

WORKING GROUP FOR PLANETARY SYSTEM NOMENCLATURE (NOMENCLATURE DU SYSTEME PLANETAIRE)  
(Committee of the Executive Committee)

PRESIDENT: P.M. Millman

Establishing an international system of nomenclature for the topographic features on the surfaces of planetary bodies is an exercise that requires assistance from many sources and depends on the cooperation of many individuals. The Working Group for Planetary System Nomenclature (WGPSN) has five nomenclature task groups reporting to it, and these groups prepare the detailed lists of names for the consideration of the WGPSN, which in turn makes recommendations to the Executive Committee of the IAU. The names of those who have been directly involved in preparing this present report (approved at the 17th General Assembly of the IAU in Montreal, Canada, 1979) are listed in IAU Trans. Vol. 17A, pp. 113-114, 1979. The current membership in the nomenclature groups is listed in this volume, p. .

During the three years following the 16th General Assembly in Grenoble, France the WGPSN has held three meetings:-

- Fourth Meeting - Washington, D.C., U.S.A., June 1 and 2, 1977;
- Fifth Meeting - Innsbruck, Austria, June 2, 1978;
- Sixth Meeting - Montreal, Canada, August 13 and 15, 1979.

In addition to the items reported in IAU Trans. Vol. 17A, pp. 113-114, 1979, the following nomenclature rules and terminology have been approved:-

Commemorative names of persons recently deceased shall not be assigned to topographical features on planetary bodies until after a minimum period of three years from the date of death.

The following temporary nomenclature shall be used to announce the discovery of new satellites - year/first letter of primary/arabic number - for example, Janus would have been originally announced as 1966 S 1. A name should be assigned to a satellite only after the orbit has been uniquely determined. Roman numerals are reserved for established members of satellite system, thus an alternative designation for Janus is S X.

Five Latin terms have been added to the 25 listed in IAU Trans. Vol. 16B, pp. 321-369, 1977, for use in nomenclature on the surfaces of planetary bodies (plurals are given in brackets)-

FLEXUS (Flexus)	a very low curvilinear ridge with a scalloped pattern
LINEA (Lineae)	a dark or bright elongate marking, may be curved or straight
MACULA (Maculae)	a dark spot, may be irregular
REGIO (Regiones)	a large area marked by reflectivity or colour distinctions from adjacent areas
TERRA (Terrae)	a rolling or rough upland area

In addition to the 30 approved Latin terms, referred to above, the following two terms have been generally used in specific cases-

OCEANUS	a very large, dark area on the moon
SOLITUDO	a classical, dark-hued albedo feature on Mercury.

## LUNAR NOMENCLATURE

Table 1. 54 names, approved as assigned to features on the lunar surface.  
Positions have been given in degrees of latitude and longitude.

CRATERS			
ALDER, Kurt	1902-1958 German chemist	48.6S	177.4W
ANUCHIN, Demitrii N.	1843-1923 Russian geographer, anthropologist	49.0S	101.3E
ARYABHATA	476-c550 Indian astronomer, mathematician	06.2N	035.2E
BARKLA, Charles G.	1877-1944 British physicist	10.7S	067.2E
BLACKETT, Patrick M.S.	1897-1974 English physicist	37.3S	115.6W
BOK, Priscilla F.	1896-1975 American astronomer	20.2S	171.6W
BORN, Max	1882-1970 German physicist	06.0S	066.8E
BRONK, Detlev W.	1897-1975 American physiologist	26.1N	134.5W
CARREL, Alexis	1873-1944 French surgeon, physiologist	10.7N	026.7E
CARRILLO, Flores N.	1911-1967 Mexican engineer	02.2S	080.9E
CORI, Gerty T.R.	1896-1957 Czechoslovakian/American biochemist	50.6S	151.9W
DE MORAES, A.	1916-1970 Brazilian astronomer	49.4N	141.5E
DIDEROT, Denis	1713-1784 French philosopher	20.4S	121.5E
DOERFEL, Georg S.	1643-1688 German astronomer	69.1S	107.9W
FEDOROV, A.P.	1872-1920 Russian rocket engineer	28.2N	037.0W
FINSEN, Niels R.	1860-1904 Danish physician	42.0S	177.9W
GUILLAUME, Charles E.	1861-1938 Swiss physicist	45.4N	173.4W
HARGREAVES, Frederick J.	1891-1970 English Astronomer	02.2S	064.1E
HARKHEBI	circa 300 BC Egyptian astronomer	39.9N	099.8E
HEINRICH, Wladimir W.	1884-1965 Czechoslovakian astronomer	24.8N	015.4W
HOPMANN, J.	1890-1975 Austrian astronomer	50.8S	160.3E

## CRATERS (Cont'd.)

KARRER, Paul	1889-1971 Russian/Swiss chemist	52.1S	141.8W
KEPINSKI, F.	1885-1966 Polish astronomer	28.6N	126.8E
LINDSAY, Eric M. (replaces Dollond C)	1907-1974 Irish astronomer	07.0S	013.0E
LIPPMANN, Gabriel	1845-1921 French physicist	55.5S	114.6W
LIPSKIY, Yu.N.	1909-1978 Soviet astronomer	02.2S	179.5W
MENZEL, Donald H.	1901-1976 American astronomer	03.4N	036.9E
OLIVIER, Charles P.	1884-1975 American astronomer	59.1N	136.5E
PIKEL'NER, S.B.	1924-1975 Soviet astronomer	47.9S	123.3E
PLANTÉ, Gaston	1834-1889 French physicist	10.2S	163.3E
POCZOBUTT, O.M.	1728-1810 Polish astronomer	57.5N	099.3W
RICHARDSON, Owen W.	1879-1959 English physicist	31.1N	100.3E
SABATIER, Paul	1854-1941 French chemist	13.2N	079.0E
SHIRAKATSI, Anania	c620-c685 Armenian geographer	12.2S	128.5E
SIKORSKY, Igor I.	1889-1972 Russian/American aeronautical engineer	66.1S	103.2E
STEARNS, Carl L.	1892-1972 American astronomer	34.8N	162.6E
TAMM, Igor	1895-1971 Soviet physicist	04.4S	146.4E
THEILER, Max	1899-1972 South African bacteriologist	13.4N	082.9E
TISELIUS, Arne	1902-1971 Swedish biochemist	07.0N	176.5E
TUCKER, Richard H.	1859-1952 American astronomer	05.6S	088.2E
VERTREGT, M.	1897-1973 Dutch chemist, space scientist	19.7S	170.9E
VIRCHOW, Rudolph L.K.	1821-1902 German pathologist	09.8N	083.7E
VIRTANEN, Artturi I.	1895-1973 Finnish biochemist	15.5N	176.7E
VON BEHRING, Emil A.	1854-1917 German bacteriologist	07.8S	071.8E

CRATERS (Cont'd.)

