NASA Technical Memorandum 87775

World Atlas of Large Optical Telescopes

Second Edition

Stephen Paul Meszaros

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NASA
National Aeronautics
and Space Administration
Scientific and Technical Information Branch
1986

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AUTHOR'S NOTE

The information on the various telescopes in this atlas was obtained primarily through publications. Consequently the accuracy of the material presented is almost entirely dependent upon the sources selected. Where conflicts arose between sources, the most up-to-date and/or reliable source (in the author's opinion) was used. The major publications consulted are listed in the "References" section on page 38.

The author would appreciate any corrections and/or additions to the information in this atlas which the reader may have. Please send these to: Stephen P. Meszaros, Code 253.3, Goddard Space Flight Center, Greenbelt, Maryland 20771.

INTRODUCTION

The purpose of this atlas is to bring together in one place a series of maps and tables giving locations and information on the world's largest telescopes. This edition updates an earlier atlas of the same name (see "References"). A secondary purpose is to show prime observatory locations for the possible establishment of future new observatories.

Only optical telescopes engaged in astronomical research are considered in this atlas. Telescopes of mirror or lens diameter of one meter (approximately 39-inches) and larger are listed. Observatories having one or more telescopes in this size range are referred to as "Major Observatories" in the atlas. (Smaller telescopes are often present at these observatories too.) Generally, the information presented here represents the world astronomical instrument situation as of early 1986.

"Prime Observatory Locations" are also shown on the atlas maps. These are areas with a combination of both aridity and medium elevation, factors which are very beneficial to telescopic observation. Aridity usually suggests clear skies—a necessity for optical telescopes. Medium elevation places observatories above as much of the earth's moving atmosphere as possible in order to provide steady astronomical seeing (but not so high as to put them into extreme climatic regions).

The first map lists the 19 largest telescopes in the world and shows their general locations.

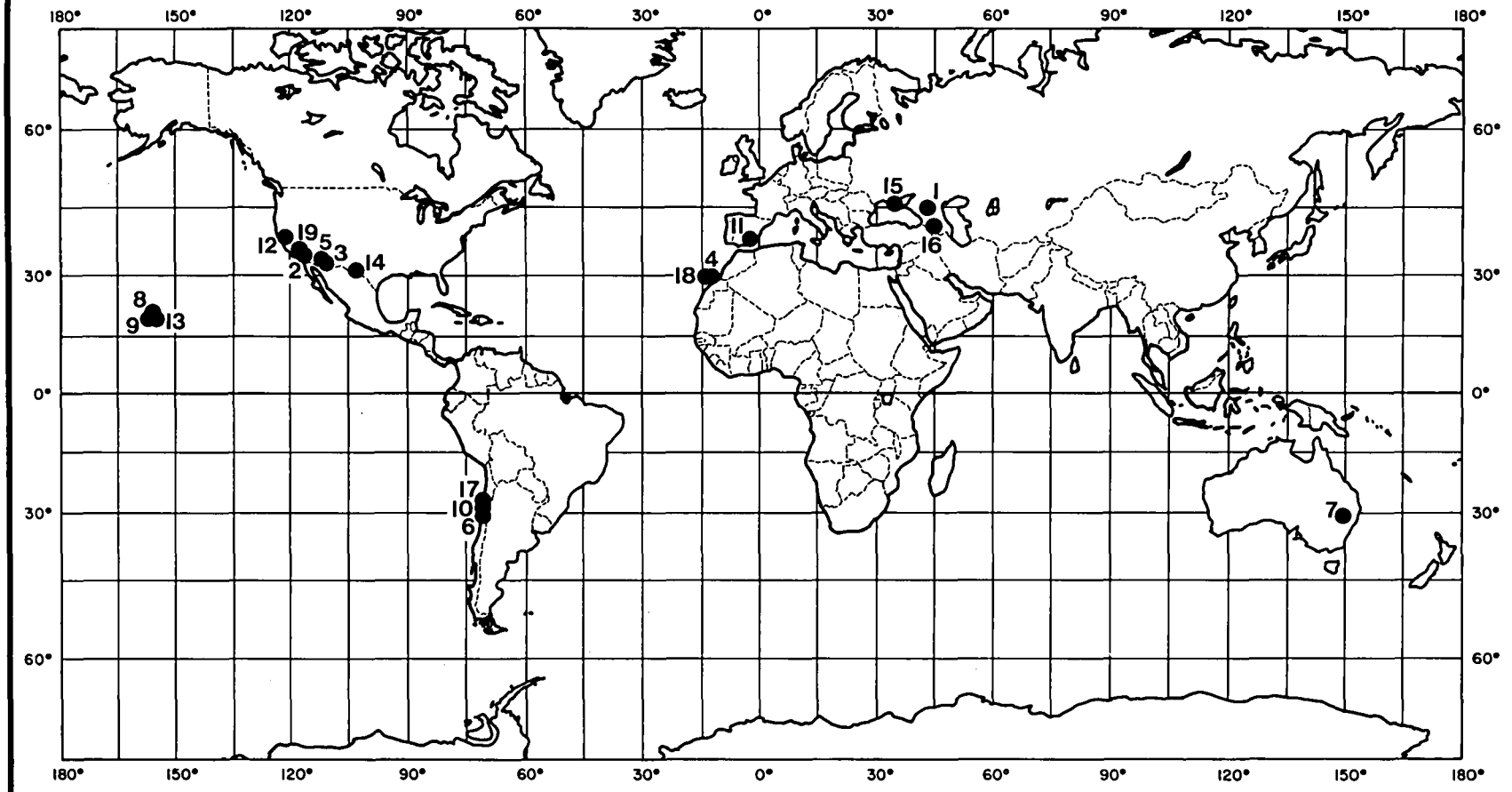
THE WORLD'S LARGEST TELESCOPES

(Mirror Diameter 2.5 Meters (100 Inches) and Greater)

Map No.	Size	Location	Observatory	Name
1	6.0m (236″)	USSR	Special Astrophysical	—
2	5.1m (200″)	US	Mt. Palomar	Hale
3	4.5m (176″)	US	Whipple	MMT[1]
4	4.2m (165″)	Canary Is.	Roque de los Muchachos	Herschel
5	4.0m (158″)	US	Kitt Peak National	Mayall
6	4.0m (158″)	Chile	Cerro Tololo	—
7	3.9m (153″)	Australia	Anglo-Australian	AAT[2]
8	3.8m (150″)	Hawaii	Mauna Kea	UKIRT[3]
9	3.6m (142″)	Hawaii	Mauna Kea	CFHT[4]
10	3.6m (142″)	Chile	European Southern	—
11	3.5m (138″)	Spain	German-Spanish	—
12	3.0m (120″)	US	Lick	Shane
13	3.0m (120″)	Hawaii	Mauna Kea	NASA-IRTF[5]
14	2.7m (107″)	US	McDonald	—
15	2.6m (102″)	USSR	Crimean Astrophysical	Shajn
16	2.6m (102″)	USSR	Byurakan	—
17	2.5m (101″)	Chile	Las Campanas	Du Pont
18	2.5m (100″)	Canary Is.	Roque de los Muchachos	Isaac Newton
19	2.5m (100″)	US	Mt. Wilson	Hooker

1. Multiple Mirror Telescope: Six 1.8m (72″) Mirrors Combined
2. Anglo-Australian Telescope
3. United Kingdom Infrared Telescope
4. Canada-France-Hawaii Telescope
5. NASA-Infrared Telescope Facility

THE WORLD'S LARGEST TELESCOPES



GUIDE TO THE ATLAS

Part I: The Maps

The following maps cover continent-sized regions of the earth's surface. Major Observatory locations are indicated by numbered triangles, the numbers referring to the accompanying list of observatories. Prime Observatory Locations are delineated on the maps by a hachured pattern. This pattern shows areas with a combination of less than 51 centimeters (20-inches) of rainfall per year and an elevation range between approximately 1000 and 4000 meters (3000 to 13,000 feet).

Part II: The Tables

The tables contain the following information:

Observatory – the observatory name and/or the name of the sponsoring institution.

Location – The observatory location, either the name of the mountain or a nearby town/city.

Type – the telescope type;
"Re" indicates reflecting telescope,
"Rf" refracting telescope,
"S" Schmidt telescope,
"Sol" solar telescope,
"IR" infrared telescope, and
"MMT" multiple-mirror telescope.

