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16 August 1984

M E M O R A N D U M

To: Craig Walker
From: Irwin Shapiro
Subject: Pulsar Astrometry and Ionospheric Corrections

I have read Norbert Bartel's and Carl Gwinn's memos on methods of ionospheric corrections needed for pulsar astrometry and would just like to remind everyone that the location of a Global Positioning System (GPS) receiver at each site to observe the NAVSTAR satellites may well provide better ionospheric data than would any of the methods proposed in these earlier memos. Observing both the ~1225 and ~1575 MHz signals simultaneously from several satellites from each site will allow interpolation/extrapolation to determine the total electron content along the path to the observed pulsar. A study could be made to assess with reasonable quantitative reliability the accuracy achievable with such mappings of the observed total electron contents to the pulsar lines of sight.

The cost of these receivers may well decrease dramatically with time to, say, a several tens of thousands of (1984) dollars level or the next, say, five years.

IS/nm