HARRIS-GALVESTON SUBSIDENCE DISTRICT

Groundwater Withdrawal and Land Subsidence in Harris and Galveston Counties for the 2025 Calendar Year

by
Ashley Greuter, P.G.
and
Alan Hurlbert

Harris-Galveston Subsidence District Report 2026-01

MICHAEL J. TURCO
GENERAL MANAGER

The Harris-Galveston Subsidence District (District) has monitored water use, groundwater levels, and subsidence in Harris, Galveston, and adjacent counties since 1975. In the greater Houston area, subsidence, the lowering of land-surface elevation, is caused by the depressurization of our aquifers due to the use of groundwater as a primary water source. The mission of the District is to cease ongoing subsidence and prevent the occurrence of future subsidence. As part of this effort, it is important for the District to provide the public with consistent, high-quality information on groundwater use, aquifer water levels, and subsidence.

The information contained within this report is the compilation of the largest multi-agency effort in the State of Texas that leverages the resources of both the Harris-Galveston and Fort Bend Subsidence Districts with the City of Houston, the United States Geological Survey, and the Brazoria County Groundwater Conservation District. This year, this multi-agency partnership will publish the 50th volume of this important data compilation. This report is intended to exceed the requirements of section 8801.117 of the District's enabling legislation.

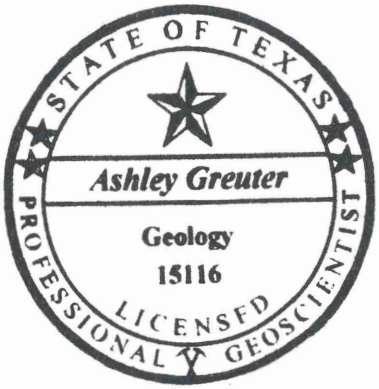
On behalf of the Harris-Galveston Subsidence District and its Board of Directors, I would like to thank you for your interest in this year's Annual Groundwater Report. We look forward to continuing to provide timely, accurate, high-quality data and research to inform the District's regulatory planning efforts to prevent subsidence and improve water planning throughout this region.

Sincerely,

Michael J. Turco
General Manager

Professional Geoscientist Seal

The contents of this report (including figures and tables) document the work of the following Licensed Professional Geoscientist:



Ashley Greuter, P.G. No. 15116

Ashley Greuter was responsible for all aspects of the water use and subsidence sections of the report, including preparing figures, tables, and written text. The groundwater-level data collection and associated interpretations were performed by USGS staff and are included as preliminary findings in the report for informational purposes. The subsidence data were processed and analyzed by Dr. Guoquan Wang at the University of Houston.

Ashley Greuter

Signature

May 13, 2026

Date

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Acknowledgments

The compilation of the data and analysis in this report would not be possible without the concerted efforts of many contributors to the 2025 Annual Groundwater Report. The authors would like to thank the staff of the Harris-Galveston Subsidence District for their diligent field work in collecting GPS data and for the processing of water use data; Dr. Guoquan Wang (University of Houston) for processing and archiving raw GPS data; and the engineers, staff, and permittees/owners of actively permitted wells in the District that submitted detailed water use on over 7,300 pumpage reports contained in this report.

Public hearing notice was posted on the website:	February 4, 2026
Public hearing held on:	April 30, 2026
Hearing Examiner:	Judge Helen Truscott
Hearing record held open for public comment until:	May 8, 2026
Approved by the Board of Directors:	May 13, 2026

Conversions Factors and Datums

Multiply	By	To obtain
inch (in)	2.54	centimeter (cm)
foot (ft)	0.305	meter (m)
mile (mi)	1.61	kilometer (km)
square mile (mi^2)	2.59	square kilometer (km^2)
gallon (gal)	3.785	liter (L)
million gallons per day (MGD)	3785.41	cubic meter (m^3)
million gallons per day (MGD)	3.0688	acre-feet (acre-ft)

List of Acronyms

BCGCD	Brazoria County Groundwater Conservation District
CORS	Continuously Operating Reference Station
FBSD	Fort Bend Subsidence District
GNSS	Global Navigation Satellite System
GPS	Global Positioning System
GRP	Groundwater Reduction Plan
HGSD	Harris-Galveston Subsidence District
InSAR	Interferometric Synthetic Aperture Radar
LOWESS	locally weighted scatterplot smoothing
MGD	Million Gallons per Day
NGS	National Geodetic Survey
NOAA	National Oceanic and Atmospheric Administration
NWS	National Weather Service
PAM	Periodically Measured Station
POR	Period of Record
TxDOT	Texas Department of Transportation
UH	University of Houston
USGS	United States Geological Survey

Executive Summary

In the greater Houston region, groundwater was the primary source of water for municipal, agricultural, and industrial users over the last century. The rapid population growth in the 1950s led to a dramatic increase in water demand and groundwater withdrawals. Over time, the extensive withdrawal of groundwater resulted in significant subsidence, prompting the Texas Legislature to create the Harris-Galveston Subsidence District in 1975. The District's mission is to prevent further subsidence in Harris and Galveston counties through groundwater regulation and water conservation.

Each year, the Harris-Galveston Subsidence District publishes an Annual Groundwater Report to provide the latest information on subsidence in our region. The Annual Groundwater Report encompasses data collected for the previous calendar year, including climatic conditions, water use, groundwater levels, and measured subsidence. Pursuant to District Resolution No. 2026-1146 passed on February 11, 2026, the Board of Directors held a public hearing at 9:00 a.m. on April 30, 2026, to present the findings of the 50th Annual Groundwater Report for the 2025 calendar year. This report provides an in-depth review of the information presented during the public hearing.

Climate

Annual variations in precipitation can significantly impact the amount of water used (i.e., total water demand) in the District. Groundwater use patterns fluctuate based on total rainfall received, which results in changes in aquifer water levels and, potentially, in land subsidence. During periods of excessive rainfall, total water demand can decline; conversely, during droughts, groundwater use can increase, leading to declining groundwater levels. For the first half of the calendar year, the cumulative rainfall totals remained only slightly above or below average for each station except in Sugar Land. Some minor storm events kept precipitation totals close to the 1991-2020 precipitation normals between May and July, but rainfall from these events never pushed any station more than a few inches above normal. However, precipitation totals began to drop sharply starting in August and lasted through the remainder of the year. The most cumulative rainfall was measured at Hobby Airport with 42.8 inches, placing it about 13 inches below normal. The lowest total rainfall in 2025 was recorded at Scholes Field, with only 28.5 inches, about 18.5 inches below normal.

Water Use

Since 1976, water users in the District have been working to change their primary source of water from groundwater to alternative water as required by the District's Regulatory Plan to prevent subsidence. The percentage of total water demand sourced from groundwater has decreased from about 61 percent in 1976 to about 21 percent in 2025. The majority of groundwater use, approximately 83 percent, occurs in Regulatory Area Three, where the regulatory compliance timeline will not be completed until 2035. The three primary water uses in the District are public supply, industrial, and irrigation. The overall groundwater use within the District in 2025 is 232.8 million gallons per day (MGD), which is a two percent decrease from the previous year. Groundwater used for public supply remains the largest use category at about 212.5 MGD and accounts for approximately 91 percent of all groundwater used in the District.

The District's Regulatory Plan requires permittees to convert to alternative water sources in order to reduce their reliance on groundwater. The primary alternative water supply used in the District is treated surface water sourced from three river basins: the Trinity River Basin, the San Jacinto River Basin and the Brazos River Basin. In 2025, the total alternative water used was 869.7 MGD, with the Trinity River remaining the single largest source of alternative water at 68 percent of the total and provided about 588.5 MGD in surface water supply. Groundwater remains the second largest source of water supply representing approximately 21 percent of the total water demand. The total water demand for the District was 1,102.6 MGD in 2025, which is one percent more than the reported water use in the previous year.

Groundwater Levels

Since 1975, the United States Geological Survey (USGS) has measured the potentiometric water level in hundreds of wells throughout southeast Texas in cooperation with HGSD through a joint funding agreement with additional cities, subsidence districts, and groundwater conservation districts. These data are used to monitor water levels in the Chicot/Evangeline (undifferentiated) and Jasper aquifers and to evaluate historical water-level trends. Since water level is the best measure of pressure in the aquifer, this information is also crucial for understanding how groundwater pumping may depressurize the aquifer and the resulting impacts on land subsidence.

The change in water level in the Chicot-Evangeline (undifferentiated) aquifer from 1977 to 2026 highlights the impact of District regulation on the aquifer. Generally, Regulatory Areas One and Two have seen a substantial rise in water levels of over 200 feet (61 meters) in the Chicot-Evangeline (undifferentiated) aquifer, as measured in areas such as the Houston Ship Channel. The area of rise is a result of the reduction of groundwater use required by the District's Regulatory Plan. Conversely, in Regulatory Area Three, water levels measured in 2025 were consistently lower than the 1977 benchmark levels, with declines of over 300 feet (91 meters) in the Chicot-Evangeline (undifferentiated) aquifer in northern Harris County. These areas are growing rapidly, and the conversion to alternative sources of water will not be completed until 2035. The greatest historical declines in water level were measured in south-central Montgomery County, with over 400 feet (122 meters) around The Woodlands.

Subsidence

Since the 1990s, the District has developed a subsidence monitoring network utilizing global positioning system (GPS) technology to monitor land surface deformation within and surrounding the District. This network involves collaboration amongst GPS station operators such as the Fort Bend Subsidence District (FBSD), the University of Houston (UH), the Brazoria County Groundwater Conservation District (BCGCD), Texas Department of Transportation (TxDOT), and other local entities. The subsidence monitoring network includes over 190 active GPS stations throughout southeast Texas in 2025.

The District estimates the average annual subsidence rate as the linear regression of the change in ellipsoidal height, which represents the vertical movement in the GPS data collected from the GPS stations, from the five most current years (i.e., 2021 through 2025). The subsidence rates observed in Regulatory Area One are stable, since they have reached the full regulatory conversion requirements, and Chicot-Evangeline (undifferentiated) water levels have risen. Subsidence rates are generally above half a centimeter per year throughout Regulatory Area

Three, as groundwater remains the primary water source in this area and Chicot-Evangeline (undifferentiated) water levels have declined significantly. The highest subsidence rate was measured at GPS stations in the Katy and Fulshear areas, exceeding 3 centimeters per year.

Introduction

The greater Houston area has relied on groundwater as a primary water source since the early 1900s. During and following the economic boom of the 1940s, rapid population expansion and increased water use resulted in water-level declines in the Chicot and Evangeline aquifers of 250 and 300 feet (76 and 91 meters), respectively, from 1943 to 1977 (Gabrysch, 1982). The reliance on groundwater and subsequent subsidence, resulting from this abundant groundwater withdrawal, led to the creation of the Harris-Galveston Subsidence District in 1975 to prevent further subsidence in Harris and Galveston counties. Since then, the District has been successful in mitigating subsidence through groundwater regulation, advanced science and research, regional collaboration, and award-winning water conservation programs.

Purpose of Report

This report comprises the 50th Annual Groundwater Report for the District. Pursuant to District Resolution No. 2026-1146 passed on February 11, 2026, the Board of Directors held a public hearing for the Annual Groundwater Report at 9:00 a.m. on April 30, 2026. The public hearing was held at the District office and offered virtually for viewing purposes only. The public hearing fulfills the requirements of Section 8801.117, Texas Special Districts Local Laws Code, which states that each year, the Board of Directors shall hold a public hearing for the purpose of taking testimony concerning the effects of groundwater withdrawals on the subsidence of land within the District during the preceding year.

The hearing was attended by 24 people, including both in-person and virtual participants, members of the USGS staff, members of the District's staff, HGSD Board Directors, representatives from regional water authorities and cities, and the public. Those giving testimony were Ashley Greuter, P.G., HGSD's Director of Research and Water Conservation, and Jason Ramage, Hydrologist, USGS Texas-Oklahoma Water Science Center, Gulf Coast Programs Office. Ms. Greuter submitted 13 exhibits, including topics of precipitation, groundwater withdrawal, alternative water use, and subsidence data. Mr. Ramage presented 13 exhibits, including information on water-level altitudes, water-level changes, and aquifer compaction. The record for testimony and public comment was open from April 30, 2026, through May 8, 2026. All testimony, public comments, and questions are provided in **Appendix C**.

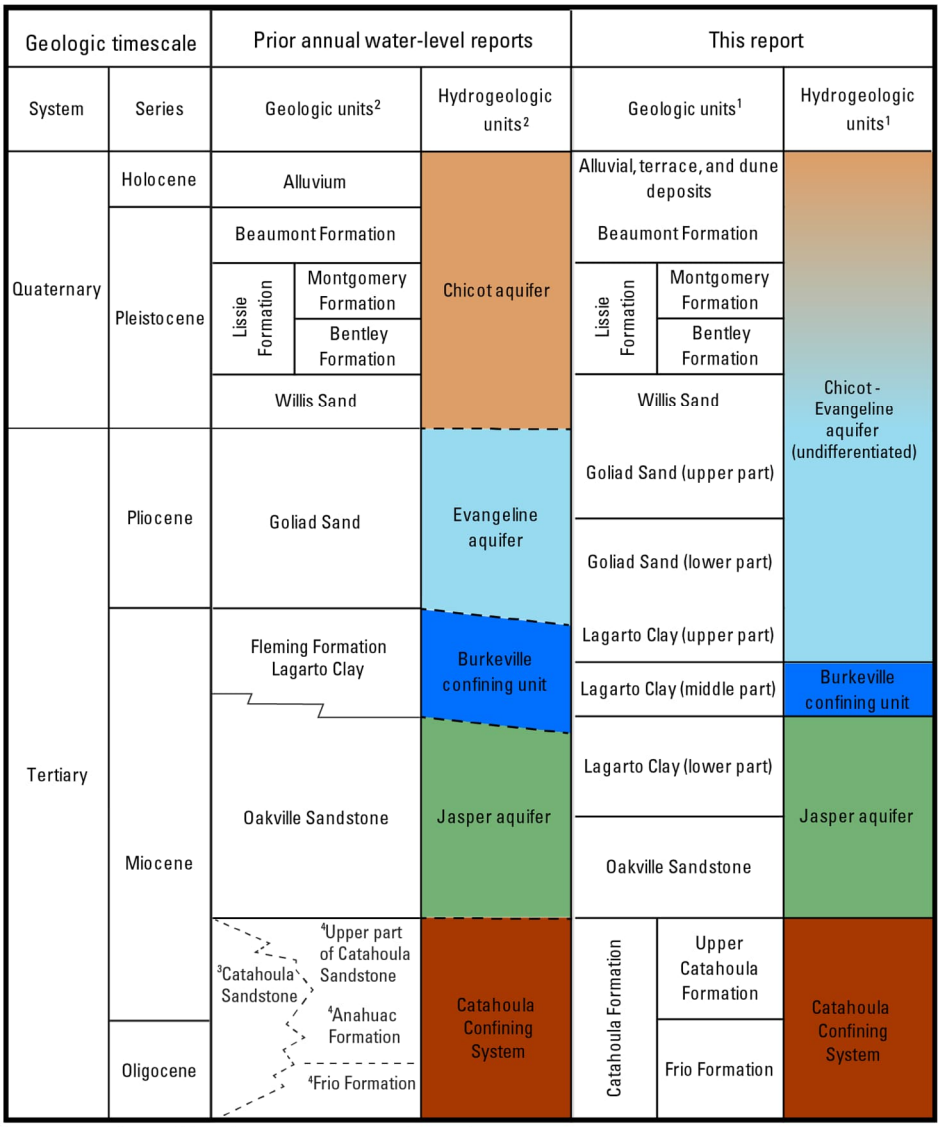
This report provides a general description of the District, which includes hydrogeology, alternative water sources, and regulatory planning, as well as an overview of the information presented during the public hearing, including precipitation, water use, groundwater levels, and subsidence within the District from January 1, 2025, through December 31, 2025. **Appendix A** of this report includes the exhibits presented at the public hearing held on April 30, 2026.

Description of Study Area

The following section provides an overview of the conditions within the District's jurisdiction, including hydrogeology, hydrology, and the District's regulatory planning areas.

Hydrogeology

The Gulf Coast Aquifer exists as an accretionary wedge of unconsolidated sediments composed primarily of sand, silt, and clay. The interbedded sands and clays are indicative of a transgressive-regressive shoreline such that the units are horizontally and vertically discontinuous at large scales and thicken down-dip southeast towards the Gulf of Mexico. From youngest to oldest, these hydrogeologic units include the Chicot-Evangeline (undifferentiated), Burkeville Confining Unit, Jasper, and Catahoula Confining System Aquifers (**Figure 1**).



[1]Modified from Young and Draper (2020) and Young and others (2010; 2012)
[2]Modified from Baker (1979)
[3]Located in the outcrop
[4]Located in the subcrop

Figure 1: Updated stratigraphic column of the Gulf Coast Aquifer System in Harris and adjacent counties, Texas (Source: Ramage et al., 2022).

The two primary water-bearing units located within the District include the Chicot-Evangeline (undifferentiated) aquifer and the Jasper aquifer. The Chicot-Evangeline (undifferentiated) aquifer comprises the shallow portion of the Gulf Coast Aquifer system and is hydrologically connected, allowing for the free flow of water between the Chicot and Evangeline units. Historically in the District, nearly all groundwater production in the Gulf Coast Aquifer system occurred in the Chicot-Evangeline (undifferentiated) aquifer. This aquifer was heavily used because it contains freshwater (i.e., total dissolved solids under 1,000 milligrams per liter) at depths ranging from a few hundred feet to over a thousand feet below the land surface for the majority of the District, with some exceptions of slightly saline (i.e., total dissolved solids ranging from 1,000 to 3,000 milligrams per liter) groundwater in areas within Galveston County in close proximity to the Gulf of Mexico (Anaya, et al., 2016).

The Jasper aquifer is the deepest of the primary water-bearing units and is isolated by the regionally persistent Burkeville confining unit. The Catahoula Sandstone, the deepest water-bearing unit in the Gulf Coast Aquifer System, and the Burkeville confining unit are utilized as a groundwater supply in areas to the north and west of the District, where these units may produce appreciable amounts of freshwater.

Most of the subsidence that has occurred in the District can be attributed to clay compaction in the Chicot-Evangeline (undifferentiated) aquifer associated with long-term water use and the decline in the aquifer's water level. Because of the significant amount of clay material in the primary water-bearing units of the aquifer, the risk of compaction is high in areas where the developed portions of the aquifers are within about 2,000 feet of land surface under high stress from groundwater development and have had sustained potentiometric water level declines (Yu, et al., 2014).

Surficial Hydrology

The District's Regulatory Plan requires permittees to reduce their reliance on groundwater by converting to alternative water supplies to meet their water needs. The primary alternative water supplies used in the District are surface water sourced from three main river basins: the Brazos River Basin, the San Jacinto River Basin, and the Trinity River Basin (**Figure 2**).

The Brazos River Basin is the second largest river basin in Texas, covering over 45,000 square miles (116,550 sq km) (Texas Water Development Board, 2025). The headwaters of the Brazos River are located near the Texas-New Mexico border and the river travels over 800 miles (1,287 km) to discharge into the Gulf of Mexico near Freeport, Texas. The Brazos River Authority manages the 11 reservoirs within this basin, eight of which are owned by the Brazos River Authority and three are owned by the U.S. Army Corps of Engineers (Region H Water Planning Group, 2016).

The San Jacinto River Basin is the smallest river basin in Texas, covering almost 4,000 square miles (10,360 sq. km) (Texas Water Development Board, 2025). Lake Conroe and Lake Houston are the two water supply reservoirs located within the San Jacinto River Basin. Lake Conroe is jointly owned by the City of Houston and the San Jacinto River Authority. The San Jacinto River Authority operates Lake Conroe and provides water supply to Harris and Montgomery counties. Lake Houston is owned by the City of Houston and operated by the Coastal Water Authority.

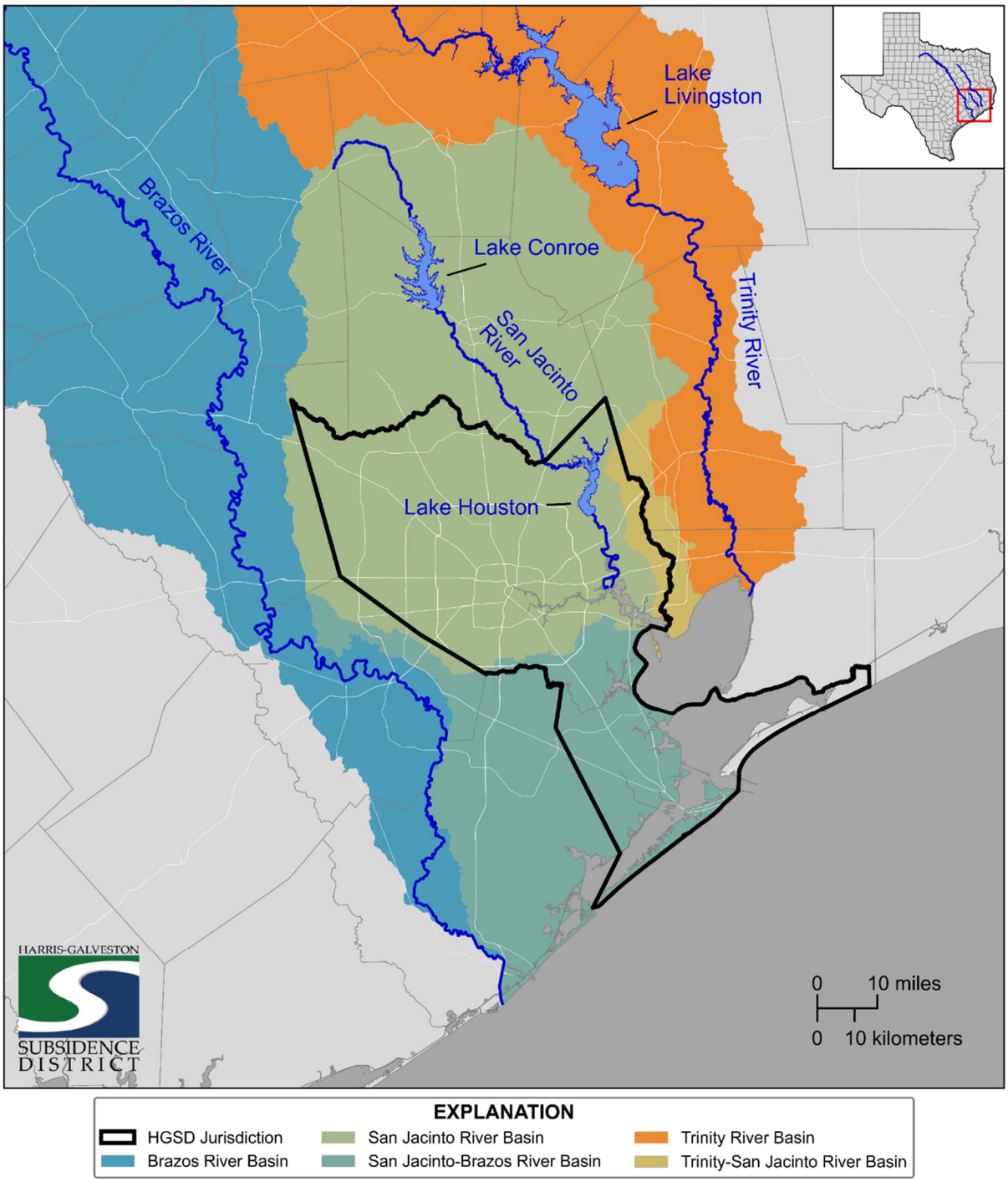


Figure 2: Location and extent of river basins and reservoirs that supply alternative water to Harris and Galveston counties.

The Trinity River Basin covers almost 18,000 square miles (46,619 sq. km), with headwaters of the basin located in north central Texas (Texas Water Development Board, 2025). The Trinity River flows through the Dallas-Fort Worth metroplex, traversing 550 miles (885 km) until the river discharges into Trinity Bay near Anahuac, Texas. The Trinity River Basin includes many

reservoirs that are owned and operated by several different agencies, such as Lake Livingston, which is owned and operated by the Trinity River Authority.

Alternative Source Waters

In the 1950s, the City of Houston, along with other entities in the region, began developing several water-supply reservoirs within the San Jacinto and Trinity River Basins to provide water for the rapidly growing region. Today, water treatment plants served by these surface water sources and the Brazos River Basin are operated by the City of Houston, the City of Sugar Land, the City of Richmond, the Gulf Coast Water Authority, the Brazosport Water Authority, and others.

To meet the Harris-Galveston Subsidence District's regulatory requirements to convert from groundwater to an alternative water supply, the City of Houston and regional water authorities—the Central Harris County Regional Water Authority, North Fort Bend Water Authority, North Harris County Regional Water Authority, West Harris County Regional Water Authority, and Coastal Water Authority (collectively, the Water Authorities) – began working together to plan, design, finance, and construct several major infrastructure projects.

Projects were developed to support the necessary alternative water supply and distribution infrastructure to facilitate the District's future conversion requirements (**Figure 3**):

- Luce Bayou Interbasin Transfer Project: pumps untreated surface water from the Trinity River through a series of canals and water pipelines along Luce Bayou to Lake Houston. This project was completed in 2024 (Coastal Water Authority, 2025).
- Northeast Water Purification Plant Expansion: provides 400 MGD of treated surface water conveyed by the Luce Bayou Interbasin Transfer Project (Greater Houston Water, 2025).
- Northeast Transmission Line Project: provides for the conveyance of the additional treated surface water from Lake Houston into central and northern Harris County (Musku, et al., 2025).
- The Surface Water Supply Project: will convey treated water from the expanded Northeast Water Purification Plant into western Harris County and northeastern Fort Bend County (Surface Water Supply Project, 2025).

In addition to the projects described above, the City of Houston and the water authorities are each designing and constructing their own distribution systems to convey the treated surface water to their customers. These interrelated regional projects are planned to be completed by 2026 for the northern portion of Fort Bend County.

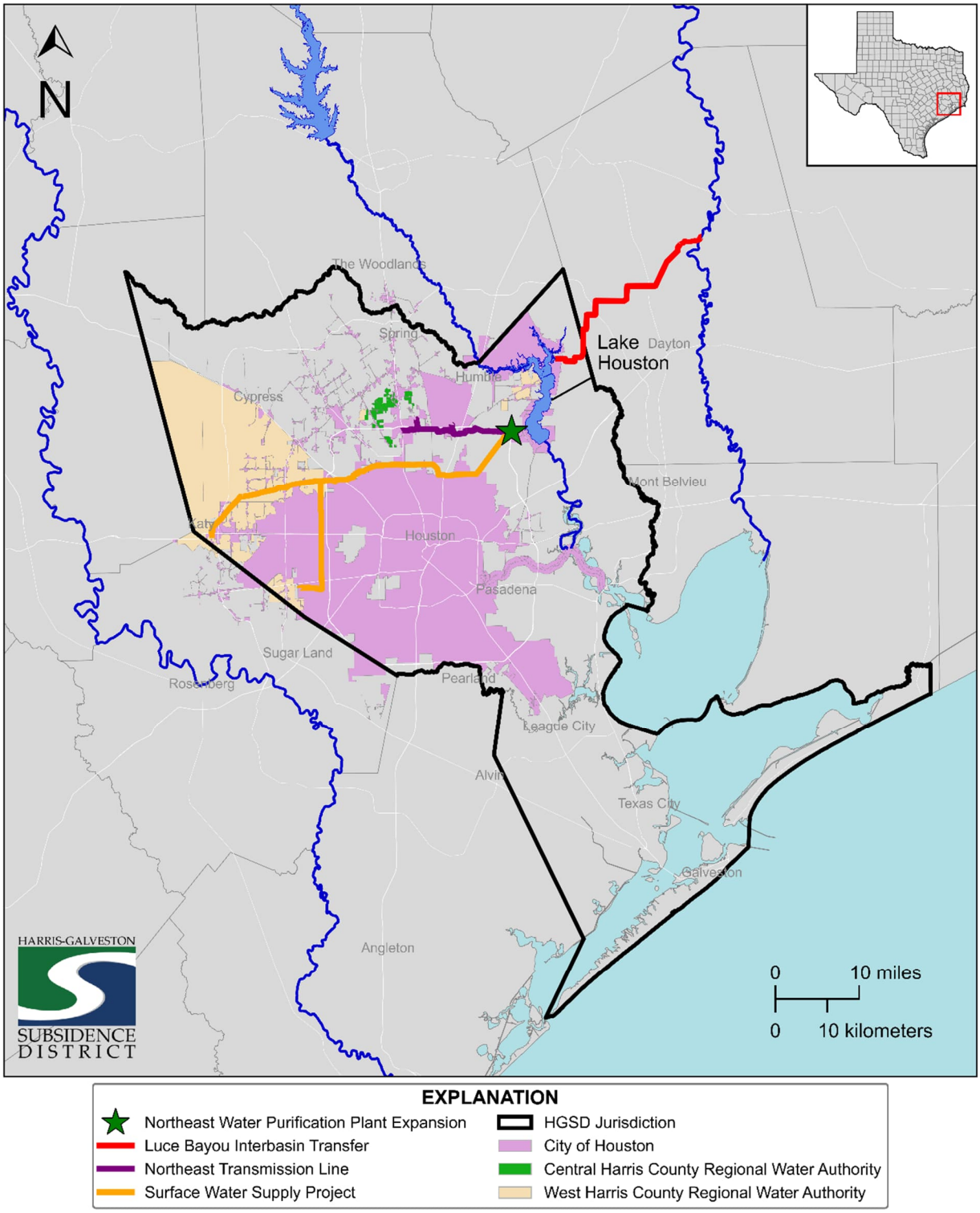


Figure 3: Alternative water supply and infrastructure distribution projects occurring within the District.

Regulatory Planning

The District's Regulatory Plan was developed to reduce groundwater withdrawal to a level that ceases ongoing subsidence and prevents future subsidence within the District. The District utilizes a novel approach to regulate groundwater withdrawal in order to prevent subsidence by allowing a portion of the total water demand of a water user to be sourced from groundwater. Total water demand is defined as the total amount of water used by an entity from all sources including groundwater, treated surface water, reclaimed water, etc. The District adopted the most recent Regulatory Plan on January 9, 2013, and it was subsequently amended on May 8, 2013, and April 14, 2021 (Harris-Galveston Subsidence District, Amended 2021).

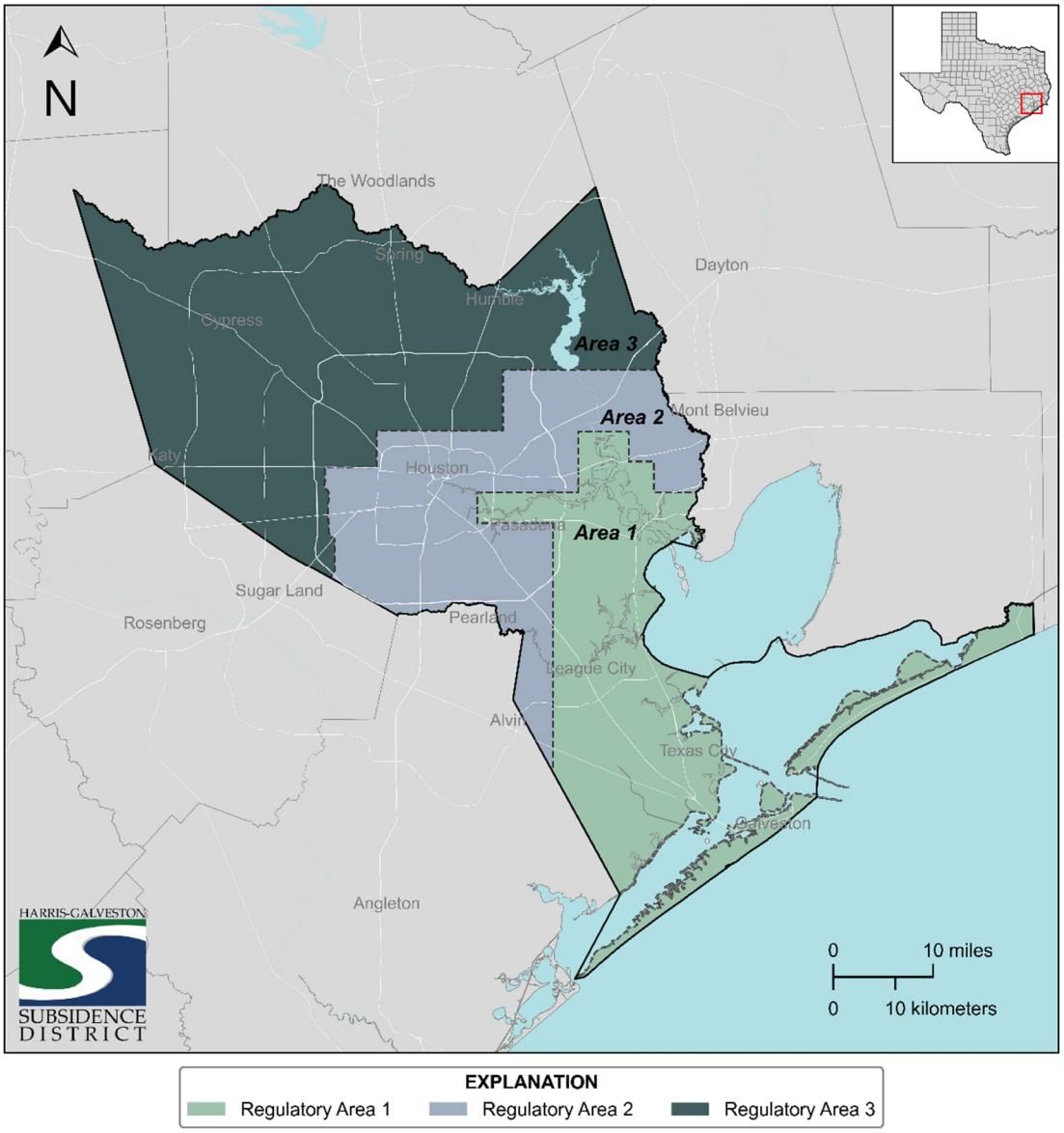


Figure 4: Geographic designation of the Harris-Galveston Subsidence District's Regulatory Areas.

The District has historically used regulatory areas to guide groundwater conversion deadlines and regulations. The 2013 Regulatory Plan has subdivided Harris and Galveston counties into three regulatory areas (**Figure 4**). Regulatory Area One includes the Houston Ship Channel, Industrial Corridor, and coastal areas of Galveston and Harris Counties. Regulatory Area Two is primarily an urban intermediate area that includes downtown, the Texas Medical Center, and parts of eastern Harris County. Regulatory Area Three covers the remaining areas of the District in northern and western Harris County.

Permittees in Regulatory Area One are required to have no more than 10 percent of their total water demand come from groundwater sources. Permittees in Regulatory Area Two must have no more than 20 percent of their total water demand sourced from groundwater. Reduction in groundwater use in both Regulatory Areas One and Two began when the District was created in 1975, and by 2000, most of those areas had fully converted to alternative water sources. Regulatory Area Three is still undergoing conversion from groundwater to alternative water sources. This area completed its first conversion in 2010, reducing groundwater use from 100 percent to 70 percent of total water demand. Additionally, the 2025 calendar year marked a conversion for further reduction of groundwater use to 40 percent of the total water demand within Regulatory Area Three for permittees operating under a District-approved Groundwater Reduction Plan (GRP).

The District's Regulatory Plan allows permittees with more than ten million gallons per year of total water demand the option to establish groundwater reduction plans (GRPs) that provide a phased approach to conversion timelines.

For those permittees operating under a GRP in Area Three, permittees are required to adhere to the future conversion deadline in 2035, which requires groundwater withdrawals to be no more than 20 percent of the permittee's total water demand.

All other permittees in Regulatory Area Three, specifically those without GRPs, are required to reduce their groundwater withdrawals so that no more than 20 percent of their total water demand is sourced from groundwater.

The following sections provide a summary of the information presented at the Public Hearing held on April 30, 2026. The exhibits used to provide testimony during the hearing are included in **Appendix A – Exhibits Presented at Public Hearing held on April 30, 2026.**

2025 Climate Summary

The District reviews local climatic data provided by the National Oceanic and Atmospheric Administration (NOAA) – National Weather Service (NWS) climate stations within and adjacent to the District's jurisdiction (**Figure 5**). Variation in local precipitation, specifically deviations from historical norms, is important to analyze because it directly affects the magnitude of total water demand from water users in the region and can affect the availability of alternative water supplies, such as surface water.

During periods of above-normal precipitation in the region, total water demand typically remains near or below normal due to reduced municipal and agricultural water use. Conversely, during periods of below-normal precipitation, the region's total water demand will typically increase due to greater demand, mainly for outdoor irrigation and agricultural uses. Additionally, during prolonged periods of below-normal precipitation, natural limitations on alternative supplies may require increased groundwater use, which can subsequently lower aquifer water levels, compact aquifer materials, and cause land subsidence.

The cumulative precipitation departure from 1991-2020 normal precipitation is referenced against each NWS climate station displayed in **Figure 6**. The 1991 to 2020 normals represent the average precipitation over that 30-year interval from NWS climate stations. Within **Figure 5**, the Katy NWS climate station, which was included in previous Annual Groundwater Reports, did not record data for the first eight months of 2025, making the calculation of the cumulative precipitation departure from normal invalid. Therefore, the Katy station is shown as "No Data".

For the first half of the calendar year, the cumulative rainfall totals remained only slightly above or below average for each station except in Sugar Land. Some minor storm events kept precipitation totals close to the 1991-2020 precipitation normals between May and July, but rainfall from these events never pushed any station more than a few inches above the normals. However, precipitation totals began to drop sharply starting in August and lasted through the remainder of the year. Therefore, the year ended with all seven stations well below the normals. The most cumulative rainfall was measured at Hobby Airport with 42.8 inches, placing it about 13 inches below normal (**Figure 6**). The lowest total rainfall measured in 2025 was recorded at Scholes Field with only 28.5 inches, which is about 18.5 inches below normal (**Figure 6**). The greatest departure from normal was measured at the Baytown climate station, with almost 2 feet below normal (**Figure 6**).

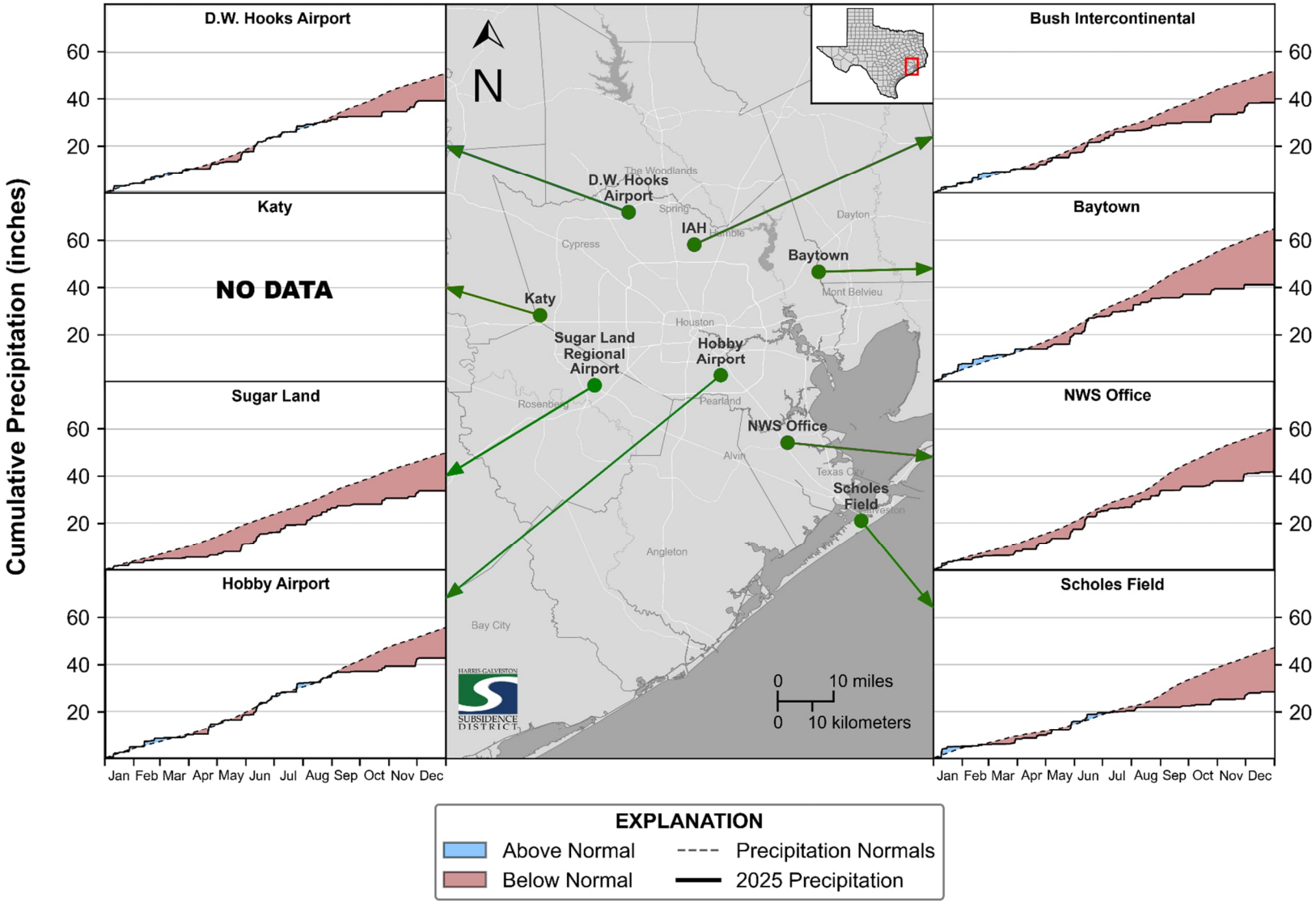


Figure 5: Location of National Weather Service (NWS) climate stations analyzed for the 2025 calendar year. Graphs contain individual station cumulative precipitation, in inches, as the solid black line compared to the 1991-2020 Precipitation Normals shown in the dashed line.

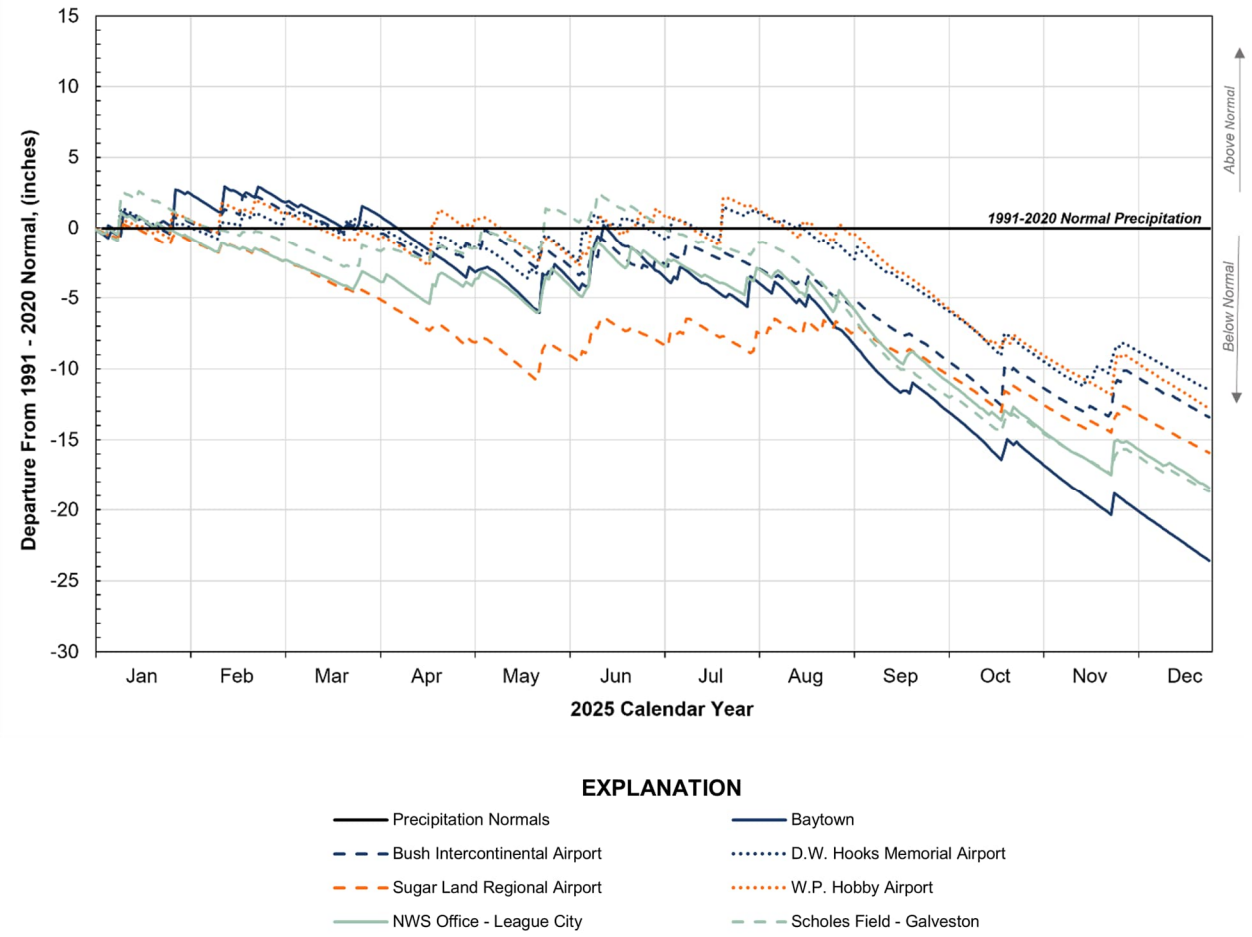


Figure 6: Cumulative 2025 precipitation departure from 1991-2020 normals precipitation, in inches, at select NWS climate stations within and surrounding the District. Source: https://www.ncei.noaa.gov/access.

2025 Water Use Summary

The District collects groundwater and alternative water supply use annually from permittees. These datasets provide an understanding of the location and quantity of groundwater use, the intended use of groundwater withdrawals, and a perspective on the conversion from groundwater to surface water, since the volume and source of alternative water use are captured.

As of April 2026, the permittees submitted their annual water-use data from over 7,300 active water wells for the District to compile and use in this report. Estimates of groundwater withdrawals associated with missing reports were based on permitted allocations for operational wells in 2025 and amount to approximately 1.6 MGD, which is less than 1% of total groundwater withdrawals.

In addition to providing water use data for 2025, this report includes updated groundwater withdrawal totals for the previously reported year, 2024. These changes are made during the normal permitting and reporting process as part of the exchange between the District and its permittees. The changes include updating estimated amounts with actual amounts, data entry errors, and errors in the submitted data. The reported groundwater withdrawal total for 2024 increased by 0.25 MGD, reaching 237.9 MGD.

Groundwater Use for the Entire District

The three primary water use types in the District are public supply, industrial, and irrigation. The total amount of groundwater used in 2025 was reported as 232.8 MGD, a 2% decrease from the previous year. Public supply continues to be the dominant use in the District at 212.5 MGD, which comprises 91 percent of the total groundwater used (**Figure 7**).

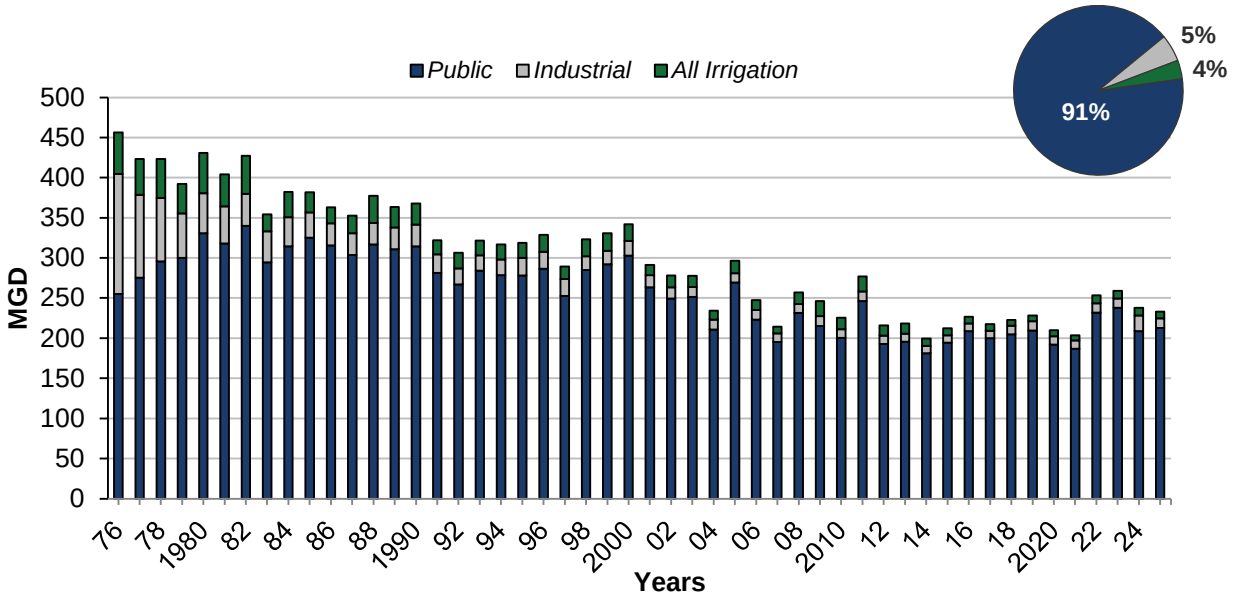


Figure 7: Groundwater withdrawals, in million gallons per day (MGD), by well use from 1976 to 2025. The total groundwater used in the District was 232.8 MGD in 2025, with 91 percent for public supply as shown in the pie chart.

The District is divided into three regulatory areas that define the percentage of total water demand that may be met by groundwater (**Figure 4**). The total amount of groundwater withdrawal for 2025, differentiated by regulatory area, is provided in **Table 1**.

Table 1. Summary of Reported Groundwater Use (in MGD) Grouped by Regulatory Area.

Regulatory Area	Year	Water Use Category			Total
		Public	Industrial	All Irrigation	
Area 1	2024	2.89	14.23	0.19	17.3
	2025	3.69	7.16	0.09	10.9
	1-Year Change	*28%*	*-50%*	*-53%*	*-37%*
Area 2	2024	21.67	2.90	1.04	25.6
	2025	23.93	3.09	0.93	28
	1-Year Change	*10%*	*7%*	*-11%*	*9%*
Area 3	2024	184.22	2.42	8.33	195
	2025	184.94	1.90	7.12	194
	1-Year Change	*0%*	*-21%*	*-15%*	*-1%*

The total groundwater withdrawals are grouped by regulatory area over the history of the District, as shown in **Figure 8**, and highlight the impact of the District's Regulatory Plan. Regulatory Areas One and Two, which have been fully converted according to the Regulatory Plan, use significantly less groundwater than Regulatory Area Three, which is still undergoing conversion.

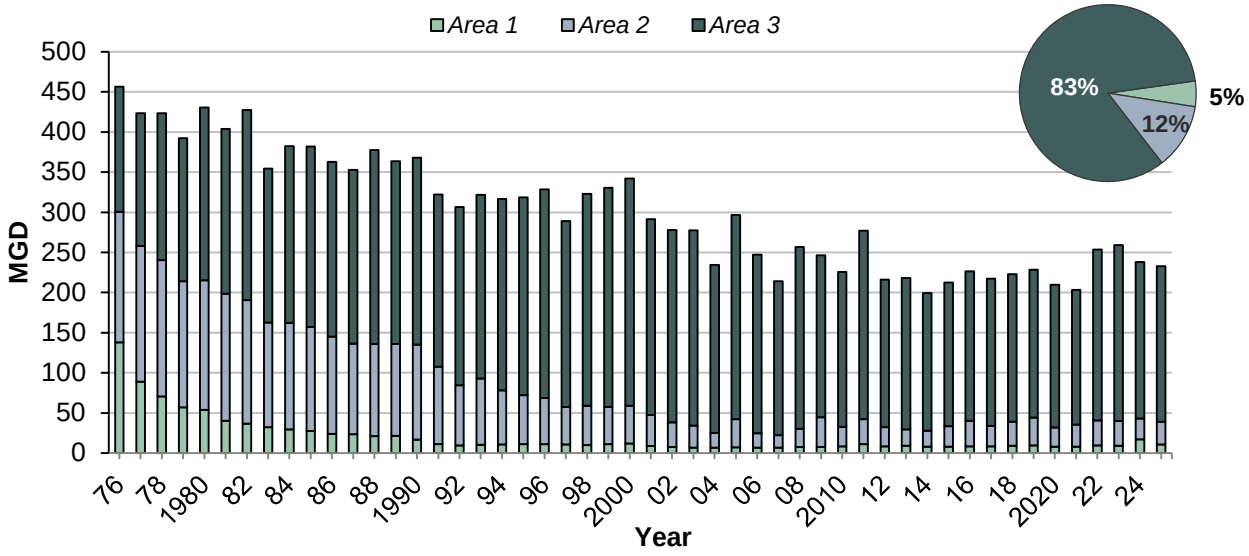


Figure 8: Groundwater withdrawals, in million gallons per day (MGD), by regulatory area from 1976 to 2025. Total groundwater used in the District was 232.8 MGD in 2025, with the majority from Area Three, as represented by the pie chart.

Regulatory Area One

Regulatory Area One covers most of Galveston County and the southeastern portion of Harris County. Cities and villages included are Bacliff, Baytown, Bayou Vista, Channelview, Clear Lake Shores, Deer Park, Dickinson, El Lago, Galena Park, Galveston, Highlands, Hitchcock, Kemah, La Marque, La Porte, League City, Morgan's Point, Nassau Bay, Pasadena, San Leon, Santa Fe, Texas City, Seabrook, Shoreacres, Taylor Lake Village, Tiki Island, and Webster. Also included are Clear Lake, Johnson Space Center, and Bolivar Peninsula areas. This area was converted to alternate water sources in the 1980s and early 1990s.

In 2025, total groundwater withdrawal in Regulatory Area One was 10.9 MGD, a 37 percent decrease from the previous year (**Table 1**). The majority of groundwater use in Regulatory Area One is associated with industrial needs, which comprises 65 percent of the use in this area. Industrial and irrigation use both decreased by about 50 percent from the previous year (**Figure 9**). Public supply was the only reported increase in groundwater use in Regulatory Area One, with a 28 percent increase from the previous year. Historically, groundwater withdrawals have declined in Regulatory Area One from a maximum of 137.9 MGD in 1976 to 10.9 MGD in 2025, which represents approximately a 92 percent decrease (**Figure 9**).

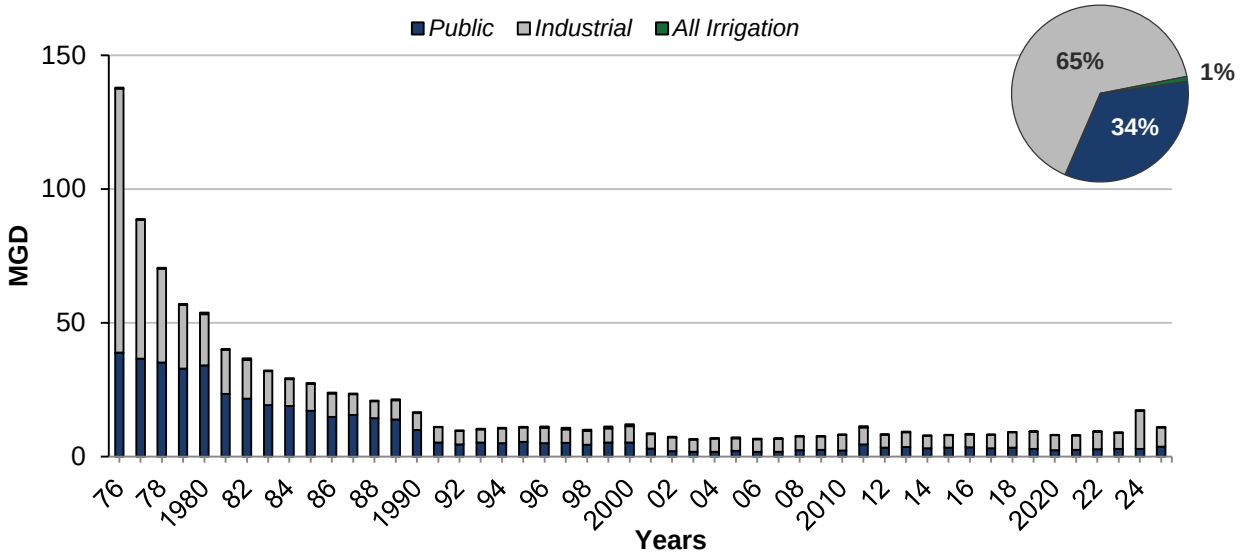


Figure 9: Groundwater withdrawals for Regulatory Area One, in million gallons per day (MGD), by water use category from 1976 to 2025. A total of 10.9 MGD of groundwater was used in Regulatory Area One in 2025, with 65% of the withdrawals being used for industrial purposes as shown in the pie chart.

Regulatory Area Two

Regulatory Area Two covers a small northwestern slice of Galveston County and southern and eastern Harris County. Cities, entities, and areas included are Bellaire, Cloverleaf, Crosby, Friendswood, Highlands, Hobby Airport, Pasadena, Sheldon, South Houston, the Villages, West University, and large portions of the City of Houston. Regulatory Area Two has been converted to alternate water sources since 2002, where possible.

In 2025, total groundwater withdrawal in Regulatory Area Two was 28 MGD, a 9 percent increase from the previous year (**Table 1**). Public supply remains the dominant use type at 86 percent of the total and increased by ten percent from the previous year (**Figure 10**). Overall, groundwater use in Regulatory Area Two has declined from 170.1 MGD in 1978 to below 40 MGD since 2001.

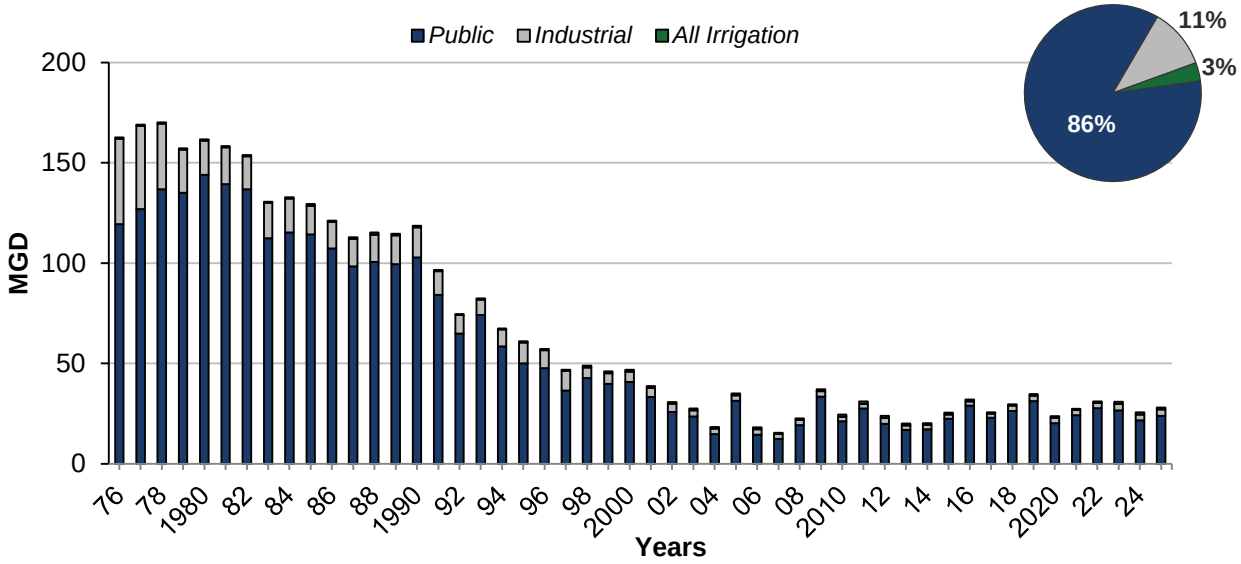


Figure 10: Groundwater withdrawals for Regulatory Area Two, in million gallons per day (MGD), by water use category from 1976 to 2025. A total of 28 MGD of groundwater was used in Regulatory Area Two in 2025, with 86% of the withdrawals being used for public supply as shown in the pie chart.

Regulatory Area Three

Regulatory Area Three covers north and west Harris County. Cities, entities, and areas included are Jersey Village, Humble, Kingwood, Huffman, Tomball, Cypress, Hockley, Spring, and parts of Katy. Entities in this regulatory area were required to convert to alternative water sources beginning in 2010 and 2025, with the conversion facilitated by the City of Houston and the Regional Water Authorities. One subsequent conversion deadline in 2035 remains for permittees with District-approved groundwater reduction plans.

In 2025, total groundwater withdrawal in Regulatory Area Three was 194 MGD, a one percent decrease from the previous year (**Table 1**). Similar to Regulatory Area Two, the largest category of water use is public supply, which was reported at 184.9 MGD and accounts for 95 percent of the total groundwater use in this area (**Figure 11**). Industrial water use has been below 3 MGD since 2012. While all irrigation use has remained below 10 MGD since 2014.

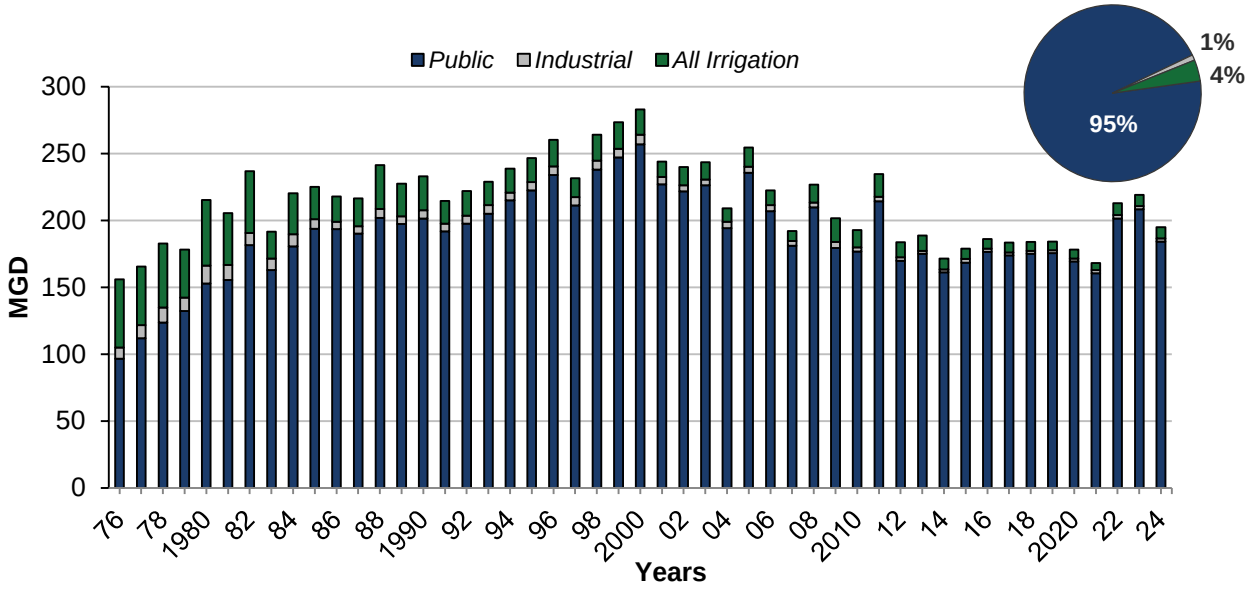


Figure 11: Groundwater withdrawals for Regulatory Area Three, in million gallons per day (MGD), by water use category from 1976 to 2025. A total of 194 MGD of groundwater was used in Regulatory Area Three in 2025, with 95% of the withdrawals being used for public supply as shown in the pie chart.

Alternative Water Supply and Total Water Use

The District's Regulatory Plan requires permittees to convert to alternative water supplies in order to reduce their reliance on groundwater. The primary alternative water supply used in the region is surface water sourced from three primary river basins, including the Trinity River Basin, the San Jacinto River Basin, and the Brazos River Basin (**Figure 2**). Reclaimed water, including metered water from the effluent from treatment plants, captured stormwater runoff, and reuse water from industrial processes, is another alternative supply that began providing a consistent supply to the District in 1997.

In 2025, the total alternative water used in the District was 869.7 MGD, which is almost two percent more than was used in the previous year (**Figure 12**). The Trinity River Basin accounts for the majority of the alternative water supply and brought about 588.5 MGD to the District. Reclaimed water has increased by over 1,900 percent from less 0.4 MGD in 2001 to almost 7.7 MGD in 2025; however, it still accounts for less than one percent of the total alternative water used in the District.

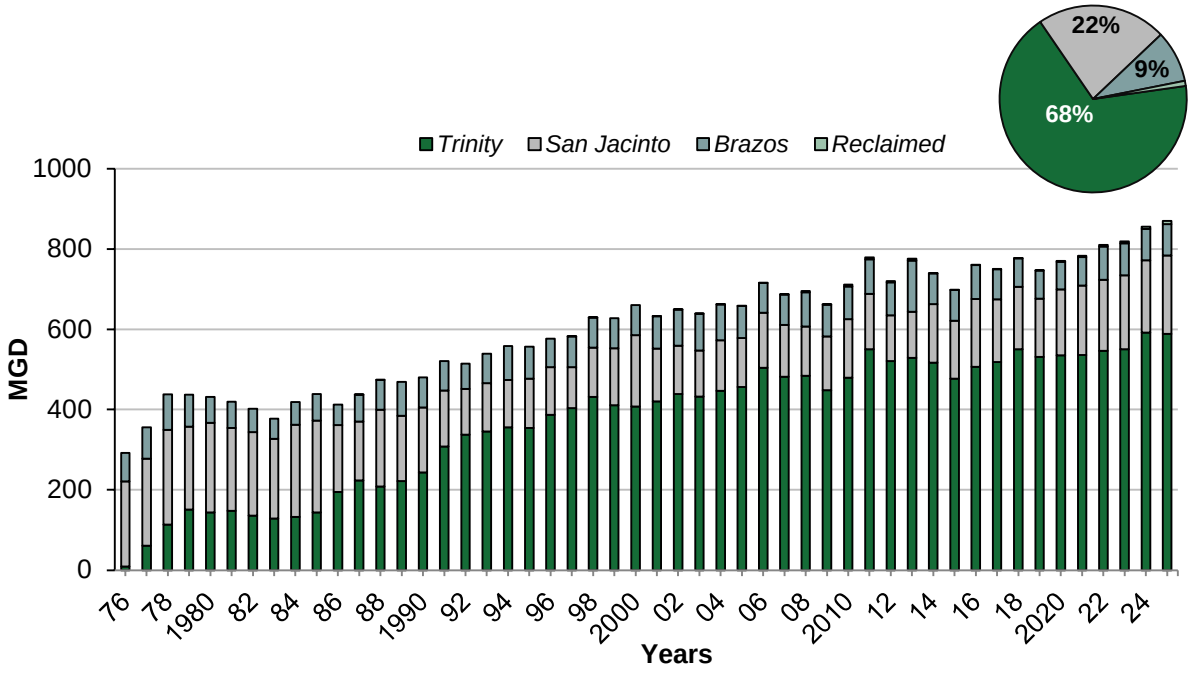


Figure 12: Total alternative water use for the District, in million gallons per day (MGD), by source water, from 1976 to 2025. The reported total alternative water used in the District in 2025 was 869.7 MGD, with the majority supplied from the Trinity River Basin as shown in the pie chart.

Since 1992, the Trinity River Basin has remained the largest water source used in the District. Groundwater remains the second largest source of water supply within the District as a whole. The surface water from the San Jacinto River Basin increased by over eight percent from the previous year. The highest increase in alternative water was reported in reclaimed water, with approximately a 41 percent increase from the previous year, yet it comprises less than one percent of the total alternative water supply in 2025 (**Figure 12**).

Table 2. Summary of Reported Alternative Water, Groundwater and Total Water Use (in MGD) for the entire District.

Water Source		2024	2025	1-Year Change
Alternative Supplies	Brazos River Basin	78.27	78.04	0%
	San Jacinto River Basin	180.73	195.44	8%
	Trinity River Basin	591.40	588.54	0%
	Reclaimed Water	5.45	7.68	41%
	Alternative Subtotal	*855.85*	*869.70*	2%
Groundwater		237.89	232.85	-2%
	Total Water Use	**1,093.74**	**1,102.55**	**0.8%**

The total water use for the District was determined to be 1,102.55 MGD in 2025, which is slightly below a one percent decrease from the previous year (**Table 2**).

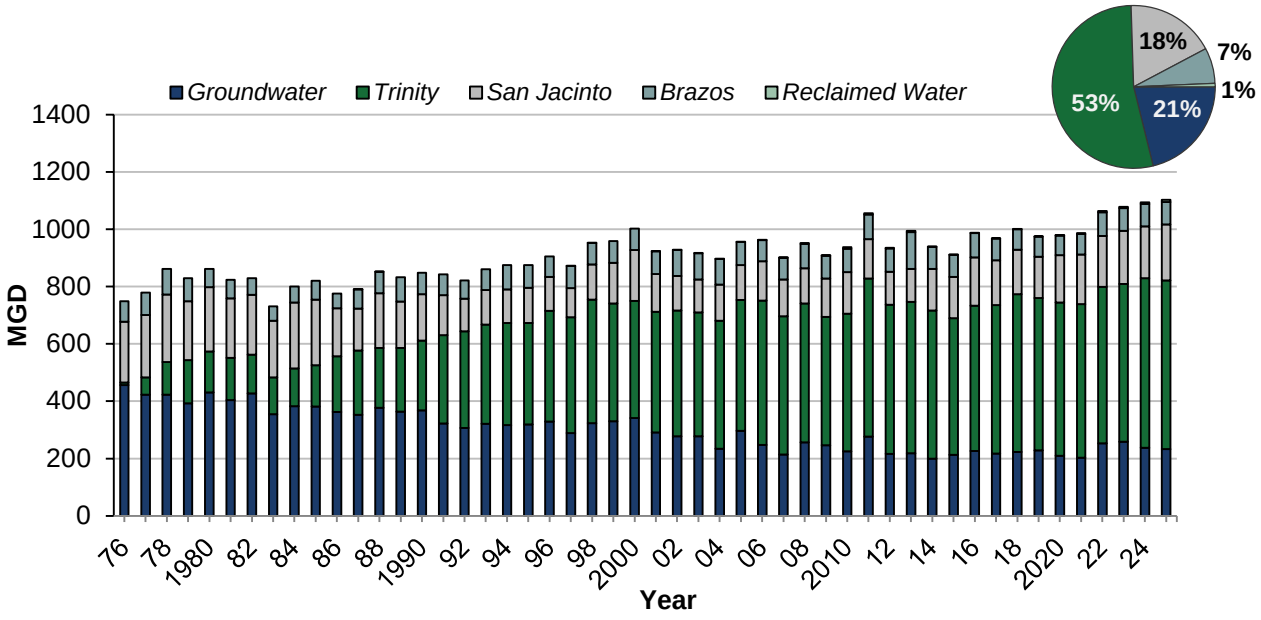


Figure 13: Total water use for the District, in million gallons per day (MGD), by source water, from 1976 to 2025. The reported total water used in the District in 2025 was 1,102.6 MGD with the majority sourced from the Trinity River Basin as shown in the pie chart.

2025 Groundwater Levels Summary

All groundwater used in the District is sourced from the Gulf Coast Aquifer System, which is composed of two primary water-bearing units. The unit most widely used in the District is the Chicot-Evangeline (undifferentiated) aquifer. The Chicot is the shallowest aquifer in the District, which is directly connected to the Evangeline Aquifer immediately beneath it. Due to the interconnectedness of these units and recent changes to the hydrostratigraphy, the Chicot and Evangeline aquifers were grouped together and reclassified as the Chicot-Evangeline (undifferentiated) by the USGS (Ramage, et al., 2022). The Burkeville confining unit lies beneath the Evangeline portion of the Chicot-Evangeline (undifferentiated) and isolates the last primary aquifer, the Jasper aquifer. The Jasper aquifer is not widely used in the District, but is a primary source of water for counties north of the District, such as Montgomery County.

Annually, since 1975, the USGS has measured the potentiometric surface in hundreds of wells throughout the Houston region in cooperation with the District through a joint funding agreement, along with additional cities, subsidence districts, and groundwater conservation districts, to monitor and provide reports on groundwater level altitude data for the Chicot-Evangeline (undifferentiated) and Jasper aquifers. The potentiometric surface is defined as the level to which water rises in a well (Fetter, 2001). For confined aquifers like the Gulf Coast Aquifer System, the potentiometric surface can be above the top of the aquifer unit in tightly cased wells. Changes in the potentiometric surface (water level) are primarily caused by external forces that depressurize the aquifer, such as groundwater pumping.

Annual measurements of aquifer water level, also referred to as water-level altitude, are essential for understanding the impact of groundwater use on the aquifer, which in turn may affect land subsidence. The USGS staff measures water levels in various wells (e.g., public supply, industrial, irrigation, and observation) from December through March each year. The collected data and associated analyses, such as the generation of the water-level altitude map, are performed by USGS staff and provided to the District through the joint funding agreement for the purposes of the annual groundwater report.

The water-level altitude for the Chicot/Evangeline (undifferentiated) aquifer shows the areas of primary stresses, which are the greatest declines in the water-level, occur in western and northern Harris County, as well as southern Montgomery County and northeastern Fort Bend County (**Figure 14**). The 2025 water-level map was created using measurements collected from 530 wells across 11 counties in the greater Houston-Galveston region from December 2025 through March 2026. The types of wells measured included public supply, irrigation, industrial, and observation wells throughout the region. The black circles in **Figure 14** designate the location of the wells that were measured.

The USGS also uses annual water-level measurements to compare with past datasets and determine changes in the aquifer over different time periods. The change in water level in the Chicot/Evangeline (undifferentiated) aquifer since 1977 clearly demonstrates the impact of District regulation on the aquifers (**Figure 15**). Generally, Regulatory Areas One and Two have seen a substantial rise in water levels with over 200 feet (about 61 meters) in the Chicot-Evangeline (undifferentiated) aquifer in locations like the Houston Ship Channel. The areas of rise result from the reduction in groundwater use required by the District's Regulatory Plan.

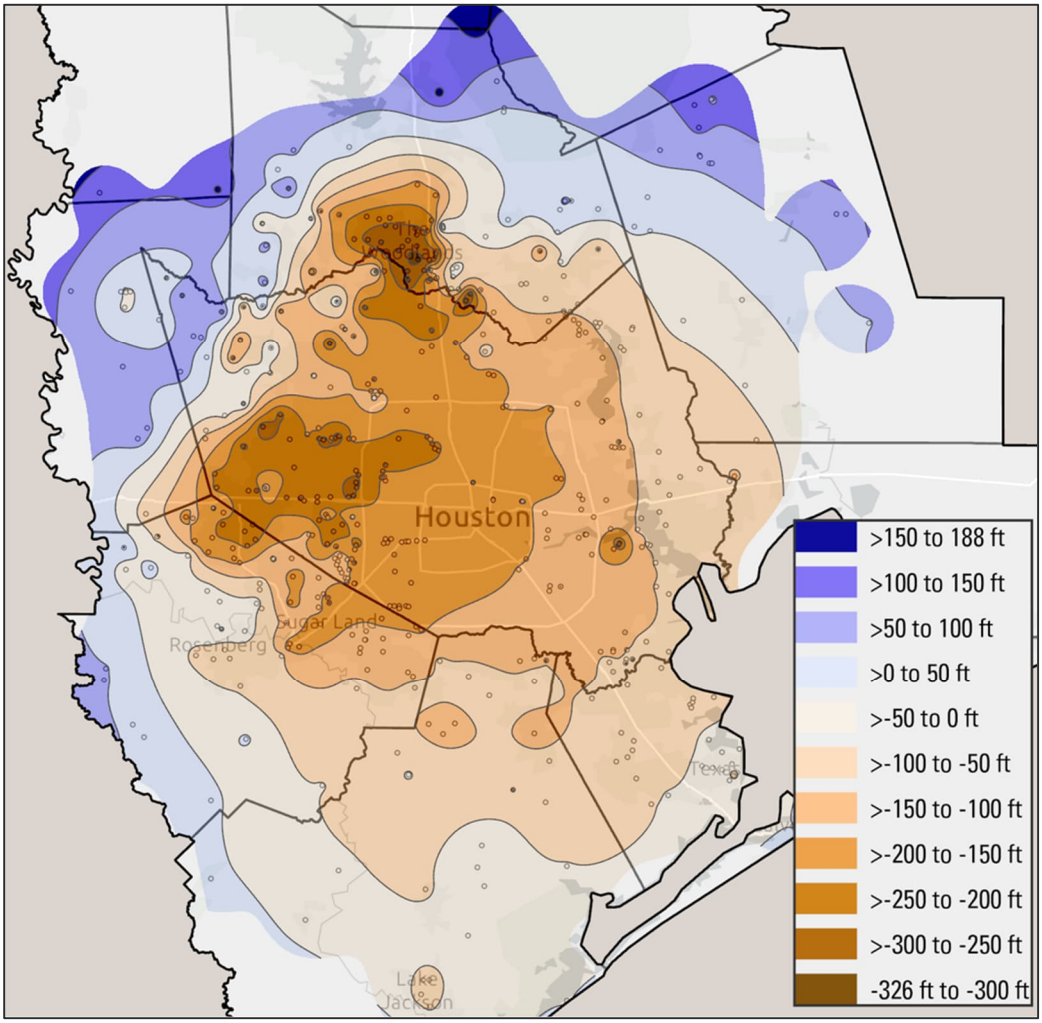


Figure 14: Altitude of the potentiometric surface determined from water levels measured in tightly cased wells (black circles) screened in the Chicot-Evangeline (undifferentiated) aquifer, Houston region, Texas, 2026 (Source: USGS provisional data – preliminary and subject to change).

Conversely, in Regulatory Area Three, water levels in the Chicot-Evangeline (undifferentiated) aquifer remain significantly below the historical benchmark as the population grows rapidly, and conversion to alternative water sources will not be completed in this area until 2035. The maximum decline for the Chicot-Evangeline (undifferentiated) aquifer occurs in The Woodlands within south-central Montgomery County, with over 400 feet (about 122 meters) below datum from 1977 to 2026 (**Figure 15**).

Groundwater levels in southern Montgomery County are of particular concern as the greatest water-level declines in the Chicot-Evangeline (undifferentiated) aquifer exist in south-central Montgomery County near The Woodlands in both 2026 water-level measurements, as shown in Figure 14, as well as the comparison of changes in the water-level from 1977 to 2026, as displayed in **Figure 15**. This area is also an important area of interest, as continued population

growth and groundwater use may result in an expansion of the area of decline into northern Harris County.

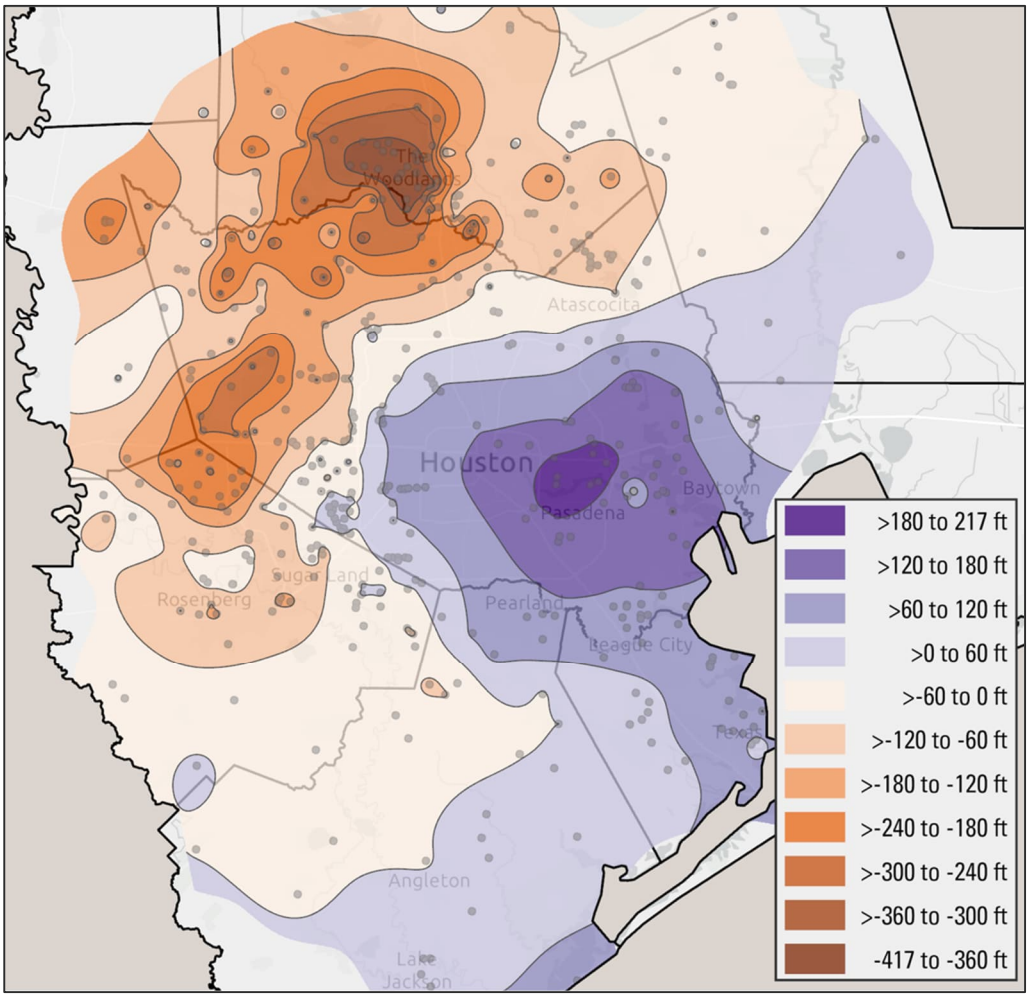


Figure 15: Potentiometric water-level change at wells screened in the Chicot-Evangeline (undifferentiated) aquifer, Houston region, Texas, from 1977 to 2026 (Source: USGS provisional data – preliminary and subject to change).

Water-level altitudes in the Jasper aquifer also indicate a decline of over 300 feet (91.4 meters) measured in wells near the central border between Harris County and Montgomery County in 2026 (**Appendix A**). Additionally, the Jasper water-level altitude in 2026 shows declines of over 250 feet (76.2 meters) in south-central Montgomery County near The Woodlands. The majority of groundwater withdrawals from the Jasper aquifer occur in Montgomery County, where hydrogeologic conditions are more favorable for producing potable water.

The information presented for the groundwater levels section is a summary of the provisional data presented at the public hearing held on April 30, 2026, by the USGS. Such exhibits used to provide testimony during the hearing are included in **Appendix A**. A USGS Scientific Investigation Report should be released later in 2026, documenting the status of groundwater level altitudes and the long-term changes in these aquifers.

2025 Subsidence Summary

Subsidence is the lowering of the land surface elevation. In the Houston-Galveston region, subsidence primarily occurs from the compaction of clays due to groundwater withdrawal for municipal, industrial, and irrigation water supply. As the aquifer's water level declines, fine-grained sediments, such as silt and clay, release water, thereby depressurizing the system and causing compaction through reorientation of minerals within these sediments. This compaction of the aquifer lowers overlying stratigraphic units and is observed at the land surface as subsidence.

The District has installed and maintained global positioning system (GPS) stations throughout Harris, Galveston, and surrounding counties to monitor the land surface on a routine basis since the mid-1990s. The collection of GPS stations is referred to as the subsidence monitoring network. The subsidence monitoring network is a collaboration among the District, FBSD, UH, Brazoria County Groundwater Conservation District (BCGCD), the National Geodetic Survey (NGS), the USGS, the City of Houston, and the Texas Department of Transportation (TxDOT). The monitoring network has grown to over 190 stations throughout the region. As of 2026, the District operates and maintains 74 GPS stations with approximately 66 stations located in Harris and Galveston counties and the remaining eight stations within Brazoria, Waller, Montgomery, and Chambers counties.

GPS Station Overview

The GPS stations are constructed in different ways based on when they were installed and operator preferences. The District designed a permanent GPS station in the mid-1990s to apply a consistent measurement method across multiple counties. This design is known as PAM and is named after the original port-a-measure method utilized by the District in the early 1990s when the GPS station was a survey benchmark disk and each location collected data periodically. The design consists of a two-inch galvanized pipe drilled approximately 34 feet below ground surface and extends eight feet above the ground surface. The pipe is anchored in a concrete plug at the base and enclosed by centering bands and PVC pipe near the surface to reduce movement. The exposed pipe (i.e., the section of pipe that extends eight feet above the ground surface) is mounted with an antenna adapter to secure the global navigation satellite system (GNSS) antenna. A separate two-inch pipe is installed within a few feet from the antenna pipe to hold an enclosure box, which stores a battery and GNSS receiver, and a mounted solar panel. Both pipes are surrounded by four bollards and encased in a concrete slab for protection. **Figure 16** depicts a schematic of the District’s GPS station design.

The building mount is another design for a GPS station. Building mounts have a GNSS antenna mounted on or near the roof. Buildings with deep foundations and clear sky views are optimal locations to measure land-surface elevation change and limit interference. This building mount design is used by UH throughout the greater Houston area.

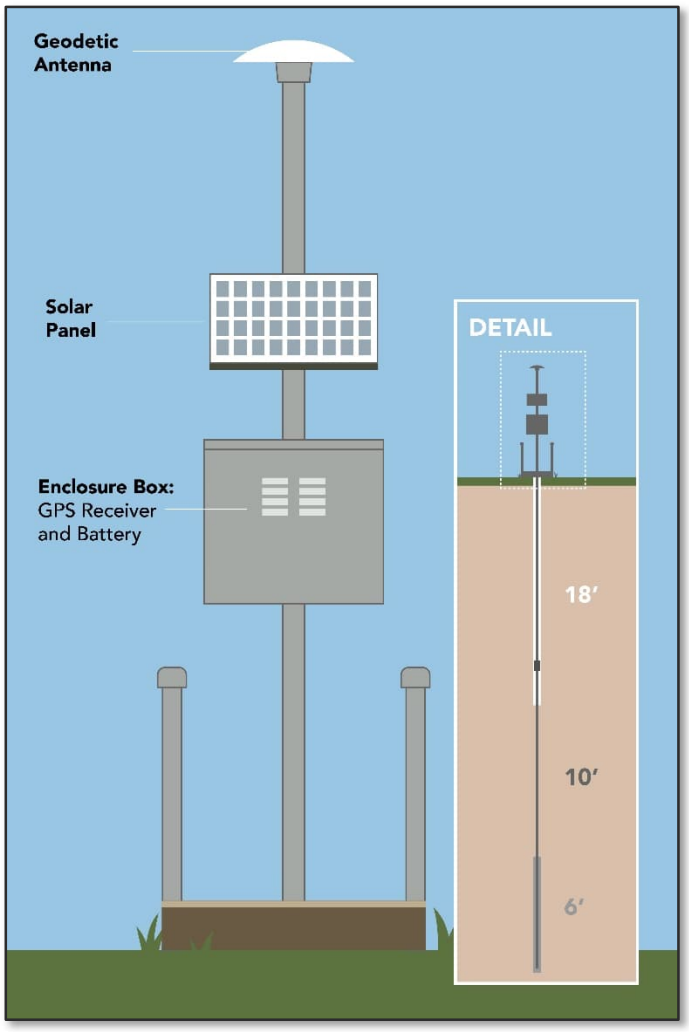


Figure 16: Schematic of the District's GPS station design for a permanent GPS station. Note schematic is not drawn to scale and is intended for visual purposes only. All numbers are provided in US standard measurement.

GPS data are collected at each GPS station on specific monitoring schedules. The District operates both periodic and continuous monitoring GPS stations. Periodic monitoring stations collect GPS data for approximately seven days every two months at the GPS station. These stations are constructed in the District's PAM design and use a Trimble GNSS antenna and receiver to gather land-surface data. Continuous monitoring stations collect GPS data every day of the year and some are designated as continuously operating reference stations (CORS). Operators, such as UH and TxDOT, operate continuous monitoring stations.

GPS Data Processing

Satellite signals are collected every 30 seconds and averaged over 24 hours by global navigation satellite system (GNSS) antenna and receiver into one raw daily data file. The GPS data collected measure the land surface as a three-component displacement time series involving the horizontal (East-West), vertical (North-South), and ellipsoidal height (up-down) components. GPS data are processed and converted to a stable reference frame called GOM25 to remove natural movements such as plate tectonics. Additional methods of GPS data processing include the identification of outliers and estimations of site velocities and associated uncertainties.

Outliers are identified through a series of steps that include applying a locally weighted scatterplot smoothing (LOWESS) algorithm to obtain a time-series trend with two iterations, removing the residual time-series trend, and estimating the median of absolute deviations (MAD) of the residual time-series (Wang, et al., 2022). The subsidence rate of a GPS station is estimated using the linear regression of the most recent five-year ellipsoidal height data (i.e., 2020-2024), for active stations that have a minimum of three years of data. The root mean square (RMS) accuracy of the GPS data provided in this report is approximately five to eight millimeters for the vertical direction or ellipsoidal height (Wang, et al., 2022).

The entire GPS dataset from all contributors is reprocessed every few years as improvements in positioning software, updates to global to regional reference frames, and other data processing analysis tools, such as orbital clock updates, are disseminated to users. Caution should be applied when attempting to mix or compare old GPS datasets with newer versions as GPS data processing is both a complex and a dynamic procedure.

The vertical displacement is determined by the change in ellipsoidal height, which is the distance from a point on the earth's surface to the reference ellipsoid. The reference ellipsoid is a mathematical representation of the earth's surface as a smoothed ellipsoid. Although the ellipsoid height is not the same as elevation, or the orthometric height, research has shown that linear trends of vertical displacement at GPS stations over the same time interval were the same for both ellipsoidal and orthometric heights (Wang & Soler, 2014). Therefore, ellipsoidal heights are used to estimate vertical displacement of the land surface.

The period of record includes GPS measurements of the ellipsoidal height that are collected over the lifespan of each GPS station. It is used to track the full history of land-surface deformation and is represented as a vertical displacement time series. Period of record plots give a historical context to understand local to regional subsidence trends. Period of record plots for each GPS station in the subsidence monitoring network that were actively collecting data in 2025 are provided in **Appendix B**.

Average Annual Subsidence Rate

The average annual subsidence rate helps show the recent change in land surface deformation at each GPS station and is calculated by using the linear regression (i.e., the statistically determined best-fit straight line through a scatter plot of data points) of the most recent five (5) years of data for active GPS stations with at least three years of GPS data. **Figure 17** depicts the average annual subsidence rate from 2021 to 2025 for over 190 GPS stations in southeast Texas.

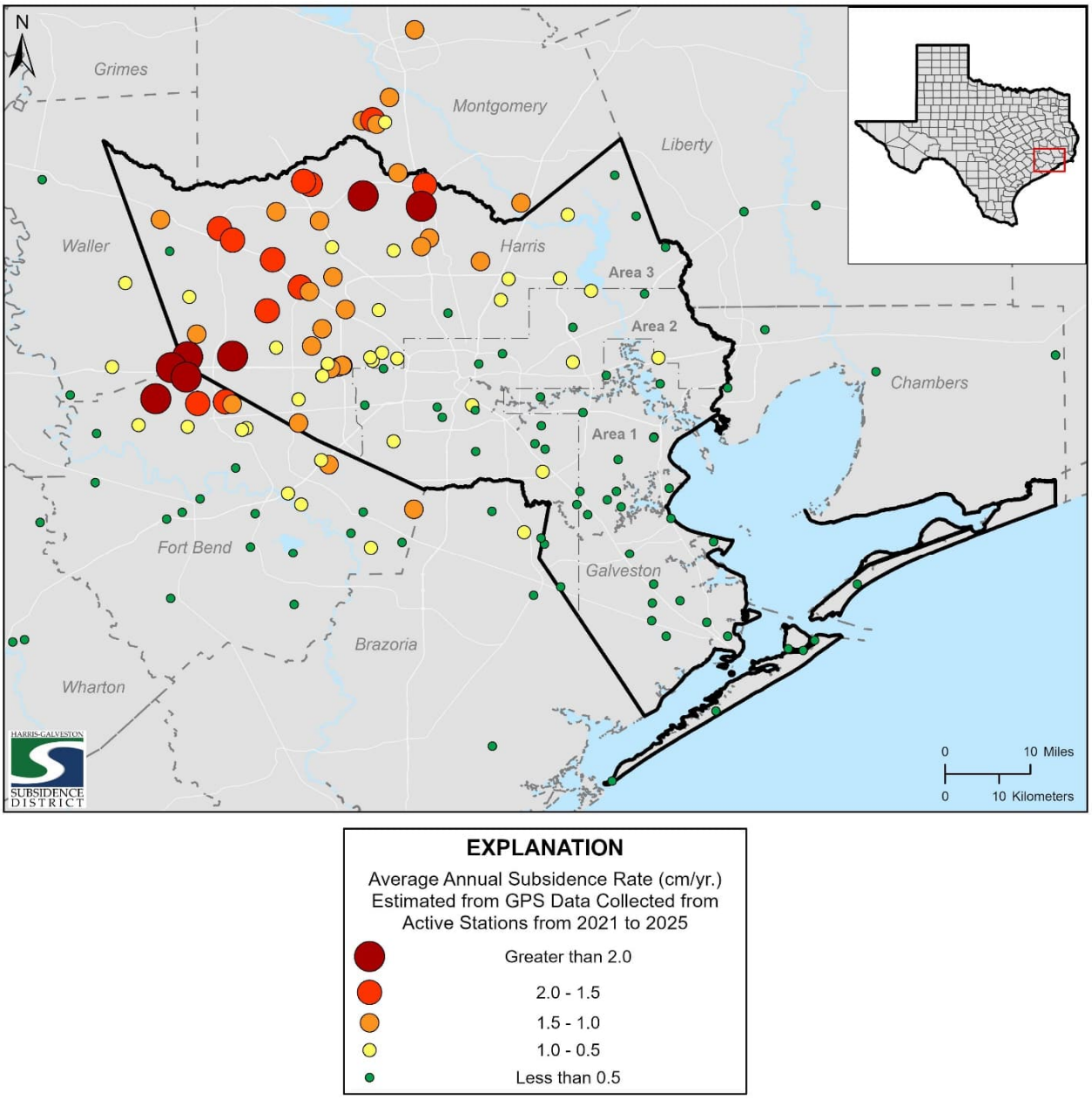


Figure 17: Annual subsidence rate, measured in centimeters per year, from 2021 to 2025, referenced to GOM20 and estimated from three or more years of GPS data collected from active GPS stations in Harris, Galveston, and surrounding counties, Texas.

Regulatory Area One shows stable subsidence rates at less than half a centimeter per year as noted by the small green circle in **Figure 17** As this area has been fully converted, and USGS groundwater level data show that water levels have risen.

The highest subsidence rates (i.e., greater than 2 centimeters per year) occur in Regulatory Area Three within western Harris County, as well as southeastern Waller County and northeastern Fort Bend County. GPS station P111, located near Fulshear within Fort Bend County, has the highest subsidence rate estimated at 3.31 centimeters per year. Other GPS stations near P111 in the Katy area also show high subsidence rates greater than 2.0 centimeters per year, such as GPS station P029, located in Katy within Fort Bend County (**Figure 18**).

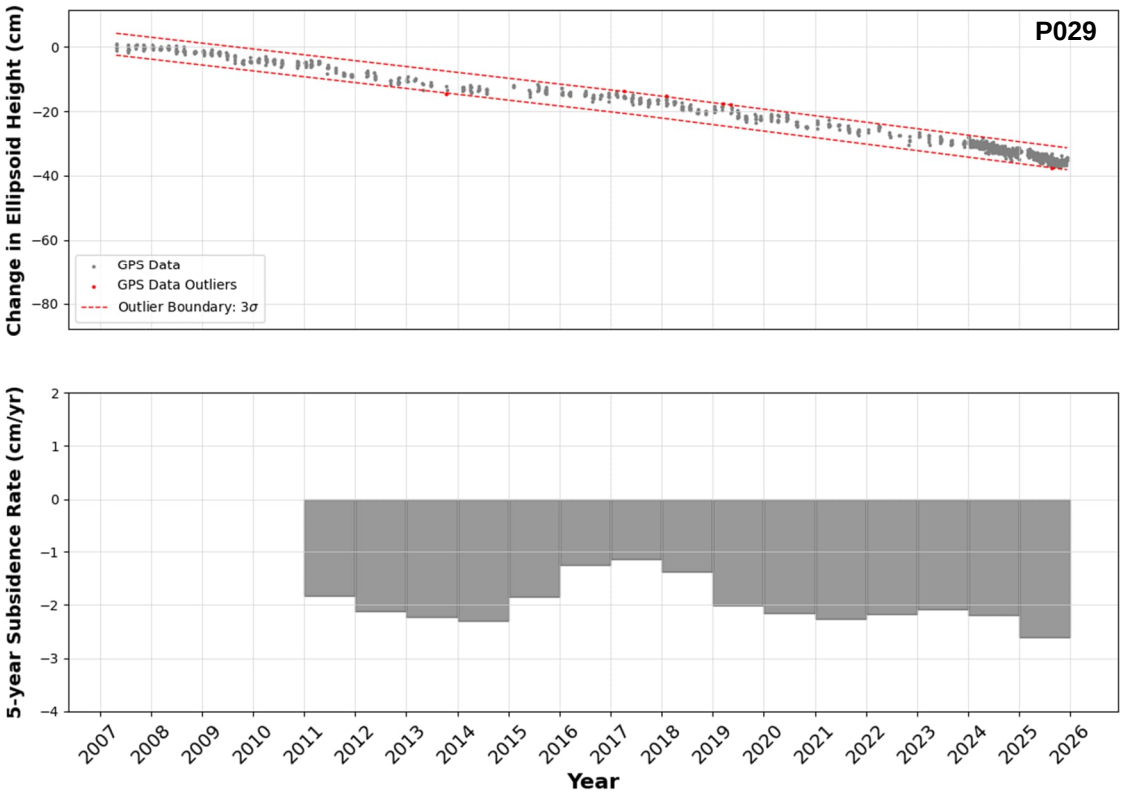


Figure 18: Period of record data from GPS station P029 located in Katy, Texas, 2007-2025. P029 has recorded approximately 35 cm of subsidence since 2007. The 2021-2025 subsidence rate is 2.64 cm/yr. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered by HGSD when calculating subsidence rates and are shown for informational purposes only.

Other areas in Regulatory Area Three, such as Cypress and Tomball, as well as areas in southern Montgomery County like The Woodlands, have subsidence rates greater than 1.5 centimeters per year. Based on the GPS data collected and analyzed in the subsidence monitoring network, subsidence is occurring in Regulatory Area Three, as this area is still undergoing conversion to alternative water supplies.

Interferometric Synthetic Aperture Radar

Since 2019, the District has sponsored research conducted by Southern Methodist University that utilizes a novel remote sensing methodology to evaluate land-surface changes in the Houston-Galveston region. This project involves multi-temporal interferometric synthetic aperture radar (InSAR) to estimate changes in the land surface from a regional scale and complements the District's subsidence monitoring network by providing data in between the GPS stations. Synthetic aperture radar (SAR) scenes are created through the transmission of electromagnetic radiation (i.e., radio waves) that are sent from the sensor to the ground surface and bounce back up to the sensor. The sensor circles the earth in precise orbit and time called passes. It takes about 12 days for the sensor to revisit an area previously captured. Experts use information gleamed from these different passes to detect small changes in the distances between them. This processed pair of SAR images is called an interferogram and shows if the land is moving up or down (Helz, 2005). This process was applied to the Houston-Galveston region and using state-of-the-art processing techniques achieved accuracy in millimeters.

The District continues to work with technical experts from SkyGeo, Inc. to estimate the annual subsidence rate averaged from 2021 through 2025 across Harris, Galveston, and surrounding counties. Approximately 164 SAR scenes were analyzed from January 5, 2021 through December 21, 2025 from the descending track of Sentinel-1 and processed using the persistent scatterers technique to create an interferogram of the velocities in the vertical direction.

Results from InSAR-derived subsidence rates are shown in **Figure 19** and these rates closely resemble rates calculated from the GPS stations. For example, green colors indicate very minor subsidence to uplift and warmer colors, ranging from yellow to red, indicate higher subsidence. As presented in **Figure 19,** Regulatory Area One shows predominantly green color from InSAR-derived data, indicating little subsidence to uplift. Conversely, Regulatory Area Three contains darker red InSAR-derived data, which represents subsidence rates greater than 2.0 centimeters per year, in **Figure 19** and these higher subsidence rates extend into northeastern Fort Bend County and southcentral Montgomery County. Some isolated areas of higher subsidence rates, represented by red, were also detected in northwestern Brazoria County and western Chambers County.

The combination of remote sensing technologies, such as InSAR and GPS, allows the District to monitor land-surface changes with greater accuracy. The agreement between these different datasets enhances the District's ability to track subsidence from regional to local scales.

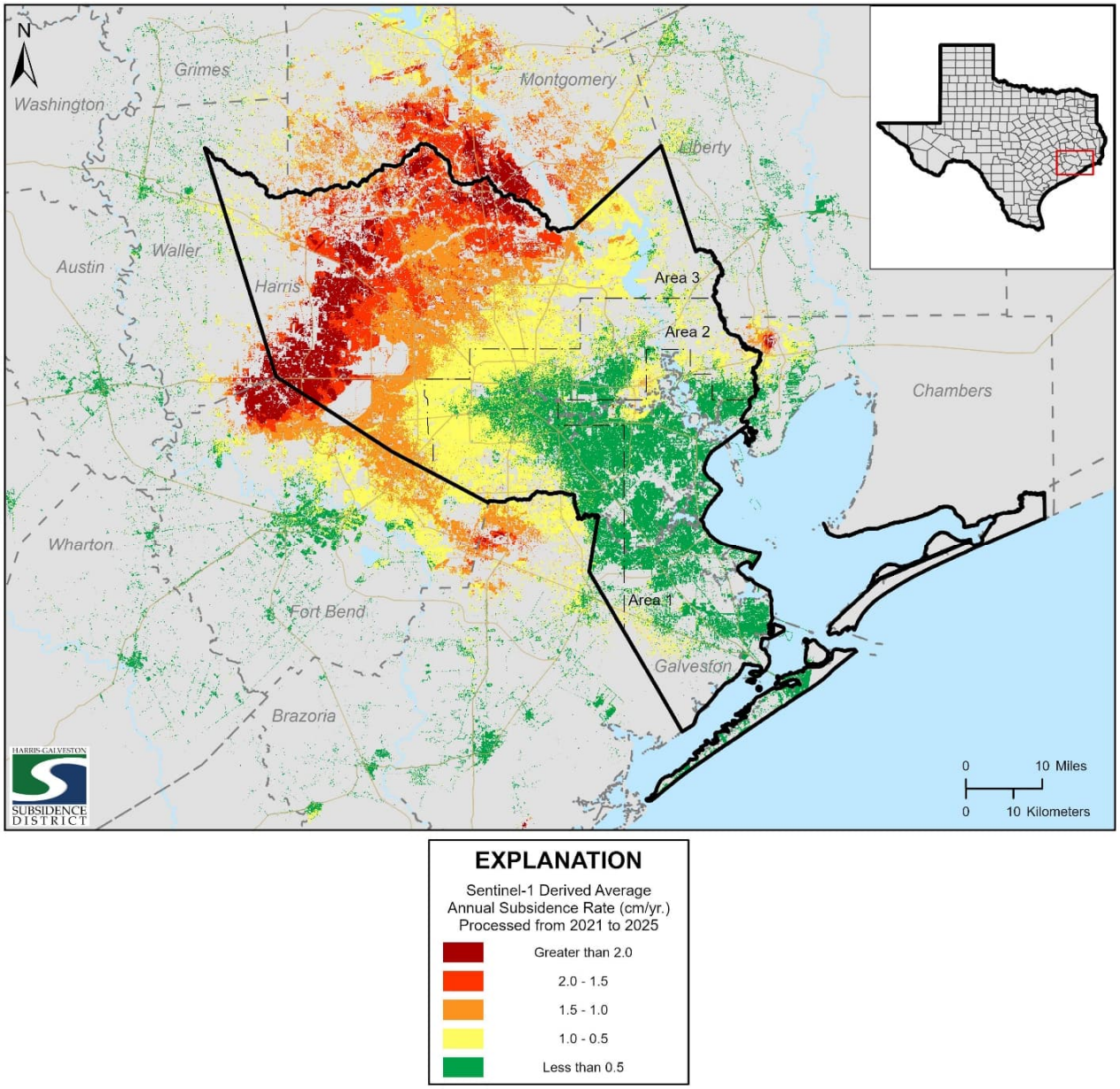


Figure 19: Interferometric Synthetic Aperture Radar (InSAR)-derived annual subsidence rate, calculated in centimeters per year, estimated from Sentinel-1 data and averaged from 2021 through 2025.

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Appendix A – Exhibits Presented at Public Hearing held on April 30, 2026

Welcome to the 2025 Annual Groundwater Report Public Hearing

IN-PERSON ATTENDEES

- Please mute all personal devices.
- This boardroom is equipped with microphones that will be recording throughout the entirety of the hearing. Please be mindful of this so as not to disturb the audio for our virtual attendees.
- Public testimony and Q&As will be available at the end of this hearing.

VIRTUAL ATTENDEES

- Virtual attendees will be muted for the entirety of the hearing.
- The webinar will be recorded, including all chat between participants.
- For audio/visual issues, please chat with the organizer.

HARRIS-GALVESTON SUBSIDENCE DISTRICT

2025 Annual Groundwater Report Public Hearing

April 30, 2026

Harris-Galveston Subsidence District

The Harris-Galveston Subsidence District (HGSD) is a special-purpose district created by the Texas Legislature in 1975 to provide the regulation of groundwater withdrawal to end subsidence in Harris and Galveston counties.

GROUNDWATER REGULATION

- Applying a science-based regulatory framework that identifies guidelines for groundwater withdrawals through a well permitting process and an adaptive management strategy that allows for the regulatory plan to be amended based on the best available data.

SCIENCE & RESEARCH

- Improving the understanding of our groundwater system and the impact of groundwater withdrawal through water use, aquifer data, and land surface data collection. Utilizing impactful research to help predict subsidence and ensure the regulatory plan's effectiveness.

WATER CONSERVATION

- Equipping our local communities with water conservation tools and resources to increase water efficiency and reduce reliance on groundwater to prevent further subsidence.

COLLABORATION

- Working with local, state, federal, and international organizations to achieve our mission, share resources, and improve understanding of water resources to maximize sustainable solutions.

HARRIS-GALVESTON SUBSIDENCE DISTRICT

Annual Groundwater Reports

Each year, the Harris-Galveston Subsidence District publishes an Annual Groundwater Report to provide the latest information on subsidence in our region. This report encompasses data collected for the previous calendar year and includes the following elements:

- Climate
- Water Use
- Groundwater Levels
- Subsidence

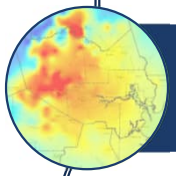
The results of the Annual Groundwater Report ultimately tell the story about our region's subsidence mitigation efforts and help to better inform local decision-makers with data that can be used to build a more resilient community.

HARRIS-GALVESTON SUBSIDENCE DISTRICT

Agenda

Climate

Water Use



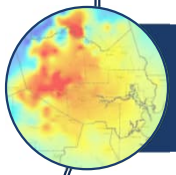
Groundwater Levels

Subsidence

Agenda

Climate

Water Use



Groundwater Levels

Subsidence

Exhibit 1

Location of National Weather Service (NWS) climate stations used for rainfall data for the 2025 calendar year.

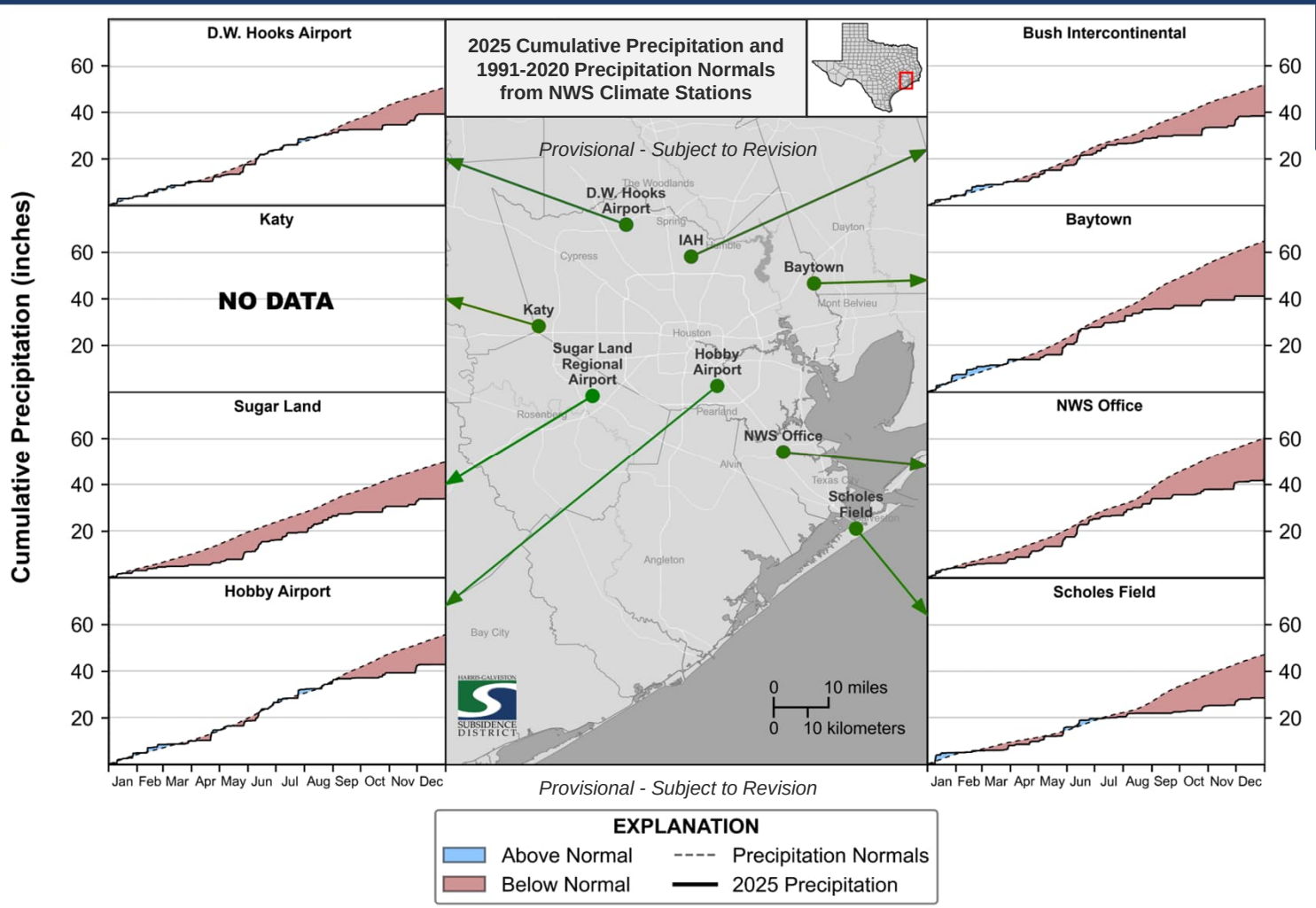
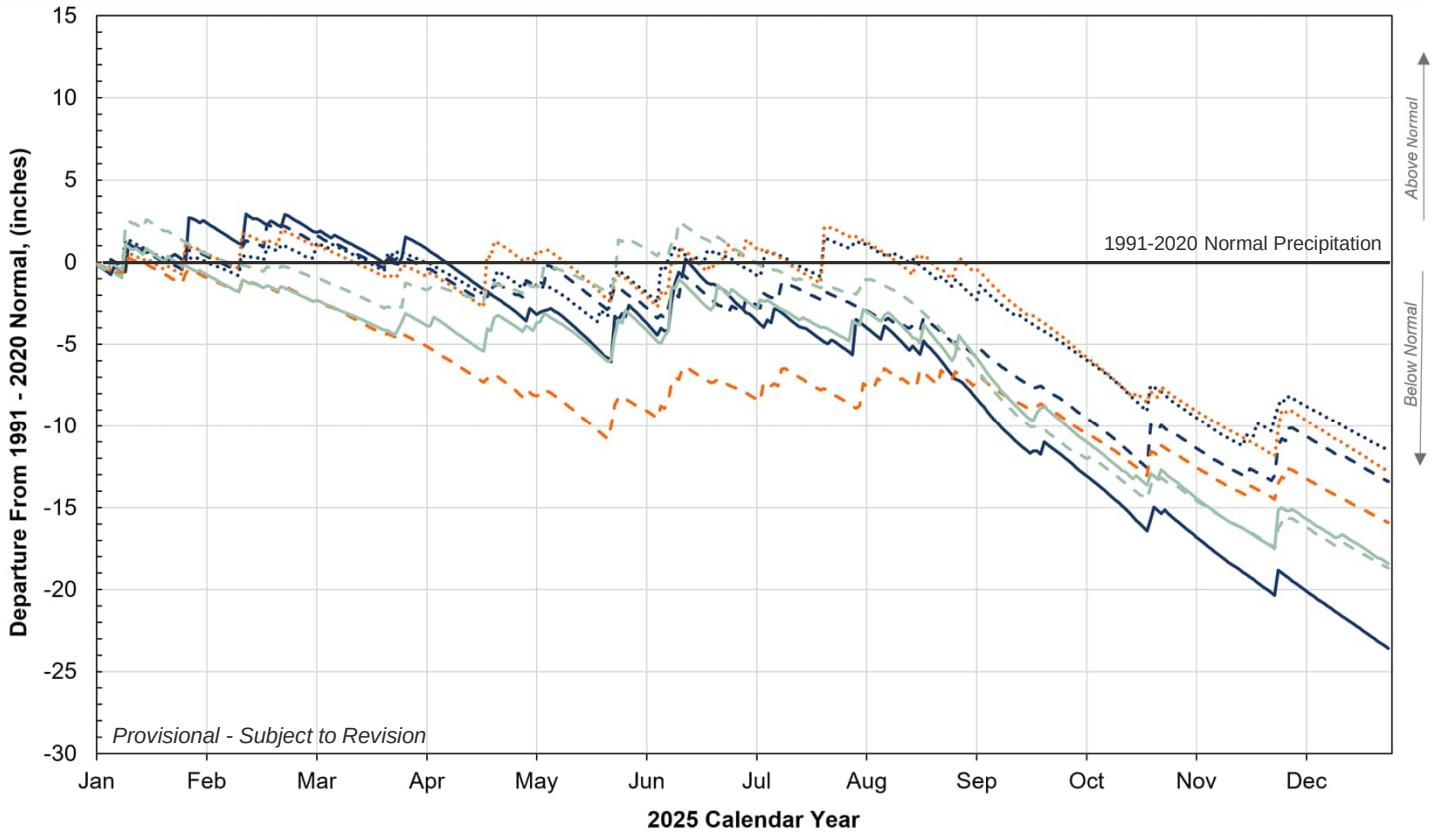


Exhibit 2 | 2025 Precipitation Data



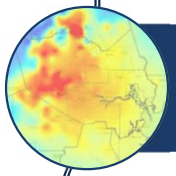
EXPLANATION

- Precipitation Normals
- Baytown
- Bush Intercontinental Airport
- D.W. Hooks Memorial Airport
- Sugar Land Regional Airport
- W.P. Hobby Airport
- NWS Office - League City
- Scholes Field - Galveston

Agenda

Climate

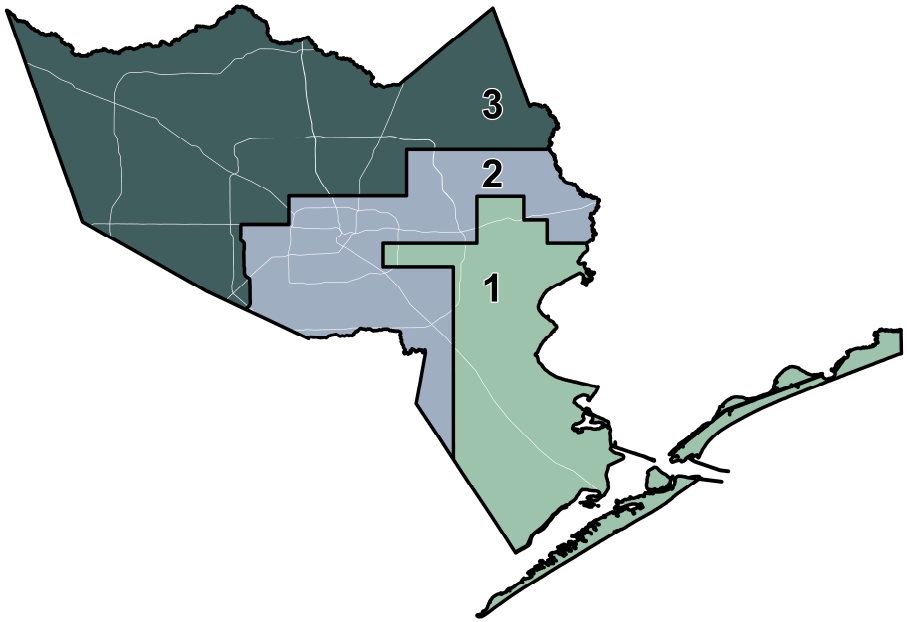
Water Use



Groundwater Levels

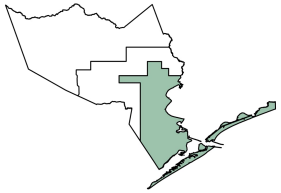
Subsidence

HGSD's Regulatory Areas



- **Area 1:** No more than 10% of Total Water Demand (TWD) may be sourced from groundwater.
- **Area 2:** No more than 20% of TWD may be sourced from groundwater.
  - Groundwater Reduction Plan (GRP) may be approved with conditions.
- **Area 3:** No more than 20% of TWD may be sourced from groundwater.
  - Permittees operating within an approved GRP have the following requirements:
    - 2025 – reduce groundwater use to no more than 40% of TWD
    - 2035 – reduce groundwater use to no more than 20% of TWD

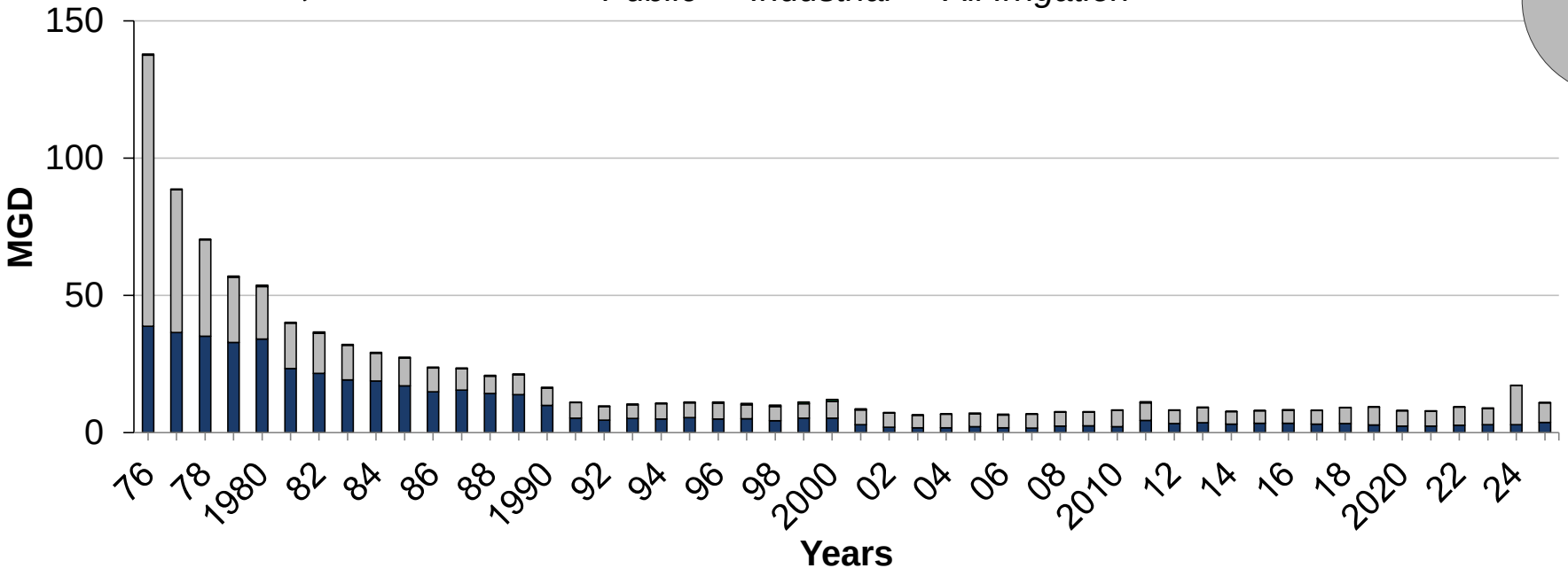
Exhibit 3 | Regulatory Area 1 Groundwater Use



Regulatory Area One

Groundwater Withdrawals Grouped by Use

Public *Industrial* *All Irrigation*



2025: 10.9 MGD

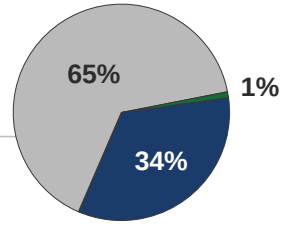
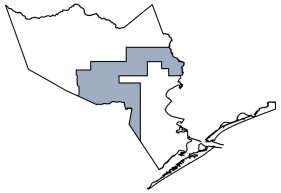
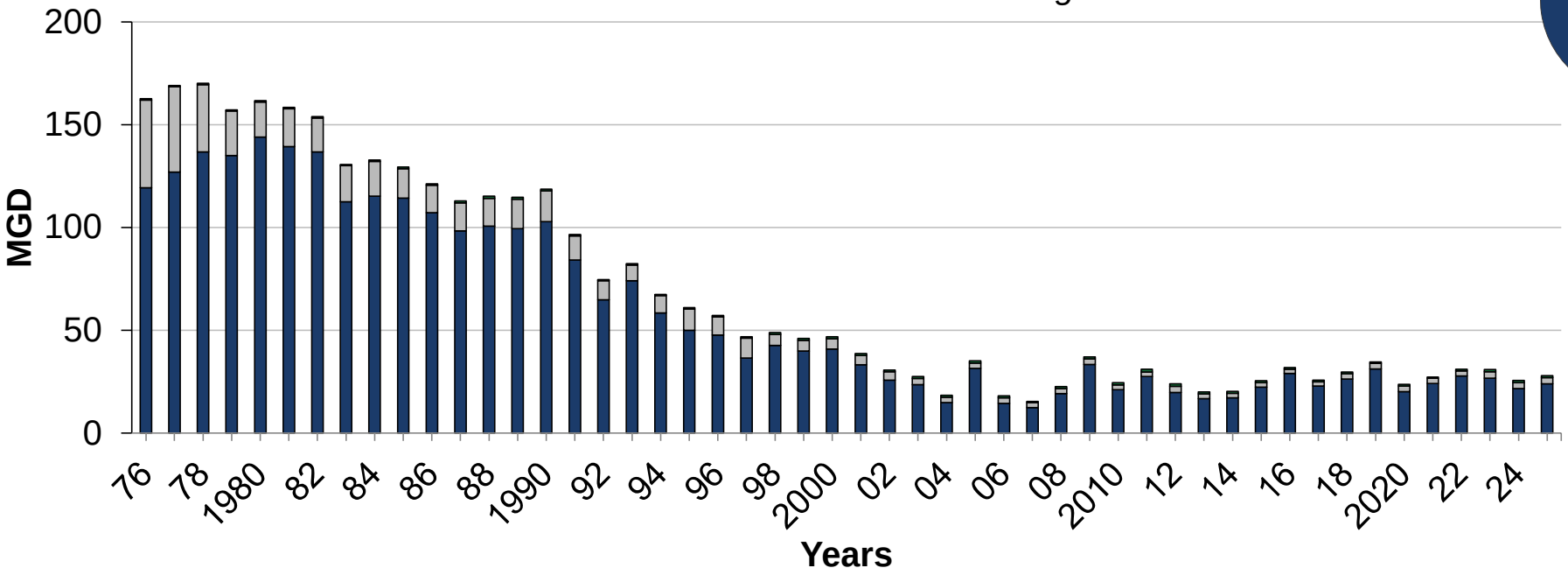


Exhibit 4 | Regulatory Area 2 Groundwater Use





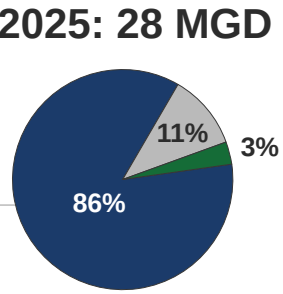
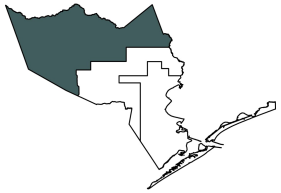


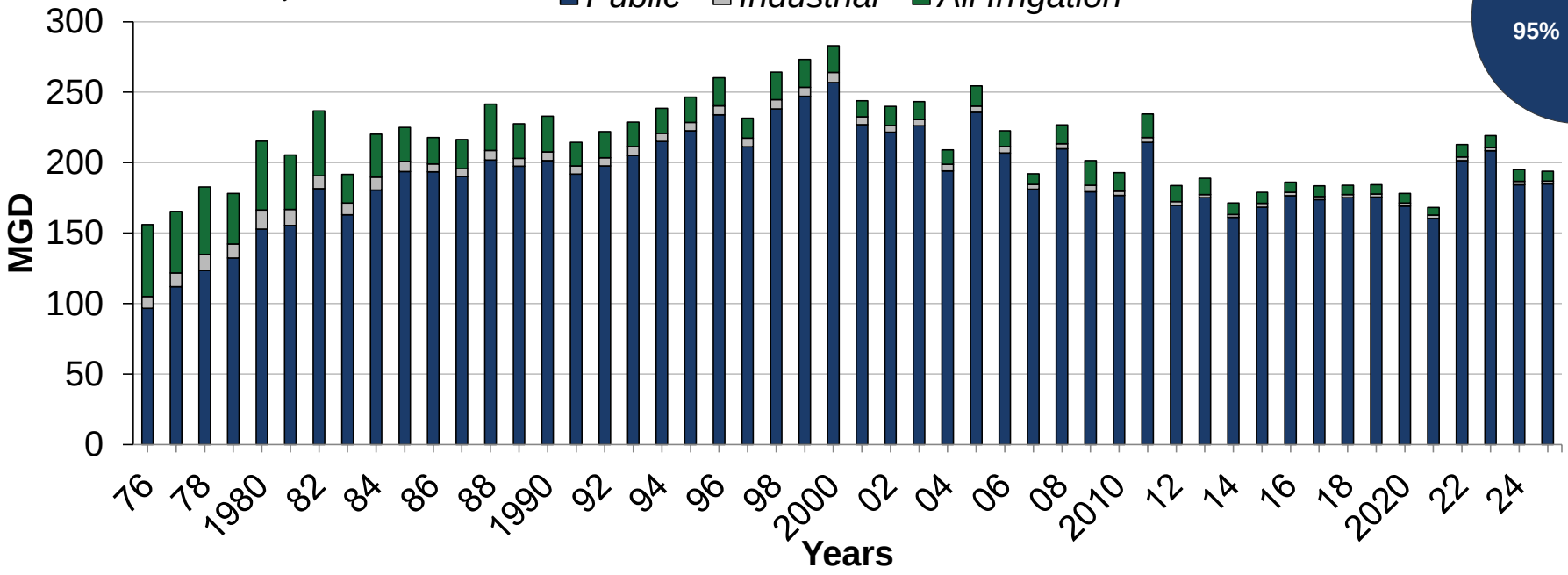
Exhibit 5 | Regulatory Area 3 Groundwater Use



Regulatory Area Three

Groundwater Withdrawals Grouped by Use

Public *Industrial* *All Irrigation*



2025: 194 MGD

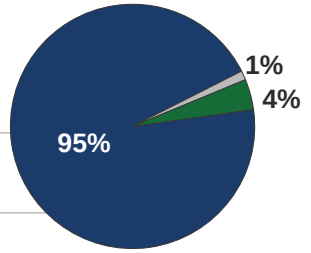
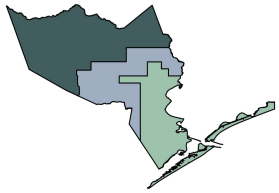


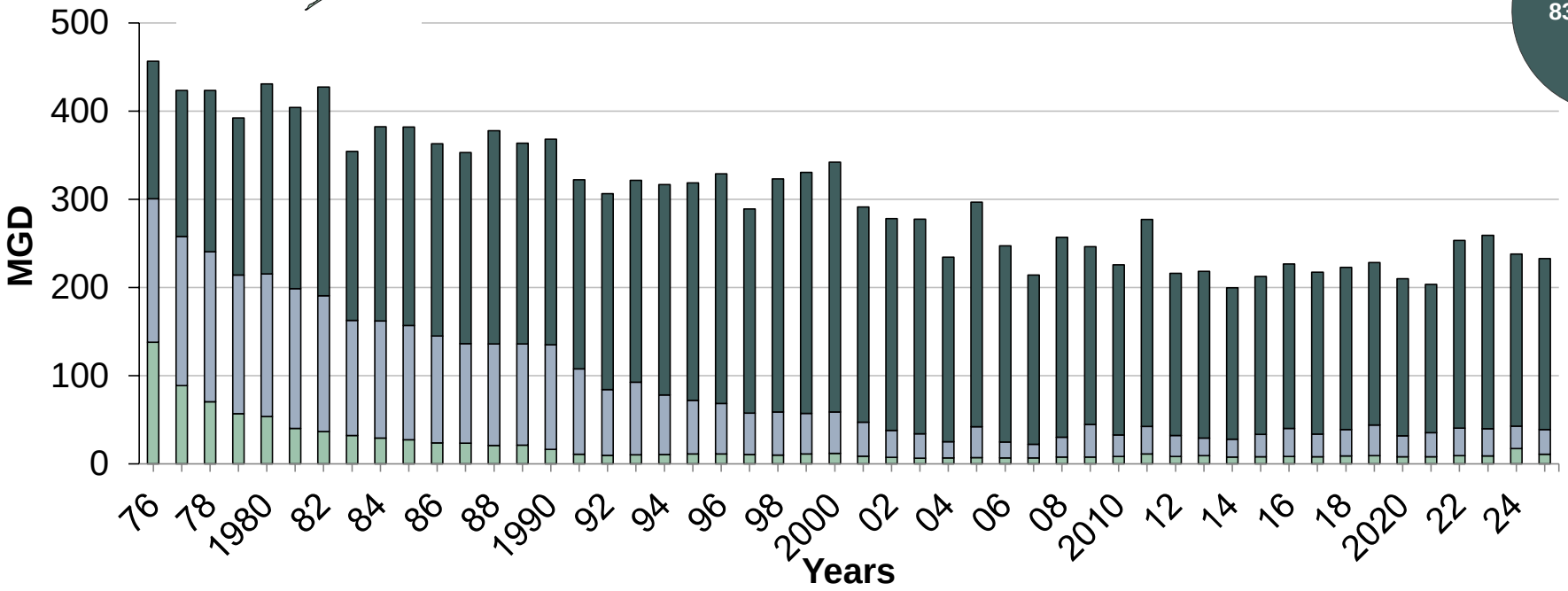
Exhibit 6 | All Regulatory Areas' Groundwater Use