Size – the telescope mirror or lens diameter in meters and inches. (For Schmidt telescopes both the mirror and correcting lens diameters are given.)

Dates – the year the telescope started operation.

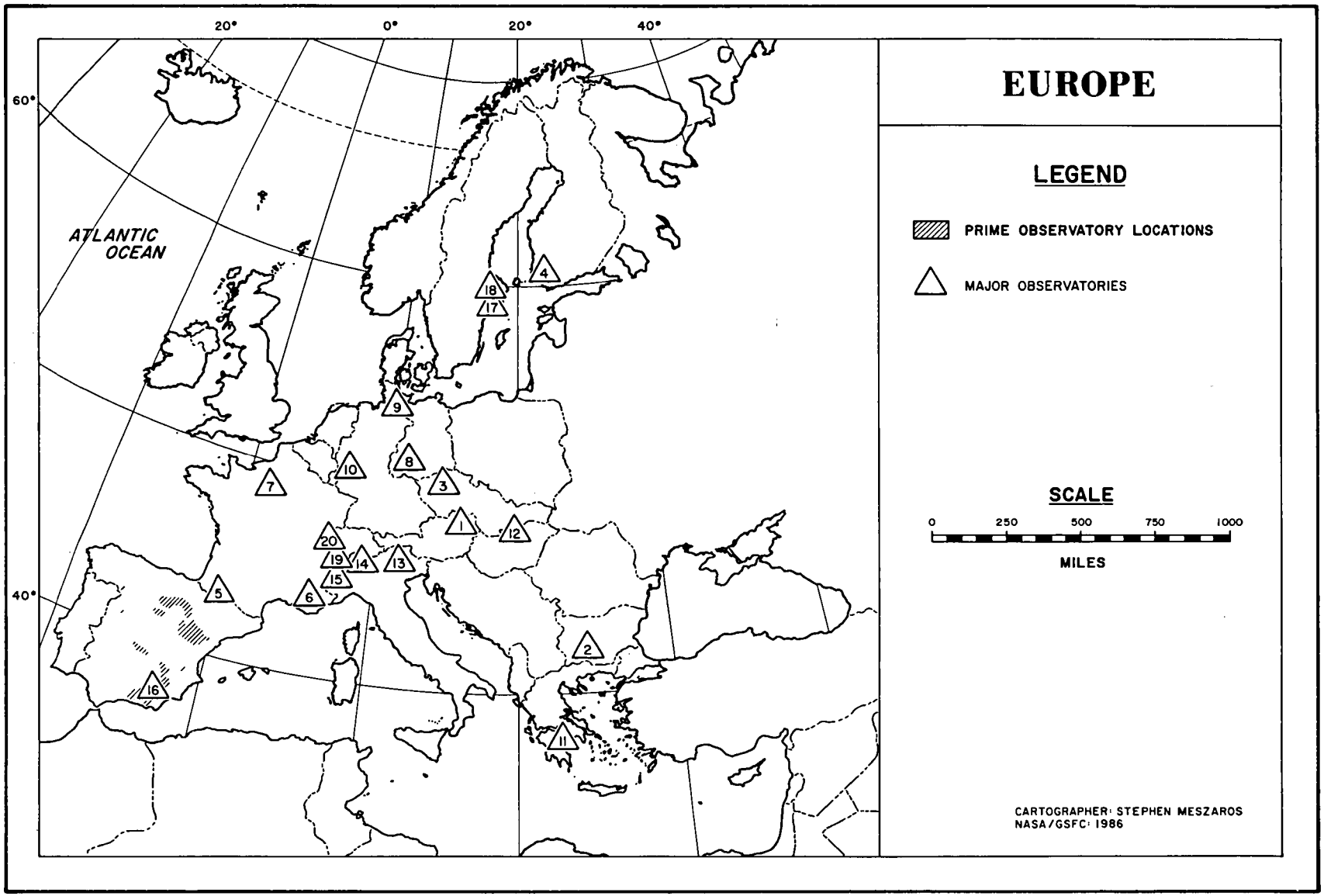
Notes – note numbers indicate additional information supplied in the "Notes" section at the end of the atlas, beginning on page 36.

Any information that is questionable or is lacking altogether is indicated by a question mark (?).

PART I: THE MAPS

MAJOR EUROPEAN OBSERVATORIES

Map Number	Observatory	Location
1	Figl Astrophysical	Austria
2	Mt. Rozhen	Bulgaria
3	Ondrejov	Czechoslovakia
4	Turku	Finland
5	Pic du Midi	France
6	Haute Provence	France
7	Paris	France
8	Schwarzschild	Germany
9	Hamburg	Germany
10	Astronomical Institute	Germany
11	National	Greece
12	Konkoly	Hungary
13	Astrophysical	Italy
14	Milan-Merate	Italy
15	Turin	Italy
16	German-Spanish	Spain
17	Stockholm	Sweden
18	Uppsala	Sweden
19	IR Astronomy	Switzerland
20	Geneva	Switzerland


20°
0°
20°
40°
60°
40°
ATLANTIC OCEAN
1
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9
10
11
12
13
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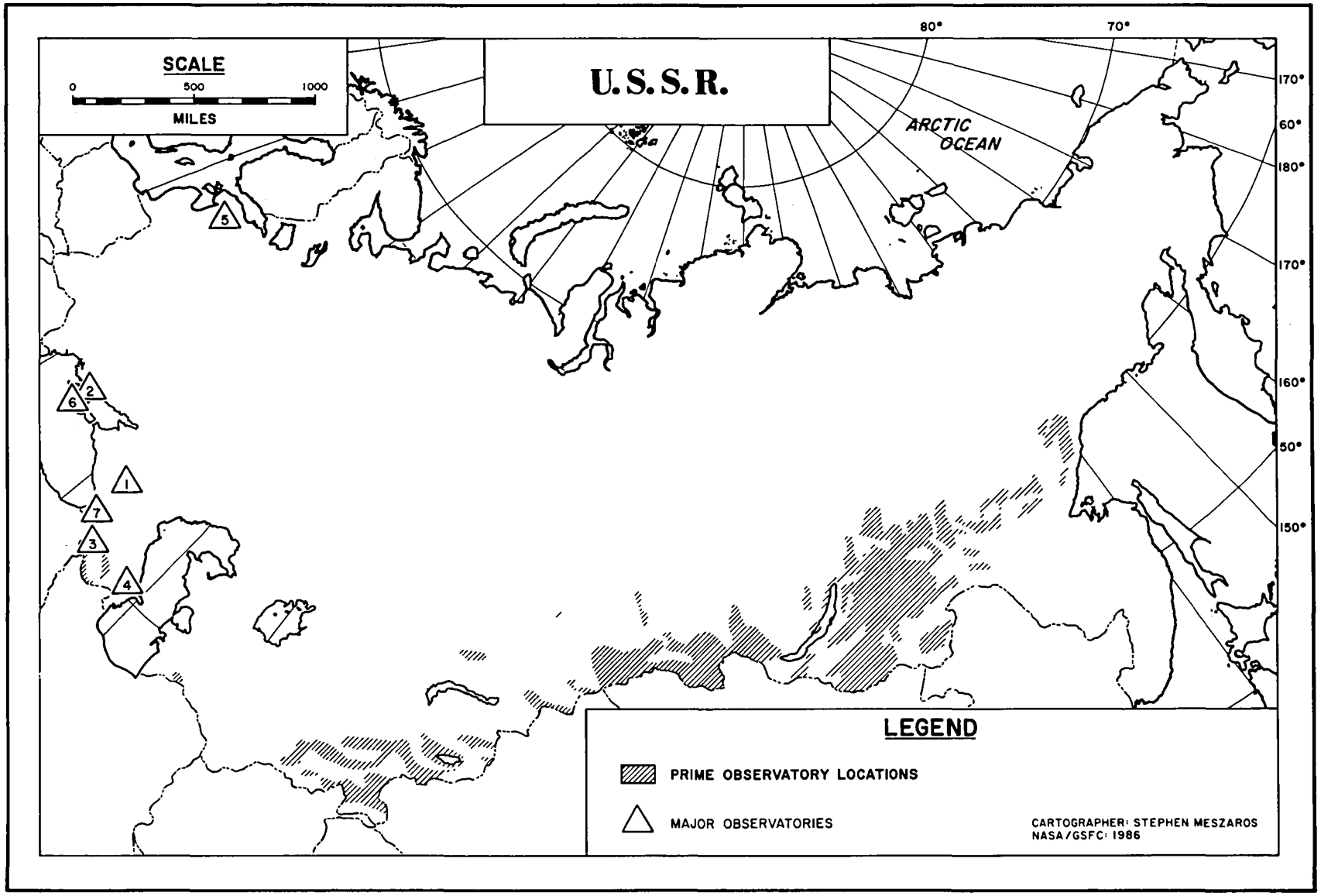
16
17
18
19
20
EUROPE
LEGEND
PRIME OBSERVATORY LOCATIONS
MAJOR OBSERVATORIES
SCALE
0
250
500
750
1000
MILES
CARTOGRAPHER: STEPHEN MESZAROS
NASA/GSFC: 1986

