AUGUST SITREPS

Little America

No. 7, 3 Sept 57 * AURORA. Visual obs routine. Spectrograph on semimanual oper. All sky camera working satis. Spherical mirror replaced due to scratches caused during soot removal. Meteor radar operation satis. 11 hrs tests made with sporadic meteor reflections noted during 2 hrs. Visual meteor observations made 3 hrs with naked eye in 45° cone around zenith, with maximum of 7 per hr. No texture obs. GEOMAG. Operation routine. Month was generally quiet. 3 Aug moderate storm with sudden commencement 1557Z ; 6 Aug disturbed; 29 Aug large magnetic storm commenced 1920Z; during first 3 hrs registered ranges 1560 gammas vertical intensity; 1635 gammas horizontal intensity; 6° 54' declination. GLACIOLOGY. Deep pit finished at 20 meters, cores obtained 20 to 40 meters with hand augur. Approx ice temperatures as follows: 16.8 m, -23.3° C; 26.3 m, -22.6°C; 39.0 m, -22.2°C. 165 samples for oxygen isotope study taken from 15 to 19 meters. Stakes located across two inland valleys for strain rate studies. During blizzard 30 Aug full results obtained from 70 accumulation stakes: 34, erosion; 14, no change; 22, accumulation, with average 0.8 cm erosion. IONOSPHERE. C4 recorder routine operation 98.4% of month. First half SWI 24 Aug lost by warning message with wrong text. MET OBS. Surface and upp air obser routine. 62 radiosondes made with average height 17262 meters. Pyrheliometer and illuminaometer back in oper. Surface ozone analyzer under repair and test after difficulties believed due to impurities in system. MICROMET AND RAD. Kipp solarimeter in operation 20 Aug. Continued measurements outgoing radiation to different azimuth distances with Linke-Feussner actinometer. Several calibrations made of Schulze radiometer for long wave radiation. Studies made of wind erosion. Halo obs on 11 days. Continued temperature gradient, wind profile, heat flow. 217 wind profiles observed making total for year 676, as follows in percent and wind speed; 29%, 0 to 5 m/sec; 41%, 5 to 10 m/sec; 19.5%, 10 to 15 m/sec; 6%, 15 to 20 m/sec; 4%, 20 to 25 m/sec; 0.5%, 25 to 27 m/sec. For winds over 15 m/sec roughness parameters 1 to 10 cm indicated. PHYSIOLOGY. Investigated human thermal balance in cold. Made simultaneous determinations heat production, skin and body temperature. Correlating with micromet data. SEIS AND GRAV. Analysis of records from seismic sites near barrier completed. With changes of surface elevation from 17 to 43 meters, ratio of thickness to surface elevation mostly 5.5 to 7.0. Higher values in crevassed valley north of camp believed to be cause of active vertical displacements in crevasses. TRAV OPER. Spare differential for damaged Snocat borrowed from Byrd Sta cache and repairs underway. Traverse food packing completed. First aid kits assembled. MISC COMM. Receipt of data improved since number of skeds increased to 4 per day with Mother Sta. 4 skeds surface and upper air analysis broadcasts missed due to communication blackouts on Aug 5, 29, 30 and 31. Reliability of New Zealand data increased with RATT transmission from ZKLF, Pretoria, Africa rarely heard.

Byrd Sta

August Sitrep, 2 Sept 57 * AURORA. August most active month to date. Flaming aurora Aug 10. Great activity Aug 15, 18, 19, 30. Very bright and bright to very bright aurora Aug 11, 15 and 20. Rare yellow aurora Aug 30. Tower structure withstood 70 knot wind, spectrograpg mount 50 knot. All sky camera inoperative all month. Governor and main springs each broke several times, now repaired. Replacements for shutter shaft ball bearings hand made. Bed hung from ceiling under dome for meteor obs. Other phenomens observed include crepuscular shadow rays Aug 7; probable noctilucent clouds Aug 19; nacreous clouds Aug 21, 24, 30; bluegreen meteor near fireball brilliance in south Aug 29. GEOMAG. Hourly scalings begun. No monthly means but preliminery records indicate an H of .158 and Z of .598. Rapid run not yet under test operation. Weather and magnetic conditions hinder frequent absolute observations necessary at this time. GLACIOLOGY. Monthly accumulation average 3 cms. Core obtained from bottom deep pit at 12 meters to 30 m for density and stratigraphy. Air sampled at 30 m. Melted cores filtered to obtain precipitate . IONOSPHERE. Transmitting antenna-terminating resistor opened during

70 kn wind. Compelled to switch receiving antenna to transmitter to continue, resulting in 50% less spread echo due to orientation of transmitting antenna. Receiver sensitivity over entire range. Repairs await daylight and favorable weather conditions. METEOROLOGY. Punch cards and summaries up to date. Radiation equipment installed. Leaking fuel line in Herman-Nelson caused light fire in Bldg 9 when heater backfired. Average height 50 raobs 18083 meters. High winds aborted majority. STA SEIS. Recorded 21 disturbances. High winds caused great disturbance to vertical seismograph partly obliterating 10 days records. Only jarring and RF interference with horizontals. East -West seismo goes against east stops periodically every 5 to 6 days. Necessary to obtain time corrections with stop watch from radio central. Estimate accuracy to half-second. TRAV SEIS AND GRAV. Summary trav results: Ice thickness profile, grav and seis reflection depths in good agreement. Rock relief very rugged. Lowest point 1400 m below SL; highest 30 m above. Corresponding low and high in ice surface. Maximum ice thickness 2600 m, average 1650 m. Near surface velocities: P and S velocity to 50 m depth most stations. Difference between stations small. Poissons ratio .26 at 14 m, over .30 above 5 m and below 40 m. P velocity- density correlation to .6 m good. Maximum density range at one velocity plus or minus .01 gm/cc. Refraction profile: Max P vel 3865 m/sec, max S vel 1945, approx depth 250 meters. Average vertical P vel below 250 meters 3750 m/sec. PS and SS reflections poor. No refracted arrivals through rock up to 16 km distance. Possible critical angle refraction gives velocity 4200 to 4300 m/sec. Altimetry: Elev Byrd Sta determination by trav altimeters corrected for measured wind velocity 1500 m plus or minus 25 m, in good agreement with Sea Cent value of 1515 m.

