

AN INDEX OF OCEAN FEATURES  
PHOTOGRAPHED FROM GEMINI SPACECRAFT

by

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## INTRODUCTION

The 575 photographs listed in this Index are cross-referenced as to (1) Gemini Flights, (2) Oceanographic Features, and (3) Geographic Locations. No listings for flights III and VI were made because none of the photographs taken showed significant oceanographic features.

The photograph numbers in the Index listings are those used in the Bureau of Commercial Fisheries (BCF) file at Galveston. Numbers and dates of the photographs with oceanographic features are not necessarily consecutive since the selections for the Index were made from a file of more than 700 photographs. We have used the BCF numbers to avoid a burdensome repetition of the much longer numbers of the National Aeronautics and Space Administration's Photographic Laboratory at the Manned Spacecraft Center, Houston, Texas. The NASA/MSC color and black and white photograph numbers that correspond to the BCF catalog numbers are listed in the last section of the Index. Should any photographs be ordered, the NASA/MSC color or black and white number must be noted for the type of photograph required. Orders may be addressed to:

National Space Science Data Center  
Goddard Space Flight Center  
Code 601  
Greenbelt, Maryland 20771

Technology Applications Center  
University of New Mexico  
Albuquerque, New Mexico 87106

Creative Arts Studio, Inc.  
814 H Street, N. W.  
Washington, D. C. 20001

## Oceanographic Features

The Index categories of Gemini Flights and Geographic Locations are self-explanatory, however, some comments are needed regarding the oceanographic features.

Phenomena have been listed which are obvious and useful to the BCF interpretative studies. The individual features are not totally inclusive. For example, barrier islands, sand bars, and sand spits are in Coastal Deposits. Turbid water, from whatever cause, is included in Coastal Sediments, except for those photographs in which the Discolored Water seemed to be from factors other than suspended sediments. Lagoons are "coastal lagoons" and Calcareous Reefs include atolls.

Photographs from which the current directions and patterns can be evaluated for the instant the photograph was taken are listed under the category of Currents. Features indicating currents may be (1) turbid water, (2) slicks, (3) bow, or shock waves around islands, or (4) island wakes. The

latter two differ significantly and have therefore been listed under separate categories.

Local Winds are noted by the distribution of clouds, usually along coasts and usually depicting the land and sea breeze regimes.

Reflection of the sun from the sea surface has been photographed and is listed under Sun Glitter. Many of these photographs show amazing features within the area of the sun's reflection; currents, current shears, eddies, upwelling, and water-mass boundaries are some examples.

The largest category is Clouds, which is not surprising, for the direct relationship between the sea and the tropical marine atmosphere is made clear from many spectacular examples in the Gemini photographs. Consequently, we have listed a number of cloud types, arrangements, and patterns, some of which require an explanation.

Cloud Lines are usually cumulus and in a linear arrangement, dictated by some local condition. Where cloud lines clearly form as a Convergence, they are listed again under that category.

Bénard Cells are oceanic cumulus clouds arranged in polygonal cells. The use of Bénard's name is purely a convenience and implies no origination.

Von Kármán Eddies are counter-rotating cloud arrangements downwind from islands. As with Bénard, use of von Kármán's name is a convenient identification of the phenomenon.

Bow Waves are the cloud distribution patterns resulting from the clouds passing close to an island and are similar to waves produced from the bow of a ship.

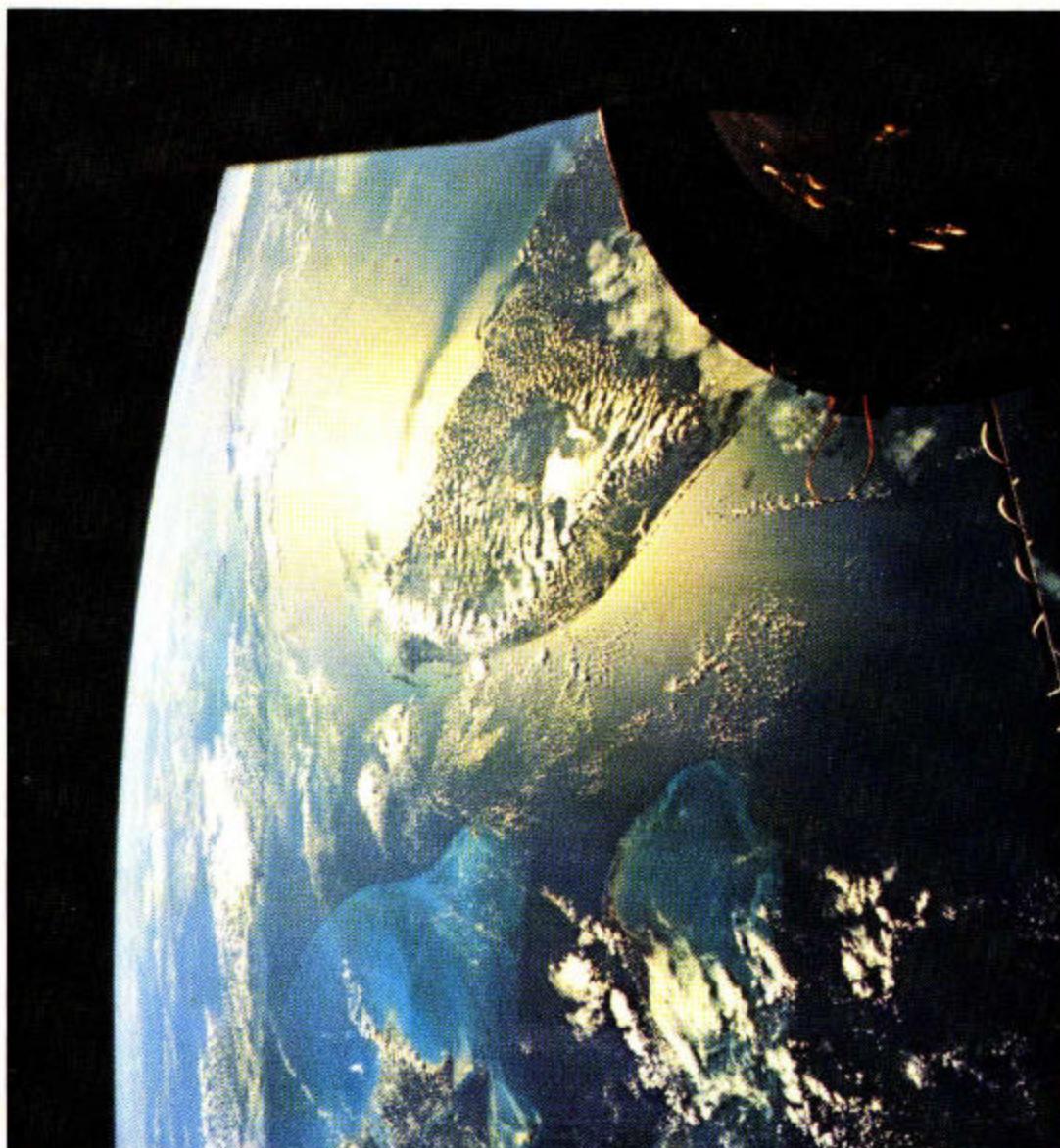
Contrails are the distinct linear cloudlike features frequently formed behind aircraft.

The standard 8 x 10 inch, black and white photograph has proven useful for distinguishing most features, however, the color photograph is imperative for sun glitter, turbid water, or underwater structure feature definition. Color and black and white prints both are suitable for casual inspection and interpretation. Contact transparencies of the 70-mm film are used for more detailed examination. These transparencies can be viewed satisfactorily using a binocular microscope magnifying up to about 15 diameters.

A photograph depicting oceanographic features is included in Section I of this Index for each of the Gemini flights and may be found

preceding the actual listing of photographs for that flight.

These photographs were taken with a slightly modified, hand-held Hasselblad 500 C camera.



GEMINI XII NOVEMBER 12, 1966  
CAPT. JAMES A. LOVELL, JR., LT. COL. EDWIN E. ALDRIN, JR.  
SOUTH FLORIDA, FLORIDA KEYS, WESTERN BAHAMA ISLANDS, CUBA,  
AND PARTS OF THE GULF OF MEXICO AND CARIBBEAN SEA.