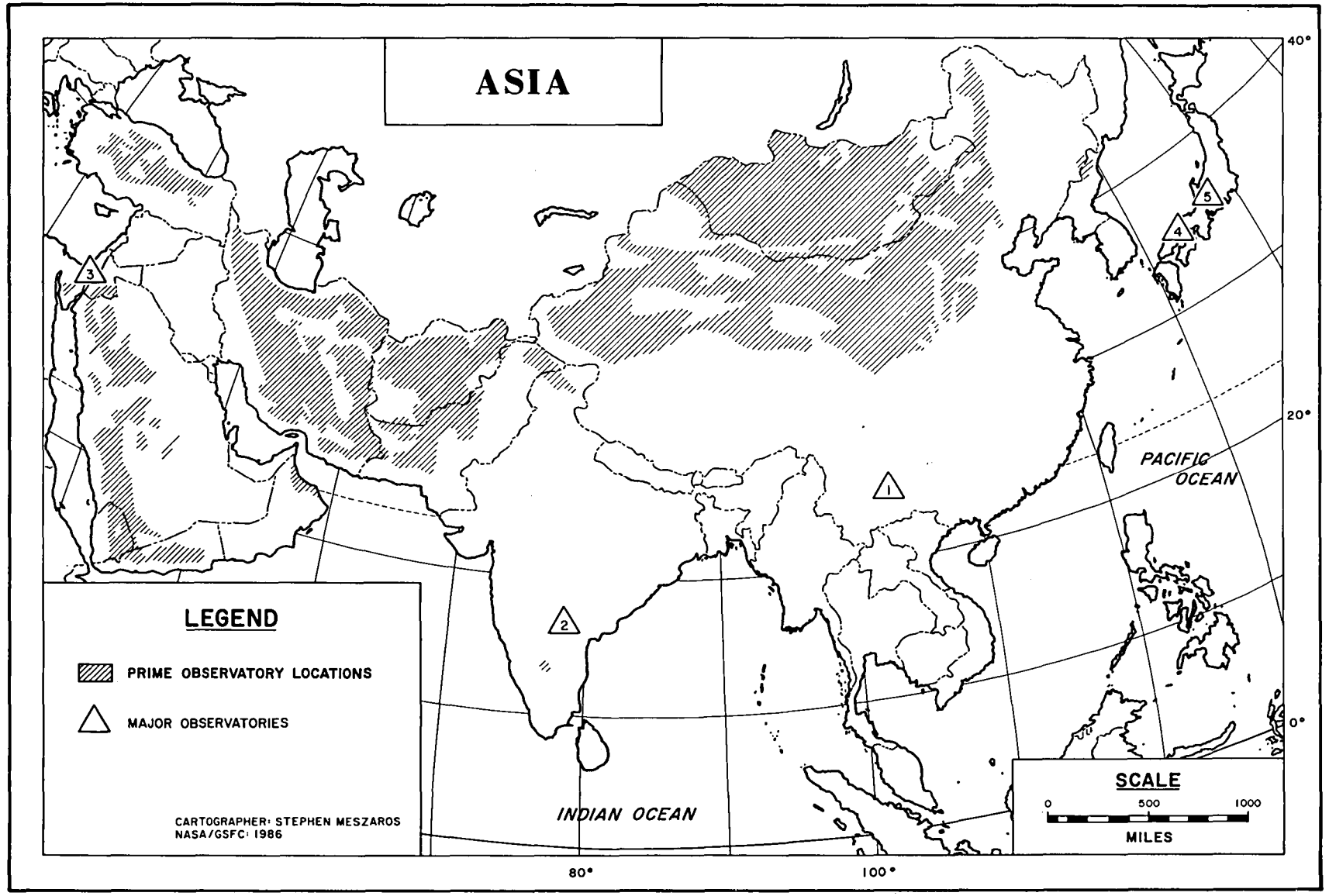
MAJOR USSR OBSERVATORIES

Map Number	Observatory	Location
1	Special Astrophysical	Zelenchukskaya
2	Crimean Astrophysical	Crimea
3	Byurakan	Soviet Armenia
4	Shemakha Astrophysical	Azerbaijan
5	Struve Astrophysical	Estonian SSR
6	Sternberg Astronomical	Crimea
7	Abastumani Astrophysical	Georgian SSR


SCALE
0
500
1000
MILES
U.S.S.R.
ARCTIC OCEAN
80°
70°
170°
60°
180°
170°
160°
50°
150°
1
2
3
4
5
6
7
LEGEND
PRIME OBSERVATORY LOCATIONS
MAJOR OBSERVATORIES
CARTOGRAPHER: STEPHEN MESZAROS
NASA/GSFC: 1986

MAJOR ASIAN OBSERVATORIES

Map Number	Observatory	Location
1	Yunnan	China
2	Nizamiah	India
3	Wise	Israel
4	Okayama Astrophysical	Japan
5	Kiso	Japan


ASIA
40°
20°
0°
80°
100°
PACIFIC OCEAN
INDIAN OCEAN
1
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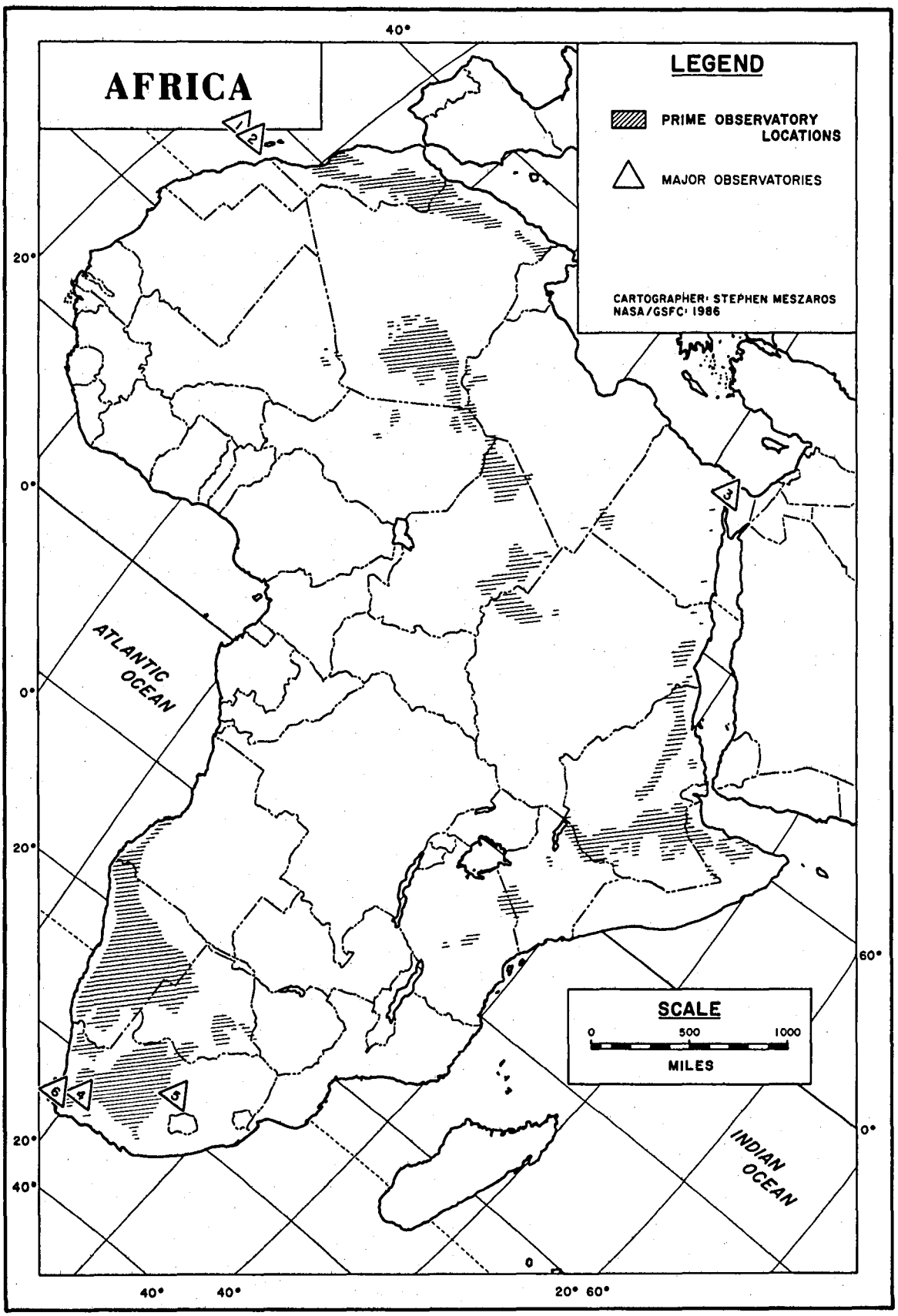
LEGEND
PRIME OBSERVATORY LOCATIONS
MAJOR OBSERVATORIES
CARTOGRAPHER: STEPHEN MESZAROS
NASA/GSFC: 1986
SCALE
0
500
1000
MILES

