

U.S. Radio Astronomy Observatories

Please send corrections or updates to bpa@nas.edu

[National Astronomy and Ionosphere Center--Arecibo Observatory](#)

Box 995

Arecibo, PR 00613-0995

Phone: (787) 878-2612

Contact: Daniel Altschuler

Sponsor: National Science Foundation through Cornell University

Location: Arecibo, Puerto Rico

For data on the telescopes, location, frequencies, etc., see the [NAIC website](#).

[Caltech Submillimeter Observatory](#)

Division of Physics, Mathematics, and Astronomy

California Institute of Technology

Pasadena, CA 91125

Contact: T. G. Phillips

Sponsor: National Science Foundation

Location: Mauna Kea, Hawaii

Latitude: 19° 49' 34"

Longitude: 155° 28.3'

Altitude: 4100 m

Telescope: Steerable paraboloid Leighton design

Diameter: 10.4 m

Area: 84 m²

Height: 15 m

Coverage: 0°-360° az., 0°-90° el.

Remarks:

Observation Type: Galactic, extragalactic, spectral line, continuum

Frequency band(s):

250 GHz

350 GHz

450 GHz

650 GHz

850 GHz

[Crawford Hill \(horn antenna, see below for millimeter telescope\)](#)

AT&T Bell Laboratories

Holmdel, NJ 07733

Contact: Robert W. Wilson

Location: Holmdel, NJ

Latitude: +40° 23.5'

Longitude: -74° 11.2' E

Altitude: 100 m

Telescope: 22-ft. horn antenna

Diameter: 7 m

Area: 23 m² at 0.60 eff.

Height: 10 m

Coverage: 0°-360° az., 0°-90° el.

Remarks: Antenna is usable up to 40 GHz. No observations have been performed since 1982.

Observation Type: HI line survey

Frequency band(s):

Tunable 1400 MHz

Crawford Hill (mm telescope)

AT&T Bell Laboratories

Holmdel, NJ 07733

Contact: Robert W. Wilson

Reference: T. S. Chu et al., Bell System Technical Journal 57, 1257-1288, May-June, 1978

Location: Holmdel, NJ

Latitude: +40° 23.5'

Longitude: -74° 11.2' E

Altitude: 100 m

Telescope: Offset cassegrain mm telescope

Diameter: 7 m

Area: 23 m² at 0.60 eff.

Height: 12 m

Coverage: 0°-360° az., 0°-90° el.

Observation Type: mm-wavelength spectral line and continuum

Frequency band(s):

Tunable from 70-250 GHz

[Deep Space Network--Goldstone Deep Space Communications Complex \(DSS 12\)](#)

[\(scroll down for more DSN sites worldwide\)](#)

Jet Propulsion Laboratory, California Institute of Technology

4800 Oak Grove Drive

Pasadena, CA 91109

Sponsor: National Aeronautics and Space Administration (NASA)

Reference: Deep Space Network Flight Project Interface Design Handbook 810-5, Rev. D, Vol. II, JPL

Location: Goldstone, California

Latitude: 35° 17' 59.853" N

Longitude: 243° 11' 43.414" E

Altitude: 1001.3 m

Telescope: Equatorial-parabolic cassegrain antenna

Diameter: 34 m

Area: 2215 m² at 2.2 GHz

1671 m² at 8.4 GHz

Height: Approximately 18 m

Coverage: No coverage south of 35° el. at 180° az.

Remarks: These are equatorial antennas whose coverage is stated approximately.

Observation Type: Spacecraft communications and radio astronomy

Frequency band(s):

2250 MHz

8.42 GHz

[Deep Space Network--Goldstone Deep Space Communications Complex \(DSS 13\)](#)

Jet Propulsion Laboratory
California Institute of Technology
4800 Oak Grove Drive
Pasadena, CA 91109

Sponsor: National Aeronautics and Space Administration (NASA)

Reference: DSS 13 Master Plan May 1977, JPL Deep Space Research Station (DSS 13), Subsystem Functional Requirements, May 1987, JPL

Location: Goldstone, California

Latitude: 35.0665426° N

Longitude: 243.20510° E

Altitude: 1093 m

Telescope: Parabolic antenna

Diameter: 26 m

Area: 1253 m² at 2.3 GHz

1349 m² at 8.4 GHz

Height: 14 m

Coverage: 0°-360° az., 0°-90° el.

Remarks: Will be upgraded to a 34-m GHz beam waveguide antenna by the end of 1990. The search for extraterrestrial intelligence will examine the band from 1-10 GHz.

