

SITE INFORMATION

Revised 12/17/97

Current Site Name: Fort Davis
Location: Fort Davis, TX
Site Number: 33A
Geographic Region: North America
Tectonic Plate: North American

General Site Description: The VLBA station is located approximately 180 miles southwest of El Paso, Texas on the southern edge of the Fort Davis mountains and 8 miles northwest of the town of Fort Davis. A fixed 26-meter polaris antenna (HRAS 085), located at the George R. Agassiz station (GRAS), was operational until 1991. It has since been dismantled. The VLBA antenna is 300 meters southeast of where HRAS was located.

Measurements supporting the determination of plate motion, plate stability, polar motion/earth rotation, regional deformation, and intercomparison of measurement techniques.

Local Geology: Not Available

Site Topo Map: USGS 1:25000 Sheet Casket Mountain Quadrangle

CONTACT INFORMATION

Site Ownership: USA (National Science Foundation)
Site Management: National Radio Astronomy Observatory (NRAO) through
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MONUMENT INFORMATION

Revised 12/17/97

Current Site Name: Fort Davis
 Location: Fort Davis, TX
 Site Number: 33A
 Number of Observing Monuments: 4
 Surveyed into National Network: Yes

Monument Number: 4010-S 1993
 Type of Monument: 0.457 Meter Diameter Stainless Steel Plate
 Monument Inscription: Fort Davis VLBA Site GPS Station Mark JPL 4010-S 1993
 Systems using Monument: GPS

Latitude: N 30° 38' 06.26916"
 Longitude: W 103° 56' 36.99422" meters
 Elevation: 1617.13 meters
 Height above Ellipsoid: 1594.436 meters
 Geodetic Coordinate Source/Date: ATSC / 12-DEC-97
 Geodetic Coordinate Datum/Ellipsoid: IERS / ITRF94
 Elevation Datum: NGVD 1927

Source of Monument Geodetic Survey Ties: ATSC
 Comments: Stainless steel plate set flush in center of .762 m diameter concrete monolith that projects .5 m above ground.

Differential Coordinates

Monument Number	Monument Inscription	X	Y	Z
7613	NONE (VLBA REFERENCE POINT)	-114.809	15.815	0.832
	HRAS 85	-313.720	186.571	149.436

Monument Number	Monument Inscription	North	East	Up
7613	NONE (VLBA REFERENCE POINT)	-5.560	-115.237	11.021
---	HRAS 85	182.327	-349.433	-14.607

MONUMENT INFORMATION

Revised 12/17/97

Current Site Name: Fort Davis
Location: Fort Davis, TX
Site Number: 33A
Monument Number: 4010-S 1993

Monument Description: The station is located approximately 180 miles southeast of El Paso, Texas in the Davis Mountains and 8 miles northwest of the town of Fort Davis.

The station mark is a punchmark in the center of an etched triangle on the top of a 0.457 meter diameter stainless steel plate. The plate is set flush in the top of a 0.762 meter diameter concrete monolith that projects 0.5 meters above the ground. The stainless steel plate is etched **“Fort Davis VLBA Site GPS Station Mark JPL 4010-S 1993 NASA FLINN Site North American High Precision Fiducial Network Blewitt and Clark Space Geodetic Pioneers JPL/GSFC Collaboration”**.

The mark is set approximately 33 meters North of a wood post/wire fence line and 50 meters East of a large dirt berm that extends around the Northeast perimeter of the NRAO VLBA antenna fence line.

MONUMENT INFORMATION

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Current Site Name: Fort Davis
Location: Fort Davis, TX
Site Number: 33A
Number of Observing Monuments: 4
Surveyed into National Network: Yes

Monument Number: 7216
Type of Monument: Intersection of polar axis and plane containing declination axis
Monument Inscription: None
Systems using Monument: 85-Foot Fixed VLBI Antenna

Latitude: N 30° 38' 12.18811"
Longitude: W 103° 56' 50.11324" meters
Elevation: 1616.84 meters
Height above Ellipsoid: 1595.125 meters
Geodetic Coordinate Source/Date: ATSC / 12-DEC-97
Geodetic Coordinate Datum/Ellipsoid: IERS ITRF94 (1993)
Elevation Datum: NGVD 1929

Comments: The antenna is also referenced as HRAS 085. For monuments listed below see McDonald site. Antenna dismantled in 1991.