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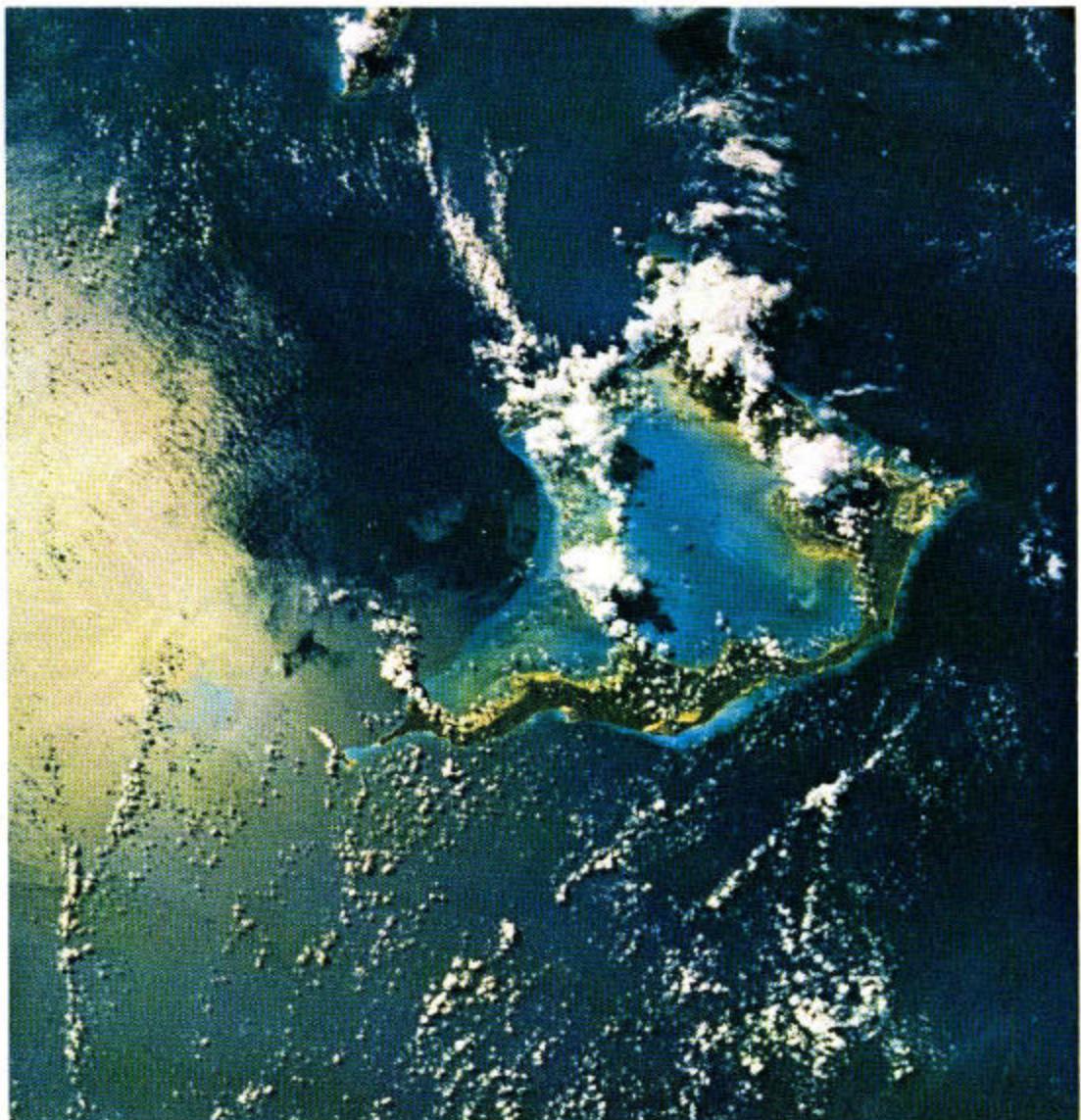
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I DIVISION OF PHOTOGRAPHY BY FLIGHT



GEMINI IV JUNE 4, 1965  
LT. COL. JAMES A. McDIVITT, LT. COL. EDWARD H. WHITE  
ACKLINS AND CROOKED ISLANDS, BAHAMA ISLANDS.

GEMINI IV

June 3-7, 1965

Major James A. McDivitt - Major Edward H. White

Apogee: 175 miles

Perigee: 100 miles

Camera: Hasselblad Model 500 C (NASA modified)

Lens: Zeiss Planar, 80-mm F. L.; f-2.8

Film: Format - 55 x 55-mm; width - 70-mm

Film Type: Eastman Kodak Ektachrome MS (S.O., 217)

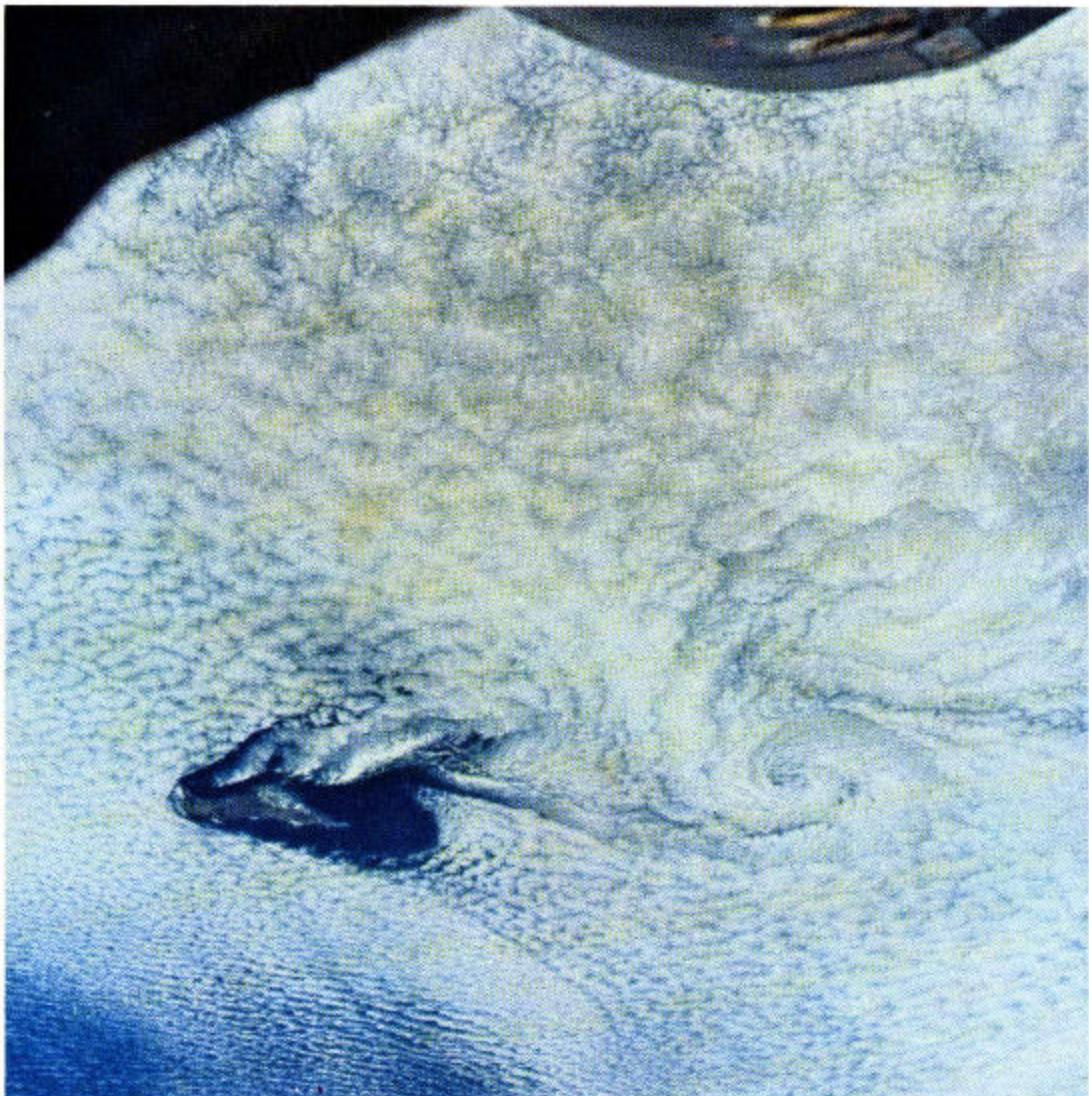
OCEANOGRAPHIC FEATURES

<u>SLIDE NO.</u>	<u>DATE</u>	<u>TIME*</u>	<u>LOCATION</u>
1	6/4/65	17:55	Nile Delta, Egypt, Suez Canal, Israel, Jordan, Syria, Saudi Arabia, Iraq
3		28:28	Florida Keys, Cape Sable, Florida Bays, Everglades
4		28:29	Florida Straits, Grand Bahama Banks
5		28:29	Andros Island, Bahamas
6		28:30	Great Exuma Island, Bahamas
7		28:30	Acklins & Crooked Island, Bahamas
8		--	Atlantic Ocean
9		--	Atlantic Ocean
10		--	Indian Ocean
19		16:22	Nile Delta, Egypt
20	6/3/65	14:53	Persian Gulf, Iran coast -- looking west
22		14:48	Egypt, Red Sea, Foul Bay

