

SIT REPS FOR JUNE ' 58LITTLE AMERICA IGY STATION

IGY NR 40, Sit Rep for June - Aurora: Auroras were reported on all of the 20 clear days in the month. Some 700 hundred feet of all sky camera film was taken. The patrol spectrograph operated in automatic mode during the entire month. Infrared spectra was finally obtained after exposures of 100 hours. Some difficulty with frost on the inside of the all sky camera light and clock windows has been encountered in periods of extreme cold. The all sky camera pictures themselves continue to be clear except from occasional outside lights. Operation of the scanning spectrometer has been hindered by a parasitic oscillation. No aurora spectra have been obtained from attempts with weak aurora.

Geomagnetism: Variometer temperature coefficient tests run with the following results: The standard horizontal intensity recorded  $-0.3$  gammas per degree centigrade; the rapid run horizontal intensity  $-0.7$  gammas per degree centigrade. Temperature coefficient for vertical intensity variometers was not obtained as results were not repeatable. Examination of magnetograms indicates that the variometer level varies with temperature (Z trace density and distance between H and Z base lines varied with respect to temperature); movement is apparently not uniform, and therefore prevents repeatable results. The program operation is normal in all other respects.

Glaciology: Accumulation stake observations covering a total of 108 stake years gives an annual snow accumulation of 83 cm. During the month of March, April and May 1958 the average accumulation was 38 cm.

Ionosphere: Ionosphere records were similar for those in May with F2 critical peaking near 1800 hours local meridian time. There was a very high occurrence of wide spread echos near the criticals. The C-4 os operating satisfactorily. There has been considerable trouble with changes in film sensitivity throughout the month with many records being quite dark. This situation was normal at the end of the month.

Meteorology: 52 successful radiosonde releases were made during the month with an average height of 19,799 meters. The highest run was 25,224 meters on the 15th at 1200 Z. The restriction to one charge of hydrogen per scheduled release was relaxed on the 11th of the month with only one scheduled run after that date unsuccessful. A silica gel dehydrator was placed in the hydrogen line between the outside condenser and the inflation nozzle which has apparently improved the heights reached. The voltage into the Met office was increased and stabilized by rerouting from the generators. One boiling flask for the still broke on the 26th and the spare was placed in operation.

Seismology: Data analysis of the Ross Shelf Traverse has continued. Ice thicknesses have been calculated by four following methods: By the primary wave reflection from the ice water interface calculated for 12 stations; By the shear primary wave combination reflection from the ice water interface calculated for 12 stations, by multiple reflections of two types, first, once through water and twice through the ice, and second, once through the ice and twice through the water calculated for 36 stations; and average velocity from the ocean floor reflection time change with distance from shot used with theoretical charts calculated for 43 stations. Eight of the fifty-nine seismic stations have questionable results. The average thickness for all stations is 460 meters with the thickest ice of 776 meters near Liv Glacier.

Traverse: The overhaul of the third traverse vehicle is 95 % completed with the old unit rebuilt with new motor, transmission, differentials, fifth wheels and complete set of pontoons and tracks.

Weather Central: The Central's operations has

been normal. Research has been continuing on the previously mentioned topics. Two seminars have been held within the Cnetral on the topics of analysis and Antarctic Bibliography, Astapenko and Gray on the first topic, Cochran on the second. Data reception for the month has been as follows (retransmission NIA Weather broadcast): Read (columns) as station percent Surface data Received, percent upper air data received;

## Mawson Collective

Norway	84	75	Port Stanley Group	38	33
King Baudouin	73	55	Halley Day	30	25
Davis	93	82	Deception Group	75	87
Mawson	93	83	Gonzales Videla	67	XX
Taylor	75	XX	McMurdo Collective		
Mirny Collective			Amundsen Scott	99	100
Mirny	88	73	Ellsworth	98	100
Pioneerskaiya	87	XX	Wilkes	98	72
Komsomolskaya	88	XX	McMurdo	99	98
Oasis	88	88	Hallett	97	97
Vostok	88	67	Durville	97	97
Sovietskaiya	83	67	Charcot	100	XX
			Byrd	100	100
			New Zealand and Australia	97	97
			South Africa	20	XX
			Macquarie Island	99	67

The entire loss of the Mirny collective in the 0000Z and 0600 Z reports is noted. The loss in the Mawson reports is partially due to blizzard conditions near the end of the month. The time lag improved considerably near the end of this month. However, thirty percent of the analysis is still restricted due to the time lag.