Entire District

Groundwater Withdrawals Grouped by Regulatory Area

Area 1 *Area 2* *Area 3*



2025: 232.8 MGD

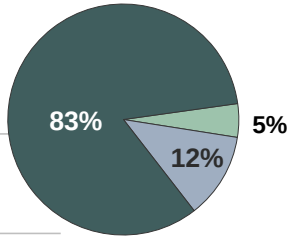
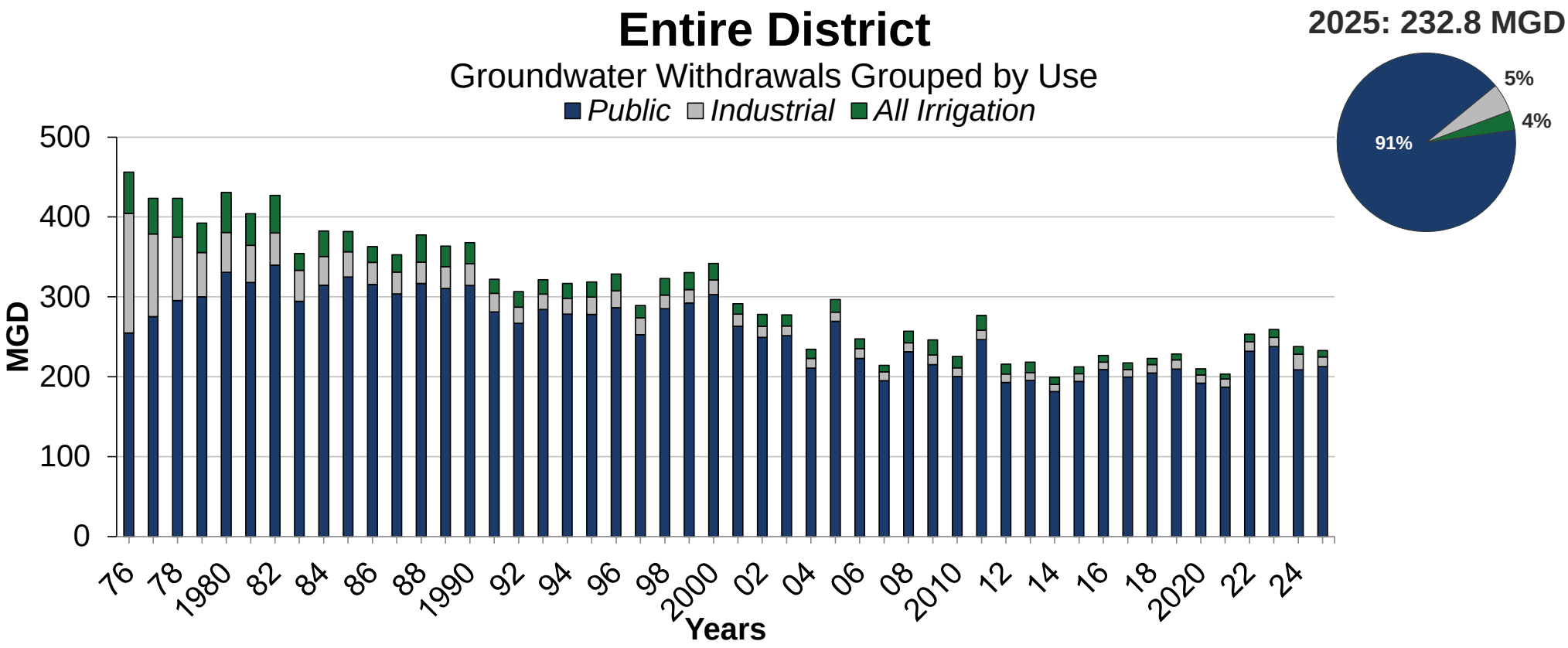
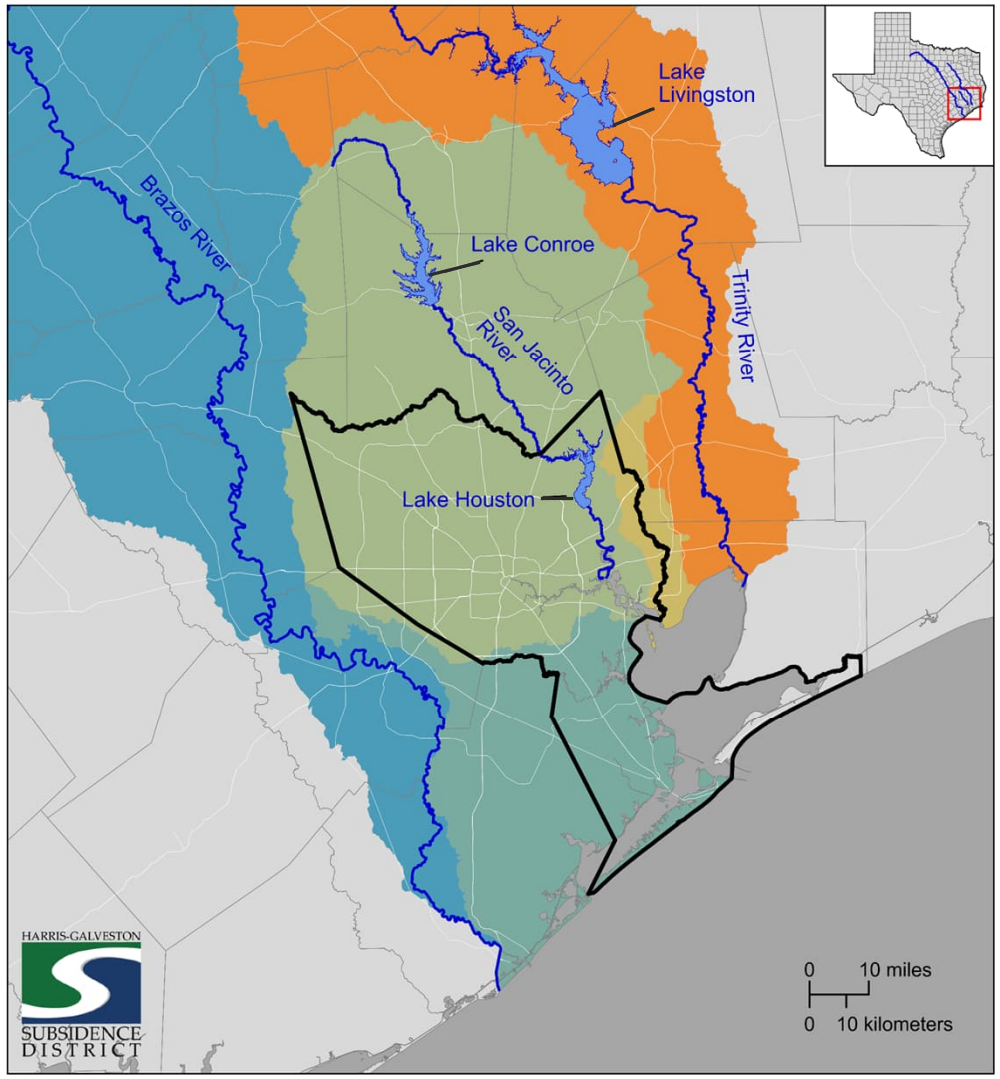


Exhibit 7 | Entire District Groundwater Use Type



Alternative Water Sources

- **Surface Water**
  - Trinity River
  - San Jacinto River
  - Brazos River
- **Reclaimed Water**



EXPLANATION

- HGSD Jurisdiction
- Brazos River Basin
- San Jacinto River Basin
- San Jacinto-Brazos River Basin
- Trinity River Basin
- Trinity-San Jacinto River Basin

Exhibit 8 | Alternative Water Used for Entire District

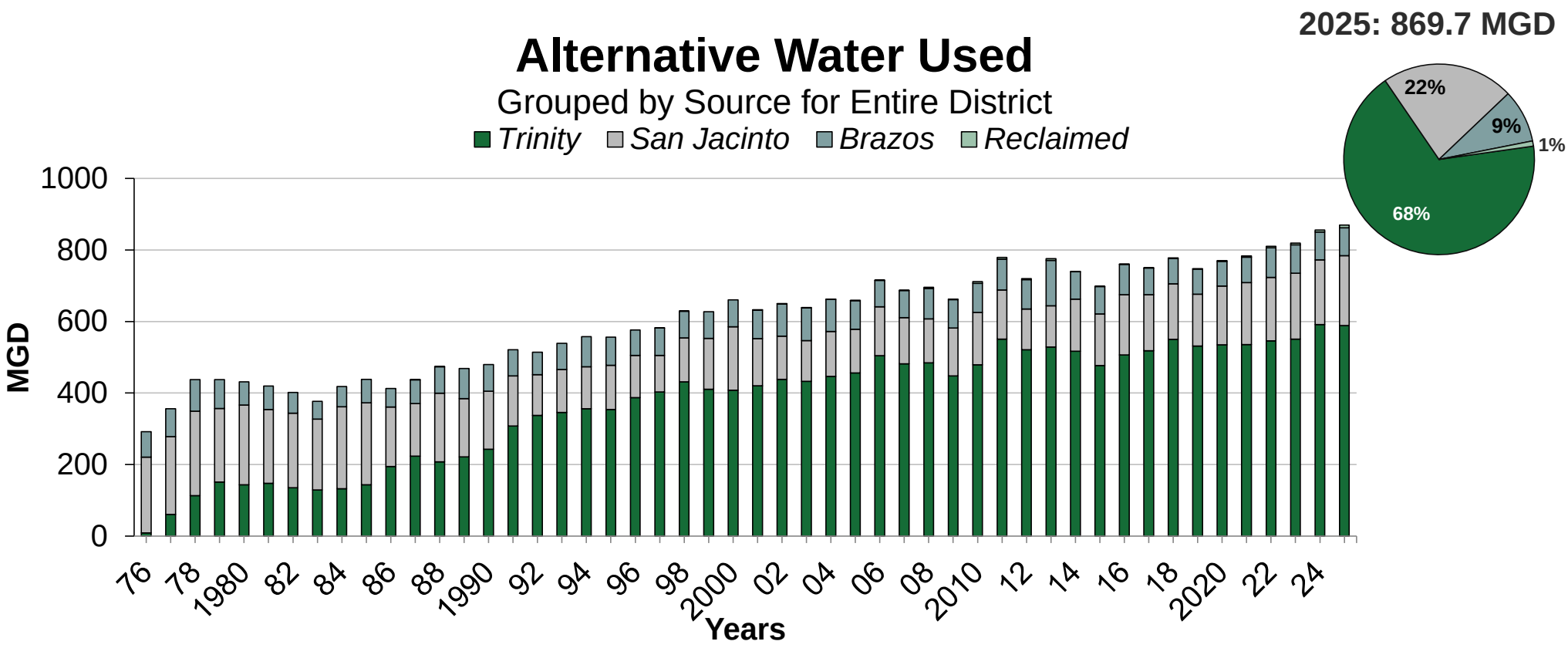
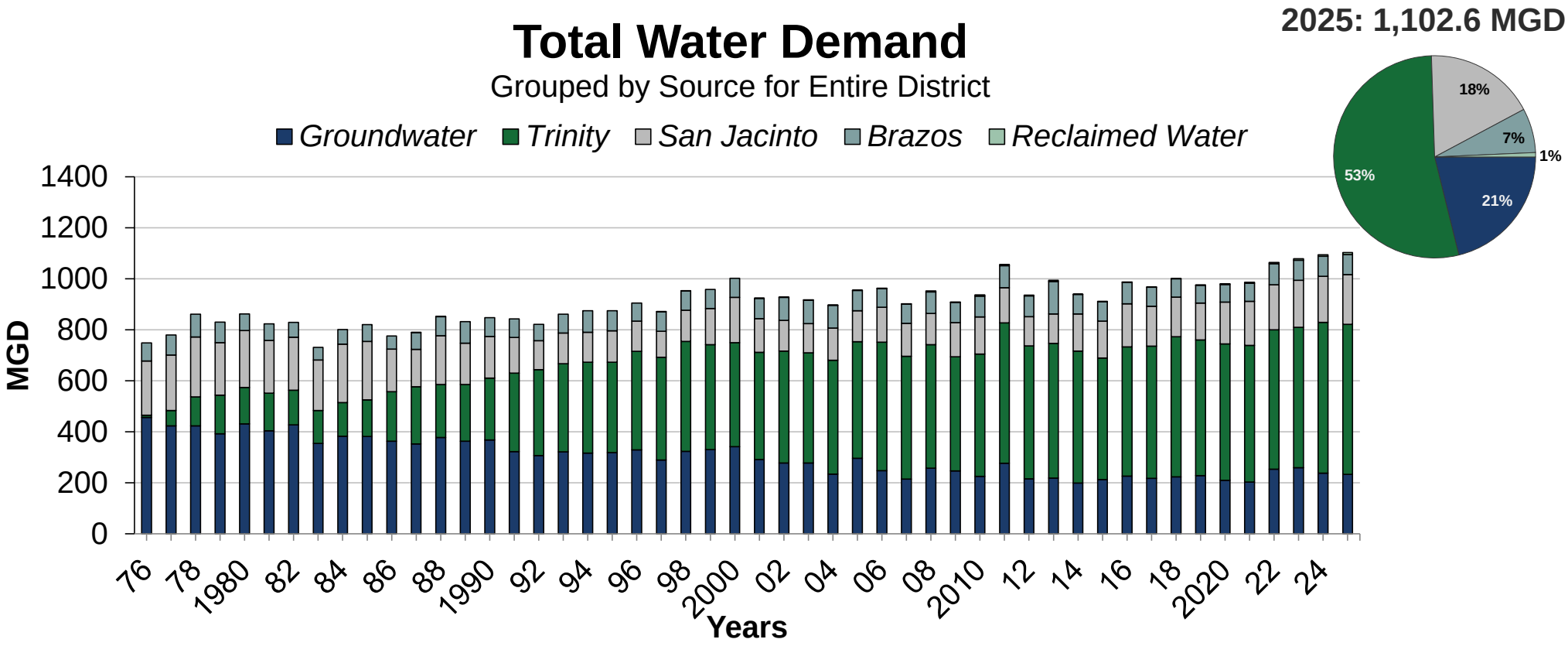


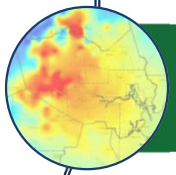
Exhibit 9 | Total Water Demand



Agenda


Climate


Water Use


Groundwater Levels


Subsidence

USGS
science for a changing world

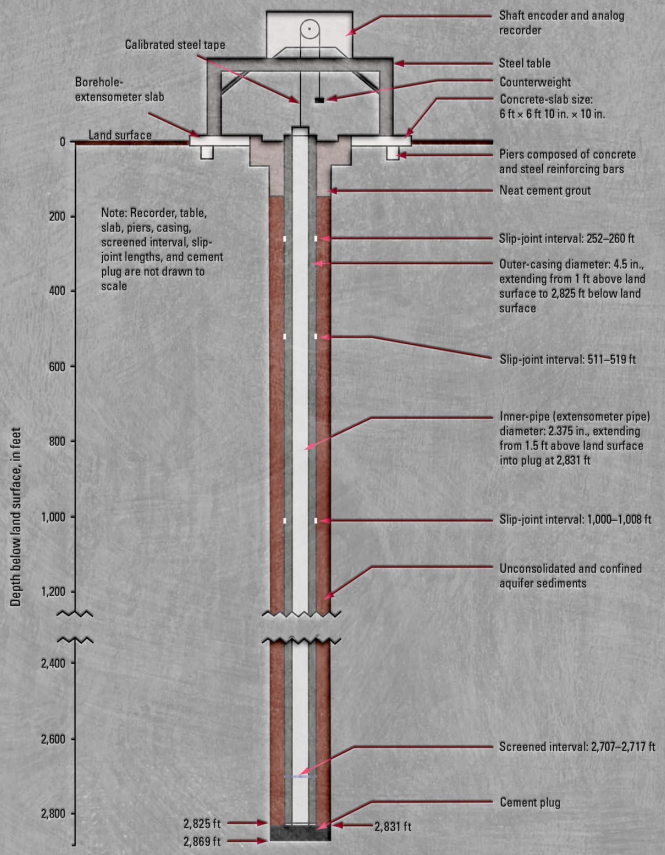


DIAGRAM OF A BOREHOLE EXTENSOMETER

Groundwater-level Altitudes, Long-Term Change & Compaction

CHICOT/EVANGELINE AND JASPER AQUIFERS

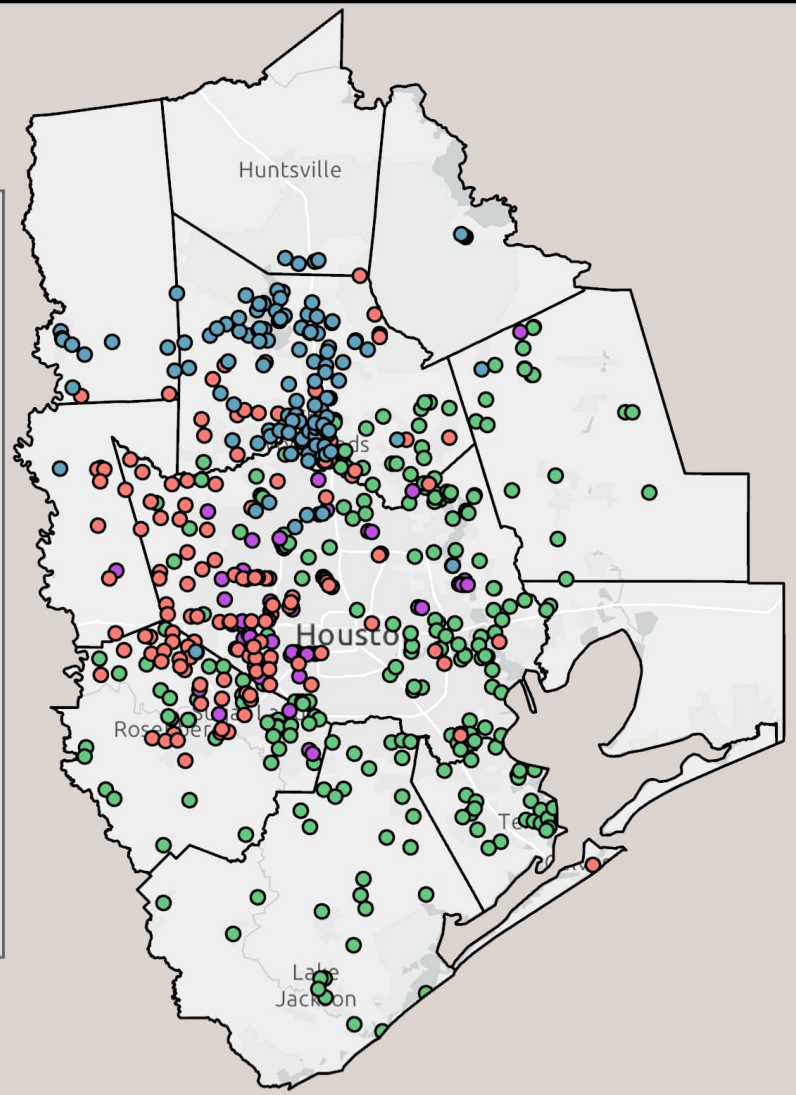
RESEARCH IN COOPERATION WITH THE HARRIS–GALVESTON & FORT BEND SUBSIDENCE DISTRICTS BRAZORIA GROUNDWATER CONSERVATION DISTRICT, THE CITY OF HOUSTON AND LONE STAR GROUNDWATER CONSERVATION DISTRICT

2026 Water-Level Map Series

Chicot and Evangeline Aquifers (undifferentiated)
- 2026 Water-Level Altitude
- 2025 to 2026 Water-Level Change
- 2021 to 2026 Water-Level Change
- 1977 to 2026 Water-Level Change

Jasper Aquifer
- 2026 Water-Level Altitude
- 2025 to 2026 Water-Level Change
- 2021 to 2026 Water-Level Change
- 2000 to 2026 Water-Level Change

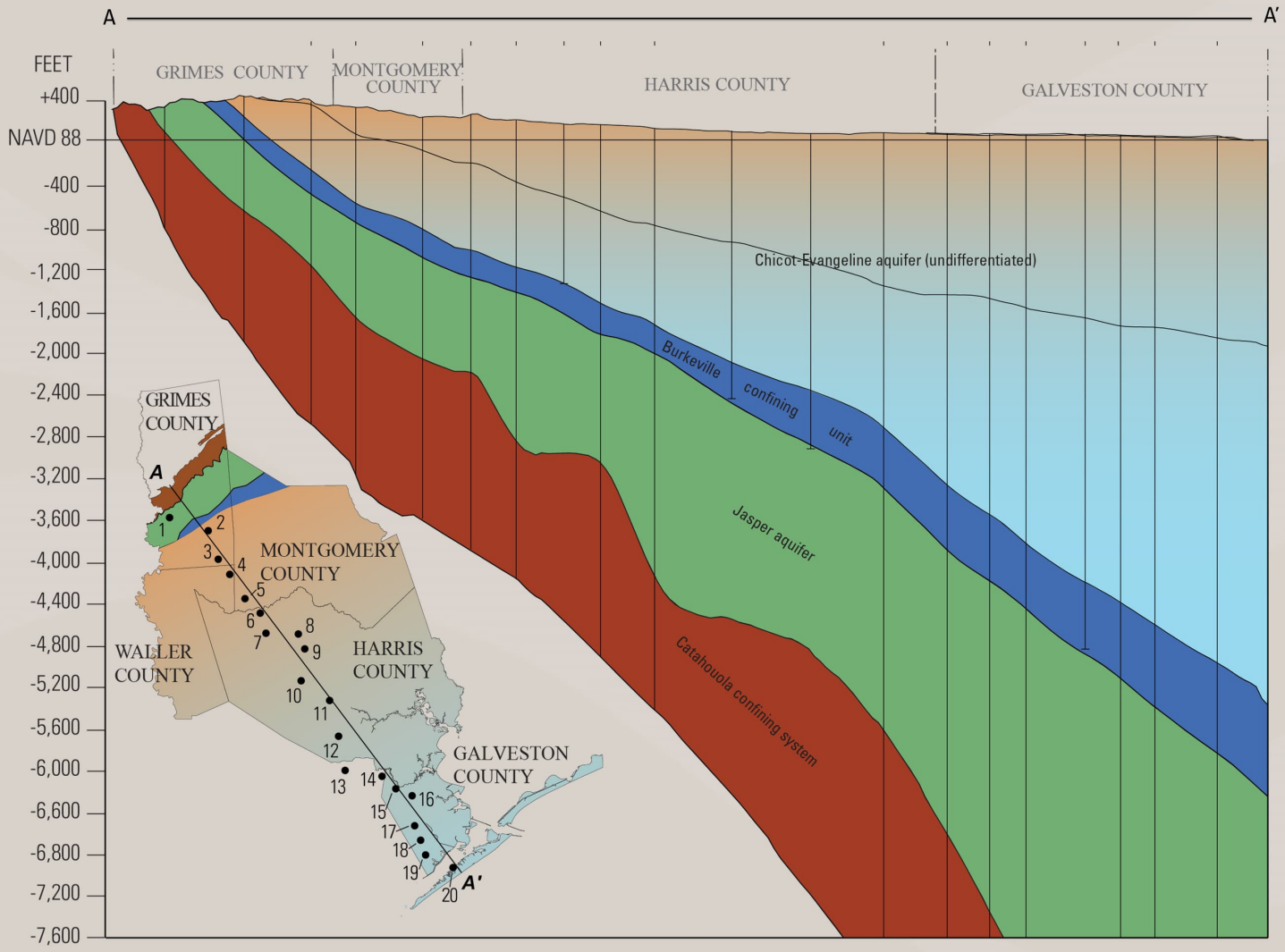
Compaction 1973 to 2025
- Compaction Data from 13 Extensometers



Geology and Hydrology

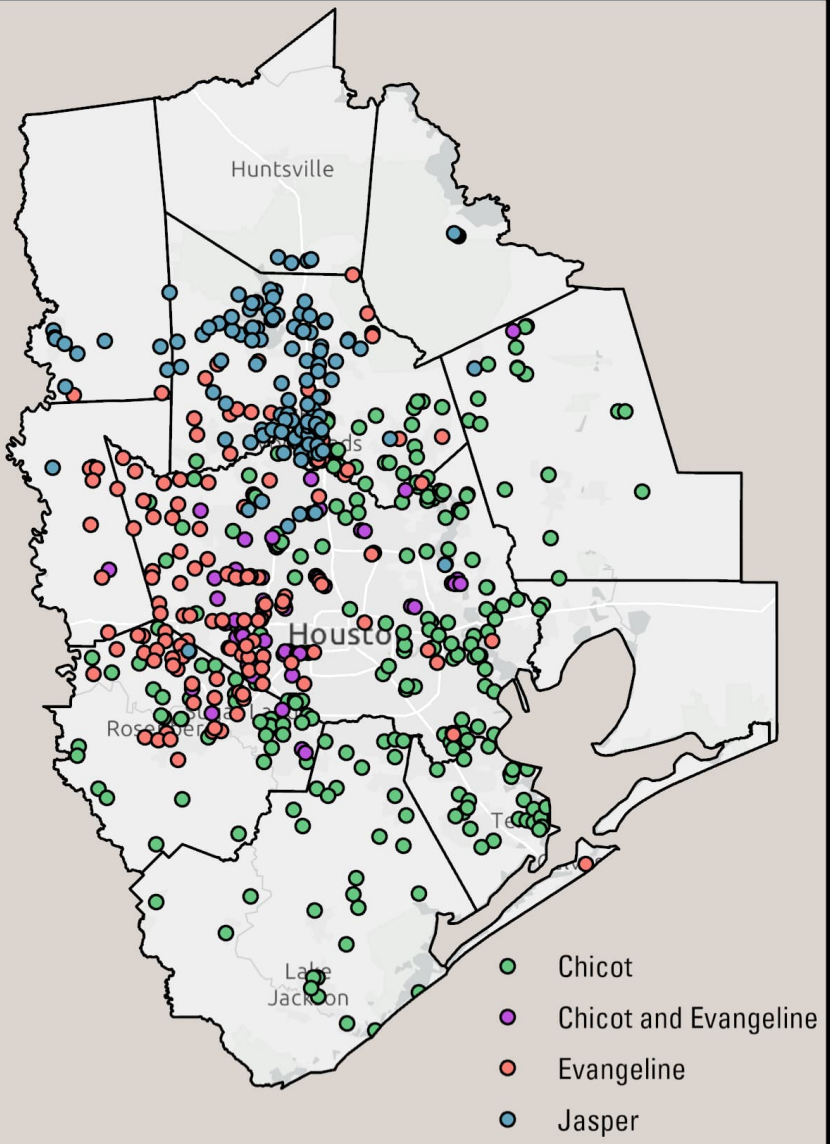
Geologic timescale		Geologic unit[1]		Hydrogeologic unit[1]
System	Series			
Quaternary	Holocene	Alluvium		Chicot and Evangeline aquifers (undifferentiated)
	Pleistocene	Beaumont Formation		
		Lissie Formation	Montgomery Formation	
			Bentley Formation	
		Willis Sand		
Tertiary	Pliocene	Goliad Sand (upper part)		
		Goliad Sand (lower part)		
	Miocene	Lagarto Clay (upper part)		
		Lagarto Clay (middle part)		Burkeville confining unit
		Lagarto Clay (lower part)		Jasper aquifer
		Oakville Sandstone		
	Oligocene	Frio Formation		Catahoula confining unit
		Vicksburg Formation		
Lower Oligocene- and pre-Oligocene sediments				

[1]Modified from Young and others (2012, 2014) and Young and Draper (2020).



Well Network

- Data collected across 11 counties
- Data collection:
  - early December to early March
- Well types:
  - Public Supply, Irrigation, Industrial, Observation
- Number of wells measured
  - 530 - Chicot and Evangeline (undifferentiated)
  - 106 - Jasper
- Number of measurements used to create the altitude maps
  - 502 - Chicot and Evangeline (undifferentiated)
  - 106 - Jasper
- Data were estimated for:
  - 43 wells in the Chicot and Evangeline (undifferentiated)
  - 19 wells in the Jasper



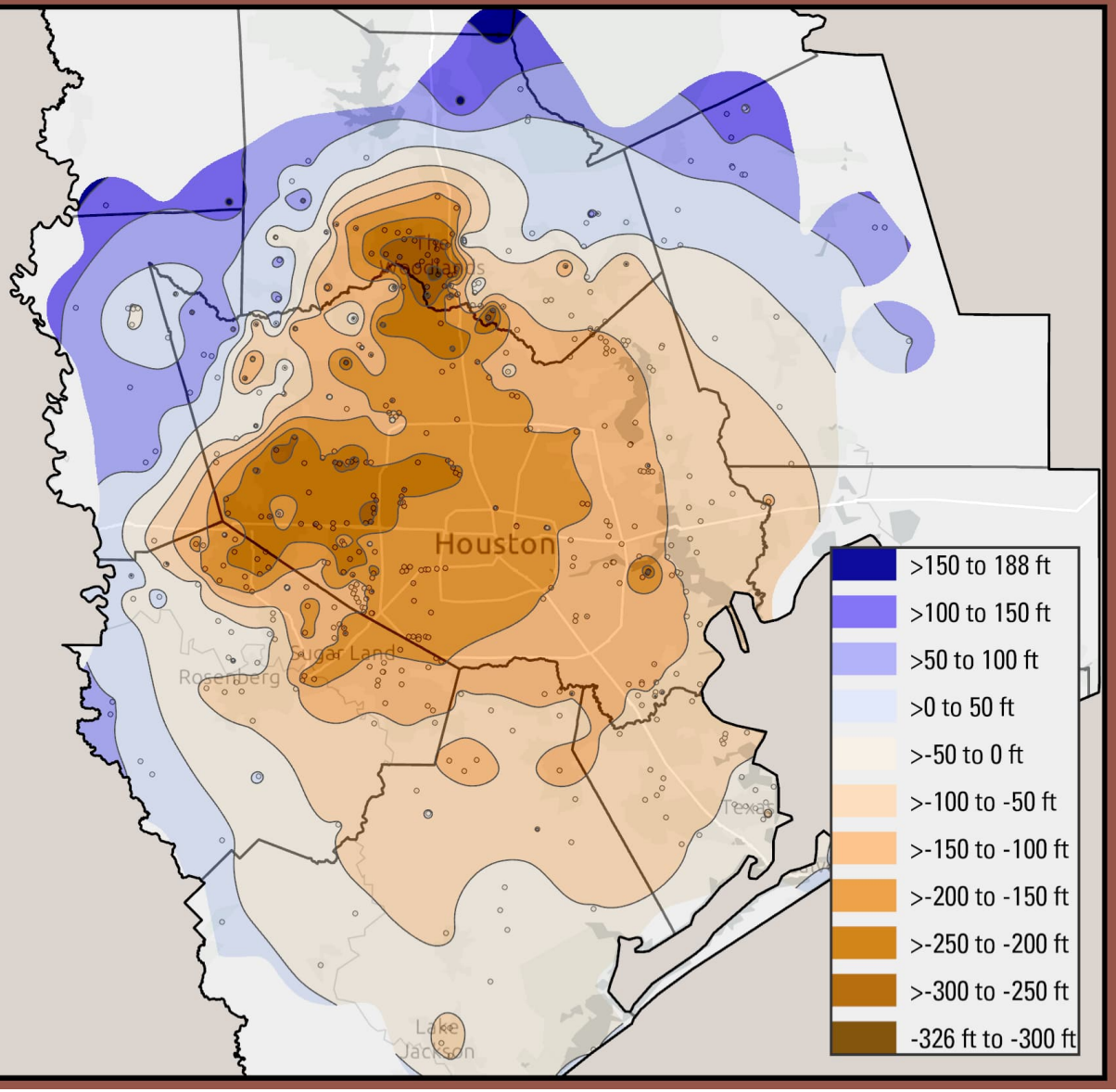
Water-Level Altitude

Chicot and Evangeline (undifferentiated)

Altitudes are referenced from NAVD 88

Lowest altitudes are in portions of southern Montgomery County and west-central Harris County

Highest altitudes are in portions of northern Waller, southern Grimes, northeastern Montgomery, southern San Jacinto and northern Liberty Counties



2025 to 2026 Water-Level Change

Chicot and Evangeline (undifferentiated)

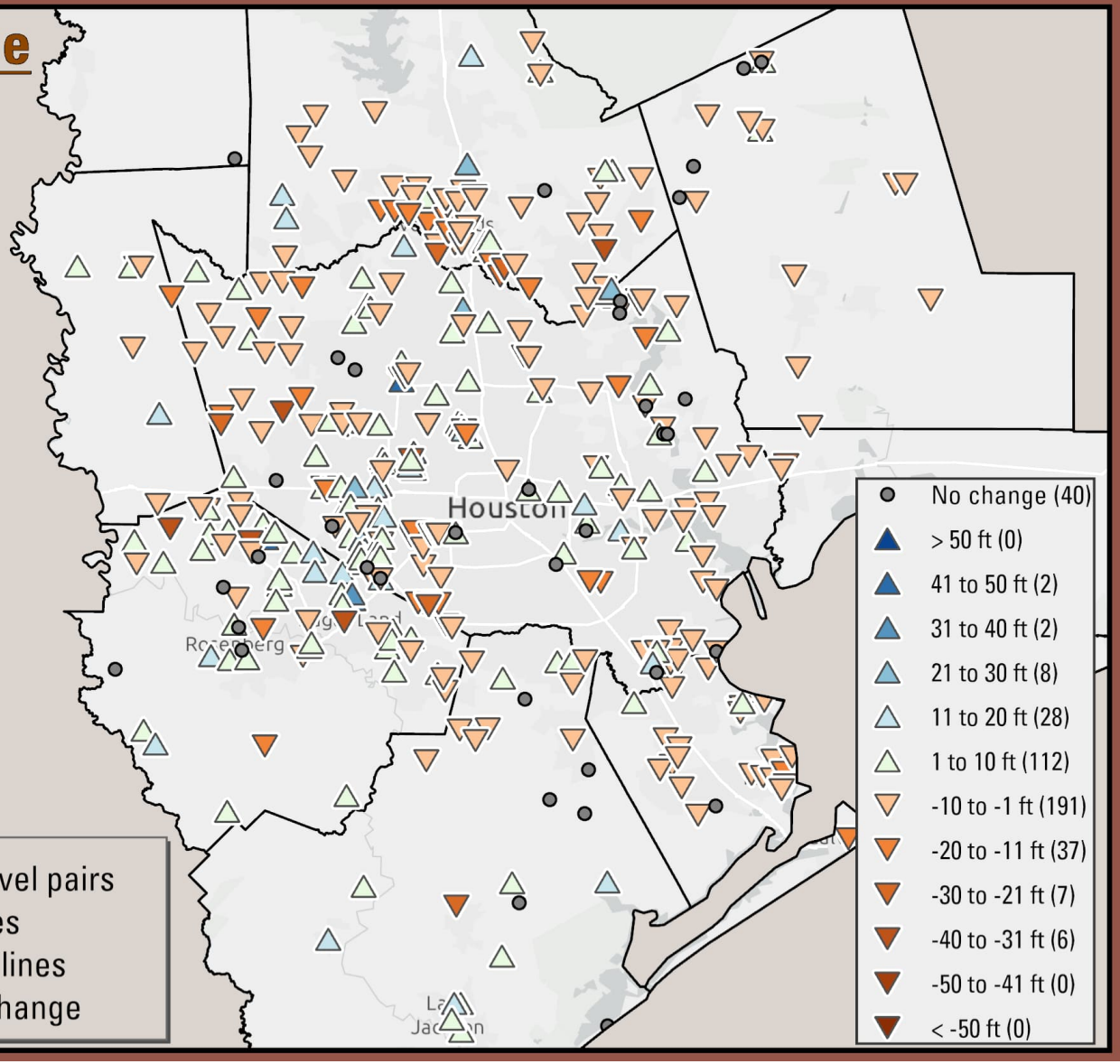
Most of the rises and declines were in the range of 1 to 10 ft of change

Rises concentrated in the southwestern portion of Harris County and central and east-central portion of Fort Bend County

The largest declines were in northern and east-central Fort Bend County, west-central Harris County and south-eastern Montgomery County

The largest rises were in west-central Harris County and Northern Fort Bend County

436 water-level pairs
- 35% Rises
- 56% Declines
- 9% No change



2021 to 2026 Water-Level Change

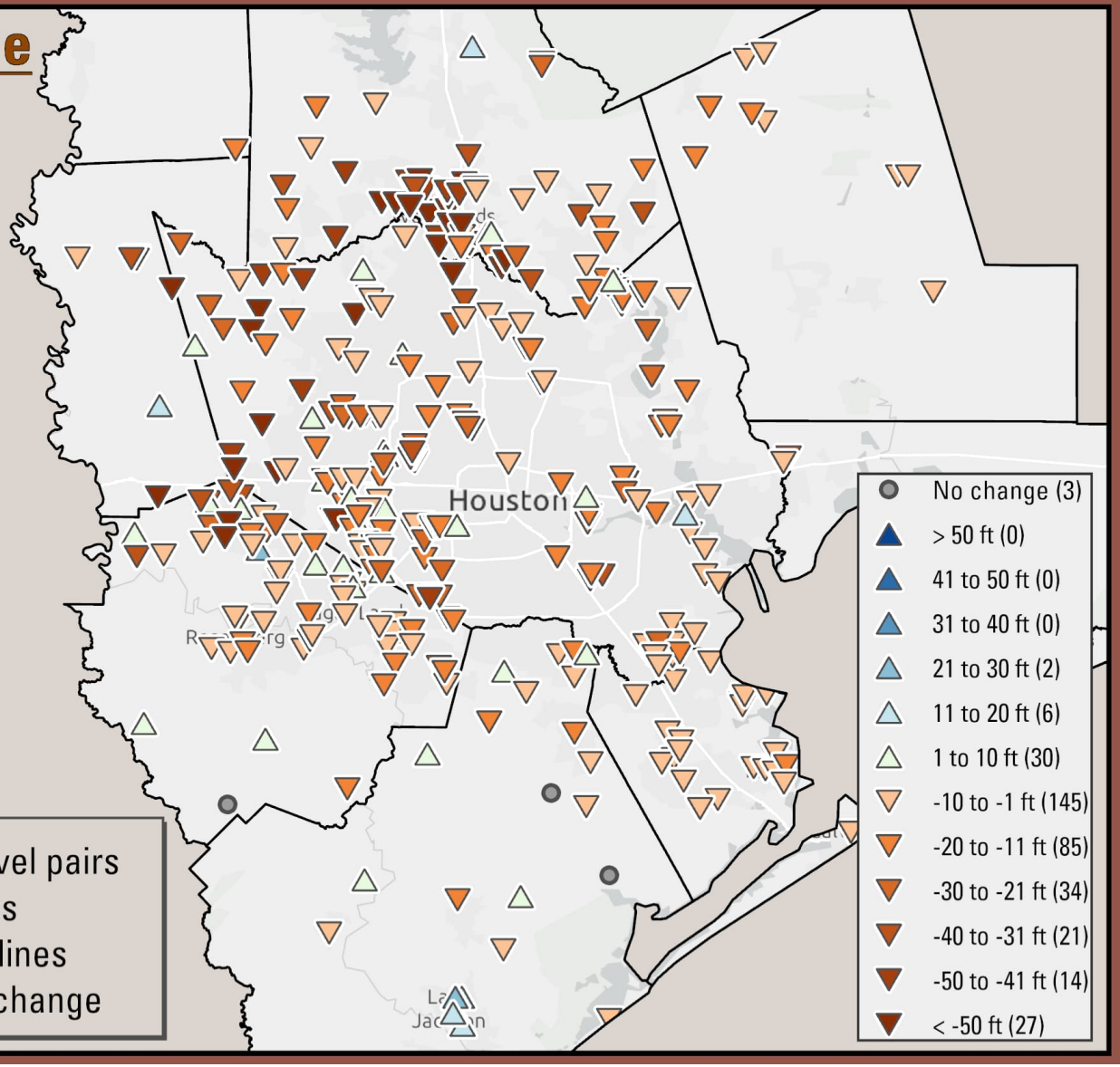
Chicot and Evangeline (undifferentiated)

Most of the rises and declines were in the range of 1 to 10 ft of change

The largest declines were concentrated across portions northern Fort Bend, western Harris, and southern Montgomery counties

Rises were limited with the two largest rises of more than 20 ft occurring at one well in northern Fort Bend County and one well in southern Brazoria County

368 water-level pairs
- 11% Rises
- 89% Declines
- <1% No change



Long Term Change 1977 to 2026

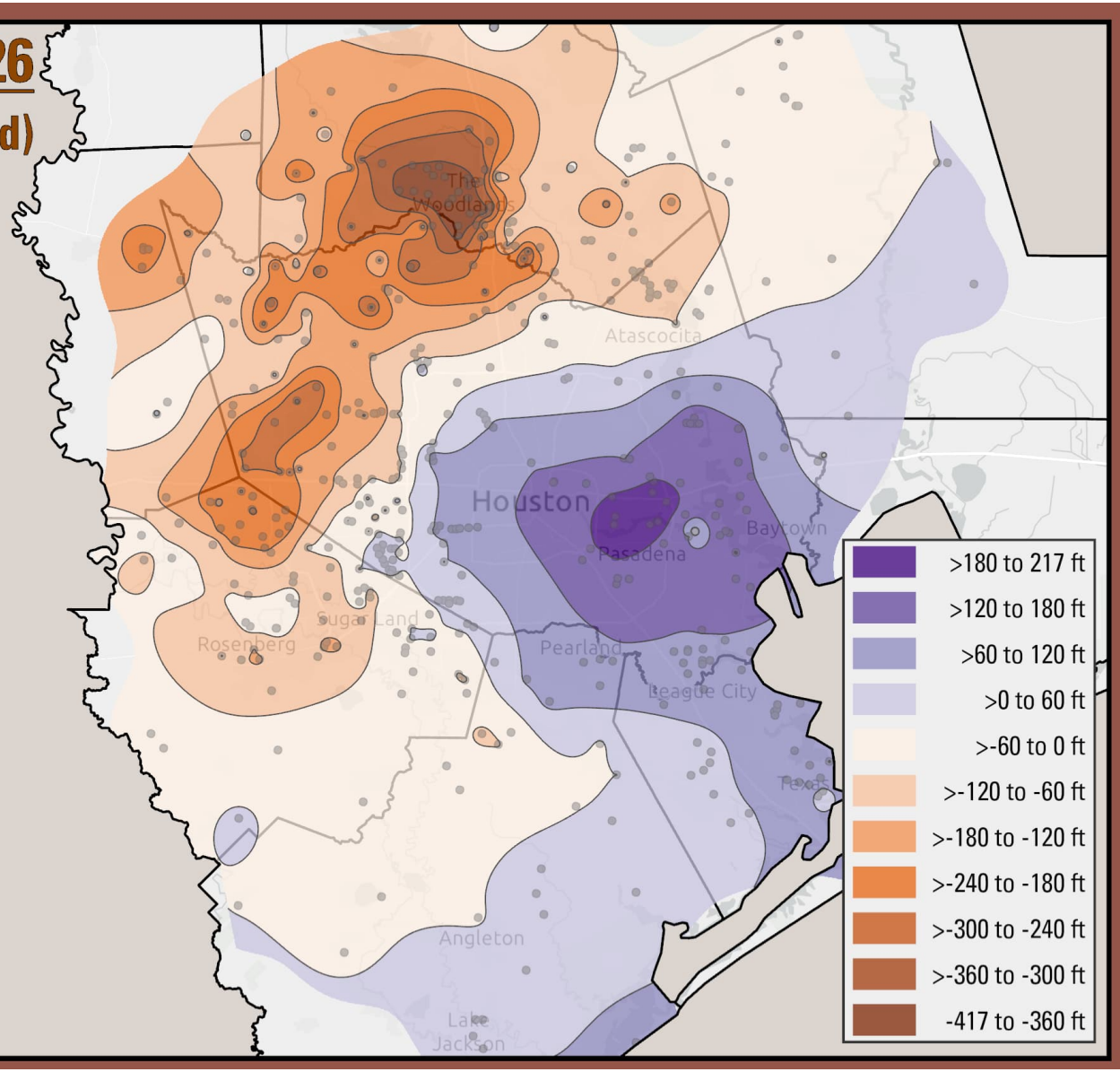
Chicot and Evangeline (undifferentiated)

Water-level rises:

- Most of central and eastern Harris County
- Portions of Liberty, Chambers, Galveston, Brazoria and Fort Bend counties
- Largest rises (>180 ft) in east-central Harris County

Water-level declines:

- Most of the northern and western portions of the greater Houston area
- Largest declines (>= 360 ft) in southern Montgomery County



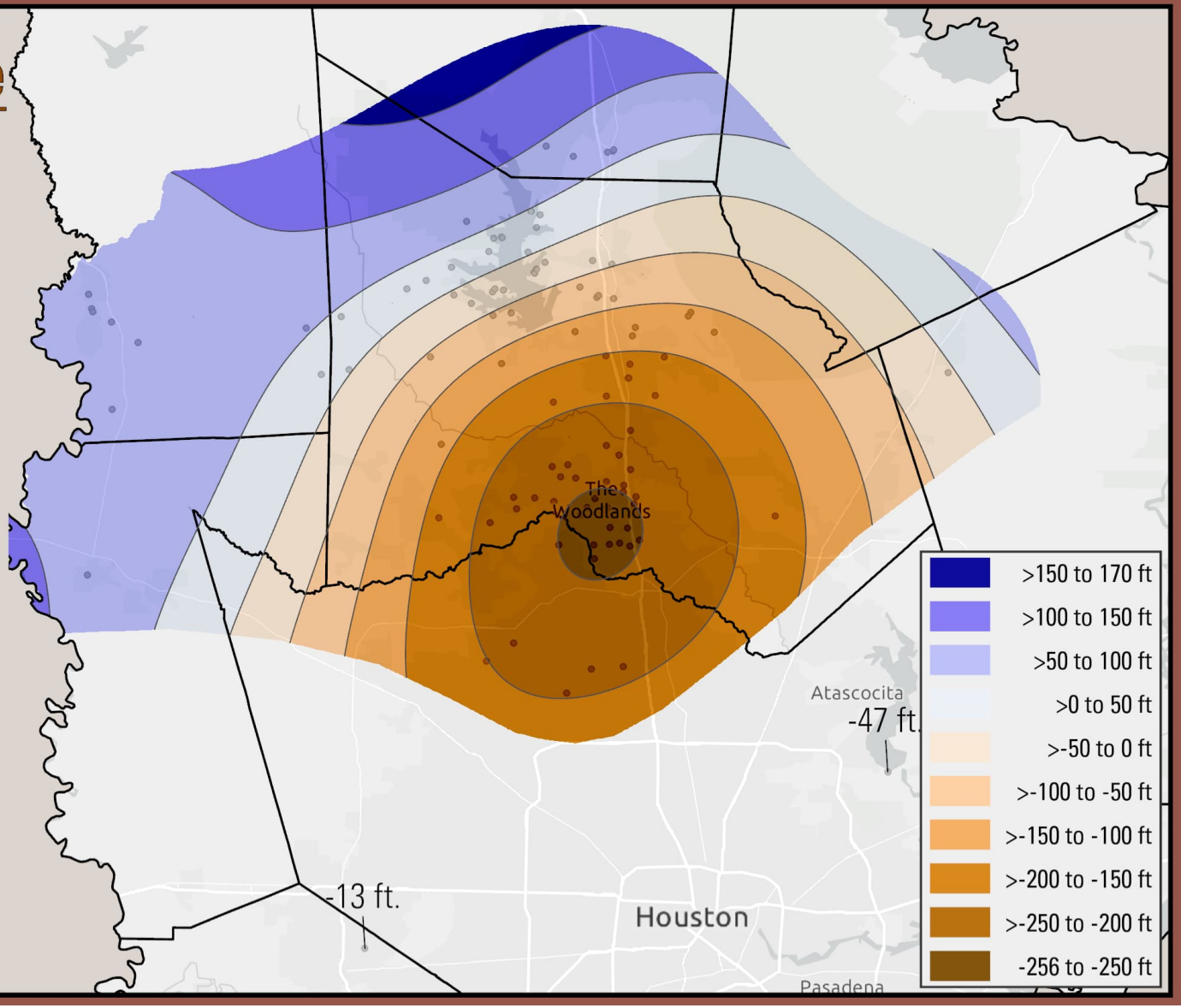
Water-Level Altitude

Jasper

Altitudes are referenced from NAVD 88

Altitudes generally deepen in the down-dip (NW-SE) direction

Lowest altitudes (>250 ft below NAVD 88) in south-central Montgomery County and north-central Harris County



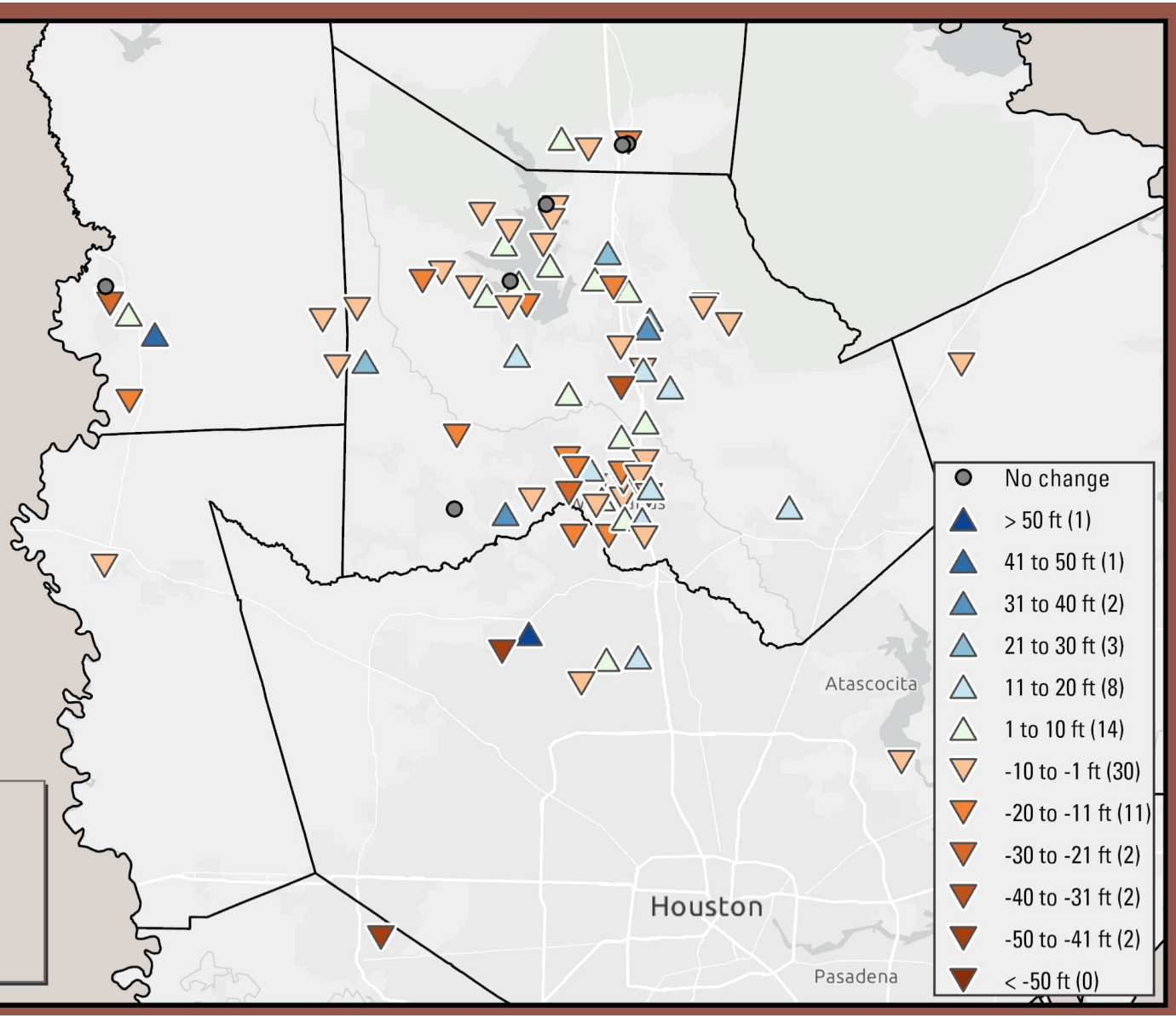
2025 to 2026 Water-Level Change - Jasper Aquifer

Predominantly declines from 1 to 20 feet

Largest declines (> 40 ft) are in west-central Harris County and northern Fort Bend County

Largest rise (> 50 ft) is in west-central Harris County

82 water-level pairs
- 35% Rises
- 58% Declines
- 7% No change



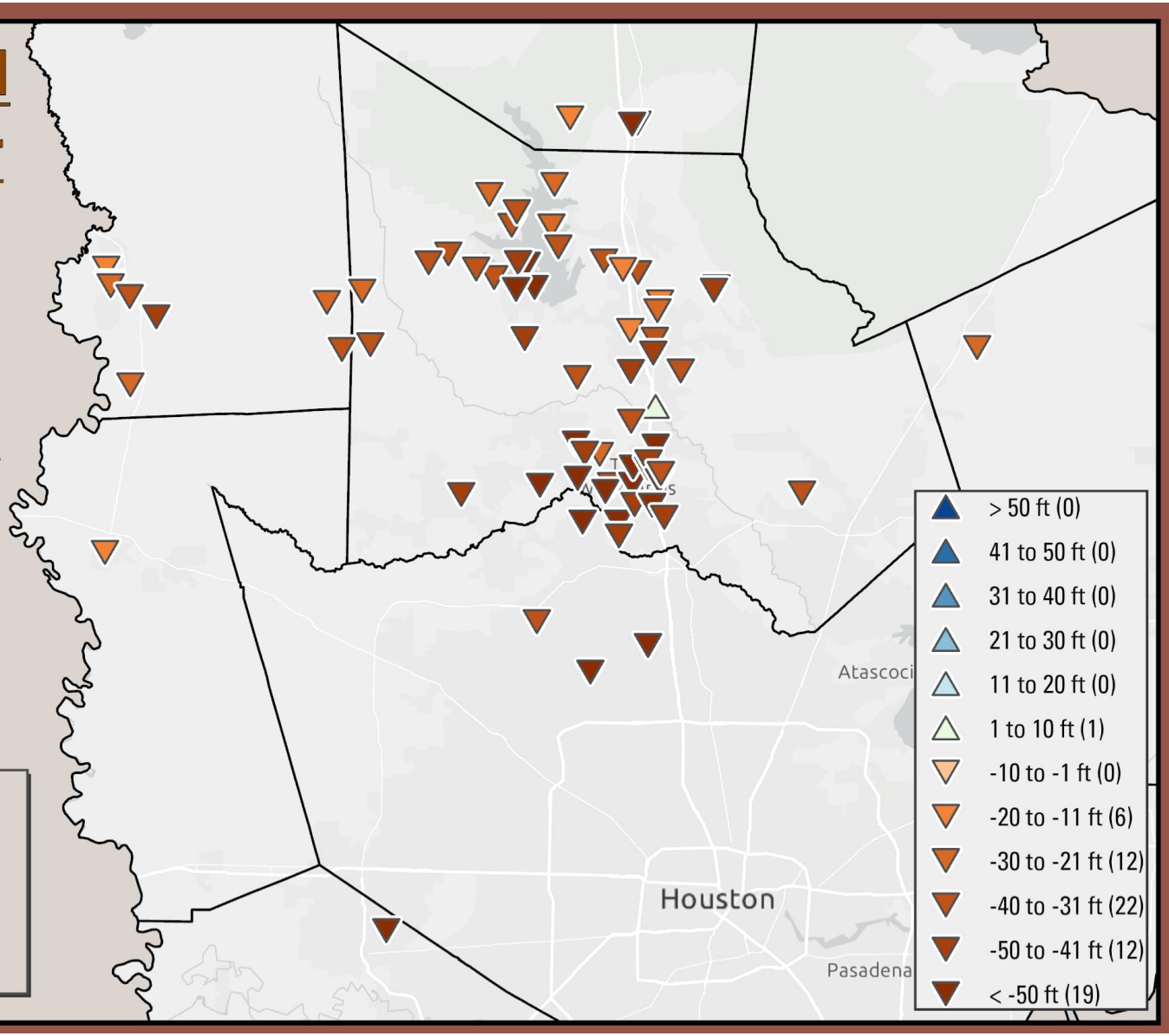
2021 to 2026 Water-Level Change - Jasper Aquifer

Nearly all declines with all of them more than 10 feet.

One slight rise in central-Montgomery County

Declines exceeding 50 ft across most of the study area

72 water-level pairs
- 1% Rises
- 99% Declines
- 0% No change



Long Term Change 2000 to 2026 - Jasper Aquifer

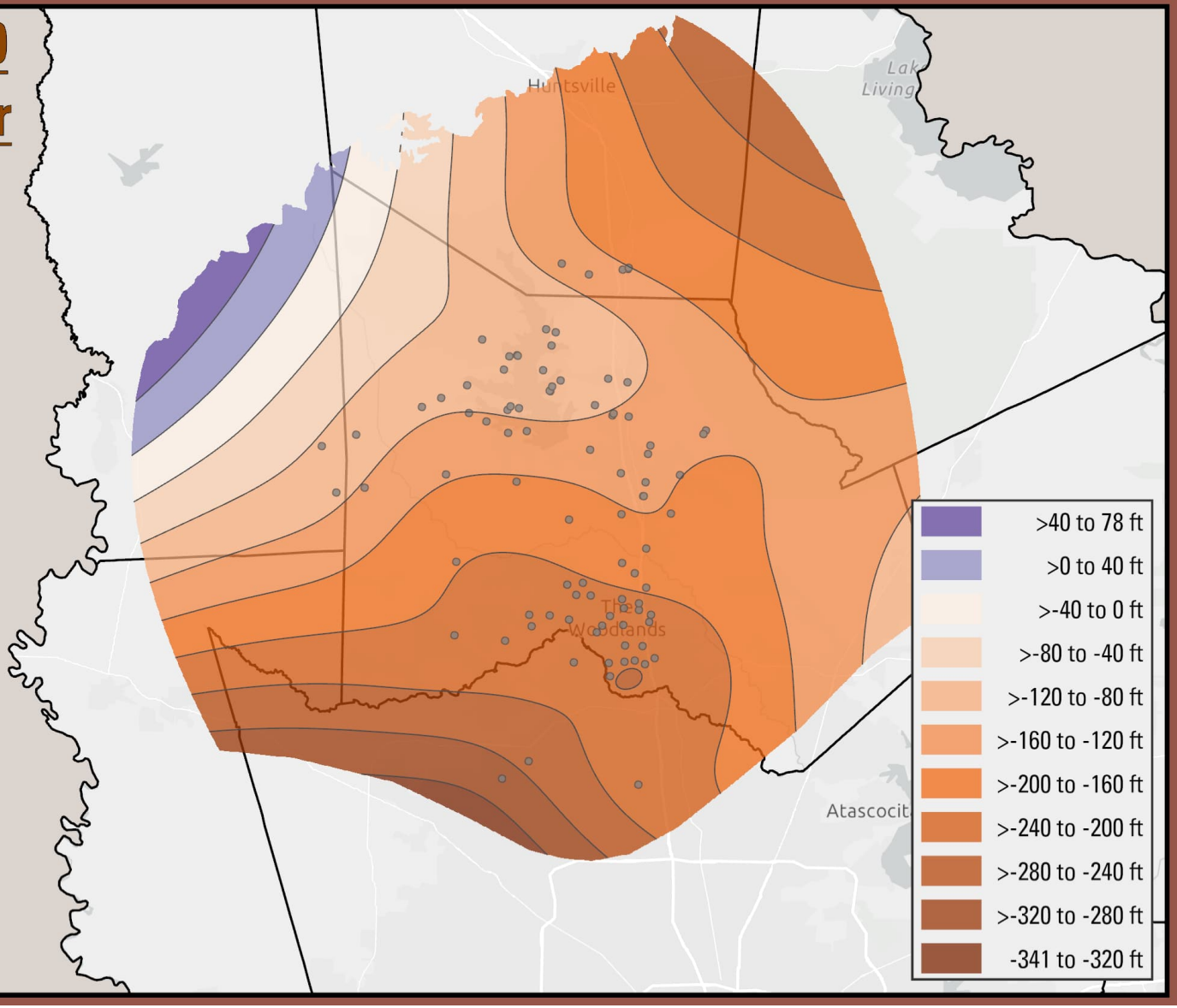
Water-level rises:

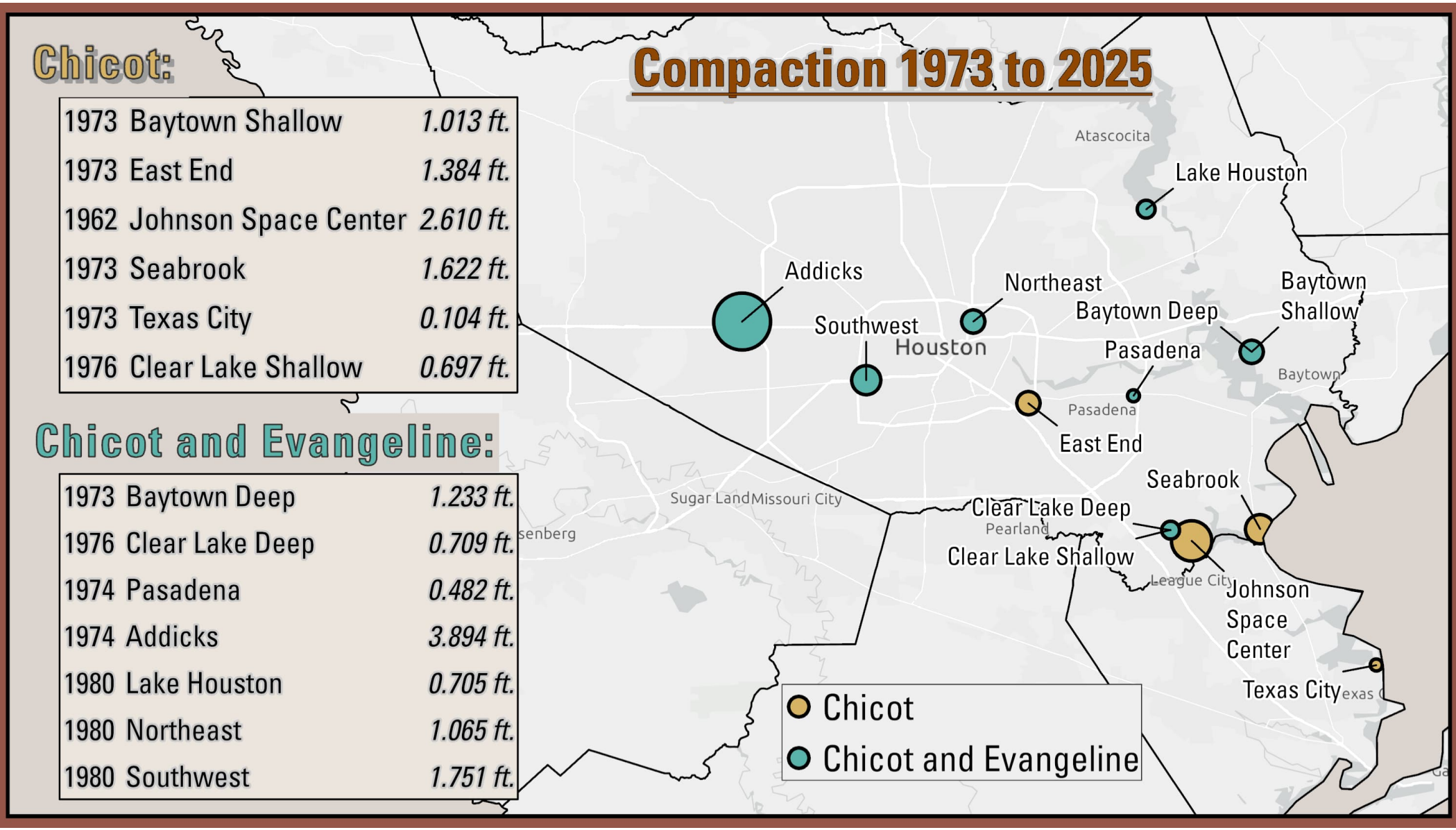
- Slight rises in the north-western portion of the Jasper study area, primarily in Grimes County

Water-level declines:

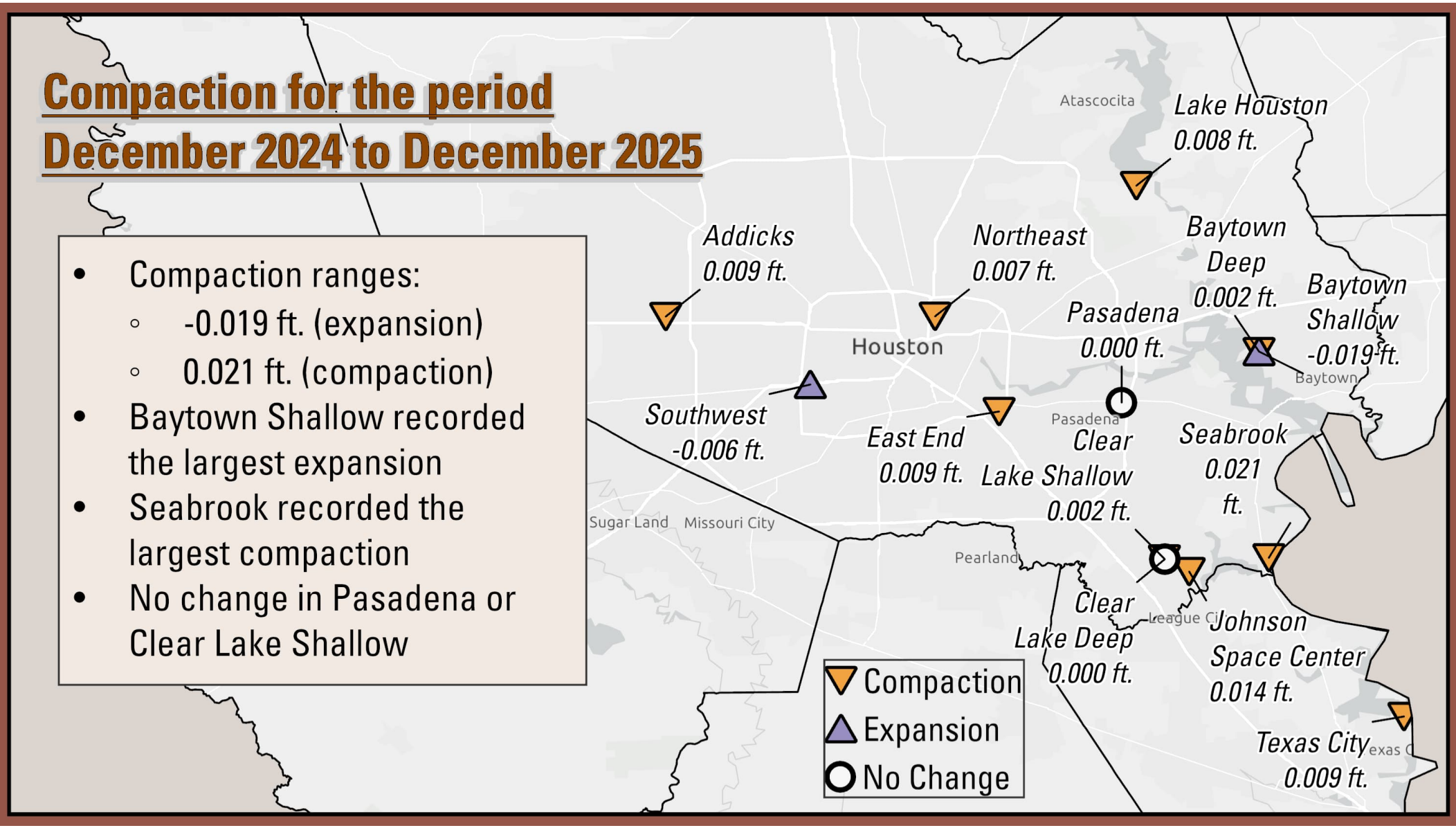
- The majority of the Jasper study area shows declines
- The largest declines are in the west-central portions of Harris County

note: *limitation of well network corresponds to areas of large rises and declines at the extreme edges of the shaded areas*




Compaction 1973 to 2025
Chicot:
1973 Baytown Shallow 1.013 ft.
1973 East End 1.384 ft.
1962 Johnson Space Center 2.610 ft.
1973 Seabrook 1.622 ft.
1973 Texas City 0.104 ft.
1976 Clear Lake Shallow 0.697 ft.
Chicot and Evangeline:
1973 Baytown Deep 1.233 ft.
1976 Clear Lake Deep 0.709 ft.
1974 Pasadena 0.482 ft.
1974 Addicks 3.894 ft.
1980 Lake Houston 0.705 ft.
1980 Northeast 1.065 ft.
1980 Southwest 1.751 ft.
Atascocita
Lake Houston
Addicks
Northeast
Baytown Deep
Baytown Shallow
Southwest
Houston
Pasadena
Baytown
Pasadena
East End
Seabrook
Sugar Land
Missouri City
Clear Lake Deep
Pearland
Clear Lake Shallow
League City
Johnson Space Center
Texas City
Chicot
Chicot and Evangeline

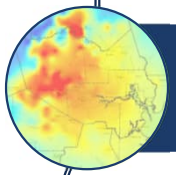
Compaction for the period December 2024 to December 2025



Agenda


Climate


Water Use


Groundwater Levels


Subsidence

Subsidence Monitoring

All HGSD-operated global positioning system (GPS) stations are constructed in a custom design.

GPS data are collected for one week every two months (periodic monitoring).

A conversion to continuous monitoring (data collection every day of the year) began in 2023 and will continue through 2027.

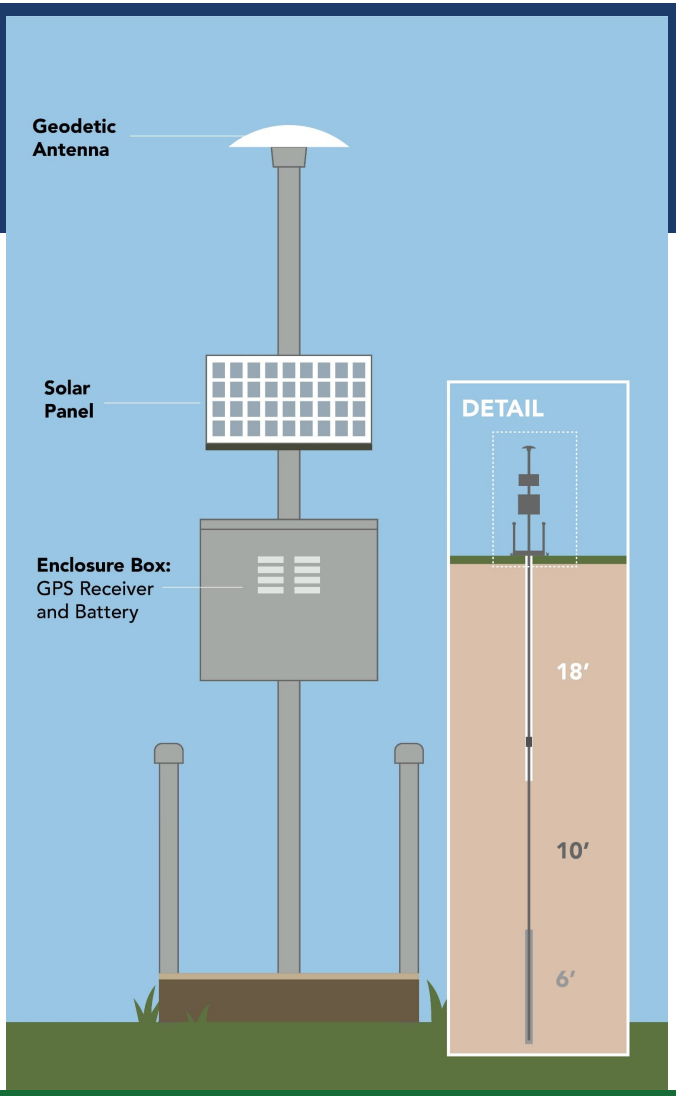
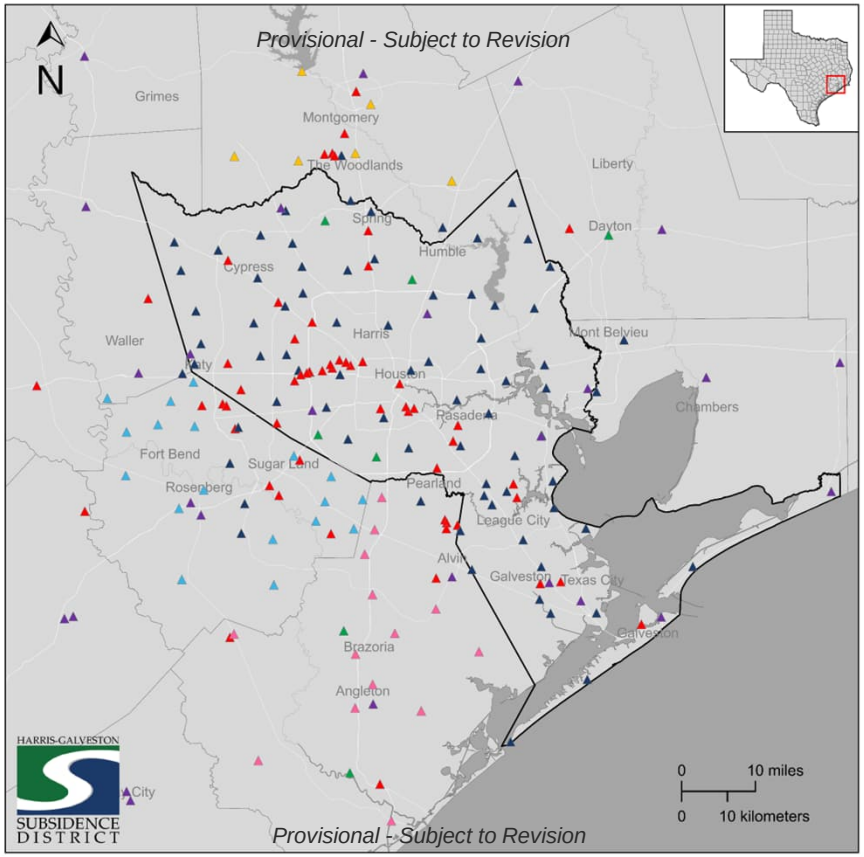


Exhibit 10 | Subsidence Monitoring Network

Location and operator of GPS stations that monitor land surface deformation periodically or continuously within southeast Texas in 2025.

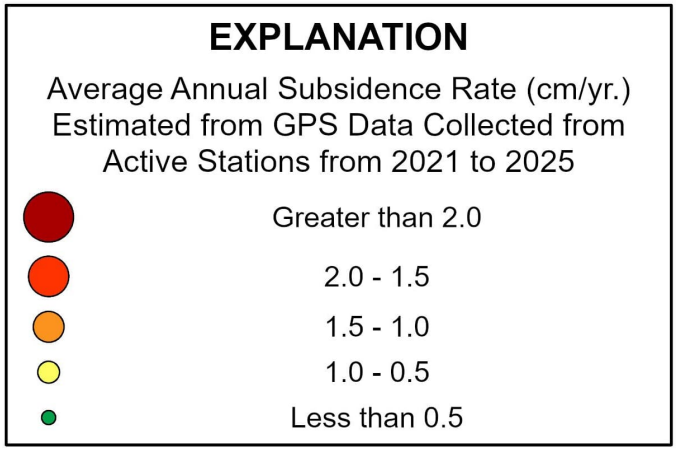


EXPLANATION

- HGSD Jurisdiction
- Harris-Galveston Subsidence District
- Fort Bend Subsidence District
- University of Houston
- Texas Department of Transportation
- Brazoria County Groundwater Conservation District
- Lone Star Groundwater Conservation District
- Other Operators

Exhibit 11 | Subsidence Rates from GPS Stations

Annual subsidence rate, in centimeters per year (cm/yr.), estimated from GPS data collected at active stations with three or more years of data averaged from 2021 to 2025.



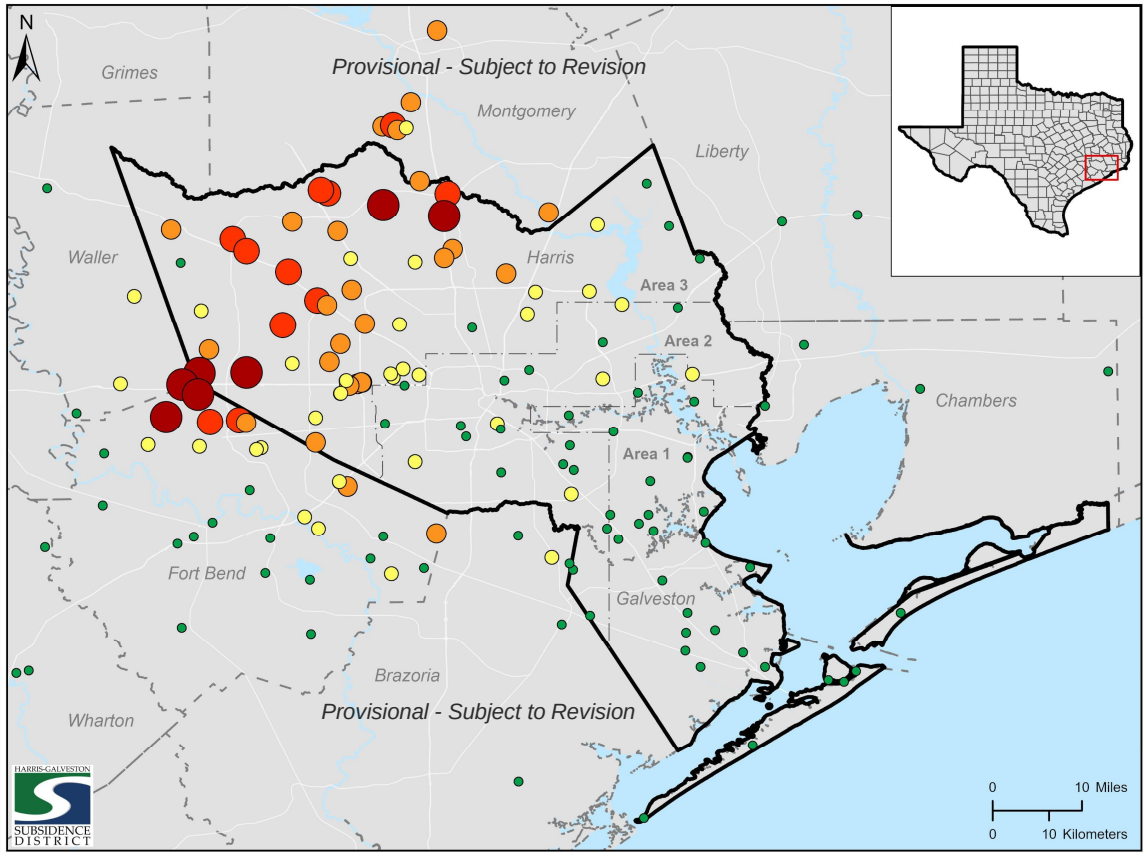
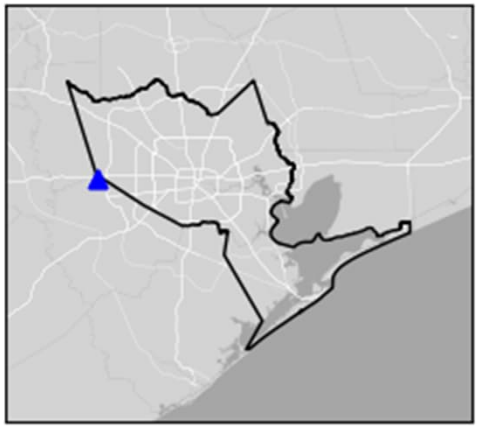
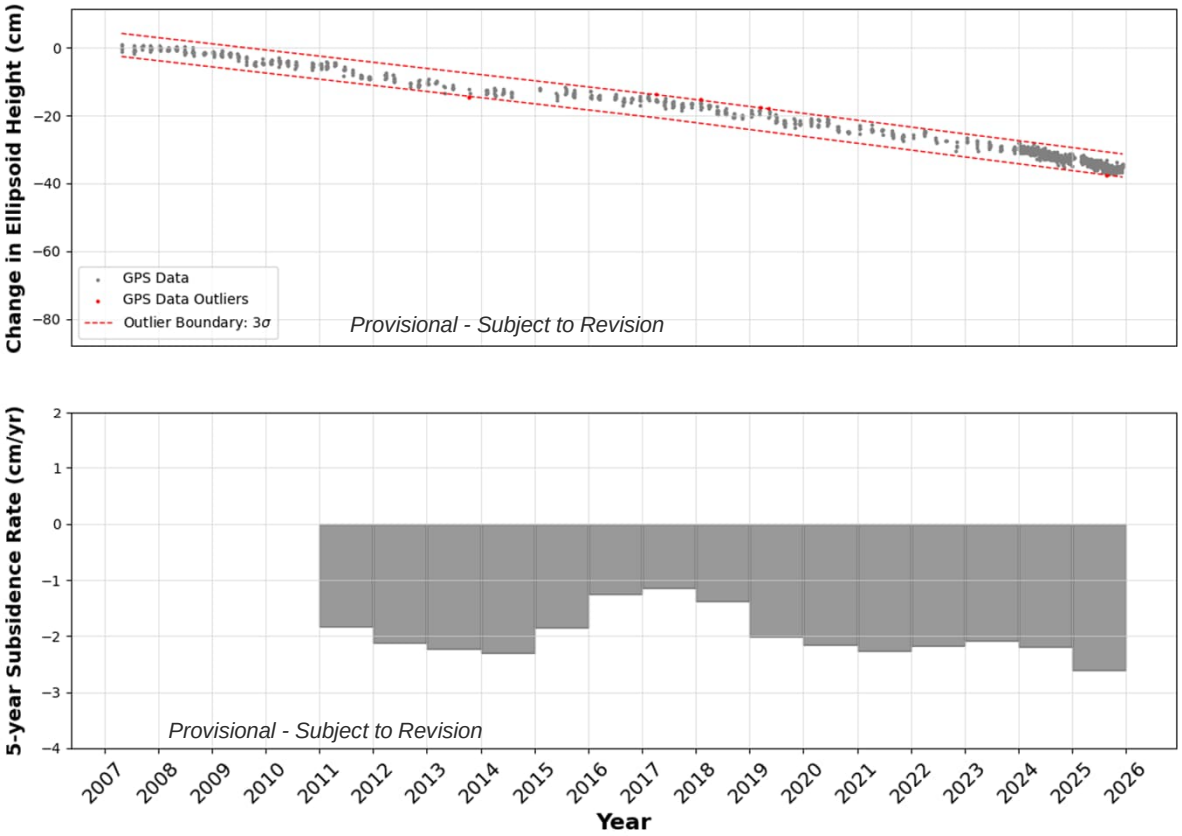


Exhibit 12 | Greatest Subsidence Rate

GPS station **P029**, located in Katy, has measured a total of 35 cm of subsidence since 2007 with a 2021-2025 average rate of **2.64 cm/yr**.

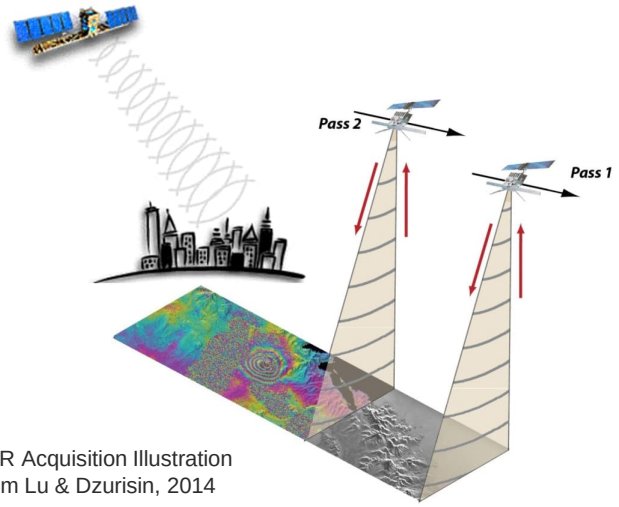


Processed GPS data (source: UH) over period of record. Processed data (grey circles) located inside the outlier boundary (red dashed lines) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are excluded from subsidence rate calculations and are shown for informational purposes only.



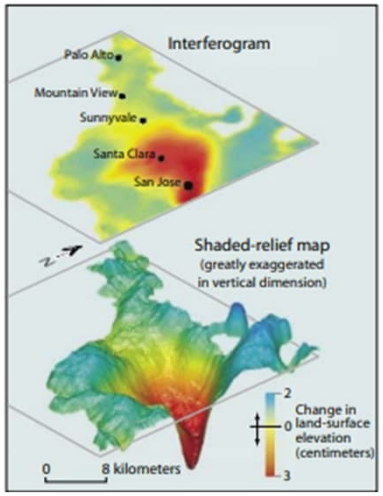
Interferometric Synthetic Aperture Radar (InSAR)

- Synthetic aperture radar (SAR) data are generated by transmitting radio waves from the sensor to the ground and back to the sensor.
- InSAR compares two SAR images of the same area at different times to detect small changes in distances between them. This processed pair of SAR images is the interferogram.
- Processing techniques can be used to achieve an accuracy of millimeters.



InSAR Acquisition Illustration
from Lu & Dzurisin, 2014

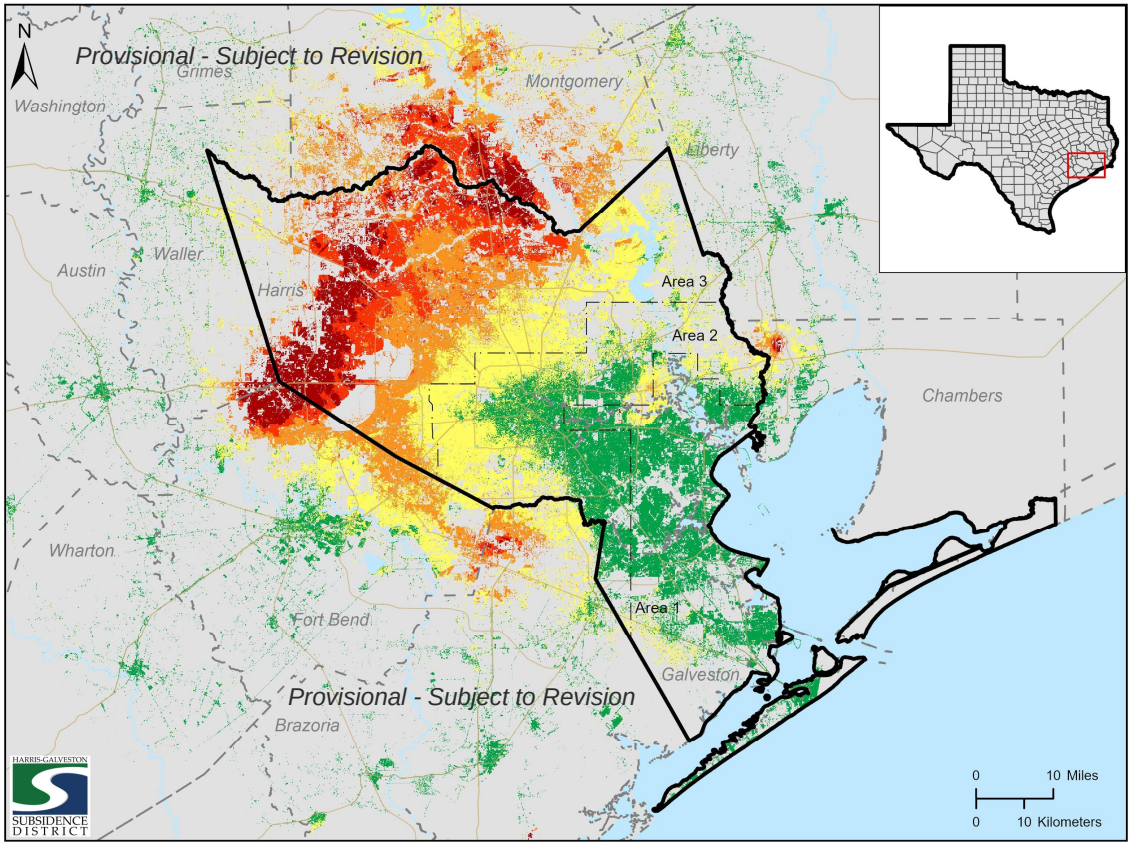
Processing



Interferogram (top) and 3-D topography (bottom)
from USGS Fact Sheet 2005-3025

Exhibit 13 | Subsidence Rates from InSAR

Annual subsidence rate, in centimeters per year (cm/yr.), estimated from Sentinel 1A derived time-series interferograms averaged from 2021 to 2025.



EXPLANATION

Sentinel-1 Derived Average Annual Subsidence Rate (cm/yr.) Processed from 2021 to 2025

- Greater than 2.0
- 2.0 - 1.5
- 1.5 - 1.0
- 1.0 - 0.5
- Less than 0.5

Gray areas show no data as the accuracy of InSAR decreases in rural areas due to tropospheric errors and decorrelation in the vegetated areas.

Testimony and Public Comment

Any person who wishes to appear at the hearing and present testimony, evidence, exhibits, or other information may do so in person, by counsel, via email to **info@subsidence.org**, or any combination of these options.

Thank you for attending the 2025 Annual Groundwater Report Public Hearing

- The record will remain open until **May 8, 2026**. You may provide comments by sending an email to **info@subsidence.org**.

- The 2025 Annual Groundwater Report will be presented to the Harris-Galveston Subsidence District Board of Directors at their next meeting on **May 13, 2026,** for approval.

- Upon Board approval, the 2025 Annual Groundwater Report will be posted on our website, **hgsubsidence.org** - located within the Science and Research section.

Scan the QR code to visit the Annual Groundwater Reports page on our website. →

HARRIS-GALVESTON SUBSIDENCE DISTRICT

HARRIS-GALVESTON SUBSIDENCE DISTRICT

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Friendswood, TX 77546

Appendix B – Period of Record Data

A comprehensive table is provided, which includes the GPS station name, coordinates, dates of operation, sample count, total vertical displacement, and the annual rate of change in ellipsoidal height (i.e., subsidence rate) from 2021 to 2025. A period of record time-series plot and a five-year subsidence rate graph are also included for each GPS station that actively collected data in 2025 and has been in operation for at least three years.

Site Name	Latitude (Decimal degrees)	Longitude (Decimal degrees)	Start of POR (Decimal year)	End of POR (Decimal Year)	Length of POR (Years)	Number of Samples (Days)	Total Vertical Displacement over POR (cm)	Annual Rate of Change in Ellipsoidal Height 2021-2025 (cm/yr.)
ADKS	29.791	-95.586	1993.520	2025.824	32.304	9475	-4.8	-0.13
ALEF	29.692	-95.635	2014.259	2026.064	11.806	3825	-7.9	-1.04
AULT	29.998	-95.745	2015.557	2026.064	10.508	3254	-14.7	-1.87
CFHS	29.919	-95.632	2015.595	2025.878	10.283	3285	-16.3	-1.74
CFJV	29.882	-95.556	2015.773	2026.064	10.292	3265	-11.3	-1.36
CMFB	29.681	-95.729	2014.409	2026.064	11.655	3738	-7.3	-0.88
COH6	30.040	-95.185	2004.249	2024.197	19.948	3300	-12.2	-0.74
COTM	29.394	-94.998	2015.097	2026.064	10.968	3183	-3.0	-0.22
CSTE	29.796	-95.511	2015.387	2026.062	10.675	3281	-6.2	-0.79
DEN1	29.510	-95.258	2011.778	2025.358	13.580	4443	-5.6	-0.66
DEN4	29.500	-95.230	2015.825	2025.038	9.213	1974	-2.5	-0.39
DMFB	29.623	-95.584	2014.771	2026.064	11.294	3640	-8.4	-1.02
DWI1	29.014	-95.404	2009.399	2026.064	16.665	4765	-3.0	-0.07
FSFB	29.556	-95.630	2014.371	2026.064	11.693	3644	-2.9	-0.59
GSEC	30.197	-95.528	2015.756	2026.064	10.308	2858	-9.5	-1.27
HCC1	29.788	-95.561	2012.914	2026.045	13.131	4299	-9.8	-1.06
HCC2	29.788	-95.562	2013.139	2025.484	12.345	3641	-11.0	-1.15
HSMN	29.800	-95.470	2013.298	2026.064	12.767	4170	-7.3	-0.77
JGS2	30.045	-94.891	2012.463	2026.064	13.602	3750	-2.0	0.12
KKES	29.850	-95.595	2015.598	2025.588	9.990	2607	-13.7	-1.37
KPCD	29.926	-95.924	2016.441	2025.944	9.503	2908	-4.9	-0.55
KPCS	29.926	-95.924	2016.441	2025.936	9.495	2316	-4.2	-0.54
LCBR	30.182	-96.602	2010.538	2026.062	15.524	3075	-3.0	-0.22
LGC1	30.045	-94.075	2013.531	2026.064	12.534	3592	-3.3	-0.10
LKHU	29.913	-95.146	1997.539	2025.999	28.460	9861	-1.4	0.03
MDWD	29.771	-95.595	2013.303	2026.064	12.761	4128	-11.5	-0.98
MEPD	29.658	-95.240	2014.040	2026.062	12.022	3738	-0.7	-0.28
MRHK	29.804	-95.745	2014.396	2026.064	11.669	3679	-23.0	-2.38
N301	29.311	-94.792	2018.530	2026.064	7.535	2175	-2.5	-0.02
NASA	29.552	-95.096	2014.201	2025.659	11.458	3539	-2.9	-0.19
NETP	29.791	-95.334	1993.517	2025.783	32.266	9130	-4.0	-0.29
OKEK	29.725	-95.803	2014.576	2026.062	11.485	3247	-12.9	-1.62
P000	29.539	-95.152	1996.003	2024.849	28.846	1801	-4.7	-0.17
P001	29.912	-95.617	1994.164	2025.898	31.734	2555	-77.3	-1.07
P002	30.001	-95.416	1994.318	2025.917	31.600	2481	-72.1	-1.30
P003	29.821	-95.613	1994.328	2024.438	30.109	1819	-60.0	-1.33
P004	29.630	-95.597	1994.660	2025.881	31.222	2414	-33.1	-0.86
P005	29.791	-95.586	1996.698	2025.999	29.301	2114	-35.1	-0.51
P006	29.818	-95.672	2014.276	2025.999	11.723	504	-12.7	-0.72
P007	29.936	-95.577	1999.115	2025.999	26.884	1905	-68.6	-1.36
P008	29.980	-95.476	1999.613	2025.917	26.304	1607	-44.1	-0.50
P009	30.038	-95.071	1999.345	2025.613	26.268	1640	-8.5	-0.11
P010	29.566	-95.799	1999.266	2025.994	26.728	1764	-9.9	-0.23
P011	30.032	-95.865	1999.345	2025.972	26.627	1839	-17.0	-1.08
P012	30.060	-95.263	2000.895	2025.969	25.074	1539	-20.1	-1.26
P013	30.195	-95.490	2000.914	2025.903	24.989	1500	-30.2	-0.62
P014	29.474	-95.644	2000.879	2025.901	25.022	1331	-6.7	-0.21
P016	29.544	-95.527	2000.860	2025.999	25.140	1361	-6.6	-0.02
P017	30.091	-95.615	2000.895	2025.955	25.060	1424	-43.1	-1.51

Site Name	Latitude (Decimal degrees)	Longitude (Decimal degrees)	Start of POR (Decimal year)	End of POR (Decimal Year)	Length of POR (Years)	Number of Samples (Days)	Total Vertical Displacement over POR (cm)	Annual Rate of Change in Ellipsoidal Height 2021-2025 (cm/yr.)
P018	29.965	-95.678	2000.862	2025.999	25.137	1345	-44.1	-1.88
P019	29.841	-95.805	2000.892	2025.766	24.874	1301	-27.1	-1.46
P020	29.533	-95.013	2002.044	2025.936	23.892	1412	0.4	0.40
P021	29.545	-95.312	2002.082	2025.969	23.887	1506	-4.5	-0.34
P022	29.335	-95.021	2002.041	2025.706	23.665	1360	-7.6	0.10
P023	29.335	-94.918	2002.060	2025.060	23.000	1385	0.3	0.26
P024	29.669	-95.041	2002.118	2024.788	22.671	1340	1.8	0.23
P026	29.210	-94.938	2002.194	2025.824	23.630	3473	-2.3	0.11
P027	29.583	-95.016	2002.367	2024.881	22.515	1310	-7.6	-0.07
P028	29.751	-94.918	2002.194	2025.999	23.805	1321	-6.0	0.00
P029	29.769	-95.822	2007.320	2025.936	18.616	1099	-35.0	-2.64
P030	29.689	-95.902	2007.353	2025.958	18.605	909	-9.2	-0.59
P031	29.398	-95.848	2007.350	2025.865	18.515	799	2.3	0.40
P032	29.541	-95.707	2007.350	2025.994	18.643	814	-1.2	-0.07
P033	29.490	-95.224	2006.323	2025.917	19.594	969	-3.1	-0.09
P034	29.422	-95.042	2010.356	2025.452	15.096	4903	-7.2	-0.08
P035	29.473	-95.082	2006.621	2025.695	19.074	821	3.6	0.75
P036	29.494	-94.942	2006.966	2025.936	18.970	1027	-1.9	0.23
P037	29.631	-95.101	2007.372	2025.846	18.474	916	2.7	-0.01
P038	29.649	-95.223	2007.356	2025.079	17.723	889	2.4	0.21
P039	29.645	-95.339	2011.093	2025.898	14.805	675	-2.2	-0.33
P040	29.493	-95.462	2007.353	2025.999	18.646	833	-10.3	-0.34
P041	29.662	-95.476	2007.337	2025.994	18.657	983	-10.9	-0.65
P042	29.732	-95.635	2007.334	2025.879	18.545	836	-12.8	-0.85
P043	29.093	-95.111	2006.545	2025.999	19.454	3308	-1.9	0.02
P044	29.880	-95.687	2007.320	2025.912	18.591	829	-24.2	-1.57
P045	29.876	-95.385	2007.331	2025.936	18.605	884	-6.9	-0.28
P046	30.030	-95.600	2007.323	2025.917	18.594	829	-27.9	-1.40
P047	30.090	-95.424	2007.339	2025.939	18.600	921	-33.8	-1.84
P048	30.045	-95.672	2007.320	2025.953	18.632	807	-20.3	-1.28
P049	29.422	-94.702	2006.279	2024.038	17.759	2444	-3.6	0.15
P050	29.848	-94.856	2006.838	2025.999	19.162	1177	-3.6	-0.31
P051	29.933	-95.284	2007.339	2025.936	18.597	850	-12.7	-0.51
P052	29.852	-95.177	2007.339	2025.955	18.616	850	-2.7	-0.28
P053	29.908	-95.057	2007.339	2025.975	18.635	819	-0.4	0.66
P054	29.801	-95.034	2006.816	2025.999	19.183	921	-3.5	-0.53
P055	29.794	-95.177	2006.799	2025.999	19.200	866	-1.4	-0.74
P056	29.903	-95.817	2007.320	2025.879	18.558	725	-12.1	-0.83
P057	29.684	-95.722	2009.137	2025.917	16.780	667	-7.2	-0.71
P058	29.485	-95.715	2010.591	2025.879	15.287	641	-3.7	-0.12
P059	29.617	-95.740	2010.572	2025.994	15.422	627	-5.2	-0.40
P060	29.686	-95.820	2012.068	2025.936	13.868	601	-10.3	-0.78
P061	29.675	-95.972	2011.129	2025.955	14.827	697	-5.7	-0.28
P062	29.593	-95.974	2011.129	2025.975	14.846	572	-3.1	0.33
P063	29.508	-95.547	2011.432	2025.999	14.567	693	-3.3	-0.40
P065	30.106	-95.107	2012.432	2025.988	13.556	615	-8.8	-0.07
P066	30.017	-95.767	2011.167	2025.263	14.096	641	-20.5	-1.53
P067	29.532	-95.855	2011.109	2025.975	14.865	652	-2.8	0.04
P074	29.736	-95.231	2011.972	2025.898	13.926	617	1.0	0.26

Site Name	Latitude (Decimal degrees)	Longitude (Decimal degrees)	Start of POR (Decimal year)	End of POR (Decimal Year)	Length of POR (Years)	Number of Samples (Days)	Total Vertical Displacement over POR (cm)	Annual Rate of Change in Ellipsoidal Height 2021-2025 (cm/yr.)
P075	29.758	-95.031	2012.432	2025.936	13.504	867	-0.3	0.08
P076	29.361	-95.045	2012.643	2025.936	13.293	581	-5.5	-0.01
P077	29.979	-95.850	2013.197	2025.975	12.777	512	-3.4	0.68
P078	29.739	-96.016	2014.331	2025.972	11.641	486	-4.1	-0.03
P079	29.035	-95.471	2014.827	2025.999	11.172	2933	-2.7	-0.44
P080	29.578	-95.165	2014.862	2025.761	10.899	3459	-0.6	-0.19
P081	29.556	-95.170	2014.854	2025.761	10.907	3500	-1.6	-0.23
P090	29.710	-95.160	2015.977	2025.898	9.921	544	1.3	-0.12
P091	29.783	-95.493	2016.320	2025.996	9.676	537	-4.0	-0.27
P092	29.881	-95.501	2016.320	2025.994	9.673	503	-6.5	-0.95
P093	29.417	-95.197	2017.238	2025.495	8.257	403	-1.8	-0.10
P094	29.722	-95.524	2017.298	2025.999	8.701	464	-2.3	-0.02
P095	29.808	-95.294	2017.203	2025.936	8.734	490	-0.2	-0.09
P096	29.724	-95.748	2017.624	2025.786	8.161	2479	-3.6	-1.05
P097	29.785	-95.847	2018.104	2025.999	7.895	701	-18.1	-2.43
P098	29.803	-95.820	2018.120	2025.991	7.871	484	-16.2	-2.15
P099	29.986	-95.579	2018.140	2025.936	7.797	371	-5.1	-0.89
P100	29.934	-95.198	2019.309	2025.958	6.649	335	-1.8	-0.57
P103	29.151	-95.311	2019.717	2025.602	5.885	94	0.6	0.17
P108	29.772	-95.121	2021.244	2025.999	4.756	208	-1.3	-0.32
P109	29.986	-95.022	2021.148	2025.953	4.805	210	1.2	0.35
P110	29.548	-95.442	2021.189	2025.999	4.810	149	-7.2	-1.28
P111	29.733	-95.873	2021.285	2025.958	4.674	137	-15.3	-3.32
P113	29.388	-95.642	2023.337	2025.898	2.561	76	1.4	0.54
PWES	30.199	-95.511	2015.223	2026.064	10.842	3435	-15.2	-1.97
RDCT	29.810	-95.495	2013.563	2026.062	12.498	3797	-7.7	-0.85
ROD1	30.072	-95.527	2007.003	2026.064	19.061	6032	-27.0	-2.21
RPFB	29.484	-95.514	2014.773	2026.064	11.291	3633	-4.0	-0.58
SANJ	30.507	-95.289	2022.422	2025.999	3.578	602	-1.4	-0.85
SESG	29.987	-95.430	2014.680	2026.064	11.384	3655	-13.1	-1.32
SHSG	30.054	-95.430	2014.721	2026.064	11.343	3653	-17.9	-2.07
SISD	29.762	-96.174	2015.176	2026.064	10.888	3365	-1.8	-0.09
SPBH	29.802	-95.515	2013.303	2026.062	12.758	4173	-8.8	-0.92
TDAM	29.314	-94.817	2013.435	2026.064	12.630	3850	-4.4	-0.13
THSU	29.714	-95.340	2012.953	2026.064	13.112	4005	-2.5	-0.39
TMCC	29.702	-95.395	2003.271	2025.996	22.725	5587	-3.9	-0.46
TXAC	29.778	-94.671	2011.124	2026.064	14.940	4914	-1.4	-0.09
TXAV	29.403	-95.242	2017.147	2026.064	8.917	1853	-3.5	-0.47
TXB2	30.090	-94.192	2012.463	2026.064	13.602	3691	-11.6	-0.27
TXBC	29.000	-95.972	2009.405	2026.062	16.657	5531	-4.8	-0.38
TXBH	29.786	-95.946	2017.150	2026.064	8.914	2244	-6.0	-0.82
TXBX	30.718	-96.397	2013.191	2026.064	12.873	4172	4.2	-0.24
TXC5	29.704	-96.573	2017.213	2026.064	8.851	2261	-2.0	-0.22
TXCK	31.323	-95.436	2012.022	2026.064	14.042	4572	-1.3	-0.26
TXCM	29.703	-96.577	2010.437	2026.064	15.628	5183	-2.5	-0.14
TXCN	30.349	-95.441	2005.580	2026.064	20.485	6965	-24.9	-1.48
TXCY	30.096	-95.626	2017.391	2026.064	8.674	2072	-13.3	-1.74
TXED	28.968	-96.634	2009.429	2026.064	16.635	3945	-1.6	-0.10
TXEX	29.564	-95.119	2010.881	2025.350	14.469	4580	2.3	-0.01

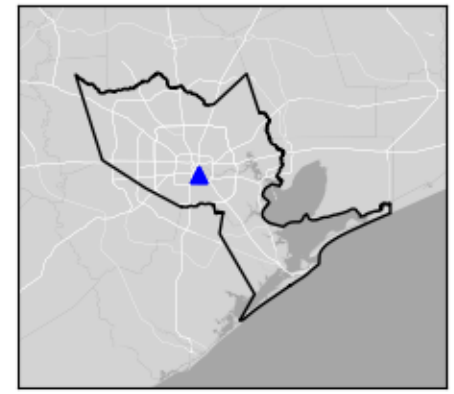
Site Name	Latitude (Decimal degrees)	Longitude (Decimal degrees)	Start of POR (Decimal year)	End of POR (Decimal Year)	Length of POR (Years)	Number of Samples (Days)	Total Vertical Displacement over POR (cm)	Annual Rate of Change in Ellipsoidal Height 2021-2025 (cm/yr.)
TXGA	29.328	-94.773	2005.580	2026.064	20.485	6777	-9.4	-0.39
TXHE	30.099	-96.063	2005.580	2026.064	20.485	6955	-10.5	-0.33
TXHP	31.334	-93.865	2012.022	2026.062	14.040	4571	-6.2	-0.83
TXHV	30.721	-95.553	2015.463	2026.064	10.601	2897	1.0	0.04
TXKO	30.395	-94.332	2011.770	2026.064	14.294	4687	-3.1	-0.32
TXLF	31.356	-94.718	2005.580	2026.064	20.485	6957	-2.8	-0.38
TXLI	30.056	-94.771	2005.580	2026.064	20.485	6897	-2.5	-0.28
TXLQ	29.358	-94.953	2013.059	2026.064	13.005	3678	-1.2	-0.13
TXLV	30.745	-94.922	2011.778	2026.064	14.286	4705	-4.1	-0.38
TXMG	28.983	-95.964	2013.309	2026.064	12.756	3334	-3.6	-0.26
TXP5	29.668	-95.042	2019.181	2026.048	6.866	1448	0.3	-0.09
TXPV	28.638	-96.619	2010.292	2026.064	15.773	5229	-0.5	-0.16
TXRN	29.543	-95.829	2015.206	2026.064	10.858	2992	-1.6	-0.26
TXSP	29.731	-93.897	2016.454	2026.064	9.610	2304	-0.9	-0.02
TXTG	29.898	-95.297	2015.466	2026.064	10.598	2873	-4.6	-0.56
TXVA	28.835	-96.910	2005.092	2026.064	20.972	6995	0.5	0.05
TXWH	29.325	-96.112	2010.426	2026.064	15.639	5169	-5.7	-0.28
TXWI	29.806	-94.371	2015.480	2026.064	10.584	2742	-2.3	-0.06
TXWN	29.329	-96.092	2015.003	2026.064	11.061	3052	-1.2	-0.20
UH01	29.722	-95.345	2012.745	2025.958	13.213	3307	-2.9	-0.55
UHC3	29.390	-95.044	2014.157	2026.064	11.907	3755	-5.4	-0.36
UHCL	29.578	-95.104	2014.242	2026.064	11.822	3627	-1.5	-0.18
UHCR	29.728	-95.757	2014.125	2026.064	11.940	3677	-14.4	-1.70
UHEB	29.526	-96.066	2014.595	2026.064	11.469	3370	-2.3	-0.13
UHF1	30.236	-95.483	2014.390	2026.059	11.669	3317	-12.1	-1.23
UHJF	30.236	-95.483	2014.390	2026.059	11.669	2518	-11.2	-1.17
UHKD	29.724	-95.748	2018.971	2025.317	6.346	2102	-7.2	-1.42
UHKS	29.724	-95.748	2018.412	2025.320	6.908	2379	-6.4	-1.31
UHLH	29.913	-95.146	2021.862	2025.117	3.255	1007	-1.8	-0.83
UHRI	29.719	-95.403	2014.330	2026.064	11.734	3751	-3.9	-0.48
UHSL	29.575	-95.652	2014.185	2025.498	11.313	3273	-4.5	-0.83
UTEX	29.786	-95.568	2012.496	2025.484	12.988	4088	-9.7	-1.08
WCHT	29.783	-95.581	2013.295	2026.062	12.767	4063	-12.7	-1.20
WEPD	29.688	-95.229	2014.075	2026.064	11.989	3800	-0.4	-0.25
WHCR	30.194	-95.505	2014.779	2026.064	11.285	3634	-10.9	-1.30
YORS	30.110	-95.469	2020.827	2025.958	5.131	1507	-7.3	-1.30
ZHU1	29.962	-95.331	2003.042	2026.064	23.023	7556	-21.8	-1.05

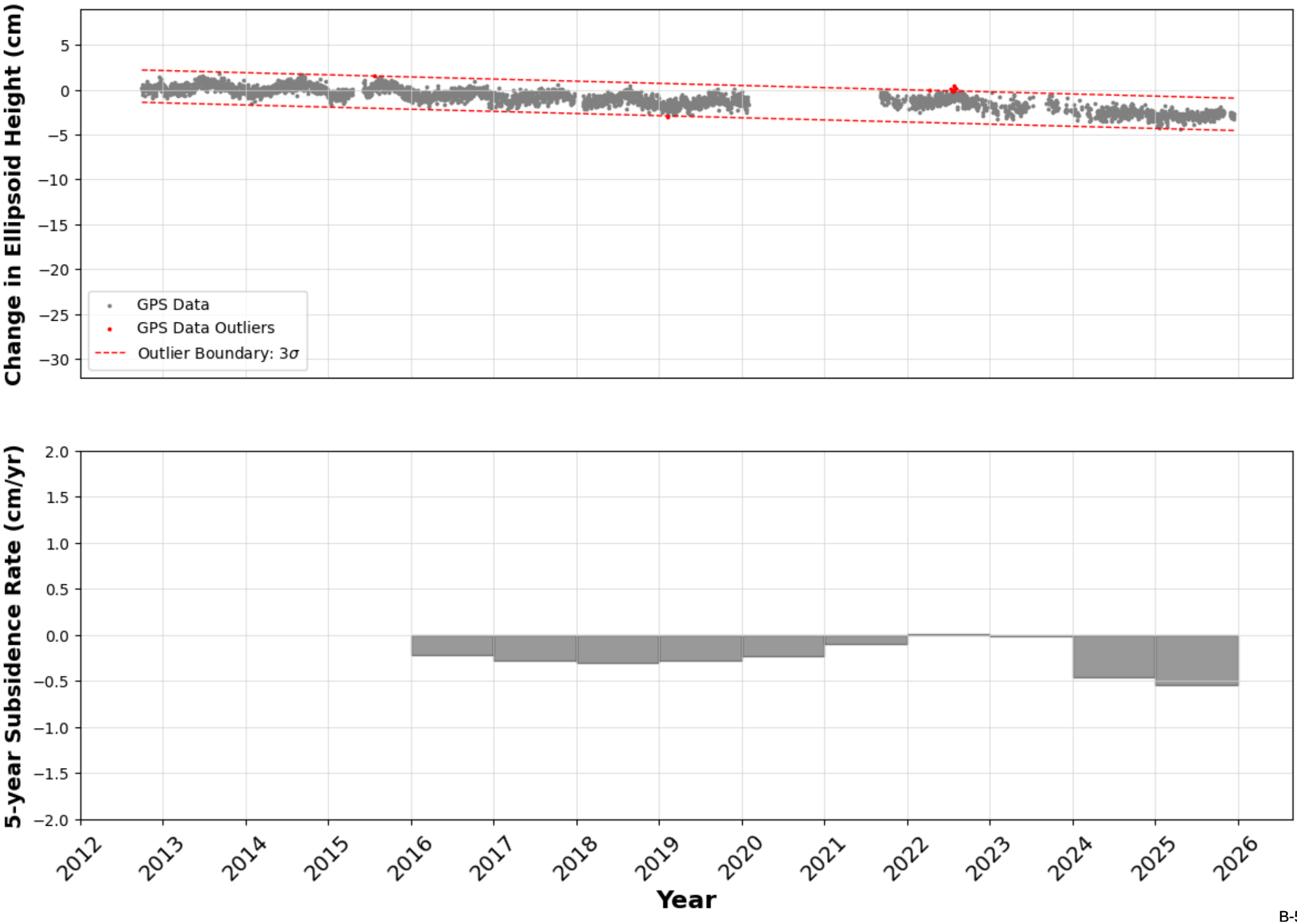
Notes:

n/a: rate of change in ellipsoidal height not calculated.

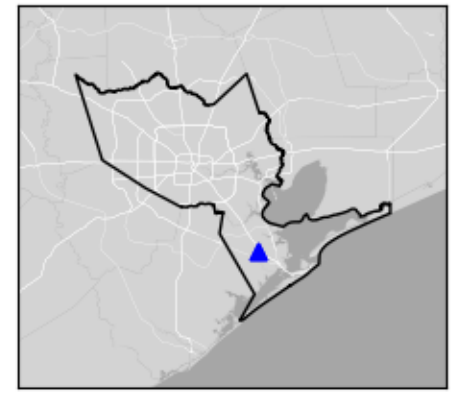
UH01

Houston, TX



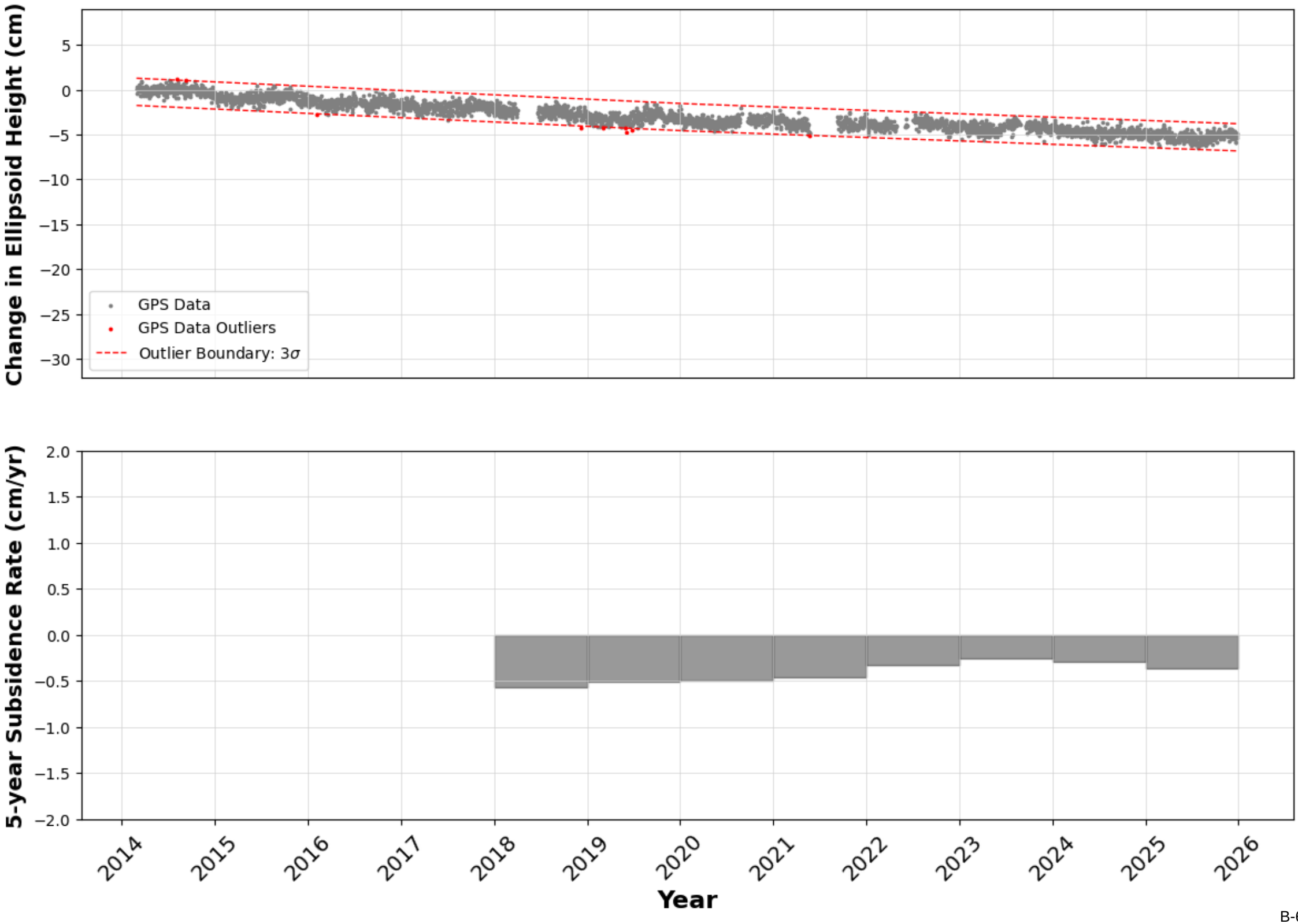


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered by HGSD when calculating subsidence rates and are shown for informational purposes only.



