

PACIFIC REGIONAL  
PLANETARY DATA CENTER

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APOLLO 7 MISSION DATA AND  
INFORMATION LIST, 70MM COLOR PHOTOGRAPHY

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Submitted By  
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PREFACE

Prepared by the NASA Mapping Sciences Laboratory, Manned Spacecraft Center, Houston, Texas and the Lockheed Electronics Company, Houston Aerospace Division under contract NAS 9-5191 in response to Job Order 60-114, (Action Document No. 024.03-4, Apollo 7 Mission Data and Information List, 70mm Color Photography) issued by the Mapping Sciences Laboratory, Manned Spacecraft Center, Houston, Texas.

## ABSTRACT

The crew of the Apollo 7 mission exposed nine magazines of 70mm film during their October 1968 flight. The film loads within the magazines were: two each of Kodak SO-368 and 3400, and five of Kodak SO-121. Seven of the nine magazines, which include 493 frames of usable imagery, are described in the following report.

A descriptive outline including the evaluation methods and mission parameters has been compiled. The frame number, orbit, date, season, local solar time, G.E.T., sun elevation, coordinates, and scales were compiled as useful support data for each frame evaluated.

Photographic map plots, altitudes, and percent cloud cover, along with an image evaluation were compiled for data enhancement.

The description of the imagery by discipline is intended to aid the user in a more detailed evaluation of the Apollo 7 imagery.

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APOLLO 7 MISSION DATA AND INFORMATION LIST, 70MM COLOR PHOTOGRAPHY

1. INTRODUCTION

The information obtained from the photographs taken during the Apollo 7 Mission proved to be extremely valuable. Numerous areas which have never before been photographed from spacecraft altitudes were acquired. The photographic attitudes ranged from near vertical to high oblique, and from under to over exposed photographic quality. Photographic altitudes ranged from 88 nautical miles to 198 nautical miles, with an average range of 120 to 130 nautical miles. Sun angles, for the exposures, varied from 5 degrees to 84 degrees. A wide range of factors therefore affected the overall quality of the resulting imagery.

The following pages comprise a report of the mission data and an information list for the Apollo 7 photographs compiled by the Mapping Sciences Laboratory.

A guide to the user is that portion of the report which deals with the total number of frames pertaining to a single discipline. This information should enable the user to quickly select those frames which apply to his specific discipline. No attempt has been made to establish which frames have the largest percentage of single discipline occurrence, but only that the particular frame in question does contain major features of interest to that discipline. Some photographs will contain features pertaining to a number of disciplines.

## 2. DISCUSSION

### 2.1 Mission

The primary mission objectives were to test the command module, spacecraft performance and capabilities. This mission was a 10 day earth orbital operations mission. The launch azimuth was 72 degrees from true north, with an orbit inclination of 33 degrees to the equator. As a secondary mission objective, photos were obtained throughout the mission, from 35 degrees north to 35 degrees south latitude, over a period of 157 orbits. Targets of weather and terrain were of prime importance during the entire mission. These areas could then be further studied, from a different perspective and incorporated into the Earth Resources survey.

Each of the areas photographed was analyzed in a generalized manner for further study to be performed for its specific related disciplines of Geography/Cartography, Geology/Hydrology, Agriculture, Forestry, Meterology, and Oceanography.

#### 2.1.1. World Apollo Index Map

Figures 1, 3 and 5 illustrate the extent and location of Apollo 6 and 7 photographic coverage. The limits of frame coverage were extracted from previously compiled ONC plots.



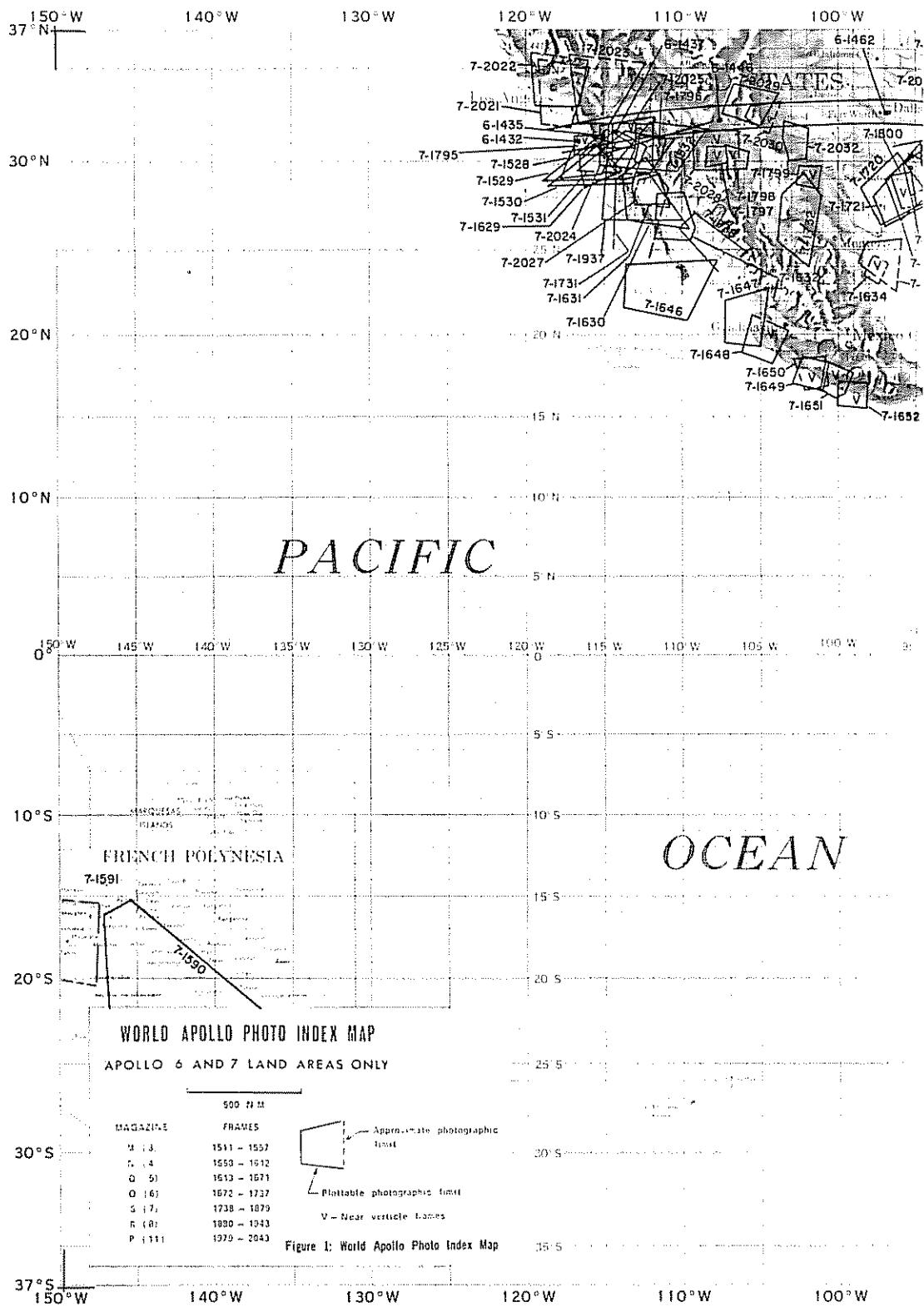
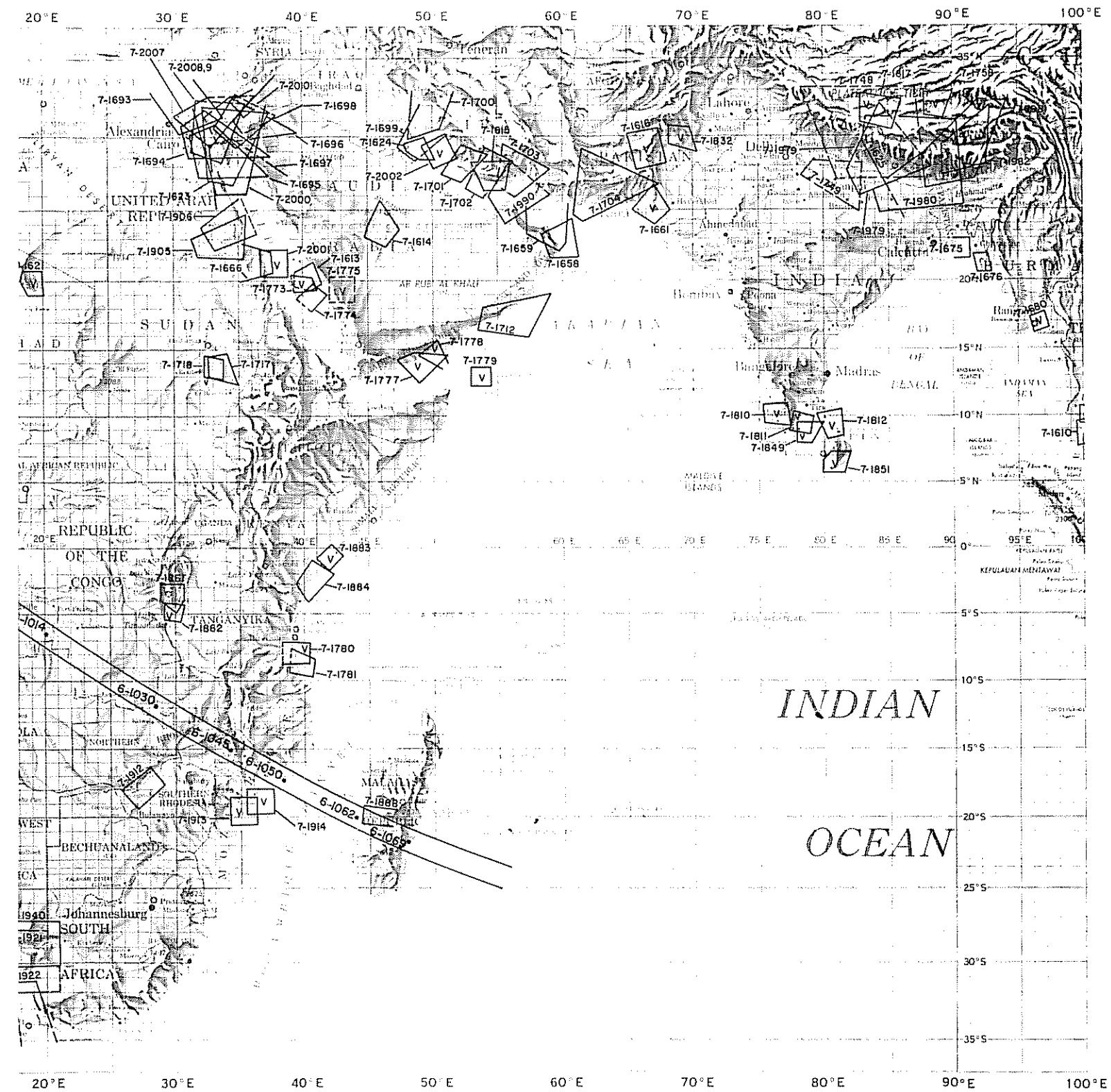
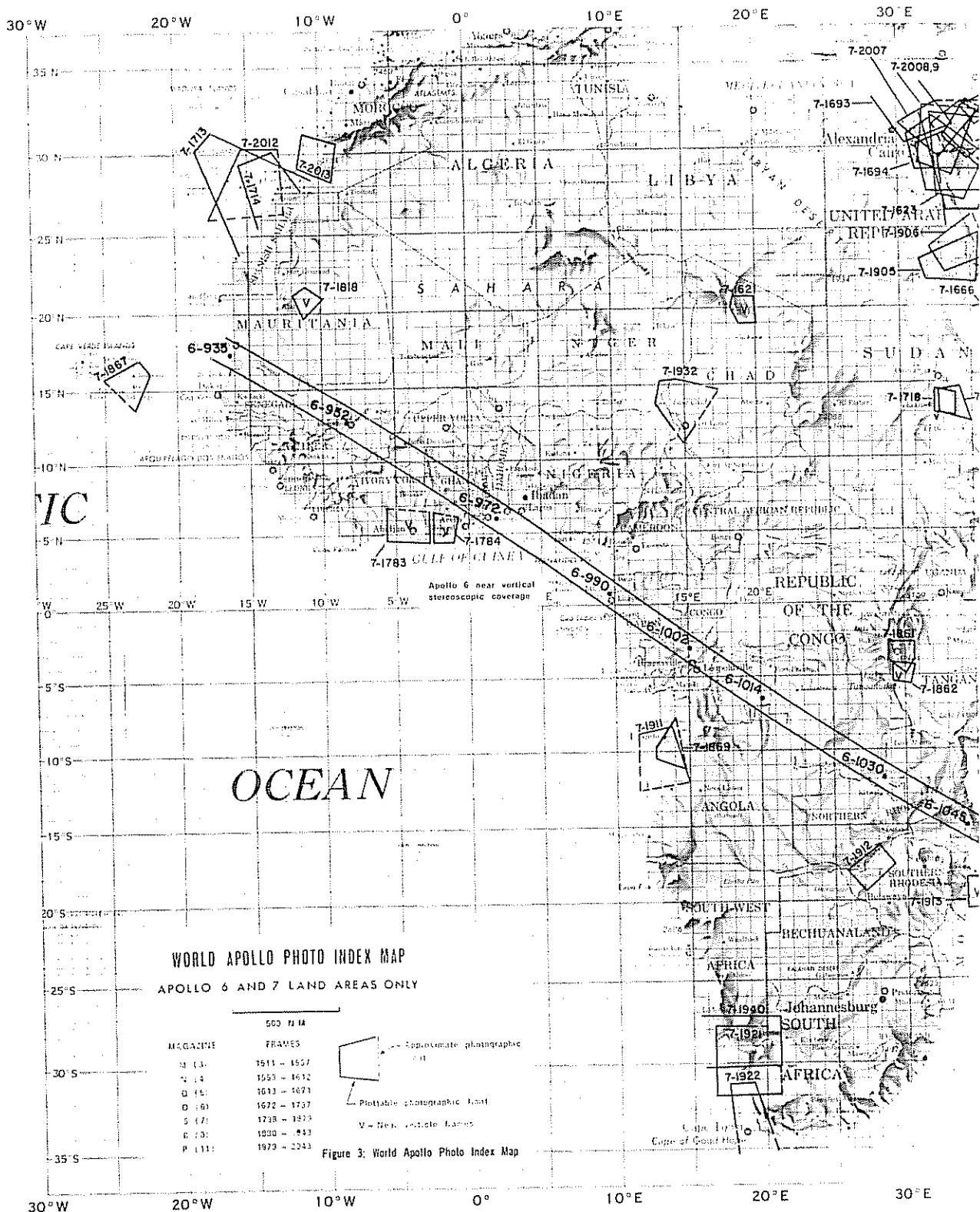




Figure 2: Apollo Photo Coverage Enlargement of Baja California Area





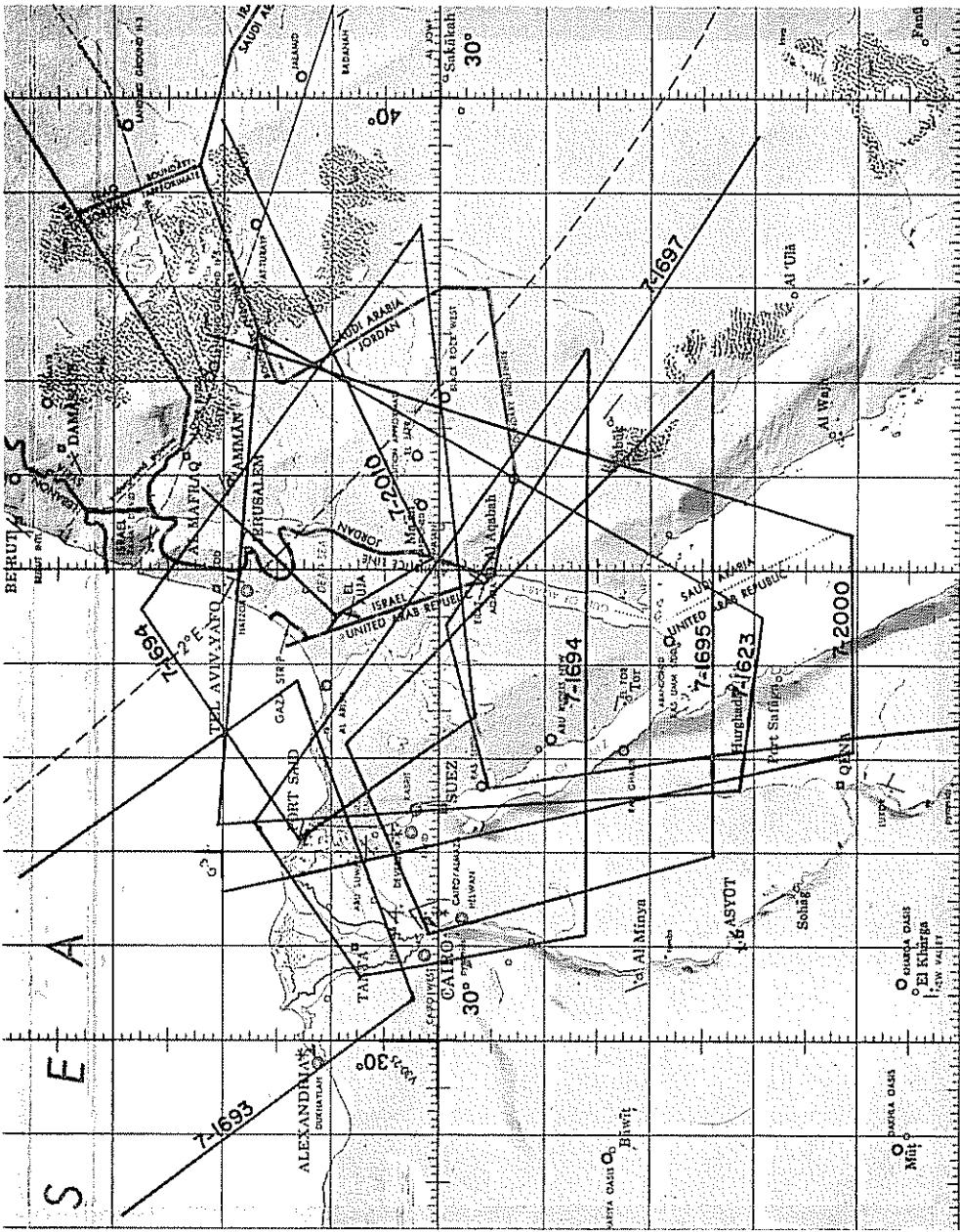


Figure 4: Apollo Photo Coverage Enlargement of Sinai Peninsula Area



Figures 2 and 4 are enlarged segments of the Baja California area and the Sinai Peninsula respectively. These areas were photographed extensively and appear as heavy line congestion on the World Apollo Index Map. The purpose of the enlargement is to reduce line congestion for easy frame limit identification.

## 2.2 Camera Data

- Camera: Hasselblad 500-C NASA Modified, 70mm, Serial No. 023
- Lens: Zeiss Planar, f/2.8, 80mm focal length
- Aperture Setting: f2.8 to f 22
- Shutter: Between the lens
- Film-Filter Combination per Magazines

<u>Magazine</u>	<u>Film</u>	<u>Filter</u>	<u>MSC Numbers</u>
M	SO-368	None	AS7-3-1511 to 1557
N	SO-368	None	AS7-4-1558 to 1612
Q	SO-121	2A	AS7-5-1613 to 1671
O	SO-121	2A	AS7-6-1672 to 1737
S	SO-121	2A	AS7-7-1738 to 1879
R	SO-121	2A	AS7-8-1880 to 1943
P	SO-121	None	AS7-11-1980 to 2043

Magazines V and U were not included in this evaluation due to a malfunction in the camera system.

2.3 Film Data

- Type: Eastman Kodak, S0-368, Medium Speed Ektachrome, ASA-64.
- Type: Eastman Kodak, S0-121, High Resolution Aerial Ektachrome, AEI-6.
- Size: 70mm, 2.5 mils thick, on polyester base.
- Format: 55.5mm by 55.5mm

2.4 Filter Data

- Type: Wratten 2A, lower limit of transmittance is 4100 Angstroms.

2.5 Equipment/Data Used for Interpretation

2.5.1 Transparency media

2.5.1.1. Tube magnifiers 7X, linen testers 5x

2.5.1.2. Stereoscopes

2.5.1.2.1 Hand, folding, 2x and 4x

2.5.1.2.2 Zoom, binocular, 0.7-30x

2.5.1.3 Rear projection viewers, 3, 4, 8, 12 and  
24 magnification

2.6 Screening Information List Explanation

The following is a column by column explanation of the Screening Information List:

2.6.1 Frame Number - The photographic frames from the Apollo 7 mission were from AS7-3-1511 to AS7-8-1943 and AS7-10-1949 through AS7-11-2043. These frames were exposed on seven magazines as previously listed in paragraph 2.2.

- 2.6.2 Orbit Number - The orbit numbers designate the orbit in which the frame was exposed.
- 2.6.3 Date - The day in which the photo, on its designated orbit, was exposed.
- 2.6.4 Seasons - Apollo 7 photographs were taken during October. The season in the areas north of 15 degrees north latitude is Fall, and in the areas south of 15 degrees south latitude is Spring. In the tropical latitudes, areas between latitudes 15 degrees north and 15 degrees south, there is a small annual temperature range, resulting in a lack of distinct seasons; Fall, Winter, Spring and Summer. The principal determinant factor of seasons in tropical areas is the extent and distribution of moisture, which results in a tropical climate of hot-wet and cool-dry seasons.
- 2.6.5 Ground Elapse Time (G.E.T.) - This time designation is initiated from the time of launch through the entire mission on a continuous basis starting at 000 hours, 00 minutes and 00 seconds.
- The listing is only recorded in hours and minutes, and was extracted from the orbit trace. The exact geographic position of the spacecraft at the time of exposure cannot

be determined by the resulting imagery without extensive analytical photogrammetric resection and mensuration. Camera orientation angles as well as spacecraft altitudes are inconsistent for a quick nadir point location determination. In most frames, the image format is obscured by the limits of the spacecraft windows, and only in a few cases is the horizon available for accurate tilt axis analysis or principal line construction on the imagery.

Since the exact nadir point location is difficult to determine from the photography, the possibility of determining an exact G.E.T. from the imagery is improbable. The G.E.T. for each frame has been extracted from the "Apollo 7 Preliminary Report." These exposure times are approximate and intended only as an aid to the user.

- 2.6.6 Local Solar Time - Local Solar Time, for a particular frame, is that time at or near the principal point at the time of exposure and is based upon the GMT of the exposure and the geographic position of the principal point. The time change constant applied to the calculation of Local Solar Time is 4 minutes for every one degree of longitude change. Local time corridors were

not taken into consideration for this computation.

- 2.6.7 Sun Elevation - The local Sun Elevation is an approximate value that indicates the angle of the sun above the horizon for a particular time and location and is intended only as a guide to the user. These values were extracted from the "Apollo 7 Preliminary Report" and are used as support data.
- 2.6.8 Principal Point - Each photograph that contained enough land mass for geographical identification, was plotted on either World Aeronautical Charts 1:1,000,000 or Operational Navigation Charts, 1:1,000,000. In many instances the map or photo detail was insufficient for photo frame plotting. The photo principal points, once established on the photography, were plotted on the map source, by a detail comparison of photo imagery at the principal point with the map detail. In some instances the terrain at the principal point, in even near vertical imagery, contained inadequate topographic character for image transfer. On those frames where the principal point falls over water or cloud covered areas, and too far from land mass for even approximate placement, the principal point was not plotted. The principal points for high oblique frames were not plotted, due to the lack of visible detail near the center of the photograph.

However, when the principal point could be transferred from the photograph to the map source, the geographic coordinates were scaled and recorded to the nearest minute of latitude and longitude of the point. These values, which were extracted from map sources, are in most cases accurate to plus or minus 30 minutes of latitude and longitude. The resulting values appear in the tables as Principal Point Latitude and Longitude.

In cases where it was not possible to establish the principal point due to one or more of the above reasons, the latitude and longitude of the principal point for that particular frame was extracted from the "Apollo 7 Preliminary Report." Such values are designated by an asterisk. These coordinates are only approximate and generally accurate to plus or minus one degree. They are intended to give the user the approximate location of the principal points.

2.6.9 Approximate Scales at the Principal Point - The established scales of Apollo 7 photographs are variable and approximate. A majority of the frames were exposed at various angles of camera attitude and spacecraft altitudes, which constantly changed the scale of the photographs along the axis of tilt.

Scales will be constant however along lines constructed perpendicular to the axis of tilt. To compute and construct a scale grid for each individual frame proved too time consuming. It was decided however, to determine the scale for a particular perpendicular under certain conditions.

If the conditions of reliable map sources, and sufficient photo detail were present, the scales along a line perpendicular to the axis of tilt and at the principal point could be determined. This was accomplished by the ratios of map scale, map distance to photo distance. The problem is to have measurable image distances which correspond to measurable map distances; for example: drainage intersections, points on a coast line, highway intersections, small islands, etc.. All measurements were made perpendicular to the tilt axis and as close to the principal point as possible. Scales of this type were determined only when the proper conditions prevailed, and are meant only as a guideline for the user. They should not be used for precise photo mensuration and it should be remembered that the scales are only as reliable as the map source.