VON BÉKÉSY, Georg	1899-1972 Hungarian physicist	51.9N	126.8E
WALLACH, Otto	1847-1931 German chemist	04.9N	032.3E
WILDT, Rupert	1905-1976 German/American astronomer	09.0N	075.8E
ZWICKY, Fritz	1898-1974 Swiss astrophysicist	15.9S	167.6E

DORSA

MAWSON, Douglas	1882-1958 English/Australian geologist	09.0S	050.5E to 06.0S 054.0E
TETYAEV, Mikhail M.	1882-1956 Soviet geologist	16N	067E to 22N 062E

LACUS

PERSEVERANTIA	Lake of Persistence	07.5N to	08.0N 061.0E to 062.5E
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MONTES

USOV, Mikhail A.	1883-1933 Soviet geologist	12.0N	063.2E
VINOGRADOV, Alexander P. (replaces Euler $\beta$ )	1895-1975 Soviet geochemist and cosmochemist	22.4N	032.5W

SINUS

SUCCESSUS	Gulf of Success	00 to	03N 057E to 060E
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CATENAE

For three crater chains the designations listed below are recommended for printing on current lunar maps. These provide a cross-reference to the earlier Soviet lunar maps; GDL standing for Gas Dynamics Laboratory, GIRD for Group for the Study of Reaction Motion, and RNII for Rocket Research Institute.

Catena LEUSCHNER (G D L)	16N	123W	to	02N	109W
Catena MICHELSON (G I R D)	03N	126W	to	05S	114W
Catena LUCRETIUS (R N I I)	04S	126W	to	10S	119W

Table 2. 95 first names of men and women, approved as assigned on an international basis to small features on large-scale map sheets of the lunar surface. No name on this list refers to any particular person. Locations are given in degrees, minutes, and in some cases seconds, of latitude and longitude. Where no Latin term is listed the feature is a crater.

<u>Sheet 38B2/S1 (1:50,000)</u>				<u>Sheet 41A3/S1 (1:50,000)</u>			
	°	'	"	°	'	"	
Aloha	29	45	20N	053	54		W
Rima Cleopatra	30	00	N	054	00		W
<u>Sheet 39A1/S1 (1:50,000)</u>				<u>Sheet 41B4/S1 (1:50,000)</u>			
	°	'	"	°	'	"	
Rocco	28	54	N	045	01		W
Ruth	28	42	N	045	05		W
<u>Sheet 39A3/S1 (1:50,000)</u>				<u>Sheet 41B4/S2 (1:50,000)</u>			
	°	'	"	°	'	"	
Ivan	26	51	N	043	16		W
Vera	26	19	N	043	44		W
<u>Sheet 39B2/S1 (1:25,000)</u>				<u>Sheet 41B4/S3 (1:50,000)</u>			
	°	'	"	°	'	"	
Isabel	28	10	N	034	05		W
Louise	28	28	N	034	13		W
Samir	28	29	N	034	18		W
Walter	28	02	N	033	50		W
<u>Sheet 39B2/S2 (1:25,000)</u>				<u>Sheet 41C3/S1 (1:10,000)</u>			
	°	'	"	°	'	"	
Boris	30	31	N	033	31		W
Gaston	30	53	N	033	58		W
Linda	30	41	N	033	23		W
<u>Sheet 39B3/S1 (1:50,000)</u>				<u>Sheet 42A4/S1 (1:10,000)</u>			
	°	'	"	°	'	"	
Courtney	25	08	N	030	49		W
Dorsum Thera	24	30	N	031	25		W
Catena Yuri	24	24	N	030	24		W
Rima Zahia	25	00	N	030	28		W
<u>Sheet 39C2/S1 (1:50,000)</u>				<u>Sheet 42A4/S2 (1:10,000)</u>			
	°	'	"	°	'	"	
Akis	20	02	N	031	46		W
Ango	20	29	N	032	21		W
Jehan	20	42	N	031	53		W
Natasha	20	00	N	031	19		W
Catena Pierre	19	46	N	031	52		W
Rosa	20	19	N	032	21		W
Rima Wan-yu	20	00	N	031	27		W
<u>Sheet 40A1/S1 (1:50,000)</u>				<u>Sheet 42C3/S1 (1:10,000)</u>			
	°	'	"	°	'	"	
Annegrit	29	26	N	025	39		W
Charles	29	53	N	026	23		W
Mavis	29	45	N	026	22		W
<u>Sheet 40A4/S1 (1:10,000)</u>				<u>Sheet 42C3/S2 (1:10,000)</u>			
	°	'	"	°	'	"	
Artemis	25	01	N	025	23		W
Felix	25	04	30N	025	24	30W	
Verne	24	56	30N	025	24	30W	
Ann	25	06	N	000	03		W
Ian	25	43	N	000	24		W
Kathleen	25	20	N	000	49		W
Michael	25	03	N	000	12		E
Patricia	24	57	N	000	24		E
Rima Vladimir	25	10	N	000	45		W
Julienne	26	02	N	003	07		E
Carlos	24	55	N	002	17		E
Béla	24	40	N	002	15		E
Jomo	24	25	N	002	25		E
Taizo	24	42	N	002	11		E
Agnes	18	39	N	005	19	20E	
Dag	18	42	N	005	15	20E	
Ina	18	38	40N	005	17	30E	
Osama	18	36	N	005	15	30E	
Christel	24	32	N	011	04		E
Yoshi	24	33	10N	010	58	40E	
Krishna	24	30	20N	011	15	50E	
Manuel	24	27	20N	011	20	30E	
Sung-mei	24	36	N	011	16	40E	
Isis	18	56	40N	027	28	40E	
Mary	18	55	N	027	23		E
Robert	19	01	20N	027	26	30E	
Catena Brigitte	18	31	N	027	32	10E	
Jerik	18	31	N	027	37	30E	
Rima Marcello	18	36	N	027	42	30E	
Osiris	18	38	20N	027	38	30E	
Rima Reiko	18	32	40N	027	42	10E	

Table 2 (Cont'd.)

