

**Science, Politics, and Peace:  
Antarctica and the  
International Geophysical Year  
(IGY)**

**Mid-Atlantic Senior Physics Group  
American Physical Society  
17 June 2020**

**Dian Olson Belanger**

# DEEP FREEZE

The United States,  
the International Geophysical Year,  
and the Origins of Antarctica's Age of Science



Dian Belanger

Support through NSF Grant No. OPP-9810431 is gratefully acknowledged.

Interpretations are the author's own.



GEOGRAPHIC  
SOUTH POLE

ROALD AMUNDSEN      ROBERT F. SCOTT

DECEMBER 14, 1911      JANUARY 17, 1912

THE U.S. GOVERNMENT PRINTING OFFICE: 1962 O 548 000





Captain  
James Cook



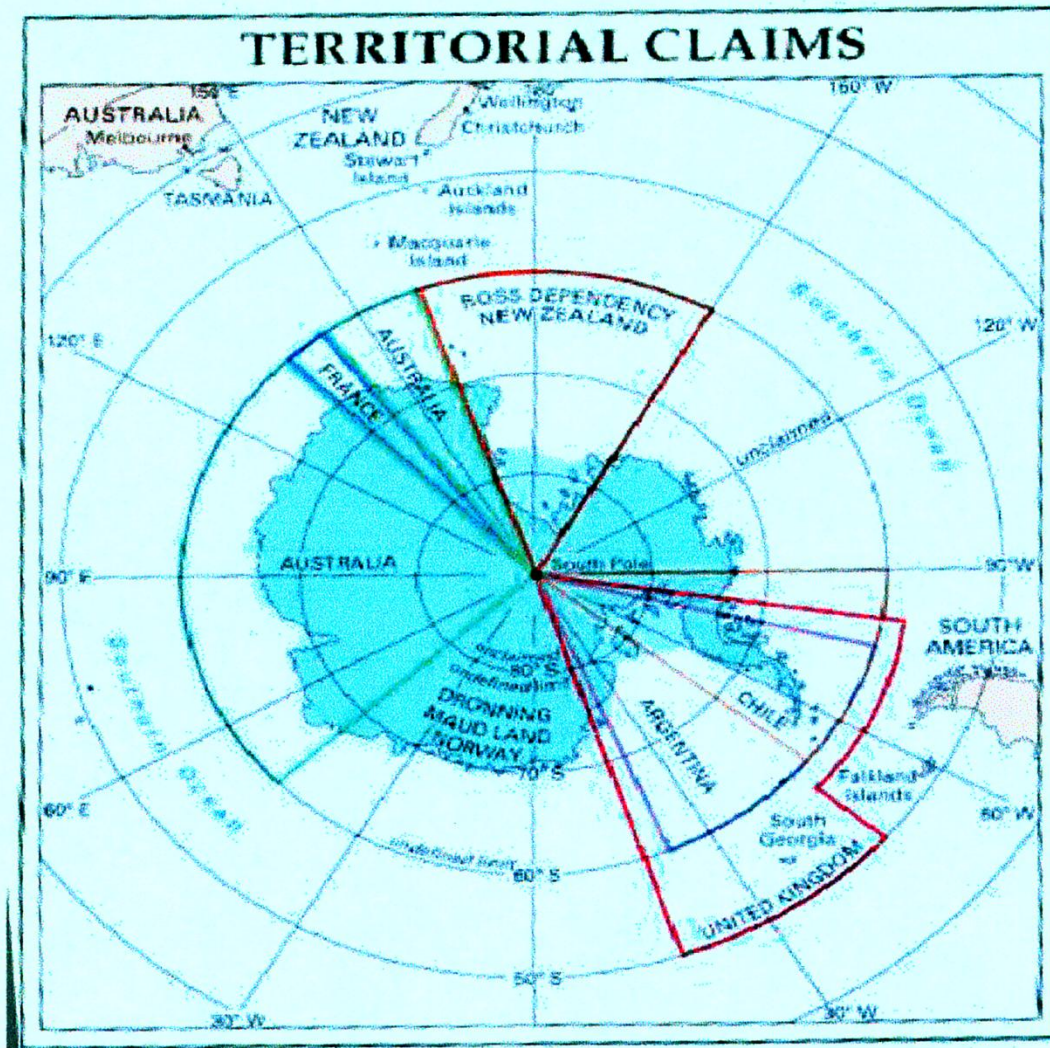
Lieut.  
Charles Wilkes



Scott at South Pole, beaten by Amundsen



Richard E. Byrd



## Claimants

Chile

Argentina

Great Britain

Norway

Australia

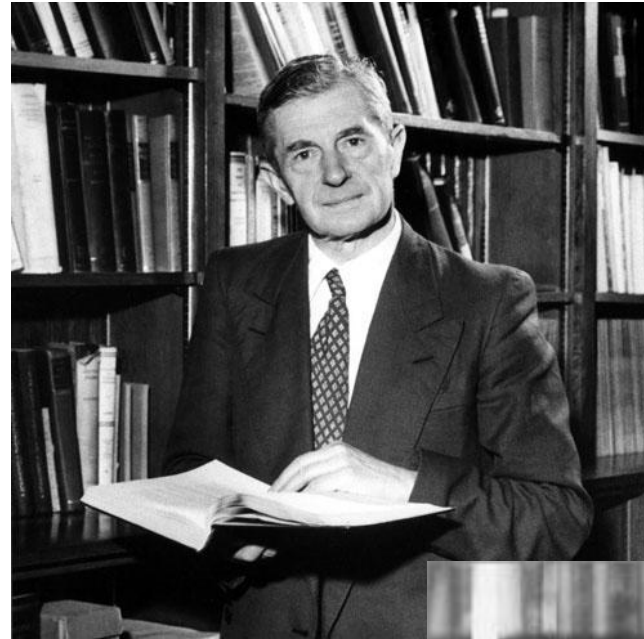
France

New Zealand



# Van Allen's fateful dinner party

5 April 1950



Sydney Chapman

Lloyd Berkner

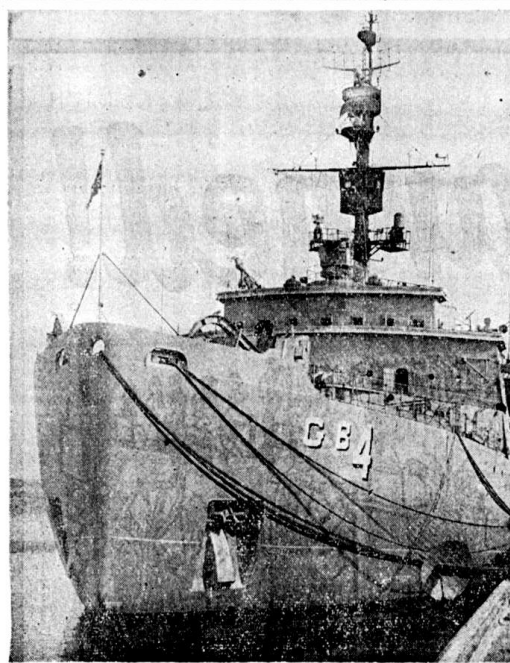


James Van Allen

# International Geophysical Year (IGY) 1957 - 1958

- Begun as 3<sup>rd</sup> International Polar Year
  - IPY-1 (1882-83)
  - IPY-2 (1932-33)
- Planned and coordinated internationally by scientists—“apolitical”
- Implemented by National Committees (NAS)
- Funded by governments (NSF)

Oct. 19, 53



Ready for Deep Freeze, code name of the Antarctic expedition, is the USS Healy (WMEC-90) at sea. It will carry the hand-picked crew and its equipment to the glacier at Davisville. It will carry the hand-picked crew and its equipment to the glacier at Davisville.

### Most Powerful Icebreaker

## The Glacier Poised for Polar Voyage

By DALE R. TAFT  
America's finest, newest, largest and most powerful icebreaker, the USS Healy, will sail this afternoon from Davisville to signal the beginning of "Operation Deep Freeze"—the most ambitious expedition in history.