Differential Coordinates

Monument Number	Monument Inscription	X	Y	Z
7080	7080 1988	-5810.066	3621.343	4362.423
7086	MOBLAS 1979	-5914.394	3496.572	4031.860
7206	NONE (LURE 107 1985)	-6570.298	3267.552	3579.242
7850	7850 1988	-5797.193	3631.619	4384.345
7851	7851 1988	-5798.469	3632.239	4384.856
7897	TLRS 7897	-6589.754	3298.504	3585.888
7900	HARVARD RM 5 1980	-16.973	-39.906	-95.340
---	HARVARD 1977	-9.523	-5.261	-39.038
---	HARVARD RM 3 1977	7.463	-45.391	-93.375
---	HARVARD RM 4 1977	19.117	-36.689	-75.025

MONUMENT INFORMATION

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Current Site Name: Fort Davis
Location: Fort Davis, TX
Site Number: 33A

Monument Number: 7613
Type of Monument: Intersection of Elevation & Azimuth Axes
Monument Inscription: None
Systems using Monument: 25-Meter VLBA Antenna

Latitude: N 30° 38' 06.08864"
Longitude: W 103° 56' 41.32055"
Elevation: 1628.16 meters
Height above Ellipsoid: 1606.439 meters
Geodetic Coordinate Source/Date: ATSC / 16-DEC-97
Geodetic Coordinate Datum/Ellipsoid: IERS ITRF94 (1993)
Elevation Datum: NGVD 1929

Differential Coordinates

Monument Number	Monument Inscription	X	Y	Z
4010	JPL 4010-S 1993	114.809	-15.815	-0.832
4011	---	-5989.547	3788.636	4541.724
7216	NONE-HRAS REF PT.	-201.877	158.812	155.894
7900	HARVARD NO. 5 (1977)	-218.850	118.906	60.555
---	FT DAVIS VLBA RM1	30.634	66.331	83.640
---	FT DAVIS VLBA RM2	134.964	-36.462	-23.561
---	FT DAVIS VLBA RM3	-100.763	1.906	-67.010
---	HARVARD 1977	-211.392	153.556	116.857

Monument Number	Monument Inscription	North	East	Up
4010	JPL 4010-S 1993	5.561	115.236	-11.024
---	FT DAVIS VLBA RM1	108.5323	13.7461	-19.1225
---	FT DAVIS VLBA RM2	-21.7301	139.7730	-9.5431
---	FT DAVIS VLBA RM3	-69.0893	-98.2524	-14.8435

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Current Site Name: Fort Davis
Location: Fort Davis, TX
Site Number: 33A
Monument Number: 7613

Monument Description: The station is located approximately 180 miles southeast of El Paso, Texas on the southern edge of the Davis mountains, and 8 miles northwest of the town of Fort Davis, Texas.

The station mark is a point represented by the perpendicular intersection of a plane through the elevation axis with the azimuth axis of the NRAO VLBA (Very Long Baseline Array) antenna. The point is not accessible and cannot be occupied. No survey disk or mark designates the point. It should be noted that the antenna elevation axis is offset by 2.134 meters (7 feet) from the antenna azimuth axis.