MAJOR AFRICAN OBSERVATORIES

Map Number	Observatory	Location
1	Roque de los Muchachos	Canary Islands
2	Del Teide	Canary Islands
3	Helwan	Egypt
4	South African Astronomical	South Africa
5	Boyden Station	South Africa
6	Royal	South Africa


AFRICA
LEGEND
PRIME OBSERVATORY LOCATIONS
MAJOR OBSERVATORIES
CARTOGRAPHER: STEPHEN MESZAROS
NASA/GSFC: 1986
SCALE
0
500
1000
MILES
ATLANTIC OCEAN
INDIAN OCEAN
40°
20°
0°
20°
40°
60°
0°
20°
40°
40°
20°
60°
1
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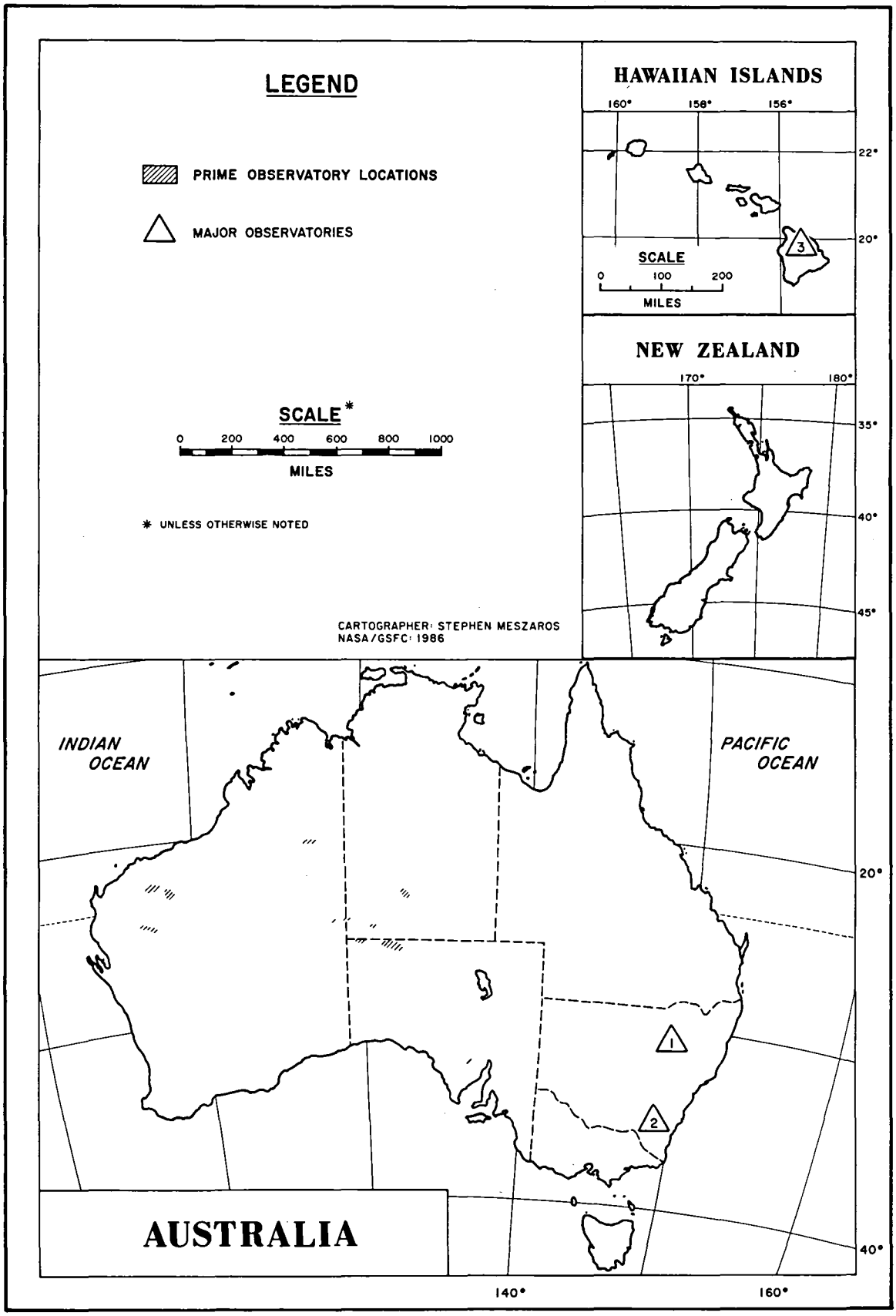
4
5
6

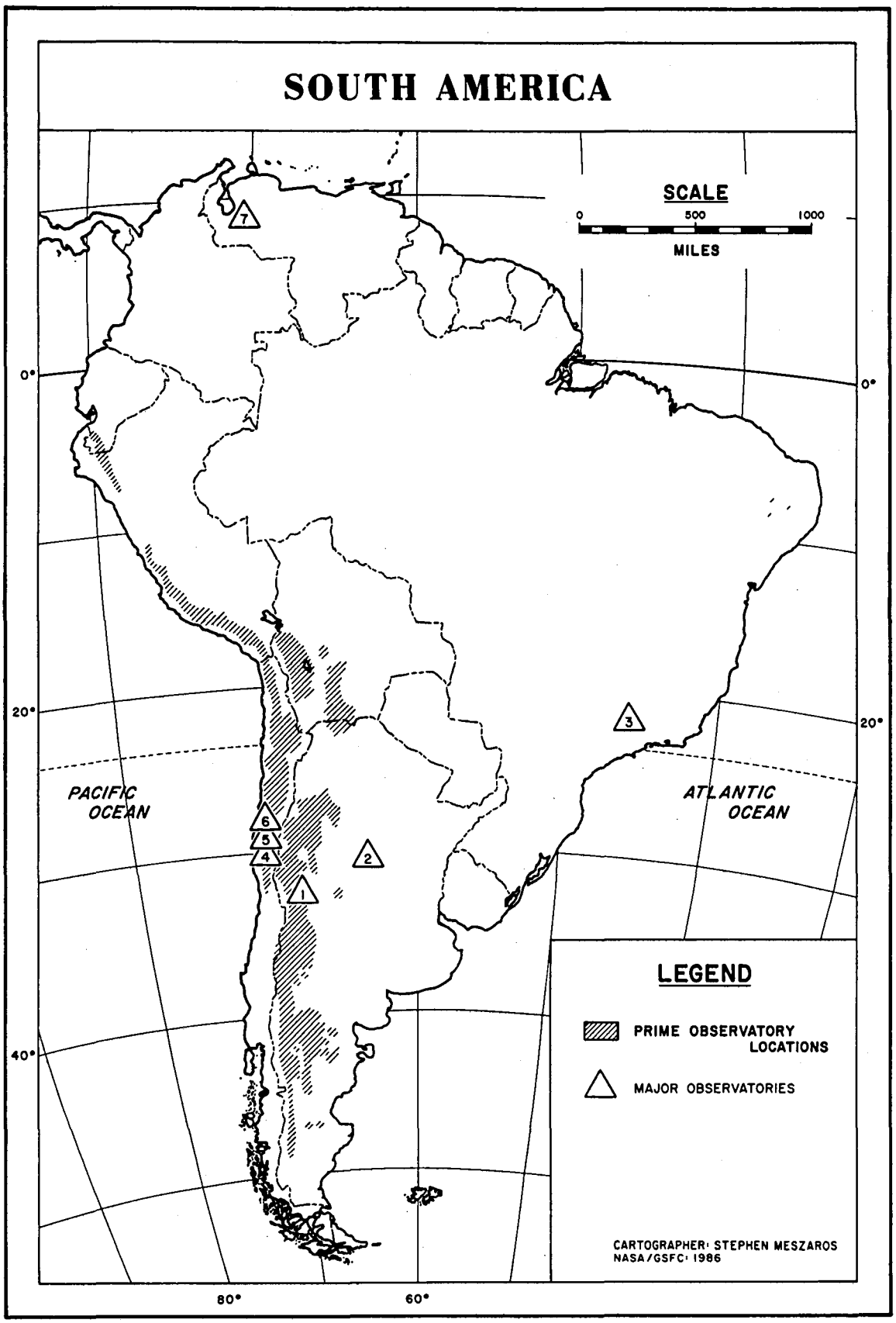
MAJOR OBSERVATORIES OF AUSTRALIA & THE PACIFIC

