NEOS Operation Center

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Abstract This report covers the activities of the NEOS Operation Center at USNO from 2023 to 2024. The Operation Center schedules IVS-R4 and IVS-INT-1 Intensive sessions.

1 VLBI Operations

Each week NEOS operations consisted of one 24-hour duration IVS-R4 observing session and five one-hour duration IVS-INT-1 ("Intensive") sessions. IVS-R4 sessions were observed Thursday–Friday and were used to measure all five Earth Orientation Parameters, while IVS-INT-1 sessions were observed daily Monday–Friday and were used to measure UT1-UTC. In 2023–2024, the operational IVS-R4 network consisted of six to 13 stations. The regular stations for the weekday IVS Intensives were Kokee Park and Wettzell. Kokee Park lost their internet connection from July 2024 through the end of the year. IVS-INT-1 sessions during this time were scheduled with Kokee Park, Mauna Kea (VLBA), and Wettzell on Monday, Tuesday, and Thursday. On Wednesday and Friday, IVS-INT-1 sessions were scheduled with Ishioka and Wettzell. Table 1 shows the number of sessions scheduled during the 2023–2024 period.

The Operation Center uses SKED [1] for scheduling. All sessions are correlated at the Washington Correlator, which is located at USNO and is run by NEOS.

Table 1 2023–2024 sessions scheduled

Type	Mode	Number scheduled
IVS-INT-1	S/X	475
IVS-R4	S/X	101

2 Staff

Merri Sue Carter, Sara Hardin, and Phillip Haftings are the main staff members of the NEOS Operation Center. Phillip Haftings, located in Washington D.C. (USNO), is responsible for the overall management. Merri Sue Carter, located at the USNO Flagstaff Station (NOFS), is the primary scheduler. Sara Hardin, also located in Washington D.C. (USNO), provides support for updates and as the backup scheduler.

3 Future Plans

Sara and Merri Sue are investigating the feasibility of incorporating VIESCHED++ [2] into operational scheduling. Most barriers to using the new software have been resolved, and VIESCHED++ will be tested in IVS-INT-1 sessions in 2025.

References

1. Nancy Vandenberg, (1999) Sked: interactive/automatic scheduling program. NASA/Goddard Space Flight Center.
2. Matthias Schartner and Johannes Böhm, (2019) VieSched++: A New VLBI Scheduling Software for Geodesy and Astrometry. Publications of the Astronomical Society of the Pacific, 131, 084501, doi:10.1088/1538-3873/ab1820.

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