The glacier, loaded with tents, blankets, and gear, snow tractor, and other polar essentials at Norfolk, Va., for the first time to land ice cap and will be at Little America I party.

Cmdr. Herbert W. Arlington, Mass., officer of the 200-man Seabee battalion, is pioneering unit of the U.S. Navy. He is the first to land ice cap and will be at Little America I party.

Also aboard are 200-ton icebreaker USS Healy, Coast Guard Lt. Cmdr. Royce of Grand Rapids, Antarctic explorer on expeditions led by Richard E. Byrd, strike out from Little America I party.

## NEW POLAR BASE BUILT IN A WHIRL

### Seabees Assemble Antarctic Luxury Station on Barren Peninsula in Only 2 Weeks

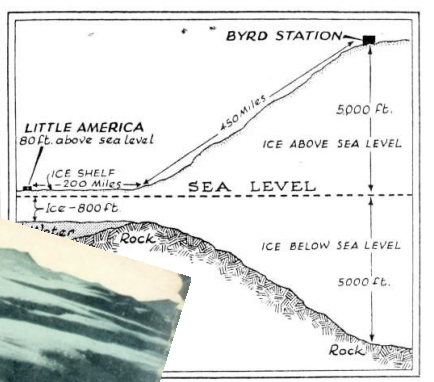
WILKES STATION, Antarctica, Feb. 16—The construction of this base, completed last night by Navy Seabees has been a wonder to behold. Two weeks ago this spot was a barren, partly ice covered peninsula on a largely unexplored coast. Today, with the sixteen windowless orange buildings, a forest of radio masts and



## U.S. Antarctic Base Is on 10,000 Feet of Ice

### Findings May Lead to Increased Estimate of World's Water

By WALTER SULLIVAN  
Byrd Station, the United States outpost in Antarctica, appears to rest on 10,000 feet of ice 5,000 feet above and 5,000 below sea level. Echo soundings have shown that the land beneath the sheet at this point, 650 miles "inland" in Marie Byrd



Station (cross on map) is believed to have 10,000 feet of ice above and below sea level, as shown in diagram.

Advertisement for TIME magazine. It features the magazine cover with the headline "PROSPERITY and A Business Revival" and "QUEST FOR A CONTINENT". Below the cover is a photograph of a smiling man, identified as Antarctic Explorer Siple.