South Pole Sta

August Sitrep, 2 Sept 57 * GENERAL. Health and morale excellent. Dawn light nearly dimmed out stars. Medical and science lectures continue two days weekly. AURORA. 1577 observations during August. Displays visible 27 days, other 4 days overcast. All sky camera operating 88% complete. Repeated K100 camera governor spring and shutter trouble causing intermittent operation during last half of month. With increased twilight all sky camera operation ceases 3 Sept. Manual spectrograph operation 100% complete for month. Turntable used since 17 Aug to collect twilight data. Meteor count: final results of extremely limited obser: naked eye, 7.6 per hr; binoculars, 9.1 per hr. STA SEISMOLOGY. Aug vertical recordings 90% complete. 101 disturbances reported for month. For reported periods given by C&GS 30% Pole identified. Largest of these New Guinea C90229202 and Prin Edward Is 04210851Z. Both had strong onset P wave and disturbance lasted about 12 minutes. One of largest disturbances not yet identified Jul 17112212Z had strong P wave and lasted 12 min. Replacement galvanometers for horiz seis not functioning satis. Attempt of further replacement abandoned. Await shipment new galvos to put horiz in operation. GEOMAG. Askania variagraph operation satis on all 3 components. Average pit temp -50°C. GLACIOLOGY. Snow mine depth now below 50 ft. Over 210 man hours for month. Density 0.52 does not portray flinty hardness of -52.3°C snow. IONOSPHERE. 35 mm C-3 recorder 99% complete for month. Scaling up to date. 750 ft 16 mm film recorded at 4 frames per min on almost daily sked 1500 to 1800Z and 2010 to 2300Z. This sampling of sunrise affect to be continued in Sept. During past three days of month there has been consistent spread of F layer with occasional sporadic E and F. G layer appeared several times each month. No regular E or Sep F2 F1 and F2 as to be expected with return of sun observed up to 1 Sept. Diurnal trend critical freq F layer presumed related to eccentric geomag pole observed again this month. Hourly median which ranges 3.4 to 5.4 are higher during Greenwich morning than later in day. During late Aug blackout an unidentified layer recorded at 18 to 20 km with critical freq of 1.0 to 1.1 mcs. METEOROLOGY. Operations continue normal. Average height 62 soundings 16002 m.

Hallett Sta

Sitrep No. 9, 4 Sept 57* GEOMAG. Variograph operated without difficulty entire period. SEISMOLOGY. All seismographs in routine operation. Erratic trace movement still a difficulty in horizontal components. AURORA. 1 kv power supply of spectrograph failed 14 Aug. Operated manually until 31 Aug, when modified circuit permitting use 6 kv power supply from ionosphere gear was installed. All sky camera operated without trouble entire period. IONOSPHERE. Essentially full operation for month. PRF control open circuit for 3rd time. Modification expected to prevent repetition. Germanium diode across video output again shorted. Current radio blackout prevents test of revised circuit solution. METEOROLOGY. All scheduled radiosoundings made with average height 17688 meters. No soundings missed since 23 June. Pronounced increase in heights since soaking balloons in 140° F diesel fuel.

Wilkes Sta

August Sitrep, 6 Sept 57* AURORA AND AIRGLOW. Out of 364 hrs observed 94 were clear but many of these were quite hazy with moonlight making it rather difficult to detect faint aurora. Aurora observed during only 35 hrs. Bright display of rayed bands with red lower borders on 311730Z. Displays otherwise quite feeble. Instruments continue to function with only very minor adjustments necessary. GLACIOLOGY. Work continues on Poinsett ice cap (S-2). Depth of pit 28 m. Photos of thin sections and wall sections being made. 216 met obs taken. Holholm and Cameron returned base Aug 17 to participate Cape Poinsett trip with Eklund and Charlton etc. Returned S-2 after Poinsett trip terminated because of storm frequency and unsafe sea ice. IONOSPHERE. Ionosonde in operation 97.7% of month. High absorption condition existed during 10-14, 23,24,26,29 and 31 with very high absorption on 30th. Weak F1 and E layers recorded during undisturbed days. COSMIC RAY. Checkout test completed without improving data consistently. Eqpt continue to operate as is pending further instructions from U of Md. SEISMOLOGY. 13 earthquakes recorded. Microseismic storms showing well defined beats during passage low pressure areas 14, 22, 24, 25 Aug. Normal trace amplitude .2 - .5 mm max 6 mm 14 Aug. Normal period 7 - 8 sec. GEOMAG. Quiet month. Average of D, H and Z: 82.6°, 9377 gammas and 65506 gammas. Scale values of std magnetograph 10.5 min, 24.4 gammas and 24.8 gammas per mm, resp. Storm of about 16 hrs duration began 291920Z. Max range of elements during a 2 hr period 395 min, 1275 gammas, and 1395 gammas. Less intense storm 311707Z marked by group of micropulses with 8 - 12 sec periods. METEOROLOGY. 10 releases lost during August due high winds. All bay ice broken up and blown out during week of 25th with exception of sheltered coves and that protected by grounded icebergs. Young ice now forming. No pack ice visible. GENERAL. Berkeley conducting class in Math and Long giving ski instructions. Health and morale fine.

Ellsworth Sta

Sitrep No. 9, 31 Aug. 57 * AURORA. Observations 20 nights in Aug. Flaming aurora observed 7 nights of winter. Next to HAS most persistent form, lasting one occasion 4 hrs. Too faint and swift to photo motion. Most all sky exposures successful at 10 sec. Use 40 sec to record faint semi-permanent quiet arc feature of S3 and S4 morning hrs. Photometry in blue and red lightof zenith brightness during twilight shows marked recurrent variations with change of solar zenith angle. First obs molecular scattering as sun strikes region near 200 km. Brightness correlates somewhat with rawinsonde temperatures, appears a sensitive measure atmospheric density in region below 50 km. IONOSPHERE. C4 ionosonde behaving moderately well. Few remaining pecadilloes less susceptible to chastening involve poor mechanical design of 35 mm camera with some lost records resulting. Recm redesign of this camera or modification of C3 type for use with C4. Operation normal otherwise. Scaling current. Definite echo layers and less definite F1 layers observed occasionally. Whistler gear operating satis with few marred recordings due to low ambient temp and RFdio interference. Have definitely recorded

wagon wheels and what are believed to be noise whistlers. Have begun work on whistler spectroanalyzer and hope to perform critical experiment to test feasibility of basic data within next month. GRAVITY AND SEISMOLOGY. Measured vertical gravity gradients on aurora tower and in deep pit as experiment to determine density of snow removed from pit. Knowledge of density and P and S wave velocities will allow complete determinations of elastic properties of snow at seismic freq to 55 meters depth. Food unpacked for traverse resupply. GLACIOLOGY. Deep pit completed 1 Aug at slope 15° off vertical. Slope depth 32.4 meters and vertical depth 31.3 meters. Strata at pit bottom dip approx 45° NE. Three inch ice core cut 26 meters below floor of pit 10° off vertical. Ice from deep cores show elongated bubbles of preferred orientation. Density of deepest core approx .89. Temp taken at 5 m intervals throughout depth of pit and core hole. Thermohm placed 3 meters into wall for pit measurements. Decreasing temp with depth appears to approach cold limit. Lowest reading of -26.72° C at core hole bottom. Samples of oxygen isotope analysis taken in strata from surface to depth of 18 meters. Two rows of pins, spaced at one meter, set and triangulated down west wall of pit to measure vertical and horizontal compression and distortion. Local magnetic declination determined with greater precision than previously possible. Calculations carried out for time of first sunrise in effort to determine refraction value at horizon. METEOROLOGY. Began installation radiation eqpt 11 Aug. First piece; upward facing pyrheliometer installed on platform on rawin dome. Second piece; downward facing pyrheliometer installed upon triped in clear snow field. Third piece; normal incidence pyrheliometer installed upon triped in same snow field. Fourth piece; sunshine switch, installed in same snow field. All eqpt portable, making installation easy for take down storage. Cloudy days have prevented orientation normal incidence pyrheliometer and sunshine switch properly. As result sunshine switch is not operative at present time. All eqpt staggered in snow field to prevent shadowing each other. All climatic and recorder records brought up to date. GENERAL. Sta scientific leaders express gratification on enthusiastic endeavor by IGY personnel to obtain maximum results and military groups splendid, ever ready cooperation enabling IGY group to devote entire time on their own work. All well.