UHC3

La Marque, TX



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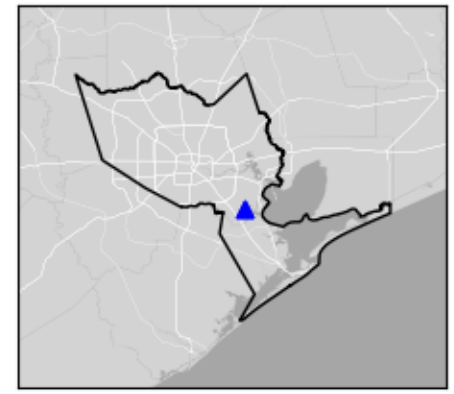
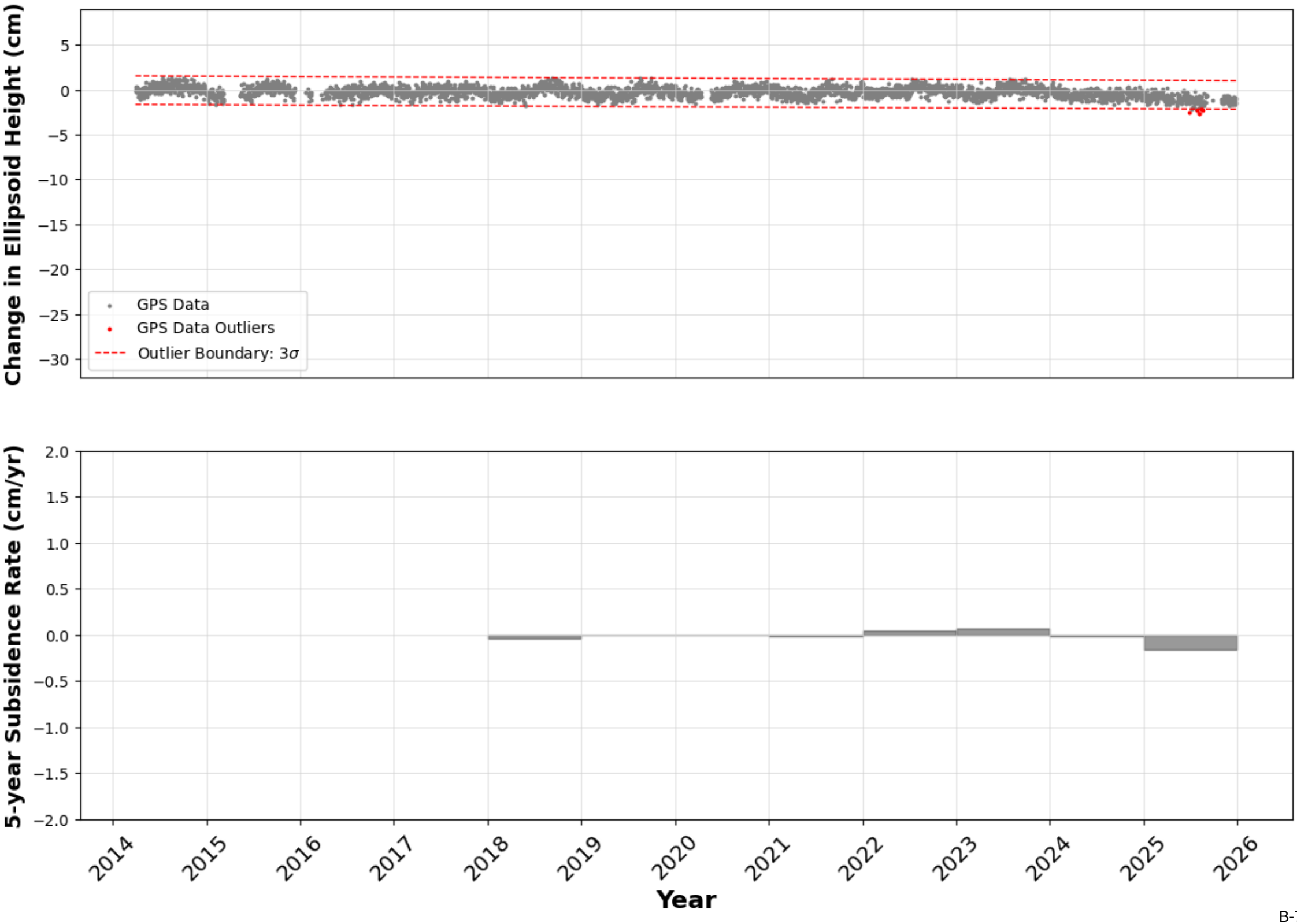


UHCL

Houston, TX



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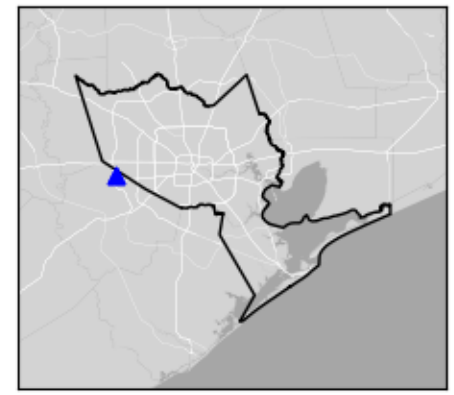
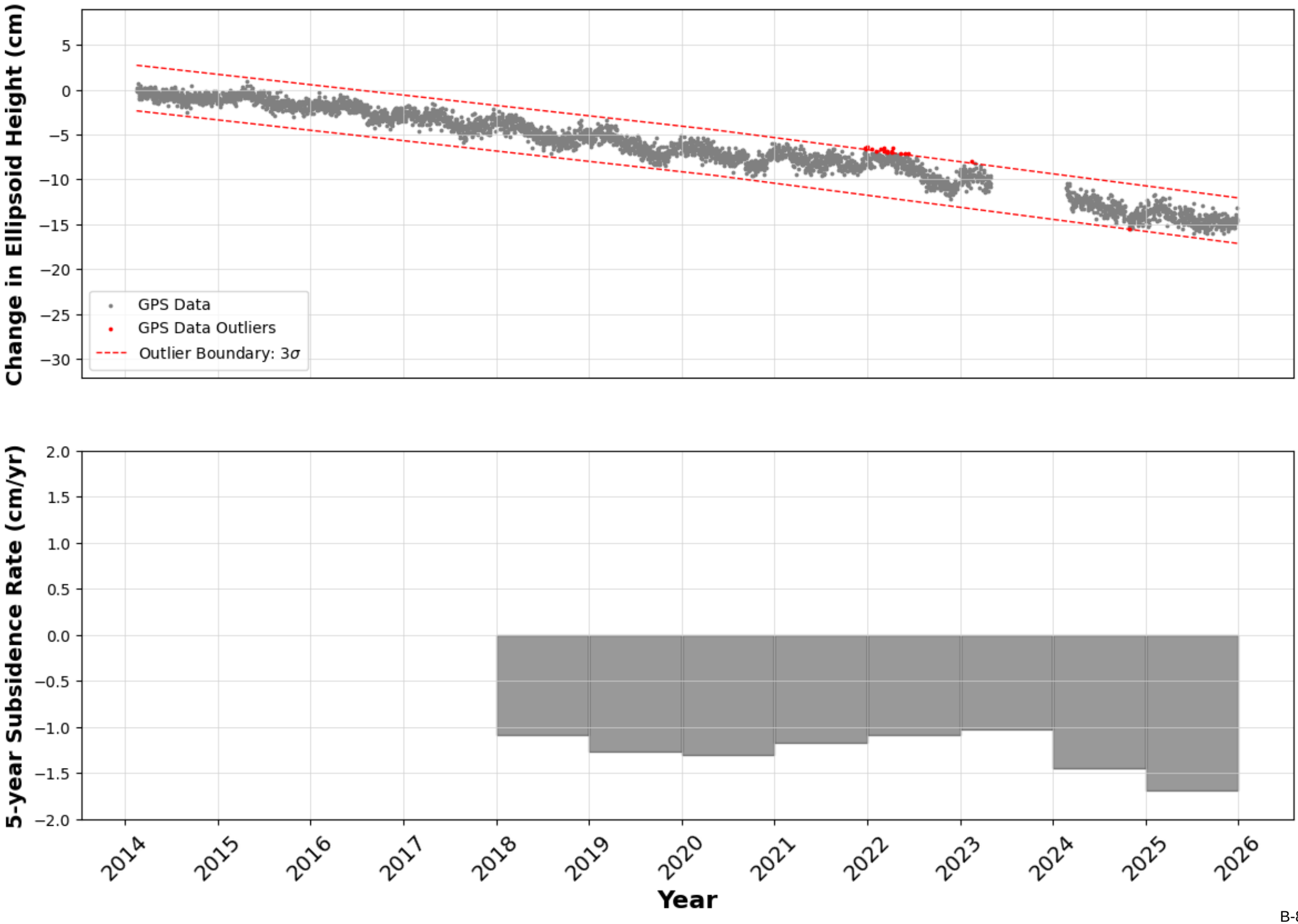


UHCR

Katy, TX



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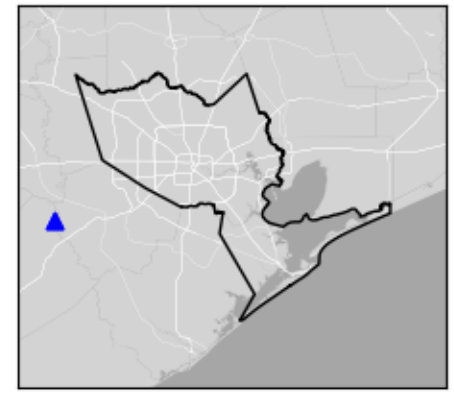
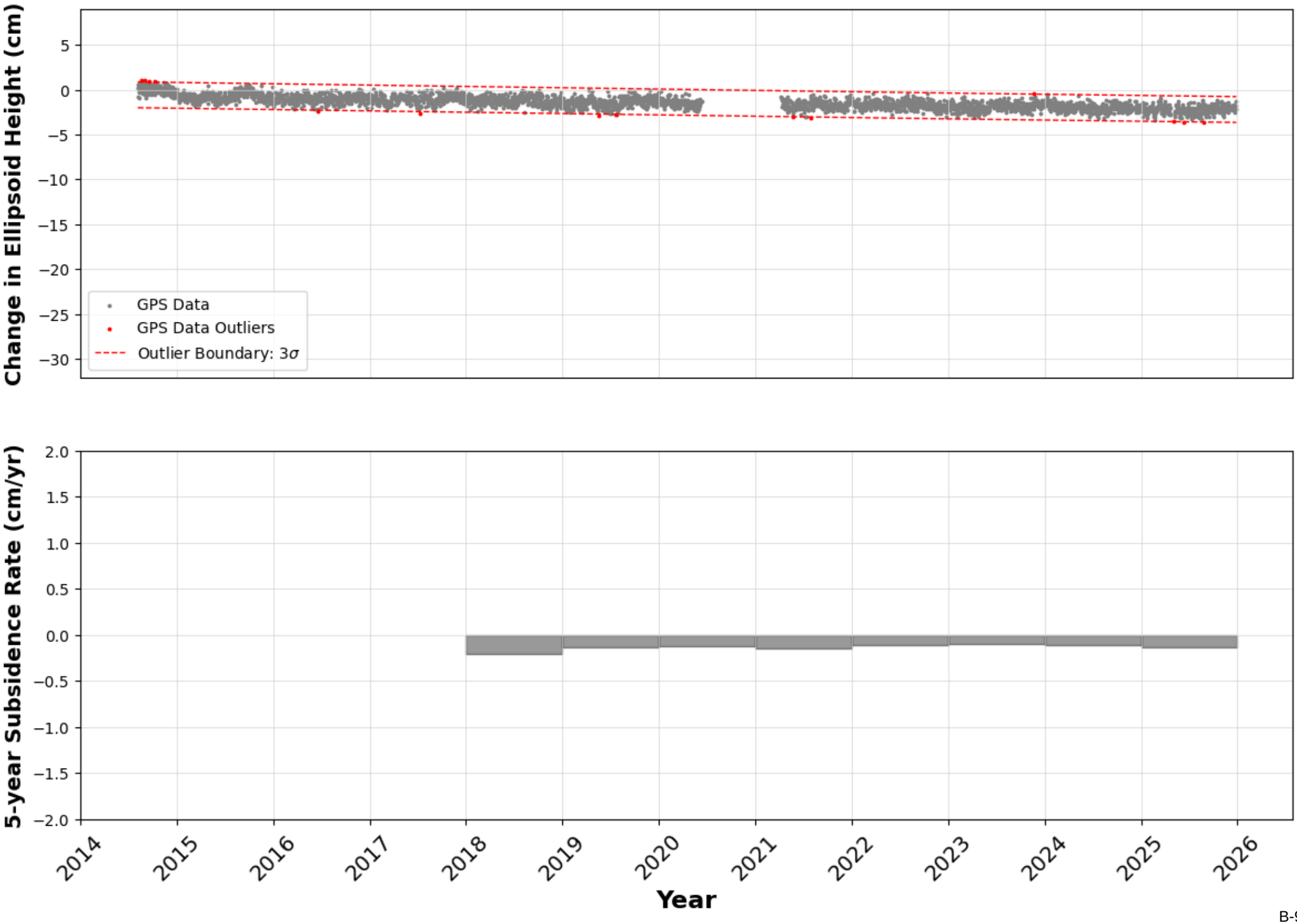


UHEB

East Bernard, TX



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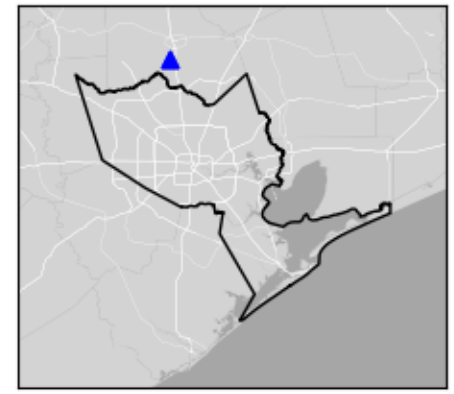
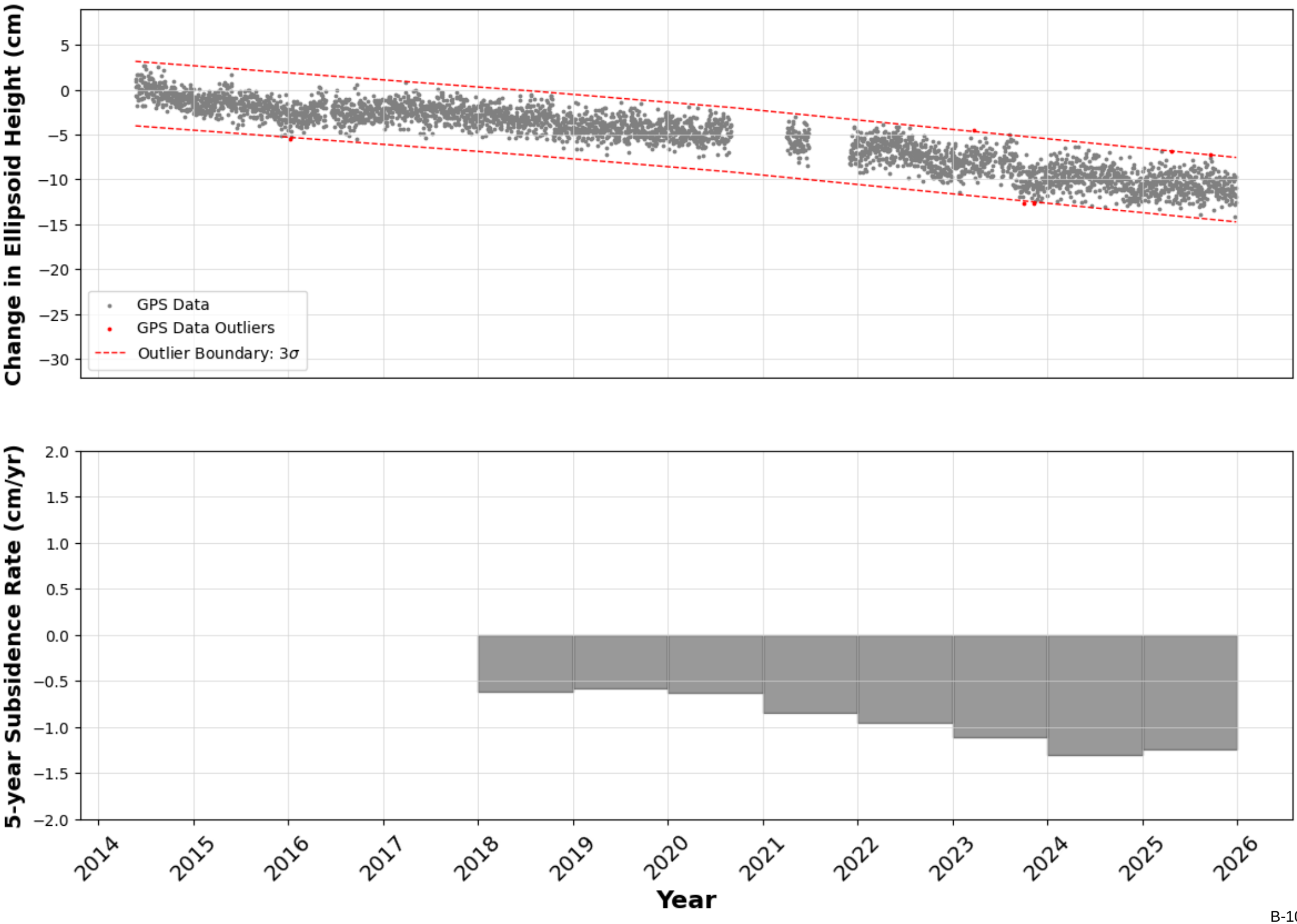


UHF1

Conroe, TX



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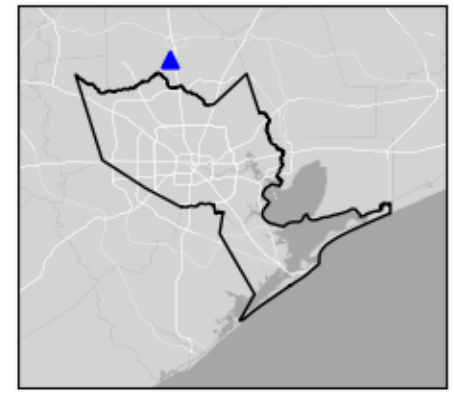
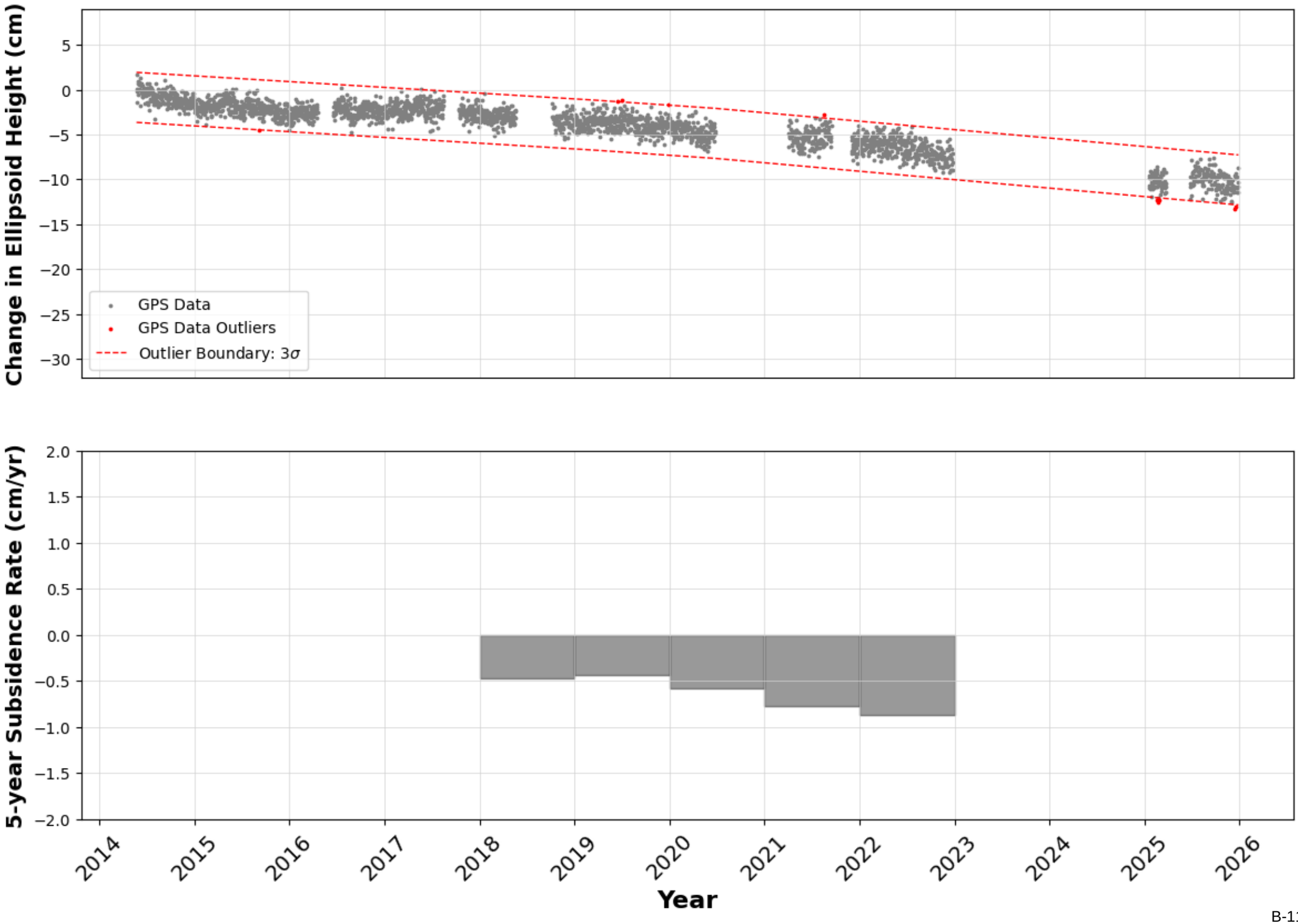


UHJF

Conroe, TX



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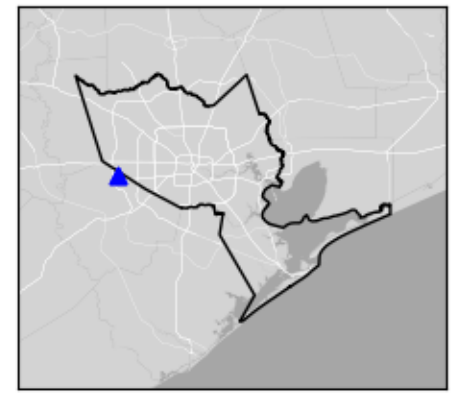
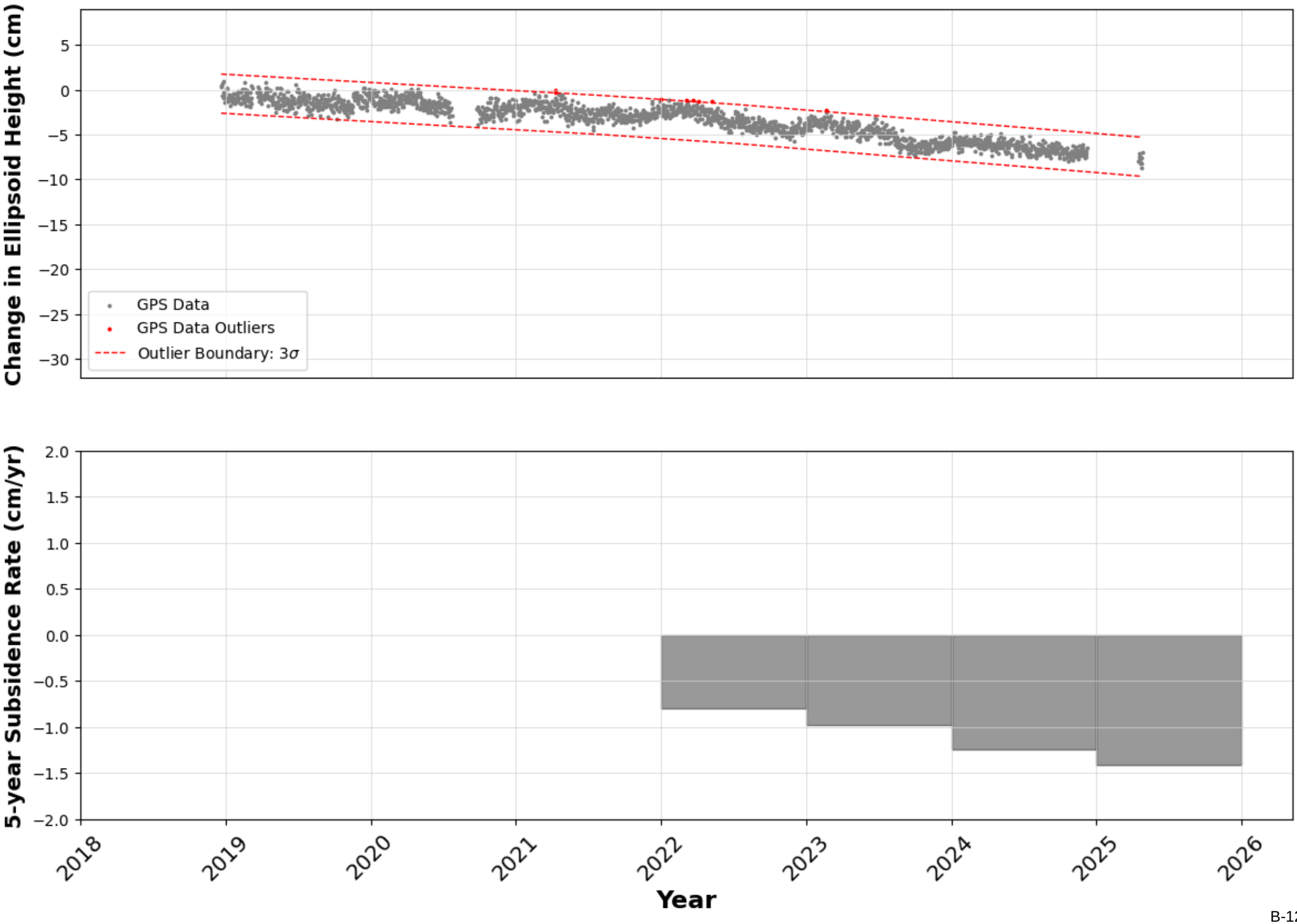


UHKD

Katy, TX



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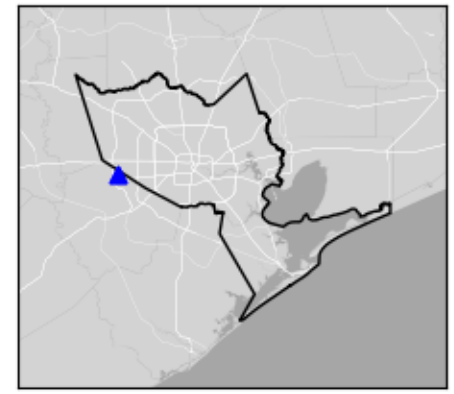
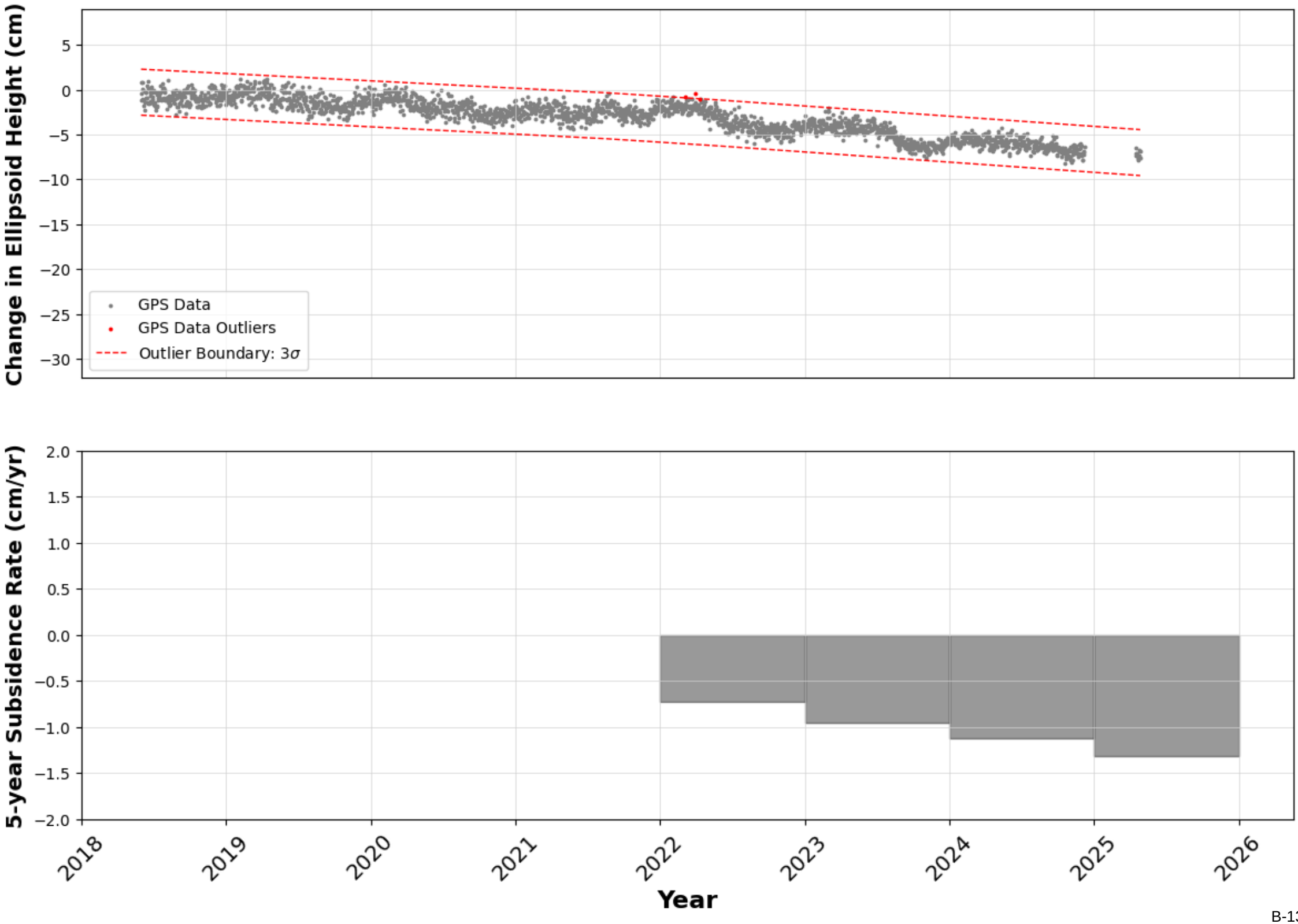


UHKS

Katy, TX



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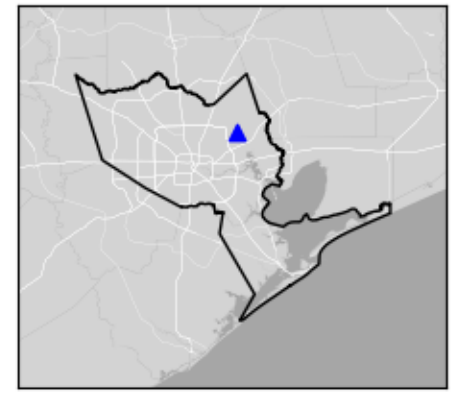
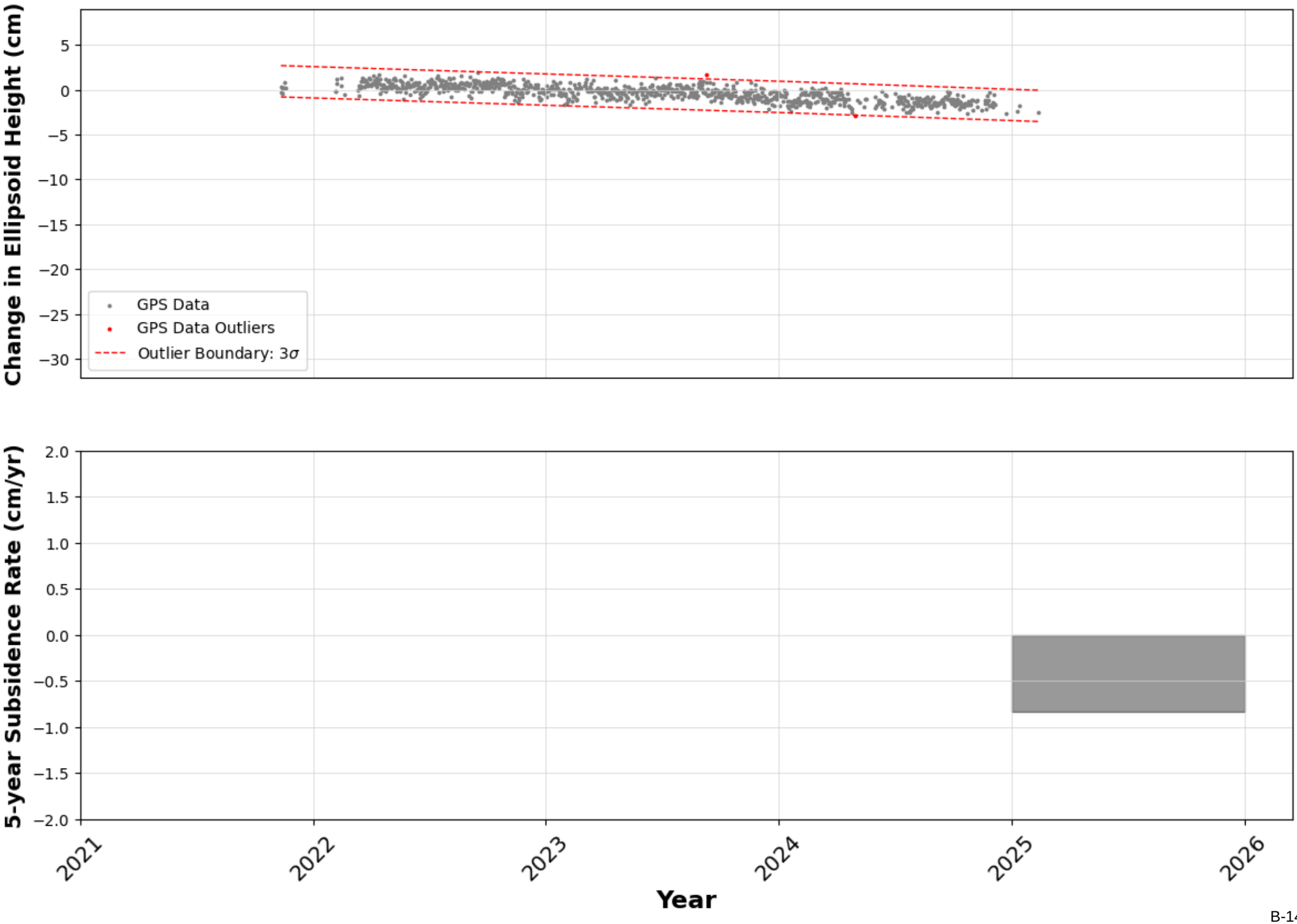
UHLH





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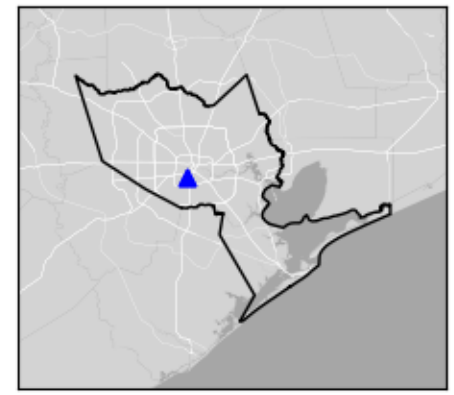
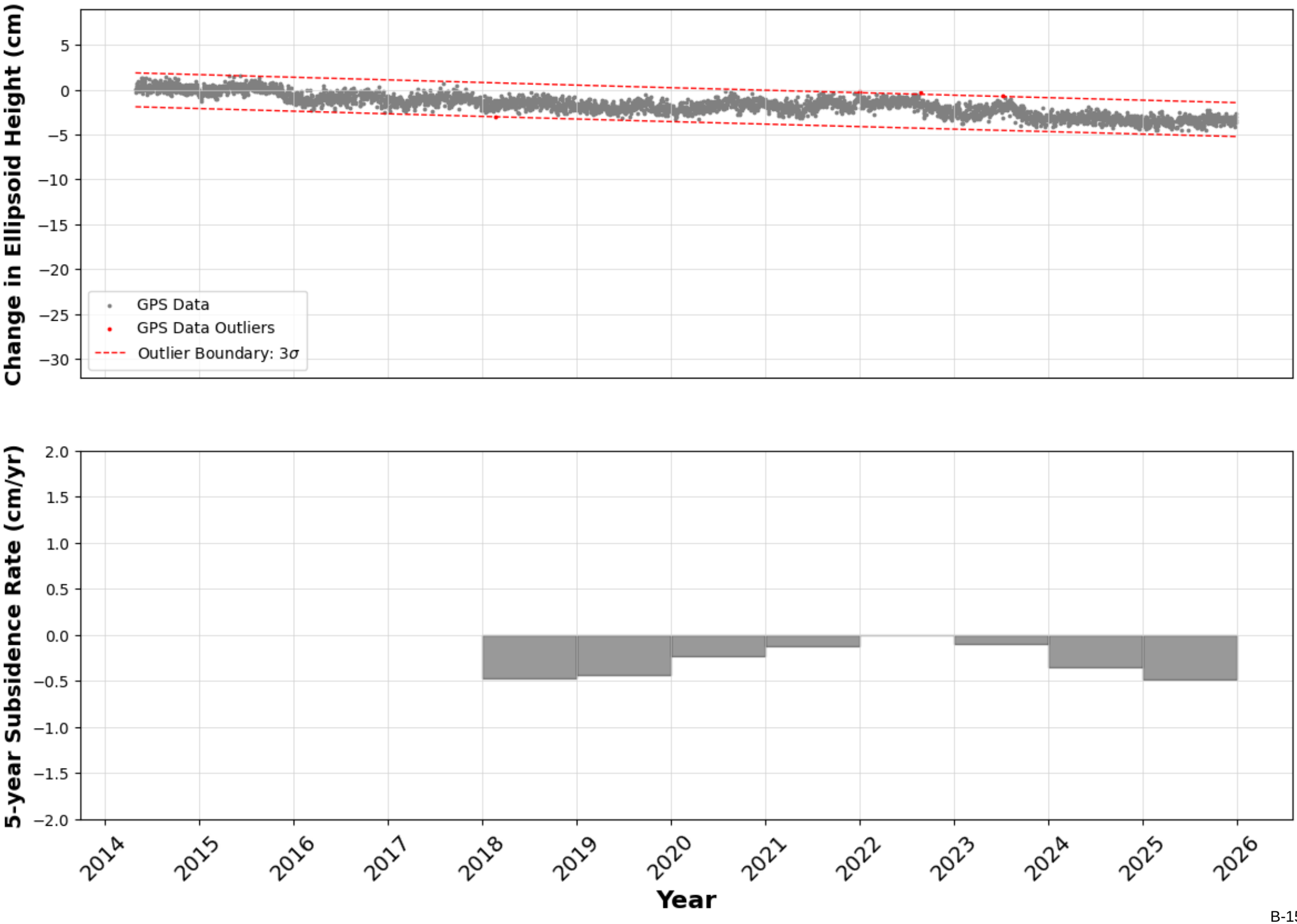


UHRI

Houston, TX



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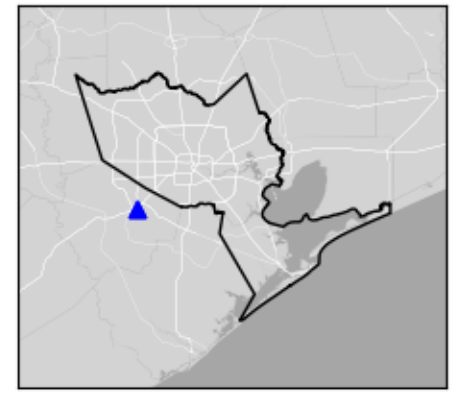
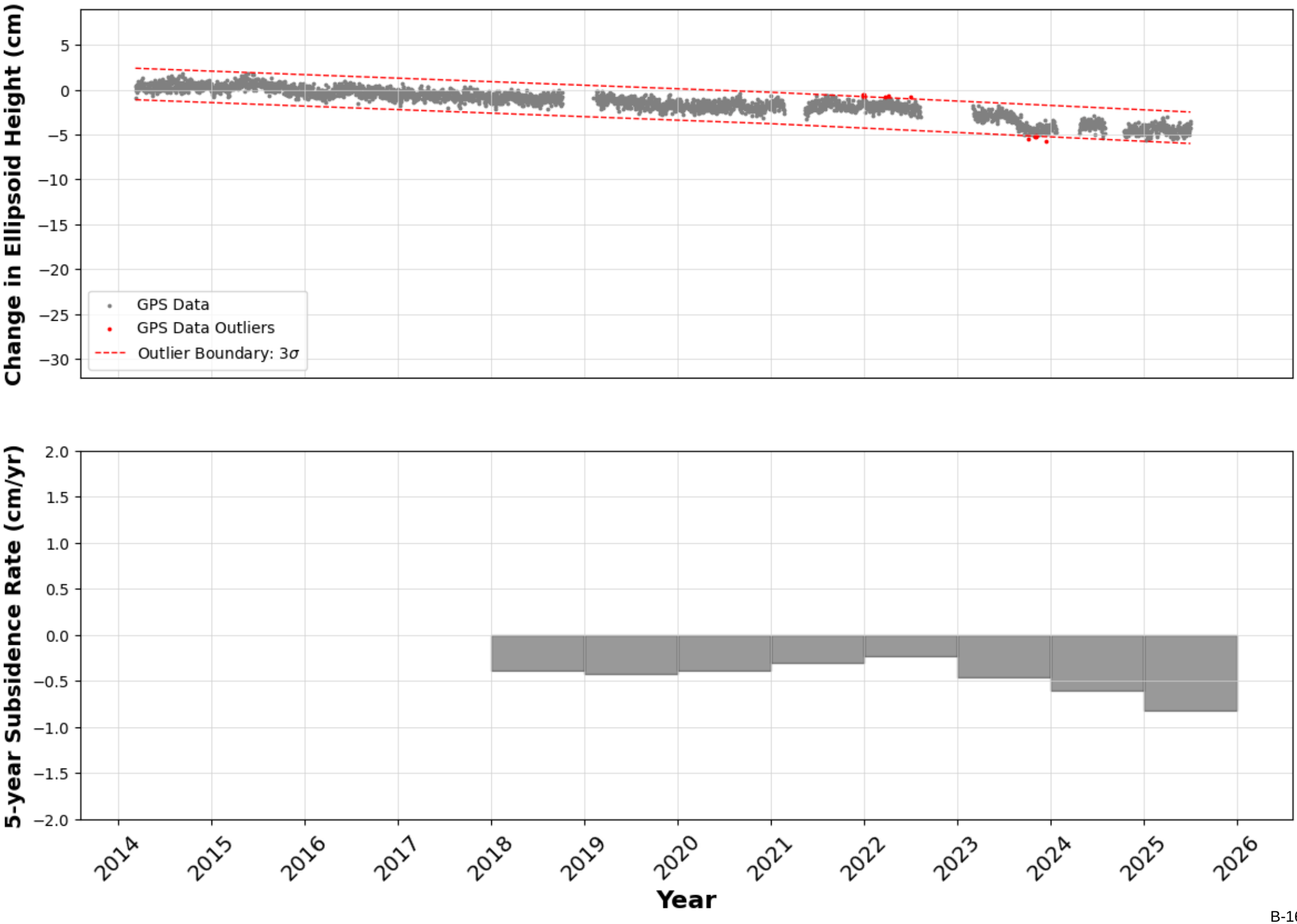


UHSL

Sugar Land, TX



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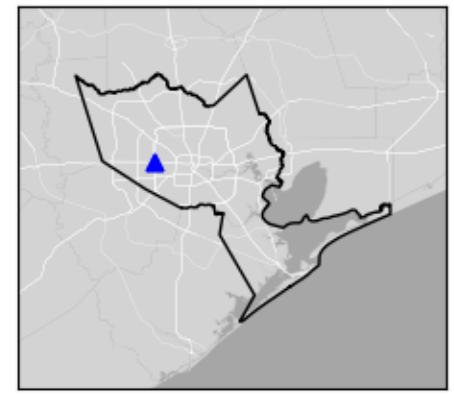
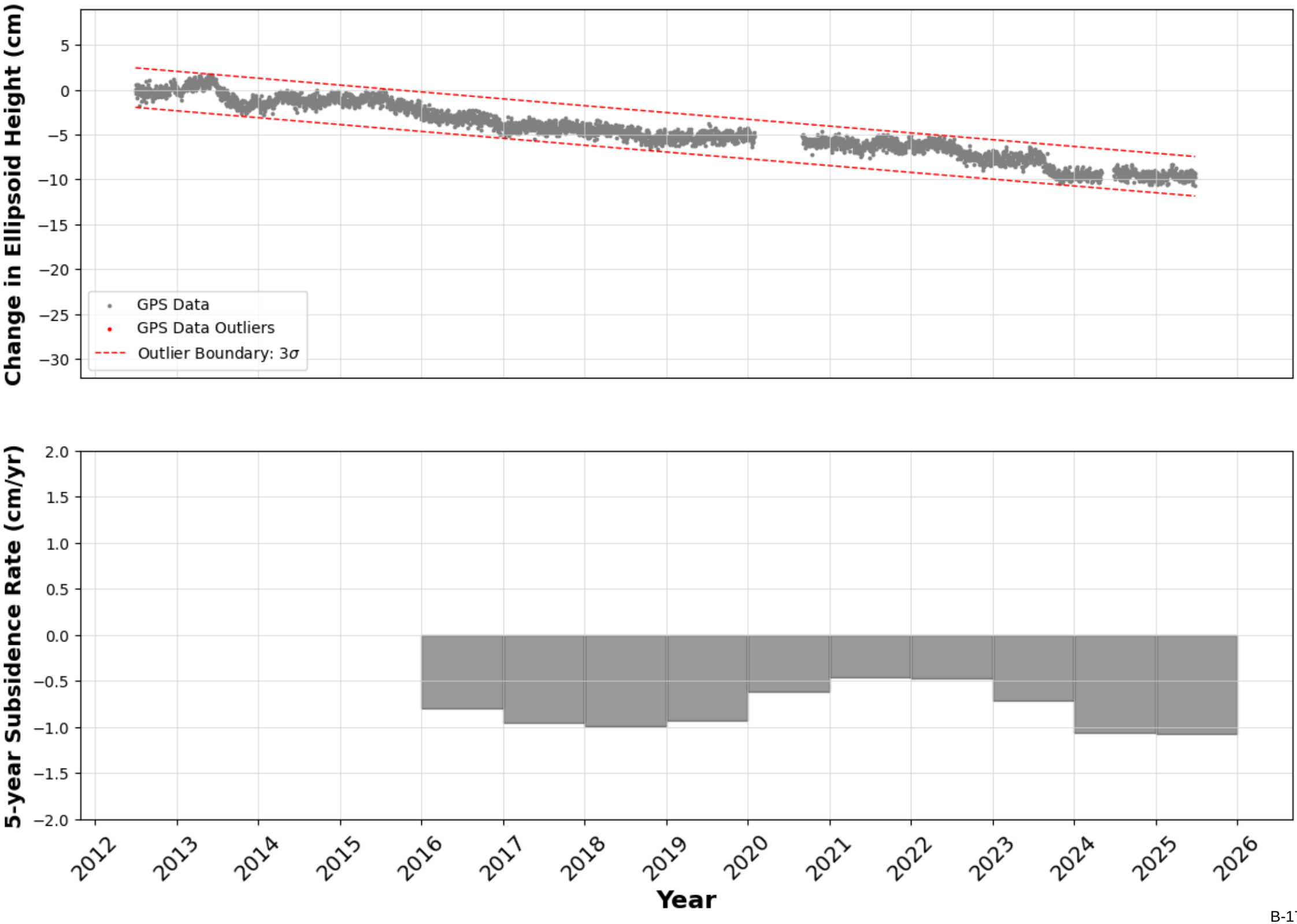
UTEX

Houston, TX





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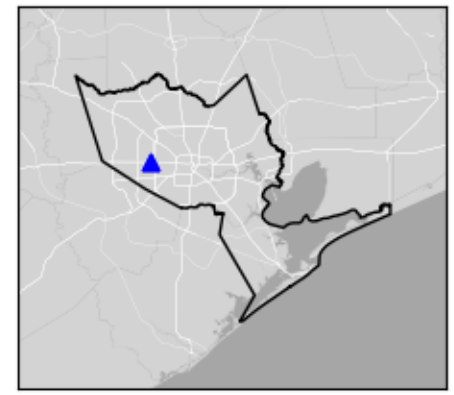
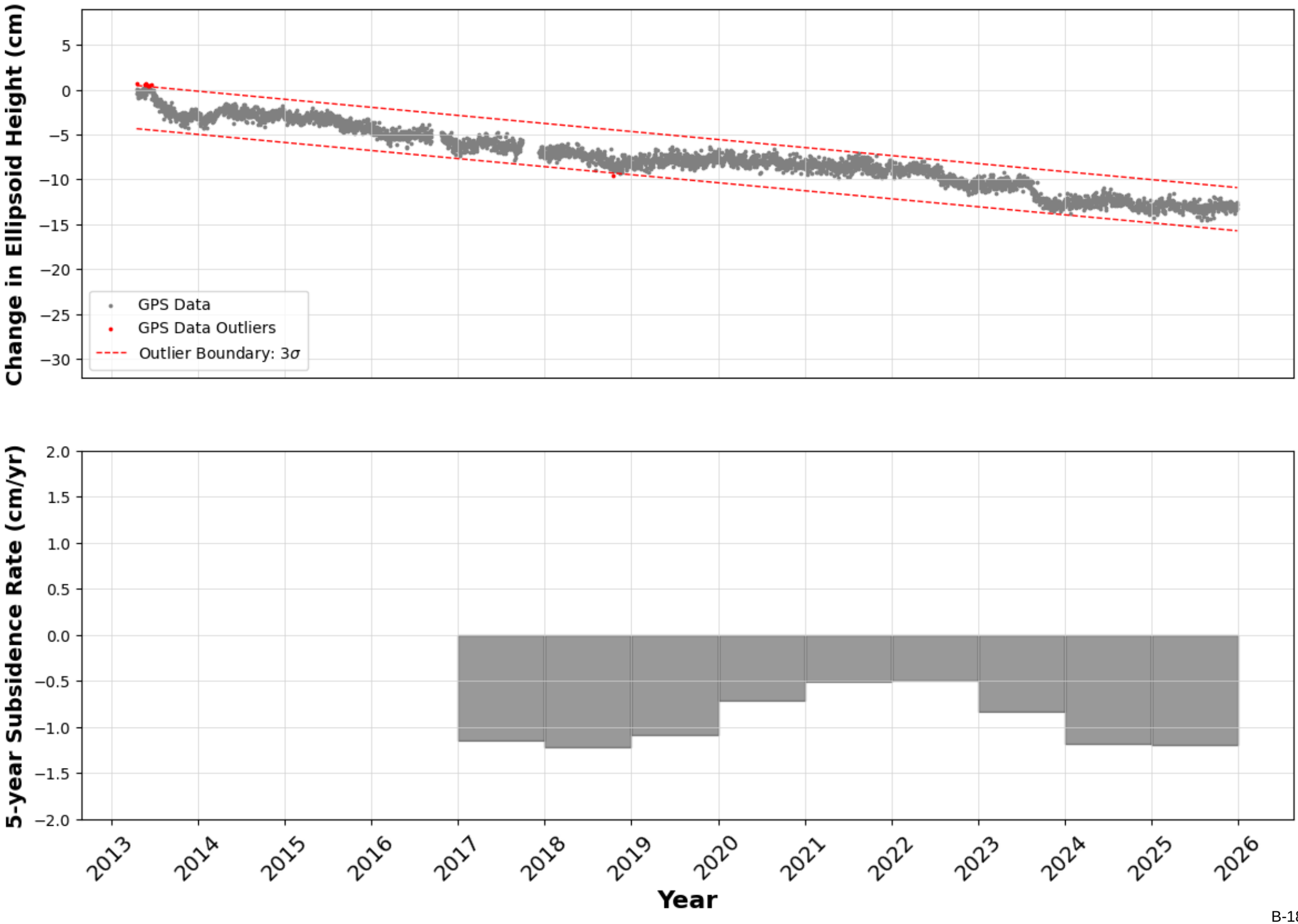


WCHT

Houston, TX



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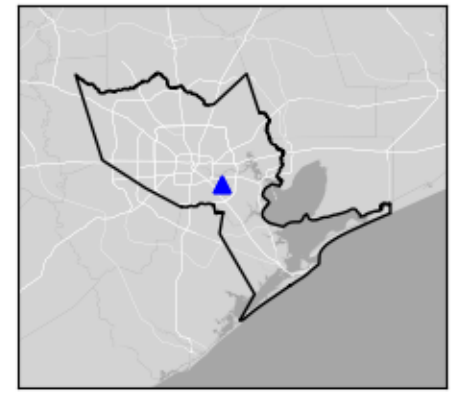
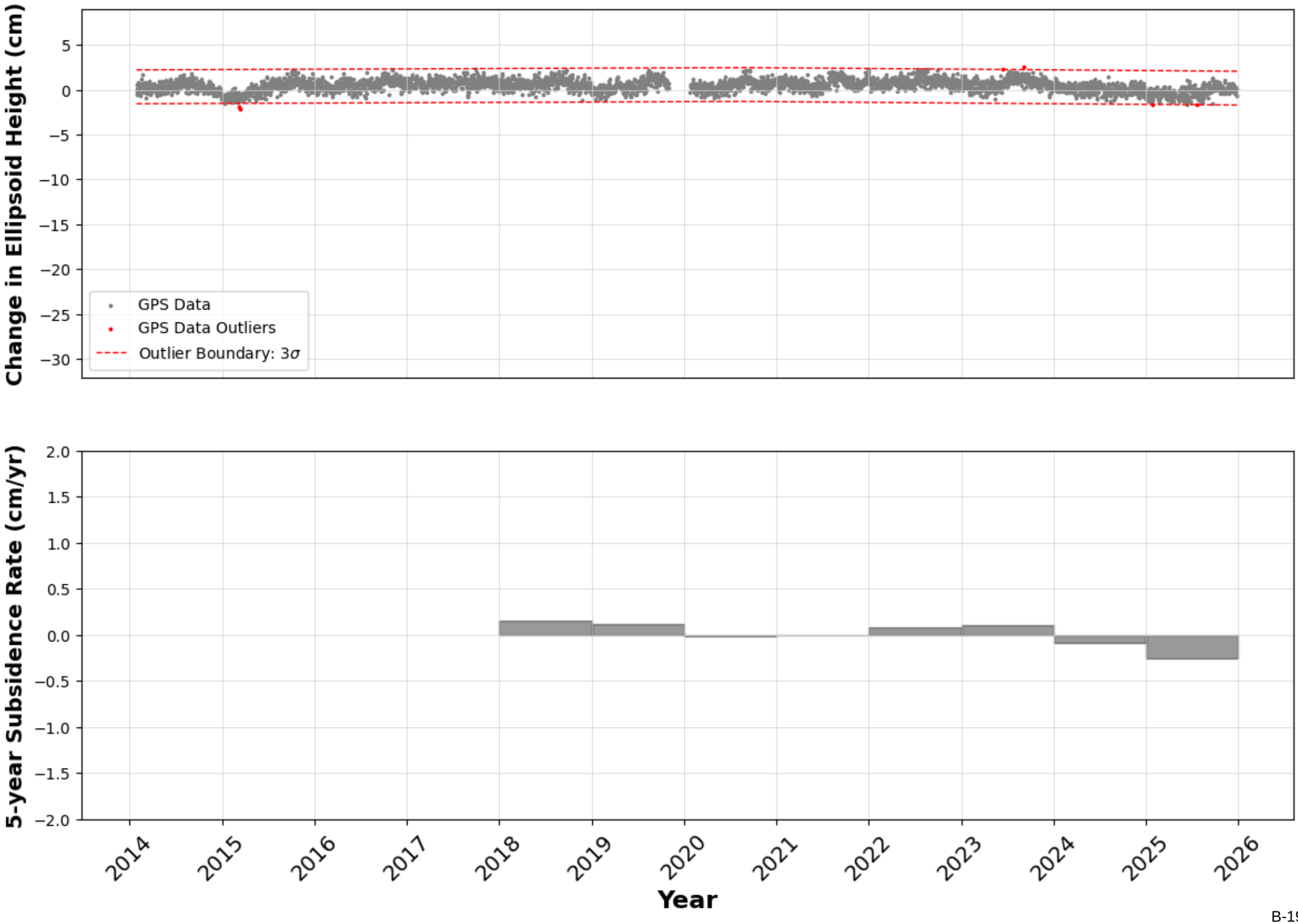


WEPD

Pasadena, TX



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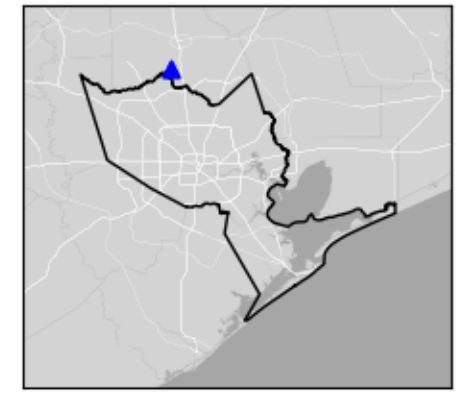
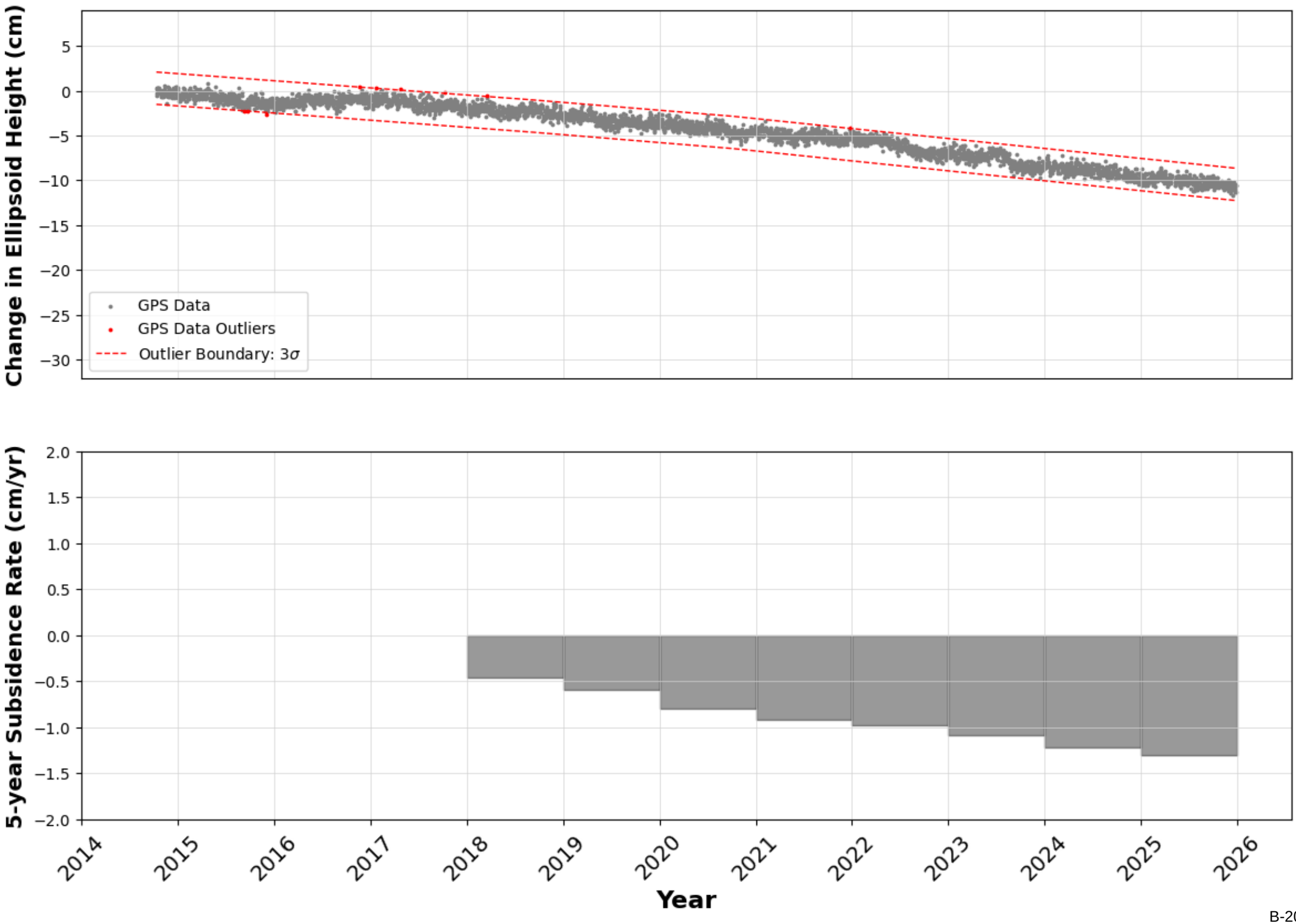


WHCR

The Woodlands, TX



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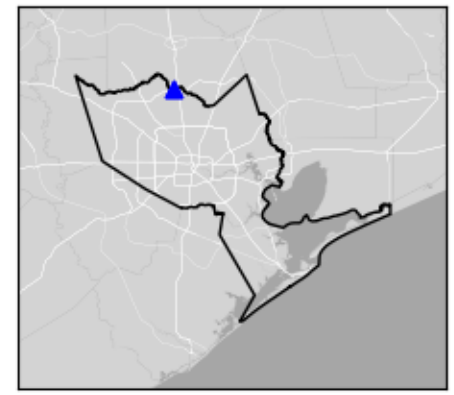
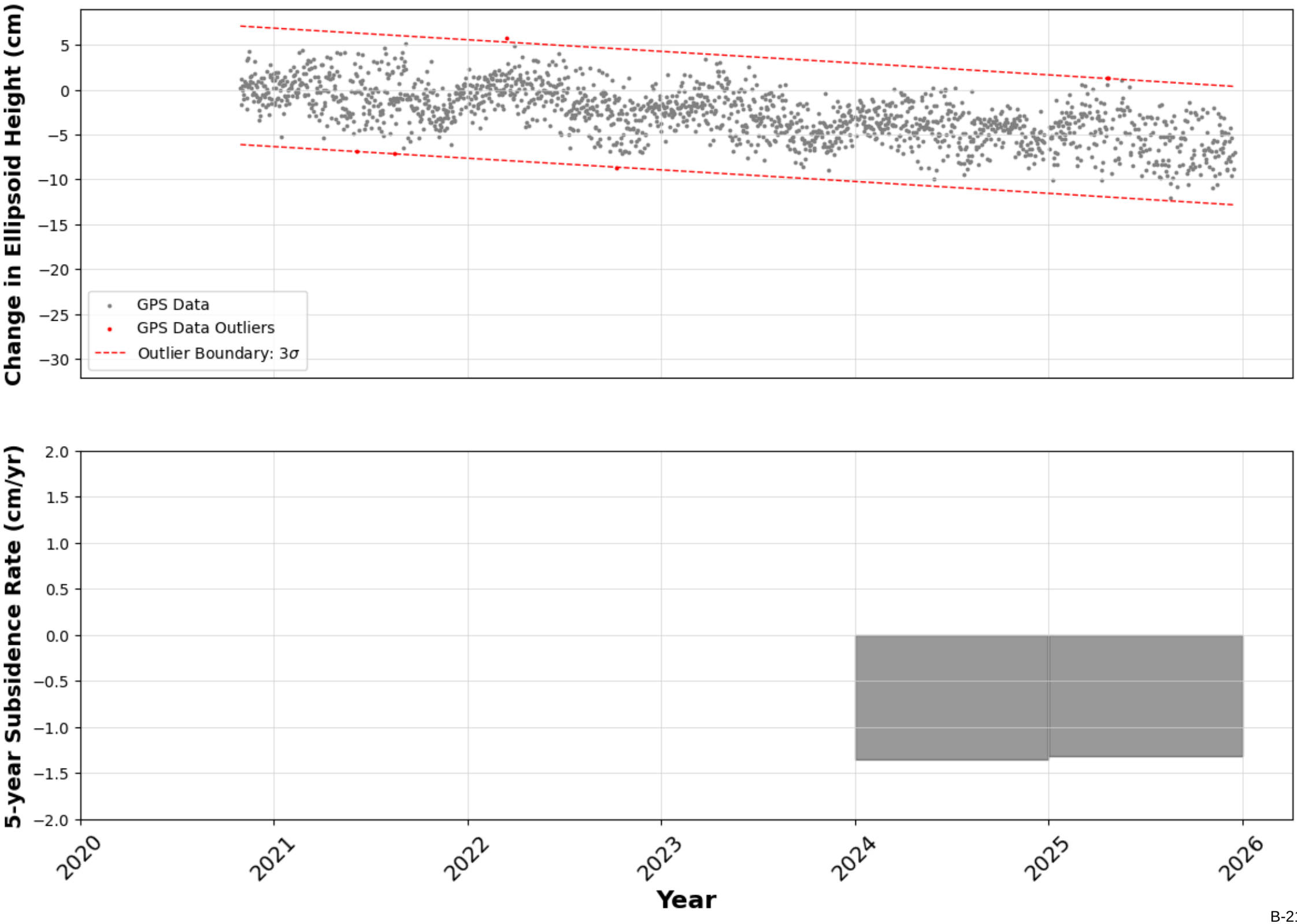
YORS

The Woodlands, TX





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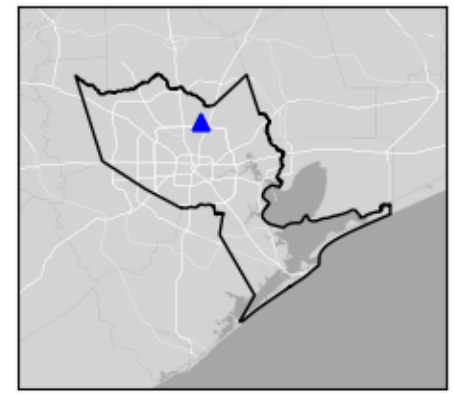
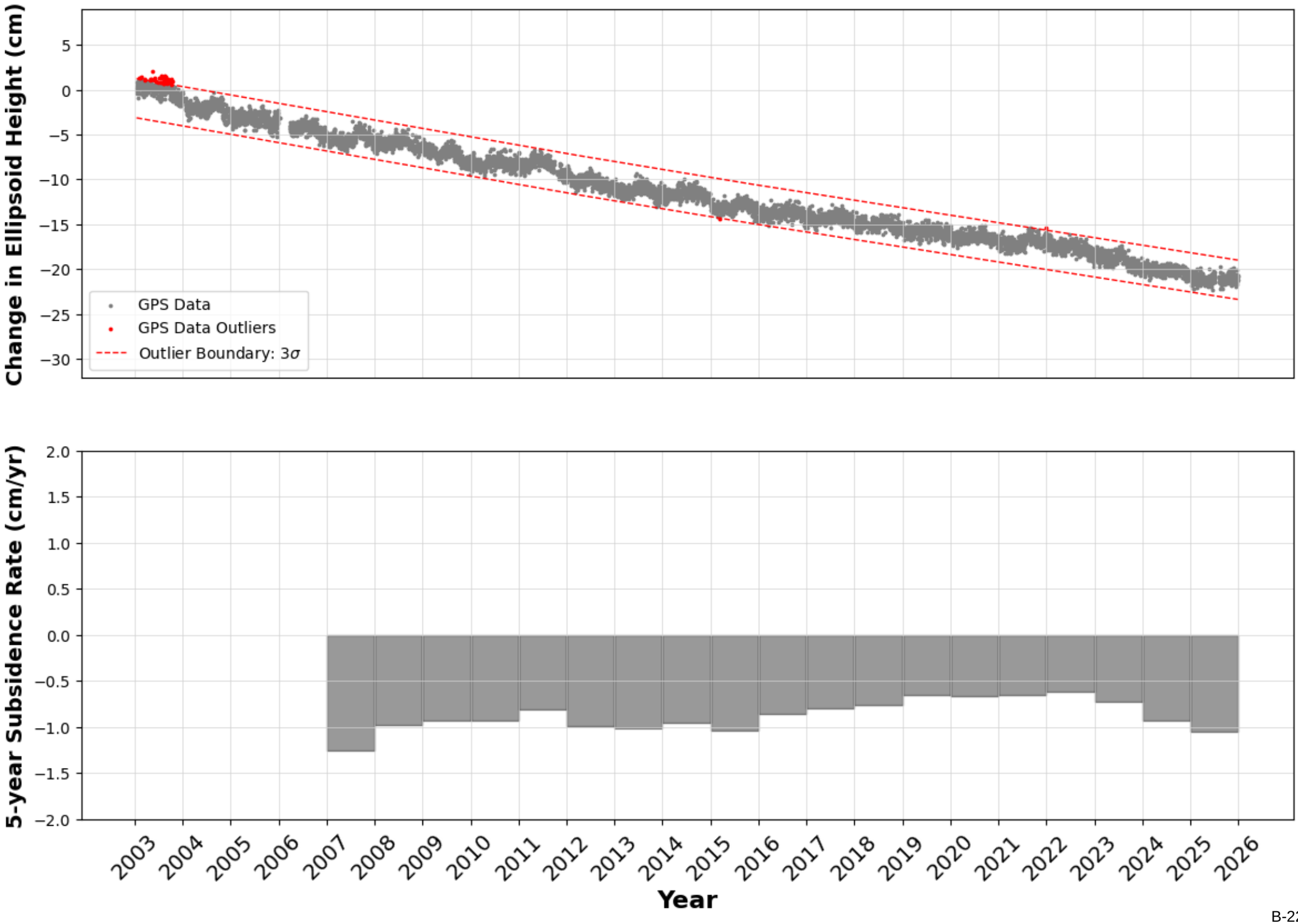
ZHU1

Houston, TX





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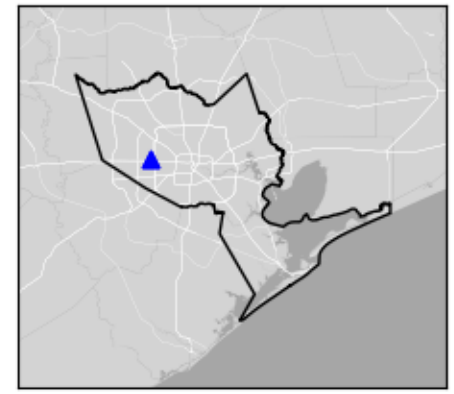
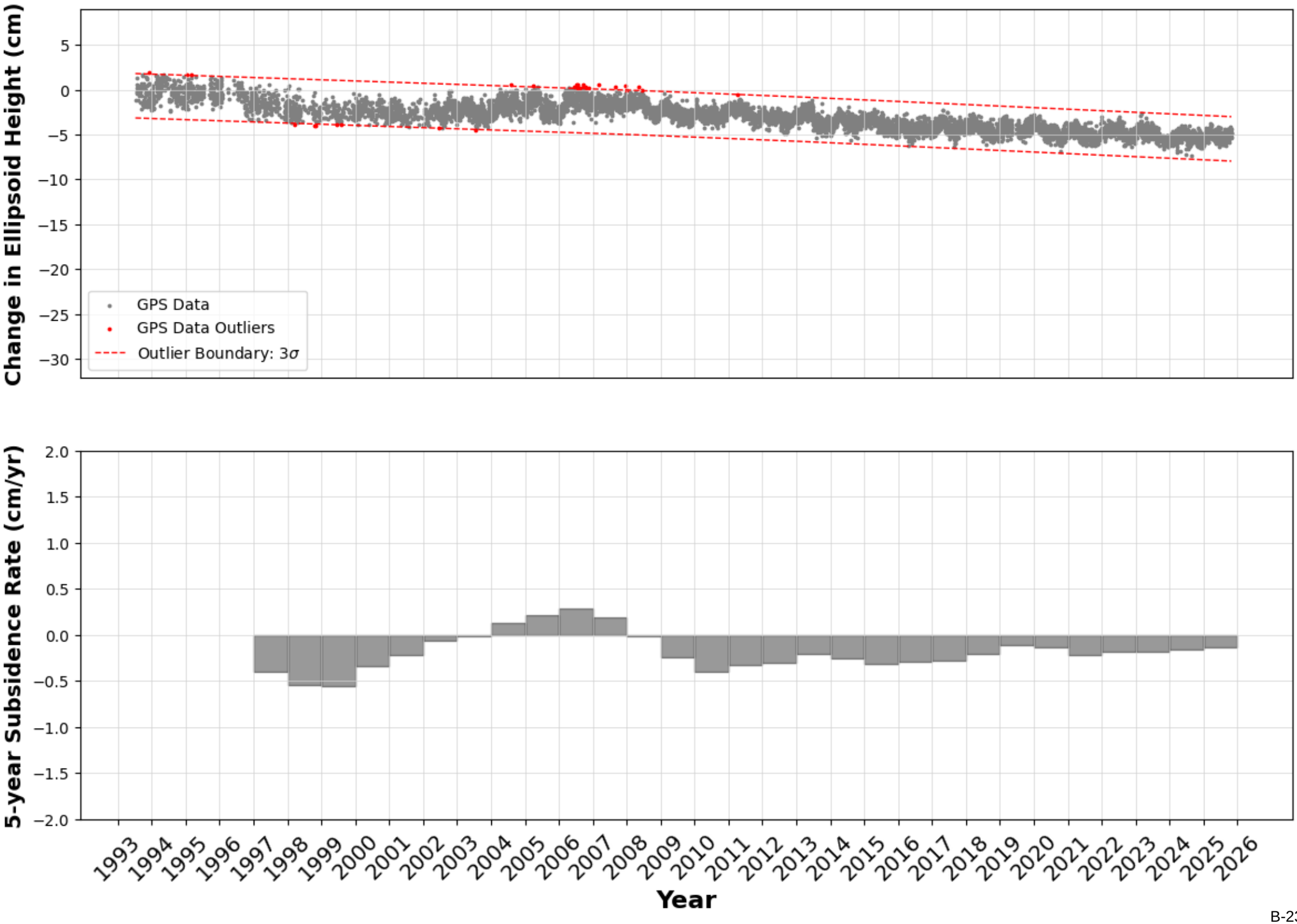
ADKS

Houston, TX





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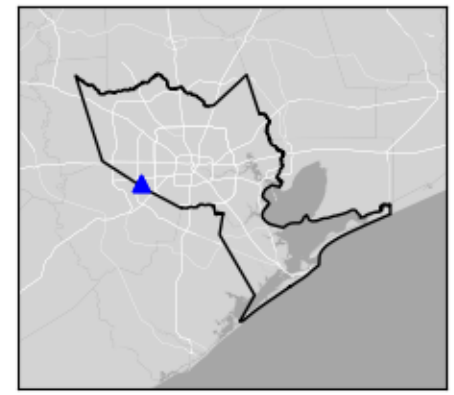
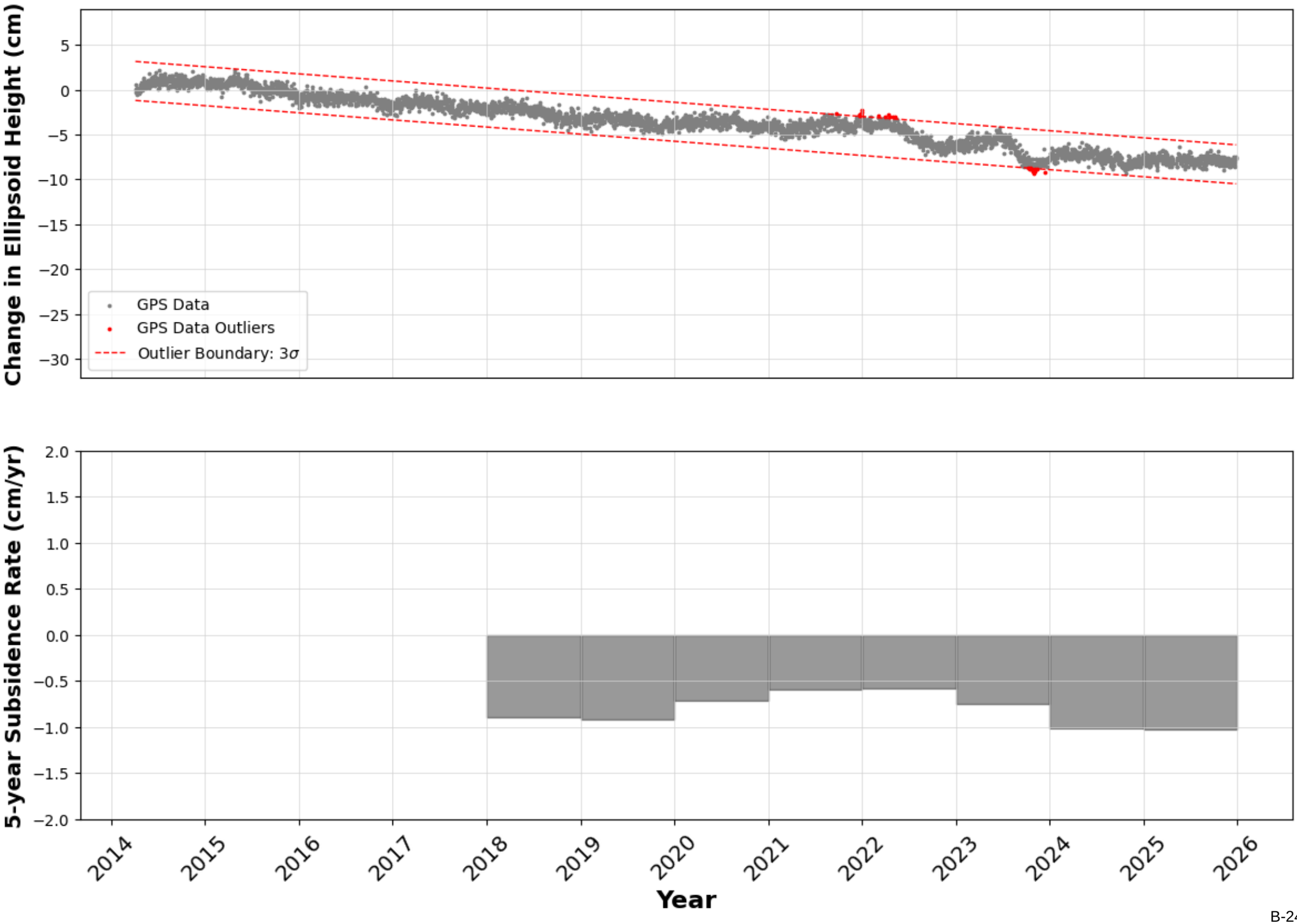
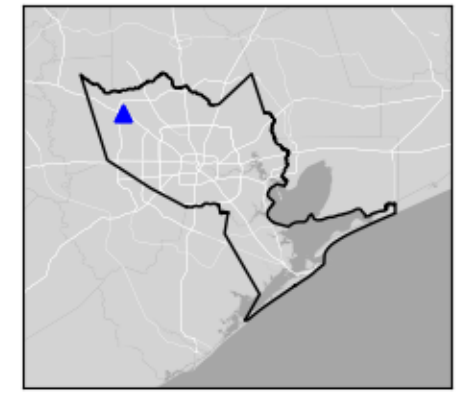


ALEF

Houston, TX

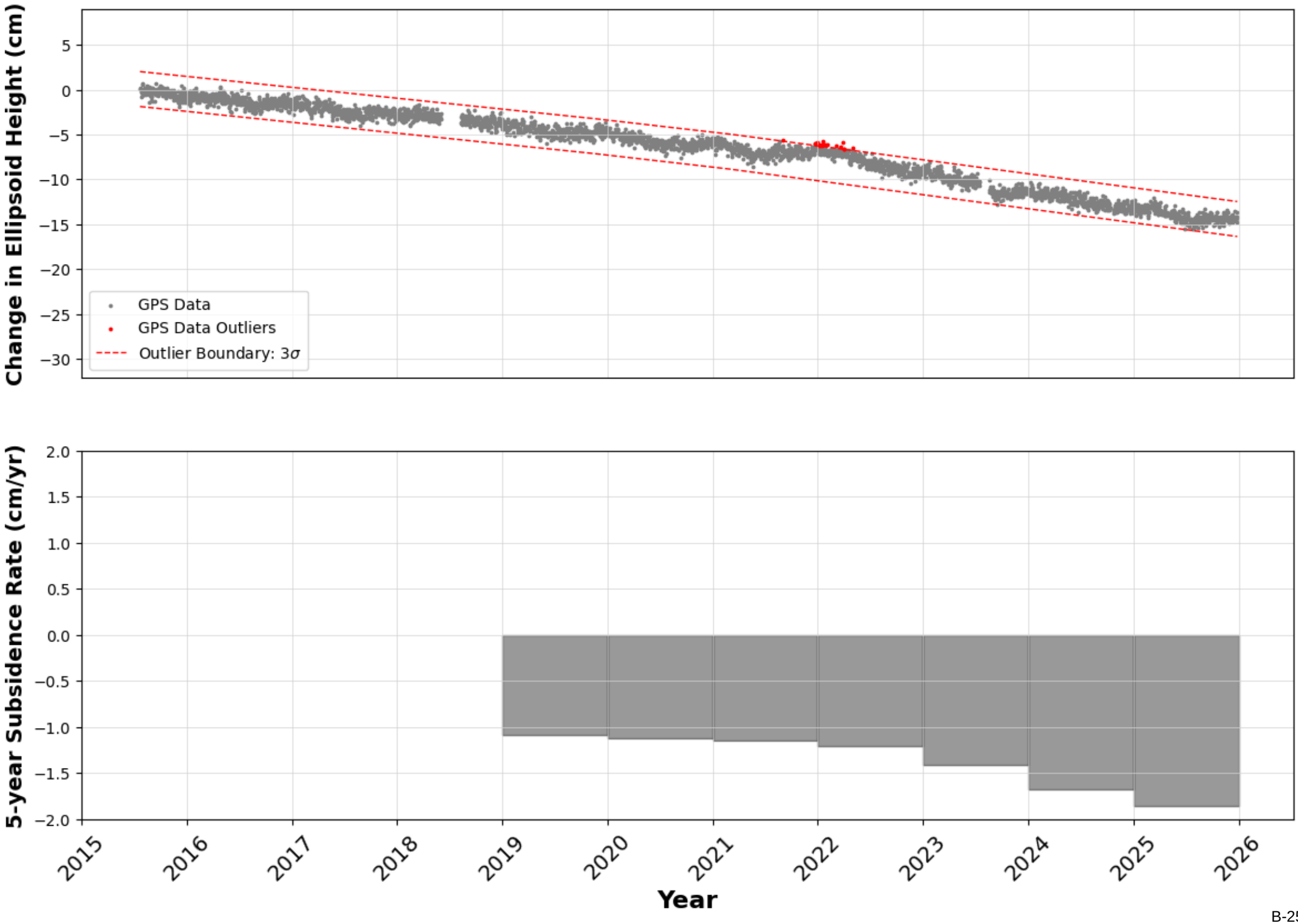


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered by HGSD when calculating subsidence rates and are shown for informational purposes only.



AULT

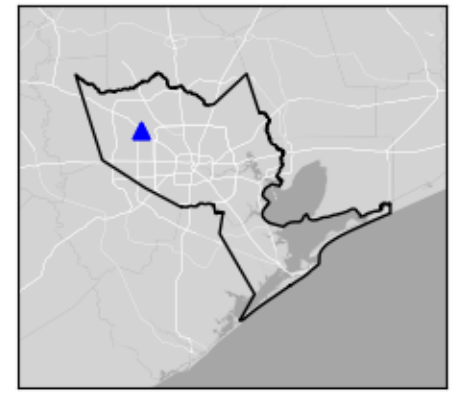
Cypress, TX

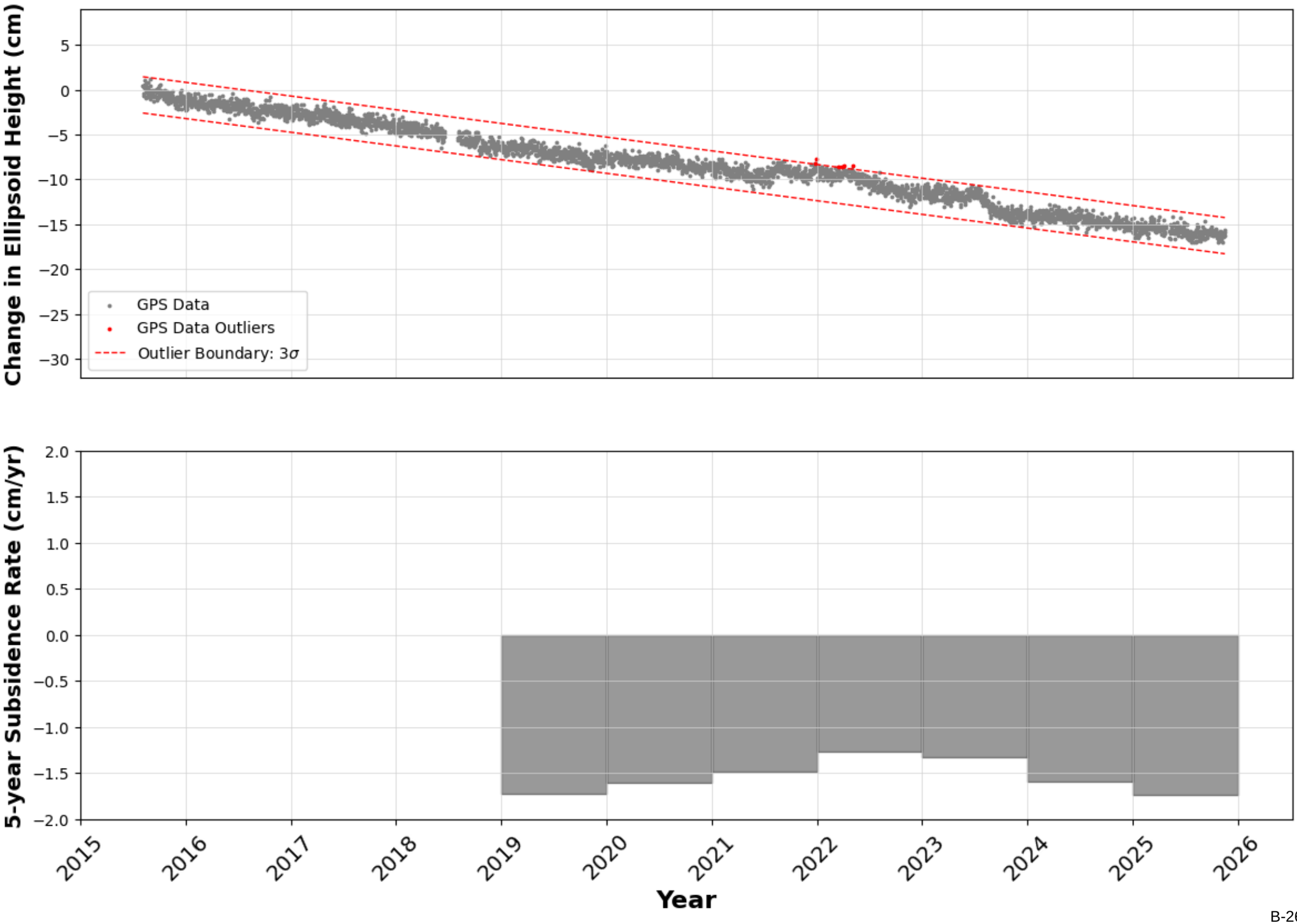


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered by HGSD when calculating subsidence rates and are shown for informational purposes only.

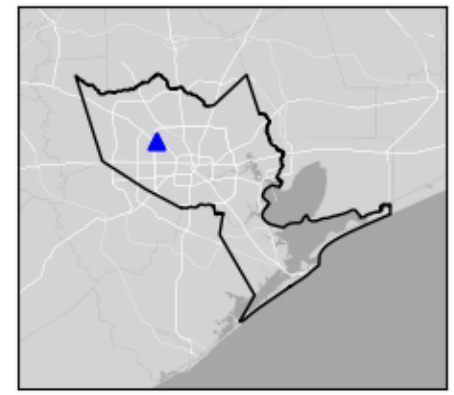
CFHS

Houston, TX



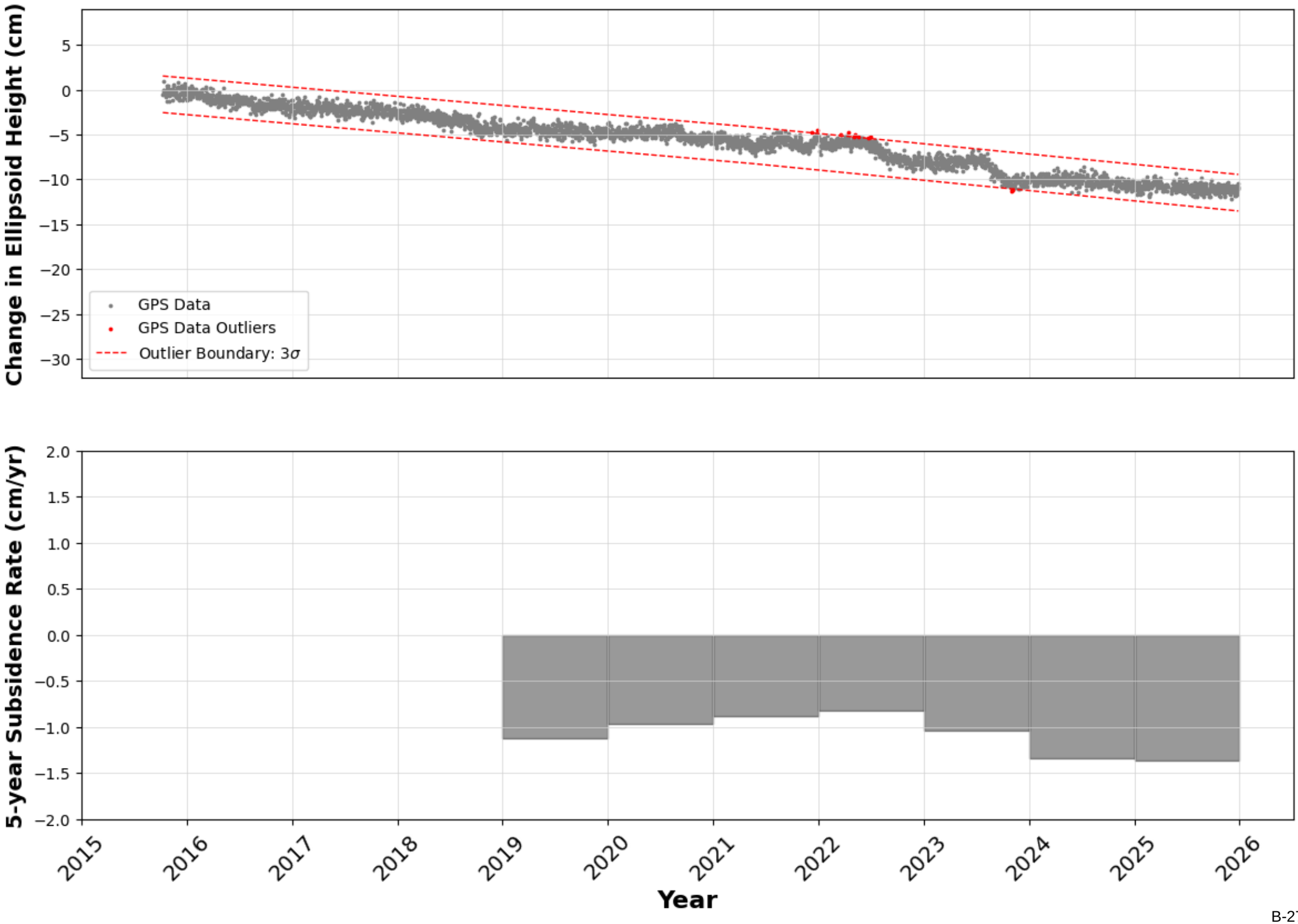


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered by HGSD when calculating subsidence rates and are shown for informational purposes only.

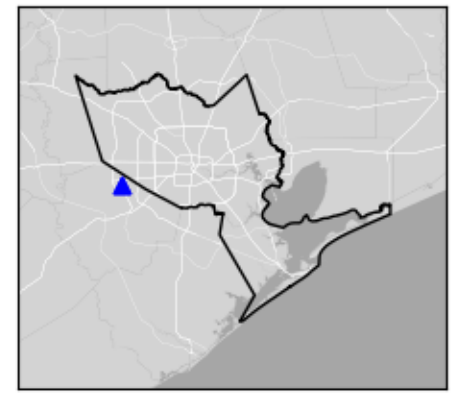


CFJV

Jersey Village, TX

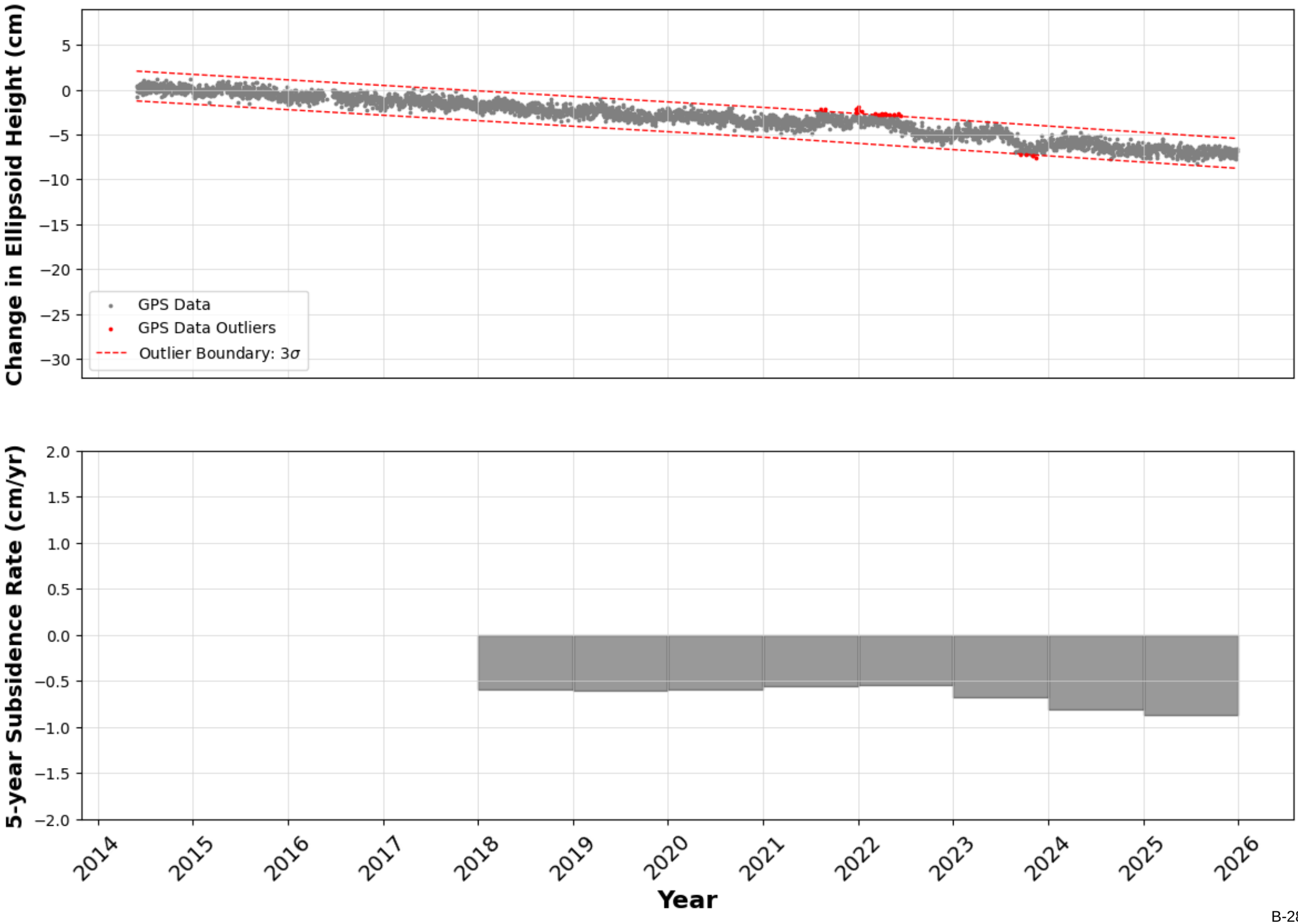


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered by HGSD when calculating subsidence rates and are shown for informational purposes only.



CMFB

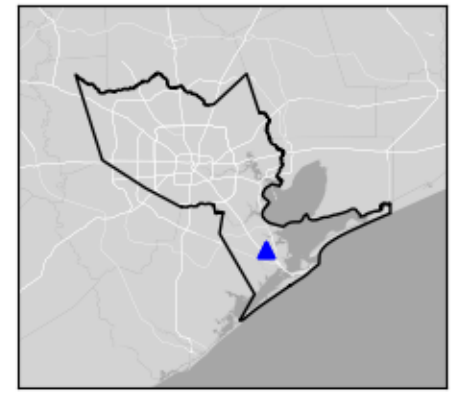
Richmond, TX

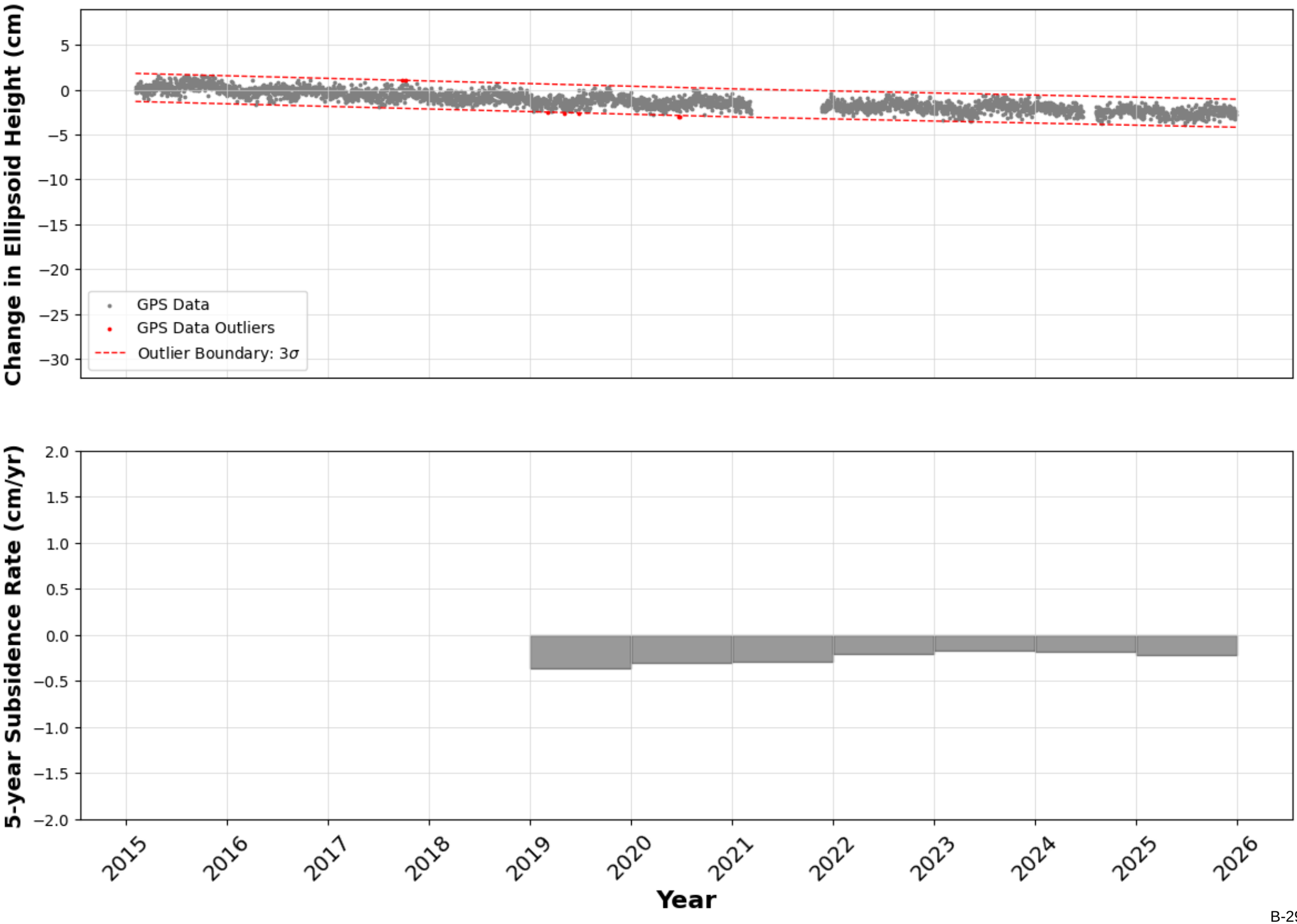


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered by HGSD when calculating subsidence rates and are shown for informational purposes only.

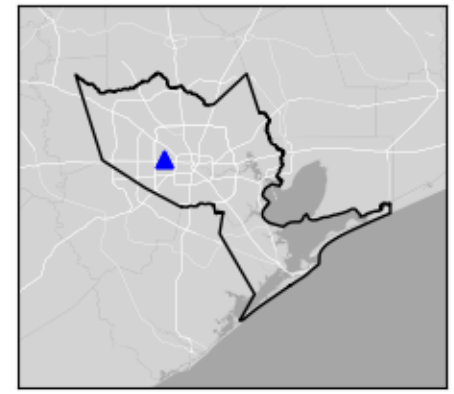
COTM

Texas City, TX



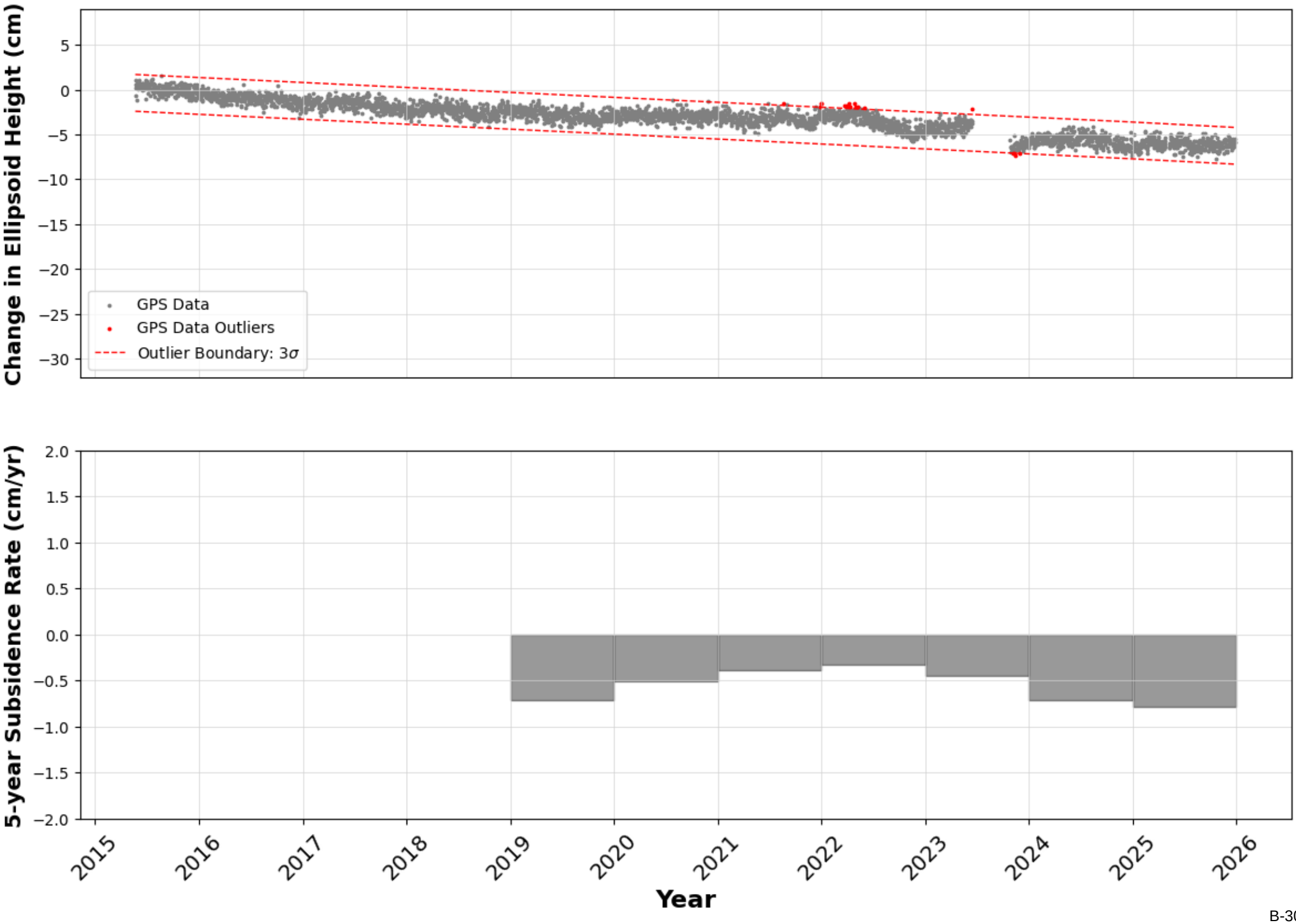


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered by HGSD when calculating subsidence rates and are shown for informational purposes only.



CSTE

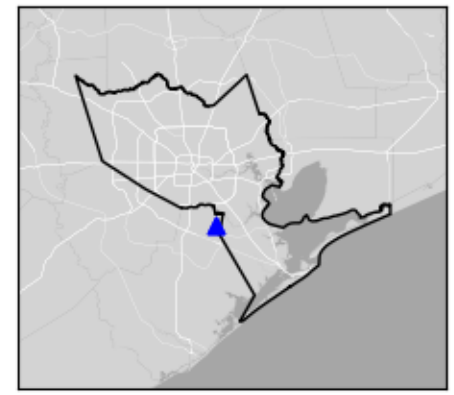
Houston, TX

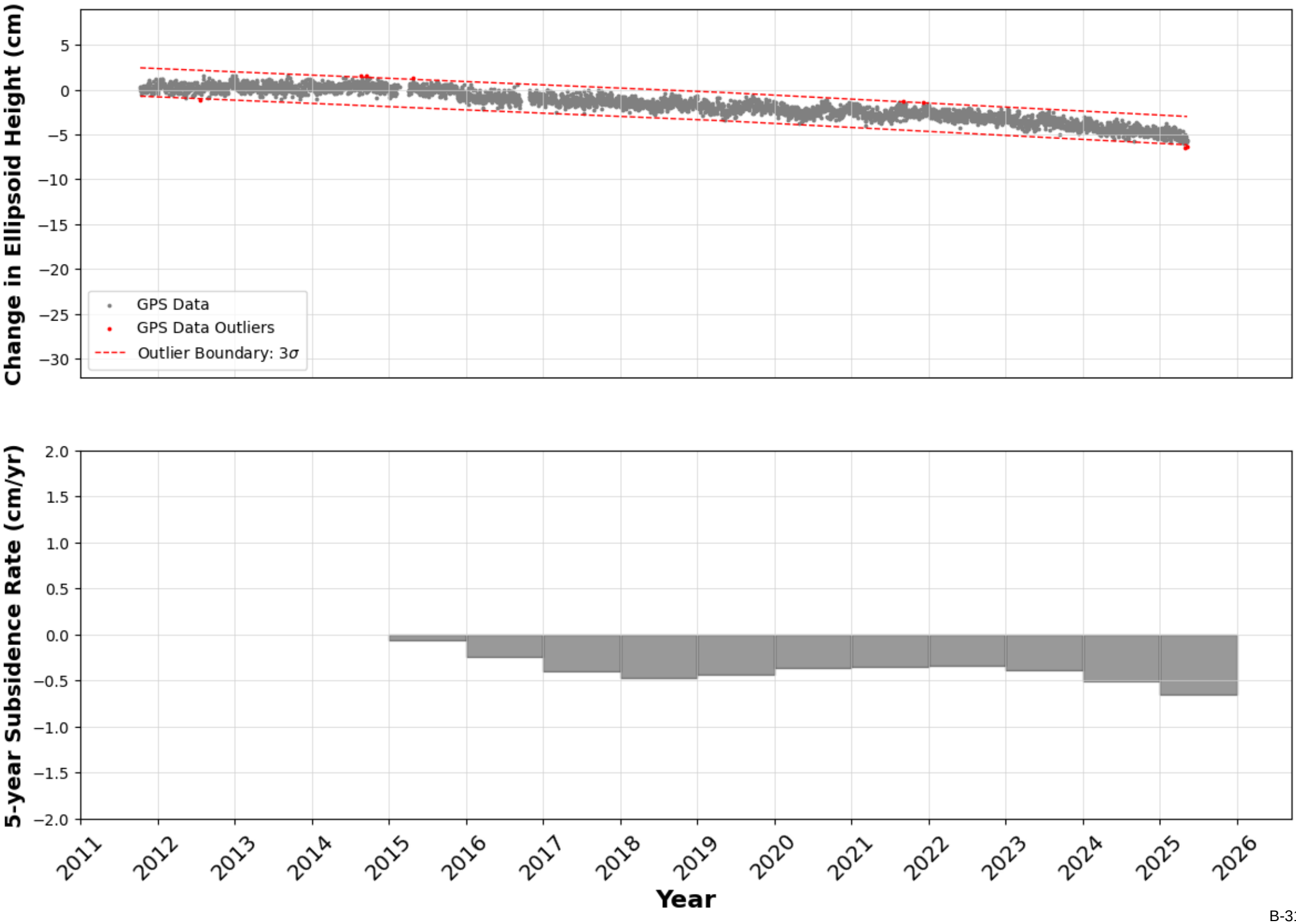


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered by HGSD when calculating subsidence rates and are shown for informational purposes only.

DEN1

Alvin, TX

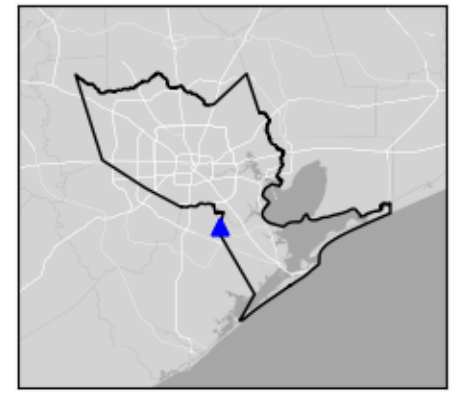


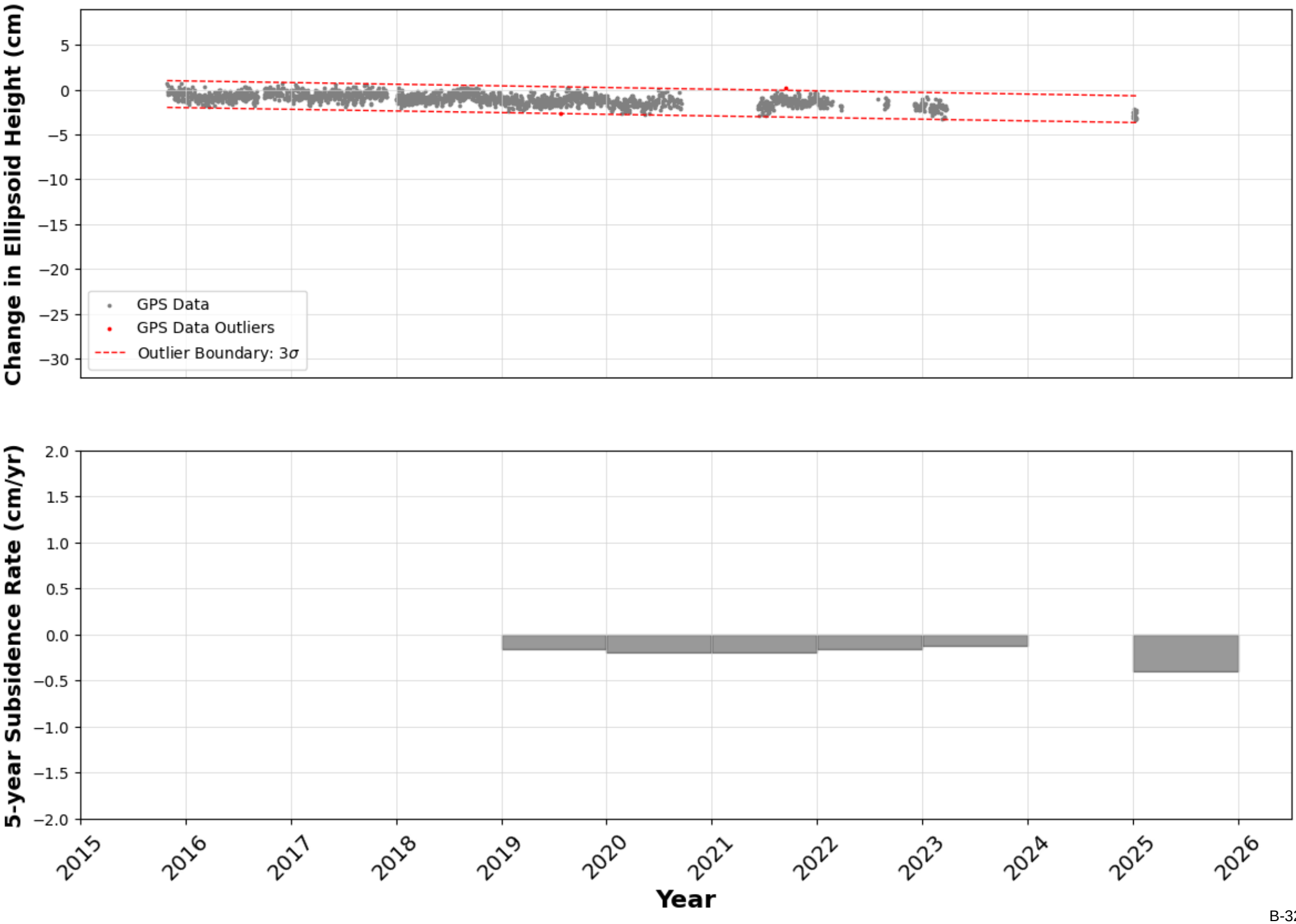


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered by HGSD when calculating subsidence rates and are shown for informational purposes only.

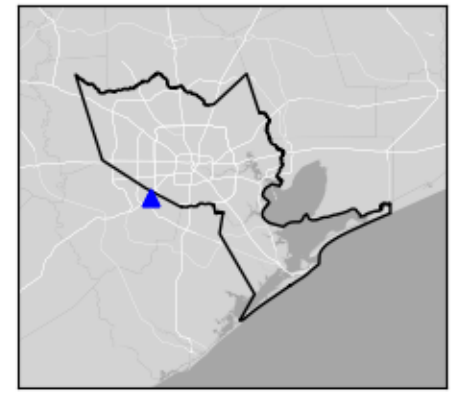
DEN4

Alvin, TX



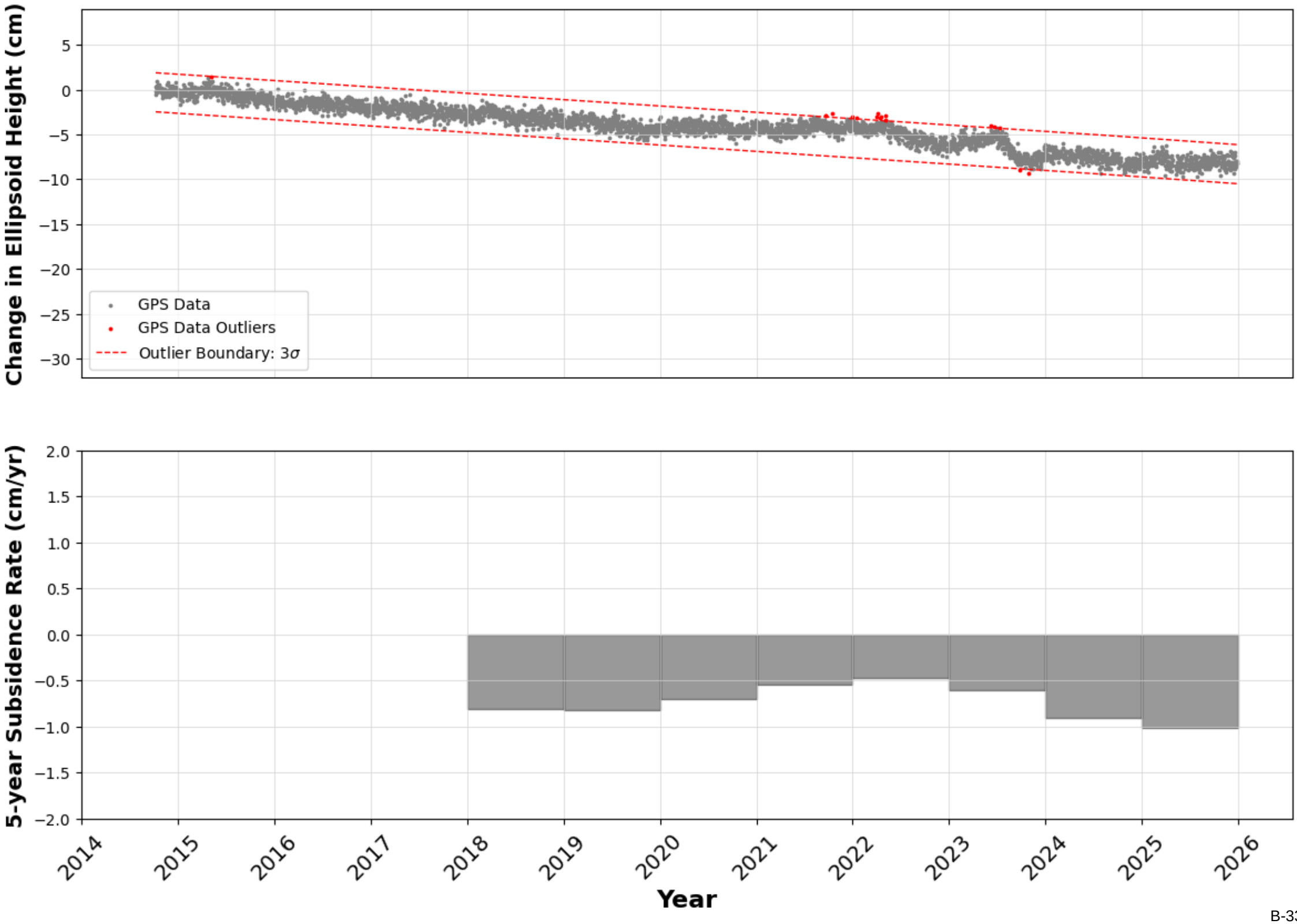


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered by HGSD when calculating subsidence rates and are shown for informational purposes only.



DMFB

Sugar Land, TX



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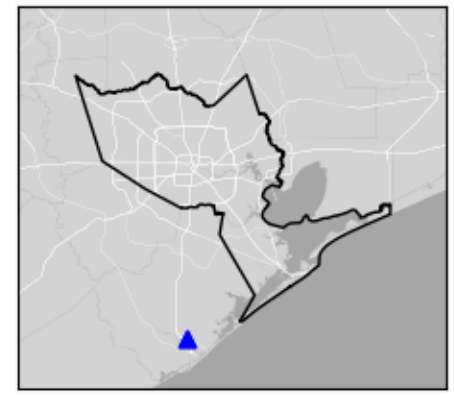
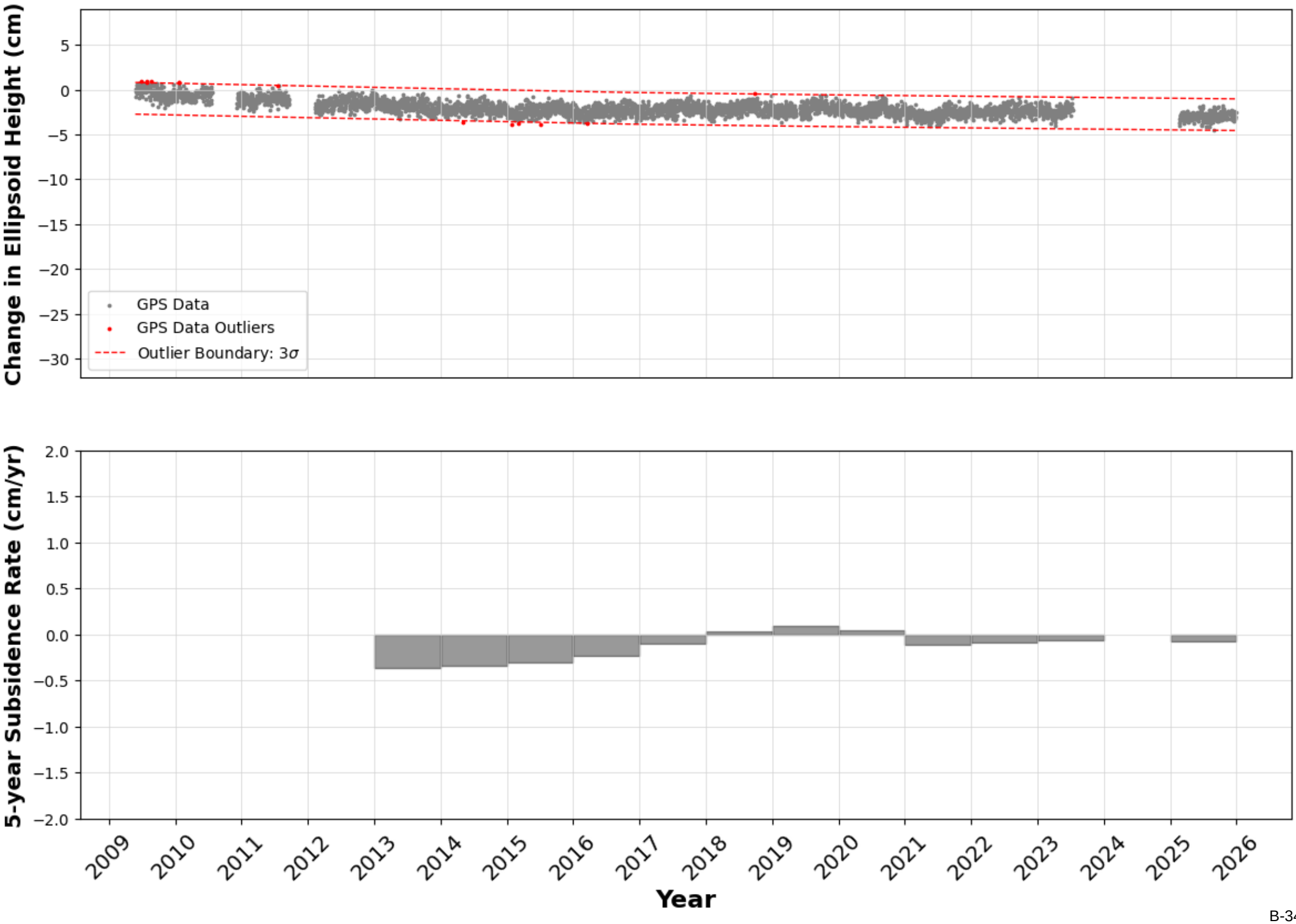
DWI1

Clute, TX





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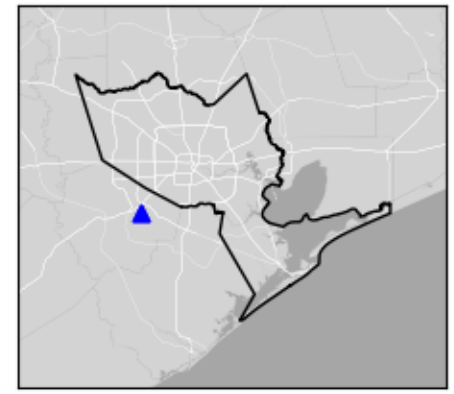
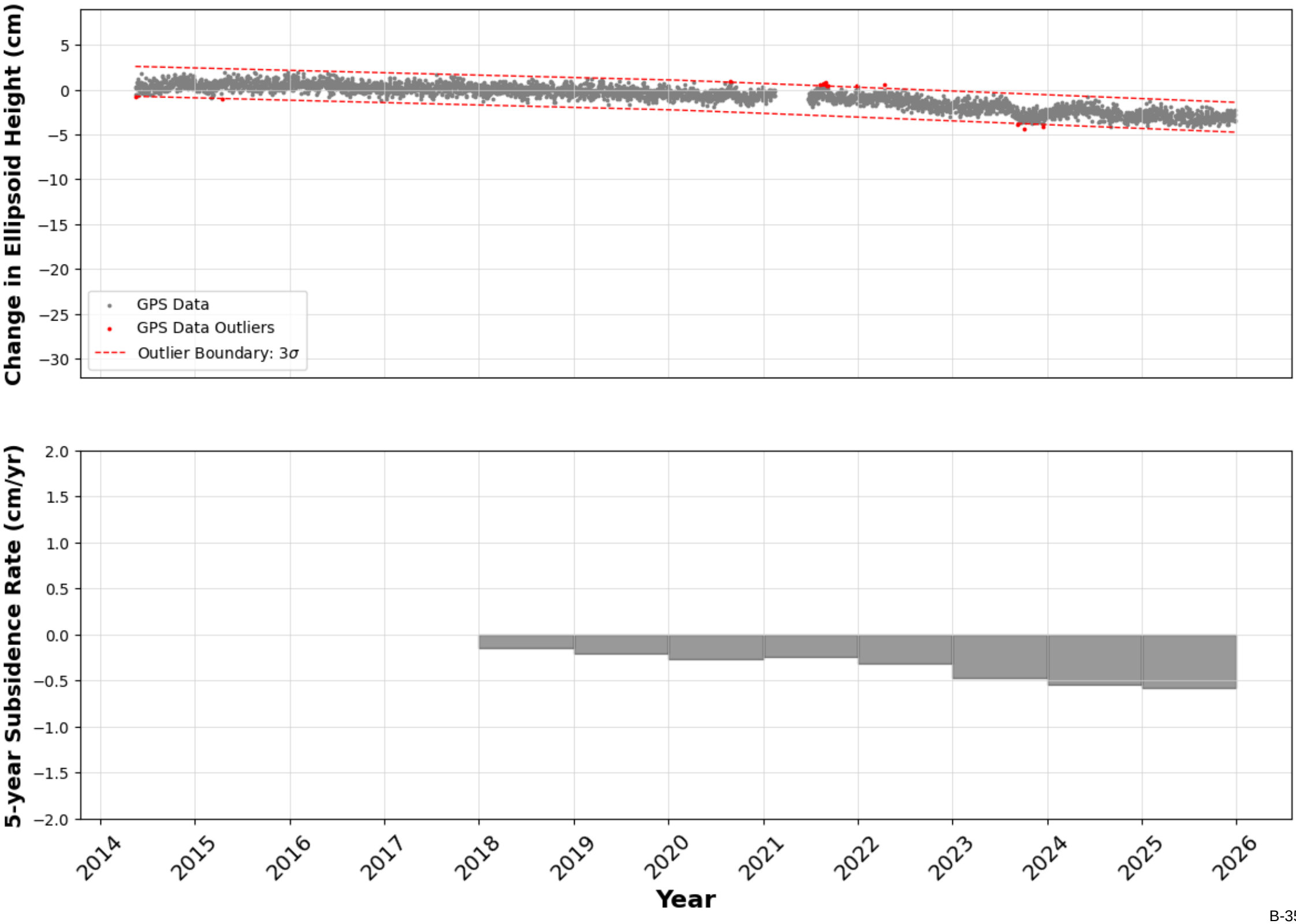


FSFB

Sugar Land, TX



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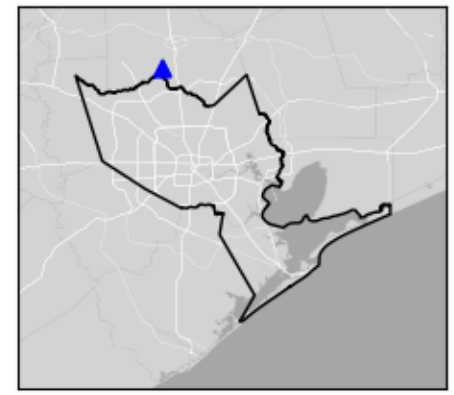
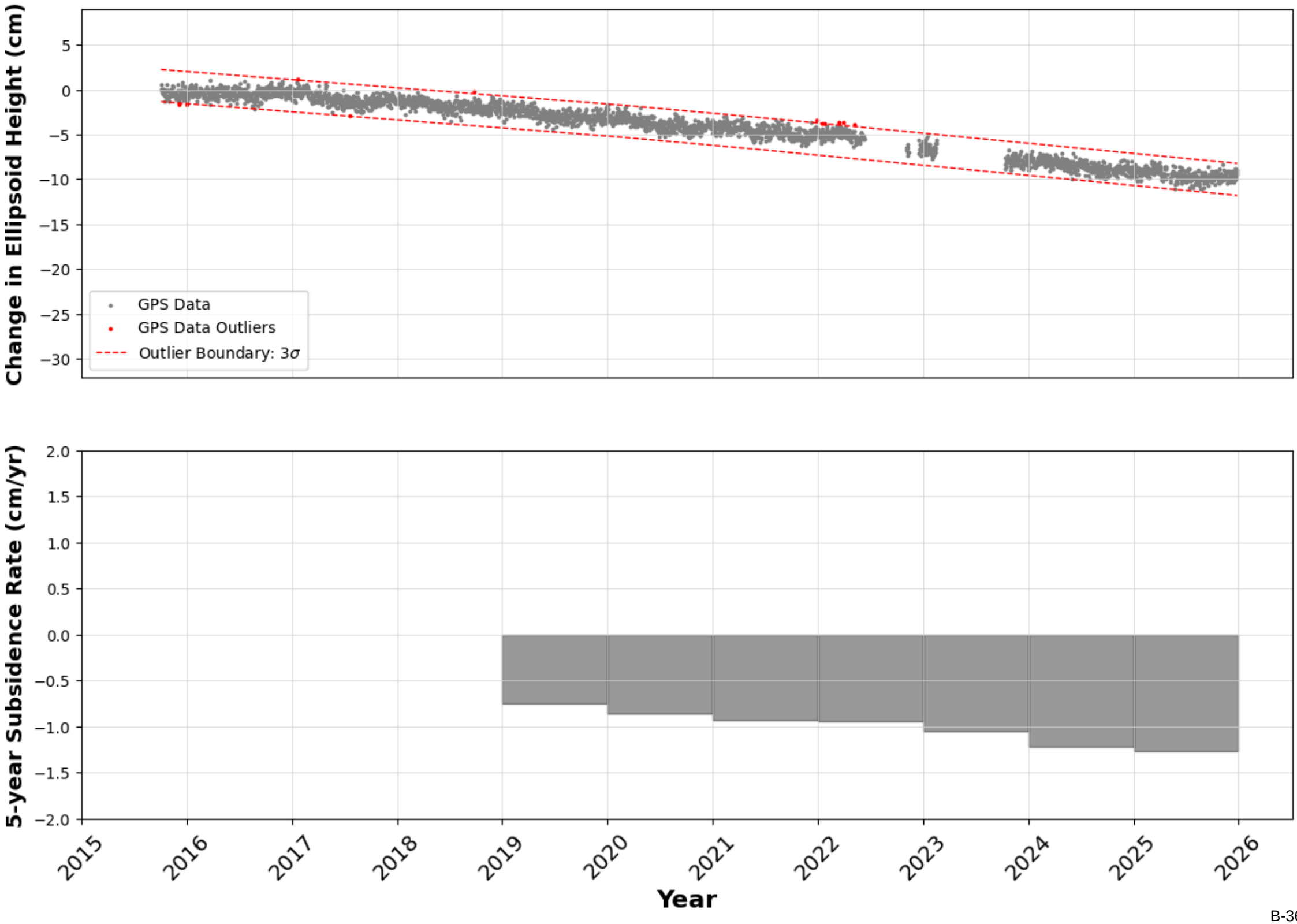


GSEC

Spring, TX



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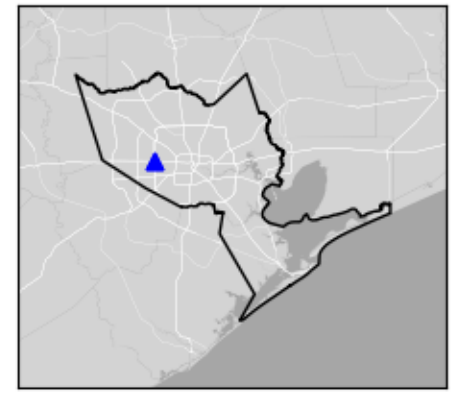
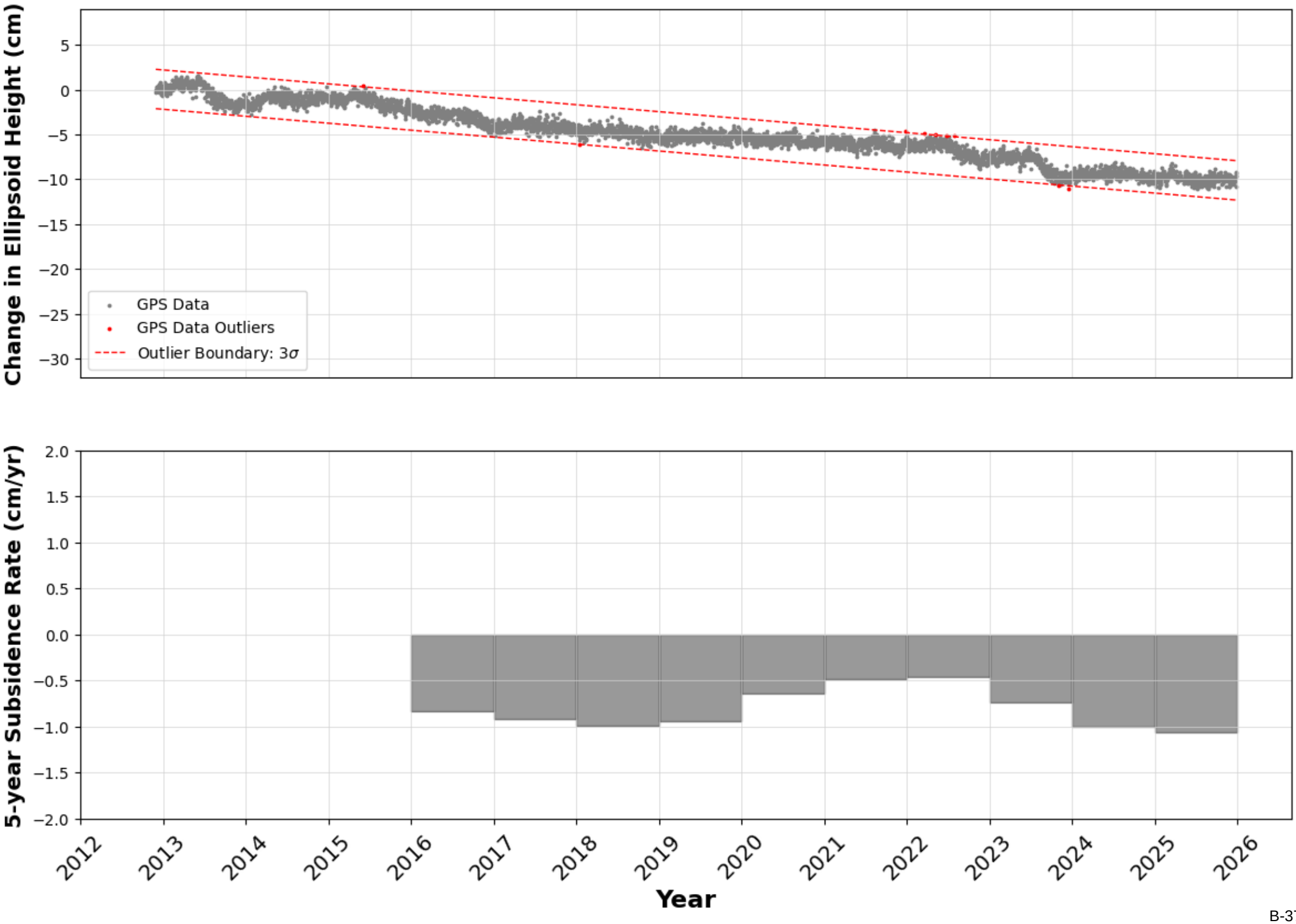


HCC1

Houston, TX



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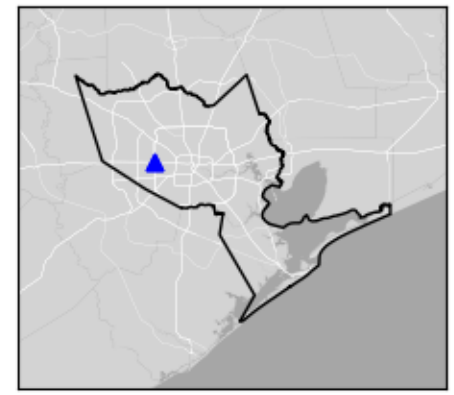
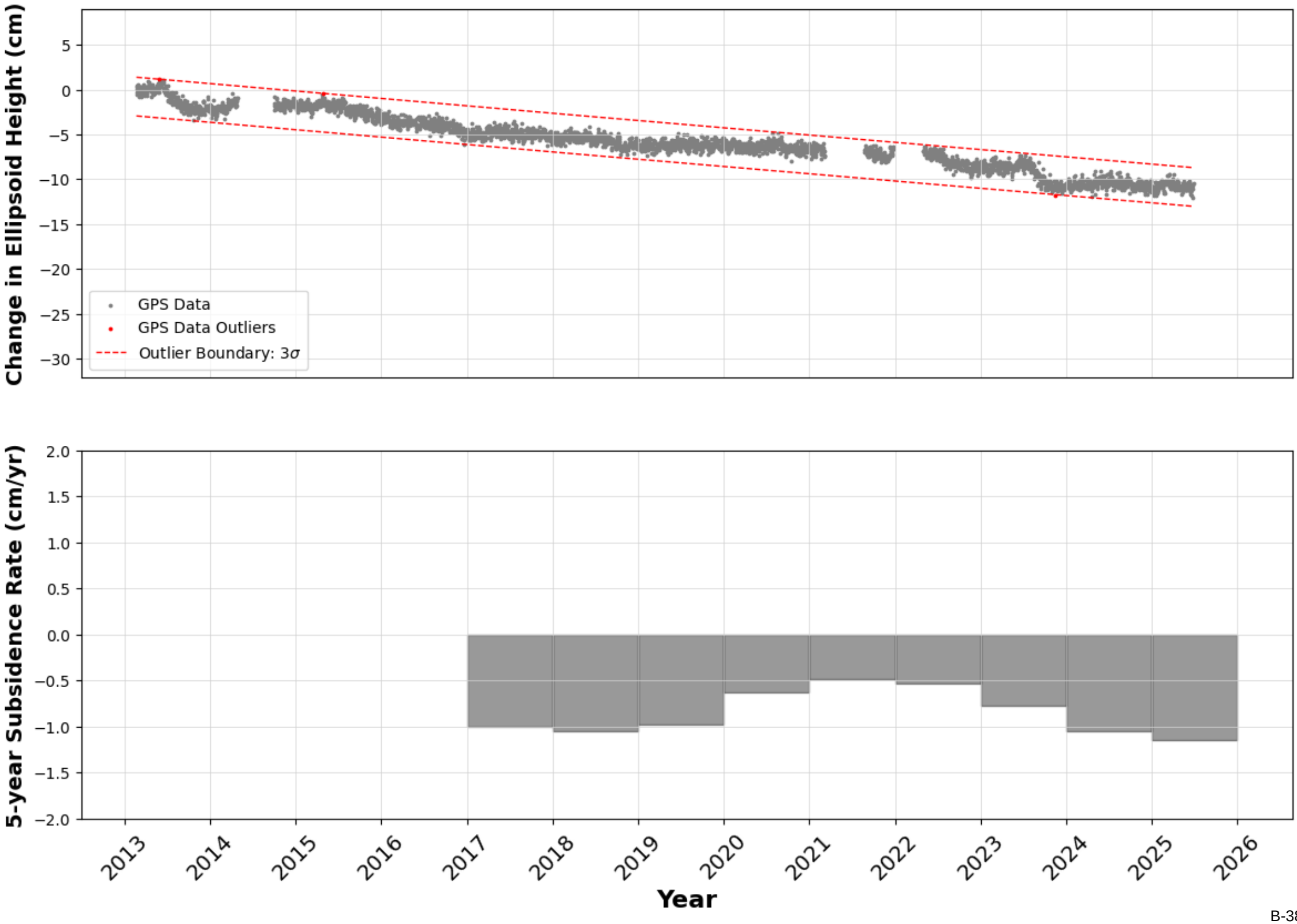
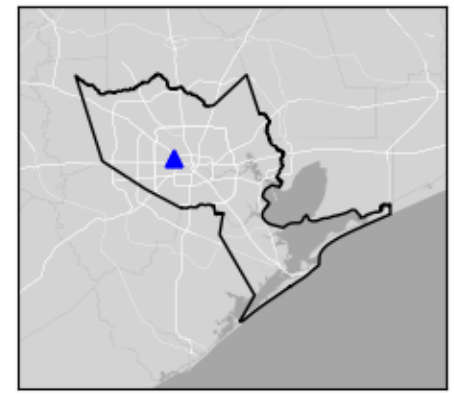


HCC2

Houston, TX

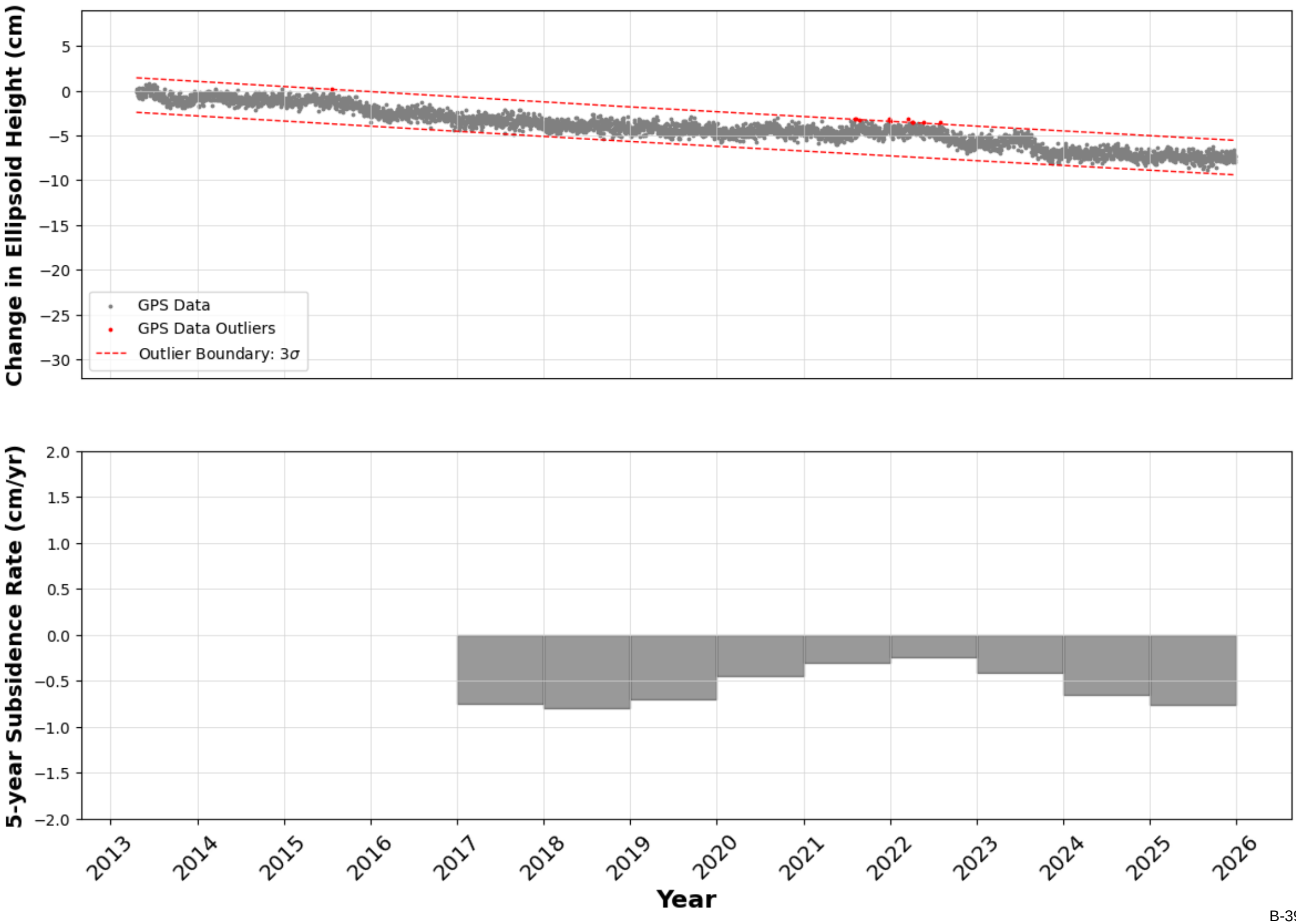


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered by HGSD when calculating subsidence rates and are shown for informational purposes only.