BYRD STATION

June Status Report - ~~Atmosology~~ Routine Ops.. There was a substantial increase in balloon run heights during the latter part of the month due to a change in the conditioning method. The average 50 mb temperature was 79.7 Deg. C., 30 mb temperature 81.1 Deg. C., the average 20 mb temperature 80.2 Deg. C. The tropopause was difficult to distinguish or was missing entirely during the month. The upper wind flow was from the Southwest during the month and as a result the surface winds were light. This and past evidence points to the fact that Byrd Station has a valley flow with a North South slope. The coldest temperature recorded was -75.4 Deg. F. Ionosphere: Trouble free ionospheric recorder operation during the month with the result that no data was lost. The usual F-2 critical frequency diurnal variation phenomenon reported last month was even more pronounced throughout June. Lowest median F-2 criticals (3.0 mc/s) occurred at 0800 and 0900 remaining at a low level from 0700 through 1600: Highest median F-2 criticals (6.2 mc/s) recorded at 2200 and 0100 with only slight deviation from 2100 through 0300. Radio Noise: The radio noise project is recording on a regular basis; No outages for the month. The average noise power from 1 mc in May was 7 sb above March. Whistlers: The VLF Recording Project A continues on a regular basis. The NSS Tape (B) recorder is down for repairs for one week. No whistler mode echoes have been noted to date.

Aurora: Equipment failures punctuated operations during the month. Approximately 14 hours of data were lost when the K-100 All Sky Camera five times and the minute timer failed once. Spectrograph failure (twice malfunction of the shutter and once difficulty with the photomultiplier circuit) caused the loss of one and one half days. Except for these outages operations have been normal with the visual observations program running smoothly. Meteor observation facility was ready this month. However, conditions did not permit observations.

Glaciology: All regular readings were made of snow temperature, accumulation, and deep pit deformation. Surface area was read after major meteorological changes has occurred. The geological samples from the 1957-58 Traverse were made ready for shipment. The monthly mean accumulation was 2.8 cm. with 0.8 cm water equivalent determined by density tubes. The June accumulation was the lightest in 1958. The light winds and clear skies have changed the surface characteristics.

Traverse Seismology: Reduction of the Traverse reflection and long refraction shots nearly completed. There seems to be good evidence of difference in velocity versus depth relations for SV and SS waves. The average vertical P wave velocity from wide angle reflections is less well determined than expected. Shoran type distance measurement equipment using the Traverse vehicle radios is under construction. It is planned to use this for long refraction, wide angle reflection, and possibly aid without navigation.

Geomagnetism: Station Seismology: Fruitful month with 114 quakes picked up and reported. There seems to be less interference after rewiring recording apparatus. By using the new rotary drum dryer records presentation noticeably improved. Construction activities for the Geomage program continue. The control panel was moved into the new building and the variations building was completely rewired. The control system in the office was completely redone. A new four battery emergency system was installed. These changes resulted in a more dependable operation. Only two days records were lost because of rewiring activities. The program machine is troublesome at times. No major breakdown is anticipated although equipment is in need of replacement parts and adequate repairs. All the systems are recording well. New K-indices charts have been drafted. K figures are now being furnished to Mirny and Little America Station.

General: Planned and enjoyable leisure time activities providing significant variation from the usual routine with favorable results. The repair of the Traverse vehicles has been slowed down because of the snow build up at the garage entrance. The D-8 is presently out of operations and the D-4 requires frequent track repair causing delay in snow control. Progress is being made to repair D-8. The support personnel are making tenacious effort to clear entrance to garage. Providing no blizzards in the next few days, job will soon be completed. New tunnel to transmitter building progressing. Over 100 feet have been completed to date.

