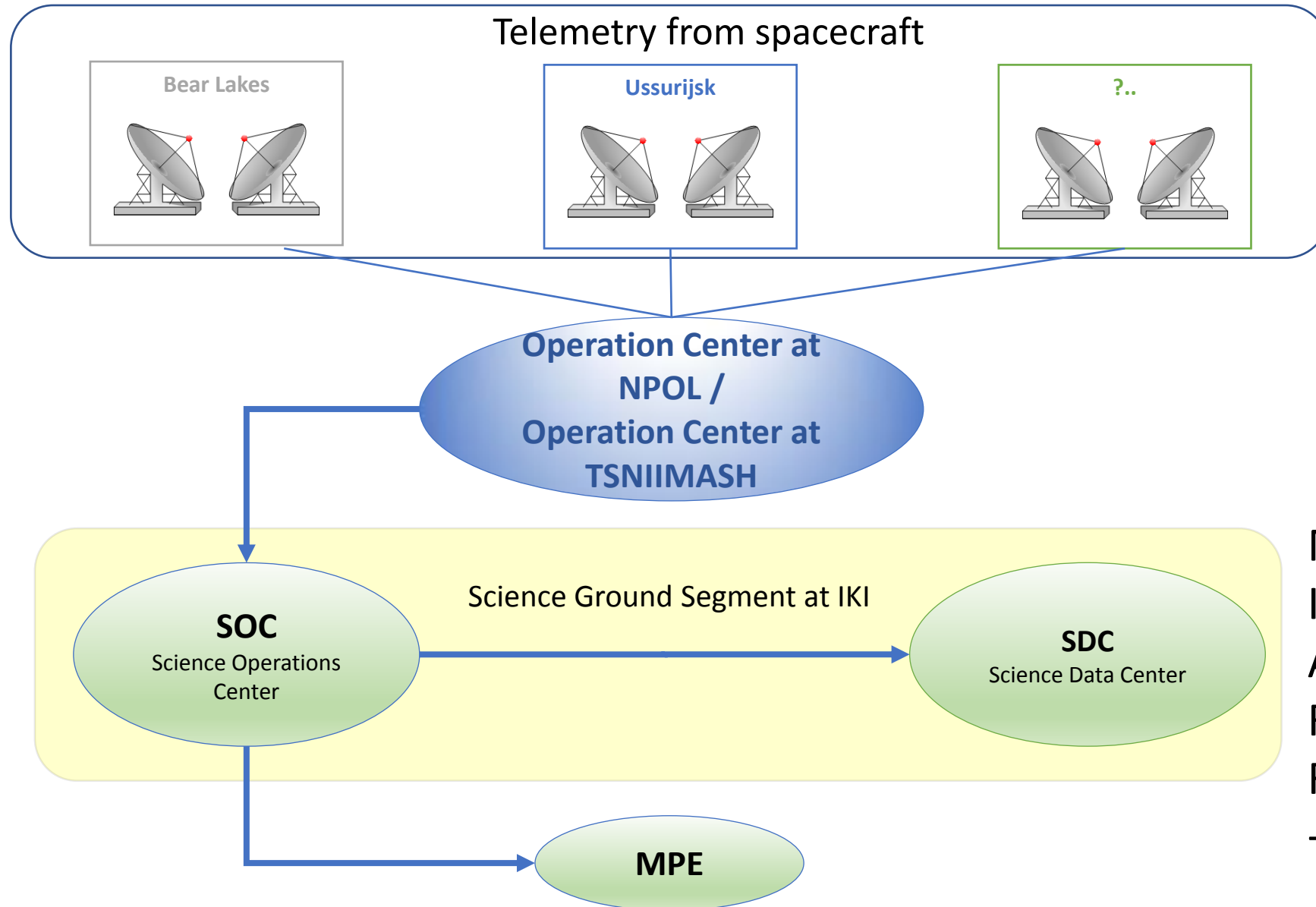


SRG Data Center at IKI

Roman Krivonos

Space Research Institute (IKI), Moscow, Russia

SRG Ground Segment



V. Nazarov
F. Korotkov
O. Batanov
+

M. Pavlinsky
I. Lapshov
A. Tkachenko
R. Burenin
R. Krivonos
+

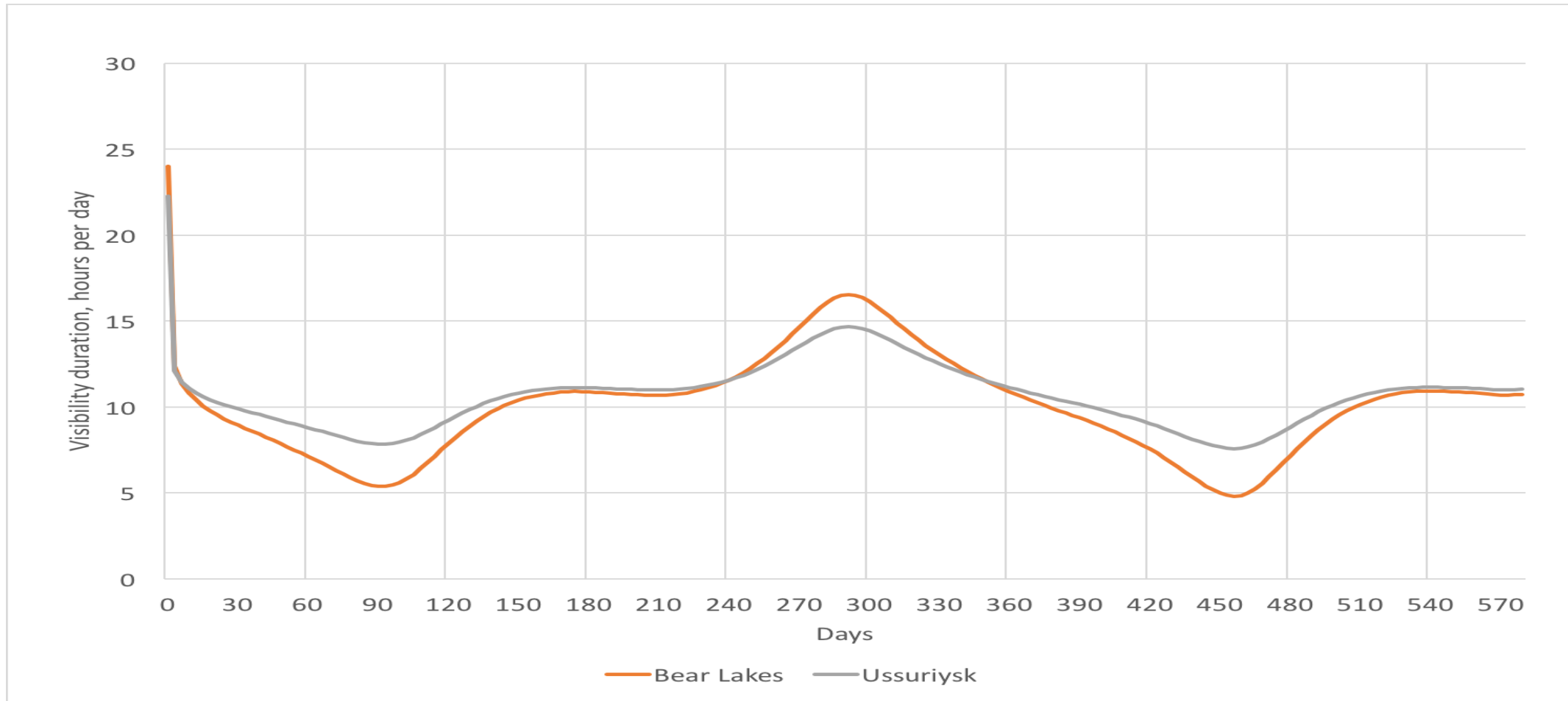
SRG Science Operations Center (IKI)

- Ground segment
- Scheduling of main operations with spacecraft
- Data input from NPOL (independent fiber channel)
- Quick-look s/c health monitoring
- Data distribution to SDC (IKI) and MPE

SRG Ground segment



Duration of daily visibility intervals depending on days from start at 15.03 2019



The first ART-XC and eRosita observations are considered before start of the baseline mission program in L2.

