

OPEN

SEN-86-044

Station LOWFIELD: Commissioning Report

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Commissioning of the northern station, including the decision to site it for radio quiet rather than for access, and the twelve-year gap between first occupation and formal commissioning.

PURPOSE

Station LOWFIELD was commissioned on 29 August 1986 as a permanent facility for signal reception and long-baseline observation, replacing the seasonal emplacement that had occupied the site since 1974.

SITING

The site was selected for one property: it is radio-quiet by geography rather than by agreement.

Quiet zones maintained by regulation depend on the regulation continuing to exist and on everyone continuing to honour it. Neither is a property an institution with a fifty-year horizon should build on. LOWFIELD is quiet because of terrain and distance, and will remain so whatever anyone decides.

The cost of this choice is access. Resupply is seasonal. There is no road. The eleven-week rotation that governs station life -- and that SEN-22-018 later showed to be two to three weeks too long for human attention -- is a direct consequence of the sea ice calendar.

THE TWELVE-YEAR GAP

The site was first occupied in 1974 and not commissioned until 1986. The report records the reason plainly: for most of that period the institution could not demonstrate that it could keep people there safely through a winter, and declined to commission a facility it might have to abandon.

Three winters were spent proving otherwise, unoccupied, with instrumentation only.

This gap has one consequence for the Archive worth noting. Records from the pre-commissioning period -- including SEN-81-017 -- were made at a site with no formal instrument log, no calibration chain of custody and no commissioning baseline. They are held to a lower evidentiary standard as a result, and that limitation is attached to them permanently rather than being quietly forgotten.

CONFIGURATION AT COMMISSIONING

- Reception: primary array plus two auxiliary baselines
- Reference: local standard, comparison against travelling standard on resupply
- Power: islanded generation with seasonal fuel; the direct ancestor of Helios
- Complement: four, eleven-week rotation
- Communications: intermittent by design

The reference arrangement described above is the single-instrument design that failed at ARGENT seven years later; see SEN-93-112. LOWFIELD was retrofitted to three-way comparison in 1994.

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