

Radio Occultation Capability on Decadal Survey Missions

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The National Research Council Decadal Survey calls for NASA involvement in GNSS radio occultation (bold emphasis in original):

NASA should implement a set of 15 missions phased over the next decade. All of the appropriate low Earth orbit (LEO) missions should include a Global Positioning System (GPS) receiver to augment operational measurements of temperature and water vapor.

And again on page 280:

. . . In view of the importance of the occultation measurement and the accurate positioning of the satellite for other sensor measurements, GPS receivers should be a standard part of both NASA and NPOESS low-Earth-orbit payloads.

We have been working with the Decadal Survey missions to bring this recommendation to fruition with mixed results. Because the Decadal Survey calls for radio occultation measurements outside of the individual mission descriptions, it is often missed, its importance is sometimes not recognized, and it has been the first item descoped.

We are developing a “return on investment” argument for why multiple satellites with GNSS radio occultation capability are needed. We would welcome discussions with the community on this topic.