Reference mark 1 is a punch mark in the center of the rounded top of a 0.012 meter diameter stainless steel rod. It is set approximately 0.3 meters below the ground surface in a greased 0.025 meter diameter pvc pipe. The mark and greased pvc pipe are set in the center of a 0.14 meter diameter pvc pipe that is held in place with concrete. An aluminum logo cover has been cemented to the top of the 0.14 meter diameter pvc pipe and covers the mark. The cover is set flush with the ground surface. The aluminum cover is stamped "**FT. DAVIS VLBA RM1 JAN 90**". The mark is set approximately 22.5 meters southeast of the centerline of a gravel road and is located at a distance of 109.4 meters and at a geodetic azimuth of 07 degrees from SGP Station 7613.

Reference mark 2 is a standard NASA-GSFC brass disk set flush and epoxied into bedrock approximately 0.4 meters below the ground surface. The disk is stamped "**FT. DAVIS VLBA RM2 JAN 90**". The disk is set in the center of a 0.14 meter diameter pvc pipe that is held in place with concrete. An aluminum logo cover has been cemented to the top of the pvc pipe and is flush with the ground surface. The mark is set approximately 1.4 meters north of a wooden pole/barbed wire fenceline, and is located at a distance of 141.4 meters and at a geodetic azimuth of 99 degrees from SGP Station 7613.

Reference mark 3 is a standard NASA-GSFC brass disk set flush and epoxied into bedrock approximately 0.4 meters below the ground surface. The disk is stamped "**FT. DAVIS VLBA RM3 JAN 90**". The disk is set in the center of a 0.14 meter diameter pvc pipe that is held in place with concrete. An aluminum logo cover has been cemented to the top of the pvc pipe and is flush with the ground surface. The mark is set approximately 20 meters northeast of the corner of a wooden pole/barbed wire fenceline and is located at a distance of 120.1 meters and at a geodetic azimuth of 235 degrees from SGP Station 7613.

MONUMENT INFORMATION

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Current Site Name: Fort Davis
Location: Fort Davis, TX
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Monument Number: 7900
Type of Monument: Standard Brass Reference Monument
Monument Inscription: Harvard RM 5 1977
Systems using Monument: Mobile VLBI

Latitude: N 30 38' 08.81660"
Longitude: W 103 56' 50.37055"
Elevation: 1605.104 meters
Height above Ellipsoid: 1583.384 meters
Geodetic Coordinate Source/Date: ATSC / 16-DEC-97
Geodetic Coordinate Datum/Ellipsoid: IERS ITRF94 (1993)
Elevation Datum: NGVD 1929

Comments: This reference monument was occupied by a mobile VLBI during a special VLBI experiment in October 1988.