Map Number	Observatory	Location
1	Siding Spring	Australia
2	Mt. Stromlo	Australia
3	Mauna Kea	Hawaii


LEGEND
PRIME OBSERVATORY LOCATIONS
MAJOR OBSERVATORIES
SCALE*
0 200 400 600 800 1000
MILES
* UNLESS OTHERWISE NOTED
CARTOGRAPHER: STEPHEN MESZAROS
NASA/GSFC: 1986
HAWAIIAN ISLANDS
160° 158° 156°
22°
20°
SCALE
0 100 200
MILES
NEW ZEALAND
170° 180°
35°
40°
45°
INDIAN OCEAN
PACIFIC OCEAN
20°
40°
140°
160°
AUSTRALIA
1
2
3

MAJOR SOUTH AMERICAN OBSERVATORIES

Map Number	Observatory	Location
1	Univ. de La Plata	Argentina
2	National	Argentina
3	National	Brazil
4	Inter-American	Chile
5	European Southern	Chile
6	Carnegie Southern	Chile
7	Astronomical Investigation	Venezuela


SOUTH AMERICA
SCALE
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500
1000
MILES
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20°
40°
80°
60°
PACIFIC OCEAN
ATLANTIC OCEAN
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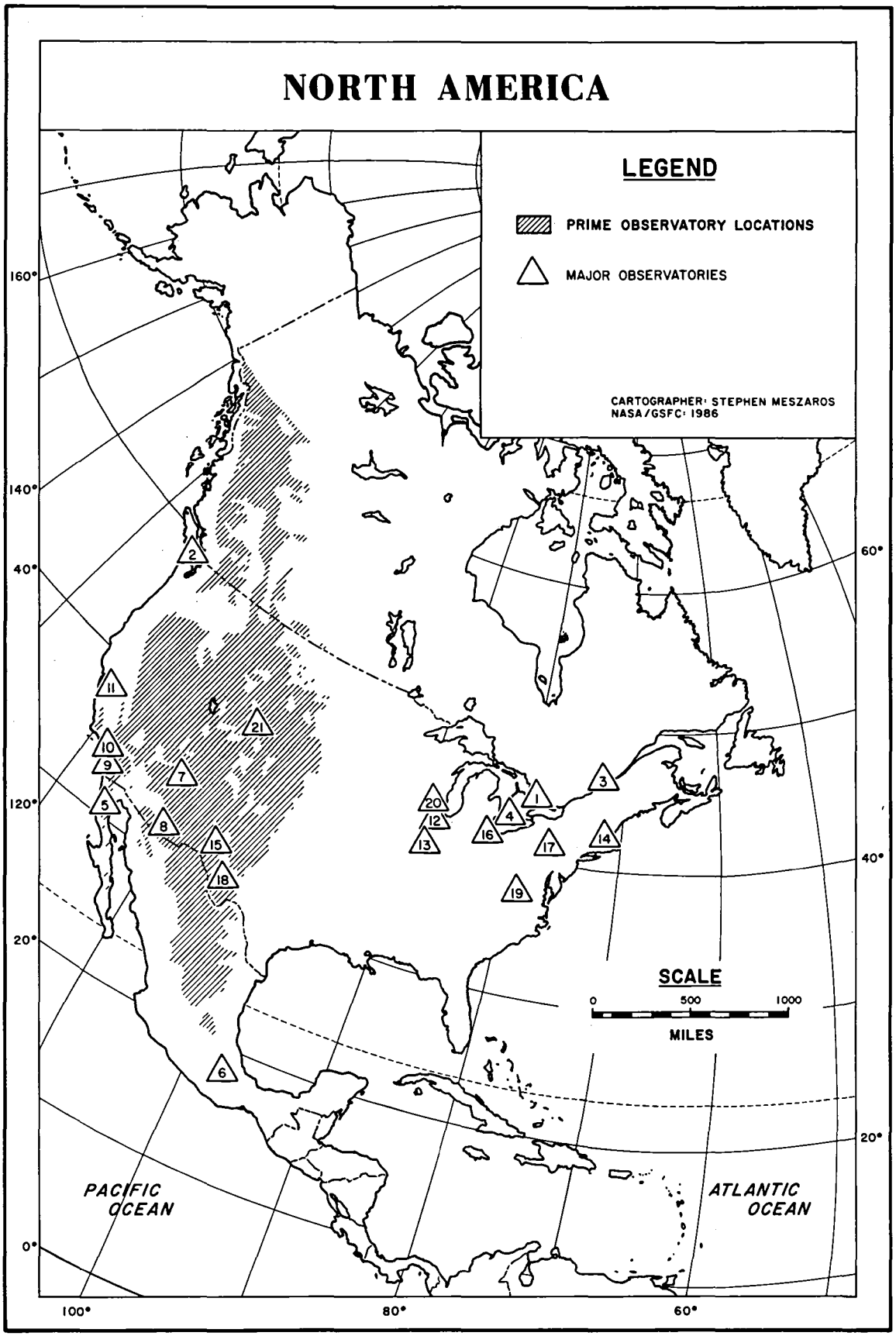
LEGEND
PRIME OBSERVATORY LOCATIONS
MAJOR OBSERVATORIES
CARTOGRAPHER: STEPHEN MESZAROS
NASA/GSFC: 1986

MAJOR NORTH AMERICAN OBSERVATORIES

Map Number	Observatory	Location
1	David Dunlap	Canada
2	Dominion Astrophysical	Canada
3	Astronomical	Canada
4	Western Ontario	Canada
5	National Astronomical	Mexico
6	National Astrophysical	Mexico
7	Lowell, Lowell-Ohio & U.S. Naval	United States
8	Mt. Lemmon, Catalina, Kitt Peak, Steward, McGraw-Hill & Whipple	United States
9	Mt. Palomar	United States
10	Mt. Wilson	United States
11	Lick	United States
12	Lindheimer	United States
13	Prairie	United States
14	Agassiz Station	United States
15	Sacramento Peak	United States
16	Ritter	United States
17	Penn State Univ.	United States
18	McDonald	United States
19	McCormick	United States
20	Yerkes	United States
21	Wyoming Infrared	United States


