

CR 134262

SKYLAB SHORT-LIVED EVENT ALERT PROGRAM

Contract NAS 9-13474

Final Report

Principal Investigator

Mr. Robert A. Citron

February 1974

Prepared for

National Aeronautics and Space Administration
Johnson Space Center
Houston, Texas 77058

Smithsonian Institution
Astrophysical Observatory
Cambridge, Massachusetts 02138

The Smithsonian Astrophysical Observatory
and the Harvard College Observatory
are members of the
Center for Astrophysics

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Final Report

1. INTRODUCTION

During the three manned Skylab missions, the Center for Short-Lived Phenomena (CSLP) reported a total of 39 significant events to the Johnson Space Center (JSC) as part of the Skylab Short-Lived Event Alert Program.

Information pertaining to these events was telegraphed to JSC daily, and the data were updated as frequently as new information was received from the Center's network of correspondents.

The telegraphed daily status reports were made as comprehensive as possible and included the names and locations of the events, the track number and revolution number during which the event could be observed, the time (GMT) to within ± 2 sec when Skylab was closest to the event area, and the light condition (daylight or darkness) at that time and place. The messages sent to JSC during the Skylab 4 mission also included information pertaining to ground-truth studies and observations being conducted on the events. Photographic priorities were assigned for each event.

During the Skylab 2 and Skylab 3 missions, the daily status reports were telegraphed to JSC at 0900 Central Time 2 days in advance of the predicted sighting opportunities, in order to give personnel at JSC time to evaluate the reports and pass them to the Skylab crew if appropriate. For the Skylab 4 mission, the daily status reports were sent 3 days ahead of the predicted sighting opportunities to increase the time available for evaluation and transmission to Skylab.

Throughout all three manned missions, provisions were made so that CSLP could contact the JSC after normal working hours, or vice versa, if necessary.

The accuracy and thoroughness of the sighting opportunities for the short-lived events that the CSLP forwarded to JSC were contingent on the accuracy of the data in the original and updated Table 2-2 in Section 7, Field Data Pack, EREP Console Operations Handbook. Where no data were available for particular revolutions, interpolation of statistics was necessary. It is felt that the accuracy of these interpolated figures was reasonable.

2. SKYLAB 2

As part of CSLP's Short-Lived Event Alert Program, a communications test was conducted on 19 April 1973 between the Smithsonian Astrophysical Observatory's (SAO) Communications Center and JSC. During the test, the time interval between the sending of the message by Robert Citron and its receipt by John Kaltenbach was determined to be 25 min.

Mission-simulation status reports, sent on 23, 24, and 25 April, were received without problems.

Regular daily status reports were sent via teletype to JSC beginning on 4 May; the new format as agreed on by Mr. Citron and JSC was employed. Actual event reports were sent in order to familiarize CSLP with the preparation of such messages and to secure response from JSC regarding any faults in the reporting system.

With the launch of Skylab 1 on 14 May, routine daily messages were begun. However, because of problems aboard the spacecraft, messages were not sent from 15 to 24 May. After resuming on 25 May, messages continued until 20 June.

No data were available regarding times and positions of the ascending nodes for the period 13 to 22 June. This required interpolation of figures, and the accuracies of the predicted visibility opportunities of the events for the last few days of the mission were probably rather inaccurate.

The following 15 events were reported to JSC during the Skylab 2 mission:

<u>CSLP Event Number</u>	<u>Name of Event</u>	<u>Location</u>
19-73	Asama Volcanic Eruption	Honshu, Japan
34-73	Montevallo Sinkhole	Alabama, USA
42-73	Mississippi River Floods	Midwest and South USA

<u>CSLP Event Number</u>	<u>Name of Event</u>	<u>Location</u>
55-73	Williamsburg Natural Gas Escape	Michigan, USA
57-73	Casper Oil Pipeline Break and Bird Kill	Wyoming, USA
59-73	Kilauea Volcanic Eruption - 1973	Hawaii, USA
62-73	Murray Oil Pipeline Rupture	Idaho, USA
65-73	Windward Passage Oil Slick	Caribbean Sea
67-73	Chelsea Landslip	Quebec, Canada
74-74	Bear Glacier Surge	Tadzhik, USSR
77-73	ESSO Brussels Oil Spill	New York, USA
79-73	Santa Barbara Oil Slick	California, USA
156-73	Erta'Ale Volcano	Ethiopia
-	Nyiragongo Volcano	Republic of Zaïre
-	Big Cypress Swamp Fire	Florida, USA

Thirty-two daily status reports were telegraphed to JSC during the mission, and these contained statistics for 152 sighting opportunities for the 15 events.

3. SKYLAB 3

On 31 July, David Squires of CSLP met with Mr. Kaltenbach of JSC and several team members of the Earth Resources Experiment Package to plan communications procedures to be followed during the Skylab 3 mission. It was agreed that the CSLP would increase the types and numbers of events reported and would expand descriptions of all events to make them as complete and informative as possible.

CSLP began transmitting Skylab daily status reports to JSC on 7 August. The messages were sent every day through 22 September.

The following 11 events were reported to JSC by teletype during Skylab 3:

<u>CSLP Event Number</u>	<u>Name of Event</u>	<u>Location</u>
84-73	Japanese Seaweed Introduction to England	Isle of Wight, England
92-73	Tiatia Volcanic Eruption	Kuril Islands, USSR
93-73	Nishino-shima Submarine Volcanic Eruption	Bonin Islands, Japan
94-73	Curacoa Reef Submarine Volcanic Activity	Northern Tonga Islands, South Pacific Ocean
96-73	Mount Langila Volcanic Eruption	New Britain, Territory of New Guinea
97-73	Lagoa Rodrigo de Freitas Fish Kill	Rio de Janeiro, Brazil
99-73	Hemlock Looper Infestation	Massachusetts, USA
106-73	Western USA Forest Fires	Western USA
109-73	Puebla Earthquake	Puebla, Mexico
112-73	Indus River Floods	Punjab, Pakistan
117-73	Santiaguito Volcanic Eruption	Guatemala, Central America

Forty-four daily status reports were telegraphed to JSC during the mission, containing statistics for 154 sighting opportunities for the 11 events.

4. SKYLAB 4

On 30 November 1973, cables were sent to five overseas correspondents requesting information on ground-truth data currently being obtained on six active volcanos, as follows:

Nyiragongo Volcano – Dr. A. Pouclet, Bukavu, Zaire, and Dr. H. Tazieff, Paris, France;

Erta'Ale Volcano – Dr. Tazieff and Dr. J. Varet, Addis Ababa, Ethiopia;

Mt. Etna Volcano – Dr. Tazieff;

Nishino-shima Submarine Volcano – Dr. Y. Sawada, Tokyo, Japan;

Sakurazima Volcano – Dr. Sawada;

Kilauea Volcano – Dr. D. Peterson, Island of Hawaii, Hawaii.

Replies were received by mail from all five correspondents, and copies of the correspondence were forwarded to Mr. Kaltenbach.

From 21 November 1973 to 2 February 1974, CSLP telegraphed daily status reports on short-lived events to JSC. The following 17 events were reported by teletype to JSC during the Skylab 4 mission:

<u>CSLP Event Number</u>	<u>Name of Event</u>	<u>Location</u>
59-73	Kilauea Volcanic Eruption – 1973	Hawaii, USA
93-73	Nishino-shima Submarine Volcanic Eruption	Bonin Islands, Japan
130-73	Choristoneura Population Increase	Maine, USA
131-73	Douglas Fir Tussock Moth Outbreak	Washington, Idaho, Oregon, USA
134-73	Massachusetts Pine Looper Outbreak	Massachusetts, USA
139-73	Sakurazima Volcanic Activity	Kyusyu, Japan
145-73	Bodrog River Oil Slick	Hungary
147-73	Probable Volcan Wolf Eruption	Galapagos Islands, Ecuador
150-73	Galapagos Islands Eruptions	Galapagos Islands, Ecuador
156-73	Erta'Ale Volcanic Activity	Ethiopia

<u>CSLP Event Number</u>	<u>Name of Event</u>	<u>Location</u>
3-74	Chile-Bolivia Border Earthquake	Potosi State, Bolivia
5-74	Duck Island Oil Spill	New Jersey, USA
7-74	La Pampa Province Forest Fires	Argentina
9-74	Reventador Volcanic Activity	Ecuador
11-74	Pacific Submarine Volcanic Eruption	Volcano Islands, Mariana Islands area, Pacific Ocean
-	Nyiragongo Volcano	Zaire
-	South Vietnam Forest Defoliation	South Vietnam

Seventy-four daily status reports were telegraphed to JSC during Skylab 4, in which statistics were included for 380 sighting opportunities for the 17 events.

In addition to teletyping information on current short-lived events to JSC, event notification and information cards were routinely mailed to Mr. Kaltenbach, Dr. Robin Brett, Dr. Everett Gibson, and Dr. Michael Reynolds. This mailing included 179 event cards during the contract period (23 April 1973 to 8 February 1974).

The event notification cards issued by CSLP on the 39 events reported to JSC are reproduced in Appendix A, except for Nyiragongo Volcano, Big Cypress Swamp Fire, and South Vietnam Forest Defoliation. These last three events were not issued numbers and were not sent to the Center's network of correspondents.

Sample cable message sent to JSC are included in Appendix B.

APPENDIX A
EVENT NOTIFICATION CARDS

EVENT	19-73	ASAMA VOLCANIC ERUPTION	7 FEBRUARY 1973	1563.
EVENT NOTIFICATION REPORT				
TYPE OF EVENT		GEOPHYSICAL		
DATE OF OCCURRENCE		1 FEBRUARY 1973		
LOCATION OF EVENT		ISLAND OF HONSHU, JAPAN		
REPORTING SOURCE		THE JAPANESE NATIONAL SCIENCE MUSEUM		
SOURCE CONTACT		DR. TOKIKO TIBA		
DEPARTMENT OF GEOLOGY THE NATIONAL SCIENCE MUSEUM 3-23-1, HYAKUNIN-CHO, SHINJUKU, TOKYO, JAPAN		<small>This report is based on information received from the reporting source and is disseminated for information purposes only. The Smithsonian Institution bears no responsibility for its accuracy.</small>		
SMITHSONIAN INSTITUTION CENTER FOR SHORT LIVED PHENOMENA 60 Garden Street CAMBRIDGE, MASSACHUSETTS 02138 UNITED STATES OF AMERICA CABLE - SATELLITES NEW YORK TELEPHONE (617) 854-7511				
<p>"On February 1, 19h 20m 26 sec (GMT Feb. 1, 10h20m26sec), the Asama volcano (2542m.) blew up with a terrific explosion after 11 years of silence, since the activity on November 7, 1961. Only one explosion has taken place so far. Smoke and ash formed a column 1000 meters high. The volcanic ash, carried by the west-northwest wind, reached the Pacific Ocean. Fist-sized volcanic bombs fell within an area of 4 km from the crater, but no lava flow occurred. Fragments of andesite, sulfur and pumice were found on the southern foot of the volcano.</p> <p>"Air vibration as a result of the explosion reached 1.8 millibars as recorded on the barograph of the meteorological observatory of Karuizawa. The maximum amplitude of vibration from the explosion earthquake was 136 microns. The explosion took place 7 hours after abnormally frequent earthquakes were recorded."</p> <p>Asama is located in the central part of Honshu Island, 140 km northwest of Tokyo. The geographical position is: Latitude 36°24'N, Longitude 138°32'E. Asama is a strato-volcano with double craters lying on a shield volcano which rests on an older strato-volcano.</p>				

100-210-5

EVENT	34-73	MONTEVALLO SINKHOLE	26 MARCH 1973	1592.
EVENT NOTIFICATION REPORT				
TYPE OF EVENT		GEOPHYSICAL		
DATE OF OCCURRENCE		2 DECEMBER 1972		
LOCATION OF EVENT		MONTEVALLO, SHELBY COUNTY, ALABAMA, U.S.A.		
REPORTING SOURCE		U.S.GEOLOGICAL SURVEY, DEPT. OF THE INTERIOR		
SOURCE CONTACT		MR. DONALD KELLY, INFORMATION OFFICE, UNITED STATES DEPARTMENT OF THE INTERIOR, GEOLOGICAL SURVEY, WASHINGTON, D. C. 20242, U. S. A.		
SMITHSONIAN INSTITUTION CENTER FOR SHORT LIVED PHENOMENA 60 Garden Street CAMBRIDGE, MASSACHUSETTS 02138 UNITED STATES OF AMERICA CABLE - SATELLITES NEW YORK TELEPHONE (617) 854-7511		<p>A large sinkhole measuring about 425 ft. long, 350 ft. wide, and 150 ft. deep that developed recently in central Alabama may be the largest sinkhole to form in recent years in the United States. The "December Giant" sinkhole is located in a wooded area in Shelby County, near Montevallo, Alabama. The collapse is believed to have occurred on Dec. 2 1972, when a nearby resident reported a roaring noise, the sound of breaking trees, and the shaking of his house. The huge collapse was discovered two days later by hunters. It did not cause any harm to man or buildings. In the past, sinkholes have caused damage to highways, railroads, sewage facilities, homes, and other buildings in certain parts of Alabama and in other sinkhole-prone areas of the United States. The U.S.G.S. estimates that at least 1,000 sinkholes areas of land-surface subsidence, or other related features have developed within the last 15 yrs. in an area of about 10 square miles in Shelby County which includes the "December Giant" site.</p> <p>John C. Newton, U.S.G.S. explained that "sinkholes are natural features in areas underlain by cavernous limestone; however, man's activity apparently can greatly increase their occurrence." Sinkholes like the "December Giant" are generally caused by the collapse of surface clays into underlying caverns in carbonate rocks (limestone and dolomite). "Collapse may be triggered by a variety of factors, including the rising and falling of the water table, increases in the amount of precipitation and overland runoff, loss of support to the clays by solution enlargement of caverns, (Continued on Card No. 1593.)</p>		