August Weather Averages

	Little Am	Byrd	Pole	Hallett	Wilkes	Ellsw	McMurdo
Temp, ave, °F	-30.1	-19.9	-72.8	-17.1	+ 9.5	-34.4	-14.0
Temp, high, °F	0.0	+8.3	-45.4	+19.4	+32.0	+4.1	+18
Temp, low, °F	-56.0	-51.2	-99.8	-43.6	-11.0	-59.1	-42
Ave Wind dir	S	N	340 g	SW	ESE	S	ESE
Ave Wind Speed, kn	14.1	23.5	16.0	6.7	12.9	12.1	11
Peak Wind Speed	75	62	33	55	57	39	43
No. Clear Days	9	6	20	12		3	9
Partly Cloudy	14	11	8	10		27	11
Cloudy	8	14	3	9		1	11

Crary

SEPTEMBER SITREPS

Little America

No. 8, 4 Oct 57 * Aurora Continued visual obs during darkness and twilight. Spectrograph on semi-manual operation. All-sky camera program terminated Sep 17 account of twilight. K-100 camera failure Sep 17 in governor and spring mechanism. Meteor radar observations between 2 and 4 hrs daily. Interference from radio communications. Frequency of echos shows dependency on ionosphere absorption. Variation usually between 4 and 15 echos per hr. Geomag Sep was generally disturbed with only 7 quiet days. A magnetic storm had a gradual beginning on the 12th with an SC following on the 13th at 0047Z. A large storm began with an SSC on the 21st at 1005Z. Moderate magnetic storm began with an SSC at 0016Z on the 29th. Glaciology Density and stratigraphy finished in deep pit. Density at 20 meters, 0.62; 30 m, 0.67 and 40 m, 0.74. 3.5 km base line rechained with 2.1 meter increase in 7 months. Winter snow studied in 6 shallow pits of known accumulation since March. Surveying array enlarged to include 3 additional points near barrier edge. Hydrographic Station at Kainan Bay made 30 Sep to 300 meters: temp -1.98° C at 5 m, -1.83° C at 300 m. Schoeck, aurora scientist during winter begins duties as chief glaciologist 1 Oct. Ionosphere Operation routine. Last five days of month trouble with potentiometers causing instability of oscillograph traces and some loss of observations. Met Obs Average height 60 radiosonde soundings 19860 meters. Readings from normal incidence pyrheliometer on parts of 13 days. All other instruments including radiometers, pyrheliometers, illuminometers, carbon dioxide analyzer and ozone analyzer in routine operation except infrared hygrometer which has worn out gear. Micromet and Radiation Schulze net radiometer and Kipp solarimeters in continuous operation except for three days recorder trouble. Schulze net radiometer long wave radiation calibration made on 2 days. Linke-Fuessner actinometer measurements normal incidence radiation made with different filters on seven days. Simultaneous short wave radiation calibration made Schulze net radiometer and Kipp solarimeters. Halo obs made on 22 days. Wind and temperature gradient studies continue. 153 wind profiles taken during month of light winds. Physiology Continued field thermal balance studies. Completed weeks study of nutritional intake and energy expenditure of 5 IGY and 5 Navy personnel. Spent 11 days at McMurdo. Discussed Medical Officer observations on cold injury and cold acclimatization. Arranged for return in November for penguin study. Seis and Grav Traverse gravimeter and magnetometer ties made at McMurdo. Traverse Operations Installations in 3 Snocats completed. Crevasse detector assembled and testing in progress. Recon flight made over planned route across north end of Roosevelt Island. Weather Central Radio blackouts and poor propagation conditions during month made operations very difficult. 40% sked analyses missed due to insufficient data. Portion completed fair to poor. No progress on improvement mother daughter network relay of weather. Shoyo and Norwegian reports still received too late to be of value in analysis.

Byrd Station

Sep Sitrep, 2 Oct 57* Aurora Scanning film and preparing final seasons report primary activity of month. Lines of neutral and ionized oxygen and nitrogen, CO and sodium in spectrograms. Hydrogen lines rare. Red diffuse surfaces and violet coronae Sep 13. Sep 14 bright aurora with rotating rays. One aurora with green and violet rays simultaneous. Geomag 17 days with more than 3 hrs duration of great disturbance. Disturbed 2 hr interval at 130800Z with D 184 minutes, H 2748 gammas, Z 1717 gammas. Sudden commencement at 211005Z with 2 hr ranges of D 182, H 1417, Z 853. Scale values for standard magnetograph D 5.7, H23.9, Z 24.5. Glaciology Accumulation 2.5 cm. Past winter and summer seasons influence on snow temperature detected at 8 and 16 meters respectively. Present warming detected at 4 meters. Square mile area windward of station buildings flagged for future accumulation and snow surface studies. Ionosphere. Transmitting antenna terminating resistor repaired. Receiving antenna switched back Sep 6. 137 hr blackout

condition of 720 hr in month. Meteorology Alf's rib permit return full duty. Daily 24 hr forecast begun. Physical inventory of equipment, property cards, new limiting angle chart, instrument location drawing. station history complete. Official forms up to date for past 9 months. Salvagable equipment and records prepared for shipment. Correlation graph of pressure, wind, weather, visibility, ceiling and winds aloft prepared for forecast and research. Instrument shelter relocated at surface. Pressure surges greater than .02 in. in half hr twice Sep 17, once Sep 21. Average 58 raobs 16288 meters. 12 mb raob Sep 180000Z to 26626 meters station record. Station Seismology Recorded 19 disturbances. Moderate microseismic activity Sep 5 to 12. Greatest activity Sep 21 with period 8 to 8.5 sec and E-W having greater amplitudes than N-S. Coincident with lowest pressure for month. Trav Seismology Glaciological deep pit and core hole shots measured vertical seismic velocity. Good impulsive Rayleigh waves in vertical pit wall. Geophone coupled to core hole using spring legs released at hole bottom when cord burned by Tareyton cigarette. Seismic gear checked out in good shape pending ordered parts. Short P and S refraction profiles completed in vicinity 20 meter augur hole. Experiments in shear wave generation show best success to 150 meters with 2x4 driven sideways in augur hole, at greater distance with cap about 15 cms from vertical longitudinal steel plate. Seismic gear in vehicle Hectori with attention to balanced load. Tomorrow 2 Snocats in outside storage dug out, started, checked, 5th wheel and gas tank from Buttons installed in Hectori. Buttons waits new units arriving from Little America Station.