HSMN

Houston, TX



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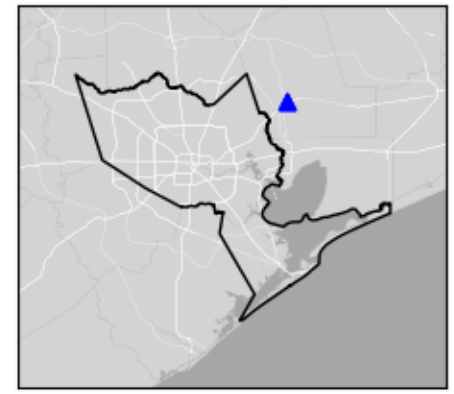
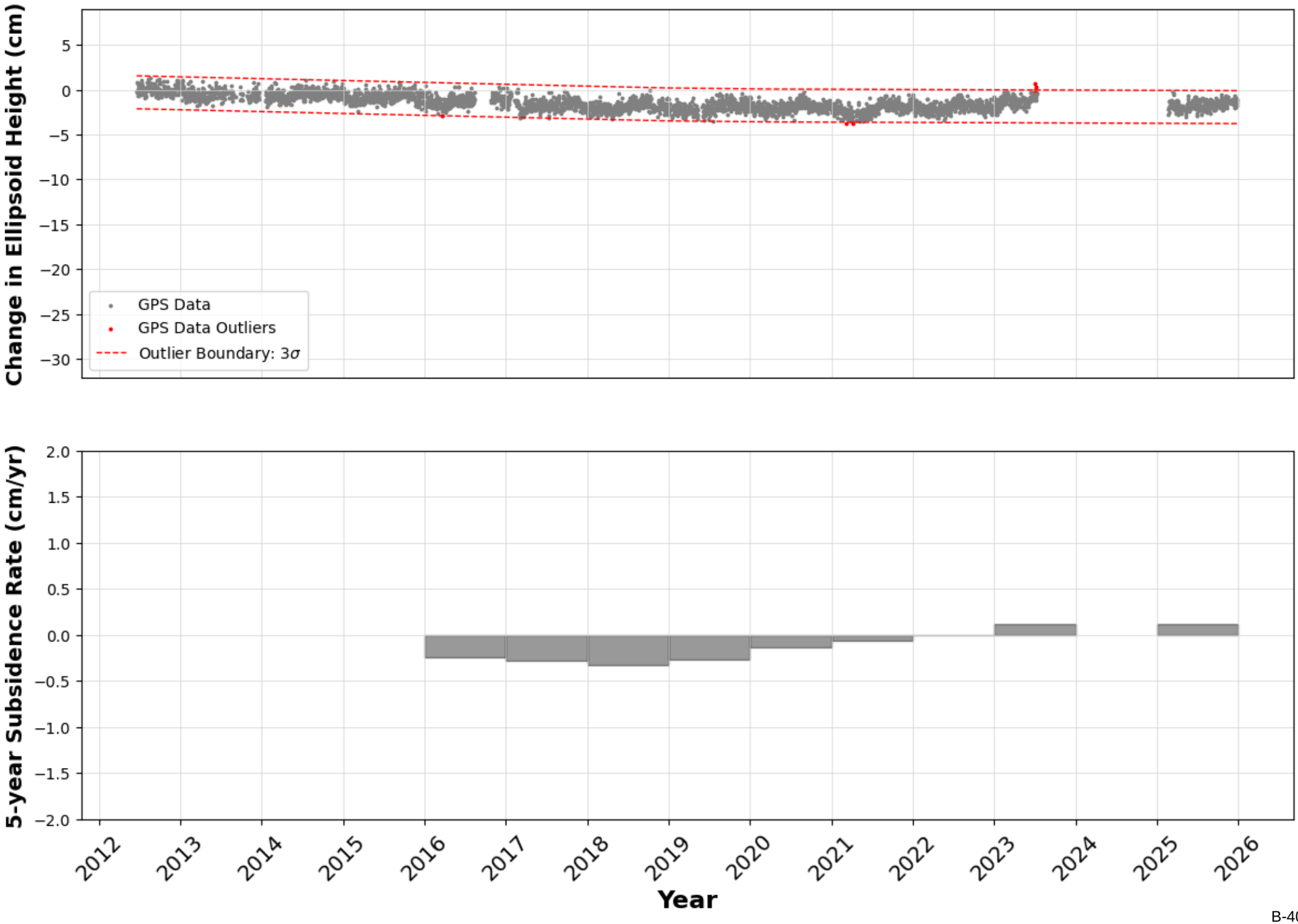


JGS2

Dayton, TX



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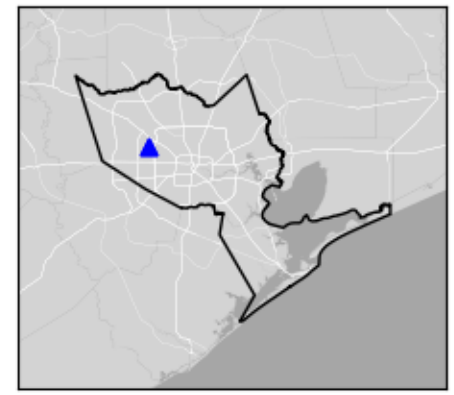
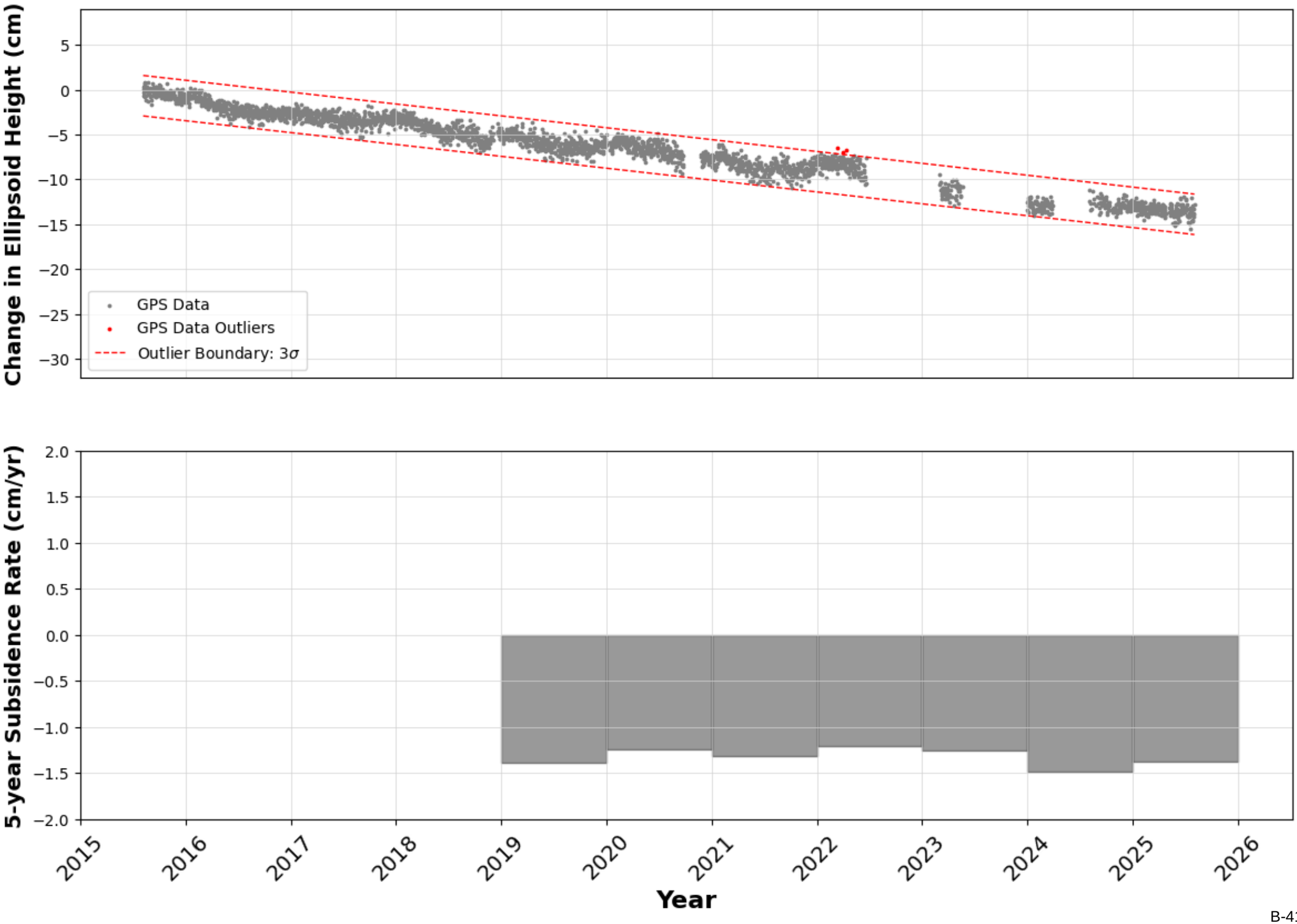
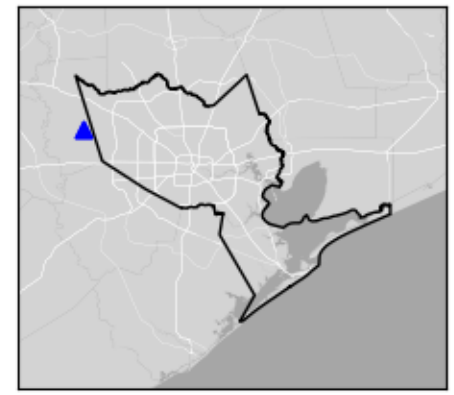


KKES

Houston, TX

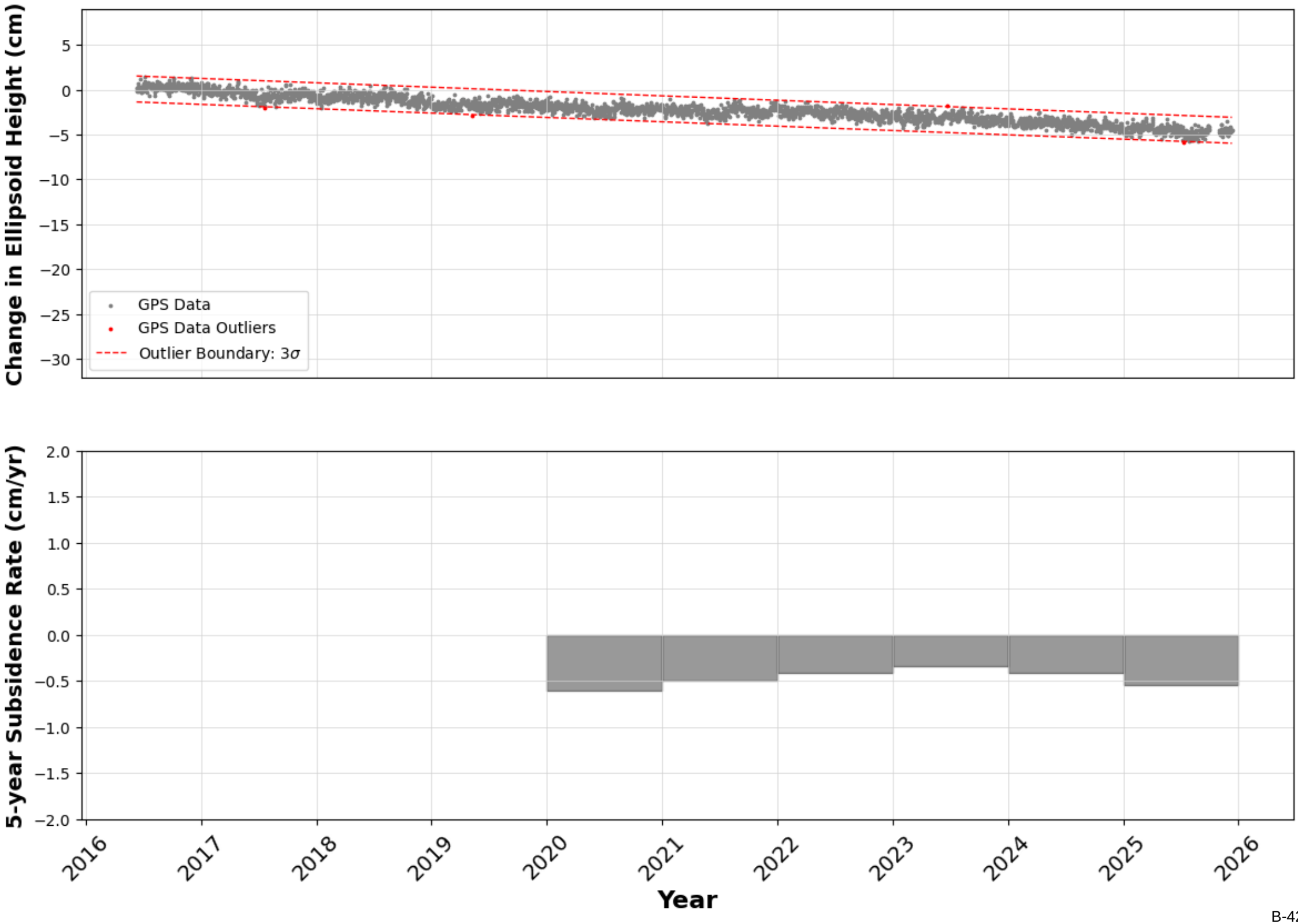


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered by HGSD when calculating subsidence rates and are shown for informational purposes only.



KPCD

Pattison, TX



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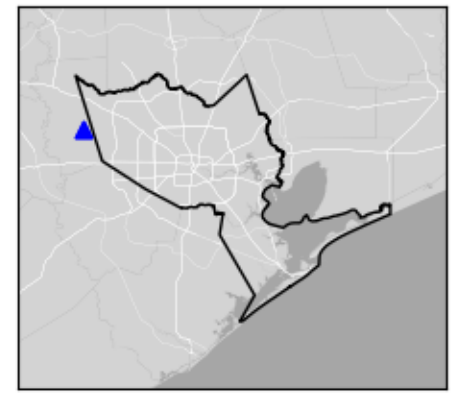
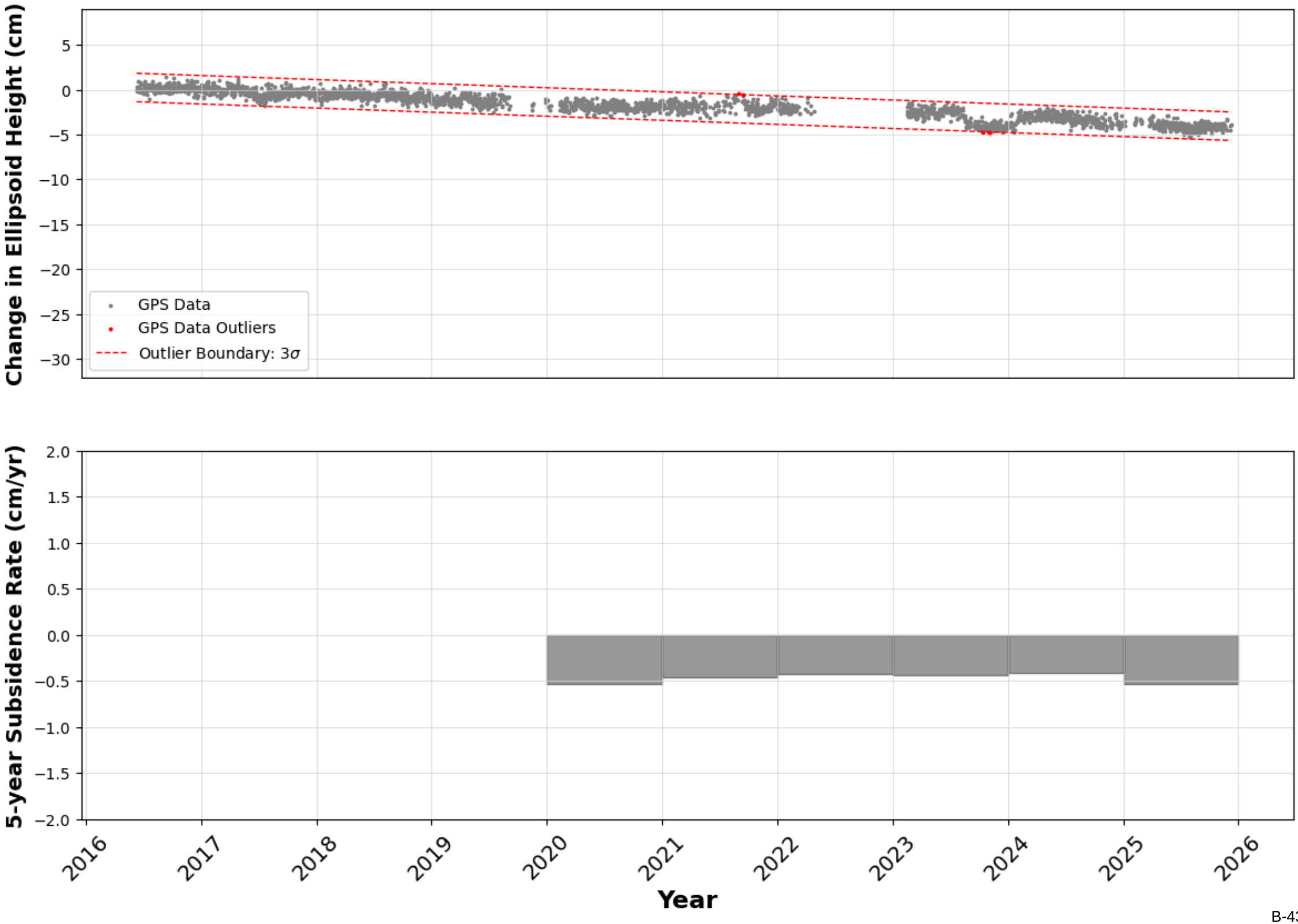


KPCS

Pattison, TX



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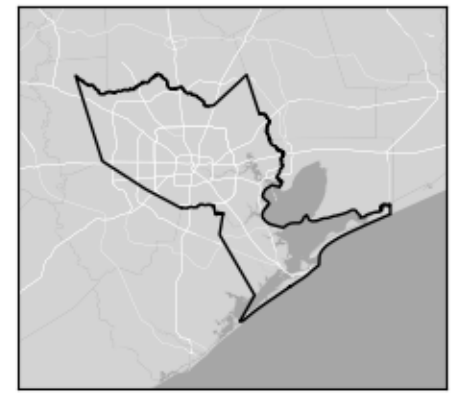
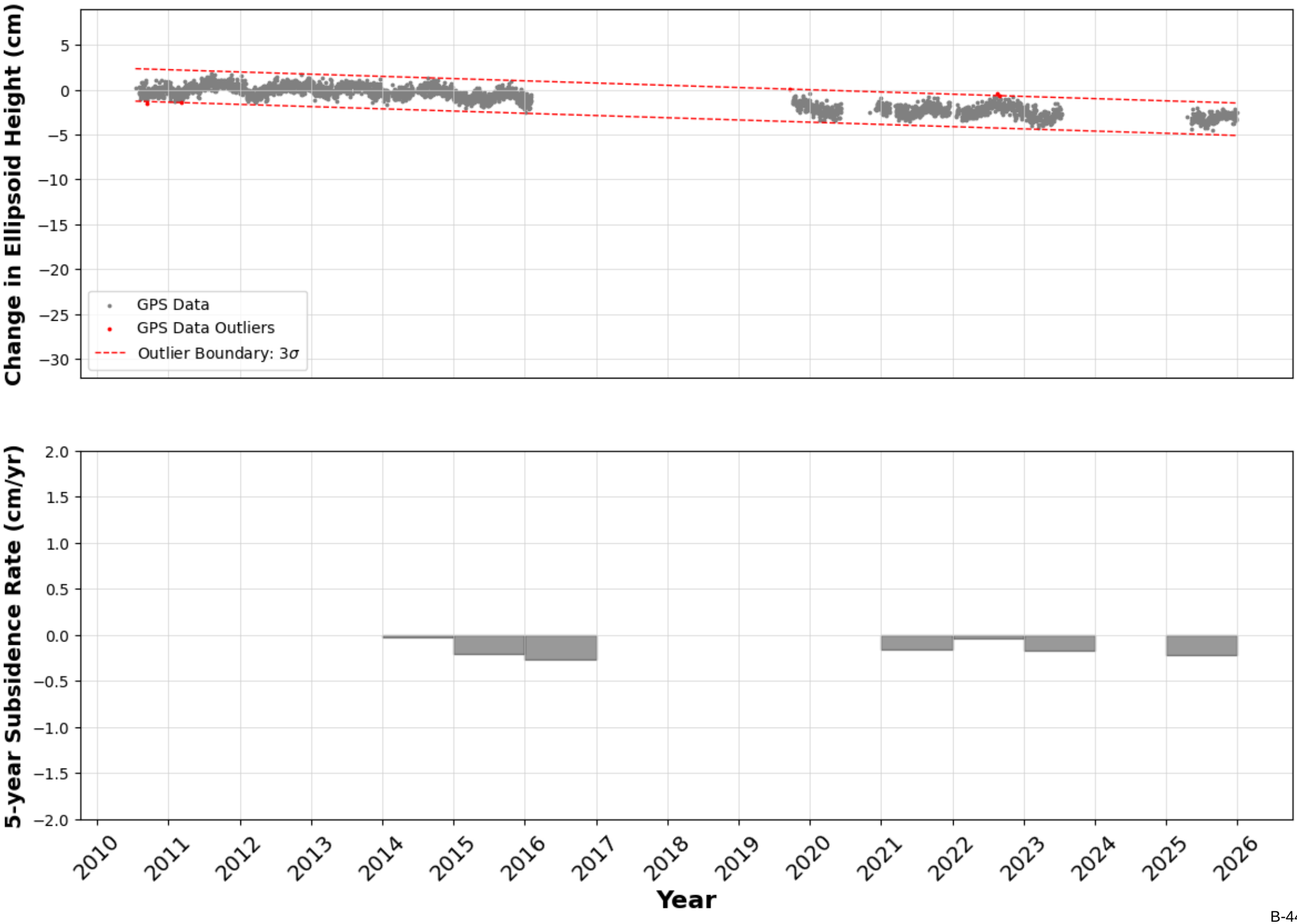
LCBR

Burton, TX





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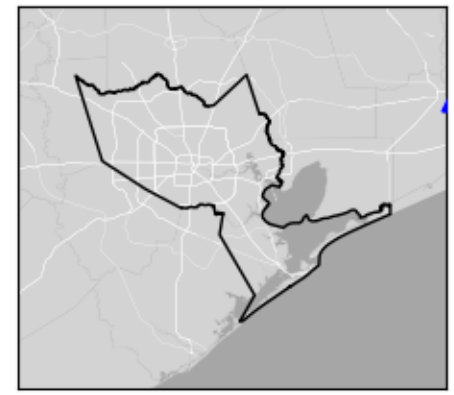
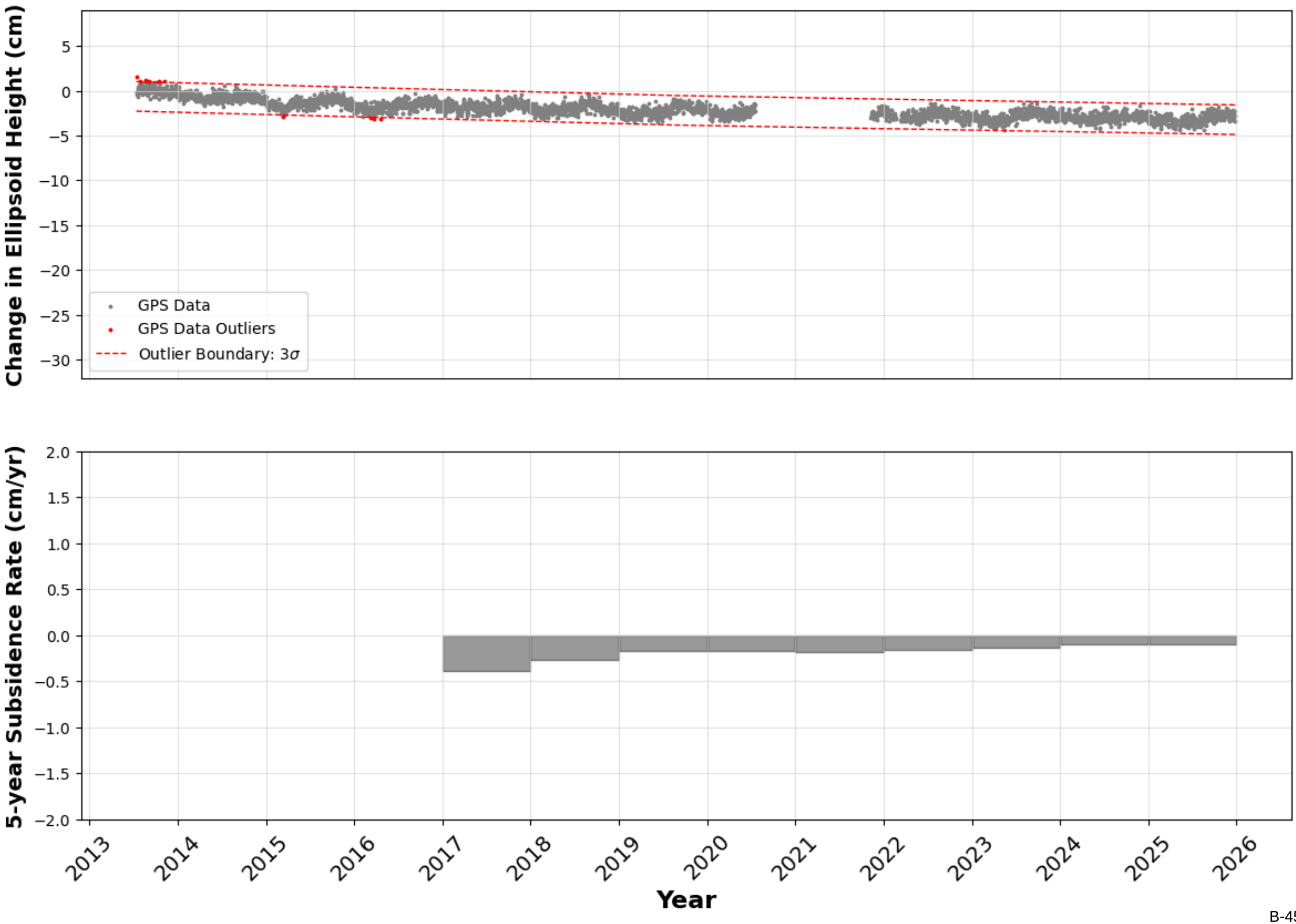


LGC1

Beaumont, TX



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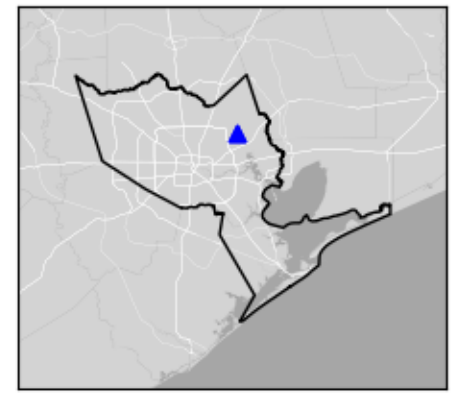
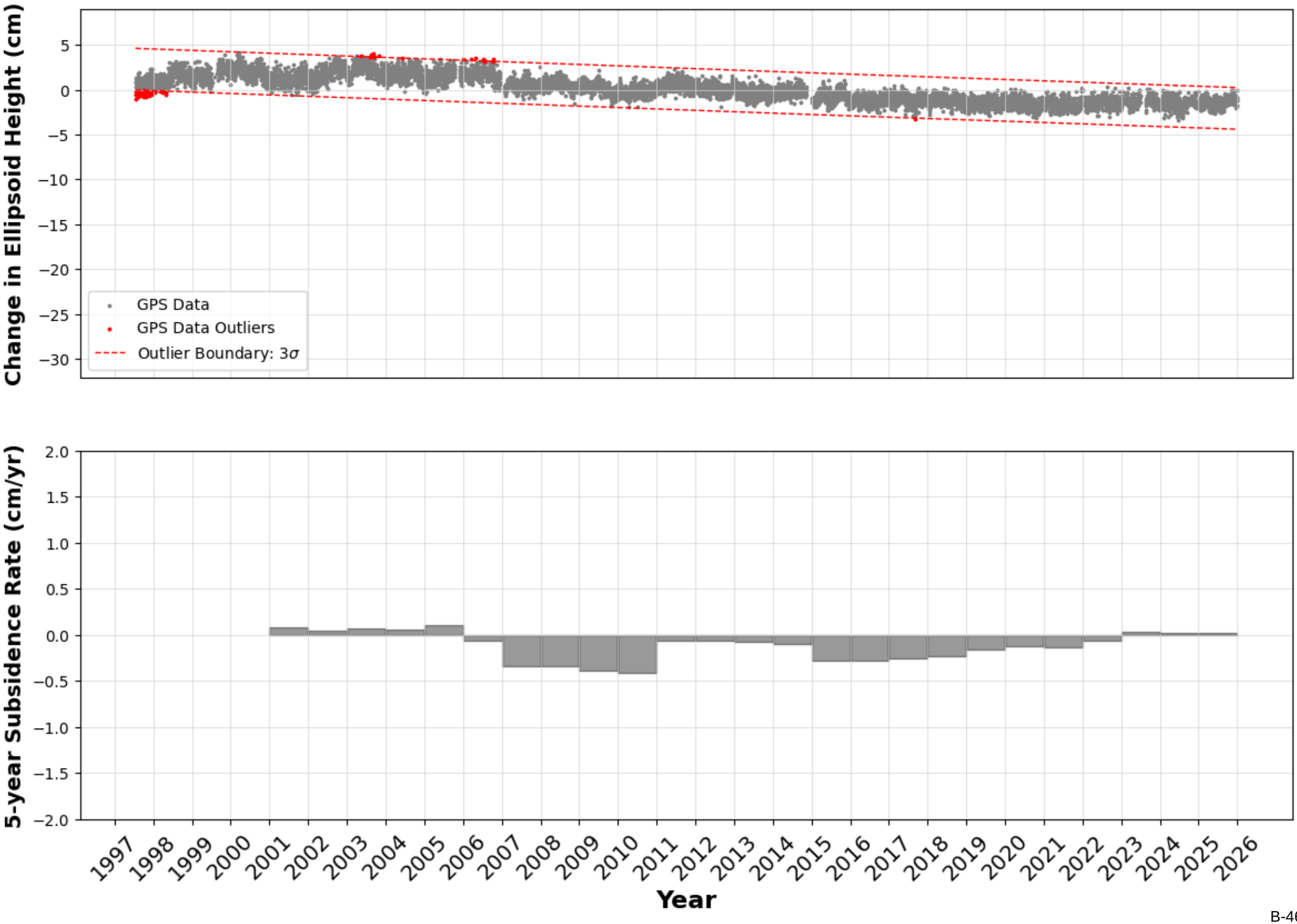


LKHU

Houston, TX



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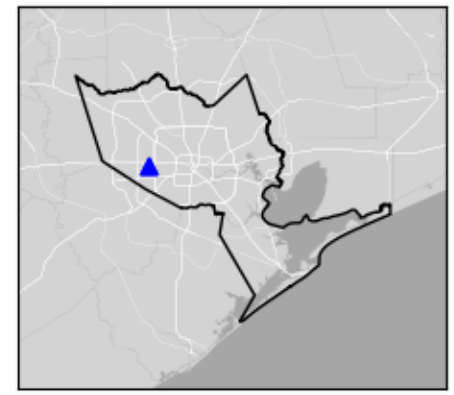
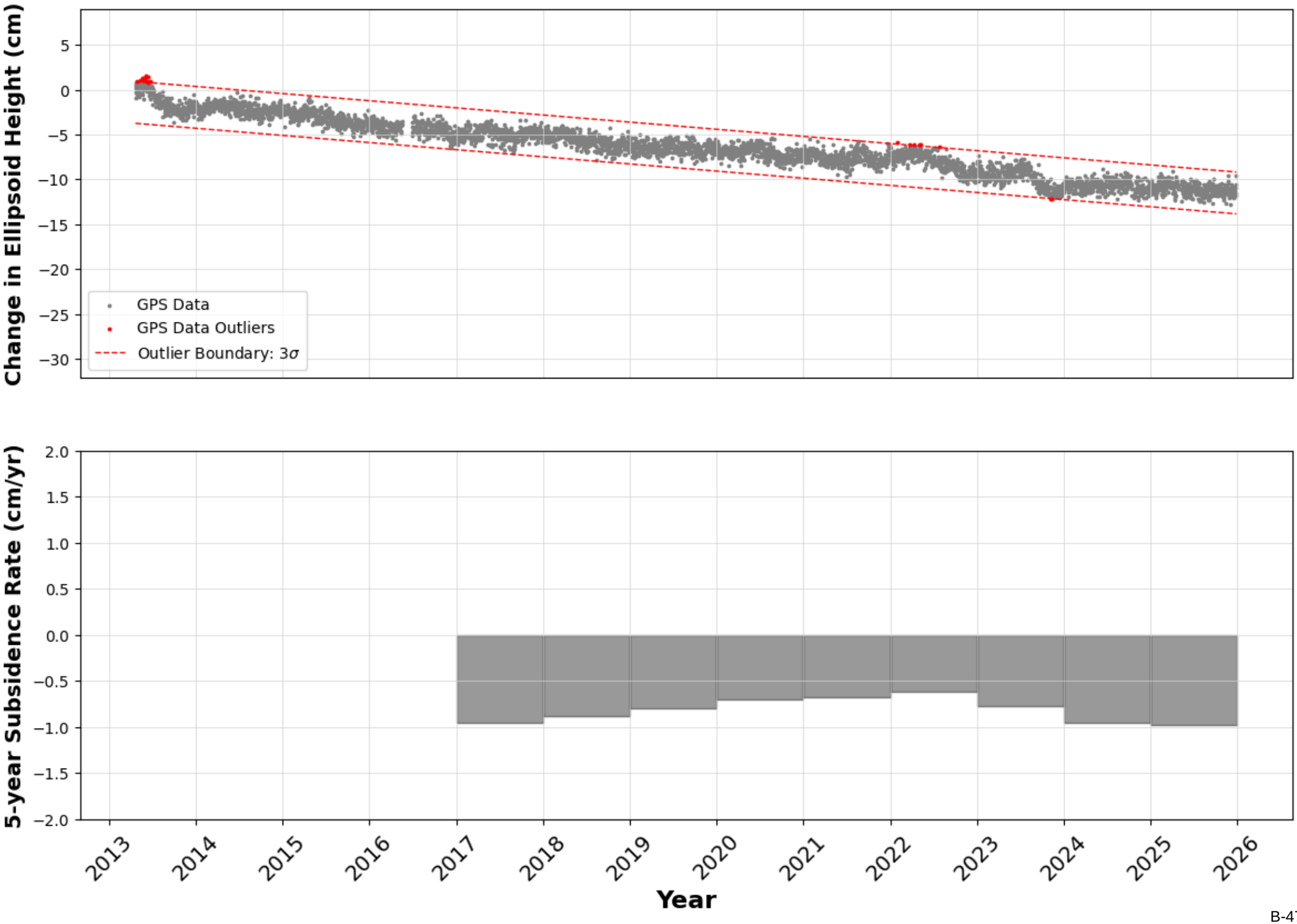


MDWD

Houston, TX



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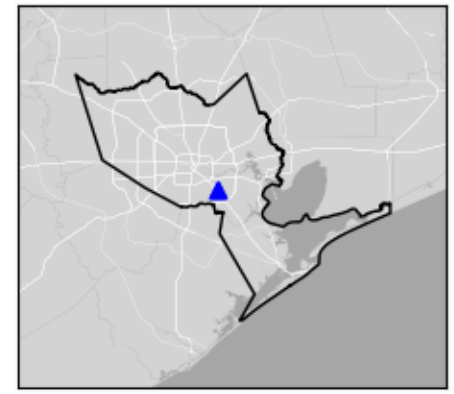
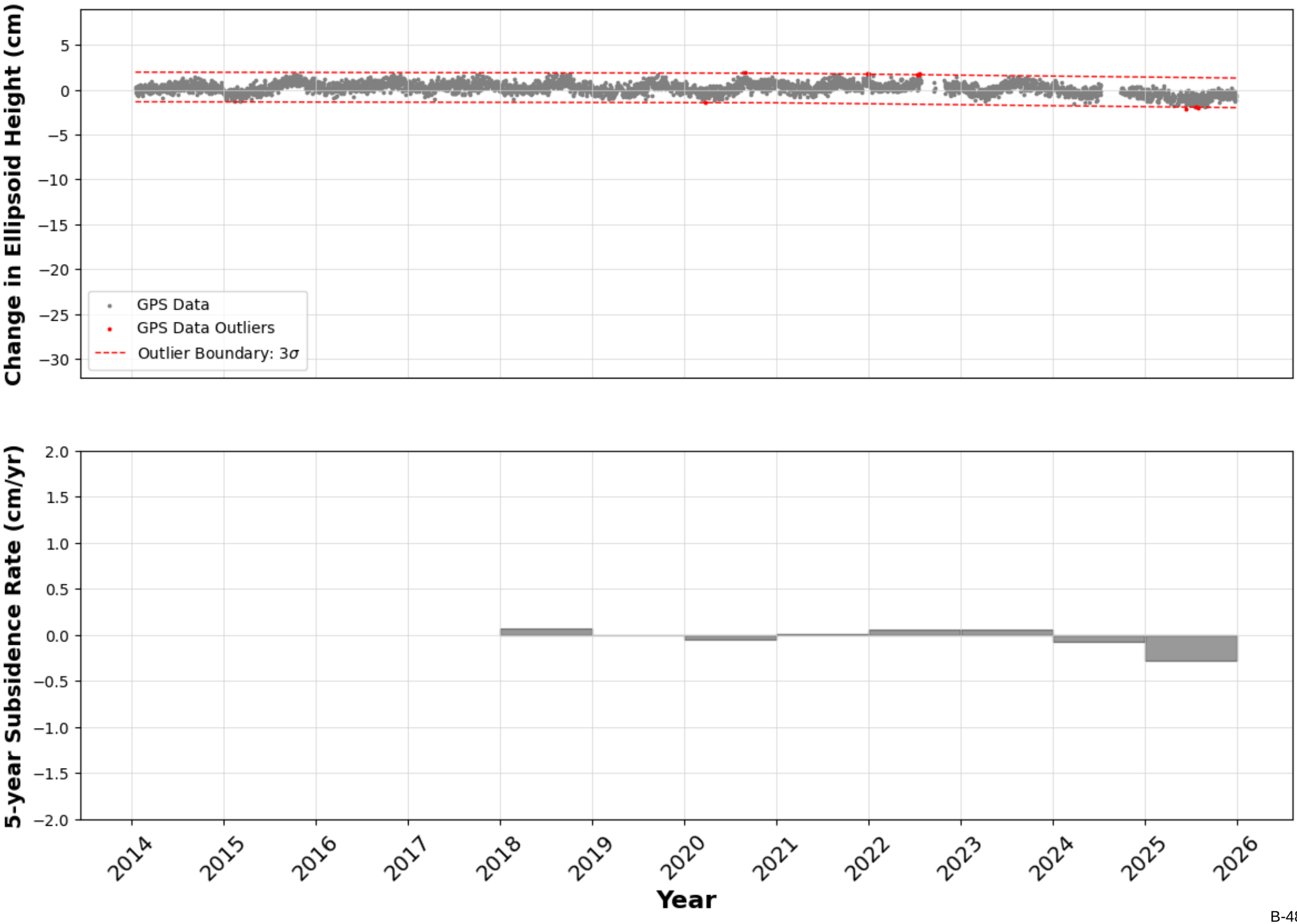
MEPD

South Houston, TX

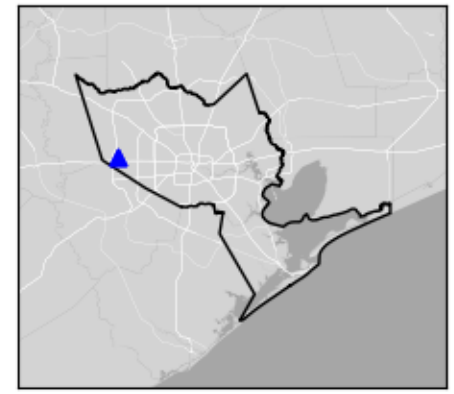


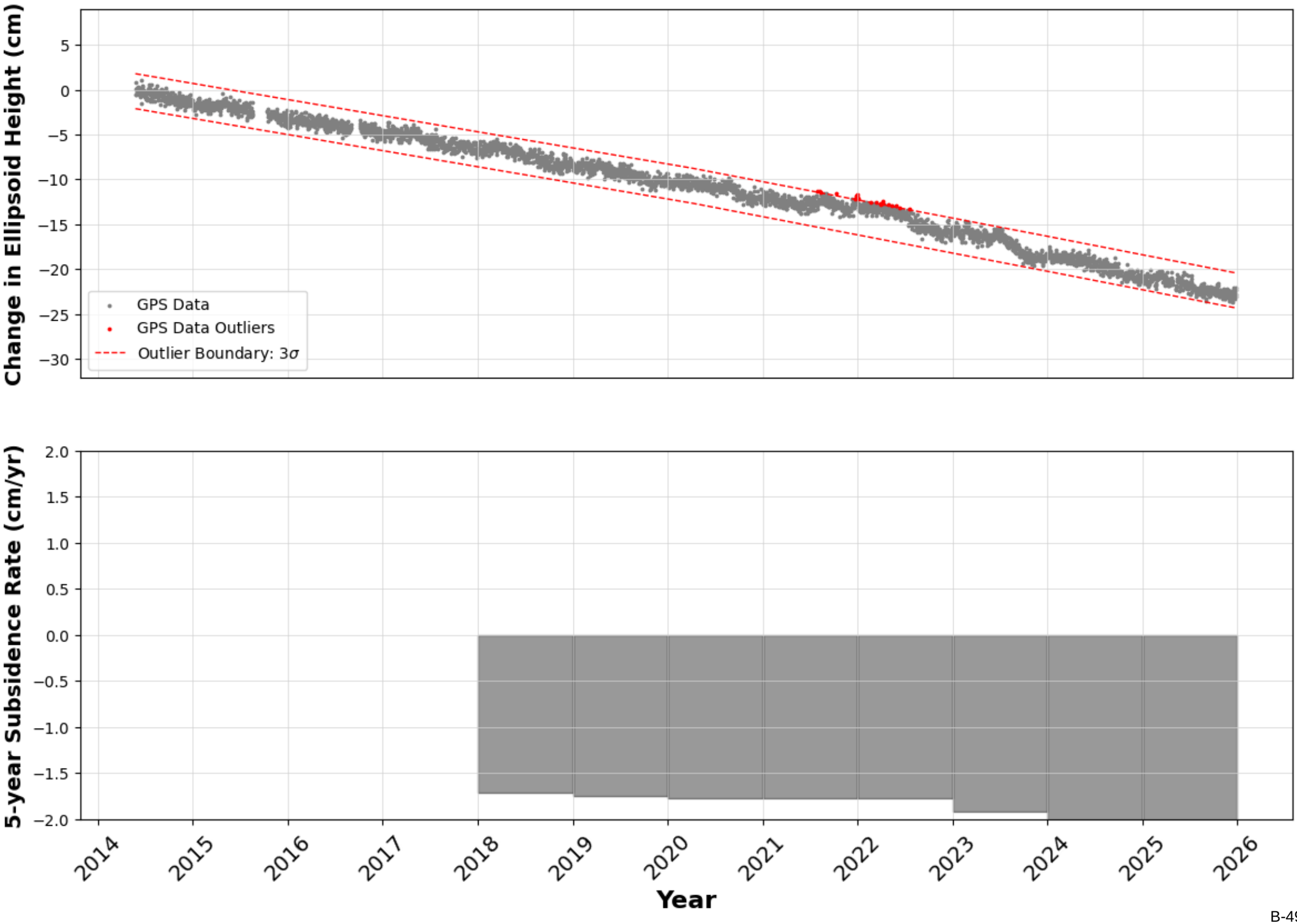


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered by HGSD when calculating subsidence rates and are shown for informational purposes only.

MRHK

Katy, TX

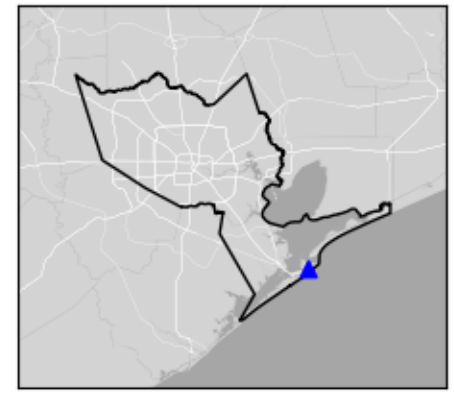


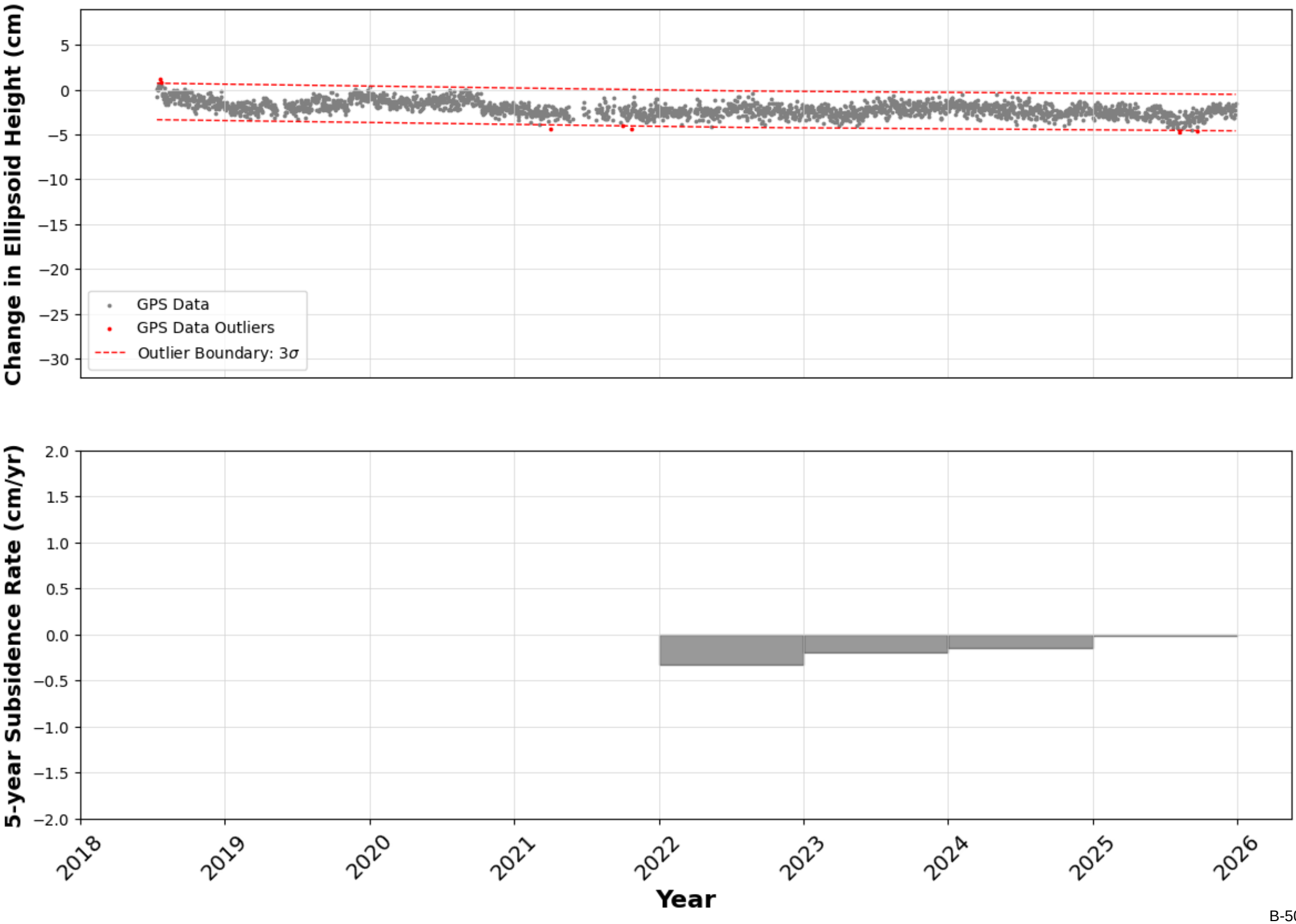


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered by HGSD when calculating subsidence rates and are shown for informational purposes only.

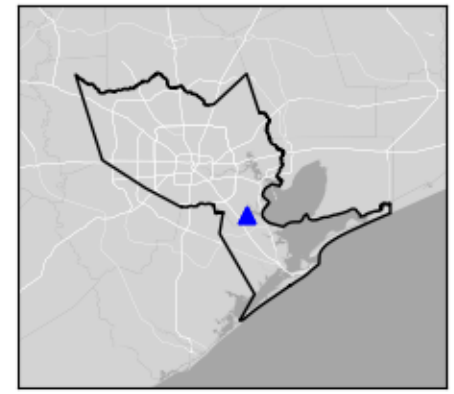
N301

Galveston, TX



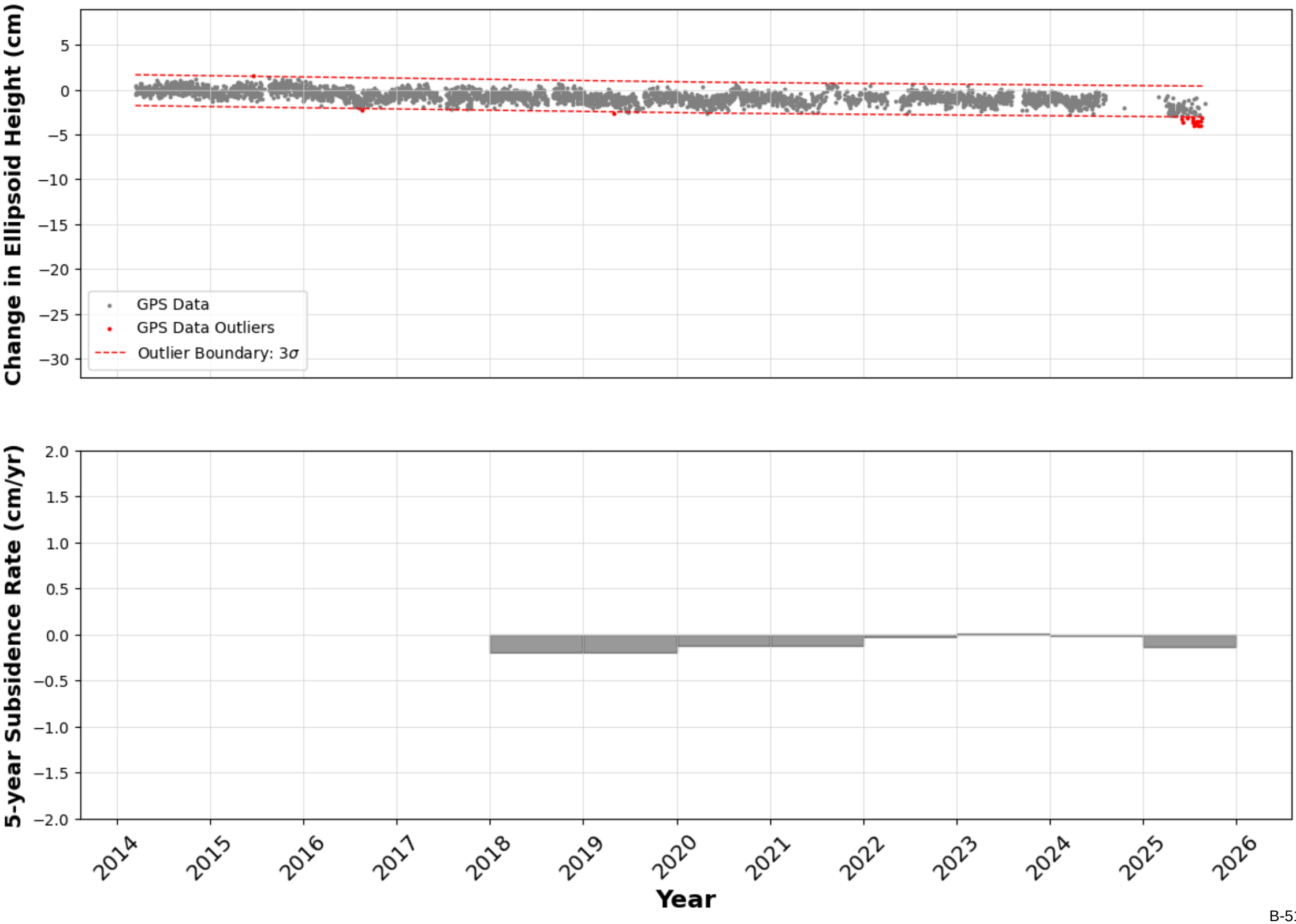


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered by HGSD when calculating subsidence rates and are shown for informational purposes only.



NASA

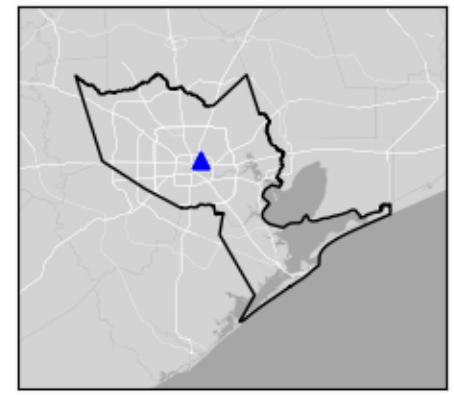
Houston, TX

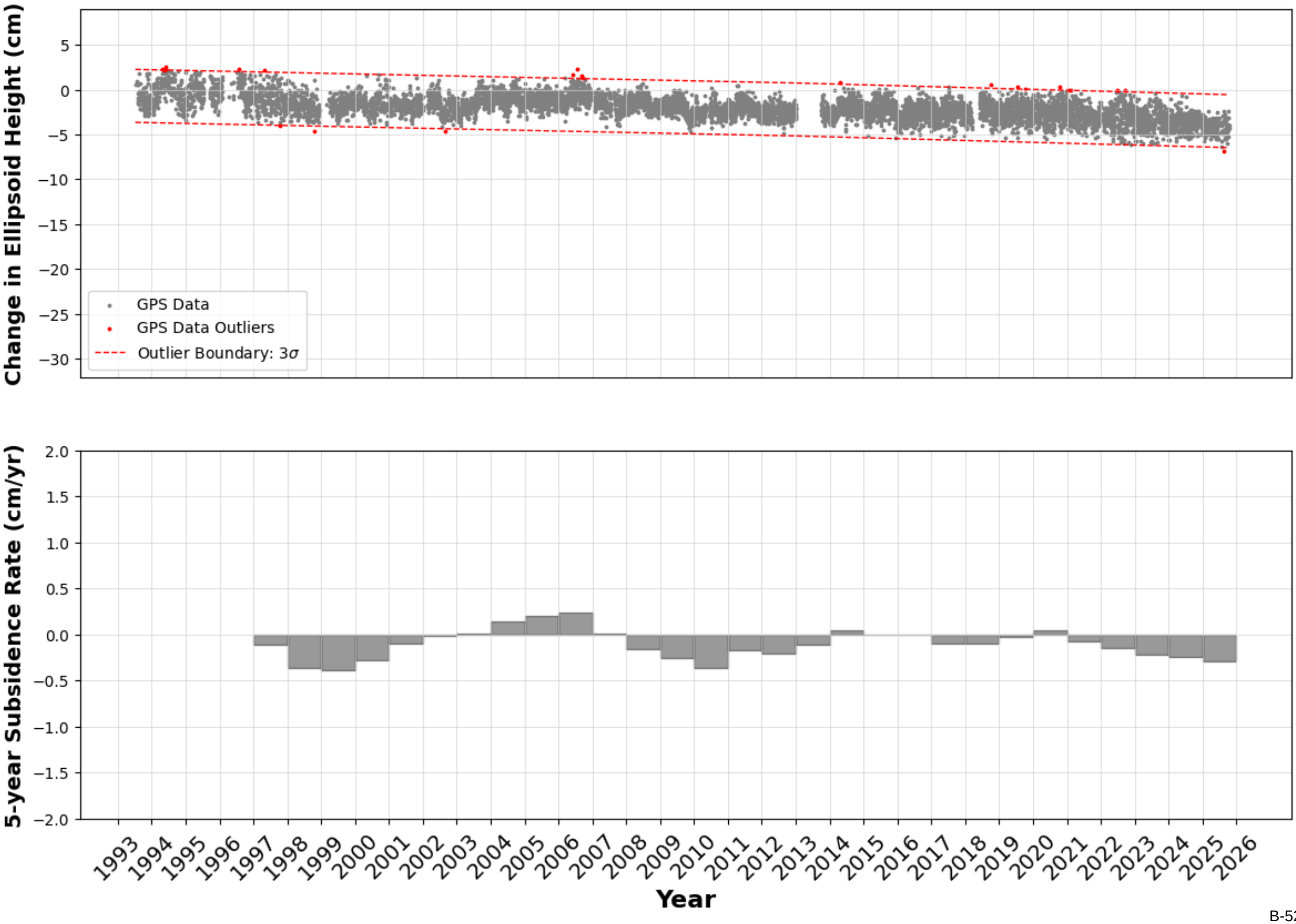


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered by HGSD when calculating subsidence rates and are shown for informational purposes only.

NETP

Houston, TX

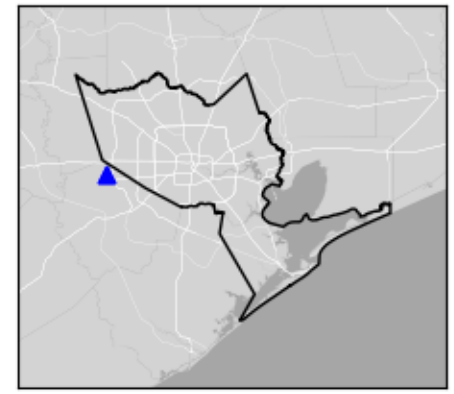


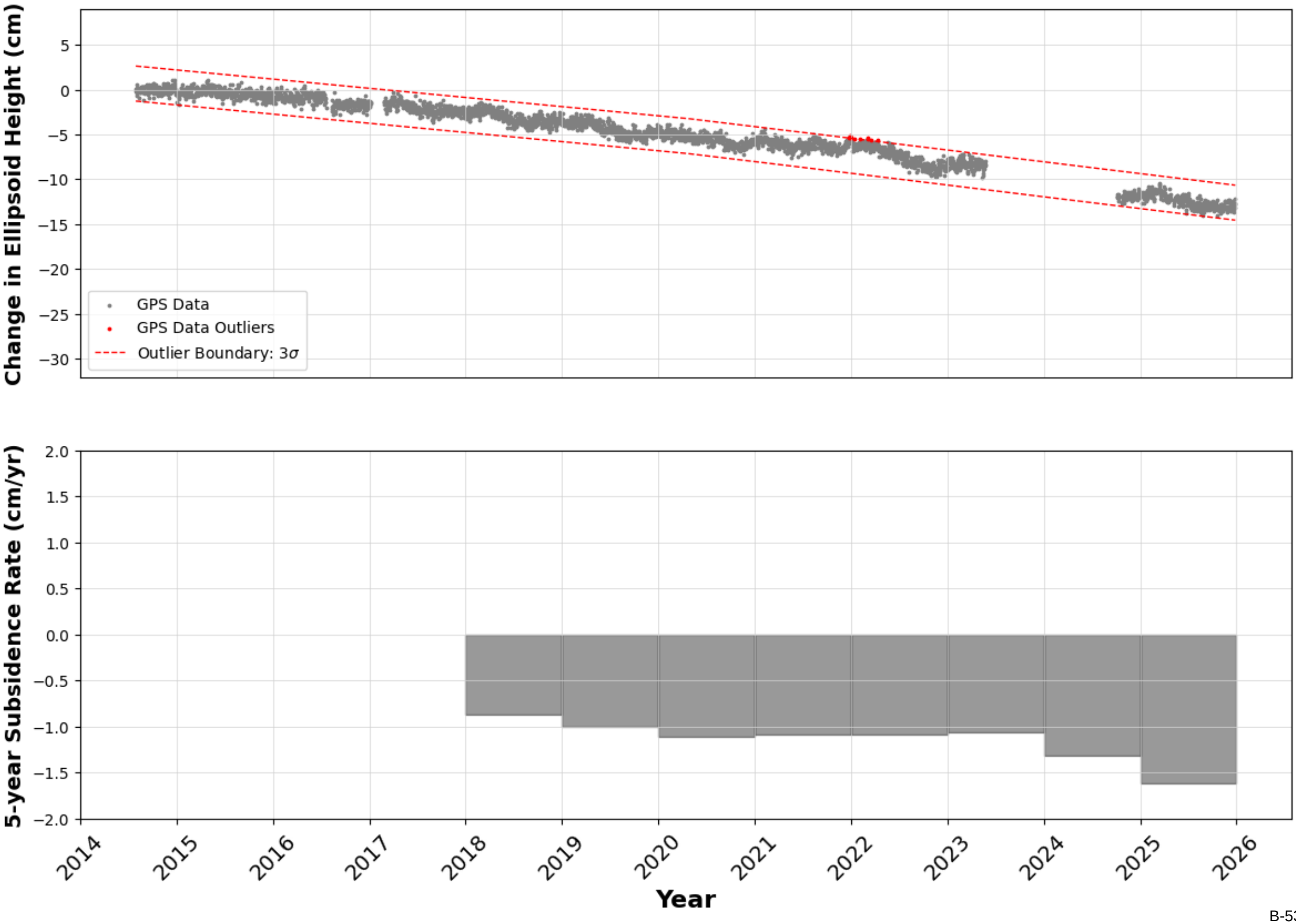


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered by HGSD when calculating subsidence rates and are shown for informational purposes only.

OKEK

Katy, TX

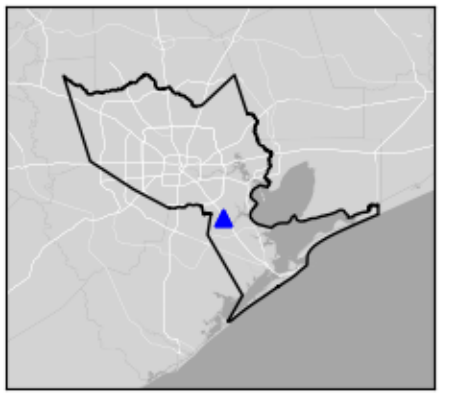


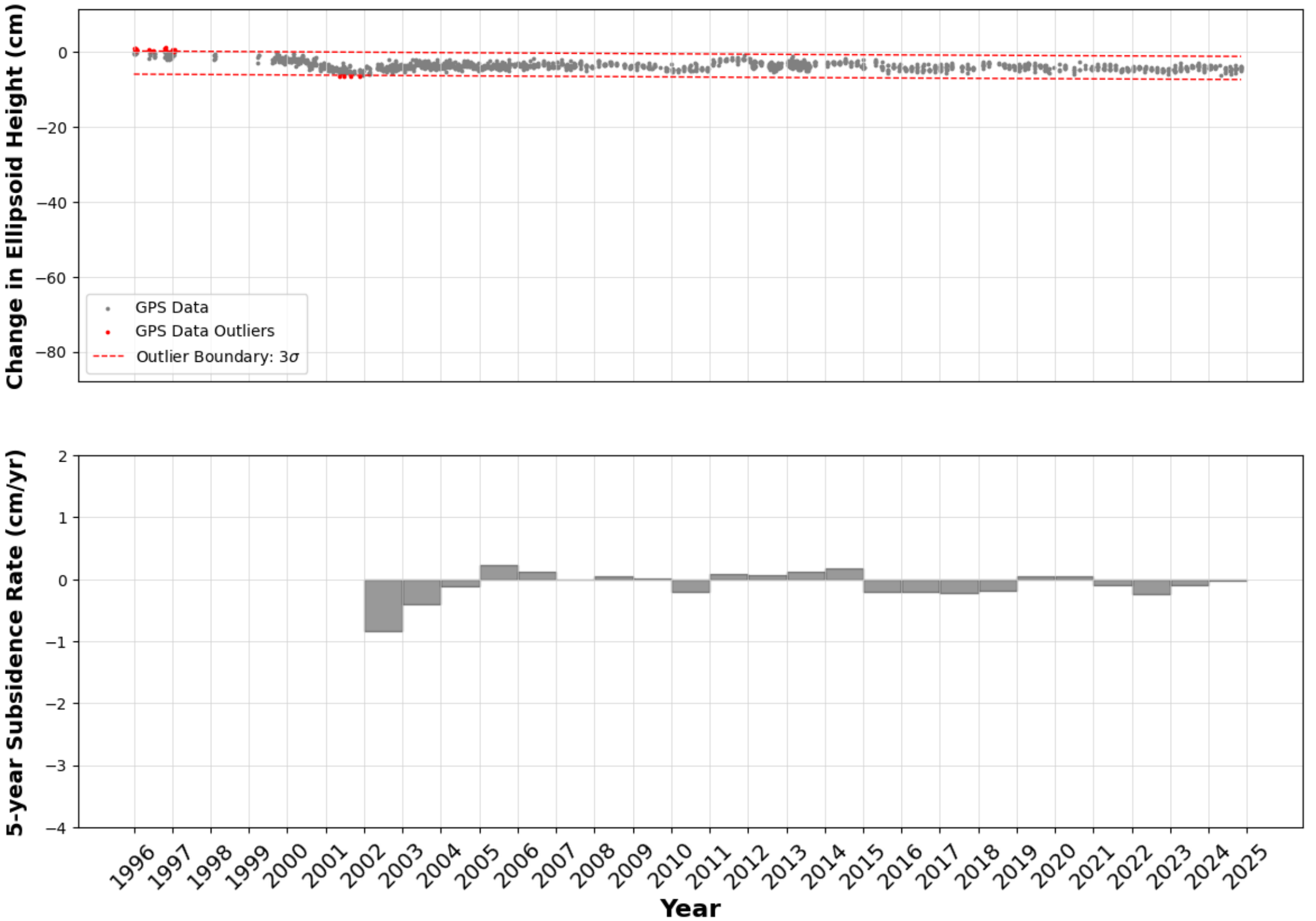


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered by HGSD when calculating subsidence rates and are shown for informational purposes only.

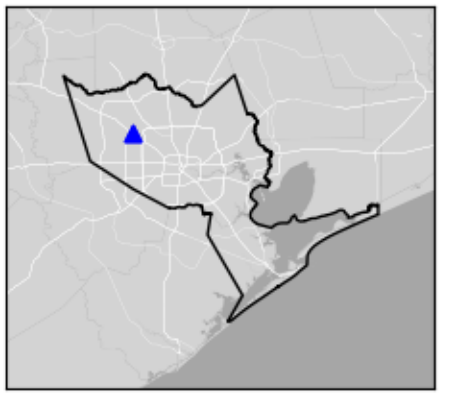
P000

Friendswood, TX



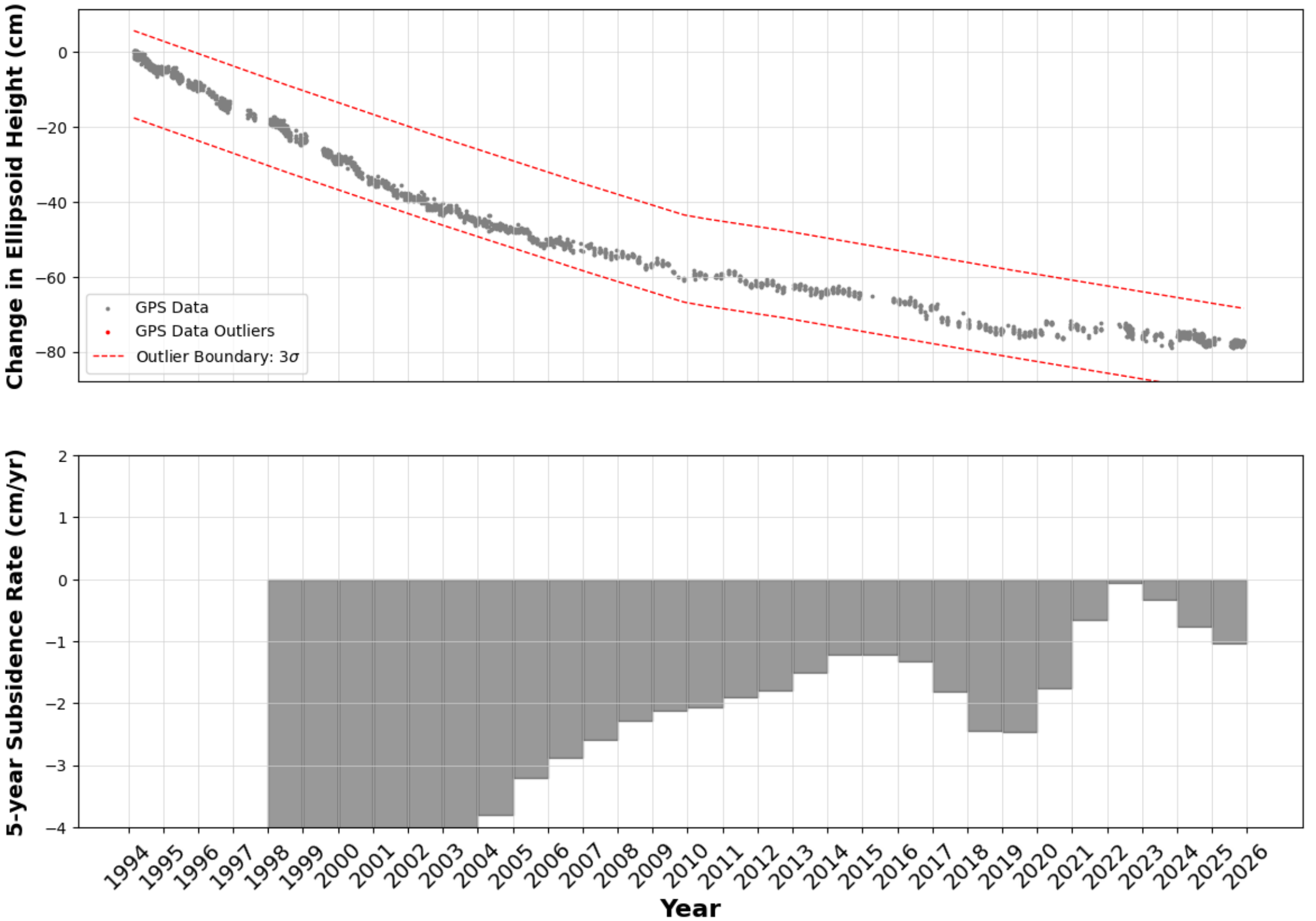


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.



P001

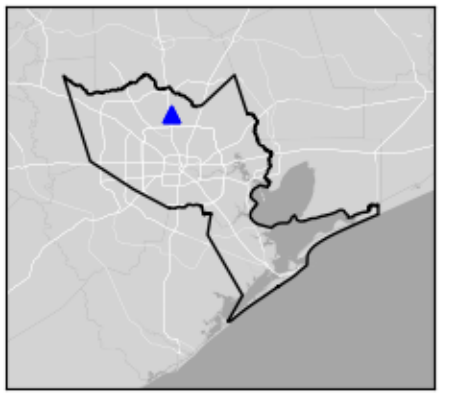
Houston, TX

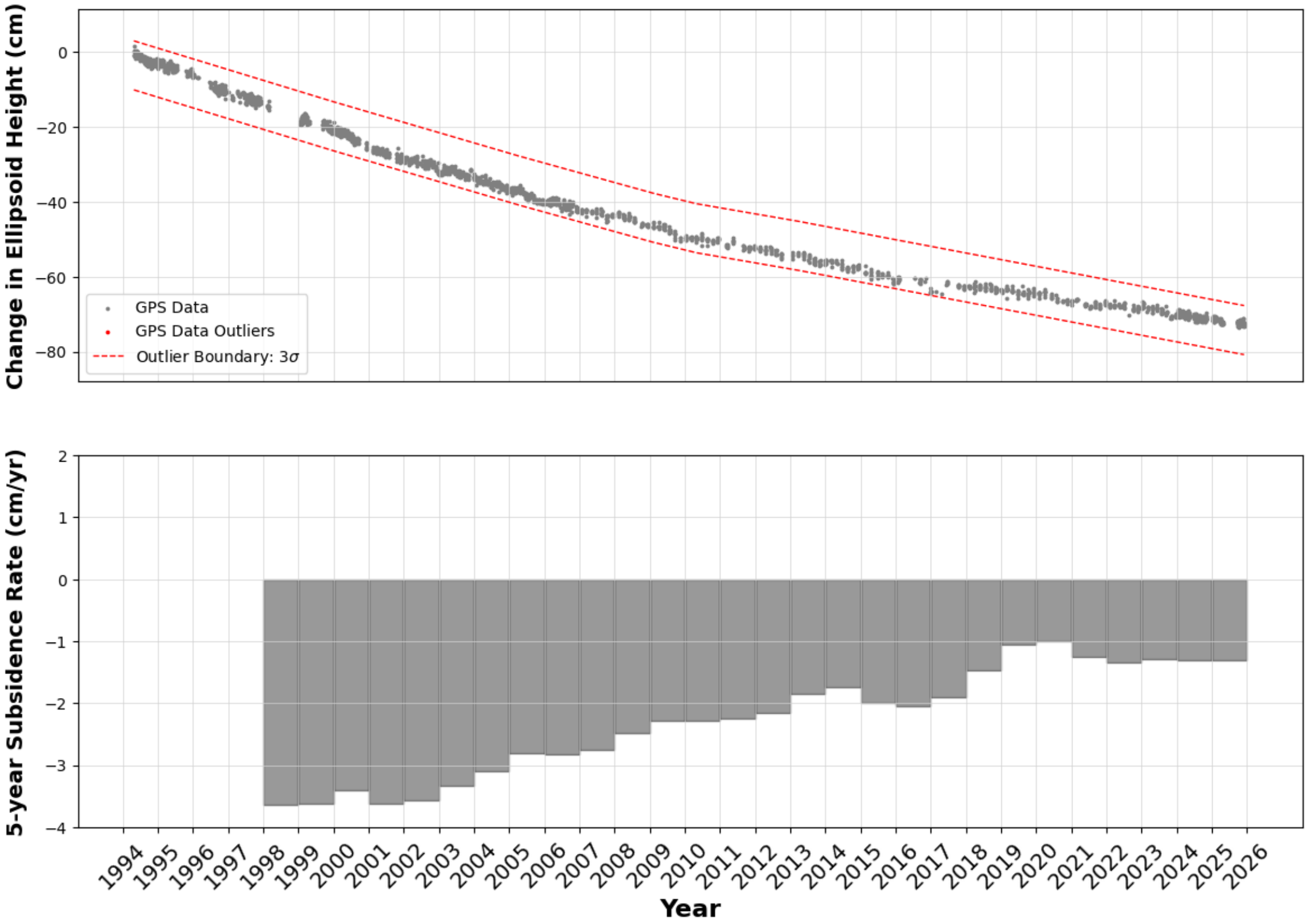


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P002

Houston, TX

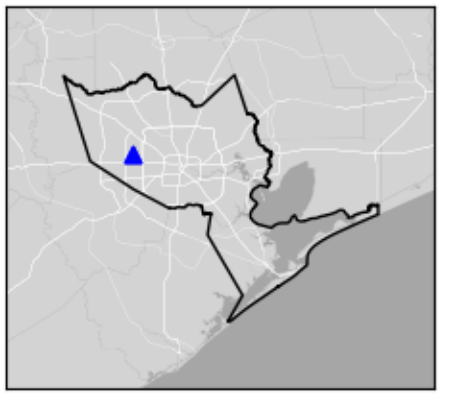


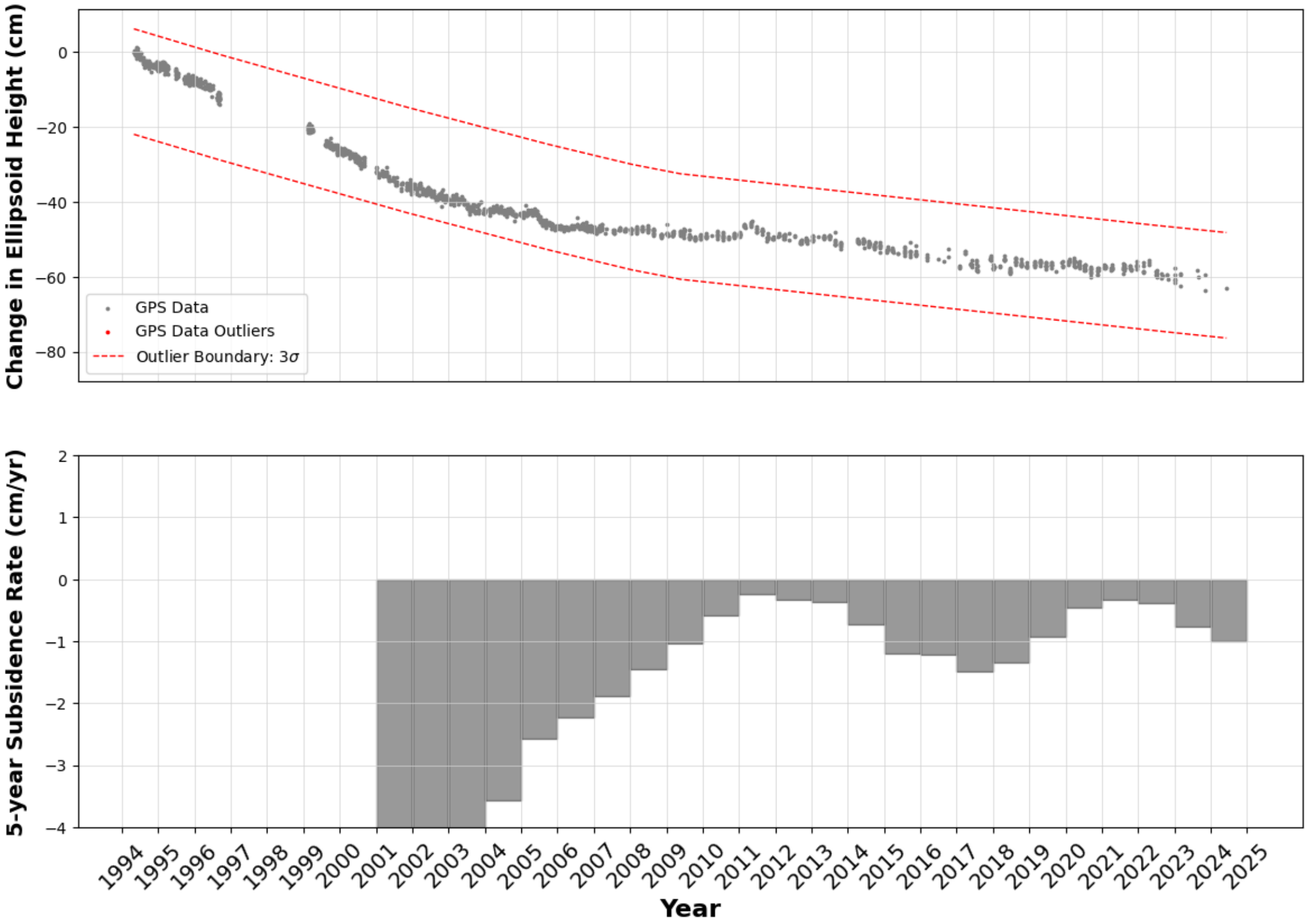


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P003

Houston, TX

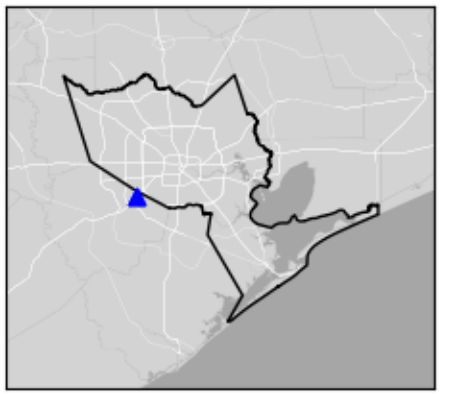


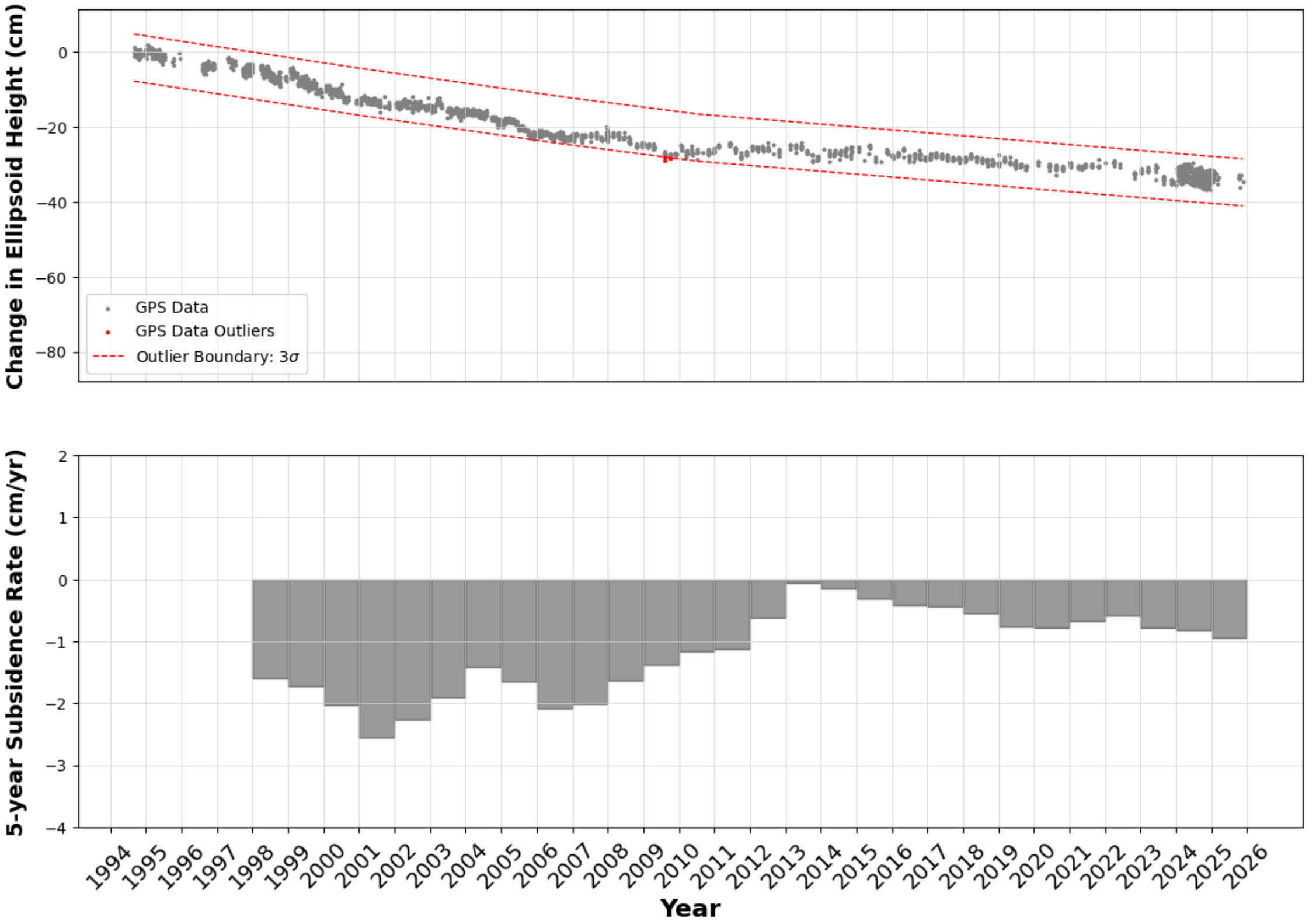


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P004

Sugar Land, TX

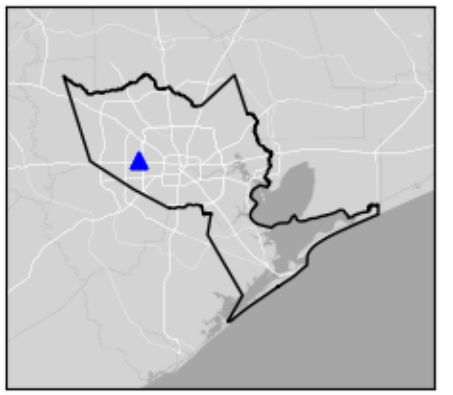


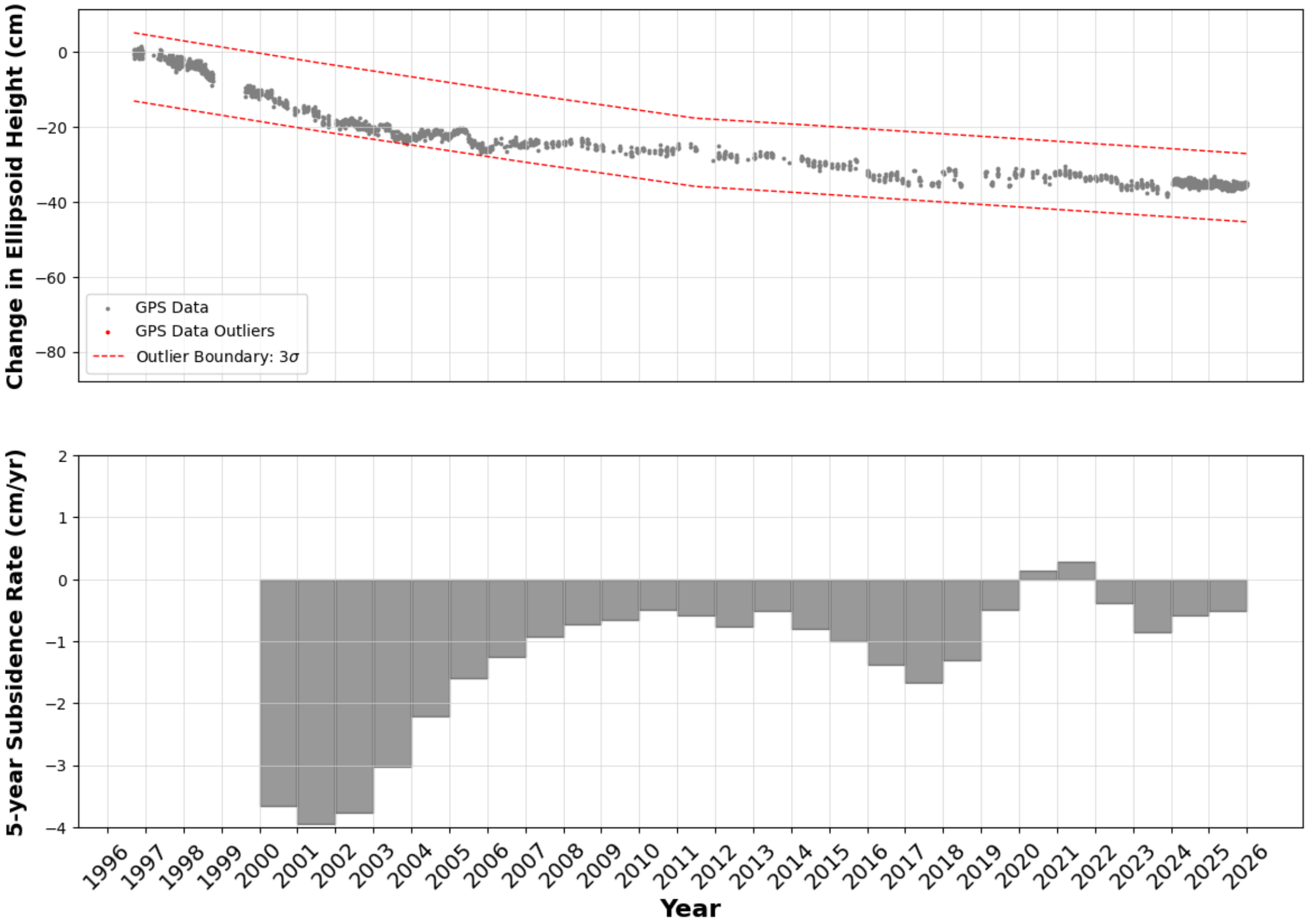


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P005

Houston, TX

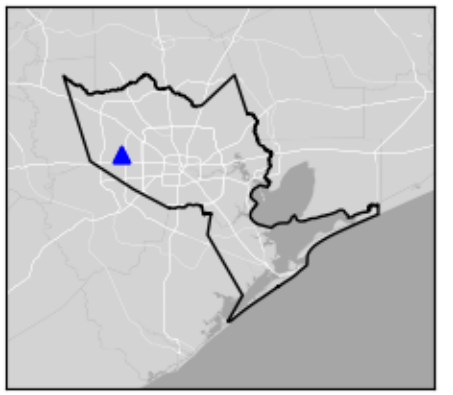


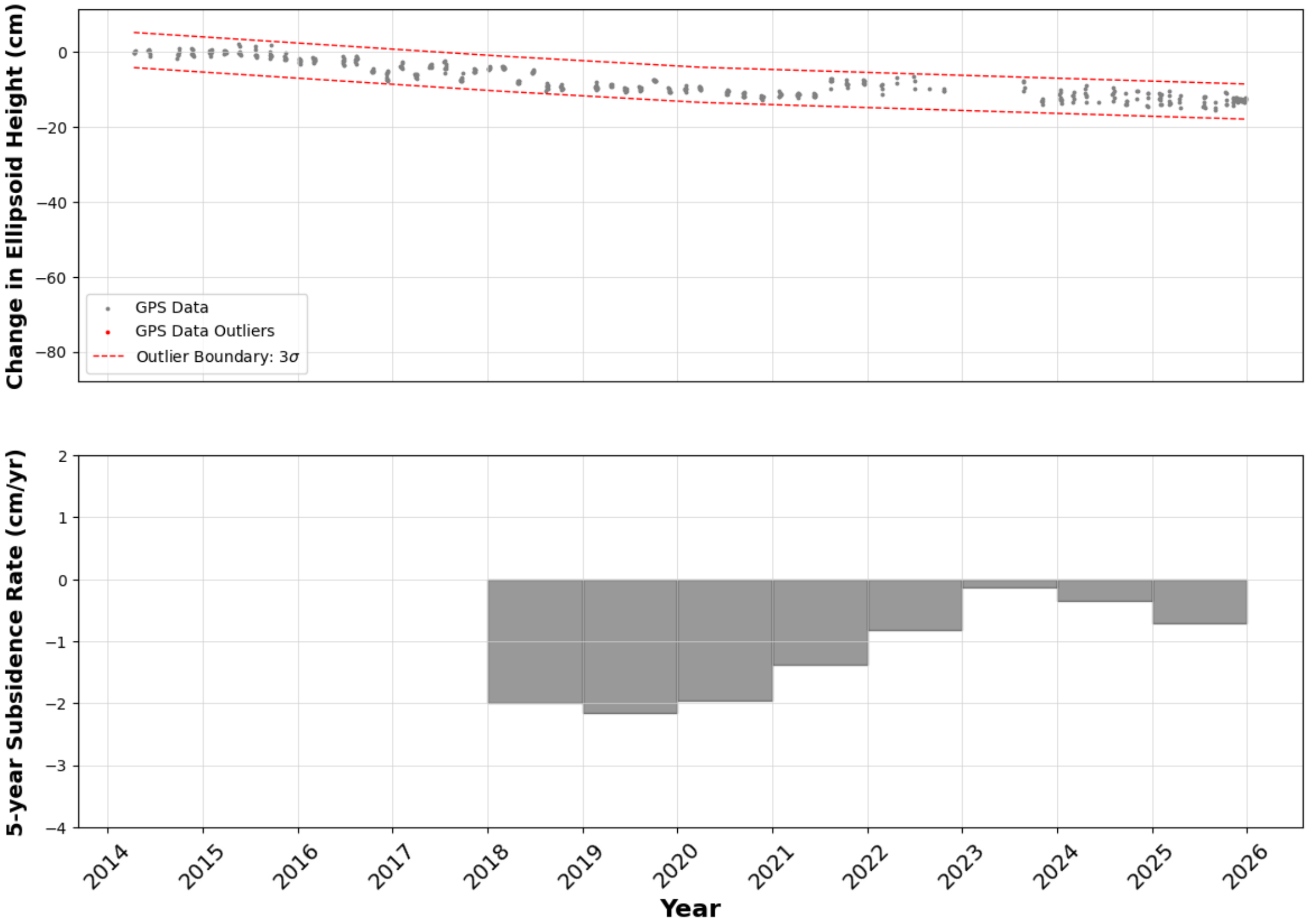


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P006

Houston, TX

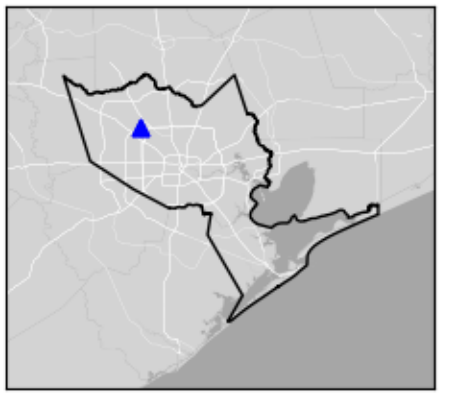


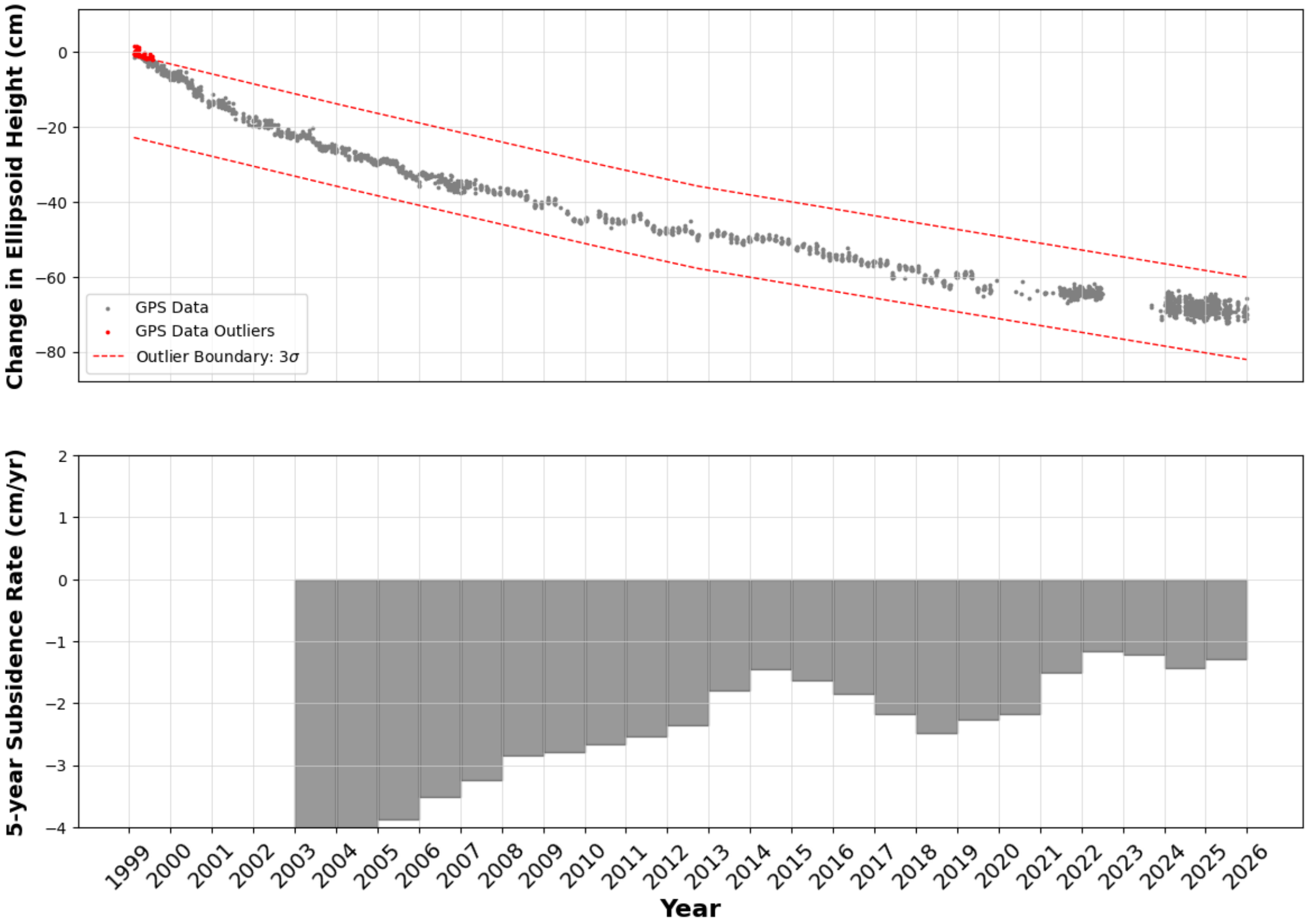


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P007

Houston, TX

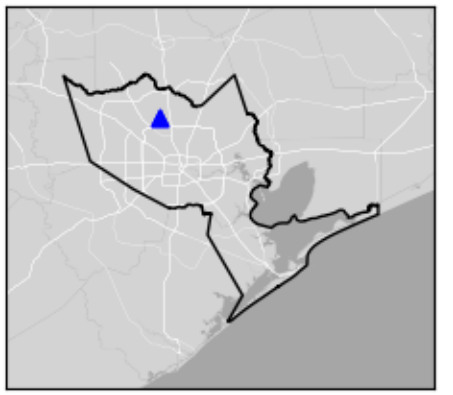


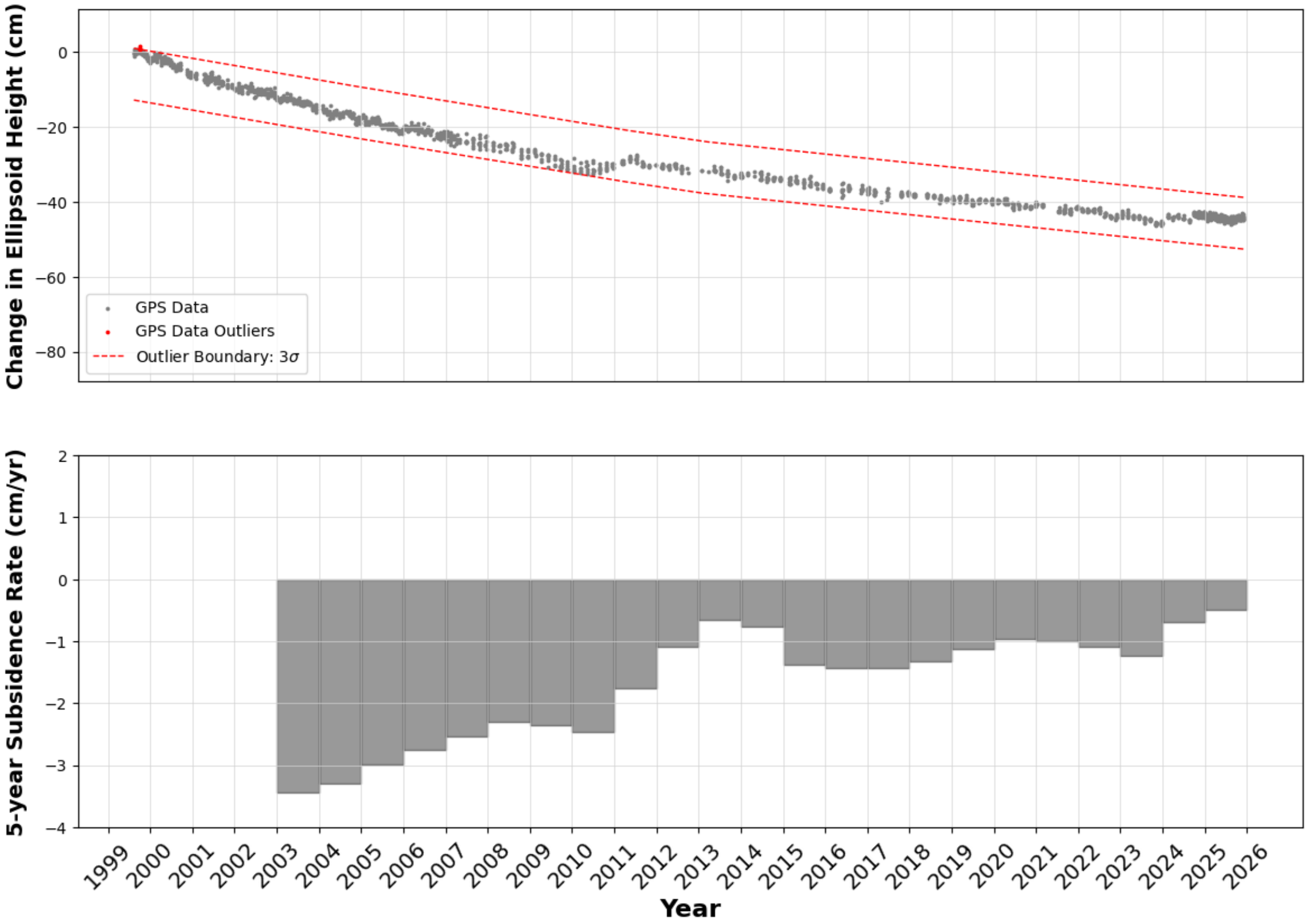


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P008

Houston, TX





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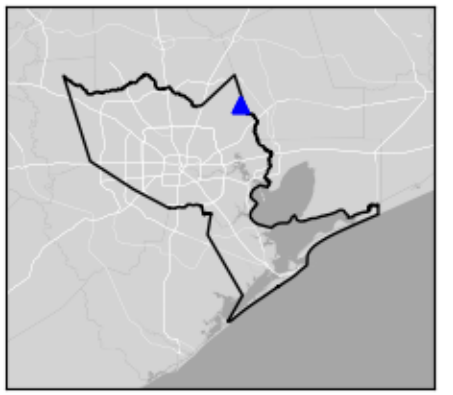
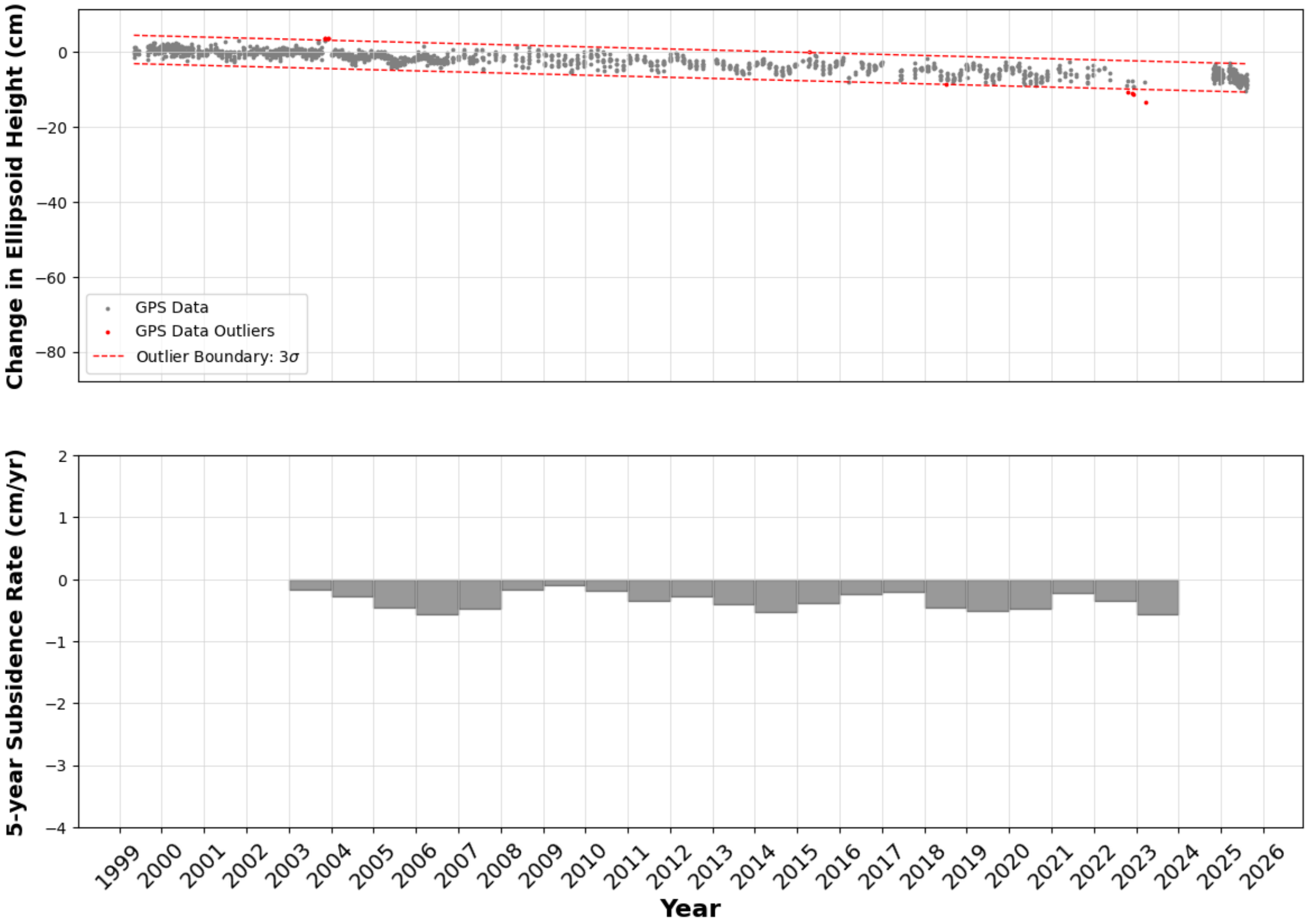
P009

Huffman, TX





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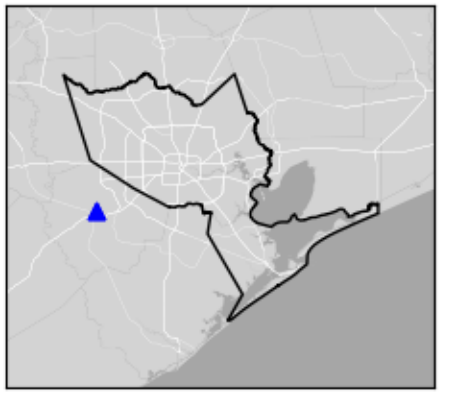
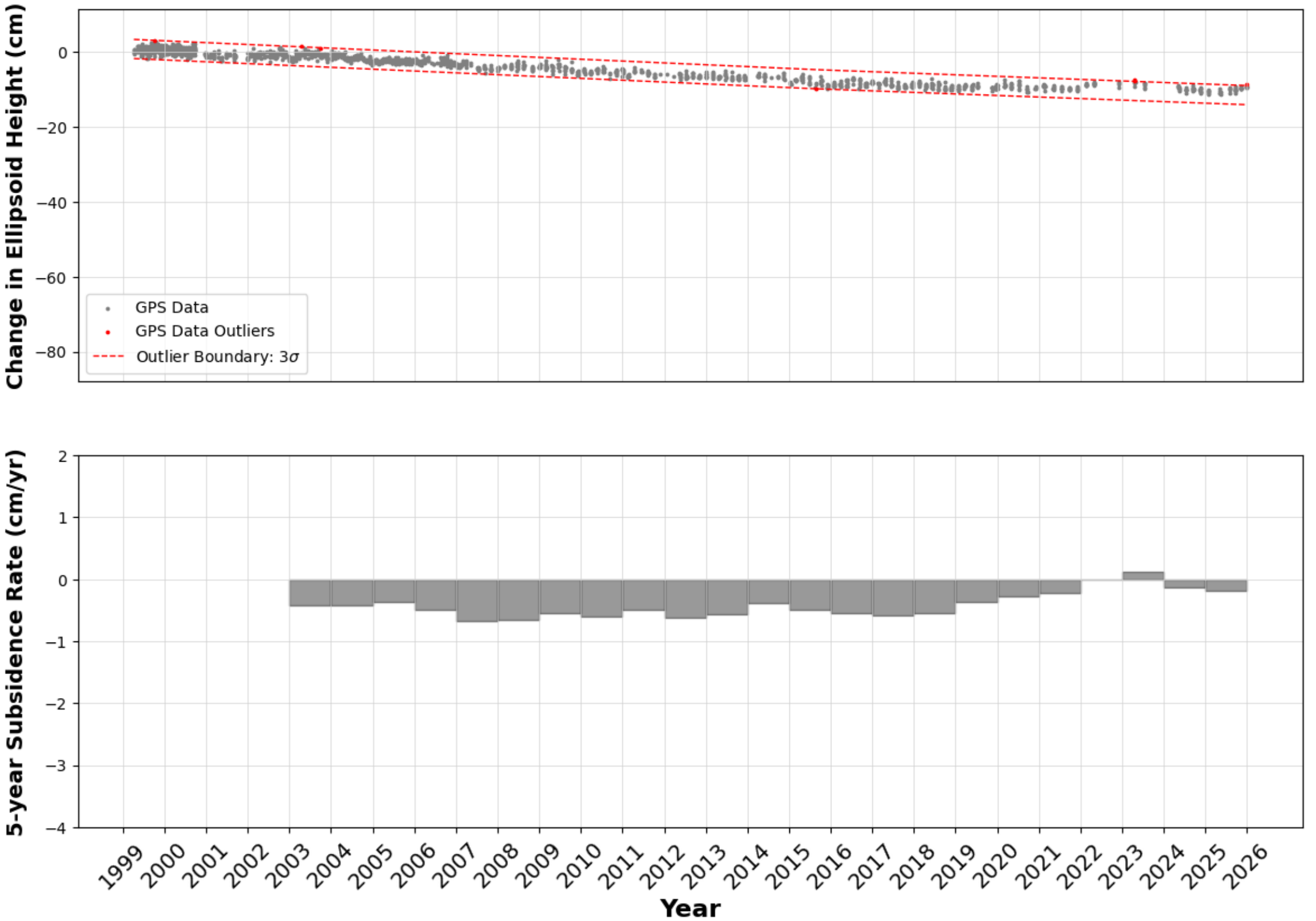
P010

Rosenberg, TX

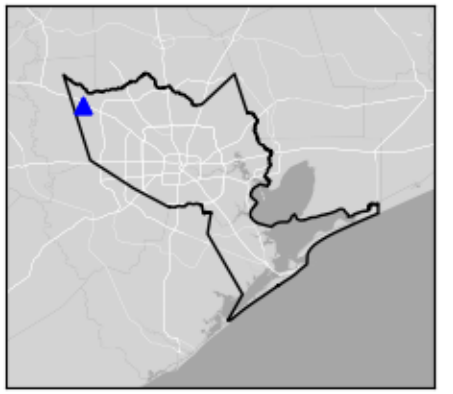


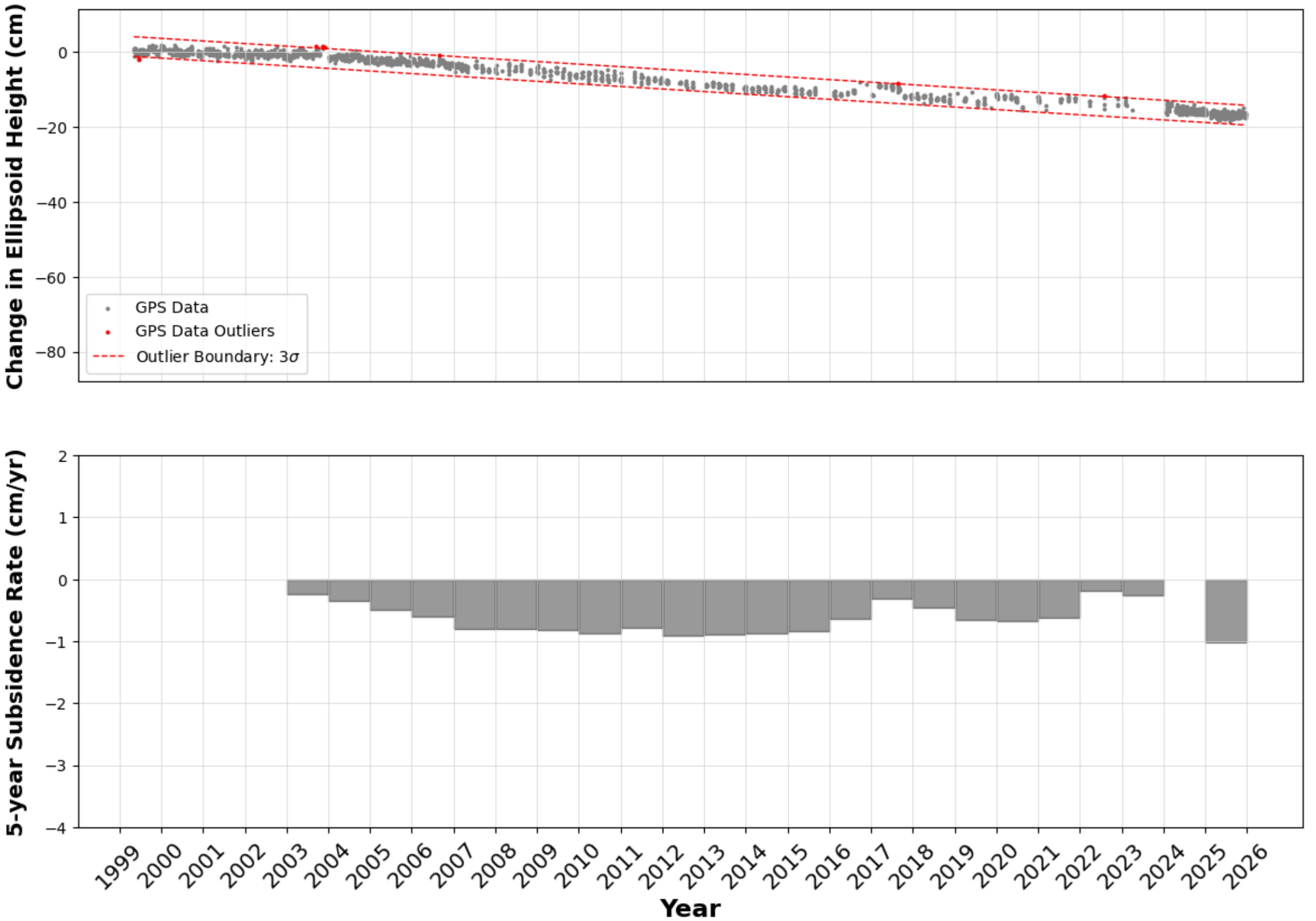


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P011

Hockley, TX

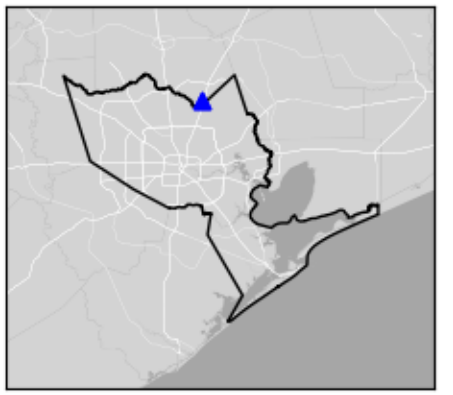


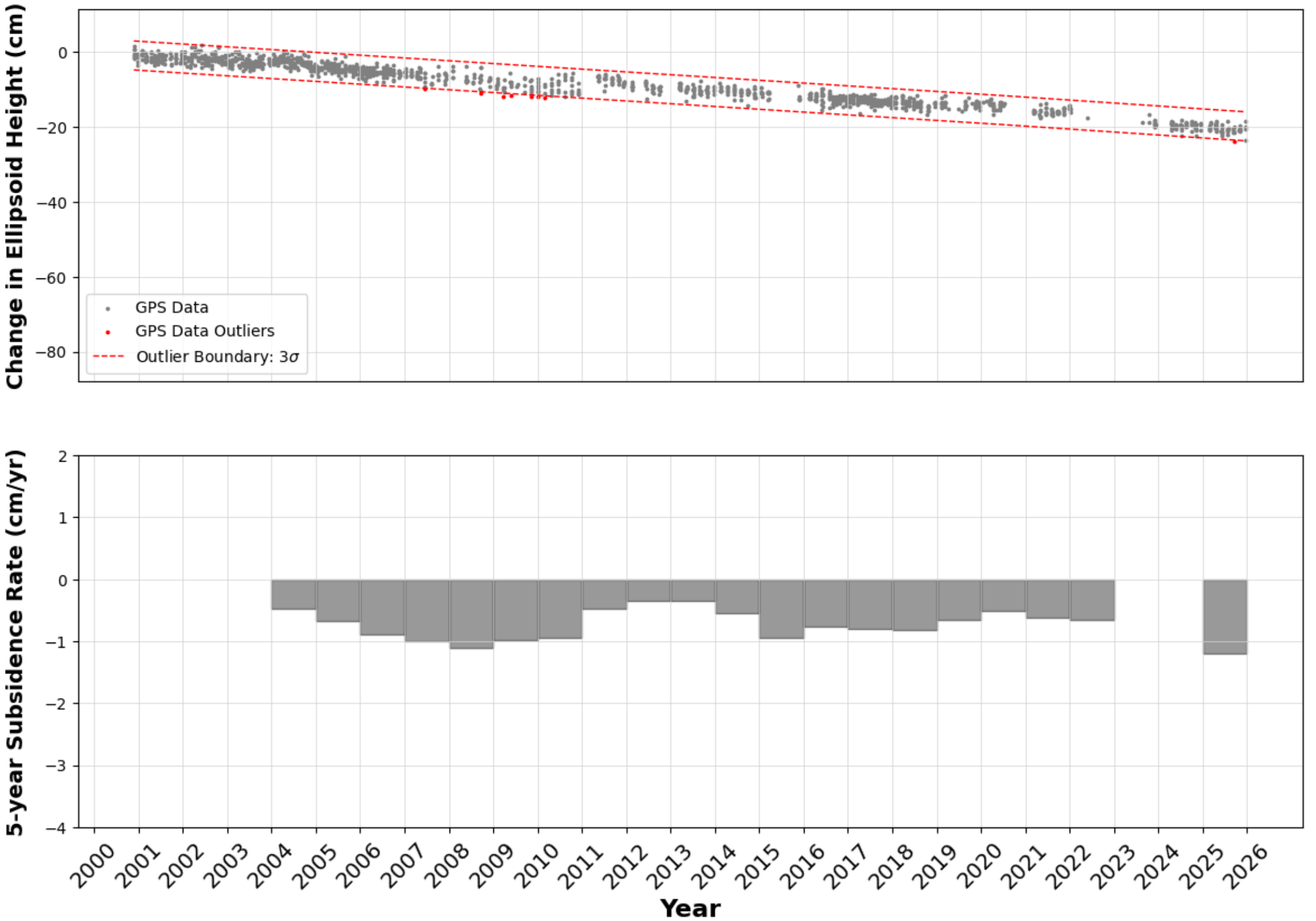


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

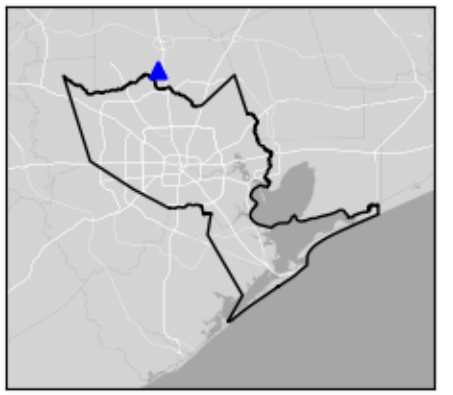
P012

Porter, TX



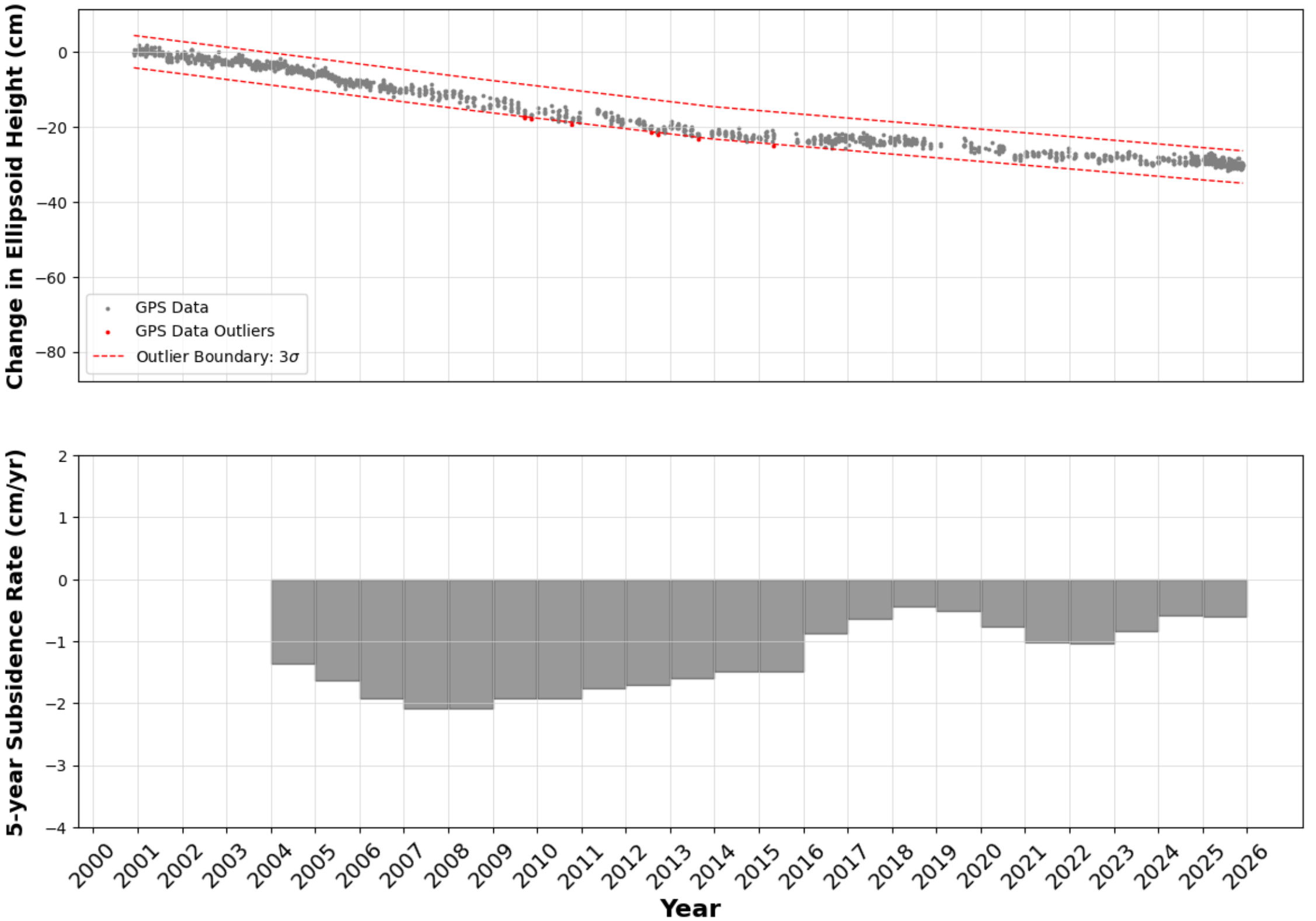


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.



