

# SCIENTIFIC PROGRAMME

**August 12, 2002. Monday**

**Opening Session:  
Advances in Astronomical and Physiological Research  
in the Elbrus Region**

**14:00 – 15:30**

- 14:00 Words of Welcome
- 14:20 V. Tarady, P. Beloshitsky, H. Kurdanov (ICAMER) On the International Cooperation at the High-Altitude Scientific Bases of ICAMER in the Elbrus Region
- 15:00 K. Jockers (MPAe, Katlenburg-Lindau, Germany) Six Years of Observing with the Two-Channel Focal Reducer of MPAe at Pik Terskol, Aims and Their Realization

**Plenary Session PS-AB**

**16:00 – 18:00**

- 16:00 H. A. Azadjanjan (Moscow, Russia)  
Н. Н. Сиротинин – основатель отечественной горной физиологии
- 16:30 V. N. Ishkov (IZMIRAN, Troitsk, Russia) The Current 23rd Solar Cycle Evolution and Consequences of the Possible Solar Activity Decrease for Environmental Ecology
- 17:00 S. Soroko<sup>1</sup>, M. Lushnov<sup>1</sup>, E. Golovina<sup>2</sup> (<sup>1</sup> I. M. Sechenov Inst. of Evolutionary Physiology and Biochemistry of RAS, <sup>2</sup> Russian State Hydrometeorological Univ., St.-Petersburg, Russia)  
Organization of Medical Data Collection and Processing Depending on Long-Term Dynamics of Cosmoheliogeophysical Parameters

**Public lecture**

**18:00**

- L. Mueller (Jena, Germany) Understanding the Universe

**August 13, 2002. Tuesday**

**Plenary Session PS-1A**

**14:00 – 15:30**

- 14:00 J. Kręłowski (Center for Astronomy, N. Copernicus Univ., Toruń, Poland)  
High Resolution Spectra of Dark Interstellar Clouds: Spectra from Terskol *vs* those from Other Major Observatories
- 14:25 М. Аль-Вардат, Ю. Ю. Балегга, В. В. Лейшин, Ф. А. Мусаев (SAO RAS, Russia)  
Синхронные спектральные и спекл-интерферометрические наблюдения кратной системы ADS 11061
- 14:45 I. I. Zinchenko (IAP, Nizhny Novgorod, Russia)  
Scientific Goals and Prospects of the Ground-Based Submillimeter Astronomy
- 15:05 B. Zhilyaev<sup>1</sup>, Ya. Romanyuk<sup>1</sup>, O. Svyatogorov<sup>1</sup>, I. Verlyuk<sup>1</sup>, V. Tarady<sup>2</sup>, A. Sergeev<sup>2</sup>, N. Karpov<sup>2</sup>, M. Lovkaya<sup>3</sup> (<sup>1</sup> MAO NASU, <sup>2</sup> ICAMER, <sup>3</sup> CrAO)  
Observations of Stellar Image Motions with the Synchronous Network of Telescopes

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**Workshop A1**  
**Optical Telescopes and Facilities**

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Convener: V. Leushin

**August 13, 2002. Tuesday**

**Session 1**

**9:30 – 11:00**

- 9:30 V. Tarady, A. Sergeev, N. Karpov, K. Bogatyryov (ICAMER)  
Optical Monitoring of Nearby Space at the ICAMER Observatory on Terskol Peak
- 9:50 A. P. Hatzes<sup>1</sup>, D. E. Mkrtychian<sup>2</sup> (<sup>1</sup> Thüringer Landessternwarte Tautenburg, Germany,  
<sup>2</sup> AO ONU) Big Science with the 2m-class Telescopes in a Global Network
- 10:10 O. Andriyenko (ICAMER) Investigation of Seeing Conditions at Terskol Peak
- 10:25 V. Konichek, V. Dudinov, A. Zheleznyak, V. Vakulik, I. Sinelnikov (IA KhNU) Adjustment of the AZT-22 Telescope (Maidanak Mountain). Theoretical and Technical Aspects
- 10:45 V. Rummyantsev, N. Chernykh (CrAO)  
Automatic Telescope for Observation of Near-Earth Asteroids