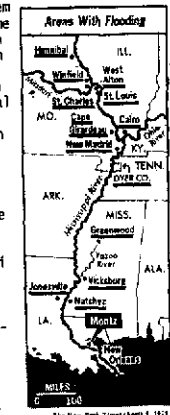
100-210-5

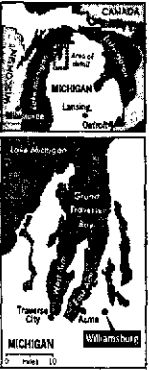
EVENT	34-73	MONTEVALLO SINKHOLE	26 MARCH 1973	1593.
EVENT NOTIFICATION REPORT				
TYPE OF EVENT		GEOPHYSICAL		
DATE OF OCCURRENCE		2 DECEMBER 1972		
LOCATION OF EVENT		MONTEVALLO, SHELBY COUNTY, ALABAMA, U.S.A.		
REPORTING SOURCE		U.S. GEOLOGICAL SURVEY, DEPARTMENT OF THE INTERIOR		
SOURCE CONTACT		MR. DONALD KELLY, INFORMATION OFFICE, UNITED STATES DEPARTMENT OF THE INTERIOR, GEOLOGICAL SURVEY, WASHINGTON, D. C. 20242, U.S.A.		
SMITHSONIAN INSTITUTION CENTER FOR SHORT LIVED PHENOMENA 60 Garden Street CAMBRIDGE, MASSACHUSETTS 02138 UNITED STATES OF AMERICA CABLE - SATELLITES NEW YORK TELEPHONE (617) 854-7511		<p>(Continued from Card No. 1592.)</p> <p>subsurface erosion of the underside of the clays, and vibrations and overloading of the land surface."</p> <p>"Lowering of the water table, whether natural or man-induced--appears particularly significant. Not only does the removal of ground water eliminate some of the buoyant support holding up clays that overlie caverns, but the greater depth to the water table increases the amount and velocity of water moving downward through the clays. The result of these processes is to allow the clay to begin collapsing into underlying cavities in the bedrock. The collapse of the clay eventually works its way to the land surface, sometimes appearing first as slight depressions, but occasionally developing suddenly into large craters such as the "December Giant!."</p> <p>U. S. G. S. geologists, in cooperation with the Geological Survey of Alabama and the Alabama Highway Department, have recently begun a program to map and monitor the growing sinkhole problems of central and northern Alabama. This includes using remote sensing techniques, particularly the use of remote sensor devices carried aboard aircraft.</p>		

100-210-5

EVENT	42-73	MISSISSIPPI RIVER FLOODS	10 APRIL 1973	1602.
EVENT NOTIFICATION REPORT				
TYPE OF EVENT		GEOPHYSICAL		
DATE OF OCCURRENCE		2-10 APRIL 1973		
LOCATION OF EVENT		MIDWESTERN AND SOUTHERN STATES, U. S. A.		
REPORTING SOURCE		U. S. ARMY CORPS OF ENGINEERS		
SOURCE CONTACT		U. S. ARMY CORPS OF ENGINEERS		
SMITHSONIAN INSTITUTION CENTER FOR SHORT LIVED PHENOMENA 60 Garden Street CAMBRIDGE, MASSACHUSETTS 02138 UNITED STATES OF AMERICA CABLE - SATELLITES NEW YORK TELEPHONE (617) 854-7511		<p>The Mississippi-Missouri River system reached the highest flood levels in some locations since 1844 as more than seven million acres of land were flooded from Illinois to Louisiana. The situation was so serious that in Montz, Louisiana (25 miles north of New Orleans), several homes had to be moved or destroyed in order to make room for another levee in an attempt to contain the river. The Army Corps of Engineers estimated that the present levee will not last beyond the end of April. Property damage throughout the area was estimated to be \$25 million as hundreds of homes were damaged or destroyed.</p> <p>At the confluence of the Mississippi and the Missouri Rivers just north of St. Louis, a land area 12 by 4 miles square was inundated. The area included the towns of West Alton and Portage des Sioux, as well as highway and rail lines.</p> <p>The Mississippi River had been running well above normal for several months, but the flooding situation became critical when a series of spring rainstorms brought heavy rains to the entire area.</p>		

100-210-5



EVENT	55-73	WILLIAMSBURG NATURAL GAS ESCAPE	25 APRIL 1973	1620.
<p>Virtually the entire population of Williamsburg, Michigan, and several families from Acme, Michigan have been evacuated due to the eruption of underground water and gas that has caused about 100 potholes and gas-bearing geysers to appear on the surface, first observed on 18 April. The area is on the southern shore of Grand Traverse Bay, Lake Michigan, about ten miles east of Traverse City, Michigan (44°46'N., 85°38'W.). The total area affected is approximately nine square miles. The potholes that formed measured from a few inches up to 25 feet in diameter, and 15 feet deep. Some of them erupted muddy water to a height of four feet, while others appeared to bubble.</p> <p>The gas that is escaping is methane, found here in a geological formation called the Niagara drift of strata, 6,200 feet below the surface. It is theorized that the gas may be leaking from a gas well recently drilled at a site four miles south of Williamsburg by the Amoco Production Co., a subsidiary of Standard Oil Co. of Indiana. (Cont. on card No. 1621.)</p>				
				
<p>EVENT NOTIFICATION REPORT: a</p>				
TYPE OF EVENT		GEOPHYSICAL		
DATE OF OCCURRENCE		18 APRIL 1973		
LOCATION OF EVENT		WILLIAMSBURG,		
		MICHIGAN, U.S.A.		
REPORTING SOURCE		MICHIGAN DEPT.		
		OF NATURAL RESOURCES		
SOURCE CONTACT		DR. DAVID H. JENKINS,		
DEPUTY DIRECTOR, MICHIGAN DEPARTMENT		OF NATURAL RESOURCES, LANSING, MICH.		
<p>SMITHSONIAN INSTITUTION CENTER FOR SHORT LIVED PHENOMENA 60 Garden Street CAMBRIDGE, MASSACHUSETTS 02138 UNITED STATES OF AMERICA CABLE: SATELLITES NEW YORK TELEPHONE: (617)-864-7911</p>				

500-slp-5

EVENT	55-73	WILLIAMSBURG NATURAL GAS ESCAPE	25 APRIL 1973	1621.
<p>(Continued from card No. 1620).</p>				
<p>Amoco sealed off the new well, and is preparing to drill two parallel wells, one 1,600 feet deep to bleed off any escaping gas, and the other 6,000 feet deep to intercept the original well at the bottom. Cement or mud will then be forced down the new hole to seal the bottom. (Amoco has thirty wells in the natural gas field containing an estimated seven trillion cubic feet of gas.)</p> <p>A geologist with the Michigan Dept. of Natural Resources believes that the escaping gas is being pressured into extremely porous limestone, which results in the surface eruptions in the Williamsburg area. Mud from the eruptions has been flowing into Acme Creek, which drains into Grand Traverse Bay. The silt has become a threat to fish and to the Bay, which supplies Traverse City with its drinking water. The gas itself presents no apparent danger to the water life.</p> <p>The event is being investigated by the Michigan Dept. of Natural Resources and by the Amoco Production Co. Dr. Sidney Dyer, of the D.N.R., is in charge of the geologists on site.</p>				
<p>EVENT NOTIFICATION REPORT: b</p>				
TYPE OF EVENT		GEOPHYSICAL		
DATE OF OCCURRENCE		18 APRIL 1973		
LOCATION OF EVENT		WILLIAMSBURG,		
		MICHIGAN, U.S.A.		
REPORTING SOURCE		MICHIGAN DEPT.		
		OF NATURAL RESOURCES		
SOURCE CONTACT		DR. DAVID H. JENKINS,		
DEPUTY DIRECTOR, MICHIGAN DEPARTMENT		OF NATURAL RESOURCES, LANSING, MICH.		
<p>SMITHSONIAN INSTITUTION CENTER FOR SHORT LIVED PHENOMENA 60 Garden Street CAMBRIDGE, MASSACHUSETTS 02138 UNITED STATES OF AMERICA CABLE: SATELLITES NEW YORK TELEPHONE: (617)-864-7911</p>				

500-slp-5

EVENT	57-73	CASPER OIL PIPELINE BREAK AND BIRD KILL	4 MAY 1973	1623.
<p>A pipeline under the control of Standard Oil Co. of Indiana ruptured adjacent to an industrial slump, or man-made soda lake, in Casper, Wyoming. The water that enters this lake first passes through some filter beds and, in spite of the fact that it comes out with a lot of sludge from the refinery salts and a little oil, is fairly clean.</p> <p>The lake, which covers several square miles, harbors a large number of water fowl. Many species of ducks breed there as well as many wading birds. The area, owned by the refinery, has become an important breeding area and migration stop.</p> <p>The amount of oil that spilled out of the pipeline was unknown as was the date the spill began. It was first detected on 29 April. Between 5,000-10,000 waterfowl were thought to have been killed as a result of the oil. A blizzard was occurring in the area at the time the spill was discovered. The wind had blown the oil so that the entire lake became covered with a slick and heavy crude oil piled up all along the edge.</p> <p>Some of the ducks affected by the oil included large numbers of gadwall; redhead; canvasback; bluing, greenling, and cinnamon teal; scaup and large numbers of lesser scaup; snowdr; widgeon; American ruddy ducks, and a few mallards. The largest population affected was grebe (an entire colony nesting in the area was wiped out). Some geese were also oiled as well as coot, many goldeneye and bufflehead, Wilson sparrows and comorants. Muskrats were also affected by the oil.</p>				
<p>EVENT NOTIFICATION REPORT</p>				
TYPE OF EVENT		BIOLOGICAL		
DATE OF OCCURRENCE		29 APRIL 1973		
LOCATION OF EVENT		CASPER, WYOMING		
		U.S.A.		
REPORTING SOURCE		PHILIP STANTON,		
DR. WILDLIFE REHABILITATION CENTER,		GROVE ST., UPTON, WYOMING 01568, USA		
SOURCE CONTACT		DR. OLIVER SCOTT		
PRES. LOCAL CHAPTER, AUDUBON SOCIETY,		CASPER, WYOMING, U.S.A.		
<p>SMITHSONIAN INSTITUTION CENTER FOR SHORT LIVED PHENOMENA 60 Garden Street CAMBRIDGE, MASSACHUSETTS 02138 UNITED STATES OF AMERICA CABLE: SATELLITES NEW YORK TELEPHONE: (617)-864-7911</p>				

EVENT	59-73	KILAUEA VOLCANIC ERUPTION - 1973	8 MAY 1973	1628.
<p>The Kilauea Volcano erupted spectacularly on 5 May 1973, with lava fountains reaching a height of 100 feet. The eruption ripped open a fissure 600 feet wide, and caused several forest fires to suddenly break out. The eruption occurred amidst hundreds of volcanic tremors, ten days after a 6.2 Richter magnitude earthquake shook the island.</p> <p>By 6 May the volcano was in a deflated condition. The Chain of Craters Highway and the Hillina Pali Road were damaged by the lava flow.</p> <p>The eruption on 5 May was only the second time in 60 years that an eruption went up a rift (fault) zone instead of down.</p> <p>As of 7 May the volcano had reverted to a more normal state of activity.</p>				
<p>EVENT NOTIFICATION REPORT</p>				
TYPE OF EVENT		GEOPHYSICAL		
DATE OF OCCURRENCE		5 MAY 1973		
LOCATION OF EVENT		ISLAND OF HAWAII,		
		U.S.A.		
REPORTING SOURCE		UNITED STATES		
		GEOLOGICAL SURVEY		
SOURCE CONTACT		DR. DONALD W.		
PETERSON, HAWAIIAN VOLCANO OBSERVATOR		HAWAII NATIONAL PARK, HI 96718, USA		
<p>SMITHSONIAN INSTITUTION CENTER FOR SHORT LIVED PHENOMENA 60 Garden Street CAMBRIDGE, MASSACHUSETTS 02138 UNITED STATES OF AMERICA CABLE: SATELLITES NEW YORK TELEPHONE: (617)-864-7911</p>				