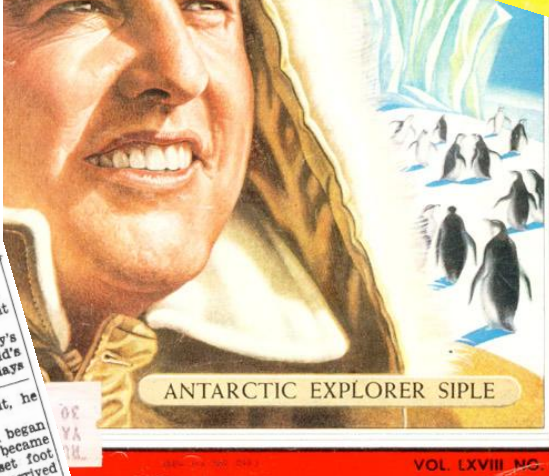
Advertisement for a book titled "QUEST FOR A CONTINENT" by Walter Sullivan. The text describes the fascinating story of the Antarctic and the quest to conquer the continent. It mentions the discovery of Marie Byrd Land and the role of the International Geophysical Year.

## Hams Keep Men at Pole In Contact With Families

SYRACUSE, N. Y., June 7 (AP)—To 315 men at the seven United States bases in Antarctica, the name R. A. G. S. connotes a warm oasis in a frigid expanse of desolation.

The R. A. G. S. are a group of amateur radio operators. They are the only men in the world who can talk to their families from the South Pole.

Heavy-duty tractors have replaced the dogs in development of the last frontier—the frozen Antarctic. Real Admiral George Dufek, commander of the Navy's Antarctic Support Force, said here last night that the world's search for knowledge has spelled an end to the glorious days of the masses can't wait, he added. Soon after the program began, Admiral Dufek became a man to set foot on the continent. He arrived in Antarctica on Nov. 28, 1956.



ANTARCTIC EXPLORER SIPLE

WASHINGTON, June 30—As if to start the International Geophysical Year with a bang, the sun showered the earth with electron particles today, causing severe disturbances in this planet's upper air and magnetic field. Radio communications on many long-range circuits were at a standstill. The "year," which will last eighteen months, began at 8 P. M. Eastern Daylight Time, which was midnight Greenwich Mean Time. President Eisenhower pointed to the international cooperation that has made possible the scientific enterprises, regarded by many as the greatest in history. He said that, in his view, "the most important result of the International Geophysical Year is the demonstration of the ability of peoples of all nations to work together harmoniously for the common good."

Man exists on the thin crust of a spinning globe and, for all his investigations, has not been able to penetrate the interior of the earth much about what goes on more than a few miles up and a few miles down. Man's known environment, as Lloyd V. Berkner has said, "is a narrow and shallow slice of the earth's surface on the upper side by the fields of human endeavor. The United States is proud to have a part in the great scientific undertaking. I should like to congratulate all who have helped to make this the year of the earth."

WASHINGTON, June 30—Following are President Eisenhower's broadcast remarks of the opening of the International Geophysical Year. July 1 marks the beginning of the International Geophysical Year in order to obtain information about the sun and the earth's environment from outside the earth's atmosphere. There is the sense of worldwide human endeavor. The United States is proud to have a part in the great scientific undertaking. I should like to congratulate all who have helped to make this the year of the earth.

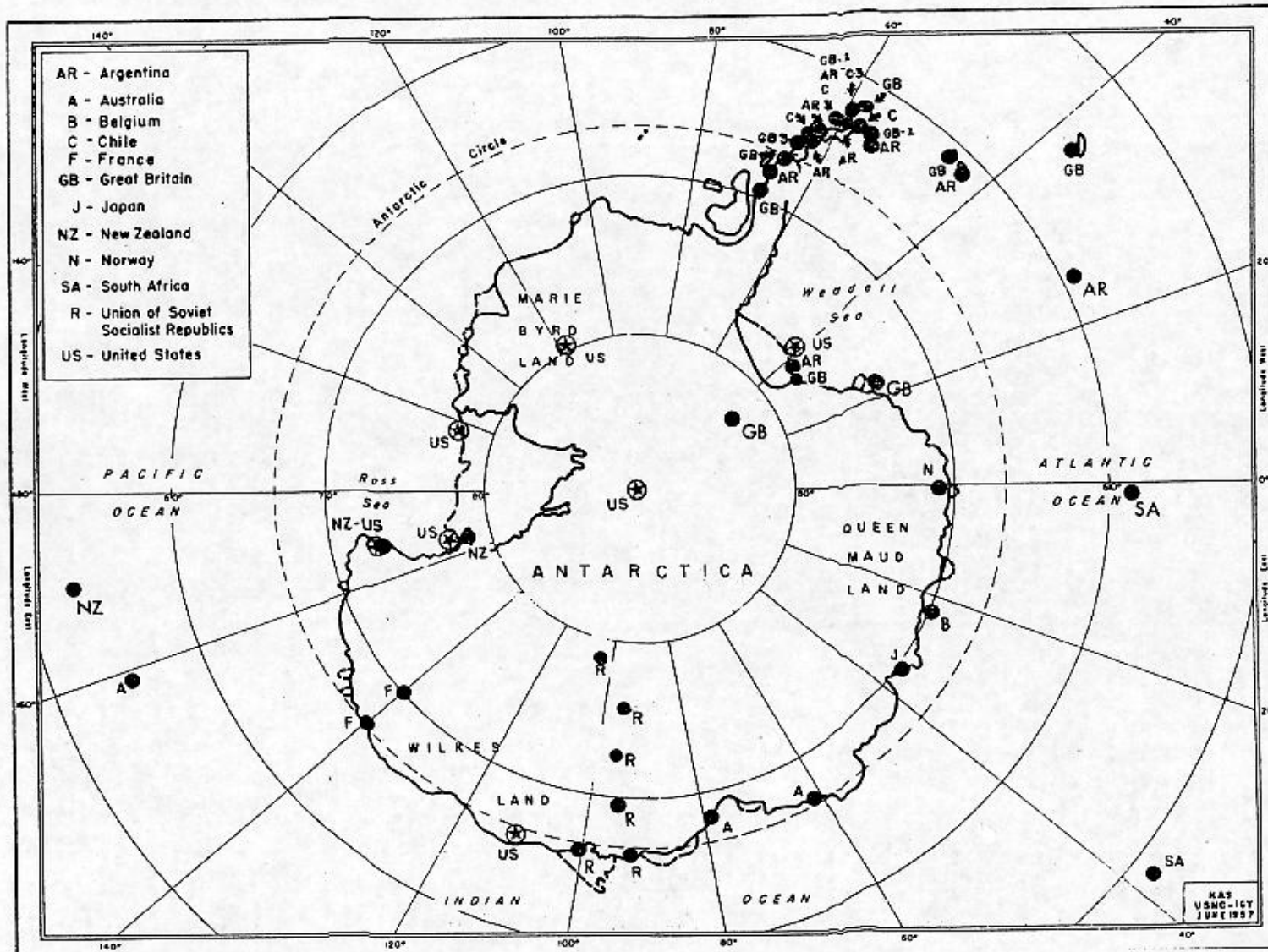
# International Geophysical Year (IGY) 1 July 1957 – 31 December 1958