SOUTH POLE STATION

IGY NR 566 June Sit Rep - Celestial observations continued as previously outlined. Aurora: Bright aurora were observed on 24 days, red aurora on five. There was no complete overcast during the month. The motion of the aurora is predominantly towards the East. The frosting of the all sky camera dome is interfering with the records. The last 3450 RPM fan broke on 16 June. This was replaced with a 1735 RPM motor which could not do the job adequately. The original fan was repaired and put back in the dome June 30. It is hoped that the present equipment will hold up for two more months. The spectrograph operated without failure during the entire month. Meteorology: Improved balloon release conditions have greatly increased percent of successful flights and restriction on hydrogen chemical charges were relaxed June 10. Balloons are currently being conditioned in warm diesel, yet still unable to get 500 gram balloons above minus 75 to 88 Deg Cel. temperatures found between 40 and 50 millibars. The hydrogen is passed through a moisture condenser, water trap and moisture filter. There were 57 successful flights during the month on 61 charges of chemicals. One flight on the 2nd missed due instrument failure and two on the 14th due to ground equipment failure. 11.1 pounds of caustic soda used per successful flight with 634 pounds used during month. There are 3,600 pounds remaining. The new low temperature of the current winter was 101.7 Deg F. observed on June 18. The temperature remained below -100 Deg F. for five hours. The average monthly temperature was -61.2 Deg. C.; the highest being -39.3 Deg. C. the lowest -74.3 Deg. C. Glaciology: The monthly average snow accumulation was 1.8 cm. Horizontal and vertical deformation sets were located in the snow mine at the following depths; 15, 20, 25 meters. Seismology: Station operation was normal. 225 disturbances were reported during June. At least 63 disturbances in May were confirmed as quakes. Micrometeorology: 153 wind profiles were run on 30 days during month which were characterized by light winds. The highest hourly speed measured at eight meters was 11.3 meters per second on June 3. Temperature recording continued operation throughout month. The surface inversion on June 27 was the second largest of the season. From the surface to eight meters there was a change of 19.5 Deg. F; From the surface to 3 centimeters 4.7 Deg. F. An inversion of greater than 10 Deg. F. persisted for 20 consecutive hours. Ionosphere: Quality of the Ionosonde records continue to be satisfactory. 16 hours of continuous 16 mm records taken in June. Interpretation of the Ionograms has been increasingly difficult because of oblique and spread echoes. Deviative absorption has also increased. Median FOF2 values show less variation than for previous months although F-Min values show more. Geomagnetism: Operation has been normal for the month. General: On June 21 the new generator went out of commission. There were no replacements for the burned out parts. A jury rig has produced electricity but with a variation of 2 - 5 volts, satisfactory for station operations but not for the scientific program. If it proves impossible to stabilize this generator an attempt will be made to rebuild the new generator from the old, and operate with only one generator until the resupply.

HALLETT STATION

IGY NR 102, Hallett June Sit Rep - Aurora: Aurora were seen on 15 nights during the month, all other times being overcast. There has been severe interference throughout the month from cloud and haze. All aurora observed have been greenish-white in color. A perforated metal light attenuator fitted to the calibration lamp in the patrol spectrograph gives improved appearance of the calibration. The difficulties that have been encountered with the spectrograph photo counter have been traced to a loose cam in program unit. Ionosphere: Sporadic E layer exactly on 100 Km marker causes difficulty in determining F-Min. Records of several hours were lost on the 29 and 30th due to a power break caused by storm. The equipment is generally performing well apart from the scope intensity variations. Comparison of 35 mm and 16 mm recordings show that intensity variations occur on both scopes simultaneously. Therefore the spare 6 KV supply has been installed but improvement has not been verified. Geomagnetism: The program is operating satisfactorily. No major activity has been recorded this month. Seismology: A total of 40 earthquakes were recorded of which 32 have been verified. The vertical long period seismometer requires adjustment usually not more than once per week as temperature in the seismographic hut slowly varies. Meteorology: The intense storms during the middle and at the end of the month produced peak gusts up to 80 kts, with the sustained wind averaging about 60 kts. Drifting snow covered radiometer on the 27th. The pin in the coupling of the aerovane sheared on the 27th and was repaired with a stronger and in operation on the 30th. Periodic frost and blowing snow alternately froze packed 2 and 10 meter wind equipment. Sea level pressure of 30.38 was recorded on the 29th, the highest since inception of observations at this station. The average height of 43 radiosonde flights was 17,288 meters. Only one third of the flights terminated due balloon burst. The eastern horizon reduced average height. The highest flight, on June 26 at 0000Z reached 14 MB and 23,658 meters. The average monthly temperature was -23.0 Deg C., the lowest -36.1 Deg. C., the highest -10.1 Deg. C. The jet heater installed in the North side of the Galley maintains the rawindema at nearly constant +10 Deg C.

