Status of RSDC

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RSDC

- *Supports the archive of all publicly available + Russian PI data*
- *Has the current OSA + Russian INTEGRAL software installed*
- *Used by IKI scientists, scientists from Sternberg Astronomical Institute (Moscow University), Kazan University, Ioffe Institute, Pulkovo Observatory, Lebedev Physical Institute, Moscow Engineering Physics and Moscow Technical Physics Institutes*
- *Uses Russian optical telescopes for identificaton (and study) of new IGR sources (RTT-150 at Turkey, 6-m telescope at Nizhnii Arkhyz, AZT33IK at Sibirya/Monds)*

RSDC

- *Supported by the Russian Academy of Sciences and Space Research Institute*
- *Archive data occupy now more than 35 Tbytes*
- *Currently there is possibility to use resources of the SRG Data Center (10 computer servers, 200 Tbytes)*
- *About 10 scientists are involved but some of them are currently spending some time developing the software for the SRG project (scheduled for the launch in March of 2018).*

Russian INTEGRAL related papers and theses

- *PhD - 10 (RSDC: Chelovekov, Tsygankov, Shtykovskii, Krivonos, Molkov, Karasev, Filippova, others: Arefiev, Minaev, Krassilshikov)*
- *Expected PhD - 3 (Prosvetov — on March 24, Mereminskii and Khorunzhev by the end of 2017)*
- *DSc - 5 (RSDC: Revnivtsev, Sazonov, Lutovinov, others: Bikmaev, Seifina)*
- *Russian publication activity based on INTEGRAL*
  >310 papers and ATELs (see INTEGRAL Russian Library in NASA/ADS by Lutovinov et al.)