**Session 2**

**11:30 – 13:00**

- 11:30 B. Zhilyaev (MAO NASU)  
Intensity Interferometer Experiment with the Synchronous Network of Telescopes
- 11:50 V. H. Андрук<sup>1</sup>, Г. З. Бутенко<sup>2</sup>, Ю. Н. Иващенко<sup>3</sup> (<sup>1</sup> MAO NASU, <sup>2</sup> ICAMER,  
<sup>3</sup> Андрушевская астрономическая обсерватория Украинской астрономической ассоциации)  
Обработка ПЗС-изображений звездных полей в пакете MIDAS/ROMAFOT
- 12:05 Г. З. Бутенко<sup>1</sup>, В. Н. Андрук<sup>2</sup>, В. И. Кузнецов<sup>1</sup>, Л. И. Снежко<sup>3</sup>, С. Ф. Носов<sup>2</sup>, В. Г. Парусимов<sup>2</sup>,  
Н. Н. Перетятко<sup>2</sup>, А. В. Сергеев<sup>1</sup> (<sup>1</sup> ICAMER, <sup>2</sup> MAO NASU, <sup>3</sup> SAO RAS)  
Исследование астроклимата 2-м телескопа на пике Терскол
- 12:20 О. П. Быков (MAO RAS) Астрометрия с большими телескопами
- 12:40 N. Bakhtigaraev<sup>1</sup>, V. Chazov<sup>2</sup> (<sup>1</sup> IA RAS, <sup>2</sup> SAI MGU)  
Simulation and Visualization of the Celestial Bodies's Observations by Computer

**Poster Session A1: Optical Telescopes and Facilities**

- A1\_P1 N. Karpov (ICAMER) The Real-Time System for Astronomical Observations on the Telescopes of the Virtual Observatory from ICAMER, SAO, and BNO
- A1\_P2 V. Maslov<sup>1</sup>, V. Godunova<sup>2</sup>, Ye. Bilevych<sup>1</sup> (<sup>1</sup> ISP NASU, <sup>2</sup> ICAMER) New Approaches and Materials for Improving the Technology of Telescope Mirror Manufacturing
- A1\_P3 Ya. O. Romanyuk<sup>1</sup>, O. A. Svyatogorov<sup>1</sup>, B. E. Zhilyaev<sup>1</sup>, V. R. Khalack<sup>1</sup>, A. V. Sergeev<sup>2</sup>  
(<sup>1</sup> MAO NASU, <sup>2</sup> ICAMER) Development and Installation of the System for the Precise Timing and Synchronization of the Synchronous Network of Telescopes

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**Workshop A2**  
**High-Resolution Spectroscopy**

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Convener: J. Krelowski

**August 14, 2002. Wednesday**

**9:30 – 11:00**

- 9:30 N. G. Bochkarev (SAI MGU) Astrophysical Tomography
- 9:50 G. A. Galazutdinov<sup>1</sup>, F. A. Musaeu<sup>1,2</sup>, J. Krelowski<sup>3</sup>, G. A. H. Walker<sup>4</sup> (<sup>1</sup> SAO RAS, <sup>2</sup> ICAMER, <sup>3</sup> Center for Astronomy, N. Copernicus Univ., Toruń, Poland, <sup>4</sup> Univ. of British Columbia, Vancouver, Canada) Diffuse Interstellar Bands – a Survey with Precise Wavelengths
- 10:10 A. Galeev<sup>1</sup>, I. Bikmaev<sup>1</sup>, F. Musaeu<sup>2</sup>, G. Galazutdinov<sup>2</sup> (<sup>1</sup> DA KSU, <sup>2</sup> SAO RAS) Study of Photometric Solar-Analog Stars from the Spectra Obtained with the 2-m Telescope at the Terskol Observatory
- 10:30 J. Kuznetzova<sup>1,2</sup>, A. Bondar<sup>2</sup>, A. Vid'machenko<sup>1</sup>, A. Sergeev<sup>2</sup> (<sup>1</sup> MAO NASU, <sup>2</sup> ICAMER) The Spectroscopic Observation Results of Stars with Extrasolar Planets and Extended Objects