WILKES STATION

IGY NR 365, Wilkes June Sit Rep - Geomagnetism: Almost daily leveling of the Z system has been found necessary. Shifts of up to several millimeters in the Z trace require raising and lowering of the Z system in order to recenter system. Good temperature control in the variations building is not affected whenever large variations occur outside. Other operations are normal. Aurora: 23 nights were clear. Aurora were seen on all but four. Spectrograms show nitrogen negative group enhancement on nearly all exposures. Sodium lines are strongest during the twilight hours. Hydrogen Alfa lines were present on four occasions. Nitrogen positive group enhancement appears rarely. 15 minute observations have been made during all dark hours since mid May. Tri X development increased to 11 minutes to improve contrast of faint aurora. Type B aurora has been seen on two occasions about one hour before magnetic midnight. A cursory examination of the visual data tends to indicate presence of secondary morning mass in activity, which occurs about five hours after magnetic midnight. Cosmic Rays: Observations have been routine except for four days in which data was lost. Two of these were due to scalar trouble, 2 more due to a temperature drop in the shack sufficient to cause clock to freeze. Second situation corrected so that it will not reoccur. First situation due to unreliability of transistor flip-flops. One G-M tube was replaced. Glaciology:

The height of Site 2 has been fixed by altimetry at 3,730 feet with probable error 75 feet. Since October deformation tunnel has compacted an average of 12 mm vertically and 7 mm horizontally. Stratigraphic studies at Site 2 agree with last years measurements and show annual precipitation averages 26 cm water equivalent since 1954. At the main base work has started on a winter coring program to investigate superimposed ice of different ages and detailed effects of melting on 10 meter temperature. The program is considerably handicapped by blunt drilling bits. Ionosphere: The "critical dome" has dropped and narrowed until June 22 at which time the diurnal curve dome was under 6 mc and centered around 1500 Hours local time. This diurnal curve was in general centered around 1200 hours local time for the month of June. It usually has a steeper leading edge than trailing edge. It has been noted here that reasonable amateur contacts can be expected when this curve rose about 7 mc. An electronically regulated power supply was designed and built here for the purpose of isolating the frequency marker unit. After its installation an improvement was noted in the ease of adjustment of this unit as well as in the markers presentation on the scope unit. Seismology: 39 Earthquakes were recorded during June. Fiber from Geomagnetic spares installed in East and Vertical galvanometers since no standard suspension wire is on hand. Meteorology: Winds on June 20 blew aerovane transmitter apart and damaged hydrogen shack roof slightly. Repairs on both completed shortly thereafter. Average temperature for the month was -6.4 Deg.F., maximum 19.0 Deg. F., Minimum -26.0 Deg.F. Highest recorded gust of wind 89 mph. Total snowfall for the period was 7.2 in. The average height of 25 rawinsonde flights was 18,661 meters. Oceanography: Southerly winds blew ice out South of Shirley Islet on two occasions. The remainder of the bay to Chappel Islet is solid ice two feet thick. Ice thickness and salinity observations started June 9. Six bottom samples 60 yards apart were taken in Ramp Cove. The project was temporarily suspended due to high winds from the 27th to the end of the month. First few holes were cut with an ice chisel, but now we are using 2½ lbs C-4 per hole. Time lapse movies of ice are being taken as light permits. General: All were amazed at the generally good weather in June. Except for a few notable exceptions month was calm and work outdoors pleasant. Several trips on foot were made to Shirley and Bailey Islets. Weasel was tried on ice to tow winch sled. Snocat was used to bring in seals killed off Base Point. These included one Weddell, one Crabeater, and one Ross. The latter was the third one of its kind seen. All scientific apparatus working fine including aerology. Seminars are being given in Ionospheric Physics and related phenomena, fundamentals of Auroral Physics, elements of Glaciology, Gravity winds and pressure. The satellite tracking antennas is nearly completed.