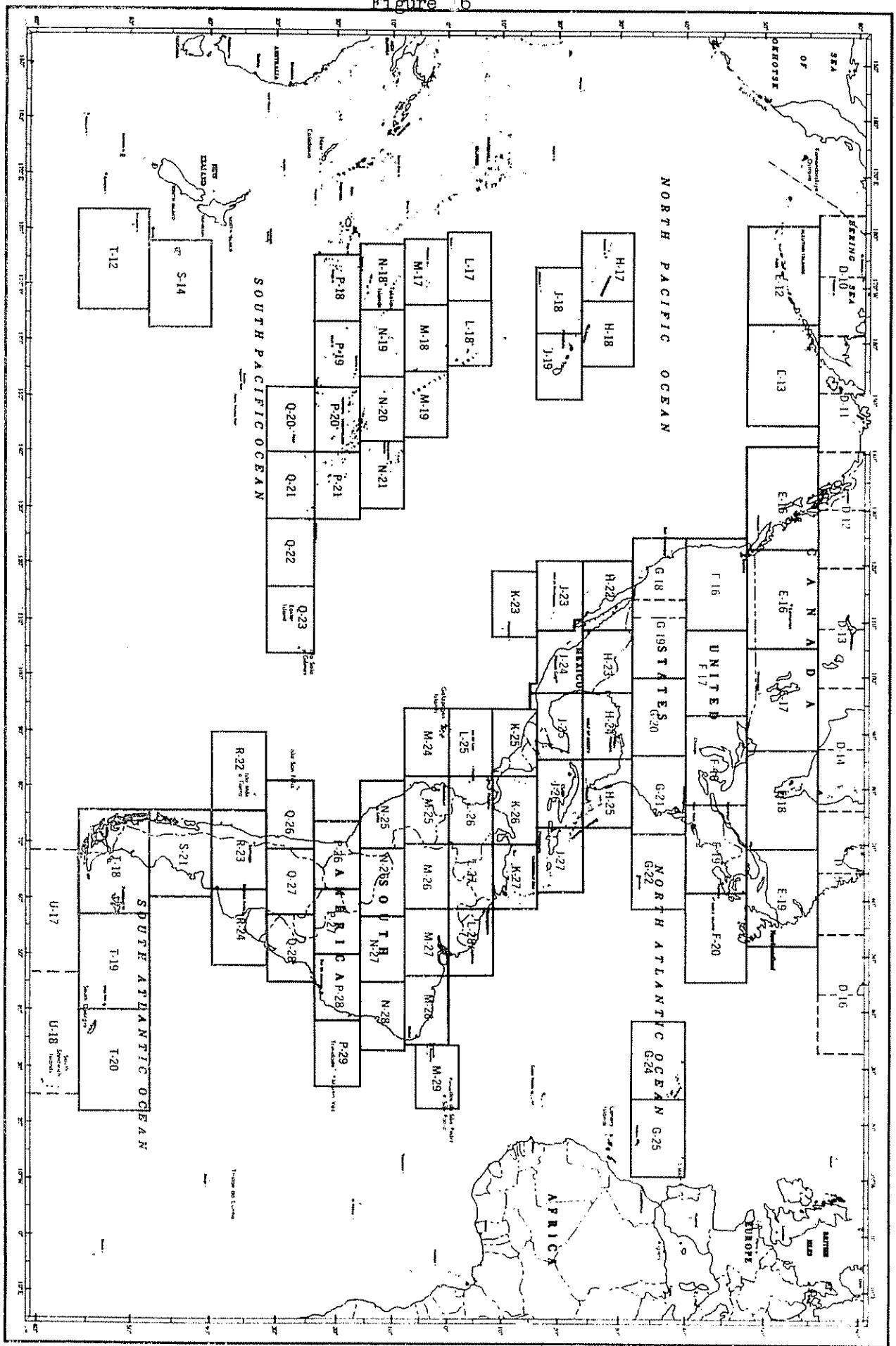
#### 2.6.10 Map Plots - Figures 6 and 7 are indices published by the

Aeronautical Chart and Information Center, denoting the sequence and location of the Operational Navigation Chart series throughout the world. These maps, compiled at 1:1,000,000 scale were used for Apollo 7, photographic plotting. World Aeronautical Charts were used for plotting where ONC's were lacking. The above circumstances were seldom and do not justify the incorporation of a WAC index in this publication. For each of the photographs, where a principal point was located, a designated ONC or WAC is recorded.

- 2.6.11 Altitude - The spacecraft elevation above mean sea level, at the spacecraft nadir, expressed in nautical miles.
- 2.6.12 Present Cloud Cover - Clouds appear in over 90% of Apollo photography and obliterate a large percent of the photographable land mass. Although cloud formations are of definite interest to meteorologist, and climatologist, their obscuring nature produces a problem to the Earth Resources Investigator who is interested in the underlying terrain. It was decided therefore that the person or persons required to make photographic terrain analysis of Apollo 7 imagery should be forewarned regarding the approximate percentage of cloud coverage of each frame. This was accomplished by placing a 100 unit proportionate grid, constructed to frame format requirements, over each

INDEX NO. 3  
Code ONC**OPERATIONAL NAVIGATION CHARTS**INDEX NO. 3  
Code ONC

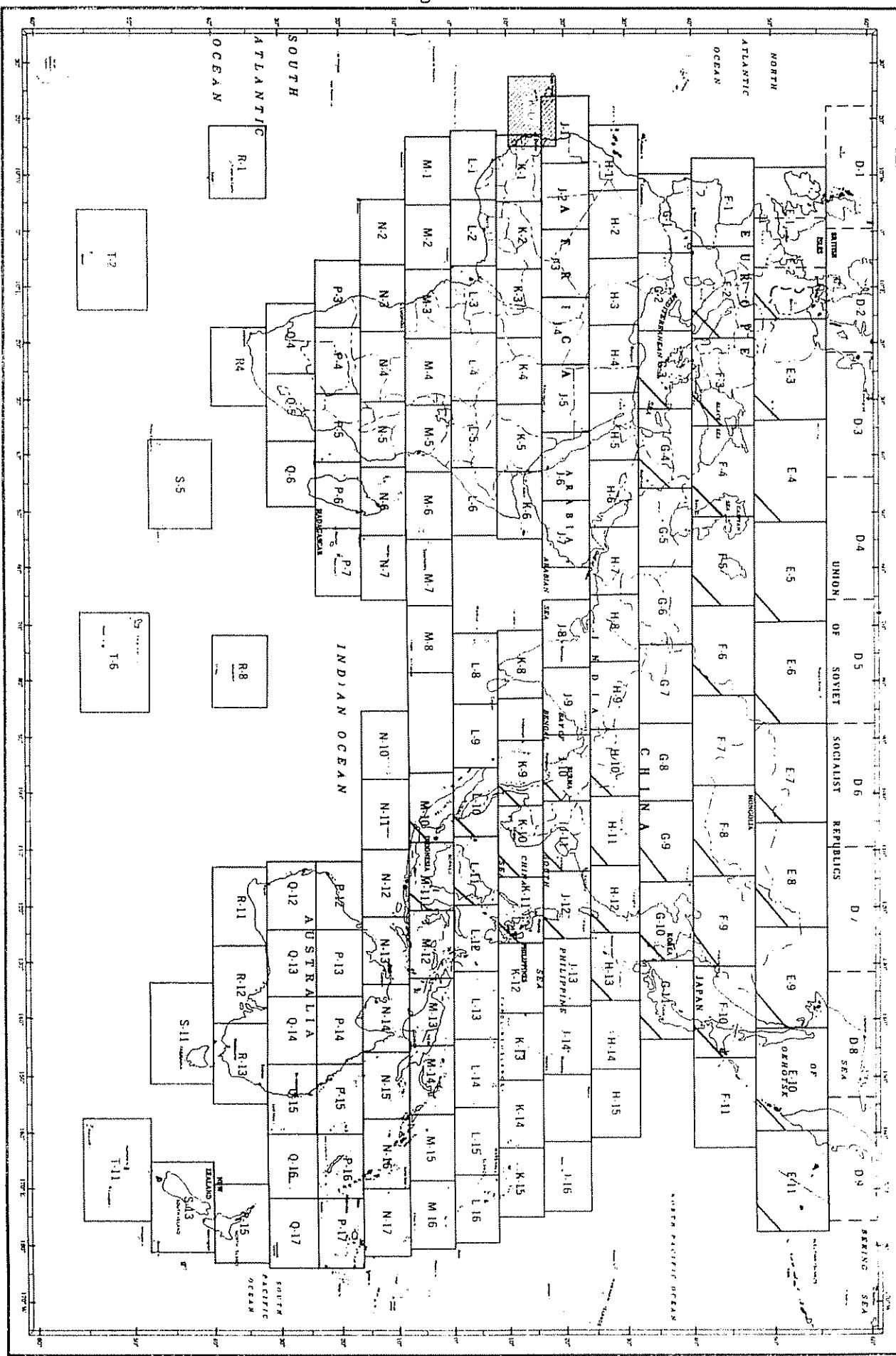
Figure 6



**INDEX NO. 2**  
**Code ONC**

## OPERATIONAL NAVIGATION CHARTS

INDEX NO. 1



frame. If a one percent square contained clouds over one half its area the cloud coverage was considered one percent. Each square within the frame limits, which contained actual imagery was counted and recorded as the percentage of cloud coverage within that frame. In cases where the frame was exposed for cloud-top brightness, the underlying imagery is dark. The presence or absence of clouds below the bright cloud barrier was impossible to ascertain. Therefore, the percentage of cloud cover is based entirely upon the uppermost apparent cloud cover.

- 2.6.13 Description by Discipline - The description of the current Earth Resource disciplines on Apollo 7 imagery was undertaken to aid the photo analyst in his search for discipline occurrence within each frame. In the event a given discipline does not appear to be contained within the frame limits, that discipline category was excluded from the frame description column.

The descriptions for each frame are short, concise, general statements of occurrence. They are based upon visual inspection of the 70mm film positive with the aid of magnification devices. Only those discipline aspects which were most apparent to the evaluator were described. No attempt was made to perform a detailed

analysis of any one discipline. The location of the desired disciplines within the frame has been denoted only geographically and not by coordinates.

Because of their closely related characteristics, Geography and Cartography and Geology and Hydrology were combined into one description. The other disciplines were Agriculture, Forestry, Meteorology and Oceanography.

Image evaluation in this report, denoted in parenthesis at the end of Geography, was devised as a rapid method for determining exposure quality. The three descriptive terms used to denote exposure quality are simple and concise. The terms Light, Normal, and Dark denote overexposure, normal exposure, and underexposure respectively. This guideline should enable the investigator to eliminate or at least grade those frames which are applicable for his particular discipline evaluation.

### CONCLUSIONS

The data and information contained in this report is intended to aid the scientist in selecting the frames most suited to his needs, and to provide him with the basic information about the selected frames to aid him in the analysis of the Apollo 7, 70mm color photography.

Ideally, this information should accompany the photography that is provided to the scientists in the Earth Resources Program. Due to the amount of time that is needed to prepare this report, the photography and this information could not have been disseminated to the scientists simultaneously. However, it is hoped that there will be a continued demand for Apollo photography for scientific analysis; and to those scientists, the data and information in this report should be an invaluable aid in the initial stages of their investigations.

Frames Pertaining To Each Discipline

<u>Oceanography</u>	<u>Geography/ Cartography</u>	<u>Agriculture</u>	<u>Geology/ Hydrology</u>	<u>Forestry</u>	<u>Meteorology</u>
1590-92	1528-36	1529-32	1528-31	1528-32	1528-32
1594-95	1541-46	1613-15	1541-45	1593-95	1536-56
1607-08	1590-95	1624	1593-94	1607-11	1590-95
1611	1604	1626	1613-43	1613-1616	1606-12
1613	1607-43	1629-36	1645-52	1626-27	1617-19
1615	1645-52	1641	1654-55	1629-38	1624-30
1619	1654-70	1643	1657-62	1640-43	1634-55
1623-24	1672-80	1693	1666-67	1647-52	1658-59
1626-36	1693-1708	1699	1693-1705	1662	1662-66
1638-42	1712-26	1700-02	1713-26	1666	1668-71
1649-52	1731-37	1717-18	1731-37	1693-99	1675-89
1654-55	1737-60	1720-1725	1740-50	1701-05	1693-1700
1661	1764-85	1731-33	1752-59	1716-1718	1702-47
1666	1787-1800	1736-37	1764	1720-1725	1749-74
1670	1802-24	1773-74	1772-81	1732	1776-90
1680	1826-32	1796	1783-90	1748-49	1792-1808
1694-97	1835-88	1798	1793-1800	1769-70	1810-16
1699-1705	1891-94	1831	1802	1777-78	1819-28
1716	1896-1903	1835	1804	1781	1830-31
1717	1905-14	1837-39	1807-13	1783-84	1833-54
1720-21	1916-18	1844	1817-19	1789	1861-80
1723-26	1920-22	1849	1824	1797	1883-88
1731	1924-28	1868-69	1826-32	1799	1891-99
1733-38	1931-43	1899	1835	1809	1901-04
1740-47	1979-85	1900	1837-39	1811-12	1907-14
1751-56	1987-93	1910	1841-45	1830-31	1919-27
1760	1996-2003	1916-18	1849-53	1835-39	1929-32
1769	2006-2013	1928	1856-57	1843-45	1934-37
1772-74	2015-2041	1942	1859-64	1850-51	1939-84
1777-1781		1980	1867-73	1855-56	1985-87
1811		2006-09	1880-81	1861	1890
1831		2020-34	1887-88	1863	1893
1843-44			1893-94	1868-73	1896-97
1867			1896-1903	1880-81	2001
1880-81			1905-14	1887-88	2003-23
1884			1916-18	1894	2027-41
1888			1920-22	1897-03	
1894-99			1924-25	1905-14	
1901-02			1927-28	1917-18	
1907			1931	1920	
1909-10			1936	1922	
1913-14			1938-43	1924-25	
1918			1979-85	1927-28	
1927-28			1988-93	1931-32	

Frames Pertaining to Each Discipline

<u>Oceanography</u>	<u>Geography/ Cartography</u>	<u>Agriculture</u>	<u>Geology/ Hydrology</u>	<u>Forestry</u>	<u>Meteorology</u>
1931			1996–2003	1936	
1933–34			2006–2013	1941–43	
1938–39			2015–2033	1979–85	
1943				1999	
1983–84				2001	
1996–97				2012–13	
2001–02					2020–40
2024–27					
2033–41					

DESCRIPTION BY DISCIPLINE											
FRAME NUMBER	DATE	SEASON	GET	LOCAL SOLAR TIME	SUN ELEV	PRINCIPAL POINT LATITUDE	LONGITUDE	APPROXIMATE SCALE OF 70MM AT PP	MAP PLOTS ONC	ALTITUDE N.A.	CLOUDS
1511	2	10/11								30	Congo, coastal area, out of focus (Normal)
1512	2	"								--	Condensation (Dark)
1513	2	"								--	Condensation (Dark)
1514	2	"								--	Spacecraft Window (Light)
1515	2	"								--	Spacecraft Window (Dark)
1516	2	"								--	Spacecraft Window (Dark)
1517	"	"								--	S-IVB booster and condensation (Dark)
1518	"	"								--	S-IVB booster and condensation (Dark)
1519	"	"								--	S-IVB booster and condensation (Dark)
1520	"	"								--	S-IVB booster and condensation (Dark)
1521	"	"								26	S-IVB booster (Normal)
1522	"	"								50	S-IVB booster (Normal)
1523	"	"								50	S-IVB booster (Normal)
1524	"	"								25	S-IVB booster (Normal)
1525	"	"								41	S-IVB booster (Normal)
1526	"	"								20	S-IVB booster, clouds (Normal)
1527	"	"								95	S-IVB booster, clouds (Normal)
1528	"	"	Fall	03:07	11:00	46°	30°31'N 115°56'W	1:14,250,000	H-22	125	GEOGRAPHY/CARTOGRAPHY: Baja California, Sierra San Pedro Martir Mountains, Rio San Rafael, Bay of San Quintin. (Normal)
											GEOLOGY/HYDROLOGY: Complex mountains highly faulted and folded, and elevated alluvial plains. Intermittent drainage is well defined.
											FORESTRY: Scattered low shrubform.
											METEOROLOGY: Alto-cumulus clouds.
											OCEANOGRAPHY: Sediment flow from Colorado River.
1529	"	"	Fall	03:08	10:34	47°	30°32'N 114°21'W		H-22	125	GEOGRAPHY/CARTOGRAPHY: Baja California, Gulf of California, Mexico, Bay of La Paz, Mouth of Colorado River. (Normal)
											AGRICULTURE: Extensive dry land cultivation, irrigated.
											GEOLOGY/HYDROLOGY: Complex mountains, alluvial plains and erg desert, all containing intermittent drainage.
											FORESTRY: Scattered low shrubform.
											METEOROLOGY: Strato-cumulus and Alto-cumulus.
											OCEANOGRAPHY: Sediment flow from Colorado River.
1530	"	"	Fall	03:08	10:37	47°	30°20'N 113°44'W		H-22	125	GEOGRAPHY/CARTOGRAPHY: Baja California, Gulf of California, Mexico, Bay of La Paz, Mouth of Colorado River. (Normal)
											AGRICULTURE: Extensive dry land cultivation, irrigated.
											GEOLOGY/HYDROLOGY: Deltaic and elevated erg. plains with complex mountains in the background.
											FORESTRY: Scattered low shrubform.
											METEOROLOGY: Cirro-cumulus.
											OCEANOGRAPHY: Sediment flow from Colorado River.

FRAME NUMBER	DATE	SEASON	GET	LOCAL SOLAR TIME	PRINCIPAL POINT LATITUDE	SUN ELEV	LONGITUDE	APPROXIMATE SCALE OF 70MM AT PP	MAP PLOTS WAC	ALTITUDE N.H.	CLOUDS IN %	DESCRIPTION BY DISCIPLINE			
												ONC	PP		
1531	2 1968 10/11	Fall	03:08	10:41	47° 30' N	47° 30' N	112° 57' W		H-22	125	0	GEOGRAPHY/CARTOGRAPHY: Gulf of California, Mexico, Cabo San Lucas, Magdalena River. (Normal) AGRICULTURE: Irrigated dry land cultivation, along drainage. FORESTRY: Scattered low shrubform, some coniferous forest at higher elevations. METEOROLOGY: Cirrus, small alto-cumulus. OCEANOGRAPHY: Some tonal changes.			
1532	"	n	Fall	03:08	10:43	47° 30' N	30° 58' N	111° 03' W		H-22	125	2	GEOGRAPHY/CARTOGRAPHY: Gulf of California, Mexico, Nopales, Arizona, Magdalena River. (Normal) AGRICULTURE: Dry land cultivation along drainage. GEOLOGY/HYDROLOGY: Complex hills and mountains. EDENTERY: Scattered shrubform, some coniferous forests at higher elevations. METEOROLOGY: Cirrus. OCEANOGRAPHY: Some tonal changes.		
1533	"	n	Fall	03:09	11:02	47° 31° 00' N	31° 00' N	107° 30' W			125	15	GEOGRAPHY: S-IV booster, Arizona. (Blurred)		
1534	"	n	Fall	03:09	11:06	48° 30' N	30° 30' N	106° 30' W		H-23	125	20	GEOGRAPHY: Arizona, New Mexico, Texas, SIVB booster. (Normal)		
1535	"	n	Fall	03:09	11:12	48°						30	GEOGRAPHY: Texas, SIVB booster. (Normal)		
1536	"	n	Fall	03:10	11:17	48°						126	15	GEOGRAPHY: Texas, SIVB booster. (Normal)	
1537	"	n	—	—	03:10	—	—	—				126	50	Clouds, SIVB booster (Normal)	
1538	"	n	—	—	03:11	—	—	50°				126	95	Clouds, SIVB booster (Normal)	
1539	"	n	—	—	03:12	—	—	—				126	100	Clouds, SIVB booster (Normal)	
1540	"	n	—	—	03:13	—	—	—				126	95	Clouds, SIVB booster (Normal)	
1541	"	n	Fall	03:13	12:16	—				H-25	126	80	GEOGRAPHY/CARTOGRAPHY: Mississippi Sound, Gulfport, Biloxi, Hattiesburg. (Normal) GEOLGY/HYDROLOGY: Atlantic Coastal Plain deposits. METEOROLOGY: Strato-cumulus, some alto-cumulus. OCEANOGRAPHY: Some tonal changes.		
1542	"	n	Fall	03:14	12:17	48°				H-25	126	70	GEOGRAPHY/CARTOGRAPHY: Mississippi Sound, Biloxi, and coastal beaches. (Normal) GEOLGY/HYDROLOGY: Marine and coastal plain region. METEOROLOGY: Cirro-cumulus, alto-cumulus, strato-cumulus. Cumulus. OCEANOGRAPHY: Sediment flows, fresh, salt water inner-face.		

FRAME NUMBER	LORO	DATE	SEASON	GET	LOCAL SOLAR TIME	SUN ELEV.	PRINCIPAL POINT LATITUDE	LONGITUDE	APPROXIMATE SCALES OF 70MM AT PP	MAP PLOTS		ALTITUDE N.M.	CLOUDS	DESCRIPTION BY DISCIPLINE		
										WAC	ONC					
1543	2	1968 10/11	Fall	03:15	12:36	48°				H-25		126	65	GEOGRAPHY/CARTOGRAPHY: Florida, Pensacola, Panama City, Appalachian. (Normal)		
														GEOLOGY/HYDROLOGY: Submerged coastline and coastal plain deposits.		
														METEOROLOGY: Stratocumulus, alto-cumulus.		
														OCEANOGRAPHY: Sediment flows, submerged sandbars.		
1544	3	"	Fall	03:16	12:51	48°	28°56'N	82°31'W		H-25		126	70	GEOGRAPHY/CARTOGRAPHY: Florida, Cape Kennedy, Daytona, Orlando, Lake McCoy. (Normal)		
														GEOLOGY/HYDROLOGY: Low coastal plain region with karst topography inland.		
														METEOROLOGY: Cirrus, cumulus, towering cumulus.		
														OCEANOGRAPHY: Coastline.		
1545	3	"	Fall	03:16	12:53	48°	28°55'N	82°40'W		H-25		127	60	GEOGRAPHY/CARTOGRAPHY: Florida, Cape Kennedy, Titusville, Daytona. (Normal)		
														GEOLOGY/HYDROLOGY: Low coastal plain region with karst topography inland.		
														METEOROLOGY: Cirrus, cumulus, towering cumulus.		
														OCEANOGRAPHY: Well developed beach pattern.		
1546	3	"	Fall	03:16	13:08	48°	28°00'N	82°20'W		H-25		127	75	GEOGRAPHY/CARTOGRAPHY: Florida, Cape Kennedy, Titusville, Daytona Beach. (Normal)		
														GEOTECHNICAL: Cumulus, some alto-cumulus.		
														OCETOGRAPHY: Some color changes.		
1547	3	"	---													
1548	3	"	---													
1549	3	"	---													
1550	3	"	---													
1551	3	"	---													
1552	3	"	---													
1553	3	"	---													
1554	3	"	---													
1555	3	"	---													
1556	3	"	---													

FRAME NUMBER	L E B R O	DATE	SEASON	GET	LOCAL SOLAR TIME	SUN ELEV.	PRINCIPAL POINT		APPROXIMATE SCALES OF 70MM AT PP	MAP PLOTS		ALTITUDE N.H. CLouds % WAC ONC	DESCRIPTION BY DISCIPLINE
							LATITUDE	LONGITUDE		WAC	ONC		
1558	1A1	1968 10/12											Astronaut Schirra, Spacecraft Interior
1559	1A1	"											Astronaut Cunningham, Spacecraft Interior
1560	1A1	"											Rendezvous with SIVB Booster
1561	1A1	"											Rendezvous with SIVB Booster
1562	1A1	"											Rendezvous with SIVB Booster
1563	1A1	"											Rendezvous with SIVB Booster
1564	1A1	"											Rendezvous with SIVB Booster
1565	1A1	"											Rendezvous with SIVB Booster
1566	1A1	"											Rendezvous with SIVB Booster
1567	1A1	"											Rendezvous with SIVB Booster
1568	1A1	"											Rendezvous with SIVB Booster
1569	1A1	"											Rendezvous with SIVB Booster
1570	1A1	"											Rendezvous with SIVB Booster
1571	1A1	"											Rendezvous with SIVB Booster
1572	1A1	"											Rendezvous with SIVB Booster
1573	1A1	"											Rendezvous with SIVB Booster
1574	1A1	"											Rendezvous with SIVB Booster
1575	1A1	"											Rendezvous with SIVB Booster
1576	1A1	"											Rendezvous with SIVB Booster
1577	1A1	"											Rendezvous with SIVB Booster
1578	1A1	"											Rendezvous with SIVB Booster
1579	1A1	"											Rendezvous with SIVB Booster
1580	1A1	"											Fogged Spacecraft Window
1581	1A1	"											Spacecraft Window with Vapor
1582	1A1	"											Astronaut Schirra
1583	1A1	"											Astronaut Eisele
1584	1A1	"											Astronaut Cunningham
1585	1A1	"											Astronaut Cunningham, Spacecraft Interior
1586	1A1	"											Astronaut Cunningham, Spacecraft Interior
1587	1A1	"											Astronaut Cunningham, Blurred
1588	1A1	"											Astronaut Cunningham
1589	1A1	"											
1590	1A1	10/20	Spring	224:18	13:40	62°	16°00'S	145°15'W*				119	25
													GEOGRAPHY/CARTOGRAPHY: Tumotu Archipelago, View Southeast. Society Islands. (Normal)
													GEOLoGY/HyDROLOGY: Island chain of atolls.
													MEteORology: Cirrus, small cumulus, alto-cumulus.
													OCEANOGRAPHY: Wave-action along coastline.
1591	1A1	10/20	Spring	224:18	13:40	65°	15°30'S	148°00'W*				120	35
													GEOGRAPHY/CARTOGRAPHY: Tumotu Archipelago, Rangiroa, Tikehau, Society Islands. (Normal)
													GEOLoGY/HyDROLOGY: Island chain of atolls.
													MEteORology: Cirrus, small cumulus, alto-cumulus.
													OCEANOGRAPHY: Wave-action along coastline.

\*approximate

FRAME NUMBER	LNB#	DATE	SEASON	GET	LOCAL SOLAR TIME	PRINCIPAL POINT LATITUDE	PRINCIPAL POINT LONGITUDE	APPROXIMATE SCALE OF 70MM AT PPP	DESCRIPTION BY DISCIPLINE			
									MAP PLOTS WAC	MAP PLOTS ONC	ALTITUDE N.H.	CLOUDS %
1592	154	1968 10/21	Spring	243:57	14:18	47° 24° 00' S	70° 30' W <sup>n</sup>	1:6,666,670	P-26, Q-26, Q-27	172	38	GEOGRAPHY/CARTOGRAPHY: Chile, Argentina, Atacama Desert, Andes Mountains. (Normal) GEOLOGY: Narrow coastal plain and rugged complex mountain region. METEOROLOGY: Stratus, strato-cumulus. OCEANOGRAPHY: Shallow water in bay. Wave-action in bay areas.
1593	154	1968 10/21	Spring	243:58	14:29	46° 23° 00' S	67° 29' W	P-26 Q-27	175	4	GEOGRAPHY/CARTOGRAPHY: Laguna Colorada, Bolivia, Salar de Atacama, Chile, Salar de Arizaro, Argentine. (Normal) GEOLOGY: Complex mountain region with karst topography and region of ferric mining. FORESTRY: Mountains in southeast forested. METEOROLOGY: Small cumulus.	
1594	154	1968 10/21	Spring	244:03	15:42	32° 31° 08' S	51° 02' W	R-24 Q-28	195	13	GEOGRAPHY/CARTOGRAPHY: Brazil, Uruguay, Lago dos Patos. (Normal) GEOLOGY: Coastal Plain with a shoreline region of emergence and lagoon regions. FORESTRY: Marsh along coastline. Dense forest. METEOROLOGY: Small cumulus, alto-cumulus. OCEANOGRAPHY: Shallow lagoon. Wave-action along the coastline, sediment movement along coastline.	
1595	154	1968 10/21	Spring	244:04	15:51	31° 28° 58' S	49° 24' W	1:4,062,500	Q-28	198	21	GEOGRAPHY/CARTOGRAPHY: Brazil, East Coast. Road network. Scattered settlements. (Normal) GEOLOGY: Narrow Coastal Plain and complex mountain region. FORESTRY: Dense forest and coastal marsh grasses. METEOROLOGY: Cumulus, alto-cumulus. OCEANOGRAPHY: Continental Shelf. Continental slope interface.
1596									Astronaut Schirra. (Dark)			
1597									Astronaut Cunningham. (Out of focus)			
1598									GEOGRAPHY/CARTOGRAPHY: Brazil, Lagoa dos Patos. (Out of focus. Dark.)			
1599	155								GEOGRAPHY/CARTOGRAPHY: Christmas Island. (Out of focus)	63		
1600									Astronaut Eisele, spacecraft interior. (Dark)			
1601	-								Spacecraft interior and window.			