- 66 participating countries
  - 12 in Antarctica
- Two great unknowns:
  - Antarctica
  - Outer space

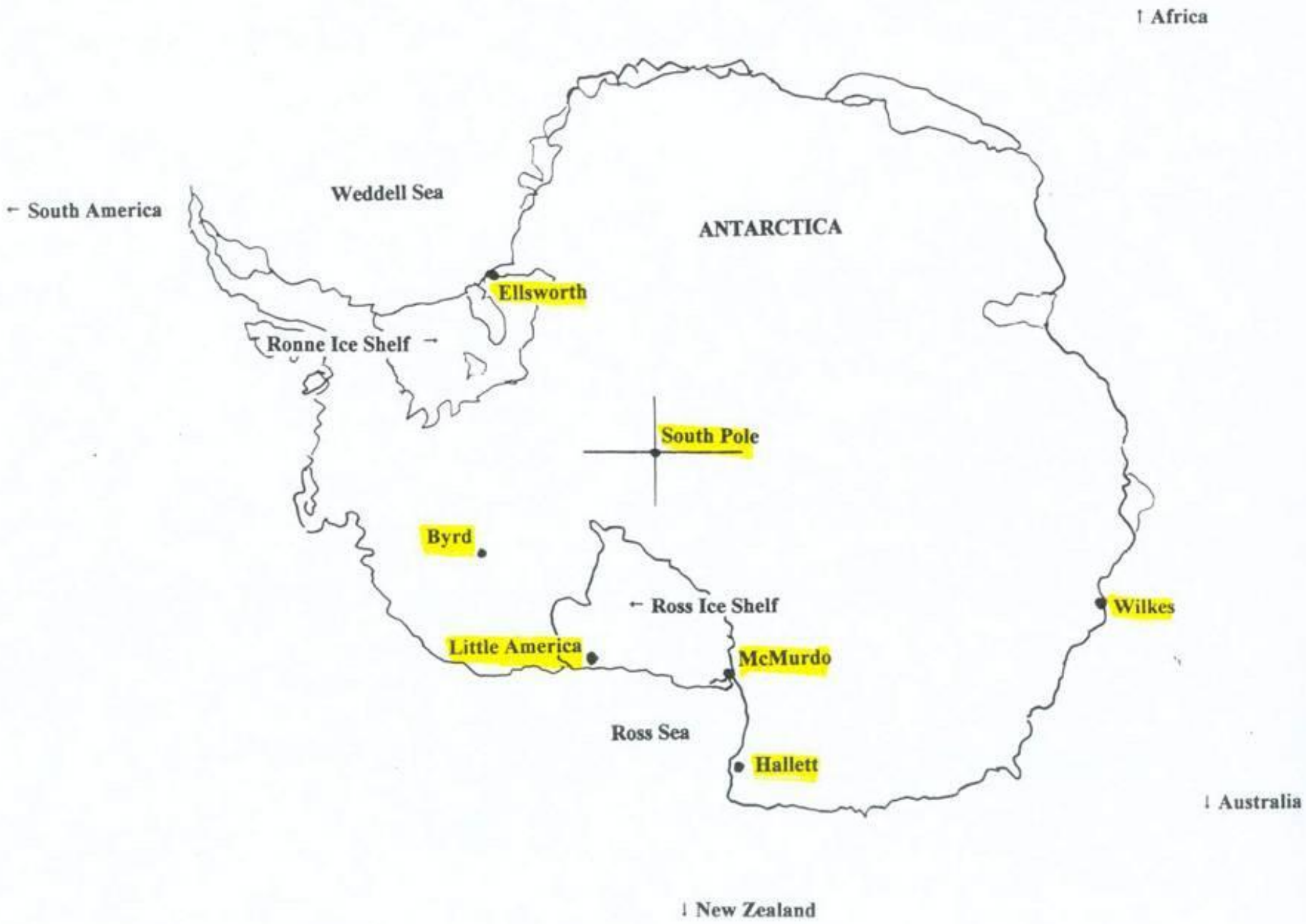
# International Geophysical Year (IGY) 1 July 1957 – 31 December 1958