Observation Type: Spacecraft communication research, planetary radar, radio astronomy

Frequency band(s):

2050-2700 MHz

8.05-8.9 GHz

[Deep Space Network--Goldstone Deep Space Communications Complex \(DSS 14\)](#)

Jet Propulsion Laboratory
California Institute of Technology
4800 Oak Grove Drive
Pasadena, CA 91109

Sponsor: National Aeronautics and Space Administration (NASA)

Reference: Deep Space Network Flight Project Interface Design Handbook 810-5, Rev. D, Volume II, JPL

Location: Goldstone, CA

Latitude: : 35 25 33.25 N**Longitude:** 116 53 22.33 W**Altitude:** 1031.81 m**Telescope:** Parabolic cassegrain**Diameter:** 70 m**Area:** 7697 m² at 1.6 GHz11084 m² at 2.3 GHz10006 m² at 8.4 GHz7851 m² at 22 GHz**Height:** 33.5 m**Coverage:** 0°-360° az., 6°-90° el.**Remarks:** This facility has a 400-kW cw radar capability at 2.2 and 8.4 GHz.**Observation Type:** Spacecraft communication and navigation, radio astronomy**Frequency band(s):**

1670 MHz

2290 MHz

8.45 GHz

22 GHz

[Deep Space Network--Goldstone Deep Space Communications Complex \(DSS 15\)](#)

Jet Propulsion Laboratory
 California Institute of Technology
 4800 Oak Grove Drive
 Pasadena, CA 91109

Sponsor: National Aeronautics and Space Administration (NASA)**Reference:** Deep Space Network Flight Project Interface Design Handbook 810-5, Rev. D, Volume II, JPL**Location:** Goldstone, CA**Latitude:** 35° 25' 18.88"**Longitude:** 243° 06' 49.48"**Altitude:** 994.0 m**Telescope:** Parabolic cassegrain**Diameter:** 34 m**Area:** 2056 m² at 2.2 GHz2631 m² at 8.4 GHz**Height:** 18 m**Coverage:** 0°-360° az., 0°-90° el.**Remarks:** This station is used for VLBI observations for spacecraft navigation, radio astronomy, and geodesy.**Observation Type:** Spacecraft communications and radio astronomy**Frequency band(s):**

2250 MHz

8.45 GHz

[Deep Space Network--Canberra Deep Space Communications Complex](#)

(DSS 42)

Jet Propulsion Laboratory, California Institute of Technology
4800 Oak Grove Drive
Pasadena, CA 91109

Sponsor: National Aeronautics and Space Administration (NASA)

Reference: Deep Space Network Flight Project Interface Design Handbook 810-5, Rev. D, Volume II, JPL

Location: Tidbinbilla, Australia

Latitude: -35° 24' 08.0381"

Longitude: 148° 58' 48.2057" E

Altitude: 663.8 m

Telescope: Equatorial mount parabolic cassegrain antenna

Diameter: 34 m

Area: 2215 m² at 2.2 GHz

1671 m² at 8.4 GHz

Height: Approximately 18 m

Coverage: No coverage south of 35° el. at 180° az.

Remarks: These are equatorial mount antennas whose coverage is stated approximately.

Observation Type: Spacecraft communications and radio astronomy

Frequency band(s):

2250 MHz

8.42 GHz

Deep Space Network--Canberra Deep Space Communications Complex (DSS 43)

Jet Propulsion Laboratory, California Institute of Technology
4800 Oak Grove Drive
Pasadena, CA 91109

Sponsor: National Aeronautics and Space Administration (NASA)

Reference: Deep Space Network Flight Project Interface Design Handbook 810-5, Rev. D, Volume II, JPL

Location: Tidbinbilla, Australia

Latitude: -35° 24' 14.3407"

Longitude: 148° 58' 48.1908" E

Altitude: 669.7 m

Telescope: Parabolic cassegrain antenna

Diameter: 70 m

Area: 7697 m² at 1.6 GHz

11084 m² at 2.3 GHz

10006 m² at 8.4 GHz

7851 m² at 22 GHz

Height: 33.5 m

Coverage: 0°-360° az., 6°-90° el.

Remarks: This antenna is sometimes used as an array element with the 64-m antenna located in Parkes, Australia.