South Pole Station

Sep Pole Sitrep. 1 Oct 57 " Health and morale excellent. Sun reappeared prematurely about a week before schedule when actually 3° below horizon. Stayed up almost continually last few days before official sunrise 23 Sep. Premature sun greatly distorted. Record lowest temperature -102.1 F on 18th and record average monthly temperature -80.1 F. Some persons taking hikes to assumed site of Amundsens tent. Aurora Programs terminated Sep as follows: All-sky camera 050000Z, spectrograph 070000Z and visual 080000Z. Data summary for year: Visual 5323 obs, all-sky camera 3400 ft 16 mm film, spectrograph 300 ft 16 mm film. Landolt now working on IBM cards and data books. Seismology 18 days records lost due to failure final galvanometer for Benioff recorder. Spare Sprengnether recorder now making good vertical records since 23 Sep. Both recorders installed in 90 x 32 " light tight compartment of ionosphere scaling room of Science Bldg. Ionosphere C3 recorder in operation 98% of month. Continuous 16 mm film record 825 ft. Critical frequencies of F layer has doubled and amount of spread has decreased. So far no echo or Sep F1 and 2 layers. Radio atmospheric monitoring antenna and equipment installed. Glaciology Mine depth 67 ft. Snow surface very hard, rough and sculptured. Developing new technique of snow crystal photography by shadow directly on film thanks to availibilty of Army supplies. Technique also being used by meteorology to record periodic crystal fallout from atmosphere. Meteorology Snow frost and drift [illegible] catch at surface 1.6" in snow, 0.36" precipitation. Catch 10 meters above surface 0.3 " snow, 0.04 " precipitation. Minimum temperature on 18th also gave 27 F increase in first 10 meters and 74 F increase in 500 meters. Average height 61 soundings 16656 meters. 2 soundings on the 25th and 30th, reaching 15 mb, showed warming from -80° C at 50 mb to -62° C at termination. 06Z and 18Z pibals now being taken using calcium hydride charges. Comparative rabals on the 20th and 24th. Weather Central canned maps received only 12 days. 24 hr terminal forecasts made daily.

Hallett Station

No. 10, 3 Oct 57 * Geomag Paper jamming in magazine caused complete loss of records on 16,17,18 and 19 Sep. Absolute magnetometer now installed. Some doubt as to magnetic stability of local site. Seismology No change status seismic program. Aurora Spectrograph produced no records until 27th due dropping out of bolts which secure solenoid and data shutter to frame. Loosening of micro-switch mountings, burning out of solenoid LS-1 and failure of crystal diodes complete peccadillo parade for period. Ionosphere Full operation until 30th when mainspring in master clock came loose. Spare unit installed but proved faulty. Original unit now repaired. Meteorology Surface and upper air observations continue on routine basis. Both pyrheliometers installed, power to radiometer in process. Stray RF radiation no problem with transmitter. Recently installed radio beacon, which will operate only during flights, renders records useless. Average height 60 radiosoundings 17578 meters.

Wilkes Station

Sep Sitrep, 3 Oct 57 * All disciplines operating routinely. Vincennes Bay free of ice most of month. Located Russian cairn at camp occupied by 12 men 13 Oct to 8 Nov 56, on Bailey Island. Aurora Continuous visual observations suspended since 13 Sep due almost continuous overcast, scarcity of aurora and increasing shortness of night. All-sky camera and spectrograph operated continually entire month without interruption. Ionosphere Ionosonde in operation 97.9 % of month. High absorption conditions on 1 - 5, 13, 22,24,27 and 30 Sep. Definite F 1 up to 5.4 mc and E to 3.2 mc recorded during disturbed days. Data processing current. Cosmic Rays Equipment operation considered routine. Test of 2 hr recorder show no difficulties. Count differences of half telescopes less than 6 % any 15 minutes of month. Data quality still questionable pending further info from Univ of Md. Glaciology Deep pit 31 meters. Cylindrical deformation tunnel being made at bottom pit, diameter 2 meters, length 6 meters, one half finished. 6 areas vicinity of icecap station selected and photographed for studies surface features. 204 meteorological obs taken by glaciologists. Stakes on ice ramp front of shear moraine near Wilkes Sta resurveyed and show no movement. Long and Glasgal measured stakes on Vanderford Glacier. Party infield a week due to high winds and blowing snow. Maximum recorded movement since 3 March average 1.7 m per day. Mt Long traverse temporarily cancelled due to lack of weasel fan belts and slow progress several projects caused by weather, and weasel and generator troubles at icecap station. Seismology 19 earthquakes recorded. Primary phases Mariana quake 1 Sep and Samoa quake 2 Sep strongly recorded. Records erratic during high winds. Radio blackout made time checks difficult. Microseismic amplitudes generally low. Geomagnetism Extremely active month. Approximate averages D, H and Z were 82-40.8, 9372, and 65/30. Sudden commencement noted 020315Z, 130046Z, 211005Z, 221344Z and 290016Z. Micropulses during daylight hours at peak intensity on 25th decreasing next two days. Group period about 5 min with wave period 35 seconds. Peak to peak amplitudes order of 5 min for D and 20 gammas for H and Z. Program machine still troublesome and Z baseline continues elusive. Meteorology Weather characterized by alternating periods mild relatively calm weather and storms with high winds and blowing snow. Solar and sky radiation measurable during 14 hrs Oct 1st. Average height upper air soundings 19439 meters with 12 missed from excessive winds. Total accumulation icecap station average for 3 stakes Apr 1 to Oct 1 was 15 inches. All well.

Ellsworth Station

No. 10, 1 Oct 57 * Seismology Shelf ice seismic refraction program well under way. Shots from one mile on out, with geophone spacings of 1, 5 and 30 meters. Presently at 6 kilometers. Ionosphere C4 operation about normal. Replaced Astig pot second time in APT and first time in ANT. 35 mm camera still sticks occasionally. Receive most all AGI warnings 1 to 3 days late due to ionospheric condition but usually can receive WWV well enough to hear alerts. Abandoned hope of monitoring WWV signal strength because of ambiguity introduced by sporadic reception