- 66 participating countries
  - 12 in Antarctica
- Two great unknowns:
  - Antarctica
  - Outer space
- ***Cold War!***

# International Geophysical Year ANTARCTIC STATIONS



- Argentina
- Australia
- Chile
- France
- Great Britain
- New Zealand
- Norway
- Belgium
- Japan
- South Africa
- USA
- USSR









**Cmdr. Standish Backus**  
(US Navy Art Collection)

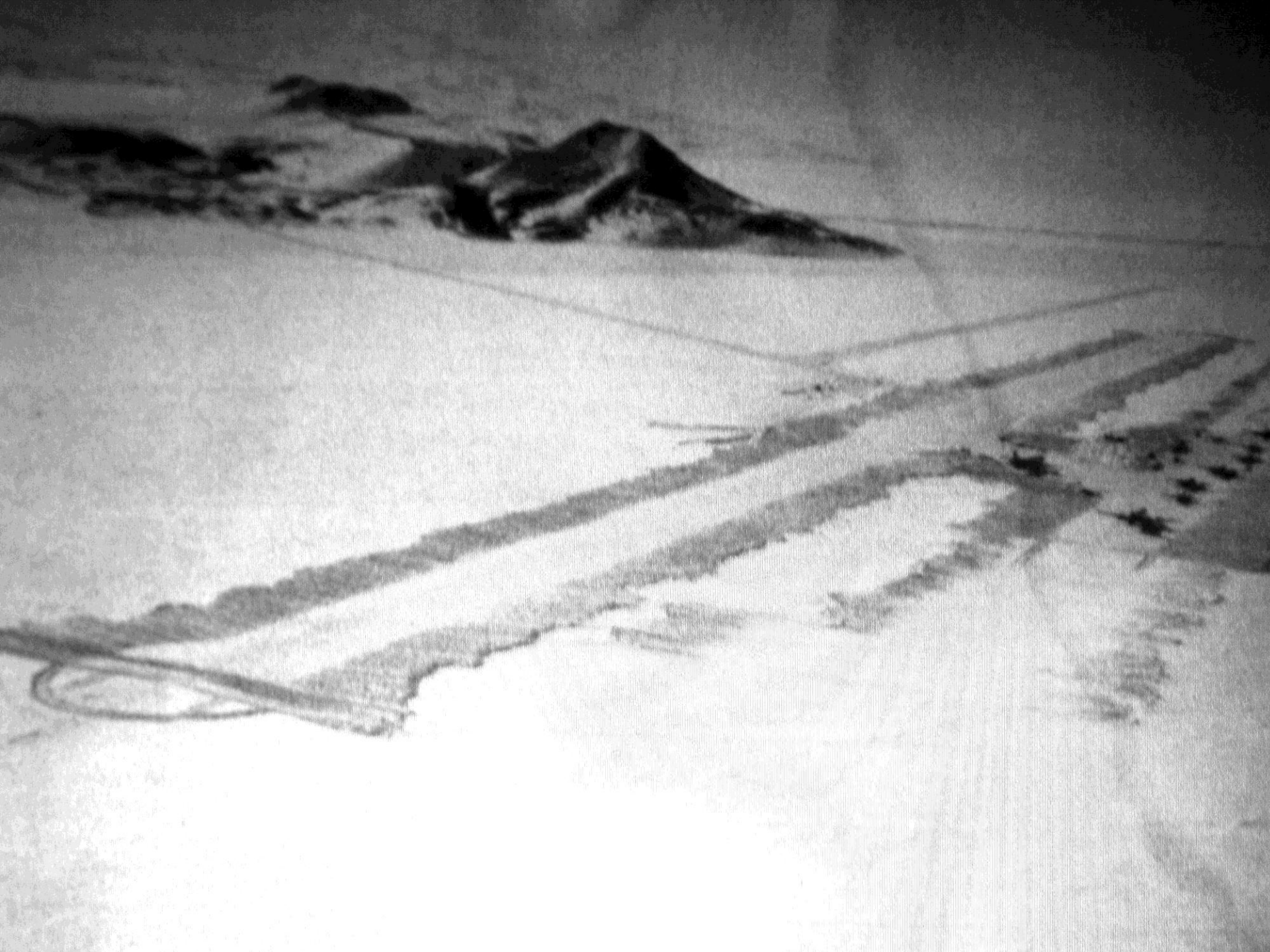






TROOP CARRIER  
U.S. AIR FORCE