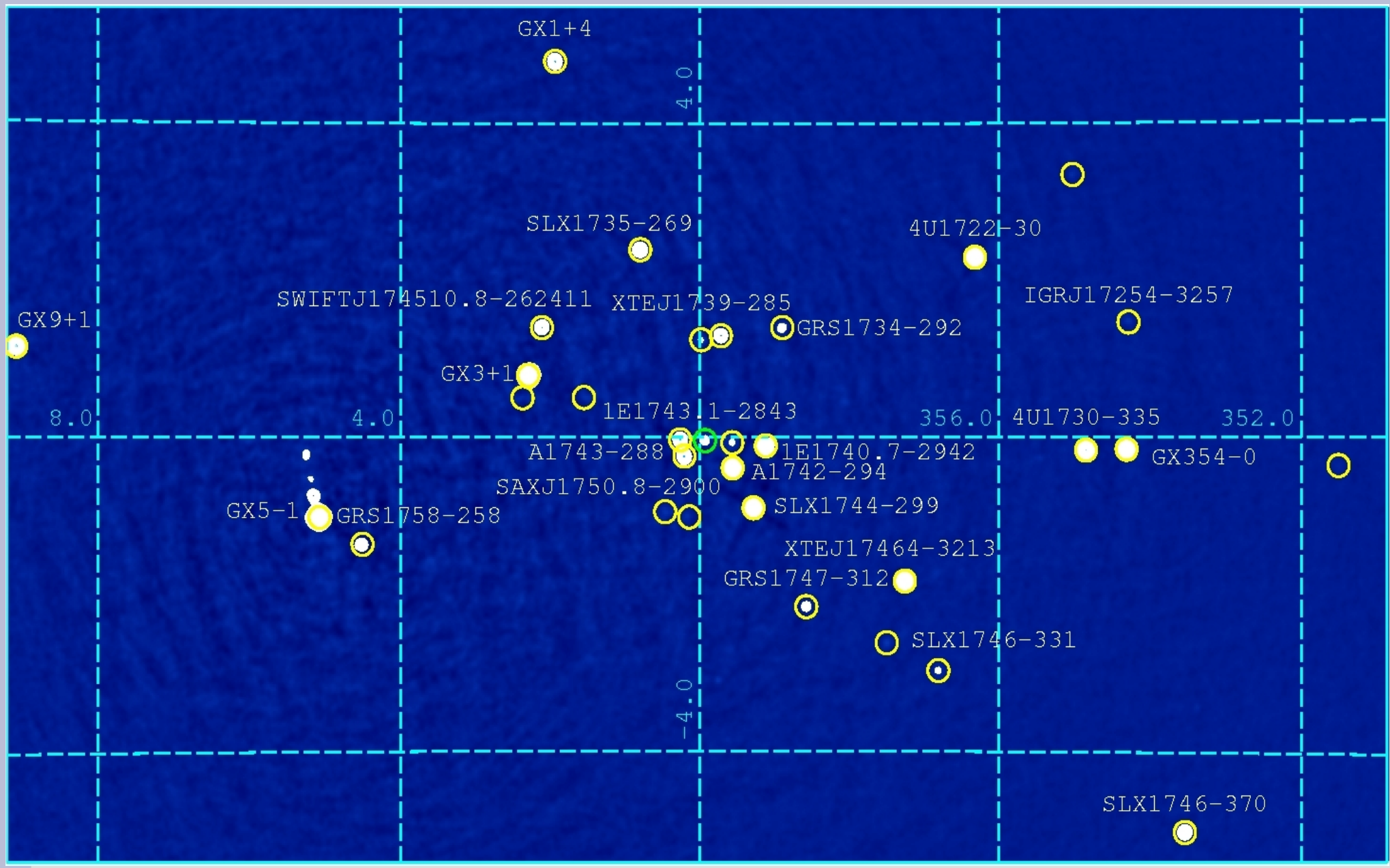
Recent & Current Activities

- **JEM-X Galactic center field and all-sky surveys** (Mereminskiy, Grebenev)
- **IBIS/ISGRI deep field surveys (LMC, Coma+3C273, M82)** (Mereminskiy, Krivonos, Lutovinov)
- **JEM-X X-ray bursts catalogue (2003-2014, multiple bursts)** (Chelovekov, Grebenev)
- **SN2014J study and Ti-44 Galactic survey** (Churazov, Grebenev, Lutovinov, Krivonos)
- **Broad-band spectroscopy of X-ray novae** (Prosvetov, Grebenev)
- **Accretion regimes transition in the V0332+53 pulsar** (Lutovinov et al.)