\*Approximate

FRAME NUMBER	DATE	TIME	SEASON	GET	LOCAL SOLAR TIME	PRINCIPAL POINT	APPROXIMATE SCALE'S OF 70MM AT P.P.	MAP PLOTS		ALTITUDE N.A.M.	CLOUDS	DESCRIPTION BY DISCIPLINE
								WAC	ONC			
1602	1968											Spacecraft interior and window.
1603												METEOROLOGY: Cirrus, small cumulus.
1604	157	10/22	Fall	2:09:37	06:50	10° 27°30' N 92°30' E				H-10	93	75 GEOGRAPHY/CARTOGRAPHY: Himalaya Mountains. (Light) GEOLGY: Complex mountain region. AEREOLOGY: Alto-cumulus.
1605												Spacecraft window. (Light)
1606												METEOROLOGY: Strato-cumulus. (Dark)
1607	158	10/22	Spring	251:16	11:22	00°43'S 135°48'E	1:12,272,727			K-13	115	27 GEOGRAPHY/CARTOGRAPHY: Schouten-Eiland Islands. Small scattered settlements along the coast. (Normal) GEOLGY: Volcanic island chain. METEOROLOGY: Cumulus, cumulus-nimbus, cirrus. FORESTRY: Dense tropical forests. OCEANOGRAPHY: Waves along the coastline.
1608	158	10/22	Hot-Wet	251:20	12:19	09°04'S 148°52'E	1:3,000,000			K-15	130	47 GEOGRAPHY/CARTOGRAPHY: Cape Nelson, New Guinea, Solomon Sea, sketchy road pattern. (Normal) GEOLGY: Coastal plain of island. FORESTRY: Dense tropical forests. METEOROLOGY: Cirrus, small cumulus, alto-cumulus. OCEANOGRAPHY: Waves in bay areas.
1609	158	10/22	Hot-Wet	251:21	12:29	08°48'S 152°43'E	1:3,846,150			K-15 (Normal)	140	29 GEOGRAPHY/CARTOGRAPHY: Woodlark Island, Solomon Sea. Thailand. (Normal) GEOLGY: Low marine island, bounded by coral reefs. FORESTRY: Intermittent forest. METEOROLOGY: Cirrus, small cumulus, towering cumulus.
1610	159	10/22	Hot-Wet	252:42	10:25	63° 09°29' N 99°53'E				K-9 K-10	100	85 GEOGRAPHY/CARTOGRAPHY: Gulf of Thailand. The Mm Rat, Thailand. (Normal) GEOLGY: Coastal plain region. FORESTRY: Dense tropical forests. METEOROLOGY: Cirrus, small cumulus, alto-cumulus.
1611	159	10/22	Hot-Wet	252:47	11:34	83° 02°01'S 116°03'E	1:14,000,000			K-11	120	54 GEOLOGY: Coastal plain region. FORESTRY: Dense forest. METEOROLOGY: Small cumulus, towering cumulus, alto-cumulus. OCEANOGRAPHY: Varying breadth of Continental Shelf.

\*Approximate

FRAME NUMBER	DATE	SEASON	GET	LOCAL SOLAR TIME	PRINCIPAL POINT LATITUDE	PRINCIPAL POINT LONGITUDE	APPROXIMATE SCALES OF 70MM AT PP	MAP PLOTS WAC	ALTITUDE N.M.	DESCRIPTION BY DISCIPLINE	
										ONC	SDOCLRS
1612	159 10/22	Hot-Hot	252:50	12:09	84° 08'07"S	124° 01'E	1:3,875,000	H-13	130	2	GEOGRAPHY/CARTOGRAPHY: Lesser Sunda Islands, Pulau Alor, Pulau Pantar, Pulau Lemblen. (Light) GEOLOGY: Complex mountain island chain. METEOROLOGY: Cirrus, cumulus.
1613	24 10/13	Fall	37:20	07:05	15° 20'00"N	40° 23'E	1:3,333,000	J-6	132	0	GEOGRAPHY/CARTOGRAPHY: Saudi Arabia, Red Sea, Coast of Al Lith. (Normal) AGRICULTURE: Grazing. GEOLOGY/HYDROLOGY: Highly fractured igneous mountain region and an adjacent elevated desert plain. FORESTRY: Scattered low shrubform. OCEANOGRAPHY: Submerged land forms visible.
1614	24 10/13	Fall	37:21	07:28	20° 23'41"N	46° 08'01"E		J-6	131	0	GEOGRAPHY/CARTOGRAPHY: Saudi Arabia, Jabel Turayq, south of Ar Riyad, Marrah. (Normal) AGRICULTURE: Nomadic herding. GEOLOGY/HYDROLOGY: Dissected sedimentary plateau and large plain region. Denritic drainage throughout the plateau. FORESTRY: Scattered low shrubform.
1615	24 10/13	Fall	37:23	08:04	26° 26'52"N	54° 42'E	1:3,173,000	H-7	128	0	GEOGRAPHY/CARTOGRAPHY: Southern coast of Iran, Bandar-e Lengeh, Qeshm Island, Qeys Island. (Normal) AGRICULTURE: Nomadic herding. GEOLOGY/HYDROLOGY: Highly folded region of anticlines with possible salt plug intrusions. FORESTRY: Grass and low scattered shrubform. OCEANOGRAPHY: Sediment patterns from Rud-e-Kul River.
1616	24 10/13	Fall	37:27	08:54	34° 28'55"N	66° 17'E		H-8	127	0	GEOGRAPHY/CARTOGRAPHY: Pakistan, Karthar and Makran Ranges, Quetta. (Normal) GEOLOGY/HYDROLOGY: Folded and fractured mountainous region. FORESTRY: Intermittent grasslands.
1617	24 10/13	Fall	37:31	10:08	43° 31'02"S	83° 24'E	1:3,400,000	H-9	124		GEOGRAPHY/CARTOGRAPHY: Tibet, Ngangtartng Tso Lake, Tarok Tso Lake. (Normal) GEOLOGY/HYDROLOGY: Complex hills and mountains of Tibet Plateau. METEOROLOGY: Cumulus, alto-cumulus.
1618	24 10/13	Fall								40	GEOGRAPHY/CARTOGRAPHY: Tibet, Himalayas. (Dark) GEOLOGY/HYDROLOGY: Complex mountainous region. METEOROLOGY: Cirrus, alto-cumulus.

DESCRIPTION BY DISCIPLINE									
FRAME NUMBER	DATE	SEASON	GET	LOCAL SOLAR TIME	SUN ELEV	PRINCIPAL POINT LATITUDE	LONGITUDE	APPROXIMATE SCALES OF 70MM AT PP	MAP PLOTS WAC
1619	24 10/13	Fall	34:40	12:55	50° 25'00" N	123°00' E*		H-12	125
								GEOGRAPHY/CARTOGRAPHY: Ryukyu Island, Taruma, Irabu, Miyako. (Normal)	60
								GEOLGY/HYDROLOGY: Marine coral deposits.	
								METEOROLOGY: Cumulus, alto-cumulus, cirrus.	
								OCEANOGRAPHY: Island atolls.	
1620	25 "	Fall	38:48	06:51	11° 19'00" N	15°00' E*			134
								GEOGRAPHY/CARTOGRAPHY: Niger, Grand Erg sand dunes. (Dark)	0
								GEOLOGY: Linear Seif Dune Plain Region of the Sahara.	
1621	25 "	Fall	38:49	07:06	14° 19'55" N	18°32' E		J-4	133
								GEOGRAPHY/CARTOGRAPHY: Chad, Tibesti Mountains, Emi Koussi volcano. (Dark)	0
								GEOLGY/HYDROLOGY: Volcanic mountains of basalt in the Sahara.	
1622	25 "	Fall	38:51	07:38	21° 23'00" N	26°00' E*			130
								GEOGRAPHY/CARTOGRAPHY: United Arab Republic, Gulf Kebur Plateau. (Dark)	0
								GEOLGY/HYDROLOGY: Sedimentary plateau elevated above the erg plains.	
1623	25 "	Fall	38:53	08:10	26° 28'20" N	33°53' E		H-5	128
								GEOGRAPHY/CARTOGRAPHY: Sinai Peninsula, Red Sea, Gulf of Suez, Gulf of Aqaba. (Normal)	4
								GEOLGY/HYDROLOGY: Fractured mountainous Granitic region, and coastal erg plains.	
								OCEANOGRAPHY: Coral reef buildup and sedimentation along the coast.	
1624	25 "	Fall	38:56	09:15	37° 29'00" N	49°00' E*		H-6	126
								GEOGRAPHY/CARTOGRAPHY: Kuwait, Persian Gulf coast, Fallata Island. (Normal)	4
								AGRICULTURE: Dry land cultivation along coast.	
								GEOLGY/HYDROLOGY: Coastal Plain and sedimentation deposits.	
								METEOROLOGY: Cumulus.	
								OCEANOGRAPHY: Fresh-salt water interface, current patterns showing sediment flows, sun glint.	
1625	25 "	Fall	39:03	11:58	53° 28'00" N	88°00' E*		H-9	124
								GEOGRAPHY/CARTOGRAPHY: Nepal, Tibet, India, Ganges Plain. (Normal)	5
								AGRICULTURE: Irrigated subsistence.	
								GEOLGY/HYDROLOGY: Submerged coastline, dissected hills and mountains of complex structure.	
								FORESTRY: Intermittent evergreen forests.	
								METEOROLOGY: Cumulus, strato-cumulus.	
								OCEANOGRAPHY: Fresh-salt water interfaces, sediment flow patterns.	
1626	25 "	Fall	39:11	13:58	45° 23'00" N	116°00' E*		J12	126
								GEOGRAPHY/CARTOGRAPHY: China, Han River, Shan-Toli. (Normal)	70
								AGRICULTURE: Irrigated subsistence.	
								GEOLGY/HYDROLOGY: Submerged coastline, dissected hills and mountains of complex structure.	
								FORESTRY: Intermittent evergreen forests.	
								METEOROLOGY: Cumulus, strato-cumulus.	
								OCEANOGRAPHY: Fresh-salt water interfaces, sediment flow patterns.	

DESCRIPTION BY DISCIPLINE											
FRAME NUMBER	DATE	SEASON	GET	LOCAL SOLAR TIME	SUN ELEV.	PRINCIPAL POINT LATITUDE	LONGITUDE	SCALES OF 70MM AT PP	MAP PLOTS WAC ONC	ALTITUDE N.H.	CLOUDS
1627	25 10/13	Fall	39:14	14:22	42°	19°00'N	121°22'E	1:4,600,000	J-12	127	41
											GEOGRAPHY/CARTOGRAPHY: Philippine Island, north Luzon coast, Babuyan Island, Lazon Strait. (Normal) GEOLOGY/HYDROLOGY: Complex hill structure and volcanic islands. FORESTRY: Scattered tropical hardwood forests. METEOROLOGY: Cumulus, alto-cumulus. OCEANOGRAPHY: Well developed beaches, some water tonal differences.
1628	33 "	Fall	52:32	12:01	52°	26°40'N	113°40'W*		H-22, 23	122	24
											GEOGRAPHY/CARTOGRAPHY: Baja California, Gulf of California, western coast of Mexico. (Normal) GEOLOGY/HYDROLOGY: Coastal plain deposits and dissected hills and mountains. FORESTRY: Cumulus. METEOROLOGY: Cumulus. OCEANOGRAPHY: Faint tonal changes.
1629	33 "	Fall	52:32	12:01	52°	30°00'N	116°00'N*		H-22	122	35
											GEOGRAPHY/CARTOGRAPHY: Baja California, Bahia San Quintin. (Normal) AGRICULTURE: Cultivation patterns apparent along western coast. GEOLOGY/HYDROLOGY: Folded and basement complex hill and mountainous region. Intermittent dendritic drainage. FORESTRY: Scattered desert shrubform. METEOROLOGY: Cumulus, towering-cumulus. OCEANOGRAPHY: Tonel changes along eastern coast.
1630	33 "	Fall	52:33	12:06	52°	28°20'N	112°40'W*	1:3,700,000	H-22	122	0
											GEOGRAPHY/CARTOGRAPHY: Baja California, Gulf of California, Mexico, Tiburon Island. (Normal) AGRICULTURE: Extensive cultivation along Sonora River delta. GEOLOGY/HYDROLOGY: Complex and volcanic hills and mountains, with coastal and alluvial plains. FORESTRY: Scattered desert shrubform. OCEANOGRAPHY: Current patterns along Mexican coast.
1631	33 "	Fall	52:33	12:06	52°	28°42'N	112°20'W	1:3,000,000	H-22	122	0
											GEOGRAPHY/CARTOGRAPHY: West coast of Mexico, Gulf of California, Tiburon Island. AGRICULTURE: Extensive cultivation along Sonora River Delta. GEOLOGY/HYDROLOGY: Deltic, coastal and alluvial plains with complex hills dissected throughout. FORESTRY: Scattered desert shrubform. OCEANOGRAPHY: Sun glint showing surface currents.

FRAME NUMBER	DATE	SEASON	GET	LOCAL SOLAR TIME	PRINCIPAL POINT SUN ELEV	LATITUDE	LONGITUDE	APPROXIMATE SCALE'S OF 70MM AT PPP	MAP PLOTS			ALTITUDE N.M.	CLOUDS	DESCRIPTION BY DISCIPLINE
									WAC	ONC	WAC			
1632	33 1968 10/13	Fall	52:33	12:06	52° 27'30" W	111°00' N			H-22	122	0			GEOGRAPHY/CARTOGRAPHY: Western Coast of Mexico, Gulf of California. (Normal) AGRICULTURE: Extensive cultivation along coast, prominent field patterns. GEOLOGY/HYDROLOGY: Deltaic coastal plains and complex hills and mountains. FORESTRY: Scattered desert shrubform, with evergreens at higher elevations. OCEANOGRAPHY: Prominent sun glint revealing surface current patterns.
1633	33 "	Fall	52:35	13:49	51° 24'45" N	97°30' W		1:2,920,000	H-23 J-24	123	47			GEOGRAPHY/CARTOGRAPHY: Mexico, Lower Texas Gulf Coast, Laguna Madre, Gulf of Mexico, San Fernando. (Normal) AGRICULTURE: Extensive cultivation along northern coast, shoreline of emergence with an offshore bar and lagoon. GEOLOGY/HYDROLOGY: Shoreline of emergence with an offshore bar and lagoon. Scattered to dense shrubform, coastal grasses. FORESTRY: Cumulus towering cumulus. METEOROLOGY: Cumulus. OCEANOGRAPHY: Well developed beaches, inner coastal lagoon depths evident by color contrast. Some offshore current patterns apparent.
1634	33 "	Fall	52:35	13:49	51° 24'20" N	97°30' W		1:3,300,000	H-23 J-24	123	35			GEOGRAPHY/CARTOGRAPHY: Mexico, Laguna Madre, Laguna de Morales, Soco la Marina River, Gulf Coast. (Normal) AGRICULTURE: Isolated field patterns, primarily along Soto River and coast. GEOLOGY/HYDROLOGY: Shoreline of emergence with an offshore bar and lagoon. FORESTRY: Coastal grasses with scattered shrubform. METEOROLOGY: Cumulus. OCEANOGRAPHY: Well developed beaches, sun glint exposing surface wave and current patterns.
1635	33 "	Fall	52:37	13:50	48° 21'24" N	89°12'12" W		1:4,560,000	J-15	123	40			GEOGRAPHY/CARTOGRAPHY: Mexico, northern coast of Yucatan, Merida, Gulf of Mexico, Progreso. (Normal) AGRICULTURE: Extensive cultivation patterns along coast at Progreso and inland to Merida. GEOLOGY/HYDROLOGY: Emerged coastline and coastal plain deposits. FORESTRY: Grasses with scattered shrubform. METEOROLOGY: Cumulus, alto-cumulus. OCEANOGRAPHY: Some surface current activity apparent along coast.

FRAME NUMBER	EQUIP	DATE	SEASON	GET	LOCAL SOLAR TIME	PRINCIPAL POINT LATITUDE	PRINCIPAL POINT LONGITUDE	SCALES OF 70MM AT FP	MAP PILOTS WAC	ALTITUDE N.M.	DESCRIPTION BY DISCIPLINE	
											% CLOUDS	% CLDS
1636	33	1968 10/13	Fall	52:37	13:50	48° 21°30' N	89°40' W		J-25	123	40	GEOGRAPHY/CARTOGRAPHY: Mexico, northern coast of Yucatan, Merida, Gulf of Mexico. (Normal) AGRICULTURE: Extensive field pattern development along coast. GEOLGY/HYDROLOGY: Emerged coastline and coastal plain deposits. FORESTY: Grasses and low shrubform. METEOROLOGY: Cumulus, cumulonimbus. OCEANOGRAPHY: Partial sun glint revealing offshore wave or current activity.
1637	33	"	Fall	52:38	13:52	47° 20°41' N	87°20' W		J-25	123	90	GEOGRAPHY/CARTOGRAPHY: Mexico, northeastern tip of Juretan, Puerto Juarez. (Normal) GEOLGY/HYDROLOGY: Emerged coastline and coastal plain. FORESTY: Dense shrubform with large open areas near coast. METEOROLOGY: Cumulus, towering cumulus, cirrus.
1638	34	"	Cool-Dry	52:42	14:46	38° 12°17' N	72°04' W	1:5,100,000	K-26	128	38	GEOGRAPHY/CARTOGRAPHY: Columbia, Venezuela, Peninsula de Guajira, Gulf of Venezuela, Maracaibo. (Normal) GEOLGY/HYDROLOGY: Sedimentary coastal plain with complex and folded hills. FORESTY: Dense tropical forests inland. METEOROLOGY: Cumulus, cirrus. OCEANOGRAPHY: Some sediment patterns in Gulf of Venezuela.
1639	34	"	Cool-Dry	52:42	15:00	38° 12°15' N	71°30' W	1:5,110,000	K-26	128	25	GEOGRAPHY/CARTOGRAPHY: Colombia, Venezuela, Peninsula de Guajira. (Normal) GEOLGY/HYDROLOGY: Sedimentary coastal plain with complex and folded hills. FORESTY: Cumulus, cirrus. OCEANOGRAPHY: Some color change.
1640	34	"	Cool-Dry	52:43	15:05	37° 12°03' N	70°13' W	1:5,750,000	K-26	128	30	GEOGRAPHY/CARTOGRAPHY: Venezuela, Peninsula de Paraguana, Islands of Aruba and Curacao. (Normal) GEOLGY/HYDROLOGY: Coastal plain region. FORESTY: Dense to semi-dense stands on mainland. METEOROLOGY: Cumulus, cirrus. OCEANOGRAPHY: Some wave activity along beaches.
1641	34	"	Cool-Dry	52:43	15:05	36° 10°25' N	68°29' W		K-27	129	50	GEOGRAPHY/CARTOGRAPHY: Venezuela coastline, Gulf of Trieste, Valencia. (Normal) AGRICULTURE: Field patterns evident in lowlands of interior. GEOLGY/HYDROLOGY: Coastal plain and complex mountain region. FORESTY: Dense tropical forests in upper peninsula. METEOROLOGY: Cumulus, cirrus. OCEANOGRAPHY: Sediment patterns along interface.

FRAME NUMBER	L INE OR	DATE	SEASON	GET	LOCAL SOLAR TIME	SUN ELEV	PRINCIPAL POINT		APPROXIMATE SCALE OF 70MM AT PP		MAP PILOTS WAC ONC	ALTITUDE N.M.	CLOUDS %	DESCRIPTION BY DISCIPLINE	
							LATITUDE	LONGITUDE							
1642		1968 10/13	Cool-Dry	52:44	15:31	32°	11°00' N	64°00' W	1:6,510,000	K-27	129	14	GEOGRAPHY/CARTOGRAPHY: Venezuela coast, Peninsula de Araya, Paracotos, Isla Margarita. (Normal) GEOLGY/HYDROLOGY: Sunmerged coastline and coastal plain. FORESTRY: Dense tropical rainforest grading to shrub-form. METEOROLOGY: Cumulus, alto-cumulus. OCEANOGRAPHY: Some tormal change.		
1643	34	"	Cool-Dry	52:44	15:31	33°	8°05' N	64°15' W	1:4,100,000	K-27 L-27	130	35	GEOGRAPHY/CARTOGRAPHY: Venezuela, Orinoco River, Ciudad Bolívar, El Tigre. (Normal) AGRICULTURE: Isolated field patterns near El Tigre. GEOLOGY/HYDROLOGY: Sedimentary plateau, flooded plain and meandering perennial drainage. FORESTRY: Isolated dense forest stands, primarily along Orinoco River and tributaries. METEOROLOGY: Cumulus.		
1644	34	"									95		CLOUDS: Strato-cumulus. (Normal)		
1645	34	"	Fall	54:07	13:38	45°	26°00' N	113°00' W*		H-22	123	10	GEOGRAPHY/CARTOGRAPHY: Baja California. (Normal) GEOLGY/HYDROLOGY: Alluvial and low plains. Complex mountains in the foreground. METEOROLOGY: Small-cumulus.		
1646	34	"	Fall	54:07	13:38	46°	23°00' N	111°00' W*		H-22	123	20	GEOGRAPHY/CARTOGRAPHY: Baja California. (Normal) GEOLGY/HYDROLOGY: Low plains region. METEOROLOGY: Cumulus, alto-cumulus.		
1647	34	"	Fall	54:09	14:08	43°	21°00' N	106°00' W*		J-24	124	54	GEOGRAPHY/CARTOGRAPHY: Mexico, Puerto Vallarta. (Normal) GEOLGY/HYDROLOGY: Coastal plain region. FORESTRY: Semi-dense forest stands in the southern boundarygrading to isolated shrubform to the north. METEOROLOGY: Cumulus, cirrus.		
1648	34	"	Fall	54:09	14:08	43°	19°30' N	104°30' W	1:3,840,000	J-24	124	46	GEOGRAPHY/CARTOGRAPHY: Mexico, Puerto Vallarta to Vizcainillo. (Normal) GEOLGY/HYDROLOGY: Coastal plain and dissected hills region. FORESTRY: Semidense forest stands changing to dense stands along drainage. METEOROLOGY: Cumulus, towering-cumulus, alto-cumulus, cirrus.		

FRAME NUMBER	DATE	TIME	SEASON	GET	LOCAL SOLAR TIME	PRINCIPAL POINT LATITUDE	SUN ELEV.	MAP PLOTS	ALTITUDE N.A.	CLOUDS	DESCRIPTION BY DISCIPLINE			
											SCALES	WAC	ONC	
1649	1968 10/13	54:09	Fall	14:08	42°	17°38' N	101°58' W	1:13,840,000	J-24	15 (Normal)	GEOGRAPHY/CARTOGRAPHY: Mexico, Bahia de Petacalco. GEOLOGY/HYDROLOGY: Basement complex of Sierra Madre and elevated coastal plain. FORESTRY: Semidense to open forests with dense vegetation along major drains. METEOROLOGY: Small cumulus, alto-cumulus. OCEANOGRAPHY: Excellent fresh-salt water interface with definite sediment flow patterns.	-	-	
1650	34	"	Fall	54:10	14:27	42°	17°37' N	101°30' W	1:13,320,000	J-24	125	GEOGRAPHY/CARTOGRAPHY: Mexico, West Coast, Bahia de Petacalco. (Normal) GEOLOGY/HYDROLOGY: Basement complex of the Sierra Madre Del Sur with intermittent and perennial drainage. FORESTRY: Semidense to open forests with dense vegetation along drains. METEOROLOGY: Cumulus, alto-cumulus. OCEANOGRAPHY: Excellent fresh-salt water interface with definite sediment flow patterns.	17	-
1651	34	"	Fall	54:10	14:27	42°	17°10' N	100°25' W	1:13,320,000	J-24	125	GEOGRAPHY/CARTOGRAPHY: Mexico, West Coast, Acapulco. (Normal) GEOLOGY/HYDROLOGY: Complex mountains and perennial drainage flowing toward the Coastal Plain region. FORESTRY: Scattered low shrubform. METEOROLOGY: Cumulus, alto-cumulus. OCEANOGRAPHY: Sediment flows showing offshore currents.	32	-
1652	34	"	Fall	54:10	14:27	42°	16°45' N	99°17' W	1:13,390,000	J-24	125	GEOGRAPHY/CARTOGRAPHY: Mexico, west coast, Acapulco to Tlacuapan. (Normal) GEOLOGY/HYDROLOGY: Coastal Plain region with adjacent complex and dissected hills. FORESTRY: Scattered low shrubform with intermittent forest stands. METEOROLOGY: Cumulus, alto-cumulus, cirrus. OCEANOGRAPHY: Fresh-salt water interface showing sediment flows.	50	-
1653											BLANK.			
1654	36	"	Fall	56:45	07:40	21°	24°00' N	118°00' E*		131	75 (Dark)	GEOGRAPHY/CARTOGRAPHY: China Coast near Quemoy Island. GEOLOGY/HYDROLOGY: Shoreline of submergence with coastal sedimentation. METEOROLOGY: Cumulus, cirrus. OCEANOGRAPHY: Some sediment transports.	-	-

FRAME NUMBER	DATE	SEASON	GET	LOCAL SOLAR TIME	SUN ELEV.	PRINCIPAL POINT LATITUDE	LONGITUDE	APPROXIMATE SCALES OF 70MM AT PP	MAP PLOTS WAC ONC	ALTITUDE N.M.	DESCRIPTION BY DISCIPLINE		
											CLOUDS	%	
1655	1968 10/13	Fall	56:45	07:40	21°	24°20' N	118°30' E*			131	70 (Dark)	GEOGRAPHY/CARTOGRAPHY: China Coast near Quemoy Island.	
1656	38	10/14	Fall	59:40							5	GEOGRAPHY/CARTOGRAPHY: Saudi Arabia, Empty Quarter sand dunes. (Light)	
1657	38	"	Fall	59:40	06:19	05°	22°00' W	54°00' E*		136	25	GEOGRAPHY/CARTOGRAPHY: Saudi Arabia, Trucial States, Coast of Abu Dhabi. (Light)	
1658	38	10/14	Fall	59:41	06:42	10°	22°19' N	59°50' E		J-7	10 (Light)	GEOLOGY/HYDROLOGY: Eng plains of self dunes.	
1659	38	10/14	Fall	59:42	06:45	09°	24°00' N	60°00' E*		J-7	135	GEOGRAPHY/CARTOGRAPHY: Muscat and Oman, Oman Ranges, Coast of Iran. (Light)	
1660	38	10/14	Fall	59:44	07:15	14°	32°00' N	67°00' E*			132	15 (Normal)	GEOLOGY/HYDROLOGY: Coastal mountain complex.
1661	38	10/14	Fall	59:44	07:15	15°	25°00' N	66°58' E	1:3,200,000	H-8	132	GEOGRAPHY/CARTOGRAPHY: Pakistan, Karachi and Indus River. (Light)	
1662	38	10/14	Fall	59:55	10:26	44°	31°52' N	111°56' E	1:3,000,000	G-9 H-11	124	20 (Normal)	GEOLOGY/CARTOGRAPHY: Perennial deltaic flood plain and sedimentary folded and horizontal beds.
1663	38	10/14	Fall	59:56	10:59	43°	36°00' N	120°00' E*		G-10 H-12	123	25 (Light)	GEOLOGY/HYDROLOGY: Scattered shrubform changing to dense vegetation in delta.
												FORESTRY: Isolated shrubform.	
												METEOROLOGY: Cirrus, cumulus.	
												GEOPHYSICS: Fresh-salt water interface with sediment patterns showing current directions.	
												GEOPHYSICS: Shallow sea, Korea Bay.	
												GEOPHYSICS: Cirrus, cumulus.	