P013

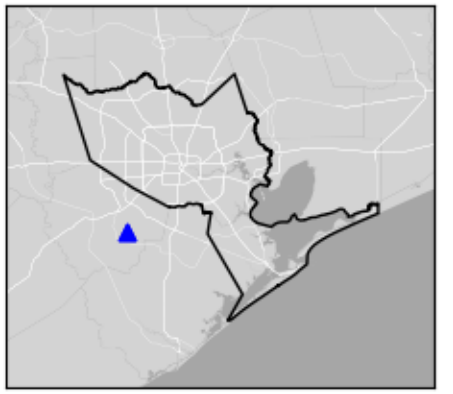
The Woodlands, TX

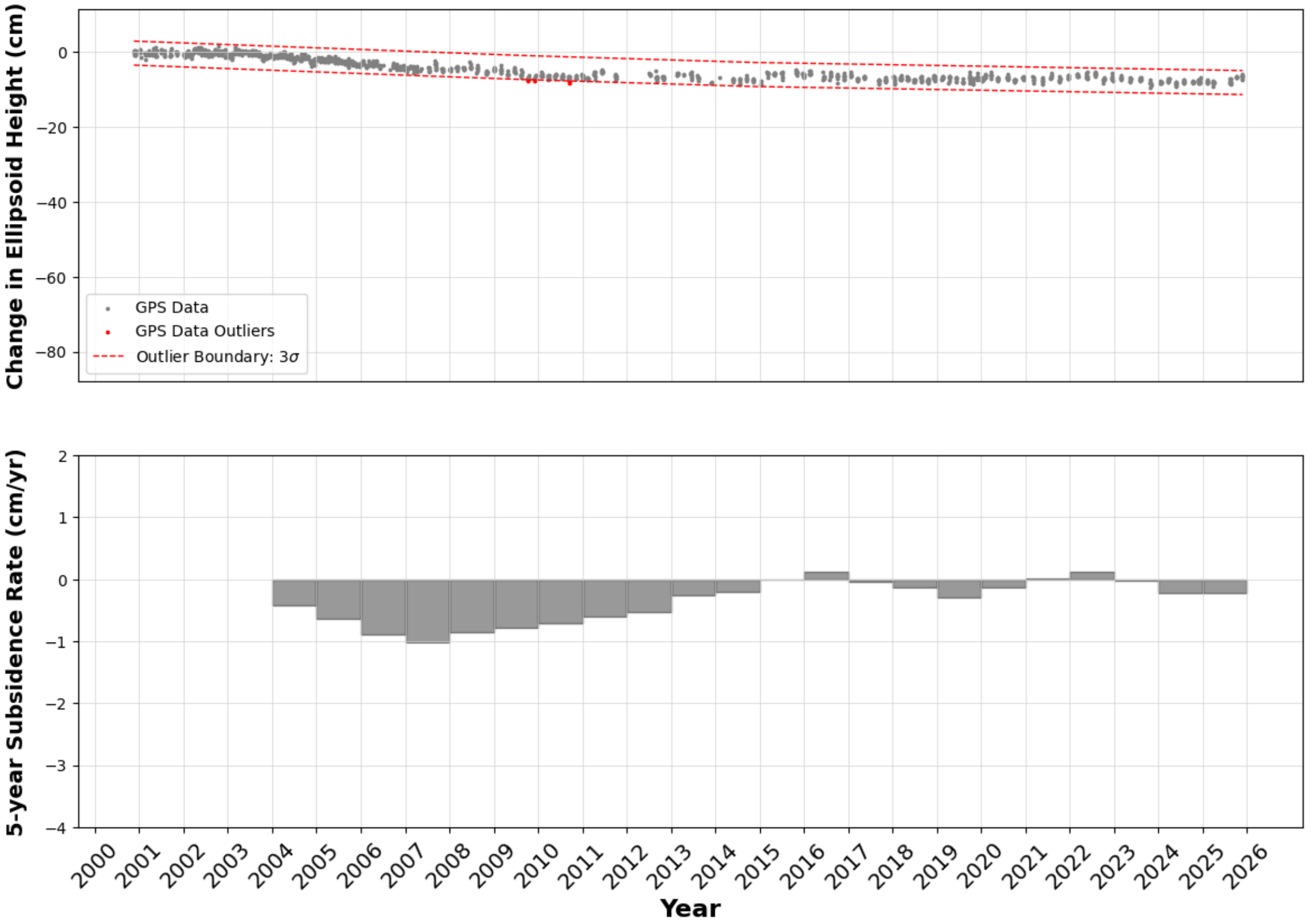


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P014

Thompsons, TX

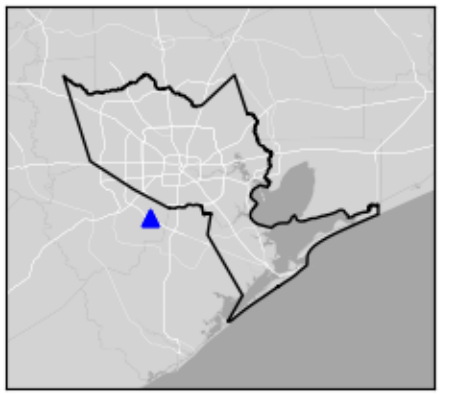


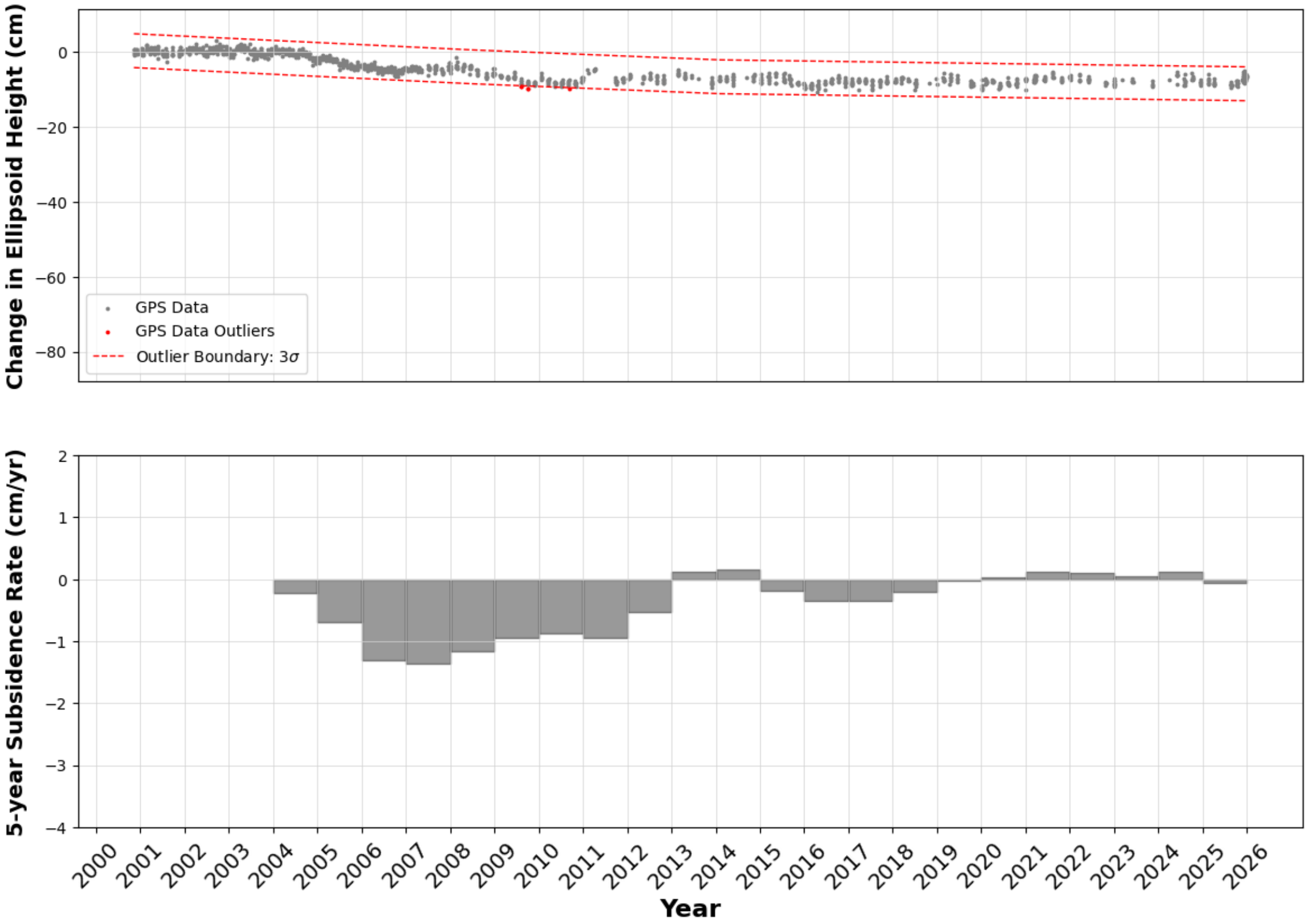


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P016

Missouri City, TX

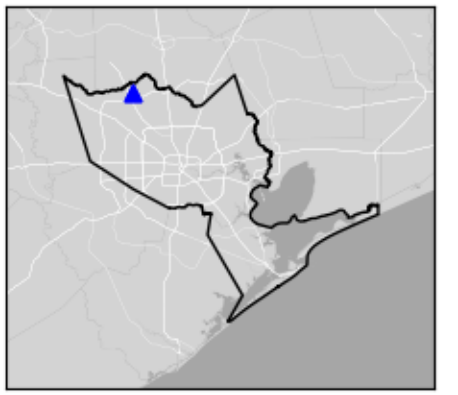


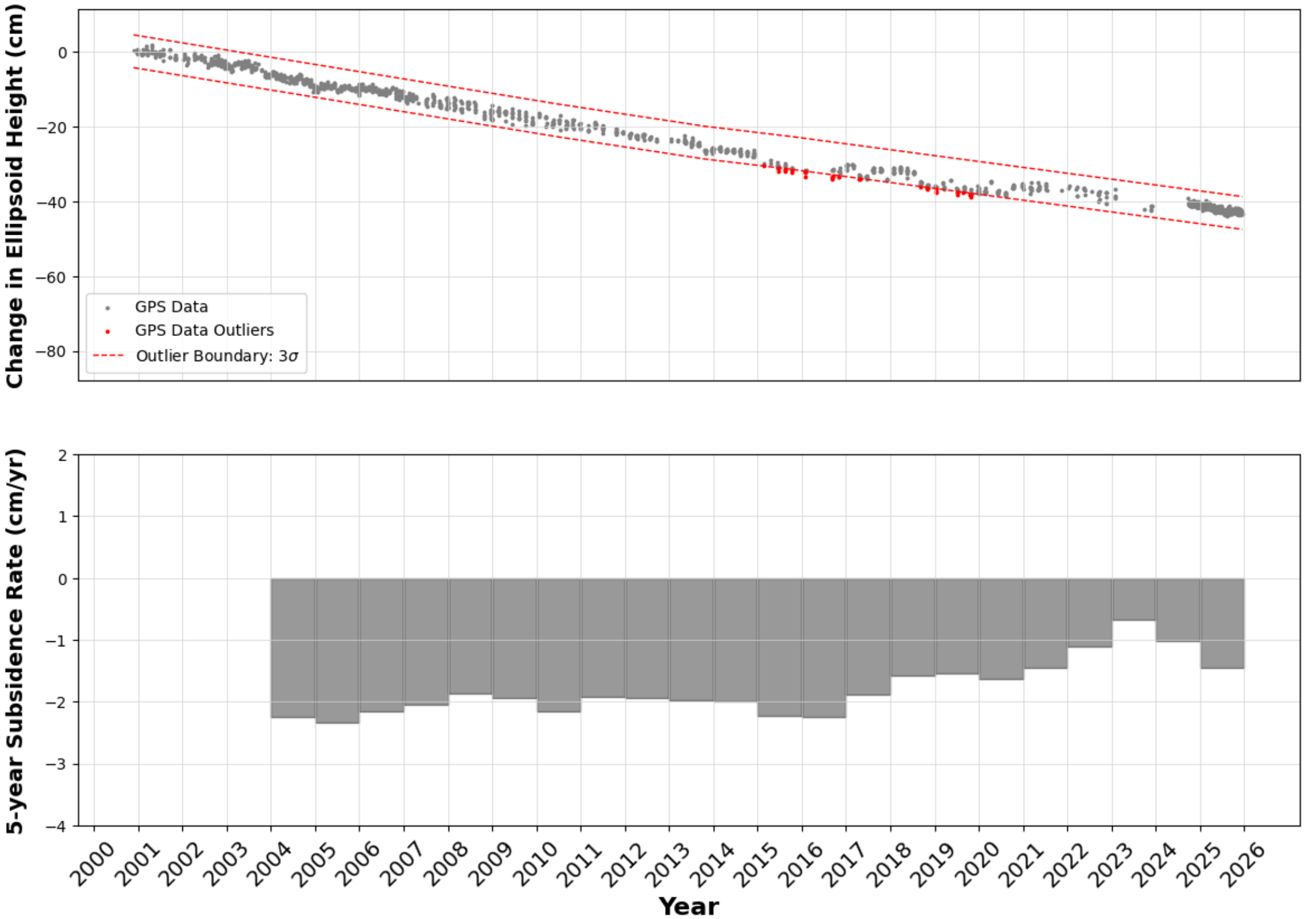


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P017

Tomball, TX

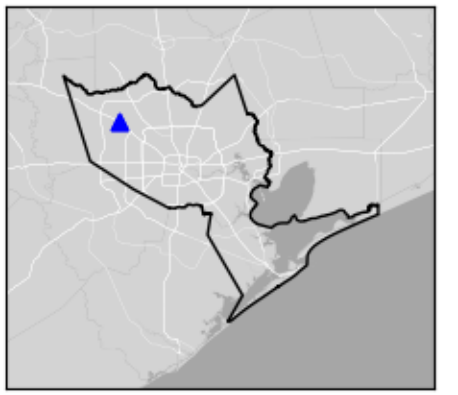


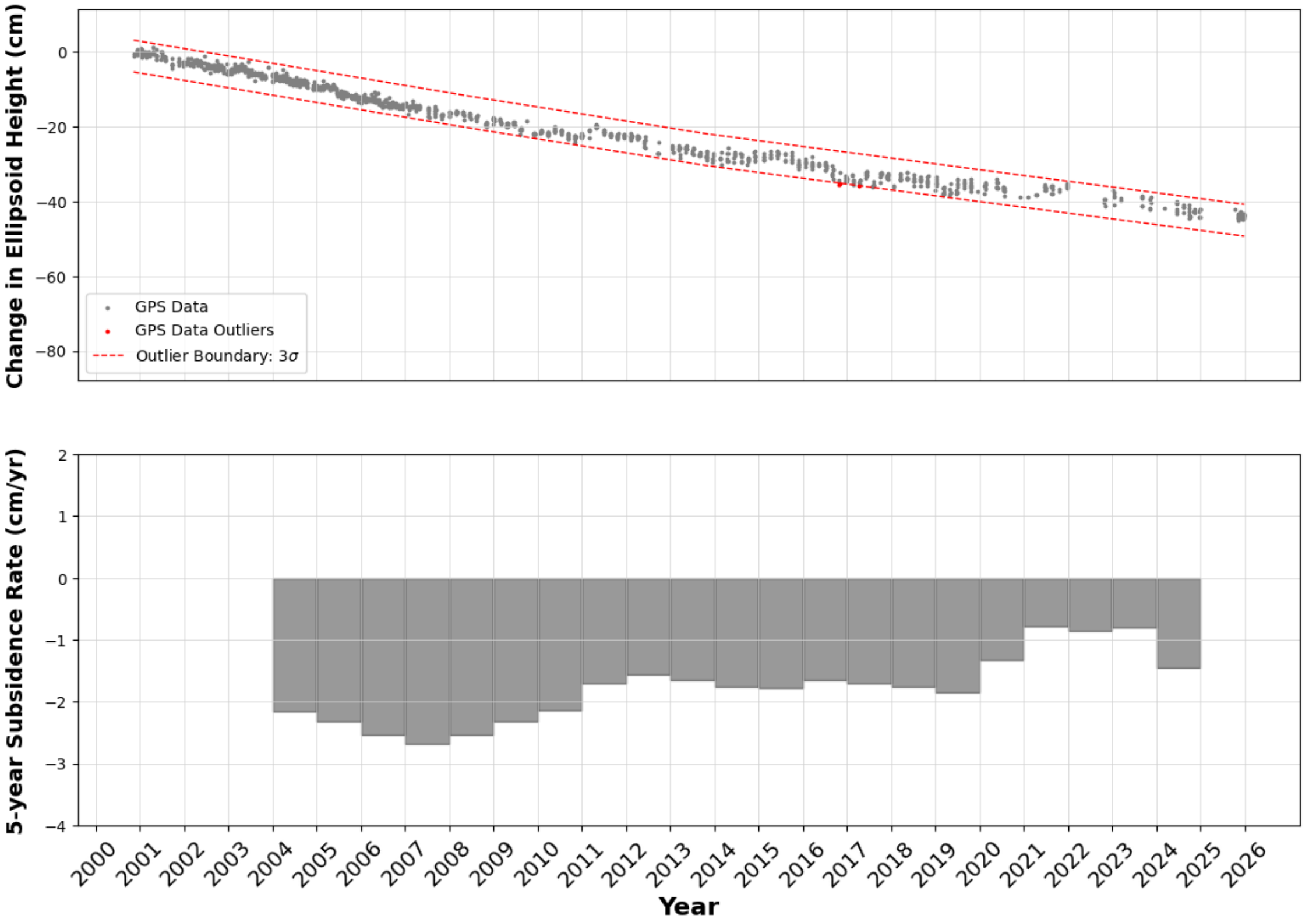


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P018

Cypress, TX





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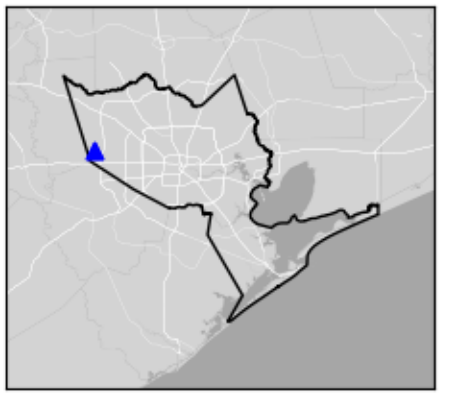
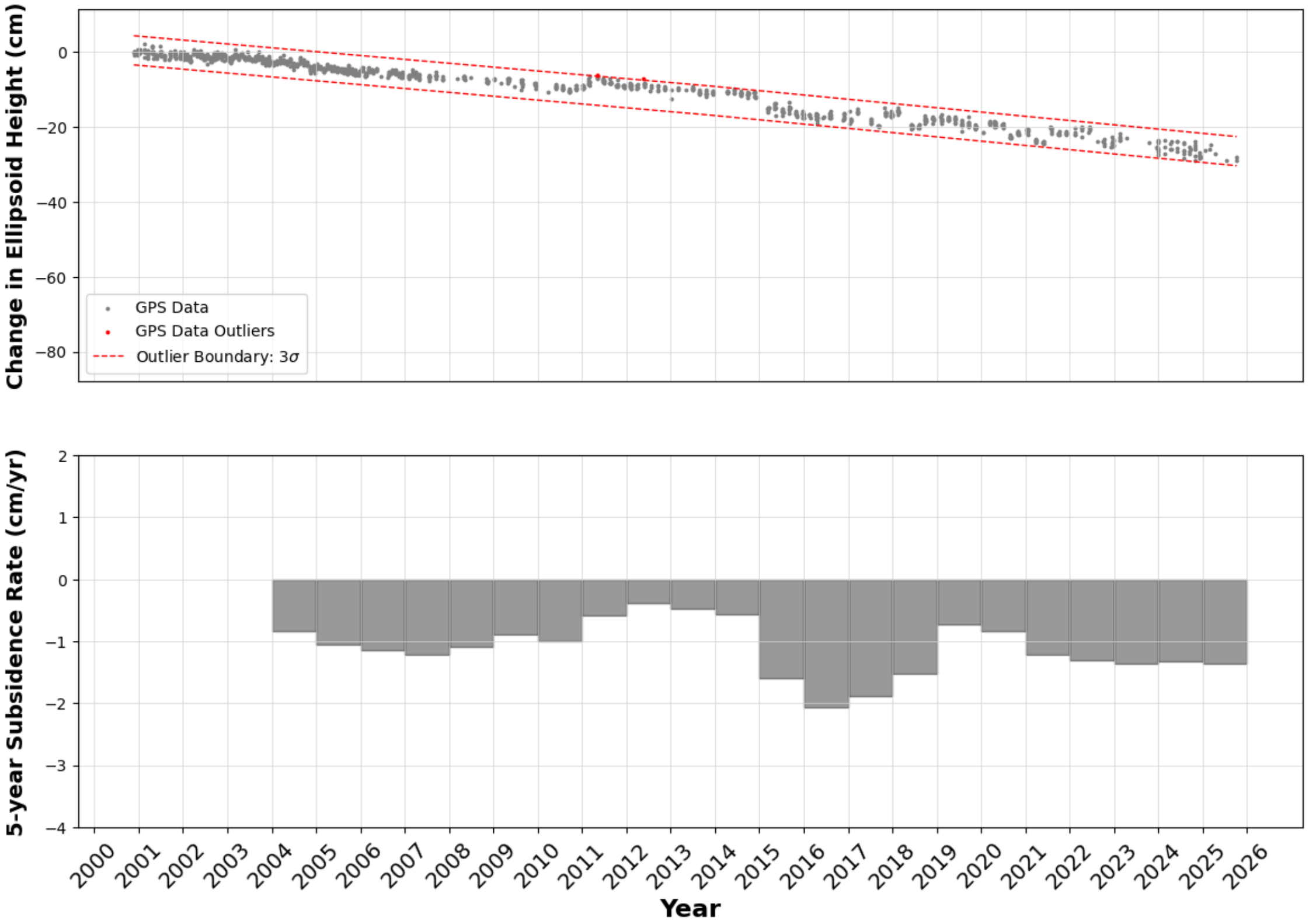
P019

Katy, TX

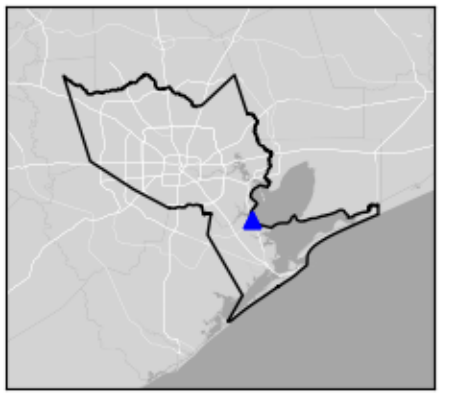


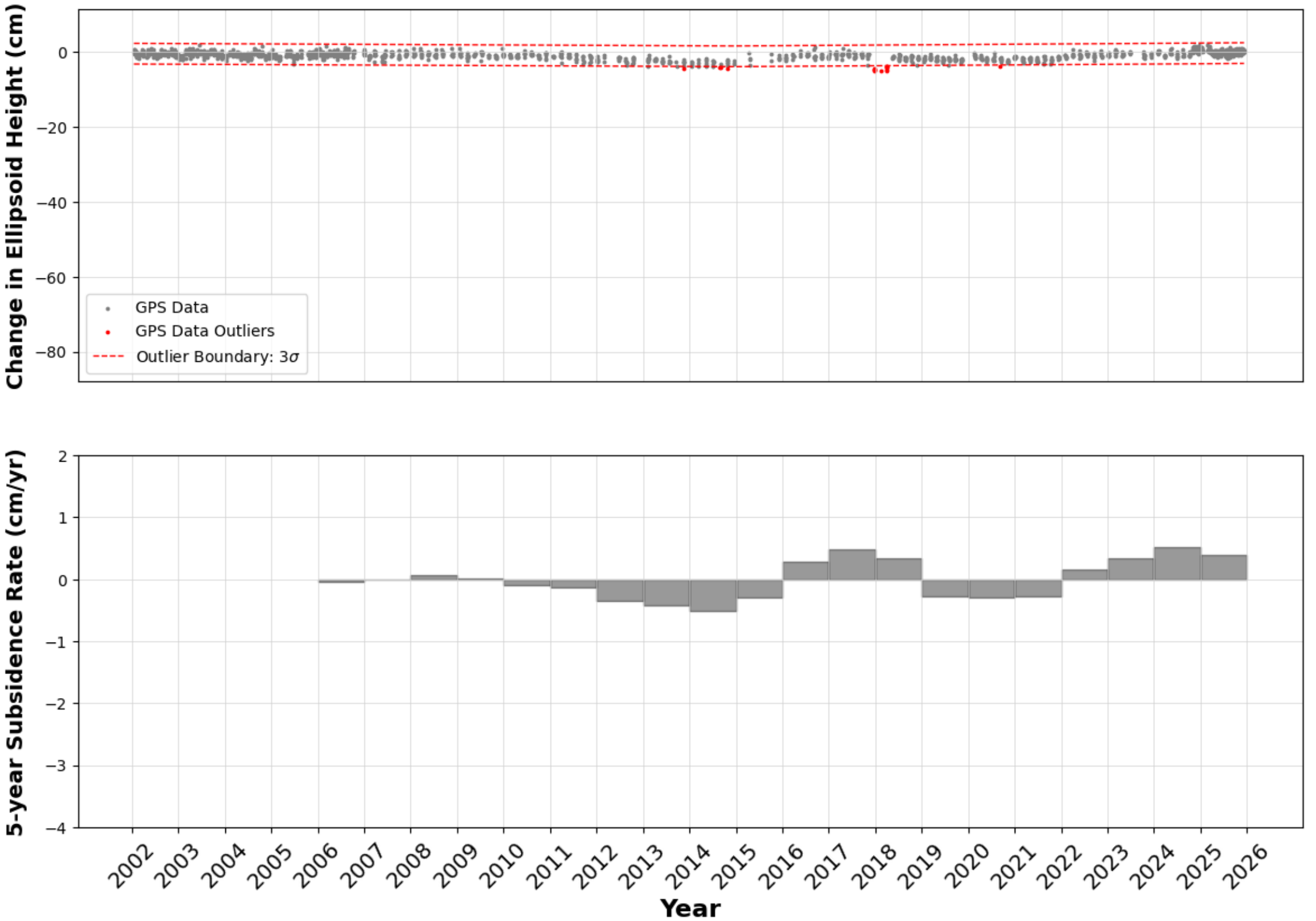


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P020

Kemah, TX

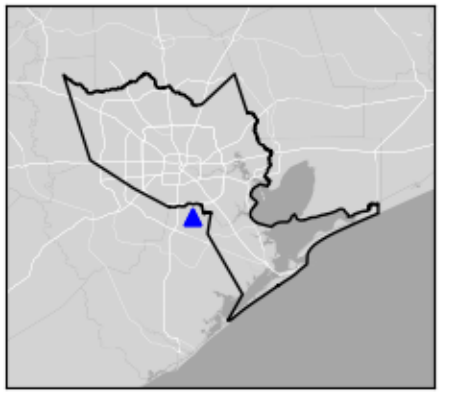


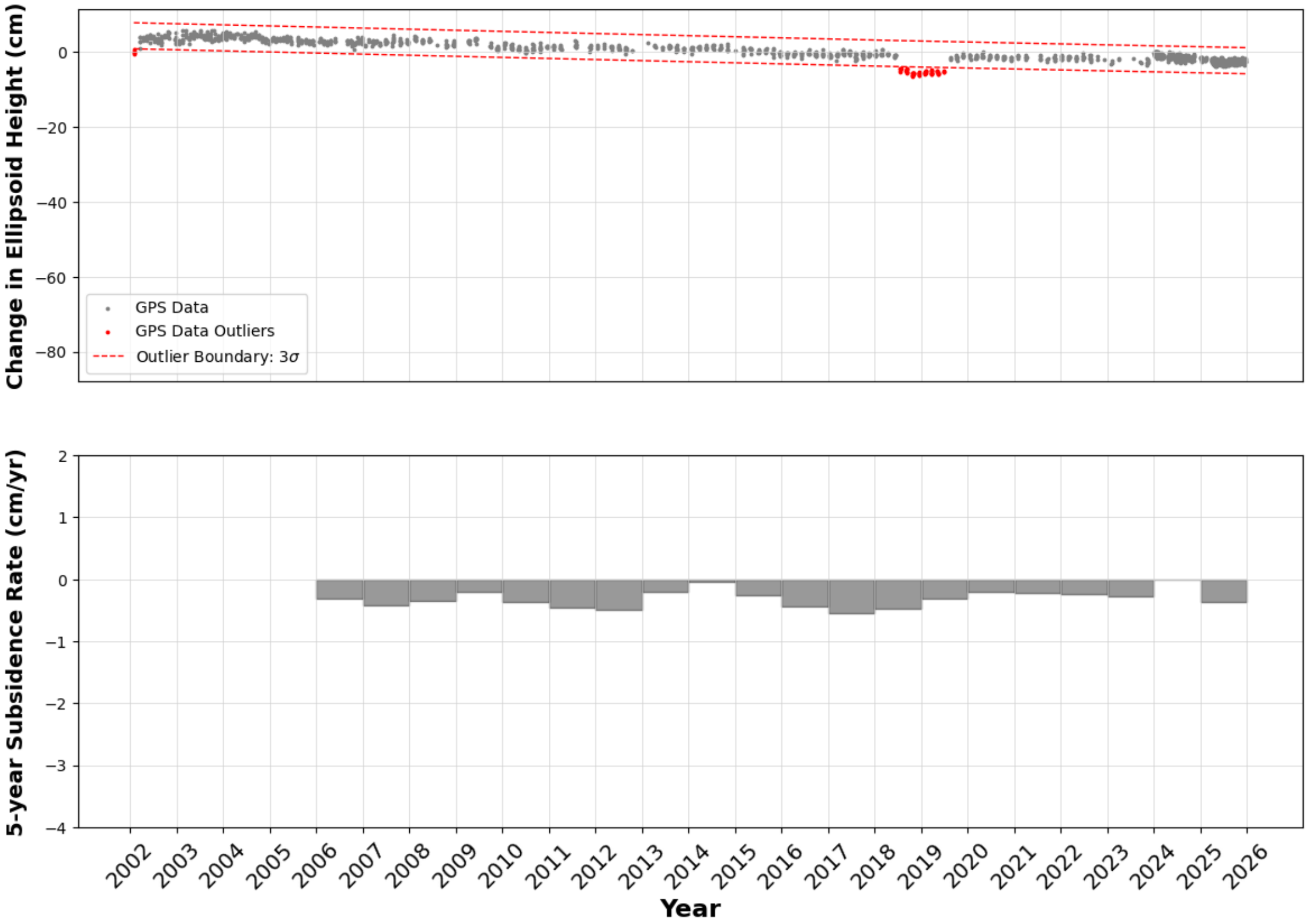


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P021

Pearland, TX

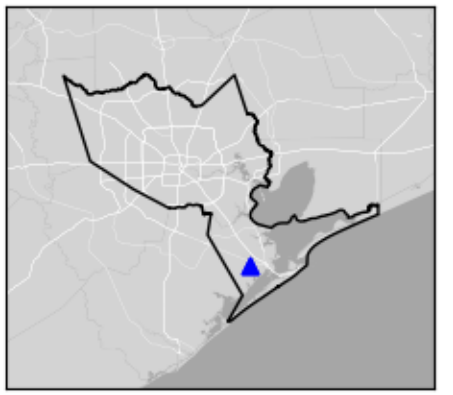


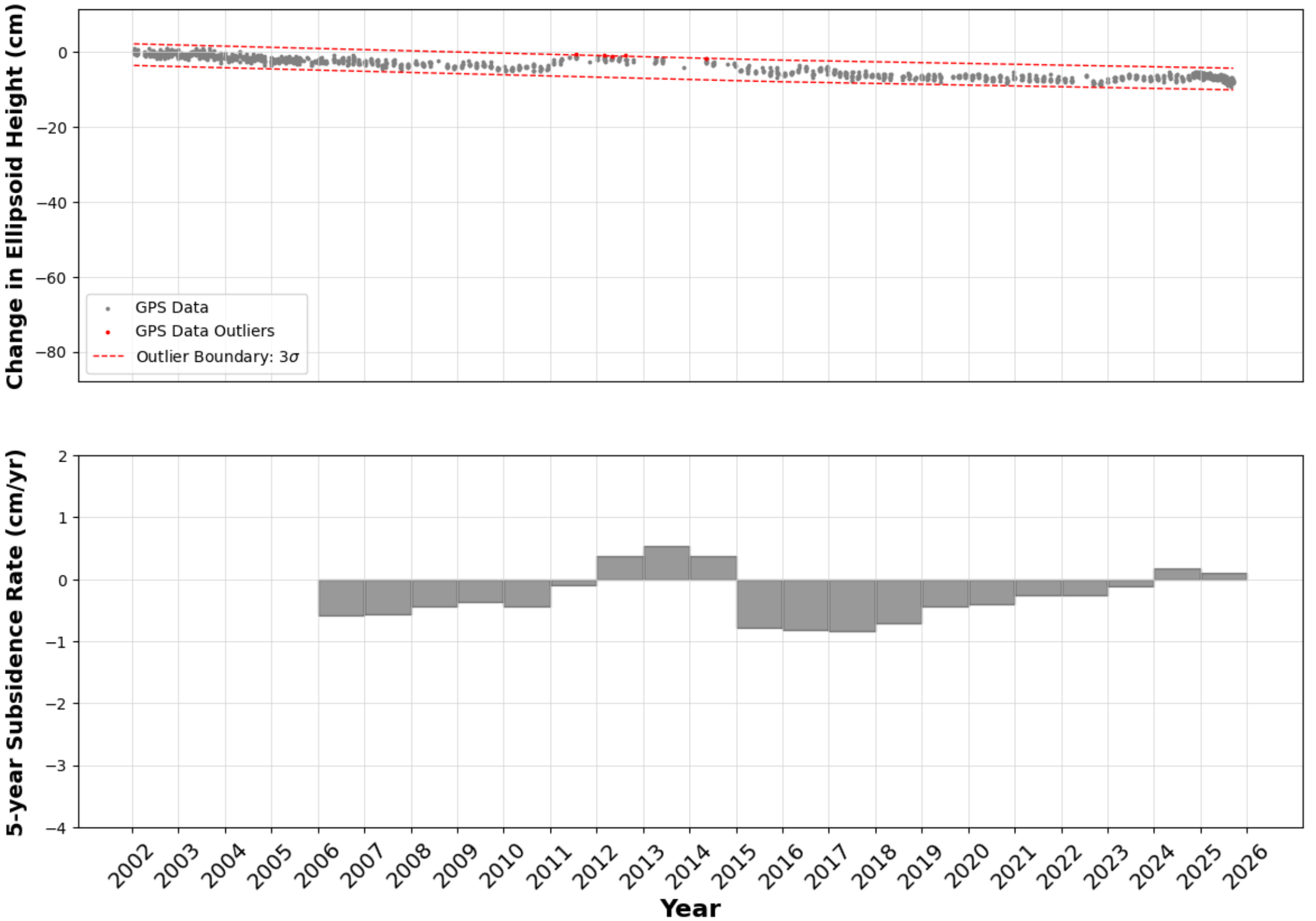


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P022

Hitchcock, TX

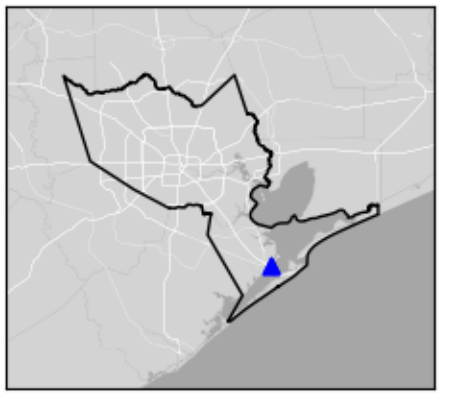


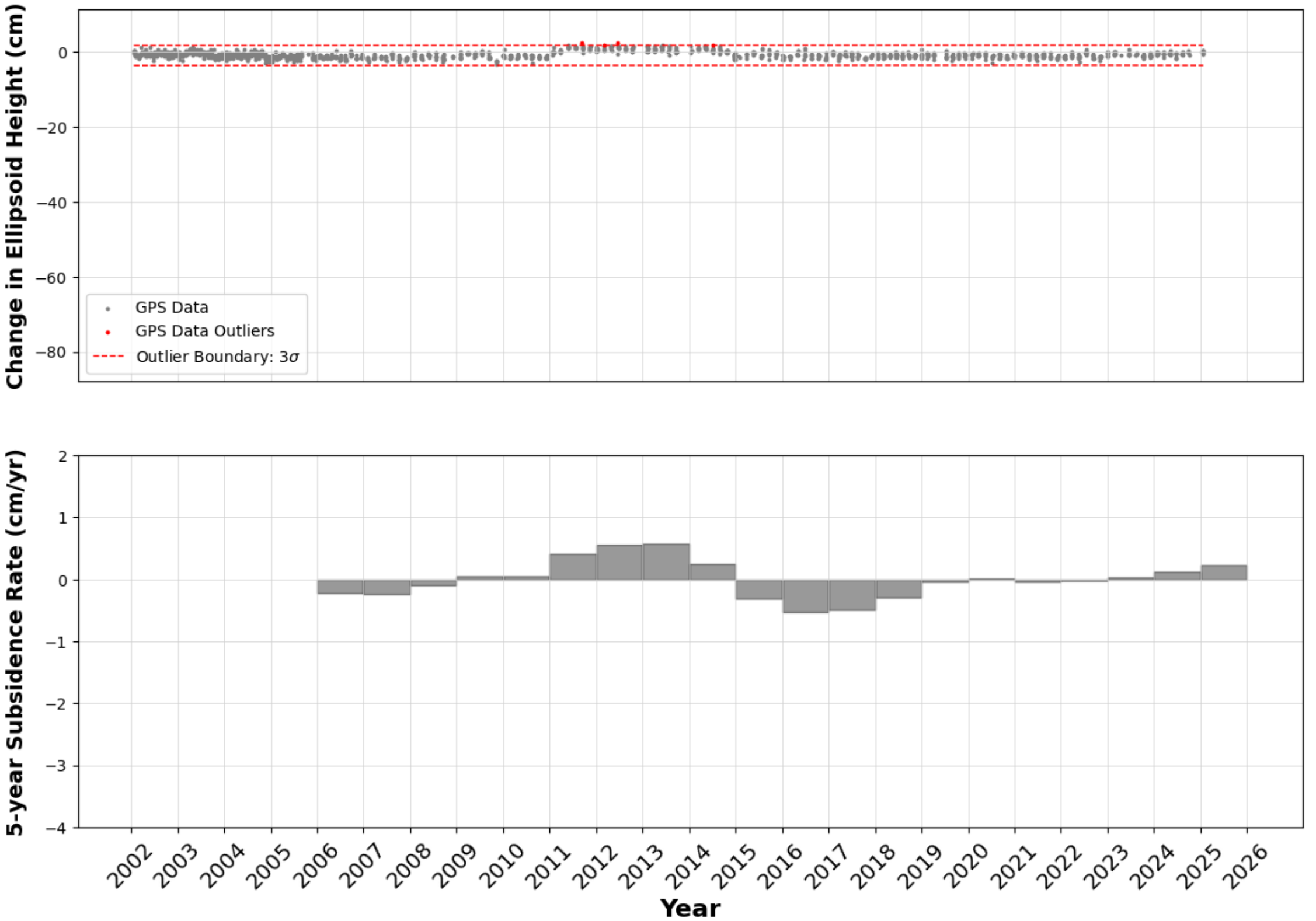


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P023

Texas City, TX

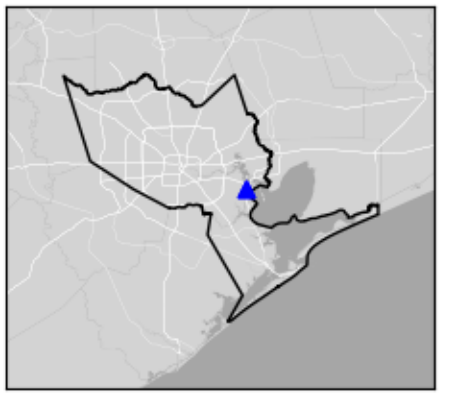


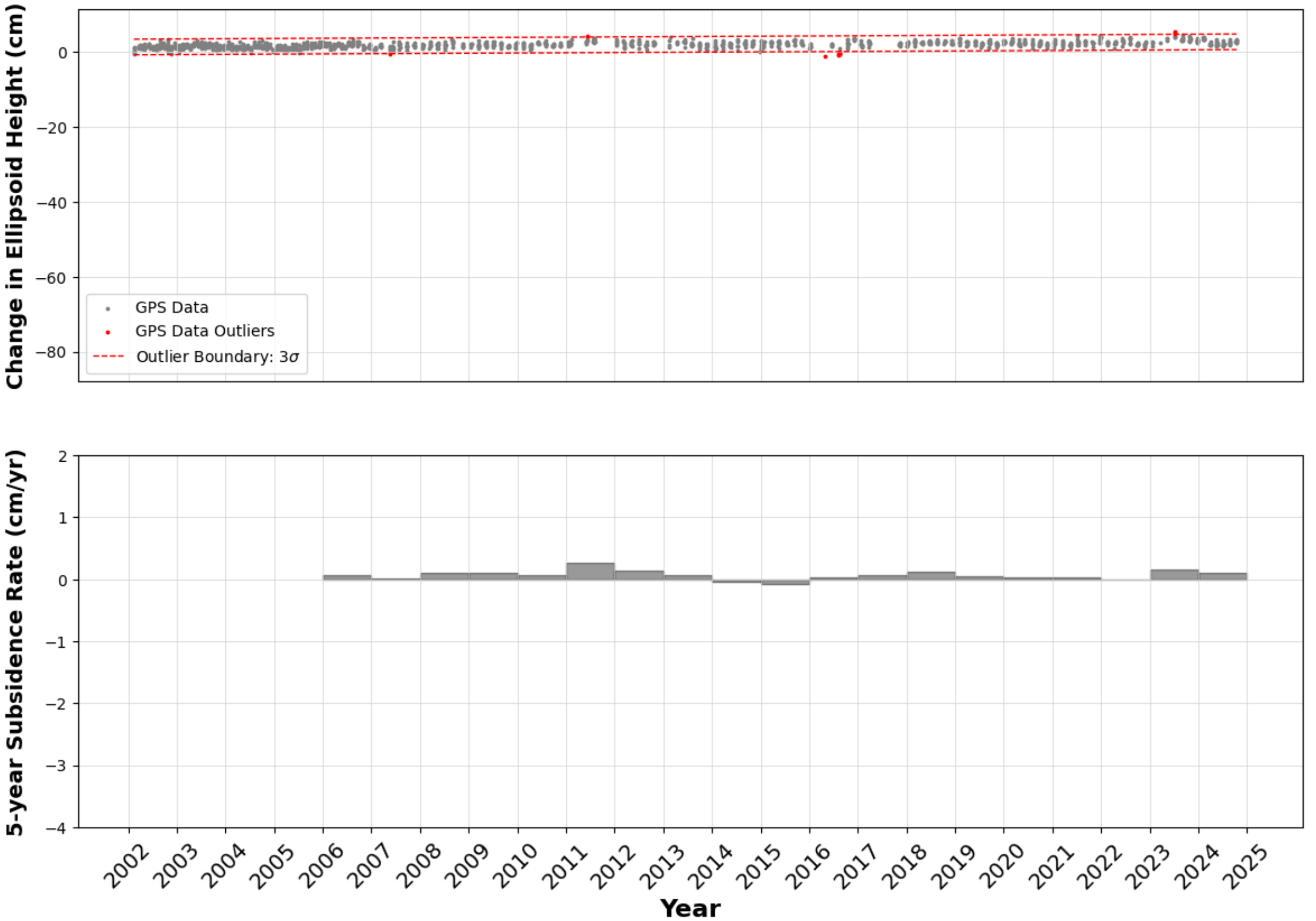


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P024

La Porte, TX

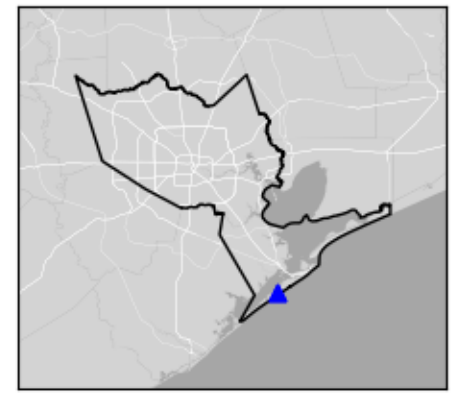


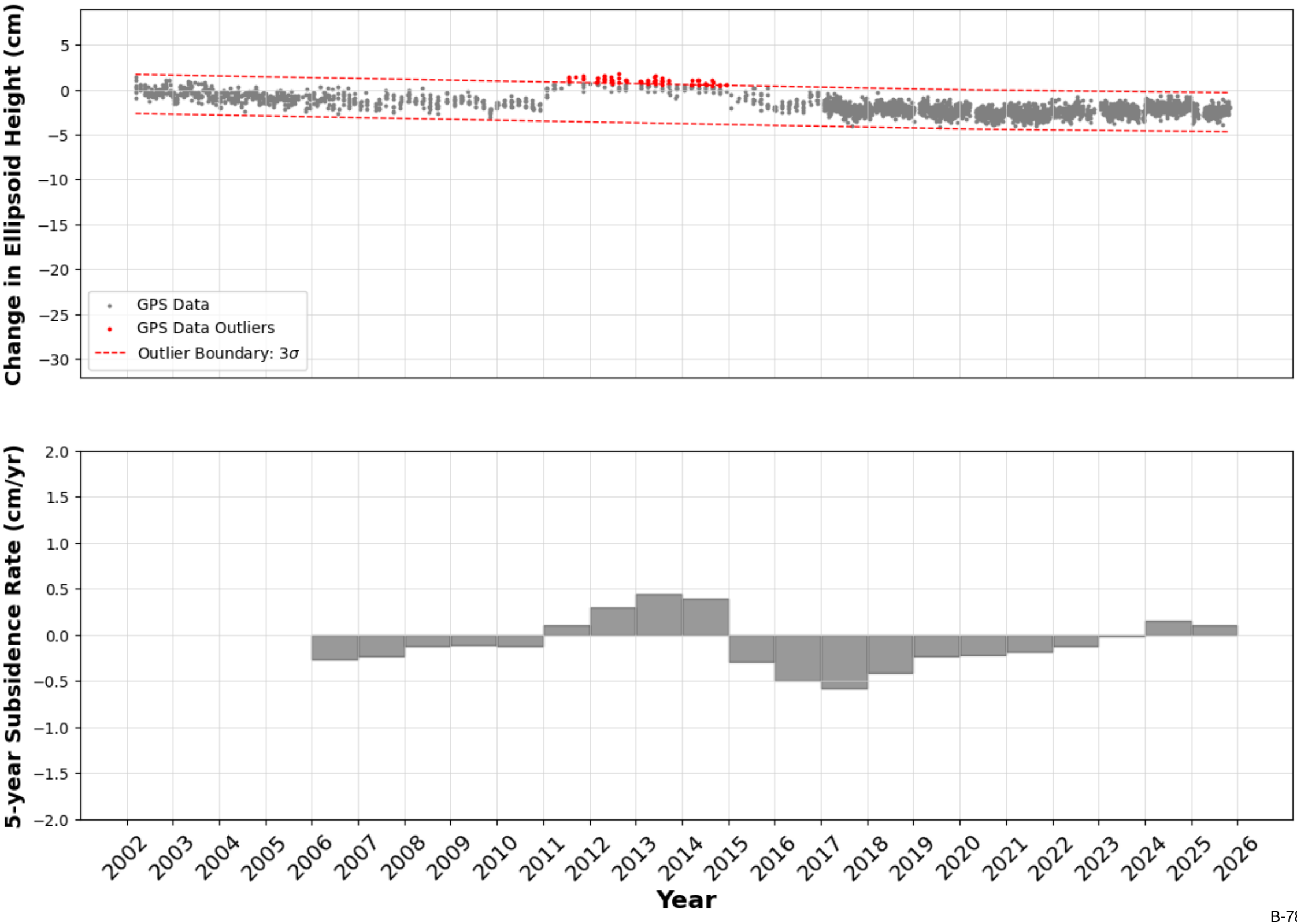


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P026

Galveston, TX

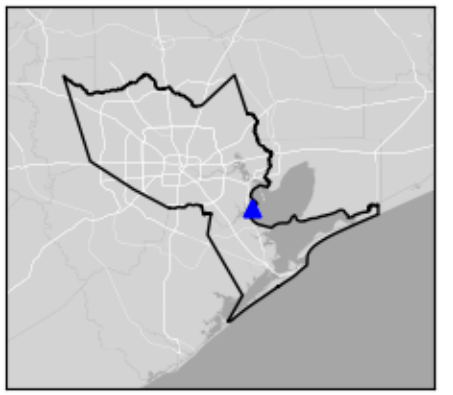


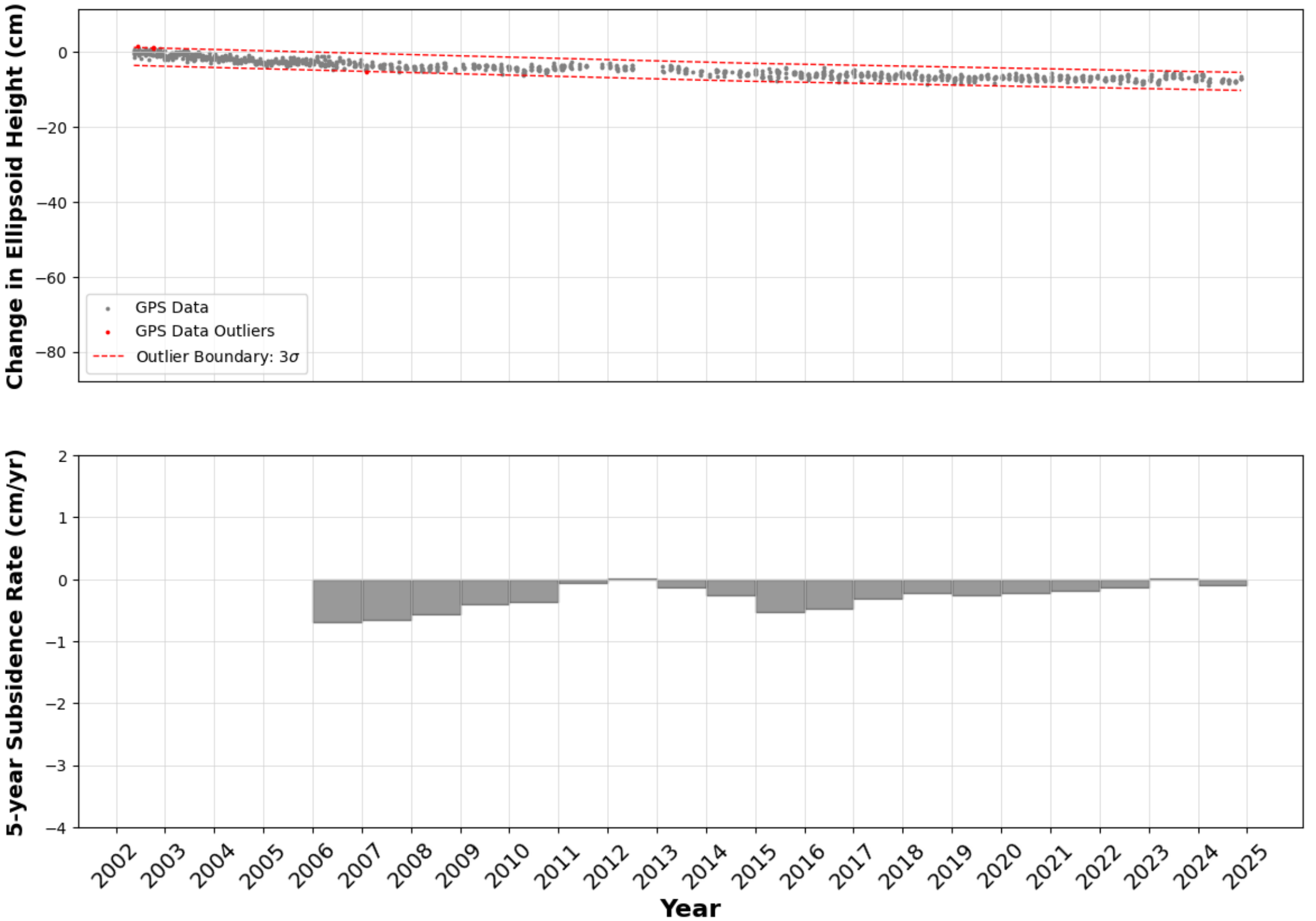


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered by HGSD when calculating subsidence rates and are shown for informational purposes only.

P027

Seabrook, TX

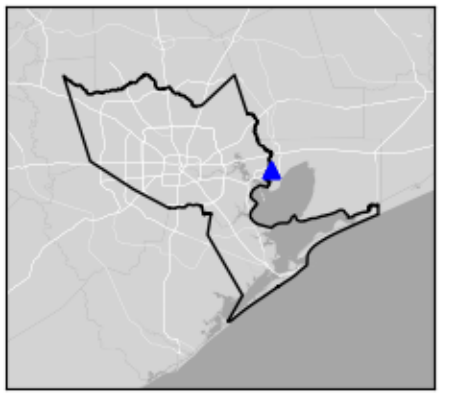


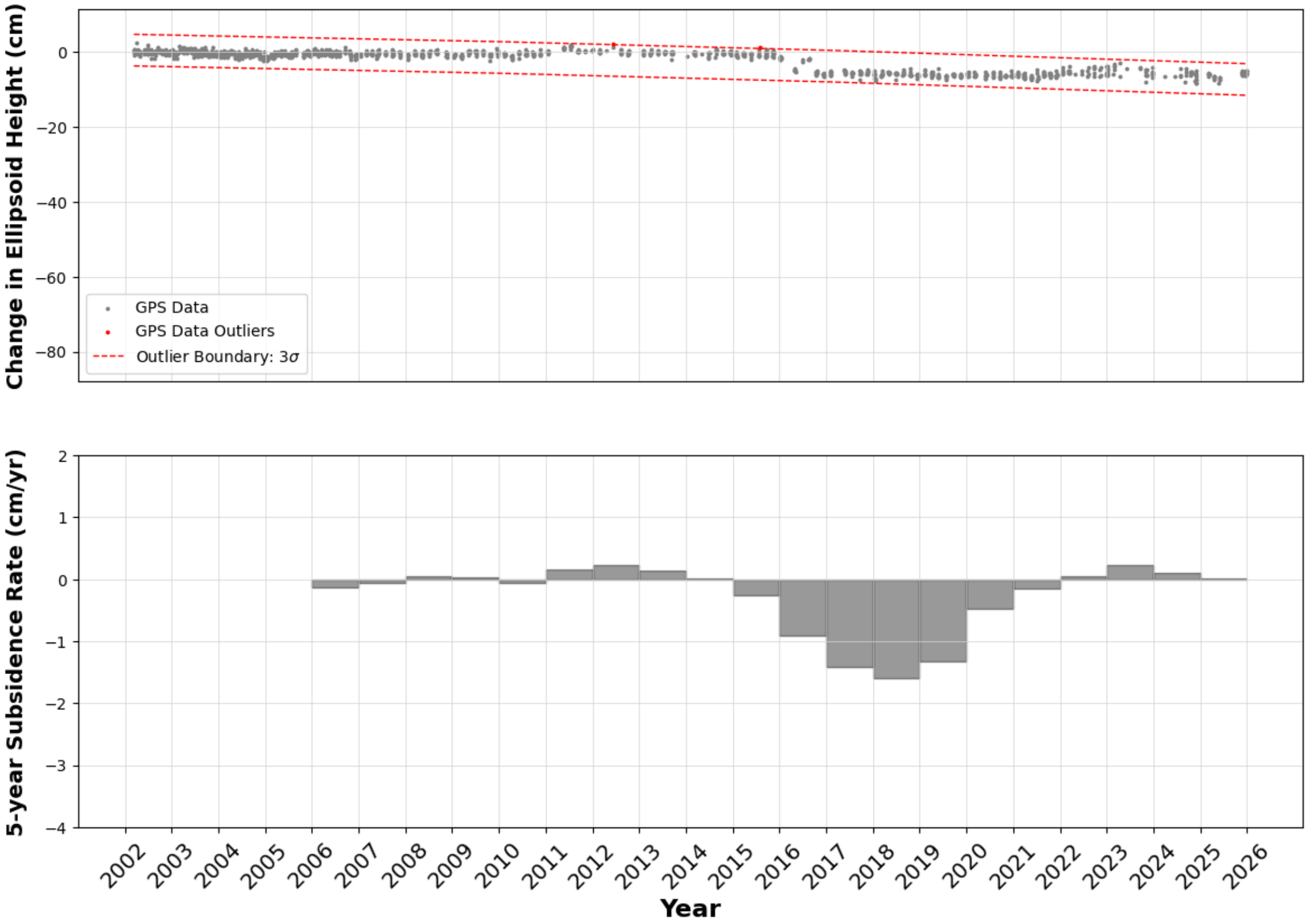


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P028

Baytown, TX

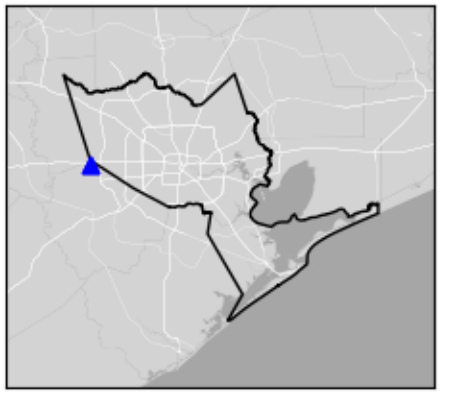


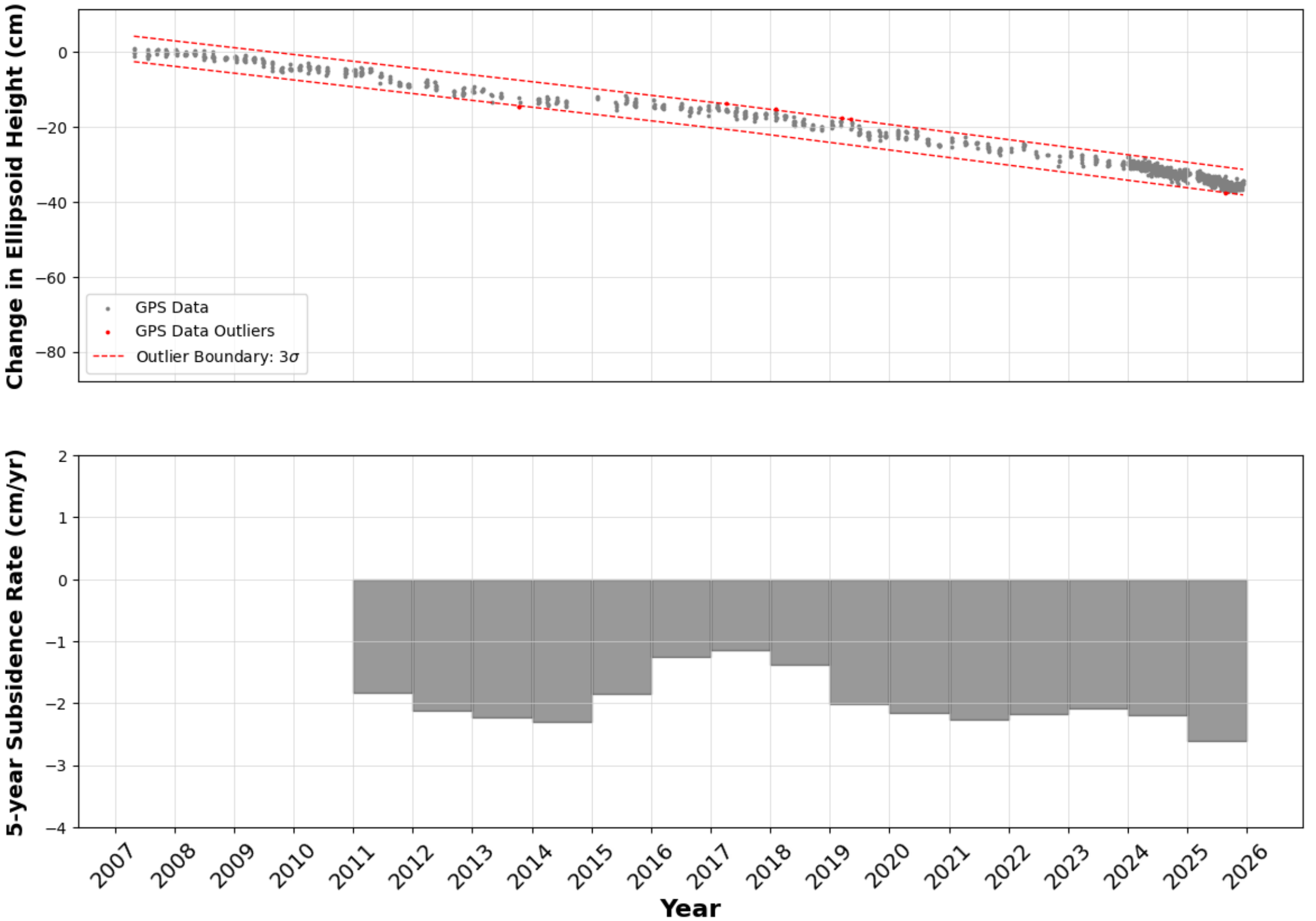


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P029

Katy, TX

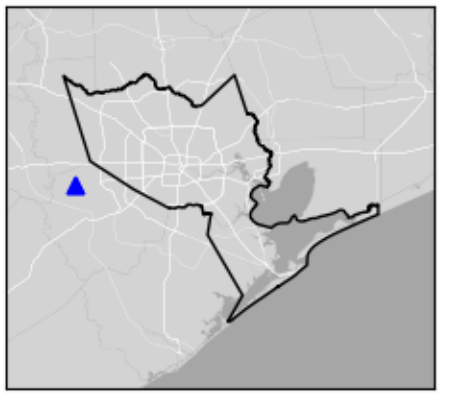


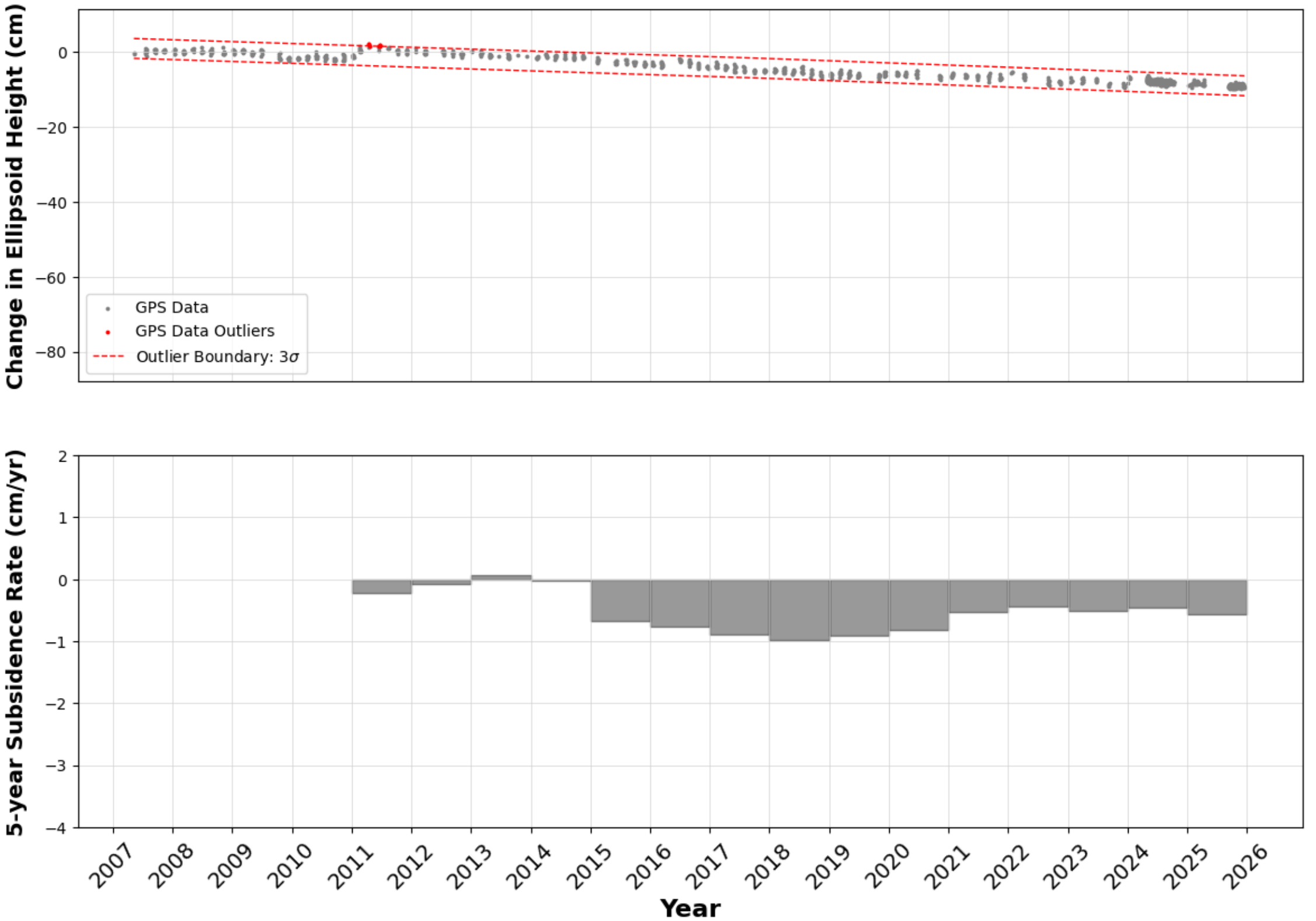


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P030

Fulshear, TX

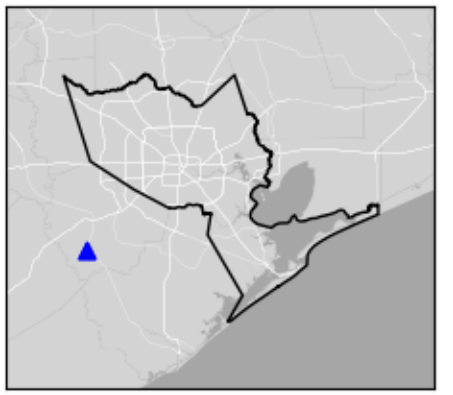


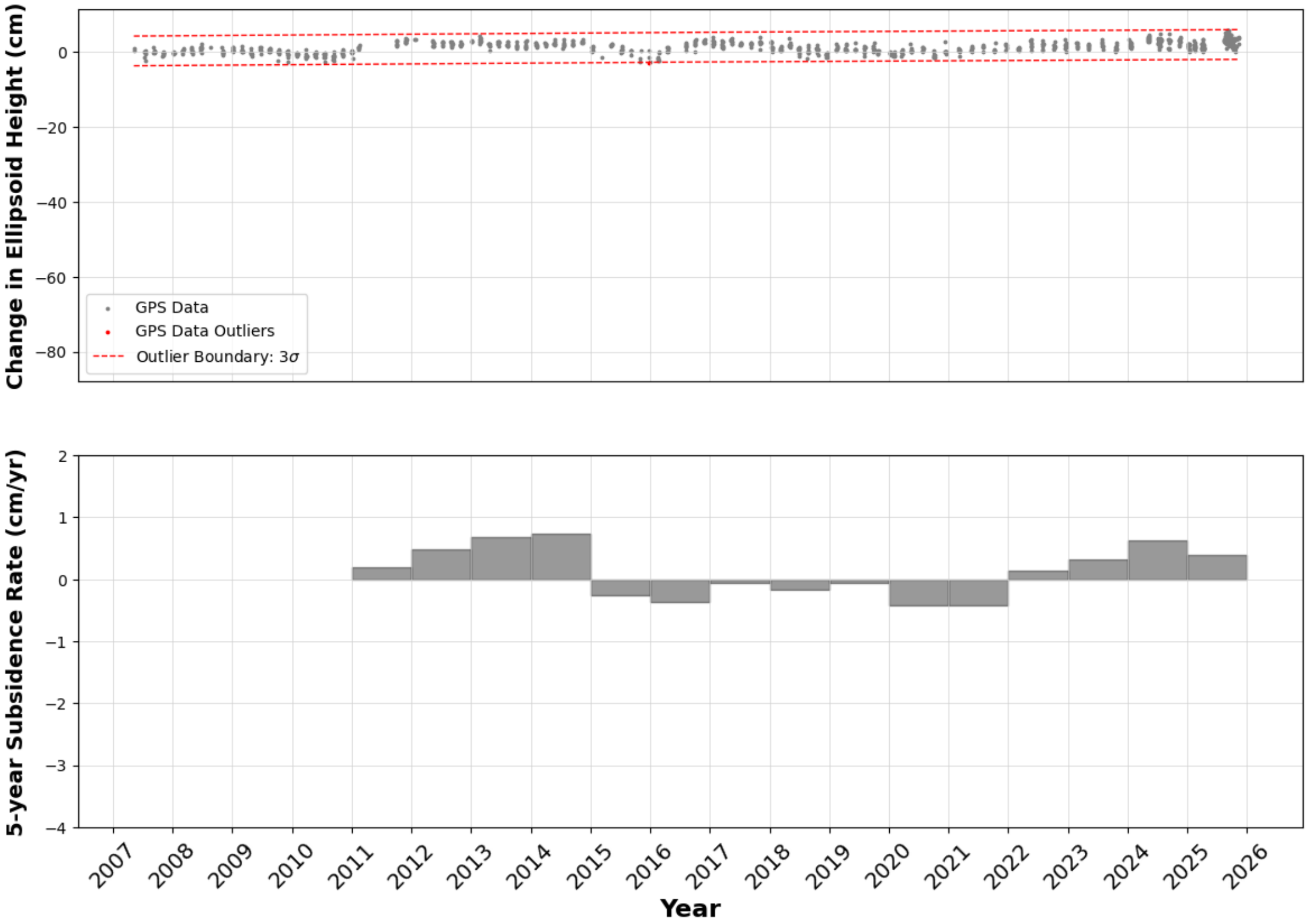


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P031

Needville, TX

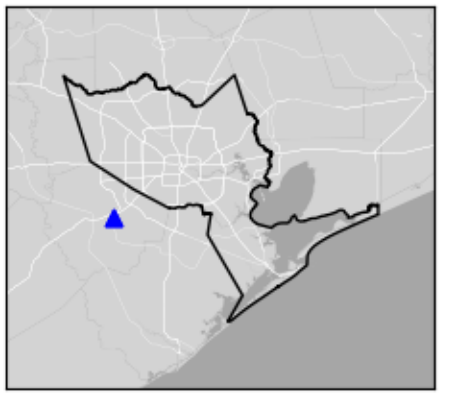


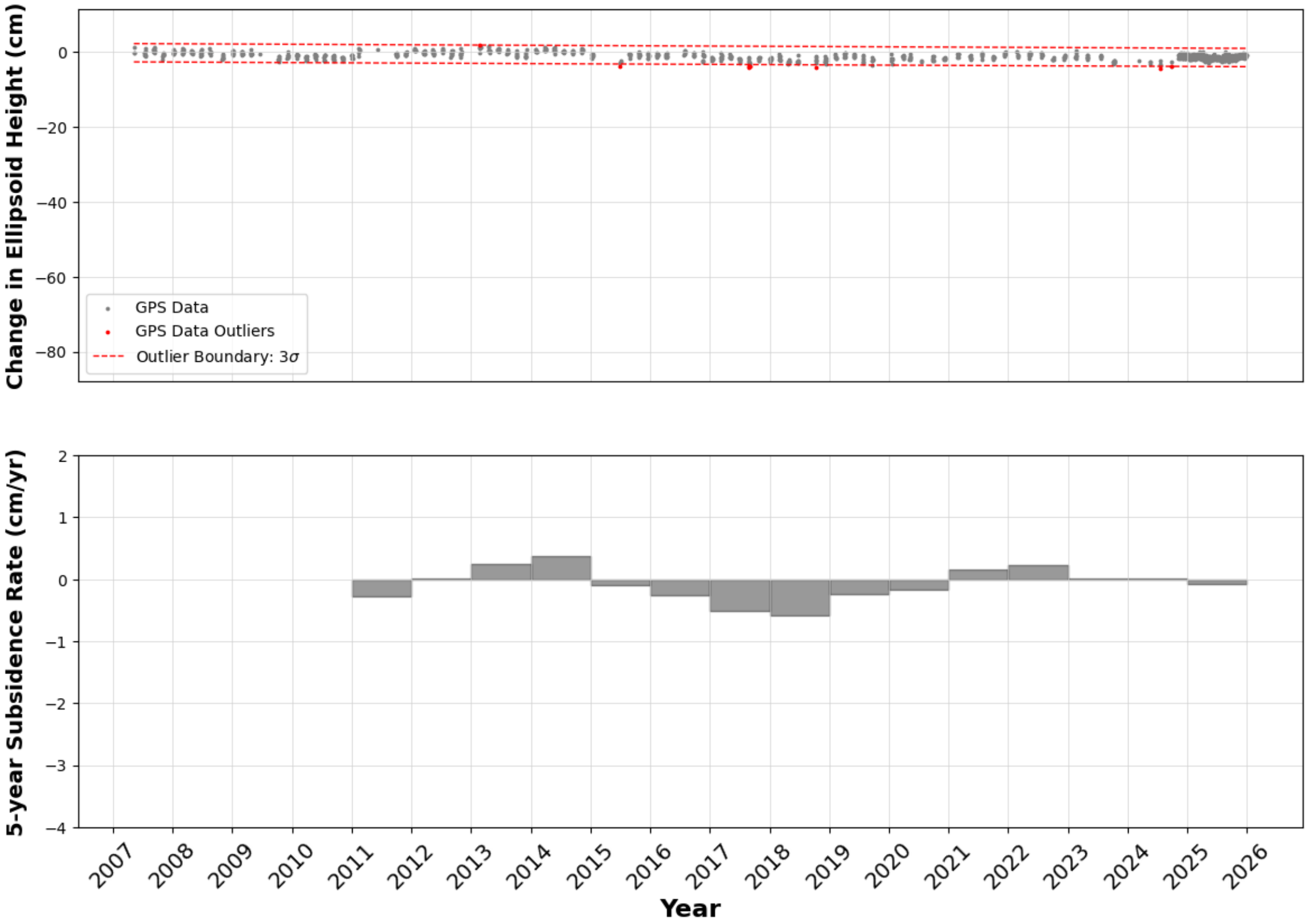


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P032

Richmond, TX

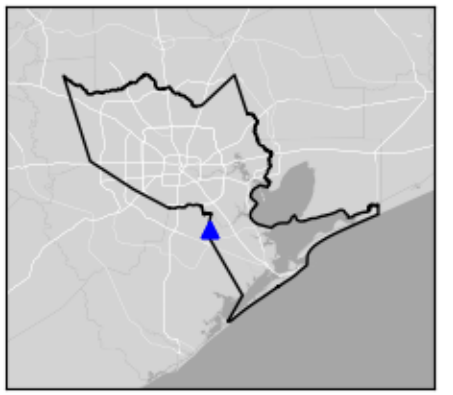


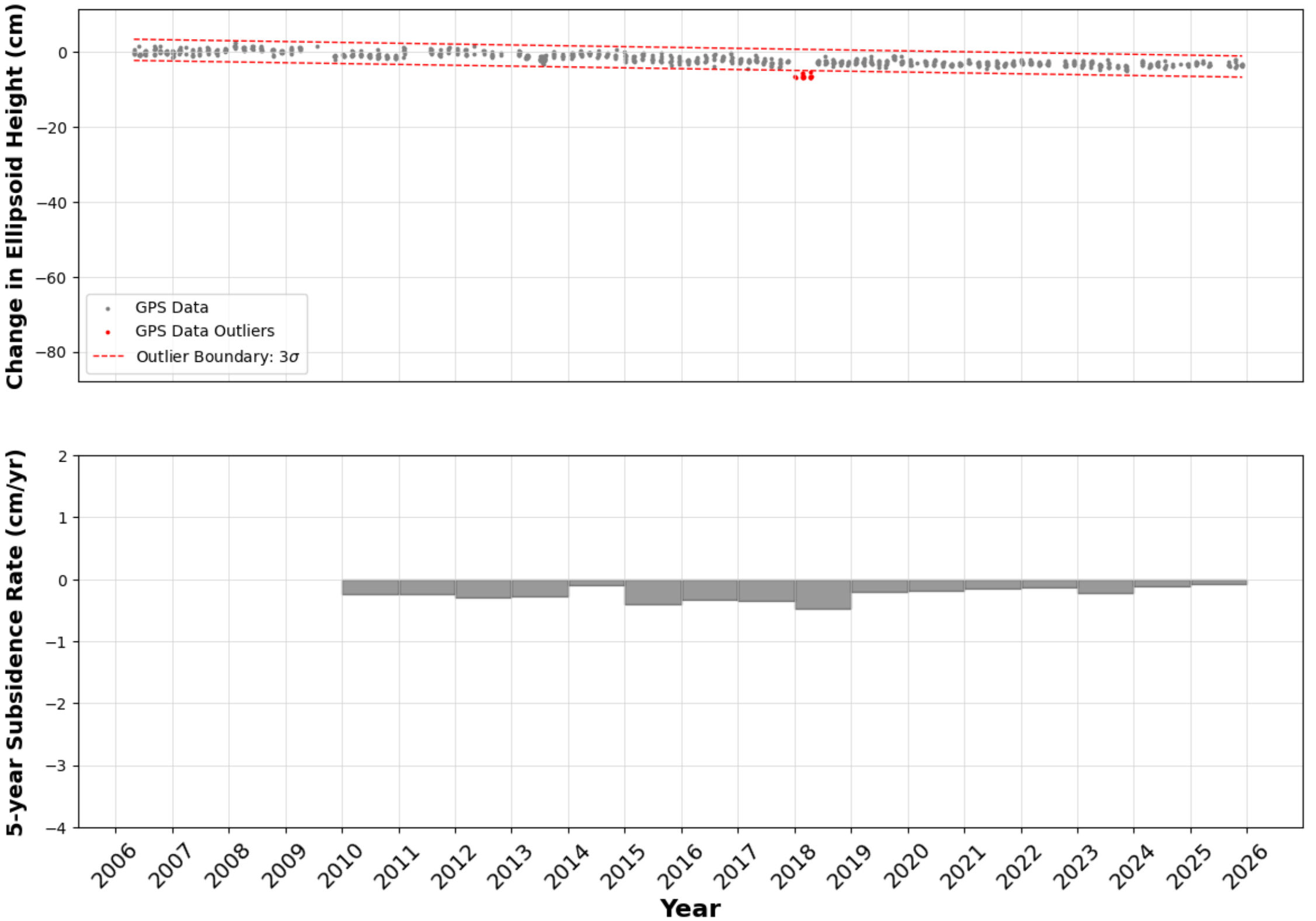


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P033

Friendswood, TX

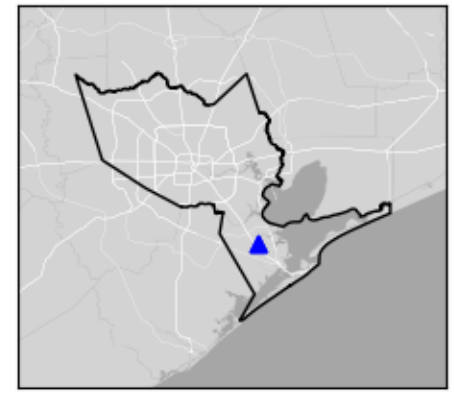


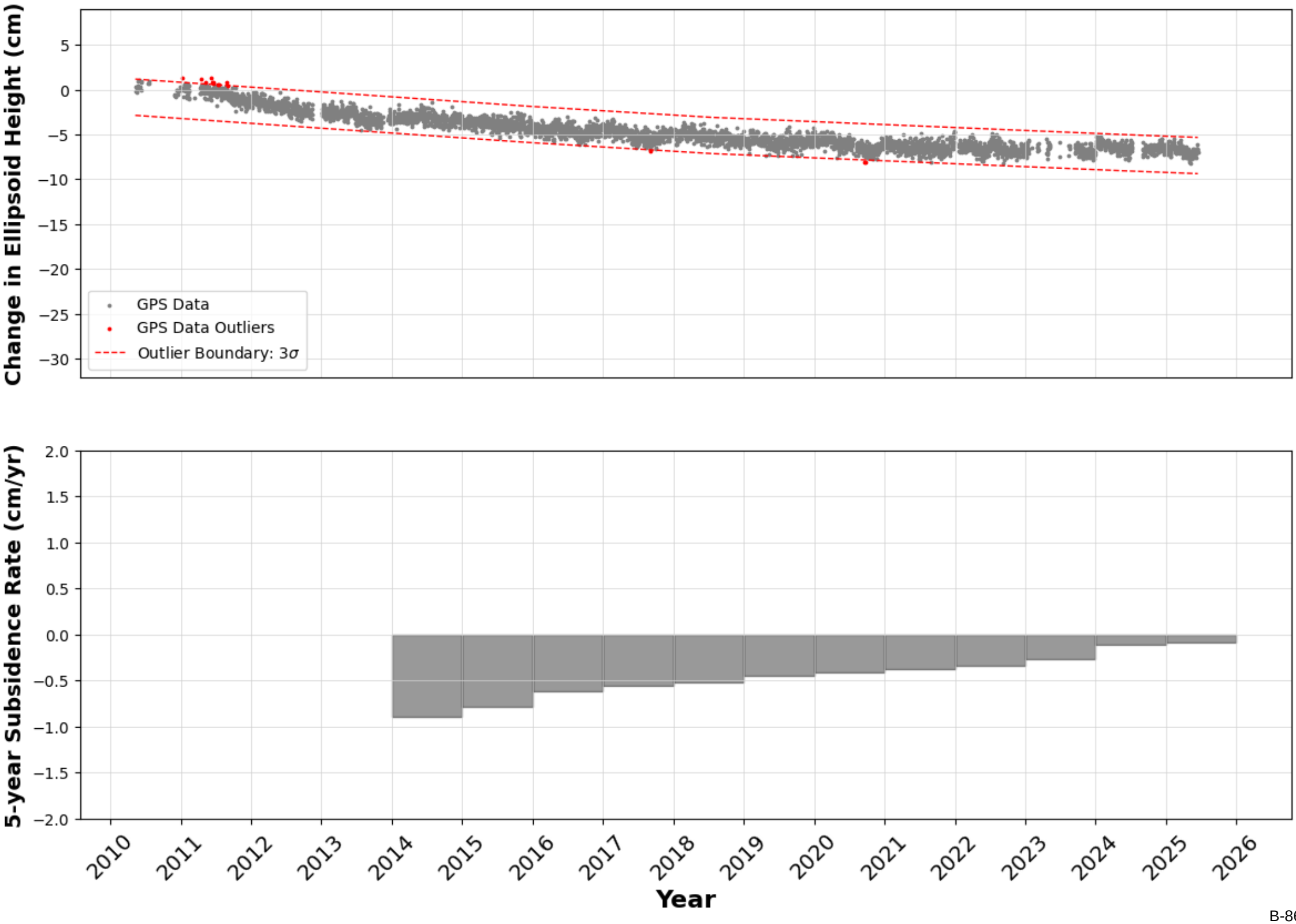


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P034

Texas City, TX

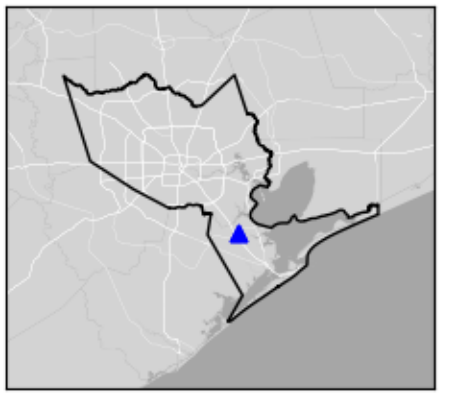


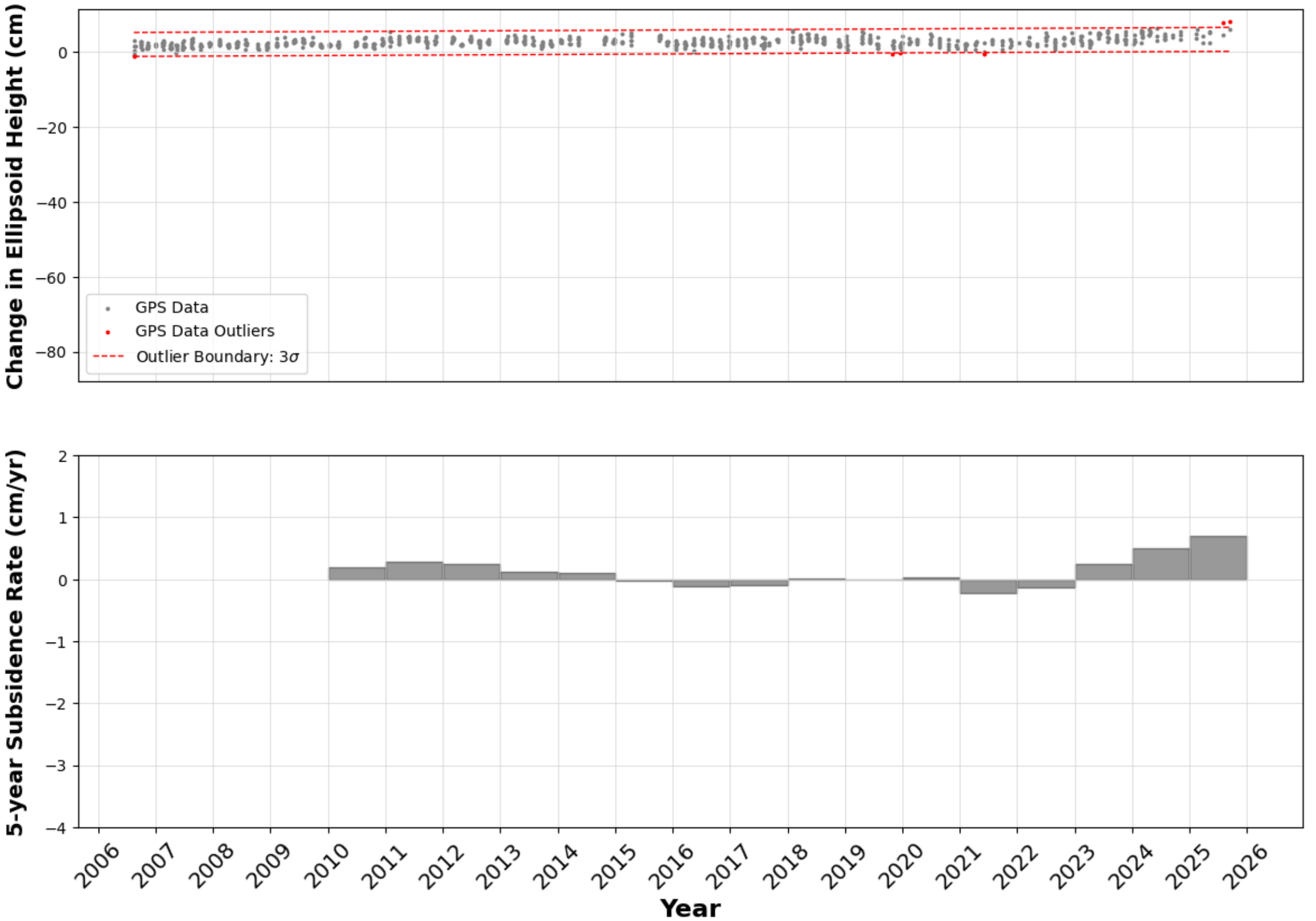


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered by HGSD when calculating subsidence rates and are shown for informational purposes only.

P035

League City, TX

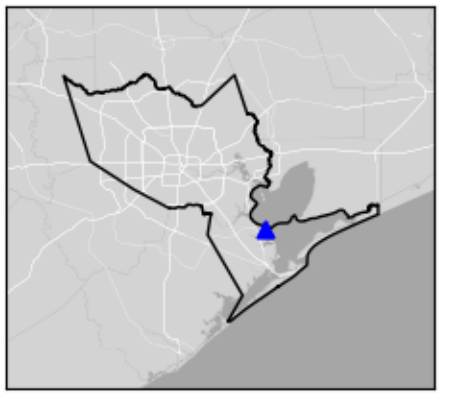


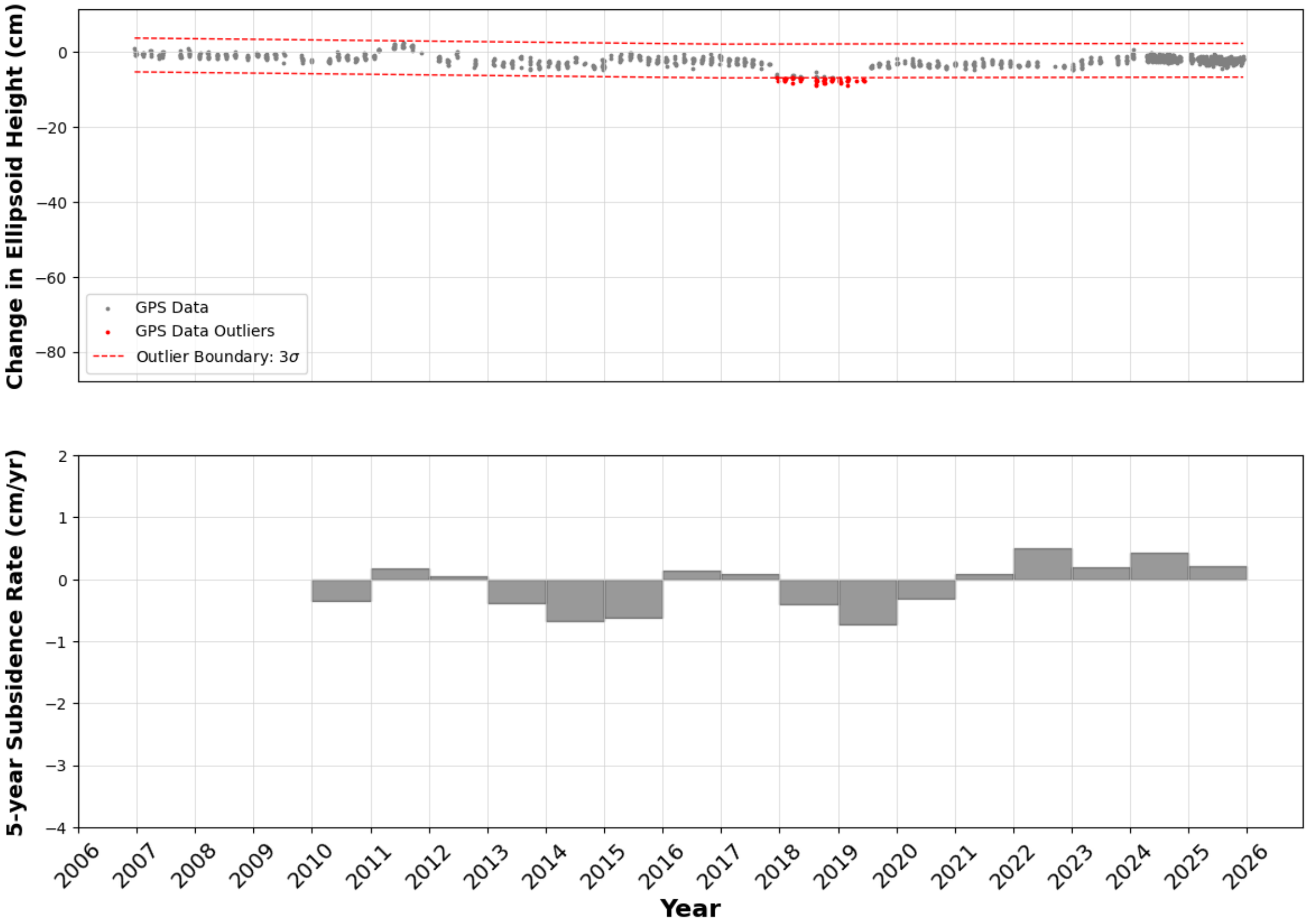


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P036

San Leon, TX

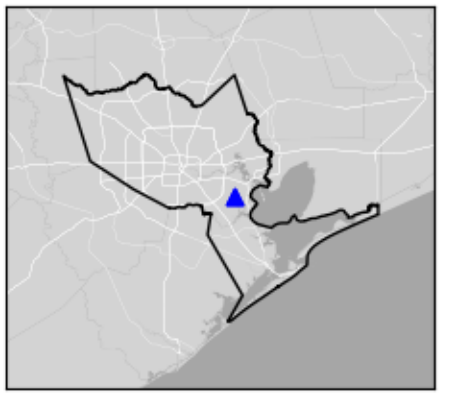


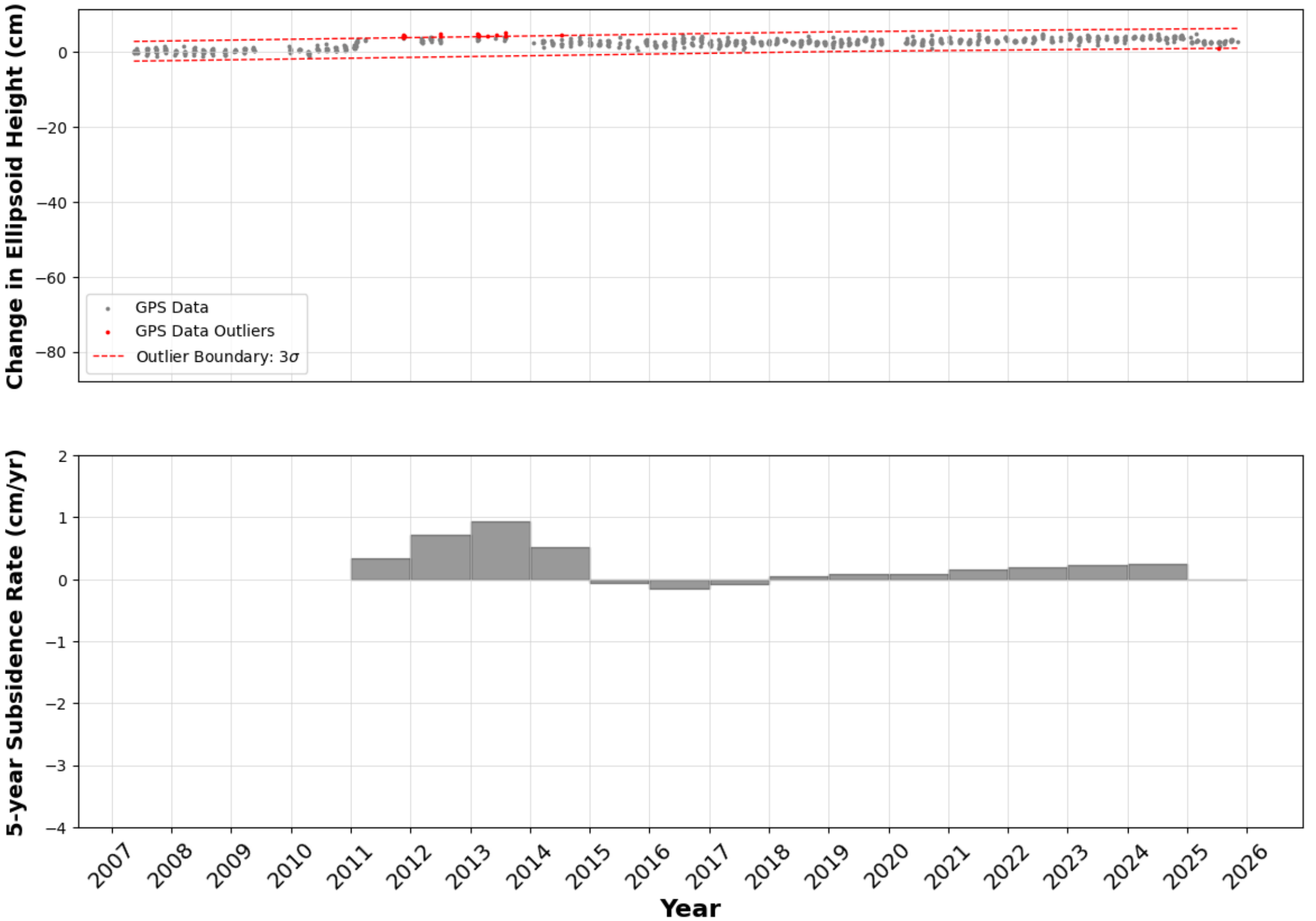


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P037

Pasadena, TX

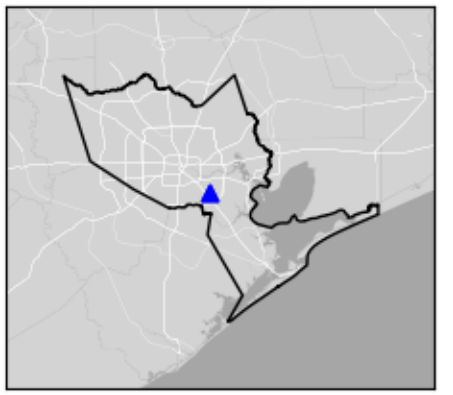


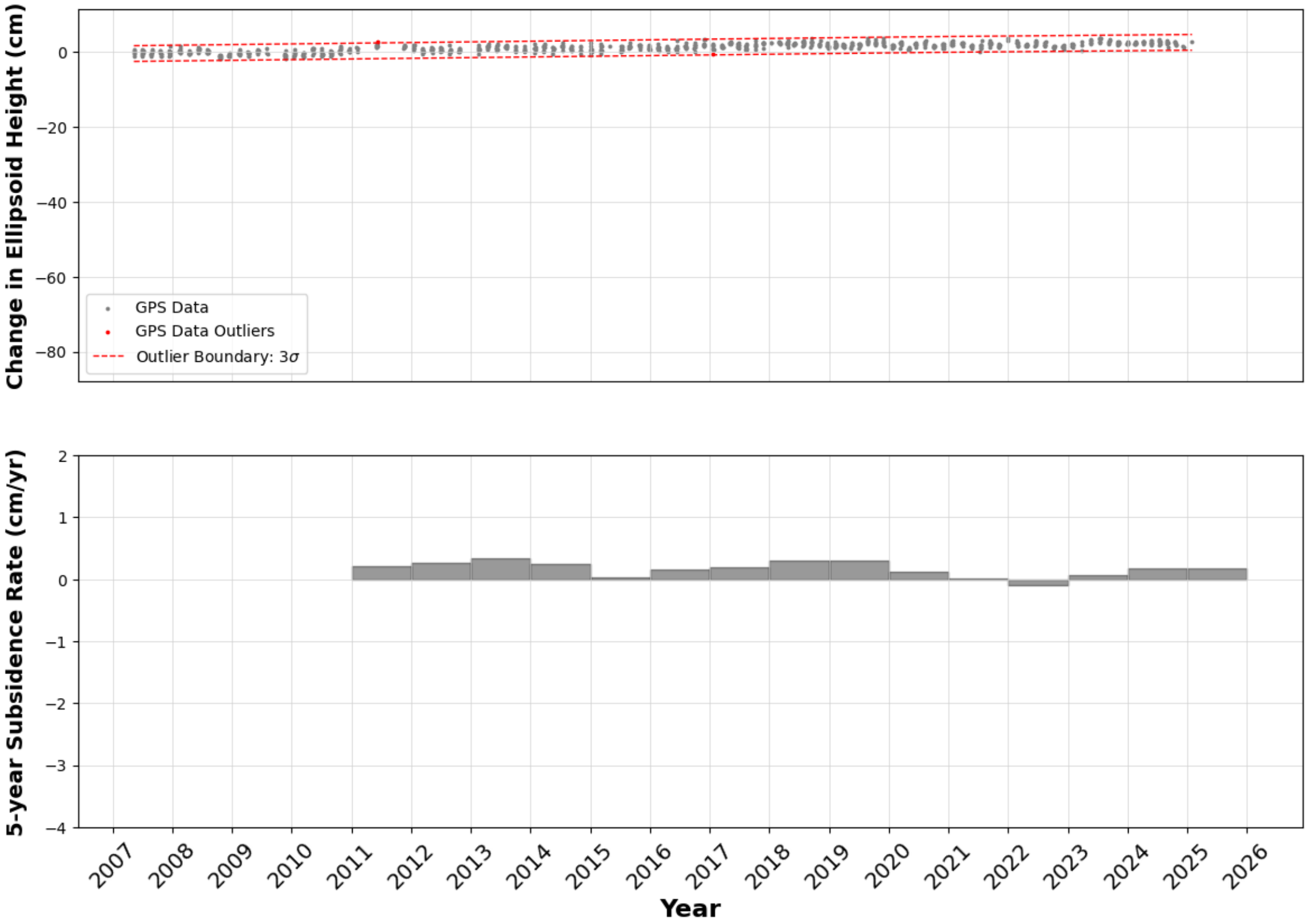


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P038

Houston, TX

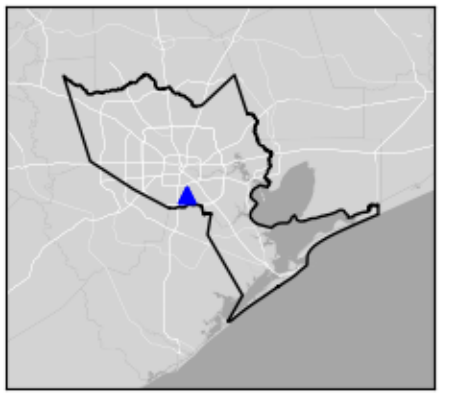


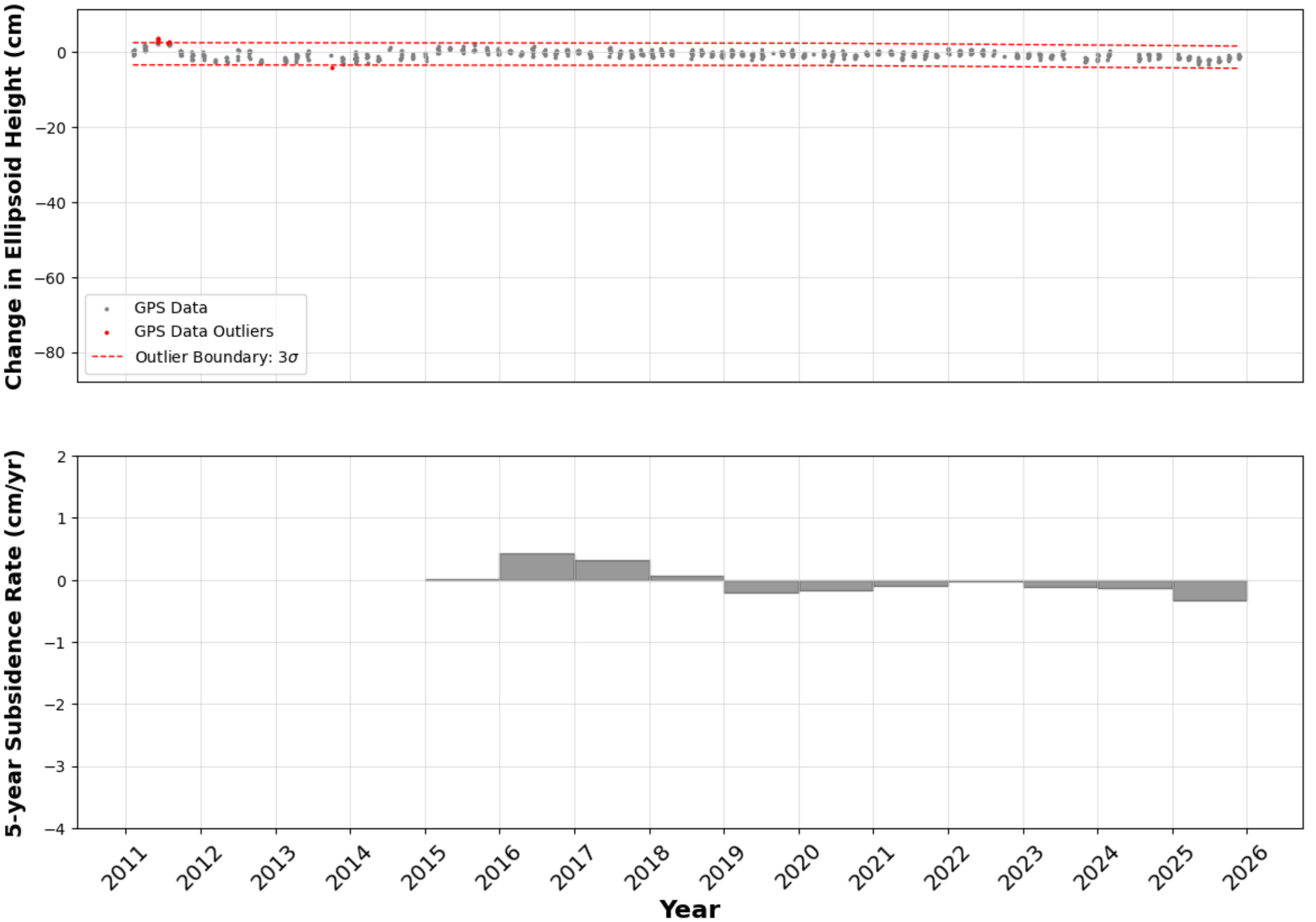


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P039

Houston, TX

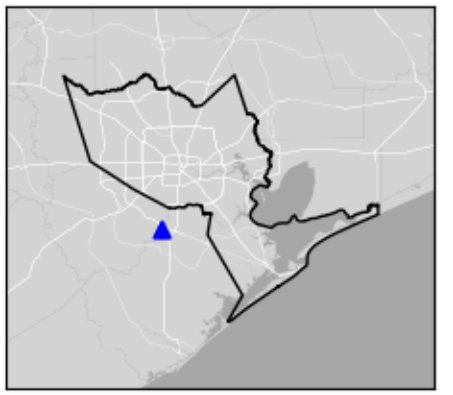


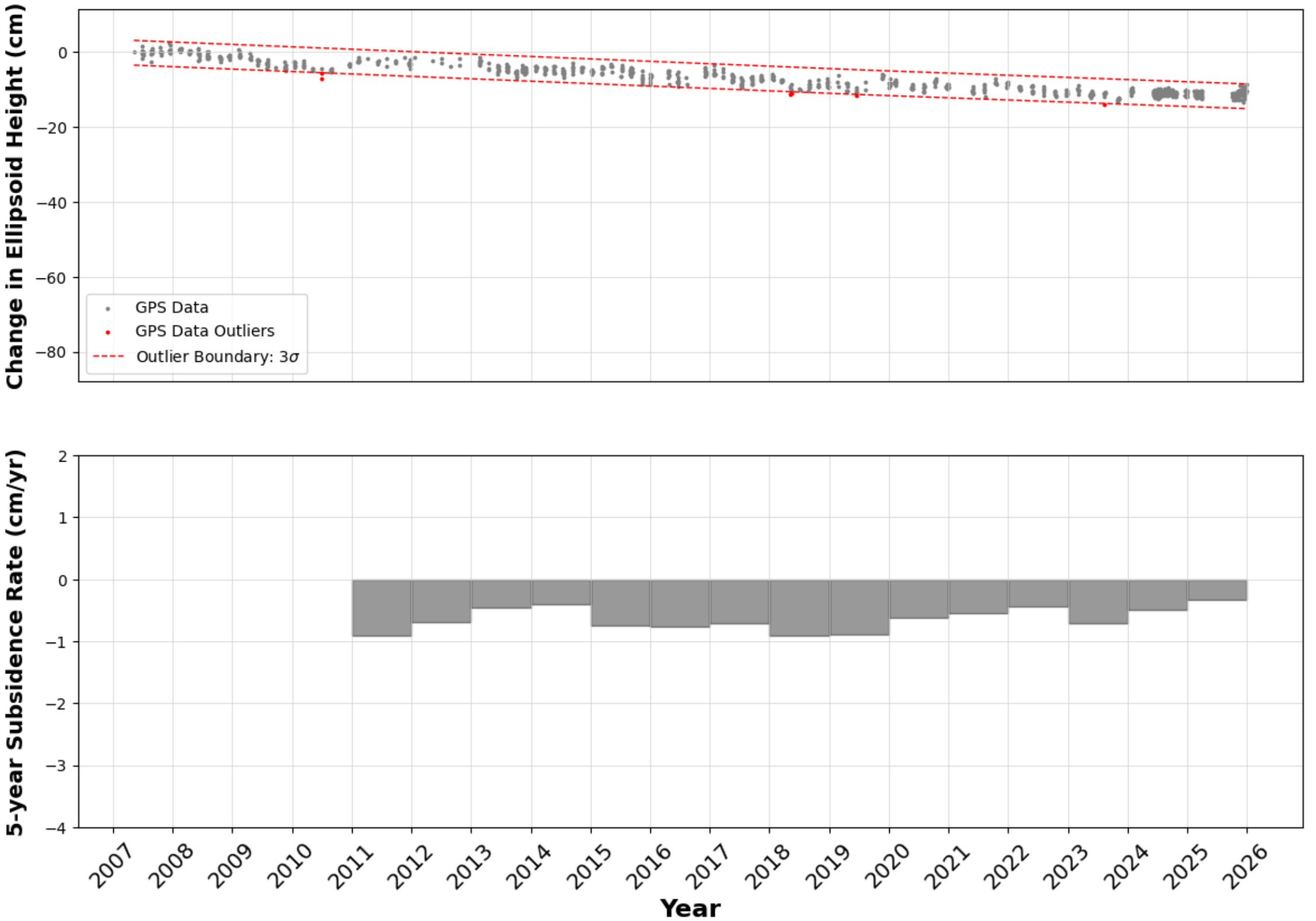


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P040

Rosharon, TX

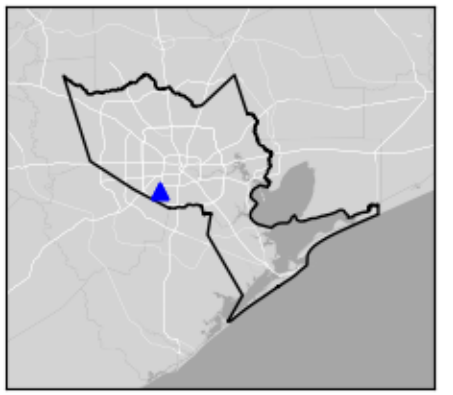


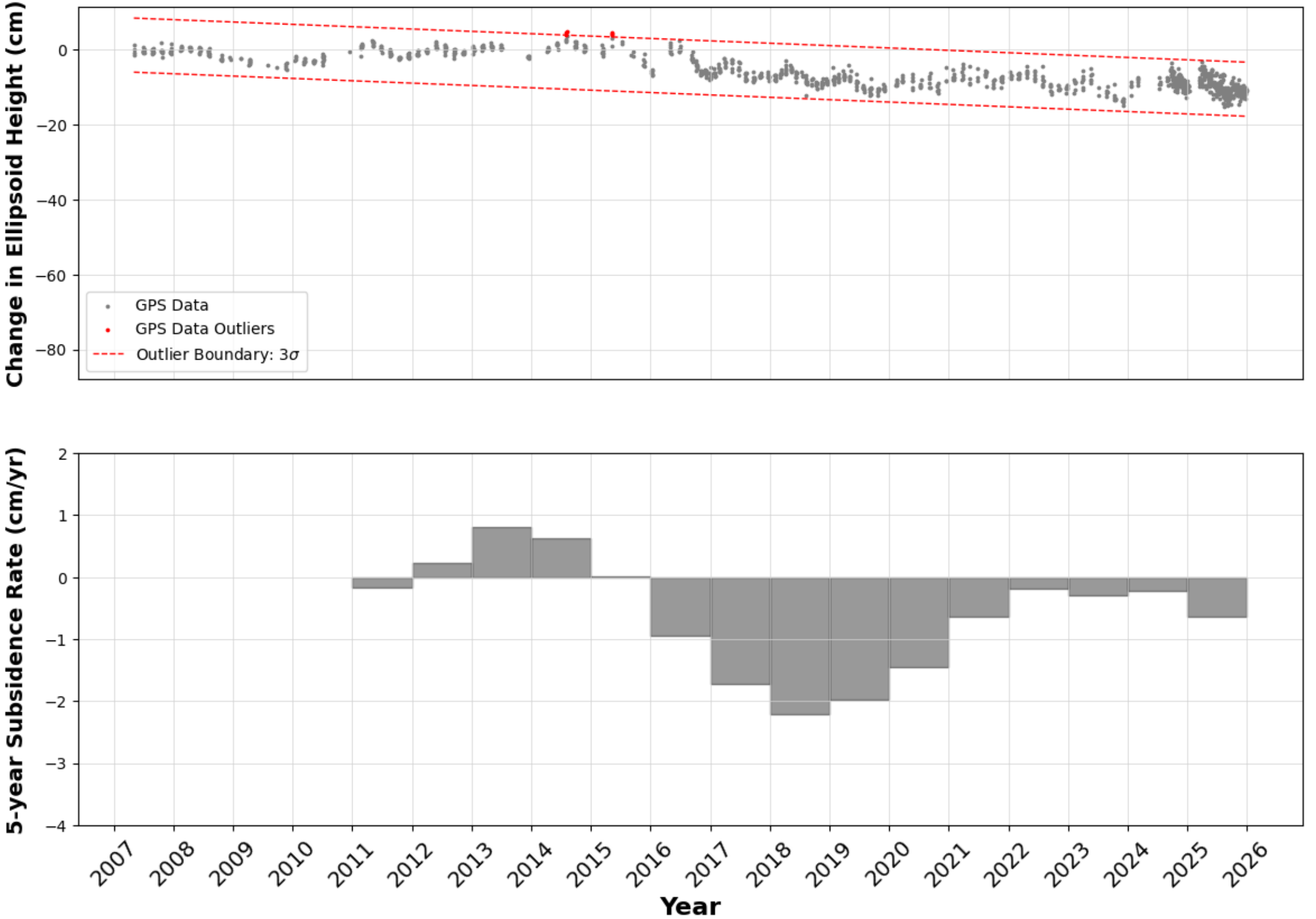


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P041

Houston, TX

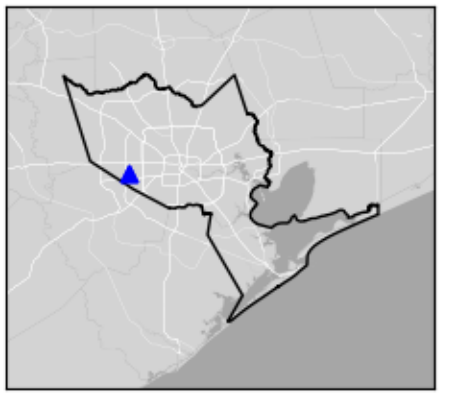


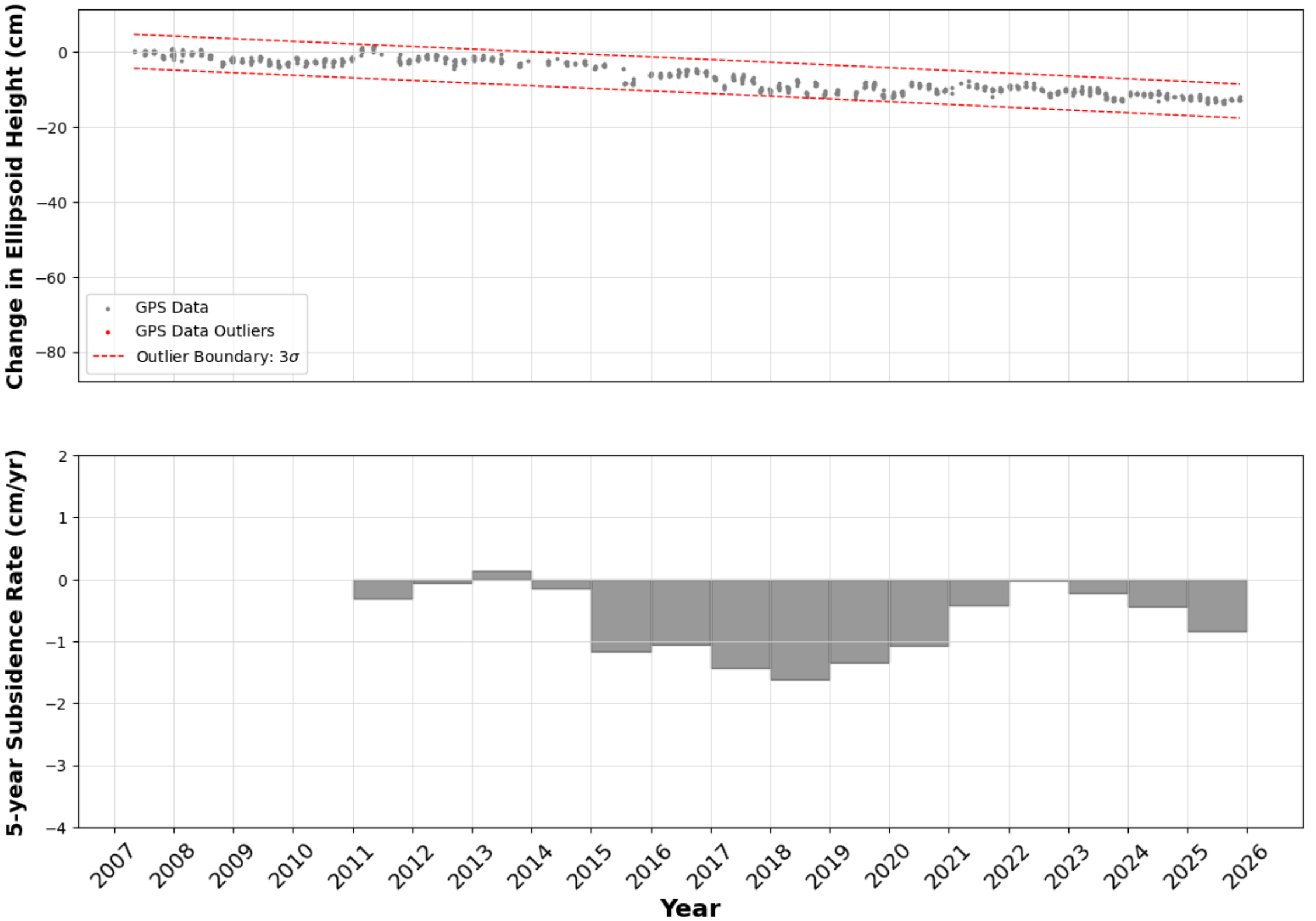


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P042

Houston, TX

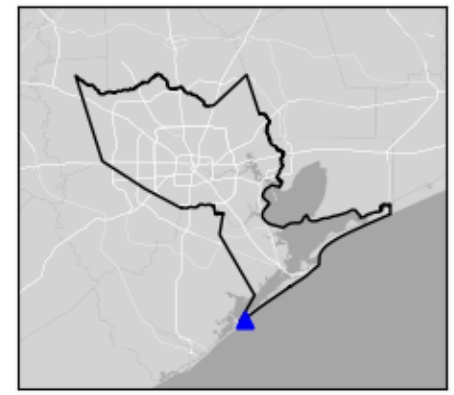


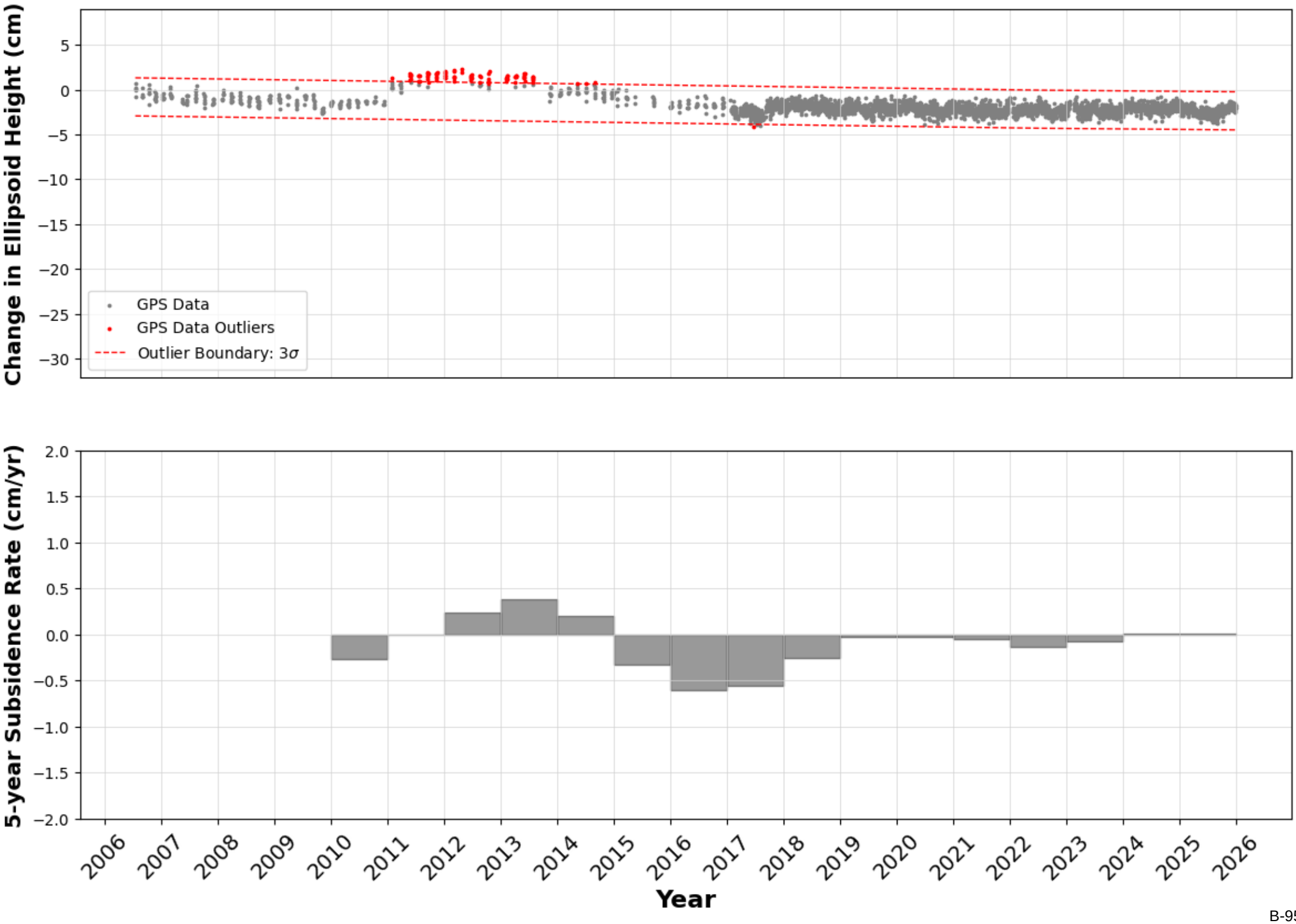


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

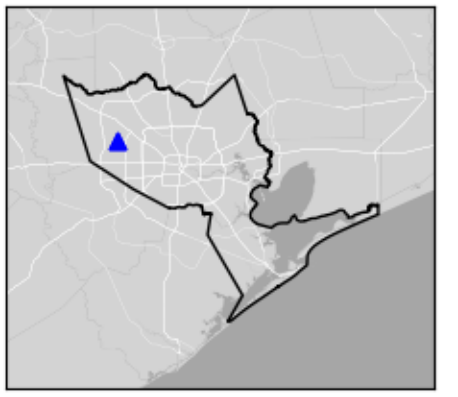
P043

Galveston, TX



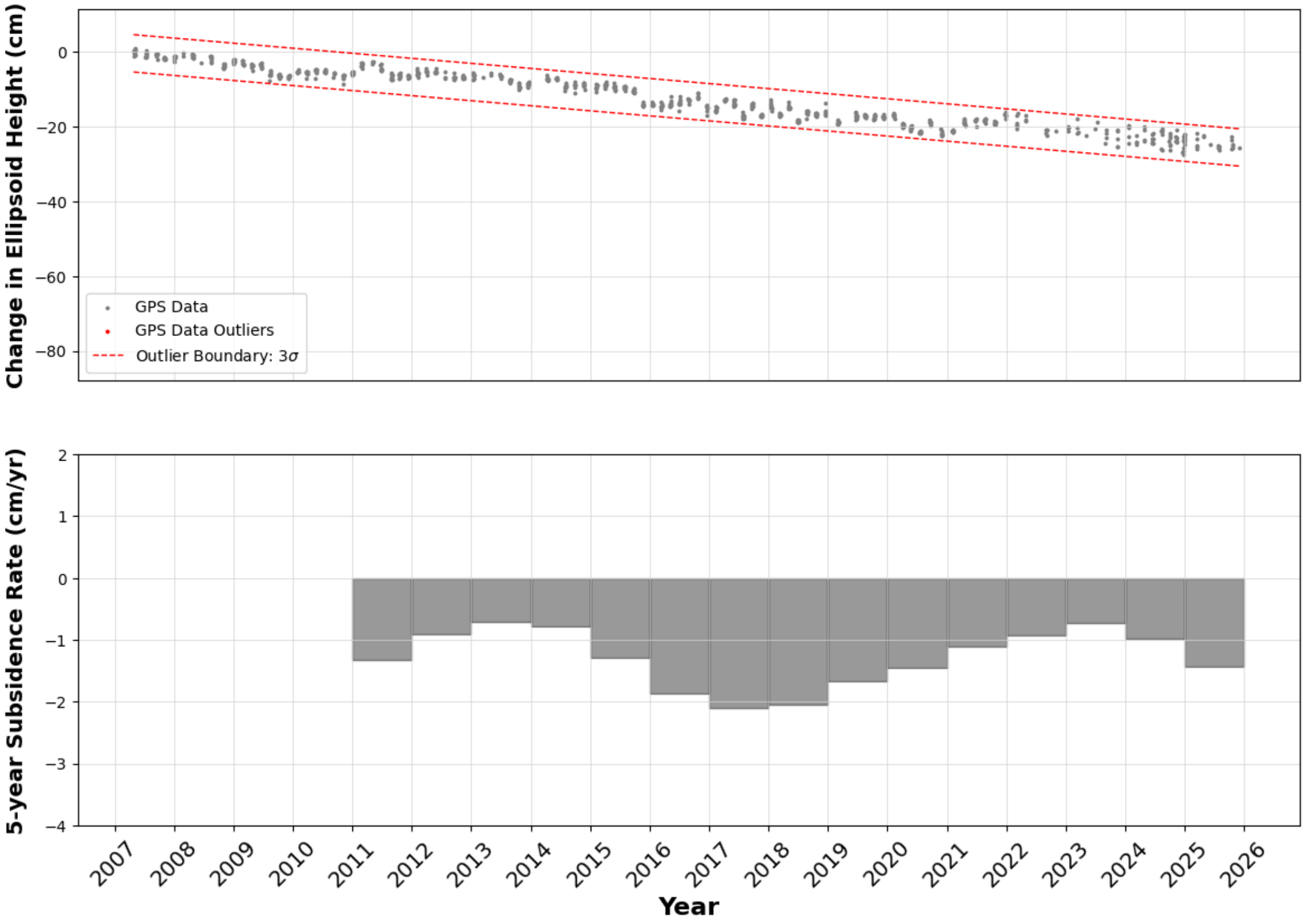


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered by HGSD when calculating subsidence rates and are shown for informational purposes only.



P044

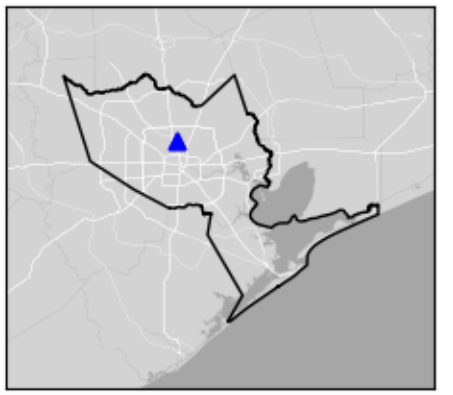
Cypress, TX

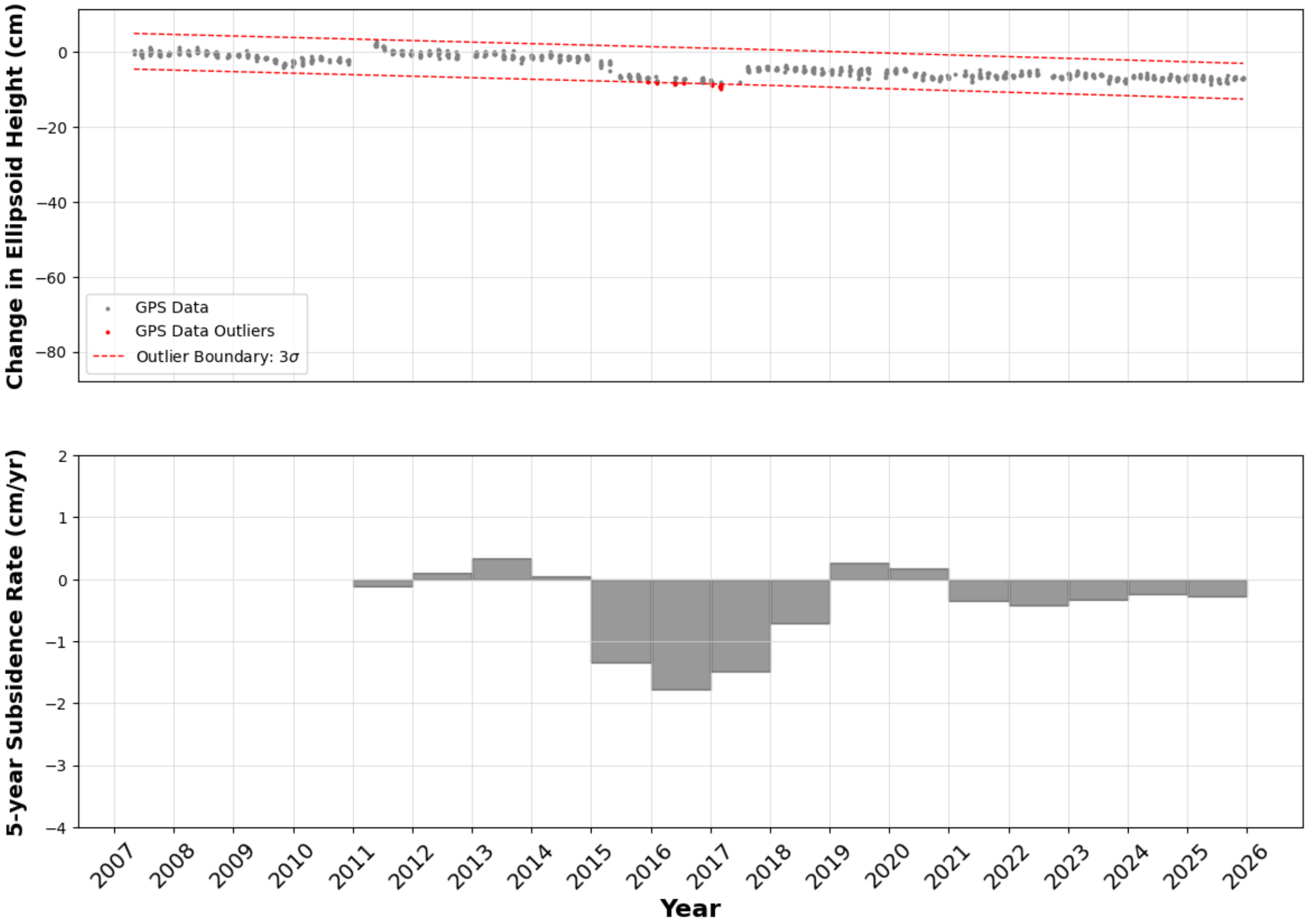


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P045

Houston, TX

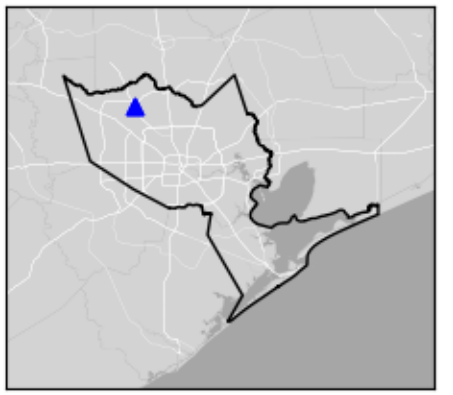


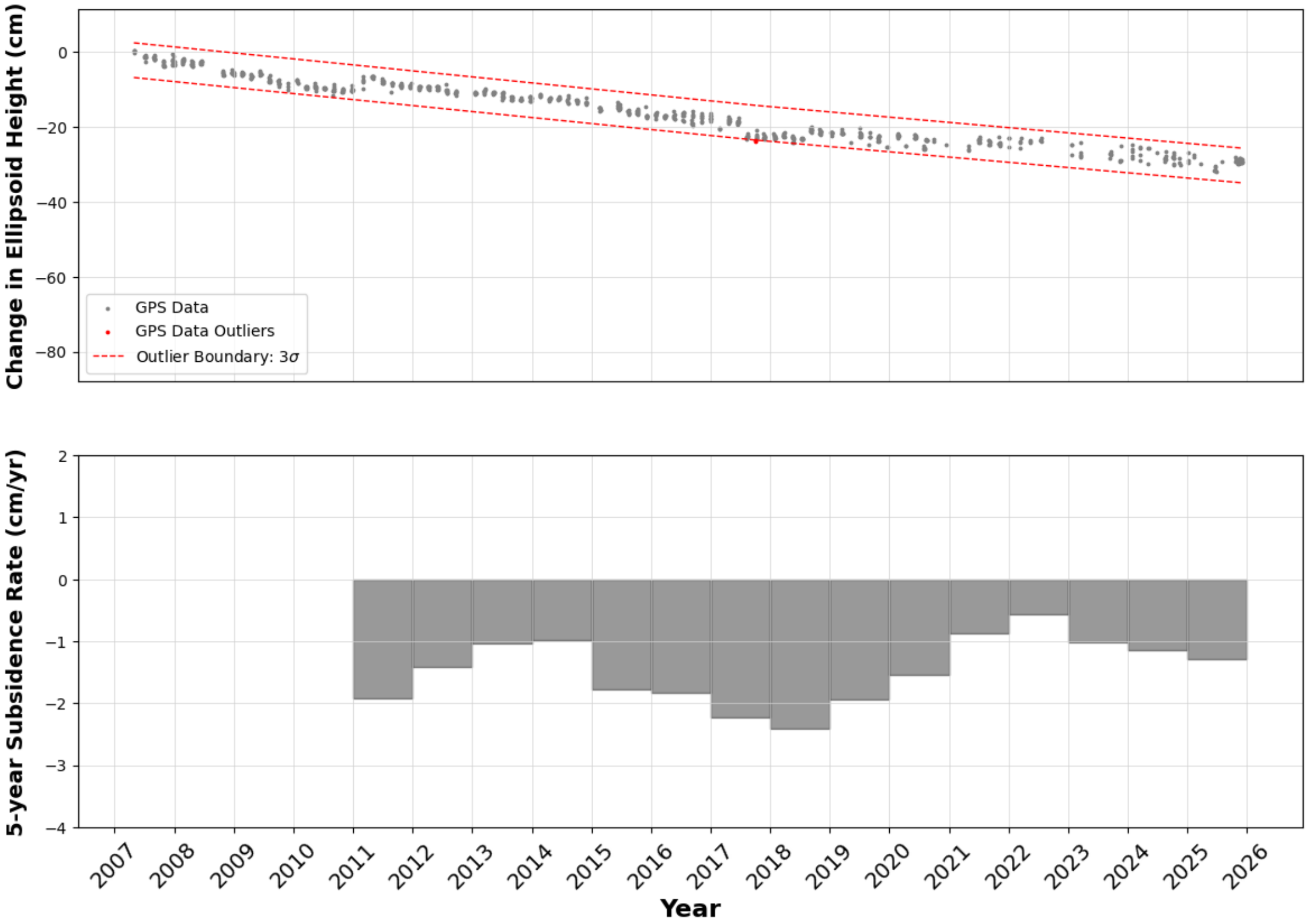


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

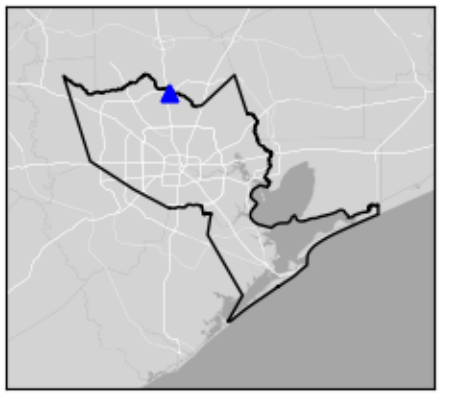
P046

Tomball, TX



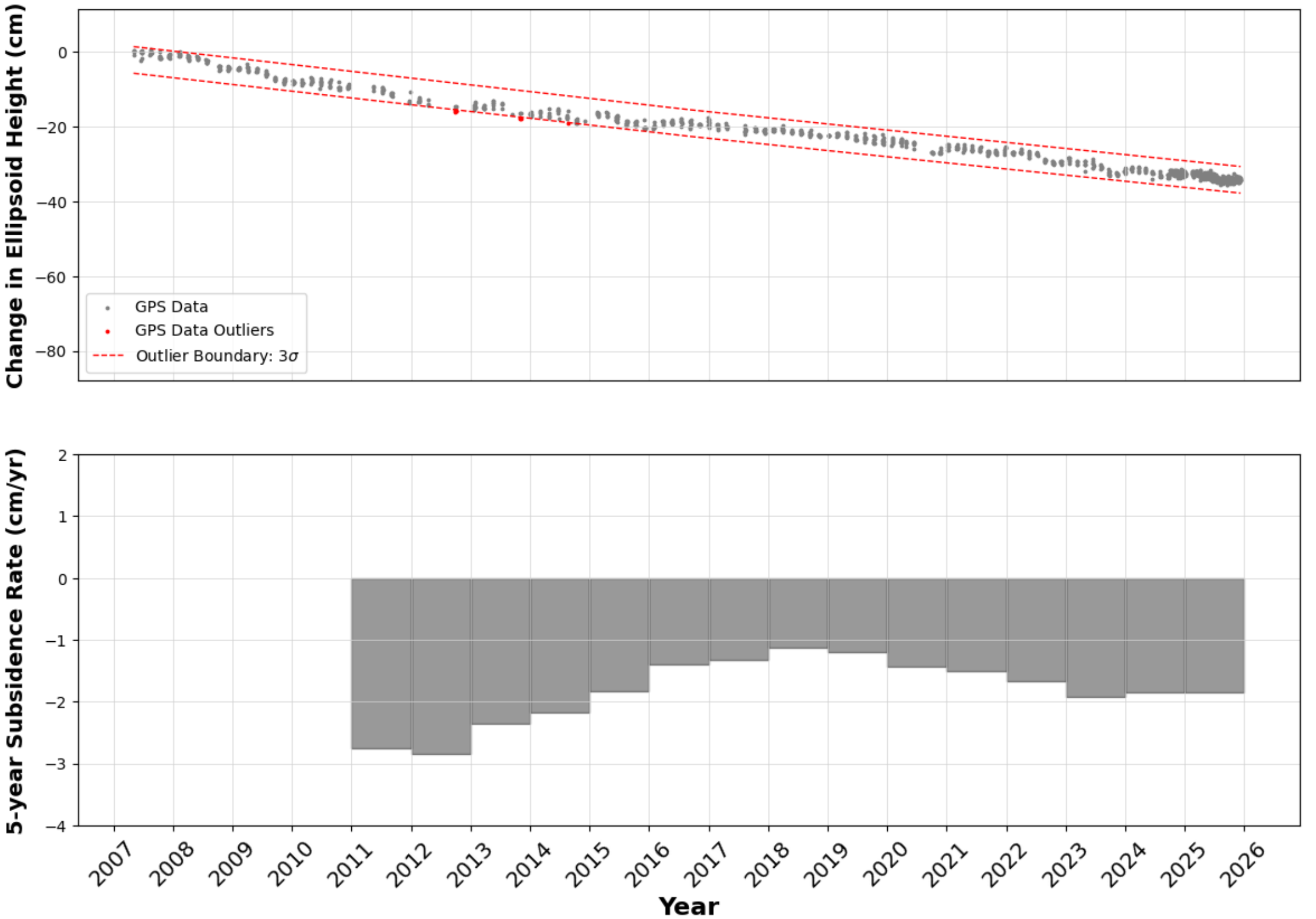


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.