#### ELLSWORTH STATION

IGY NR 222, June Sit Rep - Aurora: Aurora were observed on 20 nights. Cloudy conditions have been more prevalent this month. The first all red aurora was seen at 0815 Z on June 29 with the moon hampering observations. The all sky camera normal clock jammed again. The motor has bent the shaft and broken the gear. The solenoid now kept from sticking by rubber band spring. Good Navy cooperation in keeping the outside lights to a minimum. Meteorology: Fire in the jet heater space on June 29 again leaves the Rawindome without heat. There is constant trouble with the wind vane filling with snow during strong winds and freezing during calm periods. The average monthly temperature was - 32.9 Deg C. Ionosphere: The program operation was normal. Cosmic Rays:

There was a notable increase in neutron counting rate beginning May 31 ending June 9, with broad peak extending from June 3 to 7 at times registering 34 percent more particles than normal. The ionospheric C-4 recorder is causing sporadic counting in Meson electronics. The extremes of temperature and humidity ruined the coating on the GM tubes last year; so recommend in any resupply that they be packed differently. Glaciology: The thickness of the sea ice is now 97 inches, an increase of 13 during the month. Snow stake accumulation was 5.4 cm. More 2 meter pits have been dug. Side tunnel from 10 meter level of the deep pit now 26 feet long. Seismology: Traverse snocat completed. All instruments have been vertically mounted on cushioned wall brackets. The back can be closed off as dark room with developing ca's in aluminum box heated by an extra hot water heater. All equipment has been wired to central switchboard allowing for rotational charging of batteries in any combination. Additional ignition starter and engine heat gauge also wired to switchboard allowing men to start engine for additional heat without leaving darkroom.

#### IGY NEWS

News Message Nr. 14, Following message was sent to the Soviet Newspaper Izvestia, Moscow, on the occasion of the First Anniversary of Antarctic IGY Research and the session of the Special Committee on Antarctic Research - "Amundsen-Scott South Pole Station, located at 90 Degrees South, is situated on 8,297 feet of ice cover on rock 903 feet above sea level. The station is manned by 18 scientific and support personnel. The station Scientific Leader is P. Mogensen. Personnel at this station were the first to winter in continents interior. Record low temperature of 102.1 Deg. F. was reported September 1957. In December the Pole receives the most sunlight in world, but ice reflects 95 percent of the radiation. The sun set on March 22 and reappeared September 23. Scientists gain at this station a maximum period of darkness for atmospheric studies. Ellsworth Station, 41-03 Deg West 77-44 Deg. South, is located 2 miles from the sea. The station is 135 feet above sea level on ice 760 feet thick. The station is surrounded by crevasses, although there is a dangerous passage to the Southeast. The station is manned by 40 scientific and support personnel. The Station Scientific is M. Brennen. Ellsworth scientists discovered mountain range 9,000 feet high and large ice free areas including fresh water lake with abundant plant life. A trough was also discovered beneath the ice averaging 3,500 feet below sea level and extending South and South East. Wilkes Station, located on the Budd Coast at 66-15 Deg South 110-32 Deg East, and has a subsidiary station 50 Miles inland on the icecap for additional studies. Wind at Wilkes Station reached 133 Miles per hour during April storm over a twenty-four hour period. In the past twelve months the cosmic ray counts revealed an interesting decrease in magnetic storms. The low count correlated with a decrease in the Northern Latitudes. 27 scientific and support personnel are wintering-over at Wilkes Station. The Scientific Station Leader is Tressler. Carl Eklund, last year's Scientific Leader at the Station branded Skua Gulls and Weddell Seals, surveyed the Penguin Rookeries and recorded the temperature of incubation of Penguin and Skua eggs. Little America Station, located at 78-11 Deg South 162-10 Deg West, is situated on the ice shelf edging the Ross Sea and is the largest of the US IGY Antarctic Stations and is the Scientific Field Headquarters for the US Antarctic Program. Here it is that the IGY Weather Central is set up by US at request of the international IGY Committee. This central is operated by an international team. Station Scientific Leader is A.P. Crary. Little America scientist have found that the