Recent & Current Activities

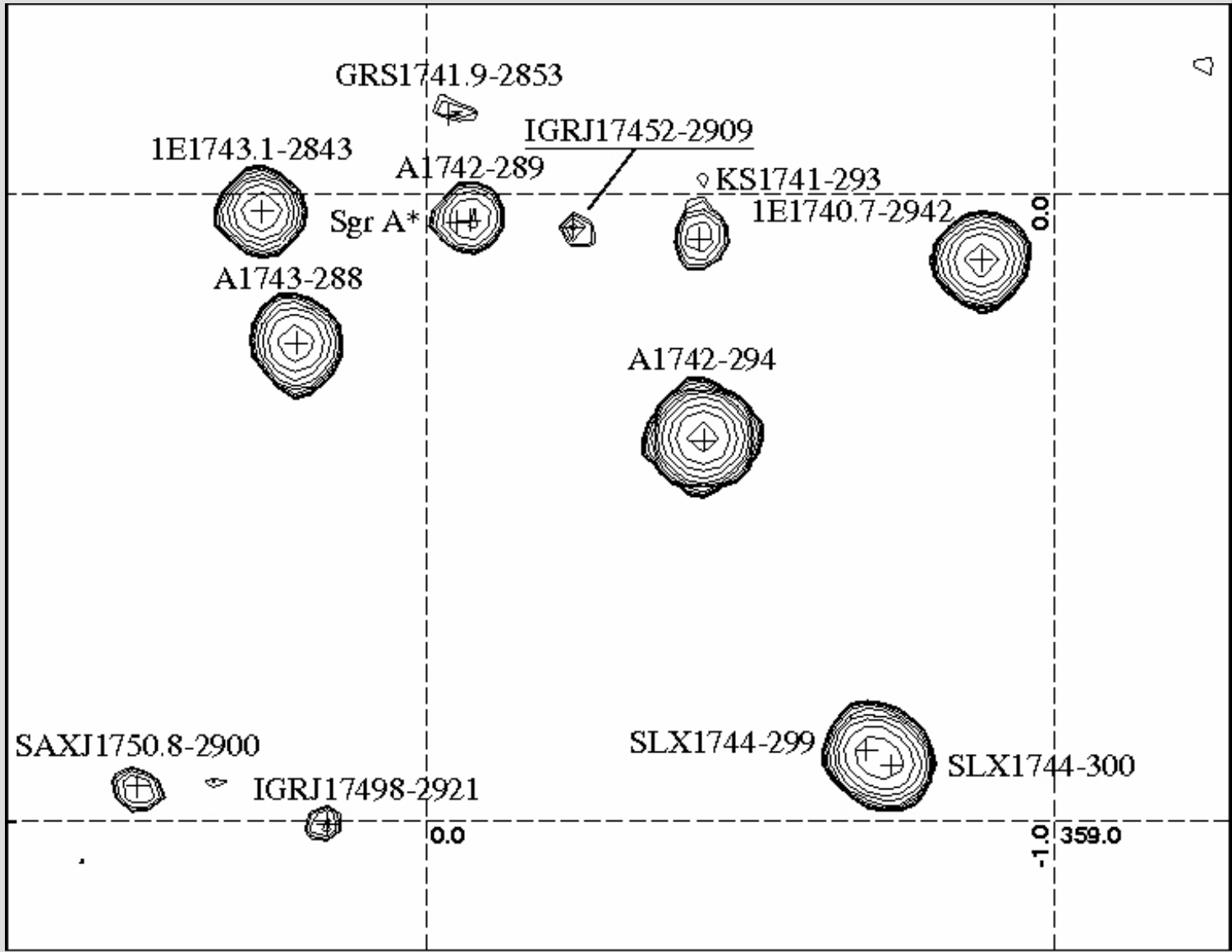
- **Optical identification of IGR sources or distant quasars candidates** (Burenin, Khorunzhev, Karasev, Lutovinov, Semena)
- **IBIS/ISGRI study of the Galactic ridge X-ray emission** (Krivonos et al.)
- **JEM-X study of the Galactic ridge X-ray emission** (Mereminskiy, Grebenev)
- **Monitoring of outbursts of X-ray transients, e.g. GRS 1739-278** (*ATEL 9517*)**, GRO J1744-28** (*ATEL 1073*)**, activity from the direction of Sgr A*** (*ATEL 9000*) (Mereminskiy, Grebenev, Krivonos, Filippova)

INTEGRAL/JEM-X Galactic Center Field Survey (5-10 keV)



INTEGRAL/JEM-X Galactic Center Field Survey (5-10 keV)