500-slp-5

EVENT	62-73	MURRAY OIL PIPELINE RUPTURE	15 MAY 1973	1631.
<p>At about 8:30 p.m. on 2 May, an estimated 126,000-200,000 gallons of No. 2 diesel fuel oil spilled from a pipeline rupture near Murray, Idaho. The pipeline, operated by the Yellow Pipeline Co. of Spokane, extends from Billings, Montana to Spokane, Washington. The fuel oil line was shut down within 5 minutes of the rupture, but oil continued to drain from the pipe until a valve 9 miles away was shut off more than 3 hours later.</p> <p>Efforts were made to keep the fuel from seeping into Prichard Creek, 6-8000 feet southwest of the rupture. Prichard Creek drains into the North Fork of the Coeur d'Alene River and into Coeur d'Alene Lake. Officials at the scene reported that they were building a trench lower than the water table in an attempt to catch the oil before it entered the creek. It was determined that the oil was seeping through the ground to the west, parallel to Prichard Creek, at a rate of about 1,000 feet per day. Because the creek canyon narrows to about 30 feet in width about a mile from where the leak occurred, the oil would be forced into the creek unless precautions were taken to stop it. The oil was to be skimmed off of the top of the water that flowed into the trench. A skimming device was also set up over the creek next to the trench to divert any oil leaking into it.</p>				
EVENT NOTIFICATION REPORT				
TYPE OF EVENT		BIOLOGICAL		
DATE OF OCCURRENCE		2 MAY 1973		
LOCATION OF EVENT		MURRAY		
IDAHO, U.S.A.				
REPORTING SOURCE		J. KATHLEEN HECKT ROGERS HIGH SCHOOL, E. 1622 WELLESLEY SPOKANE, WASHINGTON 99207, U.S.A.		
SOURCE CONTACT		WILLIAM NEWELL		
SANITARY ENGINEER, OIL AND HAZARDOUS MATERIALS SECTION U.S. ENVIRONMENTAL PROTECTION AGENCY SEATTLE, WASHINGTON 98101, U.S.A.				
SMITHSONIAN INSTITUTION CENTER FOR SHORT-LIVED PHENOMENA 40 Garden Street CAMBRIDGE, MASSACHUSETTS 02138 UNITED STATES OF AMERICA CABLE: SATELLITES NEW YORK TELEPHONE: (617)-864-7911				

100-519-5

EVENT	65-73	WINDWARD PASSAGE OIL SLICK	16 MAY 1973	1635.
<p>The following is an Ecology Spot Report from the U.S. Navy Ecology Report Network:</p> <ol style="list-style-type: none"> "TYPE OF OBSERVANCE: petroleum slick DATE AND TIME DISCOVERED: 1:25 p.m., 14 May 1973 SOURCE: unknown LOCATION: 19°44.0'N, 74°19.8'W EXTENT: approximately 8 nautical miles long and 60 yards wide DESCRIPTION: petroleum slick trail intermittent and oriented on 030-210° true axis ACTION TAKEN: none WEATHER: clear, true wind 075°, 12 knots, air temperature 84°F APPLICABLE OCEANOGRAPHIC CONDITIONS: none CAUSE: unknown. Appearance suggests vessel pumping bilges or stripping tanks OTHER OBSERVERS: units of task group 22.1" 				
EVENT NOTIFICATION REPORT				
TYPE OF EVENT		BIOLOGICAL		
DATE OF OCCURRENCE		14 MAY 1973		
LOCATION OF EVENT		WINDWARD PASSAGE		
70 MILES SE OF GUANTANAMO, CUBA				
REPORTING SOURCE		U.S.S. CORONADO,		
U.S. NAVY ECOLOGY REPORT NETWORK, USA				
SOURCE CONTACT		CHIEF, NAVAL OP-		
ERATIONS, DIV. OP-45, WASHINGTON,				
D.C., U.S.A.				
<small>This report is based on information received from the reporting source and is disseminated for information purposes only. The Smithsonian Institution bears no responsibility for its accuracy.</small>				
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500-519-5

EVENT	67-73	CHELSEA LANDSLIP	17 MAY 1973	1637.
<p>A large landslip occurred near Chelsea in the Province of Québec, just north of Ottawa, Ontario, on 8 May 1973. The slide started at 2:30 p.m. when a 1,000-foot section of Québec's new Highway 5 suddenly caved in, dropping nearly 30 feet.</p> <p>Thousands of tons of mud and rock shifted, leaving a path of destruction nearly a mile long and temporarily closing Highway 11. (No pavement had yet been poured on Highway 5, which runs one-half mile west of Highway 11; work crews were still leveling and filling the route.)</p> <p>The mass of clay and mud gouged a channel 200 yards wide, uprooting trees and boulders and cutting back the banks of the ravine more than 30 feet. The slide stopped at the Canadian Pacific Railway embankment, east of Highway 11 and just west of the Gatineau River.</p> <p>The landslip occurred in an area where terrain instability, especially after heavy rain, is well-known due to the uncertain properties of the Pleistocene Leda Clay.</p>				
EVENT NOTIFICATION REPORT				
TYPE OF EVENT		GEOPHYSICAL		
DATE OF OCCURRENCE		8 MAY 1973		
LOCATION OF EVENT		CHELSEA, QUÉBEC,		
CANADA				
REPORTING SOURCE		MR. PETER HARKER, CHIEF, GEOLOGICAL INFO. PROCESSING, DIV., GEOLOGICAL SURVEY, OTTAWA, ONT.		
SOURCE CONTACT		DR. NELSON GADD,		
TERRAIN SCIENCES DIVISION, GEOLOGICAL SURVEY OF CANADA, 601 BOUTH STREET, OTTAWA, ONTARIO K1A 0E8, CANADA				
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500-519-5

EVENT	74-73	BEAR GLACIER SURGE	31 MAY 1973	1647.
<p>The Bear Glacier at the head of the 57 mile-long Vanch Valley, is part of a huge ice field in the heart of the Pamir highlands. Among the glaciers that rise in the ice field is the 44 mile-long Fedchenko Glacier, longest in the Soviet Union. The Bear Glacier is rapidly advancing at the present time, and this has caused a serious flood threat to the Vanch Valley. The threat to the valley derives not from the glacier itself, but from huge temporary mountain lakes that have been building up inside valleys as the rapidly surging stream of ice plugged up valley mouths. As temperatures rise over the next few weeks, the dammed lakes are expected to wash out the ice barriers, unleashing the expected flood into the valley. The Bear Glacier, known as the Medvezhi in Russian, is one of the world's pulsating glaciers, which surge forward at unusually high rates at regular intervals, then retreat and advance suddenly again. The phenomenon has been attributed to the accumulation of ice at the head of the glacier, causing tremendous pressures to set the glacier periodically into rapid motion. The advancing glacier front is 500 feet high and 1800 feet wide. The advance was first detected on 17 April 1973. The normal rate of the Bear Glacier has been about 500 feet a year. In 1963 it took two months before a dammed-up lake in a tributary valley broke through the ice barrier to ravage the Vanch Valley. The flood was of such magnitude as to raise the level of the Vanch River by 10 feet at the town of Vanch 50 miles downstream from the glacier. According to the latest progress report, 350 million cubic feet of water have already accumulated, compared with about 200 million in 1963.</p>				
EVENT NOTIFICATION REPORT				
TYPE OF EVENT		GEOPHYSICAL		
DATE OF OCCURRENCE		APRIL-MAY 1973		
LOCATION OF EVENT		BEAR GLACIER, (APPROX. 39°N. Lat; 72°E. LONG) TADZHIK REPUBLIC, U.S.S.R.		
REPORTING SOURCE		INSTITUTE OF GEOGRAPHY, MOSCOW, U.S.S.R.		
SOURCE CONTACT		DR. LEONID D. DOLGUSHIN, INSTITUTE OF GEOGRAPHY, MOSCOW, U.S.S.R.		
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EVENT	77-73	ESSO BRUSSELS OIL SPILL	5 JUNE 1973	1650.
EVENT NOTIFICATION REPORT				
TYPE OF EVENT		BIOLOGICAL		
DATE OF OCCURRENCE		2 JUNE 1973		
LOCATION OF EVENT		NEW YORK CITY		
HARBOR, NEW YORK, U.S.A.				
REPORTING SOURCE		MR. L. WORTH		
PUBLIC AFFAIRS OFFICE 3RD COAST GUARD DISTRICT, NYC, U.S.A.				
SOURCE CONTACT		MR. LARRY WORTH		
SENIOR CHIEF PETTY OFFICER PUBLIC AFFAIRS OFFICE 3RD COAST GUARD DISTRICT GOVERNOR'S ISLAND, NY 10004, U.S.A.				
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<p>On Saturday, 2 June at 12:41 a.m., the <u>Sea Witch</u>, a container ship owned by American Export Isbrandtsen Lines of New York City, collided with the tanker <u>ESSO Brussels</u> owned by ESSO Marine of Antwerp, Belgium. The <u>ESSO Brussels</u> was moored at a federal anchorage in New York harbor and had just completed loading 6000 barrels of Nigerian crude oil at the time of the accident. She carried a total of 9,218,000 gallons of oil. The <u>Sea Witch</u> was outbound for Aruba and carried a general cargo.</p> <p>The amount of oil spilled is not known. Some of the oil was burned off in the violent explosion which followed the crash. The oil which did not spill will be recovered from the <u>ESSO Brussels</u> as soon as the ships cool sufficiently. A northwest wind and outgoing tides pushed much of the oil involved in the spill out to sea. Some of the viscous, tar-like oil has come up on the beaches of Staten Island and Coney Island. Three companies, Coastal Services, Inc. of Elizabeth, New Jersey; Clean Water, Inc. of Tom's River, New Jersey; and Metropolitan Petroleum Co. of New York City, New York, were contracted to help with the clean-up, which is under the control of the Coast Guard and the Federal Environmental Protection Agency. The oil is being raked up with pitchforks. The clean-up is expected to be completed by the end of this week.</p>				

500-slp-5

EVENT	79-73	SANTA BARBARA OIL SLICK	7 JUNE 1973	1652.
EVENT NOTIFICATION REPORT				
TYPE OF EVENT		BIOLOGICAL		
DATE OF OCCURRENCE		4 JUNE 1973 & CONT		
LOCATION OF EVENT		COAL OIL POINT		
CALIFORNIA, U.S.A.				
REPORTING SOURCE		MR. ED CONLON		
7TH COAST GUARD DISTRICT CALIF., U.S.A.				
SOURCE CONTACT		MR. ED CONLON		
CHIEF PETTY OFFICER PUBLIC INFORMATION 7TH COAST GUARD DISTRICT LONG BEACH, CALIFORNIA, U.S.A.				
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<p>On 4 June 1973, the natural seepage of oil near Coal Oil Point began to increase causing a large oil slick off the Santa Barbara coast in California. Coast Guard helicopters estimated the slick to be 5 miles long and 50-75 yards wide by Tuesday, 5 June. The quantity of oil involved is not known.</p> <p>Divers reported the entire undersea area to be pock-marked with holes from 6" to 3' in diameter out of which gas was bubbling. Schools of smelt and anchovies, several seals, and a shark were seen swimming normally in the area, apparently unaffected by the oil. No damage to birds or marine life has been reported.</p> <p>The slick is now running parallel to the coast about 1-1.5 miles off shore. No oil has washed up on the beaches so far, and no clean-up is being attempted. The cause of the sudden increase in natural seepage is not known.</p>				

500-slp-5

EVENT	84-73	JAPANESE SEAWEED INTRODUCTION TO ENGLAND	19 JUNE 1973	1660.
EVENT NOTIFICATION REPORT				
TYPE OF EVENT		BIOLOGICAL		
DATE OF OCCURRENCE		1971 AND CONTIN.		
LOCATION OF EVENT		PEMBRIDGE, ISLE OF WIGHT, GREAT BRITAIN		
REPORTING SOURCE		AMERICAN EMBASSY		
LONDON, ENGLAND				
SOURCE CONTACT		DR. G. JONES DR. FARNHAM		
DEPARTMENT OF BIOLOGICAL SCIENCE				
PORTSMOUTH POLYTECH PORTSMOUTH, ENGLAND				
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<p>A species of Japanese seaweed, <u>Sargassum muticum</u>, has been introduced to England's south coast along the shores of Pembroke and the Isle of Wight. The seaweed has been growing in this region for at least two years and is threatening local seaweed species. The manner of introduction of <u>Sargassum muticum</u> to Great Britain is unknown.</p> <p><u>Sargassum muticum</u> grows to a height of about 2 meters. The rate of growth is 1 to 2 centimeters per day. It grows on rocky shores and its range extends from the beach to a mile out from shore.</p> <p>The foreign seaweed is being removed by hand from the beaches. It is hoped that it will eventually be eliminated.</p>				

500-slp-5

EVENT	92-73	TIATIA VOLCANIC ERUPTION	16 JULY 1973	1677.
EVENT NOTIFICATION REPORT				
TYPE OF EVENT		GEOPHYSICAL		
DATE OF OCCURRENCE		SPRING 1973 AND CONTINUING		
LOCATION OF EVENT		KUNASHIR ISLAND, KURIL ISLANDS, U.S.S.R.		
REPORTING SOURCE		INSTITUTE OF VOL- CANOLOGY, PETROPAYLOVSK KAMCHATSKIY 3		
SOURCE CONTACT		DR. Y. M. DOUBIK, INSTITUTE OF VOLCANOLOGY, PETROPAYLOVSK		
KAMCHATSKIY 3, U.S.S.R.				
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<p>The <u>Tiatia</u> volcano began erupting several months ago after a 161-year period of inactivity. (In August 1812 there were normal explosions, and in the middle of the 19th century solfatara fields and vapors.)</p> <p>During the current activity a crater has formed at the foothills of the eastern slope and is ejecting ash at one-second intervals. The eruption cloud reaches a height of 5 kilometers above the summit, and flames can be observed at night.</p> <p>The explosions are audible up to a distance of 50 kilometers from the volcano, and the depth of ash near the volcano measures up to 60 cm thick.</p> <p><u>Tiatia</u> is a strato volcano of the somma type, located at the northeastern extremity of <u>Kunashir Island</u>. The geographical position of the central cone is latitude 44°12'N., longitude 146°15'E. The height above sea level is 1822 meters.</p>				