<u>Sheet 42C3/S3 (1:50,000)</u>					<u>Sheet 77D1/S1 (1:10,000)</u>									
	°	'	"		°	'	"		°	'	"			
Rima Carmen	19	53	N	029	20	E		Alan	10	56	30S	006	09	10W
Ching-te	20	00	30N	029	57	30E		Delia	10	55	10S	006	06	30W
Rima Rudolf	19	43	N	029	37	E		Harold	10	53	S	006	03	W
Stella	19	54	N	029	45	E		Osman	10	58	40S	006	14	W
								Priscilla	10	57	40S	006	11	40W
								Susan	11	00	20S	006	17	10W
<u>Sheet 61A2/S1 (1:50,000)</u>					<u>Sheet 77D3/S1 (1:50,000)</u>									
	°	'	"		°	'	"		°	'	"			
Diana	14	18	N	035	40	E		Chang-ngo	12	41	S	002	09	W
Mons Esam	14	33	N	035	44	E		José	12	41	S	001	39	W
Grace	14	13	N	035	54	E		Monira	12	33	S	001	42	30W
								Ravi	12	31	S	001	57	W
								Soraya	12	52	S	001	37	W
<u>Sheet 61D2/S1 (1:50,000)</u>					<u>Sheet 100C1/S1 (1:50,000)</u>									
	°	'	"		°	'	"		°	'	"			
Donna	07	13	N	038	18	E		Bawa	25	17	S	102	34	E
								Edith	25	46	S	102	20	E
								Fairouz	26	05	S	102	57	E
								Karima	25	56	S	102	59	E
								Rima Siegfried	25	55	S	102	45	E
<u>Sheet 65C1/S1 (1:50,000)</u>					<u>Sheet 102A1/S1 (1:50,000)</u>									
	°	'	"		°	'	"		°	'	"			
Mons André	05	04	N	120	35	E		Kira	17	43	S	132	50	E
Mons Ardeshir	05	01	N	121	01	E								
Mons Dieter	04	54	N	120	21	E								
Mons Dilip	05	35	N	120	51	E								
Mons Ganau	04	50	N	120	30	E								
Sita	04	34	N	120	46	E								
<u>Sheet 65C1/S2 (1:50,000)</u>														
	°	'	"		°	'	"							
Carol	08	28	N	122	20	E								
Ewen	07	41	N	121	26	E								
Kasper	08	17	N	122	05	E								
Melissa	08	05	N	121	46	E								
Romeo	07	30	N	122	38	E								
Shahinaz	07	32	N	122	24	E								

MERCURY NOMENCLATURE

Table 3. 68 names, approved as assigned to craters on the surface of Mercury. Locations are given in degrees of latitude and longitude, crater diameters in km. Biographical information is listed in Table 4.

<u>Borealis Sheet</u>					<u>Victoria Sheet</u>				
CRATERS				Diam.	CRATERS				Diam.
ARISTOXENES	82	N	011	W 65	MONTEVERDI	64	N	077	W 130
GOETHE	79.5N		044	W 340	RUBENS	59.5N		073.5W	180
PURCELL	81	N	148	W 80	STRAVINSKY	50.5N		073	W 170
VAN DIJCK	76.5N		165	W 100	VYASA	48.5N		080	W 275
SAIKAKU	73	N	177	W 80	SHOLOM-ALEJKHEM	51	N	076.5W	190
TUNG YÜAN	73.5N		055	W 60	MONET	44	N	009.5W	250
MANSART	73.5N		120	W 75	DERZHAVIN	44.5N		035.5W	145
JÓKAI	72.5N		136	W 85	HUGO	39	N	047.5W	190
GAUGUIN	66.5N		097	W 75	VELÁZQUEZ	37	N	054	W 120
TURGENEV	66	N	135	W 110	AL-HAMADHANI	39	N	089.5W	170

Table 3 (Cont'd.)

CRATERS				Diam.	CRATERS				Diam.
VERDI	64.5N	169 W	150	HOLBEIN	35.5N	029 W	85		
NIZAMĪ	71.5N	165 W	70	KUAN HAN-CH'ING	29 N	053 W	155		
MARTIAL	69 N	178 W	45	PRAXITELES	27 N	060 W	175		
DESPRÉZ	81 N	092 W	40	WREN	24.5N	036 W	215		
MYRON	71 N	080 W	50	GLUCK	37.5N	018.5W	85		
				SOR JUANA	49 N	024 W	80		

Shakespeare Sheet				Michelangelo Sheet					
CRATERS				Diam.	CRATERS				Diam.
BOTTICELLI	64 N	110 W	120	IVES	32.5S	112 W	20		
BRAHMS	58.5N	177 W	75	SAYAT-NOVA	27.5S	122.5W	125		
AHMAD BABA	58.5N	127 W	115	USTAD ISA	31.5S	166 W	105		
ZOLA	50.5N	178 W	60	SARMIENTO	28.5S	188.5W	115		
STRINDBERG	54 N	136 W	165	SÜR DÄS	46.5S	094 W	100		
MANSUR	47.5N	163 W	75	MICHELANGELO	44.5S	110 W	200		
SHAKESPEARE	48.5N	151 W	350	SURIKOV	37 S	125 W	105		
CHŎNG CH'ŎL	47 N	116 W	120	DELACROIX	44.5S	129.5W	135		
NERVO	43 N	179 W	50	SHELLEY	47.5S	128.5W	145		
VAN EYCK	43.5N	159 W	235	TAKAYOSHI	37 S	164 W	105		
SCARLATTI	40.5N	099.5W	135	YAKOVLEV	40.5S	163.5W	100		
BRONTĚ	39 N	126.5W	60	DOSTOEVSKIJ	44.5S	177 W	390		
DEGAS	37.5N	127 W	45	LIANG K'AI	39.5S	183.5W	105		
MARCH	31.5N	176 W	55	RIEMENSCHNEIDER	52.5S	100.5W	120		
COUPERIN	30 N	152 W	75	ALENCAR	63.5S	104 W	85		
HEINE	33 N	124.5W	65	HAWTHORNE	51 S	116 W	100		
MUSSORGSKIJ	33 N	096.5W	115	VINCENTE	56.5S	143 W	85		
				DOWLAND	53 S	180 W	80		
				BARTÓK	29 S	135 W	80		
				BASHŌ	32 S	170.5W	70		

Table 4. Biographical information for Mercury crater names

AHMAD BABA al-Tinbukti (1556-1627) Sudanese writer
ALENCAR, Jose de (1829-1877) Brazilian novelist
AL-HAMADHANI (d. 1007) Arabic writer
ARISTOXENES (c. 150 BCE) Greek musical theorist
BARTÓK, Belá (1881-1945) Hungarian composer
BASHŌ, Matsuo (17th cen) Japanese writer
BOTTICELLI, Sandro (1445-1510) Italian painter
BRAHMS, Johannes (1883-1897) German composer
BRONTĚ, Charlotte (1816-1855) and Emily (1818-1848) English novelists
CHŎNG CH'ŎL (1536-1593) Korean poet
COUPERIN, Francois (1688-1733) French composer
DEGAS, Edgar (1834-1917) French painter
DELACROIX, Eugene (1798-1865) French painter
DERZHAVIN, Gavrila Romanovich (1743-1816) Russian poet

Table 4 (Cont'd.)