NORTH AMERICA
LEGEND
PRIME OBSERVATORY LOCATIONS
MAJOR OBSERVATORIES
CARTOGRAPHER: STEPHEN MESZAROS
NASA/GSFC: 1986
SCALE
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500
1000
MILES
PACIFIC OCEAN
ATLANTIC OCEAN
160°
140°
120°
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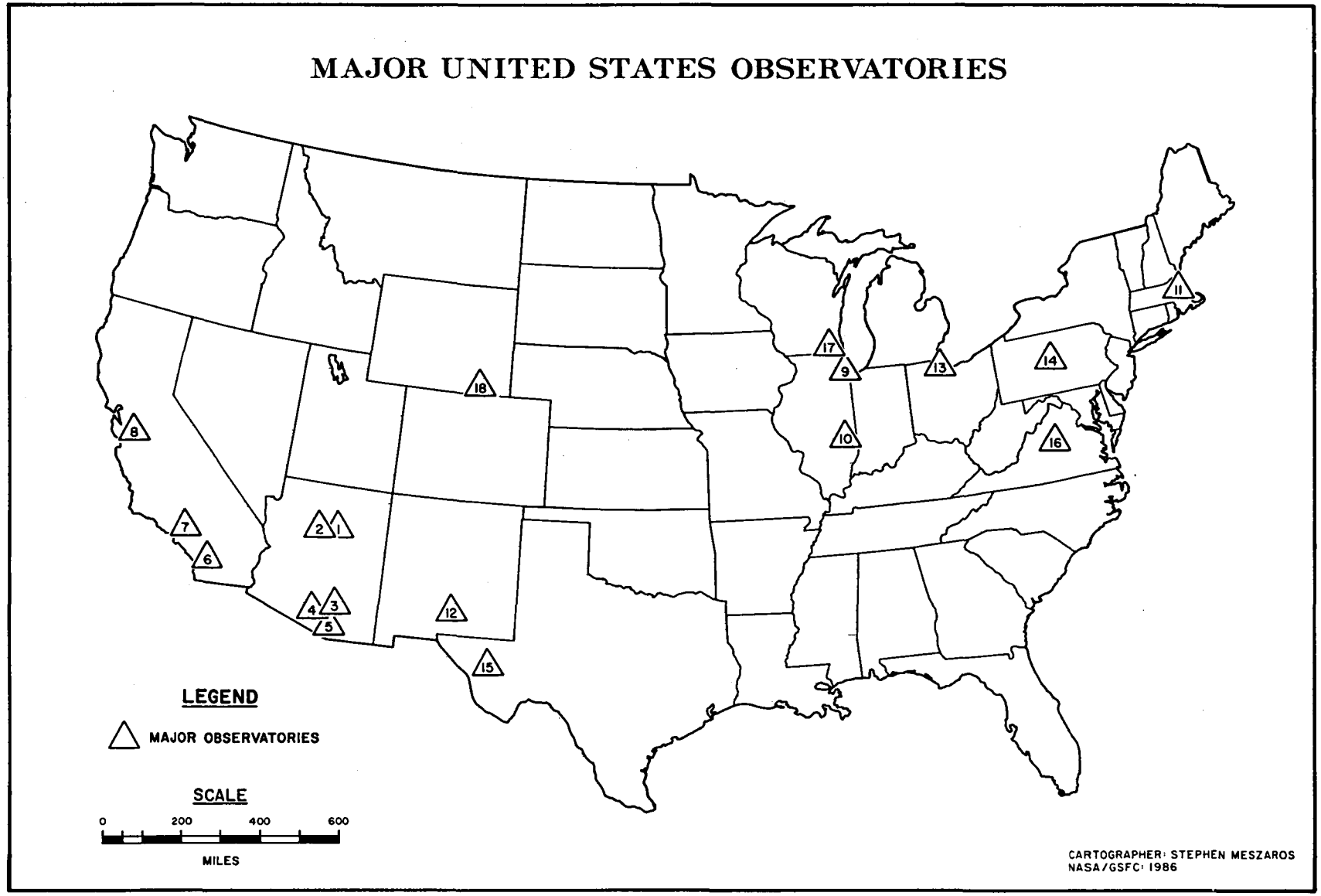
21

MAJOR UNITED STATES OBSERVATORIES*

Map Number	Observatory	Location
1	Lowell & Lowell-Ohio	Arizona
2	U.S. Naval	Arizona
3	Mt. Lemmon & Catalina	Arizona
4	Kitt Peak, Steward & McGraw-Hill	Arizona
5	Whipple	Arizona
6	Mt. Palomar	California
7	Mt. Wilson	California
8	Lick	California
9	Lindheimer	Illinois
10	Prairie	Illinois
11	Agassiz Station	Massachusetts
12	Sacramento Peak	New Mexico
13	Ritter	Ohio
14	Penn State Univ.	Pennsylvania
15	McDonald	Texas
16	McCormick	Virginia
17	Yerkes	Wisconsin
18	Wyoming Infrared	Wyoming

*Excluding Hawaii (see Hawaii under "Australia & the Pacific")


MAJOR UNITED STATES OBSERVATORIES
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LEGEND
MAJOR OBSERVATORIES
SCALE
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400
600
MILES
CARTOGRAPHER: STEPHEN MESZAROS
NASA/GSFC: 1986

PART II: THE TABLES

LARGE EUROPEAN TELESCOPES*

Observatory	Location	Type	Size	Date	Notes
(European Southern Observatory—see "South America")					
AUSTRIA					
Figl Astrophysical	Vienna	Re	1.5m (60″)	1969	
BULGARIA					
Mt. Rozhen	Mt. Rozhen	Re	2.0m (79″)	1980?	
CZECHOSLOVAKIA					
Ondrejov	Ondrejov	Re	2.0m (79″)	1967	
ENGLAND					
(Anglo-Australian Telescope—see "Australia" under "Australia & the Pacific")					
("UKIRT" Telescope—see "Hawaii" under "Australia & the Pacific")					
(Newton and Herschel Telescopes—see "Canary Islands" under "Africa")					
FINLAND					
Turku?	Turku	Re	1.0m (39″)	?	
FRANCE					
(Canada-France-Hawaii Telescope—see "Hawaii" under "Australia & the Pacific")					
Pic du Midi (Univ. of Toulouse)	Bogueres de Bigorre	Re	2.0m (79″)	1979	
Pic du Midi (Univ. of Toulouse)	Bogueres de Bigorre	Re	1.1m (43″)	1964	
Haute Provence	Saint Michel	Re	1.9m (76″)	1958	
Haute Provence	Saint Michel	Re	1.5m (60″)	1969	
Haute Provence	Saint Michel	Re	1.2m (47″)	1943	

*Excluding the USSR

LARGE EUROPEAN TELESCOPES (Continued)

Observatory	Location	Type	Size	Date	Notes
		FRANCE (Continued)			
Haute Provence	Saint Michel	Re	1.0m (39″)	?	
Paris	Meudon	Re	1.0m (39″)	1893	
		GERMANY			
	(German-Spanish Astronomical Observatory—see "Spain")				
Schwarzschild	Tautenburg	S	1.3m/2.0m (53″/79″)	1960	(1)
Hamburg	Bergedorf	Re	1.2m (47″)	?	
Astronomical Institute	Daun	Re	1.1m (43″)	?	
		GREECE			
National (of Athens)	Kiaton	Re	1.2m (48″)	1975	
		HUNGARY			
Konkoly	Piszkesteto	Re	1.0m (39″)	1974	
		ITALY			
	(Center for Infrared Astronomy—see "Switzerland")				
Astrophysical (of Padua Univ.)	Asiago	Re	1.8m (72″)	1973	(2)
Astrophysical (of Padua Univ.)	Asiago	Re	1.2m (48″)	1942	
Milan-Merate	Merate, Como	Re	1.4m (54″)	1968	
Milan-Merate	Merate, Como	Re	1.0m (39″)	1929	
Turin	Pino Torinese	Re	1.0m (41″)	1974	

LARGE EUROPEAN TELESCOPES (Continued)

Observatory	Location	Type	Size	Date	Notes
		SPAIN			
German-Spanish Astronomical	Calar Alto	Re	3.5m (138″)	?	
German-Spanish Astronomical	Calar Alto	Re	2.2m (88″)	1979	
German-Spanish Astronomical	Calar Alto	Re	1.5m (60″)	1979	
German-Spanish Astronomical	Calar Alto	Re	1.2m (48″)	1975	
German-Spanish Astronomical	Calar Alto	S	0.8m/1.2m (32″/48″)	?	
		SWEDEN			
Stockholm	Saltsjobaden	Re	1.0m (40″)	1931	
Uppsala	Bro	S	1.0m/1.3m (39″/53″)	1962	
		SWITZERLAND			
Center for IR Astronomy	Gornergrat	IR	1.5m (60″)	1980	(3)
Geneva	Geneva	Re	1.0m (40″)	1927	