Observation Type: Spacecraft communication and navigation, radio astronomy

Frequency band(s):

1670 MHz

2290 MHz

8.45 GHz

22 GHz

[Deep Space Network--Canberra Deep Space Communications Complex \(DSS 45\)](#)

Jet Propulsion Laboratory, California Institute of Technology

4800 Oak Grove Drive

Pasadena, CA 91109

Sponsor: National Aeronautics and Space Administration (NASA)

Reference: Deep Space Network Flight Project Interface Design Handbook 810-5, Rev. D, Volume II, JPL

Location: Tidbinbilla, Australia

Latitude: -35° 24' 00.15"

Longitude: 148° 58' 35.32" E

Altitude: 672 m

Telescope: Parabolic cassegrain antenna

Diameter: 34 m

Area: 2056 m² at 2.2 GHz

2631 m² at 8.4 GHz

Height: 18 m

Coverage: 0°-360° az., 0°-90° el.

Remarks: This station is used for VLBI observations for spacecraft navigation, radio astronomy, and geodesy.

Observation Type: Spacecraft communications and radio astronomy

Frequency band(s):

2250 GHz

8.45 GHz

[Deep Space Network--Madrid Deep Space Communications Complex \(DSS 61\)](#)

Jet Propulsion Laboratory

California Institute of Technology

4800 Park Grove Drive

Pasadena, CA 91109

Sponsor: National Aeronautics and Space Administration (NASA)

Reference: Deep Space Network Flight Project Interface Design Handbook 810-5, Rev. D, Volume II, JPL

Location: Robledo, Spain

Latitude: 40° 25' 47.717"

Longitude: 355° 45' 08.278"

Altitude: 796.1 m

Telescope: Equatorial mount parabolic cassegrain antenna

Diameter: 34 m

Area: 2215 m² at 2.2 GHz

1671 m² at 8.4 GHz

Height: Approximately 18 m

Coverage: No coverage south of 35° el. at 180° az.

Remarks: These are equatorial mount antennas whose coverage is stated approximately.

Observation Type: Spacecraft communications and radio astronomy

Frequency band(s):

2250 MHz

8.42 GHz

[Deep Space Network--Madrid Deep Space Communications Complex \(DSS 63\)](#)

Jet Propulsion Laboratory

California Institute of Technology

4800 Oak Grove Drive

Pasadena, CA 91109

Sponsor: National Aeronautics and Space Administration (NASA)

Reference: Deep Space Network Flight Project Interface Design Handbook 810-5, Rev. D., Volume II, JPL

Location: Robledo, Spain

Latitude: 40° 25' 56.610" N

Longitude: 355° 45' 11.93" E

Altitude: 812.3 m

Telescope: Parabolic cassegrain antenna

Diameter: 70 m

Area: 7697 m² at 1.6 GHz

11084 m² at 2.3 GHz

10006 m² at 8.4 GHz

7851 m² at 22 GHz

Height: 33.5 m

Coverage: 0°-360° az., 6°-90° el.

Observation Type: Spacecraft communication and navigation, radio astronomy

Frequency band(s):

1670 MHz

2290 MHz

8.45 GHz

22 GHz

[Deep Space Network--Madrid Deep Space Communications Complex \(DSS 65\)](#)

Jet Propulsion Laboratory

California Institute of Technology

4800 Oak Grove Drive

Pasadena, CA 91109

Sponsor: National Aeronautics and Space Administration (NASA)

Reference: Deep Space Network Flight Project Interface Design Handbook 810-5, Rev. D, Volume II, JPL

Location: Robledo, Spain

Latitude: 40° 25' 42.121"

Longitude: 355° 44' 59.654"

Altitude: 781.5 m

Telescope: Parabolic cassegrain antenna

Diameter: 34 m

Area: 2056 m² at 2.2 GHz

2631 m² at 8.4 GHz

Height: 18 m

Coverage: 0°-360° az., 0°-90° el.

Remarks: This station is used for VLBI observations for spacecraft navigation, radio astronomy, and geodesy.

Observation Type: Spacecraft communications and radio astronomy

Frequency band(s):

2250 MHz

8.45 GHz

[Five College Radio Astronomy Observatory](#)

FCRAO

619 Lederle GRC

University of Massachusetts

Amherst, MA 01003

Contact: F. Peter Schloerb

Sponsor: National Science Foundation and the University of Massachusetts

Reference: Kraus, J., Radio Astronomy (2nd ed.); Predmore, C.R. et al., Trans. IEEE MTT 32, 498 (1984)

Location: New Salem, MA

Latitude: 42° 23.5' N

Longitude: 72° 20.7' W

Altitude: 314 m

Telescope: Steerable cassegrain paraboloid (radome, alt.-az. mount)

Diameter: 13.7 m

Area: 66 m² at 0.45 eff. (115 GHz)

Height: n/a

Coverage: 0°-360° az., 10°-87° el.

