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Astronomical Observatory**



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Book of Abstracts

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International Churyumov Readings “CAMMAC-2023”

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CONTENTS

Scientific organizing committee.....	2
Local organizing committee.....	2
Contents.....	3
Plenary Session.....	6
<i>I.L. Andronov, V.V. Breus, L.L. Chinarova, S.V. Kolesnikov et al.</i> Statistically optimal phenomenological modelling of astronomical signals	7
<i>O. Golubov.</i> Yarkovsky effect as a driving force of asteroids in the Kirkwood gaps	9
<i>A.S. Guliyev, X.M. Mikailov, N. Farzi, R.A. Guliyev.</i> Spectral, photometry and dynamic features of the comet C/2020 F3 (NEOWISE)	12
<i>V.V. Kleshchonok.</i> Pages of the biography and scientific activity of Klym Churyumov	13
<i>V.N. Krivodubskij.</i> Illintsi Astrobleme is the oldest on the Ukrainian Crystal Shield	14
<i>Yu. Krugly, I. Belskaya, Z. Donchev, R. Inasaridze et al.</i> Dart Impact on binary near-Earth asteroid Didymos	18
<i>V.G. Lozitsky, S.M. Osipov.</i> New results to problem of local magnetic fields in active regions on the Sun obtained with HST AO KNU and ATsU-5 MAO NAS	20
<i>V.K. Rosenbush.</i> Comet 67P/Churyumov–Gerasimenko: new knowledge gained by the ROSETTA space mission	21
<i>N.G. Shchukina, J. Trujillo Bueno.</i> Coronal magnetometry with EUV lines	22
Section reports.....	23
<i>V.G. Chiorny, V.G. Shevchenko, I.G. Slyusarev, O.I. Mikhhalchenko</i> <i>et al.</i> Photometry of 25 small fast-rotating asteroids of different families and dynamical groups	24
<i>V.M. Efimenko, V.G. Lozitsky.</i> Development of Solar Activity in the 25th Cycle	26

International Churyumov Readings “CAMMAC-2023”

<i>A.V. Golubaev, A.M. Mozhgova.</i> Some kinematic, physical and chemical properties of meteor bodies according to modern terrestrial observations	27
<i>A.O. Ivanov, V.O. Ponomarenko.</i> Analysis of discovered exoplanets in order to search for conditions close to Terrestrial ones	28
<i>R.I. Kostik.</i> Properties of sound wave propagation in quiet and active (facular) regions of the solar atmosphere	29
<i>O.M. Kozhukhov, M.S. Medina, O.B. Briukhovetskyi, S.V. Rischenko et al.</i> NSFCTC’S activities in NEOS observations in 2019 – 2023 . . .	31
<i>M.V. Kravtsova, V.G. Shevchenko, Yu.N. Krugly, R.Ya. Inasaridze et al.</i> Magnitude-phase dependence of low-albedo asteroid (1390) Abastumani	32
<i>O. Kuzmysnyi, N. Myslitska, V. Zabolotnyi.</i> Use of the educational complex in astronomy when working with applicants for secondary education	33
<i>I. Kyrylenko, O. Golubov, I. Slyusarev, J. Visuri et al.</i> Search for parent bodies of recently fallen meteorites	35
<i>V.G. Lozitsky.</i> Does Solar Activity cause massive events on Earth? . .	37
<i>I. Luk’yanyk, I. Kulyk, Ya. Pavlenko, O. Shubina et al.</i> Are exocomets alike the Solar System comets?	40
<i>V.O. Ponomarenko, <u>K.I. Churyumov</u></i> Physical features of the researched Jupiter family comets and long-period comets	41
<i>V.M. Reshetnyk.</i> Comprehensive modeling of the dust tail of asteroid 6478 Gault	42
<i>V.V. Rychagova, I.G. Slyusarev, V.G. Kaydash, Yu.G. Shkuratov et al.</i> Space weathering on surfaces of Vesta and Ceres	43
<i>A.V. Sergejev.</i> Color-based asteroid taxonomy from multi-color digital sky surveys	45
<i>O.V. Shulga, F.I. Bushuev, <u>M.P. Kaliuzhnyi</u>, N.V. Maigurova et al.</i> The results of testing the prototype network of radio complexes for determining the kinematic parameters of meteors at the frequency of the GRAVES radar in the Carpathian region of Ukraine	46
<i>I.G. Slyusarev, V.G. Shevchenko, V.V. Rychagova.</i> Rotational properties of the largest Main Belt asteroid families	47