of WWVH and JJY, low sig[illegible] strength and receiver sensitivity. Work on Whistler spectroanalyzer proceeding. Up to 25% of Whistler schedule have high S noise from ham radio audio injected via ac lines. Whistler rate decreasing and more classical type echos discernible. Aurora Obs last aurora 18 Sept. Hotel variometer shows correlation between onset magnetic bay and break up of overhead aurora. Continuing photometry of twilight. Developed technique of separating micrometeorites from melted snow by electromagnet. Collecting irregular magnetic fragments and shiny magnetic perfect spheres 5 to 50 microns diameter. Daily collecting snow samples uncontaminated by camp. Glaciology Pit closure pins placed at 5 meter intervals and triangulated. Oxygen isotope samples continued to 20 meter depth. Shallow pit dug to 3 meters depth. Station elevation rechecked with 5 km level loop. Closure error 6 cms. Traverse Assembled 2 ½ ton sleds and completed food packaging. Snocat spare part list prepared for information of sta. Meteorology All IGY equipment operating. Unable to obtain readings on normal incidence pyrheliometer and sunshine switch due heavy cover of precipitation type clouds during month. Instrument shelter and snow catcher moved to more suitable location. Shelter and gauge now 200' south of office and snow catcher 400' south. Because snow drifts engulfed the equipment. Rebuilt and repaired aero storage tunnels also shovelled snow from tunnels and passageways. 2 raob runs lost on the 19th due to burned out resistor R-318. This caused weak[illegible] oscillofr tubes V3-1 to 6 and V402 to 4. Also blowing of 1/8 A fuses in this part of EK-5. Total height for 58 runs 17040 meters. On the 19th at 1200Z run of 23100 meters made.

September Weather Averages

	Little Am	Byrd	Pole	Hallett	Wilkes	Ellsw	McMurdo
Temp, ave, °F	-29.4	-23.1	-82.1	-9.9	+11.2	-17.9	-7.4
Temp, high, °F	-2.9	+1.4	-57.6	+15.8	+31	+20.1	+11
Temp, low, °F	-51.0	-61.4	-102.1	-34.6	- 8	-56.0	-28
Ave Wind dir	SE	NE	330G	SW	ESE	S	E
Ave Wind speed, kn	10.4	22.4	12.7	3.5	15.7	12.8	11
Peak Wind speed	25	49	36	55	91	36	40
No. Clear Days	7	5		11		0	
Partly Cloudy	13	10		16		25	
Cloudy	10	15		3		5	

Miscellaneous

Station Leaders, 2nd Yesr

Little America -	A. P. Crary
Byrd Sta	Stephen S. Barnes
South Pole Sta	Major Palle Mogensen
Hallett Sta	Kenneth J. Salmon
Ellsworth Sta	Dr. Matthew J. Drennen
Wilkes Sta	Dr. Willis L. Tressler

[illegible]

Msg from IGY WASHDC 011646 Oct
Your 232310 Sep IGY NR 29 notal x All civilian personnel Antarctica covered by same air flight insurance as last year x US IGY Personnel are not required to sign waivers for air flights Antarctica to New Zealand

Ship Schedules: GLACIER, ATKA, GREENVILLE VICTORY - Kainan Bay, 1 Dec 57
TOWLE, BURTON IS, ELSPENN - McMurdo, 1 Jan 58
WESTWIND, WYANDOT - Ellsworth, 10 Jan 58
ARNEB - Wilkes, 15 Jan 58

Msg from IGY WASHDC 031704 Oct
Circular Nr 60 x From Nexler x Cannot emphasize too strongly necessity for taking proper measures to preserve scientific data x Data should be duplicated whenever possible x Microfilm camera available at Little America Sta for this purpose. Other stations urged to send data there for reproduction if practicable x In shipping the data avoid if possible air transportation x Scientific discipline chief at each station has responsibility to insure all data of his discipline are transported securely and safely to addresses designated in Nr 28 x

Addressed referred to in above msg:
MET Chief Weather Bureau Washington, DC, Attn: ONR IGY Project Office
GEOMAG Director, Coast and Geodetic Survey, Washington, DC, Attn: IGY Geomag
IONOSPHERE National Bureau of Standards, Boulder, Colorado, Attn: S2 10
GLACIOLOGY Data Center, American Geographic Society, Broadway and 156th Street, New York City, N.Y.
AURORA (by ship) Commander, Air Force Research Center, Hanscom Field, Bedford, Mass, Attn: CRZI, IGY Aurora Program

Msg from IGY WASHDC 041959 Oct
Circular Nr 61 x For all IGY personnel from Nexler x Since movement south of second year IGY personnel has begun, here are some guide-lines covering return of present IGY personnel to CONUS x After short period of overlap with new crew you will be sent home as rapidly as military travel facilities permitx There may be unavoidable periods of delay enroute and it is suggested that all personnel occupy themselves by writing reports of their activities to be transmitted with recommendations to USNC-IGY. Preparation of scientific reports is especially encouraged. Unfortunately funds are not available to return personnel by commercial carriers. Become familiar with those provisions in your contract covering public relations and article writing. IGY personnel returning from Ross Sea Area and inland stations should consult the IGY representative at US Navy Headquarters Christchurch, NZ regarding this matter. For Ellsworth and Wilkes, Station Scientific Leader will remain senior IGY representative for return trip CONUS. It is not expected there will be any get together of IGY personnel in Washington DC on return. Agency to which you are affiliated will communicate with you regarding leave and future arrangements. (Editor's note: Have Fun)

First contingent of IGY personnel to New Zealand, should have departed from US by air 1 Oct. Names as follows. Location and discipline where known:

J.O. Annexsta
S. S. Barnes - Sta Leader, Byrd Sta
D. L. Baulch
J. B. Campbell
J. C. Cook - Seismology, LAS
F. L. Darling- Met Tech, Byrd
J. A. Dawson
F. O. Field - Visiting Scientist
S. P. Fazekas
L. A. Gooday
C. R. Greene
J. M. Hamilton
R. J. Hanson - Met, Pole Sta
A. M. Jorgensen
J. P. Van Knack
G. A. Llano - lichenology, McMurdo
E. A. Wood - IGY Rep, McMurdo
L. A. Leschack
J. E. Long - Trav Mech, Byrd Sta
M. L. Long - Glac, Byrd Sta
P. Mogensen - Sta Leader, Pole Sta
W. C. Noble
E. L. Peters
J. D. Reid - Glac, summer, LAS
E. S. Robinson - Glac, summer, LAS
J. H. Spackman - Grav, summer, McMurdo
M. J. Todd
G. Turnbull - Paleomag. studies, Hallett
W. W. Vickers - Glac, summer, LAS
C. W. Gartlein - Visiting Scientist
M. J. Coffman
A. Kryger
W. Tiniski
J. E. Burnham