FRAME NUMBER	DATE	SEASON	GET	LOCAL SOLAR TIME	PRINCIPAL POINT LATITUDE	SUN ELEV.	LONGITUDE	APPROXIMATE SCALES OF 70MM AT PP	MAP PLOTS			CLOUDS %	DESCRIPTION BY DISCIPLINE
									WAC	ONC	N.W.		
1664	38	10/14	Fall	59:59	11:42	50°	31°30'N	130°00' E*		H-13	122	90	GEOGRAPHY/CARTOGRAPHY: Southern tip of Japan. (Light) METEOROLOGY: Cirrus, alto-cumulus, cumulus.
1665	38	10/14	Fall									55	GEOGRAPHY/CARTOGRAPHY: Two small islands. (Light) METEOROLOGY: Cumulus.
1666	39	10/14	Fall	61:12	06:43	10°	21°23'N	36°51'E	1:2,900,000	J-6	123	20	GEOGRAPHY/CARTOGRAPHY: Sudan, Red Sea, Coast at Ras Abu Shababrah. (Light) GEOLOGY/HYDROLOGY: Highly fractured sedimentary and igneous mountain complex, coastal plain and intermittent drainage. FORESTRY: Shrubform and grasses. METEOROLOGY: Cumulus. OCEANOGRAPHY: Offshore, subsurface topography visible.
1667	39	10/14	Fall	61:20	08:52	31°				H-8		0	GEOGRAPHY/CARTOGRAPHY: Afghanistan, Kainul, Panjshir River, Kab-i-Baba Mountains. (Normal) GEOLOGY/HYDROLOGY: Folded mountain complex and intermittent drainage.
1668	40	10/14	Cool-Dry				14°55'N	121°18'E		K-11		80	GEOGRAPHY/CARTOGRAPHY: Philippine Islands, Manila. (Dark) METEOROLOGY: Cumulus, towering cumulus, cirrus.
1669	40	10/14	Cool-Dry	63:08	14:33	43°	12°16'N	125°20'E		K-11	125	80	GEOGRAPHY/CARTOGRAPHY: Philippine Islands, northern coast of Samar. (Dark) METEOROLOGY: Cumulus, cirrus. OCEANOGRAPHY: Circular reefs.
1670	40	10/14	Hot-Wet									60	GEOGRAPHY/CARTOGRAPHY: North of Solomon Islands. (Dark) METEOROLOGY: Cumulus, cirrus.
1671	40	10/14										50	CLOUDS: Cumulus, towering cumulus, cirrus. (Dark)
1672	41	10/14	Fall	64:33	13:24	50°	21°30'N	87°00'E*			122	0	GEOGRAPHY/CARTOGRAPHY: India, mouth of Hooghly River, Bay of Bengal. (Dark)
1673	41	10/14	Fall	64:34	13:29	50°	21°40'N	88°00'E*			122	0	GEOGRAPHY/CARTOGRAPHY: India, mouth of Hooghly River, Bay of Bengal. (Dark)
1674	41	10/14	Fall	64:34	13:34	49°	21°30'N	88°40'E*			122	0	GEOGRAPHY/CARTOGRAPHY: India, Pakistan, mouth of Haringa River, Bay of Bengal. (Dark)
1675	41	10/14	Fall	64:34	13:38	48°	21°58'N	90°20'E		J-10	122	28	GEOGRAPHY/CARTOGRAPHY: Burma, Pakistan, mouth of Ganges River, Bay of Bengal. (Dark) METEOROLOGY: Cumulus, cirrus.
												-	-

FRAME NUMBER	DATE	SEASON	GET	LOCAL SOLAR TIME	PRINCIPAL POINT LATITUDE	LONGITUDE	APPROXIMATE SCALES OF 70MM AT PP	MAP PLOTS			ALTITUDE N.H.	CLOUDS	DESCRIPTION BY DISCIPLINE
								WAC	ONC	WAC			
1676	41	1968 10/14	Fall	64:35	13:46	47° 21'00"E	92°00' E*			J-10	122	35 (Dark)	GEOGRAPHY/CARTOGRAPHY: Burma, Pakistan, Cor's Bazar. METEOROLOGY: Cumulus, cirrus.
1677	41	10/14	Fall	64:35	13:48	47° 20'00" W	92°30' E*				122	25 (Dark)	GEOGRAPHY/CARTOGRAPHY: Burma, Bay of Bengal, coast of Arayab. METEOROLOGY: Cumulus.
1678	41	10/14	Fall	64:35	13:52	47° 18'40" N	92°30' E*				123	13 (Dark)	GEOGRAPHY/CARTOGRAPHY: Burma, Bay of Bengal, Cheduba Island, Andren Bay. METEOROLOGY: Cumulus, cirrus.
1679	41	10/14	Fall	64:36	13:56	47° 18'20" N	94°20' E*				123	50 (Dark)	GEOGRAPHY/CARTOGRAPHY: Burma, Bay of Bengal, Cheduba Island, Andren Bay. METEOROLOGY: Cumulus, towering cumulus, cirrus.
1680	41	10/14	Fall	64:36	14:04	47° 16'27" N	96°15' E				124	38 (Dark)	GEOGRAPHY/CARTOGRAPHY: Burma, Rangoon, Hlaing River. METEOROLOGY: Cumulus OCEANOGRAPHY: Sediment pattern from river mouth.
1681	41	10/14	Cool-Dry	64:38	14:43	41° 13'30" N	105°30' E*				126	100 (Dark)	GEOGRAPHY/CARTOGRAPHY: Cambodia, Mekong River near Siem Reap. METEOROLOGY: Cumulus, towering cumulus, cirrus.
1682	41	10/14									95	90 (Dark)	METEOROLOGY: Cumulus, strato-cumulus, cirrus. (Dark)
1683	41	10/14									80	80 (Dark)	METEOROLOGY: Cumulus, strato-cumulus, cirrus. (Dark)
1684	41	10/14									50	50 (Dark)	METEOROLOGY: Cumulus, cirrus. (Dark)
1685	41	10/14									40	40 (Dark)	METEOROLOGY: Cumulus, cirrus. (Dark)
1686											20	20 (Dark)	METEOROLOGY: Cumulus, cirrus. (Dark)
1687	41	10/14									100	100 (Dark)	METEOROLOGY: Cumulus, alto-cumulus, cirrus. (Dark)
1688	41	10/14									50	50 (Dark)	METEOROLOGY: Cumulus, cirrus. (Dark)
1689	41	10/14									0	BLANK	
1690	41	10/14									0	BLANK	
1691	41	10/14									129	0 (Light)	GEOGRAPHY/CARTOGRAPHY: Morocco, coast near Ifni, horizon. (Light)
1692	42	10/14	Fall	65:46	09:41	25° 27'00" N	13°00' E*				-	-	

DESCRIPTION BY DISCIPLINE									
FRAME NUMBER	DATE	SEASON	GET	LOCAL SOLAR TIME	PRINCIPAL POINT LATITUDE	PRINCIPAL POINT LONGITUDE	APPROXIMATE SCALE OF 70MM AT P.P.	MAP PLOTS WAC	ALTITUDE N.M.
								ONC	CLOUDS
1693	42	10/14	Fall	65:59	10:59	48° 31° 23' N	30° 38' E	H-5	124 33 Said. (Dark)
1694	42	10/14	Fall	65:54	10:59	51° 30° 12' N	32° 09' E	H-5	124 27 GEOGRAPHY/CARTOGRAPHY: Nile Delta, Alexandria to Port Said. AGRICULTURE: Extensive cultivation in Nile Delta area. GEOLOGY/HYDROLOGY: Deltaic flood plain and a lower coastal plain. Perennial drainage is dominant within the delta. FORESTRY: Scattered shrubform outside of agriculture patterns. METEOROLOGY: Cumulus, towering cumulus.
1695	42	10/14	Fall	65:55	10:59	55° 29° 21' N	32° 50' E	H-5 J-6	124 7 GEOGRAPHY/CARTOGRAPHY: Gulf of Suez, Red Sea, Gulf of Aqaba. (Dark) GEOLOGY/HYDROLOGY: Elevated erg plains with fractured basement complex mountains. Intermittent drainage dominates. FORESTRY: Scattered shrubform and desert grasses. METEOROLOGY: Cumulus. OCEANOGRAPHY: Submerged coastline visible in Gulf of Suez.
1696	42	10/14	Fall	65:56	11:13	49° 30° 59' N	33° 55' E	H-5	124 13 GEOGRAPHY/CARTOGRAPHY: Mediterranean Sea, Israel, Dead Sea. (Dark) GEOLOGY/HYDROLOGY: Coastal plain and fractured sedimentary hills and mountains. FORESTRY: Scattered shrubform and desert grasses. METEOROLOGY: Cumulus, cirrus. OCEANOGRAPHY: Inland salt water bodies along coast.
1697	42	10/14	Fall	65:55	11:16	52° 28° 15' N	34° 25' E	H-5	124 10 GEOGRAPHY/CARTOGRAPHY: Sinai Peninsula, Red Sea, Gulf of Aqaba. (Dark) GEOLOGY/HYDROLOGY: Fractured mountain complex with dendritic intermittent drainage. FORESTRY: Desert shrubform. METEOROLOGY: Cumulus. OCEANOGRAPHY: Coral visible in Strait of Gubal.
1698	42	10/14	Fall	65:56	11:21	49° 31° 28' N	35° 45' E	H-5	123 1 GEOGRAPHY/CARTOGRAPHY: Israel, Dead Sea, Jordan. (Dark) GEOLOGY/HYDROLOGY: Fractured mountain complex with intermittent drainage. FORESTRY: Desert shrubform. METEOROLOGY: Cirrus.

FRAME NUMBER	E W N S	DATE	SEASON	GET	LOCAL SOLAR TIME	SUN ELEV	PRINCIPAL POINT LATITUDE	LONGITUDE	APPROXIMATE SCALES OF 70MM AT PP	MAP PLOTS WAC	MAP PLOTS ONC	ALTITUDE N.A.	DESCRIPTION BY DISCIPLINE		
													CLOUDS	CLIMATOLOGY	
1699	42	10/11	Fall	65:58	12:17	50°	30°02' N	48°54' E	1:7,800,000	H-6	H-6	121	J	GEOGRAPHY/CARTOGRAPHY: Persian Gulf, Kuwait, mouth of Tigris-Euphrates Rivers. (Dark) AGRICULTURE: Scattered field patterns along rivers. GEOLOGY/HYDROLOGY: Basaltic flood plain region. FORESTY: Desert shrubform primarily along banks of major drains. METEOROLOGY: Small cumulus. OCEANOGRAPHY: Good fresh-salt water interface, showing sediment patterns.	OCEANOGRAPHY: Sediment flow patterns from rivers.
1700	42	10/14	Fall	65:58	12:21	49°	31°04' N	49°40' E	1:6,900,000	H-6	H-7	121	7	GEOGRAPHY/CARTOGRAPHY: Persian Gulf, Iran, Iraq, mouth of Tigris-Euphrates Rivers. (Dark) AGRICULTURE: Field patterns along Karun River. GEOLOGY/HYDROLOGY: Alluvial flood plain, delta, and complex folded mountains. FORESTY: Cumulus. METEOROLOGY: Cumulus. OCEANOGRAPHY: Sediment flow patterns from rivers.	GEOGRAPHY/CARTOGRAPHY: Persian Gulf, Iran, coast of Kangan, Zagros Mountains. (Dark) AGRICULTURE: Possible cultivation patterns along avenues of drainage near Lake Daryachehli. GEOLOGY/HYDROLOGY: Folded sedimentary mountain region with an intermittent drainage system. FORESTY: Grass and scattered desert shrub. METEOROLOGY: Sediment flow patterns along coast. OCEANOGRAPHY: Some color change.
1701	42	10/14	Fall	66:00	12:29	52°	28°03' N	51°45' E	1:3,860,000	H-6	H-7	121	0	GEOGRAPHY/CARTOGRAPHY: Persian Gulf, Iran, coast of Lar, Zagros Mountains. (Dark) AGRICULTURE: Cultivation patterns visible near town of Rizak. GEOLOGY/HYDROLOGY: Folded sedimentary mountain region. FORESTY: Grass and scattered desert shrub. METEOROLOGY: Cumulus. OCEANOGRAPHY: Some color change.	GEOGRAPHY/CARTOGRAPHY: Persian Gulf, Iran, coast south of Lar, Zagros Mountains. (Dark) AGRICULTURE: Cultivation patterns visible near town of Rizak. GEOLOGY/HYDROLOGY: Folded sedimentary mountain region. FORESTY: Grass and scattered desert shrub. METEOROLOGY: Cumulus. OCEANOGRAPHY: Some color change.
1702	42	10/14	Fall	66:01	12:40	52°	27°09' N	54°02' E	1:3,590,000	H-7	H-7	121	1	GEOGRAPHY/CARTOGRAPHY: Gulf of Oman, Iran, Qishm Island. (Dark) GEOLOGY/HYDROLOGY: Folded mountains, salt plugs, and a submerged delta region. FORESTY: Grass and scattered desert shrub. METEOROLOGY: Cumulus. OCEANOGRAPHY: Sediment deposits along coast, channels off island of Qishm very distinctive.	GEOGRAPHY/CARTOGRAPHY: Gulf of Oman, Iran, Qishm Island. (Dark) GEOLOGY/HYDROLOGY: Folded mountains, salt plugs, and a submerged delta region. FORESTY: Grass and scattered desert shrub. METEOROLOGY: Cumulus. OCEANOGRAPHY: Sediment deposits along coast, channels off island of Qishm very distinctive.
1703	42	10/14	Fall	66:01	12:48	51°	26°58' N	56°03' E	1:14,000,000	H-7	H-7	121	1	GEOGRAPHY/CARTOGRAPHY: Gulf of Oman, Iran, Qishm Island. (Dark) GEOLOGY/HYDROLOGY: Folded mountains, salt plugs, and a submerged delta region. FORESTY: Grass and scattered desert shrub. METEOROLOGY: Cumulus. OCEANOGRAPHY: Sediment deposits along coast, channels off island of Qishm very distinctive.	GEOGRAPHY/CARTOGRAPHY: Gulf of Oman, Iran, Qishm Island. (Dark) GEOLOGY/HYDROLOGY: Folded mountains, salt plugs, and a submerged delta region. FORESTY: Grass and scattered desert shrub. METEOROLOGY: Cumulus. OCEANOGRAPHY: Sediment deposits along coast, channels off island of Qishm very distinctive.

FRAME NUMBER	L <sub>82</sub>	DATE	SEASON	GET	LOCAL SOLAR TIME	SUN ELEV	PRINCIPAL POINT LATITUDE	LONGITUDE	SCALES OF 70MM AT PP	MAP PLOTS		ALTITUDE N.M.	CLOUDS %	DESCRIPTION BY DISCIPLINE			
										WAC	ONC						
1704	42	1968 10/14	Fall	66:02	13:13	50°	25°26'N	62°01'E	1:5,000,000	H-7	121	0	GEOGRAPHY/CARTOGRAPHY: Arabian Sea, Iran, Pakistan, Makran Ranges. (Dark) GEOLOGY/HYDROLOGY: Alluvial coastal plain and complex sedimentary folded mountain ranges. FORESTRY: Scattered desert shrubform and grass. OCEANOGRAPHY: Fresh-salt water interface.				
1705	42	10/14	Fall	66:05	13:44	47°	22°20'N	69°00'E	1:4,900,000	J-8	122	10	GEOGRAPHY/CARTOGRAPHY: India, Gulf of Kutch, Jamnagar. (Dark) GEOLOGY/HYDROLOGY: Low flood plain area of low hills and salt marshes. FORESTRY: Scattered to dense shrubform, mostly mangrove. HETEROLOGY: Cumulus. OCEANOGRAPHY: Possible sediment flows or subsurface topography visible.				
1706	42	10/14	Fall	66:06	14:01	45°	21°00'N	73°00'E*		J-8	122	35	GEOGRAPHY/CARTOGRAPHY: India, Gulf of Cambay. (Dark) METEOROLOGY: Cumulus, alto-cumulus.				
1707	42	10/14	Hot-Wet	66:17	17:12	09°	08°40'N	118°10'E			137	40	GEOGRAPHY/CARTOGRAPHY: Somewhere in Indonesia. (Dark) METEOROLOGY: Cumulus, cirrus.				
1708	42	10/14	Hot-Wet	66:17	17:24	07°	09°30'N	121°00'E			137	60	GEOGRAPHY/CARTOGRAPHY: Indonesia, east end of Sumba Island. (Dark) METEOROLOGY: Cumulus, cirrus.				
1709	42	10/14										60	METEOROLOGY: Small cumulus. (Dark)				
1710	42	10/14										60	METEOROLOGY: Cumulus, dense cirrus. (Dark)				
1711	42	10/14										75	METEOROLOGY: Cumulus, strato-cumulus, some cirrus. (Dark)				
1712	43	10/14	Fall	67:35	14:16	44°	16°54'N	54°41'E		J-7	124	20	GEOGRAPHY/CARTOGRAPHY: Mascal-Oman, Arabian Sea, Coast of Salalah. (Dark) GEOLOGY/HYDROLOGY: Coastal plain region with numerous wadis. METEOROLOGY: Cumulus, cumulo-nimbus.				
1713	44	10/14	Fall	68:53	10:52	50°	29°10'N	16°25'W	1:6,000,000	H-1	124	35	GEOGRAPHY/CARTOGRAPHY: Canary Islands, African coast in background. (Dark) GEOLOGY/HYDROLOGY: Volcanic islands and coastal plain METEOROLOGY: Small cumulus.				
1714	44	10/14	Fall	68:53	10:54	52°	28°30'N	13°30'W		H-1	124	25	GEOGRAPHY/CARTOGRAPHY: Canary Islands, African coast in background. (Dark) GEOLOGY/HYDROLOGY: Low erg coastal plain. METEOROLOGY: Strato-cumulus.				

FRAME NUMBER	DATE	SEASON	GET	LOCAL SOLAR TIME	PRINCIPAL POINT LATITUDE	LONGITUDE	APPROXIMATE SCALE OF 70MM AT PP	MAP PLOTS			ALTITUDE N.H.	CLOUDS %	DESCRIPTION BY DISCIPLINE		
								WAC	ONC	WNC					
1715	44 1968 10/14	Fall	68:53	10:56	52° 27'00" N	15°00'44" W		H-1			124	13	GEOGRAPHY/CARTOGRAPHY: Canary Islands, African coast in background. (Dark) GEOLOGY/HYDROLOGY: Low erg coastal plain. METEOROLOGY: Strato cumulus.		
1716	44 "	Fall	68:54	11:03	52° 27'26" N	14°05' W		H-1			124	8	GEOGRAPHY/CARTOGRAPHY: Canary Islands, Fuerteventura Island Coast of Spanish Sahara in background. (Dark) GEOLOGY/HYDROLOGY: Island of complex hills and mountainous, erg coastal plain with numerous wadis and dry lakes. FORESTRY: Dense tropical forests. OCEANOGRAPHY: Cumulus. Surface patterns visible near islands.		
1717	44 "	Cool-Dry	69:07	10:01	43° 13'48" N	33°22' E	1:3,200,000	K-5			124	30	GEOGRAPHY/CARTOGRAPHY: Africa, Sudan, Blue and White Nile, South of Khartoum. (Dark) AGRICULTURE: Extensive cultivation, field patterns and irrigation system easily discernable. GEOLOGY/HYDROLOGY: Interior elevated alluvial floodplain. FORESTRY: Tall savanna intermixed with groups of subtropical hardwoods. METEOROLOGY: Cumulus, cumulo-nimbus.		
1718	44 "	Cool-Dry	69:07	09:58	43° 13'44" N	35°56' E	1:2,900,000	K-5			124	22	GEOGRAPHY/CARTOGRAPHY: Africa, Sudan, Blue and White Nile, South of Khartoum. (Dark) AGRICULTURE: Extensive cultivation, field patterns and irrigation system easily discernable. GEOLOGY/HYDROLOGY: Interior elevated alluvial floodplain. FORESTRY: Tall savanna, intermixed with groups of subtropical hardwoods. METEOROLOGY: Cumulus.		
1719	44 "	Cool-Dry	69:08	09:42	42° 11'45" N	37°28' E	1:3,760,000	K-5			125	40	GEOGRAPHY/CARTOGRAPHY: Africa, Ethiopia, Lake Tana. (Dark) AGRICULTURE: Draughtage basin in a mountainous region. METEOROLOGY: Cumulus, part of cumulo-nimbus.		
1720	45 "	Fall	71:45	08:24	28°	29°01' N	95°29' W	I-4,130,000			124	37	GEOGRAPHY/CARTOGRAPHY: Texas Gulf Coast, Galveston to Corpus Christi. (Normal) AGRICULTURE: Extensive cultivation, irrigated, grazing. GEOLOGY/HYDROLOGY: Coastal plain region with a shoreline of emergence. FORESTRY: Mixed hardwood-conifer forests changing to grass and shrubform along coast. METEOROLOGY: Cumulus, strato-cumulus. OCEANOGRAPHY: Excellent sediment flows into Gulf from Texas rivers, indicating offshore currents.		

FRAME NUMBER	DATE	SEASON	GET	LOCAL SOLAR TIME	SUN ELEV	PRINCIPAL POINT LATITUDE	LONGITUDE	APPROXIMATE SCALES OF 70MM AT PP	MAP PLOTS			ALTITUDE N.M.	CLOUDS	DESCRIPTION BY DISCIPLINE
									WAC	ONC	WAC			
1721	45	1968 10/14	Fall	08:26	28° 28' 50" N	96° 08' W			H-24			125	30	GEOGRAPHY/CARTOGRAPHY: Texas Gulf Coast, Beaumont to Corpus Christi. (Normal) AGRICULTURE: Extensive cultivation, irrigated, grazing. GEOLOGY/HYDROLOGY: Coastal plain region with a shore-line of emergence. FORESTRY: Mixed hardwood-conifer forests changing to grass. METEOROLOGY: Cumulus, strato-cumulus. OCENOGRAPHY: Excellent sediment flows into Gulf from rivers, Galveston Bay.
1722	45	"	Fall	09:02	34° 30' 58" N	87° 11' W			H-24			124	1	GEOGRAPHY/CARTOGRAPHY: Mobile, Alabama. Pensacola, Florida. (Normal) AGRICULTURE: Field patterns near Pensacola. GEOLOGY/HYDROLOGY: Gulf coastal plain of sedimentary bed. FORESTRY: Mixed conifer-hardwood forests. METEOROLOGY: Small scattered cumulus.
1723	45	"	Fall	09:25	38° 31' 22" N	81° 31' W	1:3,800,000		H-23			124	30	GEOGRAPHY/CARTOGRAPHY: Georgia coast, Savannah. (Normal) AGRICULTURE: Extensive cultivation, scattered definable field patterns. GEOLOGY/HYDROLOGY: Atlantic Coastal Plain with a shore-line of emergence and perennial drainage inland. FORESTRY: Mixed conifer-hardwood, dense hardwood growth in bottom lands. OCENOGRAPHY: Fresh-salt water interfaces with an abundance of sediment flows.
1724	45	"	Fall	09:27	38° 32' 28" N	81° 19' W	1:3,660,000		G-21 H-23			123	10	GEOGRAPHY/CARTOGRAPHY: Georgia coast. Savannah. (Normal) AGRICULTURE: Extensive cultivation, but scattered definable field patterns. GEOLOGY/HYDROLOGY: Atlantic Coastal Plain and shoreline of emergence. FORESTRY: Mixed conifer-hardwood, dense hardwood growth in bottom lands. METEOROLOGY: Cumulus, alto-cumulus. OCENOGRAPHY: Fresh-salt water interfaces with an abundance of sediment flows.
1725	45	"	Fall	09:30	38° 32' 37" N	80° 39' W	1:4,200,000		G-21 H-23			123	15	GEOGRAPHY/CARTOGRAPHY: Georgia and South Carolina coasts. Savannah, Charleston. (Normal) AGRICULTURE: Extensive cultivation, scattered definable field patterns. GEOLOGY/HYDROLOGY: Atlantic coastal plain and shoreline of emergence. FORESTRY: Mixed conifer-hardwoods, dense hardwood growth in bottomlands.

