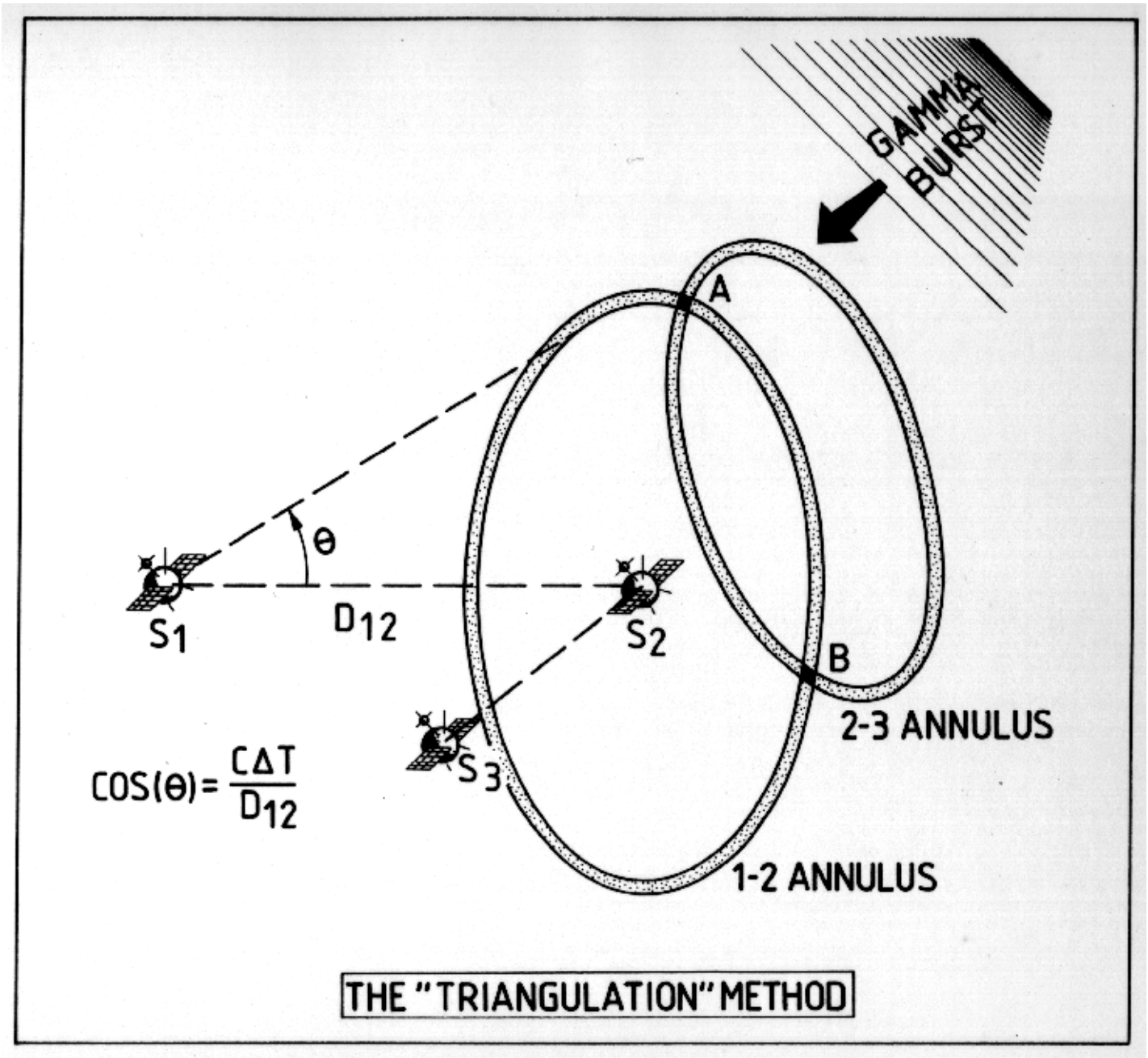
The figure on the left is an HST observation of GRB970228; on the right, the logo of the 3rd Interplanetary Network.

Burst Bibliography | IPN Data | The Master Burst List NEW DATA

The third interplanetary network (IPN3) is a group of spacecraft equipped with gamma-ray burst detectors. By timing the arrival of a burst at several spacecraft, its precise location can be found. The farther apart the detectors, the more precise the location. The principle is illustrated in the figure below. Each pair of spacecraft, like S1 and S2, gives an annulus of possible arrival directions whose center is defined by the vector joining the two spacecraft, and whose radius theta depends on the difference in the arrival times divided by the distance between the two spacecraft.



IPN3 began operations in 1990, with the launch of the Ulysses (ESTEC website, JPL website) spacecraft, which carried the GRB experiment. It was joined by the Compton Gamma Ray Observatory in 1991. Pioneer Venus Orbiter, Mars Observer, and the Near Earth Asteroid Rendezvous mission (NEAR) were part of the network while they were operating. Today, the main spacecraft contributing their data are WIND, 2001 Mars Odyssey, INTEGRAL, RHESSI, Swift, MESSENGER, Suzaku, AGILE, and Fermi. Other members of the network have included the Indian SROSS-C2 spacecraft, the Air Force's Defense Meteorological Satellites, the Japanese Yohkoh spacecraft, the Italian X-ray astronomy satellite BeppoSAX, the Chinese SZ-2 mission, and HETE-II. When the duty cycles and effective fields of view of all the missions in the network are considered, the IPN is a full-time, isotropic all-sky GRB monitor. So far, 27 spacecraft have participated in the network.

Some recent IPN-related publications.

Send mail to the following address with questions or comments about this web site.

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