Remarks: 15 element focal plane array receiver at 3 mm

Observation Type: Planetary, cometary, galactic, and extragalactic spectroscopy and continuum

Frequency band(s):

86-115 GHz

[Hat Creek Radio Observatory--BIMA](#)

[\(scroll down for other telescopes at this site\)](#)

(6.1-m telescopes)

Radio Astronomy Laboratory

University of California

Berkeley, CA 94720

Phone: (510) 643-7673

Contact: Leo Blitz

Sponsor: National Science Foundation

Reference: The Berkeley-Illinois-Maryland-Associates Millimeter Array, 1996, Welch et al., PASP, 108, 93.

Location: Cassel, California

Latitude: +40° 49' 04" N

Longitude: 121° 28' 24" W

Altitude: 1043 m

Telescope: Array of ten steerable paraboloids

Diameter: 6.1 m

Area: 51 m² at 0.60 eff.

Height: 6 m

Coverage: Full sky

Remarks: 24-h operation, all seasons

Observation Type: Aperture synthesis in continuum and spectral lines

Frequency band(s):

75-115 GHz

220-270 GHz

28-36 GHz

[Hat Creek Radio Observatory--BIMA](#)

(26-m telescope)

Radio Astronomy Laboratory

University of California

Berkeley, CA 94720

Phone: (415) 642-6424

Contact: William J. Welch

Sponsor: National Science Foundation

Reference:

Location: Cassel, California

Latitude: +40° 49' 04" N

Longitude: 121° 28' 24" W

Altitude: 1043 m

Telescope: Equatorial mounted, steerable paraboloid

Diameter: 26 m

Area: 250 m²

Height: 20 m

Coverage: Full sky

Remarks: 24-h operation

Observation Type: VLBI, spectral observations of galactic OH, HI, DI, H

Frequency band(s):

320-335 MHz
 1300-1800 MHz
 2000-2400 MHz
 4500-5000 MHz
 8.000-8.500 GHz
 10.500-11.000 GHz

Haystack Observatory

Northeast Radio Observatory Corporation
 Route 40
 Westford, MA 01886

Sponsor: National Science Foundation**Reference:** Bulletin AAS 28, 512-525 (1996)

An Introduction to the Haystack Observatory, April 1987

Location: Tyngsboro, MA**Latitude:** 42° 37.4'

71° 29.3' W

Altitude: 122 m**Telescope:** Cassegrain paraboloid, alt.-az. mounted**Diameter:** 36 m**Area:** 440 m² at 8 GHz410 m² at 22 GHz400 m² at 43 GHz160 m² at 86 GHz**Height:** 23.3 m**Coverage:** All sky**Observation Type:** Spectral line, continuum, and VLBI at all frequencies**Frequency band(s):**

2240-2340 MHz

7.5-8.7 GHz

21.2-25.4 GHz

35-49 GHz

85-115 GHz

University of Indiana Radio Observatory

Lilly Hall

University of Indiana

Indianapolis, IN

39	42	38.2	N
086	08	05.5	W

Sponsor:**Reference:****Location:** Indianapolis, IN**Latitude:****Longitude:****Altitude:****Telescope:** Parabolic dish

Diameter: 5 m

Area:

Height:

Coverage:

Observation Type:

Frequency band(s):

C band, at about 3.78 GHz, (with brief dual KU and C band operation) and 1.42 GHz.

[Morehead Radio Telescope \(13.25-m telescope\)](#)

Morehead State University

Astrophysics Laboratory

150 University Blvd.

Morehead, KY 40351

Phone: (606) 783-2381

Contact: Dr. Benjamin K. Malphrus

Sponsor: NSF, NASA, Morehead State University

Location: Morehead, KY

Latitude: 38.183° N

Longitude: 83.433° W

Altitude: 1337 ft.

Telescope: Full-motion partial paraboloidal section

Major Axis: 13.25 m

Minor Axis: 3.35 m

Approximate total Surface Area: 44 m²

Coverage: 0° - 360° az., 0° - 90° el.

Frequency Band(s):

Currently Operating:

1.38-1.42 GHz

Planned: 1.6- 1.7 GHz

2.4- 4.2 GHz

22-24 GHz

[National Radio Astronomy Observatory--Green Bank](#) [\(scroll down for other telescopes at this site and information on the National Radio Quiet Zone\)](#)

The [100-m telescope](#) is operational.

[National Radio Astronomy Observatory--Green Bank](#)

42.7-m Telescope

P.O. Box 2

Green Bank, WV 24944-0002

Phone: (304) 456-2011

Sponsor: National Science Foundation

Location: Green Bank, WV

Latitude: 38° 26' 08" N

Longitude: 79° 49' 42" W

Altitude: 825 m

Telescope: Paraboloid, equatorial mount

Diameter: 42.7 m

Area: 790 m² at 0.55 eff.