FRAME NUMBER	L180	DATE	SEASON	GET	LOCAL SOLAR TIME	SUN ELEV.	PRINCIPAL POINT LATITUDE	LONGITUDE	APPROXIMATE SCALES OF 70MM AT PTP	MAP PLOTS			ALTITUDE N.M.	CLOUDS %	DESCRIPTION BY DISCIPLINE								
										WAC	CNC												
1726	45	10/14	Fall	0930	38°	32°22'N	80°40'W		1:4,600,000	G-21	H-23		123	15	METEOROLOGY: Cumulus, alto-cumulus. OCEANOGRAPHY: Fresh-salt water interfaces showing sediment flow.	GEOGRAPHY/CARTOGRAPHY: South Carolina-Georgia coast. AGRICULTURE: Savannah, Charleston. (Normal)	GEOLGY/HYDROLOGY: Atlantic Coastal Plain and shoreline of emergence.						
1727	45	"												75	METEOROLOGY: Cumulus, alto-cumulus. (Normal)	OCEANOGRAPHY: Fresh-salt water interface, showing sediment	METEOROLOGY: Cumulus, alto-cumulus. (Normal)						
1728	45	"												75	METEOROLOGY: Cumulus, alto-cumulus. (Normal)	OCEANOGRAPHY: Some tidal changes.	METEOROLOGY: Cumulus, alto-cumulus. (Dark)						
1729	45	"												80	METEOROLOGY: Cumulus, alto-cumulus. (Dark)		METEOROLOGY: Cumulus, alto-cumulus. (Dark)						
1730	45	"												80	METEOROLOGY: Cumulus, alto-cumulus. (Dark)		METEOROLOGY: Cumulus, alto-cumulus. (Dark)						
1731	47	"	Fall	0917	38°	28°41'N	112°51'W		1:4,800,000	H-22			126	20	GEOGRAPHY/CARTOGRAPHY: West coast of Mexico, Gulf of Baja California, Pacific Ocean. (Dark) AGRICULTURE: Extensive area of cultivation along west coast of Mexico.	GEOLGY/HYDROLOGY: Basement complex mountains and elevated alluvial plains.	METEOROLOGY: Cirrus, cumulus.	OCEANOGRAPHY: Some tidal changes.					
1732	47	"												124	METEOROLOGY: Cumulus.		GEOGRAPHY/CARTOGRAPHY: Mexico, Torreon, Sierra Madre Mountains. (Dark) AGRICULTURE: Cultivation sparse, field patterns discernable near town of Torreon.	GEOLGY/HYDROLOGY: Folded and complex mountain region with intermittent drainage.					
1733	48	"	Fall	1107	52°	28°05'N	102°20'W		1:15,100,000	H-23			124	30	METEOROLOGY: Cumulus.	FORESTRY: Desert shrubform changing to dwarf evergreen at higher elevations.	GEOGRAPHY/CARTOGRAPHY: United States, Miami, Florida Keys, Florida Straits. (Dark) AGRICULTURE: Field patterns near Miami.	GEOLGY/HYDROLOGY: Atlantic Coastal Plain.					
1734	48	"												121	60	METEOROLOGY: Cumulus, cirrus.	OCEANOGRAPHY: Great Bahama Bank in background.	GEOGRAPHY/CARTOGRAPHY: Bahamas, Andros Island, Williams Island. (Normal)	GEOLGY/HYDROLOGY: Great Bahama Bank.				
														121	50	METEOROLOGY: Cumulus, alto-cumulus, cirrus.	OCEANOGRAPHY: Great Bahama Bank.						

FRAME NUMBER	DATE	SEASON	GET	LOCAL SOLAR TIME	PRINCIPAL POINT SUN ELEV	LATITUDE	LONGITUDE	APPROXIMATE SCALES OF 70MM AT P.P.	MAP PLOTS			ALTITUDE N.M.	CLOUDS %	DESCRIPTION BY DISCIPLINE			
									WAC	ONC	WAC			WAC	ONC	WAC	ONC
1735	48	10/14	Fall	75:00	13:19	52° 18' 10" N	70° 57' W	1:5,300,000	J..27	J..27	J..27	122	85	GEOGRAPHY/CARTOGRAPHY: Dominican Republic, Santo Domingo. (Dark)			
1736	48	10/14	Fall	75:01	13:26	52° 18' 40" N	69° 56' W	1:3,850,000	J..27	J..27	J..27	122	75	GEOGRAPHY/CARTOGRAPHY: Dominican Republic. (Dark)			
1737	48	10/14	Fall	75:01	13:29	52° 18' 00" N	68° 45' W					123	75	GEOGRAPHY/CARTOGRAPHY: Dominican Republic, La Romana, Saona Island. (Dark)			
1738	51	10/14	Fall	80:56											AGRICULTURE: Some field patterns visible.		
1739	51	10/14			80:57	53°									GEOLOGY/HYDROLOGY: Coastal plain region.		
1740	51	10/15	Fall	80:58	10:41	50° 23' 00" N	160° 30' W					599	122	METEOROLOGY: Cumulus, cirrus.			
1741	51	10/15	Fall	80:59	10:32	50° 23' 00" N	158° 30' W					599	122	OCEANOGRAPHY: Shonan area.			
1742	51	10/15	Fall	80:59	10:26	50° 23' 00" N	157° 00' W					599	122	GEOGRAPHY/CARTOGRAPHY: Island of Oahu, Hawaii, City of Honolulu. (Normal)			
															GEOLOGY/HYDROLOGY: Volcanic mountains.		
															FOREST: Dense tropical rainforests in highlands.		
															METEOROLOGY: Cumulus, cirrus.		
															OCEANOGRAPHY: Island coastlines and beaches.		
															GEOGRAPHY/CARTOGRAPHY: Island of Oahu, Molokai, Lanai, Maui, Kahoolewae. (Normal)		

FRAME NUMBER	DATE	SEASON	GET	LOCAL SOLAR TIME	PRINCIPAL POINT LATITUDE	LONGITUDE	APPROXIMATE SCALES OF 70MM AT FP	MAP PLOTS WAC	MAP PLOTS ONC	DESCRIPTION BY DISCIPLINE	
										CLOUDS % N.M.	CLOUDS % N.M.
1742 (cont'd)	1968										
1743	51	10/15	Fall	80:59	10:26	50° 22' 00" N	157° 00' W	599	122	31	GEOLOGY/HYDROLOGY: Volcanic mountains. METEOROLOGY: Cumulus, cirrus. OCEANOGRAPHY: Coastlines
1744	51	10/15	Fall	80:29	10:24	49° 22' 00" N	156° 30' W	599 634	122	35	GEOGRAPHY/CARTOGRAPHY: Hawaiian Islands, Maui, Lanai, Maui, Kahoolawe, (Normal) GEOLOGY/HYDROLOGY: Volcanic mountain. METEOROLOGY: Cumulus, thick cirrus. OCEANOGRAPHY: Coastline.
1745	51	10/15	Fall	81:00	10:21	49° 21' 30" N	156° 00' W			123	43
1746	51	10/15	Fall	81:00	10:21	50° 32' 02" N	155° 40' W	634	123	50	GEOGRAPHY/CARTOGRAPHY: Islands, Hawaii and Maui. (Normal) GEOLOGY/HYDROLOGY: Volcanic, dendritic drainage. METEOROLOGY: Cumulus, altocumulus, cirrus. OCEANOGRAPHY: Island coastlines.
1747	51	10/15	Fall	81:00	10:18	49° 21' 30" N	155° 20' W	634	123	70	GEOGRAPHY/CARTOGRAPHY: Island of Hawaii. (Normal) GEOLOGY/HYDROLOGY: Volcanic, dendritic drainage. METEOROLOGY: Cumulus, altocumulus, cirrus. OCEANOGRAPHY: Island coastline.
1748	52	10/15	Fall	82:08	06:57	10° 32' 02" N	85° 00' E	H-9	132	0	GEOGRAPHY/CARTOGRAPHY: India, Nepal, South China, Himalayas, Mt. Everest, Ganges R., Ghaghra R., Lakes Tanga, Tso and Terinam Tso. (Normal) GEOLOGY/HYDROLOGY: Complex mountain system, with perennial and intermittent streams. FORESTRY: Dense evergreen forests on southern slopes.
1749	53	10/15	Fall	83:09	03:06	25° 27' 00" N	81° 00' E*	H-9	129	18	GEOGRAPHY/CARTOGRAPHY: India, Nepal, Himalayan

FRAME NUMBER	DATE	SEASON	GET	LOCAL SOLAR TIME	PRINCIPAL POINT LATITUDE	PRINCIPAL POINT LONGITUDE	APPROXIMATE SCALES OF 70MM AT PP	MAP PLOTS		ALTITUDE N.M.	CLOUDS %	DESCRIPTION BY DISCIPLINE
								WAC	ONC			
	1968											
1750	53	10/15	Fall	83:50	11:01	25° 31'00" N	122°00'E*			H-12	123	GEOGRAPHY/CARTOGRAPHY: China, Yantze River, Lake Tal Hu, Shanghai, East China Sea. (Light) GEOLOGY/HYDROLOGY: Interior elevated plains with meandering perennial drainage and flood plain. METEOROLOGY: Strato-cumulus, cirrus. FORESTRY: Scattered to semi dense stands of mixed species.
1751	53	10/15	Fall	83:50	11:06	48° 31'00" N	122°00'E*			H-12	123	GEOGRAPHY/CARTOGRAPHY: China, Yangtze River, East China Sea. (Light) METEOROLOGY: Cumulus, thick cirrus. OCEANOGRAPHY: Sediments polluting offshore water showing direction and dispersion of littoral drift. Nearshore current setting southwesterly.
1752	53	10/15	Fall	83:50	11:05	48° 31'00" N	123°00'E"			H-12	123	GEOGRAPHY/CARTOGRAPHY: China, Shanghai, Mintane, Chung Ming Two Island, at Yangtze River Mouth. (Light) GEOLOGY/HYDROLOGY: Coastal Flood Plain. METEOROLOGY: Cumulus, strato-cumulus, cirrus. OCEANOGRAPHY: Sediments polluting offshore water with nearshore current setting southwesterly.
1753	53	10/15	Fall	83:50	11:01	48° 30°51' N	121°57'E			H-12	123	GEOGRAPHY/CARTOGRAPHY: China, Mouth of the Yangtze River, East China Sea. (Light) GEOLOGY/HYDROLOGY: Coastal Flood Plain. METEOROLOGY: Cumulus, strato-cumulus, cirrus. OCEANOGRAPHY: Sediments polluting offshore water showing definite direction and dispersion patterns to the southwest by nearshore currents.
1754	53	10/15	Fall	83:50	11:02	48° 30°40' N	122°20'E"			H-12	123	GEOGRAPHY/CARTOGRAPHY: China, Mouth of Yangtze River, East China Sea. (Light) GEOLOGY/HYDROLOGY: Coastal Flood Plain. METEOROLOGY: Cumulus, thick cirrus. OCEANOGRAPHY: Sediments outflowing from Yangtze River in a southwesterly direction.

FRAME NUMBER	DATE	SEASON	GET	LOCAL SOLAR TIME	PRINCIPAL POINT LATITUDE	LONGITUDE	APPROXIMATE SCALES OF 70MM AT PP	MAP PLOTS			ALTITUDE N.M.	CLOUDS %	DESCRIPTION BY DISCIPLINE				
								WAC	ONC	WAC	ONC						
1755	53	10/15	Fall	83:50	10:59	48°	30°57' N	121°43'E			H-12	123	24	GEOGRAPHY/CARTOGRAPHY: China, Mouth of Yangtze River, East China Sea, Shanghai, Hang Chow Bay. (Light) GEOLOGY/HYDROLOGY: Coastal Flood Plain METEOROLOGY: Cumulus, thick cirrus. OCEANOGRAPHY: Definite gradation of sedimentary outflow from the Yangtze River Mouth.			
1756	53	10/15	Fall	83:50	11:01	48°	31°20' N	122°00'E*			H-12	123	28	GEOGRAPHY/CARTOGRAPHY: China, Mouth of Yangtze River, East China Sea. (Light) GEOLOGY/HYDROLOGY: Coastal Flood Plain. METEOROLOGY: Cumulus, thick cirrus. OCEANOGRAPHY: Definite gradation of sedimentary outflow from the Yangtze River Mouth, nearshore current setting in a southwesterly direction.			
1757	53	10/15	Fall	83:52	11:43	51°	30°00'E	132°00'E*			H-13	121	52	GEOGRAPHY/CARTOGRAPHY: Southern Japan, Kagoshima Bay and Islands of Yakushima and Tanegashima, Pacific Ocean and East China Sea. (Light) GEOLOGY/HYDROLOGY: Volcanics. METEOROLOGY: Cumulus, thick cirrus.			
1758	54	10/15	Fall	85:13	10:16	43°	31°40' N	88°48'E			H-9	123	19	GEOGRAPHY/CARTOGRAPHY: China, Plateau of Tibet, Lake Seiling Tso and Heteng Tso Lake. (Normal) GEOLOGY/HYDROLOGY: Sedimentary plateau with perennial lakes and snow covered hills. METEOROLOGY: Towering cumulus.			
1759	54	10/15	Fall									80	GEOGRAPHY/CARTOGRAPHY: Himalayas. (Normal) METEOROLOGY: Towering cumulus, alto-cumulus, cirrus.				
1760	54	10/15 Hot-Wet		85:33	14:56	40°	07°20' N	155°00'E*				127	12	GEOGRAPHY/CARTOGRAPHY: Oroluk Lagoon and Caroline Islands in the Pacific Ocean. (Dark) GEOLOGY/HYDROLOGY: Small cumulus, towering cumulus. METEOROLOGY: Coral atoll with color differentiation.			
1761		10/15										100					
1762		10/15										100					

FRAME NUMBER	L <sub>80</sub> R <sub>0</sub>	DATE	SEASON	GET	LOCAL SOLAR TIME	SUN ELEV.	PRINCIPAL POINT LATITUDE	LONGITUDE	APPROXIMATE SCALES OF 70MM AT P.P.	MAP PLOTS WAC	ALTITUDE N.M.	CLOUDS	DESCRIPTION BY DISCIPLINE	
													CL	DS
1763		1968												
1764	56	10/15	Fall	88:09	08:00	22°	31°30'N	12°00'E*					75	METEOROLOGY: Towering cumulus, cirrus. (Dark)
1765	56	10/15	Fall	88:11	08:46	29°	35°00'N	23°00'E*					130	GEOGRAPHY/CARTOGRAPHY: Tunisia Gulf de Gabès. (Dark) GEOLGY/HYDROLOGY: Edge plains and coastal plain adjacent to the Gulf. METEOROLOGY: Cumulus.
1766	56	10/15	Spring	88:41	16:36	18°	05°30'S	133°00'E*					127	GEOGRAPHY/CARTOGRAPHY: Cyprus, Turkey, Mediterranean Sea. (Dark) METEOROLOGY: Cumulus, cirrus.
1767	56	10/15	Spring	88:41	16:36	18°	12°00'S	133°00'E*					135	GEOGRAPHY/CARTOGRAPHY: Kepuluan Kai, Banda Sea, North of Australia. (Dark) METEOROLOGY: Cumulus, cirrus.
1768	56	10/15	Spring	88:42	16:54	16°	12°30'S	135°15'E*					136	GEOGRAPHY/CARTOGRAPHY: Australia, Northern Territory, Van Diemen Gulf. (Dark) METEOROLOGY: Cumulus, strato-cumulus, cirrus.
1769	56	10/15	Hot-Wet	88:42	16:45	16°	12°35'S	135°17'E					136	GEOGRAPHY/CARTOGRAPHY: Australia, Northern Territory, Arnhem Bay. (Light) METEOROLOGY: Cumulus, cirrus. FORESTY: Several smoke plumes from fires. OCEANOGRAPHY: Sun-glint area off the coast.
1770	56	10/15	Hot-Wet	88:42	16:49	16°	14°20'S	135°45'E					137	GEOGRAPHY/CARTOGRAPHY: Australia, Queensland, Western Gulf of Carpentaria, Littoral Bight. (Light) METEOROLOGY: Cumulus, cirrus. FORESTY: Smoke plumes.
1771	56	10/15	Spring	88:43	17:10	11°	16°54'S	140°11'E					137	GEOGRAPHY/CARTOGRAPHY: Australia, Queensland, Gulf of Carpentaria, Wallaby Islands. (Light) METEOROLOGY: Cumulus, strato-cumulus.

FRAME NUMBER	DATE 10/15/68	SEASON	GET	LOCAL SOLAR TIME	PRINCIPAL POINT LATITUDE	APPROXIMATE SCALE OF 70MM AT PP LONGITUDE	MAP PLOTS				CLOUDS 15%	DESCRIPTION BY DISCIPLINE	
							WAC	ONC	WAC	ONC			
1772	58	Fall	91:19	13:02	56°	19°30' N 40°00' E*			J-6	88	2	GEOGRAPHY/CARTOGRAPHY: Saudi Arabia, Red Sea, Heidmeh, Abu Latt Coral Reefs. (Normal) GEOLOGY/HYDROLOGY: Coastal plain and coral reef build-up offshore. OCEANOGRAPHY: Coral reefs, atolls, clear water, wave front/current pattern in sun-glint area. METEOROLOGY: Small cumulus.	
1773	58	Fall	91:19	13:03	56°	19°43' N 40°12' E			J-6	88	2	GEOGRAPHY/CARTOGRAPHY: Saudi Arabia, Red Sea, Hammarah, Ad Dugah, Abu Latt Coral Reefs. (Normal) AGRICULTURE: Small field patterns. GEOLOGY/HYDROLOGY: Coastal plain and coral reef build-up offshore. OCEANOGRAPHY: Coral reefs and a possible wave front in the sun-glint area. METEOROLOGY: Small cumulus.	
1774	58	Fall	91:19	13:06	56°	18°50' N 40°38' E			J-6	88	2	GEOGRAPHY/CARTOGRAPHY: Arabian coast, Red Sea, Al Qunfudah. (Normal) AGRICULTURE: Extensive dry land cultivation in delta area. GEOLOGY/HYDROLOGY: Dome structure, dendritic intermittent streams (braided) on the sedimentary hill region. OCEANOGRAPHY: Coral reefs partly obscured by sun-glint, no breakers over reefs. METEOROLOGY: Small cumulus.	
1775	58	Fall	91:19	13:15	54°	19°20' N 43°20' E*					89	0	GEOGRAPHY/CARTOGRAPHY: Saudi Arabia, Asir Mts. (Normal) GEOLOGY/HYDROLOGY: Complex, folded mountains with intermittent dendritic streams.
1776	58	Fall	91:22	13:24	57°	14°00' N 45°00' E*			K-6	89	50	GEOGRAPHY/CARTOGRAPHY: Saudi Arabia, Yemen, South Arabia, Southwest corner, Red Sea. [light] GEOLOGY/HYDROLOGY: Coastal plain and intermittent streams. METEOROLOGY: Cumulus, stratus.	
1777	58	Fall	91:22	13:41	52°	14°20' N 49°02' E			K-6	90	37	GEOGRAPHY/CARTOGRAPHY: Saudi Arabia, Aden, Gulf of Aden, Al Mukalla Sharra Bay. (Normal)	

FRAME NUMBER	1780	DATE	SEASON	GET	LOCAL SOLAR TIME	PRINCIPAL POINT LATITUDE	SUN ELEV.	APPROXIMATE SCALES OF 70MM AT PP	MAP PLOTS WAC	ALTITUDE N.H.	DESCRIPTION BY DISCIPLINE	
											% CLOUDS	% ONC
		1968										
1778	58	10/15	Fall	91:22	13:43	52°	14°35'N	49°47'E		K-6	90	39
1779	58	10/15	Fall	91:23	14:00	50°	12°20'N	53°30'E		K-6	91	36
1780	60	10/15	Hot-Met	94:30	14:09	25°	07°48'S	39°10'E		N-5	108	65
1781	60	10/15	Hot-Met	94:30	14:11	25°	08°05'S	39°23'E	1:4,233,330	N-5	108	60

FRAME NUMBER	DATE	SEASON	GET	LOCAL SOLAR TIME	SUN ELEV	PRINCIPAL POINT LATITUDE	LONGITUDE	APPROXIMATE SCALE OF 70MM AT P.P.	MAP PLOTS WAC	ALTITUDE N.H.	DESCRIPTION BY DISCIPLINE		
											ONC	CLD 35°	
1782	10/15		1968										
1783	61	10/15	Hot-Wet	95:52	14:18	43°	05°20'W	1:3,333,330	L-2	95	88	GEOGRAPHY/CARTOGRAPHY: An Island. METEOROLOGY: Cumulus, strato-cumulus.	
1784	61	10/15	Hot-Wet	95:52	14:11	42°	05°12'W	1:4,000,000	L-2	95	76	GEOGRAPHY/CARTOGRAPHY: Ghana, Africa, city of Sekondi. (Light) GEOLOGY/HYDROLOGY: Coastal plain. METEOROLOGY: Cumulus, thick cirrus. FORESTRY: Densely forested.	
1785	61	10/15	Cool-Dry	95:25	15:30	33° 00'00"	08°00'E*				102	GEOGRAPHY/CARTOGRAPHY: Caloon, Port Gentil. (Light). GEOLOGY/HYDROLOGY: Coastal plain. METEOROLOGY: Cumulus, thick cirrus.	
1786	61	10/15		95:56	15:49	30°	04°30'S	12°30'E*			103	Overexposed	
1787	61	10/15	Fall	97:04	09:46	29°51'N	95°12'W	1:3,860,000	H-24	95	53	GEOGRAPHY/CARTOGRAPHY: Texas, Houston Area. (Dark) GEOLOGY/HYDROLOGY: Coastal plain. METEOROLOGY: Cumulus.	
1788	61	10/15	Fall	97:04	09:46	40°	29°52'N	95°03'W	1:3,650,000	H-24	95	43	GEOGRAPHY/CARTOGRAPHY: Houston Area, Texas. (Dark) GEOLOGY/HYDROLOGY: Coastal plain. METEOROLOGY: Cumulus.
1789	61	10/15	Fall	97:05	10:07	43°	29°57'N	90°14'W	1:3,410,000	H-24	94	22 (Dark) GEOLOGY/HYDROLOGY: Low alluvial plain FORESTRY: Marsh vegetation - intermittent.	

DESCRIPTION BY DISCIPLINE											
FRAME NUMBER	DATE	SEASON	GET	LOCAL SOLAR TIME	SUN ELEV	PRINCIPAL POINT LATITUDE	PRINCIPAL POINT LONGITUDE	APPROXIMATE SCALES OF 70MM AT PP	MAP PLOTS WAC	ALTITUDE N.H.	CLOUDS
	1968										
1790	61	10/15	Fall	97:05	10:08	41° 29' 58" N	90° 22' 1" W	1:6,410,000	H-24	94	GEOGRAPHY/CARTOGRAPHY: Louisiana, New Orleans, Lake Pontchartrain Area. (Dark) GEOLOGY/HYDROLOGY: Low alluvial plain. METEOROLOGY: Cumulus.
1791	61	10/15	Fall	97:05	10:13	43° 30' 45" N	88° 20' 1" W		H-24	94	GEOGRAPHY/CARTOGRAPHY: Alabama, Mobile Area. (Dark) Too dark to extract any other information.
1792	61	10/15	Fall	97:05	10:10	45° 29' 00" N	89° 40' 1" W		H-24	93	GEOGRAPHY/CARTOGRAPHY: Louisiana, Mouth of Mississippi River Delta. (Dark) GEOLOGY/HYDROLOGY: Cumulus. METEOROLOGY: Cumulus. Too dark to extract any other information.
1793	61	10/14	Fall	97:06	10:19	45° 30' 10" N	87° 20' 1" W		H-24	93	GEOGRAPHY/CARTOGRAPHY: Florida, Pensacola Area. (Dark) GEOLOGY/HYDROLOGY: Coastal plain. METEOROLOGY: Cumulus.
1794	61	10/14	Fall	97:06	10:26	46° 30' 00" N	86° 01' 1" W	1:2,812,500	H-24	97	GEOGRAPHY/CARTOGRAPHY: Florida, Apalachicola Area. (Dark) GEOLOGY/HYDROLOGY: Coastal plain. METEOROLOGY: Stratocumulus.
1795	62	10/14	Fall	98:12	09:51	41° 31' 00" N	116° 00' 1" W	1:5,750,000	H-22	97	GEOGRAPHY/CARTOGRAPHY: Mexico; Baja, California; Punta Colimett, Sierra San Pedro, Motir Mts. (Normal) GEOLOGY/HYDROLOGY: Narrow coastal plain, plateau and complex fold - mountain range - trellis drainage. METEOROLOGY: Cumulus.
1796	62	10/14	Fall	98:13	10:08	43° 30' 42" N	111° 58' 1" W	1:3,000,000	H-22	96	GEOGRAPHY/CARTOGRAPHY: Mexico: Sorora, Cabo, Rio Magdalena. (Normal) GEOLOGY/HYDROLOGY: Complex hills, plateau and alluvial plains, dendritic drainage. METEOROLOGY: Cumulus. AGRICULTURE: Field patterns, grazing land.
1797	62	10/14	Fall	98:15	10:27	46° 30' 24" N	107° 42' 1" W		H-23	94	GEOGRAPHY/CARTOGRAPHY: Mexico: Nuevo Casas Granel, Rio de Santa Marin, Rio de Chases Grandes. (Normal) GEOLOGY/HYDROLOGY: Complex plateau and folded mountains, trellis drainage. METEOROLOGY: Towering cumulus. FORESTRY: Forest along major streams.