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DESPRÉZ, Josquin (c.1450-1521) Flemish/French composer
DOSTOEVSKIJ, F.M. (1821-1881) Russian writer
DOWLAND, John (1562-1625) English composer
GAUGUIN, Paul (1848-1903) French painter
GLUCK, Christoph Willibalt (1714-1787) German composer
GOETHE, Johann Wolfgang von (1749-1832) German poet and dramatist
HAWTHORNE, Nathaniel (1804-1864) U.S. novelist
HEINE, Heinrich (1797-1856) German poet
HOLBEIN, Hans (c.1425-1524) and Hans (c.1497-1543) German painters
HUGO, Victor (1802-1885) French writer
IVES, Charles (1874-1954) U.S. composer
JÓKAI, Mór (1825-1904) Hungarian novelist
KUAN HAN-CH'ING (c.1241-c.1322) Chinese dramatist
LIANG K'AI (c1140-c1210) Chinese painter
MANSART, Jules Hardouin (c.1646-1708) French architect
MANSUR (18th cen?) Indian painter
MARCH, Ausias (1397-1459) Spanish poet
MARTIAL, Marcus Valerius (c.40-c.104) Roman poet
MICHELANGELO, Buonarotti (1475-1564) Italian painter, sculptor, architect
MONET, Claud (1840-1926) French painter
MONTEVERDI, Claudio (1567-1643) Italian composer
MUSSORGSKIJ, Modest (1839-1881) Russian composer
MYRON (5th cen BCE) Greek sculptor
NERVO, Amado (1870-1919) Mexican poet
NIZĀMĪ, Ilyās b. Yūsuf (1141-1203) Persian/Azerbaijan poet
PRAXITELES (4th cen BCE) Greek sculptor
PURCELL, Henry (c.1659-1695) English composer
RIEMENSCHNEIDER, Tilman (16th cen) German sculptor
RUBENS, Peter Paul (1577-1640) Flemish painter
SAIKAKU, Ihara (17th cen) Japanese novelist and poet
SARMIENTO, Domingo Faustino (1811-1888) Argentine writer
SAYAT-NOVA (1712-1795) Armenian/Georgian/Azerbaijan poet
SCARLATTI, Domenico (1685-1757) and Alessandro (1660-1725) Italian composers
SHAKESPEARE, William (1564-1616) English poet and dramatist
SHELLEY, Percy Bysshe (1792-1822) English poet
SHOLEM ALEICHEM (1859-1916) Ukranian (Yiddish) writer
SOR JUANA, Inés de la Cruz (1651-1695) Mexican writer
STRAVINSKY, Igor Fedorovich (1882-1971) Russian/French composer
STRINDBERG, August (1849-1912) Swedish poet and dramatist
SŪR DĀS (1483-1573) Indian poet
SURIKOV, Vassily (1848-1916) Russian painter
TAKAYOSHI (12th cen) Japanese painter
TURGENEV, I.S. (1822-1899) Russian writer
TUNG YŪAN (10th cen) Chinese painter
USTAD ISA (17th cen) Turkish/Persian architect
VAN DIJCK, Antoon (1599-1641) Flemish painter
VAN EYCK, Jan (d.1441) Flemish painter
VELÁZQUEZ, Diego (1599-1660) Spanish painter
VERDI, Giuseppe (1813-1901) Italian composer
VINCENTE, Gil (c.1465-c.1537) Portuguese dramatist
VYĀSA (2nd cen BCE) Indian writer
WREN, Christopher (1632-1723) English architect
YAKOVLEV, Barma and Posnik (16th cen) Russian architects
ZOLA, Emile (1840-1902) French novelist

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## VENUS NOMENCLATURE

Table 5. 14 names, approved as assigned to features in the surface of Venus. Locations are given in degrees of latitude and longitude and these coordinates are approximate only.

<u>CRATER-LIKE FORMS</u>			
EVE	Symbolizes the first woman	32 S	000
LISE MEITNER	1878-1968, Austrian physicist	55.5S	321.5E
SAPPHO	fl. c610-580 BC, Lesbos, Asia Minor lyric poetess	14 N	016 E
<u>MONTES</u>			
AKNA	Yucatan, Goddess of birth	68N	318E
FREYJA	Mother of Odin in Teutonic mythology	73N	335E
HATHOR	Egyptian Goddess of the sky	25S	323E
MAXWELL, James C.	1831-1879, British physicist	65N	004E
RHEA	Female Titan in Grecian mythology	32N	283E
THEIA	Female Titan in Grecian mythology	25N	281E
<u>PLANUM</u>			
LAKSHMI	Indian Goddess of fortune and prosperity	60N to 75N	315E to 345E
<u>REGIONES</u>			
ALPHA	First letter in the Greek alphabet	20S to 30S	000 to 010E
BETA	Second letter in the Greek alphabet	20N to 35N	280E to 290E
<u>TERRAE</u>			
APHRODITE	Grecian Goddess of fertility	10S to 05N	075E to 130E
ISHTAR	Babylonian Goddess of morning and evening	60N to 75N	315E to 025E

## MARS NOMENCLATURE

Table 6. 61 names of small craters, approved as assigned on large-scale maps of the two Viking landing sites. Locations on Mars are given in degrees of latitude and longitude. Names are of small towns and stations of the space program, chosen on an international basis.

## Viking 1, YORKTOWN sheet, 1:250,000

ALBANY	USA, New York	23.30 N	049.04 W
AMSTERDAM	Holland	23.26 N	047.03 W
ANNAPOLIS	USA, Md.	23.42 N	047.76 W
BORDEAUX	France	23.36 N	048.92 W
BREMERHAVEN	Germany	23.49 N	048.57 W

Table 6. (Cont'd.)