Ross Ice Shelf is 1000 feet thick and floats in water over 2000 feet deep. The ice temperature 30 feet below the surface is slightly warmer than the surface because of the ocean heat transported through the ice. Inland Ice temperature decreased but 400 miles nearer Pole temperature rose until equal to those at the Station. These surprising results probably caused by warm winds from the Southeast. Observations at Little America reveal that annual temperature has warmed about 5 Degrees F. since 1911. Byrd Station, 79-59 Deg, South 120-01 Deg. West, in the interior of Marie Byrd Land on the Rockefeller Plateau, will among other observation supply data about the pressure waves reported half a century ago by Scott. The average station temperature is -18 Deg. F. and winds of 23 miles per hour. No clear days were reported for either January or February. There are 23 scientific and support personnel at the station. The Station Scientific Leader is S. Barnes. Byrd Station scientists drilled to 1000 feet in the ice recovering cores of ice 1000 years old. The station is situated on 10,000 feet of ice with an altitude of only 5000 feet above sea level suggesting presence of frozen sea of fjord, 100 miles to the East ice 14,000 feet thick was discovered founded on Eack bed 8,200 feet below sea level. This is the thickest ice layer yet measured. Fresh penguin tracks 150 miles from the coast were discovered during the traverse operation. Hallett Station, 72-18 Deg. S. 170-18 Deg East is located at the entrance of the Ross Sea and is operated jointly by New Zealand and the United States. The Station Scientific Leader is K. Salmon from New Zealand. There are 14 scientific and support personnel at the station. Correlation has been found at the station between auroral and ionospheric phenomena. The station is also studying geomagnetism, meteorology, seismology and airglow."

IGY Special News Message June 30, 1958 - A new "river in the sea" 250 miles wide and 1000 feet deep has been mapped by scientists from the University of California Scripps Institute of Oceanography and US Fish and Wildlife Services Pacific Oceanic Fishery Investigations. Unlike the well known surface currents that appear on maps of the oceans this is a submarine current. Measurements show that it is as strong as a thousand Mississippi Rivers and as swift as the Gulf Stream. It flows Eastward along the equator for at least 3,500 miles. The cruise on which this discovery was made is part of the US IGY program. At intersection of Longitude 149 Degrees West with the Equator ships spent 22 days measuring currents from the surface to depths of more than 3,000 feet. Only a hundred feet beneath the West flowing South Equatorial Current at the surface, The Dolphin expedition located and measured the East flowing undercurrent. The very existence of this sub current has only been known for a few years, and was discovered in the process of long line fishing, a technique used by the Japanese wherein a series of fishing lines are attached to ropes several miles long which are in turn supported by buoys. When the line was put out it was discovered that the line did not move Westward with the surface current as expected, but rather at a high speed in the opposite direction. It was not until this recent Dolphin expedition that the extent of this current was investigated. The current extends East to Galapagos Islands. Its core lies about 300 feet beneath the surface becoming shallower towards the East. The current is about 250 miles wide and moves at a rate of about 3 knots. Utilizing techniques developed at Scripps, the Dolphin Expedition anchored a buoy in the water nearly three miles deep at Longitude 140 Deg West at the Equator. Other buoys were established one or two degrees North and South of the Equator. These five buoys served as points for subsequent current measurements. The "Equator" Buoy was tended by one vessel continuously for a

IGY Special News Message June 28, 1958 - A new "river in the sea" 250 miles wide and 1000 feet deep has been mapped by scientists from the University of California Scripps Institute of Oceanography and US Fish and Wildlife Services Pacific Oceanic Fishery Investigations. Unlike the well known surface



twenty two day period. Measurements showed that at 140 Deg West the core of the current lay about 300 feet beneath the ocean surface. The current was about 700 feet thick and about 240 miles wide at this point.. It was more rapid than the surface current, averaging almost three knots against one knot of the Southern Equatorial Current. The amount of water transported in a given amount of time is about equal to the Gulf Stream as it emerges from the Florida Strait. At that the same period the other research vessel, Horizon, sailed Eastward along the Equator making current measurements every 180 miles. The core of the current gradually lifted until it was approximately 140 feet beneath the surface. Santa Isabela Island in the Galapagos Group sits astride the Equator. To the West of the Island, the current is still traceable. To the East of the Island it had disappeared. The discovery poses many problems that oceanographers must answer. Where does all this water come from? Its existence has only been assured halfway across the ocean. Does it extend to the Asiatic Shores. Where does the water go after it reaches Santa Isabela Island? The discovery of this current dramatically indicates how complicated the current structure of the ocean is. Beneath this swift current flowing east the Dolphin Expedition located still another current, a weak one flowing West. Thus in these first few thousand feet of the Pacific there are three great currents lying like ribbons on top of each other and being pulled in opposite directions.