\*Ground Elapsed Time (Lift Off: 1515 Zulu)

<u>SLIDE</u>	<u>DATE</u>	<u>TIME</u>	<u>LOCATION</u>	<u>OCEANOGRAPHIC FEATURES</u>
23	6/3/65	13:20	Sultanate of Muscat and Oman, Ras Al Hadd	Coastal sediment, strong surf
24		13:16	Aden Protectorate, Gulf of Aden, Ras Asir, Somali	Coastline, coastal stratus clouds
25		13:16	Aden Protectorate, Gulf of Aden, Wadi Hadramawt	Coastline, coastal stratus clouds, ancient city of Shibam
26		13:15	Aden Protectorate, Gulf of Aden -- looking south	Coastline, stratus clouds
27		13:15	Aden Protectorate, Gulf of Aden, Yemen, Somali	Coastal deposition
667	6/4/65	50:26	Gulf of California, Baja California, mouth of Colorado River	Delta, discolored water, coastal sediments, coastal deposits, irregular coastline
668		50:26	Gulf of California, Baja California, mouth of Colorado River	Delta, discolored water, coastal sediments, coastal deposits, irregular coastline
669		50:26	Gulf of California, Baja California, mouth of Colorado River	Delta, discolored water, coastal sediments, coastal deposits, irregular coastline
670		50:27	Baja California, Colorado River	Delta, discolored water, coastal sediments, coastal deposits, irregular coastline

<u>SLIDE</u>	<u>DATE</u>	<u>TIME</u>	<u>LOCATION</u>	<u>OCEANOGRAPHIC FEATURES</u>
675	6/5/65	50:34	Atlantic Ocean, Florida, Jacksonville, San Augustine	Local winds, lagoon, cumulus, surf
676		50:35	Atlantic Ocean, Florida, Cape Kennedy	Local winds, lagoon, currents, discolored water, cumulus, cloud lines
677		50:35	Atlantic Ocean, Florida, Cape Kennedy	Local winds, lagoon, currents, discolored water, cumulus, cloud lines
678		50:35	Atlantic Ocean, Florida, Cape Kennedy	Local winds, lagoon, currents, discolored water, cumulus, cloud lines
679		50:37	Bahama Islands, Cuba	Calcareous reefs, cumulus. cloud lines, cumulonimbus, upper- level clouds
680	6/6/65	70:00	Indian Ocean, Somali coast	Coastal sediments, currents, surf, coastal deposits, cumulus



GEMINI V AUGUST 21, 1965  
COL. L. GORDON COOPER, JR., CDR. CHARLES CONRAD, JR.  
BAJA CALIFORNIA COASTAL AREA WITH GUADALUPE ISLAND  
PROJECTING THROUGH CLOUDS.

GEMINI V

August 21-29, 1965

Lt. Col. L. G. Cooper - Cdr. Charles Conrad, Jr.

Apogee: 215 miles

Perigee: 100 miles

Camera: Hasselblad, Model 500 C (NASA modified)

Lens: Zeiss Planar, 80-mm F. L.; f-2.8

Film: Eastman Kodak, Ektachrome MS (S. O., 217)

General Aniline & Film, Anscochrome, D-50

OCEANOGRAPHIC FEATURES

<u>SLIDE</u>	<u>DATE</u>	<u>TIME*</u>	<u>LOCATION</u>
28	8/22/65	0937	Alexandria, Egypt, Nile Delta Coastal deposition, coastal sediment
29		1238	Morocco, Ras Rhir, Agadir Heavy surf, coastal sediments
30		1238	Morocco, Ras Rhir, Agadir -- looking northwest Heavy surf, coastal sediments, Bénard cells
31		1527	Texas to Tamaulipas coast, Gulf of Mexico Bénard cells, oceanic cumulus, local winds
32		1531	Florida -- looking south Bénard cells, oceanic cumulus, local winds
37		1707	Florida, Cape Kennedy -- looking south Bénard cells, oceanic cumulus, local winds
38		1707	Florida, Cape Kennedy -- looking south Bénard cells, oceanic cumulus, local winds
39		1838	Florida, Cape Kennedy -- looking north Bénard cells, oceanic cumulus, local winds
40		1838	Florida, Miami -- looking north, Florida Keys Bénard cells, oceanic cumulus, local winds, calcareous reefs, coastal sediments
41		1838	Florida, Miami -- looking north, Florida Keys Bénard cells, oceanic cumulus, local winds, calcareous reefs, coastal sediments

\* Greenwich mean time

<u>SLIDE</u>	<u>DATE</u>	<u>TIME</u>	<u>LOCATION</u>	<u>OCEANOGRAPHIC FEATURES</u>
42	8/22/65		Bahama Islands, Andros Island	Bénard cells, oceanic cumulus, local winds, calcareous reefs, coastal sediments
43	1839		Great Bahama Bank, Great Exuma, Cat, and Long Islands	Oceanic cumulus, Bénard cells, cloudlines, calcareous reefs
44	1839		Bahama Islands, Crooked, Acklins, and Long Islands	Oceanic cumulus, Bénard cells, cloudlines, calcareous reefs
45	1840		Bahama Islands, Grand Turk, Caicos Group	Oceanic cumulus, Bénard cells, cloud lines, calcareous reefs
46	2004		Mexico, Baja California -- looking southeast	Cloudline, stratus clouds
47	2004		Mexico, Baja California -- looking southeast	Irregular coastline, sun glitter, cloud lines
48	2009		Mexico, Campeche, Laguna de Terminos, Gulf of Mexico	Coastal sediments, coastal deposits, local winds
49	8/23/65	0158	British Honduras, Gulf of Honduras	Calcareous reefs
50			China, Mouth of Yangtse River	Coastal sediments
51		0159	Japan, Honshu, Osaka, Nagoya -- looking northwest	Coastal sediments
52			Taiwan -- looking east	Coastal sediments
53		0929	Egypt, Cairo, Nile Delta	Delta

<u>SLIDE</u>	<u>DATE</u>	<u>TIME</u>	<u>LOCATION</u>	<u>OCEANOGRAPHIC FEATURES</u>
54	8/23/65	1826	Florida -- looking north, Florida Keys	Cloud lines, Bénard cells, oceanic cumulus, coastal sediments
55			Cuba -- looking northwest	Bénard cells, calcareous reefs
56			Cuba -- looking northwest	Bénard cells, calcareous reefs
57			Cuba -- looking northwest, Province, Guantanomo Bay	Bénard cells, calcareous reefs
58			Mexico, Gulf of California	Coastal cloud eddy
59			Gulf of Mexico, Texas-Mexico coast	Coastal deposits, cloud lines, Bénard cells
60	8/27/65	0131	Pacific Ocean, Marshall Islands, Bikini Atoll	Bénard cells, calcareous reefs, sun glitter
61			Pacific Ocean, Marshall Islands, Rongelap Atoll, Ailinginae Atoll	Bénard cells, calcareous reefs, sun glitter
62		0525	Mediterranean Sea, Crete, Rhodes, Turkey, Aegean Islands	Island clusters, cloud lines
63		0526	Mediterranean Sea, Cyprus, Turkey,	Irregular coastline, cloud lines
64			Mediterranean Sea, Cyprus, Turkey, Syria	Irregular coastline, cloud lines
65		0612	Australia, Gulf of Carpenteria	Local winds, coastal sediments

OCEANOGRAPHIC FEATURESLOCATIONTIMEDATESLIDE

16

66	Australia, Gulf of Carpenteria, Queensland	0612	8/27/65	Local winds, coastal sediments
67	Australia, Shoal Water Bay, Cape Manifold	0614		Local winds, coastal sediments
68	Australia, Keppel Bay, Capricorn Island	0615		Coastal sediments, calcareous reefs
69	Libya, Tripoli, Mediterranean Sea	0658		Coastal sediments
70	Red Sea, Saudi Arabia	0710		Coastal sediments, calcareous reefs
71	Indian Ocean, Mozambique coast	1207		Cloud lines, coastal sediments, calcareous reefs
72	Indian Ocean, Malagasy, Madagascar west coast	1210		Coastal sediments
73	Atlantic Ocean, Africa, Cape Cross	1510		Coastal sediments, surf north of Walvis Bay
74	Port of Walvis Bay, Africa restricted	1510		Coastal sediments, surf diamond area
75	Gulf of Mexico, Texas coast	1554		Bénard cells, local winds
76	Gulf of California, Baja California	1743		Irregular coastline
77	Gulf of California, Baja California	1743		Irregular coastline
78	Honduras, Nicaragua Pacific coast, Gulf of Fonseca	1749		Coastal sediments