Crary

May 14

[illegible] No. 7 9 Nov, 1957

OCEANOGRAPHIC SITREPS

Little America

No. 9, 7 Nov 57* Airborne Seis-Glac. Pers.arr.LAS Oct. 26. Seismic equipment has been assembled lab tested and misc electrical faults corrected, at least one week more of local tests, familiarization and preparation required before flights to Victoria land can begin. Glaciological equip and accessory gear being assembled insofar as obtainable. Geomag. Routine operation continues. Possible solar flare effect 0701GZ. On 30 Oct, standard magnetograph temporarily out of operation due to large quantities of ice on inst and piers from leaking roof. Ice Shelf Deformation Project. Phase one of the program was begun with two recon flts in the Otter. Several more are scheduled but wea. conditions have been unfavorable for further recon flying as of Nov. 3. Smith and Zumberge are only party members present at Little America. Scientific equipment for the program is enroute to McMurdo by airtrans. The equipment sent to Little America by ship a year ago has been located and checked. Target date for departure to Roosevelt Island is 15 Nov. Ionosphere. Operation routine. Abt 2 percent loss of records due to stop of master clock and some trouble with program timer. Leaking roof of Ionosphere bldg. has created fire hazard to equipment but temporary channels built under roof are now directing water away from Charlie four and other equipment. Met. Obs. All equipment in routine operation except infra red hygrometer. some trouble with freezing of lines in CO_2 analyzer. Problem solved by mounting lines above snow surface. Average height 62 radiosonde flights 19132 meters. Micromet. and Radiation. Measurements of normal incidence radiation using Linke-Fuessner actinometer with different filters made on 9 days, calibrations of Schulze net radiometer and Kipp solarimeters for short wave radiation made on 5 days, for long wave radiation on 1 day. Long wave radiation calibration covering now a temperature range from minus 7 to minus 48 degrees. Helio observations on 22 days. The QMC phase of the program was concluded on 21 Oct. and preparation begun for moving to the Pole. One Hundred wind profiles were taken, bringing total to 1136. Physiology. Third series of determinations of BMR. Metabolic rate response to standardized cold exposure, skin folds, oxygen consumption in exercise, and vascular response to finger immersion in an ice bath sixty percent complete. Ross Shelf Traverse. Started 24 Oct. Location 1 Nov. 78 deg. 56 min. South, 164 deg. 40 min. West. 2 seismic 17 gravity 16 magnetic 2 glacial pits 10 rammsonde stations made on traverse. WeaCen. Receipt of mother-daughter wea data deteriorated considerably during Oct. Caused by : personnel changes, increased operational traffic, limited equipment and precedence given to press over weather. Some delays of weather messages have been as great as 12 hours. To relieve McMurdo load during summer Little America will take over Mirny weather schedules beginning 3 Nov. Analysis program continues.

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13 14 15 16
F M A M

Byrd Station

Oct. Status Report. 4 Nov. 57 * Geomag. Relatively quiet. month. Rec. no sc. Heat and power line parted 240350Z during blading fuel cache. 30 deg. Centigrade temperature drop caused loss D trace with fading H. Clock driving drum labors at low temp. No records since 25/2200Z. Glaciology. avg. accumulation 9.1 cm. Oxygen isotope samples fm deep pit rep. est. 2 compleat years accumulation. Tritium samples fm top center and base deep pit ea. rep. yr. E accumulation layer. 3 m. pit correlated with disturbed top section deep pit. 20 m. core hole complet[illegible] for densities and seismic shots. Light movement net including approximately 6 square kilometers installed and surveyed. Survey of net installed in April aborted due to weather and darkness. Accumulation study ext. in area and no. stakes. Ionosphere. Operations normal. Meteorology. Sunshine switch installed 11th, Green line and green ray observed 4th. Temp. minus degrees Centigrade avg. 26.1. Max. 11.2 on 29th. Min. 48.2 on 4th. prevailing wind N, Avg speed 15.0 knots. Peak gust 48 knots NE on 30th. Avg. 62 Raobs 19980 m. Station Seismology. 11 earth quakes recorded. Operations irregular since 22nd due airdrops and tractor train. Resumed operations 30th with some testing. Still trouble with wandering vertical trace. Traverse Seismology. Vertical shooting 20m. auger hole undisturbed area compleat, all attempts for reflections failed due increased surface noise from min. 10 db. over last March. Shots tried at depths 10 m., in air, also pattern shots various locations used including one where reflections found in March. Noise about 100 cps. independent of change size, depth, no. shots one location. No coherence even with filters out. Traverse. Preparations for trail. Gyro compass mounted field tested. Magnetic compass mounted unsuccessfully to date due difficulty getting far enough from high intermittent charging curr. Gas tank fifth wheel heaters rep. repl. Crevasse detector mounted apparently operation satisfactory. Cook wanigan consumes front half one sled assures convenient dining. Await traverse mechanic arrival from Little America Station for departure. Other. Data film snow samples shipped on tractor train to Little America Station for surface transportation conus. Soviet satellite signal taped for NBS.

South Pole Station

Pole October Sitrep. 2 Nov. 57 * General. Most records and personal gear packed for expedited exchange personnel. We find confusion of interpretation between Comnavsupfor Antarctica 220407Z Oct. assuring adequate turn-over time and double use of crews with ComNavUnits Antarctica directive 200328Z Oct, which rqr. minimum evacuation rate not less than man per man on next three flights. No clue to time between flights indicated. we are attempting full cooperation and will try to prevent any hiatus in program. We have no information on last five replacements, however we are planning following phasing of evacuation, Alfa. Johnson. Bravo. Landolt, Benson, Hansen, Guerrero, Hough, Charlie. Last plane , Flowers, Remington, Siple. Incoming personnel and stranded plane crew indicate week of acclimatization necessary befor most men fully functional. Contrary

to expectations so far new men rather than those here during winter are having colds and related diseases. Ionosphere. C3 recorder 98% for month. Antenna lowered and repaired. Reflections from F region end of month show formation of F1 and 2 layers. Eclipse observations marred by Iono. disturbance just prior to onset, however 3 hrs. continuous records made during and after eclipse. Total 33 hrs. cont. 16 mm. records records this month. Only one 16mm, camera now operative. Geomag. Observations continue no change. Atmospherics. No whistlers heard. Aurora. Records packaged for standby shipment prevents processing of data currently which was progressing well first half of Oct. Seismo. Vert. Benioff seismometer with Sprengnether 12' in paper recorder produced good records entire month. 37 confirmed quakes during reporting period 23 Sept. to 13 Oct. Most distant quake eastern Siberia 64 N. Mindanao Philippines quake Sept. 24082105 registered over 30 min. sharp disturbance. Glaciology. snow mine aprx 250 ft long 80 ft deep. Continuous cold temps, handicaps rate accomplished glaciology program. Since glaciologist arrives after Feb. air drops there have been less than 100 hrs. total when temps. have been above minus 40° and these generally occured during storms, plan remington evacuation last plane to to give maximum opportunity to work outdoors. Systematic photography of snow layers and crystal sizes continue. Meteorology. Summary for Oct. Avg. Thermoscreen temp. minus 59.9 C on 18th. Lowest -65.6Con 3rd. Avg. temp. snow surface -52.6 C. At 5m. -51.9 C. At 10m. -51.1 C. 10 m. below sfc. -50.5 C. Prevailing wind direction from table 2A, 34, speed 13.7 knots. Peak gust 34 knots direction 34 on 12th. Avg. station pressure 20.00 in. Highest 20.15 on 7th, Lowest 19.79" on 20th. No. days vis. ¼ mi. or less 4. No. days clear 12. Partly cloudy 16. Cloudy 3. Snow and drift catch at sfc 13.5" snow, 6.67" precipitation, Catch at 10m. .35' snow, .055" precipitation, Climat 89009 77029 XXPPX, Avg. height 61 Radiosondes 20038 m, Run missed on second first since May, Cause a combination of balloon instrument and generator failures, 18 mi. flt. one 20XX gave termination temp. of minus 23.3 C at 26.5 km, Comparison of flights on 1st and 30th showed fol. temp. changes: at 300 mb. from -65 to 60, at 200 mb. from -74 to 65, at 100 mb. from - 78 to 80, at 50 mb. from minus 78 59 50, at 40 mb. from -77 to 42, at 20 mb. from -67 to 24, 2[illegible] mb, height rose from 23.8 to 25.8 km. Climat temp 39009 XXXXX XXXXX 2588X XXXXX 48779 27XXX 63520 20XXX 81671 2[illegible] 87XXX 47401 90XXX. Radiometers Up and down pyrheliometers operable normally. Normal incidence await installation.