BRIDGETOWN	Barbados	22.15 N	047.10 W
BRISTOL	United Kingdom	22.35 N	046.95 W
CADIZ	Spain	23.38 N	049.05 W
CHARLESTON	USA, S. C.	22.87 N	047.82 W
COLÓN	Panama	23.01 N	047.09 W
FUNCHAL	Madeira Islands	23.21 N	049.46 W
KINGSTON	Jamaica	22.36 N	047.05 W
LA PAZ	Mexico	21.28 N	049.03 W
LISBOA	Portugal	21.49 N	047.59 W
NEW BERN	USA, N. C.	21.77 N	049.16 W
NEW HAVEN	USA, Conn.	22.30 N	049.28 W
NEWPORT	USA, R. I.	22.47 N	048.97 W
OKHOTSK	USSR	23.22 N	047.36 W
PHILADELPHIA	USA, Pa.	22.01 N	048.00 W
PORT-AU-PRINCE	Dom. Rep. (Hispaniola)	21.34 N	048.19 W
PORTSMOUTH	USA, N. H.	22.78 N	049.09 W
PRINCETON	USA, N. J.	21.93 N	049.12 W
SAVANNAH	USA, Ga.	22.27 N	047.80 W

## Viking 2, CANBERRA sheet, 1:250,000

BAYKONYR	USSR	46.60 N	227.23 W
CANAVERAL	USA	47.11 N	224.03 W
CANBERRA	Australia	47.50 N	227.25 W
EVPATORIYA	USSR	47.25 N	225.52 W
GOLDSTONE	USA	48.06 N	225.29 W
HAMAGUIR	Algeria	48.98 N	227.38 W
HOUSTON	USA	48.51 N	223.90 W
HSÜANCH'ENG	China	47.01 N	227.22 W
JOHANNESBURG	Union S. Africa	48.22 N	226.70 W
JODRELL	United Kingdom	47.77 N	227.60 W
KAGOSHIMA	Japan	47.60 N	224.12 W
KALININGRAD	USSR	48.78 N	224.89 W
KOUROU	French Guiana	47.02 N	227.12 W
MADRID	Spain	48.73 N	224.40 W
TSUKUBA	Japan	48.89 N	225.87 W
VOLGOGRAD	USSR	48.39 N	224.82 W
WALLOPS	USA	46.87 N	227.19 W
WOOMERA	Australia	48.36 N	227.28 W

## Viking 2, UPTOPIA sheet, 1:1,000,000

ACHAR	Uruguay	45.70 N	236.80 W
BHOR	India	42.00 N	225.50 W
BULHAR	Somalia	50.60 N	225.60 W
CHINCOTEAGUE	USA (Va.)	41.50 N	236.00 W
CORBY	U.K.	43.10 N	222.40 W
HĪT	Iraq	47.30 N	221.50 W
KEUL	USSR (Russian SFSR)	46.30 N	237.70 W
KUFRA	Libyan Arab Jamahiriya	40.60 N	239.70 W
KUMARA	New Zealand	43.30 N	231.40 W
LOJA	Ecuador	41.40 N	223.80 W

Table 6 (Cont'd.)

NAIN	Canada (Newfoundland)	41.70 N	233.20 W
NAJU	Korea	45.30 N	237.10 W
ORINDA	USA (Calif)	45.60 N	233.00 W
RAUB	Malaysia	42.60 N	224.90 W
RIMAC	Peru	45.20 N	223.80 W
RYNOK	USSR (Russian SFSR)	44.30 N	238.20 W
STON	Yugoslavia	47.20 N	237.40 W
TSAU	Botswana	49.80 N	238.90 W
UMATAC	USA (Guam)	42.70 N	222.80 W
VIVERO	Spain	49.20 N	241.10 W

Table 7. 28 names of features on the surface of Mars, approved as assigned on a Soviet map based on Mars 4 and 5 data. Locations are given in degrees of latitude and longitude.

<u>CRATERS (Large)</u>			
ARKAHNGELSKIY		41.0 S	024.0 W
BUNGE		34.0 S	049.0 W
SHATSKIY		33.0 S	015.0 W
SUMGIN		37.0 S	048.0 W
VINOGRADOV		20.0 S	037.5 W
VOEYKOV		32.0 S	075.0 W
<u>CRATERS (Small)</u>			
AKI	Japan	36.0 S	060.5 W
ALITUS	USSR	35.1 S	038.0 W
ANIAK	USA	32.5 S	069.0 W
DUBKI	USSR	35.0 S	055.0 W
FOROS	USSR	34.0 S	028.0 W
GARI	USSR	36.0 S	071.0 W
KUMAK	USSR	36.0 S	067.5 W
LABRIA	Brazil	35.5 S	048.0 W
LOS	USA	35.5 S	076.5 W
LUKI	USSR	30.0 S	037.0 W
MAGADI	Kenya	35.0 S	045.5 W
MENA	USSR	32.5 S	018.5 W
PULAWY	Poland	36.5 S	077.0 W
RUZA	USSR	34.5 S	052.5 W
TABOR	Czechoslovakia	36.0 S	064.0 W
ZILAIR	USSR	32.0 S	033.0 W
ZONGO	Zair	33.0 S	041.5 W
VIK	Iceland	36.0 S	064.0 W
<u>VALLES</u>			
OSUGA Valles		15.0 S	038.0 W
PROTVA Valles		33.5 S	059.0 W
RUNA Vallis		29.0 S	036.5 W
SURINDA Valles		28.5 S	035.0 W

Table 8. 36 names for features on the surface of Mars, approved as assigned on maps of the Geological Survey of the USA. Locations are given in degrees of latitude and longitude.

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<u>CRATERS</u>			
BUTA	U.S.S.R.	23.5 S	032.2 W
GORI	U.S.S.R.	23.2 S	028.6 W
LÄR	Iran	26.1 S	028.8 W
<u>CATENAE</u>			
ACHERON		35 N 103 W to	42 N 097 W
PHLEGETHON		35 N 105 W to	40 N 095 W
<u>CHAOS</u>			
AROMATUM		02.0 S	042.5 W
<u>DORSUM</u>			
ZEÄ Dorsa		47 S 283 W to	53 S 277 W
<u>FOSSA</u>			
ACHERON Fossae		37 N 130 W to	39 N 138 W
<u>MONS</u>			
LIBYA Montes		00	270 W
<u>PLANUM</u>			
BOSPOROS		32 S	56 W
ICARIA		44 S	106 W
<u>RUPES</u>			
CEBERUS		06 N 186 W to	11 N 206 W
<u>SCOPULUS</u>			
ERIDANIA		47 S to 60 S	208 W to 235 W
<u>TERRAE</u>			
AONIA		55 S	090 W
ARABIA		25 N	320 W
MARGARITIFER		10 S	025 W
NOACHIS		45 S	000
PROMETHEI		55 S	270 W
TEMPE		35 N	075 W
CIMMERIA		45 S	210 W
MERIDIANI		05 S	000
SABAEA		15 S	325 W
SIRENUM		50 S	150 W
TYRRHENA		10 S	280 W
XANTHE		10 N	040 W

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Table 8 (Cont'd.)