<u>SLIDE</u>	<u>DATE</u>	<u>TIME</u>	<u>LOCATION</u>	<u>OCEANOGRAPHIC FEATURES</u>
79	8/28/65	1404	Florida, east coast, Cape Kennedy	Local winds, coastal currents, coastal sediments
81	8/21/65	1703	Gulf of California, Baja California, Mexico	Coastal stratus
82		1712	Florida -- looking south	Oceanic cumulus, cloud lines, local winds
83		1717	Atlantic Ocean southeast of Bermuda	Oceanic cumulus
84		1718	Atlantic Ocean southeast of Bermuda	Oceanic cumulus, Bénard cells
86		1851	Caribbean Sea, Hispaniola	Cloud lines, Bénard cells, coastal sediments
87		1855	Atlantic Ocean east of Lesser Antilles	Cloud lines, Bénard cells
88		1856	Atlantic Ocean east of Lesser Antilles	Bénard cells, oceanic cumulus
89		1856	Atlantic Ocean, Brazil, French Guiana, Dutch Guiana	Coastal sediments, Bénard cells, tropical storm
90		1857	Atlantic Ocean, Brazil, French Guiana	Coastal sediments, Bénard cells, tropical storm (hurricane Betsy)
91		2004	Pacific Ocean near Wake Island	Bénard cells, sun glitter
92		2005	Pacific Ocean north of Hawaii	Bénard cells
93		2012	Pacific Ocean, California, San Luis Obispo, south to Ensenada	Coastal strato-cumulus, smog

OCEANOGRAPHIC FEATURES

SLIDE

108 94 8/21/65

Pacific Ocean, Guadalupe Island,  
Baja California, Vizcaino Bay

Coastal strato-cumulus, cloud  
bow wave, von Kármán eddies

95 2014

Pacific Ocean, Guadalupe Island,  
Baja California

Strato-cumulus, cloud bow wave  
Bénard cells, von Kármán eddies

96 2015

Pacific Ocean, Baja California,  
Scammon Lagoon

Coastal strato-cumulus, lagoon,  
coastal sediments

97 2015

Baja California, Gulf of California,  
Angel de la Guarda Island

Sun glitter, discolored water

98 2015

Gulf of California, Mexico, Tiburon  
Island, Baja California

Coastal sediments, discolored  
water

99 2015

Gulf of California, Mexico, Tiburon  
Island, Baja California

Coastal strato-cumulus, coastal  
sediments, coastal deposits, sun  
glitter, discolored water, irregular  
coastline

100 2016

Gulf of California, Baja California,  
Mexico, Colorado River

Coastal sediments, Colorado  
River delta

101 2021

Caribbean Sea, Gulf of Honduras,  
Honduras, British Honduras, Yucatan

Calcareous reefs

102 2022

Caribbean Sea, Honduras, Cape  
Gracias A Dios, Nicaragua

Coastal sediments

103 8/22/65

Philippines, north end of Luzon

Coastal sediments, stream  
discharge

104 0055

Philippines, north end of Luzon

Coastal sediments, cloud lines

<u>SLIDE</u>	<u>DATE</u>	<u>TIME</u>	<u>LOCATION</u>	<u>OCEANOGRAPHIC FEATURES</u>
107	8/22/65	0649	China, Kwangtung-Kwangsi Provinces, Gulf of Tonkin, Leuchou Peninsula	Coastal sediments, coastal deposits
108		0651	Pacific Ocean, west coast of Luzon, Linguyan Gulf	Coastal sediments
109		0756	Pacific Ocean, southeast Luzon	Irregular coastline, coastal deposits
110	8/24/65	0749	Arabian Sea, Gulf of Kutch, India	Coastal sediments
111		0804	North coast of Australia, Wessel Islands	Coastal sediments, coastal deposits, cumulus
112		0913	Mediterranean Sea, Algeria, Balearic Islands, Spain	Cloud lines
113		0920	Mediterranean Sea, Egypt, Nile Delta, Suez Canal, Cairo, Nile River	Coastal sediments, delta
114		0920	Mediterranean Sea, Egypt, Suez Canal	Coastal deposits
115		0921	Red Sea, Egypt, Saudi Arabia	Irregular coastline, calcareous reefs, discolored water
116		1336	Gulf of Mexico, Alabama, Florida	Bénard cells, cloud lines, coastal deposits, barrier islands
118	8/25/65	0446	China, Kwangtung Province, Hong Kong-Macao area	Coastal sediments

OCEANOGRAPHIC FEATURES

LOCATION

DATE

SLIDE	TIME	LOCATION	FEATURES
120	8/25/65	Florida -- looking southeast	Bénard cells, cloud lines, local winds, coastal deposits
121	1637	Cuba, Grand Bahama Bank	Calcareous reefs, local winds
122	1639	Bahama Islands, Great Exuma and Long Islands	Calcareous reefs
123	1640	Caribbean Sea, Cuba, Hispaniola, Jamaica, Great Inagua	Cloud lines, calcareous reefs
124	1803	Pacific Ocean, California coastline, Los Angeles, Salton Sea	Bénard cells, cloud lines, stratus, cumulus, smog
125	1811	Gulf of Mexico, Mexico, Yucatan	Coastal deposits, calcareous reefs, Bénard cells
126	1812	Caribbean Sea, Yucatan Peninsula, British Honduras	Oceanic cumulus, local winds
127	1814	Caribbean Sea, Honduras, Nicaragua	Coastal sediments, Bénard cells, calcareous reefs
128	2359	Japan, Ise Wan, Port of Nagoya, Osaka	Local winds, lagoon
129	2359	Japan, Ise Wan, Port of Nagoya, Osaka	Local winds, lagoon
130	8/26/65	China coast, Fukien Province, mouth of Futun-Min River, Fouchou City	Sun glitter, coastal sediments, coastal currents, island wakes
131	0303	Australia, Cape York Peninsula	Calcareous reefs, coastal sediments
132	0624		

<u>SLIDE</u>	<u>DATE</u>	<u>TIME</u>	<u>LOCATION</u>	<u>OCEANOGRAPHIC FEATURES</u>
132	8/26/65	0624	Australia, Cape York Peninsula	Coastal sediments, coastal deposits
133		0625	Australia, Cape York Peninsula	Coastal sediments, coastal deposits
135		0729	Mediterranean Sea, Crete, looking north	Island clusters
136		0731	Persian Gulf, Saudi Arabia	Coastal sediments, coastal deposits, calcareous reefs
137		1025	Atlantic Ocean, Morocco, Ras Rhir, Agadir	Irregular coastline, coastal deposits, sun glitter, currents
138		1025	Atlantic Ocean, Morocco, Spanish Ifni	Coastal cloud eddy, surf
139		1334	Atlantic Ocean, Cape Verde Islands, Boa Vista, Sal, Maio, Sao Tiago	Bénard cells, cloud lines
140		1334	Atlantic Ocean, Cape Verde Islands, Sao Niço Lau, Santo Antao, Fogo	Strato-cumulus, coastal cloud eddies
685		2248	Pacific Ocean, Island of Hawaii	Local winds, surf, cloud lines, Bénard cells, discolored water
686		8/24/65	Pacific Ocean, Hawaiian Islands, Maui, Kahoolawe, Molokai, Oahu, Kauai	Local winds, surf, cloud lines, Bénard cells, discolored water

OCEANOGRAPHIC FEATURES

<u>SLIDE</u>	<u>DATE</u>	<u>TIME</u>	<u>LOCATION</u>
687	8/27/65	1215	Indian Ocean southeast of Madagascar
688	8/21/65	1702	Pacific Ocean off coast of Baja California
689		1703	Pacific Ocean, Guadalupe Island, Isla Cedros
692	8/23/65	2143	Southern Mexico



GEMINI VII DECEMBER 8, 1965  
COL. FRANK BORMAN, CAPT. JAMES A. LOVELL, JR.  
NILE DELTA, EGYPT, SUEZ CANAL AND PARTS OF ISRAEL, SYRIA,  
JORDAN, LEBANON, TURKEY AND THE ISLAND OF CYPRUS.

GEMINI VII

December 4-8, 1965

Lt. Col. Frank Borman - Cdr. James A. Lovell, Jr.