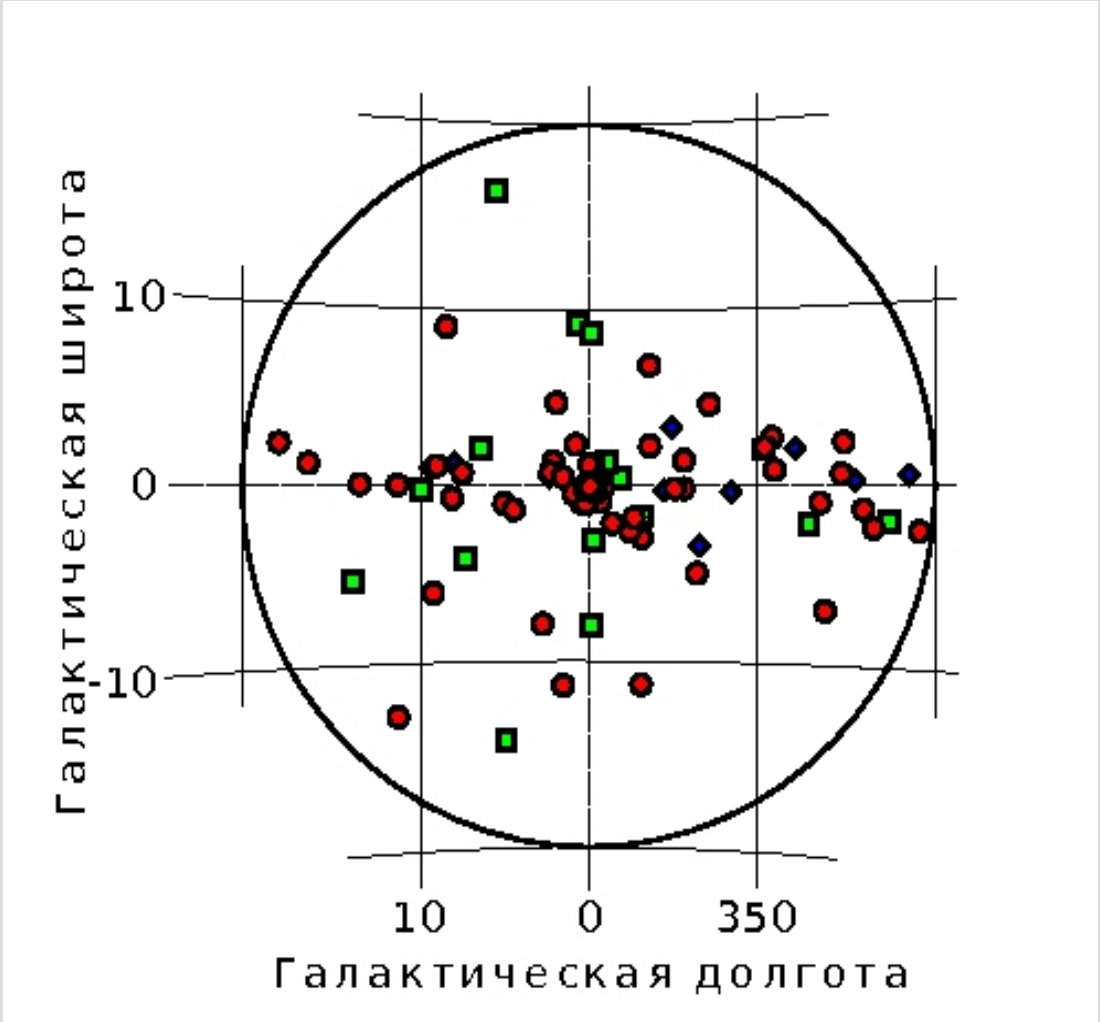
- Like ART-P
- New source at S/N=9.2
- Burster twins SLXs
- Small contribution from Sgr A*



INTEGRAL/JEM-X Galactic Center Field Survey (5-10 keV)