International Churyumov Readings “CAMMAC-2023”

<i>M. Vasilenko, D. Dobrycheva, I. Kulyk, Ya. Pavlenko et al.</i> Preliminary results of AI method application for exocomet detections in TESS time series data	48
<i>A. Voitko, O. Ivanova.</i> Dust color variations of comets C/2016 M1 (PANSTARRS) and C/2020 S4 (PANSTARRS)	50
<i>I.I. Yakovkin, N.I. Lozitska, V.G. Lozitsky.</i> Magnetic fields measured by D1, D2, D3, and NiI lines near a seismic source of a powerful Solar flare	51
<i>B. Zhilyaev, V. Petukhov, V. Reshetnyk.</i> Unidentified aerial phenomena. Two-side observations of events	52

ПЛЕНАРНІ ЗАСІДАННЯ

PLENARY SESSIONS

photometric system. The aperture photometry method was used to extract the magnitudes of the asteroid.

Results: A composite light curve of the asteroid (1390) Abastumani in the *R* filter with period of 13.164 hours was constructed revealing an amplitude of approximately 0.29 mag. The calculated *B-V* and *V-R* color indices showed average values of 0.76 and 0.35 mag, respectively, which are in good agreement with the values observed for P- or D-type asteroids. We obtained the detailed magnitude-phase dependence of asteroid (1390) Abastumani in the *R*-band. Its analysis has shown an absence of a nonlinear increase in brightness near opposition.

Conclusions: We found one more asteroid, which does not exhibit a nonlinear opposition effect in its magnitude phase dependence down to extremely small phase angles. The obtained data for the asteroid (1390) Abastumani together with already available data for several other low albedo asteroids will be used to improve our understanding of nature of their atypical brightness behavior.

USE OF THE EDUCATIONAL COMPLEX IN ASTRONOMY WHEN WORKING WITH APPLICANTS FOR SECONDARY EDUCATION

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In high school, astronomy is studied as a separate subject, but the subject for which the least number of hours is allocated, there are only 35 for the standard level. At the end of December 2023, the government distributed educational subvention funds between communities and made significant changes to the formula for distributing educational subvention

International Churyumov Readings "CAMMAC-2023"

between local budgets (Resolution of the Cabinet of Ministers of Ukraine No. 1472 of 30.12.2022), in particular: the application of the 0.9 coefficient to the volumes of educational subvention last year was introduced [1]. Thus, the real number of these hours will be even less. In addition, the educational project New Ukrainian School in the coming years will reach senior classes, where astronomy is studied. According to the new concept, a separate subject of astronomy is not provided, but as an integrated course of natural subjects.

Therefore, it is important to form a set of methodological materials, technical means and extracurricular activities. After all, only in the complex there is an opportunity to convey to the student basic knowledge of astronomy. In the arsenal of our educational institution (Municipal Institution of Higher Education "Vinnitsa Humanitarian and Pedagogical College"), teachers and teachers form complexes of subjects and disciplines, including astronomy. Unfortunately, in war conditions there is practically no possibility to conduct astronomical observations with students, so we use modeling. The complex includes the following elements: methodological materials (notes for students and plans-notes for teachers, presentations, 3D-models, guidelines, manuals and textbooks, contour maps for astronomy), technical means (school telescope, moving map of the starry sky, projection equipment, multimedia panel, laser pointer power 30mV, tablet, computer) and extracurricular activities (excursions to the planetarium, excursions to museums of Ukraine, thematic evenings on astronomy) [2, 3].

Based on empirical knowledge, we can say that of all the above, the most effective in working with applicants for secondary education is a combination of presentations, 3D-models, contour maps, and virtual planetariums with a multimedia panel.

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International Churyumov Readings “CAMMAC-2023”

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SEARCH FOR PARENT BODIES OF RECENTLY FALLEN METEORITES

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The meteorites of iron composition make up less than 2% of the ~ 71,000 meteorites that have been officially classified. To date, only 41 published meteorites have sufficient detection data to reliably reconstruct their heliocentric orbits before their entry into the Earth’s atmosphere [2]. The absence of iron meteoroids with precisely determined orbits has greatly hindered efforts to pinpoint the source of iron meteorites in the main asteroid belt.

The situation changed with a bright fireball detected and instrumentally recorded over Scandinavia on November 7, 2020, at 21:27 UTC. The analysis of the fireball trajectory allowed the prediction of the