**Robert Charles Haun**  
(US Navy Collection)

*Robert Charles Haun  
1947-1950*



**Robert Charles  
Haun**

ROBERT  
CHARLES  
HAUN

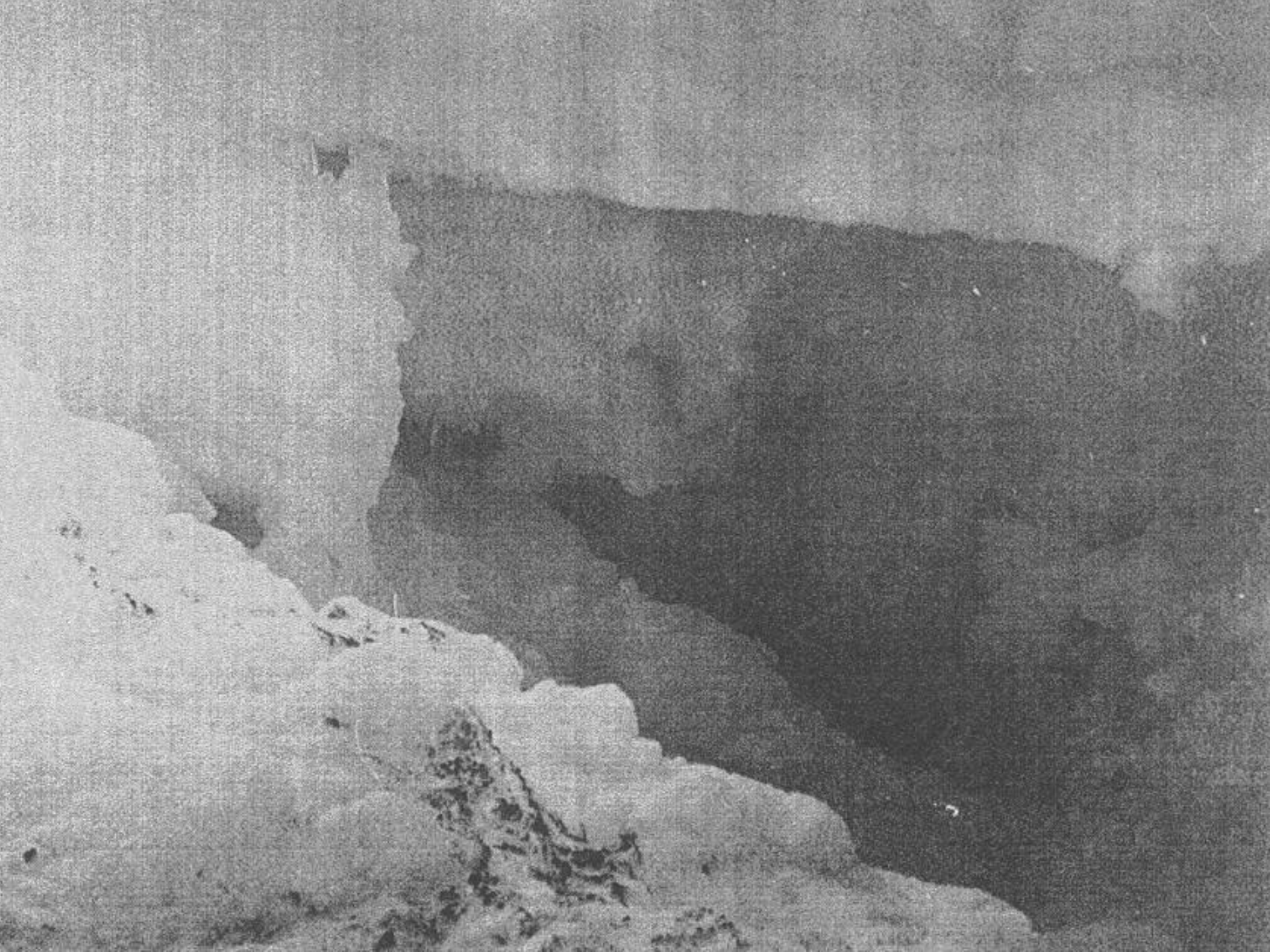




Robert Charles Haun

Robert Charles Haun  
ANTARCTICA  
LA 8-58







By John Swadener,  
courtesy Marc Swadener















# IGY Sciences in Antarctica

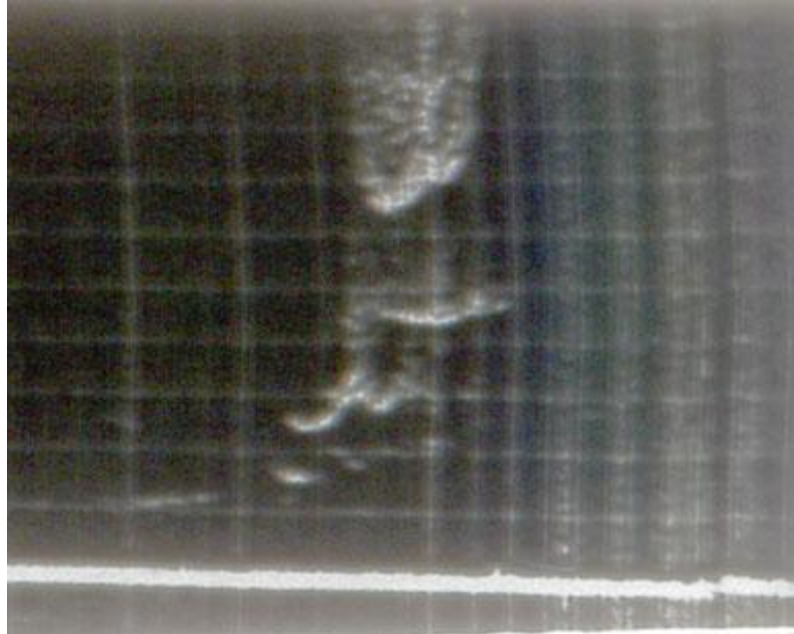
- meteorology
- aurora and airglow
- cosmic rays
- geomagnetism
- ionospheric physics
- glaciology
- seismology