## IGY News

IGY News Message Nr. 12 - The IGY Antarctic Project leaders held a meeting May 28 to firm up plans for the 1955-59 summer season operation. It was decided to send approximately fifty IGY seasonal scientific personnel to the Antarctic. In addition approximately 40 will winter-over and continue the post IGY scientific program.

On June 3 the Committee on Polar Research of the National Academy met to finalize the first post IGY winter program. The committee plans a modest beginning in a long-range program in biology, geology, geodesy, and cartography. Also the establishment of a year around biological laboratory is being planned for McMurdo, and is to be instituted this season.

The negotiations for the transfer of Wilkes Station to Australia are near completion. The US plans to provide two or three wintering-over scientists at the station this next year. (A recent message indicates that the US will not continue its glaciological program at Wilkes this next year.)

In the Arctic Basin it is reported that all installations at Drifting Station A have been move approximately one kilometer from their original locations due to ice movements, and cracking at the original site. The ice movement was first observed on April 13 when electrical lines between the laboratories and the observational sites were severed. Thereafter pressure ridges advanced towards the camp from the Southeast. Part of the floe carrying the homer beacon was displaced about 300 meters. Then a new crack formed under the radio hut damaging the building and antennas. Four men were evacuated from the station. On May 2 the ice was judged safer the four men returned supported by six more to assist in moving the camp. On May 24 the move was completed and all scientific operations are now in operation. In all only four to five days observations were lost. On June 11 two new leads, formed 2000 feet from the nearest scientific building, but the camp facilities were untouched and all programs continue on routine basis.

On May 1 a total of 116 rockets had been fired in the U.S. IGY Rocket Program including 21 Aerobees and 20 Nike Cajuns at Fort Churchill; 2 Nike Cajuns and one Aerobee, and one Nike Asp at White Sands New Mexico; two Aerobees at Alamogordo, New Mexico; 14 Nike Deacons and one Nike Asp at San Nicolas Island, California, 36 Rockoons on shipboard Arctic Operations; and 36 Rockoons on Shipboard operations in the Pacific and Antarctic waters. The major effort of the US IGY program centered at Fort Churchill where 33 of 41 launchings resulted in good rocket performance and satisfactory data return.

The USSR Research Vessel Vityaz measured a new record depth of, 10,960 meters in the Mariana Trench. The previous record, measured in the same area, was made by the British vessel Challenger in which 10,863 meters were recorded. The Vityaz obtained bottom samples by trawling from 10,930 meters but found no marine life. An attempt to obtain a core at 10,960 meters was made but was unsuccessful.

The Soviet reports to the International IGY Organizations on observations of the Dog Laika carried in the second Soviet Satellite stated that during the ascent Laika was placed in a position so acceleration acted from chest to back pressing the animal to the floor. During the ascent its heartbeat trebled and respiration was recorded three to four times normal before the satellite was launched into orbit. After the Satellite was in its orbit the animal became weightless and pushed itself from the floor easily. After a brief period of quickened heartbeat the frequency diminished and returned to near normal. The report concluded that the weightlessness did not in itself cause any essential and stable changes in the state of the animal's physiological functions.

USNC/IGY PERSONNEL  
WINTERING-OVER IN ANTARCTICA  
1957-1958

LITTLE AMERICA IGY STATION

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S.L. DENHARTOG	Glaciology/1958-59 Traverse
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SYRD IGY STATION

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D. SPENCER	Ionosphere/Whistlers/Radio Noise
M.N. TODD	Station Chief Aurora
J.O. ANNEXSTAD	Geomagnetism
N.L. PETERS	Meteorologist in Charge
F.L. DARLING	<del>Technician</del> - Meteorology
J.V. KNACK	Meteorology
W.C. NOBLE	Meteorology
C.R. BENTLEY	Chief Seismologist/Leader 1958-59 Traverse
W.E. LONG	Chief Glaciologist/1958-59 Traverse
L. LESCHACK	Seismology/1958-59 Traverse
J.B. LONG	Mechanic/1958-59 Traverse