FRAME NUMBER	L880	DATE	SEASON	GET	LOCAL SOLAR TIME	SUN ELEV	PRINCIPAL POINT		SCALES OF 70MM AT PP	MAP PILOTS	ALTITUDE N.M.	CLOUDS	DESCRIPTION BY DISCIPLINE	
							LATITUDE	LONGITUDE		WAC	ONC			
1798	62	10/15	Fall	98:35	10:32	46° 30' 08" N	106° 37' W		H-23	94	1	GEOGRAPHY/CARTOGRAPHY: Mexico; Villa Almeda, Laguna de Patos. (Normal) GEOLOGY/HYDROLOGY: Complex range, alluvial plain, and tectonic drainages. METEOROLOGY: Cumulus. AGRICULTURE: Field patterns in the valley.		
1799	62	10/15	Fall	98:36	10:52	49° 29' 15" N	101° 56' W		H-23	92	21	GEOGRAPHY/CARTOGRAPHY: Mexico - U.S. - Texas Border Comstock, Rio Grande, Serritas Del Burros. (Normal) GEOLOGY/HYDROLOGY: Complete and volcanic range and alluvial regions with trellis drainage. METEOROLOGY: Towering cumulus. FORESTRY: Intermittent forest lands on hills.		
1800	62	10/15	Fall	98:38	11:14	52° 28' 19" N	98° 14' W	1:6,540,000	H-24	91	16	GEOGRAPHY/CARTOGRAPHY: Matagorda Bay, Fort Lavaca, Texas—urban development—regional transportation network. (Normal) GEOLOGY/HYDROLOGY: Coastal plain with a shoreline of emergence. METEOROLOGY: Cumulus. Temperature and depth differences along coastal waters with distinct currents noted.		
1801	62	10/15										METEOROLOGY: Hurricane Gladys, Gulf of Mexico. (Dark)	98	
1802	63	10/15	Fall	100:12	12:59	60° 14' 00" N	94° 00' W*					GEOGRAPHY/CARTOGRAPHY: Tehuantepec Area. (Dark) GEOLOGY/HYDROLOGY: Coastal plain region. METEOROLOGY: Cumulus, thick cirrus.	88	
1803	64	10/15	Hot-Met	100:24	15:31	29° 04' 00" S	59° 00' W*					GEOGRAPHY/CARTOGRAPHY: Brazil, Amazon Basin. (Dark) GEOLOGY/HYDROLOGY: Cumulus-nimbus, strato-cumulus, thick cirrus. METEOROLOGY: Too dark to extract any other information.	102	
1804	64	10/15	Hot-Met	100:26								GEOGRAPHY/CARTOGRAPHY: Northwestern Brazil. (Dark) GEOLOGY/HYDROLOGY: Low dissected plateau, trellis drainage. METEOROLOGY: Cumulus-nimbus, strato-cumulus, cirrus.	53	

FRAME NUMBER	DATE	SEASON	GET	LOCAL SOLAR TIME	PRINCIPAL POINT LATITUDE	LONGITUDE	SCALES OF 70MM AT PP	MAP PLOTS			ALTITUDE N.M.	CLOUDS %	DESCRIPTION BY DISCIPLINE	
								WAC	CNC					
1805	64	10/15	Spring	100:27	16:37	19° 11' 35.5"	42° 20' W*				108	23	GEOGRAPHY/CARTOGRAPHY: South Africa. (Dark) METEOROLOGY: Towering cumulus, cirrus.	
1806	64	10/15	Spring	100:29	16:56	15° 14' 10" S	39° 10' W*				110	15	GEOGRAPHY/CARTOGRAPHY: (Dark) METEOROLOGY: Small cumulus, towering cumulus.	
1807	64	10/15	Spring	101:51	15:40	32° 03' 00" S	78° 30' W*				100	64	GEOGRAPHY/CARTOGRAPHY: Ecuador, Peru, Gulf of Guayaquil. (Dark) GEOLOGY/HYDROLOGY: Complex coastal mountain range and a shoreline of submergence. METEOROLOGY: Strato-cumulus, cirrus.	
1808	66	10/15	Spring	103:30	18:01	02° 23' 00" S	68° 00' W*				122	8	GEOGRAPHY/CARTOGRAPHY: Chile, coast north of Antofagasta. (Light) GEOLGY/HYDROLOGY: Complex mountains of the Andes, parallel to the coast.	
1809	68	10/16	Fall	107:19	7:54	25° 26' 20" N	83° 00' E*				110	14	GEOGRAPHY/CARTOGRAPHY: Nepal, India, Tibet, Himalaya, Ganges Plains, Assamura, Dihulegar. (Light) GEOLGY/HYDROLOGY: Complex mountains and alluvium plains. FORESTRY: Mountains forested.	
1810	72	10/16	Cloudy	113:35	13:58	54° 09' 45" N	76° 20' E	1:4,000,000	K-8	90	46	GEOGRAPHY/CARTOGRAPHY: India: coast at Alleppey, Laccadive Sea, Chochin. (Dark) (Normal) GEOLGY/HYDROLOGY: Coastal lowland and deltaic plain. METEOROLOGY: Cumulus, thick cirrus, alto-cumulus. FORESTRY: Intermittent forest and short shrubs along rivers.		
1811	72	10/16	Cloudy	113:36	13:54	08° 47' N	77° 58' E	1:4,306,000	K-8	91	48	GEOGRAPHY/CARTOGRAPHY: India: southwest coast. (Normal) GEOLGY/HYDROLOGY: Coastal plain and shoreline of emergence. METEOROLOGY: Cumulus, alto-cumulus, cirrus.		
													OCEANOGRAPHY: Ocean depth differences indicating the extent of the continental shelf.	

FRAME NUMBER	LIT #	DATE	SEASON	GET	LOCAL TIME	SUN ELEV	PRINCIPAL POINT LATITUDE	APPROXIMATE SCALE OF 70MM AT PP	MAP PLOTS WAC ONC	ALTITUDE N.A.	CLOUDS	DESCRIPTION BY DISCIPLINE		
1812	72	10/16	Cool-Dry	113:37	13:51	69°27' N	80°15 E	1:2,2000,000	K-8	91	37	GEOGRAPHY/CARTOGRAPHY: Ceylon; Palk Bay, Palk Strait, Jaffna, Peilai Island, Point Pedro. (Normal) GEOLOGY/HYDROLOGY: Coastal lowland. METEOROLOGY: Cumulus, alto-cumulus, cirrus. FORESTRY: Intermittent forest land.		
1813	72	10/16	Cool-Dry	113:37	14:00	51°	09°00' N	80°00' E*	1:6,250,000	K-8	91	55	GEOGRAPHY/CARTOGRAPHY: Ceylon, Adair's Bon'dge. (Normal) GEOLOGY/HYDROLOGY: Coastal lowland. METEOROLOGY: Cumulus, alto-cumulus, cirrus.	
1814	72	10/16	Spring	113:50	17:01	15°				113	03	GEOGRAPHY/CARTOGRAPHY: Western Australia, Roebuck Bay. (Dark) METEOROLOGY: Cumulus.		
1815	72	10/16	Spring	113:50	16:59	13°	18°20' S	121°30' E*		113	05	GEOGRAPHY/CARTOGRAPHY: Western Australia, Roebuck Bay, 80 mile beach. (Dark) METEOROLOGY: Cumulus.		
1816	72	10/16	Spring	113:51	17:20	11°	21°00' S	124°00' E*		115	04	GEOGRAPHY/CARTOGRAPHY: Western Australia; Percival Lakes, Lake Disappointment. (Dark) METEOROLOGY: Cumulus.		
1817	72	10/16	Spring	113:51	17:41	06°	22°13' S	129°05' E	1:4,000,000	P-13	118	00	GEOGRAPHY/CARTOGRAPHY: Western Australia, Lake Mae Kay. (Dark) GEOLOGY/HYDROLOGY: Dry lake basin.	
1818	75	10/16	Fall	117:57	12:26	58°	21°11' N	11°15' W		J-2	89	GEOGRAPHY/CARTOGRAPHY: Mauritania. (Light) GEOLOGY/HYDROLOGY: Low plateau and dome structure.		
1819	78	10/16	Fall	122:18	11:00	51°	29°30' N	95°30' W*		92	50	GEOGRAPHY/CARTOGRAPHY: Gulf coast, Corpus Christi. (Light) GEOLOGY/HYDROLOGY: Coastal plain region. METEOROLOGY: Cumulus, alto-cumulus.		
1820	78	10/16	Fall	122:18	10:53	51°	28°30' N	97°00' W		92	20	GEOGRAPHY/CARTOGRAPHY: Texas: Gulf coast, Corpus Christi. (Light) GEOLOGY/HYDROLOGY: Cumulus.		

FRAME NUMBER	LIG	DATE	SEASON	GET	LOCAL SOLAR TIME	SUN ELEV	PRINCIPAL POINT LATITUDE	LONGITUDE	APPROXIMATE SCALES OF 70MM AT PP	MAP PLOTS WAC	MAP PLOTS ONC	ALTITUDE N.H.	DESCRIPTION BY DISCIPLINE		
													CLOUDS	(Normal)	
1821	78	10/16	Fall											50	GEOGRAPHY/CARTOGRAPHY: Gulf of Mexico. (Light) METEOROLOGY: Towering cumulus.
1822	78	10/16	Fall											94	GEOGRAPHY/CARTOGRAPHY: Gulf of Mexico. (Dark) METEOROLOGY: Hurricane Gladys.
1823	78	10/16	Fall											100	GEOGRAPHY/CARTOGRAPHY: Gulf of Mexico. (Light) METEOROLOGY: Hurricane Gladys.
1824	78	10/16	Hot-Net	122:35	15:16	38° 05° 00'S	35°30'W*							98	GEOGRAPHY/CARTOGRAPHY: Brazil, Cago da Sao Roque. (Normal) GEOLOGY/HYDROLOGY: Coastal plain region. METEOROLOGY: Cumulus, cirrus.
1825		10/16												50	METEOROLOGY: Cumulus, alto-cumulus, cirrus. (Normal)
1826	81	10/16	Spring	127:11	17:36	05° 23°18'S	69°35'W	1:4,854,400	P-26 Q-26	117	4				GEOGRAPHY/CARTOGRAPHY: Chile; coast at Antofagasta, Pacific Ocean, Bahia Moreno, Atacama Desert. (Dark) GEOLGY/HYDROLOGY: Complex mountains adjacent to the coast, with alluvial deposits on the lower areas. METEOROLOGY: Small cumulus, strato-cumulus.
1827	81	10/16	Spring	127:11	17:42	06° 24°09'S	70°29'W	1:4,411,800	P-26 Q-26	117	4				GEOGRAPHY/CARTOGRAPHY: Chile; coast of Antofagasta, Pacific Ocean, Bahia Moreno, Atacama Desert. (Dark) GEOLGY/HYDROLOGY: Complex mountains adjacent to the coast, with alluvial deposits on the lower areas. METEOROLOGY: Small cumulus, strato-cumulus.
1828	81	10/16	Spring	127:11	17:44	06° 25°00'S	71°00'W*							117	31 (Dark) GEOGRAPHY/CARTOGRAPHY: Chile, South of Antofagasta. shoreline of submergence. GEOLGY/HYDROLOGY: Complex mountain region with a METEOROLOGY: Cumulus, strato-cumulus.
1829	81	10/16	Spring	127:12	17:47	03° 25°00'S	67°00'W*							118	GEOGRAPHY/CARTOGRAPHY: Argentina: Andes Mountains, Sular Del Hombre Muerto. (Dark) GEOLGY/HYDROLOGY: Folded sedimentary and complex mountains.

FRAME NUMBER	L E N G TH	DATE	SEASON	GET	LOCAL SOLAR TIME	PRINCIPAL POINT LATITUDE	PRINCIPAL POINT LONGITUDE	APPROXIMATE SCALES OF 70MM AT PP	MAP PLOTS			ALTITUDE N. H.	% CLOUDS	DESCRIPTION BY DISCIPLINE					
									WAC	GNC	WAC	GNC		WAC	GNC	WAC	GNC		
1830	81	10/16	Spring	127:12	17:51	03° 25' 00"S	66° 00' 14"E						118	16	GEOGRAPHY/CARTOGRAPHY: Argentina: Andes Mountains. Sular Del Hombre Muerto. (Dark) GEOLOGY/HYDROLOGY: Complex mountain region. METEOROLOGY: Stratocumulus. FORESTRY: Intermittent forest lands.				
1831	83	10/17	Fall	131:11	17:41	52° 26' 58"N	128° 24'E	1:3,400,000	H-13	93			31		GEOGRAPHY/CARTOGRAPHY: Okinawa, Island of Arueri Ganze. (Light) GEOLOGY/HYDROLOGY: Volcanic islands. METEOROLOGY: Cumulus, cirrus. FORESTRY: Intermittent forest lands. AGRICULTURE: Field patterns along the coast. OCEANOGRAPHY: Ocean depth variations.				
1832	84	10/17	Cool-dry	132:21	08:02	23° 29' 50"N	69° 10'E		H-8	118			00		GEOGRAPHY/CARTOGRAPHY: Pakistan: Toba, Kakar and Sulaiwan Ranges near Fort Sandau. (Dark) GEOLOGY/HYDROLOGY: Highly folded sedimentary mountains.				
1833		10/17											4		METEOROLOGY: Cumulus. (Dark)				
1834	86	10/17											90		METEOROLOGY: Cumulus, alto-cumulus, cirrus. (Light)				
1835													89	90	GEOGRAPHY/CARTOGRAPHY: Thailand, Gulf of Siam, Surat Thani, Samui Island. (Normal) GEOLOGY/HYDROLOGY: Coastal plain region. METEOROLOGY: Cumulus, alto-cumulus, cirrus. AGRICULTURE: Field patterns. FORESTRY: Intermittent forest lands.				
1836	80	10/17	Cool-dry	135:48	13:29	58° 09' 30"W	99° 50'E		K-9	89			58		GEOGRAPHY/CARTOGRAPHY: Thailand, Gulf of Siam, Coast east of Surat Thani, Sauri Island. (Light) METEOROLOGY: Cumulus, alto-cumulus, cirrus. FORESTRY: Densely forested.				

FRAME NUMBER	DATE	SEASON	GET	LOCAL SOLAR TIME	PRINCIPAL POINT LATITUDE	SUN ELEV	APPROXIMATE SCALES OF 70MM AT PP	MAP PLOTS		ALTITUDE N. H.	CLOUDS	DESCRIPTION BY DISCIPLINE
								WAC	CNC			
1837	86	10/17	Cool-Dry	135:49	13:35	58° 07' 00" N	101° 00' E			89	67	GEOGRAPHY/CARTOGRAPHY: Thailand: Gulf of Siam, Pattani, (light) GEOL/HYDROLOGY: Coastal plain region. METEOROLOGY: Cumulus-nimbus, cirrus. AGRICULTURE: Field patterns, subsistence farming FORESTRY: Densely forested.
1838	86	10/17	Hot-Wet	135:49	13:43	58° 05' 26" N	102° 55' E	1:5,312,500		I-10	89	GEOGRAPHY/CARTOGRAPHY: Malaysia, Malaya, West Coast of Kota Bharu. (Dark) GEOL/HYDROLOGY: Coastal plain region. METEOROLOGY: Cumulus, strato-cumulus, cirrus. AGRICULTURE: Field patterns, subsistence farming along coastal areas. FORESTRY: Densely forested.
1839	86	10/17	Hot-Wet	135:49	12:43	58° 03° 14' N	102° 57' E	1:5,300,000		I-10	89	GEOGRAPHY/CARTOGRAPHY: Malaysia, Malaya, East Coast from Kuala to Pahang River. (Dark) GEOL/HYDROLOGY: Coastal plain and perennial drainage. METEOROLOGY: Cumulus, thick cirrus. AGRICULTURE: Scattered fields. FORESTRY: Densely forested.
1840	86	10/17	Spring	135:58	15:42	32° 12° 30' S	130° 20' E			H-13	101	GEOGRAPHY/CARTOGRAPHY: Australia: Northern Territory, Darwin. (Dark) GEOL/HYDROLOGY: Coastal lowland and shoreline of submergence. METEOROLOGY: Cumulus, cirrus.
1841	86	10/17	Hot-Wet	135:58	15:42	32° 12° 47' S	130° 09' E	1:5,500,000		H-13	101	GEOGRAPHY/CARTOGRAPHY: Australia: Northern Territory, Darwin, Small Section of Bathurst Island. (Dark) GEOL/HYDROLOGY: Coastal lowland and shoreline of submergence. METEOROLOGY: Cumulus, cirrus.
1842	86	10/17	Hot-Wet	135:59	16:04	26° 14° 16' S	135° 38' E	1:8,333,300		H-14	103	GEOGRAPHY/CARTOGRAPHY: Australia: Gulf of Carpentaria Grote Eylandt, Roper River. (Dark) GEOL/HYDROLOGY: Coastal plain region with intermittent drainage. METEOROLOGY: Cumulus. FORESTRY: Intermittent forest lands.

FRAME NUMBER	DATE	SEASON	GET	LOCAL SOLAR TIME	PRINCIPAL POINT LATITUDE	PRINCIPAL POINT LONGITUDE	APPROXIMATE SCALES OF 70MM AT PP	MAP PLOTS			ALTITUDE N.M.	CLOUDS 15% IS%	DESCRIPTION BY DISCIPLINE	
								WAC	ONC	WAC	ONC			
1843	86	10/17	Fall	135:59	16:04	26°	15°16'S	135°38'E	1:4,777,800	P-14	103	3	GEOGRAPHY/CARTOGRAPHY: Australia, Gulf of Carpentaria, Mana Island, Leamis Right River. (Dark) GEOLOGY/HYDROLOGY: Coastal plain. METEOROLOGY: Cumulus. FORESTRY: Forest along coastline and streams. OCEANOGRAPHY: Ocean depth variations.	
1844	86	10/17	Spring	136:00	16:21	23°	16°58'S	139°30'E	1:3,000,000	P-14	104	5	GEOGRAPHY/CARTOGRAPHY: Australia, Gulf of Carpentaria, Valley and South Wellesley Islands. (Dark) GEOLOGY/HYDROLOGY: Coastal lowland. METEOROLOGY: Cumulus. AGRICULTURE: Scattered field patterns along the coastline. FORESTRY: Intermittent forest lands. OCEANOGRAPHY: Ocean depth variations.	
1845	86	10/17	Spring	136:00	16:33	20°	17°50'S	142°55'E	P-14	106	9	GEOGRAPHY/CARTOGRAPHY: Australia, Queensland, Great Dividing Range, Flansburgh River. (Dark) GEOLOGY/HYDROLOGY: Coastal lowland. METEOROLOGY: Cumulus. FORESTRY: Forested along river.		
1846	86	10/17	Spring	136:01	16:52	18°				108	12	GEOGRAPHY/CARTOGRAPHY: Australia. (Dark) METEOROLOGY: Cumulus.		
1847	86	10/17	Spring	136:01	16:52	18°				108	10	GEOGRAPHY/CARTOGRAPHY: Australia. (Dark) METEOROLOGY: Cumulus.		
1848	86	10/17	Cool-Dry	136:02	16:48	18°				109	8	GEOGRAPHY/CARTOGRAPHY: Australia. (Dark) METEOROLOGY: Cumulus.		
1849	87	10/17	Cool-Dry	137:17	13:34	58°	08°30'N	78°25'E	1:3,000,000	K-8	88	59	GEOGRAPHY/CARTOGRAPHY: India, Southern Tip, East Coast of Tibet. (Normal) GEOLOGY/HYDROLOGY: Coastal lowland. METEOROLOGY: Cumulus, thick cirrus. AGRICULTURE: Small fields.	

FRAME NUMBER	LIDAR DATE	SEASON	GET	LOCAL SOLAR TIME	PRINCIPAL POINT LATITUDE	PRINCIPAL POINT LONGITUDE	APPROXIMATE SCALES OF 70MM AT PP	MAP PLOTS WAC	ALTITUDE N.M.	DESCRIPTION BY DISCIPLINE	
										DNC	CLOUD %
		1968									
1850	87	10/17	Cool-Dry	137.17	13:42	56° 08'00" N	80° 30'12" E				
1851	87	10/17	Cool-Dry	137.18	13:44	57° 06'05" N	80° 36' E			89	54
1852	87	10/17	Spring	137.34	16:45	16° 17'00" S	122° 00' E			L-8	89
1853	87	10/17	Spring	137.34	16:45	16° 19'00" S	122° 00' E				108
1854	87	10/17	Spring	137.34	16:52	15°					109
1855	87	10/17	Spring	137.34	17:01	14° 18'30" S	126° 00' E				110
1856	87	10/17	Spring	137.35	17:09	10° 28'58" S	138° 58' E				111
1857	87	10/17	Spring	137.35	18:14	0° 22'38" S	128° 24' E	1:2,900,000		Q-L	112
											00
											00
											00
											00

FRAME NUMBER	DATE	SEASON	GET	LOCAL SOLAR TIME	SUN ELEV.	PRINCIPAL POINT LATITUDE	LONGITUDE	APPROXIMATE SCALE'S OF 70MM AT PP	MAP PLOTS WAC	MAP PLOTS ONC	DESCRIPTION BY DISCIPLINE	
											CLOUDS	N.H.
1858	87	10/17	Spring	137:36	09°						114	00
1859	87	10/17	Spring	137:36	08°						115	00
1860	87	10/17	Spring	137:37	07°						116	00
1861	90	10/17	Hot-Wet	14:51	43°	03°30'S	29°30'E				48	
1862	90	10/17	Hot-Wet	14:50	43°	04°45'S	29°32'E	1:2,222,200			98	26
1863	90	10/17	Fall	14:25	07:32	17°	31°30'N	95°30'W			112	31
1864	90	10/17	Fall	14:25	07:38	19°	29°00'N	94°00'W			112	50
1865	90	10/17	Fall	14:25							111	5

FRAME NUMBER	DATE	SEASON	GET	LOCAL SOLAR TIME	PRINCIPAL POINT LATITUDE	PRINCIPAL POINT LONGITUDE	APPROXIMATE SCALES OF 70MM AT PP	MAP PLOTS WAC	ALTITUDE N.M.	CLOUDS %	DESCRIPTION BY DISCIPLINE	
											DNC	ONC
1866	90	10/17	Fall	142:52	07:37	17° 33'30" N	94°30'W*			111	10	GEOGRAPHY/CARTOGRAPHY: Texas, Louisiana, Red River North to Shreveport. (Normal) METEOROLOGY: Strato-cumulus.
1867	91	10/17	Fall	143:09	12:56	64° 15'00" N	19°00'W*			86	25	GEOGRAPHY/CARTOGRAPHY: Cape Verde Islands in East Pacific off Mauritania. (Normal) GEOLOGY/HYDROLOGY: Volcanic islands. METEOROLOGY: Clouds in the horizon. OCEANOGRAPHY: Ocean depth variations.
1868	91	10/17	Cool-Hrt	143:12	13:29	60° 06'40" N	11°40'W*			87	80	GEOGRAPHY/CARTOGRAPHY: Sierra Leon: Coast East of Shebur Strait. (Normal) GEOLOGY/HYDROLOGY: Coastal lowland. METEOROLOGY: Cumulus, alto-cumulus, cirrus. AGRICULTURE: Field patterns along coastal areas. FORESTRY: Savanna grassland.
1869	91	10/17	Hot-Wet	143:20	15:19	38° 09'37"S	13°22'E	1:4,000,000	N-J	98	27	GEOGRAPHY/CARTOGRAPHY: Angola: Coast at Iuanda, Rio Cuarta, Gulf of Guinea. (Light) GEOLOGY/HYDROLOGY: Narrow coastal plain and complex plateau. METEOROLOGY: Cumulus, alto-cumulus, cirrus. AGRICULTURE: Field patterns along the coastal areas. FORESTRY: Savanna grassland.
1870	91	10/17	Fall	144:26	09:13	35° 79°00'N	94°00'W*			101	28	GEOGRAPHY/CARTOGRAPHY: Texas: Houston Area, Galveston Bay, Lake Houston, Brazos River, Colorado River, regional and local Houston highway network. (Dark) GEOLOGY/HYDROLOGY: Flat lowland and coastal plain. METEOROLOGY: Cumulus, alto-cumulus. FORESTRY: Scattered forest lands in predominantly prairie grassland.
1871	91	10/17	Fall	144:26	09:15	36° 29°00'N	94°30'W*			101	40	GEOGRAPHY/CARTOGRAPHY: Texas: Houston Area, Galveston Bay, Lake Houston, Brazos River, highway network. (Dark) GEOLOGY/HYDROLOGY: Flat lowland and coastal plain. METEOROLOGY: Towering cumulus, alto-cumulus. FORESTRY: Scattered forest lands in predominantly prairie grassland.

FRAME NUMBER	DATE 1980	SEASON	GET	LOCAL SOLAR TIME	PRINCIPAL POINT LATITUDE	SUN ELEV.	APPROXIMATE SCALES OF 70MM AT PPF	MAP PILOTS WAC	ALTITUDE N.M.	DESCRIPTION BY DISCIPLINE	
										ONC	CLOUDS %
1872	91	10/17	Fall	144:26	09:16	36° 29'31" N	94°53' W	1:5,000,000	H-24	101	35
1873	91	10/17	Fall	144:26	09:18	36° 29'12" N	95°17' W	1:5,000,000	H-24	101	25
1874	91	10/17	Fall	144:27		45°				99	4
1875	91	10/17	Fall	144:27		45°				99	64
1876	91	10/17	Fall	144:28		45°				99	99
1877	91	10/17	Fall	144:28		45°				99	90
1878	91	10/17	Fall	144:28		45°				99	90
1879	91	10/17	Fall	144:28		45°				99	90
1880	103	10/18	Spring	162:44	17:23	09° 25'30" S	114°00' E	1:6,250,00	Q-12	112	11

FRAME NUMBER	L OR	DATE	SEASON	GET	LOCAL SOLAR TIME	PRINCIPAL POINT LATITUDE	SUN ELEV	APPROXIMATE SCALES OF 70MM AT P.P.	MAP PLOTS WAC	MAP PLOTS ONC	DESCRIPTION BY DISCIPLINE	
											CLOUDS 15° 10°	ALTITUDE N.M. 1500 1000
1880 (cont'd)		1968										
1881	103	10/18	Spring	162:44	17:27	09°	26°13' S	114°45' E	1:3,000,000	Q-12	112	02 GEOGRAPHY/CARTOGRAPHY: Shark Bay, Western Australia. (Dark) GEOLGY/HYDROLOGY: Coastal plain region. FORESTRY: Intermittent shrubform and coastal savanna grass. OCEANOGRAPHY: Coastal shallows, sand bars.
1882	103	10/18	Spring	162:45	17:40	05°	24°40' S	113°57' E		Q-12	113	00 GEOGRAPHY/CARTOGRAPHY: Lakes Austin, Barrie, Ballard, Salt Lakes, Western Australia. (Dark)
1883	104	10/18	Hot-Wet	164:02	13:48	59°	02°22' S	40°32' E	1:4,740,000	H-5	88	75 GEOGRAPHY/CARTOGRAPHY: Kenya Coastline, Formosa Bay, Tana River, Shitu Channel. (Dark) METEOROLOGY: Towering cumulus.
1884	104	10/18	Hot-Wet	164:02	13:53	58°	01°07' S	41°47' E	1:3,333,330	M-5	88	38 GEOGRAPHY/CARTOGRAPHY: Sosiani, Kenya Coastline, South of Chisambo. (Dark) METEOROLOGY: Small cumulus, towering cumulus. OCEANOGRAPHY: Coastline and beaches.
1885		10/18									55	METEOROLOGY: Cirrus.
1886		10/18									50	GEOGRAPHY/CARTOGRAPHY: Coast of N.W. Africa. METEOROLOGY: Small cumulus, cirrus.
1887	105	10/18	Hot-Wet	165:53	14:53	44°	12°06' S	34°06' E	1:8,333,330	H-5	68	GEOGRAPHY/CARTOGRAPHY: Lake Nyasa, Malawi, Mozambique. (Dark) GEOLGY/HYDROLOGY: Rift zone lake with boundary structures and lying within the complex Vypya mountains. METEOROLOGY: Cumulus. FORESTRY: Intermittent shrubform and savanna grassland, smoke apparent.