Coverage:

Dec.: +88° to -46°

Hour angle: ±7h, dec. >-16°

±4h58min, -36° < dec. <-16°

±3h18min, dec. <-36°

Remarks: Frequency, bandwidth, temperature, and polarization are listed for several different receivers.

Observation Type: Continuum, spectral line, and VLBI

Frequency band(s):

50-88 MHz

110-240 MHz

450-500 MHz

280-350 MHz

350-410 MHz

450-500 MHz

500-750 MHz

750-1000 MHz

1.00-1.45 GHz

4.47-5.05 GHz

1.3-1.5 GHz

1.30-1.80 GHz

2.64-2.75 GHz

2.9-3.4 GHz

4.6-5.0 GHz

3.12-3.37 GHz

4.6-5.1 GHz

4.7-7.2 GHz

7.6-11.2 GHz

12-16.2 GHz

18.2-25.2 GHz

[National Radio Astronomy Observatory--Green Bank](#)

Two-Element Interferometer

P.O. Box 2

Green Bank, WV 24944-0002

Phone: (304) 456-2011

Sponsor: U.S. Naval Research Laboratory

Location: Green Bank, WV

Latitude: 38° 26' 08" N

Longitude: 79° 49' 42" W

Altitude: 825 m

Telescope: Two paraboloids, equatorial mounts

Diameter: 25.9 m

Area: 290 m² at 0.55 eff.

Height: n/a

Coverage:

Declination: +86° to -46°

Hour angle: ±5h 40min, dec. >0°

±4h 40min, dec. <0°

Remarks: New receivers installed by April 1989.

Observation Type: Continuum flux-density monitoring for extreme scattering events

Frequency band(s):

2.1-2.3 GHz

8.2-8.6 GHz

[National Radio Astronomy Observatory--Green Bank](#)

25.9-m Telescope

P.O. Box 2

Green Bank, WV 24944-0002

Phone: (304) 456-2011

Sponsor: U.S. Naval Research Laboratory

Location: Green Bank, WV

Latitude: 38° 26' 08" N

Longitude: 79° 49' 42" W

Altitude: 825 m

Telescope: Paraboloid, equatorial mount

Diameter: 25.9 m

Area: 290 m² at 0.55 eff.

Coverage:

Declination: +86° to -46°

Hour angle: ±5h 40min, dec. >0°

±4h 40min, dec. <0°

Observation Type: VLBI monitoring of UT1 and polar motion

Frequency band(s):

2.1-2.3 GHz

8.2-8.6 GHz

[Steward Observatory--Kitt Peak](#)

12-m Telescope

Steward Observatory

Tucson, Arizona 85721

Phone:

Contact:

Sponsor: National Science Foundation

Reference: Gordon, M. A., Sky & Telescope 67, 326 (1984); Findlay, J. W. and Payne, J. M., Proceedings of the Third International Conference on Antennas and Propagation, ICAP-83, Part 1, 55-59 (1983).

Location: Kitt Peak, AZ
Latitude: 31° 57' 11.990" N
Longitude: +111° 36' 53.475" W
Altitude: 1938 m
Telescope: Paraboloid, alt-azimuth mount
Diameter: 12.0 m
Area: 113 m²
Coverage: Elevation > 13°
Remarks: Scheduled thrice annually, based on scientific merit of applications
Observation Type: Continuum, spectral line, and VLBI
Frequency band(s):
58 - 300 GHz

[National Radio Astronomy Observatory--Very Large Array \(VLA\)](#)

P.O. Box 0
Socorro, NM 87801-0387
Phone: (505) 835-7000
Sponsor: National Science Foundation
Reference: Napier, Thompson, and Ekers; Proc. IEEE 71, 295 (1983)
Location: Plains of San Agustin, New Mexico
Latitude: 34° 04' 43.497" N
Longitude: 107° 37' 03.819" W
Altitude: 2126 m (6975 ft)
Telescope: 27 shaped paraboloids, alt-azimuth mounts, 4 standard three-armed Wye configurations, maximum baselines 1-36 km, 3 hybrid configurations
Diameter: 25 m, each antenna
Aperture eff.:
400 cm: 0.50
92 cm: 0.40
20 cm: 0.51
6 cm: 0.65
3.6 cm: 0.62
2 cm: 0.52
1.3 cm: 0.43
Height: 29 m
Coverage: -85°-445° az., 8°-125° el.
Remarks: Configurations cycle through the 4 standards and 3 hybrids every 16 months. Scheduled by configuration on a trimester basis with proposal deadlines on the 15th of June, October, and February through 1990.
Observation Type: Continuum, spectral line, and VLBI
Frequency band(s):
73.0-74.6 MHz*
306-340 MHz
1340-1730 MHz
4500-5000 MHz
8000-8800 MHz
14.4-15.4 GHz