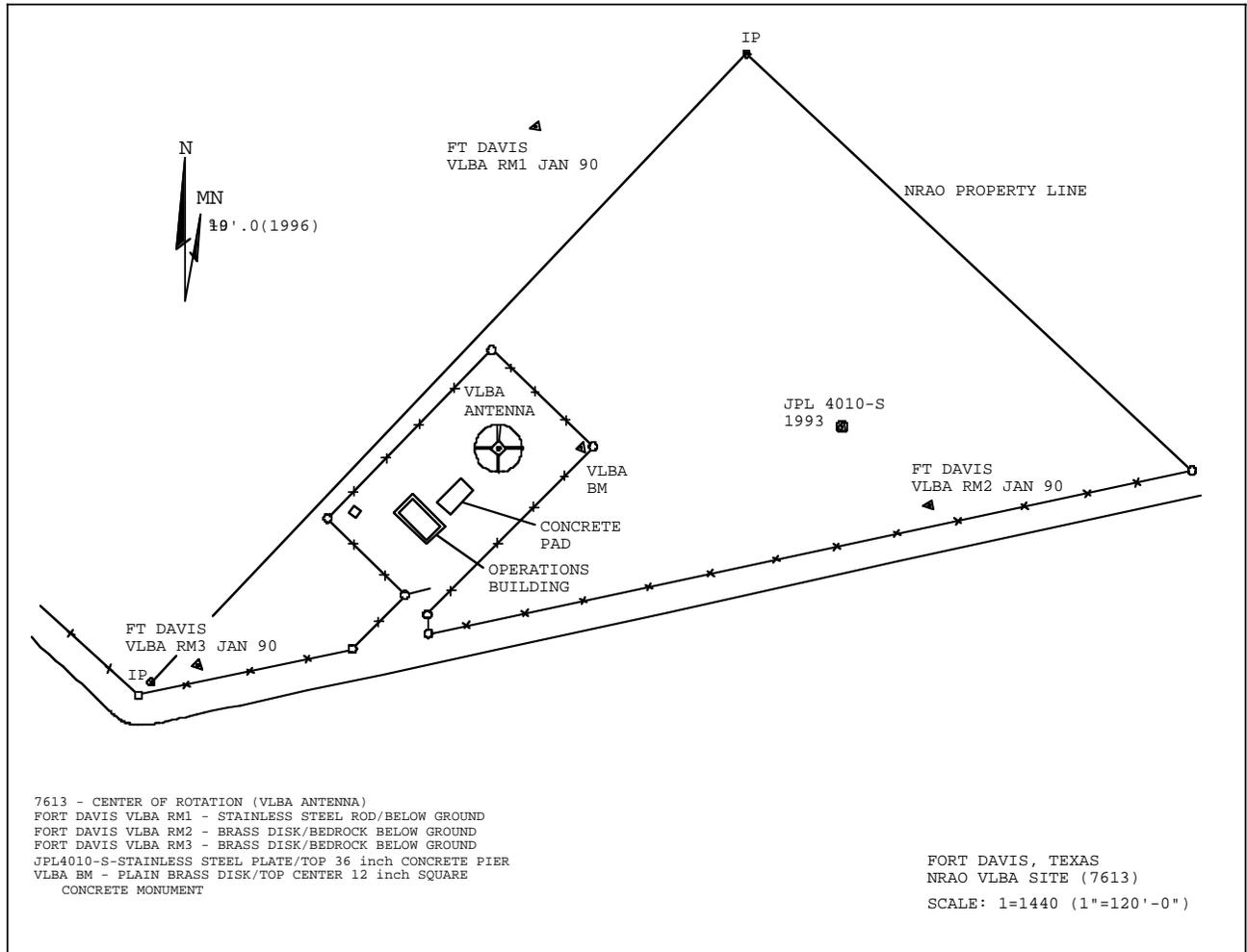
Differential Coordinates

Monument Number	Monument Inscription	X	Y	Z
7080	CDP STATION 7080 1988	-5793.092	3661.249	4457.763
7086	MOBLAS CDP 7086 (1979)	-5897.421	3536.478	4127.200
7206	NONE (LURE 107 1985)	-6553.325	3307.458	3674.582
7850	CDP STATION 7850 (1988)	-5780.219	3671.525	4479.685
7851	CDP STATION 7851 (1988)	-5781.496	3672.145	4480.196
7897	TLRS 7897	-6572.781	3338.409	3681.227
---	HARVARD 1977	7.450	34.645	56.292
---	HARVARD RM 3 1979	24.436	-5.484	1.970
---	HARVARD RM 4 1980	36.090	3.217	20.320
---	HARVARD RM 6 1980	9.822	11.079	21.206

SITE SKETCH

Revised 12/17/97

Current Site Name: Fort Davis
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HORIZON PROFILE

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OCCUPATION HISTORY

Revised 12/17/97

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SLR Occupations

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date
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No Previous Occupations

VLBI Occupations

Monument Number	Occupying System	Occupation Designator	Starting Date	Ending Date
7216	HRAS 085	72167201	11-Apr-80	31-Dec-90
7613	VLBA	76139801	01-Jan-90	-----
7900	MV-3	79005301	08-Oct-88	10-Oct-88

GPS Occupations

Monument Name	Starting Date	Ending Date	Network
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A permanent GPS receiver is located at the McDonald site.

Footprint Surveys

Survey	Starting Date	Source
Footprint	17-May-92	U. of Texas