DESCRIPTION BY DISCIPLINE											
FRAME NUMBER	ORBIT DATE	SEASON	GET	LOCAL SOLAR TIME	SUN ELEV	PRINCIPAL POINT LATITUDE	LONGITUDE	APPROXIMATE SCALES OF 70MM AT PP	MAP PLOTS WAC	ONC	ALTITUDE N.M.
1888	105	10/18	Spring	165:36	15:45	32°	20°08' S	45°50' E	1:6,111,110	P-6	50
											GEOGRAPHY/CARTOGRAPHY: Madagascar, central part of island, Morondava, Tamara River. (Dark) GEOLGY/HYDROLOGY: Coastal plain and plateau region with perennial drainage. METEOROLOGY: Cumulus FORESTRY: Intermittent shrubform and savanna grasslands OCEANOGRAPHY: Coastline visible.
1889											Terminator. (Dark)
1890											Blank.
1891	105	10/18	Fall								
1892	105	10/18	Fall								
1893	106	10/18	Fall	166:38	08:20	32°	28°13' N	80°13' W	1:2,750,000	H-25	47
											GEOGRAPHY/CARTOGRAPHY: FSC Florida, regional transportation network. (Dark) GEOLGY/HYDROLOGY: Coastal plain. METEOROLOGY: Towering cumulus.
1894	106	10/18	Fall	168:13	08:27	48°	21°43' W	81°57' N	1:5,000,000	J-26	56
											GEOGRAPHY/CARTOGRAPHY: Cuba, Bay of Pigs, Escamela de Erce. (Dark) AGRICULTURE: Scattered cultivation. GEOLGY/HYDROLOGY: Coastal plain region with sedimentation buildup and distinct shelf variation off shore. FORESTRY: Cumulus, alto-cumulus, cirrus. OCEANOGRAPHY: Intermittent dense tropical hardwood forests. Depth changes.
1895	107	10/18	Fall	168:13	10:04	49°	23°50' W	78°00' W*			59
											METEOROLOGY: Alto-cumulus, strato-cumulus. (Normal) OCEANOGRAPHY: Shelf variation.

FRAME NUMBER	LIBRIO	DATE	SEASON	GET	LOCAL SOLAR TIME	PRINCIPAL POINT LATITUDE	PRINCIPAL POINT LONGITUDE	APPROXIMATE SCALES OF 70MM AT PP	MAP PLOTS		ALTITUDE N.M.	CLOUD %	DESCRIPTION BY DISCIPLINE	
									WAC	ONC				
1896	107	10/18	Fall	168:15	10:29	54° 21' 33"N	72° 14' W	1:1,750,000	J-27					
1897	107	10/18	Fall	168:15	10:32	54° 21' 53"N	71° 20' W	1:1,750,000	J-27					
1898	107	10/18	Fall	168:16	10:45	59° 18' 08" N	68° 26' W	1:2,439,00	J-27					
1899	115	10/19	Hot-Net	182:07	14:12	54° 13' 13"S	135° 39' E	1:4,444,440	H-1A					
1900	115	10/19	Hot-Net	182:08	14:37	48° 13' 02"S	141° 26' E	1:4,230,800	H-1A					

FRAME NUMBER	L1820	DATE	SEASON	GET	LOCAL SOLAR TIME	PRINCIPAL POINT LATITUDE	PRINCIPAL POINT LONGITUDE	APPROXIMATE SCALES OF 70MM AT PP	MAP PLOTS			ALTITUDE N.M.	CLOUDS	DESCRIPTION BY DISCIPLINE		
									WAC	ONC	WAC	ONC		DISCIPLINE	DISCIPLINE	
1901		1968														
1901	115	10/19	Hot-Net	182:00	14:43	47°	13°09' S	143°26' E	1:4,500,000				N-14		30	GEOGRAPHY/CARTOGRAPHY: Australia, west coast of Cape York, Coral Sea, Campbell Point, Great Barrier Reef. (Dark) GEOLOGY/HYDROLOGY: Coastal plain region with bordering swamps and off shore coral reefs. FORESTRY: Intermittent dense forest and scattered shrubform, open grasslands along major drain. METEOROLOGY: Cumulus, cirrus. OCEANOGRAPHY: Ocean depth differences.
1902	115	10/19	Hot-Net	182:00	14:43	45°	14°34' S	144°45' E	1:5,000,000				N-14		24	GEOGRAPHY/CARTOGRAPHY: Australia, Cape Melville Princess Charlotte Bay. (Dark) GEOLOGY/HYDROLOGY: Coastal plain region with bordering swamps, shoreline of submergence, and off shore coral reefs. FORESTRY: Intermittent forests with scattered shrubform and grass, several fires. METEOROLOGY: Cumulus, cirrus. OCEANOGRAPHY: Reefs.
1903	116	10/19	Spring	183:45	15:56	29°	26°30' S	137°00' E					Q-14		43	GEOGRAPHY/CARTOGRAPHY: South Australia, Lake Eyre Basin. (Dark) GEOLOGY/HYDROLOGY: Low interior plains with numerous dry lakes and alkali deposits. FOUNDRY: Predominantly desert shrubform and grass. METEOROLOGY: Cumulus, alto-cumulus.
1904	116	10/19													25	METEOROLOGY: Cumulus, cirrus.
1905	117	10/19	Fall	184:50	10:07	49°	22°24' N	32°56' E					J-5		25	GEOGRAPHY/CARTOGRAPHY: Nile River to Red Sea. (Dark) GEOLOGY/HYDROLOGY: Alluvial plain, plateau, intermittent dendritic drainage on the plateau. FORESTRY: Predominantly scattered desert shrubform, semi-dense vegetation along banks of Nile.
1906	117	10/19	Fall	184:50	10:09	51°	23°47' N	34°16' E					J-5		00	GEOGRAPHY/CARTOGRAPHY: Nile River to Red Sea. (Dark) GEOLOGY/HYDROLOGY: Alluvial plain, plateau, intermittent dendritic drainage on the plateau. FORESTRY: Scattered desert shrubform with semi-dense vegetation along Nile.

FRAME NUMBER	LIBRO DATE	SEASON	GET	LOCAL SOLAR TIME	PRINCIPAL POINT LATITUDE	PRINCIPAL POINT LONGITUDE	APPROXIMATE SCALES OF 70MM AT PP	MAP PLOTS		ALTITUDE N.M.	CLOUDS %	DESCRIPTION BY DISCIPLINE		
								WAC	ONC					
1907	117	10/19	Spring	185:5	15:52	30°	24°31'S	113°11'E	1:5,770,000	Q-12	25 (Normal)	GEOGRAPHY/CARTOGRAPHY: Shark Bay, Western Australia. GEOLGY/HYDROLOGY: Coastal plain, hills in the interior; Intermittent stream, dendritic drainage. FORESTRY: Primarily shrubform with grass. METEOROLOGY: Cumulus. OCEANOGRAPHY: Depth differences along the coastline.		
1908	117	10/19	Spring	185:16	15:52	30°	21°45'S	113°49'E	1:15,200,000	F-12	173.9	22	GEOGRAPHY/CARTOGRAPHY: Exmouth Gulf, Western Australia. (Dark) GEOLGY/HYDROLOGY: Coastal plain with intermittent consequent drainage patterns. FORESTRY: Scattered shrubform changing to dense shrub. METEOROLOGY: Small cumulus.	
1909	118	10/19	Spring	186:51	15:50	09°	25°25'S	113°38'E	1:7,045,000	Q-12	32	GEOGRAPHY/CARTOGRAPHY: Shark Bay, Western Australia. (Dark) GEOLGY/HYDROLOGY: Coastal plain region containing low hills and intermittent consequent drainage. FORESTRY: Grass and scattered shrubform changing to semi-dense forest lands to the south. METEOROLOGY: Cumulus. OCEANOGRAPHY: Coastal shallows.		
1910	118	10/19	Spring	186:51	15:56	08°	27°27'S	114°15'E	1:7,333,330	Q-12	20	GEOGRAPHY/CARTOGRAPHY: Shark Bay, Western Australia. (Dark) AGRICULTURE: Extensive field patterns to south. GEOLGY/HYDROLOGY: Coastal plain region containing low hills and intermittent consequent drainage. FORESTRY: Grass and scattered shrubform. METEOROLOGY: Cumulus. OCEANOGRAPHY: Coastal shallows.		
1911	120	10/19	Hot-Wet	189:16	13:31	64°	10°04'S	12°41'E	1:3,750,000	H-3	63	GEOGRAPHY/CARTOGRAPHY: Angola, coast at Lunuda. (Normal) GEOLGY/HYDROLOGY: Plateau, narrow coastal plain. FORESTRY: Intermittent tall savanna grass. METEOROLOGY: Cumulus, alto-cumulus.		

FRAME NUMBER	DATE	SEASON	GET	LOCAL SOLAR TIME	PRINCIPAL POINT LATITUDE	PRINCIPAL POINT LONGITUDE	APPROXIMATE SCALES OF 70MM AT PP	MAP PLOTS		ALTITUDE N.H.	CLOUDS %	DESCRIPTION BY DISCIPLINE
								WAC	ONC			
1912	120	10/19	Spring	189°43'	13°33'	48°	17°45'S	27°11'E	1:6,680,000	P-4	38	GEOGRAPHY/CARTOGRAPHY: Zambia, Rhodesia, Lake Kariba. (Normal) GEOLOGY/HYDROLOGY: Volcanic highlands, plateau. FORESTRY: Intermittent forest and savanna grassland. METEOROLOGY: Cumulus.
1913	120	10/19	Spring	189°42'	15:05	40°	19°32' S	34°54'E	1:4,285,700	P-5	20	GEOGRAPHY/CARTOGRAPHY: Mozambique, coast of Beira. (Dark) GEOLOGY/HYDROLOGY: Coastal plain, plateau in the interior. FORESTRY: Mangrove swamps, intermittent rain forests and grasslands, several smoke plumes. METEOROLOGY: Cumulus. OCEANOGRAPHY: Ocean depth variations or sediments.
1914	120	10/19	Spring	189°42'	15:05	39°	18°55' S	36°07'E	1:4,285,700	P-5	16	GEOGRAPHY/CARTOGRAPHY: Mozambique, coast at mouth of Zambezi River. (Dark) GEOLOGY/HYDROLOGY: Delta, coastal plain and plateau. FORESTRY: Mangrove swamps, intermittent rain forests and savanna grasslands, numerous fires. METEOROLOGY: Cumulus. OCEANOGRAPHY: Ocean depth variations or sediments.
1915	120	10/19									00	Underexposed.
1916	120	10/19	Fall	189°45'	07:42	19°	31°26' N	91°45' W		H-24	00	GEOGRAPHY/CARTOGRAPHY: Alexandria, Louisiana; Jackson, Mississippi; transportation network. (Dark) AGRICULTURE: Extensive cultivation. GEOLOGY/HYDROLOGY: Flood plain, meandering Mississippi River. FORESTRY: Pine-hardwood forests and scattered bottom land hardwoods in river plain.
1917	120	10/19	Fall	189°43'	07:47	20°	30°27' N	90°14' W	1:3,208,330	H-24	2	GEOGRAPHY/CARTOGRAPHY: New Orleans, Louisiana; regional transportation network. (Dark) AGRICULTURE: Extensive cultivation pattern. GEOLOGY/HYDROLOGY: Flood plain, Mississippi River. FORESTRY: Intermittent coastal marsh and mixed forest stands.

FRAHE NUMBER	LNB#	DATE	SEASON	GET	LOCAL SOLAR TIME	SUN ELEV	PRINCIPAL POINT LATITUDE	APPROPRIATE SCALES OF 70MM AT PP LONGITUDE	MAP PLOTS			ALTITUDE N.H.	CLOUDS %	DESCRIPTION BY DISCIPLINE
									WAC	ONC				
		1968												
1918	120	10/19	Fall	190:45	07:58	22°	31°06' N	87°03' W	1:3,280,000			H-24	00	GEOGRAPHY/CARTOGRAPHY: Mobile, Alatonna; regional. (Dark) AGRICULTURE: Scattered, intense cultivation. GEOLOGY/HYDROLOGY: Coastal plain. FORESTRY: Intermittent coastal marsh vegetation with mixed pine-hardwood forests. OCEANOGRAPHY: Sediment flows into Gulf from Bay.
1919	120	10/19	Fall										100	METEOROLOGY: Hurricane Gladys, Gulf of Mexico.
1920	122	10/19	Hot-Net	192:37	13:24	66°	05°20' S	35°10' W				H-23	52	GEOGRAPHY/CARTOGRAPHY: Brazil, Metal, Cabo de Sao Roque. (Dark) GEOLOGY/HYDROLOGY: Coastal plain. FORESTRY: Intermittent dense tropical forests. METEOROLOGY: Cumulus.
1921	122	10/19	Spring	192:51	17:18	10°	30°00' S	21°00' E*	1:9,666,700			Q-4	14	GEOGRAPHY/CARTOGRAPHY: South Africa, Southwest Africa, Orange River. (Normal) GEOLOGY/HYDROLOGY: Narrow coastal plain, complex mountains, complex plateau. FORESTRY: Low shrubform, grassland. METEOROLOGY: Cirrus.
1922	122	10/19	Spring	192:51	17:14	11°	32°00' S	20°00' E*	1:5,000,000			R-4	50	GEOGRAPHY/CARTOGRAPHY: South Africa, St. Helen Bay, Cape Columbine, Cape Town, (Dark) Cape Peninsula, Cape Town, (Dark) GEOLOGY/HYDROLOGY: Folded mountains and complex plateau. FORESTRY: Low shrubform, grassland. METEOROLOGY: Cumulus, cirrus.
1923	123	10/19		194:07	12:58	72°	02°00' S	63°00' W				H-28	98	METEOROLOGY: Cumulus, cirrus. (Normal)
1924	123	10/19	Hot-Net	194:14	14:45	48°	13°01' S	36°00' W*	1:5,500,000			P-28 H-28	29	GEOGRAPHY/CARTOGRAPHY: Brazil, Bahia State, Salvador. (Dark) GEOLOGY/HYDROLOGY: Coastal plain, complex plateau. FORESTRY: Dense tropical forest. METEOROLOGY: Cumulus, cirrus.

FRAME NUMBER	L18N OR	DATE	SEASON	GET	LOCAL SOLAR TIME	SUN ELEV	PRINCIPAL POINT LATITUDE	LONGITUDE	APPROXIMATE SCALES OF 70MM AT PP	MAP PLOTS		ALTITUDE N.M.	CLOUDS %	DESCRIPTION BY DISCIPLINE	
										WAC	ONC				
1925	123	10/15	Hot-Wet	194:14	14:45	48°	15°30'S	38°00'W <sup>a</sup>	1:5,550,000	P-28				24	GEOGRAPHY/CARTOGRAPHY: Brazil, Bahia State, mouth of Jequitinhonha River. GEOLGY/HYDROLOGY: Coastal plain with perennial drainage. FORESTRY: Dense tropical forests. METEOROLOGY: Cumulus, cirrus.
1926	124	10/19	Spring	195:42	14:13	54°	19°00'S	68°00'W <sup>a</sup>						88	GEOGRAPHY/CARTOGRAPHY: Chile, Argentina, Saler de Huurui. METEOROLOGY: Alto-cumulus, thick cirrus.
1927	124	10/19	Spring	195:49	15:40	32°	24°57'S	47°23'W	1:5,172,400	Q-28				22	GEOGRAPHY/CARTOGRAPHY: Brazil Coastline, Santos to Florianoopolis (Dark) GEOLGY/HYDROLOGY: Coastal plain. FORESTRY: Dense forest. METEOROLOGY: Cumulus, alto-cumulus. OCEANOGRAPHY: Some sediment deposition.
1928	124	10/19	Hot-Wet	195:48	15:48	32°	24°00'S	46°00'W <sup>a</sup>	1:5,000,000	P-28				25	GEOGRAPHY/CARTOGRAPHY: Brazil coastline, Paruibe, Santos, Ponta de Juatinga. (Dark) AGRICULTURE: Possible field patterns. GEOLGY/HYDROLOGY: Complex hills, coastal plain. FORESTRY: Dense forests along coast becoming increasingly intermittent inland. OCEANOGRAPHY: Depth differences.
1929	127	10/20		201:23		35°								100	METEOROLOGY: Hurricane Gloria.
1930	127	10/20		201:23										97	METEOROLOGY: Hurricane Gloria
1931	129	10/20		204:47	14:56	42°	20°21'S	166°15'E	1:4,307,700	P-16	150	28		GEOGRAPHY/CARTOGRAPHY: New Caledonia, Ile Lifou. (Dark) GEOLGY/HYDROLOGY: Complex mountains. FORESTRY: Dense forest. METEOROLOGY: Cumulus. OCEANOGRAPHY: Reefs, sun-glint.	

FRAME NUMBER	LBBR#	DATE	SEASON	GET	LOCAL SOLAR TIME	SUN ELEV	PRINCIPAL POINT LATITUDE	PRINCIPAL POINT LONGITUDE	APPROXIMATE SCALES OF 70MM AT PP	MAP PLOTS		ALTITUDE N.H.	CLOUDS %	DESCRIPTION BY DISCIPLINE				
										WAC	ONC							
		1968																
1932	133	10/20	Cool-Dry	210:31	10:34	62°	13°20'N	14°43'E	1:3,700,000	H-J				20	GEOGRAPHY/CARTOGRAPHY: Lake Chad, Africa. (Dark) GEOLOGY/HYDROLOGY: Interior plain region forming a drainage basin with elevated dunes on the north side. FORESTRY: Savanna Grassland, with scattered shrubform. METEOROLOGY: Cirrus.			
1933	134	10/20	Fall	213:19	06:46	09°	Above Horizon					H-25	120	18	GEOGRAPHY/CARTOGRAPHY: Florida. (Dark) OCEANOGRAPHY: Sun-Glint.			
1934	134	10/20	Fall	213:19	07:05	11°	27°30'N	81°30'W		H-25	120			30	GEOGRAPHY/CARTOGRAPHY: Florida, E.S.C. (Dark) METEOROLOGY: Cumulus, cirrus.			
1935	134	10/20	Fall	213:20	07:02	11°	28°25'N	79°49'W				H-25	118	34	GEOGRAPHY/CARTOGRAPHY: Cuba, Havana. (Dark) GEOLOGY/HYDROLOGY: Low plain. FORESTRY: Intermittent forest lands. METEOROLOGY: Cumulus, cirrus.			
1936	136	10/20	Fall						1:7,000,000	J-26				65	GEOGRAPHY/CARTOGRAPHY: Gulf of California, Isle, Taburon and Isle Angel de la Guarda. (Dark) GEOPHYSICS: Strato-cumulus.			
1937	136	10/20	Fall	216:22	07:45	20°	30°00'N	115°00'W				H-22	112	2	GEOGRAPHY/CARTOGRAPHY: Southern end of the Gulf of California and Southwestern Mexico coast. (Dark) GEOLOGY/HYDROLOGY: Coastal plain showing off shore build-up on a shoreline of subsidence. OCEANOGRAPHY: Sun-Glint, good land water contrast.			
1938	136	10/20	Fall	216:24	08:11	26°	25°30'N	109°00'W		H-22	106			112	GEOGRAPHY/CARTOGRAPHY: Brazil, coast near Aracaju. (Normal) GEOLOGY/HYDROLOGY: Coastal plain. FORESTRY: Cumulus. OCEANOGRAPHY: Coastal shallows.			
1939	137	10/20	Spring	216:44	13:23	67°	10°00'S	36°00'W										

FRAME NUMBER	LIT#	DATE	SEASON	GET	LOCAL SOLAR TIME	PRINCIPAL POINT ELEV	APPROXIMATE LATITUDE	APPROXIMATE LONGITUDE	SCALES OF 70MM AT PP	MAP PLOTS		ALTITUDE N.M.	SOUNDING	CLOUDS %	DESCRIPTION BY DISCIPLINE			
										WAC	ONC							
		1968																
194.0	137	10/20	Spring	217:00	17:12	11°	28° 00' S	16° 53' E	1:5,500,000	Q-4	180	40	GEOGRAPHY/CARTOGRAPHY: South Africa, Orange River. (Dark) GEOLOGY/HYDROLOGY: Coastal plain. FORESTRY: Complex plateau. METEOROLOGY: Cumulus.					
194.1	140	10/20	Spring	221:29	17:00	15°	29° 00' S	53° 00' W		Q-28	172	10	GEOGRAPHY/CARTOGRAPHY: Porto Alegre, Brazil, South Atlantic Ocean. (Normal) AGRICULTURE: Some cultivation around Lagoa dos Patos. GEOLOGY/HYDROLOGY: Coastal plain. FORESTRY: Intermittent forest and Grassland. METEOROLOGY: Cumulus.					
194.2	140	10/20	Spring	221:29	17:13	12°	31° 00' S	50° 20' W	1:5,000,000	Q-28	175	6	GEOGRAPHY/CARTOGRAPHY: Porto Alegre, Brazil, South Atlantic Ocean. (Normal) AGRICULTURE: Some cultivation around Lagoa dos Patos. GEOLOGY/HYDROLOGY: Coastal plain, swamp. FORESTRY: Low shrubiform. METEOROLOGY: Cumulus, cirrus. OCEANOGRAPHY: Off shore sediment flows.					
194.3	140	10/20	Spring	221:30	17:11	12°	31° 48' S	51° 20' W	1:5,000,000	Q-28	180	13	GEOGRAPHY/CARTOGRAPHY: Porto Alegre, Brazil, South Atlantic Ocean. (Normal) AGRICULTURE: Coastal plain, swamp, sediment flow patterns in lagoon. FORESTRY: Low shrubiform. METEOROLOGY: Cumulus, cirrus. OCEANOGRAPHY: Off shore sediment flows.					
1979	8	10/12	Fall	11:59	08:46	32°	30° 20' N	86° 23' E		H-9	125	5	GEOGRAPHY/CARTOGRAPHY: India, Nepal, Tibet, Gorakhpur in India; Ganga and Ganges Rivers, Ganges Plains, Himalayas. (Normal) GEOLOGY/HYDROLOGY: Ganges interior alluvial plains and basement complex of the Himalayas. The complex Tibet plateau is in the background, perennial rivers form a braided pattern along the plains. FORESTRY: Savanna grass mixed with deciduous forest stands in flood plain, changing to dense evergreen forest at middle elevations and void of vegetation at higher elevations. METEOROLOGY: Alto-cumulus.					

FRAME NUMBER	LAT. OR DATE	SEASON	GET	LOCAL SOLAR TIME	PRINCIPAL POINT LATITUDE	SUN ELEV	APPROXIMATE SCALE OF 70MM AT PP	MAP PLOTS			ALTITUDE N.M.	CLOUDS %	DESCRIPTION BY DISCIPLINE
								WAC	ONC				
1980	8	Fall	10/12	11:59	08°43'	34°	25°52' N	85°20' E			H-9	125	GEOGRAPHY/CARTOGRAPHY: India, Nepal, Tibet, Pakistan, Patna City, Gaya in India; Ghaghra, Gandak, Son and Ganges River: Ganges Plains and Himalayas. (Normal) AGRICULTURE: Field patterns recognizable in flood plain.
													GEOLOGY/HYDROLOGY: Ganges interior alluvial plain and embayment complex of the Himalayas. The Ganges River is a perennial braided river.
													FORESTRY: Savanna grass, semi-dense forests with occasional dense stands in flood plain, changing to dense evergreen stands at higher elevation.
													METEOROLOGY: Small cumulus, alto-cumulus.
1981	8	Fall	10/12	12:00	08:55	34°	27°49' N	88°01' E			H-9	125	GEOGRAPHY/CARTOGRAPHY: Nepal, India, China, Bhutan, Himalayas and Tibet Plateau. (Normal)
													GEOLOGY/HYDROLOGY: Complex of Himalayas consisting of igneous and sedimentary rocks. Tibet plateau is highly dissected and forms a complex plateau with alluvial deposits.
													FORESTRY: Dense forest stands along plain and highland contact and up to snow line. Vegetation sparse or lacking in plateau.
													METEOROLOGY: Alto-cumulus, strato-cumulus.
1982	8	Fall	12:00	09:03	35°	28°08' N	90°11' E				H-10	126	GEOGRAPHY/HYDROLOGY: Bhutan, China, Himalayas and Tibet Plateau. (Normal)
													GEOLOGY/HYDROLOGY: Complex mountains of the Himalayas and Tibet plateau complex.
													FORESTRY: Dense to semi-dense forest stands below snow line, vegetation sparse or lacking in plateau.
													METEOROLOGY: Cumulus, alto-cumulus.
1983	8	Fall	12:10	11:54	49°	32°12' N	130°15' N	1:4,000,000			H-13	125	GEOGRAPHY/CARTOGRAPHY: Japan: Kyushu; Kagoshima; Kafoshima Bay, East China Sea. (Normal)
													AGRICULTURE: Sparse, irregular cultivation patterns.
													GEOLOGY/HYDROLOGY: Complex hills and submerged coast line.
													FORESTRY: Dense forest stands on slopes, separated by drainage system.
													METEOROLOGY: Cirrus, alto-cumulus, small cumulus.
													OCEANOGRAPHY: Off shore sedimentation.

FRAME NUMBER	DATE	SEASON	GET	LOCAL SOLAR TIME	PRINCIPAL POINT LATITUDE	PRINCIPAL POINT LONGITUDE	APPROXIMATE SCALES OF 70MM AT FP			MAP PLOTS WAC	MAP PLOTS ONC	ALTITUDE N.M.	CLOUDS %	DESCRIPTION BY DISCIPLINE	
							SCALES OF 70MM AT FP	WAC	ONC					DESCRIPTION BY DISCIPLINE	
1984	8	Fall	12:10	11:55	49° 31' 22" N	130° 41' E	1:3,452,000	H-13		125	40			GEOGRAPHY/CARTOGRAPHY: Japan: Kyushu, Kogoshima, Miyakonojo, Kagoshima Bay, East China Sea. (Normal) GEOLOGY/HYDROLOGY: Complex hills and submerged coast line.	
														FORESTRY: Dense forest stands separated by drainage system.	
														METEOROLOGY: Cirrus, alto-cumulus, small cumulus.	
														OCEANOGRAPHY: Off shore sedimentation and currents are sparse.	
1985	8	10/12 Fall	12:10	11:58	49° 31' 00" N	131° 06' E				125	72			GEOGRAPHY/CARTOGRAPHY: Japan: Kyushu: Kogoshima, Kagoshima Bay. (Normal) GEOLOGY/HYDROLOGY: Complex hills and submerged coast line.	
														FORESTRY: Dense forest stands separated by drainage network.	
														METEOROLOGY: Small cumulus, cumulus-nimbus.	
1986	8	10/12										30		METEORLOGY: Strato-cumulus. (Normal)	
1987	9	10/12 Cool-Dry	13:22	07:18	20° 12' 40" N	43° 25' E*						129	20	GEOGRAPHY/CARTOGRAPHY: Ethiopia, Yemen, Somalia, Saudi Arabia, Red Sea, Gulf of Aden. (Dark) METEOROLOGY: Small cumulus.	
1988	9	10/12 Fall	13:22	07:13	18° 16' 20" N	42° 10' E*						129	0	GEOGRAPHY/CARTOGRAPHY: Yemen, Saudi Arabia: Red Sea, Farasan Islands. (Normal)	
1989	9	10/12 Fall	13:23	07:21	19° 18' 00" N	44° 00' E*						130	0	GEOGRAPHY/CARTOGRAPHY: Saudi Arabia: Empty Quarter, Jebel Tuwaiq. (Normal) GEOLGY/HYDROLOGY: Eg: Plains region of longitudinal sand dunes.	
1990	9	10/12 Fall	13:25	08:28	27° 30' 00" N	60° 00' E*						128	30	GEOGRAPHY/CARTOGRAPHY: Saudi Arabia, Persian Gulf. (Normal) GEOLGY/HYDROLOGY: Erg plains and eroding coast. METEOROLOGY: Small cumulus, alto-cumulus.	