**Poster Session A2: High-Resolution Spectroscopy**

- A2\_P1 J. Kuznetzova<sup>1,2</sup>, A. Bondar<sup>2</sup> (<sup>1</sup> MAO NASU, <sup>2</sup> ICAMER) About Possible Emission in the Spectrum of Titan's Atmosphere
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**Workshop A3**  
**Solar System Bodies**

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Convener: D. Lupishko

**August 15, 2002. Thursday**

**Session 1**

**9:30 – 11:00**

- 9:30 L. E. Bykova (TSU) Study of the Orbital Motion of Resonance Near-Earth Asteroids
- 9:45 L. E. Bykova, V. P. Titarenko (TSU) Some Stabilizing Algorithms of Orbital Parameter Estimation for Solving the Problems of Ephemeris Improvement and Asteroid Identification
- 10:00 N. Emel'yanenko (SUU) Models for Low-Velocity Encounters of Comets with Jupiter
- 10:20 V. Emel'yanenko (SUU) Dynamics of Trans-Neptunian Objects in High-Eccentricity Orbits
- 10:40 S. N. Karpov, V. N. Zakidyshev (BNO, INR RAS) Underground Observations of the Moon Shadow

**Session 2**

**14:00 – 15:30**

- 14:00 I. Kulyk<sup>1</sup>, K. Jockers<sup>2</sup> (<sup>1</sup> MAO NASU, <sup>2</sup> MP Ae, Germany) Astrometric Observation of the Natural Satellites with the Two-Channel Focal Reducer at Pik Terskol Observatory
- 14:20 D. Lupishko, A. Ovcharenko (IA KhNU) On the Inversion Effect of Spectral Dependence of Asteroid Polarization
- 14:45 V. G. Shevchenko (IA KhNU) Phase Dependences of Asteroid Brightness: Observations and Results
- 15:05 A. Vid'machenko<sup>1</sup>, J. Kuznetzova<sup>1,2</sup> (<sup>1</sup> MAO NASU, <sup>2</sup> ICAMER) Nonlinear Optical Effects in Planetary Atmospheres

**Poster Session A3: Solar System Bodies**

- A3\_P1 S. I. Ipatov (IAM RAS) Orbital Evolution of Jupiter-Crossers and Asteroids
- A3\_P2 G. T. Kaiser, G. S. Romashin, E. D. Kuznetsov, D. V. Glamazda, J. Z. Wiebe, V. E. Berland, G. P. Khremlin (AO USU) Results of the Observations of Geosynchronous Satellites with the SBG Telescope of the Astronomical Observatory of the Ural State University
- A3\_P3 E. Kuznetsov, D. Glamazda (AO USU) Modelling the Effects of Object Explosion on a Geostationary Orbit
- A3\_P4 E. Kuznetsov, G. Kaiser (AO USU) Determination of the Second Sectorial Harmonic Parameters of the Geopotential Using Positional Observations of Geosynchronous Satellites

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**Workshop A4**  
**The Sun**

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Convener: T. Pinter

**August 15, 2002. Thursday**

**16:00 – 18:00**

- 16:00 K. A. Бурлов-Васильев, И. Э. Васильева (MAO NASU)  
Исследование Солнца на пике Терскол
- 16:20 O. Andriyenko (ICAMER)  
Current State and Prospects of the Horizontal Solar Telescope ATsU-26 at Terskol Peak
- 16:40 S. N. Karpov, V. V. Alekseenko, Z. M. Karpova, N. S. Khaerdinov, V. B. Petkov, V. Ya. Poddubny  
(BNO, INR RAS) Investigation of the Solar Cosmic High-Energy Rays
- 17:00 N. Kondrashova (AO KNU)  
Motions of Chromospheric and Photospheric Material in a Solar Flare
- 17:20 A. N. Shakhovskaya, V. A. Abramenko, V. I. Abramenko, V. I. Lopukhin (CrAO)  
The Use of a Digital Camera Sony DSC-75 for the Observations of Solar Chromosphere in H-alpha Line at the CrAO Coronagraph KG-1
- 17:40 A. П. Сарычев, Е. М. Рощина (SAI MGU)  
Болометрический контраст факелов и вариации солнечной постоянной