Hallett Station

No. 11, 7 Nov. 57. Geomag, Absolute magnetometer working satisfactorily. Awaiting undisturbed days to reduce 60 gamma range in H. Variograph full operation entire monty. Seismology. High outside temp. has forced increase thermostat setting seismeter bldg. Brief loss records prior adjustment, otherwise routine. Several days strong winds caused loss some records. Aurora. Last observed Aurora 2 Oct. Aurora Observation program ended 15th. Ionosphere. Antenna withstood high winds and permitted complete month's records. Total absorption on 23rd solar eclipse obviated need continuous run. Meteorology. Routine observational program interrupted by intense storm 22nd, 23rd, and 24th sustained winds in excess 70 knots with gusts to 99 knots. All paint windward of thermoscreen removed by gravel blasting, snow catcher damaged and both pyrheliometer bulbs completely removed. Avg. temp. -17.4°C. Avg. wind SSW 11.8knots.

Uninterupted skein radiosondings starting 23 June broken 21 Oct. Average height 59 soundings 17750 m. 17 raobs terminated due high local eastern horizon. Dewey and Almy balloons now in use show improvement in bursting heights. General. First visitors here since Mar. arrived in R4D 1 Nov. Capts. Dickey and Maher, Sir Hubert Wilkins, Press reps. and others more than doubled normal population. Additional radioman and driver remain to help with extra heavy summer program. USSR satellite first heard 6 Oct. 20 mcs. No receiver capable get time 40 mcs transmission. NZ technician constructed 30-60 mc. receiver and tuned antenna for further listening. Visual observation satellite attempted without success. Solar eclipse 23 Oct. not observable due heavy cloud cover. Communications problems McMurdo appear to be straightened out. Health and morale fine. Shear.

Wilkes Station

Oct. Sitrep. 3 Nov. 57.* General. All Disciplines operated routinely. Aided in Completion mapping field work islands and coastline northeast to Cape Folzer. Made 24 hr. continuous tape recording Russian satellite radio sig. Branded 25 Weddell seals. Vincennes Bay open except for some small scattered floes and areas of young ice. No pack ice visible. Glaciology. Deep pit 35.25 m. Drilled 27 m. from pit bottom. Total depth of investigation 61.80 m. Have reached glacier ice. Temp. at bottom drill hole -19.4°C. Met. obs. continue at icecap station (S-2). Ice temps. taken and thermograph records changed weekly at ramp station (S-1). Vanderford glacier revisited and new movement stakes set in and all stakes surveyed. Movement rate of stake #10 near middle of glacier 1.9 m. per day. Photos taken vicinity Clark Peninsula to show ice ramp, ephermeral lakes, and extensive snow drifts before melt season begins. My long traverse cancelled lack of weasel spare parts. Iono. Ionosonde in operation 97% of month. Only two hours of eclipse recorded due malfunction phantastron delay of ionosonde. High absorption conditions on 21 and 23 only for very undisturbed month. Diurnal variation of 2 decreasing steadily and longer observance of one and E each day. Cosmic Ray. Equipment operation routine. Sanborn recorder operation improved. C and decrease of 5% maximum recorded on Sanborn chart from Oct. 220100Z to 281400Z in conjunction with magnetic storm. Geomag. Fairly quiet month. S C 212244Z. Range of D,H and Z During 12 hr. storm 376 min., 1513 and 1597 gammas resp. Z reached lowest yet recorded at 220411Z. Abortive attempt to make obs. at ice cap station. Hope to succeed later in season. Some RR records lost due excessive translation of drum carriage. Seismo. 20 earthquakes recorded including 02205839 Chagos Islands, 03055812 New Guinea, 19182850 Formosa, 20120520 N Atlantic. Diurnal temp. variation causing considerable crowding and spreading of traces. Microseismic activity generally low and irregular. Meteorology. Weather characterized by light winds and mild temps. Three

upper air soundings missed due high winds in early Oct. Avg. height 59 soundings 23016 m. walkout doors installed inflation bldg, not yet tested in high winds. Wilkes Summary. A avg. temp. -9.4°C, max. 0.6°C, min. -21.7°C, avg. winds speed 10.2 knots, prevailing direction ESE, peak gust 67 knots, highest hourly average 50 knots, Sky condition, percentage of hours: clear 17, scattered 21, broken, 18, overcast 42, obscured 2. Average sea level pressure: 982.5 mbs., max. 1000.1mbs., min. 966.6 mbs. 11 days with precipitation, total 1.23" water equivalent. Wilkes Icecap Summary. based on 196 mbs.: average temperature -19.2 C, max. 6.7 C, min. -39.2 C. Average wind speed 21.2 knots, prevailing direction ESE. Sky Cover by percentage clear 32, scattered 14, broken 12, overcast 28, obscured 14. Precipitation recorded on 16 days. E snow stakes show loss of 3 in. snow cover during month. Total solar and sky radiation now being recorded at cap station. Aurora and Air Glow. Suspended Oct 17. All well, and personnel appreciate action USNC-IGY regarding return Wilkes wintering party Conus.

Ellsworth Station

Sitrep No. 11, 1 Nov. 57. Aurora, Working on IBM cards. Made photo mea. of zenith brightness during solar eclipse. Taking photo of meteoritic dusts. Average diameter 200 magnetic spheres collected mo. = 19 microns. Number and size spheres increased sharply 23 Oct, presumably due to Orionid shower. Meteorology. Nothing new. All equipment operating, all 62 raobs runs compleated this month, Average height 20-90 meters. Seismic and Glac. Pers. spent month completing preparations for traverse. Departed 20 Oct., made first complete station 31 mi. SE Ellsworth and now awaiting clear weather to commence traveling. Ionosphere, Made 23 hours continous records on 23 Oct. Definite F. layer recorded now. Several hours records lost because of malfunction of C4 35mm, camera and end-of-sweep ckt. Many L and few G conditions observed. Limited number simultaneous occurence of sharp sporadic E and L conditions noted during two visit to Belgrano base for purpose of comparing records and assisting in repair of their ionosonde.