Apogee: 174 miles

Perigee: 120 miles

Camera: Hasselblad, Model 500 C (NASA modified)

Lens: Zeiss, Planar, 80-mm F. L.; f-2.8

Zeiss, Sonnar, 250-mm F. L.; f-4.5

Film: Eastman Kodak, Ektachrome, MS (S. O., 217)

<u>SLIDE</u>	<u>DATE</u>	<u>TIME</u> *	<u>LOCATION</u>	<u>OCEANOGRAPHIC FEATURES</u>
141 **	12/8/65	88:25	Mediterranean Sea, Libya, Gulf of Sirte	Coastal sediments
142		88:25	Mediterranean Sea, Nile Delta, Sinai, Israel, Syria, Jordan, Lebanon, Turkey, Cyprus, Iraq, Suez Canal	Coastal deposits, delta, cloud lines
143 **		88:25	Mediterranean Sea, Dead Sea, Israel, Jordan, Lebanon, Egypt	Coastal deposits, cloud lines
145		89:28	Caribbean Sea, Leeward Islands, Guadeloupe, Antigua, Marie Galante, Montserrat	Surf, cloud lines
146		91:10	Bahamas, Crooked, Long, Mayaguana Islands	Calcareous reefs
147		91:10	Bahama Islands, Mayaguana, Plana Cays	Calcareous reefs
148 **		92:44	Florida Keys	Calcareous reefs
149 **		92:44	Florida Keys	Calcareous reefs
150 **		92:44	Florida Keys	Calcareous reefs
151 **		97:16	Pacific Ocean, Guadalupe Island, Baja California	Surf, cloud lines
152 **		97:16	Pacific Ocean, Cedros Island, Baja California, Punta Eugenia	Coastal lagoon, coastal deposits**

\* Ground elapsed time (Lift Off: 19:30 Zulu)

\*\* Fogged window

OCEANOGRAPHIC FEATURES

LOCATION

TIME

DATE

20			
162	12/5/65	20:30	Pacific Ocean, Auamotu Archipelago, Rangiroa, Arutua, Apataki, Toau, Kaukura Fakaraua
163		20:49	Caribbean Sea, Cuba, Guantanamo Bay, Santiago
164		22:24	Bahama Islands, Andros, Berry, New Providence
165		23:58	Atlantic Ocean, Florida, Georgia
166		25:26	Pacific Ocean, Baja California, Scammon Lagoon, Punta Eugenia
167	12/6/65	45:31	Gulf of Mexico, Mexico
168		46:20	Atlantic Ocean, Florida, St. Augustine to Ft. Pierce
169		46:20	Atlantic Ocean, Florida, Titusville to north of Daytona Beach
170**		46:20	Atlantic Ocean, Florida, Merritt Island, Cape Kennedy
171		47:54	Atlantic Ocean, Florida, Merritt Island to Daytona Beach
172		49:24	Bahama Islands, south end of Andros
173		49:24	Gulf of Mexico, Mexico

\*\* Fogged window

<u>SLIDE</u>	<u>DATE</u>	<u>TIME</u>	<u>LOCATION</u>	<u>OCEANOGRAPHIC FEATURES</u>
176	12/9/65	122:32	Pacific Ocean, Hawaiian Islands, Kure, Midway, Pearl and Hermes Reef	Calcareous reefs, atolls
177		122:32	Pacific Ocean, Hawaiian Islands, Pearl and Hermes Reef	Calcareous reefs, atolls
178	12/10/65	146:30	Caribbean Sea, Yucatan Peninsula, British Honduras	Coastal calcareous reefs
179	12/11/65	159:10	Bay of Bengal, India, Ceylon	Coastal sediments, coastal deposits, local winds, cloud lines
180		159:10	Bay of Bengal, India, Ceylon, Palk Straits	Coastal sediments, local winds, coastal deposits, cloud lines
181		159:10	Bay of Bengal, India, Ceylon, Palk Straits	Coastal sediments, cloud lines, coastal deposits, local winds
182		160:37	Indian Ocean, Somali, Ras Azir, Abd al Kuri Island. Gulf of Aden	Coastal deposits
183		163:22	Bahama Islands, Andros, Abaco, New Providence	Strato-cumulus, calcareous reefs
184		165:05	Atlantic Ocean, Senegal, Gambia, Cap Vert, Dakar	High-level cloud waves
185		167:58	Caribbean Sea, Venezuela, Isla de Margarita, Peninsula de Araya	Local winds, cumulus
186		169:35	Pacific Ocean, Mexico, Golfo and Istmo de Tehuantepec	Irregular coastline, lagoon

OCEANOGRAPHIC FEATURES

LOCATION

TIME

DATE

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187	12/12/65	186:15	Indian Ocean, Somali, Gulf of Aden	Irregular coastline, cloud lines
188		186:15	Indian Ocean, Somali, Gulf of Aden	Irregular coastline, cloud lines
189		187:28	Atlantic Ocean, Florida, Cape Kennedy	Coastal deposits
190		187:28	Atlantic Ocean, Florida, Cape Kennedy	Coastal deposits, high-level clouds
191		189:00	--	Cloud lines, contrails
192		195:30	Bolivia, South America	High-level cloud waves, sunset
193**		192:13	Caribbean Sea, Honduras, El Salvador, Nicaragua, Pacific Ocean	Coastal sediments
194		192:16	Caribbean Sea, Colombia, Peninsula de la Guajira	Bénard cells, high-level clouds
195		192:16	Caribbean Sea, Venezuela, Columbia	Cloud lines, high-level clouds
196		192:22	Atlantic Ocean, mouth of Amazon River, Baia de Marajo	Coastal sediments, cloud lines, delta
197		192:22	Atlantic Ocean, mouth of Amazon River	Coastal sediments, cloud lines, delta
198		192:22	Atlantic Ocean, Amazon River mouth	Coastal sediments, cloud lines
199		192:23	Atlantic Ocean, Baia de Marajo, Brazil, mouth of Amazon River	Coastal sediments, cloud lines, delta

\*\* Fogged window

<u>SLIDE</u>	<u>DATE</u>	<u>TIME</u>	<u>LOCATION</u>	<u>OCEANOGRAPHIC FEATURES</u>
200	12/13/65	208:42	Red Sea, Saudi Arabia, Sudan, Ethiopia	Coastal calcareous reefs, cloud lines, local winds
201		208:42	Red Sea, Saudi Arabia, Sudan, Egypt	Coastal calcareous reefs, cloud lines, local winds
202		208:43	Red Sea, Saudi Arabia, Yemen, Ethiopia	Coastal calcareous reefs, cloud lines, local winds, sun glitter
205		208:44	Gulf of Aden, Aden Protectorate, ancient city of Shibam	Irregular coastline, coastal deposits
206		208:44	Gulf of Aden, Aden Protectorate	Coastal deposits
207		208:44	Gulf of Aden, Somali, Ras Azir, Ras Hafun	Cloud lines, coastal deposits
208		208:45	Indian Ocean, Socotra Island	Surf, sun glitter, cloud lines, currents
209		210:15	Indian Ocean, Somali coast	Coastal deposits
210		214:21	Florida Keys, Cape Sable	Coastal calcareous reefs, coastal sediments
211		214:22	Cuba, Great Bahama Bank	Coastal calcareous reefs
212		214:23	Cuba, Jardines de la Reina Island	Coastal calcareous reefs, local winds
213		214:24	Caribbean Sea, Hispaniola, Haiti	Irregular coastline, coastal sediments, cloud lines

OCEANOGRAPHIC FEATURES

LOCATION

TIME

DATE

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214 12/13/65

Caribbean Sea, Hispaniola, Haiti,  
Dominican Republic

Irregular coastline, cloud lines,  
coastal sediments

214:27

Atlantic Ocean, British Guiana

Coastal sediments, local winds,  
coastal deposits



GEMINI IX JUNE 3, 1966  
COL. THOMAS P. STAFFORD, CDR. EUGENE A. CERNAN  
AN AGENA ROCKET WITH THE PLASTIC SHROUD PARTIALLY EJECTED,  
OVER THE COASTAL WATERS OF VENEZUELA, AND  
ISLAS LOS ROQUES AND ORCHILLA.

## GEMINI IX

June 3-6, 1966

Lt. Col. Thomas P. Stafford - Lt. Cdr. Eugene A. Cernan

Apogee: 157 miles

Perigee: 146 miles

Camera: 1. Hasselblad, Model 500 C (NASA modified) -- (Slide Nos. 218-233.)