**Poster Session A4: The Sun**

- A4\_P1 T. Pinter<sup>1</sup>, M. Rybansky<sup>2</sup> (<sup>1</sup> SCO, <sup>2</sup> IA AS, Tatranska Lomnica, Slovak Republic)  
The 530.3 nm Coronal Line Polarization
- A4\_P2 I. Vince<sup>1</sup>, O. Andriyenko<sup>2</sup>, O. Vince<sup>1</sup> (<sup>1</sup> AO, Belgrade, Yugoslavia, <sup>2</sup> ICAMER)  
Center to Limb Variation of the MnI 539.5 nm and the MnI 543.2 nm Line Profiles
- A4\_P3 N. Vitas<sup>1</sup>, O. Vince<sup>1,2</sup>, I. Vince<sup>2</sup> (<sup>1</sup> DA, <sup>2</sup> AO, Belgrade, Yugoslavia)  
The Influence of Hyperfine Structure on the MnI 543.25 nm Line Profile in Solar Spectrum
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**Workshop A5**  
**Stars. Stellar Variability**

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Conveners: A. Cherepaschuk, B. Zhilyaev

**August 14, 2002. Wednesday**

**14:00 – 15:30**

- 14:00 V. Gopka<sup>1</sup>, A. Yushchenko<sup>1,2</sup>, C. Kim<sup>2</sup>, F. Musaeov<sup>3,4</sup>, G. Galazutdinov<sup>3,4</sup> (<sup>1</sup> AO ONU, <sup>2</sup> CNU, (South) Korea, <sup>3</sup> ICAMER, <sup>4</sup> SAO RAS) A Step to the Solar-Like Stellar Abundance Samples. The Chemical Composition of  $\zeta$  Cygni
- 14:20 B. Zhilyaev<sup>1</sup>, I. Verlyuk<sup>1</sup>, Ya. Romanyuk<sup>1</sup>, O. Svyatogorov<sup>1</sup>, R. Gershberg<sup>2</sup>, I. Alekseev<sup>2</sup>, M. Contadakis<sup>3</sup>, S. Avgoloupis<sup>3</sup>, A. Antov<sup>4</sup>, R. Konstantinova-Antova<sup>4</sup> (<sup>1</sup> MAO NASU, <sup>2</sup> CrAO, <sup>3</sup> Univ. of Thessaloniki, Thessaloniki, Greece, <sup>4</sup> IA of Bulgarian AS, Sofia, Bulgaria)  
Fast UVRI Colorimetry of Stellar Flares on EV Lacertae with the Synchronous Network of Distant Telescopes
- 14:45 В. И. Кузнецов<sup>1</sup>, W. Buscombe<sup>2</sup>, Г. З. Бутенко<sup>1</sup>, П. Ф. Лазоренко<sup>3</sup>, Г. А. Лазоренко<sup>3</sup>  
(<sup>1</sup> ICAMER, <sup>2</sup> Northwestern University, Evanston, USA, <sup>3</sup> MAO NASU)  
Спектральная классификация слабейших звезд и ее применение для изучения РЗС, ОЗ и Галактики. I. Спектральные классы и светимости звезд РЗС NGC 2244, NGC 2264 и NGC 6913 до 22<sup>m</sup> (V)
- 15:10 В. В. Лещин (SAO RAS)  
Программный комплекс для анализа атмосфер и эволюции двойных звезд

