

SCIENTIFIC PROGRAMME

Scientific Organising Committee: A. Brzeziński, Poland; N. Capitaine, France (Co-Chair); V. Dehant, Belgium; A. Escapa, Spain; C. Hohenkerk, UK; C. Huang, China; I. Kulkova, Russia; Z. Malkin, Russia (Co-Chair); D.D. McCarthy, USA; M. Soffel, Germany; J. Souchay, France; J. Vondrák, Czech Republic; Ya. Yatskiv, Ukraine.

Local Organising Committee: A. Devyatkin (Chair), T. Borisevich, A. Vershkov, Z. Malkin, K. Maslennikov, N. Miller, V. Pashkevich, V. Pleshakov, I. Shevchenko.

Monday 22 September 2014

9:00–9:20: Opening of the Journées 2014

Welcome from A. Stepanov, Director of the Pulkovo Observatory

Welcome from C. Lassailly, Coordinator on the scientific cooperation, French embassy in Russia

Introduction to the Journées 2014 by N. Capitaine, Co-Chair of the SOC

09:20–09:50: Special session on the History of the Pulkovo Observatory

Stepanov A. *175 years of the Pulkovo Observatory.*

09:50–10:10: Session 1. Celestial reference system and frame

(Chair: N. Capitaine)

Malkin Z., Jacobs C., and IAU ICRF3 Working Group. (invited) *The ICRF-3: Status, plans, and progress on the next generation International Celestial Reference Frame.*

10:10–10:40: Coffee break

10:40–13:00: Session 1. (continuation)

(Chair: A. Andrei)

Raposo-Pulido V., Lambert S., Capitaine N., Nilsson T., Heinkelmann R., Schuh H. *On the systematics in apparent proper motions of radio sources observed by VLBI.*

Andrei A., Coelho B., Anton S. *Morphology of QSO host galaxies — a look at the SED.*

Damljanović G., Taris F., Boeva S. *Some preliminary photometric results of QSOs useful for the link between future Gaia CRF and ICRF.*

Iddink A., Jacobs C., Artz T., Nothnagel A. *First results of X/S and X/Ka-band catalog combinations with full covariance information.*

Tsvetkov A., Vityazev V. *Comparison of astrometric catalogues UCAC4, XPM, PPMXL.*

Popadyov V., Tolchelnikova S. *Some common problems in geodesy and astrometry after establishing ICRF.*

Ding P.-J., Liu J.-C., Zhu Z. *Galactic coordinate system based on multi-wavelength catalogues.*

Discussion *(Chair: Z. Malkin)*

13:00–13:45: Lunch-break

13:45–14:00: Group photo at the portico in the center of the Observatory building

14:00–15:30: Session 2. Relativity and time scales

(Chair: M. Soffel, O. Titov)

Hees A., Bertone S., Le Poncin-Lafitte C., Teyssandier P. (invited) *The Time Transfer Function as a tool to compute range, Doppler and astrometric observables.*

Klioner S. (invited) *Relativistic aspects of Gaia mission.*

Capitaine N., Soffel M. *On the definition and use of the ecliptic in modern astronomy.*

Tang K., Soffel M., Tao J.-H., Tang Z.-H. *Relativistic precession model of the Earth for long time interval.*

Soffel M. *Work related with IAU C52: RIFA.*

Litvinov D., Bartel N., Biriukov A., Kauts V., Kulagin V., Rudenko V. *Gravitational redshift experiment with the space radio telescope RadioAstron.*

15:30–16:00: Coffee break

16:00–16:40: Session 2. (continuation)

(Chair: M. Soffel)

Titov O., Girdiuk A. *Deflection of light induced by the Sun gravity field and measured with geodetic VLBI.*
Le Poncin-Lafitte C., Delva P., Meynadier F., Guerlin C., Wolf P., Laurent P. *Time and frequency transfer with a microwave link in the ACES PHARAO mission.*

Discussion *(Chair: S. Klioner)*

16:40–18:00: POSTER SESSION

18:00–19:30: WELCOME DRINK

Tuesday 23 September 2014

09:00–10:30: Session 3. Solar and extrasolar systems dynamics

(Chair: V. Dehant)

Shevchenko I. (invited) *Resonances in the Solar and exoplanetary systems.*

Devyatkin A., Gorshanov D., L'vov V., Tsekmeister S., Petrova S., Martyusheva A., Slesarenko V., Naumov K., Sokova I., Sokov E., Zinoviev S., Karashevich S., Ivanov A., Lyashenko A., Rusov S., Kouprianov V., Bashakova E., Melnikov A. *Investigation of asteroids in Pulkovo Observatory.*

Sokova I., Sokov E., Roschina E., Rastegaev D., Gorshanov D., Balega Yu., Dyachenko V. *The binary asteroid 22 Kalliope: Linus orbit determination on the basis of speckle interferometric observations.*