2. Hasselblad, Super Wide Angle-C (NASA modified)

3. J. A. Maurer, 70-mm Space Camera

Lens: 1. Zeiss, Planar, 80-mm F. L.; f-2.8

2. Zeiss, Biogon, 38-mm F. L.; f-4.5

3. Xenotar, 80-mm F. L.; f-2.8

Film: Eastman Kodak, Ektachrome, MS (S.O., 217)

70-mm width, 55 x 55-mm format

<u>SLIDE</u>	<u>DATE</u>	<u>TIME*</u>	<u>LOCATION</u>	<u>OCEANOGRAPHIC FEATURES</u>
218	6/3/66	1:36	Gulf of Mexico, mouth of Mississippi River, Louisiana	Coastal sediments, cloud lines, coastal deposits, delta
219		1:36	Gulf of Mexico, mouth of Mississippi River, Alabama, Florida	Coastal sediments, cloud lines, coastal deposits
220		4:53	Caribbean Sea, Islas Los Roques, Venezuela	Coastal calcareous reefs, fish school
221		4:53	Caribbean Sea, Islas Los Roques, Isla Orchila, Venezuela	Coastal calcareous reefs, fish school
222		4:53	Caribbean Sea, Isla La Tortuga, Venezuela	Coastal calcareous reefs
223		4:53	Caribbean Sea, Isla La Tortuga, Venezuela	Coastal islands
224		4:53	Caribbean Sea, Isla La Tortuga, Venezuela, Peninsula de Araya	Coastal islands
225	6/6/66	67:49	Atlantic Ocean, Canary Islands	Cloud lines, sun glitter
226		67:49	Atlantic Ocean, Canary Islands	Cloud lines, sun glitter
227		67:49	Atlantic Ocean, Canary Islands	Cloud lines, sun glitter
228		67:50	Atlantic Ocean, Canary Islands	Cloud lines, sun glitter, coastal stratus, island wake
229		67:50	Atlantic Ocean, Canary Islands, African coast	Cloud lines, sun glitter, coastal stratus, island wake

\* Ground elapsed time (Lift Off: 13:39:33 Zulu)

## OCEANOGRAPHIC FEATURES

SLIDE	DATE	TIME	LOCATION	OCEANOGRAPHIC FEATURES
230	6/6/66	67:50	Atlantic Ocean, Canary Islands, African coast	Cloud lines, sun glitter, coastal stratus, island wake, large waves
231		67:51	Atlantic Ocean, Canary Islands, Morocco, Spanish Sahara	Cloud lines, sun glitter, coastal stratus, island wake, large waves
232		67:51	Atlantic Ocean, Canary Islands, Morocco, Spanish Sahara	Cloud lines, sun glitter, coastal stratus, island wake, large waves
233		67:51	Atlantic Ocean, Fuerteventura Island, Morocco, Spanish Sahara	Coastal strato-cumulus
		69:33	Atlantic Ocean, Canary Islands -- looking northwest	Local winds, cloud lines
		69:33	Atlantic Ocean, Canary Islands -- looking northwest	Local winds, cloud lines
		69:49	Indian Ocean, Somali -- looking west	Bénard cells, local winds, cloud lines, sun glitter, coastal sediments
		69:49	Indian Ocean, Somali	Bénard cells, local winds, cloud lines, sun glitter, coastal sediments
		69:50	Indian Ocean, Somali	Bénard cells, local winds, cloud lines, sun glitter, coastal sediments



GEMINI X JULY 20, 1966  
JOHN W. YOUNG, LT. COL. MICHAEL COLLINS  
SOUTH END OF THE ISLAND OF TAIWAN

GEMINI X

July 18-21, 1966

Cdr. John W. Young - Maj. Michael Collins

Apogee: 410 miles

Perigee: 161

Camera: J. A. Maurer, 70-mm Space Camera

Lens: Xenotar, 80-mm F. L.; f-2.8

Film: Eastman Kodak, Ektachrome, MS (S.O., 217)

70-mm width, 55 x 55-mm format

<u>SLIDE</u>	<u>DATE</u>	<u>TIME</u> *	<u>LOCATION</u>	<u>OCEANOGRAPHIC FEATURES</u>
234	7/20/66	52:16	Pacific Ocean west of Midway Island	Bénard cells
235		52:17	Pacific Ocean, Midway Island, Kure Island	Bénard cells, calcareous reef atolls
236		52:17	Pacific Ocean, Midway Island, Kure Island	Bénard cells, calcareous reef atolls
237		52:18	Pacific Ocean, Pearl and Hermes Reef	Bénard cells, calcareous reef atolls
238		53:26	Indian Ocean, Maldives Islands of Suvadiva and Addu	Wind shear in clouds, Bénard cells, calcareous reefs, atolls
239		53:26	Indian Ocean, Maldives Islands of Suvadiva and Addu	Wind shear in clouds, Bénard cells, calcareous reefs, atolls
240		53:39	China, Fukien Province, Taiwan, Formosa Strait, Pescadores Islands	Coastal sediments, coastal currents
241		53:39	China, Chekieng Provinces, Formosa Strait, Pescadores Islands, Hang Chou Wan -- looking north	Coastal sediments
242		53:39	China, Fukien Province, Taiwan, Formosa Strait, Pescadores Islands	Coastal sediments, coastal currents
243		53:39	China, Fukien Province, Formosa Strait, Taiwan, Pescadores Islands	Coastal sediments, coastal currents, island clusters, sun glitter
244		53:39	Taiwan, Kaohsiung City	Coastal currents, sun glitter, waves, coastal sediments, coastal deposits

\* Ground elapsed time (Lift Off: 22:20:26 CMT)

<u>SLIDE</u>	<u>DATE</u>	<u>TIME</u>	<u>LOCATION</u>	<u>OCEANOGRAPHIC FEATURES</u>
256	7/20/66	--	Pacific Ocean	Bénard cells
257		41:21	Atlantic Ocean, Straits of Gibraltar, Spain, Portugal, Morocco	Coastal cloud eddy
258	7/21/66	62:35	Atlantic Ocean, Venezuela, Trinidad, mouths of Orinoco and Essequibo Rivers, Guianas	Bénard cells, coastal sediments, currents, cumulus built up on land and sea, delta
259		62:36	Atlantic Ocean, Guianas, Venezuela, Trinidad, mouths of Orinoco and Essequibo Rivers	Bénard cells, coastal sediments, currents, cumulus built up on land and sea
260		62:36	Atlantic Ocean, Guianas, Venezuela, Trinidad, Surinam, mouth of Orinoco and Essequibo Rivers	Bénard cells, coastal sediments, currents, cumulus built up on land and sea, cloud lines
261		62:37	Atlantic Ocean, Guianas, Surinam, Paramaribo	Bénard cells, coastal sediments, currents, cumulus built up on land and sea, cloud lines
262		62:37	Atlantic Ocean, Surinam, Paramaribo	Bénard cells, coastal sediments, currents, cumulus built up on land and sea, cloud lines
263		62:37	Atlantic Ocean, Surinam, French Guiana	Bénard cells, coastal sediments, currents, cumulus built up on land and sea, cloud lines
264	7/20/66	46:10	Gulf of Mexico, Texas, Mexico, Matagorda Bay to Boca Jesus Maria	Coastal deposits, Bénard cells

OCEANOGRAPHIC FEATURES

SLIDE      DATE      TIME

SLIDE	DATE	TIME	LOCATION	OCEANOGRAPHIC FEATURES
265	7/20/66	46:10	Gulf of Mexico, Texas, Mexico, Corpus Christi to Laguna Madre	Coastal deposits, Bénard cells
266		46:11	Gulf of Mexico, Texas, Matagorda Island	Coastal sediments, Bénard cells
267		46:11	Gulf of Mexico, Texas, Louisiana, Brazos River to Vermilion Bay	Coastal sediments, Bénard cells
268		51:00	Pacific Ocean	Bénard cells (high oblique)
269		51:00	Pacific Ocean	Bénard cells (high oblique)
270		51:55	Pacific Ocean, Indonesia, Siberut Island, Mentawai Archipelago	Bénard cells, island cluster
271		51:55	Pacific Ocean, Indonesia, Nias Island, Siberut Island	Bénard cells, island cluster
272		51:56	Pacific Ocean, Indonesia, Siberut Island, Mentawai Archipelago	Irregular coastline, Bénard cells
273		51:57	Pacific Ocean, Indonesia, Straits of Malacca, Malaysia	Coastal sediments, cloud lines
274		51:57	Pacific Ocean, Indonesia, Straits of Malacca, Gulf of Siam, Thailand	Coastal sediments, cloud lines



GEMINI XI SEPTEMBER 14, 1966  
CDR. CHARLES CONRAD, JR., CDR. RICHARD F. GORDON, JR.  
INDIA, CEYLON, AND A FEW OF THE LACCADIVE ISLANDS  
FROM AN ALTITUDE OF 410 n.mi.

GEMINI XI

September 12-15, 1966

Cdr. Charles Conrad, Jr. - Lt. Cdr. Richard F. Gordon, Jr.