500-slp-5

EVENT	93-73	NISHINO-SHIMA SUBMARINE VOLCANIC ERUPTION	18 JULY 1973	1678.
<p>A small submarine volcanic eruption near Nishino-shima Island was reported to have occurred at about 11:00 a.m. on 30 May 1973. The crew of the fishing boat Daini-Ebisumaru reported white smoke reaching a maximum height of 100 meters. The smoke was rising from the surface of the sea east of the island at intervals of a few minutes. During an aerial inspection by the Japan Maritime Safety Agency on 31 May, the point of eruption was determined to be about 400 meters east of Nishino-shima. A whirlpool was noticed around the site, and yellowish-green sea water and floating pumice were seen about five kilometers north of the site. According to Dr. Tokiko Tiba, The National Science Museum, Tokyo, the crew of the Tokai-Daigaku-Maru 2 of Tokai University observed two black rocks protruding 1-1.5 meters above the sea surface 600 meters south of Nishino-shima at 18h30m 1 July 1973. A fan-shaped yellow belt of water about 3 kilometers long was moving at a rate of 3 knots.</p> <p>Nishino-shima Island is located at latitude 27°14.6'N., longitude 140°52.6'E. It is 650 m long by 200 m wide, and the highest point of land is 25 m above sea level. There is no historical record of an eruption on the island, nor of a submarine eruption around it.</p>				
EVENT NOTIFICATION REPORT				
TYPE OF EVENT		GEOPHYSICAL		
DATE OF OCCURRENCE		30 MAY 1973		
LOCATION OF EVENT		IZU-MARIANA		
(BONIN) ISLANDS, JAPAN				
REPORTING SOURCE		JAPAN		
METEOROLOGICAL AGENCY				
SOURCE CONTACT		SEISMOLOGICAL DIV.		
JAPAN METEOROLOGICAL AGENCY 1-3-4 OTEMACHI, CHIYODA-KU, TOKYO 100, JAPAN				
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s00-slp-5

EVENT	94-73	CURACOA REEF SUBMARINE VOLCANIC ACTIVITY	19 JULY 1973	1679.
<p>Mr. Graf has notified the Center by cable that:</p> <p>"American Airlines Flight No. 202, from Nandi, Fiji, to Pago Pago, reports what appears to be volcanic action in the area 15 degrees 20 minutes South, 173 degrees 55 minutes West, approximately 240 kilometers southwest of American Samoa, on a direct line from Nandi to Pago Pago.</p> <p>"The Activity is centered around Curacoa Reef. The aircraft reports that it appears to be a 'gigantic oil spill', with water boiling up and steam."</p>				
EVENT NOTIFICATION REPORT				
TYPE OF EVENT		GEOPHYSICAL		
DATE OF OCCURRENCE		JULY 1973		
LOCATION OF EVENT		SAMOA ISLANDS,		
SOUTH PACIFIC OCEAN				
REPORTING SOURCE		MR. DONALD GRAF,		
GOVERNMENT OF AMERICAN SAMOA				
SOURCE CONTACT		MR. DONALD GRAF,		
GOVERNMENT ECOLOGIST, GOVERNMENT OF AMERICAN SAMOA, PAGO PAGO, AMERICAN SAMOA 96799				
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s00-slp-5

EVENT	96-73	MOUNT LANGILA VOLCANIC ERUPTION	20 JULY 1973	1681.
<p>The eruption of lava from the No. 3 crater of Mount Langila volcano in western New Britain commenced on 12 July 1973. There had been increased ash and steam emission during the preceding month.</p> <p>The lava flow was approximately one kilometer long and 300 meters wide by 18 July with lava still being extruded accompanied by loud rumblings.</p> <p>Only two other flows have been recorded this century, in 1960 and 1967. Both of these were small.</p> <p>Mount Langila is a strato volcano located 11 kilometers south of Cape Gloucester, which is on the northern coast of the western end of New Britain. The geographical coordinates are lat. 5°31'30" S., long. 148°25'00" E. The volcano rises 1,189 meters above sea level.</p>				
EVENT NOTIFICATION REPORT				
TYPE OF EVENT		GEOPHYSICAL		
DATE OF OCCURRENCE		12 JULY 1973 AND CONTINUING		
LOCATION OF EVENT		ISLAND OF NEW BRITAIN, PAPUA/NEW GUINEA		
REPORTING SOURCE		VOLCANOLOGICAL OBSERVATORY, NEW BRITAIN		
SOURCE CONTACT		DR. O. COOKE, VOLCANOLOGICAL OBSERVATORY, P. O. BOX 386, RABAU, NEW BRITAIN, TERRITORY OF PAPUA/NEW GUINEA		
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s00-slp-5

EVENT	97-73	LAGOA RODRIGO DE FREITAS FISH KILL	23 JULY 1973	1682.
<p>On 11-15 June 1973 a fish kill occurred in Lagoa Rodrigo de Freitas, a lagoon of brackish water in the south zone of Rio de Janeiro bordering the districts of Ipanema and Leblon, and connected by a canal to the ocean. The area affected was about 2.59 sq. km. and the average depth was 2.8 m. Several tons of dead fish were removed. Three main species were killed: mullet (<i>Mugil spp.</i>), menhaden (<i>Brevoortia spp.</i>) and snook (<i>Centropomus undecimalis</i>).</p> <p>Fish kills have been recorded in Lagoa since 1921. Twenty-six kills have been recorded since 1953. These kills occurred at various times throughout all months of the year. Reported tonnages removed from the lagoon vary from 2-450 T, the latter being the largest kill ever recorded (November 1971). Previous to June, the most recent kill occurred in mid-November 1972 when an estimated 95 T of fish were removed.</p> <p>Lagoa has been increasingly polluted with sewage over the last century. Exchange of water from the sea is minimal. Deep sludge on the bottom supports anaerobic bacteria and produces H₂S. Periodic disturbances of layering in the water, which are produced by meteorological factors (solar heating, evaporation, surface winds, etc.) bring lower layers of water up to the surface. Fish kills are thought to be caused more by H₂S poisoning than oxygen depletion.</p> <p>The state of Guanabara's agency SURSAN (Superintendencia de Urbanizacao e Saneamento) is investigating the kills in an attempt to find a solution to the problem.</p>				
EVENT NOTIFICATION REPORT				
TYPE OF EVENT		BIOLOGICAL		
DATE OF OCCURRENCE		11-15 JUNE 1973		
LOCATION OF EVENT		LAGOA RODRIGO DE FREITAS, SOUTH ZONE OF RIO DE JANEIRO BRAZIL		
REPORTING SOURCE		AMERICAN CONSULATE GENERAL, RIO DE JANEIRO, BRAZIL		
SOURCE CONTACT		SCIENCE ATTACHE AMERICAN CONSULATE GENERAL, RIO DE JANEIRO, BRAZIL		
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s00-slp-5

EVENT	99-73	HEMLOCK LOOPER INFESTATION	31 JULY 1973	1689.
<p>There has been an infestation of hemlock looper, or geometric inch worm, in Essex County, Massachusetts. This insect primarily attacks hemlock trees.</p> <p>The infestation actually began two years ago. It was not serious the first year, but was fairly heavy in 1972. This year reports indicate that the infestation is even heavier and more widespread. Outbreaks such as this normally collapse after 2-3 years. The last hemlock looper outbreak in Essex County occurred 20 years ago. There is no record before that.</p> <p>An aerial survey has not yet been conducted this year. Last year's survey showed damage in the towns of Essex, Manchester and West Gloucester. It was also thought that there was damage in Hamilton and Wenham, but this did not show from the air.</p> <p>After the moths mate, the eggs are laid on the twigs and needles of the hemlock. When the caterpillars hatch, they are very small and develop slowly. The feeding (1973) has just begun.</p> <p>During the infestation 20 years ago, DDT was used for control. Since DDT can no longer be used, there is no totally effective means of controlling the insects. Sevin is a compound which is being used to fight the current infestation. The caterpillars are presently in their most vulnerable stage.</p>				
<p>EVENT NOTIFICATION REPORT</p>				
TYPE OF EVENT		BIOLOGICAL		
DATE OF OCCURRENCE		1971-1973		
LOCATION OF EVENT		ESSEX COUNTY		
MASSACHUSETTS, U.S.A.				
REPORTING SOURCE		BUREAU OF INSECT PEST CONTROL, DEPT. OF NATURAL RESOURCES, BOSTON, MASSACHUSETTS, U.S.A.		
SOURCE CONTACT		MR. HOOD		
<p>CHIEF OF THE BUREAU OF INSECT PEST CONTROL, DEPT. OF NATURAL RESOURCES, 100 CAMBRIDGE ST., BOSTON, MASSACHUSETTS, U.S.A.</p> <p><small>This report is based on notifications received from the Center's correspondents and is disseminated for information purposes only. The Smithsonian Institution bears no responsibility for its accuracy.</small></p>				
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sao-slp-5

EVENT	106-73	WESTERN U.S.A. FOREST FIRES	22 AUGUST 1973	1698.
<p>There have been numerous forest fires in the Western United States of America in the past week and a half and these fires have had a major impact on the environment. As of Tuesday, 21 August there were 25 uncontrolled large fires in the Western U.S.A. A total area of about 62.60 sq. km. (130,000 acres) was affected. This included fires on private, state, and federal land.</p> <p>The fires that occurred in the national forests of the western U.S.A. were as follows:</p> <p>CALIFORNIA: Pelican Fire, El Dorado National Forest, 36.42 sq. km. (9,000 acres), 2,000 men fighting fire, not under control.</p> <p>OREGON: Granite Fire, Stanislaus National Forest, 60.70 sq. km. (15,000 acres), brought under control Tues., 21 Aug.</p> <p>OREGON: Freezeout Fire, Malloa-Whitman National Forest, 32.37 sq. km. (8,000 acres), 1,000 men on the fire, not yet under control.</p> <p>IDAHO: Cougar Creek Fire, Nez-Perce National Forest, 12.14 sq. km. (3,000 acres), brought under control on 21 Aug.</p> <p>Bull Creek Fire, Nez-Perce National Forest, 20.44 sq. km. (5,050 acres), brought under control on 21 Aug.</p> <p>Pine Creek Fire, Boise National Forest, 9.31 sq. km. (2,300 acres), brought under control on 21 Aug.</p> <p>Snake Creek Fire, Bitter Root National Forest, 6.80 sq. km. (1,680 acres), 700 men on the fire, control expected today (Wed., 22 Aug.).</p> <p>Goat Creek Fire, Flathead National Forest, 1.86 sq. km. (459 acres), control expected today (Wed., 22 Aug.).</p> <p>Tri-Creek Fire, Lolo National Forest, 24.28-32.37 sq. km. (6,000-8,000 acres, not under control, 935 men fighting the fire. MONTANA: Caribou Mtn. Fire, Coutine National Forest, 32.78 sq. km. (8,100 acres)-24.28 sq. km. (6,000 acres) in Canada and 8.50 sq. km. (2,100 acres) in the U.S.A.</p>				
<p>EVENT NOTIFICATION REPORT</p>				
TYPE OF EVENT		BIOLOGICAL		
DATE OF OCCURRENCE		MID AUGUST 1973		
LOCATION OF EVENT		WESTERN U.S.A.		
REPORTING SOURCE				
DIV. OF FIRE MANAGEMENT, U.S. FOREST SERVICE, U.S.O.A. WASHINGTON, D.C., U.S.A.				
SOURCE CONTACT		EDWIN YOUNG		
<p>DIV. OF FIRE MANAGEMENT, U.S. FOREST SERVICE, U.S. DEPT. OF AGRICULTURE, WASHINGTON, D.C., U.S.A.</p> <p><small>This report is based on notifications received from the Center's correspondents and is disseminated for information purposes only. The Smithsonian Institution bears no responsibility for its accuracy.</small></p>				
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sao-slp-5

EVENT	109-73	PUEBLA EARTHQUAKE	28 AUGUST 1973	1701.
<p>Mr. Stover, National Earthquake Information Center, reported the following information to the Center:</p> <p>Origin Time: 095041.7 GMT, 28 August 1973</p> <p>Magnitude: 7.0 Richter</p> <p>Epicenter: 18.3° N., 96.5° W.</p> <p>Location: 150 miles S.E. of Mexico City, Mexico</p> <p>Depth: 100 kilometers</p>				
				
<p>First reports from Mexico indicate 200 persons were killed and 800 injured in six cities.</p>				
<p>EVENT NOTIFICATION REPORT</p>				
TYPE OF EVENT		GEOPHYSICAL		
DATE OF OCCURRENCE		28 AUGUST 1973		
LOCATION OF EVENT		MEXICO, 150 MILES S.E. OF MEXICO CITY		
REPORTING SOURCE		MR. CARL STOVER		
NOAA/ERL EARTH SCIENCES LABORATORIES		BERKELEY, CALIFORNIA, U.S.A.		
SOURCE CONTACT		MR. CARL STOVER		
NOAA/ERL EARTH SCIENCES LABORATORIES		NATIONAL EARTHQUAKE INFORMATION CENTER, BOULDER, COLORADO, 80302 USA		
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sao-slp-5