Pitjeva E. *Evolution of EPM ephemerides of IAA RAS.*

Girdiuk A. *Improvement of the Pluto orbit using additional new data.*

Kudryashova M., Rosenblatt P., Marty J.-Ch. *Phobos mass estimations from MEX and Viking1 data: influence of different noise sources and estimation strategies.*

10:30–11:00: Coffee break

11:00–12:00: Session 3. (continuation)

(Chair: A. Escapa, D. Hestroffer)

Perminov A., Kuznetsov E. *Expansion of the Hamiltonian of a planetary system into the Poisson series in all elements.*

Guseva I. *Some peculiarities of orbits of observed comets.*

Kuznetsov E., Zakharova P. *Long time dynamical evolution of highly elliptical satellites orbits.*

Vasilyev M., Yagudina E., Torre J.-M., Feraudy D. *Planned LLR station in Russia and its impact on the lunar ephemeris accuracy.*

12:00–13:00: Sub-Session on the IAU/IAG Joint Working Group “Theory of Earth Rotation”

(Chair: J. Ferrándiz, R. Gross)

Ferrándiz J., Gross R. *Report on the activities of the IAU/IAG Joint Working Group on Theory of Earth Rotation.*

Getino J., Escapa A. *Report on activities of the Sub-Working Group 1 “Precession/Nutation” of the IAU/IAG Joint Working Group on Theory of Earth Rotation.*

Brzeziński A. *Report on activities of the IAU/IAG Joint Working Group on Theory of Earth Rotation, Sub-WG 2 “Polar motion and UT1”.*

Heinkelmann R. *IAU/IAG Joint Working Group on the Theory of Earth Rotation. Sub Working Group 3: Numerical solutions and validation.*

Discussion (Chair: J. Ferrándiz, R. Gross)

13:00–14:00: Lunch-break

14:00–15:30: Session 4. Earth’s rotation and geodynamics

(Chair: C. Ron, R. Heinkelmann)

Schindelegger M., Böhm J., Salstein D. (invited) *The global S1 tide and Earth’s nutation.*

Dehant V. *Refinements on precession, nutation, and wobble of the Earth.*

Liu J.-C., Capitaine N. *Possible improvements of the IAU 2006 precession. The preliminary results.*

Zharov V. *Towards new nutation theory.*

Bizouard C., Zotov L., Sidorenkov N. *Lunar influence on equatorial atmospheric angular momentum and consequences for nutation.*

Terčjak M., Böhm J., Brzeziński A., Gebauer A., Klügel T., Schreiber U., Schindelegger M. *Estimation of nutation rates from combination of ring laser and VLBI data.*

Brzeziński A., Wielgosz A., Böhm S. *On application of the complex demodulation procedure for monitoring Earth rotation: comparison with the standard approach using the long periodic EOP components estimated from VLBI data analysis by the VieVS CD software.*

15:30–16:00: Coffee break

16:00–17:40: Session 4. (continuation)

(Chair: A. Brzeziński, V. Zharov)

Baenas T., Ferrándiz J., Escapa A., Getino J. *Effects of the tidal mass redistribution on the Earth rotation.*

Pashkevich V. *New high-precision Earth and Moon rotation series at long time intervals.*

Markov Yu., Filippova A. *Numerical-analytical modeling of the Earth’s pole oscillations.*

Nastula J., Wińska M., Biryło M. *Comparison of polar motion excitation functions computed from different sets of gravimetric coefficients.*

Ron C., Vondrák J. *Geomagnetic excitation of nutation.*

Sidorenkov N. *The Chandler wobble of the poles and its amplitude modulation.*

Zotov L., Bizouard C. *Prediction of the Chandler wobble.*

Pasynok S., Bezmenov I., Kaufman M. *Operative EOP activities in VNIIFTRI.*

18:00–20:00: CONFERENCE DINNER

Wednesday 24 September 2014

09:00–10:20: Session 4. (continuation)

(Chair: C. Huang, Ch. Bizouard)

Huang C., Zhang M. (invited) *Do we need various assumptions to get a good FCN? — A new multiple layer spectral method.*

Gorshkov V., Shcherbakova N., Mohnatkin A., Smirnov S., Petrov S., Trofimov D., Guseva T., Perederin V., Rosenberg N. *Deformation of the South-Eastern Baltic Shield from GNSS observations.*

Discussion (Chair: C. Huang)

10:20–10:50: Coffee break

10:50–12:00: Session 5. Astronomical almanacs and software

(Chair: C. Hohenkerk, E. Pitjeva)

Bell S., Nemes S., Prema P., Whittaker J. (invited) *The future of almanac services. An HMNAO perspective ...*

Pavlov D., Skripnichenko V. *Rework of the ERA software system: ERA-8.*
Galushina T., Bykova L., Letner O., Baturin A. *The software “IDA” for investigation of asteroid dynamics and its use for study of some asteroid motion.*

Discussion (*Chair: S. Bell*)