Apogee: 740 miles

Perigee: 160 miles

Camera: 1. J. A. Maurer, 70-mm Space Camera -- (Slide Nos. 359 -436)

2. Hasselblad, Super Wide Angle, 70-mm -- (Slide Nos. 275-358)

Lens: 1. Xenator, 80-mm F. L.; f-2. 8

2. Zeiss, Biogon, 38-mm F. L.; f-4. 5

Film: Eastman Kodak, Ektachrome, MS (S.O., 368)

70-mm width, 55 x 55-mm format

<u>SLIDE</u>	<u>DATE</u>	<u>TIME*</u>	<u>LOCATION</u>	<u>OCEANOGRAPHIC FEATURES</u>
275**	9/14/66	40:42	Red Sea, Mediteranean Sea, Saudi Arabia, Egypt, Sinai, Israel, Jordan	Irregular coastline, coastal calcareous reefs
276		40:43	Red Sea, Saudi Arabia, Egypt, Dead Sea -- Altitude 200	Irregular coastline, coastal calcareous reefs
277**		40:44	Red Sea, Saudi Arabia, Al Hijaz area -- Altitude 210	Irregular coastline, coastal calcareous reefs
278		40:47	Persian Gulf, Gulf of Oman, Arabian Sea -- Altitude 240	Irregular coastline, cloud lines
279		40:47	Arabian Sea, Persian Gulf, Gulf of Oman -- Altitude 260	Irregular coastline, cloud lines
280		40:48	Arabian Sea, Persian Gulf, Gulf of Oman -- Altitude 270	Irregular coastline, cloud lines (oblique)
281		40:49	Arabian Sea, Gulf of Oman -- Altitude 280	Cloud lines
282		40:50	Arabian Sea, India, Indus Valley, Rann of Kutch -- Altitude 290	Cloud lines, Bénard cells
283		40:51	Arabian Sea, Bay of Bengal, India, Ceylon -- Altitude 350	Cloud lines, Bénard cells
284		40:52	Arabian Sea, Bay of Bengal, India, Ceylon -- Altitude 360	Cloud lines, Bénard cells
285		40:52	Arabian Sea, Bay of Bengal, India, Ceylon -- Altitude 370	Cloud lines, Bénard cells
286		40:52	Arabian Sea, Bay of Bengal, India, Ceylon -- Altitude 380	Cloud lines, Bénard cells

\* Ground elapsed time (Lift Off: 14:42:26 Zulu)

\*\* Fogged window

OCEANOGRAPHIC FEATURES

LOCATION

TIME

DATE

SLIDE

287	9/14/66	40:53	Arabian Sea, Bay of Bengal, India, Ceylon -- Altitude 400	Cloud lines, Bénard cells
288		40:53	Bay of Bengal, India, Ceylon, Maldives Islands -- Altitude 410	Cloud lines, Bénard cells
289		40:53	Bay of Bengal, India, Ceylon, Maldives Islands -- Altitude 430	Cloud lines, Bénard cells
290		40:54	Bay of Bengal, India, Ceylon -- Altitude 440	Cloud lines, Bénard cells
291		40:55	Indian Ocean, southeast of Ceylon -- Altitude 460	Bénard cells, upper-level clouds, inter-tropical convergence zone
292		40:56	Indian Ocean west of Sumatra -- Altitude 500	Bénard cells, upper-level clouds, inter-tropical convergence zone
293		40:56	Indian Ocean west of Sumatra -- Altitude 510	Bénard cells, upper-level clouds, inter-tropical convergence zone
294		40:56	Indian Ocean west of Sumatra -- Altitude 520	Bénard cells, upper-level clouds, inter-tropical convergence zone
295		40:57	Indian Ocean west of Sumatra -- Altitude 530	Bénard cells, upper-level clouds, inter-tropical convergence zone
296		40:57	Indonesian Islands, Sumatra, Java, Borneo, Sumbawa -- Altitude 540	Bénard cells, upper-level clouds, inter-tropical convergence zone
297		40:58	Indonesian Islands, Sumatra, Java, Bali, Borneo -- Altitude 550	Bénard cells, upper-level clouds, inter-tropical convergence zone

<u>SLIDE</u>	<u>DATE</u>	<u>TIME</u>	<u>LOCATION</u>	<u>OCEANOGRAPHIC FEATURES</u>
298	9/14/66	40:59	Indonesian Islands, Java, Sumatra, Bali, Borneo -- Altitude 560	Bénard cells, upper-level clouds, inter-tropical convergence zone
299		40:59	Indonesia, Sumatra, Java, Bali, Borneo, Sumbawa -- Altitude 570	Bénard cells, upper-level clouds, inter-tropical convergence zone
300		41:00	Indonesia, Java, Bali, Borneo, Sumbawa -- Altitude 580	Bénard cells, upper-level clouds, inter-tropical convergence zone
301		41:02	Indonesia, Java, Bali, Borneo, Sumbawa -- altitude 590	Bénard cells, upper-level clouds, inter-tropical convergence zone
302		41:03	Australia, northwest coast Altitude 610	Coastal deposits, cloud lines, calcareous reefs
303		41:03	Australia, northwest coast, Indonesia Altitude 620	Coastal deposits, cloud lines, calcareous reefs
304		41:03	Australia, northwest coast -- Altitude 630	Coastal deposits, cloud lines, calcareous reefs
305		41:04	Australia, northwest coast -- Altitude 640	Coastal deposits, cloud lines, calcareous reefs
306		41:04	Australia, northwest coast -- Altitude 650	Coastal deposits, cloud lines, calcareous reefs
307		41:05	Gulf of Carpentaria, Cape York Peninsula, Australia - - Altitude 660	Coastal deposits, cloud lines, calcareous reefs
308		41:05	Australia, Gulf of Carpentaria, Cape York Peninsula -- Altitude 670	Coastal deposits, cloud lines, calcareous reefs

OCEANOGRAPHIC FEATURES

<u>SLIDE</u>	<u>DATE</u>	<u>TIME</u>	<u>LOCATION</u>
319	9/14/66	42:16	Red Sea, Egypt, Saudi Arabia, Sudan, Ethiopia, --Altitude 300
320		42:17	Red Sea, Gulf of Aden, Somali, Sudan, Saudi Arabia -- Altitude 310
321		42:17	Red Sea, Gulf of Aden, Somali, Sudan, Saudi Arabia -- Altitude 320
322		42:17	Red Sea, Gulf of Aden, Somali, Sudan, Saudi Arabia -- Altitude 330
323		42:18	Red Sea, Gulf of Aden, Somali, Sudan, Saudi Arabia -- 335 Altitude
324		42:18	Red Sea, Gulf of Aden, Somali, Sudan, Saudi Arabia -- Altitude 340
325		42:19	Red Sea, Gulf of Aden, Somali, Sudan, Saudi Arabia -- Altitude 350
326		42:20	Gulf of Aden, Indian Ocean, Somali, South Arabia, Socotra Island -- Altitude 370
327		42:21	Indian Ocean, Gulf of Aden, Somali, South Arabia, Socotra Island -- Altitude 380
328		42:23	Indian Ocean, Arabian Sea, India, Ceylon -- Altitude 410

<u>SLIDE</u>	<u>DATE</u>	<u>TIME</u>	<u>LOCATION</u>	<u>OCEANOGRAPHIC FEATURES</u>
329	9/14/66	42:24	Indian Ocean, Maldives Islands, India, Ceylon -- Altitude 460	Bénard cells, cloud lines, inter- tropical convergence zone
330		42:25	Indian Ocean, Maldives Islands, India, Ceylon -- Altitude 465	Bénard cells, cloud lines, inter- tropical convergence zone, upper- level clouds
331		42:27	Indian Ocean, Maldives Islands, India, Ceylon -- Altitude 500	Bénard cells, cloud lines, inter- tropical convergence zone, upper- level clouds
332		42:28	Indian Ocean, Maldives Islands, India, Ceylon -- Altitude 500	Bénard cells, cloud lines, inter- tropical convergence zone, upper- level clouds
333		42:30	Indian Ocean west of Australia -- Altitude 660	Bénard cells, cloud lines, inter- tropical convergence zone, upper- level clouds
334		42:30	Indian Ocean west of Australia -- Altitude 665	Bénard cells, cloud lines, inter- tropical convergence zone, upper- level clouds
335		42:31	Indian Ocean west of Australia -- Altitude 670	Bénard cells, cloud lines, inter- tropical convergence zone, upper- level clouds
336		42:32	Indian Ocean west of Australia -- Altitude 675	Bénard cells, cloud lines, inter- tropical convergence zone, upper- level clouds
337		46:58	Pacific Ocean, Mexico	Oceanic cumulus



GEMINI XI SEPTEMBER 14, 1966  
CDR. CHARLES CONRAD, JR., CDR. RICHARD F. GORDON, JR.  
AGENA TETHERED TO THE GEMINI SPACECRAFT OVER THE  
GULF OF CALIFORNIA NEAR LA PAZ, BAJA CALIFORNIA