FRAME NUMBER	DATE	SEASON	GET	LOCAL SOLAR TIME	PRINCIPAL POINT LATITUDE	LONGITUDE	APPROXIMATE SCALES OF 70MM AT FP	MAP PLOTS		ALTITUDE N.M.	CLOUDS % CL	DESCRIPTION BY DISCIPLINE	
								WAC	ONC				
	1968												
1991	9	10/12 Fall	13:33	10:04	42°	30°30' N	82°00' E*						
1992	9	10/12 Fall	13:33	10:04	42°	30°45' N	81°50' E				126		
1993	9	10/12 Fall	13:34	10:24	45°	30°43' N	86°45' E	1:16,000,000	H-9 G-7	H-9	126	5	GEOGRAPHY/CARTOGRAPHY: Tibet Plateau, Tibet, Himalayas. (Dark) GEOLGY/HYDROLOGY: Basement complex mountains of the Himalayas, perennials lakes from snow deposits are prevalent.
1994	9	10/12											
1995	9	10/12											
1996	9	10/12 Cool-Dry	13:56	06:09	21°	11°00' N	167°30' E*					138	
1997	9	10/12	Cool-Dry	13:56	06:27	18°	7°00' N	172°00' E*				138	
1998	10	10/12 Fall	14:53	07:28	21°	17°30' N	23°00' E		J-4	J-4	132	0	GEOGRAPHY/CARTOGRAPHY: Chad, Sudan, Libya. Erratic Plateau, Mourdi Depression. (Normal) GEOLGY/HYDROLOGY: Elevated sedimentary plateau surrounded by an interior erg plains region and highly dissected intermittent stream beds within the plateau.

FRAME NUMBER	L/ R	DATE	SEASON	GET	LOCAL SOLAR TIME	SUN ELEV	PRINCIPAL POINT LATITUDE	APPORXIMATE SCALES OF 70MM AT TPP LONGITUDE	MAP PLOTS			ALTITUDE N.M.	CLOUD COVER	DESCRIPTION BY DISCIPLINE	
									WAC	ONC					
		1968													
1999	10	10/12	Fall	14:55	08:08	28°	22°15' N	32°00' E*				J-S	130		
2000	10	10/12	Fall	14:56	08:25	27°	28°25' N	34°15' E*				H-5	129	0	GEOGRAPHY/CARTOGRAPHY: United Arab Republic, Israel, Saudi Arabia, Red Sea, Gulf of Aqaba, Gulf of Suez, Gulf of Eilat, (Normal) GEOLGY/HYDROLOGY: Mediterranean Sea. (Normal) GEOLOGY/HYDROLOGY: A region of basement complex mountainous areas adjacent to the coastal erg areas of the rift zone, numerous fault structures can be delineated. FORESTRY: Scattered desert shrubform.
2001	10	10/12	Fall	14:57	08:36	32°	24°30' N	37°00' E*				J-6	128	5	GEOGRAPHY/CARTOGRAPHY: Saudi Arabia, Red Sea, Ras Abu Jidd. (Normal) GEOLGY/HYDROLOGY: Coastal plain dune deposits and basement complex highly fractured hills and mountains. FORESTRY: Low scattered shrubform. METEOROLOGY: Small cumulus.
2002	10	10/12	Fall	15:02	09:27	39°	29°00' N	50°30' E*				H-6	126		GEOGRAPHY/CARTOGRAPHY: Iran, Persian Gulf Coast at Bushire. (Normal) GEOLGY/HYDROLOGY: Rugged hills of basement complex are adjacent to the coast. GEOMORPHISM: Coastal shallows, possible current patterns.
2003	11	10/12	Fall	16:33	09:48	41°	31°10' N	33°10' E*				H-5	126		GEOGRAPHY/CARTOGRAPHY: United Arab Republic, Israel, Nile Delta, Suez Canal. (Dark) GEOLGY/HYDROLOGY: Deltaic plain of the Nile and emergent coast line of the Mediterranean. METEOROLOGY: Small cumulus, towering cumulus.
2004	11	10/12													METEOROLOGY: Strato-cumulus. (Dark)
2005	13	10/12													GEOGRAPHY/CARTOGRAPHY: Morocco. METEOROLOGY: Small cumulus, alto-cumulus.
															125

FRAME NUMBER	DATE	SEASON	GET	LOCAL SOLAR TIME	PRINCIPAL POINT LATITUDE	PRINCIPAL POINT LONGITUDE	APPROXIMATE SCALES OF 70MM AT PP	MAP PLOTS		ALTITUDE N.H.	CLOUDS %	DESCRIPTION BY DISCIPLINE	
								WAC	ONC				
	1968												
2006	13 10/12	Fall	19:43	12:46	47°	31°00' N	30°30' E			H-5	126	GEOGRAPHY/CARTOGRAPHY: United Arab Republic, Israel, Nile Delta. (Dark) AGRICULTURE: Extremely heavy cultivation in Nile delta. GEOLGY/HYDROLOGY: Coastal plain deposits from erg area. METEOROLOGY: Cumulus, alto-cumulus.	
2007	13 10/14	Fall	19:42	12:48	48°	32°00' N	33°00' E			G-3,4 H-5	126	GEOGRAPHY/CARTOGRAPHY: United Arab Republic, Israel, Jordan, Mediterranean Sea and Suez Canal. (Dark) AGRICULTURE: Extremely heavy cultivation in delta. GEOLGY/HYDROLOGY: Deltaic coastal plain and erg desert coastal region. METEOROLOGY: Cumulus.	
2008	13 10/12	Fall	19:42	12:46	47°	30°08' N	32°38' E	1:1,444,444		H-5	126	GEOGRAPHY/CARTOGRAPHY: United Arab Republic, Israel, Ismailiya. (Dark) AGRICULTURE: Heavy cultivation in delta. GEOLGY/HYDROLOGY: Dissected sedimentary hills and erg plains region. Perennial and intermittent drainage on the coasts. METEOROLOGY: Small cumulus.	
2009	13 10/12	Fall	19:42	12:46	46°	31°30' N	32°20' E			H-5	127	GEOGRAPHY/CARTOGRAPHY: United Arab Republic, Israel, Senni Desert, Suez Canal, Great Bitter Lake. (Dark) AGRICULTURE: Heavy cultivation in delta. GEOLGY/HYDROLOGY: Coastal plain dune deposits. METEOROLOGY: Cumulus.	
2010	13 10/12	Fall	19:43	12:57	45°	31°15' N	35°15' E			H-5	127	GEOGRAPHY/CARTOGRAPHY: Israel, Jordan, Syria, Lebanon, Dead Sea. (Dark) GEOLGY/HYDROLOGY: Area of sedimentary hills and basement complex mountain structures grading into an alluvial Plain. Dead Sea forms a watershed for Israel and Jordan. METEOROLOGY: Small cumulus.	

FRAME NUMBER	DATE	SEASON	GET	LOCAL SOLAR TIME	PRINCIPAL POINT LATITUDE	PRINCIPAL POINT LONGITUDE	APPROXIMATE SCALES OF 70MM AT PP	MAP PLOTS			ALTITUDE N.M.	CLOUDS %	DESCRIPTION BY DISCIPLINE				
								WAC	ONC	WAC	ONC						
	1968																
2011	13	10/12	Fall	19:43	12:56	47° 29'37" N	35°02' E	1:3, 545, 454	H-5			127	5	GEOGRAPHY/CARTOGRAPHY: Israel, Jordan, Saudi Arabia, Gulf of Aqaba. (Normal)			
															GEOLOGY/HYDROLOGY: Sedimentary and basement complex hill and mountains, with alluvial deposits interspersed.		
															METEOROLOGY: Cumulus.		
2012	14	10/12	Fall	21:05	11:03	52° 28'00" N	15°00' W*		H-1			125	20	GEOGRAPHY/CARTOGRAPHY: Canary Islands, Morocco, Atlantic Ocean. (Dark)			
															GEOLOGY/HYDROLOGY: Volcanic, sedimentary and complex hills and the western Sahara Desert erg area of Morocco.		
															FORESTRY: Dense intermittent forest stands on islands.		
															METEOROLOGY: Cumulus, alto-cumulus.		
2013	14	10/12	Fall	21:06	11:27	51° 30'00" N	10°30' W*		H-1			125	40	GEOGRAPHY/CARTOGRAPHY: Morocco, Ras Rhir, Anti-Atlas Mountains. (Dark)			
															GEOLOGY/HYDROLOGY: Highly folded sedimentary mountain complex with alluvial deposits in the lower regions.		
															FORESTRY: Scattered desert shrubform.		
															METEOROLOGY: Strato-cumulus, small cumulus.		
2014		10/12	Fall											95	METEOROLOGY: Strato-cumulus, small cumulus. (Dark)		
2015	15	10/12	Fall	23:56	08:29	31° 24'30" N	97°30' W*							127	GEOGRAPHY/CARTOGRAPHY: Mexico, Tamaulipas, Laguna Nacra Southern end. (Dark)		
															GEOLOGY/HYDROLOGY: Coastal plain deposits along a shoreline of emergence, off shore sand bar.		
															METEOROLOGY: Cumulus, cumulus-nimbus.		
2016	15	10/12	Fall	24:00	09:37	41° 28'30" N	82°40' W		H-25			126	55	GEOGRAPHY/CARTOGRAPHY: Florida, Tampa, St. Petersburg, Gulf of Mexico. (Dark)			
															East Coast, Cape Kennedy. (Dark)		
															METEOROLOGY: Small cumulus, towering cumulus.		
2017	15	10/12	Fall	24:01	09:42	42° 28'20" N	80°30' W		H-25			126	85	GEOGRAPHY/CARTOGRAPHY: Florida, Ponce de Leon Inlet, East Coast, Cape Kennedy. (Dark)			
															METEOROLOGY: Small cumulus, towering cumulus.		

FRAME NUMBER	LORANGE	DATE	SEASON	GET	LOCAL SOLAR TIME	PRINCIPAL POINT LATITUDE	PRINCIPAL POINT LONGITUDE	APPROXIMATE SCALES OF 70MM AT P.P.	MAP PLOTS			ALTITUDE N.M.	CLOUDS %	DESCRIPTION BY DISCIPLINE
									WAC	ONC	WAC			
		1968												
2018	15	10/12 Fall		24:01	09:40	41°	29°00'N	81°00'N				H-25	60	GEOGRAPHY/CARTOGRAPHY: Florida, Flagler Beach to Melbourne, Cape Kennedy. (Dark) AGRICULTURE: Extensive irrigated field patterns. GEOLOGY/HYDROLOGY: Alluvial coastal plain and complex mountain structure. FORESTRY: Scattered desert shrubform with intermittent forests at higher elevations. METEOROLOGY: Cirrus underlined by cumulus.
2019	17	10/12 Fall		27:02	10:09	40°	34°21'N	120°22'W				G-18	45	GEOGRAPHY/CARTOGRAPHY: California, Santa Cruz, San Miguel and Santa Rosa Island, Santa Barbara, Santa Ynez Mountains, Pacific Ocean. (Normal) AGRICULTURE: Extensive cultivation patterns. Possible irrigation. GEOLOGY/HYDROLOGY: Pacific sedimentary and basement complex mountains. Mojave Desert plain and San Joaquin valley bordered by folded mountain complexes. FORESTRY: Desert shrubform with intermittent forest stands at higher elevations. METEOROLOGY: Strato-cumulus, alto-cumulus.
2020	17	10/12 Fall		27:02	10:09	41°	34°08'N	119°09'W				G-18	125	GEOGRAPHY/CARTOGRAPHY: California, Los Angeles, Oceanside, Point Arguello, Mojave Desert, Santa Ynez and San Rafael Mts., Pacific Ocean. (Normal) AGRICULTURE: Extensive cultivation patterns. Possible irrigation. GEOLOGY/HYDROLOGY: Pacific sedimentary and basement complex mountains. Mojave Desert plain and San Joaquin valley bordered by folded mountain complexes. FORESTRY: Desert shrubform with intermittent forest stands at higher elevations. METEOROLOGY: Strato-cumulus, alto-cumulus.
2021	17	10/12 Fall		27:03	10:13	42°	32°58'N	118°25'W				G-18	125	GEOGRAPHY/CARTOGRAPHY: California, Santa Barbara, Los Angeles, Oceanside, Pacific Mountain Range, Mojave Desert, Pacific Ocean. (Normal) AGRICULTURE: Isolated areas of cultivation. GEOLOGY/HYDROLOGY: Folded coastal range mountains and Mojave desert plain with large dry salt lake deposits. FORESTRY: Desert shrubform with intermittent forest stands at higher elevations. METEOROLOGY: Cumulus, strato-cumulus.
2022	17	10/12 Fall		27:03	10:13	42°	34°57'N	117°41'W				G-18	125	GEOGRAPHY/CARTOGRAPHY: California, Los Angeles to Oceanside, San Gabriel Mountains, Mojave Desert, San Joaquin Valley. (Normal) AGRICULTURE: Extensive irrigated field patterns. GEOLOGY/HYDROLOGY: Complex folded Pacific Mountain, Basin and range province and numerous dry salt lake regions. The sedimentary Pacific range contains both perennial and intermittent streams.

FRAME NUMBER	ORBIT	DATE	SEASON	GET	LOCAL SOLAR TIME	PRINCIPAL POINT SUN ELEV.	LATITUDE	LONGITUDE	APPROXIMATE SCALES OF 70MM AT PP	MAP PLOTS			ALTITUDE N.M.	CLOUDS %	DESCRIPTION BY DISCIPLINE
										WAC	ONC	WNC			
		1968													
2023	17	10/12	Fall	27:03	10:24	43°	33° 16' N	115° 26' W	1:3, 521, 700	G-18			125	0	GEOGRAPHY/CARTOGRAPHY: California, Mexico, Baja California, Imperial Valley, Mexicali, Salton Sea, Basin and Range. (Normal) AGRICULTURE: Very extensive, irregular cultivation, field patterns easily recognizable. GEOLOGY/HYDROLOGY: Complex mountains, volcanic and alluvial deposits in the basin and range, perennial Colorado River, intermittent streams and dry salt lake deposits. FORESTRY: Scattered desert shrubform. METEOROLOGY: Small isolated cumulus.
2024	17	10/12	Fall	27:03	10:34	46°	31° 20' N	113° 00' W		H-22			125	0	GEOGRAPHY/CARTOGRAPHY: Mexico, Arizona, Gulf of California, Sonora Desert, Tucson, Wilcox, Dry Lake, De Aquir Bay. (Normal) AGRICULTURE: Extensive cultivation, field patterns along Rio de la Concepcion. GEOLOGY/HYDROLOGY: Basin and range province, volcanic mountains, alluvial plains, pinnacles lava field, and lateral dune formations. FORESTRY: Scattered desert shrubform. OCEANOGRAPHY: Distinct currents and off shore sedimentation.
2025	17									G-19			125	0	GEOGRAPHY/CARTOGRAPHY: Mexico, Arizona, Sonora Desert, Gulf of California, Rio Sonoyta, Rio de la Concepcion. (Normal) AGRICULTURE: Extensive cultivation along Rio de la Concepcion. GEOLOGY/HYDROLOGY: Basin and range province, pinnacles lava field, alluvial and dunal deposits, intermittent drainage is prevalent and sedimentation outflow from the Colorado River. FORESTRY: Scattered desert shrubform. OCEANOGRAPHY: Currents and off shore sedimentation.

FRAME NUMBER	DATE	SEASON	GET	LOCAL SOLAR TIME	PRINCIPAL POINT SUN ELEV.	LATITUDE	LONGITUDE	APPROXIMATE SCALES OF 70MM AT PP	MAP PLOTS			ALTITUDE N.M.	CLOUDS %	DESCRIPTION BY DISCIPLINE				
									WAC	ONC	WAC	ONC		OCEANOGRAPHY:	WEATHER	FORESTY		
2026	17	10/12	Fall	27:04	10:34	45°	31°20'N	113°15'W	1:3,285,000	H-22	125	0	GEOGRAPHY/CARTOGRAPHY: Mexico, Arizona, Sonora Desert, Gulf of California, Rio de la Concepcion. (Normal) AGRICULTURE: Extensive cultivation along Rio de la Concepcion. GEOLOGY/HYDROLOGY: Basin and range province, volcanic and dune deposits. Deltaic plain and intermittent drainage. FORESTRY: Scattered desert shrubform. OCEANOGRAPHY: Sediments in suspension and currents adjacent to coast.	0	0	0	0	0
2027	17	10/12	Fall	27:04	10:38	46°	29°20'N	112°00'W	1:5,385,000	H-22	125	5	GEOGRAPHY/CARTOGRAPHY: Mexico, Baja California, Isla Tiburon, Isla Angel de la Guardia, Guaymas, Hermosillo. (Normal) AGRICULTURE: Extensive cultivation in Sonora River Delta. GEOLOGY/HYDROLOGY: Basement complex hills and mountains, Sonora plains and complex Sierra Madre Occidental. FORESTRY: Scattered desert shrubform. METEOROLOGY: Small cumulus. OCEANOGRAPHY: Sedimentation and currents along the coast. Sun-glint exposing surface activities.	0	0	0	0	0
2028	17	10/12	Fall	27:05	10:58	47°	31°00'N	107°40'W	H-23	125	5	GEOGRAPHY/CARTOGRAPHY: Mexico, New Mexico, Chihuahua, Jalisco, El Guzman, El Paso, Rio Grande. (Normal) AGRICULTURE: Scattered, intense cultivation along Rio Grande and in New Mexico. GEOLOGY/HYDROLOGY: Basin and range terrain, dry salt lake deposits, perennial and intermittent drainage. FORESTRY: Scattered desert shrubform with semi-dense evergreen stands at high elevations. METEOROLOGY: Small cumulus.	0	0	0	0	0	

FRAME NUMBER	LOR	DATE	SEASON	GET	LOCAL SOLAR TIME	PRINCIPAL POINT LATITUDE	PRINCIPAL POINT LONGITUDE	APPROXIMATE SCALES OF 70MM AT PP	MAP PLOTS			ALTITUDE N.M.	CLOUDS	DESCRIPTION BY DISCIPLINE
									WAC	ONC	WNC			
2029	17	10/12	Fall	27:06	11:05	47° 32' 51" N	105° 57' W	G-15	125	3	GEOGRAPHY/CARTOGRAPHY: New Mexico, White Sands, Alamogordo, Sacramento and San Andres Mountains, Pecos River. (Normal) AGRICULTURE: Intense field pattern along Pecos River at Roswell and Artesia New Mexico. GEOLOGY/HYDROLOGY: Complex sedimentary mountains, alluvial plains, alkali basin deposit and intermittent streams. FORESTRY: Scattered desert shrubform with mixed conifer-hardwood forests in Sacramento mountains. METEOROLOGY: Cumulus.			
2030	17	10/12	Spring	27:06	11:11	47° 32' 05" N	104° 28' W	G-15	125	3	GEOGRAPHY/CARTOGRAPHY: New Mexico, Texas, Carrizo, Sacramento Mountains, Salt Flat. (Normal) AGRICULTURE: Elevated alluvial plains, River. GEOLOGY/HYDROLOGY: Elevated alluvial plains, sedimentary mountains and intermittent drainage. FORESTRY: Scattered desert shrubform with mixed conifer-hardwood forests in Sacramento ranges. METEOROLOGY: Cumulus, towering cumulus.			
2031	17	10/12	Fall	27:06	11:21	48°			124	30	GEOGRAPHY/CARTOGRAPHY: New Mexico, Texas, Roswell, Lubbock, Llano Estacado. (Normal) AGRICULTURE: Extensive cultivation, large rectangular field pattern. GEOLOGY/HYDROLOGY: Central basin platform, intermittent drainage. FORESTRY: Scattered to dense shrubform. METEOROLOGY: Cirrus, cumulus.			
2032	17	10/12	Fall	27:07	11:17	49° 31' 15" N	103° 05' W	H-23	124	3	GEOGRAPHY/CARTOGRAPHY: New Mexico, Texas, Odessa, Monahans, Fort Stockton, Central Basin, Platform. (Normal) AGRICULTURE: Scattered areas of intense cultivation. GEOLOGY/HYDROLOGY: Sedimentary plains and Edwards Plateau region. Drainage is intermittent throughout. FORESTRY: Scattered low shrubform. METEOROLOGY: Cumulus, towering cumulus.			

FRAME NUMBER	DATE	SEASON	GET	LOCAL SOLAR TIME	PRINCIPAL POINT LATITUDE	PRINCIPAL POINT LONGITUDE	APPROXIMATE SCALES OF 70MM AT FP	MAP PLOTS			ALTITUDE N.M.	CLOUDS %	DESCRIPTION BY DISCIPLINE		
								WAC	ONC	WAC	ONC		OCEANOGRAPHY		
2033	17	Fall	27.08	11:57	50° 30' 04" N	93° 45' W				H-24	124	60	GEOGRAPHY/CARTOGRAPHY: Texas, Louisiana, Gulf Coast, Port Arthur, Lake Charles. (Normal) AGRICULTURE: Large areas of cultivation around Lake Charles. GEOLOGY/HYDROLOGY: Coastal plain of sedimentary beds. FORESTRY: Semi-dense to dense pine-hardwood forests. METEOROLOGY: Small cumulus. OCEANOGRAPHY: Sedimentation deposits along coast.		
2034	17	Fall	27.09	12:00	50° 29' 59" N	93° 15' W	1:4,100,000			H-24	124	45	GEOGRAPHY/CARTOGRAPHY: Texas, Louisiana, Orange, Lake Charles, Opelousas, Coastal Plain, Sabine Pass, Vermilion Bay. (Normal) AGRICULTURE: Extensive large percentage of land under cultivation. FORESTRY: Intermittent stands of mixed pine-hardwood forests. METEOROLOGY: Small cumulus. OCEANOGRAPHY: Sedimentation and current turbidity along the coast.		
2035	17	Fall								H-24			GEOGRAPHY/CARTOGRAPHY: Louisiana, Lake Charles, Crowley, Grand and White Lakes. (Normal) AGRICULTURE: Extensive cultivation. FORESTRY: Intermittent stands of mixed pine-hardwood forests. METEOROLOGY: Small cumulus. OCEANOGRAPHY: Sedimentation along the coast.		
2036	17	Fall	27.09	12:12	50° 30' 14" N	89° 58' W	1:3,666,000			H-24	124	75	GEOGRAPHY/CARTOGRAPHY: Louisiana, Mississippi, Hilliard, New Orleans, Lake Ponchartrain. (Normal) AGRICULTURE: Extensive cultivation. FORESTRY: Intermittent stands of pine bottom land hardwood forests. Coastal marsh grass. METEOROLOGY: Cumulus, cumulus-nimbus, alto-cumulus. OCEANOGRAPHY: Currents and possible depth anomalies.		

FRAME NUMBER	DATE	SEASON	GET	LOCAL SOLAR TIME	PRINCIPAL POINT LATITUDE	SUN ELEV	APPROXIMATE SCALE OF 70MM AT P.P.	MAP PLOTS			ALTITUDE N.M.	CLOUDS %	DESCRIPTION BY DISCIPLINE
								WAC	ONC	WAC			
2037	17	10/12	Fall	27:11	13:44	50°	27°55'N	82°40'W			H-25	124	GEOGRAPHY/CARTOGRAPHY: Florida, Tampa, Sarasota, Lakeland, St. Petersburg, Gulf Coast - Coastal Plain region. (Normal) AGRICULTURE: Scattered areas of semi-intense cultivation. FORESTRY: Intermittent stands of pine and bottom land hardwoods, coastal marsh grass. METEOROLOGY: Cumulus, alto-cumulus. OCEANOGRAPHY: Sun-glint and current changes are evident.
2038	17	10/12	Fall	27:12	12:53	48°	28°23'N	80°31'W	1:3,568,000		H-25	125	GEOGRAPHY/CARTOGRAPHY: New Smyrna, Palm Beach, Kennedy Space Center, Atlantic Coastal Plain. (Normal) AGRICULTURE: Scattered field patterns. FORESTRY: Intermittent stands of pine, coastal grass, bottom land shrubform. METEOROLOGY: Cumulus. OCEANOGRAPHY: Currents along the coast are evident.
2039	17	Fall	27:12	12:53	48°	28°35'N	80°30'W			H-25	125	GEOGRAPHY/CARTOGRAPHY: Florida, Titusville, Fort Pierce, Stuart, Kennedy Space Center, Atlantic Coastal Plain. (Normal) FORESTRY: Intermittent pine and bottom land hardwood low shrubform and coastal grass. METEOROLOGY: Cumulus. OCEANOGRAPHY: Currents are evident.	
2040	18	10/12	Fall	27:13	13:05	48°	26°55'N	77°40'W	1:4,000,000		H-25	125	GEOGRAPHY/CARTOGRAPHY: Grand Bahama and Great Abaco Islands, Atlantic Ocean and Limestone Coral Reefs. (Normal) FORESTRY: Dense stands of broad leaf evergreen. METEOROLOGY: Cumulus, alto-cumulus, cirrus. OCEANOGRAPHY: Bahama banks differentiation is prevalent, to show depth difference.

FRAME NUMBER	DATE	SEASON	GET	LOCAL SOLAR TIME	PRINCIPAL POINT LATITUDE	SUN ELEV	APPROXIMATE SCALES OF 70MM AT PP	MAP PLOTS WAC	ALTITUDE N.A. DHC	DESCRIPTION BY DISCIPLINE	
										CLOUDS	
2041	18	10/12	Fall	27:13	13:03	48°	26°55' N	77°45' W	H-25	125	80
											GEOGRAPHY/CARTOGRAPHY: Grand Bahama and Great Abaco Islands, Window Reflection in the center. (Normal) METEOROLOGY: Cumulus, alto-cumulus, cirrus. OCEANOGRAPHY: Bahama banks differentiation is prevalent for depth differences.
2042											Light specks
2043											Hatch window inside the spacecraft.

## REFERENCES

The following list of reference materials were used in the evaluation of Apollo 7 imagery. It was noted that in some instances the names of features varied in spelling from one source to another. An effort was made to use the most recent compilation for names.

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