EVENT	112-73	INDUS RIVER FLOODING	29 AUGUST 1973	1705.
<p>Heavy rainfall on the mountains of Kashmir sent water surging through rivers such as the Hariab and Junjab two weeks ago. The waters of the Indus abruptly flooded towns in Junjab and burst through embankments. For 10 days the swollen waters of the Indus River moved from Punjab to northern Sind. The cotton crop has been damaged; wheat stored on fields has been washed away and hundreds of towns have been submerged in 4.56 to 6.08 meters (15 to 20 feet) of water.</p> <p>The Indus may have reached a peak, especially in stricken Punjab, and floodwaters may ease. In Punjab, the hardest hit state, nearly 300 persons have died, 70,000 cattle have perished or are missing, and more than 255,000 houses have been destroyed.</p>				
<p>EVENT NOTIFICATION REPORT</p>				
TYPE OF EVENT		BIOLOGICAL		
DATE OF OCCURRENCE		AUGUST 1973		
LOCATION OF EVENT		PUNJAB-N. SIND, PAKISTAN (26°43'N, 67°41'E)		
REPORTING SOURCE		KARACHI WIRE		
SERVICE, KARACHI, PAKISTAN				
SOURCE CONTACT		KARACHI WIRE		
SERVICE, KARACHI, PAKISTAN				
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EVENT	117-73	SANTIAGUITO VOLCANIC ERUPTION	24 SEPTEMBER 1973	1711.
<p>The following report is based on information received from Dr. Samuel Bonis:</p> <p>The Santiaguito Volcanic Dome erupted violently at 7 AM on 16 September 1973. Large volumes of ash were produced which have fallen as far away as Chiapas, Mexico. The ash cloud was apparently associated with a nuée ardente which descended the Dome from the Caliente vent to the valley of the Rio Concepcion. No damage to populated areas was reported as of 17 September. If the eruption is confirmed to have been a nuée ardente, then it is the second major such event this year from Santiaguito. On 19 April 1973, a large nuée descended from the caliente vent into the Rio Nima Segundo, one kilometer east of the Rio Concepcion. This April nuée travelled four kilometers and devastated an area of about three square kilometers. The nearest habitation south of Santiaguito in the direction of travel of the nuées is seven kilometers from the Dome. Santiaguito has been nearly continuously active since it first appeared in 1922. Most of the recent activity has consisted of dome extrusion and blocky lava flows. The 1973 nuée activity represents a significant change. Previously, large nuées at Santiaguito occurred only in a five-year period between 1929 and 1934.</p> <p>Note: Santiaguito is the name of the 1922 lava dome of the Santa Maria volcano, located at latitude 14°45.5'N., longitude 91°32.9'W. The height of the top above sea level is 3,768 meters. Santa Maria is a strato volcano with an explosion crater on the southwest slope and a lava dome.</p>				
EVENT NOTIFICATION REPORT				
TYPE OF EVENT		GEOPHYSICAL		
DATE OF OCCURRENCE		16 SEPTEMBER 1973		
LOCATION OF EVENT		GUATEMALA,		
CENTRAL AMERICA				
REPORTING SOURCE		WILLIAM I. ROSE, JR.		
GEOLOGY DEPT., MICHIGAN TECHNICAL UNIVERSITY, HOUGHTON, MICHIGAN, USA				
SOURCE CONTACT		DR. SAMUEL BONIS		
INSTITUTO GEOGRAFICO NACIONAL, AV. DE LAS AMERICAS 5-76, ZONA 8,				
GUATEMALA CITY, GUATEMALA				
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EVENT	130-73	CHORISTONEURA POPULATION INCREASE	11 OCTOBER 1973	1727.
<p>There has been a massive outbreak of the spruce bud worm (<i>Choristoneura fumiferana</i>), an insect native to the United States and Canada, in northern Maine, U.S.A. About three to four million acres of forest have been affected in that region. Some large outbreaks are also occurring throughout the provinces of Ontario, Québec and New Brunswick in Canada. In fact, there is now a major upswing in population numbers of this moth throughout its natural range. This massive population increase actually began about two or three years ago, but the numbers of these moths is especially high this year.</p>				
EVENT NOTIFICATION REPORT				
TYPE OF EVENT		BIOLOGICAL		
DATE OF OCCURRENCE		1971-73 & CONTIN.		
LOCATION OF EVENT		N. E. UNITED STATES OF AMERICA AND CANADA		
REPORTING SOURCE		J. PHIPPS, BIOL. DEPT., MEMORIAL UNIV., ST. JOHN'S, NEWFOUNDLAND, CANADA		
SOURCE CONTACT		JOHN CHANSLER		
ASST. DIR., FOREST PEST CONTROL DIV., U.S. FOREST SERVICE, ROSLAND PLAZA EAST, ARLINGTON, VIRGINIA, U.S.A.				
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500-sip-5

EVENT	131-73	DOUGLAS FIR TUSSOCK MOTH OUTBREAK	12 OCTOBER 1973	1728.
<p>The Douglas fir tussock moth (<i>Hemerocampa pseudotsugae</i>) has been in outbreak proportions for the past two years and is presently infesting approximately 700,000 acres of trees in eastern Oregon and Washington and northern Idaho. The total public and private timber affected last year was 200,000 acres.</p> <p>According to Gordon George, a spokesman for the Walla Walla District of the Umatilla National Forest, Washington, 235 million board ft. of timber damaged by the moths will be sold for the next fiscal year. Only 32.5 million board ft. of moth-damaged timber were sold last year.</p> <p>The Federal Environmental Protection Agency (EPA), which banned the use of DDT, rejected the United States Forest Service's emergency request to use the pesticide against the tussock moth earlier this year. The Service is now seeking a DDT substitute and researchers expect to have test results in several weeks. If a substitute is not found, the Service may renew its request to the EPA. Agricultural Secretary Earl L. Butz has promised support if no substitute is found.</p> <p>The tussock moth is native to the western half of North America. When weather conditions and other factors are favorable, there is a population explosion. According to entomologists, the explosion follows several years of inconspicuous build-up and is not usually noticed until the trees begin to die in the second year of the three-year cycle. Normally a virus appears in the moth population and kills off the infestation in the third year. Foresters and pest control specialists, however, say that may not happen this time as there are several infestations in the area, and as one dies off, others may replace it.</p>				
EVENT NOTIFICATION REPORT				
TYPE OF EVENT		BIOLOGICAL		
DATE OF OCCURRENCE		1972-1973		
LOCATION OF EVENT		WASHINGTON, IDAHO, OREGON, U.S.A.		
REPORTING SOURCE		GORDON K. IRLE		
CASHMERE HIGH SCHOOL, CASHMERE, WASHINGTON, U.S.A.				
SOURCE CONTACT		JOHN CHANSLER		
ASST. DIR., FOREST PEST CONTROL, ROSLAND PLAZA EAST, ARLINGTON, VA., U.S.A.				
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EVENT	134-73	MASSACHUSETTS PINE LOOPER OUTBREAK	16 OCTOBER 1973	1732.
<p>The pine looper (<i>Lambdina athasaria pellucidaria</i>) is in outbreak proportions in Plymouth County and on Cape Cod in Massachusetts. It is attacking the pitch pines (<i>Pinus rigida</i>), a major species of pine in those areas, and is causing considerable damage.</p> <p>The population numbers of this insect have been building up since 1971 when it defoliated 11,000 acres on Cape Cod. In 1972 the amount of defoliated acreage nearly quadrupled as 42,700 acres were visibly damaged.</p> <p>Aerial treatment with malathion was used for control.</p>				
EVENT NOTIFICATION REPORT				
TYPE OF EVENT		BIOLOGICAL		
DATE OF OCCURRENCE		1973		
LOCATION OF EVENT		PLYMOUTH COUNTY AND CAPE COD, MASSACHUSETTS, U.S.A.		
REPORTING SOURCE		CHARLES S. HOOD		
CHIEF, BUREAU OF AGRICULTURAL PEST CONTROL, DEPT. OF NAT. RES., MASS.				
SOURCE CONTACT		JOHN F. CHANSLER		
DIV. OF FOREST PEST CONTROL, FOREST SERVICE, U.S. DEPT. OF AGRICULTURE, WASHINGTON, D.C., U.S.A.				
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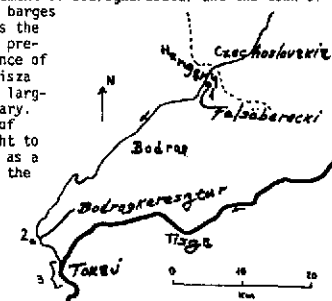
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EVENT	139-73	SAKURAZIMA VOLCANIC ACTIVITY	1 NOVEMBER 1973	1738.
<p>The Minamidake summit crater of the Sakurazima volcano has been quite active throughout most of 1973.</p> <p>In June, four explosions occurred on the first of the month, with smoke reaching an altitude of 5,000 meters, and large quantities of cinders, ash, and lapilli being ejected. In July, explosions took place on the 17th and the 22nd. In August there were a total of 17 explosions. On the 18th and 19th the smoke reached an elevation of 4,000 meters, and on 24 August 3,000 m. Activity increased significantly in September and October, with 14 explosions recorded in September, maximum height of smoke 3,000m, and 36 explosions during the first 18 days of October. The explosion on 18 October was the 76th this year. The maximum height of the volcanic smoke was 3,500m, and 40 explosion earthquakes were frequently recorded at the Kagosima Local Meteorological Observatory.</p>				
EVENT NOTIFICATION REPORT				
TYPE OF EVENT		GEOPHYSICAL		
DATE OF OCCURRENCE		1973		
LOCATION OF EVENT		SOUTHERN PART OF		
THE ISLAND OF KYUSU, JAPAN				
REPORTING SOURCE		SEISMOLOGICAL DIV		
JAPAN METEOROLOGICAL AGENCY				
SOURCE CONTACT		SEISMOLOGICAL DIV		
JAPAN METEOROLOGICAL AGENCY 1-3-4 OTEMACHI				
CHIYODA-KU, TOKYO 100, JAPAN				
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500-slp-5

EVENT	145-73	BODROG RIVER OIL SLICK	16 NOVEMBER 1973	1745.
<p>On 9 November, 1973, a large quantity (tons) of heavy oil was observed on the Bodrog River, in the vicinity of the village of Felsőberecki in northeastern Hungary. The original oil slick was about 8 km. in length. At a later date, however, some smaller oil slicks were also observed. The oil appeared to be passing down the River from Czechoslovakia into Hungary.</p> <p>Since the oil represented a danger to the fauna and flora of the River, a three-step dam of brushwood was constructed between the settlement of Bodrogkeresztur and the town of Tokaj. Two rows of barges were placed across the River in order to prevent further advance of oil towards the Tisza River, the second largest river in Hungary. A large quantity of perlite was brought to the scene for use as a fixing medium for the oil.</p>				
EVENT NOTIFICATION REPORT				
TYPE OF EVENT		BIOLOGICAL		
DATE OF OCCURRENCE		9 NOVEMBER 1973		
LOCATION OF EVENT		BODROG RIVER		
FELSŐBERECKI, NORTHEASTERN HUNGARY (48°08' N, 21°23' E)				
REPORTING SOURCE		DR. PÉTER HEDER-VÁRI, 1023 BUDAPEST, II. ÁRPÁD FEJEDÉLEM UT. JA. 40--41, HUNGARY		
SOURCE CONTACT		DR. PÉTER HEDER-VÁRI, 1023 BUDAPEST, II. ÁRPÁD		
FEJEDÉLEM UT JA 40--41, HUNGARY				
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EVENT	147-73	PROBABLE VOLCAN WOLF ERUPTION	30 NOVEMBER 1973	1749.
<p>"Galapagos National Park wardens on west flank of Volcan Wolf two weeks ago heard strong and constant rumbling from caldera rim and continued through the night. No reports of eruptive cloud, but clouds frequently obscure summit and volcano cannot be seen from inhabited parts of archipelago. Darwin Station seismograph reports no unusual seismicity, but earthquake swarm early this year (See Event Card 1588) appeared centered on the southeast flank of Wolf, the site of the last, largest (Mb4.9), and best-located event on March 19, 1973. Darwin Station party is en route to investigate and SKYLAB will photograph. The last recorded eruptions of this, the northernmost shield volcano on the largest Galapagos Is., were on the southeast flank in 1948 and 1963. The equator crosses the south end of the caldera at 91.3°W, and the rim is 6 km in diameter, 1710 meters above the sea, and 670 meters above the caldera floor. Reports of Galapagos volcanism in early August of this year appear to have been influenced by NASA press release on successful SKYLAB photography of "Galapagos Eruptive Centers". No Galapagos eruption was sighted by SKYLAB II but shortly after the press release emerged from Ecuadorian newspapers clouds and lights were reported from the volcano at Cape Berkeley, N.W. Isabela. These reports have been investigated on the volcano by Darwin Station personnel and no evidence of an August eruption has been found. The only other Galapagos volcanism known since the 1968 Fernandina caldera collapse is the 1972 Fernandina eruption reported in June of this year (Event Card 1659). We now have a more accurate date for this eruption which had not taken place on April 22. During telephone notification of the Wolf activity to Dr. Bert Nordlie, we have learned that the eruption was prior to his visit to Fernandina in mid-July of 1972, but it was not reported to the Darwin Station or other Galapagos workers."</p>				
EVENT NOTIFICATION REPORT				
TYPE OF EVENT		GEOPHYSICAL		
DATE OF OCCURRENCE		NOVEMBER 1973		
LOCATION OF EVENT		ISLA ISABELA,		
GALAPAGOS ISLANDS, ECUADOR				
REPORTING SOURCE		DR. TOM SIMKIN		
SMITHSONIAN INSTITUTION, WASH., D.C.				
SOURCE CONTACT		DR. PETER KRAMER		
CHARLES DARWIN RESEARCH STATION				
GALAPAGOS ISLANDS, ECUADOR				
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EVENT	150-73	GALAPAGOS ISLANDS ERUPTIONS	13 DECEMBER 1973	1752.
<p>"Observations from space show eruption on Volcan Fernandina, support previous indication of eruption on Volcan Wolf (Card 1749), and suggest strong thermal activity on Volcan Darwin. NOAA-2 satellite recorded vapor plume extending 200 km WSW from Fernandina summit 1534Z December 10. Infrared from same satellite shows arcuate hot spot at south end of caldera: the site of a small fissure eruption 16 months ago, caldera collapse in 1968, and large caldera lake. SKYLAB, on first clear-day pass since Wolf report, photographed eruption at 1335Z December 11 and described smoke issuing from Fernandina. December 12 NOAA-2 imagery shows fainter plume only 50 kilometers long at 1500Z and thermal pattern same as December 10.</p> <p>"NOAA-2 shows additional hot spots on east flank of Volcan Wolf and east flank of Volcan Darwin (20 kilometers S. of Wolf).</p> <p>"Only known Galapagos earthquakes in last month are 1245Z November 30 (Mb 3.9), 0555Z December 10 (Mb 4.2), and 0111Z December 11 (Mb 3.9). Accurate locations not yet available. No reports yet from Darwin Station party investigating event on ground."</p>				
EVENT NOTIFICATION REPORT				
TYPE OF EVENT		GEOPHYSICAL		
DATE OF OCCURRENCE		NOV.-DEC. 1973		
LOCATION OF EVENT		GALAPAGOS		
ISLANDS, ECUADOR				
REPORTING SOURCE		DR. F. PARMENTER, (NOAA); DR. M. McEWEN, (NASA); AND DR. J. FILON, (MIT)		
SOURCE CONTACT		DR. TOM SIMKIN, DEPT. OF MINERAL SCIENCES, SMITHSONIAN INSTITUTION, WASHINGTON, D. C. 20560 USA		
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500-slp-5