<u>SLIDE</u>	<u>DATE</u>	<u>TIME</u>	<u>LOCATION</u>	<u>OCEANOGRAPHIC FEATURES</u>
338	9/14/66	46:59	Rio Grande River, Texas, Mexico	Cumulus, strato-cumulus
339		46:59	Gulf of Mexico, Texas, Louisiana	Coastal deposits, sun glitter, cloud lines, coastal haze, contrail
340		47:00	Gulf of Mexico, Texas, Louisiana	Coastal deposits, sun glitter, cloud lines, coastal haze, contrail
341		47:01	Gulf of Mexico, Texas, Louisiana	Coastal deposits, convergence cloud lines, coastal haze, contrail
342		47:02	Gulf of Mexico, Louisiana, Alabama, Mississippi, Florida, Miss. River	Cloud lines, convergence, coastal haze, coastal sediments, delta
343		47:03	Gulf of Mexico, Mississippi River Alabama, Florida, Mississippi	Cloud lines, convergence, coastal haze, coastal sediments, delta
344		47:04	Gulf of Mexico, Florida, Cape San Blas	Cloud lines, convergence, coastal haze, coastal sediments
345		47:05	Florida, Gulf of Mexico, Atlantic Ocean	Sun glitter, cumulus, strato-cumulus, coastal deposits (oblique)
346		47:05	Central Florida, Gulf of Mexico, Atlantic Ocean	Sun glitter, cumulus, strato-cumulus, coastal deposits (oblique)
347		47:05	Central Florida, Gulf of Mexico, Atlantic Ocean	Sun glitter, cumulus, strato-cumulus, coastal deposits (oblique)
348		47:06	Central Florida, Gulf of Mexico, Atlantic Ocean	Sun glitter, cumulus, strato-cumulus, coastal deposits (oblique)

OCEANOGRAPHIC FEATURES

LOCATION

TIME

DATE

SLIDE

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349	9/14/66	47:06	Atlantic Ocean, Florida, Jacksonville to Palm Beach	Oceanic cumulus, cumulonimbus, cloud lines
350		51:30	--	Oceanic cumulus, cumulonimbus, cloud lines (oblique)
351		51:30	--	Bénard cells, oceanic cumulus, cumulonimbus, cloud lines
355		54:30	Pacific Ocean, southeast of Japan	Cumulonimbus, strato-cumulus, typhoon (Elsie)
359		40:43	Mediterranean Sea, Red Sea, Dead Sea, Sea of Galilee, Israel, Jordan, Saudi Arabia, Egypt, Suez Canal	Irregular coastline, local winds, coastal calcareous reefs, island clusters
360		40:44	Red Sea, Saudi Arabia, Al Hijaz,	Coastal calcareous reefs
361		40:48	Persian Gulf, Gulf of Oman, Iran, Saudi Arabia, Muscat & Oman	Coastal lagoons, cloud lines
362		40:49	Arabian Sea, Indus Valley, Rann of Kutch	Cloud lines
363		40:50	Arabian Sea, India, Gulf of Kutch, Gulf of Cambay	Bénard cells, cloud lines
364		40:51	Arabian Sea, Laccadive Islands, India, Ceylon	Bénard cells, cloud lines
365		40:52	Arabian Sea, Laccadive Islands, India, Ceylon	Bénard cells, calcareous reefs, atolls

<u>SLIDE</u>	<u>DATE</u>	<u>TIME</u>	<u>LOCATION</u>	<u>OCEANOGRAPHIC FEATURES</u>
366	9/14/66	40:52	Arabian Sea, Bay of Bengal, India	Bénard cells, cloud lines, coastal sediments
367		40:53	Bay of Bengal, India, Ceylon	Bénard cells, cloud lines, coastal sediments
368		40:53	Bay of Bengal, India, Ceylon	Bénard cells, cloud lines, coastal sediments
369		40:54	Bay of Bengal, India, Ceylon	Bénard cells, cloud lines, coastal sediments
370		40:58	Indonesia, Sumatra	Bénard cells, oceanic cumulus, high-level clouds
371		40:58	Indonesia, Sumatra	Bénard cells, oceanic cumulus, high-level clouds
372		40:58	Indonesia, Java, Borneo, Sumatra	Bénard cells, oceanic cumulus, high-level clouds, inter-tropical convergence zone
373		40:59	Indonesia, Java, Borneo, Sumatra	Bénard cells, oceanic cumulus, high-level clouds, inter-tropical convergence zone
374		40:59	Indonesia, Java, Borneo, Sumatra	Bénard cells, oceanic cumulus, high-level clouds, inter-tropical convergence zone, coastal sediments

OCEANOGRAPHIC FEATURES

<u>SLIDE</u>	<u>DATE</u>	<u>TIME</u>	<u>LOCATION</u>
375	9/14/66	40:59	Indonesia, Java, Bali, Lombok, Sumatra, Borneo
376		40:59	Oceanic cumulus, cloud lines
377		41:00	Oceanic cumulus, cloud lines
378		41:00	Oceanic cumulus, cloud lines
379		41:03	Irregular coastline, coastal sediments, coastal deposits, coastal calcareous reefs
380		41:03	Irregular coastline, coastal sediments, coastal reefs
381		41:03	Australia, northwest coast
382		41:03	Australia, northwest coast
383		41:04	Australia, northwest coast
384		41:04	Australia, northwest coast

<u>SLIDE</u>	<u>DATE</u>	<u>TIME</u>	<u>LOCATION</u>	<u>OCEANOGRAPHIC FEATURES</u>
385	9/14/66	41:05	Australia, northwest coast	Irregular coastline, coastal sediments, coastal deposits, coastal calcareous reefs
386		41:05	Timor Sea, Timor Island, Sumba Island, Scott Reef, Flores Island	Oceanic cumulus
387		41:06	Australia, northwest coast	Oceanic cumulus
388		41:06	Australia, northwest coast	Oceanic cumulus
389		41:06	Australia, northwest coast	Oceanic cumulus
390		41:06	Australia, northwest coast	Oceanic cumulus
391		42:05	Atlantic Ocean, Morocco, Ras Rhir, Agadir -- Altitude 160	Strato-cumulus, coastal eddy
392		42:05	Atlantic Ocean, Morocco, Ras Rhir, Agadir -- Altitude 162	Strato-cumulus, coastal eddy
406		42:18	Red Sea, Sudan, Ethiopia, Kassala -- Altitude 280	Irregular coastline, coastal sediments, calcareous reefs
407		42:18	Red Sea, Sudan, Ethiopia, Kassala -- Altitude 290	Irregular coastline, coastal sediments, calcareous reefs
408		42:19	Red Sea, Saudi Arabia, Sudan, Ethiopia -- Altitude 295	Irregular coastline, coastal sediments, calcareous reefs
409		42:20	Red Sea, Ethiopia, Saudi Arabia, Yemen -- Altitude 300	Irregular coastline, coastal sediments, calcareous reefs, local winds

OCEANOGRAPHIC FEATURES

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SLIDE DATE TIME LOCATION

410	9/14/66	42:21	Red Sea, Gulf of Aden, South Arabia, Somali, Ethiopia -- Altitude 320	Irregular coastline, coastal sediments, calcareous reefs, local winds
411		42:21	Red Sea, Gulf of Aden, South Arabia, Somali, Ethiopia -- Altitude 340	Sun glitter, coastal currents, irregular coastline, local winds
412		42:22	Indian Ocean, Gulf of Aden, Ras Hafun, Somali -- Altitude 350	Sun glitter, coastal currents, irregular coastline, local winds
413		42:25	Indian Ocean -- Altitude 360	Cloud lines, coastal deposits, local winds
414		42:25	Indian Ocean -- Altitude 380	Oceanic cumulus
415		42:27	Indian Ocean -- Altitude 400	Cumulus, Bénard cells, cloud line
416		42:27	Indian Ocean -- Altitude 420	Cumulus, Bénard cells, cloud lines
417		42:28	Indian Ocean -- Altitude 445	Cumulus, Bénard cells, cloud lines
418		42:28	Indian Ocean, Maldives Islands -- Altitude 455	Cumulus, Bénard cells, cloud lines, upper-level clouds
419		42:28	Indian Ocean, Maldives Islands -- Altitude 465	Cumulus, Bénard cells, cloud lines, upper-level clouds
420		42:29	Indian Ocean, Maldives Islands, India, Ceylon -- Altitude 475	Cumulus, Bénard cells, cloud lines, upper-level clouds
421		42:29	Indian Ocean, Maldives Islands, India, Ceylon -- Altitude 485	Cumulus, Bénard cells, cloud lines, upper-level clouds