October Weather Averages

	Little Am.	Byrd	Pole	Hallett	Wilkes	Ellsw	McMurdo
Temp, ave, °F	-3.3	-15.0	-63.2	+0.7	+15.4	-12.8	+5.5
Temp, high, °F	+1.4	+11.8	-45.4	+28.4	+30.9	+12.9	+17
Temp, low, °F	-43.1	-54.8	-86.2	-20.2	-7.2	-36.0	-5
Ave Wind Dir	SE	N	20°E	SSW	ESE	S	E
Ave Wind Speed, kn	15.3	15	13.7	11.8	10.2	7.4	12
Peak Wind speed	45	48	34	99	67	29	48
No. Clear Days	2	2	12	3	6	0	
Partly Cloudy	9	5	16	15	12	28	
Cloudy	20	24	3	13	13	3	

Antarctic Radiosonde League

9 Nov. 57, The results of the ARL for month of Oct. show a major change in the top standings. The hard working ags. at Wilkes were the winners this month. They nudged McMurdo into second place. Ellsworth climbed into third position. The remaining standing in descending order were Byrd, Pole, Little America, and Hallett. Moreland.

General IGY News

IGY News No. 1, 4 Nov. 57, This is the first of a series of news messages from the USNC-IGY headquarters to the Antarctic in effort to keep scientific personnel in the field abreast events related to the scientific programs of the IGY. Antarctic Notes. The USS Glacier fired a series of 18 rockoons while travelling from 31N to 17S; 7 cosmic ray flights, 10 proton magnetometer, and 1 test. Maximum altitude reached was 80 miles. Another series of rockoon flights is planned for the vicinity of the northern limit of the Ross Sea ice pack 30 Oct - 6 Nov. New Subi. While enroute to Antarctica the USS Arneb will follow a round-about course, crossing the equator several times, to provide cosmic ray observers aboard with maximum opportunity to obtain data. New Subi. The USSR ship Ob plans to visit several Antarctic ports including Little America Station during 1957-58 season. A US ice breaker will visit Mirny. New Subi. Scientists working in the Antarctic on special projects during the summer include Dr. L. M. Gould, Chairman, U.S. Antarctic Committee; Dr. H. Wexler, Chief Scientist, Antarctica; Dr. A. F. Spilhaus, U.S. National Committee; Mr. V. O. Field, Chairman, USNC Glaciology Panel, Dr. C.W. Gartlein who will inspect Auroral Stations, Dr. G.A. Llano, investigating the relationship of vegetation especially lichens and glacial fluctuations; Dr. J.H. Zumberge, studying ice deformation in the Ross Shelf Ice; and Dr. T.L. Pewe, Dr. R.P. Goldthwait, and Dr A.L. Washburn working on glacial geology in McMurdo Sound area. Mr. Marshall will conduct an extensive deep core drilled at Byrd Station. New Subi. CSAGI Conference. An international congerence on IGY rocket and Earth satellite programs was held in Washington 30 Sept. to 5 Oct. The conference was called by the special committee for the International Geophysical Year (CSAGI) Delegates from 13 nations attended. The conference adopted resolutions calling for reporting of rocket firing data to world data centers within two weeks after each firing, for interchange of rocket instrumentation and equipment and personnel among countries participating in the IGY rocket program, and for simultaneous launching of fockets on 18 June 1958 during a world meteorological interval. Resolutions on satellites called for tracking, especially in higher latitudes, and for additional radio stations providing tracking and telemetry reception at

108 mc., 20mc.and 40mc. The conference recommended that the US and USSR provide advance data on the forms of signals which they would transmit ant that they prepare articles about theirs for dissemination to amateur radio groups. The final recommendation was that special attention be given to the need for continued programs of research utilizing rockets and Earth satellites after the IGY and that countries undertaking such research make information on their plans available as soon as possible. New Subi.USSR Satelite. The Material following is based upon a composite of unofficial reports as of 13 October on the first USSR satellite to be placed in orbit. Launching. Radio Moscow announced on the evening of 4 Oct. that the satellite was launched earlier that day at a speed of about 26,000 ft./sec. at an angle of 65° to the Equator. Scientists in Washington estimated that the satellite was launched in a northeasterly direction from a point north of the Caspian at approximately five PM EDT 4 Oct. Satellite characteristics. Radio Moscow's first announcement stated that the satellite is a polished sphere weighing over 184 lbs. and almost 23 inches in diameter. A. A. Blagonravov, USSR delegate to the CSAGI conference on rockets and satellites, was quoted as saying that the satellite was filled with nitrogen for cooling purposes. Observations. First US reception of the satellites signals was by RCA from Riverhead, Long Island at 8:07 PM 4 Oct. First reception at NRL WashDC was at 8:30 PM. By 6 Oct., 6 of 10 Minitrack stations had been converted from 108 mc., the previously agreed frequency, to 20 and 40 mc., the frequencies transmitted from the satellite. South Pole Sta.reported 15 passes by the satellite within a 24 hour period Oct. 6-7, all observed on 20 mc. Reception was soon general. The press reported that the USSR was offering special cards to hams reporting receipt of the satellites signals. The first visual sighting was reported by a New Haven, Connecticut Moonwatch team which spotted the carrier rocket, then about 600 miles in advance of the satellite, at 6:23 AM on 10 Oct. A 5.5 power telescope was used to find the rocket. Orbit. On 10 Oct., NRL reportedly fixed the orbital period of the satellite at 96.1 minutes with the average height of the satellite as about 400 miles. The carrier rocket orbit was announced by the Smithsonian Astrophysical Observatory on 11 Oct. with apogee as 583 miles, perigee as 143 miles and time for a complete circuit 96.03 minutes. The USNC-IGY appreciates the efforts made by IGY personnel to track the Soviet satellite. All observational data during the first few hours were invaluable. Later only precise observations were valuable, but thanks are due to all who improvised on observational program to meet an emergency. Information on types of observations and limits of accuracy to give valid information on satellites orbits is now being compiled and will be distributed to all IGY stations as soon as possible. New Subi. Arctic Notes.Capt. Thomas, USCG,Ret., has been appointed administrator and coordinator of Arctic IGY programs. Capt. Thomas visited IGY installations at Thule and drifting ice station 15 - 27 Oct. Position of drifting station A on 30 Sep. was 85°21N, 172°44W. A submarine ridge 5000 feet high parallel to the Lomonosov Ridge was located by seismic and gravity measurements from station A. Existence of two other ridges is suspected. On 7 Oct. station A first received signals from the Soviet satellite on 20.005 mc.

Miscellaneous

Msg. received from IGY WASHDC 012040Z Nov.
Circular No. 73. To Siple. Attendance at NZ symposium will be limited to those personnel expecting to be in NZ enroute to Conus in accordance with TF 43 travel sked. No prolonged stop over in NZ contemplated for purpose attendance sympcsium. Those U.S. personnel attending symposium can present papers written by absent colleagues. Wexler