P047

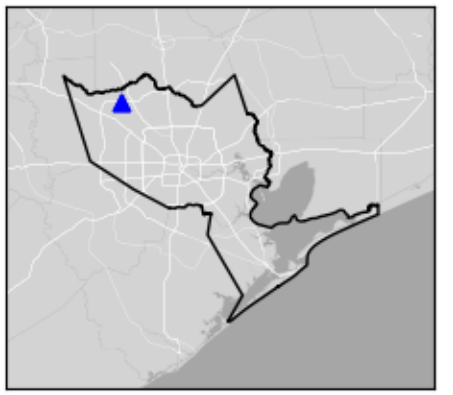
Spring, TX

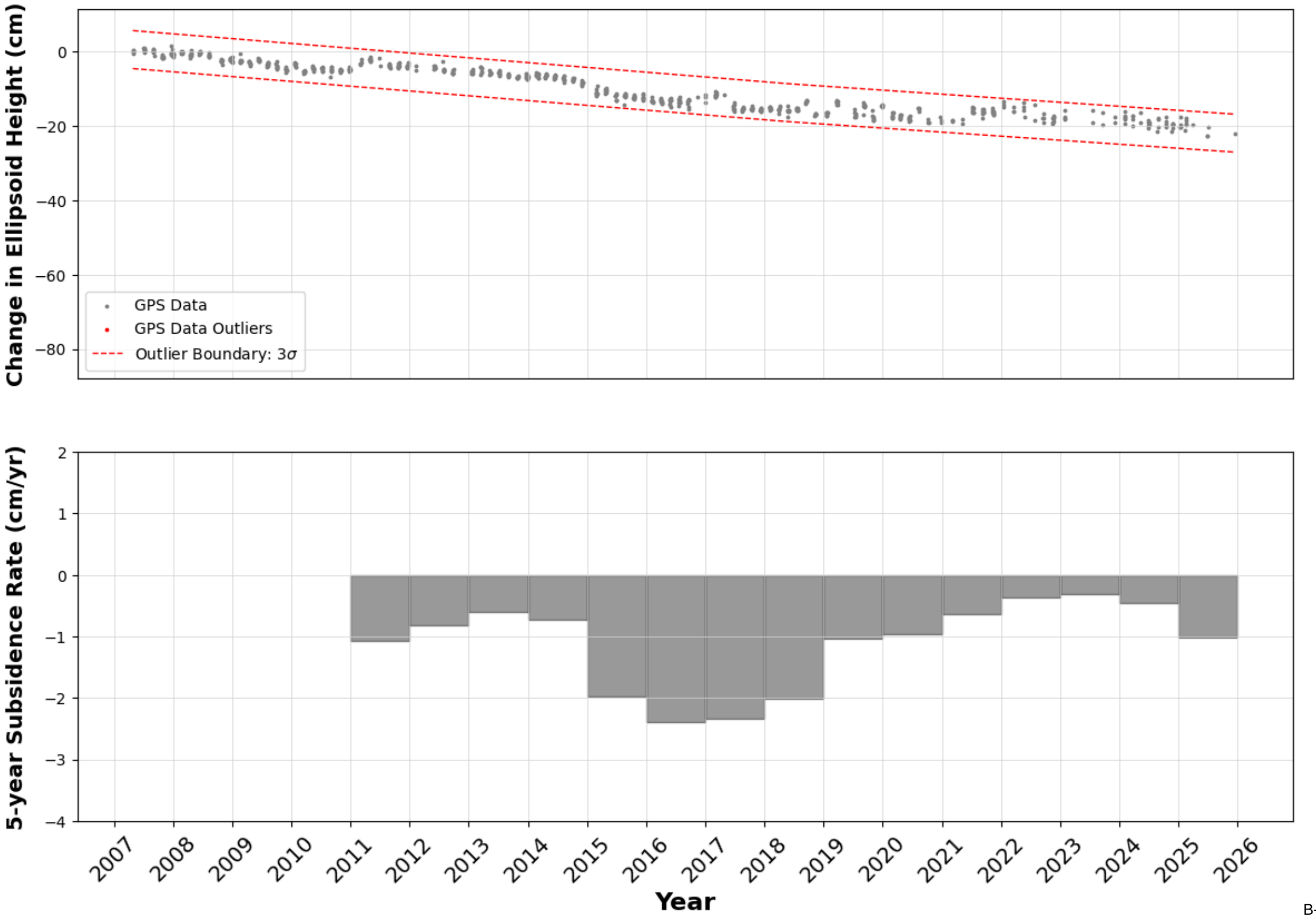


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

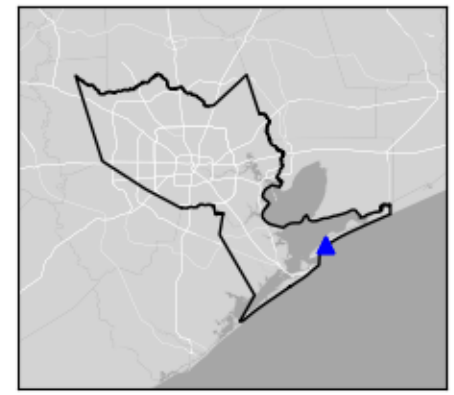
P048

Cypress, TX



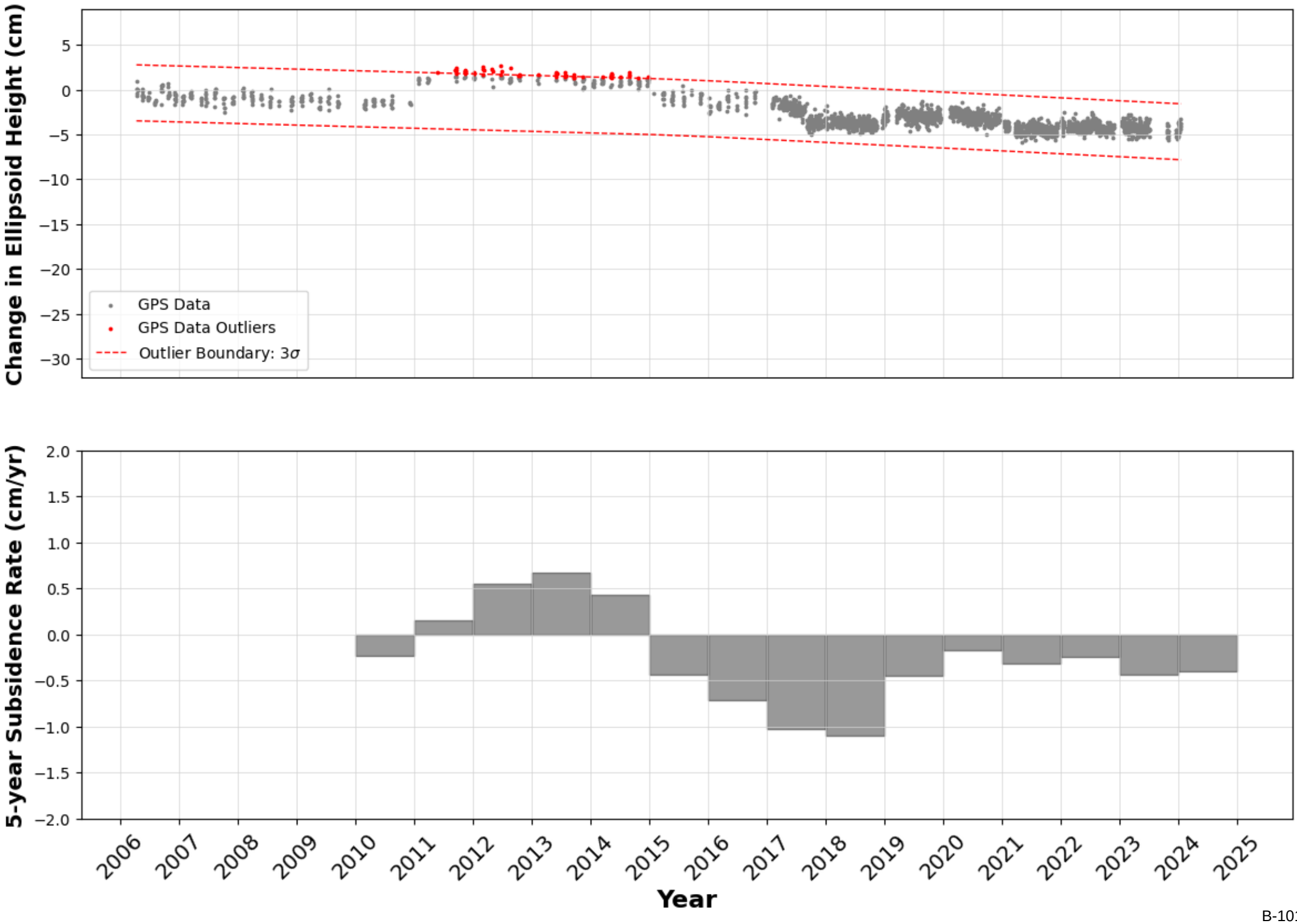


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

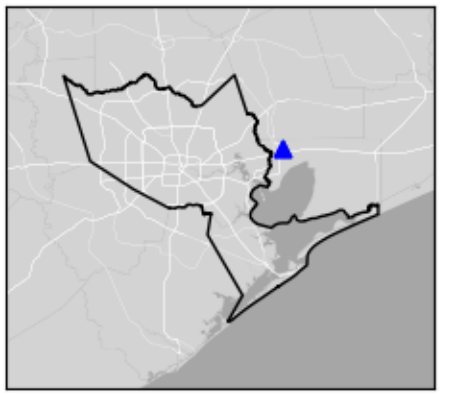


P049

Bolivar Peninsula, TX

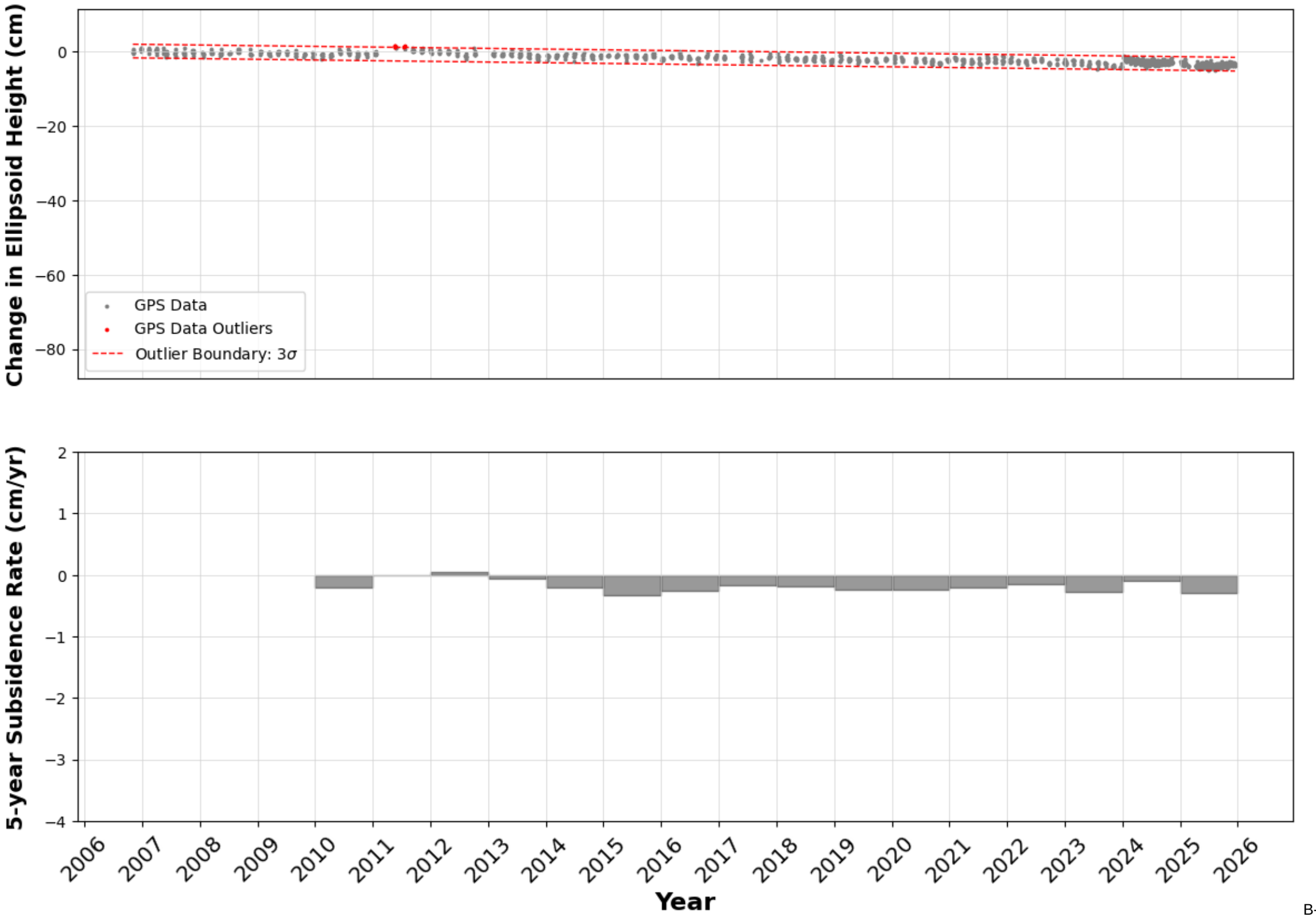


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered by HGSD when calculating subsidence rates and are shown for informational purposes only.



P050

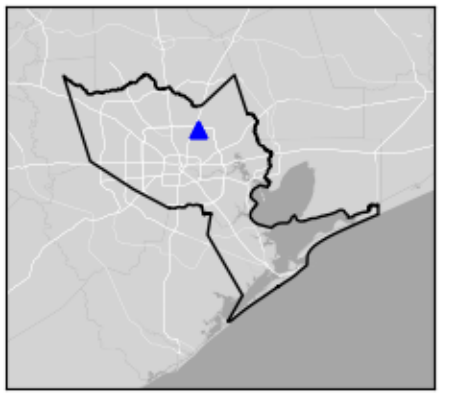
Mont Belvieu, TX

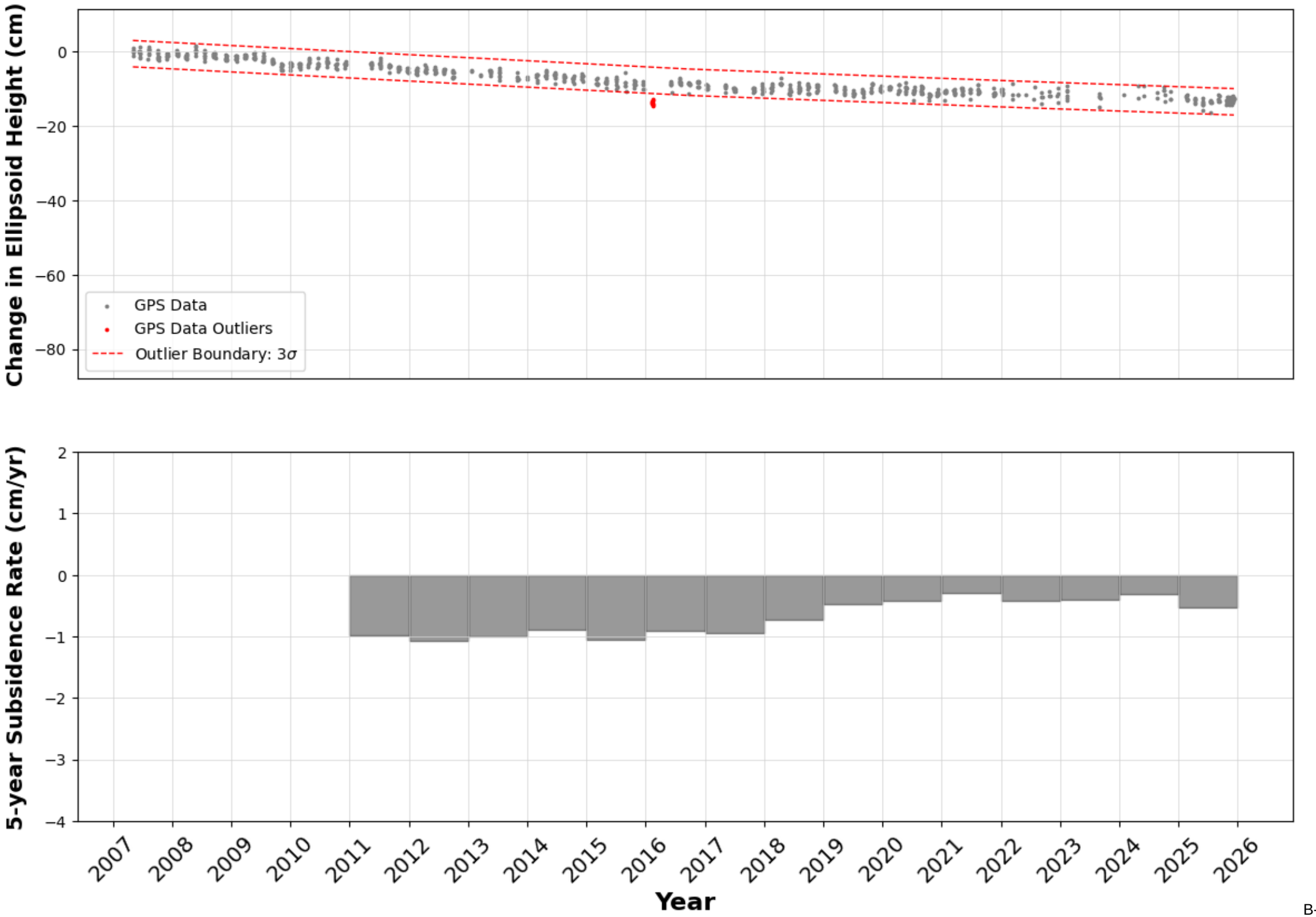


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P051

Humble, TX

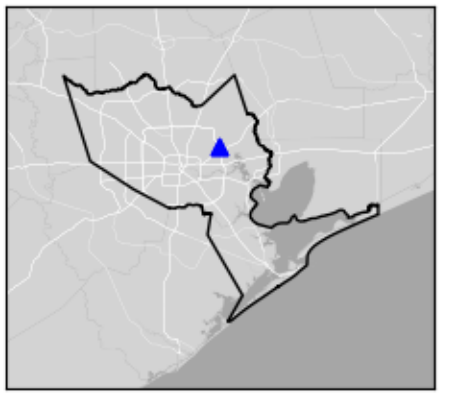


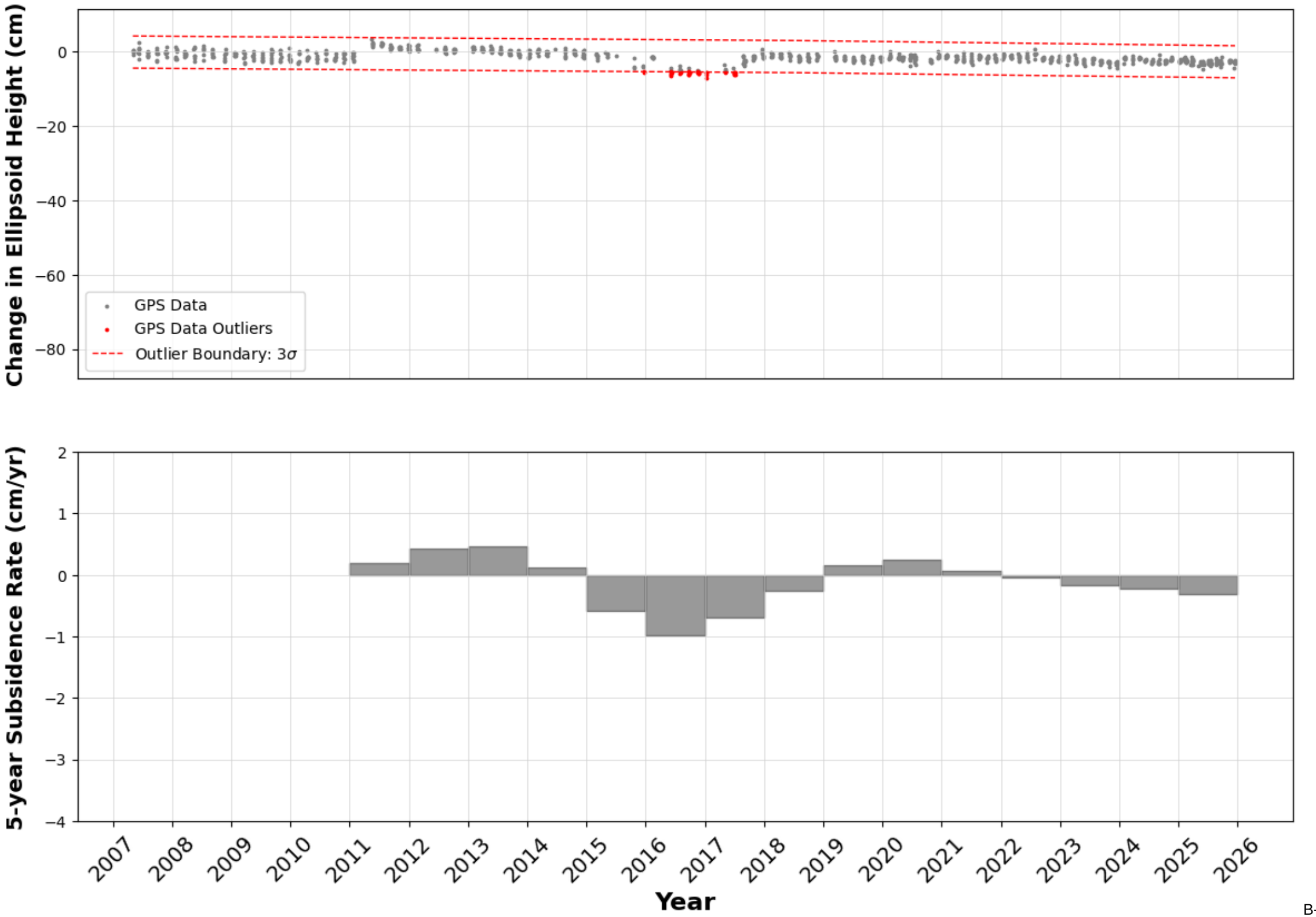


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P052

Houston, TX

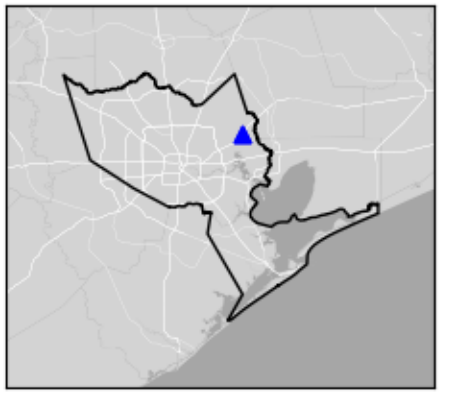


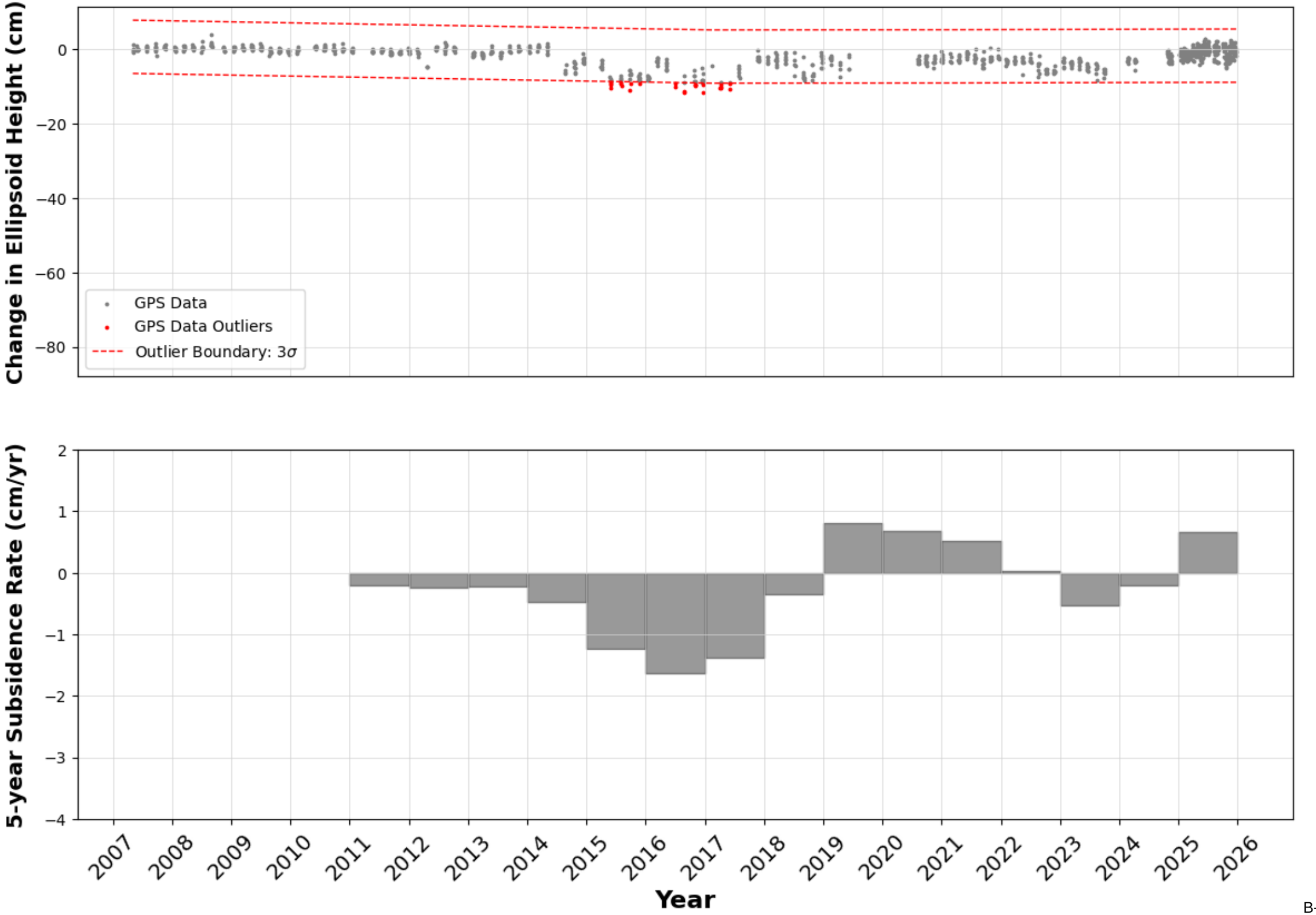


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P053

Crosby, TX

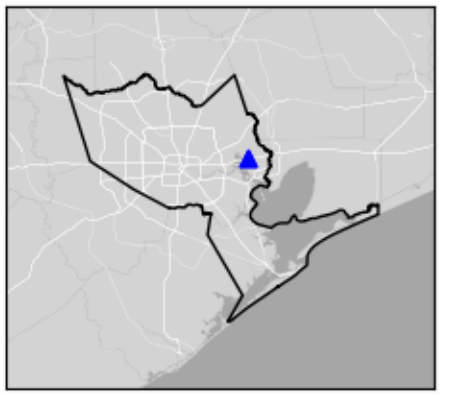


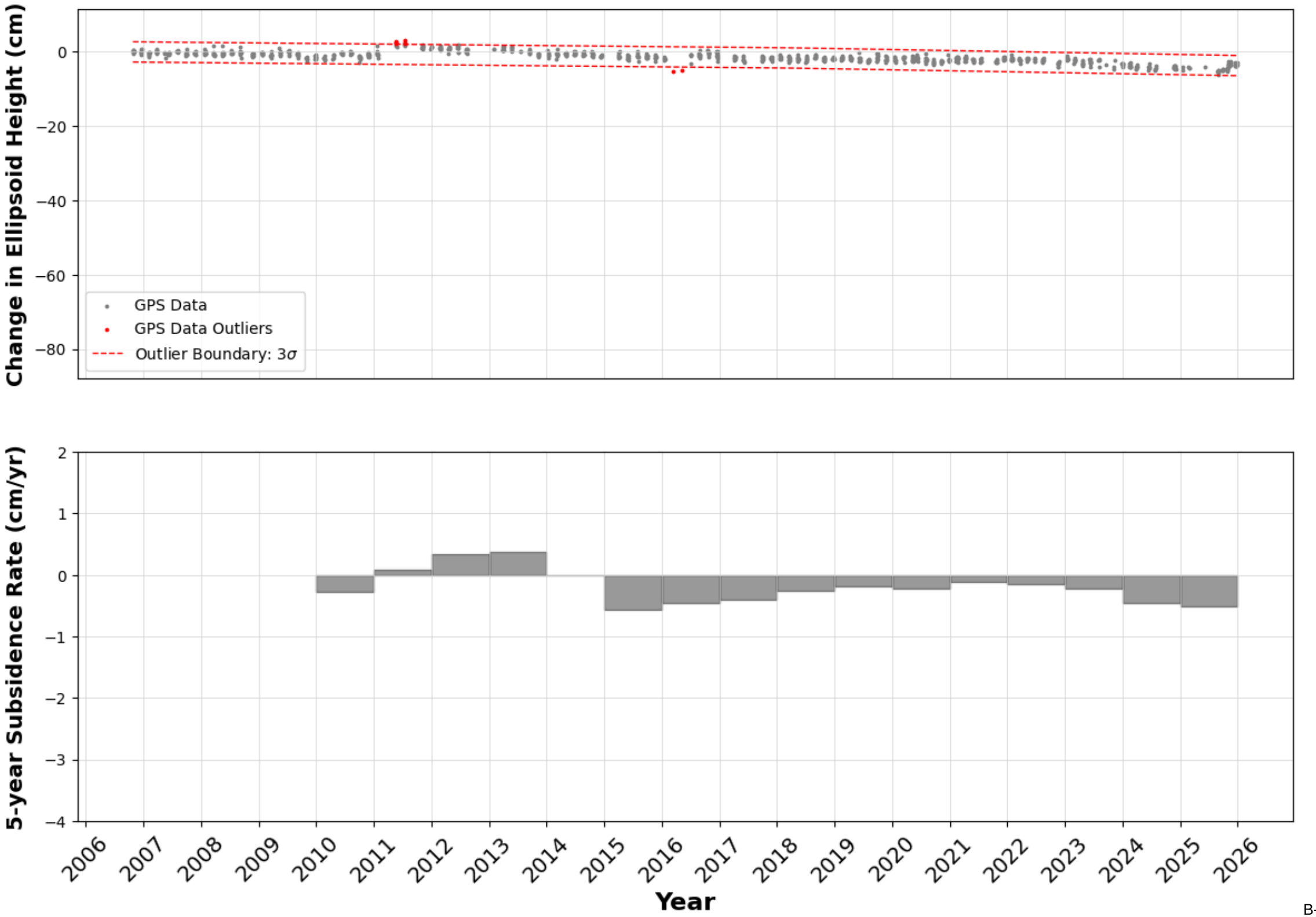


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

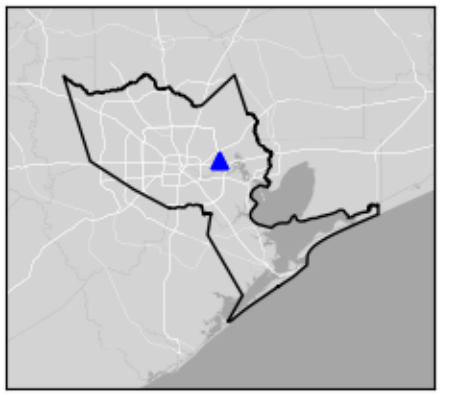
P054

Baytown, TX



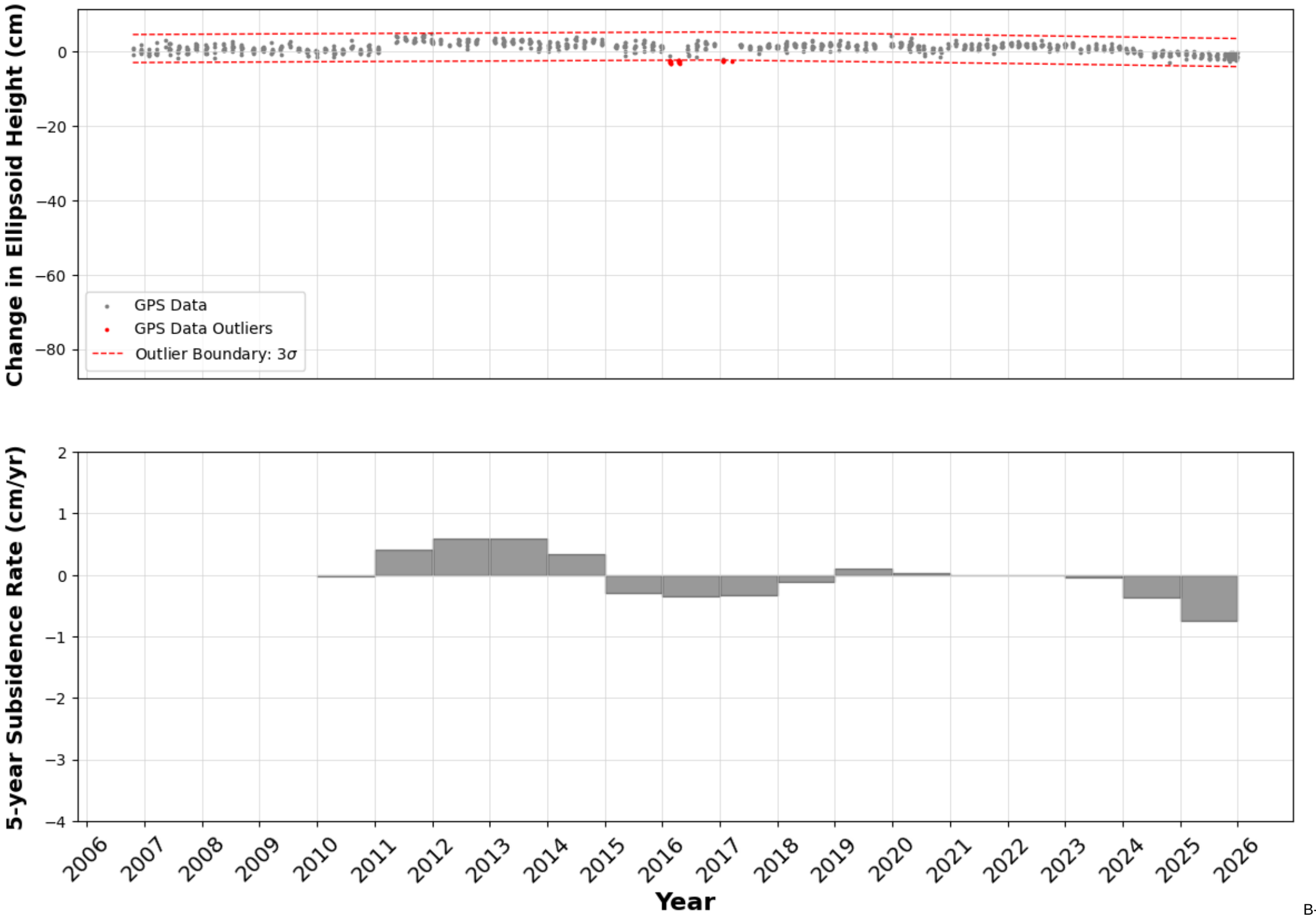


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.



P055

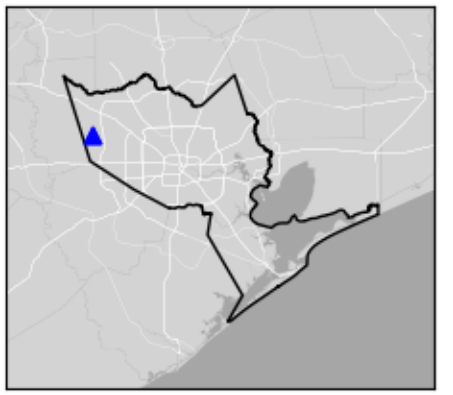
Houston, TX

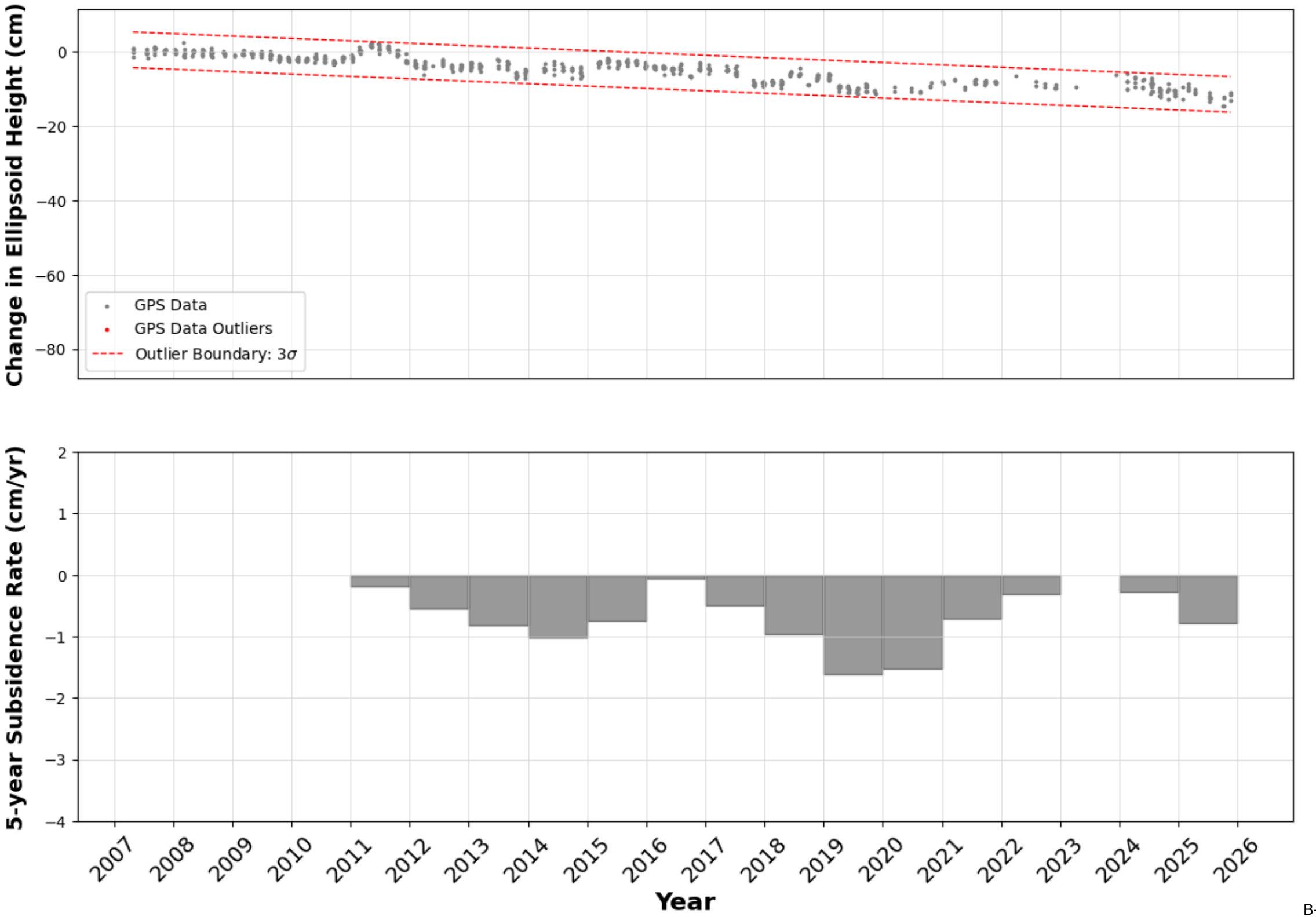


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P056

Katy, TX

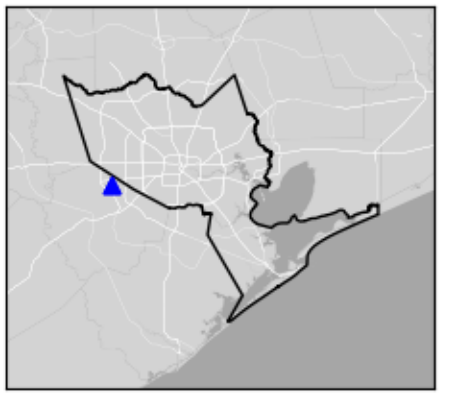


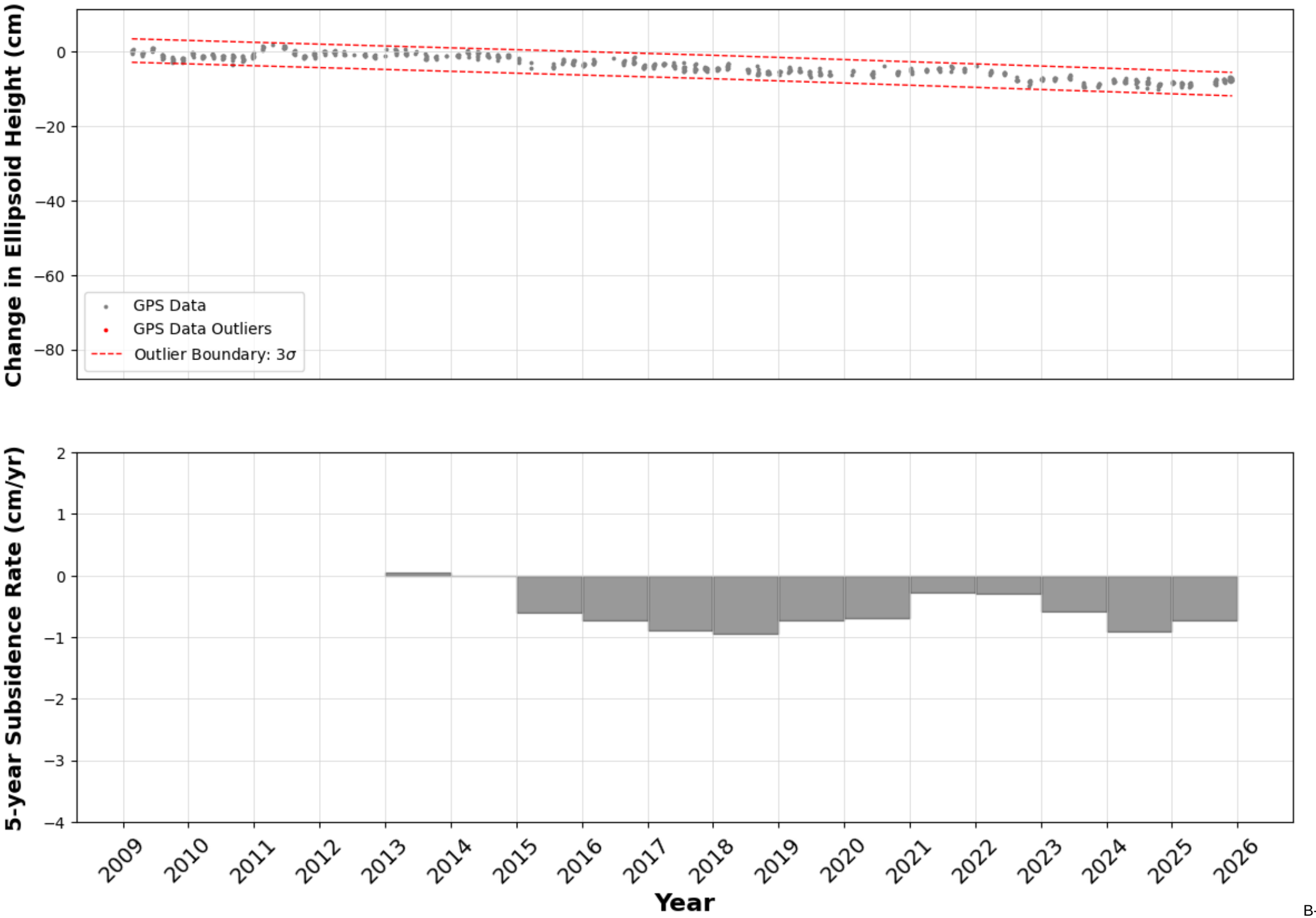


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P057

Richmond, TX

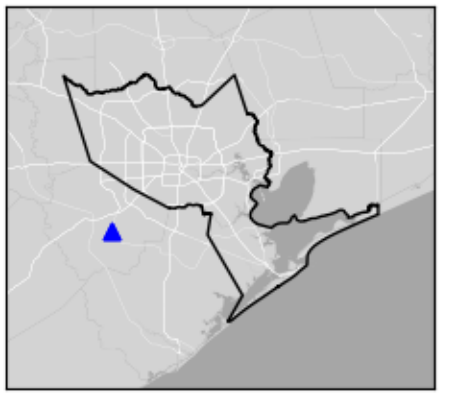


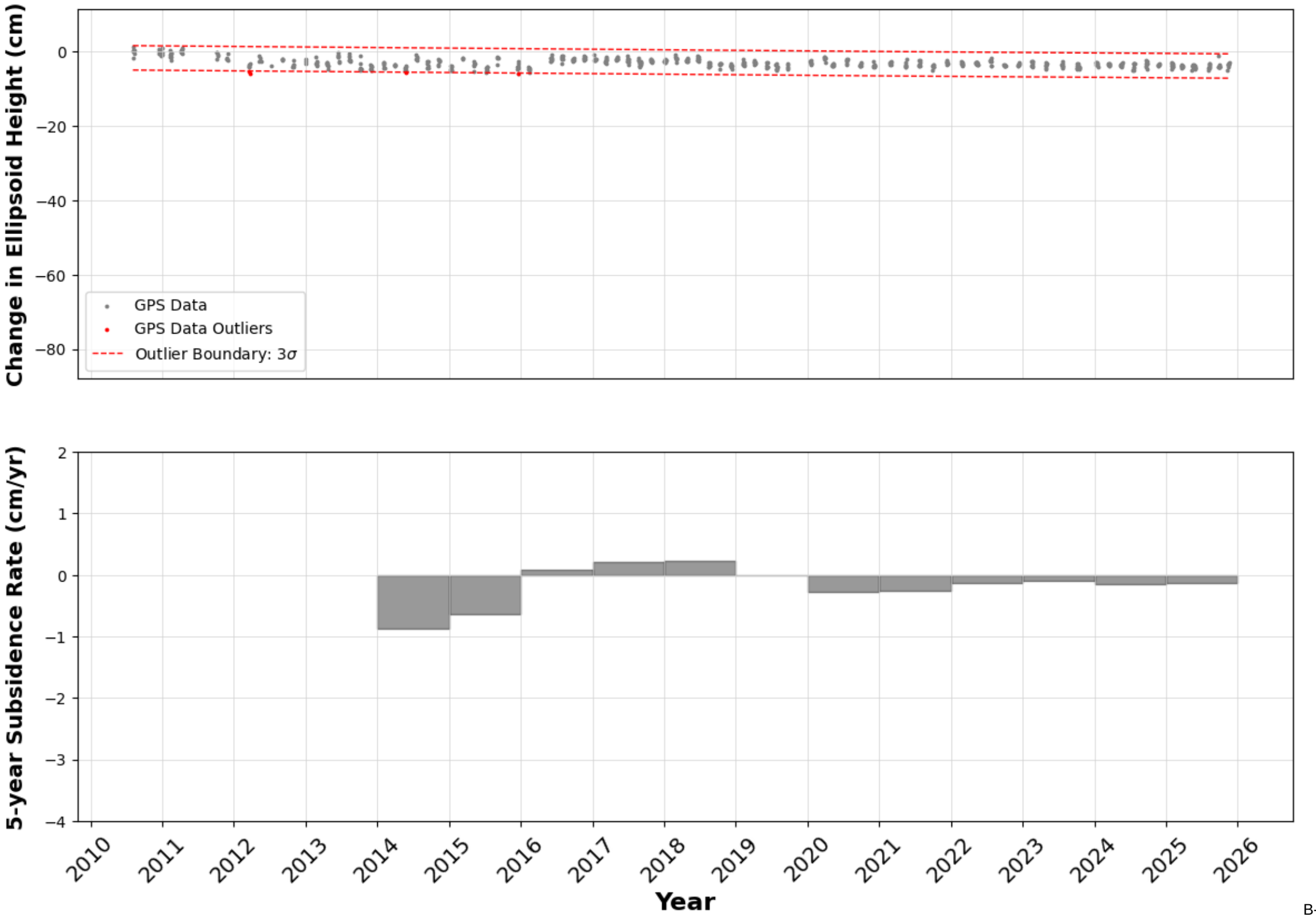


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P058

Richmond, TX

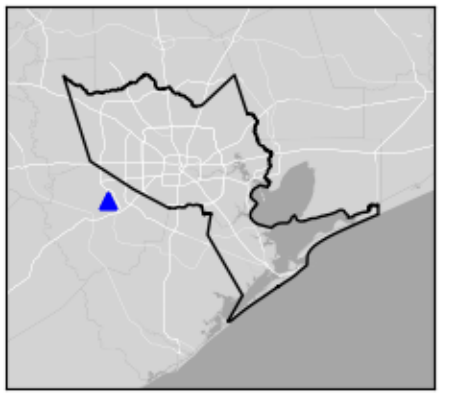


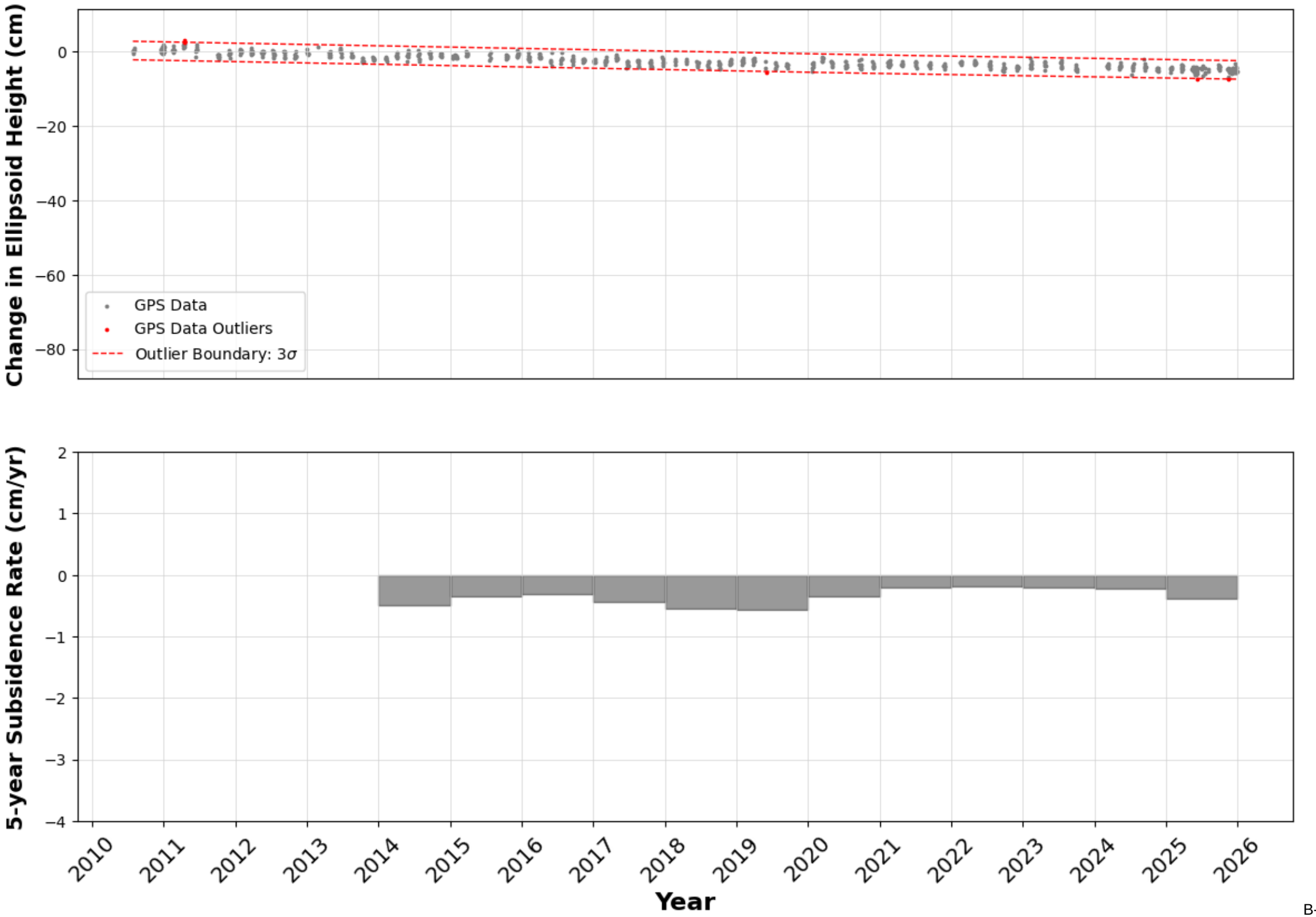


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P059

Richmond, TX

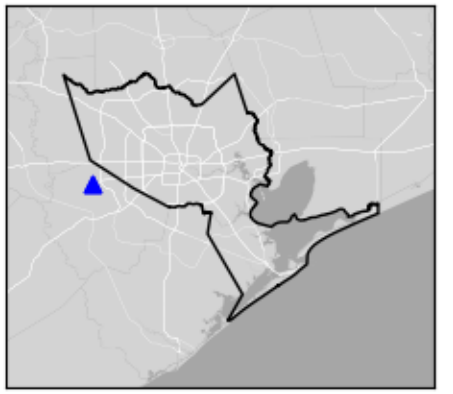


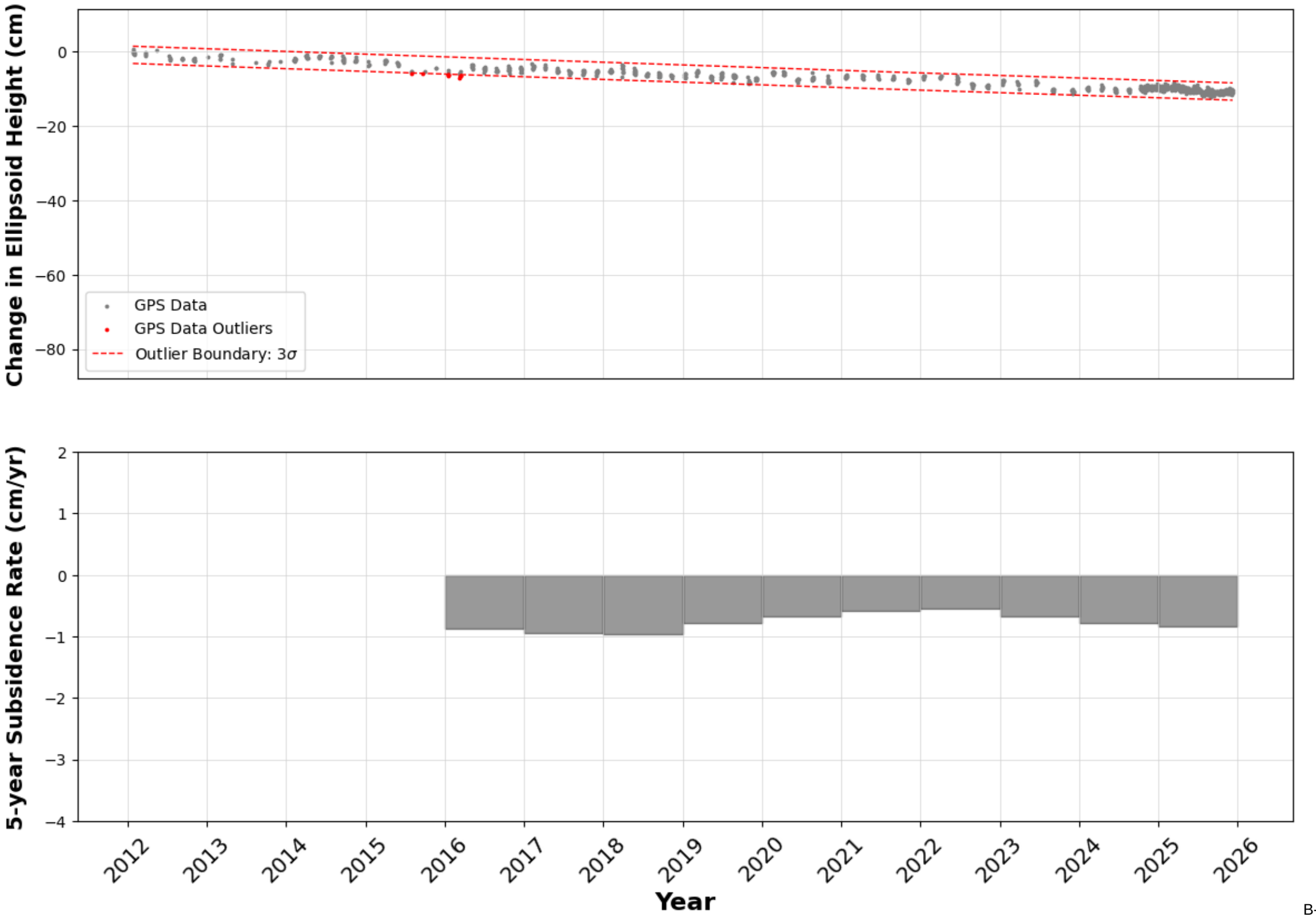


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P060

Richmond, TX

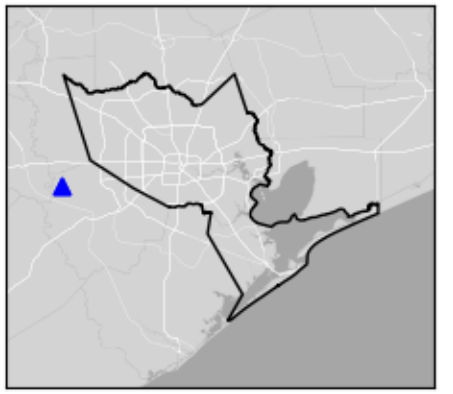


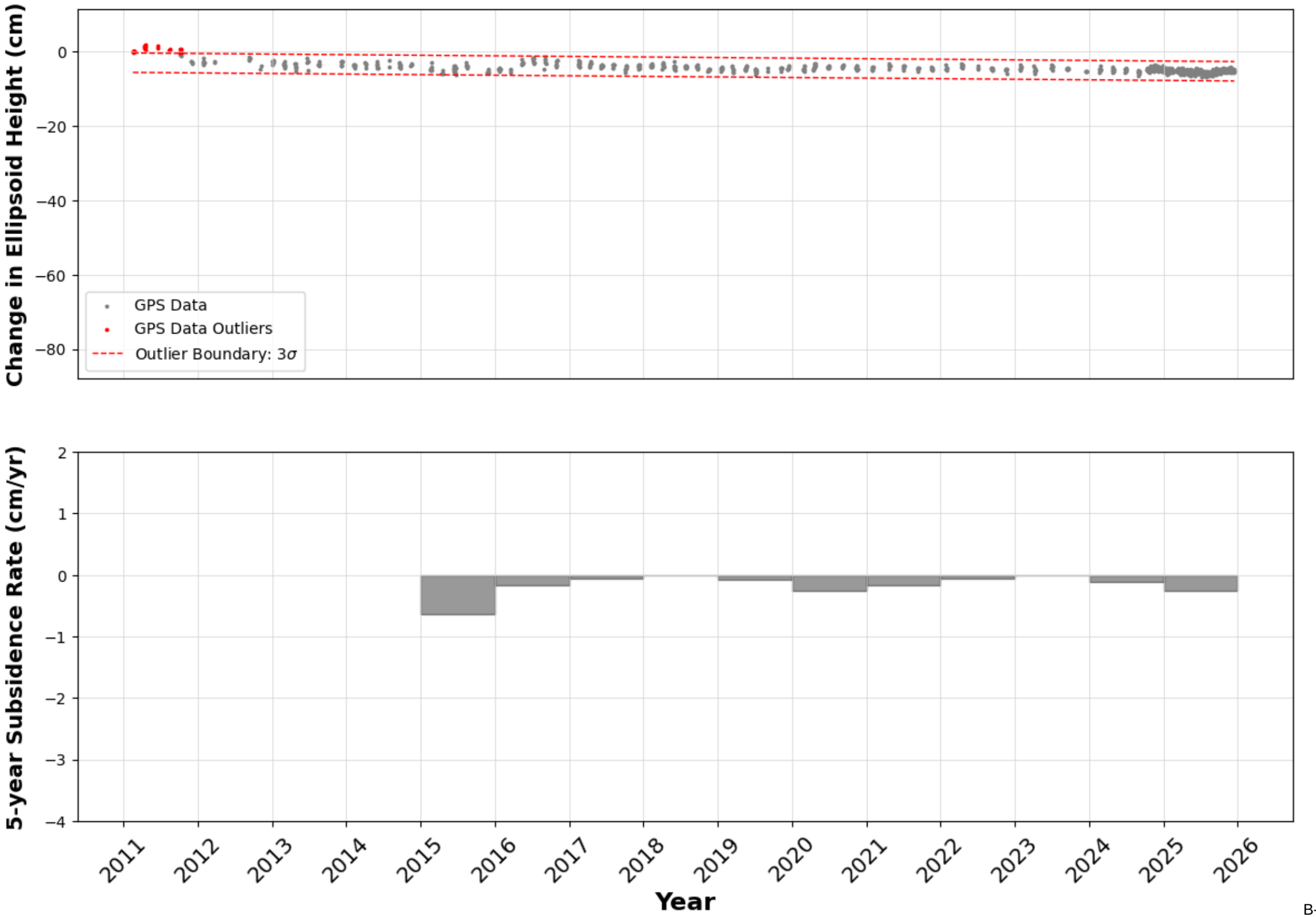


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P061

Simonton, TX

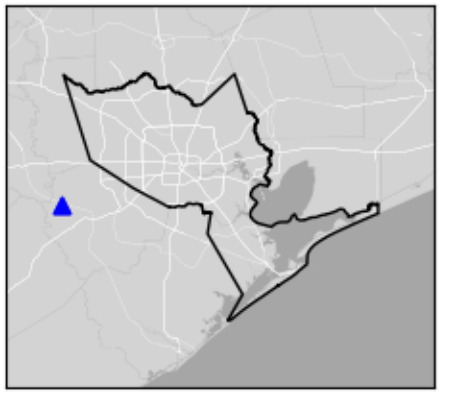


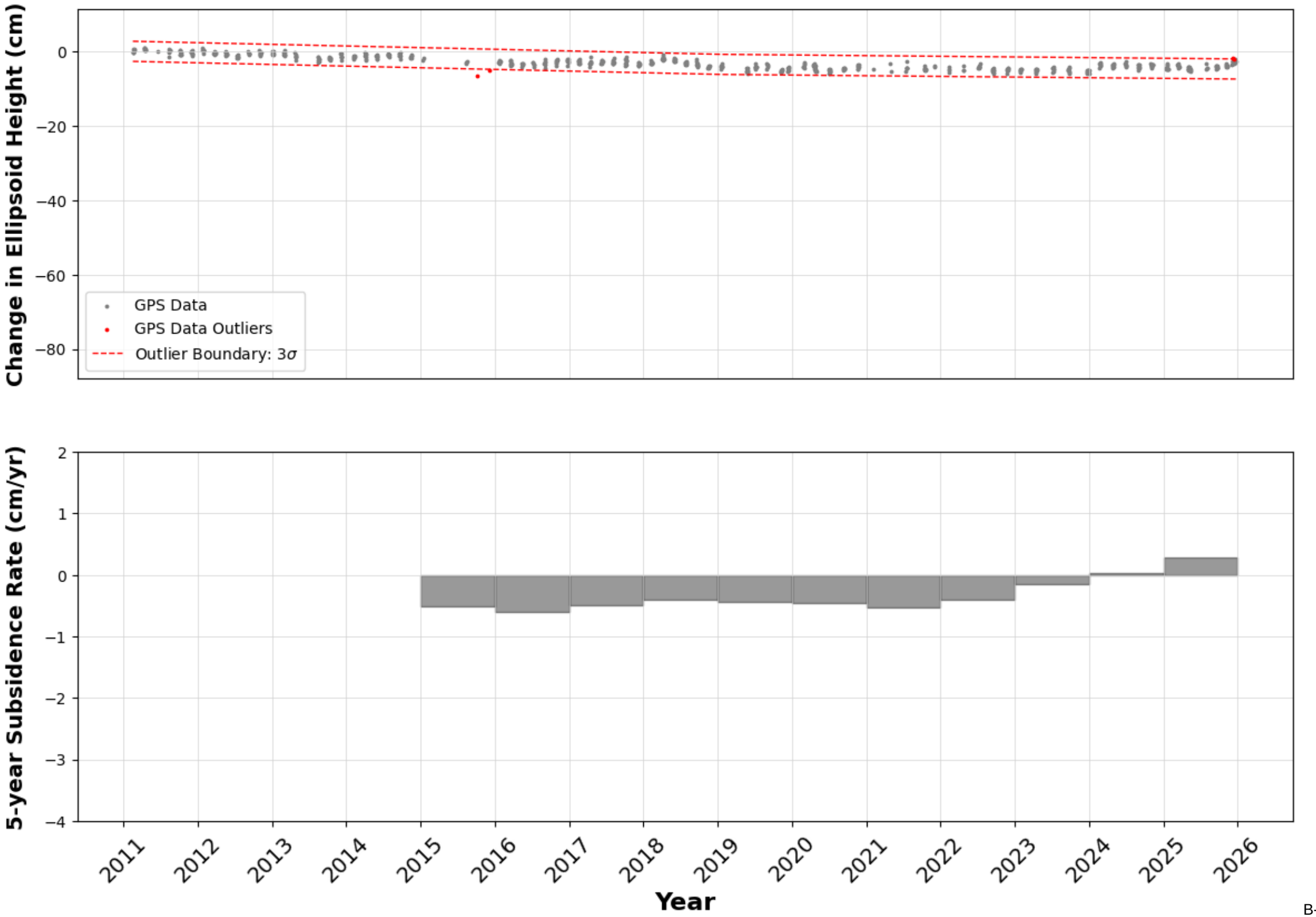


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P062

Rosenberg, TX

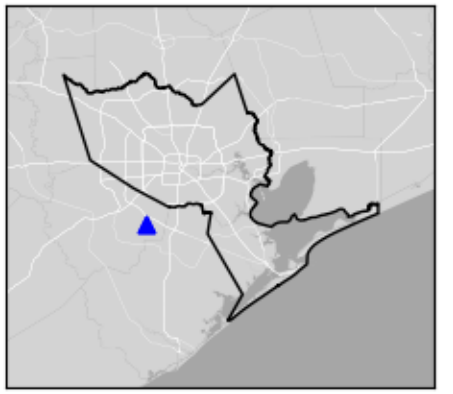


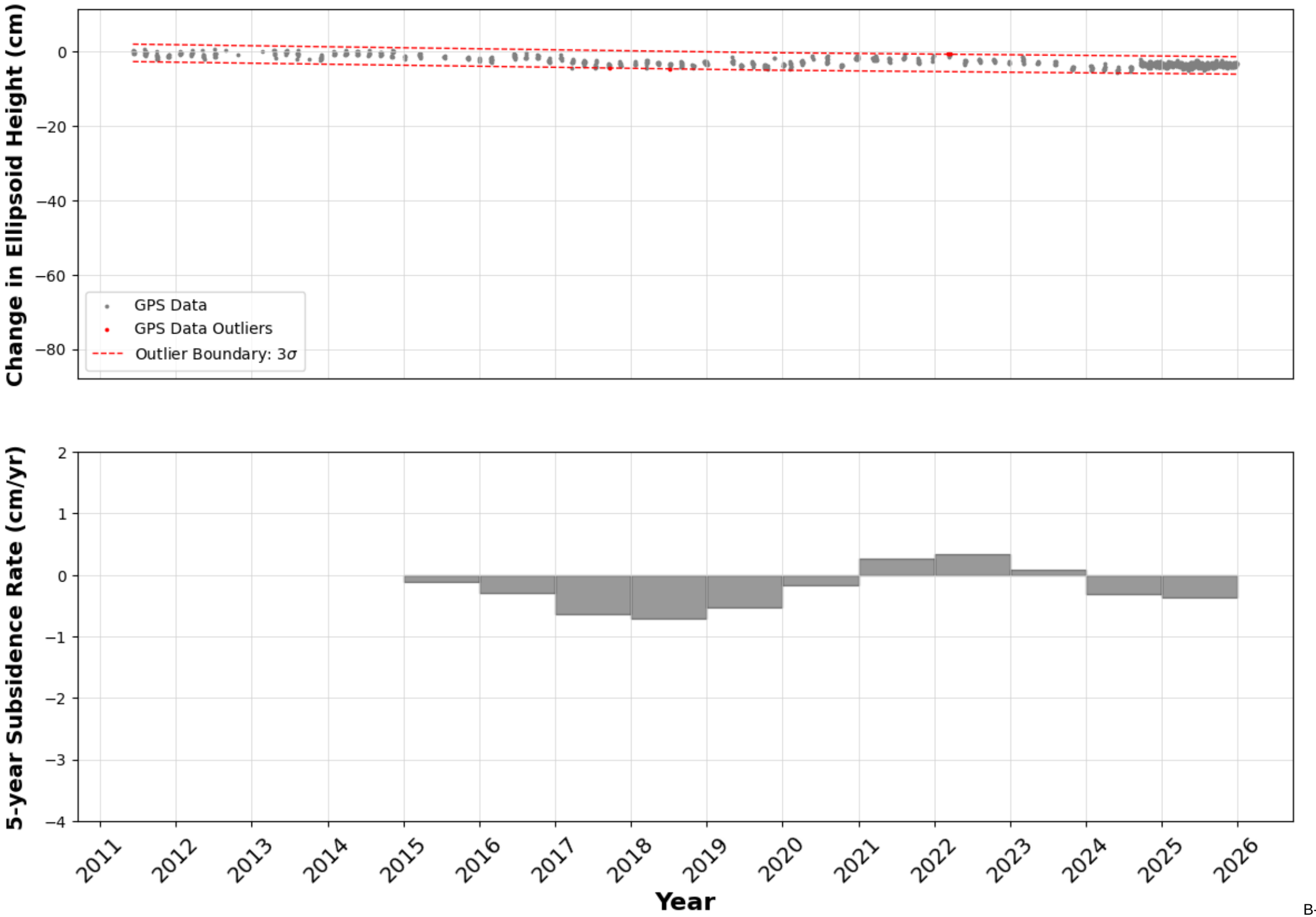


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P063

Missouri City, TX

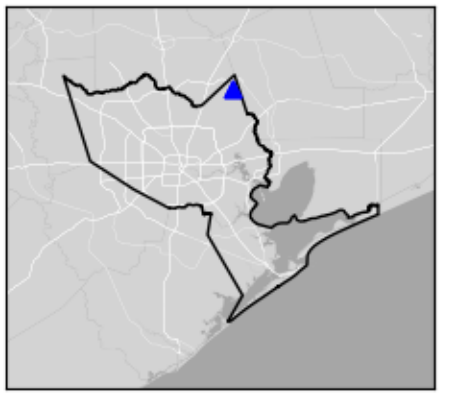


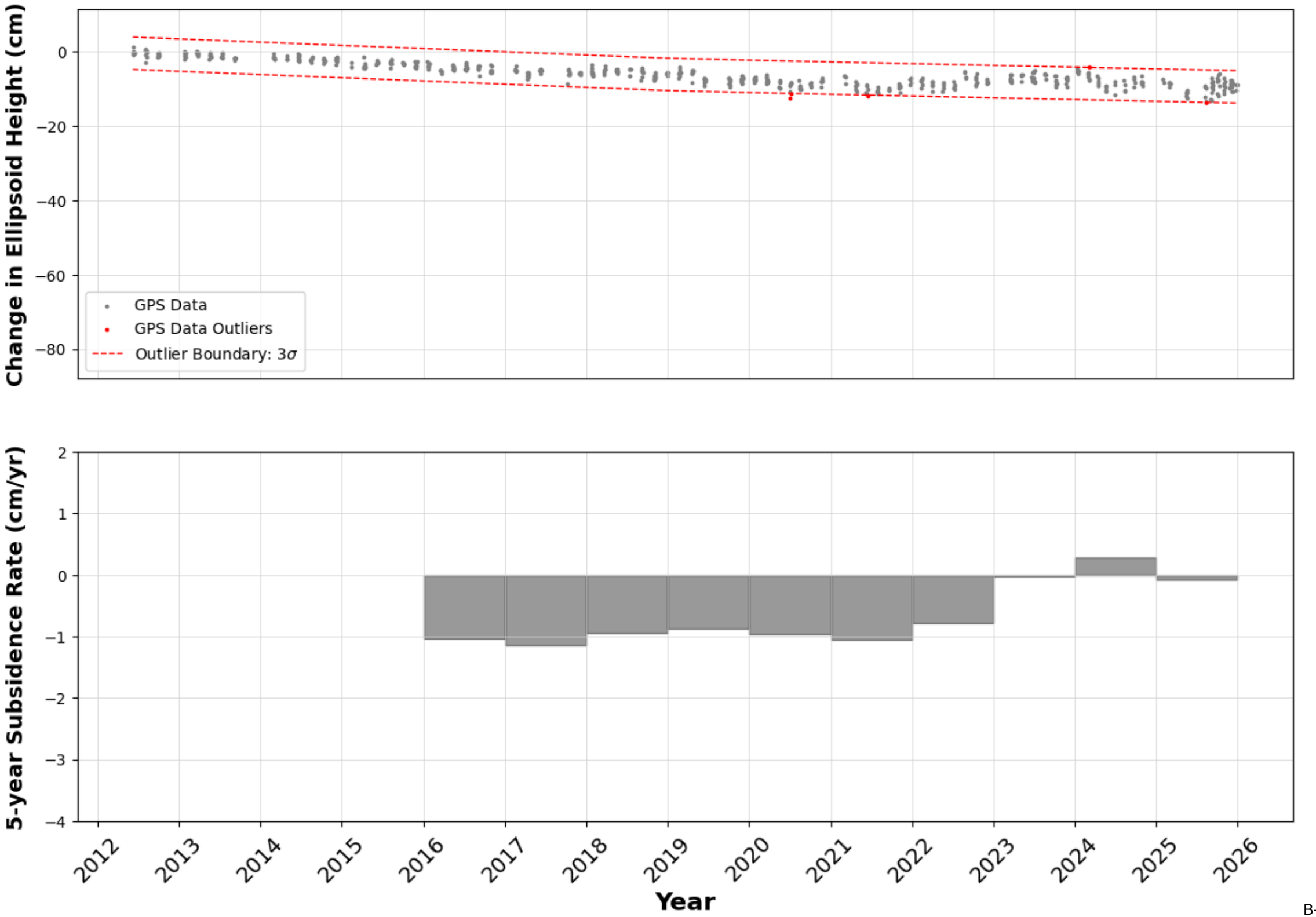


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

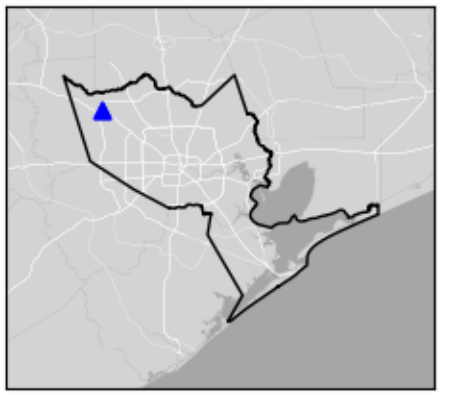
P065

Huffman, TX



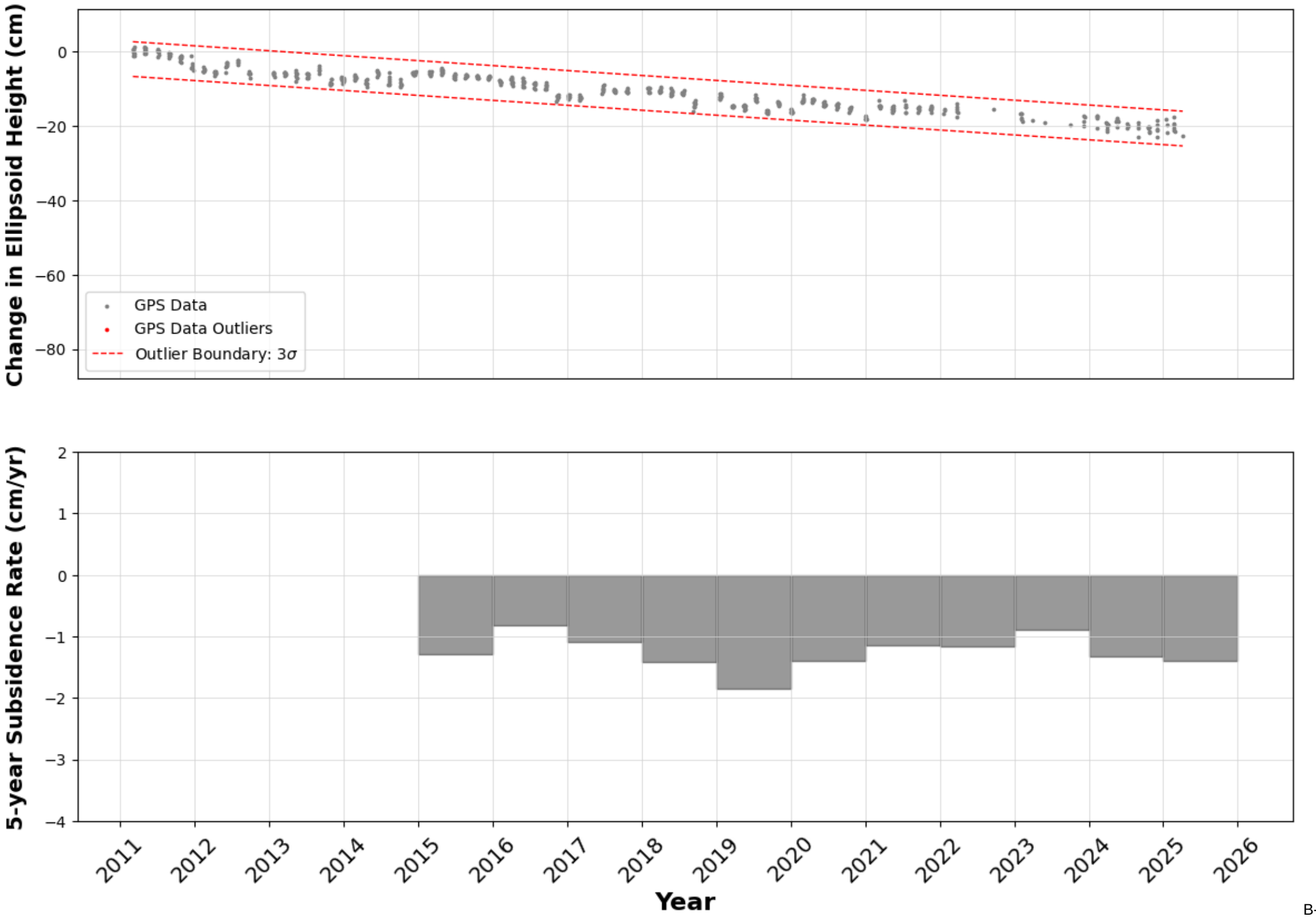


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.