EVENT	156-73	ERTA'ALE VOLCANIC ACTIVITY	20 DECEMBER 1973	1759.
EVENT NOTIFICATION REPORT				
TYPE OF EVENT		GEOPHYSICAL		
DATE OF OCCURRENCE		DECEMBER 1973		
LOCATION OF EVENT		ETHIOPIA		
(LAT. 13°37'N., LONG. 40°36'E.)				
REPORTING SOURCE		UNIVERSITÉ PARIS-SUD, LABORATOIRE DE PÉTROGRAPHIE-VOLCANOLOGIE		
SOURCE CONTACT		DR. JACQUES VARET, LABORATOIRE DE PÉTROGRAPHIE-VOLCANOLOGIE, UNIVERSITY PARIS-SUD, BATIMENT 504, 91405 ORSAY, PARIS, FRANCE		
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<p>"We are presently observing Erta'Ale from both air and land. A new track has been built by H. M. Ras Mengesha Seyoum, Governor Tigre Province, reaching the crater. I was personally at the crater for the last two nights, and both craters are still active with permanent lava-lake activity and fountaining.</p> <p>"Eruptions are frequently observed from both craters, filling the main elliptic sink and even overflowing the sink towards the south.</p> <p>"An eruption also recently occurred on the northern flank, some 100 m. long, in a northerly direction. The center of eruption of this flow is located on the northern edge of the crater and is still active (fumaroles).</p> <p>"I intend to return to Erta'Ale within a few days and also during the first days of January."</p>				

500-slp-5

EVENT	3-74	CHILE-BOLIVIA BORDER EARTHQUAKE	2 JANUARY 1974	1766.
EVENT NOTIFICATION REPORT				
TYPE OF EVENT		GEOPHYSICAL		
DATE OF OCCURRENCE		2 JANUARY 1974		
LOCATION OF EVENT		POTOSI STATE, BOLIVIA, NEAR CHILE BORDER		
REPORTING SOURCE		DR. MARKUS BÄTH, SEISMOLOGICAL INSTITUTE, UPPSALA, SWEDEN		
SOURCE CONTACT		NATIONAL EARTHQUAKE INFORMATION SERVICE (R10/S) U. S. GEOLOGICAL SURVEY BOULDER, COLORADO 80302, U.S.A.		
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<p>A strong earthquake shook southern Bolivia, northern Argentina, and northeastern Chile on 2 January 1974. According to the Seismological Institute of the University of Chile, the tremor lasted for one minute and 45 seconds. Maximum intensity was felt in Calama, Antofagasta Province, Chile. Many buildings were cracked in Calama, but none collapsed. Three people were injured at Chuquicamata, a large copper mine near Calama.</p> <p>Origin Time: 104231.9 GMT, 2 January 1974 Magnitude: 6.9 Richter Epicenter: 22.3° S. latitude, 68.0° W. longitude Location: Potosi State, Bolivia (near Chile Border) Depth: 120 kilometers</p>				

500-slp-5

EVENT	5-74	DUCK ISLAND OIL SPILL	4 JANUARY 1974	1768.
EVENT NOTIFICATION REPORT				
TYPE OF EVENT		BIOLOGICAL		
DATE OF OCCURRENCE		3 JANUARY 1974		
LOCATION OF EVENT		DUCK ISLAND		
JUST SO. OF TRENTON, NEW JERSEY, USA (40°15'N. 74°43'W)				
REPORTING SOURCE		RALPH EISEMAN		
HIGHLAND PK. HIGH SCHOOL, HIGHLAND PK., ILLINOIS, U.S.A.				
SOURCE CONTACT		HOWARD LAMP'L		
FEDERAL ENVIRONMENTAL PROTECTION AGENCY, EDISON, NEW JERSEY				
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<p>On 3 January 1974 an oil tank at the Mobit Oil facility on Duck Island just south of Trenton, New Jersey ruptured and 600,000 gallons of No. 2 fuel oil spilled out: 570,000 gallons were contained within the dike system surrounding the tank, 10,000 gallons were trapped in a swamp and about 20,000 gallons entered the Delaware River. Approximately five miles of the river were affected (the river is a mile wide in the area of the spill).</p> <p>The oil trapped by the dikes is being returned to the tank through a separator system. Oil is being removed from the swamp and the Almo Clean-up Company has been contracted to clean up the water.</p> <p>The extent of the damage to the flora and fauna of the river and swamp is unknown at present.</p>				

500-slp-5

EVENT	7-74	LA PAMPA PROVINCE FOREST FIRES	10 JANUARY 1974	1771.
EVENT NOTIFICATION REPORT				
TYPE OF EVENT		BIOLOGICAL		
DATE OF OCCURRENCE		16 DECEMBER 1973-6 JANUARY 1974		
LOCATION OF EVENT		LA PAMPA PROVINCE & NEAR JUAN DE GARAY, RIO NEGRO PROVINCE, ARGENTINA		
REPORTING SOURCE		MR. RALPH EISEMAN		
HIGHLAND PK. HIGH SCHOOL, HIGHLAND PK., ILLINOIS, U.S.A.				
SOURCE CONTACT		AMERICAN EMBASSY BUENOS AIRES, ARGENTINA		
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<p>Fires in the woodlands of La Pampa Province are reported to have been the worst in Argentine history and to have consumed over 500,000 hectares (1.2 million acres). The fires were reported at several locations in La Pampa Province--near General Acha, La Reforma, Telen, Puelches and Cuchillo-co. A fire was also reported just across the border near Juan de Garay, Rio Negro Province.</p> <p>The first fire started on 16 December and the initial fires lasted ten days. However, other fires started from time to time. All fires were reported out on 6 January. Thus the fires burned the woodlands over a period of about 21 days.</p> <p>During the period of the fires, weather conditions were reported to have been very hot (one report indicated 110°F) and generally windy, with frequent changes of wind direction. There were some thunder storms. However, while rain from such storms had some attenuating effect, it is also apparent that some of the fires were started by the lightning.</p> <p>It is estimated that some 500 persons were involved in fighting the fires. Methods tried included clearing lanes with bulldozers and shovels and counter-fires. Agencies involved in investigating and controlling the fires were as follows: Direccion Provincial de Vialidad, Direccion de Defensa Civil de la Pampa, Comision Nacional de Emergencia Agropecuaria, Direccion Nacional de Bosques de la Pampa. All of these agencies are affiliated with the Provincial government in the capital, Santa Rosa.</p>				

500-slp-5

EVENT	9-74	REVENTADOR VOLCANIC ACTIVITY	11 JANUARY 1974	1774.
		<p>Reventador is a strato volcano located at latitude 00° 05'S., longitude 77°40'W. One of the most active volcanoes in Ecuador, it rises 3485 meters above sea level. Dr. Hall reported the following by cable:</p> <p>"Visited Reventador on 15 Dec 1973 for one hour. Cone (1,000 feet high) in SW corner of caldera in eruption. Vapor plume, 1 km long, heads SW. Considerable noise from crater, no explosions, no material being ejected. Small lava lake in crater. Narrow lava flow 1.5 km long leaves lake, flows due E down cone and out onto plain. Flow began Nov. 1973 and is in motion. It is a blocky flow of olivine-rich basaltic andesite. The flow is dark black in color, but grey on sides due to fresh exposure of new material by avalanching. Flow slowly heading E for main road, oil pipe line, and Rio Coca. To N, extensive mud flow (3km long, 1 km wide), grey in color, flowed NE. Black basalt flow of July 1972 lies immediately N of lahar, flowed NE from cone. N side of cone: grey and black blocky flows up to 5km long. W side: grey blocky flows one-half km long about against caldera wall. S side: same as W side. SE side old overgrown flows, green in color. From border of caldera outward, dense green jungle. Area of recent activity, and not overgrown by jungle, approximately 4km in diameter. Plan expedition for longer stay in Feb. 1974.</p> <p>Report on Sangay Volcano (Lat 02°02'S., Long 78°20'W). Continual quiet eruption. Much explosive activity. Smoke plume leaves crater every 20-30 minutes. No data about flows or ejecta." (Reports on these volcanoes are quite rare because of their inaccessibility.)</p>	EVENT NOTIFICATION REPORT	
			TYPE OF EVENT	GEOPHYSICAL
			DATE OF OCCURRENCE	DECEMBER 1973
			LOCATION OF EVENT	
			NAPO, ECUADOR	
			REPORTING SOURCE	U. S. NATIONAL
			AERONAUTICS & SPACE ADMINISTRATION	
			SOURCE CONTACT	DR. MINARD L. HALL
			ESCUELA POLITECNICA NACIONAL,	
			QUITO, ECUADOR	
		<p>SMITHSONIAN INSTITUTION CENTER FOR SHORT-LIVED PHENOMENA 60 Garden Street CAMBRIDGE, MASSACHUSETTS 02138 UNITED STATES OF AMERICA CABLE: SATELLITE NEW YORK TELEPHONE: (617)-864-7811</p>		

EVENT	11-74	PACIFIC SUBMARINE VOLCANIC ERUPTION	21 JANUARY 1974	1778.
		<p>Dr. Johnson reported the following to the Center:</p> <p>"Sofar hydrophone records from Wake and Midway Islands indicate a sustained submarine volcanic eruption near 22°N latitude, 144°E longitude. Eruption noise was first detectable about 1800 GMT, 25 September 1973 and was continuing unabated as of 14 January 1974.</p> <p>"The activity was explosive. The indicated location is about 40 km north of a similarly detected submarine eruption site of 6-7 July 1972."</p> <p>The subject area is approximately 250 miles (400km) southeast of Iwo Jima, and 580 miles (935km) north of Guam.</p>	EVENT NOTIFICATION REPORT	
			TYPE OF EVENT	GEOPHYSICAL
			DATE OF OCCURRENCE	25 SEPTEMBER 1973 AND CONTINUING
			LOCATION OF EVENT	AREA BETWEEN VOLCANO ISLANDS AND MARIANA ISLANDS, PACIFIC OCEAN
			REPORTING SOURCE	HAWAII INSTITUTE OF GEOPHYSICS, HONOLULU, HAWAII, U.S.A.
			SOURCE CONTACT	DR. ROCKNE JOHNSON
			HAWAII INSTITUTE OF GEOPHYSICS, UNIVERSITY OF HAWAII AT MANA, 2525 CORREA ROAD, HONOLULU, HAWAII 96822, U.S.A.	
			<p>SMITHSONIAN INSTITUTION CENTER FOR SHORT-LIVED PHENOMENA 60 Garden Street CAMBRIDGE, MASSACHUSETTS 02138 UNITED STATES OF AMERICA CABLE: SATELLITE NEW YORK TELEPHONE: (617)-864-7811</p>	
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APPENDIX B
SAMPLE CABLE MESSAGES

SA0003A
PP HMSC GSTS
DE GSAO 003
20/1400Z
FM SMITHSONIAN OBSERVATORY CAMBRIDGE MASS
TO HMSC/JOHN KALTENBACH CODE TF6 PHONE 4017
JOHNSON SPACE CENTER HOUSTON TEXAS
INFO HMSC/DR WILLIAM LENOIR JOHNSON SPACE CENTER CODE CB PHONE 2222
GSTS/PAUL LOWMAN CODE 644

"SKYLAB - SHORT-LIVED EVENT ALERT PROGRAM DAILY STATUS REPORT."

