



International Geophysical Year, 1957-1958: Drifting Station Alpha Documentary Film, Version 1

USER GUIDE

How to Cite These Data

As a condition of using these data, you must include a citation:

Untersteiner, N. and F. G. van der Hoeven. 2009. *International Geophysical Year, 1957-1958: Drifting Station Alpha Documentary Film, Version 1*. [Indicate subset used]. Boulder, Colorado USA. NSIDC: National Snow and Ice Data Center. <https://doi.org/10.7265/N5MK69TW>. [Date Accessed].

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National Snow and Ice Data Center

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1 BACKGROUND

Station Alpha was the first long-term scientific base on arctic pack ice operated by a Western country. At the time of its establishment, Russia had already operated six drifting ice camps of this kind. However, due to the strategic importance and sensitivity of the Arctic Basin, little information from these early stations had reached the West. The documentary was filmed and produced by Frans van der Hoeven (Senior Scientist at Station Alpha) and Norbert Untersteiner (Scientific Leader of Station Alpha).

This excerpt from the Technical Documentation from [Arctic Climatology Project - EWG Arctic Meteorology and Climate Atlas](#) provides background history on Drifting Station Alpha:

Information on ice stations Alpha, Bravo, and Charlie was drawn from Cottell (1960) and Leary and LeSchack (1996). Alpha, Bravo (the re-occupied T-3 [station]), and Charlie were established under Project Ice Skate through the agency of the U.S. National Committee for the International Geophysical Year (IGY). The U.S. Air Force provided logistic support, and the U.S. Weather Bureau directed the meteorological observations. These included upper air data, radiation, carbon dioxide, and ozone studies as well as synoptic observations.

The scientific program included heat budget studies, ice physics, magnetics, oceanography, and geology, and was carried out by a number of U.S. universities and agencies with participation by Canadian and Japanese agencies as well. After IGY, many of these studies continued under sponsorship of the U.S. Office of Naval Research (ONR) and the U.S. Geophysics Research Directorate.

Positions were determined from observations of sun, moon, and stars with precision theodolites or transits. The recorded positions were estimated to be accurate within one half a nautical mile.

Ice Station Alpha was set up in April 1957, and the scientific program lasted from June 1957 to November 1958, when the station was abandoned due to the ice breaking up. ONR had agreed to run Alpha after IGY; and after Alpha's premature abandonment, ONR supported the establishment of Ice Station Charlie in April 1959.

2 DETAILED DATA DESCRIPTION

2.1 Format

The film is available in .mp4 format (459 MB) from the NSIDC [FTP site](#) and has a running time of 33:01 minutes. It was originally transferred to electronic media by Crosspoint of Lakewood, Colorado USA.

A transcript of the film is also available: [IGY 1957-1958: Drifting Station Alpha Transcript](#) (PDF, 27 KB).

Figure 1 shows the original front cover of the DVD.