# IGY Sciences in Antarctica

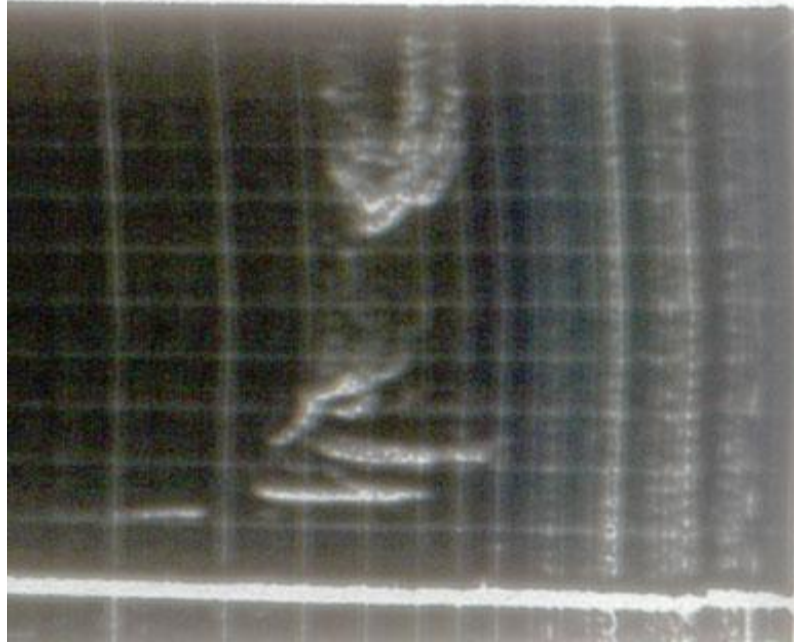
- meteorology
- aurora and airglow
- cosmic rays
- geomagnetism
- ionospheric physics
- glaciology
- seismology

. . . Wait! No geology??





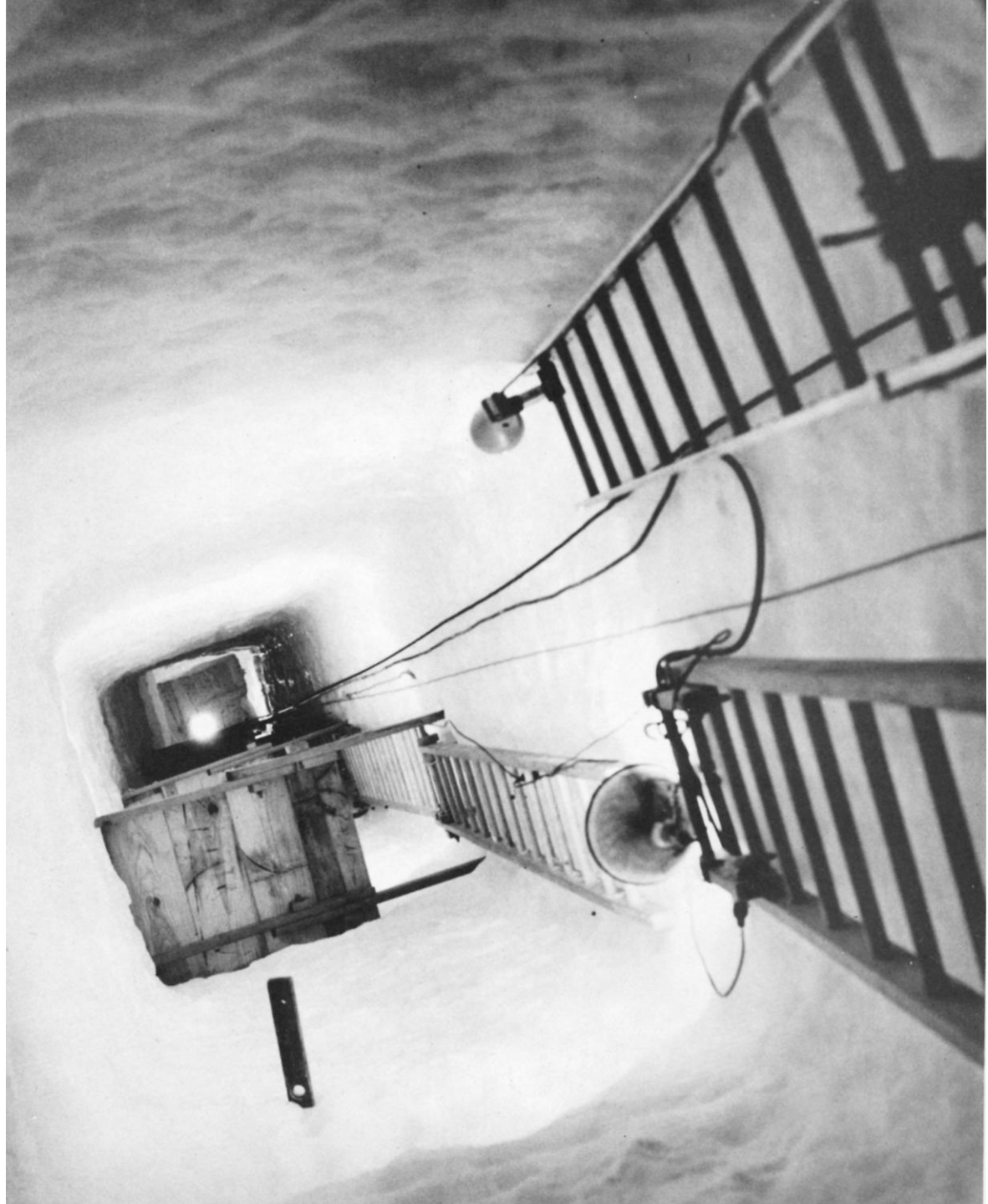
1937  
MAY 14  
C. D. LULU



2 3 1 5

2 3 1 6

2 3 1 7















# IGY Success!

## **Scientists:**

More, more!