LARGE USSR TELESCOPES

Observatory	Location	Type	Size	Date	Notes
Special Astrophysical	Zelenchukskaya	Re	6.0m (236″)	1976	(4)
Crimean Astrophysical	Simeiz	Re	2.6m (102″)	1961	(5)
Crimean Astrophysical	Simeiz	Re	1.2m (48″)	1952	
Byurakan	Yerevan	Re	2.6m (102″)	1976	
Byurakan	Yerevan	S	1.0m/1.3m (40″/52″)	1960	
Shemakha Astrophysical	Shemakha	Re	2.0m (79″)	1967	
Struve Astrophysical	Tartu	Re	1.5m (60″)	1975	
Sternberg Astronomical Institute	Simeiz	Re	1.3m (50″)	1960	
Abastumani Astrophysical	Mt. Kanobili	Re	1.3m (50″)	?	

LARGE ASIAN TELESCOPES*

Observatory	Location	Type	Size	Date	Notes
		CHINA			
Yunnan	Kunming	Re	1.0m (39″)	?	
		INDIA			
Nizamiah (Osmania Univ.)	Hyderabad	Re	1.2m (48″)	1962	
		ISRAEL			
Wise (Tel Aviv Univ.)	Mt. Zin	Re	1.0m (40″)	1971	
		JAPAN			
Okayama Astrophysical (Univ. of Tokyo)	Kamogata	Re	1.9m (74″)	1960	
Kiso	Kiso Mts.	S	1.1m/1.5m (42″/59″)	1974	

*Excluding the USSR.

LARGE AFRICAN TELESCOPES

Observatory	Location	Type	Size	Date	Notes
		CANARY ISLANDS			
Roque de los Muchachos	La Palma	Re	4.2m (165″)	1986?	(6)
Roque de los Muchachos	La Palma	Re	2.5m (100″)	1982	(7)
Roque de los Muchachos	La Palma	Re	1.0m (39″)	1983	(8)
Del Teide	Tenerife	IR	1.5m (60″)	1972	
		EGYPT			
Helwan	Helwan	Re	1.9m (74″)	1960	
		SOUTH AFRICA			
South African Astronomical	Sutherland	Re	1.9m (74″)	1974?	
South African Astronomical	Sutherland	Re	1.0m (39″)	1973	
Boyden Station	Bloemfontein	Re	1.5m (60″)	1930	
Royal	Cape of Good Hope	Re	1.0m (40″)	1961	

LARGE TELESCOPES OF AUSTRALIA & THE PACIFIC

Observatory	Location	Type	Size	Date	Notes
		AUSTRALIA			
Siding Spring	Coonabarabran, New South Wales	Re	3.9m (153″)	1975	(9)
Siding Spring	Coonabarabran, New South Wales	Re	2.3m (90″)	1984	
Siding Spring	Coonabarabran, New South Wales	S	1.2m/1.8m (48″/72″)	1973	(10)
Siding Spring	Coonabarabran, New South Wales	Re	1.0m (40″)	1964	
Mt. Stromlo	Canberra	Re	1.9m (74″)	1955	
Mt. Stromlo	Canberra	Re	1.3m (50″)	1954	
		HAWAII			
Mauna Kea (UKIRT)	Mauna Kea	IR	3.8m (150″)	1978	(11)
Mauna Kea (CFHT)	Mauna Kea	Re	3.6m (142″)	1979	(12)
Mauna Kea (NASA)	Mauna Kea	IR	3.0m (120″)	1979	(13)
Mauna Kea (Univ. of Hawaii)	Mauna Kea	Re	2.2m (88″)	1970	

LARGE SOUTH AMERICAN TELESCOPES

Observatory	Location	Type	Size	Date	Notes
		ARGENTINA			
Univ. de La Plata?	Mendoza	Re	2.1m (84″)	?	
National	Bosque Alegre	Re	1.5m (61″)	1942	
		BRAZIL			
National of Rio de Janeiro	Brazopolis	Re	1.6m (63″)	1979?	
		CHILE			
Inter-American	Cerro Tololo	Re	4.0m (158″)	1976	(14)
Inter-American	Cerro Tololo	Re	1.5m (60″)	1967?	
Inter-American	Cerro Tololo	Re	1.0m (40″)	1973	
European Southern	Cerro La Silla	Re	3.6m (142″)	1976	(15)
European Southern	Cerro La Silla	Re	3.6m (142″)	1986?	(16)
European Southern	Cerro La Silla	Re	2.2m (88″)	1985?	
European Southern	Cerro La Silla	Re	1.5m (59″)	1968	
European Southern	Cerro La Silla	Re	1.4m (54″)	1979	
European Southern	Cerro La Silla	Re	1.0m (39″)	1966	
European Southern	Cerro La Silla	S	1.0m/1.6m (39″/64″)	1969	
Carnegie Southern	Cerro Las Campanas	Re	2.5m (101″)	1976	(17)

LARGE SOUTH AMERICAN TELESCOPES (Continued)

Observatory	Location	Type	Size	Date	Notes
		CHILE (Continued)			
Carnegie Southern	Cerro Las Campanas	Re	1.0m (40″)	1971	
		VENEZUELA			
Astronomical Investigation	Llano Del Hato	Re	1.0m (39″)	1975?	
Astronomical Investigation	Llano Del Hato	S	1.0m/1.5m (39″/59″)	1975?	

LARGE NORTH AMERICAN TELESCOPES

Observatory	Location	Type	Size	Date	Notes
		CANADA			
(Canada-France-Hawaii Telescope—see "Hawaii" under "Australia & The Pacific")					
David Dunlap (Univ. of Toronto)	Richmond Hill, Ontario	Re	1.9m (74″)	1935	
Dominion Astrophysical	Victoria, British Columbia	Re	1.9m (73″)	1918	
Dominion Astrophysical	Victoria, British Columbia	Re	1.2m (48″)	1961	
Astronomical of Quebec (Univ. of Montreal)	Mt. Megantic	Re	1.6m (64″)	1978	
Univ. of Western Ontario	London, Ontario	Re	1.2m (48″)	1968	
		MEXICO			
National Astronomical	Baja, California	Re	2.1m (84″)	1979	
National Astronomical	Baja, California	Re	1.5m (59″)	1970	
National Astrophysical	Tonantzintla	Re	1.0m (40″)	1961	
		UNITED STATES (Excluding Hawaii)			
		ARIZONA			
Lowell	Flagstaff	Re	1.1m (42″)	1910	
Lowell-Ohio	Flagstaff	Re	1.8m (72″)	1962	(18)
U.S. Naval	Flagstaff	Re	1.5m (61″)	1963	
U.S. Naval	Flagstaff	Re	1.0m (40″)	1955	

LARGE NORTH AMERICAN TELESCOPES (Continued)

Observatory	Location	Type	Size	Date	Notes
		ARIZONA (Continued)			
Mt. Lemmon (Univ. of Minnesota and Univ. of California)	Mt. Lemmon	IR	1.5m (60″)	1972	
Mt. Lemmon (NASA)	Mt. Lemmon	IR	1.5m (60″)	1974	
Mt. Lemmon (Univ. of Arizona)	Mt. Lemmon	IR	1.0m (40″)	1970	
Catalina (Univ. of Arizona)	Catalina Site	Re	1.5m (61″)	1965	
Catalina (Univ. of Arizona)	Catalina Site	Re	1.0m (39″)	?	
Kitt Peak National	Kitt Peak	Re	4.0m (158″)	1973	(19)
Kitt Peak National	Kitt Peak	Re	2.1m (84″)	1964	
Kitt Peak National	Kitt Peak	Sol	1.5m (60″)	1962	(20)
Kitt Peak National	Kitt Peak	Re	1.3m (50″)	?	
Steward (Univ. of Arizona)	Kitt Peak	Re	2.3m (90″)	1969	
McGraw-Hill	Kitt Peak	Re	2.4m (95″)	1986?	(21)
McGraw-Hill	Kitt Peak	Re	1.3m (52″)	1975	
Whipple	Mt. Hopkins	MMT	6:1.8m (6:72″)	1979	(22)
Whipple	Mt. Hopkins	Re	1.5m (60″)	1970	