**Poster Session A5: Stars. Stellar Variability**

- A5\_P1 G. Kovalchuk (MAO NASU)  
Some Features in the Chemical Composition of the Variable Star V 346 Orionis
- A5\_P2 I. Verlyuk, B. Zhilyaev (MAO NASU)  
The Cataclysmic Binary KR Auriga in February 2002: Flickering and Oscillations

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**Workshop A6**  
**New Perspectives for Ground-Based Astronomy**

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Convener: Ya. Yatskiv

**August 13, 2002. Tuesday**

**16:00 – 18:00**

- 16:00 A. Galeev, I. Bikmaev (DA KSU) Atmospheric Parameters and Chemical Composition of 50 Stars with Planets Discovered in 1995–2000
- 16:20 E. A. Karitskaya (IA RAS) The Optical Doppler Tomography as a Method for the Investigation of the X-Ray Binary Cygni X-1
- 16:40 I. Vavilova (AO KNU)  
Prospective Tematics of the Future Observational Programs at the Terskol Observatory Proposed by the Astronomical Observatory of the Taras Shevchenko Kyiv National University
- 17:00 A. Vid'machenko, V. Krushevskaya (MAO NASU)  
Reflectivity Variation of an Extrasolar Giant Planet Orbiting Its Central Star
- 17:20 A. Yushchenko<sup>1,3</sup>, A. Sergeev<sup>2</sup>, C. Kim<sup>1</sup> (<sup>1</sup> CNU, (South) Korea, <sup>2</sup> ICAMER, <sup>3</sup> AO ONU)  
Gravitational Lensing by Globular Clusters. Search for Gravitational Lens Candidates and the Properties of Globular Cluster Systems at the Redshifts  $0.03 < Z < 3$

**August 14, 2002. Wednesday**

**11:30 – 13:00**

- 11:30 V. V. Alekseenko, A. B. Chernyaev, V. B. Petkov, V. Ya. Poddubny, A. V. Radchenkov, A. N. Zaichenko (BNO, INR RAS) A Search for High-Energy Gamma-Ray Bursts
- 11:45 Yu. S. Grishkan, V. B. Petkov, E. G. Vertogradova (INR RAS) Time Delay of Gamma-Ray Burst Radiation and the Possibility of Determining the Fate of Cosmological Expansion
- 12:00 N. V. Karpov<sup>1</sup>, A. V. Sergeev<sup>1</sup>, V. K. Tarady<sup>1</sup>, S. N. Karpov<sup>2</sup>, V. B. Petkov<sup>2</sup>, V. Ya. Poddubny<sup>2</sup>, I. V. Kulyk<sup>3</sup>, K. Jockers<sup>4</sup> (<sup>1</sup> ICAMER, <sup>2</sup> BNO, INR RAS, <sup>3</sup> MAO NASU, <sup>4</sup> MPAe, Germany)  
Search for Optical Afterglows of Gamma-Ray Bursts with the 2-m Telescope at the Terskol Peak Observatory
- 12:15 O. D. Lalakulich, V. B. Petkov, V. Ya. Poddubny, G. M. Vereshkov (BNO, INR RAS)  
Very Short High-Energy Gamma-Ray Bursts and Relativistic Phase Transitions in the Flux of Primordial Black Hole Radiation
- 12:30 A. Sergeev<sup>1</sup>, T. Sergeeva<sup>2</sup> (<sup>1</sup> ICAMER, <sup>2</sup> MAO NASU) The System for Quick Monitoring of Astronomical Plate Archives. Steps toward Cooperation with Modern Astronomical Research

**Poster Session A6: New Perspectives for Ground-Based Astronomy**

- A6\_P1 D. Kirilova (IA of Bulgarian AS, Sofia, Bulgaria)  
Baryon Density in the Universe and Alternative Cosmological Nucleosynthesis
- A6\_P2 B. Zhilyaev (MAO NASU) Singular Sources of Energy in Stars and Planets

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**Workshop E1**  
**The Atmosphere: Monitoring and Quantifying.**  
**Implications for the Environment and Human Health**