HALLETT IGY STATION (Joint Station with New Zealand)

K.J. SALMON (NZ)	Station Scientific Leader/Aurora and Ionosphere
C.A. KING (NZ)	Ionosphere
K.A. BARGH (NZ)	Geomagnetism/Seismology
N.S. BENES (US)	Meteorologist in Charge

AMUNDSEN-SCOTT SOUTH POLE STATION

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A.E. JORGENSEN Meteorology

WILKES IGY STATION

W.L. TRESSLER Station Scientific Leader/Oceanography  
D.R. DENNISON Station Chief Aurora  
S.R. BORRELLO Geomagnetism  
W.L. ALLISON Station Chief Ionosphere/Cosmic Rays  
D.H. EDMAN Ionosphere  
J. ZIMMERMAN Meteorologist in Charge  
REV. H. BIRKENHAUER Seismology  
J. HOLLIN Chief Glaciologist  
R. ROBERTSON Glaciology  
C. CRONE Glaciology  
A. OMMUNDSEN Mechanic

ELLSWORTH IGY STATION

M.J. BRENNEN Station Scientific Leader/Meteorologist in Charge  
V.D. URBAN Supervising Meteorologist  
A.D. WARREN Station Chief Aurora  
L.C. SEMPREBON Station Chief Ionosphere/  
D.R. REED Ionosphere  
REV. E.A. BRADLEY Chief Seismologist/1958-59 Traverse  
F.T. TURCOTTE Seismology/ 1958-59 Traverse  
R.J. GOODWIN Glaciologist/1958-59 Traverse  
J.N. PIRRIE Chief Glaciologist/1958-59 Traverse  
D.N. HOFFMAN Mechanic/ 1958-59 Traverse

ANTARCTIC IGY STATIONS \*

ARGENTINA:	General Belgrano 77-58 S 38-48 W	C.T.A.E. (con.)	South Ice 81-56 S 37 W (Abandoned 1957-58 season)
	Decepcion 62-59 S 60-43 W		
AUSTRALIA:	Mawson 67-36 S 62-54 E	UNITED KINGDOM:	Port Stanley 51-42 S 57-52 W
	Davis Base 68-32 S 77-55 E		Halley Bay 75-31 S 26-36 W
BELGIUM:	King Baudouin 70-15 S 24-12 E	U.S.S.R.	Mirny 66-33 S 93-00 E
CHILE:	O'Higgins 63-19 S 57-54 W		Oasis (Bunger Hills) 66-18 S 100-49 E
FRANCE:	Dumont d'Urville 66-40 S 140-01 E		Pioneerskaya 69-40 S 95-40 E
	Charcot 69-22 S 139-02 E		Komsomolskaya 74-08 S 97-17 E
JAPAN:	Showa Base 69-02 S 39-36 E (Abandoned Summer 1957-58)		Vostok 78-18 S 106-30 E
			Sovietskaya 78-13 S 87-22 E
NEW ZEALAND:	Adare Station 72-25 S 170-55 E (Jointly with the U.S.)	UNITED STATES:	Little America 78-11 S 162-10 W
	Scott Base 77-50 S 166-44 E (Jointly with C.T.A.E. ** until February 1958)		Byrd Station 77-53 S 120-01 W
			South Pole Station 90 S
NORWAY:	Base Norge 78-30 S 02-32 W		Wilkes Station 66-16 S 110-31 E
UNION OF SOUTH AFRICA	- No Station on the Antarctic Continent.		Ellsworth Station 77-43 S 41-08 W
C.T.A.E. **	Shackleton 77-57 S 37-16 W (Abandoned 1957-58 Season)		Adare Station 72-29 S 170-20 E (Joint US/New Zealand)
	South Ice		N.A.F. McMurdo 77-53 S 166-44 E

\* Not including sub Antarctic Island Stations nor Stations in the Palmer Peninsula except the Mother Station in the Antarctic Communication Network.

\*\* Commonwealth Trans Antarctic Expedition