

**DIVISION A
WORKING GROUP**

**ASTROMETRY BY SMALL
GROUND-BASED TELESCOPES**

*ASTROMETRIE PAR PETITS
TELESCOPES AU SOL*

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Marcelo Assafin and Roberto Vieira-Martins reported on the astrometric and photometric use of the T0.6m and T1.6m telescopes at the Observatorio do Pico dos Dias (OPD), Brazil. Dozens of nights at each telescope were used to observe small bodies, mostly TNOs, dwarf planets, and natural satellites of Jupiter and Uranus, as well as Jupiter’s Trojan asteroids. Observations were dedicated to the prediction and observation of stellar occultations. The Uranus system was observed with the technique of mutual approximations between the main satellites (Santos-Filho et al., 2019). Astrometry of Jupiter’s irregular satellites was also made.

Goran Damjanovich (Astronomical Observatory in Belgrade, Republic of Serbia) reported about the bilateral cooperation projects between Serbian and Bulgarian Academies of Sciences (2023-2025): “Gaia astrometry and fast variable astronomical objects” and “Astrometry and photometry of visual double and multiple stars”. In line with these projects, astronomical observations were done using the D=2 m Rozhen NAO BAN telescope within two periods: 2024A, from 28th June to 3rd July, and 2024B, from 4th to 9th October. During the 2024A period, there were observed 9 Extragalactic Radio Sources, mostly QSOs present in the ICRF list, for Gaia astrometry and photometry: 1800+440, 1849+670, 2059+034, 2254+024, 1424+240, 1538+149, 1546+027, 1637+574, and 1749+096. During the 2024B period, there were observed 3 Whole Earth Blazar Telescope objects, WEBT (0235+164, 2200+420, and 2230+114), 2 Gaia Alerts or Gaia-Follow-Up Network for Transients Objects (Gaia23cri and Gaia24acn), and NGC1051. There was organized the XIV Serbian-Bulgarian Astronomical Conference (SBAC) in Vrnjacka Banja, Serbia from 23rd to 27th September 2024. As well, we used a few telescopes at the Serbian Astronomical Station Vidojevica (ASV) with diameters of 40 cm, 60 cm, and 1.4 m for observing objects for Gaia astrometry, Gaia Alerts, and WEBT. In line with Gaia astrometry, we cooperated with François Taris (Paris Observatory). A paper about the Gaia Alerts, object Gaia19dke, where we did the first observation using the 60 cm ASV telescope (night 29/30 in August 2019) was published (Maskoliūnas et al., 2024).

William Thuillot (IMCCE, Paris Observatory, France) reported on the responses to Gaia alerts concerning Solar System objects continued in 2024 through the Gaia FUN SSO activity, thanks to observation by the LCOGT 1 m telescope network and the 1.2 m telescope at the Observatoire de Haute Provence. However, only a few alerts for non-referenced objects were triggered and observed, probably due to the completion of the magnitude 21 range.

Conclusions

Small telescopes with apertures less than 2 m are used for getting accurate astrometric measurements of bright Small Solar System Bodies, natural satellites, and extragalactic sources. Besides direct imaging astrometry, there are a number of observational techniques (occultations, eclipses, mutual approximations) to gain accurate mutual positions. Follow-Up networks and observational campaigns that are *using small telescopes* have shown their high efficiency in collecting observations of moving or/and transient objects. Extension of the observational sites in longitude and latitude increases the chances of getting a “clear sky” necessary for successful monitoring of the objects of interest. The Working Group facilitates the sharing of information and experience, coordination of campaigns and setup of telescope networks, http://iau_wgnps.imcce.fr.

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Chair and Co-Chair of the Working Group

References

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