<u>VALLES</u>			
DAO Vallis	23 S	265 W	to 40 S 275 W
HARMAKHIS Vallis	38 S	265 W	to 43 S 275 W
MAJA Vallis	16 N	057 W	to 21 N 049 W
MAWRTH Vallis	19 N	057 W	to 27 N 052 W
REULL Vallis	39 S	260 W	to 48 S 270 W
AXIUS Valles	53 S	285 W	to 58 S 295 W
HIMERA Valles	21 S	022 W	to 23 S 023 W
LOCRAS Valles	07 S	311 W	to 11 S 313 W
PARANÁ Valles	23 S	012 W	to 26 S 009 W
RAVI Vallis	02 S	043 W	to 02 N 039 W
WARREGO Valles	42 S	095 W	to 44 S 091 W

## THE OUTER SOLAR SYSTEM

The name CHIRON is approved, as suggested by C.T. Kowal, for the body found by him in heliocentric orbit between Saturn and Uranus. Kowal's general suggestion is also approved - that any minor planets with similar characteristics shall be called Centaurian, and named after Centaurs. These bodies can also receive numbers and be classified as minor planets, but the nomenclature must remain distinctive to separate these objects from the inner asteroids.

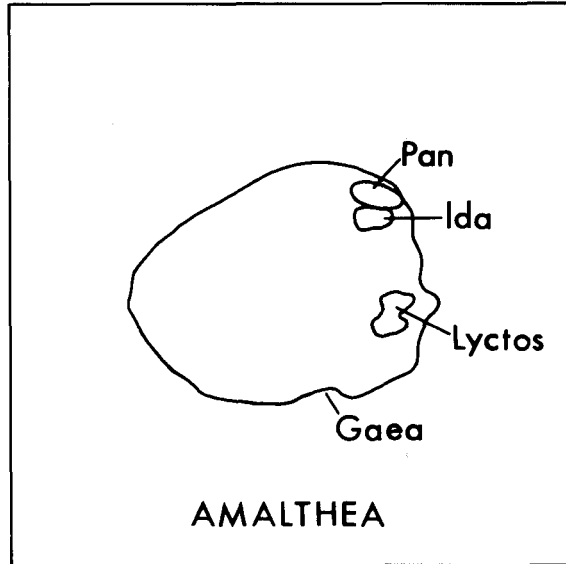
The following scheme has been adopted for naming features on the surfaces of satellites of the outer planets:-

- (a) The source of names shall be the ancient myths, legends, epics, and folktales of all cultures that have these traditions.
- (b) The Latin names for types of features shall be the same ones used in the inner solar system, with the addition of such classical terms as shall be necessary to describe new types of features without reference to their origins.
- (c) Naming shall be done in an orderly fashion to associate types of features, regions, and even entire satellites with certain categories of names.

## AMALTHEA NOMENCLATURE

Table 9. Four names approved for surface features on Amalthea, satellite of Jupiter. Approximate coordinates are given in degrees of latitude and longitude of a preliminary coordinate system, and may be in error by as much as 15 degrees.

<u>BRIGHT SPOTS</u>			
IDA	the nymph who cared for the infant Zeus	20 N	175 W
LYCTOS	the area in Crete where Zeus was raised	20 S	170 W
<u>CRATERS</u>			
GAEA	Mother Earth goddess who brought Zeus to Crete	80 S	090 W
PAN	son of Amalthea, the shepherds' god, made music on pipes of reed	55 N	035 W



Identification diagram for the surface features on Amalthea.

Io NOMENCLATURE

Table 10. 66 names as approved for features on the surface of Io, satellite of Jupiter. Approximate positions are given in degrees of latitude and longitude with brackets indicating greater uncertainty.

ERUPTIVE CENTERS

AMIRANI	Georgian god of fire	27 N	119 W
LOKI	Scandinavian mischievous demon god	19 N	305 W
MARDUK	Babylonian god of agriculture	28 S	210 W
MASUBI		45 S	053 W
MAUI	Maori hero who lifted up the sky	19 N	122 W
PELE	Hawaiian goddess of the volcano	19 S	257 W
PROMETHEUS	a Titan who stole fire from Zeus	03 S	153 W
SURT	Teutonic lord of the fire giants	45 N	337 W
VOLUND		22 N	177 W

CATENA

MAZDA	Persian royal god	(10 S	312 W)
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MONTES

HAEMUS	place name connected with the Io myth	(70 S	044 W)
SILPIUM	" " " " " " "	62 S	282 W

PLANA

DODONA	" " " " " "	(57 S	349 W)
NEMEA	" " " " " "	(70 S to 89 S	240 to 350 W)

Table 10 (Cont'd.)

REGIONES

	place name connected with the Io myth	(45 S	125 W)
BACTRIA	" " " " " " " "	(40 N to 65 N	060 to 110 W)
CHALYBES	" " " " " " " "	(00 to 50 N	130 to 210 W)
COLCHIS	" " " " " " " "	(55 S to 70 S	280 to 310 W)
LERNA	" " " " " " " "	(20 N to 30 N	000 to 100 W)
MEDIA	" " " " " " " "	(30 S to 55 S	130 to 180 W)
MYCENAE	" " " " " " " "	(20 S to 65 S	020 to 080 W)
TARSUS	" " " " " " " "		

THOLI

APIS	name for Epaphus, son of Io and Zeus	(11 S	349 W)
INACHUS	river god, father of Io	16 S	349 W