TRACK: 11 REV: 3661 GMT: 23/044852 LIGHT CONDITION: DAYLIGHT
20 3670 23/195236 DARKNESS

EVENT: NISHINO-SHIMA SUBMARINE VOLCANIC ERUPTION

STATE/COUNTRY: BONIN ISLANDS, JAPAN

LOCATION: LAT: 27 DEG 15 MINS N. LONG: 140 DEG 54 MINS E.

DESCRIPTION: NISHINO-SHIMA ERUPTION HAS FORMED CHAIN OF CINDER CONES ABOVE SEA SURFACE. NEW INSULAR VOLCANO APPEARED ABOVE SEA 600 METERS SOUTHEAST NISHINO-SHIMA ON 14 SEPT. ISLAND WAS 120 METERS DIAMETER WITH 70 METER DIAMETER CRATER. SMOKE EJECTED TO 1500 METERS HEIGHT. CHAIN OF CINDER CONES RUNS SOUTHWEST TO NORTHEAST AND IS 600 METERS IN LENGTH. ERUPTIONS NOW OCCURRING AT INTERVALS OF 1 TO 10 MINUTES WITH WATER PLUMES, VOLCANIC BLOCKS AND ASHES. CINDER COLUMN NOW REACHES MAXIMUM HEIGHT OF 300 METERS.

GROUND TRUTH: THE SEISMOLOGICAL DIVISION OF THE JAPAN METEOROLOGICAL AGENCY, TOKYO, JAPAN, IS CLOSELY MONITORING THIS VOLCANO AND HAS BEEN EVER SINCE IT BEGAN ERUPTING IN MAY 1973. PHOTOS HAVE BEEN TAKEN OF THE ERUPTION, BUT TEAMS OF INVESTIGATORS HAVE BEEN UNABLE TO LAND THEIR BOATS ON THE ISLANDS BECAUSE OF ROUGH SEAS.

PRIORITY: FIRST PHOTOGRAPHY: HIGHEST - TO ESTABLISH BASELINE DATA.

SUBSEQUENT PHOTOGRAPHY: HIGHEST - VOLCANIC ACTIVITY HAS SLOWED DOWN CONSIDERABLY AND SOME OF THE CINDER CONES ARE BEING ERODED BY WAVE ACTION. ALL CINDER-CONE ISLANDS MAY BE COMPLETELY ERODED BY WAVE ACTION BY END OF DECEMBER.

TRACK: 13 REV: 3664 GMT: 23/085046 LIGHT CONDITION: DARKNESS

EVENT: REVENTADOR VOLCANIC ACTIVITY

STATE/COUNTRY: NAPO, ECUADOR

LOCATION: LAT: 00DEG 05 MINS S. LONG: 77 DEG 40 MINS W.

DESCRIPTION: REVENTADOR, A STRATO VOLCANO, IS ONE OF THE MOST ACTIVE VOLCANOES IN ECUADOR, AND RISES 3485 METERS ABOVE SEA LEVEL.

REVENTADOR ON 15 DEC 1973: CONE (1,000 FEET HIGH) IN SW CORNER OF CALDERA IN ERUPTION. VAPOR PLUME, 1 KM LONG, HEADS SW. CONSIDERABLE NOISE FROM CRATER, NO EXPLOSIONS, NO MATERIAL BEING EJECTED. SMALL LAVA LAKE IN CRATER. NARROW LAVA FLOW 1.5 KM LONG LEAVES LAKE, FLOWS DUE E DOWN CONE AND OUT ONTO PLAIN. FLOW BEGAN NOV. 1973 AND IS IN MOTION. IT IS A BLOCKY FLOW OF OLIVINE-RICH BASALTIC ANDESITE. THE FLOW IS DARK BLACK IN COLOR, BUT GREY ON SIDES DUE TO FRESH EXPOSURE OF NEW MATERIAL BY AVALANCHING. FLOW SLOWLY HEADING E FOR MAIN ROAD, OIL PIPE LINE, AND RIO COCA. TO N, EXTENSIVE MUD FLOW (3KM LONG, 1 KM WIDE), GREY IN COLOR, FLOWED NE. BLACK BASALT FLOW OF JULY 1972 LIES IMMEDIATELY N OF LAHAR, FLOWED NE FROM CONE. AREA OF RECENT ACTIVITY, AND NOT OVERGROWN BY JUNGLE, APPROXIMATELY 4KM IN DIAMETER.

GROUND TRUTH: DR. MINARD HALL, ESCUELA POLITECNICA NACIONAL, QUITO, ECUADOR, MADE ABOVE OBSERVATIONS ON 15 DEC 1973. HE PLANS LONGER EXPEDITION TO REVENTADOR IN FEBRUARY 1974.

PRIORITY: HIGH. THIS VOLCANO VERY INACCESSABLE AND IMAGERY FROM SKYLAB WOULD BE MOST USEFUL TO COMPARE WITH DECEMBER AND FEBRUARY GROUND TRUTH OBSERVATIONS.

DESCRIPTION: LAVA LAKE IN MAUNA ULU CRATER FILLED TO BRIM AND OVERFLOWED 4 NOV. FOUNTAINS WITH HEIGHTS OF 40 METERS AND OVERFLOWS CONTINUED FOR 4 DAYS. ON 10 NOV. LAVA FOUNTAINS BEGAN AS FISSURE OPENED IN PAUAHI CRATER, 6 KM SOUTHEAST KILAUEA CALDERA AND 2 KM WEST OF MAUNA ULU. ADDITIONAL FISSURES OPENED EAST AND WEST OF PAUAHI IN BELT 2 KM LONG. FOUNTAINS REACHED HEIGHTS OF 75 METERS. SLUGGISH OUTFLOW WAS CONTINUING 16 NOV. AND SUMMIT INFLATION HAS RESUMED. APPROX 100 HECTARES OF LAND COVERED BY NEW LAVA DURING PAUAHI EPISODE. APPROX 3 MILLION CUBIC METERS LAVA ERUPTED DURING THE 8 HOURS OF STRONGEST ACTIVITY.

GROUND TRUTH: DR. DONALD PETERSON, U.S. GEOLOGICAL SURVEY AND TEAM OF SEISMOLOGISTS, GEOPHYSICISTS, GEOCHEMISTS, AND VOLCANOLOGISTS CONDUCT LONG-TERM, CONTINUOUS MONITORING OF VOLCANO SEISMICITY, LAVA VOLUME, LEVELS, FLOW RATES, COMPOSITION, TEMPERATURE, ETC. CONTINUOUS RESEARCH PROGRAM INCLUDING DEVELOPMENT OF ERUPTION PREDICTION TECHNIQUES IS BEING UNDERTAKEN USING DATA FROM U.S. GEOLOGICAL SURVEY'S HAWAIIAN VOLCANO OBSERVATORY LOCATED IN HAWAII VOLCANOES NATIONAL PARK, ISLAND OF HAWAII, HAWAII.

PRIORITY: FIRST PHOTOGRAPHY: HIGHEST - TO ESTABLISH BASELINE DATA. SUBSEQUENT PHOTOGRAPHY: HIGH - TO OBTAIN SYSTEMATIC OBSERVATIONS AND TIME HISTORY OF ERUPTION PHENOMENA. MAJOR ACTIVITY USUALLY LASTS ONLY A FEW DAYS OR WEEKS. EXPECT CURRENT ACTIVITY TO STOP BY MID-DECEMBER.

TRACK: 17 REV: 3667 GMT:23/153135 TO 153159 LIGHT CONDITION:DAYLIGHT
19 3669 23/183616 TO 183638 DAYLIGHT

EVENT: DOUGLAS FIR TUSSOCK MOTH OUTBREAK
STATE/COUNTRY: WASHINGTON, IDAHO, OREGON, U.S.A.
LOCATION: LAT: 45 DEG 00 MINS N. LONG 116 DEG 00 MINS W.
TO TO
49 DEG 00 MINS N. 118 DEG 00 MINS W.

DESCRIPTION: DOUGLAS FIR TUSSOCK MOTH HAS BEEN IN OUTBREAK PROPORTIONS FOR PAST TWO YEARS AND IS PRESENTLY INFESTING 700,000 ACRES OF TREES IN SUBJECT AREA. TUSSOCK MOTH IS NATIVE TO WESTERN HALF NORTH AMERICA. POPULATION EXPLOSION RESULTS WHEN WEATHER CONDITIONS AND OTHER FACTORS ARE FAVORABLE. RESULT OF INFESTATION IS DEATH OF TREES.

TRACK: 18 REV: 3668 GMT: 23/170752 LIGHT CONDITION: DAYLIGHT

EVENT: MASSACHUSETTS PINE LOOPER OUTBREAK
STATE/COUNTRY: PLYMOUTH COUNTY & CAPE COD, MASS. U.S.A.
LOCATION: LAT: 41 DEG 30 MINS N. LONG: 70 DEG 00 MINS W.
TO TO
42 DEG 30 MINS N. 71 DEG 00 MINS W.

DESCRIPTION: PINE LOOPER (LAMBIDIA ATHASARIA PELLUCIDARIA) IS IN OUTBREAK PROPORTIONS IN SUBJECT AREA. IT IS CAUSING CONSIDERABLE DAMAGE TO PITCH PINES (PINUS RIGIDA), A MAJOR SPECIES OF PINE IN AREA. POPULATION NUMBERS HAVE BEEN BUILDING SINCE 1971 WHEN 111,000 ACRES WERE DEFOLIATED. IN 1972 42,000 ACRES WERE DEFOLIATED.

TRACK: 52 REV: 3702 GMT: 26/083459 LIGHT CONDITION: DARKNESS
EVENT: ERTA'ALE VOLCANO
STATE/COUNTRY: ETHIOPIA
LOCATION: LAT: 13 DEG 37 MINS N. LONG: 40 DEG 36 MINS E.

DESCRIPTION: ERTA'ALE IS A STRATO VOLCANO 500 METERS A.S.L. TOP OF VOLCANO ALWAYS SHOWS FUMAROLIC ACTIVITY. BASE OF VOLCANO IS IN THE DANAKIL DEPRESSION 75 METERS BELOW SEA LEVEL. ACTUAL CONE CONTAINING SUMMIT CRATER BEGINS AT HEIGHT OF 450 METERS. LAVA FLOWS AND EJECTA CONSTITUTE THE FLANKS AND FOOT OF VOLCANO. HOT FUMES RISE FROM FISSURES IN THE LAVA AT CRATER BOTTOM AND THE WALLS. OVERALL AREA 1600 BY 700 METERS.

GROUND TRUTH: DR. HAROLD TAZIEFF, DIRECTOR OF VOLCANOLOGICAL RESEARCH, C.N.R.S., PARIS, AND TEAMS OF GEOPHYSICISTS, GEOLOGISTS, SEISMOLOGISTS, AND GEOCHEMISTS PERFORMED LONG TERM INVESTIGATIONS INCLUDING RESEARCH EXPEDITIONS IN 1969, 1970, 1971, AND 1972.

PRIORITY: FIRST PHOTOGRAPHY: HIGH - TO ESTABLISH BASELINE INFORMATION. SUBSEQUENT PHOTOGRAPHY: LOW - PERMANENTLY ACTIVE LAVA LAKE CHARACTERIZES VOLCANO.

TRACK: 60 REV: 3710 GMT: 26/144853 TO 144915 LIGHT CONDITION: DAWN
62 3712 26/180348 TO 180413 DAYLIGHT
EVENT: DOUGLAS FIR TUSSOCK MOTH OUTBREAK
STATE/COUNTRY: WASHINGTON, IDAHO, OREGON, U.S.A.
LOCATION: LAT: 45 DEG 00 MINS N. LONG 116 DEG 00 MINS W.

TO TO
49 DEG 00 MINS N. 118 DEG 00 MINS W.
DESCRIPTION: DOUGLAS FIR TUSSOCK MOTH HAS BEEN IN OUTBREAK PROPORTIONS FOR PAST TWO YEARS AND IS PRESENTLY INFESTING 700,000 ACRES OF TREES IN SUBJECT AREA. TUSSOCK MOTH IS NATIVE TO WESTERN HALF NORTH AMERICA. POPULATION EXPLOSION RESULTS WHEN WEATHER CONDITIONS AND OTHER FACTORS ARE FAVORABLE. RESULT OF INFESTATION IS DEATH OF TREES.

TRACK: 60 REV: 3710 GMT: 26/145735 TO 145745 LIGHT CONDITION: DAYLIGHT
EVENT: CHORISTONEURA POPULATION INCREASE
STATE/COUNTRY: NORTHERN MAINE, U.S.A.
LOCATION: LAT: 46 DEG 30 MINS N. LONG: 68 DEG 00 MINS W.
TO TO
47 DEG 30 MINS N. 70 DEG 00 MINS W.

DESCRIPTION: THERE HAS BEEN MASSIVE OUTBREAK OF SPRUCE BUD WORM (CHORISTONEURA FUMIFERANA) IN NORTHERN MAINE. ABOUT 3 TO 4 MILLION ACRES OF FOREST HAVE BEEN AFFECTED IN REGION. POPULATION INCREASE BEGAN 2-3 YEARS AGO BUT NUMBERS OF THESE MOTHS ESPECIALLY HIGH THIS YEAR.

