

Monday, 4 December

| 13:45-14:15 | Registration | | | |
|-------------|--------------|--------------------|--|--|
| | | AHEAD See | ssion chair: Rene Hudec | |
| 14:15-14:25 | | Rene Hudec | Opening workshop and Welcome notes | |
| 14:25–15:10 | AST | Franco Giovannelli | The History of High Energy Experiments: from UHURU to IXPE | |
| 15:10-15:40 | ОРТ | Vadim Burwitz | AHEAD2020: development and testing X-ray optics | |
| 15:40-16:00 | | Coffee break | | |
| | | AHEAD Ses | sion chair: Peter Predehl | |
| 16:00–16:30 | ОРТ | Rene Hudec 🔘 | Czech Contribution to AHEAD: Novel Lobster Eye and Kirkpatrick Baez X-ray Optics Modules | |
| 16:30-17:00 | ОРТ | Daniele Spiga 🔘 | Enhancing X-ray Mirror Performance with Carbon Dip-Coatings | |
| | | | | |
| 19:00-23:00 | | We | come reception | |



Tuesday, 5 December

| 09:15-09:30 | Registration |
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AHEAD Session chair: Rene Hudec

| | Opening workshop and Welcome notes | | |
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| 09:30-09:40 | Michal Bursa | Director of Astronomical Institute | |
| 09:40-09:50 | Zbyněk Škvor | Vice-Rector of the Czech Technical University in Prague | |
| 09:50-10:00 | Karel Dobeš | Government Commissioner for EU Agency for the Space Programme | |
| 10:00-10:15 | Rene Hudec | AXRO introduction and historical background | |
| 10:15-10:30 | | Coffee break | |

AHEAD Session chair: Randall McEntaffer

| 10:30-10:50 | OPT | Vladimír Tichý 🔘 | LOPSIMUL extra fast ray-tracing software |
|-------------|-------|------------------|--|
| 10:50-11:10 | DET | Daniele Spiga 🔘 | Advancement and future perspectives of BEaTriX |
| 11:10-11:30 | ОРТ | Alex Bayerle | Athena's X-ray mirror based on silicon wafers – advances in silicon pore optics manufacturing |
| 11:30–11:50 | ОРТ | Ondřej Nentvich | Data processing for all-sky monitoring based on Lobster-eye optics |
| 11:50-13:10 | Lunch | | |

AHEAD Session chair: Daniele Spiga

| 13:10-13:30 | ОРТ | Vladimír Tichý 🔘 | Tests of Schmidt lobster eye based on new technology |
|-------------|--------------|----------------------|--|
| 13:30-13:50 | OPT | Yanji Yang | Develpment of the Focusing Mirror in IHEP |
| 13:50-14:20 | OPT | Wayne Baumgartner | Full-Shell Replicated X-ray Optics at MSFC |
| 14:20-14:40 | ОРТ | Veronika Stieglitz 🔘 | |
| 14:40-14:55 | Coffee break | | |



Session chair: Herman Marshall

| 14:55–15:15 | ОРТ | Danielle Gurgew 🔘 | Thin film coating capabilities for X-ray optics at NASA Marshall Space Flight Center |
|-------------|--------------|-------------------|--|
| 15:15–15:35 | ОРТ | Jake McCoy | Fabrication of a large-format blazed grating with radial grooves |
| 15:35–16:00 | ОРТ | Fabien Grisé | Fabrication of gratings on curved substrates using electron-beam lithography |
| 16:00-16:15 | Coffee break | | |

Session chair: John Nousek

| 16:15–16:45 | ОРТ | Frank Siewert | Gratings for the soft- and tender-X-ray energy range - recent developments at Helmholtz Zentrum Berlin |
|-------------|-----|--------------------|--|
| 16:45–17:30 | ОРТ | Randall McEntaffer | The Off-plane Grating Rocket Experiment: international synergies for high-performance spectroscopy |

| 18:00-22:00 | Social Dinner |
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Wednesday, 6 December

| 09:20-09:30 | Registration | | | | |
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| AHEAD Session chair: Frank Siewert | | | | | |
| 09:30-10:00 | ОРТ | Alexandra Higley Early Results from Characterization of JET-X, Polished Silicon Optics and Off-Plane Reflection Gratings at the PANTER X-ray Test Facility | | | |
| 10:00-10:20 | ОРТ | Herman Marshall | Steps Toward Milli-Arcsecond X-ray Astrophysical Imaging | | |
| 10:20-10:40 | Coffee break | | | | |
| AHEAD Session chair: Michal Zajaček | | | | | |

| 10:40-11:25 | AST | Franco Giovannelli | The Impact of Space Experiments on the Knowledge of Our Universe |
|-------------|-------|--------------------|--|
| 11:25–11:45 | AST | Martin Jelínek 🔘 | Search for common features in GRB optical and X-ray lightcurves |
| 11:45–12:15 | AST | Daniele Fargion 🔘 | X Rays burst and flare in space from the Earth Horizons |
| 12:15-13:35 | Lunch | | |