22.0-24.0 GHz

National Radio Astronomy Observatory--Very Long Baseline Array (VLBA)

P.O. Box 0

Socorro, NM 87801-0387

Phone: (505) 835-7000

Sponsor: National Science Foundation

Reference: Kellermann and Thompson, Science 229, 123-130 (1985)

Location: Operations center and correlator in Socorro, NM; antenna sites at the following locations, latitudes, longitudes, and altitudes:

Pie Town, NM	34.30° N	108.12° W	2371 m
Kitt Peak, AZ	31.96° N	111.61° W	1916 m
Los Alamos, NM	35.78° N	106.25° W	1967 m
Fort Davis, TX	30.63° N	103.94° W	1615 m
North Liberty, IA	41.77° N	91.57° W	241 m
Brewster, WA	48.13° N	119.68° W	255 m
Owens Valley, CA	37.23° N	118.28° W	1207 m
St. Croix, VI	17.76° N	64.58° W	16 m
Mauna Kea, HI	19.81° N	155.46° W	3725 m
Hancock, NH	42.93° N	71.98° W	309 m

Telescope: 10 shaped paraboloids, alt-azimuth mounts

Diameter: 25 m, each antenna

Coverage: Full sky

Remarks: 10 antennas will be used for very long baseline interferometry (VLBI), with hydrogen maser standards and tape recording of signals. Becomes fully operational in 1992.

Observation Type: VLBI, line and continuum

Frequency band(s):

312-342 MHz
580-640 MHz
1.35-1.75 GHz
2.15-2.35 GHz
4.6-5.1 GHz
8.0-8.8 GHz
10.2-11.2 GHz
14.4-15.4 GHz
21.7-24.1 GHz
42.3-43.5 GHz

Ohio State University Radio Observatory

2015 Neil Avenue

Columbus, OH 43210

Contact: Robert Dixon

Sponsor: NASA and Ohio State University

Location: Near Delaware, OH

Latitude: 40° 15.1' N

Longitude: 83° 02.9' W

Telescope: Kraus-type paraboloid
Diameter: 100 x 30 m
Area: 2000 m²
Height: 30 m
Coverage: 150°-210° az., 5°-120° el.
Remarks: Continuous observations
Observation Type: SETI, OH and H lines, continuum
Frequency band(s):
1575 MHz

[Owens Valley Radio Observatory Facilities](#) [\(scroll down for other telescopes at this site\)](#)

(39.6-m telescope)
California Institute of Technology
Mail Code 105-24
Pasadena, CA 91125
Phone: (818) 395-4973
Contact: Dr. A.I. Sargent
Sponsor: NSF, NASA, California Institute of Technology
Location: Big Pine, California
Latitude: 37° N
Longitude: 118° W
Altitude: 1236 m
Telescope: Steerable paraboloid
Diameter: 39.6 m
Area: 616 m² at 0.50 eff.
Height: 23 m
Coverage: 0°-360° az., -20° to 90° el.
Frequency band(s):
319-339 MHz
580-620 MHz
1250-1490 MHz
1575-1765 MHz
2250-2330 MHz
4.75-5.15 GHz
2220-2370 MHz
8.085 GHz
10.695 GHz
19-24 GHz
42.6-43.4 GHz

[Owens Valley Radio Observatory Facilities](#)

(six-element interferometer)
California Institute of Technology
Mail Code 105-24
Pasadena, CA 91125

Phone: (818) 395-4973

Contact: Dr. A.I. Sargent

Sponsor: NSF, NASA, California Institute of Technology

Location: Big Pine, California

Latitude: 37° 14' 02.6" N

Longitude: 118° 16' 56.2" W

Altitude: 1222 m

Telescope: 6-element interferometer, steerable paraboloid

Diameter: 10.4 m

Area: 42 m² at 0.55 eff.

Height: 6 m

Coverage: 0°-360° az., 0°-90° el.