PATERAE

AMATERASU	Japanese sun goddess	38 N	307 W
ASHA	Persian god of fire	09 S	226 W
ĀTAR	son of the Persian god Mazda	30 N	279 W
ATEN	ancestor of human race, Egyptian mythology	(48 S	311 W)
BABBAR		40 S	272 W
BOCHICA	Columbian, Chibcha solar god	61 S	022 W
CREIDNE		(51 S	344 W)
CULANN	a Celtic hero	(20 S	162 W)
DAEDALUS	father of Icarus, escaped from the labyrinth by using wings	19 N	275 W
DAZHBOG	Slavonic sun god	54 N	302 W
EMAKONG		03 S	119 W
FUCHI		28 N	328 W
GALAI		11 S	289 W
GIBIL	Assyro-Babylonian god of fire, son of Anu	15 S	295 W
HENO		57 S	312 W
HEPHAESTUS	Grecian god of the forge	02 N	290 W
HIRUKO	Japanese solar god	(65 S	330 W)
HORUS	Egyptian solar god	10 S	340 W
INTI	Inca sun god	(68 S	349 W)
KANE		47 S	013 W
LOKI	Scandinavian mischievous demon god	13 N	310 W
MAASAW		40 S	341 W
MAFUIKE		(15 S	261 W)
MALIK		(33 S	127 W)
MANUA		35 N	322 W
MASAYA	Nicaraguan goddess of volcanos	(22 S	348 W)
MAUI	Maori hero who lifted up the sky	(20 S	123 W)
MIHR		16 S	306 W
NINA	Inca fire divinity	(40 S	165 W)
NUSKU	Assyro-Babylonian fire god	63 S	007 W
NYAMBE	Zambezi sun god	(00	344 W)
RA	Egyptian sun god	08 S	325 W
REIDEN		14 S	236 W
RUWA		(02 S	005 W)
SENGEN	Japanese god of Mt. Fuji	33 S	304 W
SHAKURU	Pawnee Indian sun god, Nebraska, USA	(24 N	267 W)
SHAMASH	Assyro-Babylonian sun god	(37 S	152 W)
TOHIL		(29 S	159 W)
SVAROG	the sky, Slavonic father of the gods	48 S	267 W

Table 10 (Cont'd.)

ÜLGEN		41 S	288 W
UTA	Assyro-Babylonian hero who survived the deluge	35 S	027 W
VAHAGN		(27 S	035 W)
VIRACOCHA	Inca god of rain and lake Titicaca	(62 S	282 W)

## EUROPA NOMENCLATURE

Table 11. 18 names as approved for features on the surface of Europa, satellite of Jupiter. The coordinates are listed in degrees of latitude and longitude and are approximate only. Most of the coordinates give points of intersection between linear features and do not define the entire extent of the feature. The names are taken from classical mythology, in particular the Europa myth.

LINEAE

ADONIS	son of Pheonix, nephew of Europa	33 S 123 W	to	75 S 113 W
AGENOR	Europa's father	45 S 210 W	to	30 S 174 W
ARGIOPE	a name for Europa's mother	29 S 219 W	to	06 S 182 W
ASTERIUS	Europa's husband	32 S 311 W	to	45 N 200 W
BELUS	Agenor's twin brother	03 S 215 W	to	35 N 105 W
CADMUS	brother of Europa	30 N 240 W	to	18 N 164 W
LIBYA	Agenor's mother	80 S 240 W	to	29 S 140 W
MINOS	son of Europa	48 S 218 W	to	34 S 149 W
PELORUS	from Dragon teeth, founder of Thebes	23 S 179 W	to	00 125 W
PHINEUS	brother of Europa	31 S 353 W	to	23 S 269 W
SARPEDON	son of Europa and Zeus	41 S 100 W	to	71 S 088 W
THASUS	brother of Europa	50 S 175 W	to	77 S 208 W

FLEXUS

CILICIA	where Cilix searched for Europa	63 S 170 W	to	50 S 143 W
GORTYNA	place on Crete where Zeus brought Europa	53 S 171 W	to	40 S 149 W
SIDON	another name for Tyre	73 S 240 W	to	47 S 126 W

MACULAE

THERA	island where Cadmus searched	48 S	182 W
THRACE	place where Cadmus searched	46 S	173 W
TYRE	where Zeus carried Europa	32 N	147 W

## GANYMEDE NOMENCLATURE

Table 12. 53 names as approved for surface features on Ganymede, satellite of Jupiter. Approximate positions are given in degrees of latitude and longitude with brackets indicating greater uncertainty. Crater names are taken from the mythologies of Assyria, Babylon, Canaan and Egypt.

CRATERS

ACHELOUS	Akkadian god of power, of heavens	62N	020W
ADAD	god of thunder and of the storm	57N	007W
ADAPA	lost his chance for immortality when he refused food offered by Ana	73N	040W
AMMURA	god of the "west"	34N	349W
ANU	river god, father of Ganymede	63N	349W



Table 12 (Cont'd.)

ASSHUR	Assyrian warrior	53N	338W
AYA	wife of Shamash	63N	332W
BAAL	Canaanite god	30N	336W
DANEL	mythical hero versed in art of divination	06S	026W
DIMENT	goddess of the dwelling place of the dead	25N	358W
ENLIL	god of the air, of hurricanes, of nature	52N	321W
ESHMUN	divinity of Sidon	14S	189W
ETANA	because dizzy and crashed to the Earth	69N	347W
GILGAMESH	Khumbuba the monster that guarded the mountain of cedars	(59S)	122W)
GULA		64N	020W
HATHOR	protrectress of women, goddess of joy and love	(70S)	265W)
ISIS	the name under which Io was worshipped in Egypt	(63S)	198W)
KERET	legendery hero	15N	042W
KHUMBAM	Elamite god who created	24S	339W
KISHAR	female, terrestrial progenitor	70N	005W
MELKART	divinity of Tyre	04S	186W
MOR	spirit of the harvest	33N	334W
NABU	god of intellectual activity	47S	008W
NAMTAR	plague Demon	64S	347W
NIGIRSU		63S	321W
NUT	goddess of the sky	50S	270W
OSIRIS	god of the dead	(40S)	160W)
RUTI	Byblos god	15N	310W
SAPAS		57N	046W
SEBEK		61N	004W
SIN	moon god	53N	003W
TANIT		57N	045W
TROS		09N	036W
ZAGAR	Sin's messenger brought dreams to men	58N	045W
<u>SULCI</u>			
ANSHAR	celestial world home of Lakhmu and Lakhamu	32N to 15N	211W to 190W
APSU	primordial ocean	38S to 16S	242W to 218W
AQUARIUS	constellation of the water carrier	33N to 53N	032W to 003W
DARDANUS	promentary where Ganymede was abducted by eagles of Zeus	51S to 09N	043W to 036W
HARPAGIA	mount where Ganymede was abducted	05N to 23S	335W to 322W
KISHAR	terrestrial world, home of Lakhmu and Lakhamu	10S to 09N	229W to 211W
MASHU	where Ganymede and Phoebe are worshipped as raingivers	23N to 47N	182W to 242W
MYSIA	mount where Ganymede was abducted by eagles of Zeus	13S to 33N	002W to 334W
NUN	chaos, primordial ocean		48N 339W
PHILUS		33N to 62N	220W to 200W
PHRYGIA	kingdom where Ganymede was born	04N to 23N	034W to 321W
SICYON	where Ganymede and Hebe are worshipped as raingivers	30N to 43N	024W to 359W
TIAMAT	tumultuous sea from which everything was generated	19N to 07S	223W to 202W
URUK		53N to 10S	204W to 143W

Table 12 (Cont'd.)