Session chair: Vadim Burwitz

| 13:35–13:55 | MIS | Lorenzo Natalucci | Status of the AHEAD2020 Program |
|-------------|--------------|-------------------|--|
| 13:55–14:15 | MIS | John Nousek | Flying Swift for 20 Years |
| 14:15-14:40 | MIS | Peter Friedrich | Investigations of the eROSITA "light leak" |
| 14:40-15:00 | Coffee break | | |

Session chair: Vladimir Dániel

| 15:00–15:30 | MIS | Vojtech Simon | X-ray observing the cosmic sources by the ESA–CAS satellite SMILE |
|-------------|--------------|-----------------|--|
| 15:30–15:55 | MIS | Norbert Werner | QUVIK - Quick Ultra-Violet Kilonova surveyor |
| 15:55–16:15 | MIS | Enrico Virgilli | The XGIS instrument in the context of the THESEUS ESA M7 mission candidate |
| 16:15–16:35 | Coffee break | | |



Session chair: Filip Münz

| 16:35–16:55 | MIS | Lorenzo Natalucci | GRINTA, an explorer of the transient sky |
|-------------|-----|-------------------|--|
| 16:55–17:20 | MIS | Maxim Markevitch | Line Emission Mapper - an X-ray Astrophysics Probe to reveal the hidden drivers of galaxy growth |
| 17:20–17:45 | MIS | Herman Marshall | Rocket Experiment Demonstration of a Soft X-ray Polarimeter (REDSoX) |

| 17:45 | End of day |
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Thursday, 7 December

Session chair: Peter Friedrich

| 09:30-09:50 | DET | David Hladik | Optimizing the Timepix2 Hybrid Pixel Detector: An In-Depth Exploration of Detector Performance for Scientific and Industrial Applications |
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| 09:50-10:10 | DET | Martin Urban | Timepix3: Temperature Effects on Radiation Energy Measurements |
| 10:10-10:30 | DET | Filip Münz | Performance of detectors on GRBAlpha and VZLUSAT-2 nanosatellite missions |
| 10:30-10:50 | | | Coffee break |

Session chair: Dan Schwartz

| 10:50-11:30 | AST | Konrad Dennerl | SRG/eROSITA and the first ever clear view of the soft diffuse X-ray sky |
|-------------|-----|----------------|---|
| 11:30-12:05 | AST | Peter Predehl | The X-ray Bubbles at the Galactic Center |
| 12:05-13:25 | | | Lunch |

Session chair: Jiri Svoboda

| 13:25–13:55 | AST | Michal Zajaček | Nuclear X-ray outbursts every 22 days |
|-------------|-----|----------------|--|
| 13:55–14:20 | AST | Gabriel Török | Modulation mechanism of twin-peak quasi-periodic oscillations in neutron star X-ray binaries |
| 14:20-14:45 | AST | Norbert Werner | Multi-phase gas, accretion and jet power in early-type galaxies |

| 15:00-22:00 | Social Event |
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Friday, 8 December

Session chair: Konrad Dennerl

| 09:30-10:00 | AST | Jiri Svoboda | X-ray polarimetry view of stellar-mass accretion black holes |
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| 10:00-10:20 | AST | Vladimir Karas | On particle acceleration near a magnetized rotating black hole |
| 10:20-10:40 | AST | Dan Schwartz | Synoptic Astrometry of the lensed Quasar HE0435-1223: X-ray Varstrometry |
| 10:40-11:00 | AST | Maïmouna Brigitte | Multiwavelength and X-ray polarimetric observations of the high-mass X-ray binary Cygnus X-1 during May 2023 |
| 11:00-11:15 | | | Coffee break |
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| 11:15-11:35 | | Franco Giovannelli | Concluding Remarks |
| 11:35–11:55 | | Rene Hudec | Concluding address |

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| 12:00-13:00 | Lunch |
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| 13:00 | End of workshop |
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