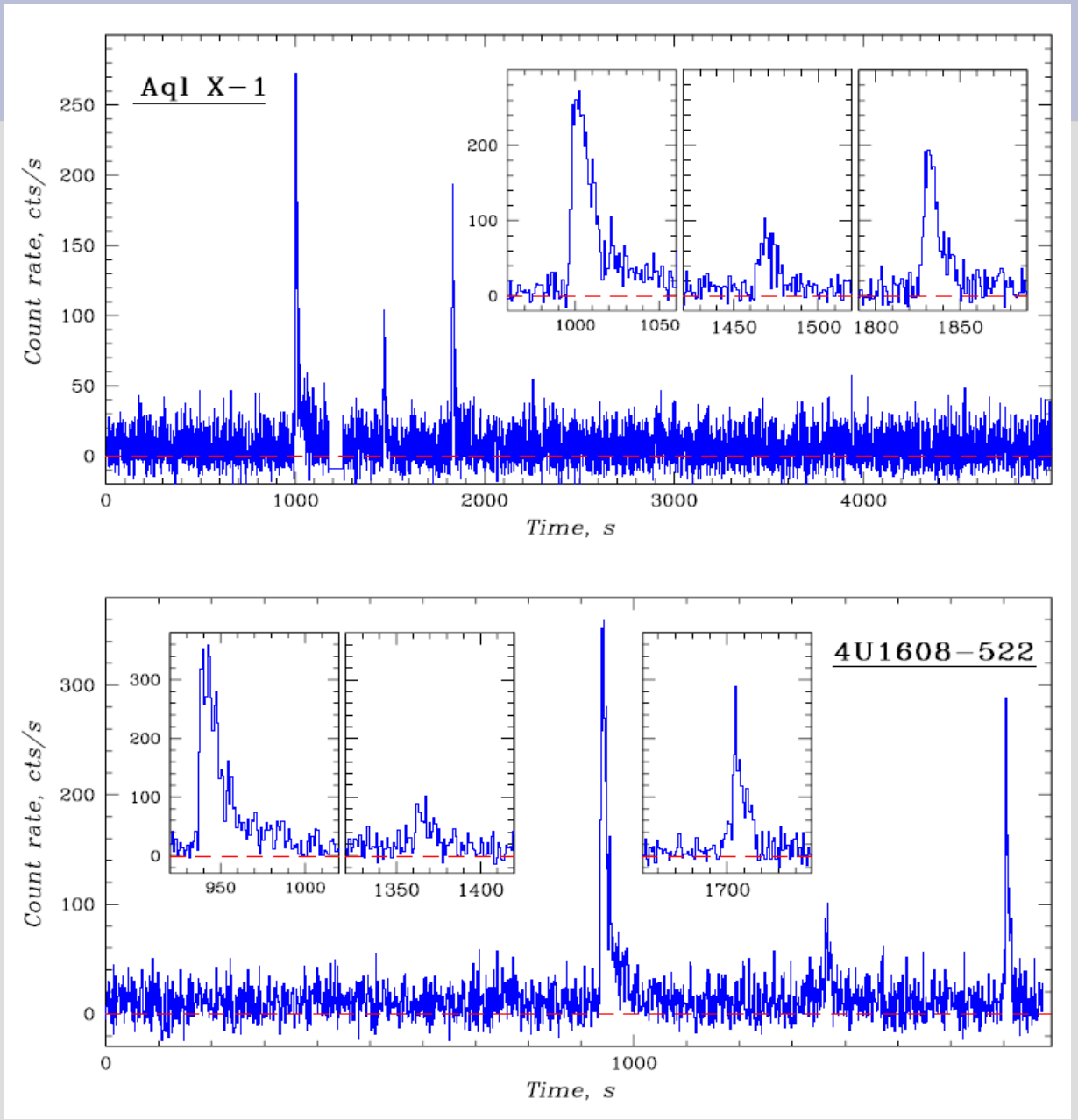
- 105 sources (>6 sigma)
- 83 at mosaics (all-time)
- 22 transients