TRACK: 63 REV: 3713 GMT: 26/200241 LIGHT CONDITION: DAYLIGHT
EVENT: CHILE-BOLIVIA BORDER EARTHQUAKE
STATE/COUNTRY: POTOSI STATE, BOLIVIA
LOCATION: LAT: 22 DEG 18 MINS S. LONG: 68 DEG 00 MINS W.

DESCRIPTION: RICHTER MAGNITUDE 6.9 EARTHQUAKE OCCURRED 1042 GMT, 2 JANUARY 1973. MAXIMUM INTENSITY REPORTEDLY FELT IN CALAMA, ANTOFAGASTA PROVINCE, CHILE. MANY BUILDINGS CRACKED, REPORTS OF SCATTERED LOCAL LANDSLIDES.

GROUND TRUTH: RESEARCHERS ON SCENE ASSESSING EFFECTS OF TREMOR ON ENVIRONMENT.

PRIORITY: HIGH. EFFECTS OF EARTHQUAKE ON PHYSICAL ENVIRONMENT MAY ONLY BE VISIBLE FROM SATELLITES OR AIRCRAFT.

23/1405Z JAN 65AO

SA0018A
PP HMSC GSTS
DE GSAO 018
30/1400Z

FM SMITHSONIAN OBSERVATORY CAMBRIDGE MASS
TO HMSC/JOHN KALTENBACH CODE TFG PHONE 4017
JOHNSON SPACE CENTER HOUSTON TEXAS
INFO HMSC/DR WILLIAM LENOIR JOHNSON SPACE CENTER CODE CB PHONE 2222
GSTS/PAUL LOWMAN CODE 644

"SKYLAB - SHORT-LIVED EVENT ALERT PROGRAM DAILY STATUS REPORT."

TRACK: 11 REV: 3803 GMT:02/005016 LIGHT CONDITION:DAYLIGHT
20 3812 02/155357 DARKNESS

EVENT: NISHINO-SHIMA SUBMARINE VOLCANIC ERUPTION

STATE/COUNTRY : BONIN ISLANDS, JAPAN

LOCATION: LAT: 27 DEG 15 MINS N. LONG: 140 DEG 54 MINS E.

DESCRIPTION: NISHINO-SHIMA ERUPTION HAS FORMED CHAIN OF CINDER CONES ABOVE SEA SURFACE. NEW INSULAR VOLCANO APPEARED ABOVE SEA 600 METERS SOUTHEAST NISHINO-SHIMA ON 14 SEPT. ISLAND WAS 120 METERS DIAMETER WITH 70 METER DIAMETER CRATER. SMOKE EJECTED TO 1500 METERS HEIGHT. CHAIN OF CINDER CONES RUNS SOUTHWEST TO NORTHEAST AND IS 600 METERS IN LENGTH. ERUPTIONS NOW OCCURRING AT INTERVALS OF 1 TO 10 MINUTES WITH WATER PLUMES, VOLCANIC BLOCKS AND ASHES. CINDER COLUMN NOW REACHES MAXIMUM HEIGHT OF 300 METERS.

GROUND TRUTH: THE SEISMOLOGICAL DIVISION OF THE JAPAN METEROLOGICAL AGENCY, TOKYO, JAPAN, IS CLOSELY MONITORING THIS VOLCANO AND HAS BEEN EVER SINCE IT BEGAN ERUPTING IN MAY 1973. PHOTOS HAVE BEEN TAKEN OF THE ERUPTION, BUT TEAMS OF INVESTIGATORS HAVE BEEN UNABLE TO LAND THEIR BOATS ON THE ISLANDS BECAUSE OF ROUGH SEAS.

PRIORITY: FIRST PHOTOGRAPHY: HIGHEST - TO ESTABLISH BASELINE DATA.

SUBSEQUENT PHOTOGRAPHY: HIGHEST - VOLCANIC ACTIVITY HAS SLOWED DOWN CONSIDERABLY AND SOME OF THE CINDER CONES ARE BEING ERODED BY WAVE ACTION. ALL CINDER-CONE ISLANDS MAY BE COMPLETELY ERODED BY WAVE ACTION BY END OF DECEMBER.

TRACK: 13 REV: 3806 GMT:02/040201 LIGHT CONDITION:DAYLIGHT

EVENT: SOUTH VIETNAM FOREST DEFOLIATION

STATE/COUNTRY: SOUTH VIETNAM

LOCATION: LAT: 11 DEG 00 MINS N. LONG: 106 DEG 40 MINS E.
TO TO
11 DEG 45 MINS N. 107 DEG 20 MINS E.

DESCRIPTION: ERTS IMAGERY OBTAINED 20 JAN 1973 (PHOTO 1181-02443) SHOWS MANY NORTH-SOUTH SWATHS OF DEFOLIATION WITH HIGH REFLECTIVITY SCATTERED IN PREVIOUSLY DENSELY FORESTED AREA APPROXIMATELY 60 KM BY 60 KM. SWATHS ARE ABOUT 10 KM LONG AND 200 METERS WIDE, AND ARE PARTICULARLY CONCENTRATED IN TWO AREAS: AT LONGITUDE 106 DEG 58 MIN EAST FROM 11 DEG 18 MIN NORTH TO 11 DEG 27 MIN NORTH, AND AT LONGITUDE 107 DEG 07 MIN EAST FROM 11 DEG 10 MIN NORTH TO 11 DEG 15 MIN NORTH. GEOGRAPHICAL CENTER OF SWATH AREA IS 107 DEG 00 MIN EAST, 11 DEG 20 MIN NORTH. DR MATTHEW MESELSON, BIOLOGICAL LABORATORIES, HARVARD UNIVERSITY, CAMBRIDGE, MASS., BELIEVES LONG-TERM EFFECTS OF DEFOLIATION WILL PROBABLY RESULT IN AFFECTED AREAS TURNING INTO SAVANNAS.

PRIORITY: HIGH. COMPARISON OF IMAGERY FROM SKYLAB WITH ERTS PHOTO VERY DESIREABLE IN ORDER TO DETERMINE CHANGES OVER ONE YEAR PERIOD, AND TO SEE WHAT CURRENT STATUS IS. WEATHER THIS TIME OF YEAR FAVORABLE FOR PHOTOGRAPHY. HIGH RESOLUTION PHOTOGRAPHY REQUESTED.

TRACK: 11 REV: 3803 GMT:02/005144 LIGHT CONDITION:DAYLIGHT
EVENT: PACIFIC SUBMARINE VOLCANIC ERUPTION
STATE/COUNTRY: AREA BETWEEN BONIN ISLANDS AND MARIANA ISLANDS,
PACIFIC OCEAN
LOCATION: LAT: 22 DEG 00 MINS N. LONG: 144 DEG 00 MINS E.

DESCRIPTION: SOFAR HYDROPHONE RECORDS FROM WAKE AND MIDWAY ISLANDS
INDICATE A SUSTAINED SUBMARINE VOLCANIC ERUPTION IN SUBJECT AREA.
ERUPTION NOISE WAS FIRST DETECTABLE 25 SEPT 1973 AND WAS CONTINUING
UNABATED AS OF 14 JAN 1974. THE ACTIVITY WAS EXPLOSIVE.

GROUND TRUTH: DR. ROCKNE JOHNSON, HAWAII INSTITUTE OF GEOPHYSICS,
HONOLULU, SENT REPORT OF THIS ACTIVITY.

PRIORITY: HIGH. DESIREABLE TO COMPARE SKYLAB IMAGERY WITH
HYDROPHONE REPORTS.

MORE

30/1410Z JAN GSAO

SAO019A
PP HMSC GSTS
DE GSAO 019
30/1400Z
FM SMITHSONIAN OBSERVATORY CAMBRIDGE MASS
TO HMSC/JOHN KALTENBACH CODE TF6 PHONE 4017
JOHNSON SPACE CENTER HOUSTON TEXAS
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GSTS/PAUL LOWMAN CODE 644

*PAGE TWO GSAO 30/1400Z
SKYLAB - SHORT-LIVED EVENT ALERT PROGRAM DAILY STATUS REPORT.
TRACK: 13 REV: 3806 GMT:02/045207 LIGHT CONDITION:DARKNESS
EVENT: REVENTADOR VOLCANIC ACTIVITY
STATE/COUNTRY: NAPO, ECUADOR
LOCATION: LAT: 00DEG 05 MINS S. LONG: 77 DEG 40 MINS W.

DESCRIPTION: REVENTADOR, A STRATO VOLCANO, IS ONE OF THE MOST
ACTIVE VOLCANOES IN ECUADOR, AND RISES 3485 METERS ABOVE SEA
LEVEL.

REVENTADOR ON 15 DEC 1973: CONE (1,000 FEET HIGH) IN SW
CORNER OF CALDERA IN ERUPTION. VAPOR PLUME, 1 KM LONG, HEADS
SW. CONSIDERABLE NOISE FROM CRATER, NO EXPLOSIONS, NO MATERIAL
BEING EJECTED. SMALL LAVA LAKE IN CRATER. NARROW LAVA FLOW 1.5
KM LONG LEAVES LAKE, FLOWS DUE E DOWN CONE AND OUT ONTO PLAIN.
FLOW BEGAN NOV. 1973 AND IS IN MOTION. IT IS A BLOCKY FLOW OF
OLIVINE-RICH BASALTIC ANDESITE. THE FLOW IS DARK BLACK IN COLOR,
BUT GREY ON SIDES DUE TO FRESH EXPOSURE OF NEW MATERIAL
BY AVALANCHING. FLOW SLOWLY HEADING E FOR MAIN ROAD, OIL PIPE
LINE, AND RIO COCA. TO N, EXTENSIVE MUD FLOW (3KM LONG, 1 KM
WIDE), GREY IN COLOR, FLOWED NE. BLACK BASALT FLOW OF JULY
1972 LIES IMMEDIATELY N OF LAHAR, FLOWED NE FROM CONE.
AREA OF RECENT ACTIVITY, AND NOT OVERGROWN BY JUNGLE,
APPROXIMATELY 4KM IN DIAMETER.

GROUND TRUTH: DR. MINARD HALL, ESCUELA POLITECNICA NACIONAL,
QUITO, ECUADOR, MADE ABOVE OBSERVATIONS ON 15 DEC 1973. HE
PLANS LONGER EXPEDITION TO REVENTADOR IN FEBRUARY 1974.

PRIORITY: HIGH. THIS VOLCANO VERY INACCESSABLE AND IMAGERY
FROM SKYLAB WOULD BE MOST USEFUL TO COMPARE WITH DECEMBER
AND FEBRUARY GROUND TRUTH OBSERVATIONS.

TRACK: 19 REV: 3811 GMT:02/143736TO 143758 LIGHT CONDITION:DAWN
EVENT: DOUGLAS FIR TUSSOCK MOTH OUTBREAK
STATE/COUNTRY: WASHINGTON, IDAHO, OREGON, U.S.A.
LOCATION: LAT: 45 DEG 00 MINS N. LONG 116 DEG 00 MINS W.

TO TO
49 DEG 00 MINS N. 118 DEG 00 MINS W.
DESCRIPTION: DOUGLAS FIR TUSSOCK MOTH HAS BEEN IN OUTBREAK
PROPORTIONS FOR PAST TWO YEARS AND IS PRESENTLY INFESTING
700,000 ACRES OF TREES IN SUBJECT AREA. TUSSOCK MOTH IS NATIVE
TO WESTERN HALF NORTH AMERICA. POPULATION EXPLOSION RESULTS WHEN
WEATHER CONDITIONS AND OTHER FACTORS ARE FAVORABLE. RESULT OF
INFESTATION IS DEATH OF TREES.

TRACK: 21 REV: 3813 GMT:02/181659 LIGHT CONDITON: DAYLIGHT
EVENT: LA PAMPA GRASSLAND FIRES
STATE/COUNTRY: LA PAMPA PROVINCE, ARGENTINA
LOCATION: LAT: 36 DEG 00 MINS S. LONG: 64 DEG 00 MINS W.

TO TO
38 DEG 30 MINS S. 68 DEG 00 MINS W.

DESCRIPTION: FIRES WERE REPORTED TO BE WORST IN RECORDED HISTORY
OF ARGENTINA. BEGAN 16 DECEMBER 1973, FINALLY ENDED 6 JANUARY
1974. 1.2 MILLION ACRES WERE AFFECTED. AREA IS DENSELY FORESTED
IN GENERAL, SEVERAL TYPES OF TREES ARE NATIVE, SOME 300-400 YEARS
OLD. VAST FOREST ACREAGE DESTROYED, BUT FIRE DID NOT INVOLVE AREA
OF MAJOR AGRICULTURAL IMPORTANCE, EITHER FOR CATTLE OR CROPS.
HUMAN POPULATION DENSITY VERY LOW.

GROUND TRUTH: SEVERAL AGENCIES AFFILIATED WITH THE PROVINCIAL
GOVERNMENT, LOCATED IN THE CAPITAL, SANTA ROSA, WERE INVOLVED IN
INVESTIGATING AND CONTROLLING THE FIRES.

PRIORITY: MEDIUM. HIGH RESOLUTION PHOTOS SHOWING DEVASTATED AREAS
WOULD BE USEFUL IN FOREST FIRE STUDIES.

30/1410Z JAN GSAO