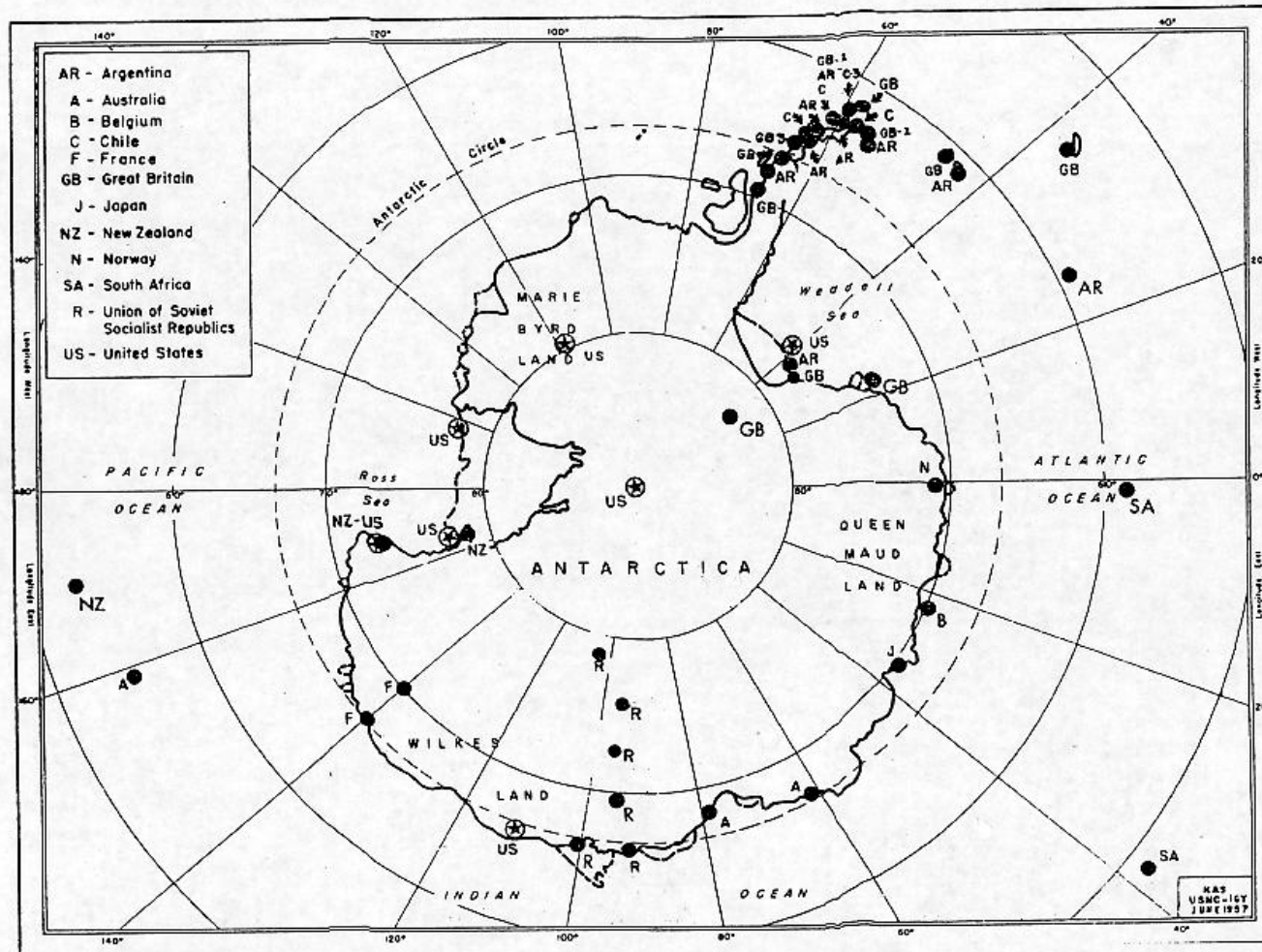
## **Military Establishment:**

Defend millions of square miles of ice?  
Where's the "gold"?

## **State Department:**

First, a claim! But where?  
Or, free access anywhere?  
Treaty, yes! But with whom?

# International Geophysical Year ANTARCTIC STATIONS



IGY and  
Treaty parties:

USA

Argentina

Australia

Chile

France

Great Britain

New Zealand

Norway

USSR

Japan

South Africa

Belgium

# Antarctic Treaty

1 December 1959, Washington, DC

- I. Peaceful purposes only
- II. Freedom of scientific investigation
- III. International cooperation
  - IGY enshrined
- IV. Territorial claims set aside



An aerial photograph of a vast, snow-covered Antarctic landscape. The terrain is rugged, with numerous snow-covered mountains and valleys. The snow is a mix of white and light blue, with some darker patches of rock or ice visible. The sky is a clear, pale blue. The overall scene is one of a remote, high-altitude environment.

# The IGY in Antarctica Endures!