- 73+2 LMXB
- 18 HMXB
- 3 CV
- 1 SGR
- 3 AGN+1 CG
- 4 unknown

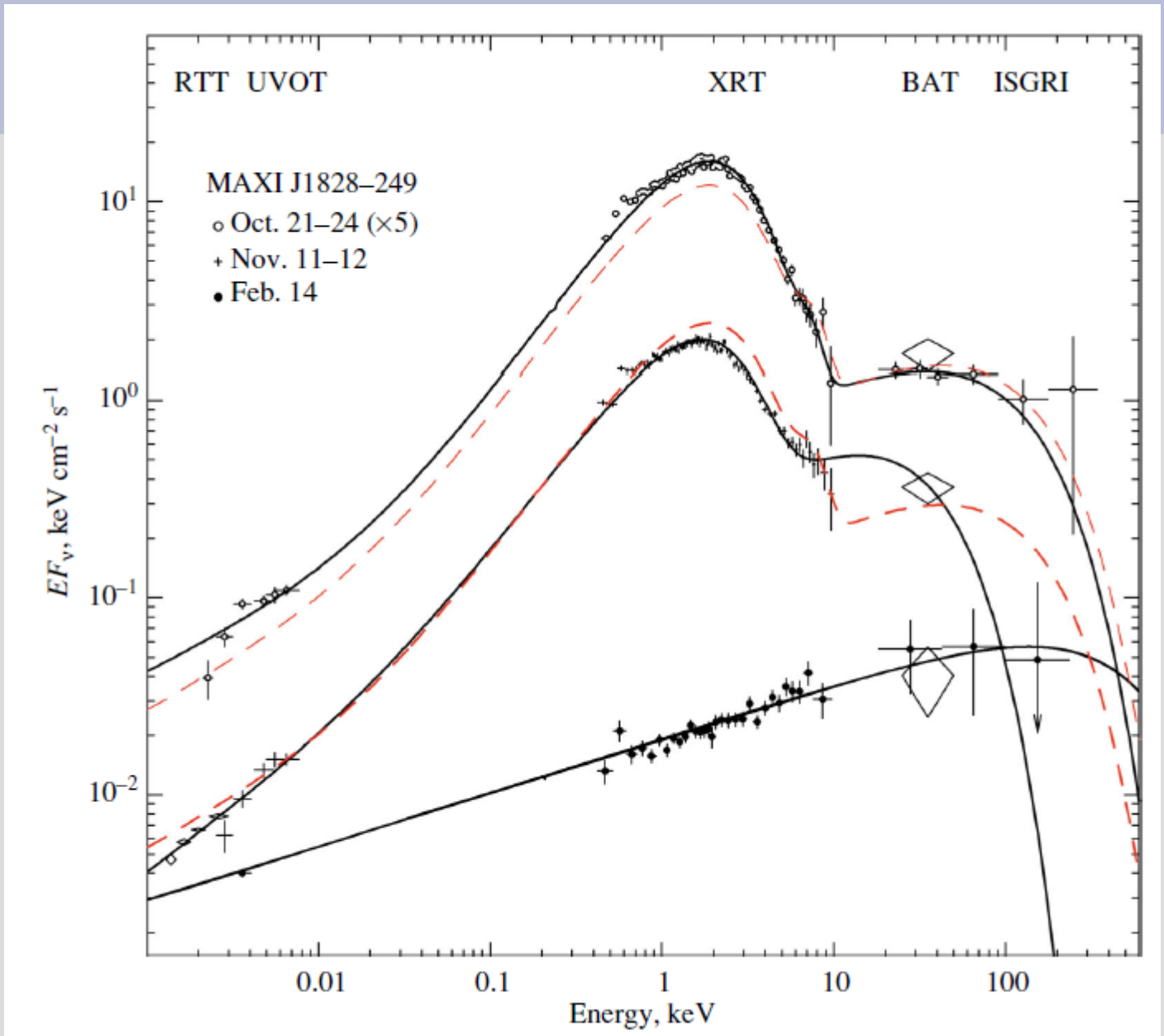


Multiple X-ray bursts

Can be explained in the model of a spreading layer of accreting matter at the surface of a neutron star (Inogamov, Sunyaev 1999)



Broad-band spectra of X-ray novae



General Problems

- Poor level of the INTEGRAL related software do not allowing make complex detailed analysis of sources based on the data from several instruments or different missions (even strict conclusions on the broad-band ISGRI spectra are very difficult!).

- It is impossible for a scientist who is not deeply involved in the INTEGRAL project to correctly analyse the data and obtain valid scientific results.

- This leads to the restricted interest from the community (many of them are theorists and have no experience of work with the X-ray data) to work themselves with the INTEGRAL data. They prefer to collaborate with IKI/RSDC scientists to check their predictions.