

July 24th., 2019

Dear A1 commission member,

Following are six announcements concerning our commission.

1. Designation of A1 commission secretary
2. Gaia News : end of the nominal mission
3. Colloquium on the AGN and quasars at Paris on June 15-19 , 2020
4. Colloquium “Journées” , October 7-9, 2019
5. News on JASMINE, astrometry satellite mission in Japan
6. “Voyage 2050” a white paper for “All sky visible and NIR space astrometry”

Best regards,

Jean Souchay

1. Designation of A1 commission secretary

Our colleague Mrs. Aletha de Witt from Hartebeesthoek Radio astronomy Observatory (South Africa) has accepted to serve as secretary of our commission. Many thanks for her involvement.

Information : https://www.iau.org/science/scientific_bodies/commissions/A1/

2. Gaia News : end of nominal mission

July 16 2019 marks the end of Gaia’s nominal five year mission. This date was chosen because it coincides with a major orbit maintenance manoeuvre, which is designed to keep Gaia out of the earth's shadow during the extended mission phase. The manoeuvre, having occurred on July 16th, was named the "Whitehead eclipse avoidance manoeuvre" in memory of Gary Whitehead from the Gaia Flight Control Team, who sadly passed away last month. You can find more details in this story from the European Space Operations Centre in Darmstadt:

http://www.esa.int/Our_Activities/Operations/Gaia_s_biggest_operation_since_launch_and_commissioning

The manoeuvre will be followed by one year of Gaia following a scanning law with a reversed precession direction (but the same spin direction) in order to aid breaking certain degeneracies in the astrometric solution. In addition slight optimizations of the scan law will be done in connection with catching high signal-to-noise ratio observations of stars near Jupiter in 2020 for the experiment aimed at measuring the light bending due to the quadrupole moment of Jupiter’s gravitational field.

The Gaia Collaboration can all look back on a wonderful five years of effort to bring two fantastic data releases to the astronomy colleagues and the world.

Transmitted by Anthony Brown

3. Colloquium on AGN and quasars at Paris in June 15-19, 2020

We are pleased to announce the “**Active Galaxies and Quasar Reference Systems in the Gaia Era**” conference, to take place 15 - 19 June, 2020 at Paris, France. This conference is co-organized by Institut d’Astrophysique de Paris (IAP), Observatoire de Paris, and US Naval Observatory. The purpose of this conference, following the Paris 2010-2015 EGSG and GAGNES meetings, will be to bring together AGN and celestial reference frame (CRF) researchers for the purposes of discussing the emerging field of optical-radio astrometric offsets seen in many of the AGNs and quasars that make up the ICRF. With the advent of Gaia and its next issue of the DR3, the existence and astrophysical nature of these offsets are on increasingly firm ground. The time is ripe for a dedicated discussion of the extended environment around AGNs and quasars, and the processes that affect their appearance across the electromagnetic spectrum, such as jet morphology, disturbed host galaxies, spectral X-UV to IR properties of quasars, variable obscuration, or even dislodged AGNs. This conference will further serve as a venue to summarize the current state of the art of AGN and CRF research.

For any information, contact Nathan Secrest (nathansecrest@msn.com) or the other co-chairs: B.Rocca-Volmerange (IAP, brigitte.rocca@iap.fr), J. Souchay (Obs. Paris, jean.souchay@obspm.fr).

4. Colloquium “Journées” in October 7-9, 2019 .

A colloquium entitled “*Journées 2019 : Astrometry, Earth Rotation and Reference Systems in the Gaia era*” will be held at Paris Observatory on October 7th, 8th and 9th, 2019. This symposium will be organized jointly by IAU commissions A1 and A2 (Rotation of the Earth). A large place will be devoted to our A1 commission topics. It will also be the occasion to celebrate the 100th birthday of commission A2 (formerly named commission 19).

Information and registration

IMPORTANT : The deadline for registration was June 30th., but it is still possible for additional people to take part to the meeting without submitting abstract.

<https://syrtte.obspm.fr/astro/journees2019>

5. News on JASMINE, astrometry satellite mission in Japan

ISAS (science division of JAXA) has selected a mission candidate JASMINE, NIR astrometry mission into the central part of our galaxy that will reveal the evolution history of our galaxy, for a M-class slot. ISAS is determined to proceed to budget request for these two missions to be launched in 2020s. The conclusion and the plan have been notified to a governmental committee that oversees the space science activity in Japan on May 21.

Transmitted by Y. Yamada

6. “Voyage 2050” a white paper for “All sky visible and NIR space astrometry”

This white paper, whose the final version is scheduled beginning of August, deals with the preparation of a new all-sky visible and NIR astrometric mission, with the aim of expanding and improving on the science cases of Gaia using basic astrometry. The white paper argues that the best overall science return can be achieved by going deeper than Gaia and by expanding the wavelength range to the NIR. For almost 2 billion common stars the combination of the two all-sky space observatories (Gaia and the new mission) would provide improved proper motions and an astrometric foundation for all branches of astronomy -- from the solar system and stellar systems, including exoplanet systems, to compact galaxies, quasars, neutron stars, binaries and dark matter (DM) substructures. The addition of NIR will result in up to 8 billion newly measured stars in some of the most obscured parts of our Galaxy, and crucially reveal the very heart of the Galactic bulge region.

A new mission would allow the slowly degrading accuracy of the Gaia visible reference frame, which will be the basis for modern astronomical measurements, to be re-initialized back to a maximal precision. The degradation is due to errors in its orientation and spin and due to small proper motion patterns which are not accounted for. The catalogue accuracy itself will decay more rapidly due to errors in the measured proper motions. Dense and accurate reference grids are needed for forthcoming Extreme, Giant and Overwhelming telescopes but also for smaller instruments currently operating or being planned. The extension of this visible reference frame into the NIR is an important step given so many new space and ground based observatories will have infrared sensitive instruments. A new mission would give better accuracy to explore proper motion patterns (e.g. from Sun's Galactic acceleration and gravitation waves), real time cosmology and fundamental physics.

Transmitted by David Hobbs