Observation Type: Galactic, extragalactic, planetary, spectral lines, continuum, VLBI

Frequency band(s):

26-36 GHz (HEMT) 80-115 GHz (SIS) 210-270 GHz (SIS)

Owens Valley Radio Observatory Facilities

(two-element interferometer)

California Institute of Technology

Mail Code 105-24

Pasadena, CA 91125

Phone: (818) 395-4973

Contact: Dr. A.I. Sargent

Sponsor: NSF, NASA, California Institute of Technology

Location: Big Pine, California

Latitude: 37° 13' 55.7" N

Longitude: 118° 17' 37.19" W

Altitude: 1226 m

Telescope: Two-element interferometer, steerable equatorial mounted paraboloid

Diameter: 27.4 m

Area: 295 m² at 0.50 eff.

Height: 15 m

Coverage: ±6h RA, +90° to -37° dec.

Remarks: Occasionally used with the 40-m antenna as a 3-element interferometer

Observation Type: Solar, galactic, continuum

Frequency band(s):

Frequency agile system:

500 MHz -18 GHz (solar observations)

2.4-8.2 GHz (low noise operation)

Pisgah Astronomical Research Institute

1 PARI Drive

Rosman, NC 28772-9614

Phone: 828- 862-5554

Contact: info@pari.edu

Sponsor: Pisgah Astronomical Research Institute, a not for profit 501c3/509 public

foundation.

Location: Pisgah National Forest near Balsam Grove, NC

Latitude: 35° 11' 59" N

Longitude: 82° 52' 19" W

Altitude: 895 m

Telescope: Two 26-m, a 12.2-m, a 4.6-m antenna, and a pair of HF LPY.

Approximate total Surface Area: 1200 m²

Coverage: 0°-360° az., 0°-90° el.

Frequency Band(s):

Currently Operating:

Current radiometers on the west 26-m telescope include the frequencies 1.4 and 1.6 GHz for HI / OH measurements, 4.829 GHz for formaldehyde detection, and 6.668 and 12.178 GHz for methanol detection. A 327-MHz receiver is in place for Pulsar timing tests. The east 26-m telescope has a 1.4 GHz radiometer, 3.4 - 4.4 GHz, and 11.7 - 12.2 GHz feeds. A modification for 327 MHz and 4.829 GHz is underway.

The 12.2-m telescope has prime focus feeds supporting 6 cm (3.3-4.4 GHz) and 3 cm (10.9-12.75 GHz), and a removable cassegrain subreflector and feed assembly is available for 6-5 cm (6.6-7.7 GHz) operation. The precision surface of the 12.2-m antenna will support planned operation at 1, 0.8, 0.7, and 0.6 cm (21.7-24.1, 36.0-36.5, 41.0 -45.0, and 48.0-49.0 GHz).

The 4.6-m antenna is configured for 21 cm (1.42 GHz), 4.829 , 6.668, and 11.178 GHz reception. The antenna was part of early NASA experiments at 30GHz with the ATS (advanced technology) satellite. So higher frequencies may be added in the future.

A NASA JOVE project 17 - 30 MHz antenna system consisting of two large 7 element log periodic yagis phased for LHCP and RHCP reception feeds Jupiter and Solar flare data to the Internet.

[Radio Solar Telescope Network \(RSTN\)--Palehua Solar Observatory](#) [\(scroll down for other RSTN sites\)](#)

Detachment 5, 55th Space Weather Squadron
(55 SWXS)

10 Hickam Court

Hickam AFB, HI 96853-5254

Phone: (808) 672-0234

DSN: 315-455-2427

Contact (Director, CO): Maj. David A. Miller

Sponsor: Air Force Space Command

Location: Palehua, Hawaii

Latitude: 21.37914° N

Longitude: 158.11412° W

Altitude: 518.16 m

Telescope: Fixed semi-bicone antenna with 34 elements; 3 tracking paraboloid antennas

Diameter: 300-m separation for bicone; 8.5, 2.4, and 0.9 m for others

Area: n/a for bicone; 57.2, 4.67, and 0.66 m² at 0.50 eff. for others

6.1 m for bicone; 10.8, 2.3, and 2.3 m

Coverage: ±23° az., 0°-180° el.

Remarks: Operational facility

Observation Type: Solar

Frequency band(s):

50 MHz for bicone;

for others

246.8 MHz

400.21 MHz

610.21 MHz

1415.92 MHz

2695.67 MHz

4962.07 MHz

8829.8 MHz

15441.85 MHz

Radio Solar Telescope Network (RSTN)--Sagamore Hill Solar Observatory

50 WS

715 Kepler Ave., Suite 60

Falcon AFB, CO 80912-7160

Phone: (719) 567-6211

DSN: 560-6211

(50WS/DO)

Contact: Maj. Charles A. Koehler

Sponsor: U.S. Air Force

Location: South Hamilton, Massachusetts [may have been moved to Holloman AFB, NM]

Latitude: 42.63083° N

Longitude: 70.81500° W

Altitude: 53.34 m

Telescope: Fixed semi-bicone antenna with 34 elements; 3 tracking parabolic antennas

Diameter: 300-m separation for bicone ; 8.5, 2.4, and 0.9 m for others

Area: n/a for bicone; 57.2 m², 4.67 m², 0.66 m² at 0.50 eff. for others

Height: 6.1 m; 10.8, 2.3, and 2.3 m

Coverage: ±23° az., 0°-180° el.