ART-XC will be

1. Calibration
2. eRosita in
3. eRosita "e"
4. Upon rea

I	II	III	IV	V	VI	VII	VIII
1	ART	<u>Cyg X-1</u>	19 58 21.68, 35 12 05.8	28/03	10/06	14	22
2	ART	Crab	05 34 31.94, 22 00 52.2	22/02	03/04	25	23
3	ART	<u>Cyg X-1</u>	19 58 21.68, 35 12 05.8	28/03	10/06	28	24
4	ART	PKS 0558-504	05 59 47.40, -50 26 52.0	—	—	14	25
5	ART	PSR B0540-69	05 40 10.84, -69 19 54.2	—	—	14	26
6	ART	PSR B1929+10	19 32 13.79, 10 59 33.2	24/03	12/05	14	26
7	ART	PSR J1930+1852	19 30 30.13, 18 52 14.1	23/03	16/05	14	27
8	ART	PKS 2155-304	21 58 52.07, -30 13 32.1	20/04	03/06	14	27
9	ART	<u>Mkn 421</u>	11 04 27.31, 38 12 31.8	28/04	16/06	14	28

node), starting from

Planning

- Long-term
 - Science program in general, target selection, PIs, Science Group, JC
- mid-term
 - Program of actual operations with eRosita/ART-XC on **~1 month**
- short-term (operative)
 - Generation of cyclograms to upload to eRosita/ART-XC **~ 1 week**

Mid-term planning

- Long-term program input
 - from 1st day of each month to 2nd day on next month (inclusive).
- Begin
 - no later than 2 weeks before the calendar month of planning
- End
 - No later than 25th day of last calendar month
- Who does
 - Personnel at NPOL
 - Personnel at SOC (IKI)
 - Science Committee, SDC

Mid-term planning

- Main stages

1. NPOL uploads month-plan of connection sessions and ballistic information
2. Based on month-plan and ballistics, eRosita/ART-XC make sequence of operations
3. SOC merges all operations to one file and uploads to NPOL
4. NPOL checks month-plan of operations and informs IKI in case of errors
5. IKI makes new version of month-plan
6. Iteration repeats until NPOL accepts month-plan

Short-term (operative)

- Weekly-based preparation of operations (cyclograms) with eRosita/ART-XC
- Merging and testing week-plan of operations
- Upload to NPOL
- Cyclograms generation through web-interface

Science Data Center at IKI

Server	CPU	Memory Gb	Quantity	Usage
SUN FIRE X2270 M2	Intel(R) Xeon(R) CPU X5675 @ 3.07GHz	12	2	Gate, DHCP, DNS, HTTP, sftp upload, Home, Terminal server, дубль SRG01
Fujitsu PRIMERGY RX300 S7	Intel(R) Xeon(R) CPU E5-2690 0 @ 2.90GHz (8 cores)	64	2	Soft, LDAP, OpenKM, NAG
Fujitsu PRIMERGY RX300 S8	Intel(R) Xeon(R) CPU E5-2690 0 @ 3.00GHz (10 cores)	64	3	NRTA APT-XC
Fujitsu PRIMERGY RX300 S8	2 x Intel(R) Xeon(R) CPU E5-2690 0 @ 3.00GHz (10 cores)	256	8	Data analysis
RAID	Archive	Volume Tb	Quantity	Notes
ET203BU-4611347017*	-	89	2	3 modules / 12 disks 4 Tb (7200rpm)
NIS	-	8	2	4 disks with 2 Tb

SDC data grow estimations

Data	1 year	7,5 years	Available / 89 Tb In archive
Raw	~350 Gb <1Gb/day	2,5 Tb	30 times capacity
Calibrated	3,5 Tb	25 Tb	3 times capacity
Backup	4.5 Tb	28 Tb	89 Tb (mirrored)

89 + 89 Tb archive – raw and calibrated data

8 + 8 Tb – raw data

eSASS at IKI

downloaded from:

- <http://www2011.mpe.mpg.de/erosita/internal/eSASS-download/>
 - eSASS, CALDB, DEMO

eSASSusers_161130

Current version

Sequence of tasks in eROSITA pipeline processing

- **Preprocessor:** tmsplit, preproc
- **Pipeline control:** eropipe, prexec, proc
- **Data access:** datool

- **TEL chain:** evprep, exposure, ftfindhotpix, pattern, energy, backgrnd, attprep, telatt, evatt, mkfilter, telgti, telselect, telstage
- **EXP chain:** expmerge, radec2xy, ftfindhotpix, evtool, flaregti
- **DET chain:** expmap, ermask, erbox, erbackmap, erl1det, apetool
- **SOU chain:** catprep, srctool, specfit, varichck, dpvalp

Underlined tasks: ready for use.

Preproc: tm2fits

calibrated event list



1. evtool
2. expmap
3. ermask
4. erbox
5. erbackmap
6. erbox
7. erl1det
8. catprep
9. srctool

End-to-end tests this Summer

- connection simulation between scientific payload and SOC