12:00–13:00: General discussion and closing the Journées 2014

(*Chair: N. Capitaine, Z. Malkin*)

13:00–13:45: Lunch-break

13:45–14:25: SOFA Business meeting

IAU Commission 19 Business Meeting

14:30–16:00: Excursion on the Pulkovo Observatory

LIST OF POSTERS

Session 1: Celestial reference system and frame

Kurdubov S., Skurikhina E. *Core sources set selection.*

Lipovka A., Lipovka N. *On the transition to the radio system coordinates ICRF.*

Medvedev Y., Kuznetsov V. *Using positional observations of numbered minor planets for determination of star catalog errors.*

Taris F., Damljanović G., Andrei A., Klotz A., Vachier F. *Optical monitoring of QSOs in the framework of the Gaia space mission.*

Vityazev V., Tsvetkov A. *Kinematics derived from Northern and Southern hemispheres of huge ICRS astrometric catalogues.*

Session 2: Relativity and time scales

Avramenko A. *Parametric invariance of the relativistic pulsar time scales.*

Heinkelmann R., Soja B., Schuh H. *Gravitational effects from a series of IVS R³D VLBI-sessions with observations close to the Sun.*

Session 3: Solar and extrasolar systems dynamics

Hestroffer D., David P., Hees A., Le Poncin Lafitte C. *Local test of general relativity with Solar system objects.*

Hestroffer D., Arlot J.-E., Lainey V., Robert V. *Taking the opportunity of the Gaia reference star catalogue for observing the Solar system in the past.*

Kovalenko I., Hestroffer D., Doressoundiram A. *Statistical inversion method for binary asteroids' orbit determination.*

Popova E. *Diagrams of stability of circumbinary planetary systems.*

Sigismondi C., Regoli V., Andrei A. *Measures of the Earth obliquity during 1701 winter solstice at the Clementine meridian line in Rome.*

Vavilov D., Medvedev Y. *Method of determining the orbits of the small bodies in the Solar system based on an exhaustive search of orbital planes.*

Session 4: Earth's rotation and geodynamics

Bezmenov I., Pasynok S. *GLONASS orbit/clock combination in VNIIFTRI.*

Escapa A., Baenas T., Ferrándiz J., Getino J. *On the minimization properties of the Tisserand systems.*

Gorshkov V. *Pole tide triggering of seismicity.*

Gross R., Nastula J. *Estimating the period and Q of the Chandler Wobble from observations and models of its excitation.*

Heinkelmann R., Belda-Palazon S., Ferrándiz-Leal J., Schuh H. *The consistency of the current conventional celestial and terrestrial reference frames and the conventional EOP series.*

Hu H., Wang R., Malkin Z. *Application of Titius-Bode law in earthquake study.*

Miller N. *Periodical regularities of polar motion in the Pulkovo latitude variations.*

Perepelkin V., Bondarenko V. *Irregular effects in the oscillatory process of the Earth's pole and temporal variations of the geopotential.*

Skurikhina E., Ipatov A., Smolentsev S., Diakov A., Olifirov V. *High-frequency Earth rotation variations from VLBI observations CONT14.*

Spiridonov E., Tsurkis I., Kuchay M., Sinyukhina S. *The probabilistic approach to the description of the Chandler wobble.*

Sun R., Shen W. *Triaxial Earth's rotation: Chandler wobble, free core nutation and diurnal polar motion.*

Tsyba E., Kaufman M. *Improvement of the software Bernese for calculation of the Earth rotation parameters according to the data of satellite laser ranging (Lageos 1, Lageos 2) in the Main Metrological Centre of the State Time and Frequency Service.*

Session 5: Astronomical almanacs and software

Andrei A., Boscardin S., Penna J., Sigismondi C., Reis Neto E., d'Avila V. *Astrometry and numerical methods for the solar heliometer.*

Brattseva O., Gayazov I., Kurdubov S., Suvorkin V. *SINCom — the new program package for combined processing of space geodetic observations.*

Hilton J., Acton C., Arlot J.-E., Bell S., Capitaine N., Fienga A., Folkner W., Gastineau M., Pavlov D., Pitjeva E., Skripnichenko V., Wallace P. *Report of the IAU Commission 4 Working Group on Standardizing Access to Ephemerides and File Format Specification: Update September 2014.*

Hohenkerk C. *SOFA & astrometry.*

Lukashova M., Glebova N., Netsvetaeva G., Sveshnikov M., Skripnichenko V. *Russian astronomical ephemeris editions and software.*

Mosenkov A., Savchenko S., Sotnikova N. *Decomposition of galaxy images and galaxy rotation curves.*

Nelmes S., Whittaker J. *Almanac services for celestial navigation.*

Skripnichenko P., Galushina T., Loginova M. *EROS — automated software system for ephemeris calculation and estimation of probability domain.*

Suvorkin V., Kurdubov S., Gayazov I. *GNSS processing in Institute of Applied Astronomy RAS.*