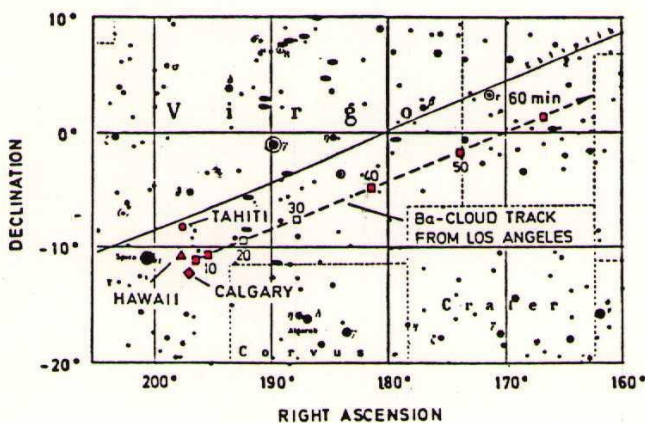
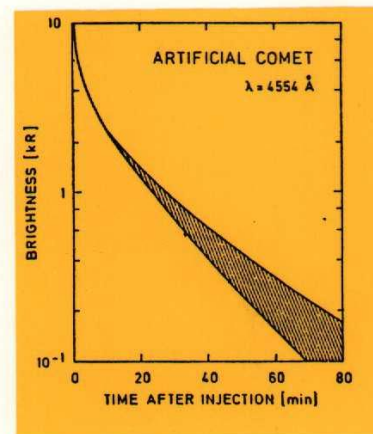


APPARITION OF A MAN-MADE COMET

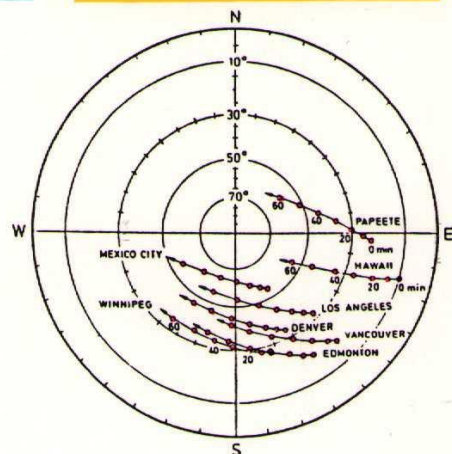
on Christmas Day • before sunrise • in the constellation of Virgo

The "comet" consists of 2.5 kg of barium vapor ejected from a satellite at 116 000 km distance from the Earth in the solar wind.

Appearance : 12:18 GMT (04:18 PST) on 25 Dec 84
 Location : 4° west of Spica
 Brightness : + 3.0 visual magnitudes
 Colour : Red-yellow-green during 1st minute
 (Ba I resonance line: 5535 Å)
 Purple-grey thereafter
 (Ba II lines at 4554 and 4934 Å)
 Apparent size: 5' wide, i.e. 1/6 of diameter of
 the moon, with long tail developing
 Duration : ~ 20 minutes for visual observa-
 tion with binoculars (7 x 50)



EXPECTED MOTION ON THE SKY



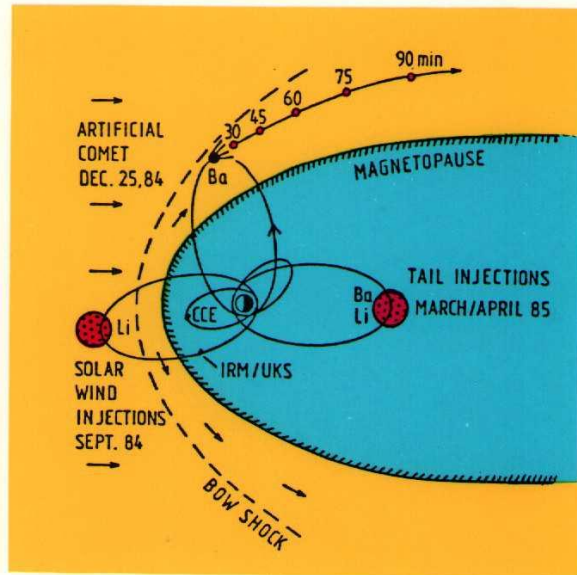
AZIMUTH AND ELEVATION

Advice for photographers: Use long focal length, but fast optics (at least f:4) and highly sensitive film (ASA 1000). Exposure times: 20 sec during first minute, up to 2 minutes thereafter.

The Artificial Comet experiment is one out of seven plasma injections performed during the AMPTE mission. The three Active Magnetospheric Particle Tracer Explorers were built in the USA, W. Germany and the United Kingdom and launched jointly on a Delta rocket on 16 August 1984 from Cape Canaveral. The release canisters are carried by the German Ion Release Module (IRM). Diagnostic measurements inside the plasma clouds and elsewhere are made by the IRM and, at close distance (200 km in Dec. 84), by the United Kingdom Subsatellite (UKS). The United States Charge Composition Explorer (CCE) traces the injected as well as naturally occurring ions inside the Earth's magnetosphere.

AMPTE Mission Profile

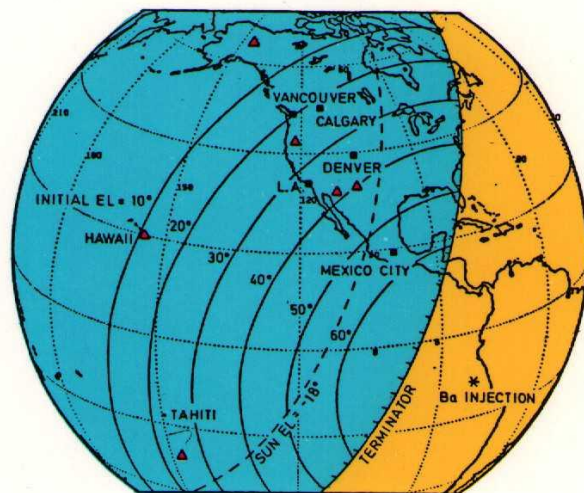
- Two (invisible) lithium injections were performed on 11 and 20 September 84 ahead of the bow shock.
- Artificial Comet:
A barium release at the morning flank of the magnetosphere (25 Dec. 84).
- Two Ba and two Li injections in the geomagnetic tail will follow in spring 1985 (dates and times not firmly predictable).



Reasons for Choice of Date

Only on 25 December 84 are the following conditions simultaneously fulfilled:

- new moon
- satellite position in view of observation sites in Western USA and Eastern Pacific
- sun below -18°
- IRM and UKS near apogee and aligned along flow line of solar wind



Postponement to 27 Dec. 84, 12:32 GMT, possible, if seeing conditions or space weather are not acceptable on 25 December. The positions on the sky are similar to those shown on the reverse side.

More information can be obtained from G. Haerendel, Max-Planck-Institut für extraterrestrische Physik, 8046 Garching bei München, W. Germany.
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