P066

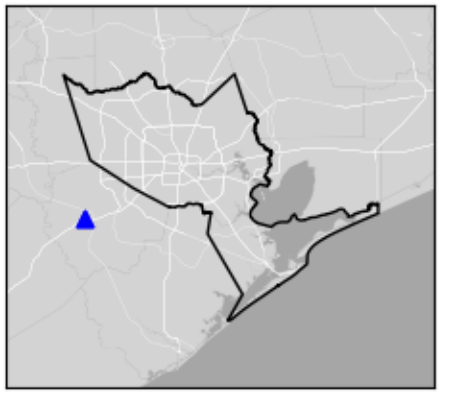
Cypress, TX

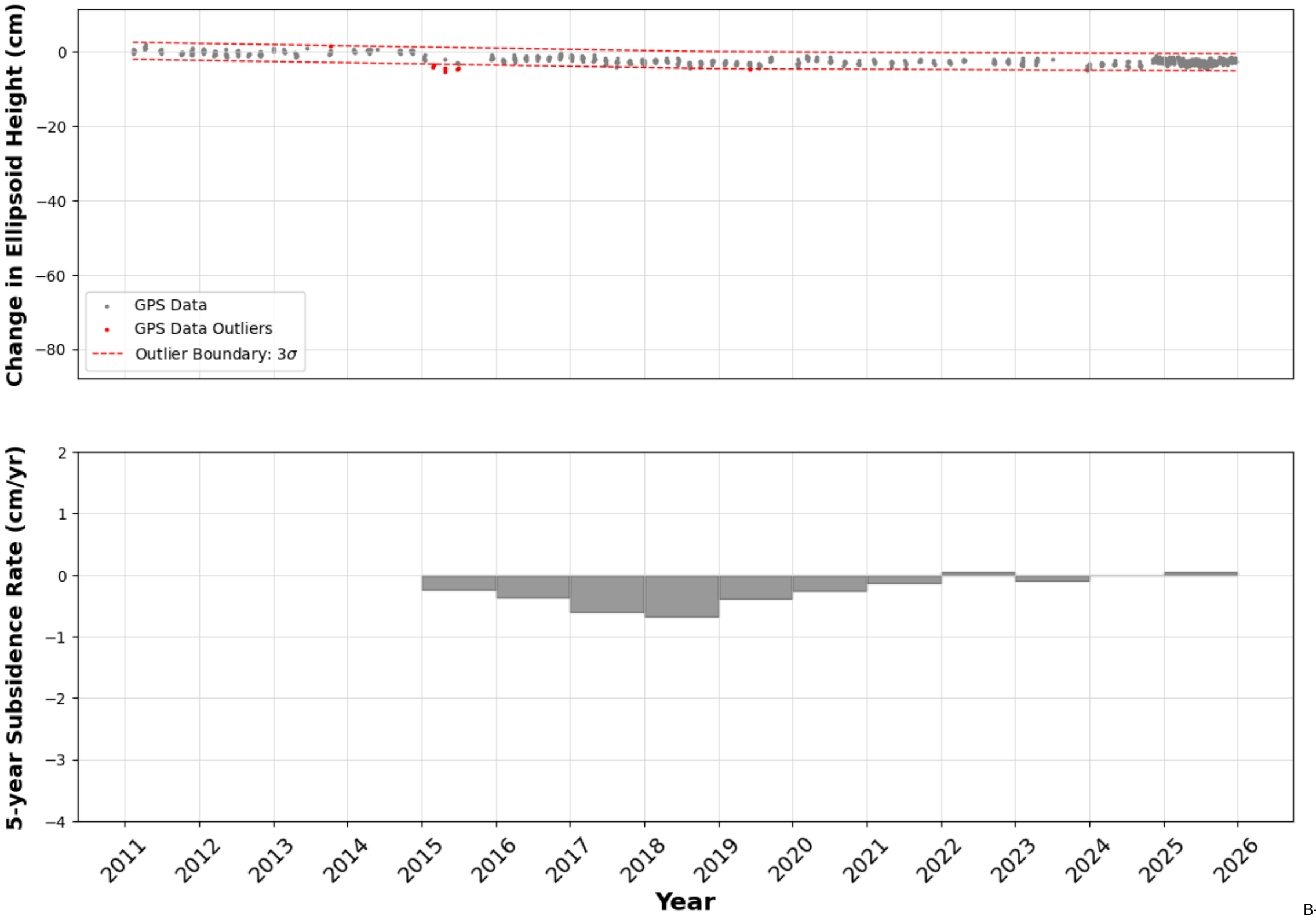


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P067

Rosenberg, TX

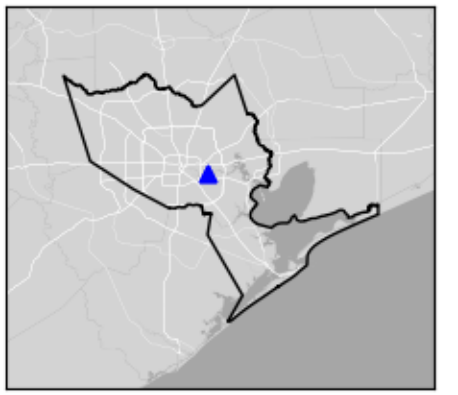


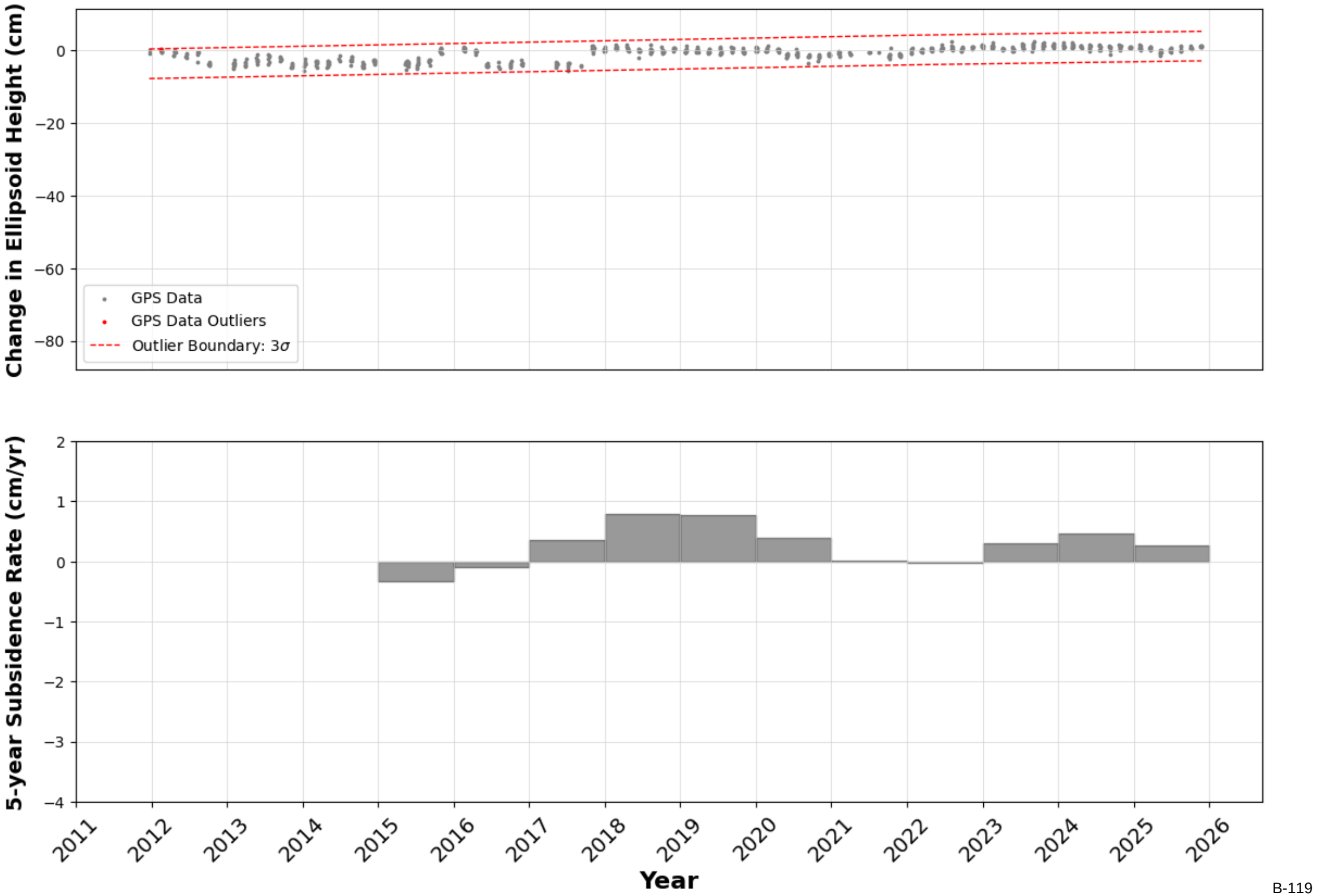


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P074

Galena Park, TX

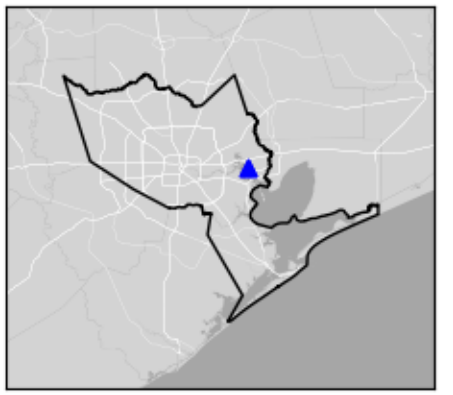


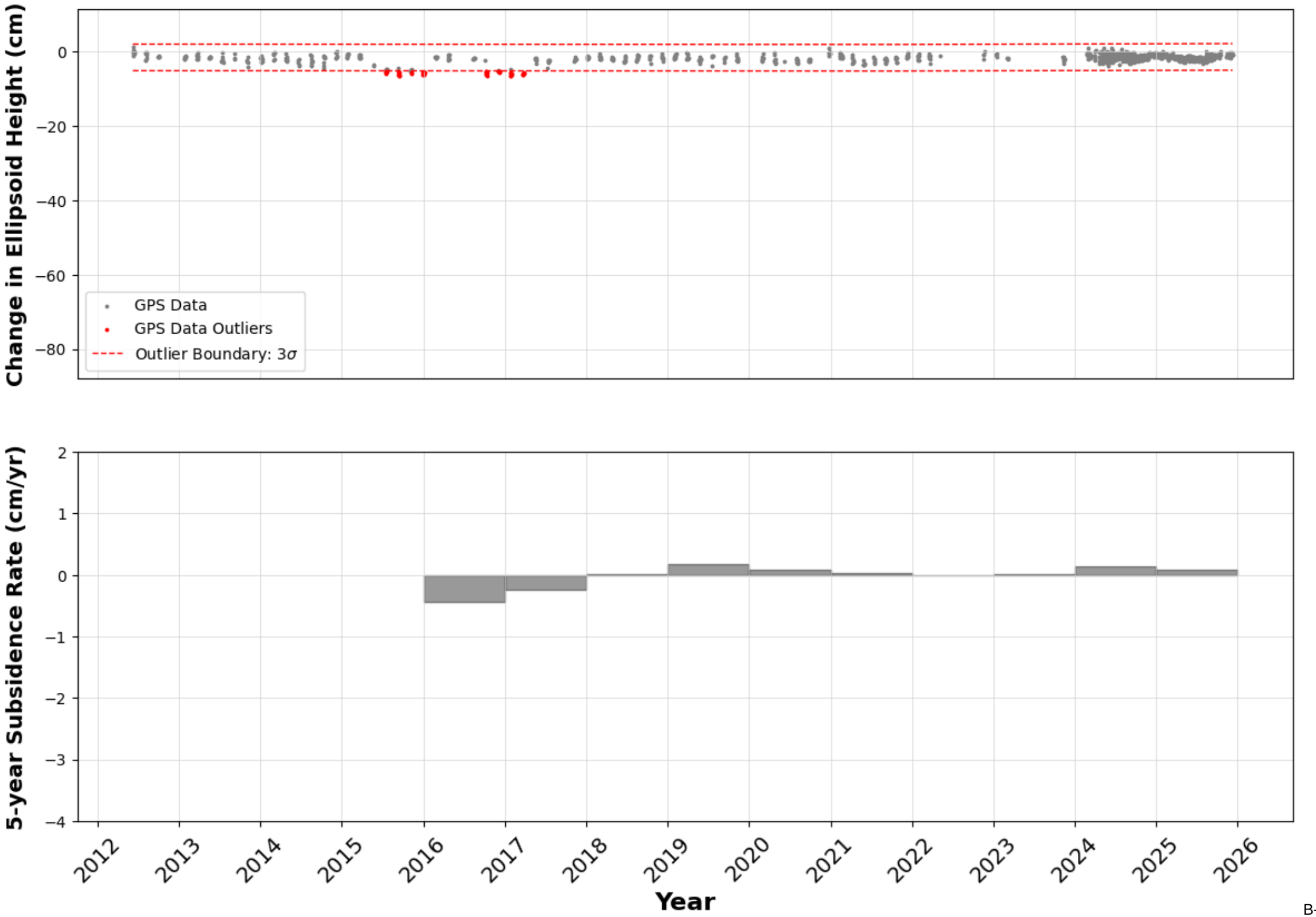


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P075

Baytown, TX

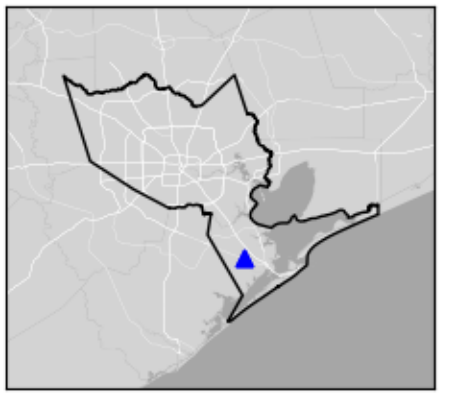


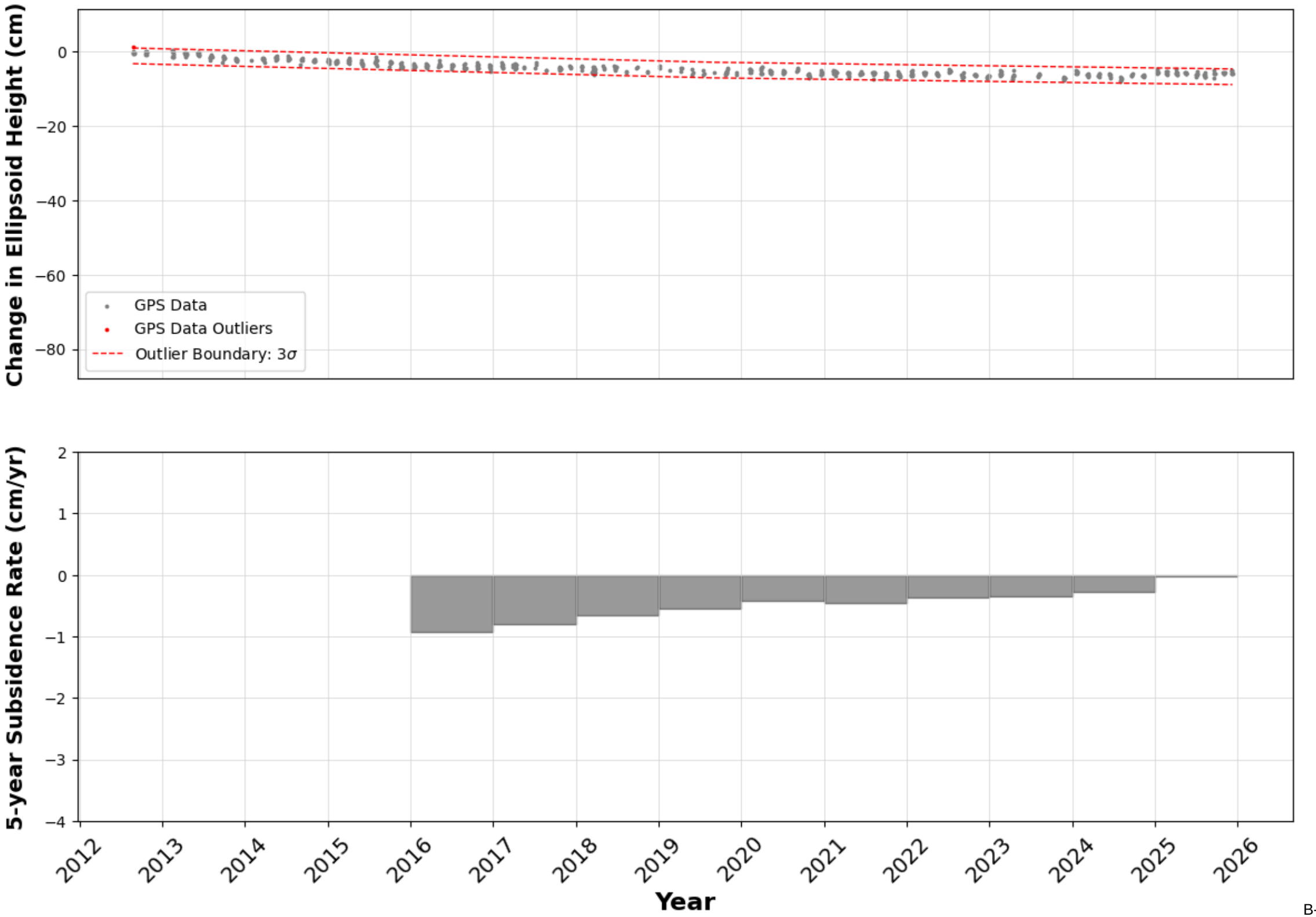


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P076

Hitchcock, TX

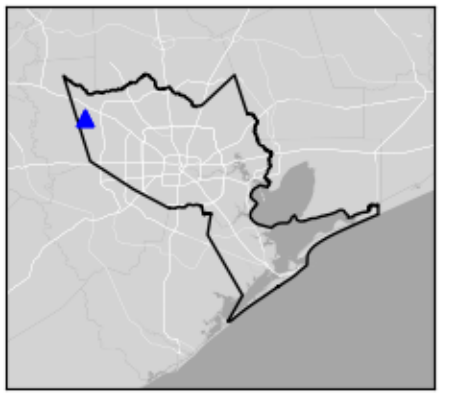


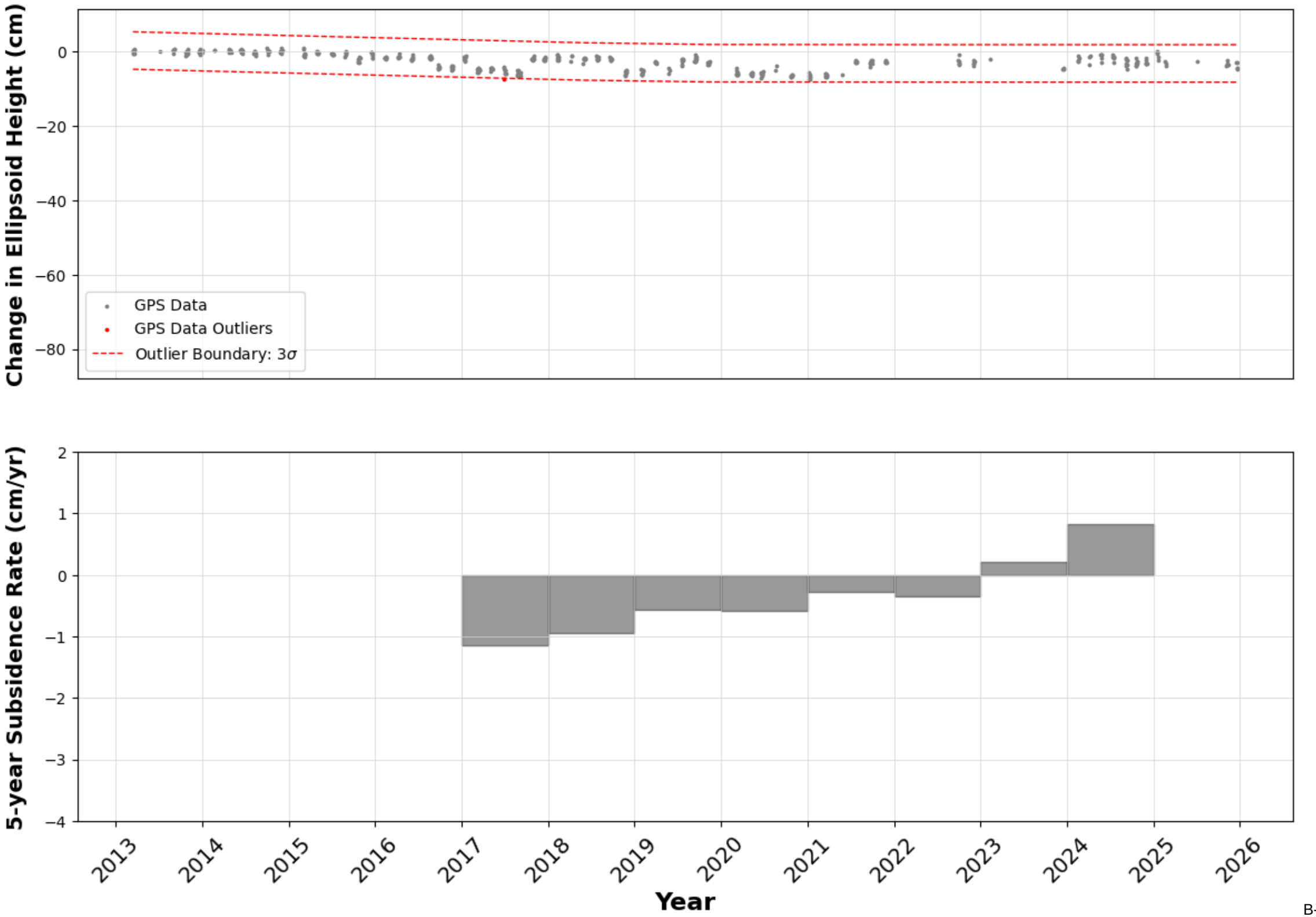


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P077

Hockley, TX

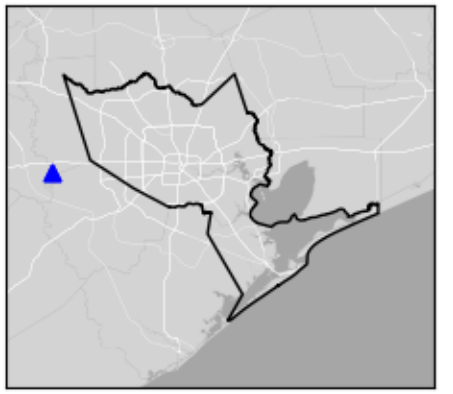


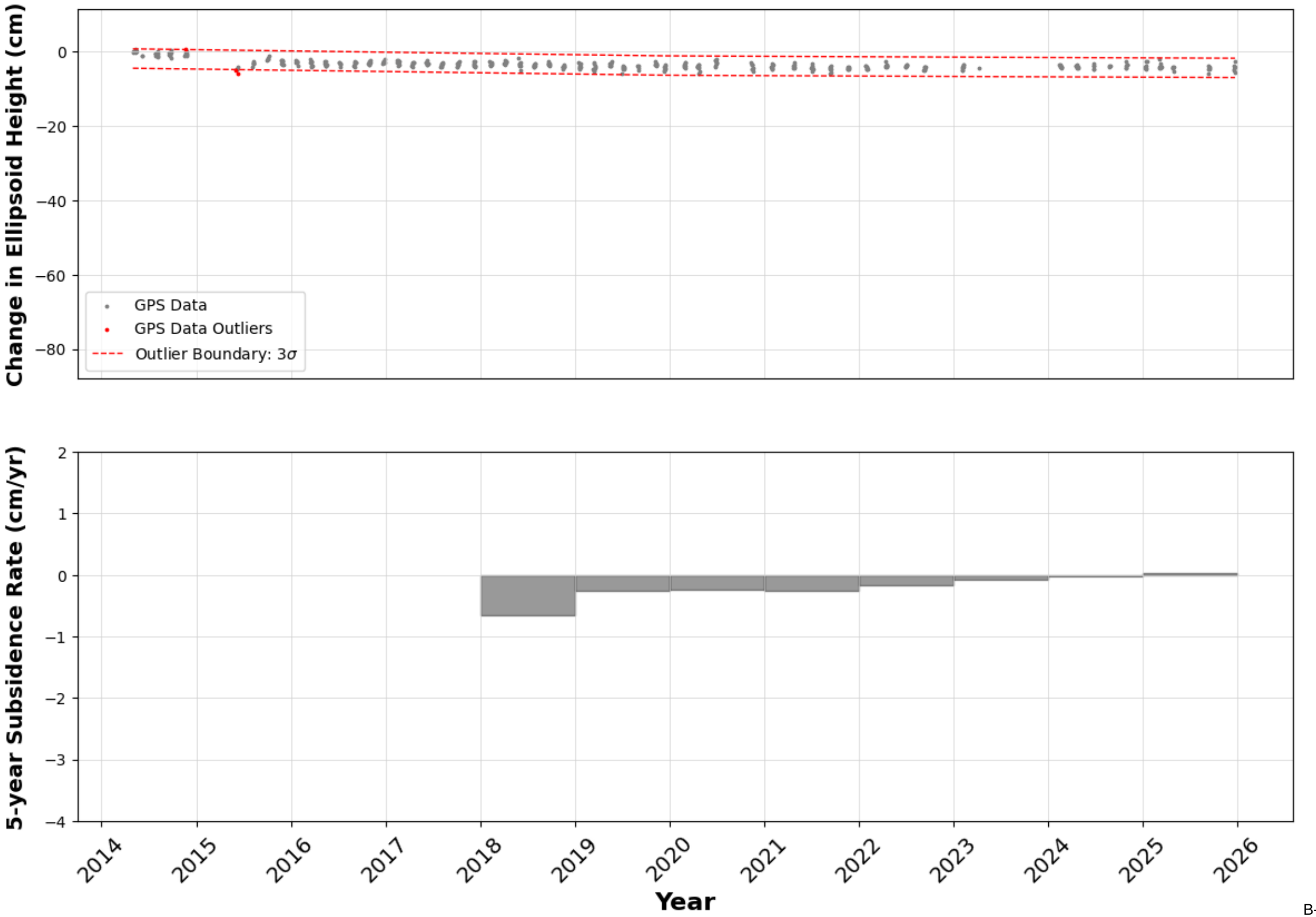


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P078

Brazos Country, TX

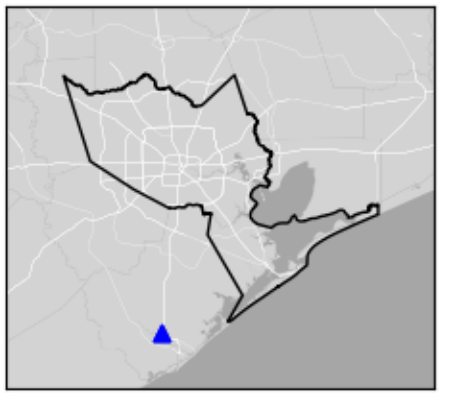


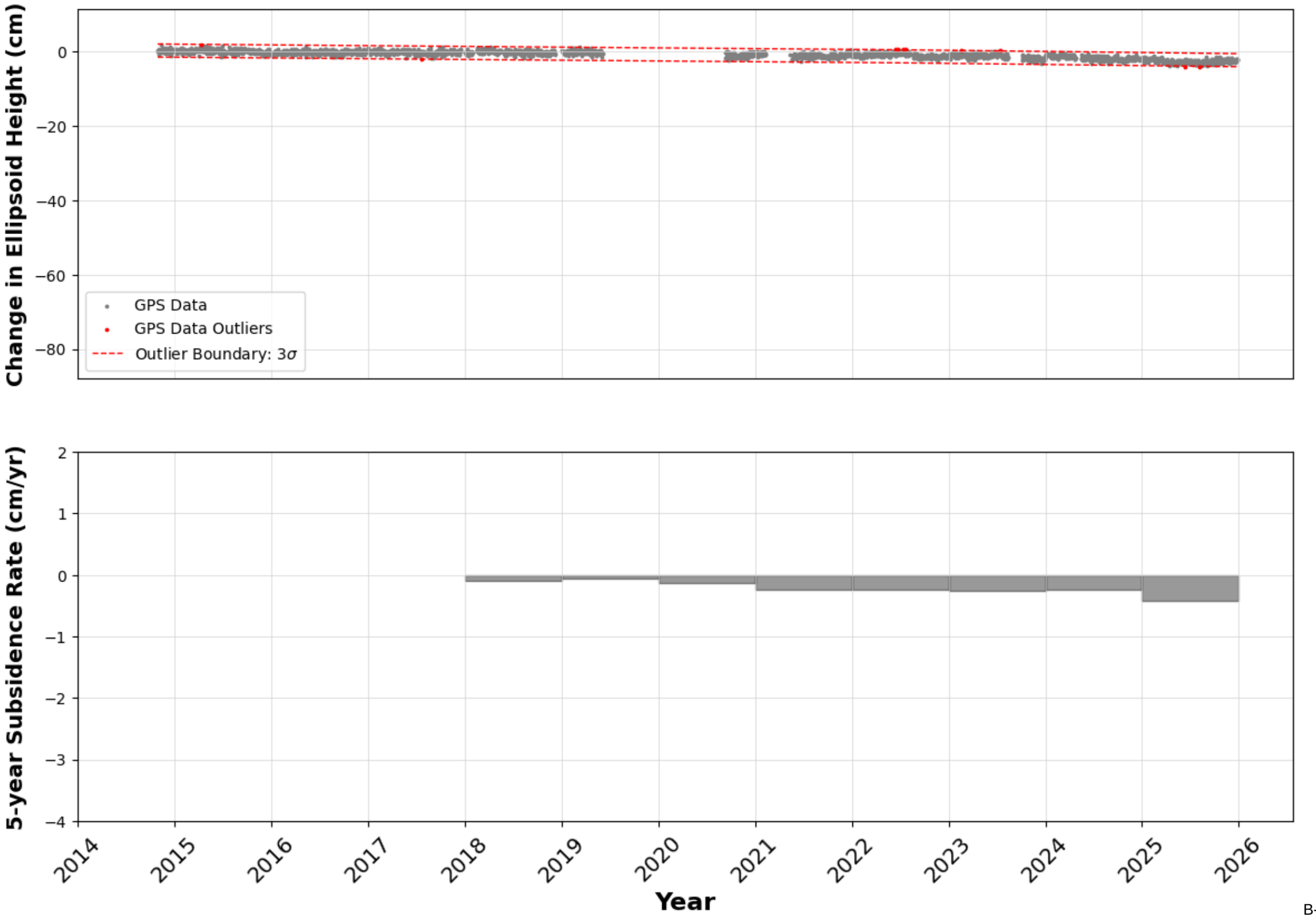


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P079

Lake Jackson, TX

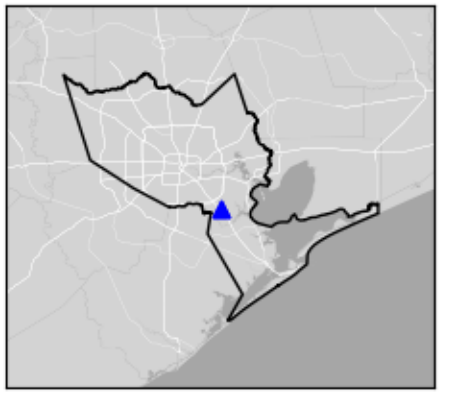


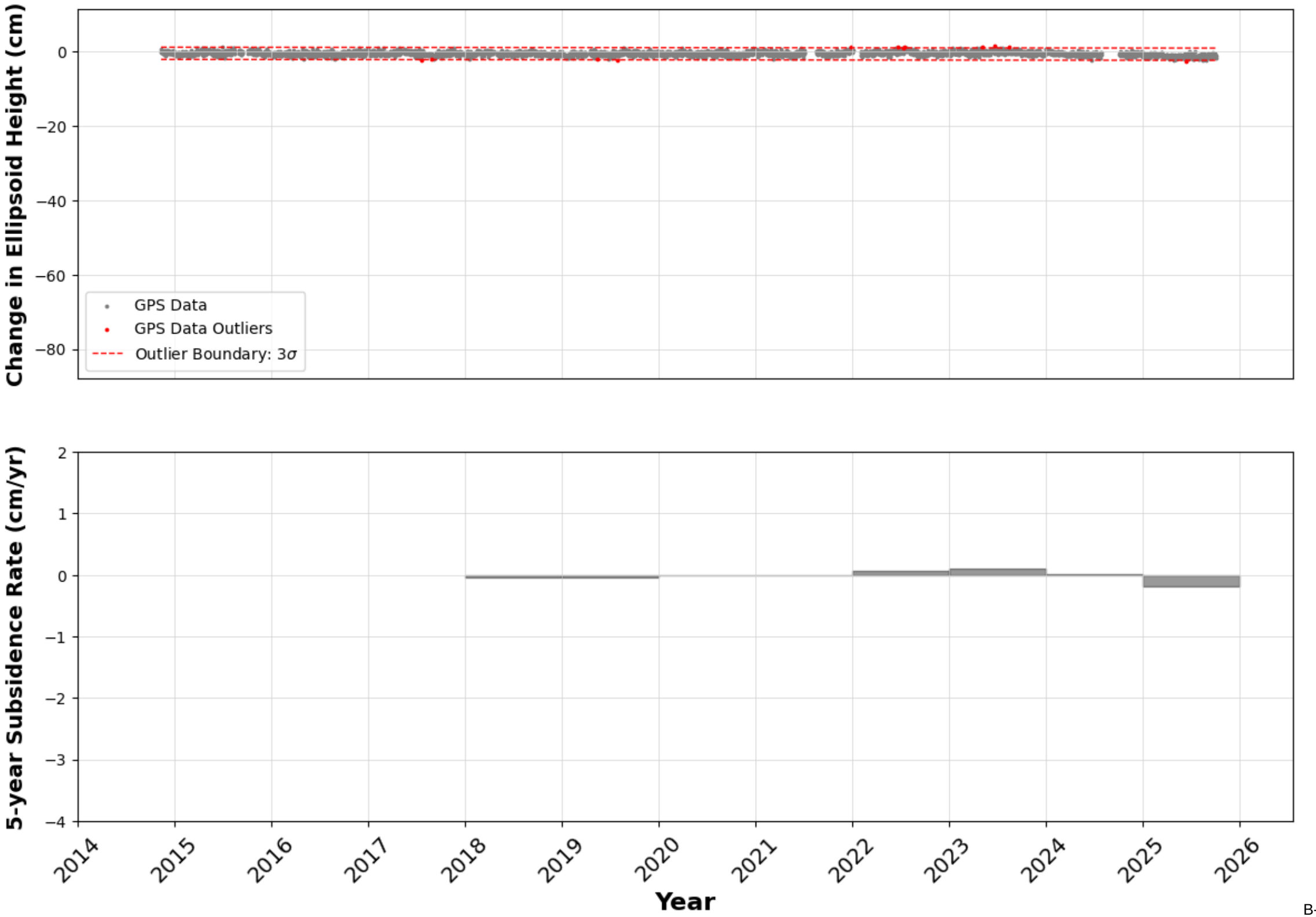


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P080

Houston, TX

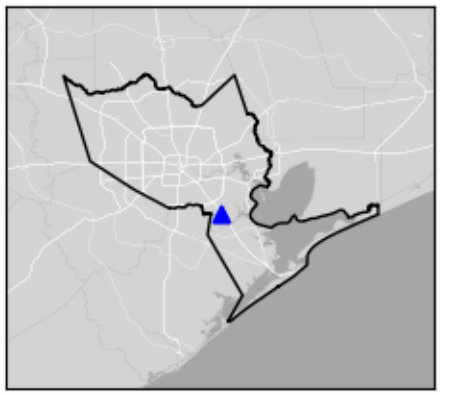


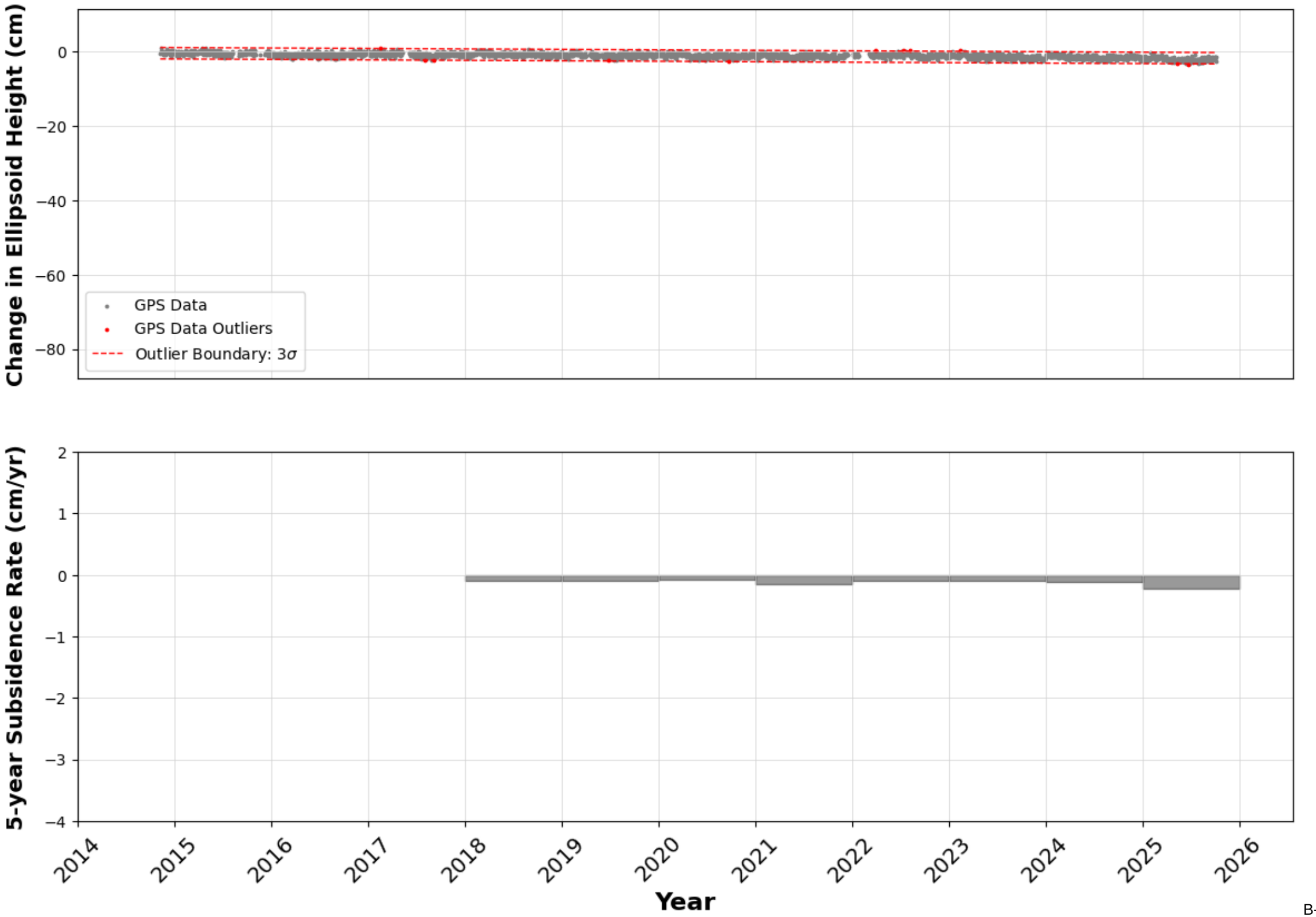


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P081

Houston, TX

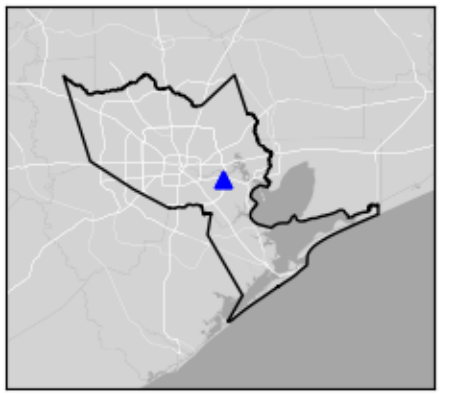


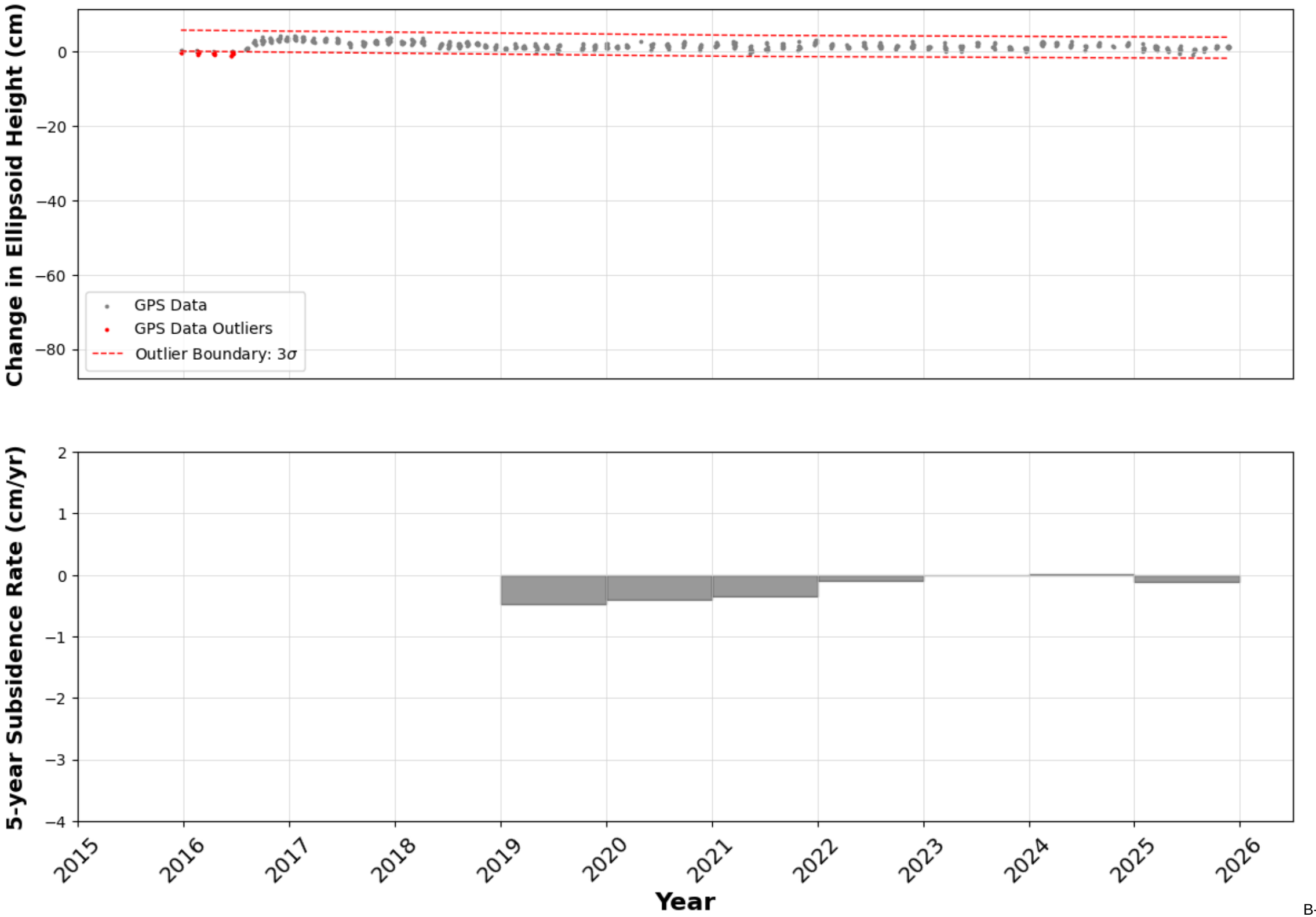


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P090

Pasadena, TX

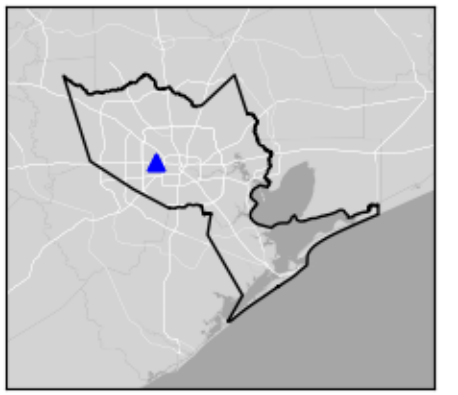


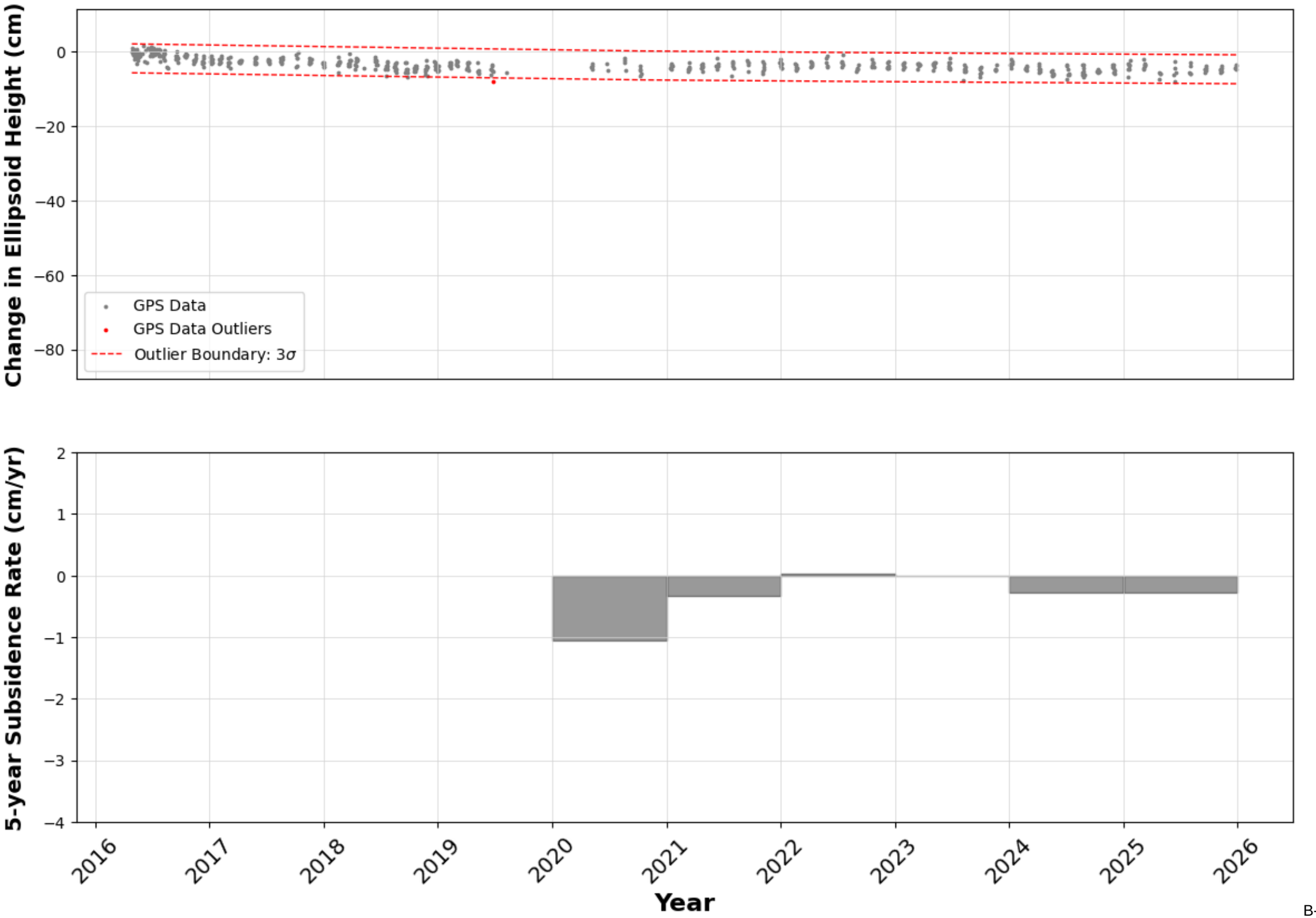


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P091

Houston, TX

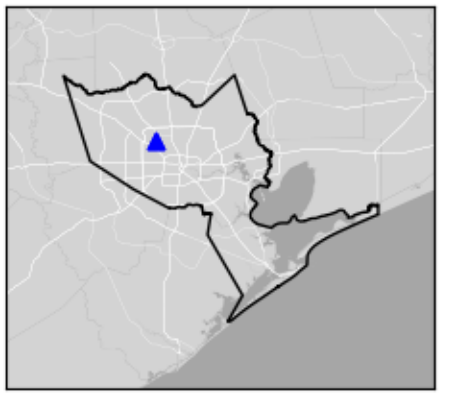


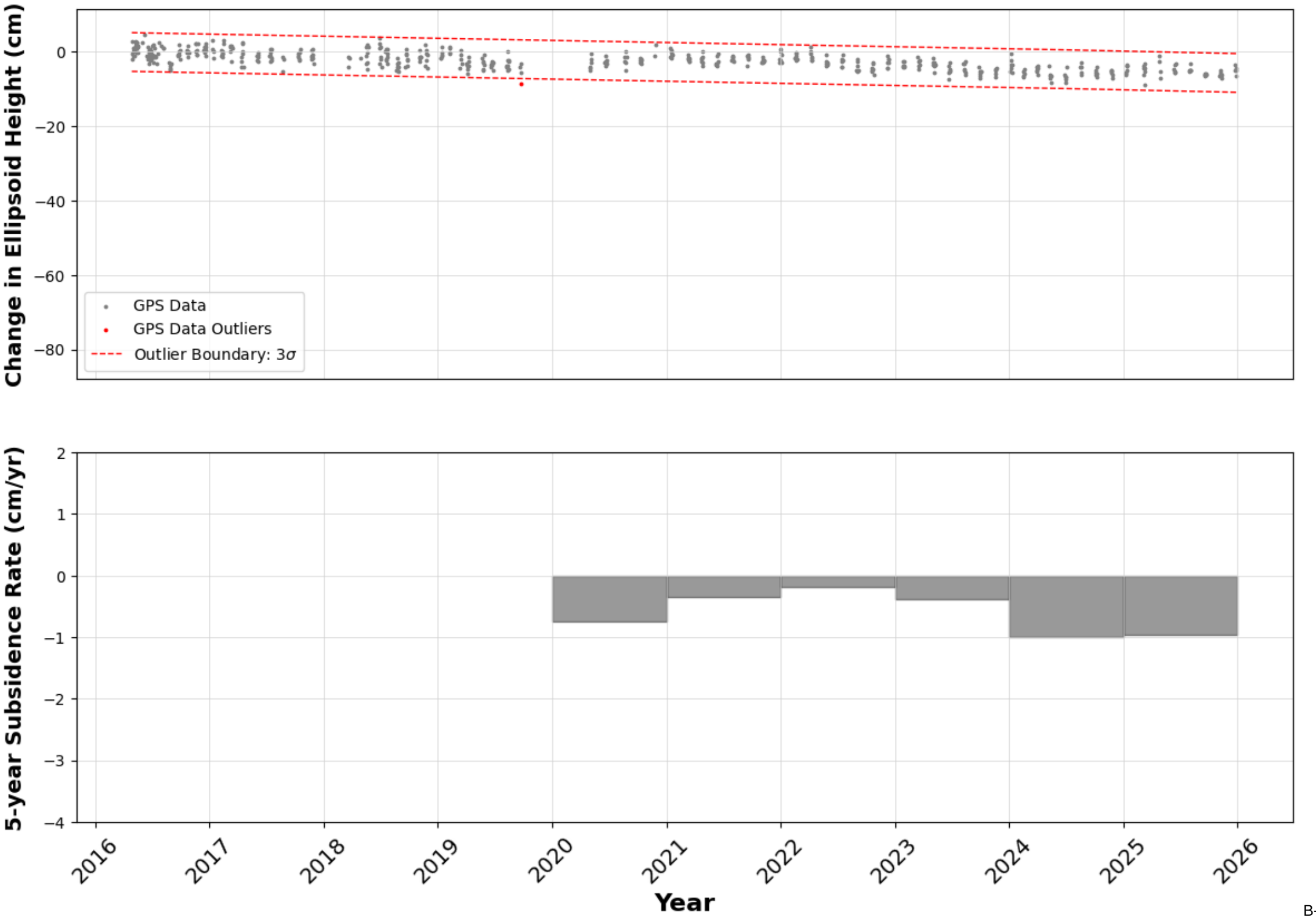


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P092

Houston, TX

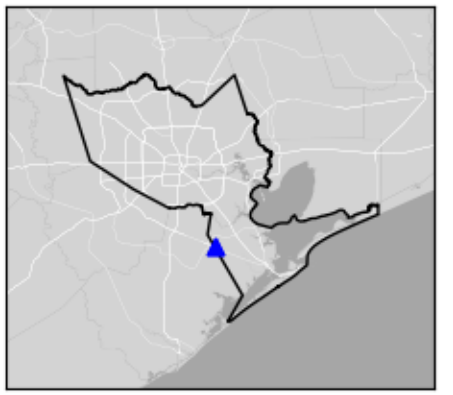


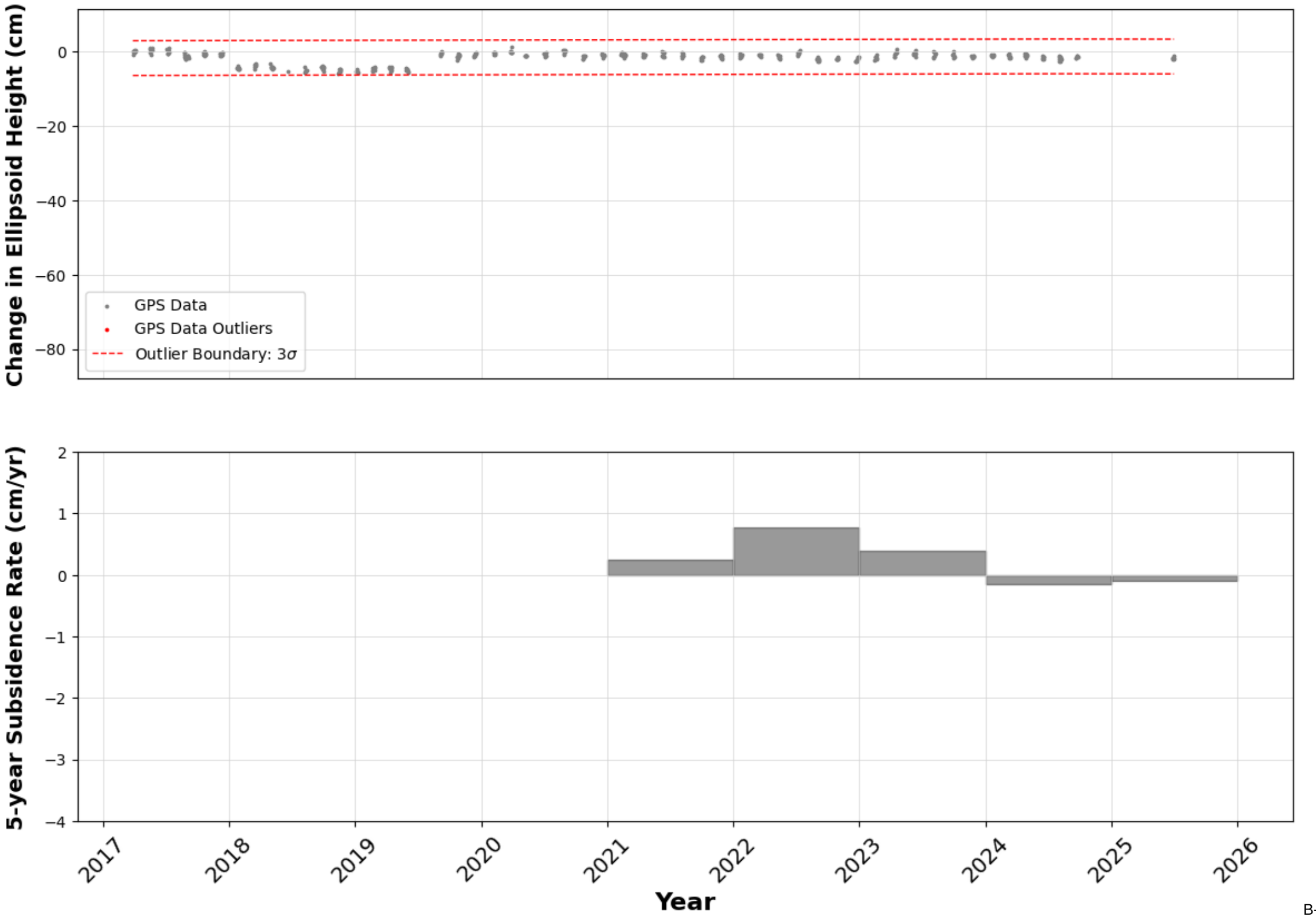


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P093

Alvin, TX

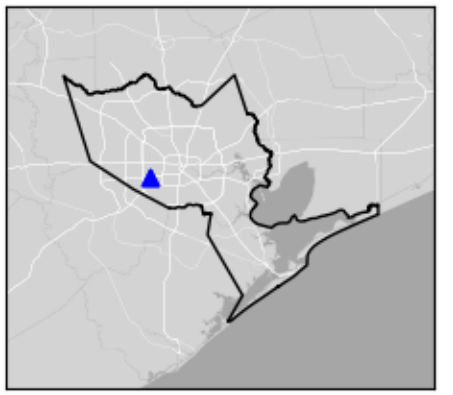


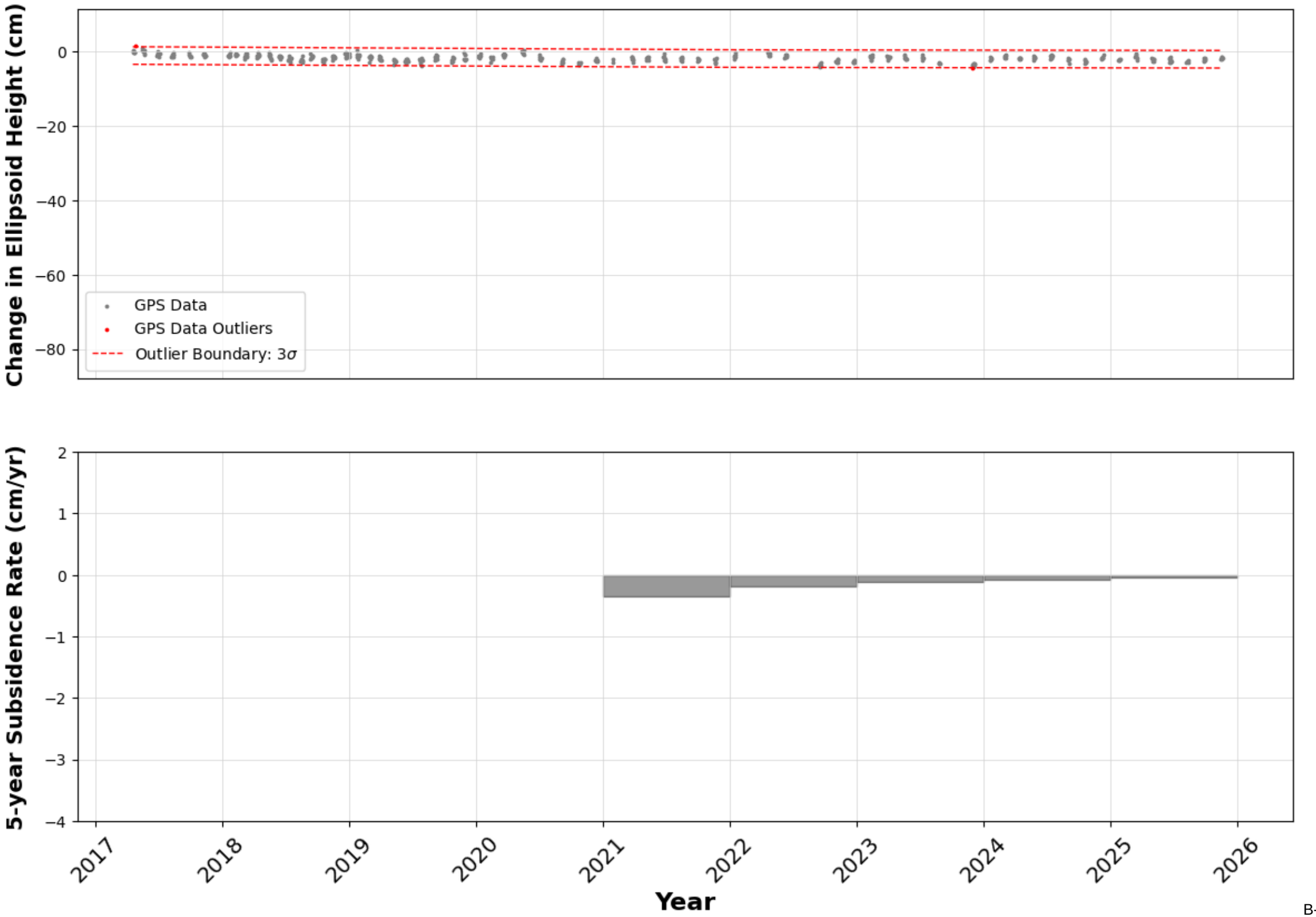


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P094

Houston, TX

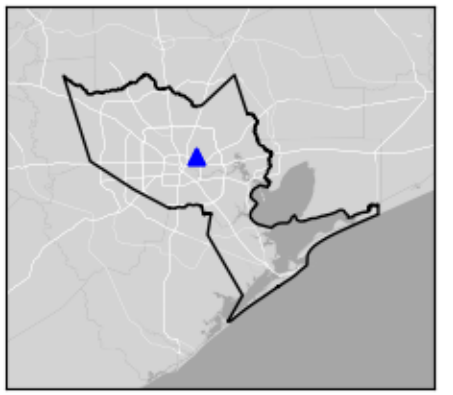


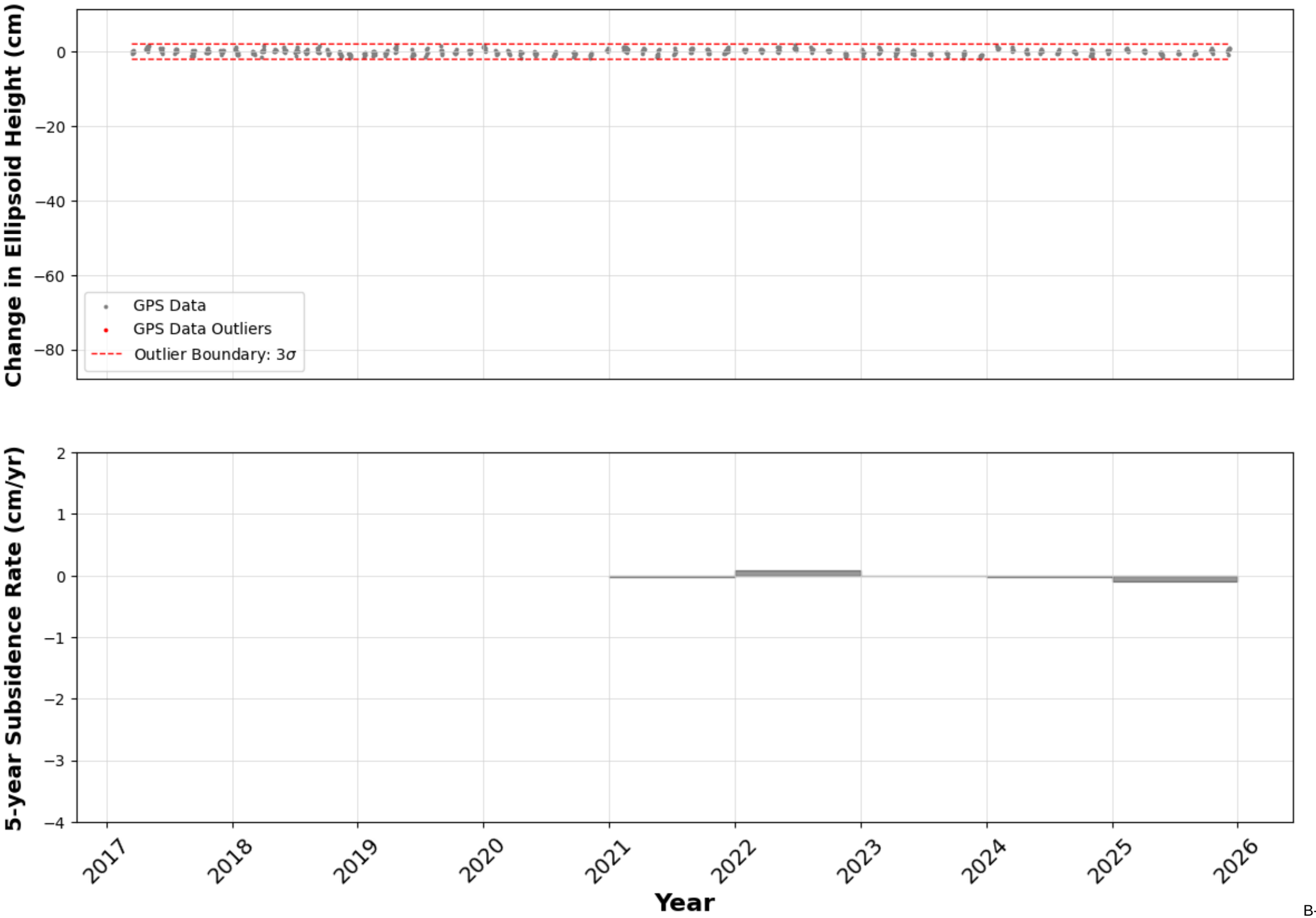


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P095

Houston, TX

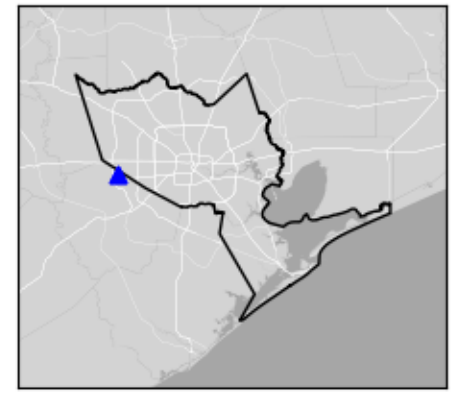


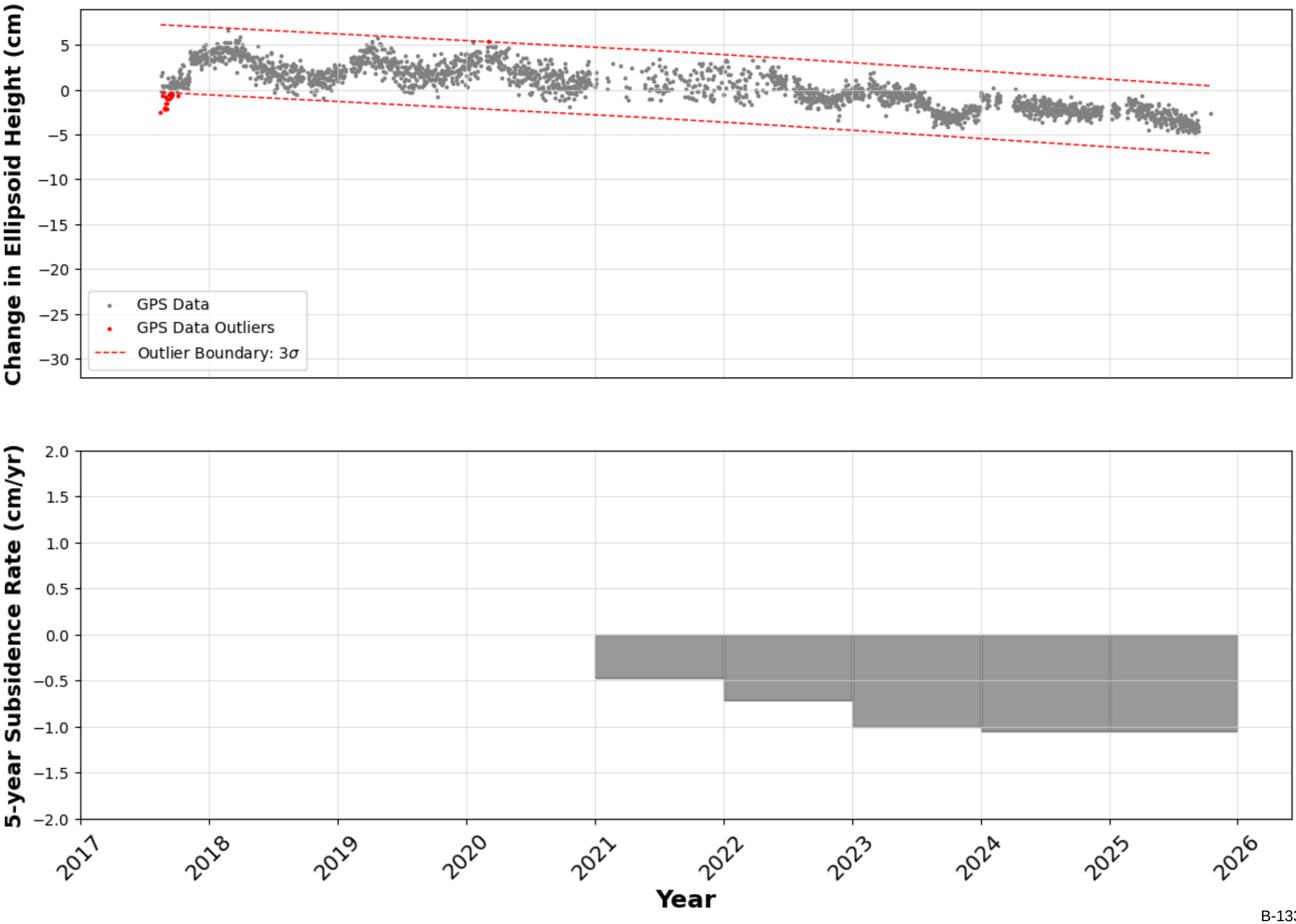


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P096

Katy, TX

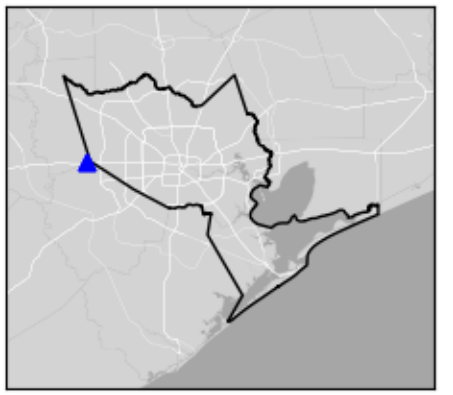


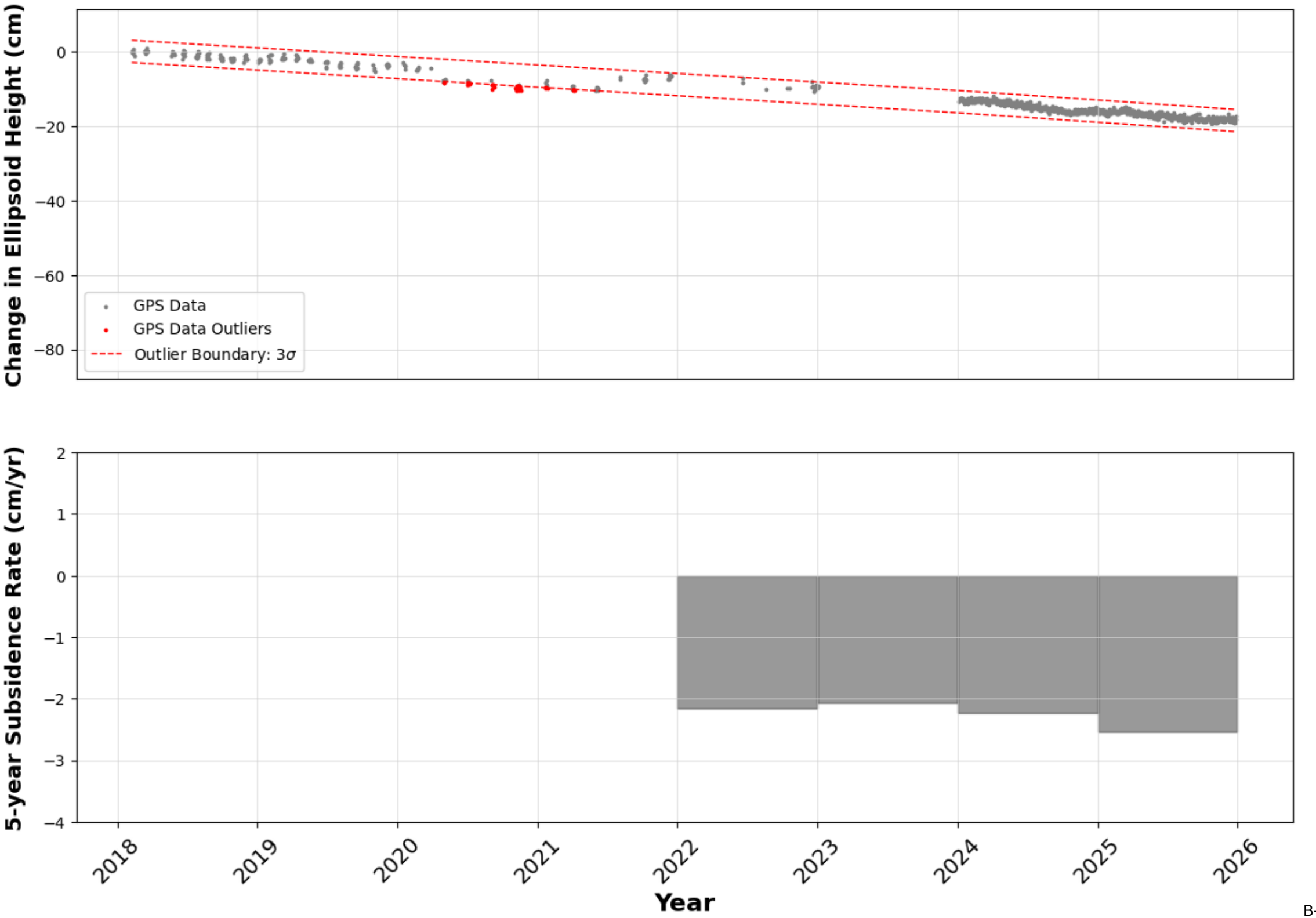


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered by HGSD when calculating subsidence rates and are shown for informational purposes only.

P097

Katy, TX

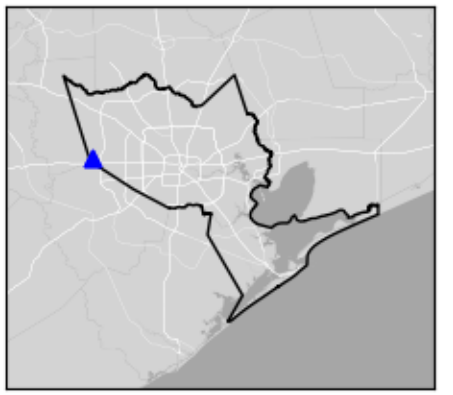


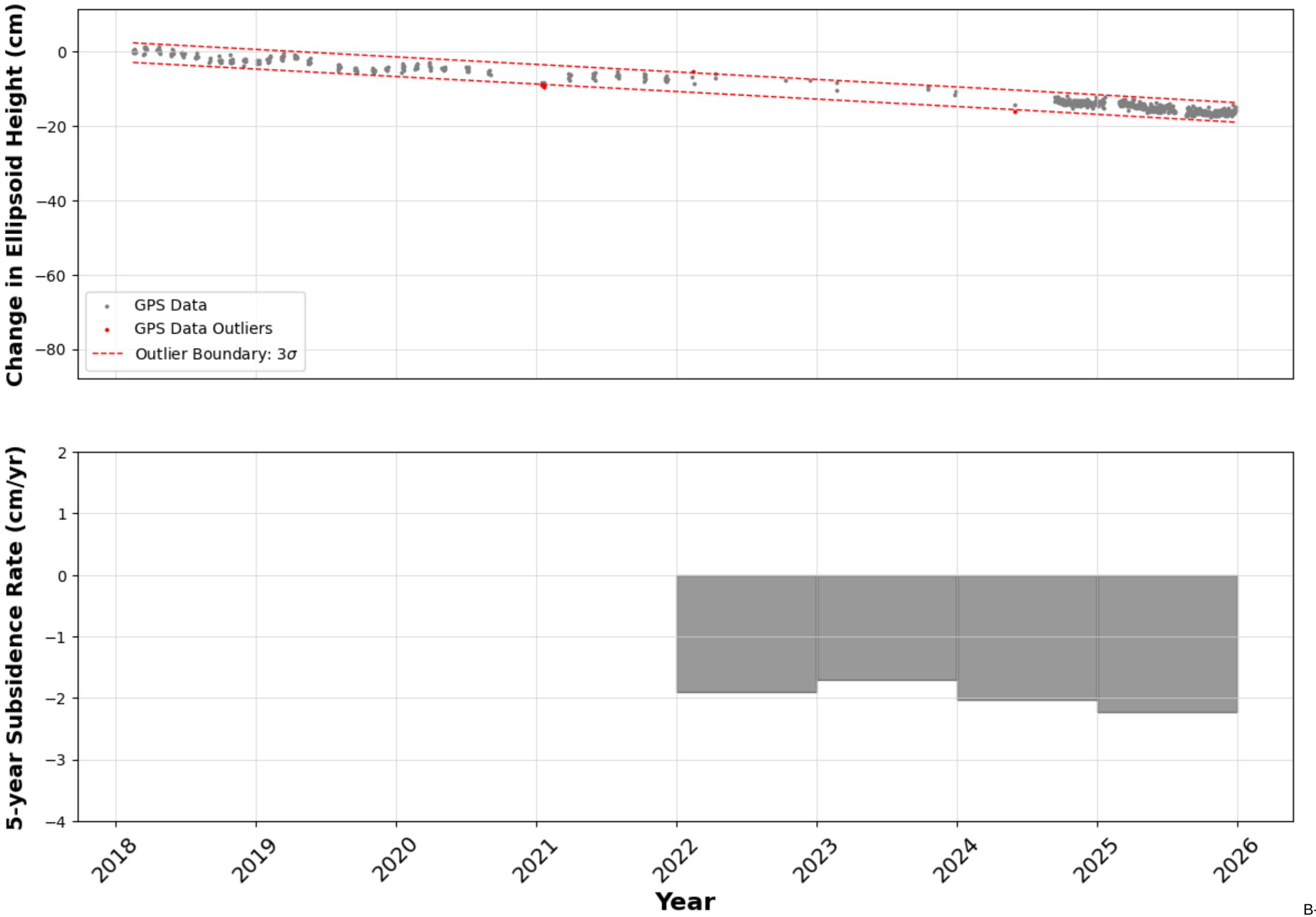


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P098

Katy, TX

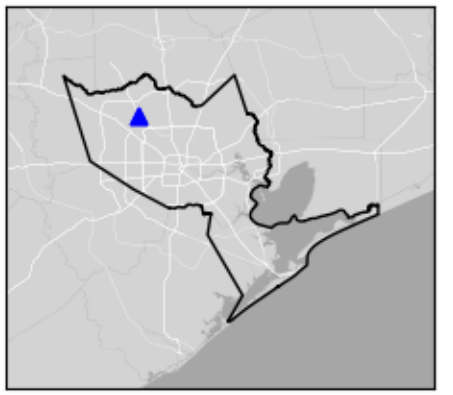


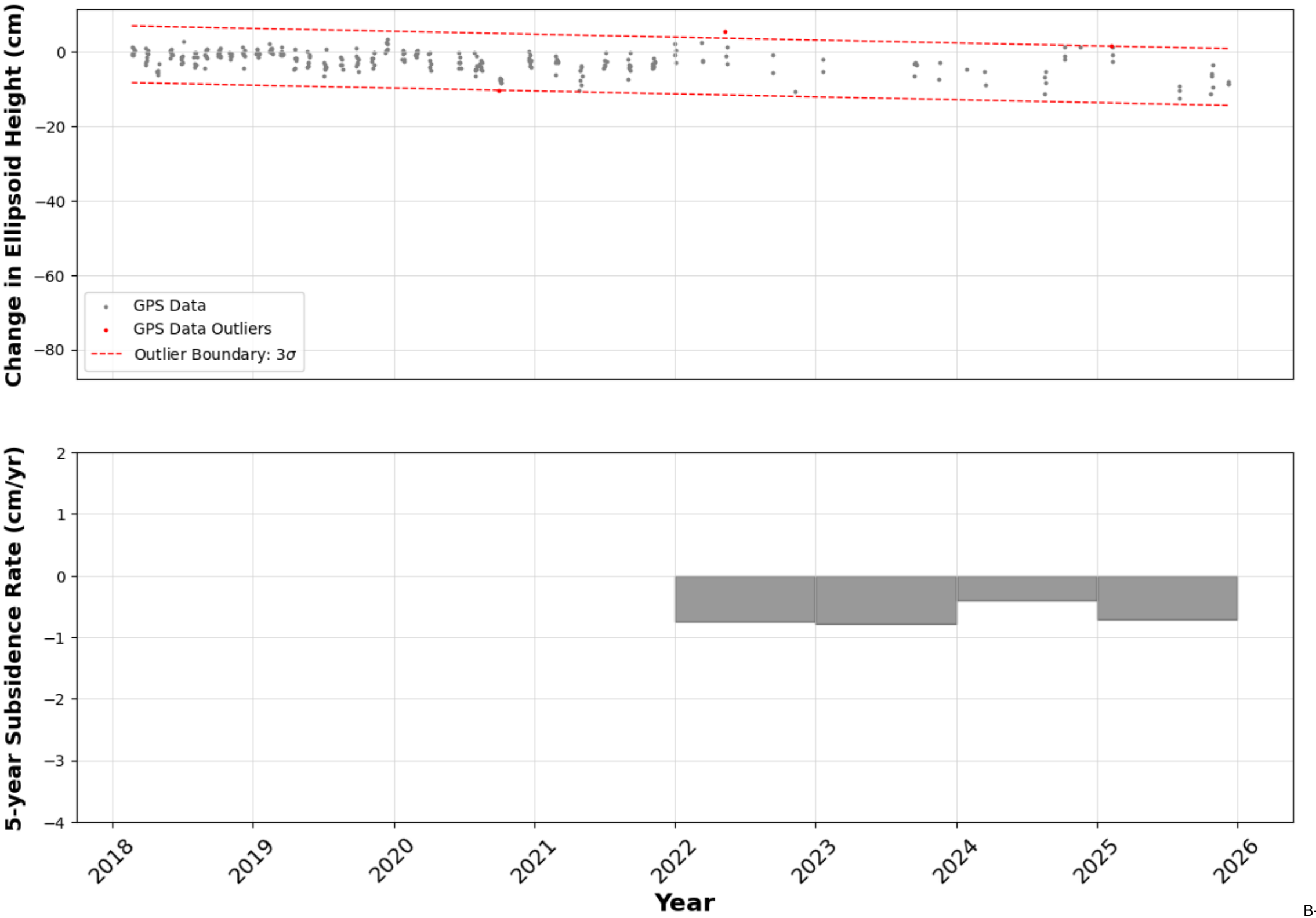


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P099

Houston, TX

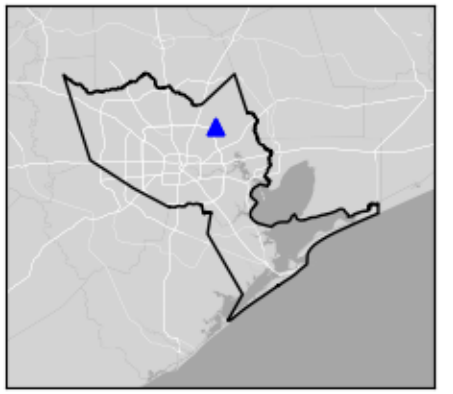


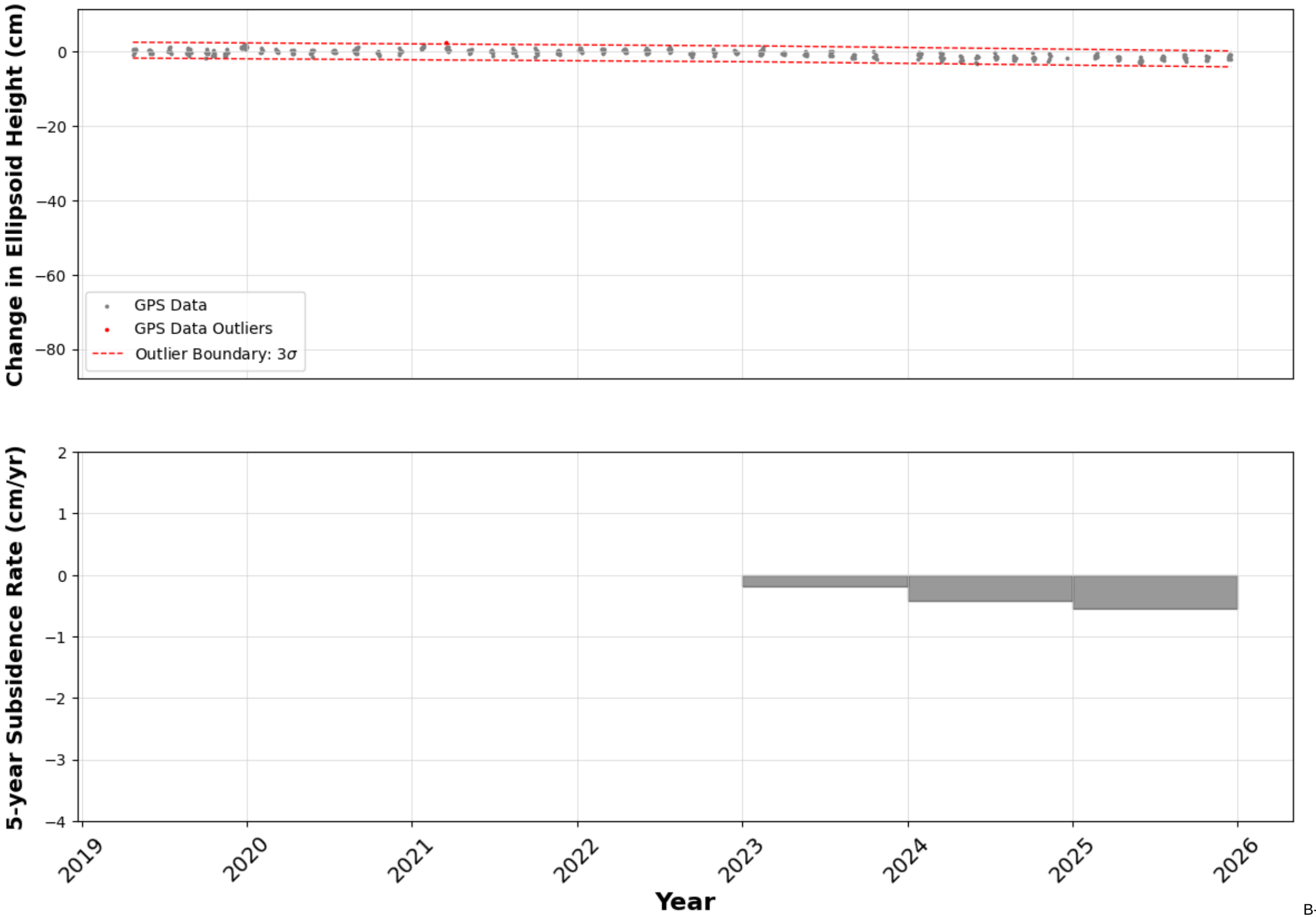


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P100

Atascocita, TX

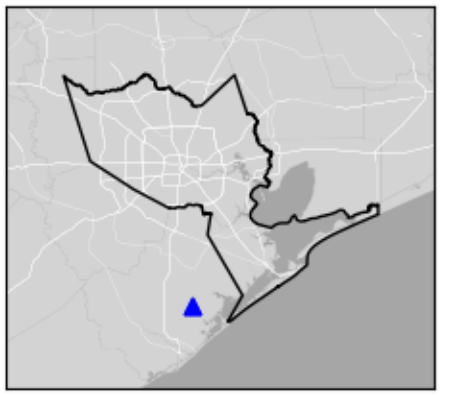


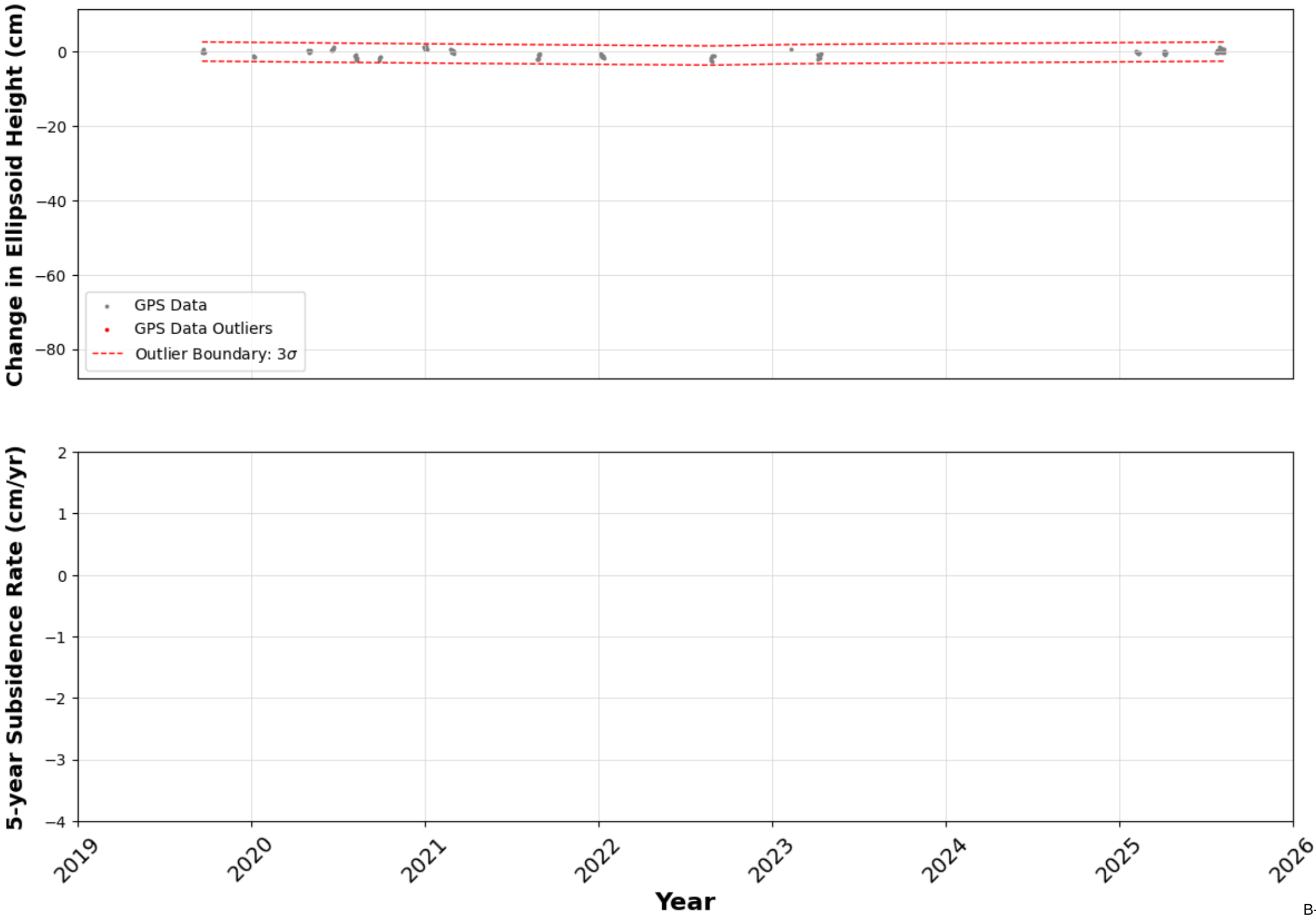


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P103

Angleton, TX

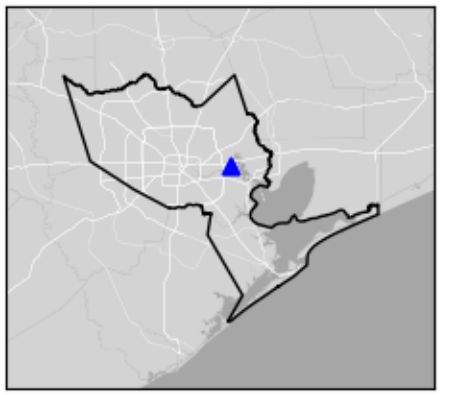


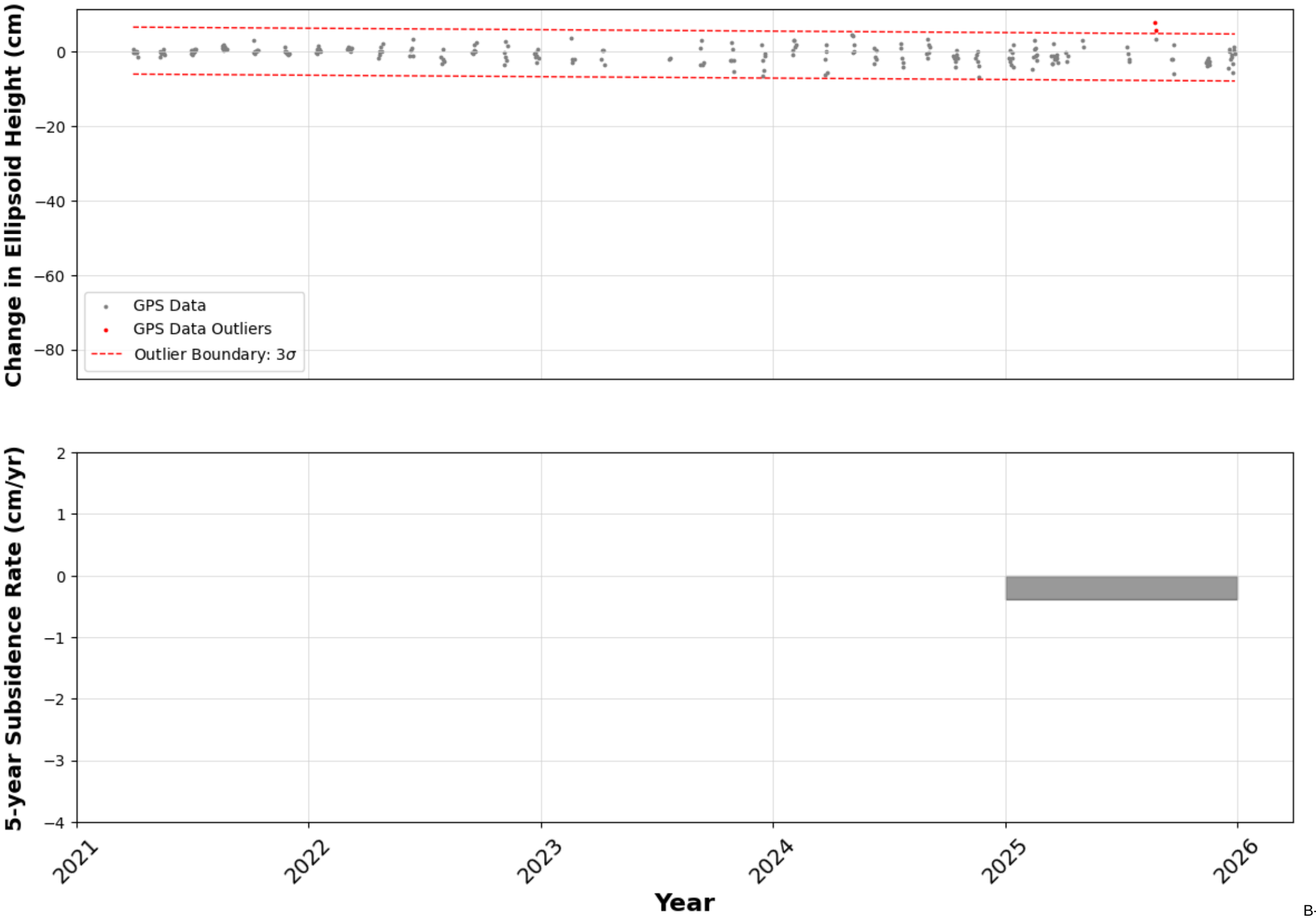


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P108

Channelview, TX

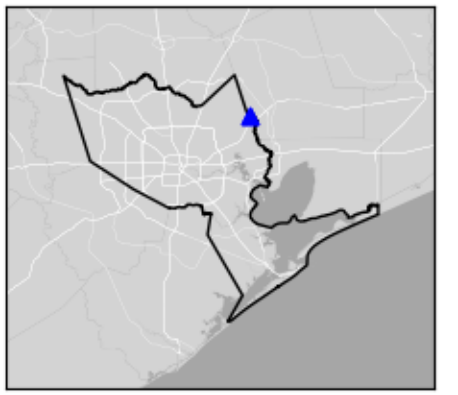


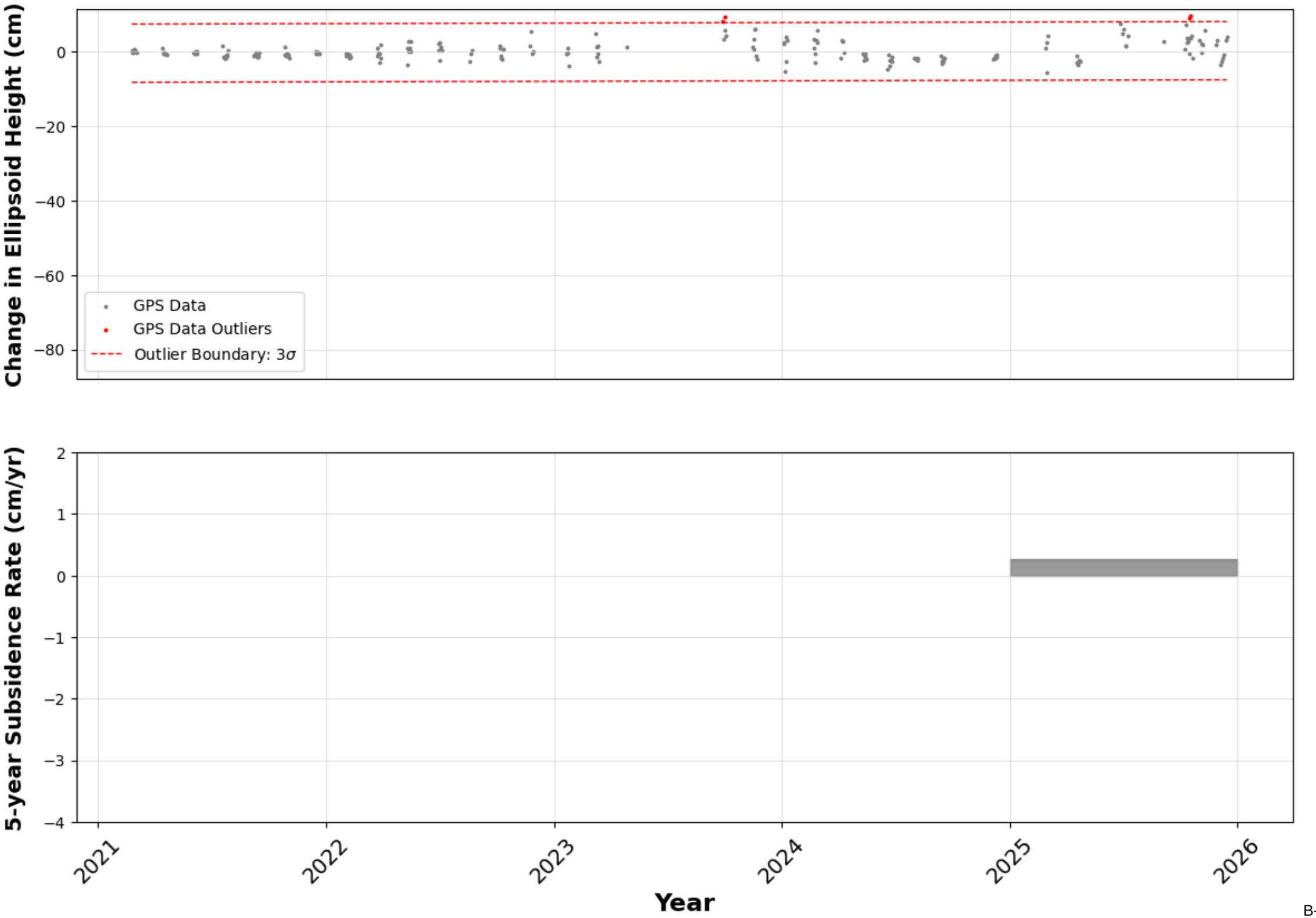


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P109

Crosby, TX

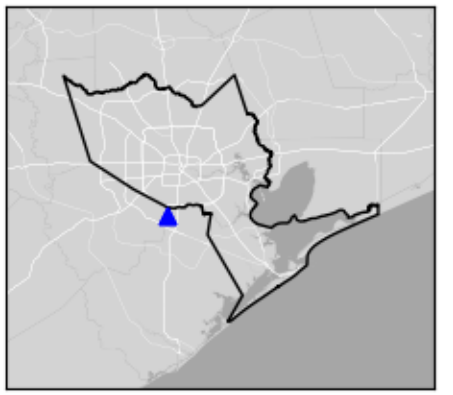


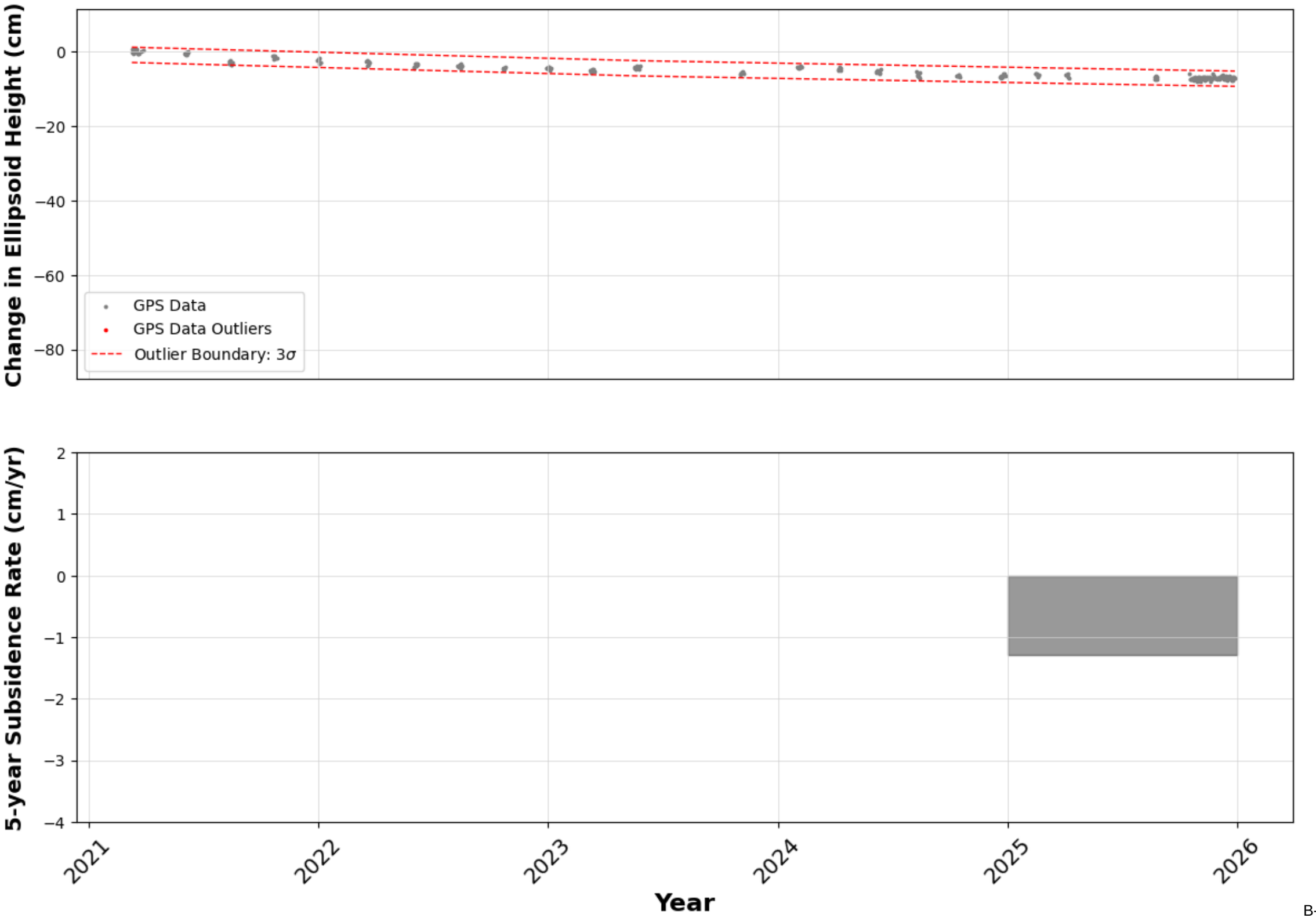


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P110

Fresno, TX

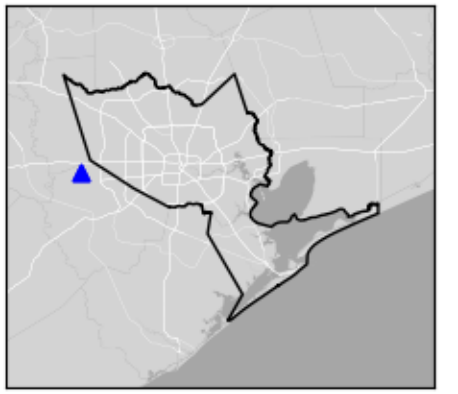


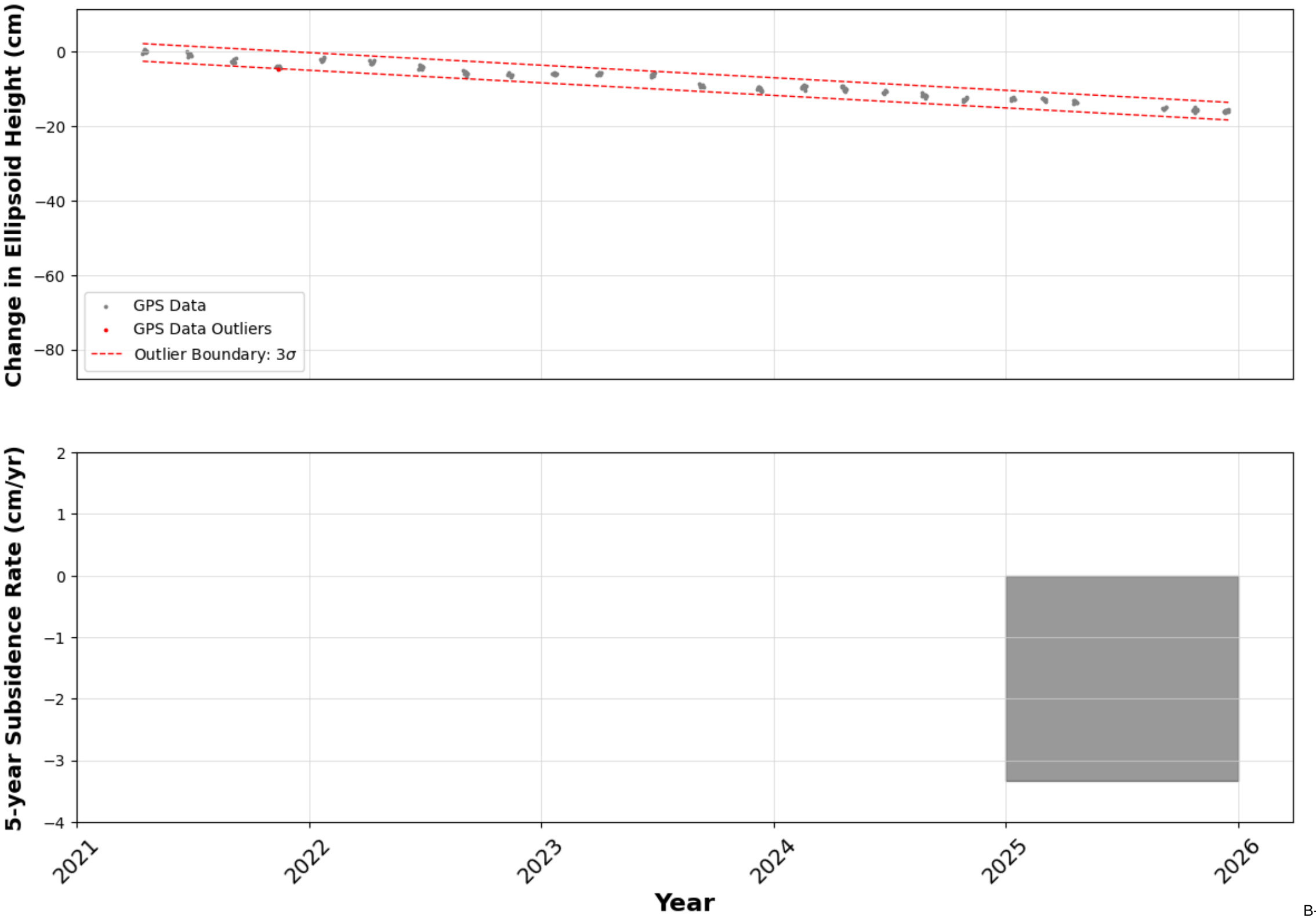


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

P111

Katy, TX

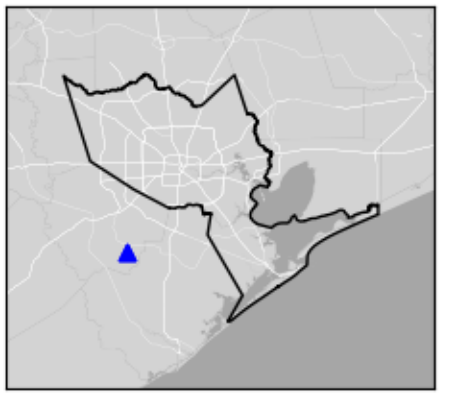


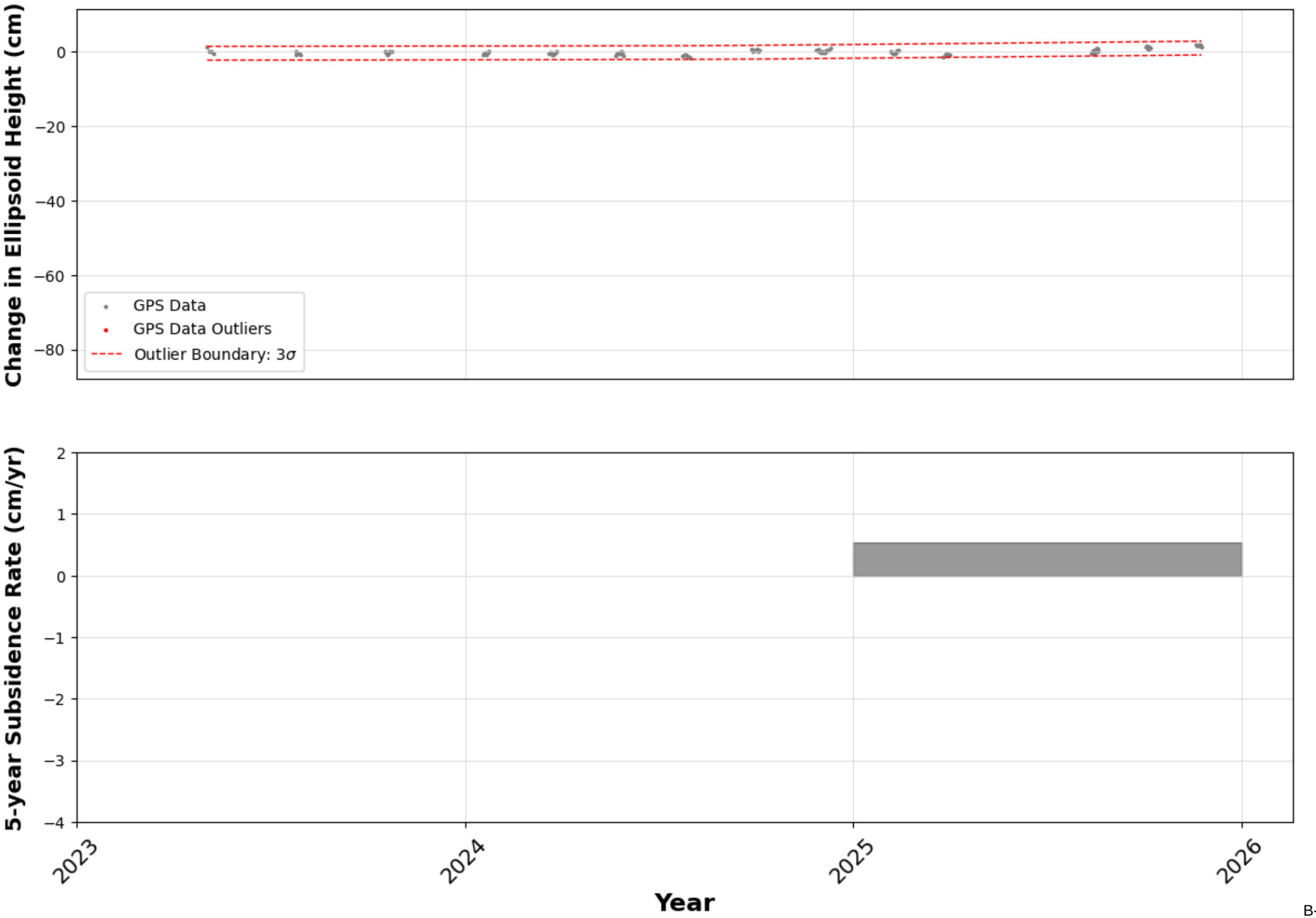


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.

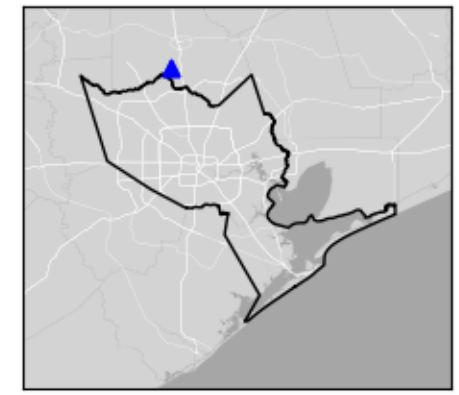
P113

Needville, TX



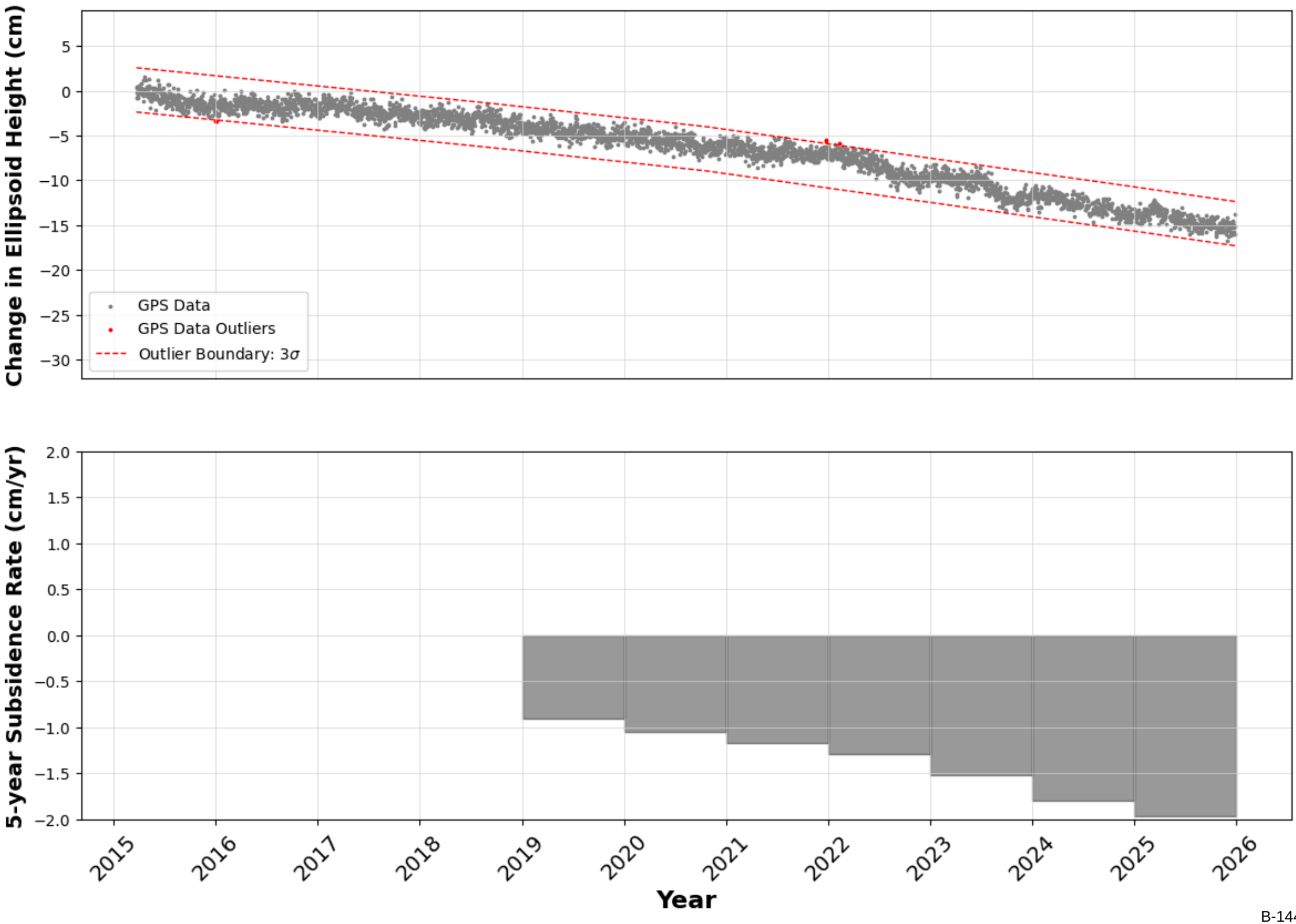


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered when calculating subsidence rates and are shown for informational purposes only.



PWES

Spring, TX



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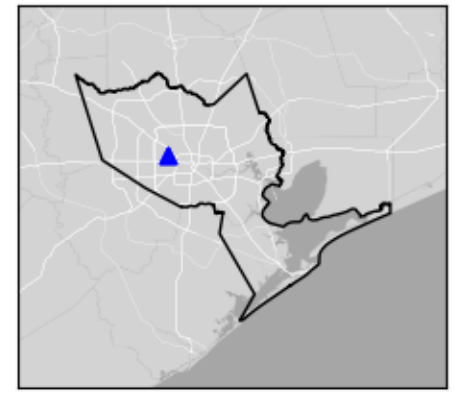
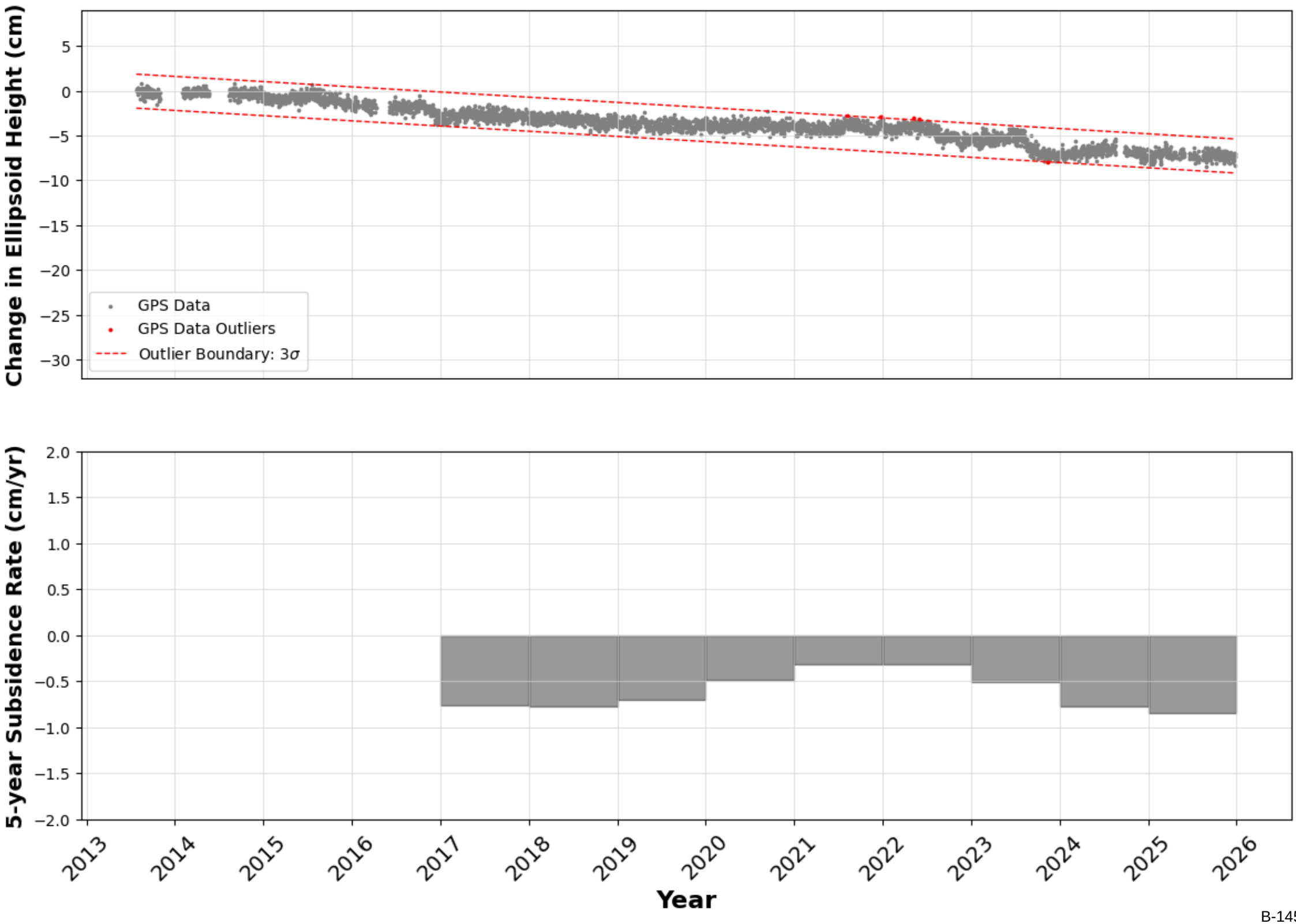


RDCT

Houston, TX



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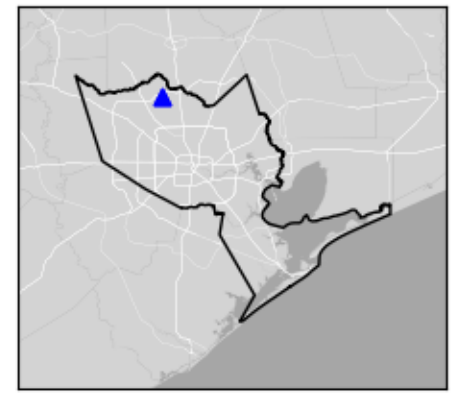
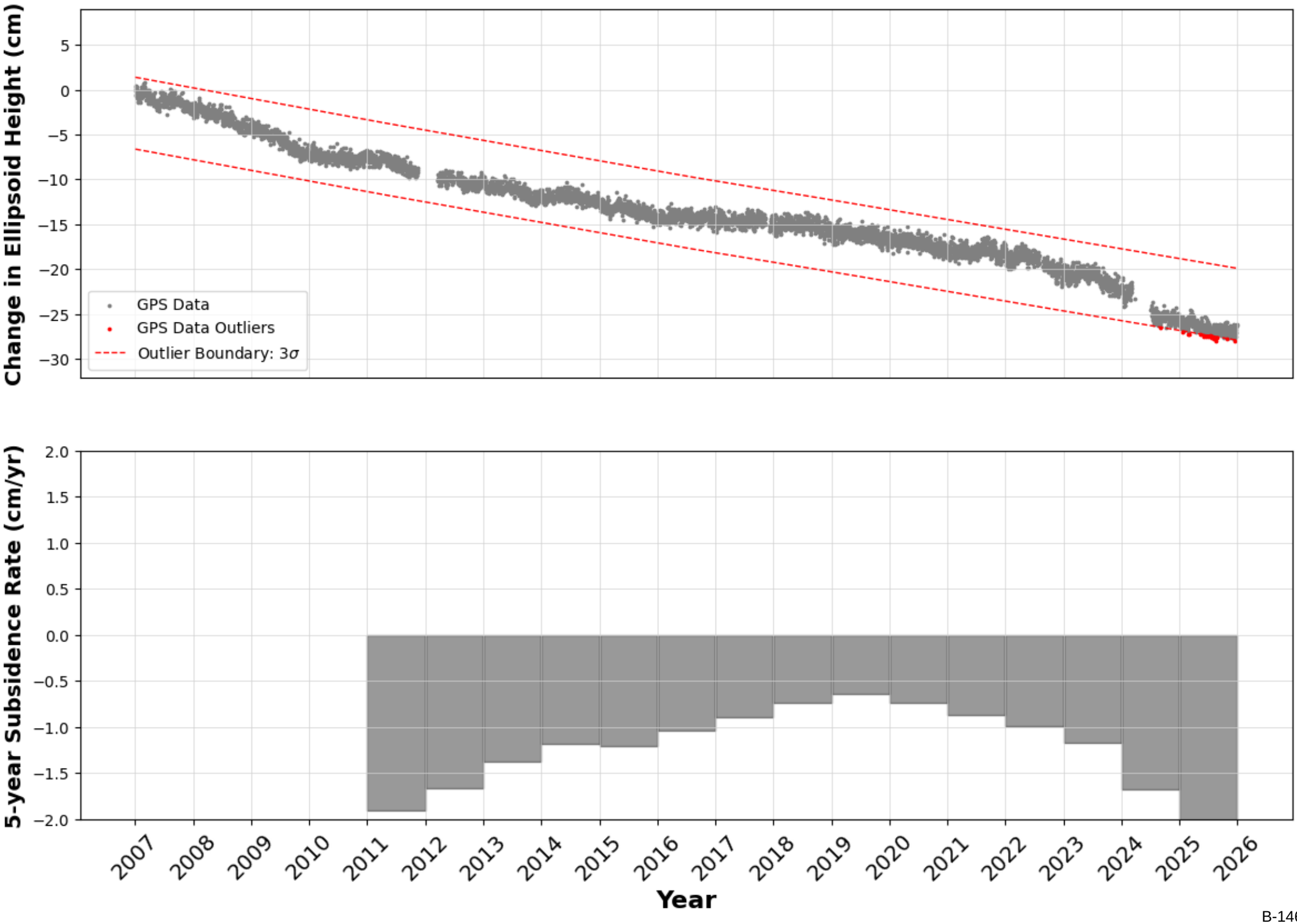
ROD1

Spring, TX





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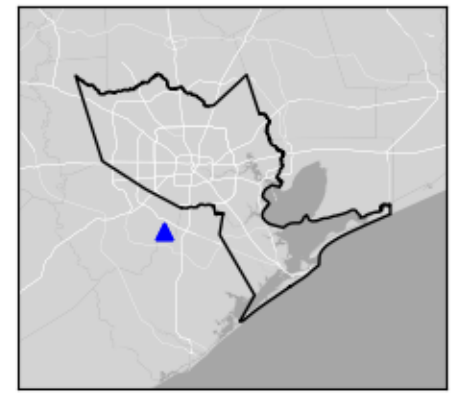
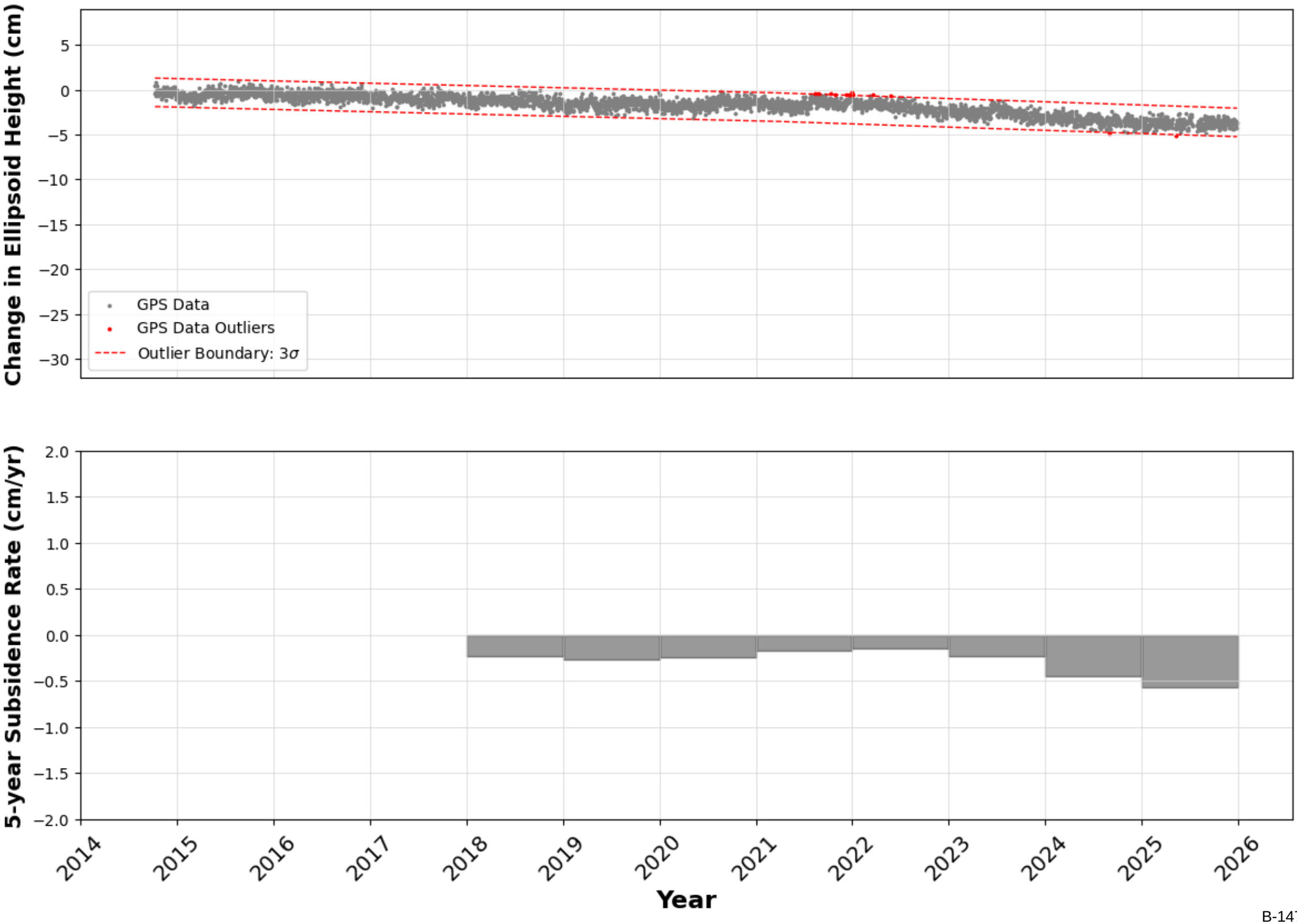


RPFB

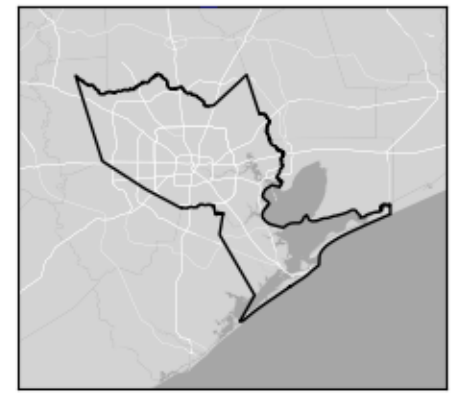
Sienna, TX

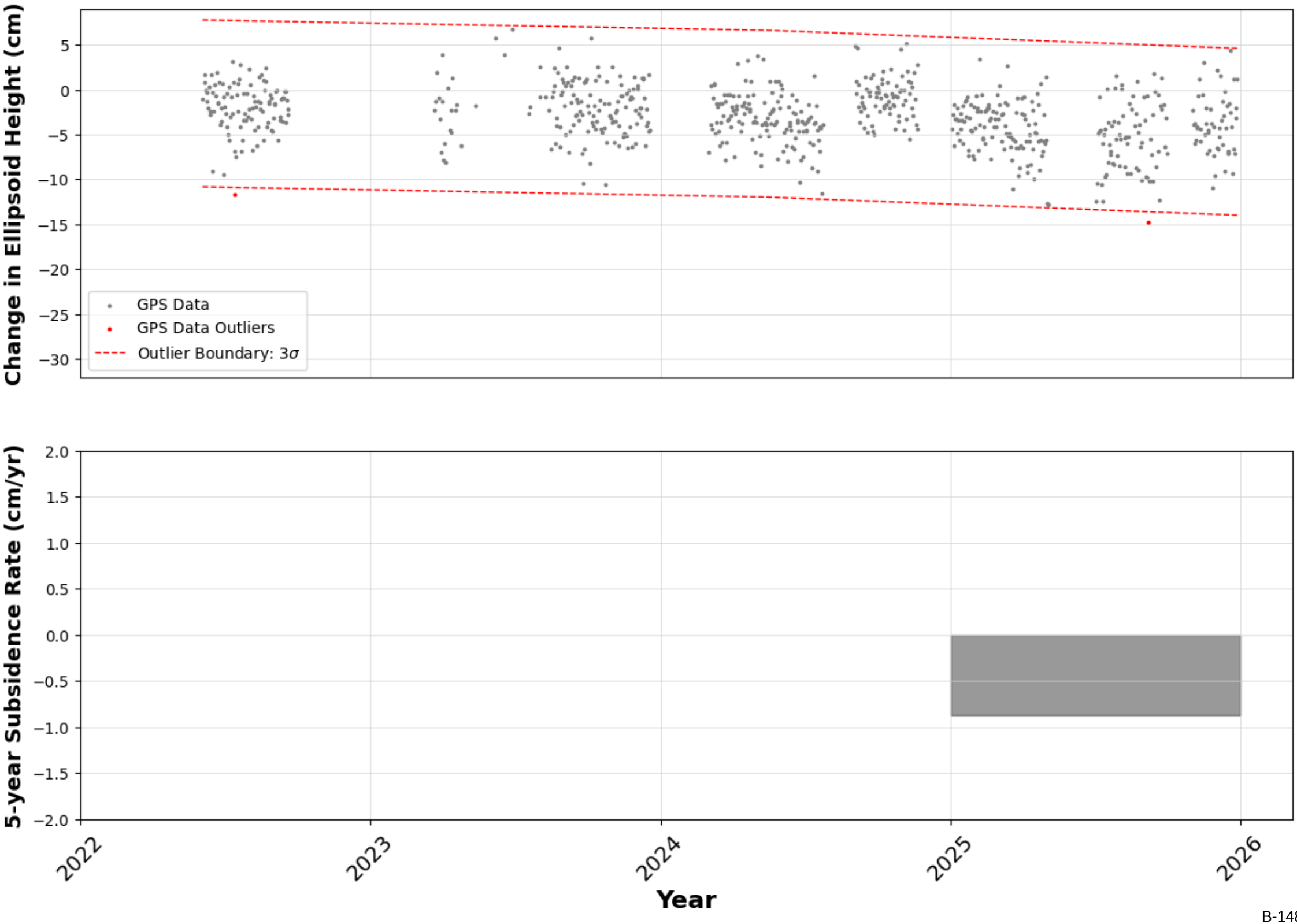


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered by HGSD when calculating subsidence rates and are shown for informational purposes only.

SANJ

Willis, TX





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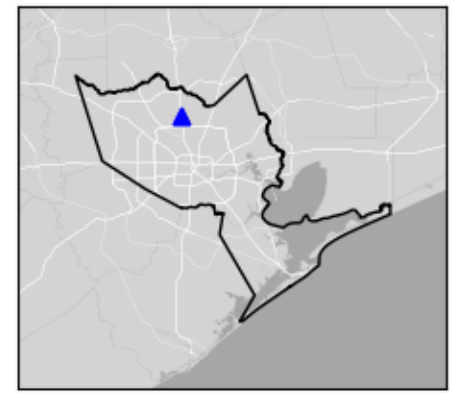
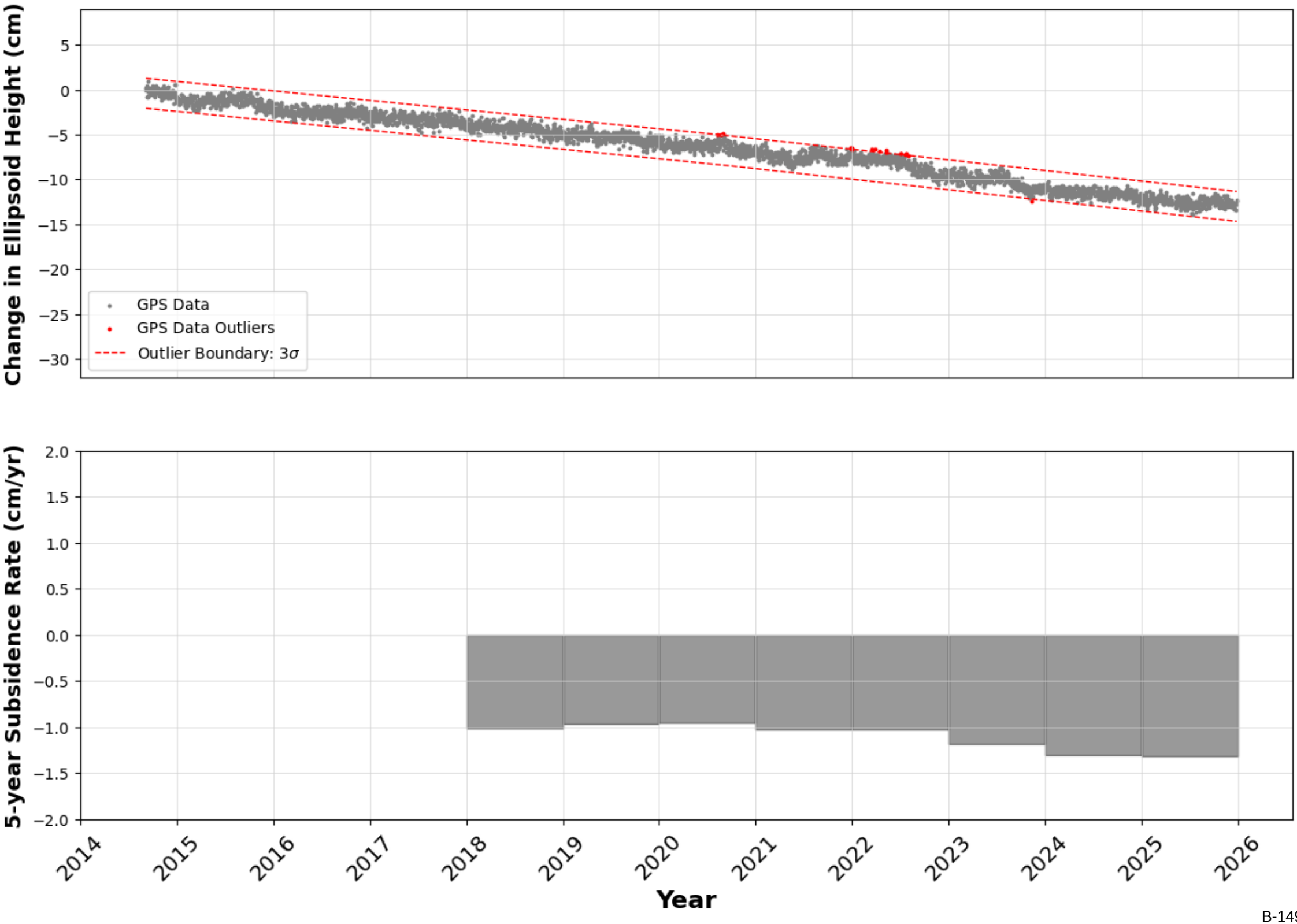
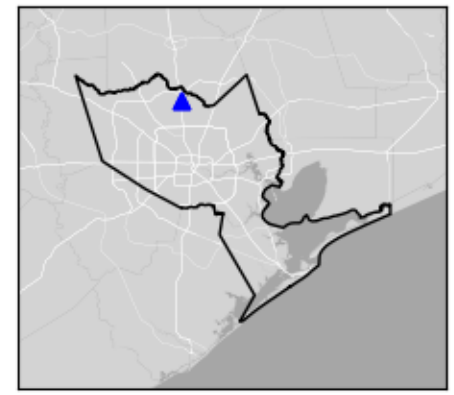


SESG

Houston, TX

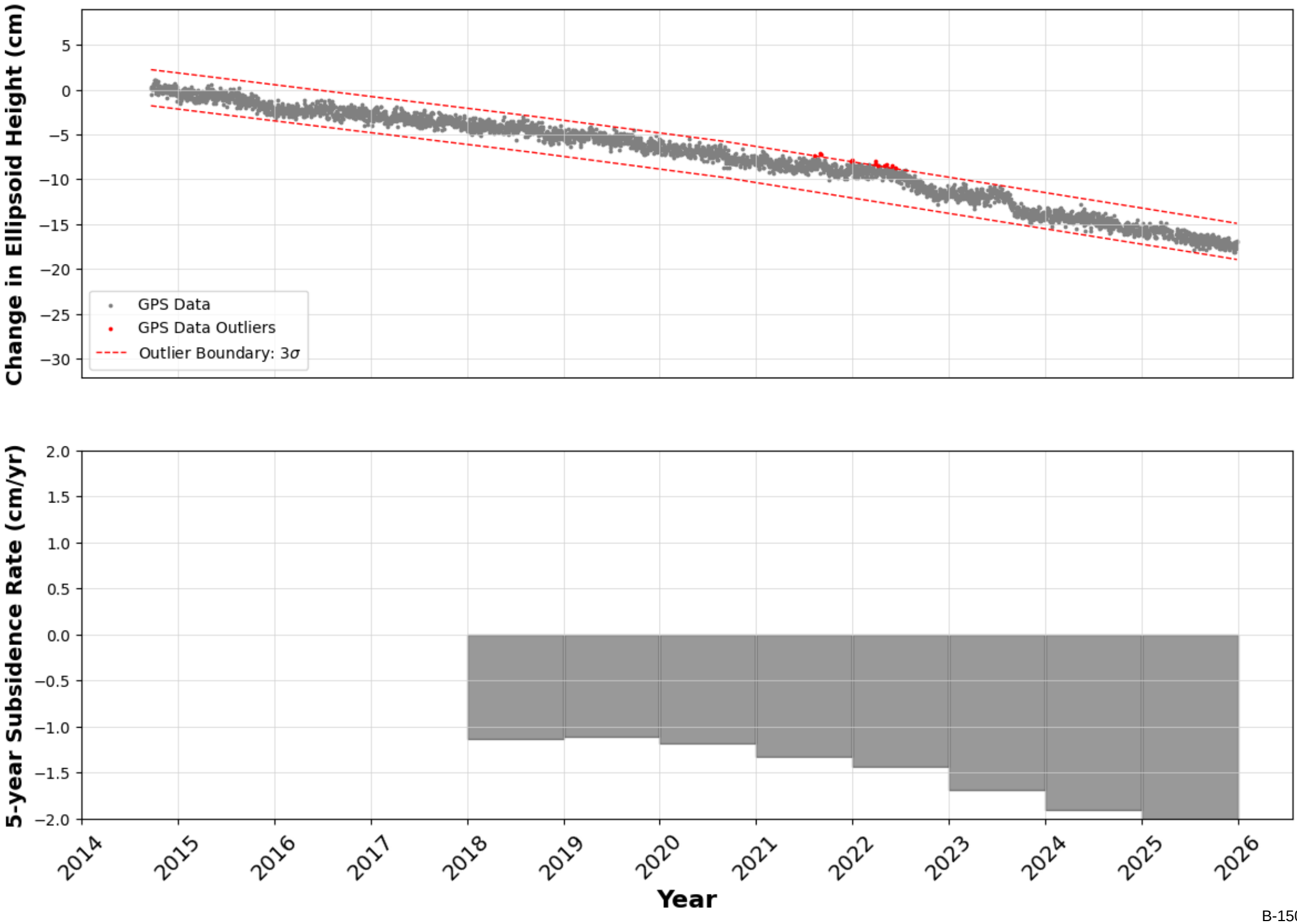


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered by HGSD when calculating subsidence rates and are shown for informational purposes only.

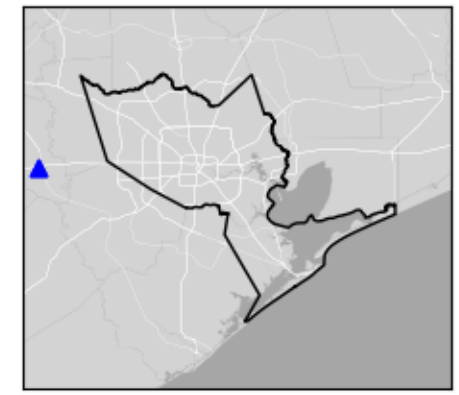


SHSG

Spring, TX

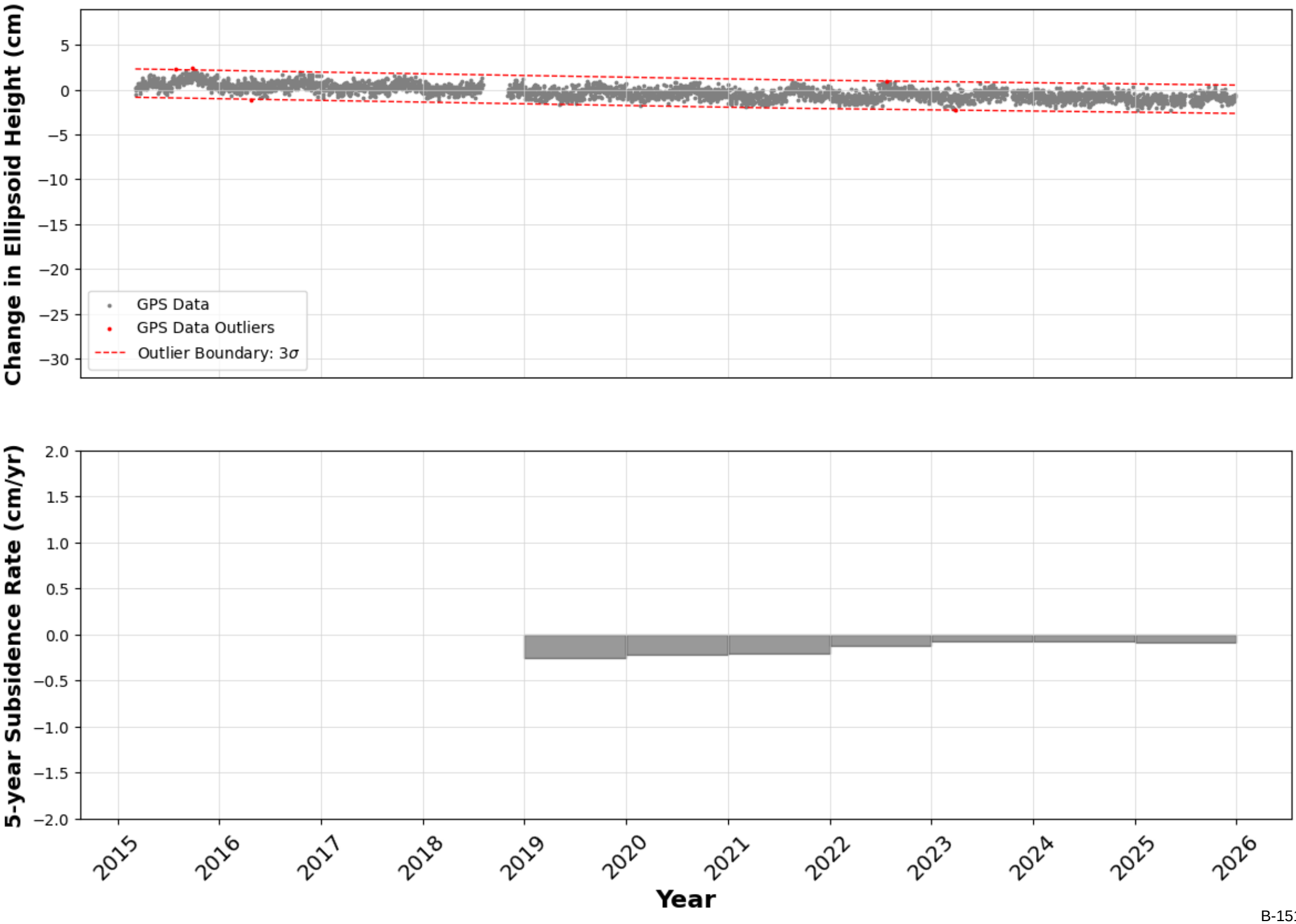


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered by HGSD when calculating subsidence rates and are shown for informational purposes only.

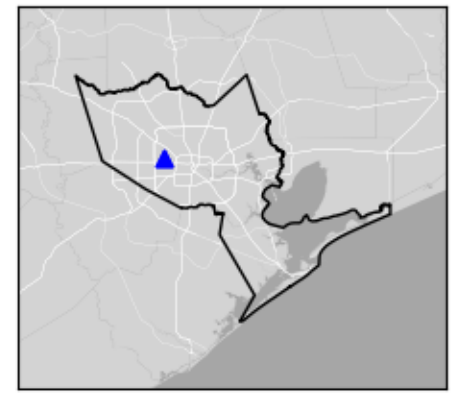


SISD

Sealy, TX

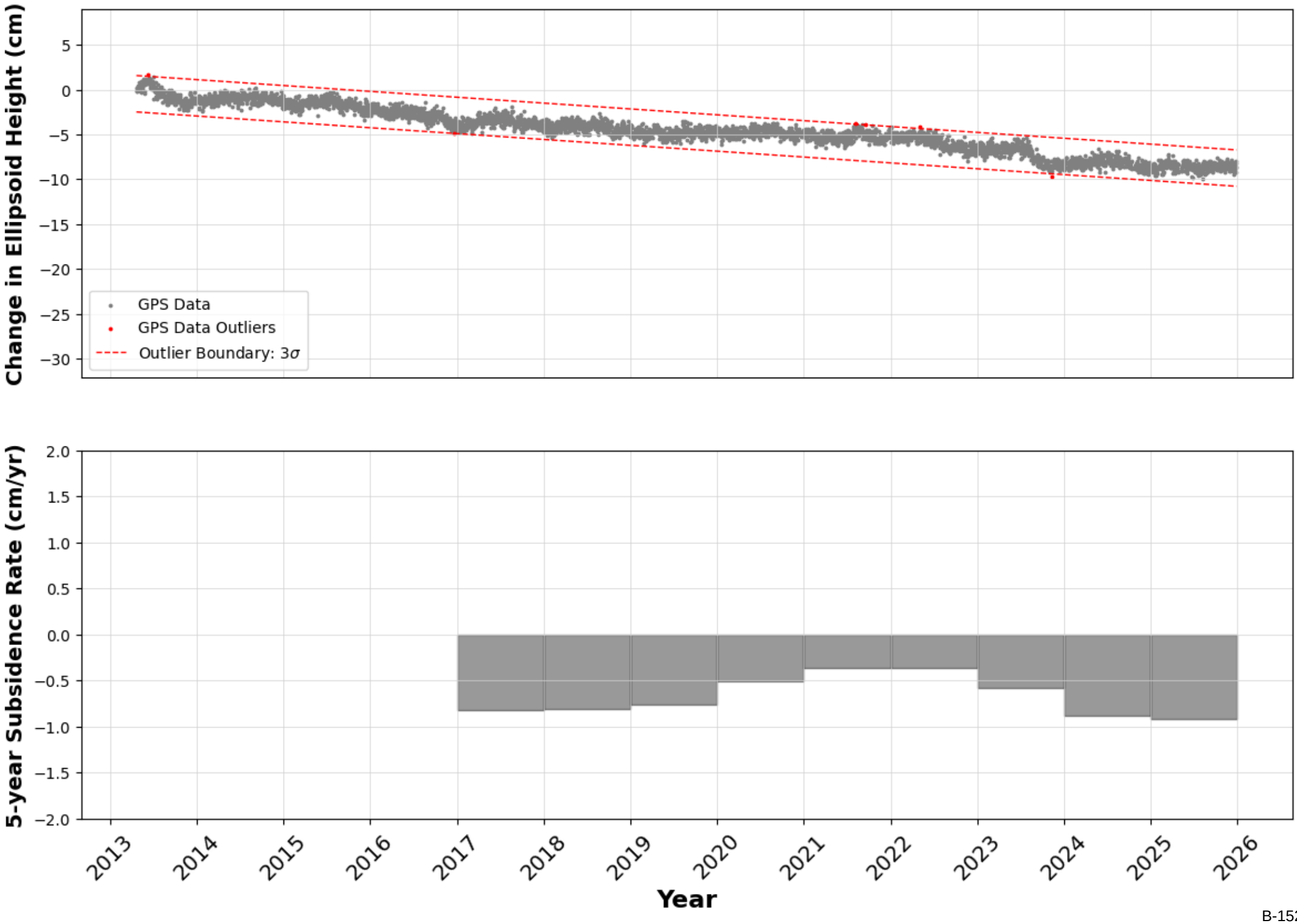


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered by HGSD when calculating subsidence rates and are shown for informational purposes only.



SPBH

Houston, TX



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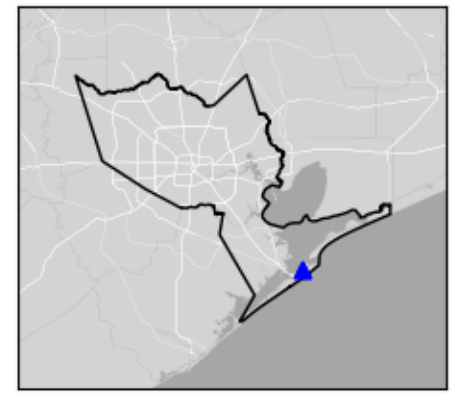
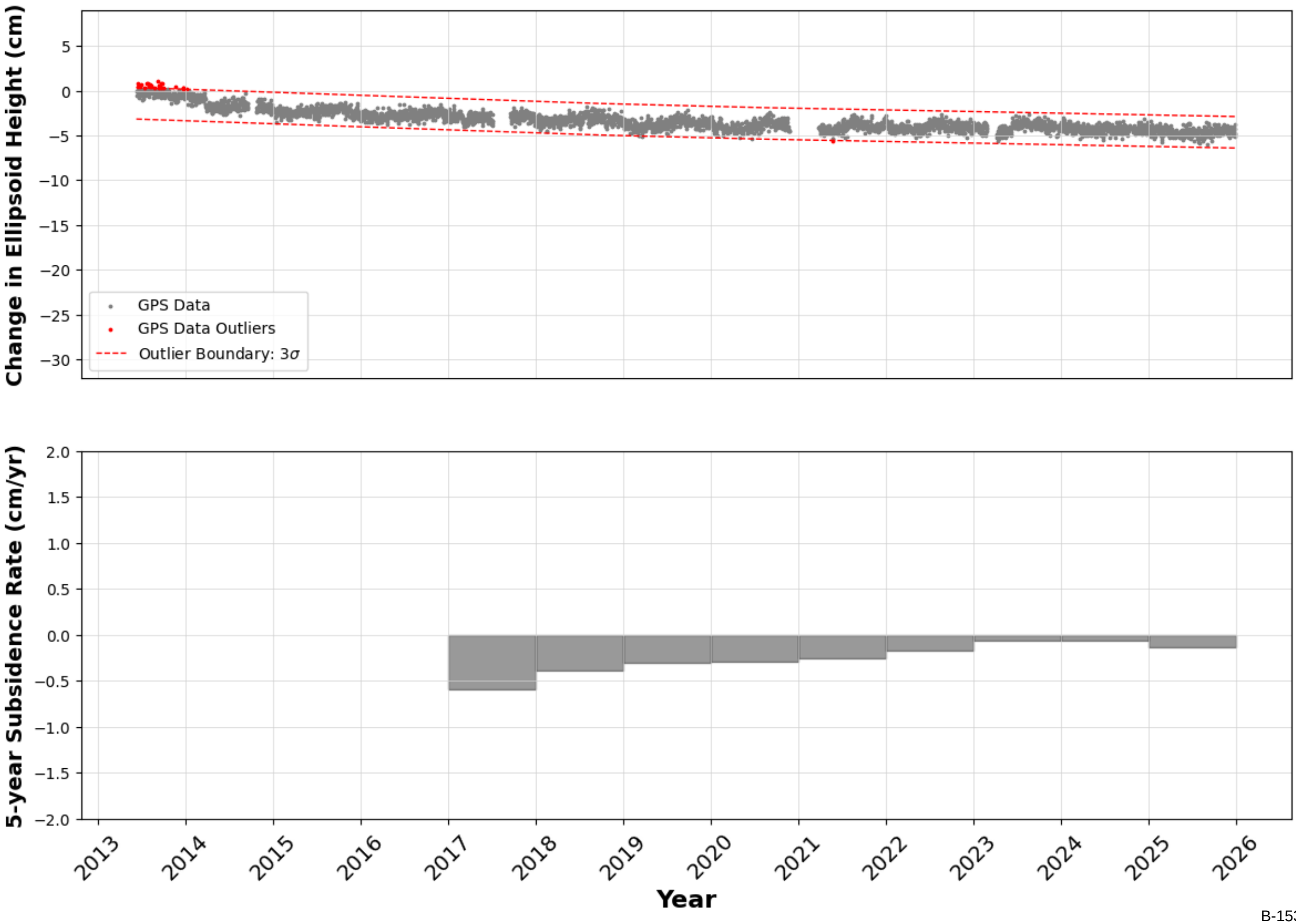


TDAM

Galveston, TX



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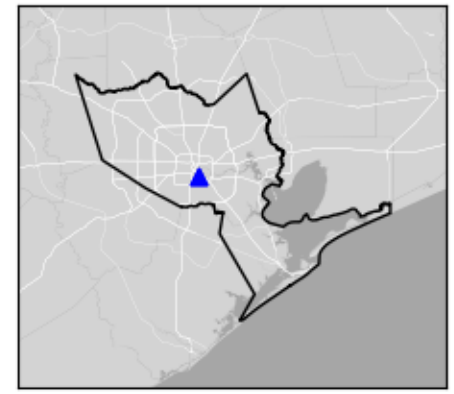
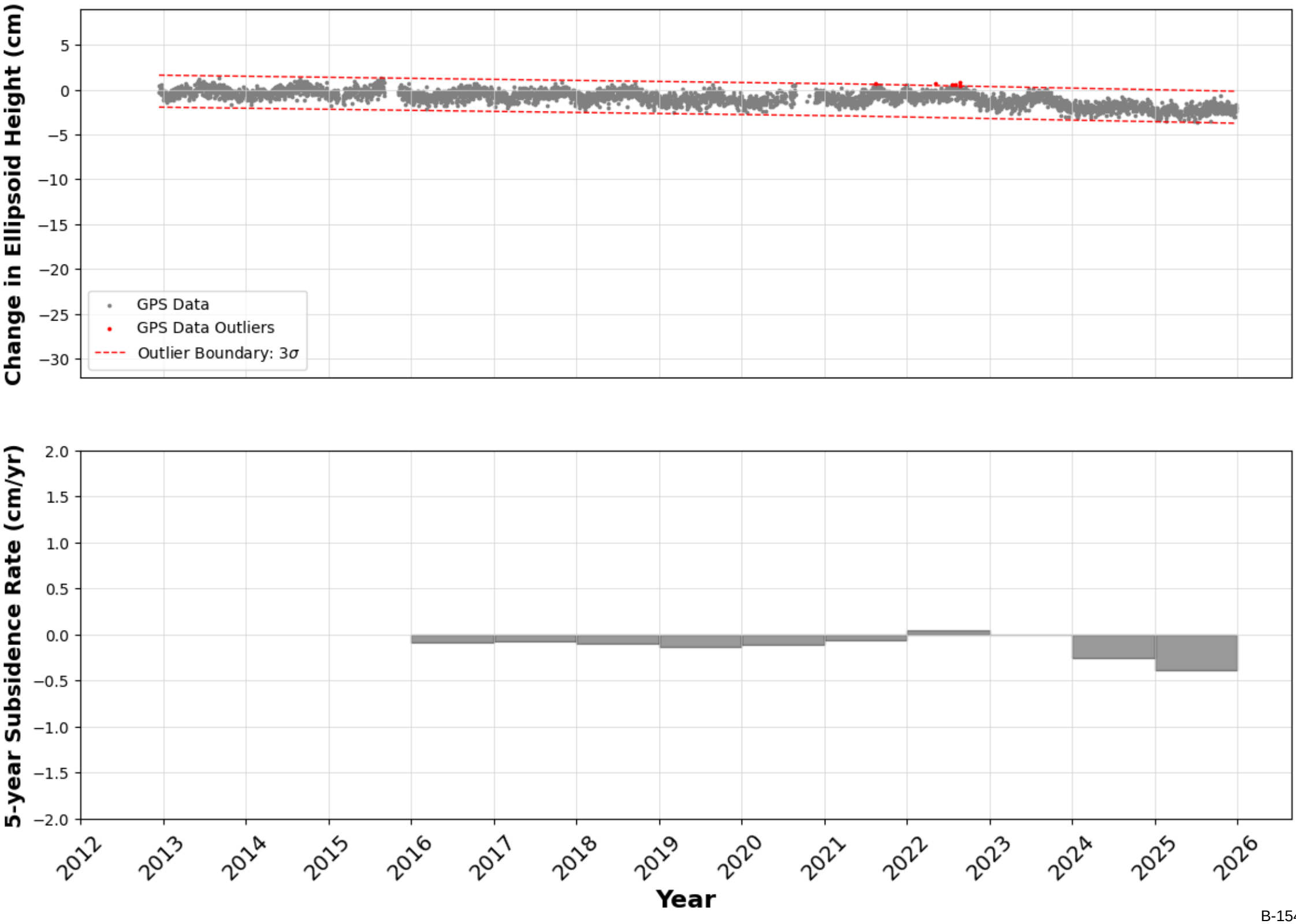


THSU

Houston, TX



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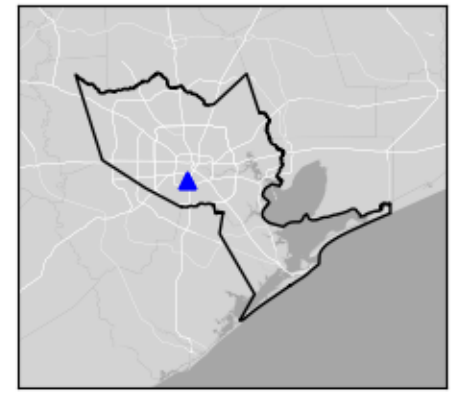
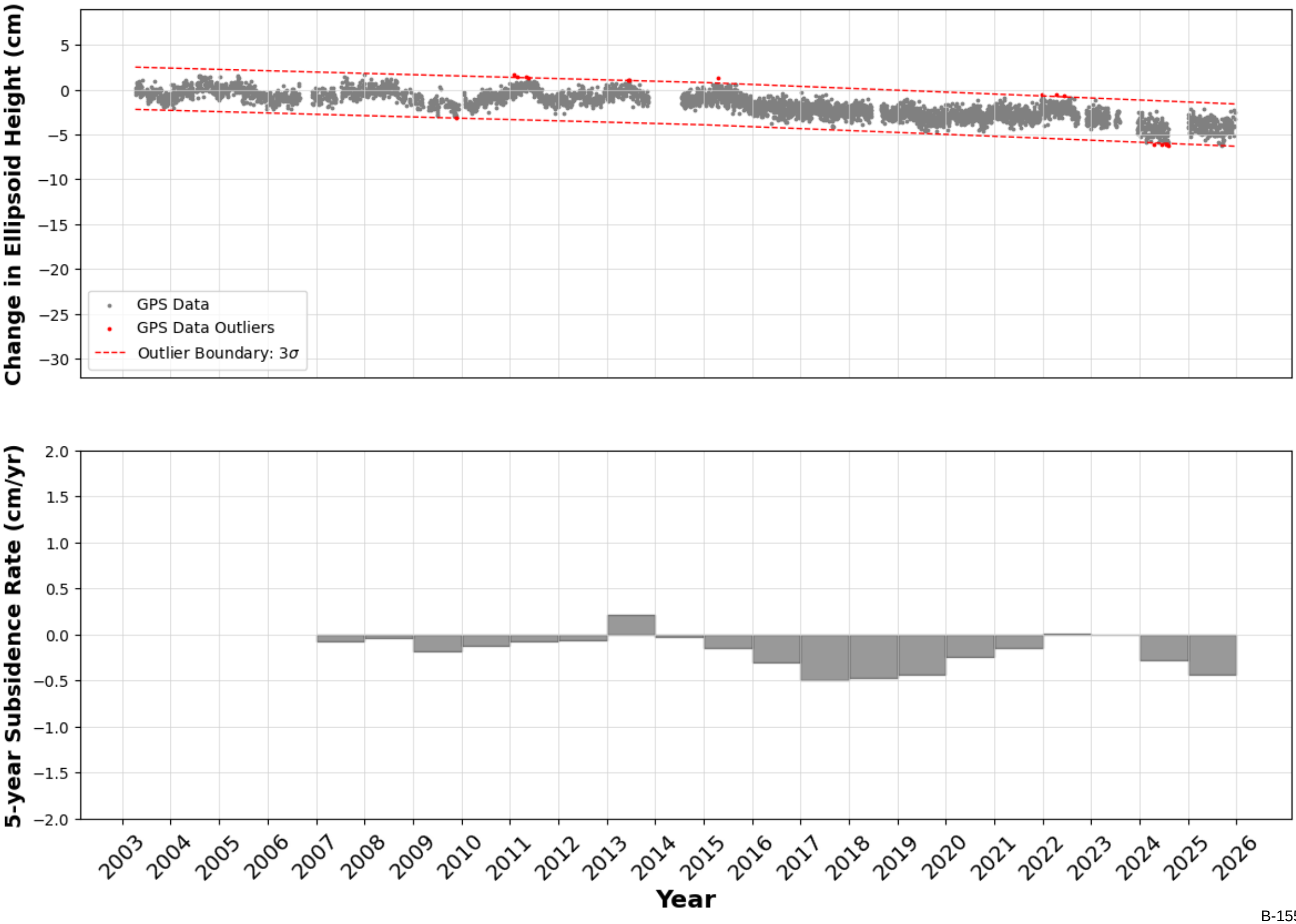
TMCC

Houston, TX





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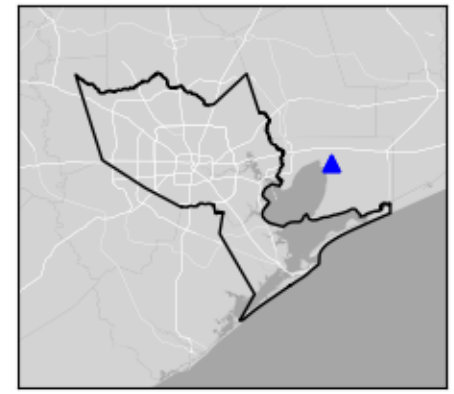
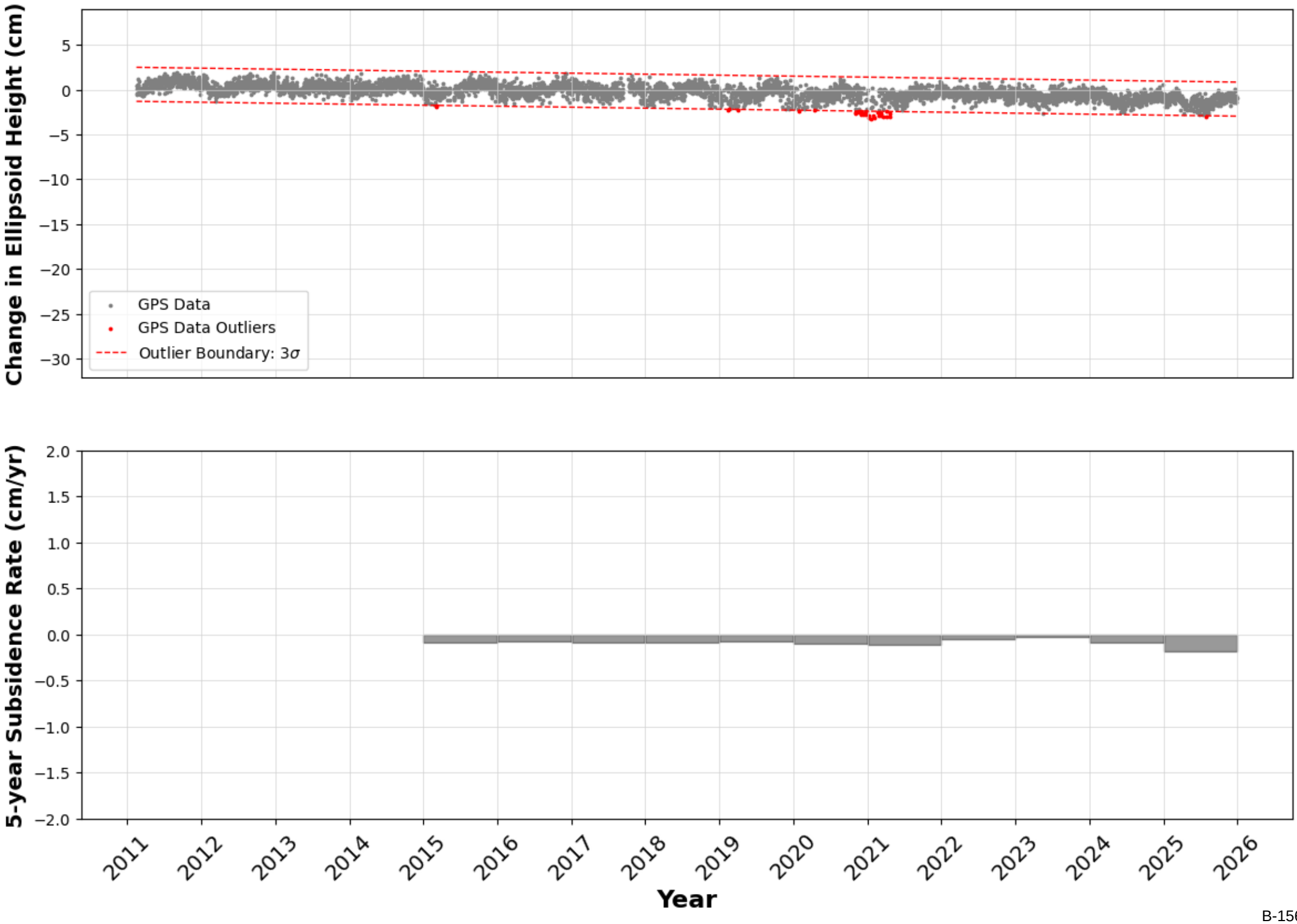


TXAC

Anahuac, TX



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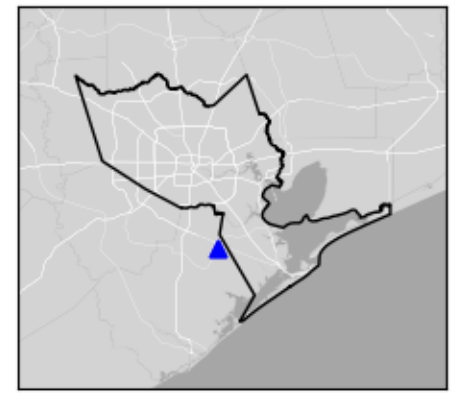
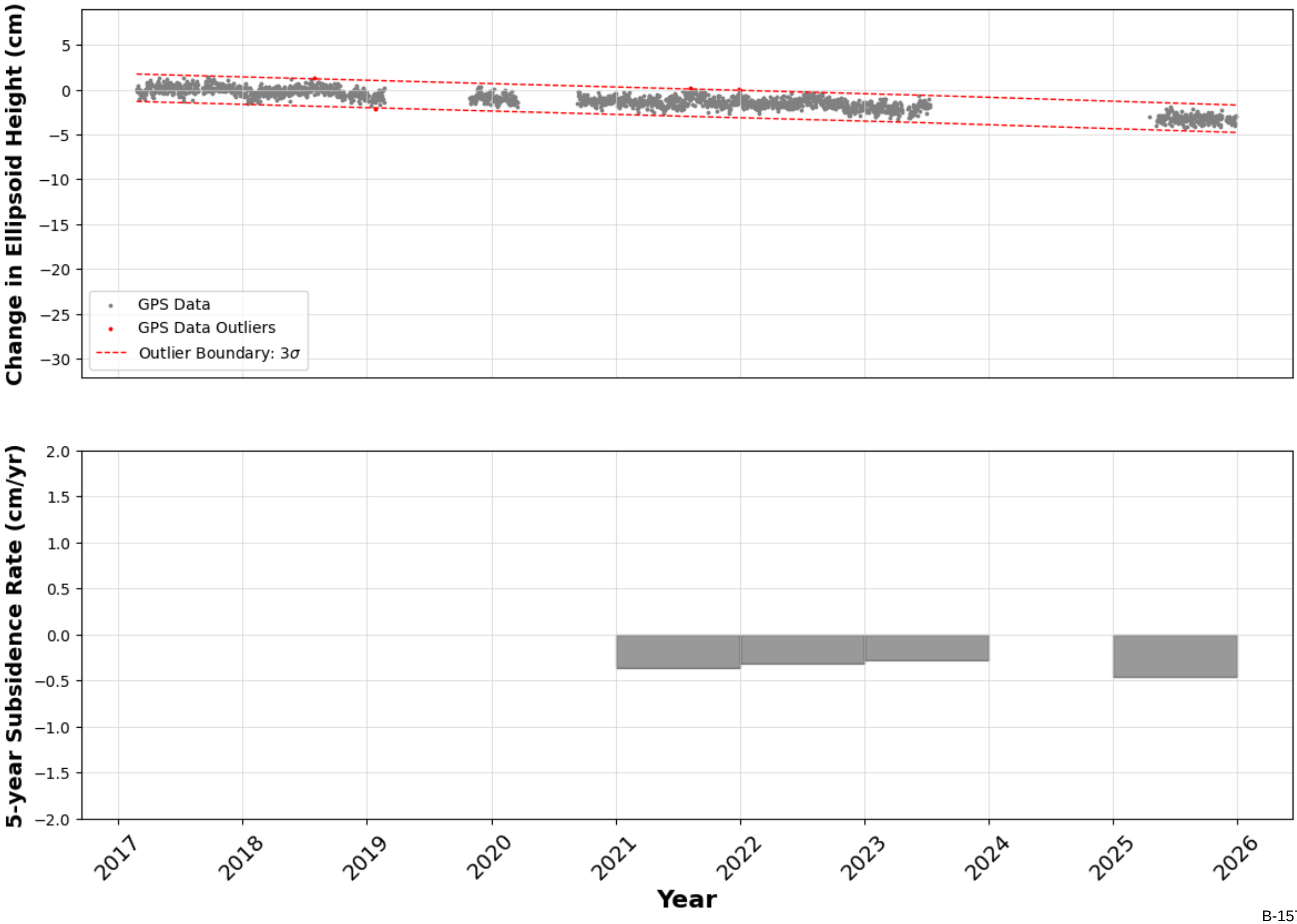
TXAV

Alvin, TX





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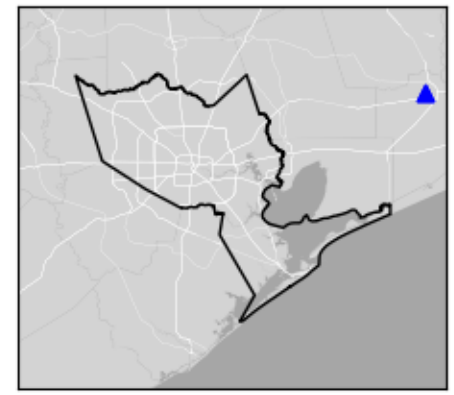
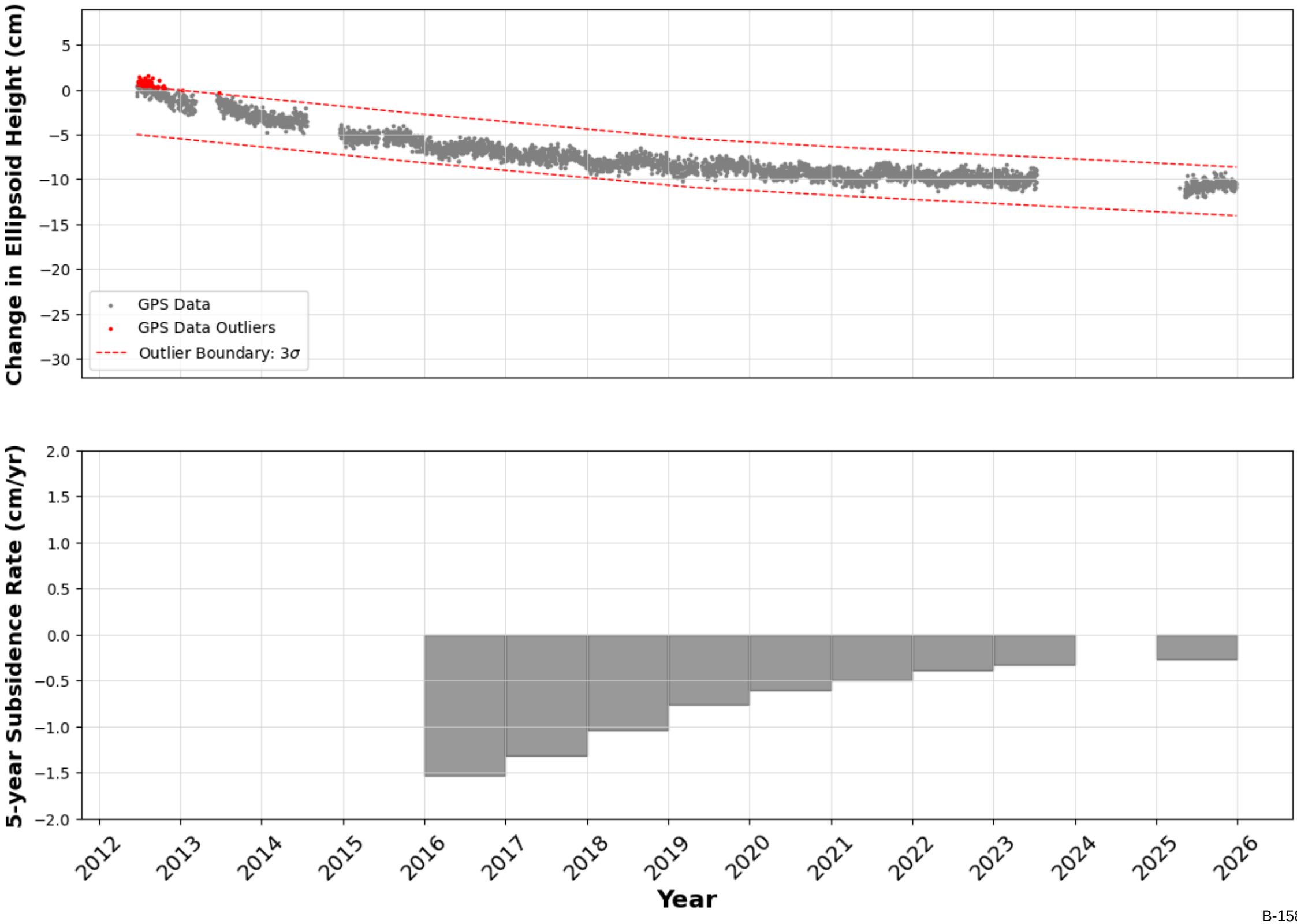
TXB2