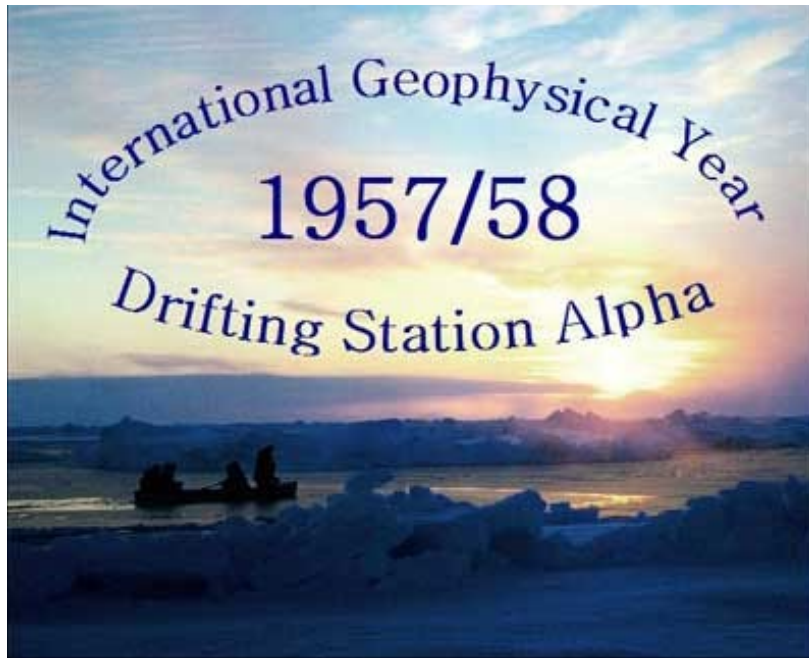


Figure 1. Original DVD Front Cover

2.2 Spatial and Temporal Coverage

The main camp was located 500 km north of Barrow, Alaska USA. Along with two satellite camps, these camps formed a triangle with sides of approximately 100 km in length. This film covers April 1957 when the drifting station was established to November 1958 when the project ended. The geographic area covered in the film footage is approximately as follows:

Southernmost latitude: 80° N
Northernmost latitude: 87° N
Easternmost longitude: 180° E
Westernmost longitude: 110° E

Figure 2 shows the path of the station as it drifted.



Figure 2. Path of Drifting Station Alpha

The green dot marks the spot where the station was established in April 1957, and the red dot marks the end of the project in November 1958. The station drifted over 3000 km during an 18-month time period.

3 REFERENCES AND RELATED PUBLICATIONS

Cabaniss, G. H. 1962. Geophysical Data from U.S. Arctic Ocean Drift Stations, 1957-1960. Air Force Cambridge Research Laboratories AFCRL-62-683.

Cottell, I. B. 1960. United States Research at Drifting Stations in the Arctic Ocean. *Polar Record* 10/(66): 269-274.

Crary, A. P. 1966. Air Force Research Achievements on Drifting Stations. *Arctic Drifting Stations*, edited by J. E. Sater, Arctic Institute of North America, Warrenton, VA: 113-125.

Leary, W. M., and L. A. LeSchack. 1996. *Project Coldfeet*, Naval Institute Press, Annapolis: 196 pp.

Fletcher, J. O. 1966. Origin and Early Utilization of Aircraft-Supported Drifting Stations. *Arctic Drifting Stations*, edited by J.E. Sater, Arctic Institute of North America, Warrenton, VA: 1-13.

Salter, J. E. 1968. *Arctic Drifting Stations*, Arctic Institute of North America, Washington, D.C.

N. Untersteiner. 1961. On the Mass and Heat Budget of Arctic Sea Ice. *Arch. Met. Geoph. Biokl. A*. Bd. 12, H. 2: 151-182.

3.1 Related NSIDC Data Collections

NSIDC houses two data collections related to the Station Alpha DVD. The first is the [Arctic Climatology Project - EWG Arctic Meteorology and Climate Atlas](#) data set that contains portions of

the data collected on Drifting Station Alpha during its operation from 1957 to 1958. The second is the [Comprehensive Ocean - Atmosphere Data Set \(COADS\) LMRF Arctic Subset](#) data set that contains data similar to the type of data acquired on Drifting Station Alpha but spans 1950 to 1995.

3.2 Other Data Collections

The [World Ocean Database \(WOD\) 2001 CD-Rom](#) contains data from Ice Station Alpha.

4 CONTACTS AND ACKNOWLEDGMENTS

Acknowledgments:

NSIDC would like to acknowledge Dr. Norbert Untersteiner for his contribution of the film and his efforts to make it available. We also acknowledge the NOAA National Geophysical Data Center, Boulder; and the NOAA Climate Database Modernization Program for their support of and contributions to this project.

5 DOCUMENT INFORMATION

5.1 Document Authors

A. Wallace and A. Windnagel prepared this document.

5.2 Publication Date

July 2009

5.3 Date Last Updated

July 2010: A. Windnagel added a reference and related data collection to the references and related data collections lists.