REGIONES

BARNARD	1857-1923 American astronomer	(05S to 37N	037W to 352W)
GALILEO	1564-1642 Italian astronomer	(01N to 65N	080W to 180W)
MARIUS	1570-1624 German astronomer	(75S to 58N	240W to 120W)
NICHOLSON	1891-1963 American astronomer	(45S to 00	061W to 318W)
PERRINE	1867-1951 American astronomer	(10N to 53N	075W to 350W)

## CALLISTO NOMENCLATURE

Table 13. 89 names as approved for surface features on Callisto, satellite of Jupiter. Approximate positions are given in degrees of latitude and longitude with brackets indicating greater uncertainty. The names are taken primarily from the myths and folk-tales of northern cultures.

CATENA

GIPUL	river (Norse)	64 N 074 W	to 71 N 034 W
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LARGE-RINGED FEATURES

ADLINDA	under the sea where souls are imprisoned after death (Eskimo)	58 S	018 W
ASGARD	where the gods dwell (Norse)	19 N	123 W
VALHALLA	Odinn's hall where dead heroes dwell (Norse)	18 N	054 W

CRATERS

ADAL	son of Jarl and Erna (Norse)	76 N	082 W
ÁGRÓI		39 N	010 W
AKYCHA	Alaskan name for the sun (Eskimo)	73 N	315 W
ALFR	dwarf (Norse)	(09 S	222 W)
ALI	strongest of all men (Norse)	60 N	056 W
ANARR	dwarf (Norse)	48 N	002 W
ANINGAN	moon god (Eskimo)	53 N	008 W
ASKR	first man created from an ash tree (Norse)	52 N	323 W
BALKR	Ottar's ancestor (Norse)	30 N	011 W
BAVORR	dwarf (Norse)	50 N	019 W
BELI	giant (Norse)	64 N	082 W
BRAGI	skald-god (Norse)	76 N	072 W
BRAMI	Ottar's ancestor (Norse)	30 N	019 W
BRAN		(31 S	197 W)
BUGA	Tungu heaven god	22 N	326 W
BURI	dwarf (Norse)	(35 S	043 W)
BURR		34 N	115 W
DAG	Ottar's ancestor (Norse)	(61 N	077 W)
DANR	king (Norse)	64 N	078 W
DIA	Callisto's sister (Greek)	72 N	064 W
DRYOPS	son of Dia by Apollo (Greek)	79 N	019 W
DURINN	dwarf (Norse)	68 N	091 W
EGDIR	shepherd for the giants (Norse)	35 N	036 W
ERLIK		65 N	347 W
FADIR	farmer (Norse)	58 N	014 W
FILI	dwarf (Norse)	64 N	340 W
FINNR	dwarf (Norse)	17 N	004 W
FRODI	father of priestess Hledis (Norse)	68 N	142 W

Table 13 (Cont'd.)

FREKI	wolf (Norse)	78 N	358 W
FULLA	Frigg's maid (Norse)	72 N	105 W
FULNIR	son of Thrael and Thyr (Norse)	61 N	035 W
GERI	wolf (Norse)	65 N	343 W
GISL	steed on which the gods ride (Norse)	59 N	032 W
GLOI	dwarf (Norse)	41 N	241 W
GOLL	servant to the gods (Norse)	57 N	318 W
GONDUL	one of Odinn's maidens (Norse)	61 N	116 W
GRIMR		33 N	199 W
GUNNR	one of Odinn's maidens (Norse)	65 N	107 W
GYMIR		64 N	053 W
HABROK	hawk (Norse)	77 N	133 W
HAKI		25 N	314 W
HAR	dwarf (Norse)	02 S	358 W
HEPTI	dwarf (Norse)	65 N	022 W
HODR	Baldr's blind brother (Norse)	70 N	091 W
HOENIR	god who gave blood to first humans (Norse)	(36 S	261 W)
HOGNI	Ottar's ancestor (Norse)	10 S	005 W
IGALUK		07 N	314 W
IVARR	Ottar's ancestor (Norse)	07 S	321 W
JUMO		61 N	008 W
KARI	Ottar's ancestor (Norse)	48 N	106 W
KARL	Rigr's son (Norse)	56 N	328 W
LODURR	god who gave goodly colour to first humans (Norse)	47 S	268 W
LONI	dwarf (Norse)	08 S	205 W
LOSY		66 N	322 W
MERA	nymph of Artemis, seduced by Zeus (Greek)	65 N	076 W
MIMIR	giant (Norse)	34 N	054 W
MITSIANA	Alaskan old man who perished while hunting on the ice (Eskimo)	57 N	097 W
MODI	son of Thorr and Sif (Norse)	67 N	122 W
NAMA	hero who built ark to save his family from the flood	57 N	329 W
NAR	dwarf (Norse)	02 N	048 W
NERIVIK	Alaskan name of Sedua (Eskimo)	14 S	051 W
NIDI	dwarf (Norse)	67 N	097 W
NORI	dwarf (Norse)	46 N	341 W
NUADA		(55 N	263 W)
OSKI	another name for Odinn (Norse)	(49 N	263 W)
OTTAR	a favorite of Freyja (Norse)	62 N	106 W
PEKKO		19 N	005 W
REGINN	dwarf (Norse)	(40 N	090 W)
RIGR	Heimdall in disguise (Norse)	(69 N	240 W)
SARAKKA		01 S	053 W
SEGINEK	the sun (Eskimo)	57 N	025 W
SHOLMO		55 N	015 W
SIGYN	Loki's wife (Norse)	37 N	027 W
SKOLL		55 N	314 W
SKULD	maiden, or norn, governing the fate of humans (Norse)	12 N	037 W
SUNDRI	dwarf (Norse)	56 N	139 W
SUMBUR		67 N	322 W
TINDR	Ottar's ancestor (Norse)	01 S	355 W

Table 13 (Cont'd.)

TORNARSUK	Greenland legendary hero (Eskimo)	28 N	129 W
TYN	war god, Odinn's son (Norse)	(69 N	228 W)
VALFODR	another name for Odinn (Norse)	01 S	239 W
VALI	Ottar's ancestor (Norse)	10 N	325 W
VESTRI	dwarf (Norse)	46 N	050 W
VITR	dwarf (Norse)	21 S	350 W
YMIR	giant from who Earth was created (Norse)	52 N	102 W

Ottawa, Ontario

3 April 1980