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Convener: V. Ilyin

**August 13, 2002. Tuesday**

**17:00 – 18:30**

- 17:00 *M. G. Sosonkin*<sup>1</sup>, *A. V. Shavrina*<sup>1</sup>, *V. A. Dyachuk*<sup>2</sup>, *A. A. Veles*<sup>1</sup>  
(<sup>1</sup> MAO NASU, <sup>2</sup> Inst. for Hydrometeorology, Kiev, Ukraine)  
The Importance of Ozone Concentration Monitoring at High-Altitude Site
- 17:20 *A. A. Veles*, *A. V. Shavrina*, *M. G. Sosonkin* (MAO NASU)  
Measurement of Ozone and Greenhouse Gases and Modeling
- 17:40 *I. Vince*, *A. Kubičela*, *O. Vince* (AO, Belgrade, Yugoslavia)  
A Method for Measuring the Relative Turbidity of the Earth's Atmosphere
- 18:00 *I. Terenetskaya* (IP NASU) "D-dosimeter": New Multifunctional UVB Sensor of the Vitamin D Synthetic Capacity of Sunlight
- 18:20 *В. Н. Ващенко*<sup>1</sup>, *А. І. Лоза*<sup>2</sup>, *Ж. І. Патлашенко*<sup>1</sup>, *О. Є. Черниш*<sup>3</sup> (<sup>1</sup> KNU, <sup>2</sup> Український Антарктичний центр, <sup>3</sup> Центр аерокосмічних досліджень НАНУ, Київ, Україна)  
Метрологічний комплекс для градування бортових ультрафіолетових спектрометрів-озонометрів

**Poster Session E1: The Atmosphere: Monitoring and Quantifying.**  
**Implications for the Environment and Human Health**

- E1\_P1 *M. Lorenc* (SCO, Slovak Republic) Stratwurm and Solar Activity
- E1\_P2 *І. О. Дичко*<sup>1</sup>, *В. Б. Бакушевич*<sup>2</sup> (<sup>1</sup> Полтавський військовий інститут зв'язку, <sup>2</sup> Полтавська гравіметрична обсерваторія НАНУ, Україна)  
Про можливий вплив комет на погодні і кліматичні умови на Землі

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**Workshop E2**  
**Space Debris**

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Convener: L. Rykhlova

**August 15, 2002. Thursday**

**11:30 – 13:00**

- 11:30 *A. Bagrov*, *G. Bolgova* (IA RAS)  
A Program of the Near-Earth Natural Debris Reproduction Process Investigations
- 12:00 *A. V. Bagrov*<sup>1</sup>, *E. S. Bakanas*<sup>1</sup>, *S. I. Barabanov*<sup>1</sup>, *G. T. Bolgova*<sup>1</sup>, *A. M. Mikisha*<sup>1</sup>, *L. V. Rykhlova*<sup>1</sup>, *V. K. Tarady*<sup>2</sup>, *A. V. Sergeev*<sup>2</sup> (<sup>1</sup> IA RAS, <sup>2</sup> ICAMER) Investigation of the Migration of Small Solar System Bodies and Development of the Technique for the Detection of Potentially Hazardous Objects and Space Debris Fragments
- 12:30 *В. Ф. Герастовский*, *М. И. Макаров*, *Ю. Ю. Махненко* (НИИ Космических систем, г. Юбилейный Моск. обл., Россия) Основные результаты привлечения обсерватории МЦ АМЭИ в интересах контроля выведения РБ и полета КА в период 1998–2001 гг.

**Poster Session E2: Space Debris**

- E2\_P1 *P. Zakharova*, *E. Kuznetsov* (AO USU) Preliminary Catalogue of Space Debris on Geostationary Orbit from TV-Observations Made at the Kourouka Astronomical Observatory in 1999–2002
- E2\_P2 *О. П. Быков* (MAO RAS) Проблемы оперативного контроля космического пространства оптическими средствами наблюдений