Beaumont, TX





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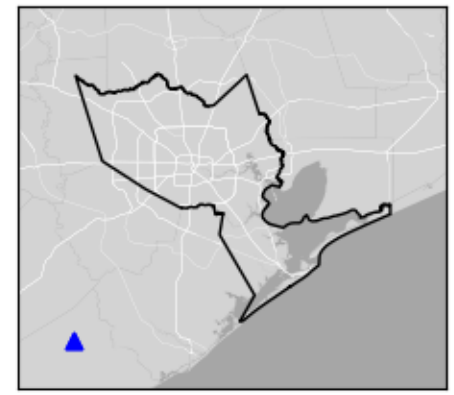
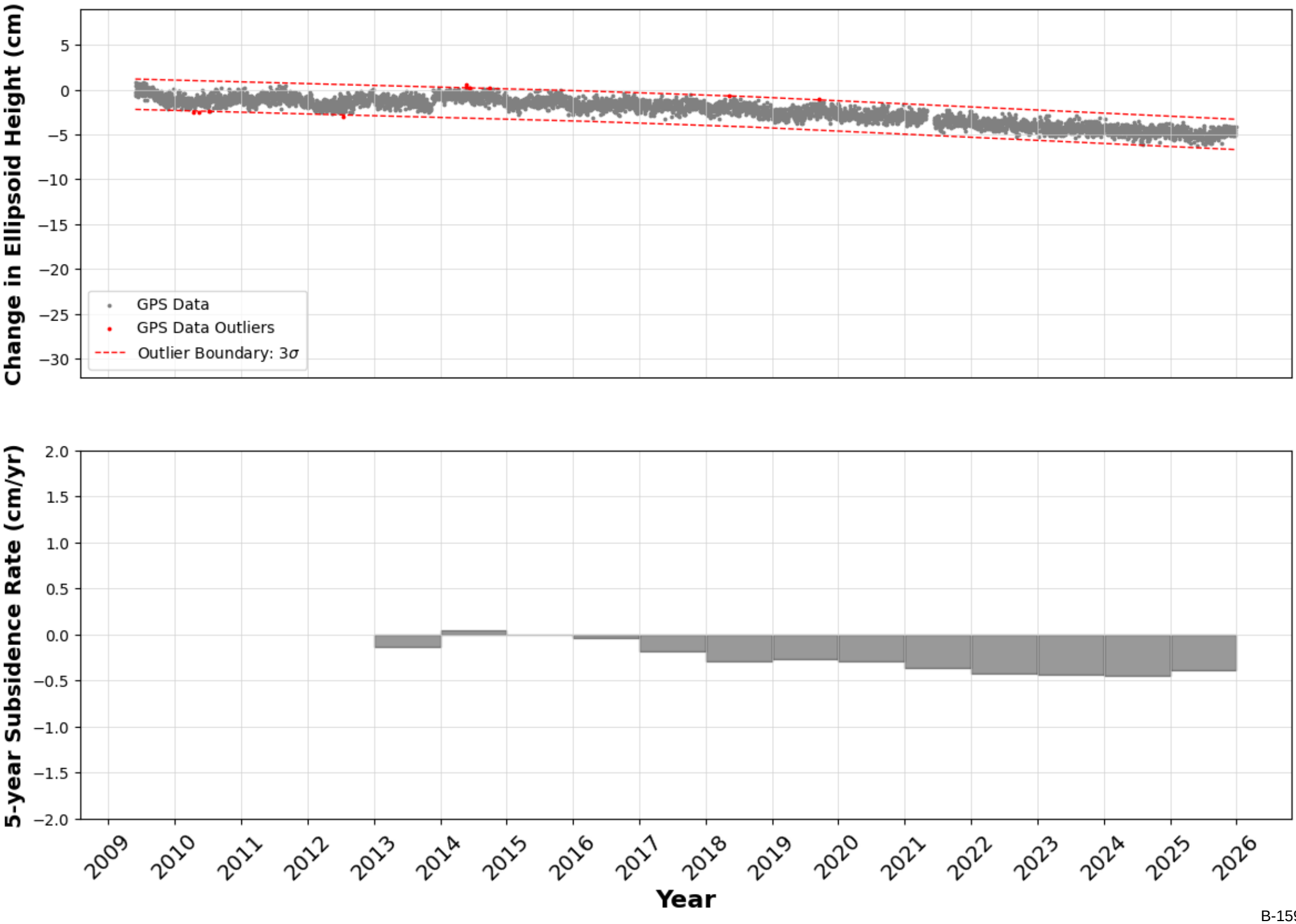
TXBC

Bay City, TX





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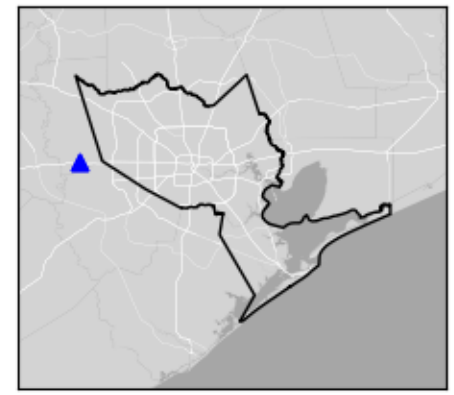
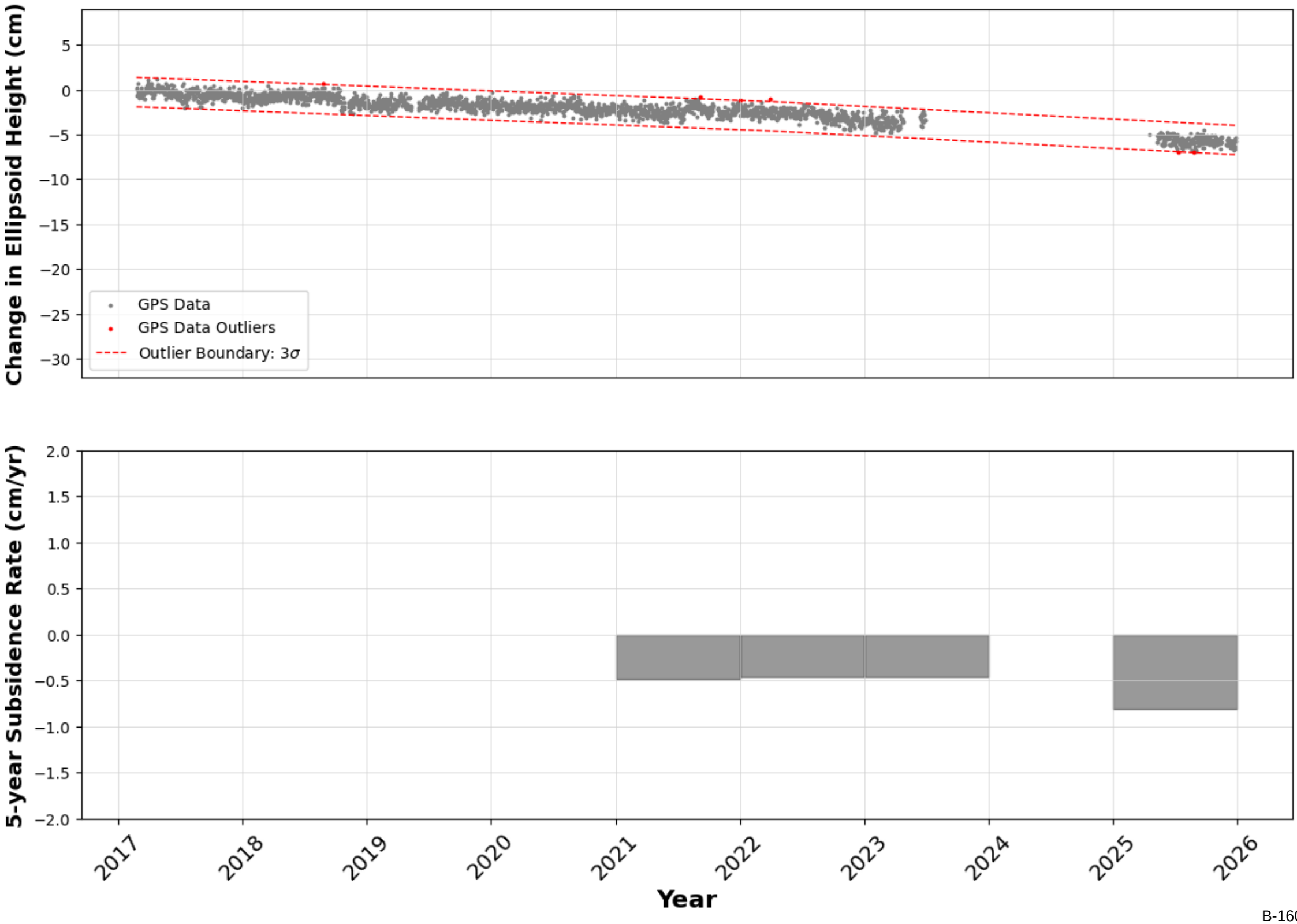


TXBH

Brookshire, TX



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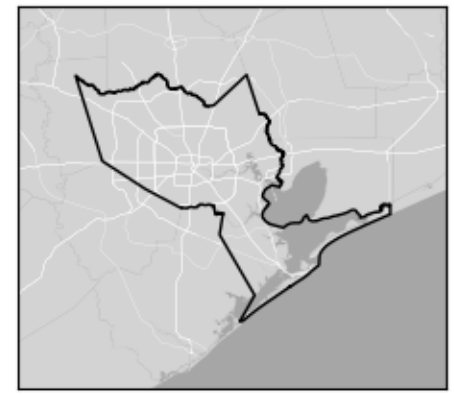
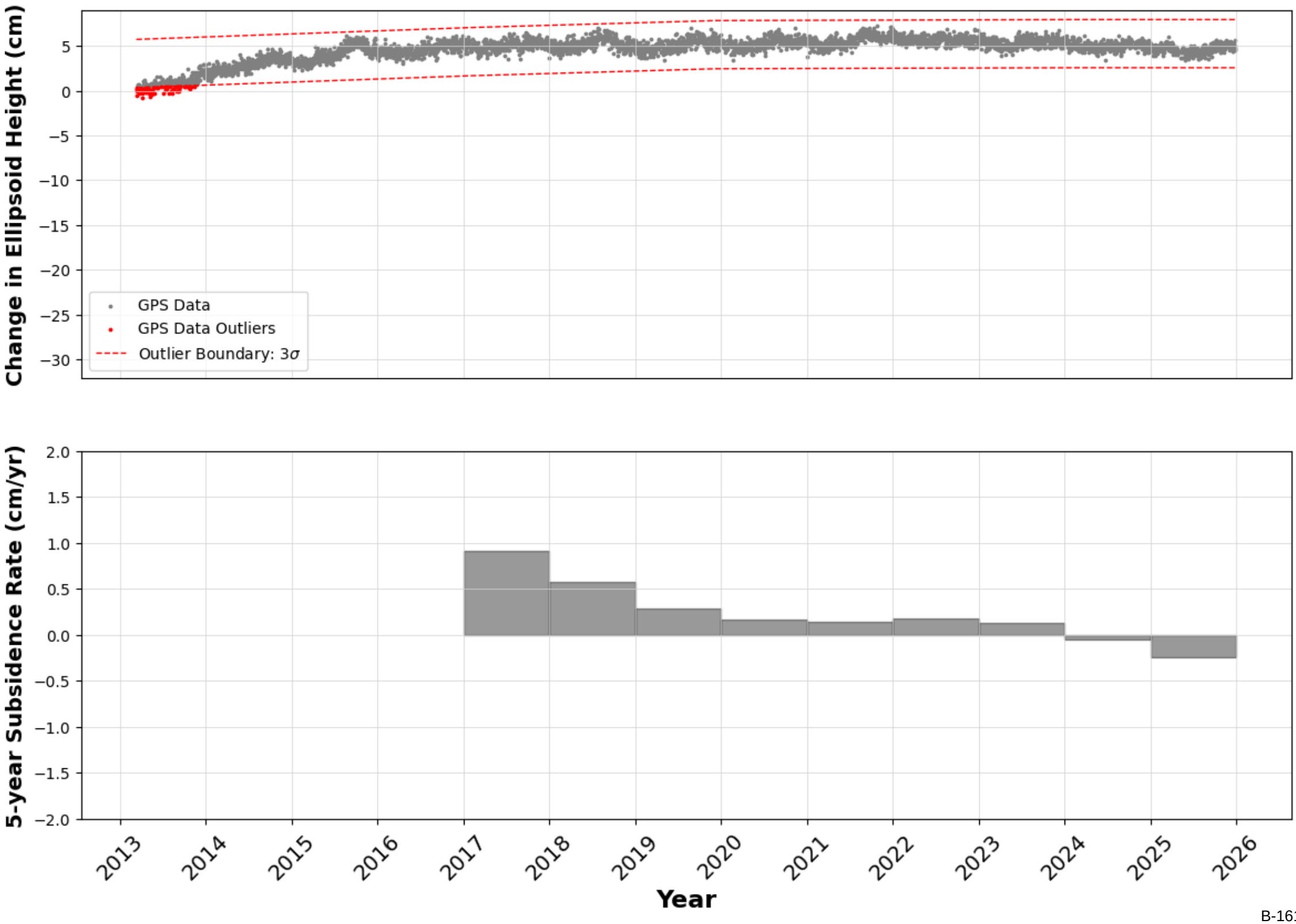
TXBX

Bryan, TX





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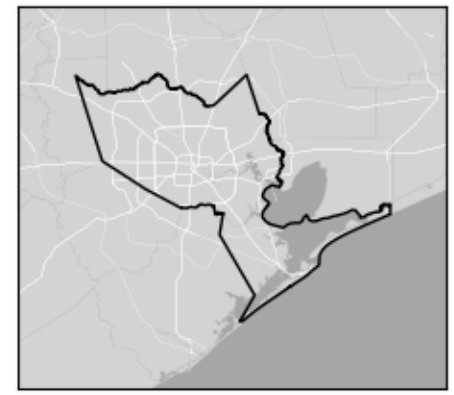
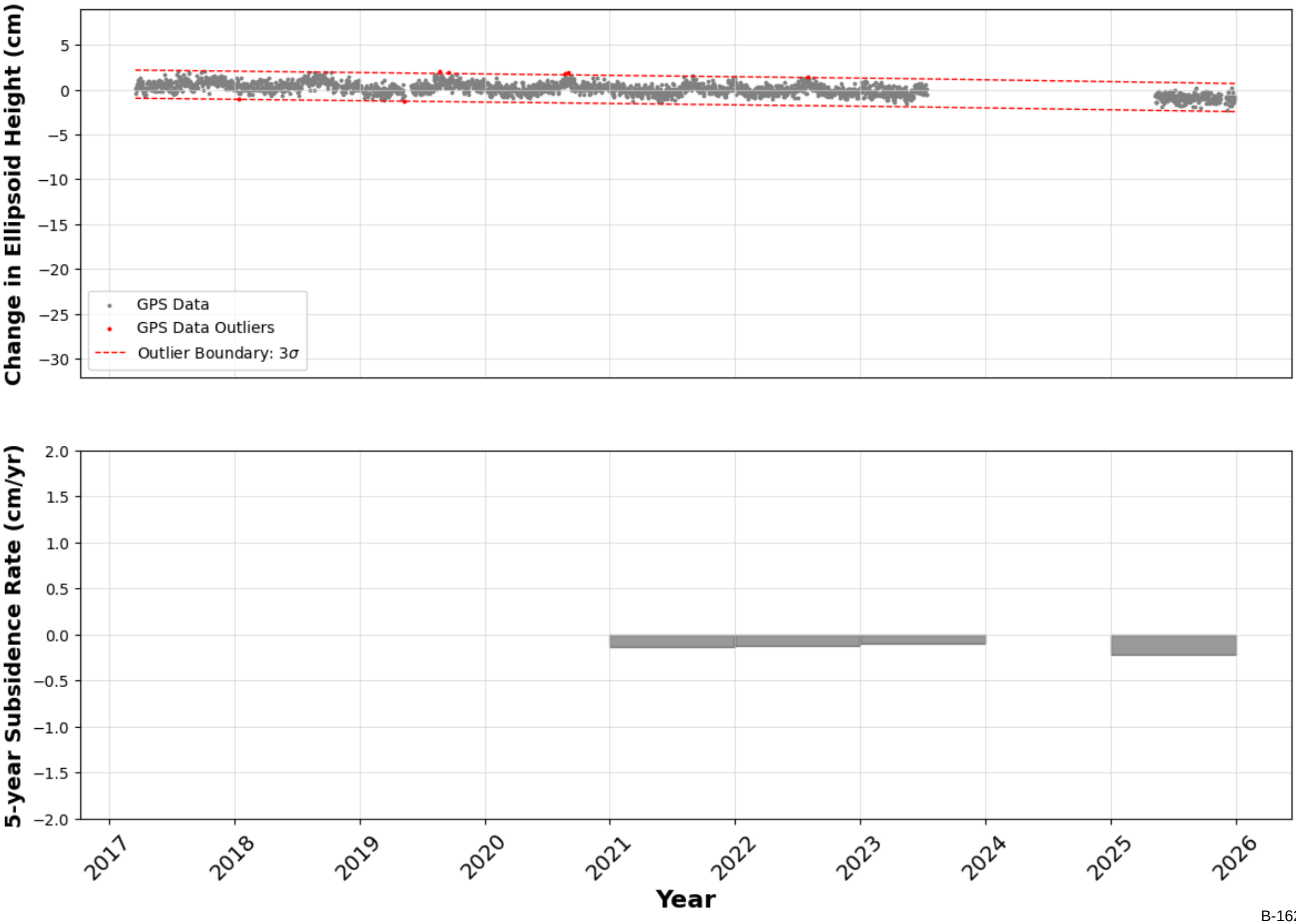
TXC5

Columbus, TX





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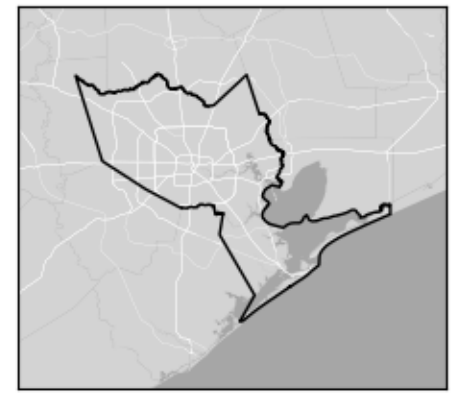
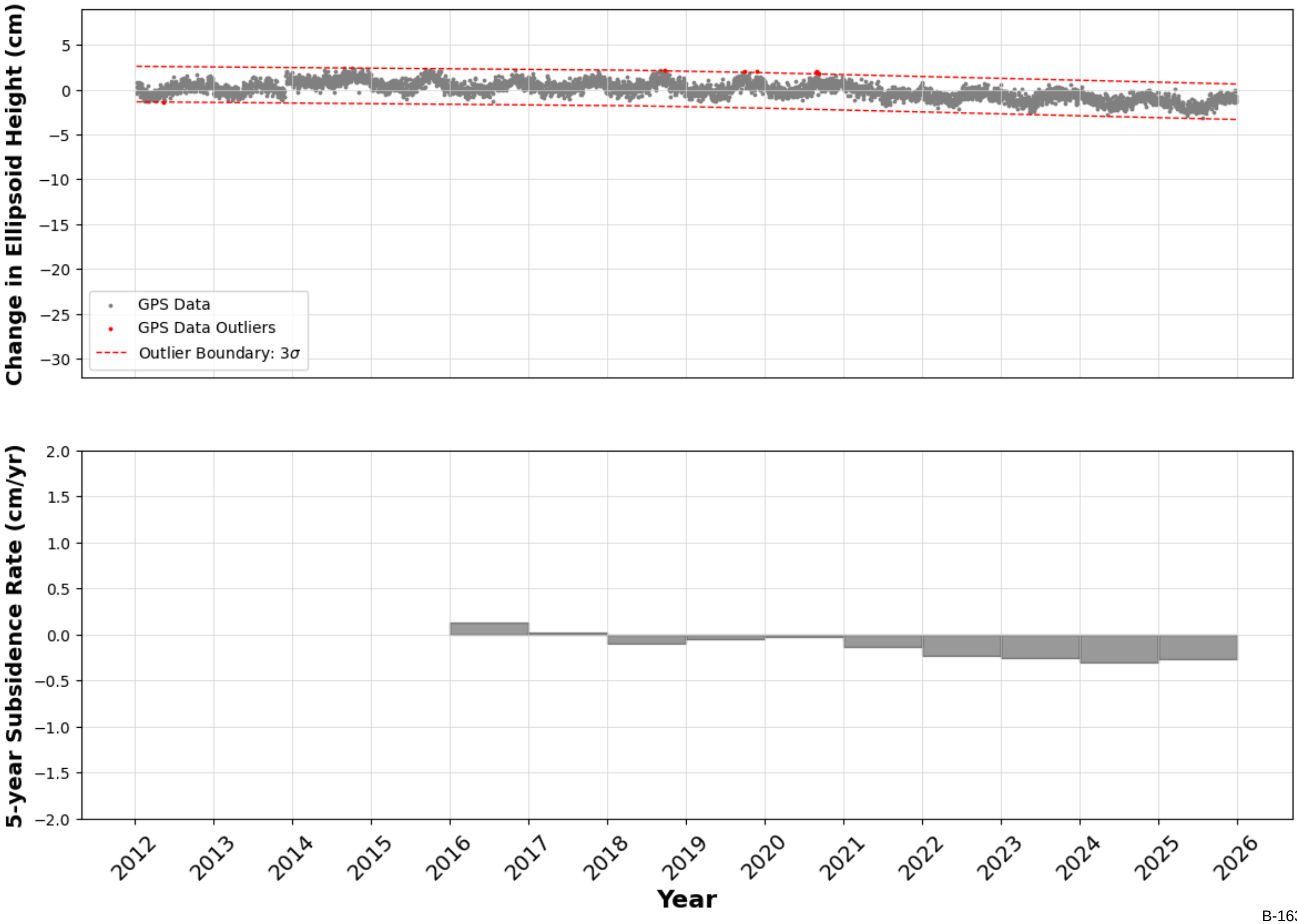


TXCK

Crockett, TX



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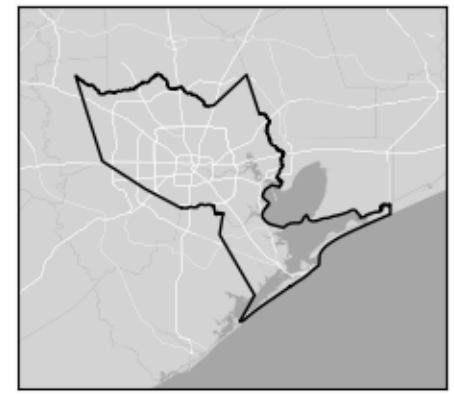
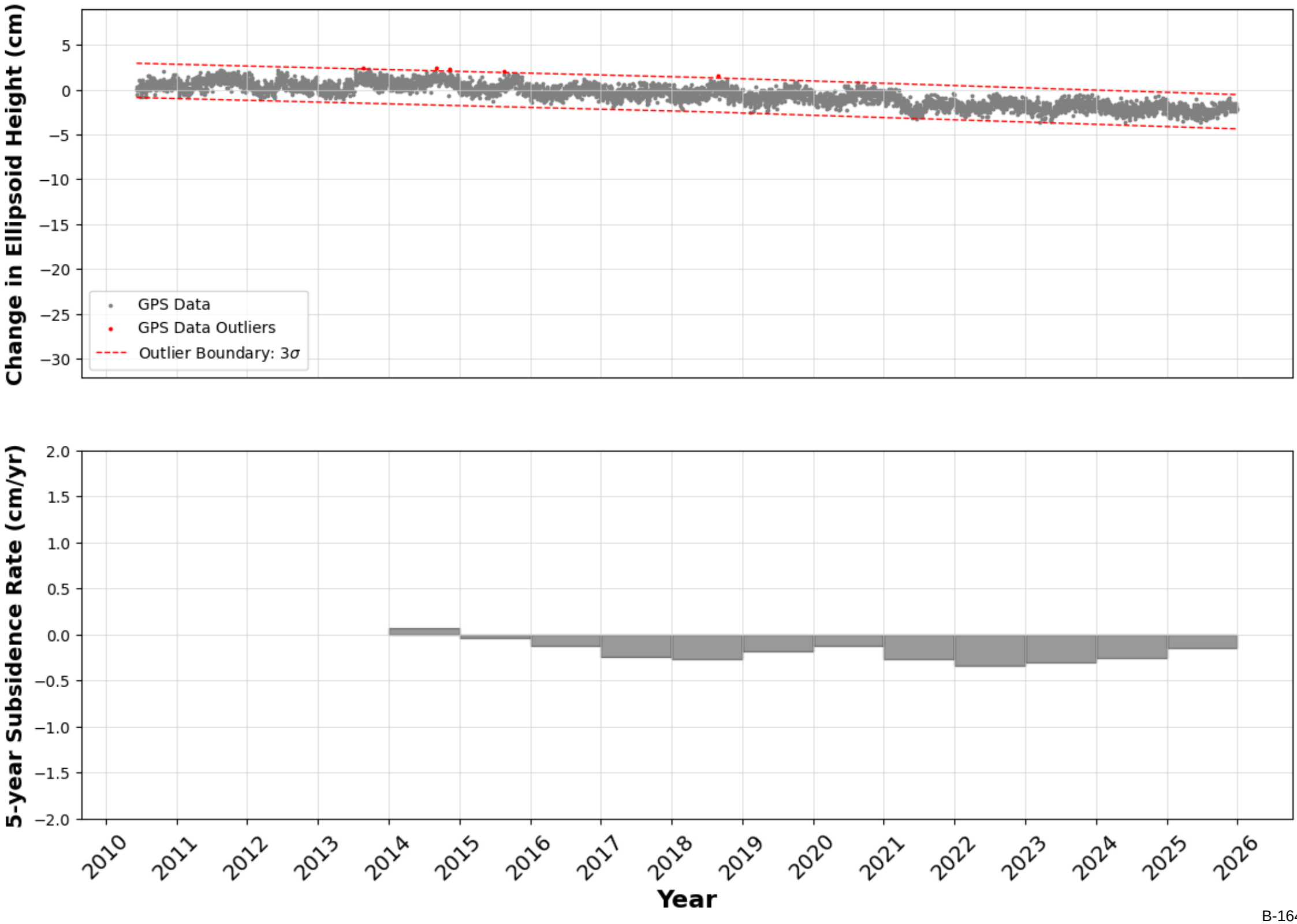


TXCM

Glidden, TX



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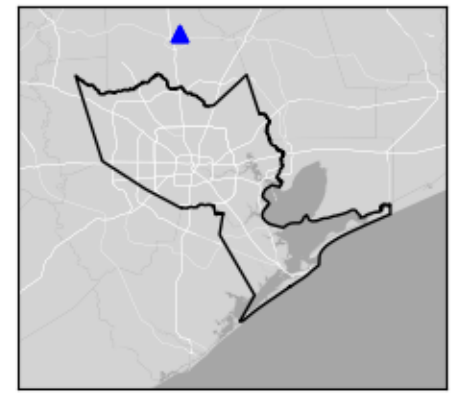
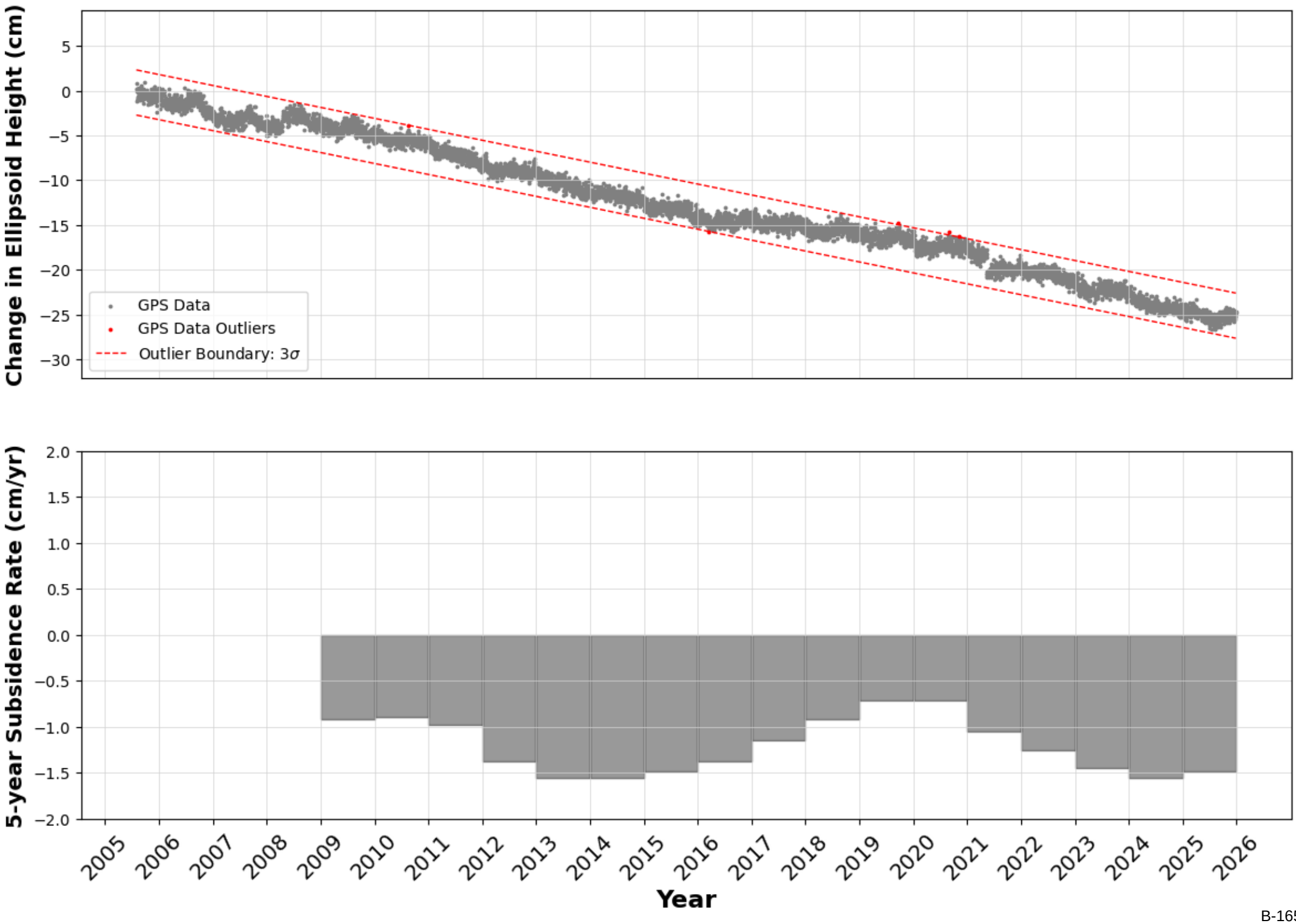
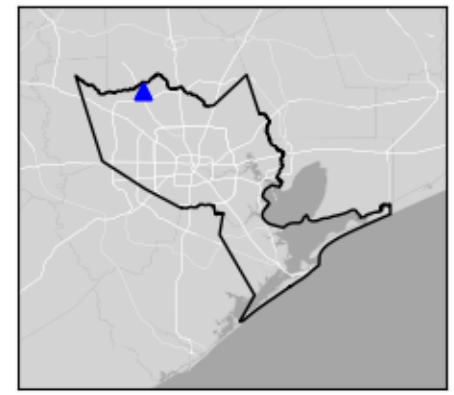


TXCN

Conroe, TX

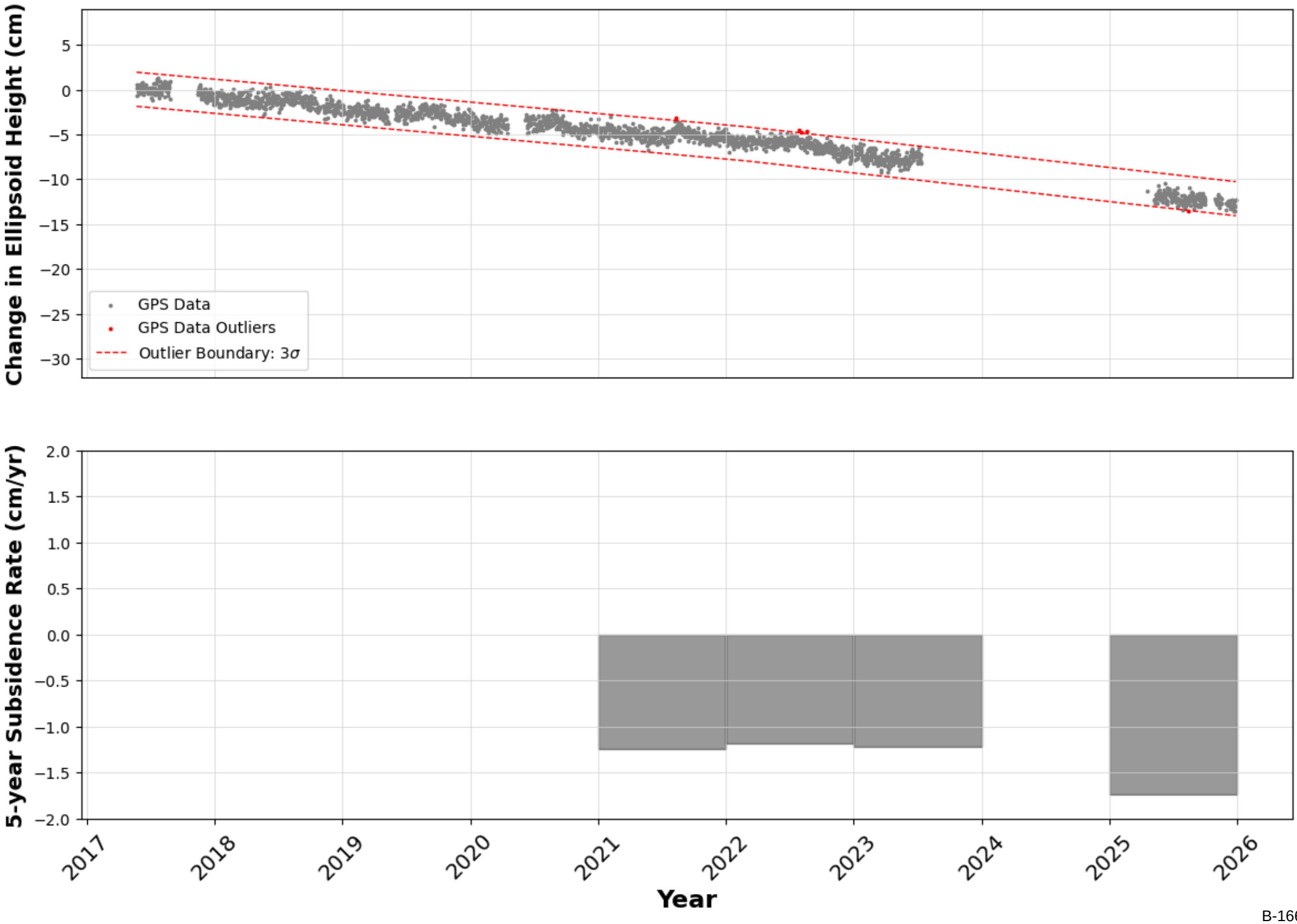


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered by HGSD when calculating subsidence rates and are shown for informational purposes only.



TXCY

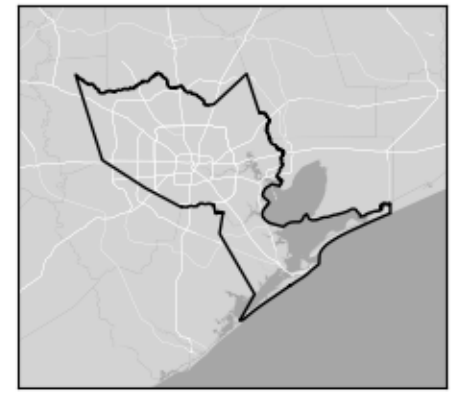
Tomball, TX

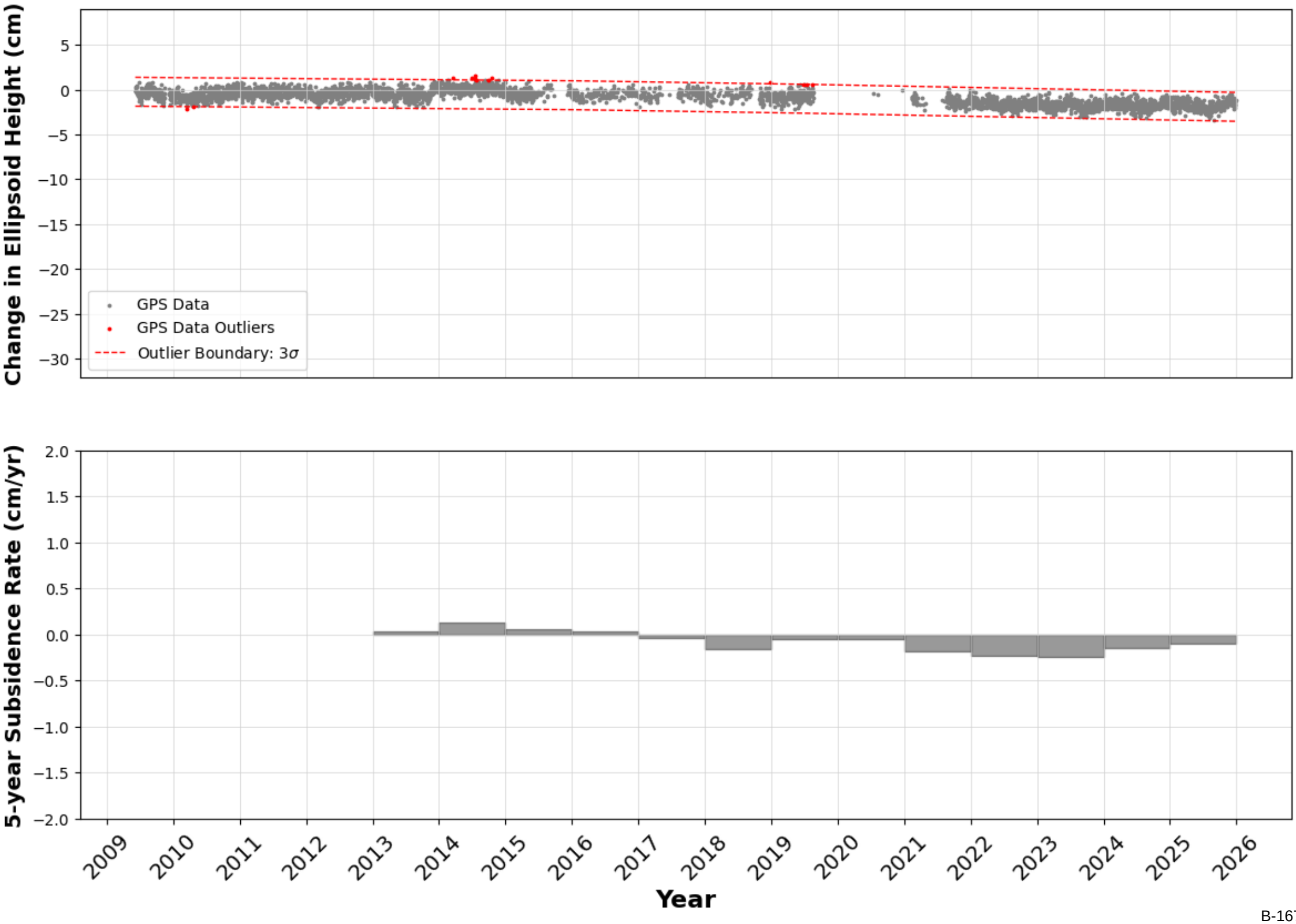


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered by HGSD when calculating subsidence rates and are shown for informational purposes only.

TXED

Edna, TX

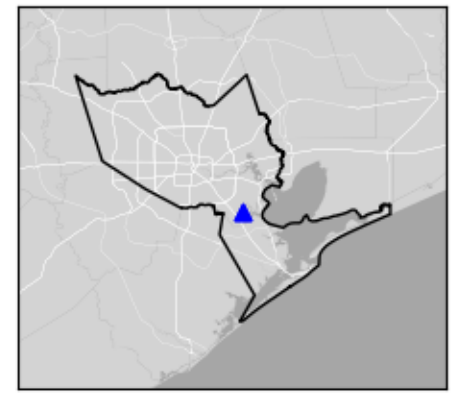


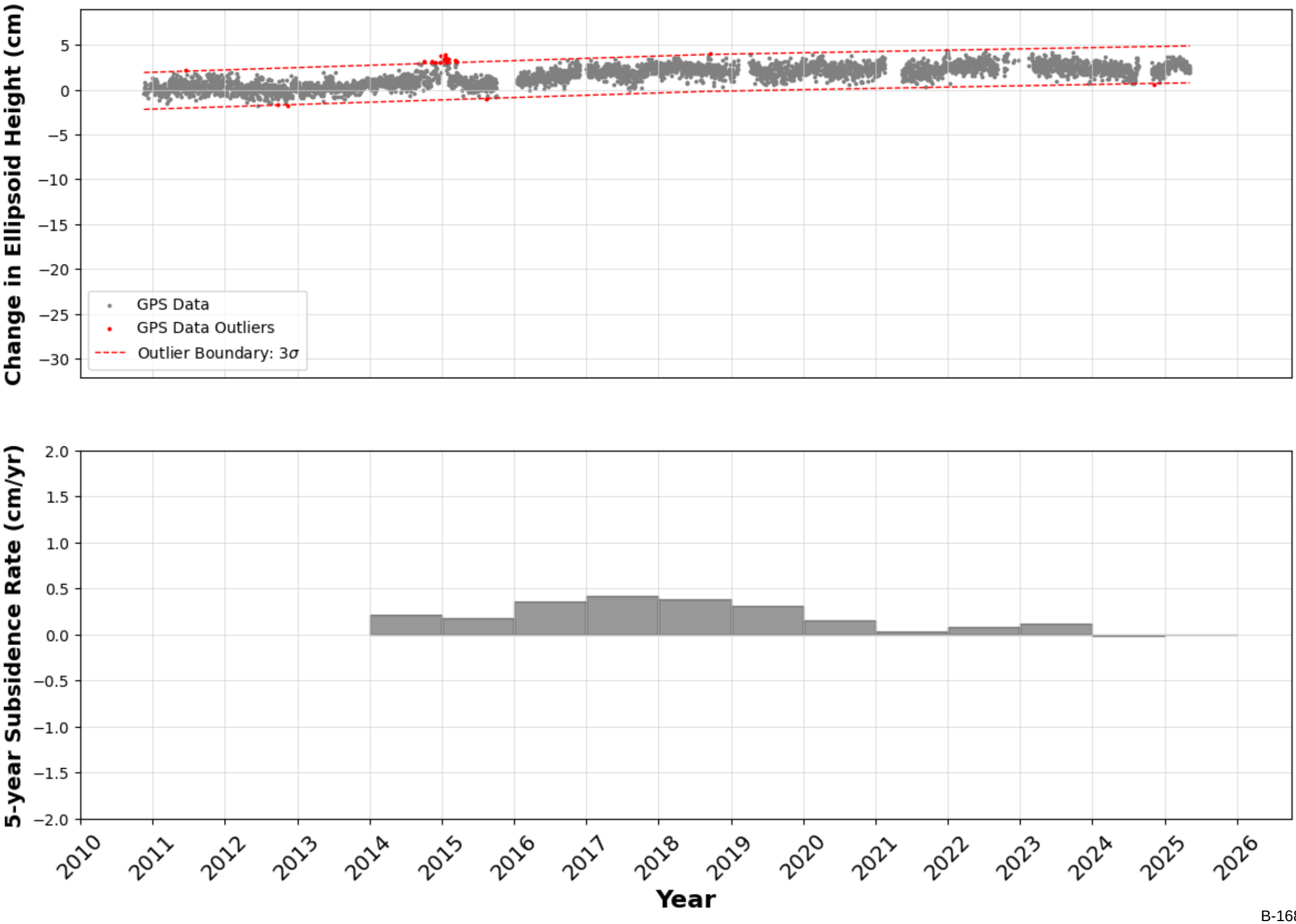


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered by HGSD when calculating subsidence rates and are shown for informational purposes only.

TXEX

Houston, TX





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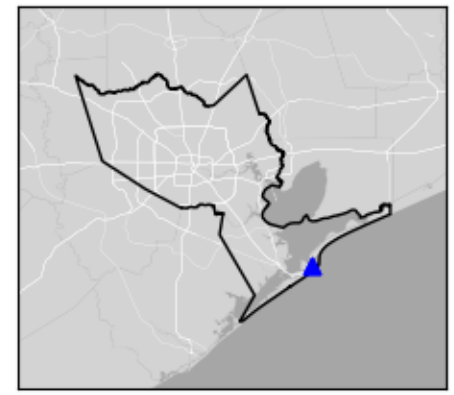
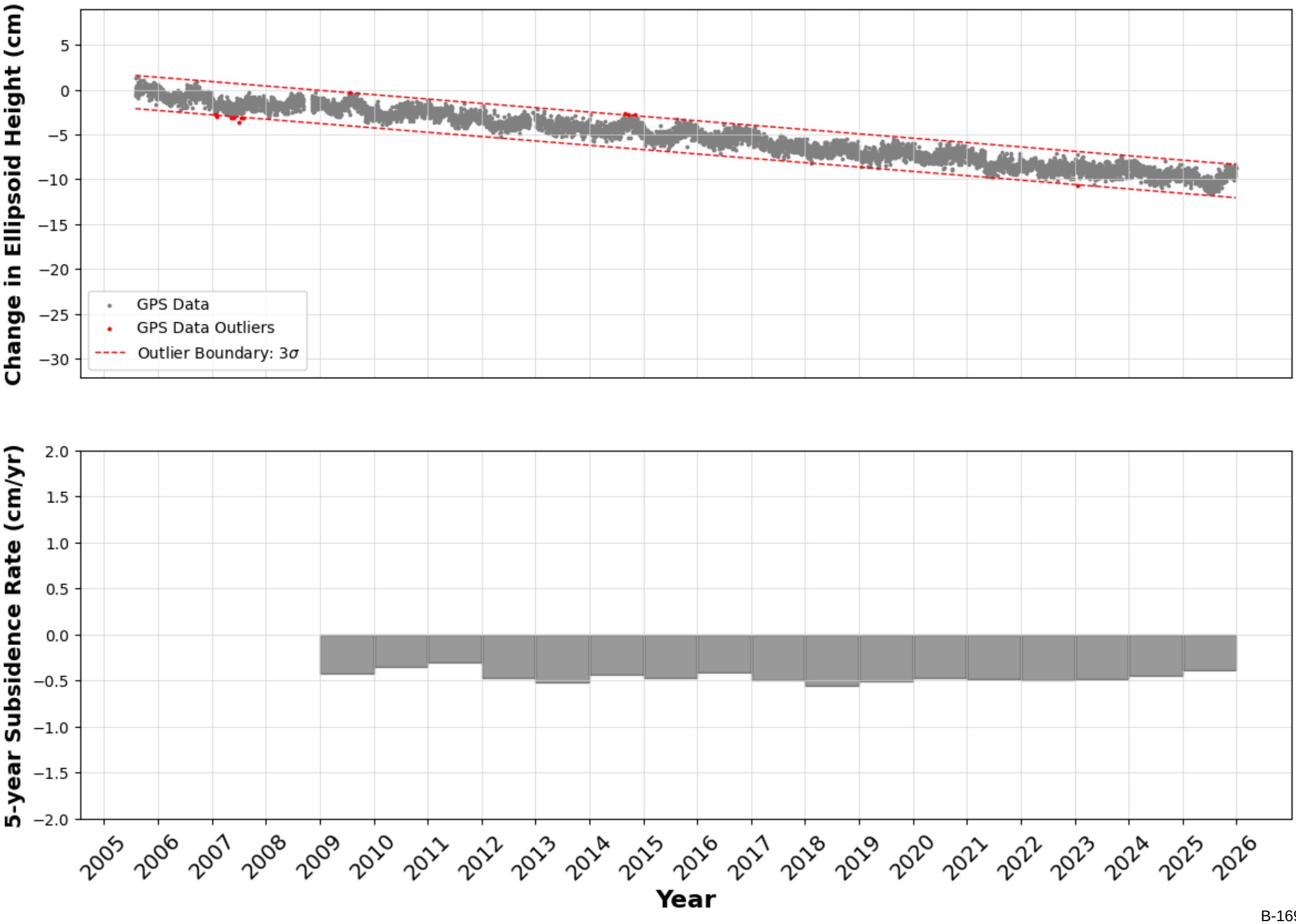
TXGA

Galveston, TX

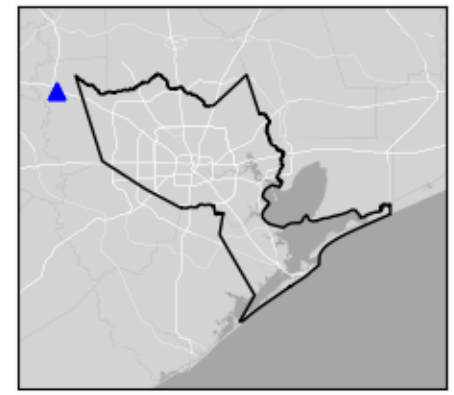


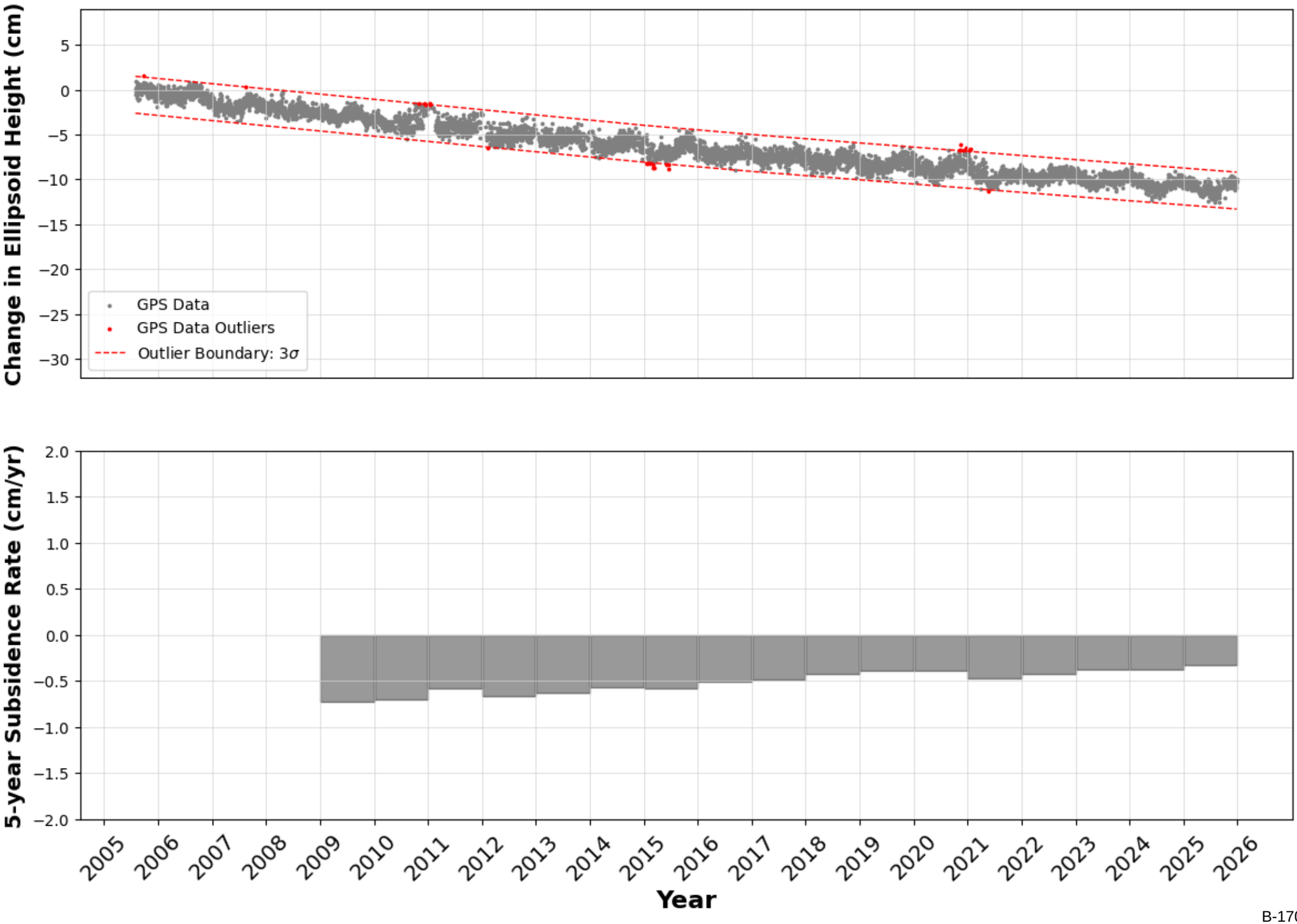


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered by HGSD when calculating subsidence rates and are shown for informational purposes only.

TXHE

Hempstead, TX





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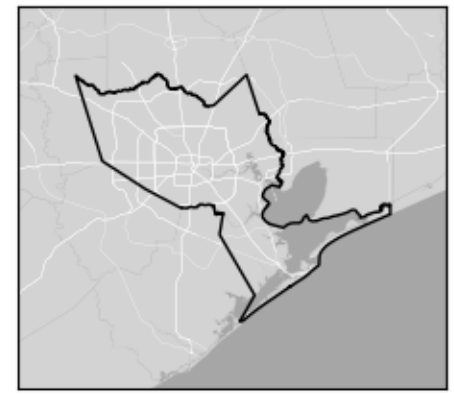
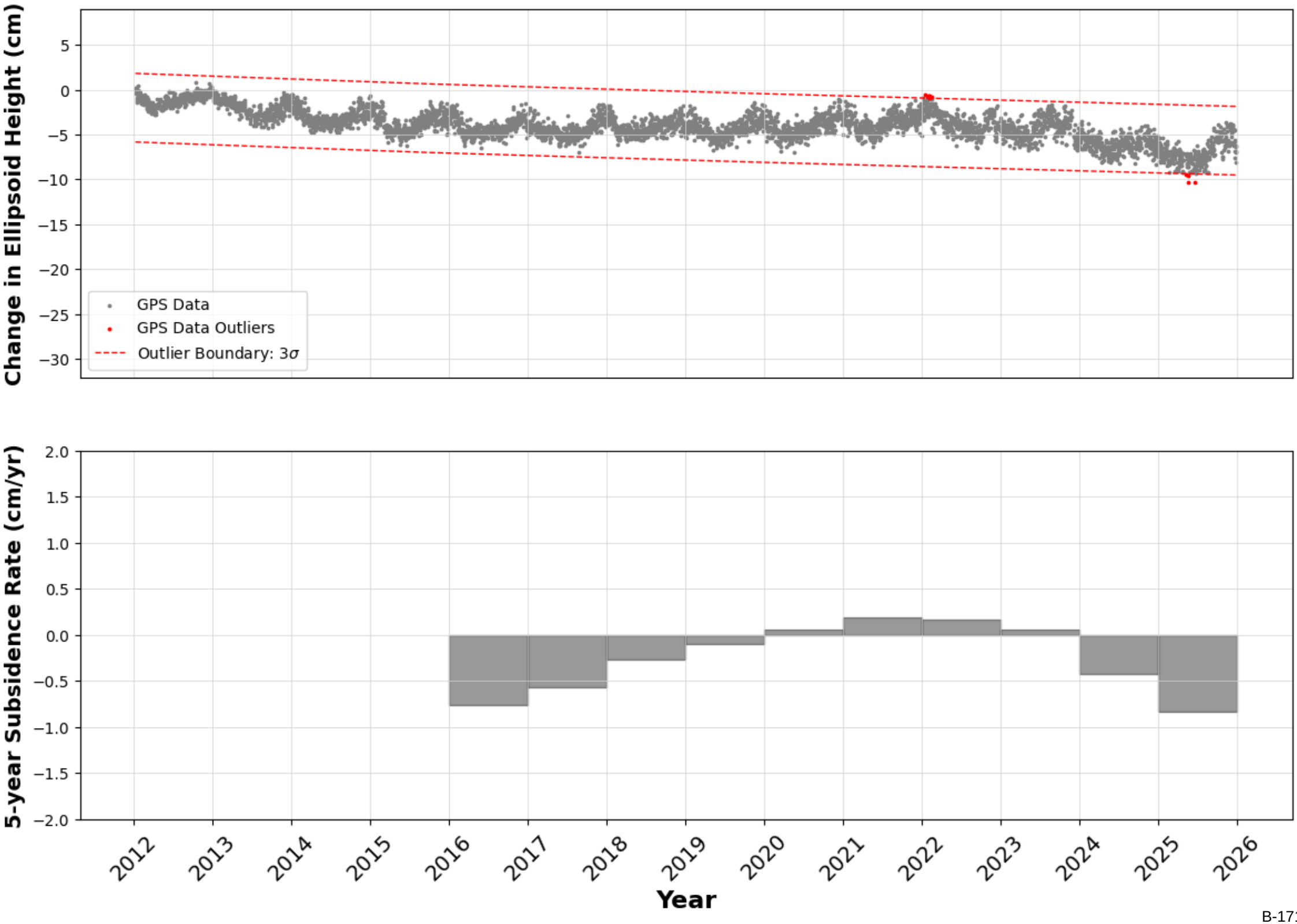


TXHP

Hemphill, TX



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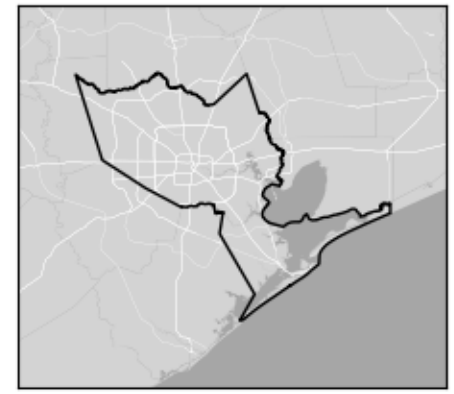
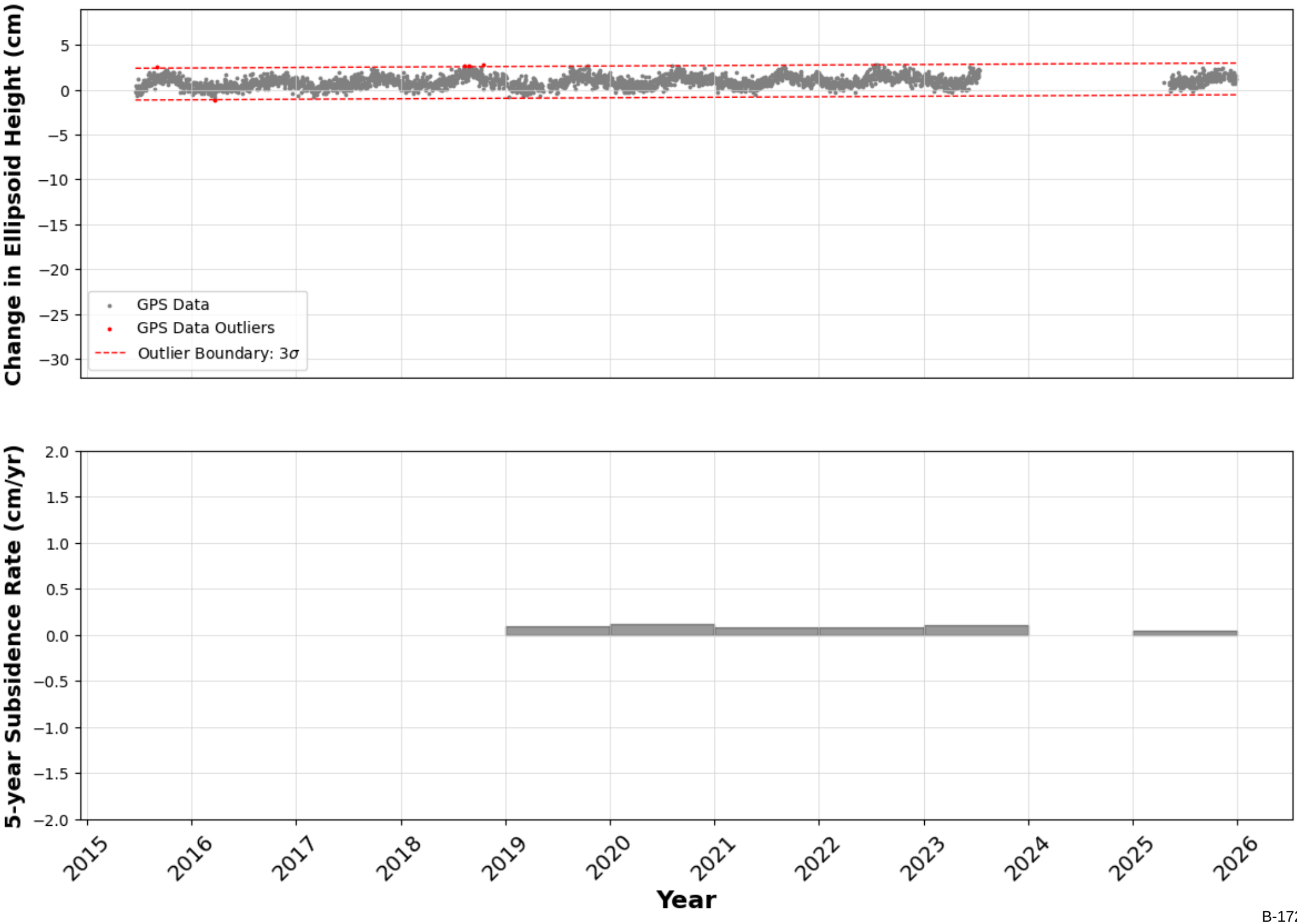


TXHV

Huntsville, TX



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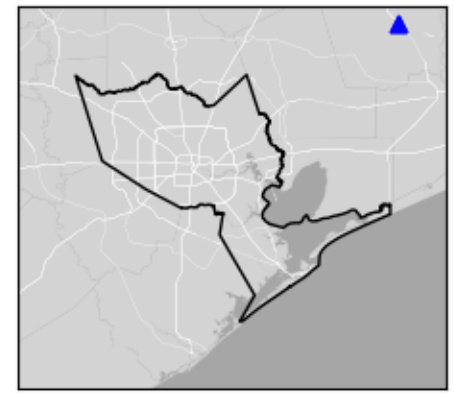
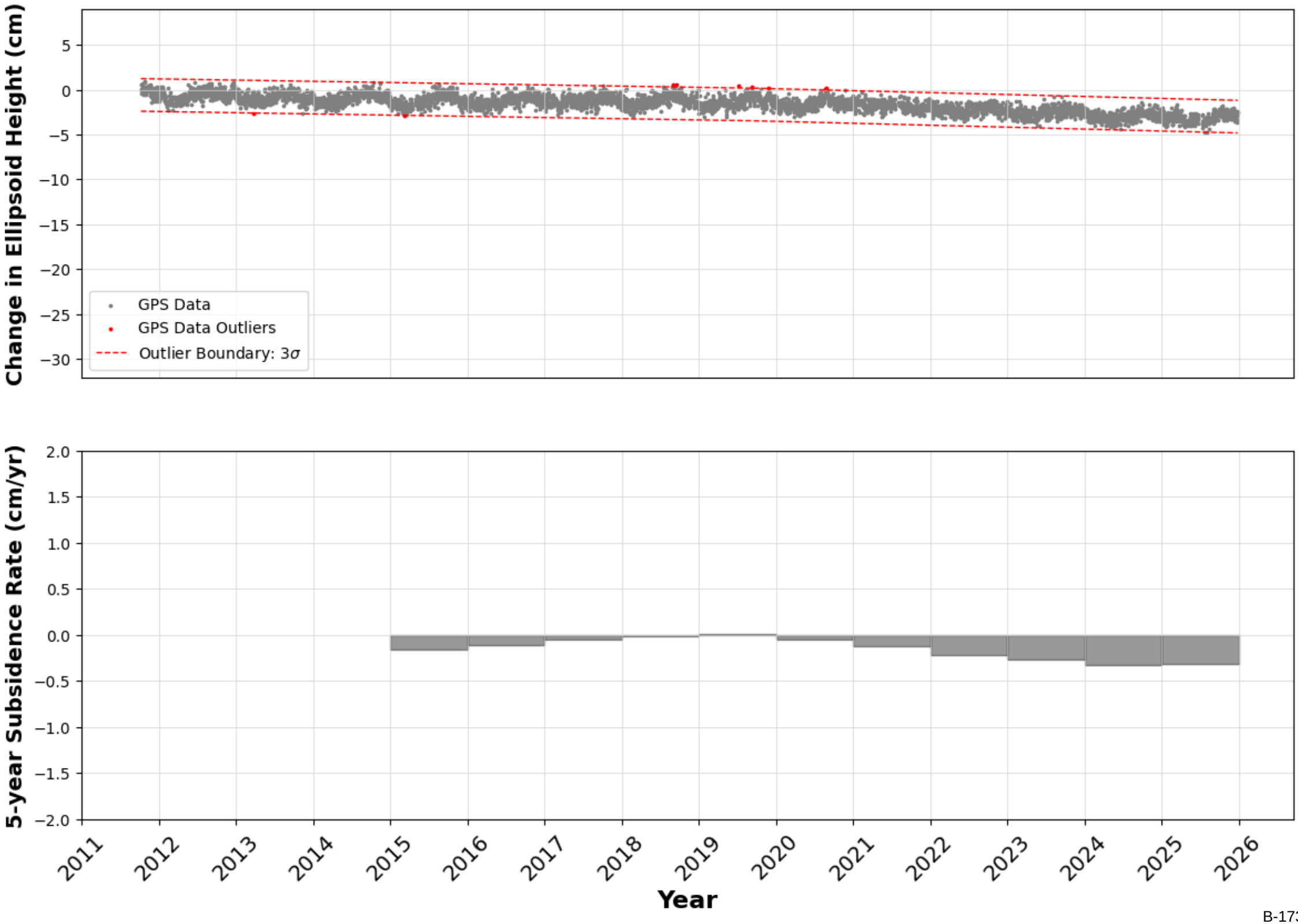


TXKO

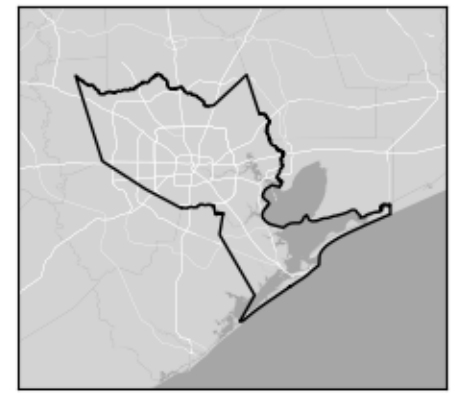
Kountze, TX

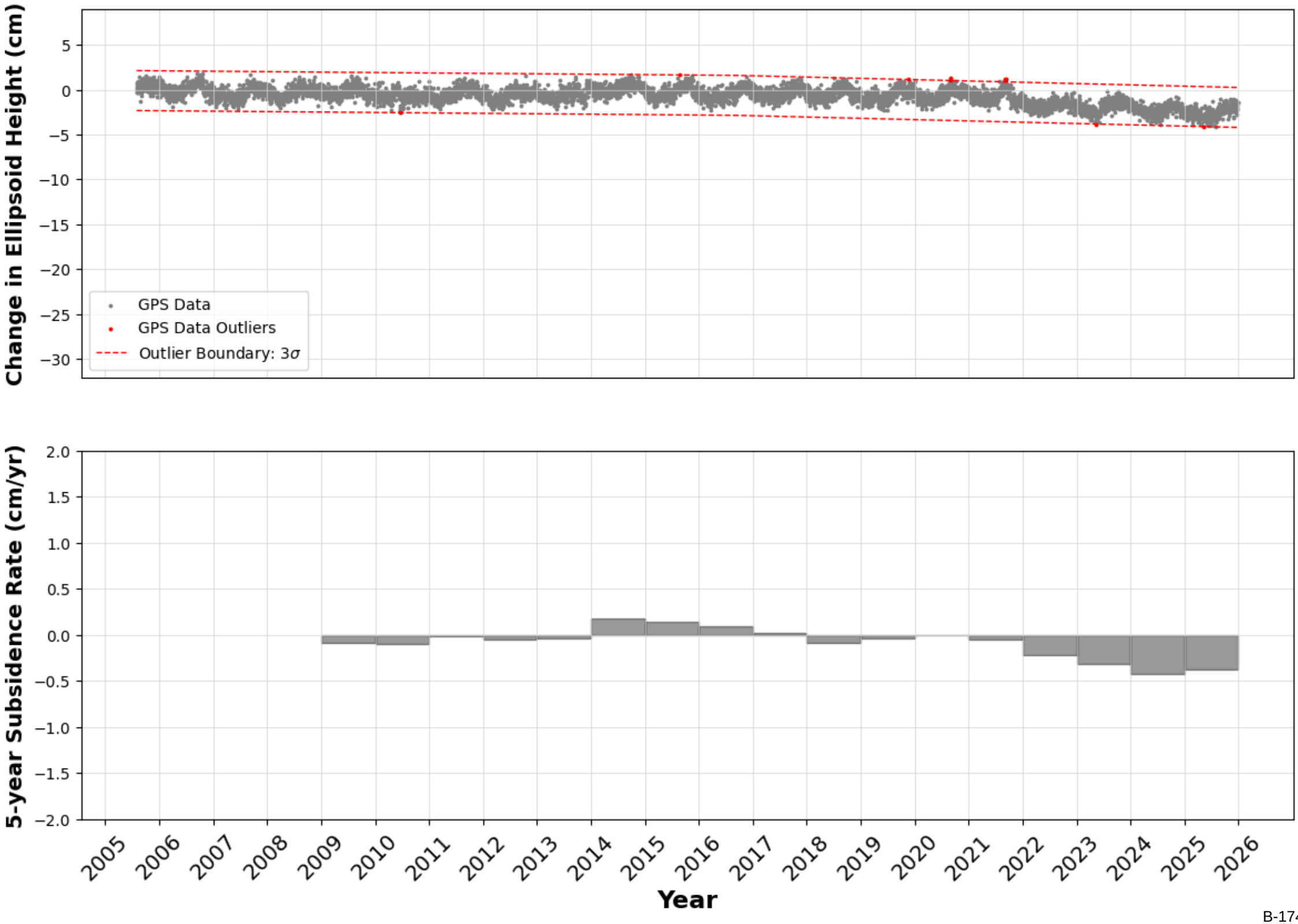


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered by HGSD when calculating subsidence rates and are shown for informational purposes only.

TXLF

Lufkin, TX





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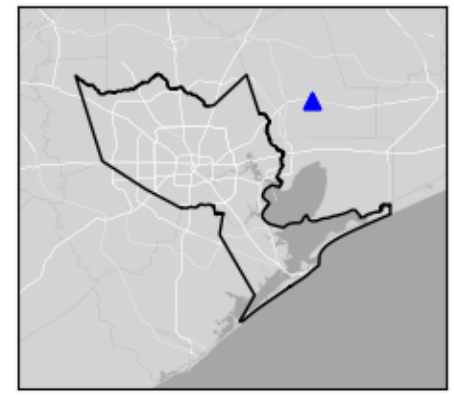
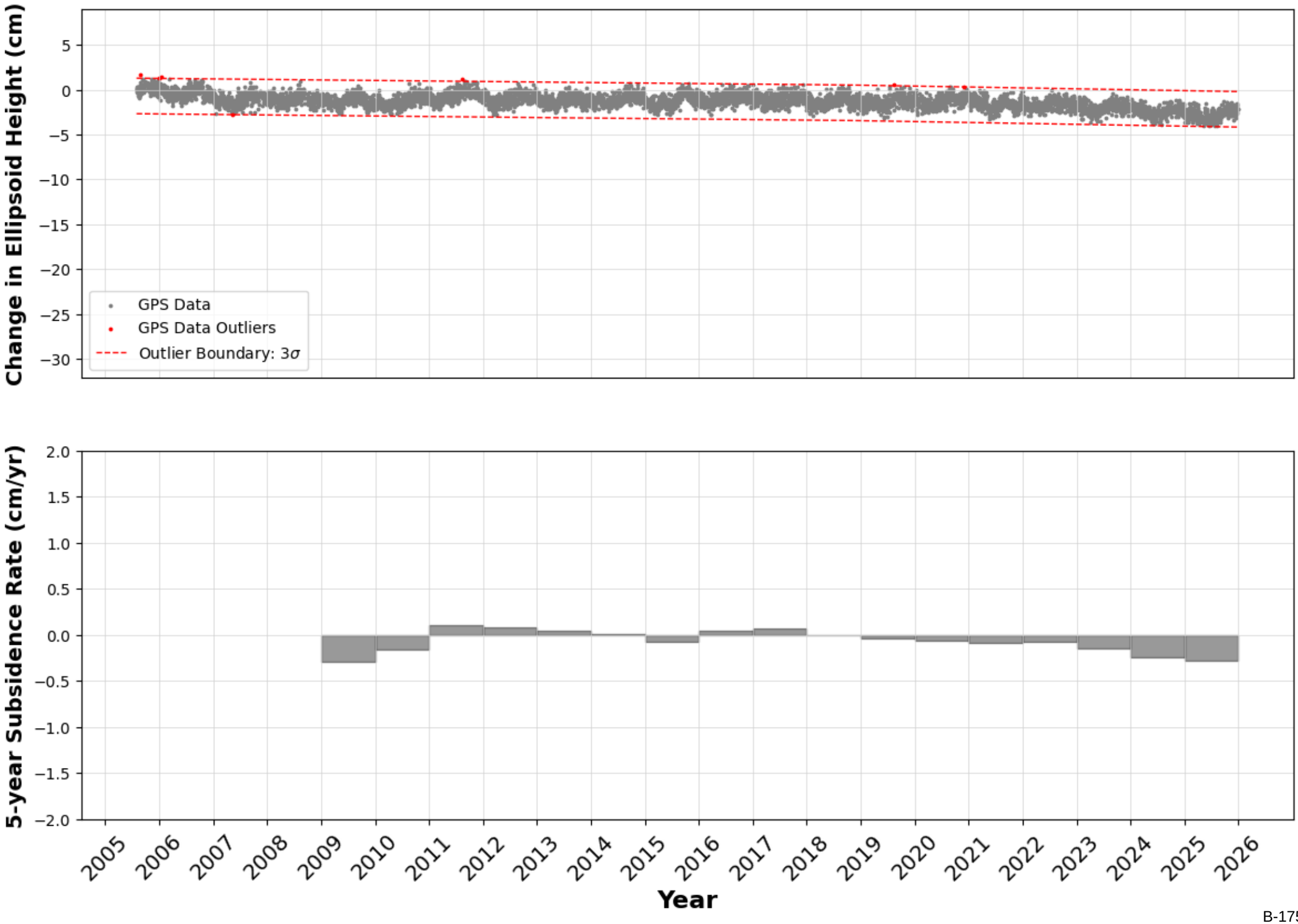
TXLI

Dayton, TX





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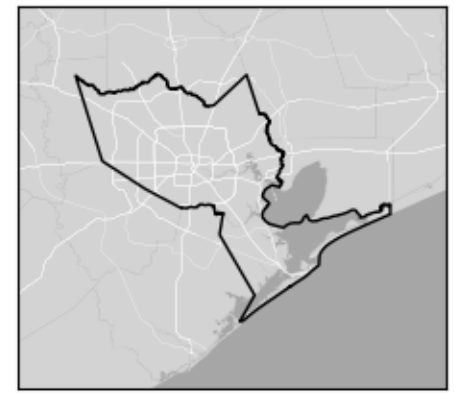
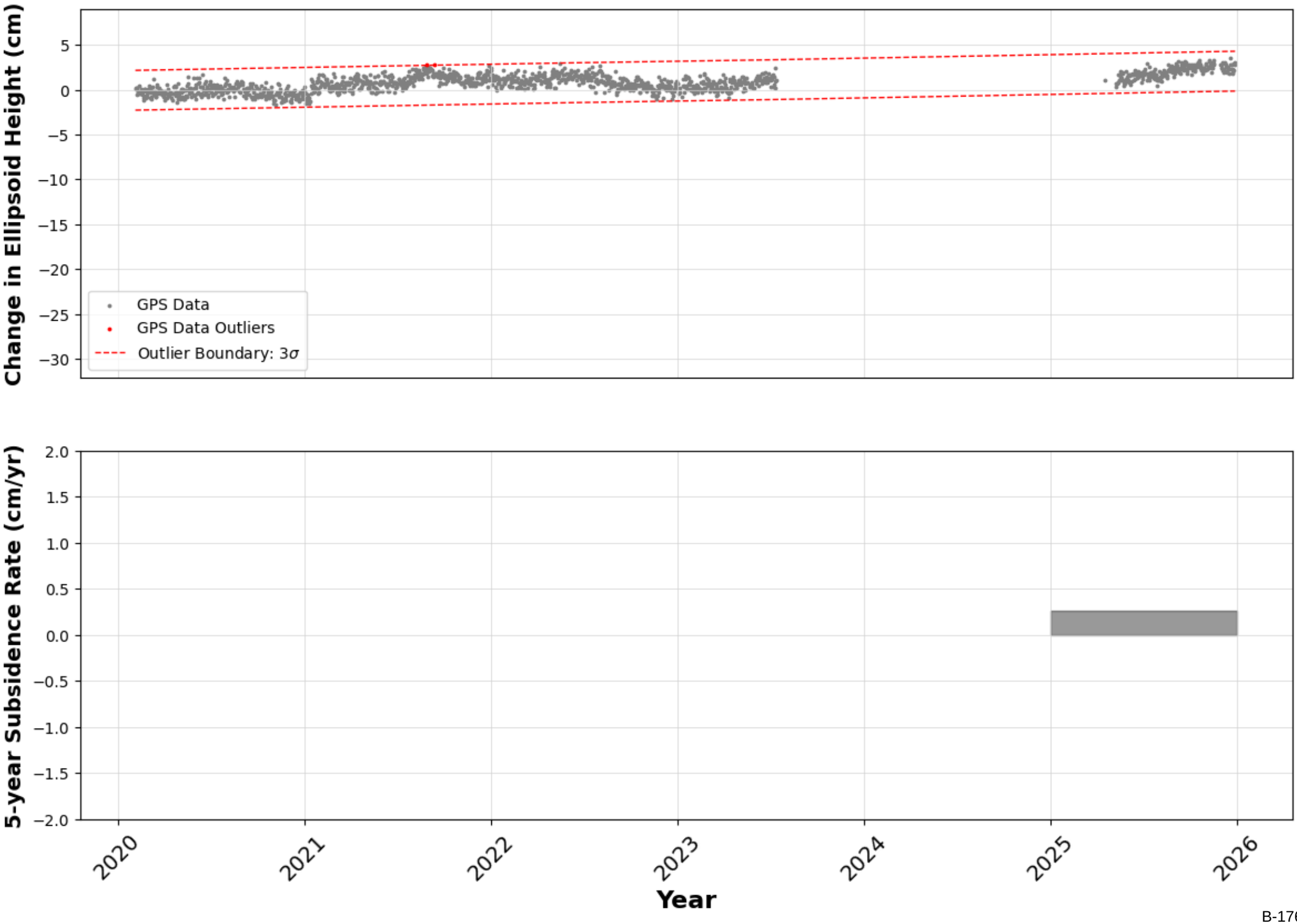
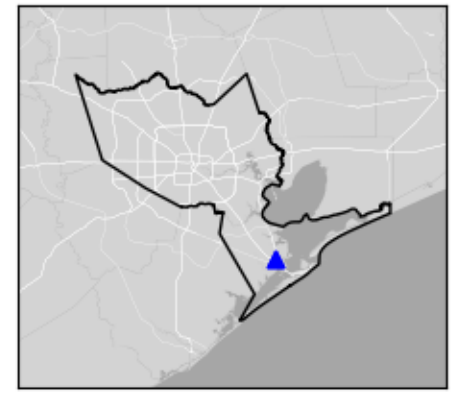
TXLK



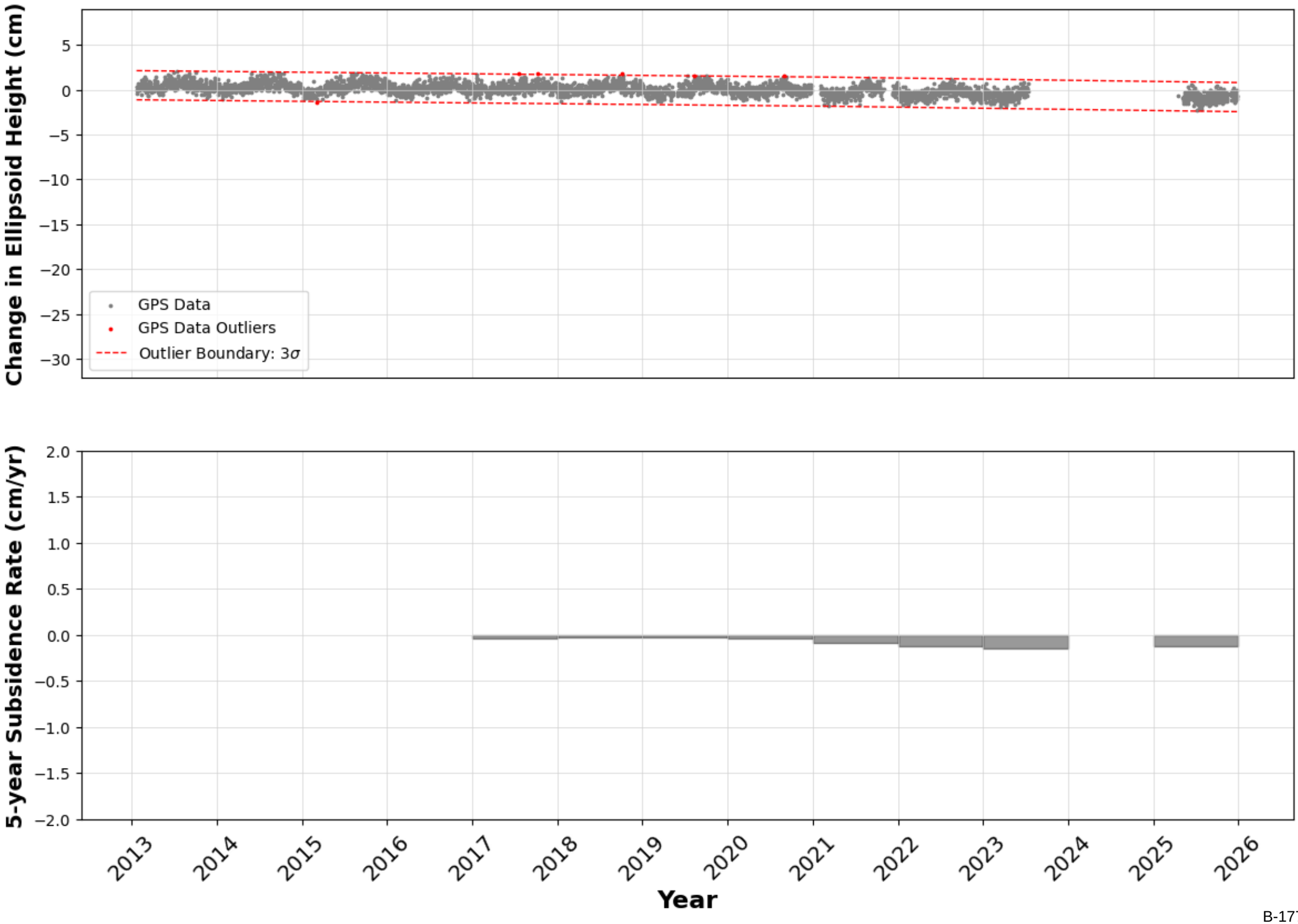


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered by HGSD when calculating subsidence rates and are shown for informational purposes only.

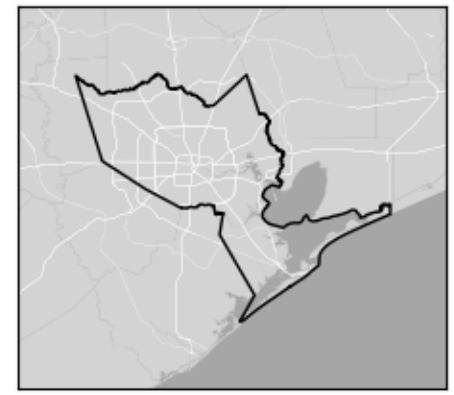


TXLQ

La Marque, TX

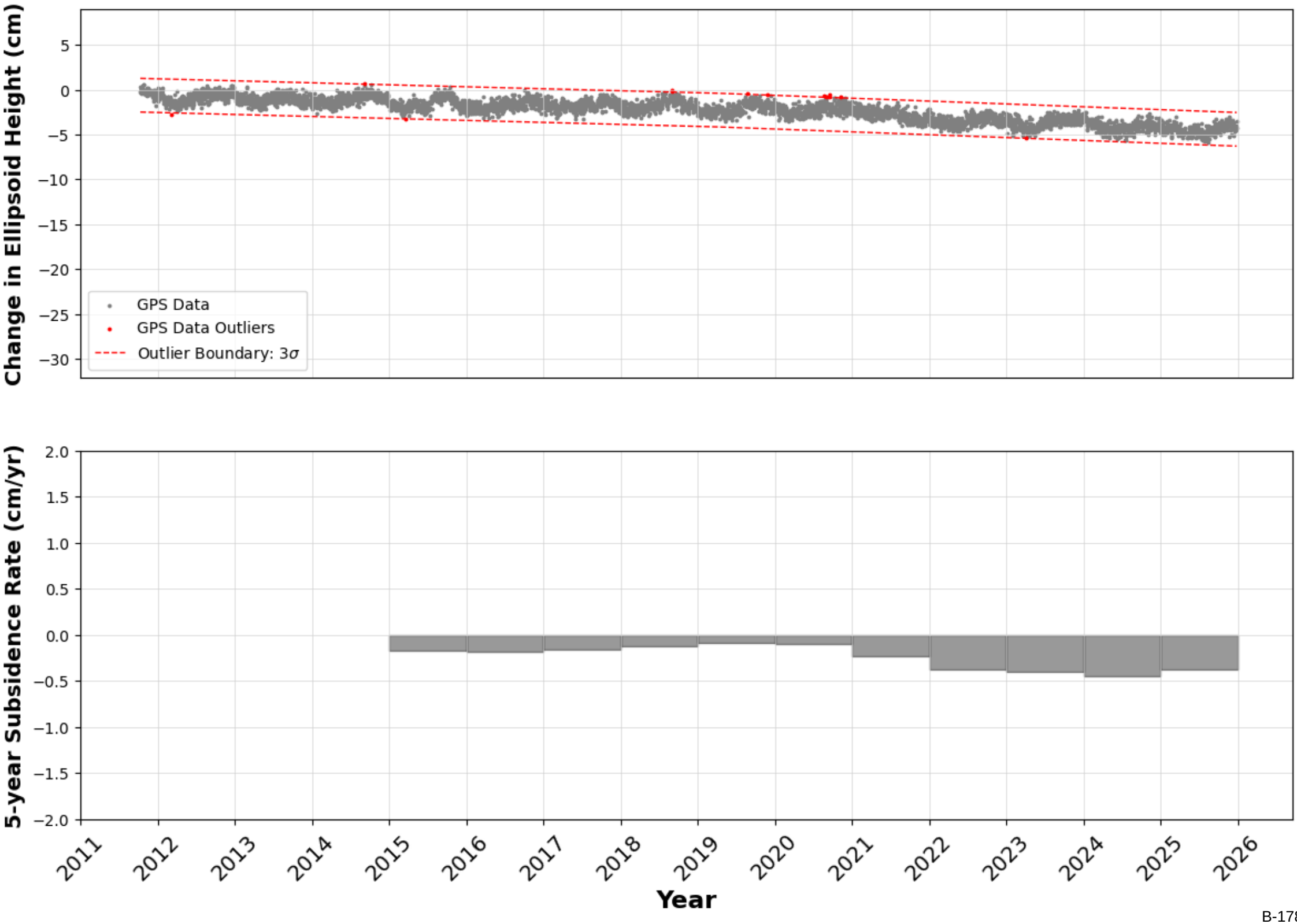


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered by HGSD when calculating subsidence rates and are shown for informational purposes only.



TXLV

Livingston, TX



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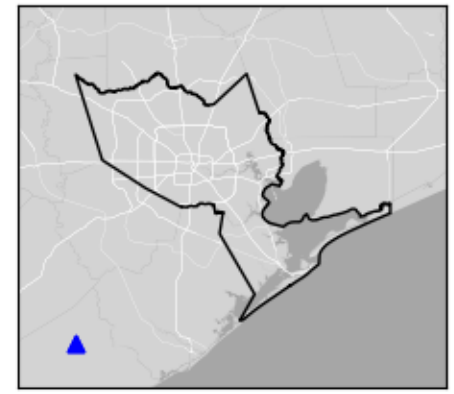
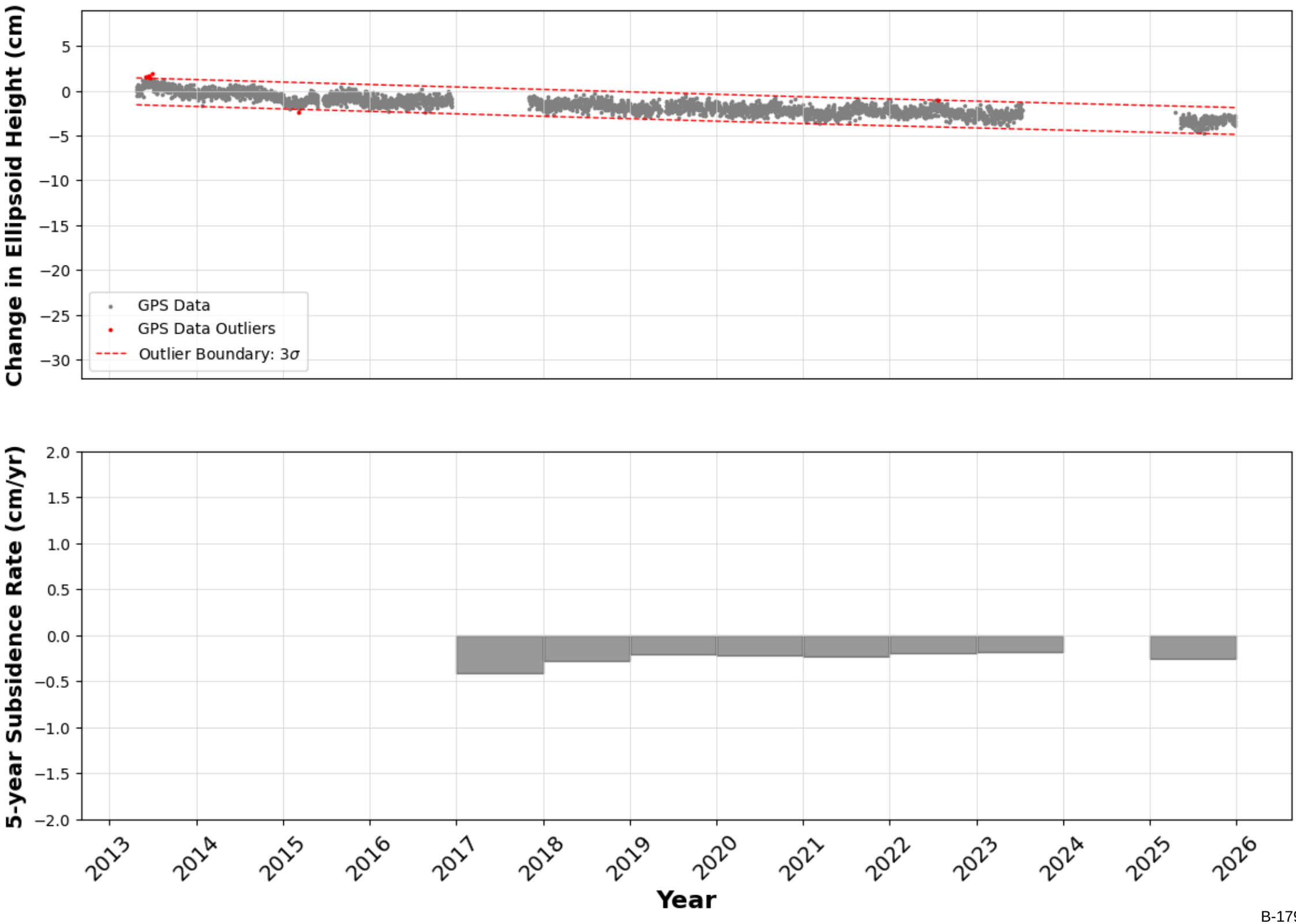


TXMG

Bay City, TX



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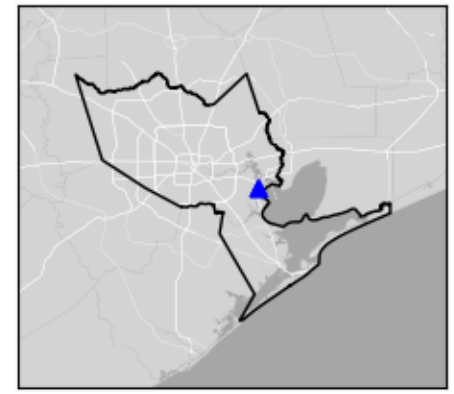
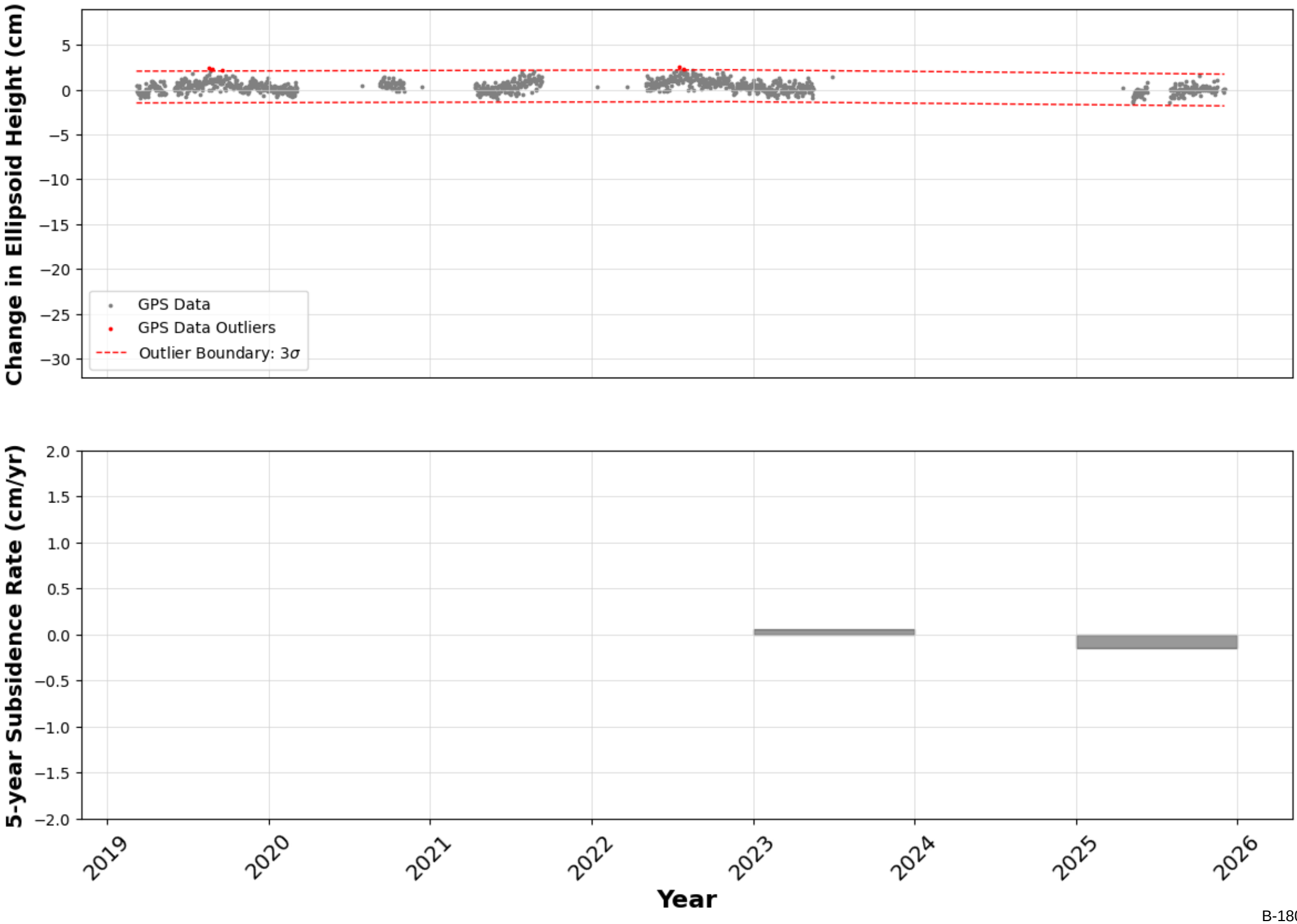
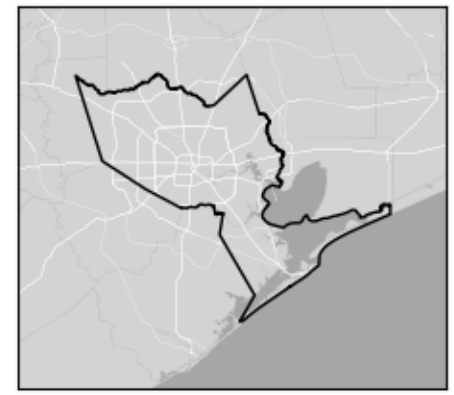
TXP5

La Porte, TX



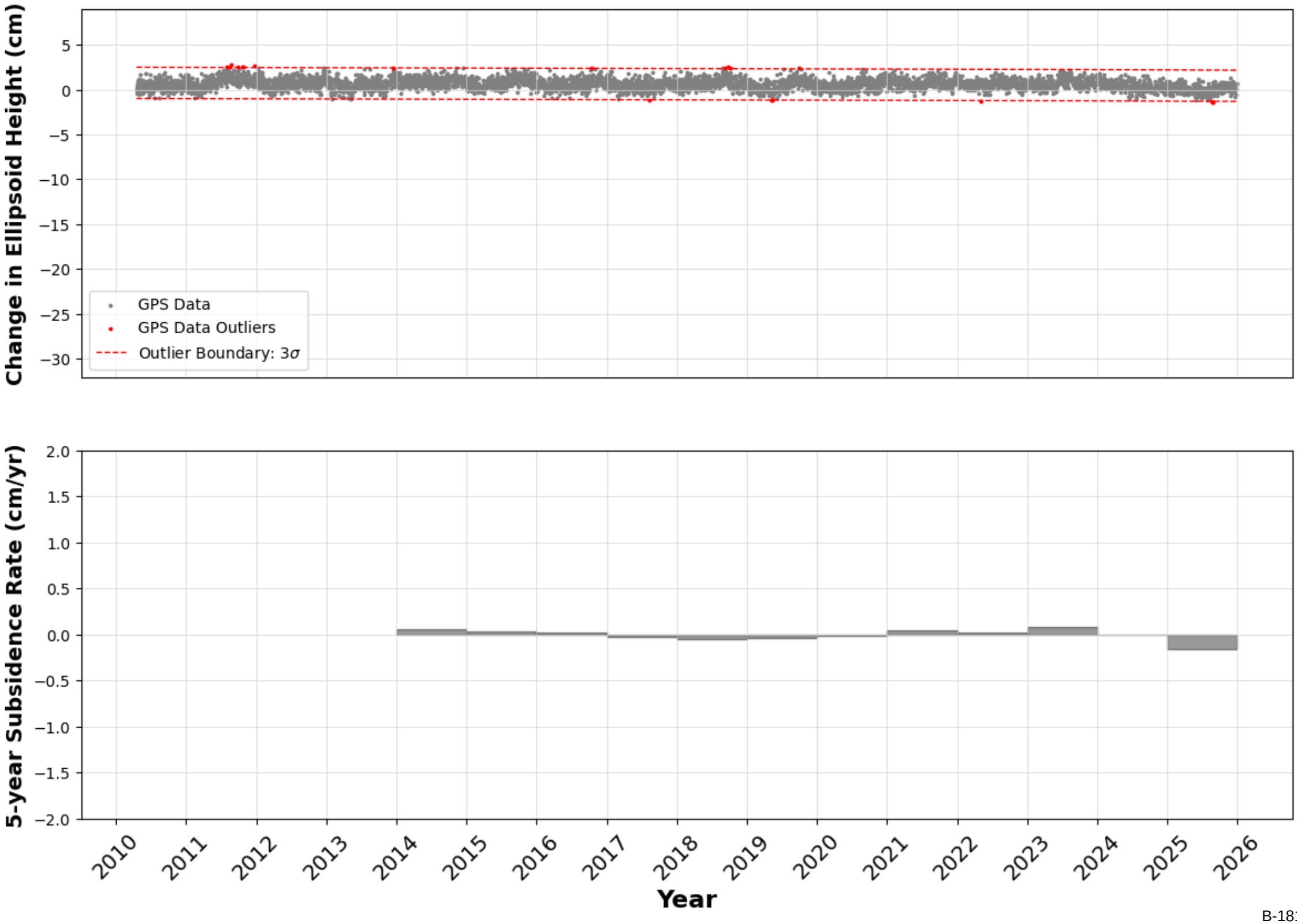


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered by HGSD when calculating subsidence rates and are shown for informational purposes only.



TXPV

Port Lavaca, TX



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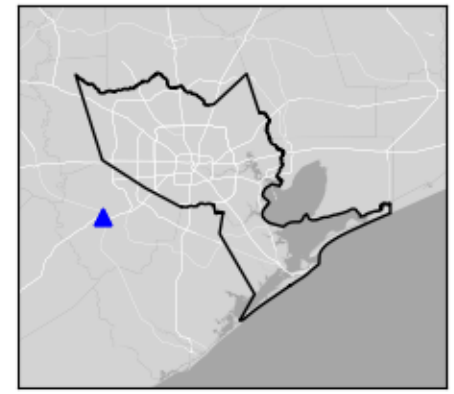
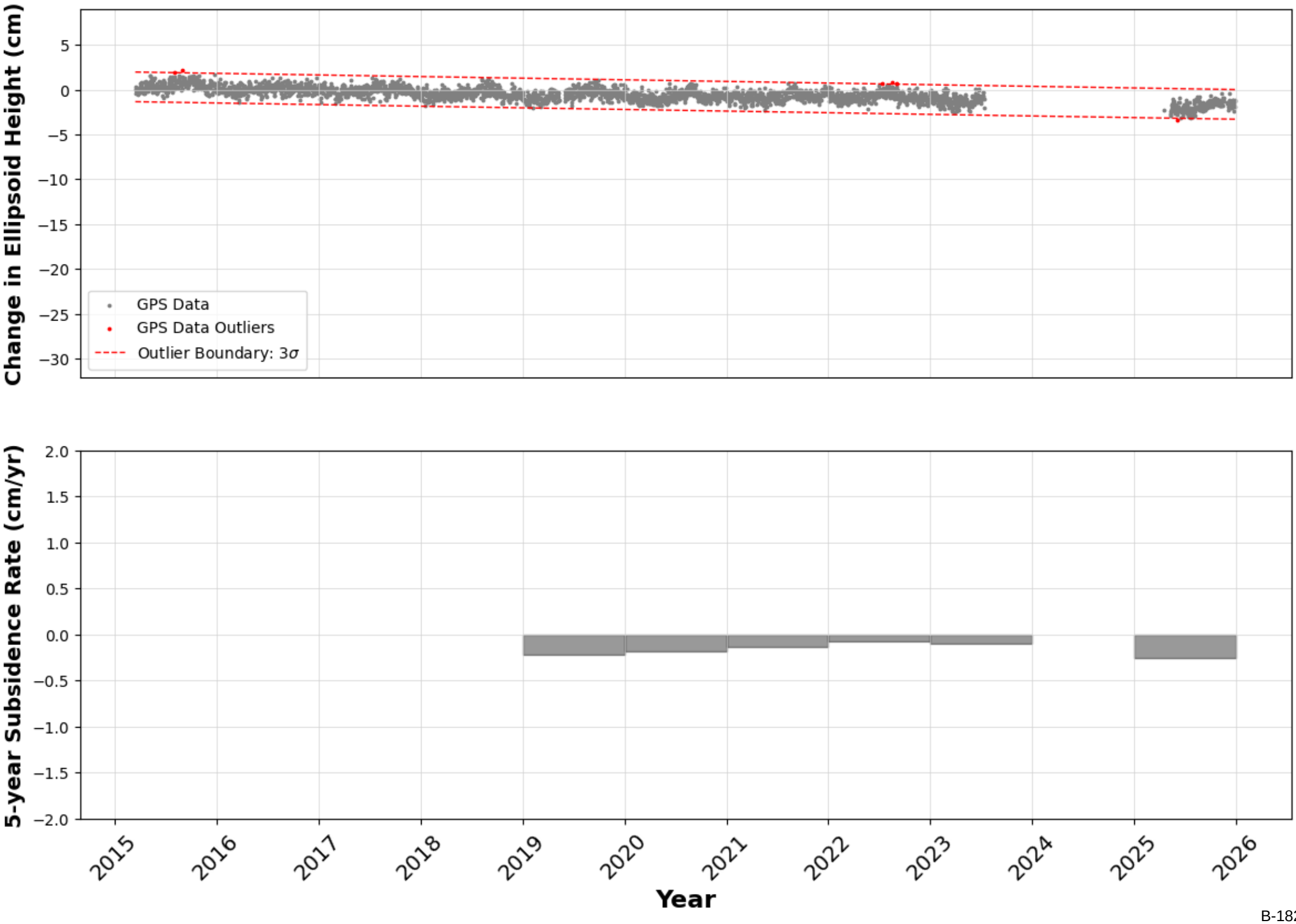


TXRN

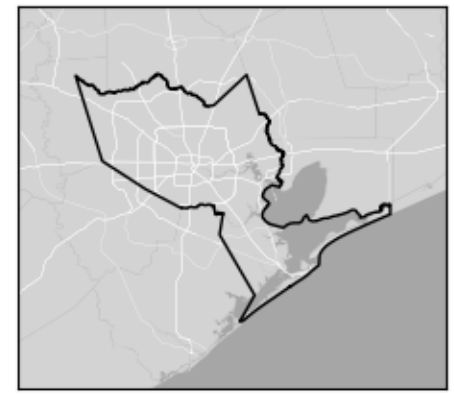
Rosenberg, TX

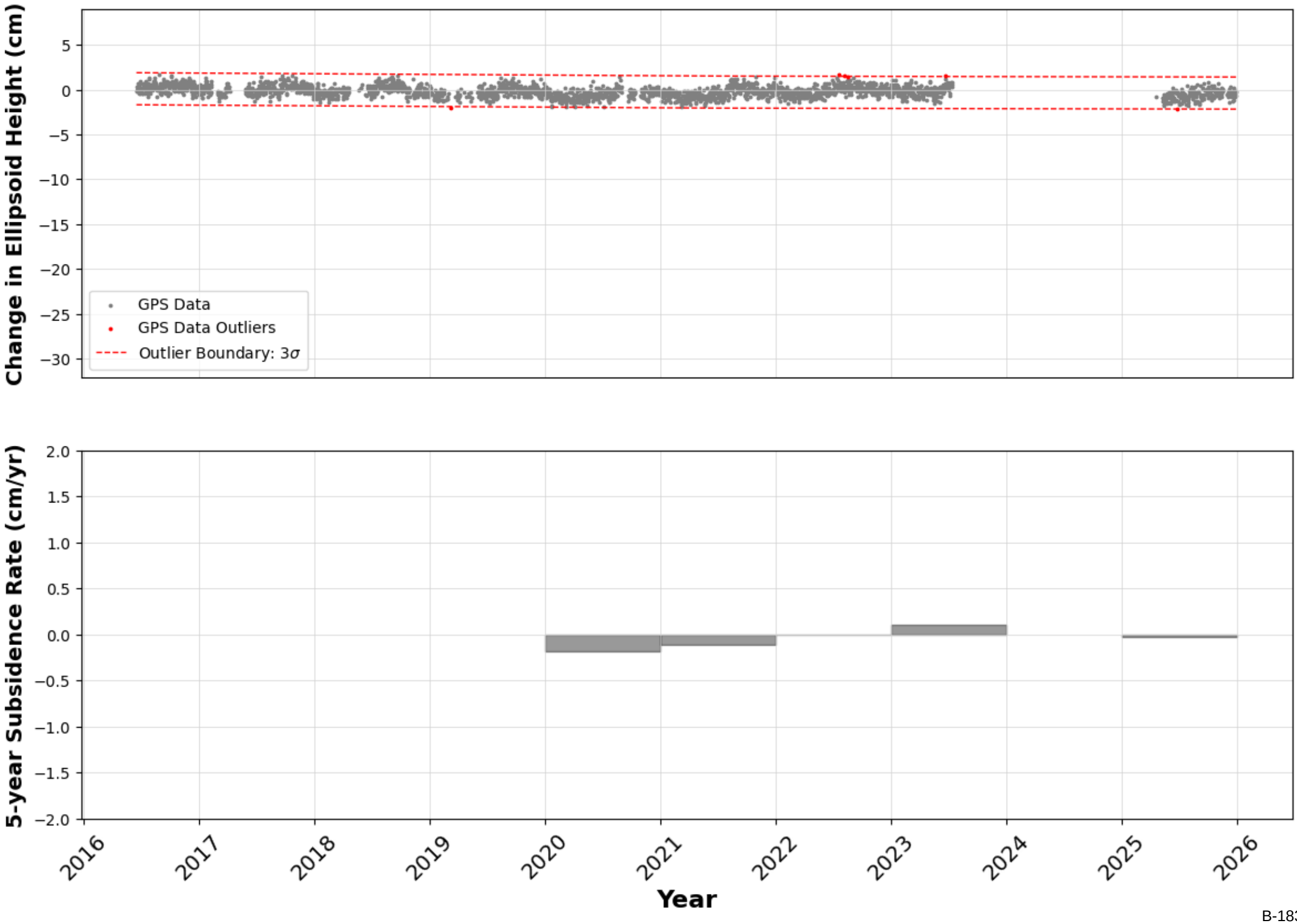


Processed GPS data (Source: University of Houston) over period of record. Processed GPS data (gray circles) located inside the outlier boundary (red dashed line) are used when calculating subsidence rates. Processed GPS data identified as outliers (red circles) are not considered by HGSD when calculating subsidence rates and are shown for informational purposes only.

TXSP

Port Arthur, TX





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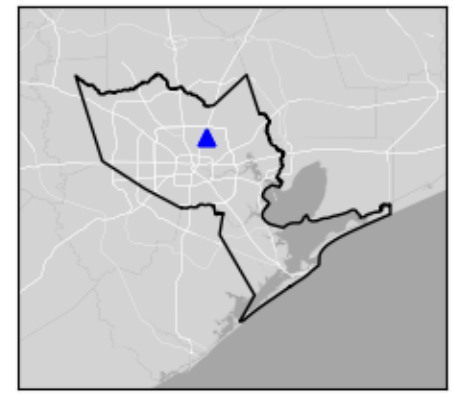
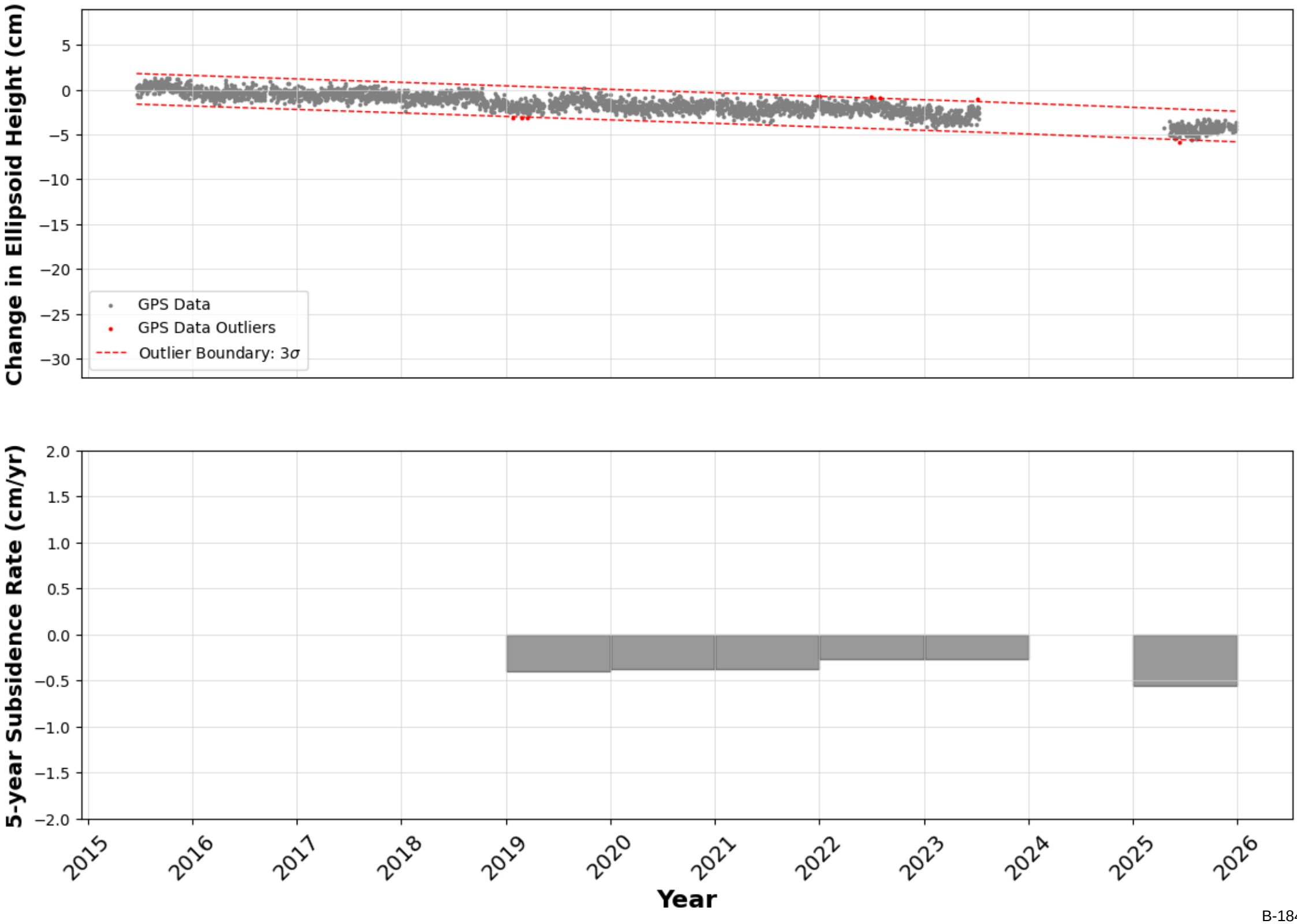


TXTG

Houston, TX



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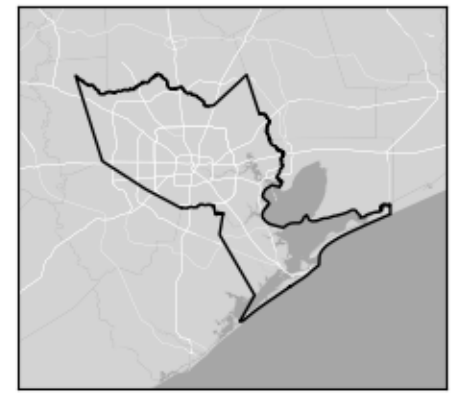
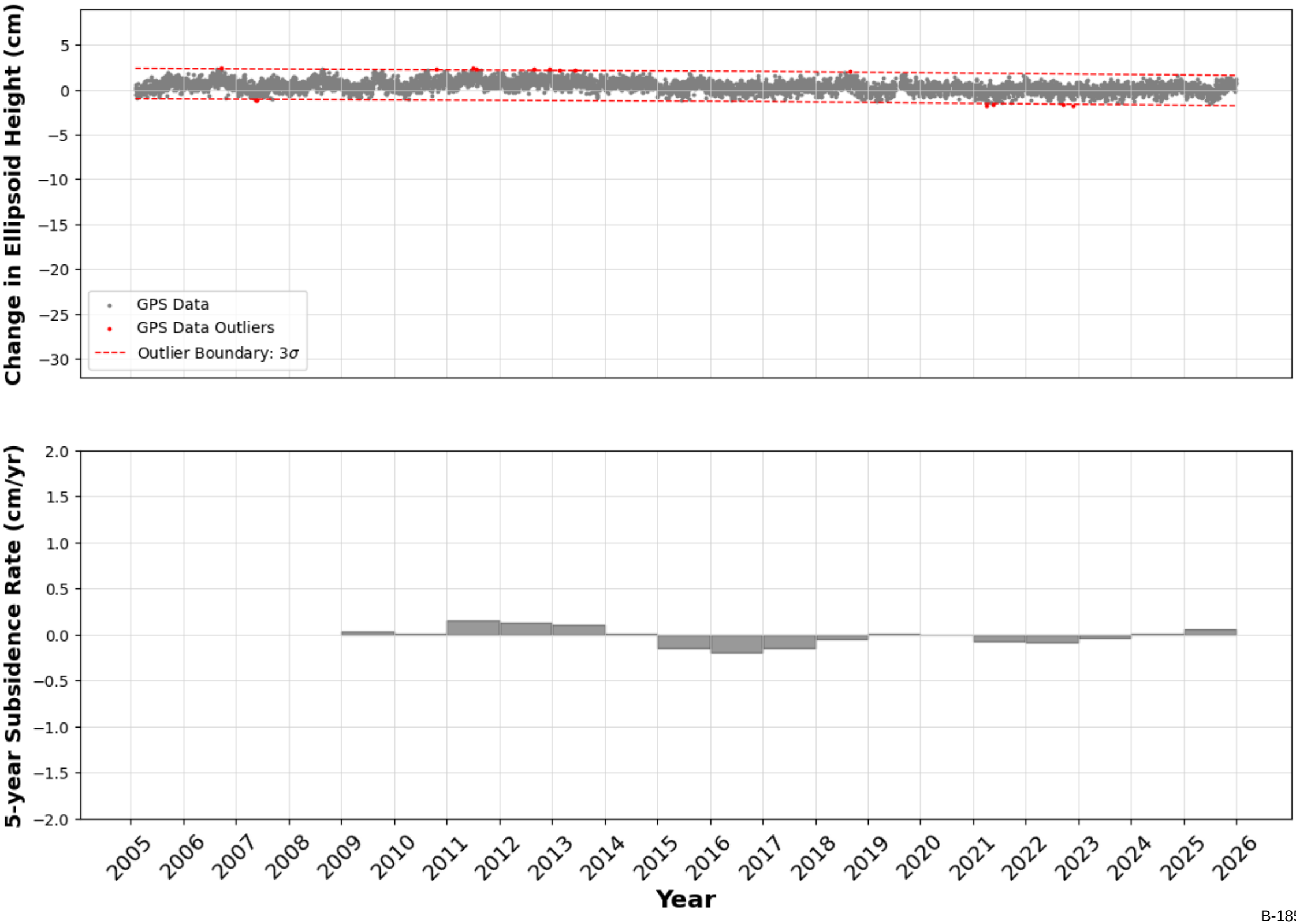
TXVA

Victoria, TX





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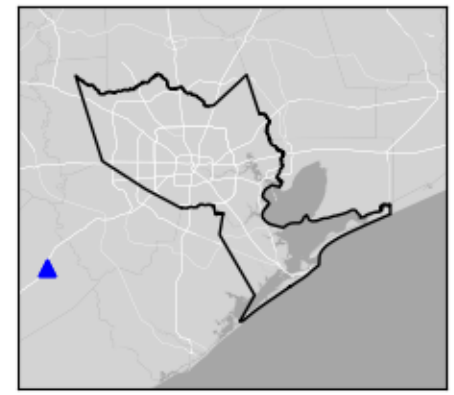
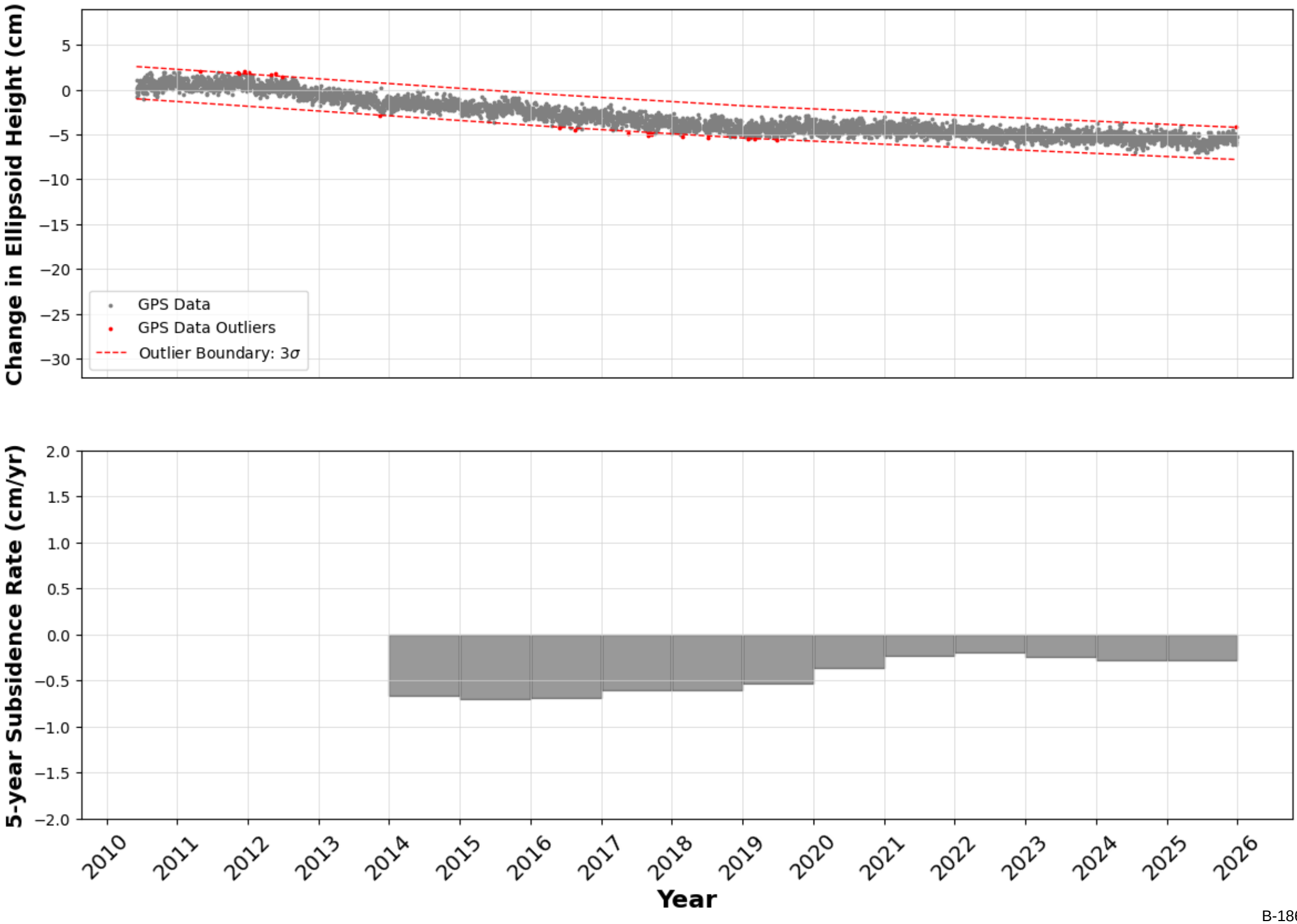


TXWH

Wharton, TX



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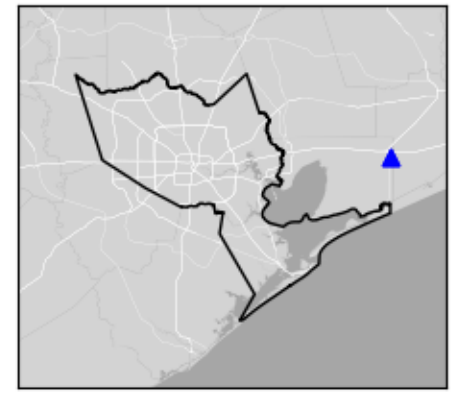
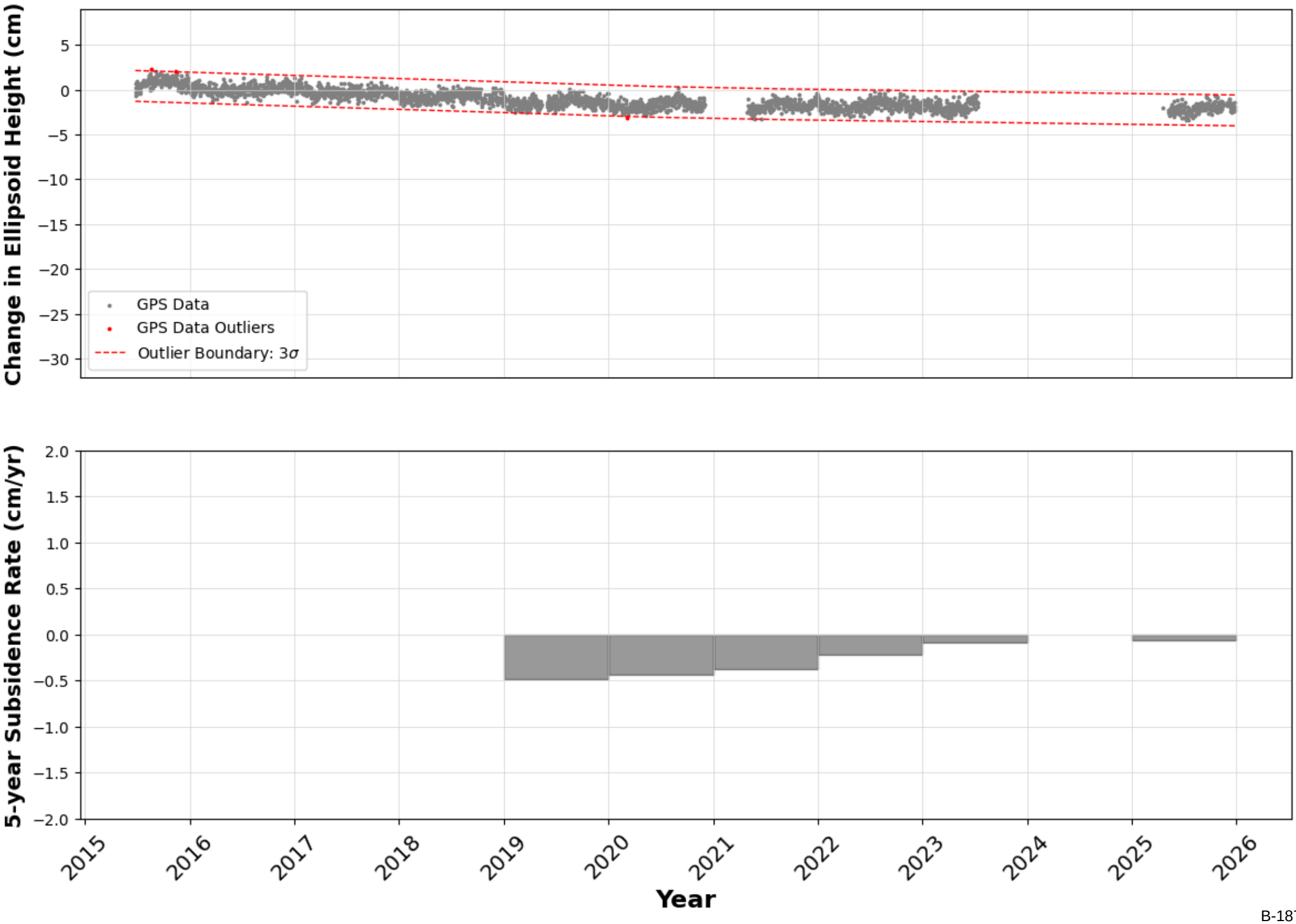


TXWI

Winnie, TX



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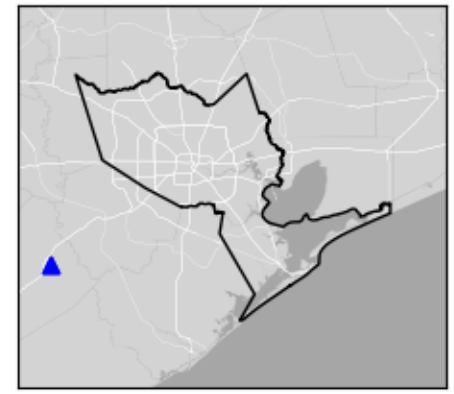
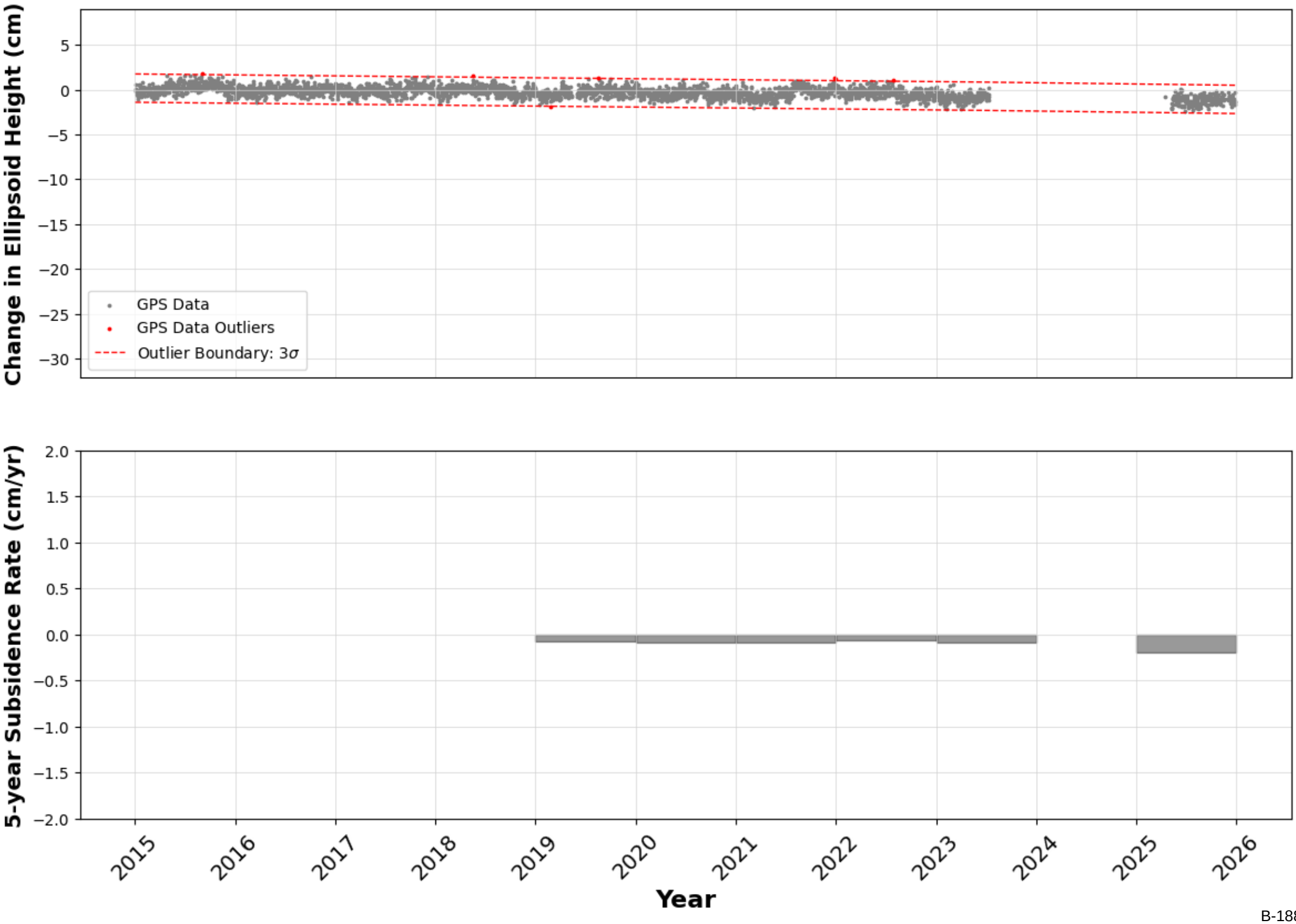
TXWN

Wharton, TX





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Appendix C – Public Testimony and Comments

Public Testimony and Comments

The public hearing for the 2025 Annual Groundwater Report was held on April 30th, 2026 and the record remained open for public testimony and comment until May 8th, 2026. One question was received and answered at the public hearing and are summarized below.

Question 1: Ms. Melissa Rowe asked, “For water use by public versus industrial from large water users like businesses and data centers be considered public or industrial?”.

Answer: *Ms. Ashley Greuter (Director of Research and Water Conservation, HGSD) responded the commercial/domestic wells are classified as public supply and data centers will be grouped with industrial for this report.*