LARGE NORTH AMERICAN TELESCOPES (Continued)

Observatory	Location	Type	Size	Date	Notes
		CALIFORNIA			
Mt. Palomar (Cal. Tech.)	Mt. Palomar	Re	5.1m (200″)	1948	(23)
Mt. Palomar (Cal. Tech.)	Mt. Palomar	Re	1.5m (60″)	1970	
Mt. Palomar (Cal. Tech.)	Mt. Palomar	S	1.2m/1.8m (48″/72″)	1948	
Mt. Wilson (Carnegie Institution)	Mt. Wilson	Re	2.5m (100″)	1917	(24)
Mt. Wilson (Carnegie Institution)	Mt. Wilson	Re	1.5m (60″)	1908	
Mt. Wilson (Carnegie Institution)	Mt. Wilson	Re	1.0m (40″)	?	
Lick (Univ. of California)	Mt. Hamilton	Re	3.0m (120″)	1959	(25)
Lick (Univ. of California)	Mt. Hamilton	Re	1.0m (40″)	1979?	
		ILLINOIS			
Lindheimer (Northwestern Univ.)	Evanston	Re	1.0m (40″)	1967	
Prairie (Univ. of Illinois)	Oakland	Re	1.0m (40″)	?	
		MASSACHUSETTS			
Agassiz Station (Harvard College)	Harvard	Re	1.5m (61″)	1934	(26)
		NEW MEXICO			
Sacramento Peak (NOAO)	Sunspot	Sol	1.6m (64″)	1969	(27)
		OHIO			
Ritter (Univ. of Toledo)	Toledo	Re	1.0m (40″)	1967	

LARGE NORTH AMERICAN TELESCOPES (Continued)

Observatory	Location	Type	Size	Date	Notes
		PENNSYLVANIA			
Penn State Univ.	Rattlesnake Mt.	Re	1.5m (60″)	1974/75	
		TEXAS			
McDonald (Univ. of Texas)	Fort Davis	Re	2.7m (107″)	1968	
McDonald (Univ. of Texas)	Fort Davis	Re	2.1m (82″)	1939	(28)
		VIRGINIA			
McCormick (Univ. of Virginia)	Fan Mt. Station	Re	1.0m (40″)	1976?	
		WISCONSIN			
Yerkes (Univ. of Chicago)	Williams Bay	Re	1.0m (41″)	1968	
Yerkes (Univ. of Chicago)	Williams Bay	Rf	1.0m (40″)	1897	(29)
		WYOMING			
Wyoming Infrared (Univ. of Wyoming)	Jelm Mt.	IR	2.3m (92″)	1977	

NOTES

1. The German 1.3/2.0 meter(53/79-inch) telescope is the largest Schmidt telescope in the world today.
2. The Italian 1.8 meter (72-inch) telescope is named the Copernicus Telescope.
3. The 1.5 meter (60-inch) telescope at Gornergrat, Switzerland is operated by the Center for Infrared Astronomy, of Italy.
4. The Russian 6.0 meter (236-inch) telescope is the largest reflecting telescope in the world today.
5. The 2.6 meter (102-inch) telescope of the Crimean Astrophysical Observatory is named the Shajn Telescope.
6. The 4.2 meter (165-inch) telescope of Roque de los Muchachos Observatory is owned by England and has been named the William Herschel Telescope.
7. The 2.5 meter (100-inch) telescope of Roque de los Muchachos Observatory is owned by England and is named the Isaac Newton Telescope.
8. The 1.0 meter (39-inch) British-Dutch telescope of Roque de los Muchachos Observatory is named the Kapteyn Telescope.
9. England and Australia are joint operators of the 3.9 meter (153-inch) "Anglo-Australian Telescope" at Siding Spring Observatory in Australia.
10. The 1.2/1.8 meter (48/72-inch) Schmidt telescope at Siding Spring Observatory in Australia is operated by England.
11. The 3.8 meter (150-inch) UKIRT (United Kingdom Infrared Telescope) is operated at Mauna Kea Observatory by England.
12. The 3.6 meter (142-inch) CFHT (Canada-France-Hawaii Telescope) is operated at Mauna Kea Observatory by Canada, France, and Hawaii.
13. The 3.0 meter (120-inch) telescope of the National Aeronautics and Space Administration is operated at Mauna Kea Observatory by the University of Hawaii's Institute for Astronomy.
14. The 4.0 meter (158-inch) telescope of the Inter-American Observatory in Chile is the largest telescope in the Southern Hemisphere. The Inter-American Observatory is managed by the National Optical Astronomy Observatories (NOAO) which also manage Kitt Peak National Observatory in Arizona (see note 19).
15. The European Southern Observatory is operated by the following countries: Belgium, Denmark, France, Federal Republic of Germany, Italy, the Netherlands, Sweden, and Switzerland.
16. This 3.6 meter (142-inch) telescope of the European Southern Observatory is known as the New Technology Telescope (NTT).
17. The 2.5 meter (101-inch) telescope of Carnegie Southern Observatory is named the DuPont Telescope. Carnegie Southern Observatory is managed by the Carnegie Institution of Washington, D.C.
18. The 1.8 meter (72-inch) Perkins Telescope is operated jointly by Lowell Observatory, Ohio State University, and Ohio Wesleyan University.
19. The 4.0 meter (158-inch) telescope of Kitt Peak National Observatory is named the Mayall Telescope. Kitt Peak is operated by the National Optical Astronomy Observatories (NOAO) for the Association of Universities for Research in Astronomy (AURA). Member universities include the following: University of Arizona, California Institute of Technology, University of California, University of Chicago, University of Colorado, Harvard University, University of Hawaii, University of Illinois, Indiana University, Johns Hopkins University, Massachusetts Institute of Technology, University of Michigan, Ohio State University, Princeton University, University of Texas, University of Wisconsin, and Yale University.

20. The McMath solar telescope at Kitt Peak National Observatory is the largest of its type in the world, with a focal length of 91 meters (300 feet).
21. The McGraw-Hill Observatory is managed by the University of Michigan, Dartmouth College, and the Massachusetts Institute of Technology.
22. The MMT or "Multiple-Mirror Telescope" concentrates the light from six 1.8 meter (72-inch) mirrors at a common focus. The light collecting area of these mirrors is equal to that of one large 4.5 meter (176-inch) mirror.
23. The 5.1 meter (200-inch) Hale Telescope of Mt. Palomar Observatory is the second largest reflecting telescope in the world today.
24. The 2.5 meter (100-inch) telescope of Mt. Wilson Observatory is named the Hooker Telescope.
25. The 3.0 meter (120-inch) telescope of Lick Observatory is named the Shane Telescope.
26. The Harvard 1.5 meter (61-inch) telescope is named the Wyeth Telescope.
27. The 1.6 meter (64-inch) solar telescope of Sacramento Peak Observatory is operated by the National Optical Astronomy Observatories (NOAO).
28. The 2.1 meter (82-inch) telescope of McDonald Observatory is named the Struve Telescope.
29. The Yerkes Observatory 1.0 meter (40-inch) telescope is the largest refracting telescope in the world.

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15. Supplementary Notes

16. Abstract

By early 1986 there will be over 120 large optical telescopes in the world engaged in astronomical research with mirror or lens diameters of one meter (39-inches) and larger. This atlas gives information on these telescopes and shows their observatory sites on continent-sized maps. Also shown are observatory locations considered suitable for the construction of future large telescopes.

Of the 126 major telescopes listed in this atlas, 101 are situated in the Northern Hemisphere and 25 are located in the Southern Hemisphere. The totals by regions are as follows: Europe (excluding the USSR), 30; Soviet Union, 9; Asia (excluding the USSR), 5; Africa, 9; Australia, 6; The Pacific, 4 (all on Hawaii); South America, 17; North America, 46 (the continental US has 38 of these). In all, the United States has 42 of the world's major telescopes on its territory (continental US plus Hawaii) making it by far the leading nation in astronomical instrumentation.

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