Remarks: Operational facility

Observation Type: Solar

Frequency band(s):

50 MHz for bicone;

for others

246.58 MHz

399.17 MHz

609.79 MHz

1415.9 MHz

2695.0 MHz

5022.38 MHz

8856.5 MHz

15356.2 MHz

Radio Solar Telescope Network (RSTN)--Learmonth Solar Observatory

50 WS 715 Kepler Ave., Suite 60
Falcon AFB, CO 80912-7160
Phone: (719) 567-6211
DSN: 560-6211
(50WS/DO)

Contact: Maj. Charles A. Koehler

Sponsor: U.S. Air Force

Location: Learmonth, Western Australia

Latitude: 22.2333° S

Longitude: 114.08333° E

Altitude: 10.9 m

Telescope: Fixed semi-bicone antenna with 34 elements; 3 tracking parabolic antennas

Diameter: 300-m separation for bicone; 8.5, 2.4, and 0.9 m for others

Area: n/a for bicone; 57.2 m², 4.67 m², and 0.66 m² at 0.50 eff. for others

Height: 6.1 m for bicone; 10.8, 2.3, and 2.3 m

Coverage: -23° to 23° az., 0°-180° el.

Remarks: Operational facility

Observation Type: Solar

Frequency band(s):

55 MHz for bicone;

for others

245.7 MHz

410.4 MHz

609.0 MHz

1415.5 MHz

2695.0 MHz

4965.5 MHz

8829.7 MHz

15421.0 MHz

Radio Solar Telescope Network (RSTN)--San Vito Solar Observatory

50 WS
715 Kepler Ave., Suite 60
Falcon AFB, CO 80912-7160
Phone: (719) 567-6211
DSN: 560-6211
(50WS/DO)

Contact: Maj. Charles A. Koehler

Sponsor: U.S. Air Force

Location: San Vito de Normanni, Italy

Latitude: 40.40248 N

Longitude: 17.43248 E

Altitude: 11.1 m

Telescope: Fixed semi-bicone antenna with 34 elements; 3 tracking paraboloid antennas

Diameter: 300-m separation for bicone; 8.5, 2.4, and 0.9 m for others

Area: n/a for bicone; 57.2, 4.67, and 0.66 m² at 0.50 eff. for others

Height: 6.1 m for bicone; 10.8, 2.3, and 2.3 m

Coverage: ±23° az., 0°-180° el.

Remarks: Operational facility

Observation Type: Solar

Frequency band(s):

50 MHz for bicone;

for others

245.32 MHz

389.84 MHz

609.62 MHz

1415.72 MHz

2695.67 MHz

4967.74 MHz

8834.9 MHz

15427.76 MHz

Smithsonian Astrophysical Observatory--Center for Astrophysics

60 Garden Street

Cambridge, MA 02138

Phone: (617) 495-7342

Contact: E.S. Palmer

Sponsor: Smithsonian Center for Astrophysics

Reference: Dame, T.M., Thaddeus, P.

Location: Cambridge, MA

Latitude: 42° 22.8' N

Longitude: 71° 07.8' W

Altitude: 24 m

Telescope: Steerable Cassegrain

Diameter: 1.2 m

Area: 1.1 m²

Height: 2 m

Coverage: 0°-360° az., 0°-85° el.

Remarks: Small telescope with a very sensitive receiver which has produced 22 PhDs and more than 100 papers since 1975.

Observation Type: Spectral line

Frequency band(s):

105-116 GHz

Radio Astronomy Institute, Stanford University

Space, Telecommunications and Radioscience Laboratory

Stanford University

Stanford, CA 94305-4035

Contact: R.N. Bracewell

Reference: Proc. IEEE 61, 1249 (1973)

Latitude: 37° 23.9' N

Longitude: 8h 08min 45.2s

Altitude: 80 m

Telescope: Five collinear paraboloids

Diameter: 18 m

Area: 650 m²

Coverage: Full

Remarks: Dormant facility

Frequency band(s):

10.68 GHz