



18th Workshop on Radiation Monitoring
for the International Space Station
3-5 September 2013, Budapest, Hungary

Passive dosimetry in the PIRS module: 2010-2013.

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3 wishes.....

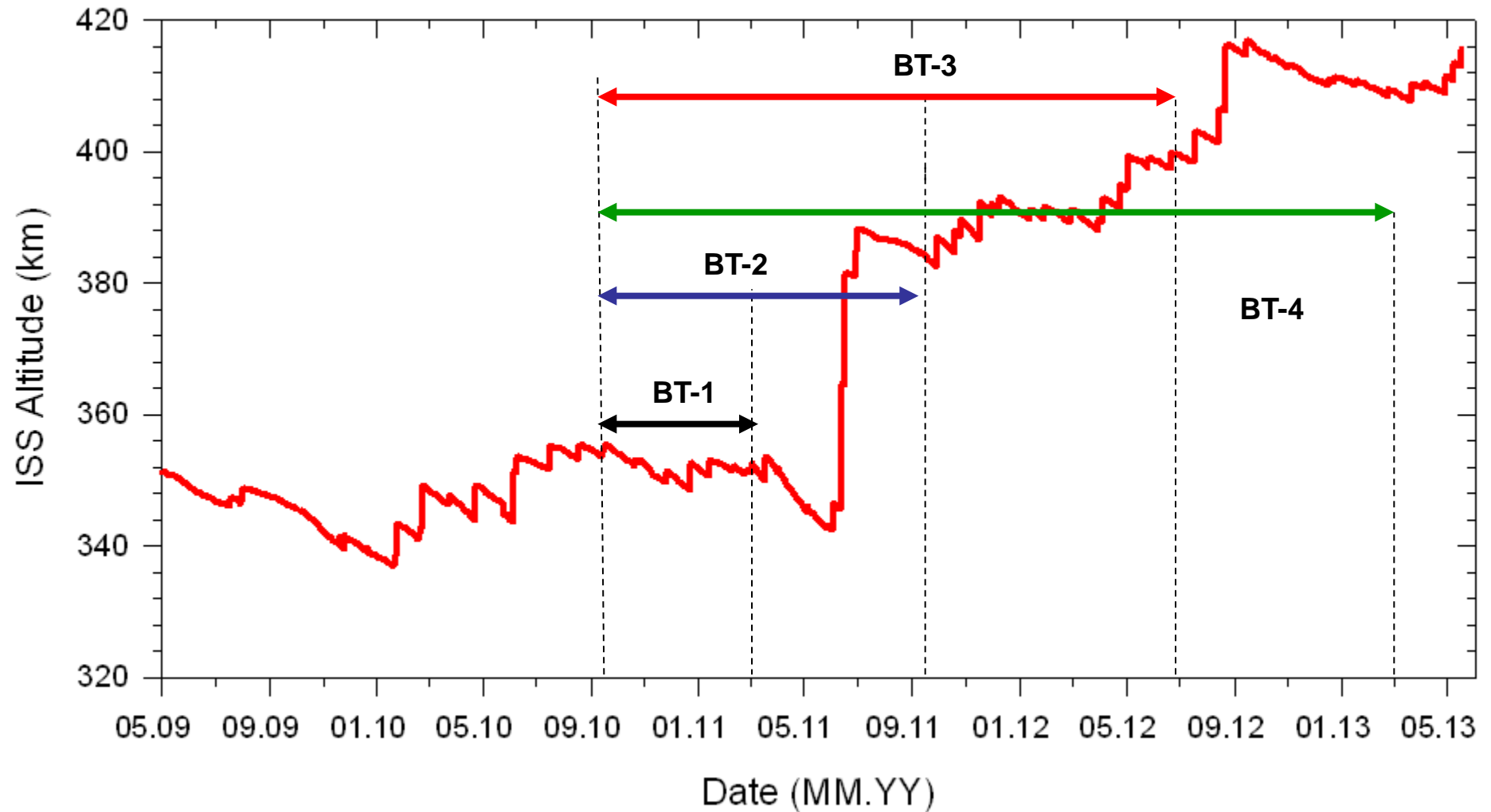
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BioTrack

Common launch date: 10.09.2010.

Name	Down loader	Landing date	Flight duration, day	Time increment, day
TTD-6-1	Soyuz-TMA-01M	16.03.2011.	187	-
TTD-7-2	Soyuz-TMA-21	16.09.2011.	371	184
TTD-6-2	Soyuz-TMA-03M	01.07.2012.	661	290
TTD-6-3	Soyuz-TMA-06M	16.03.2013.	917	256

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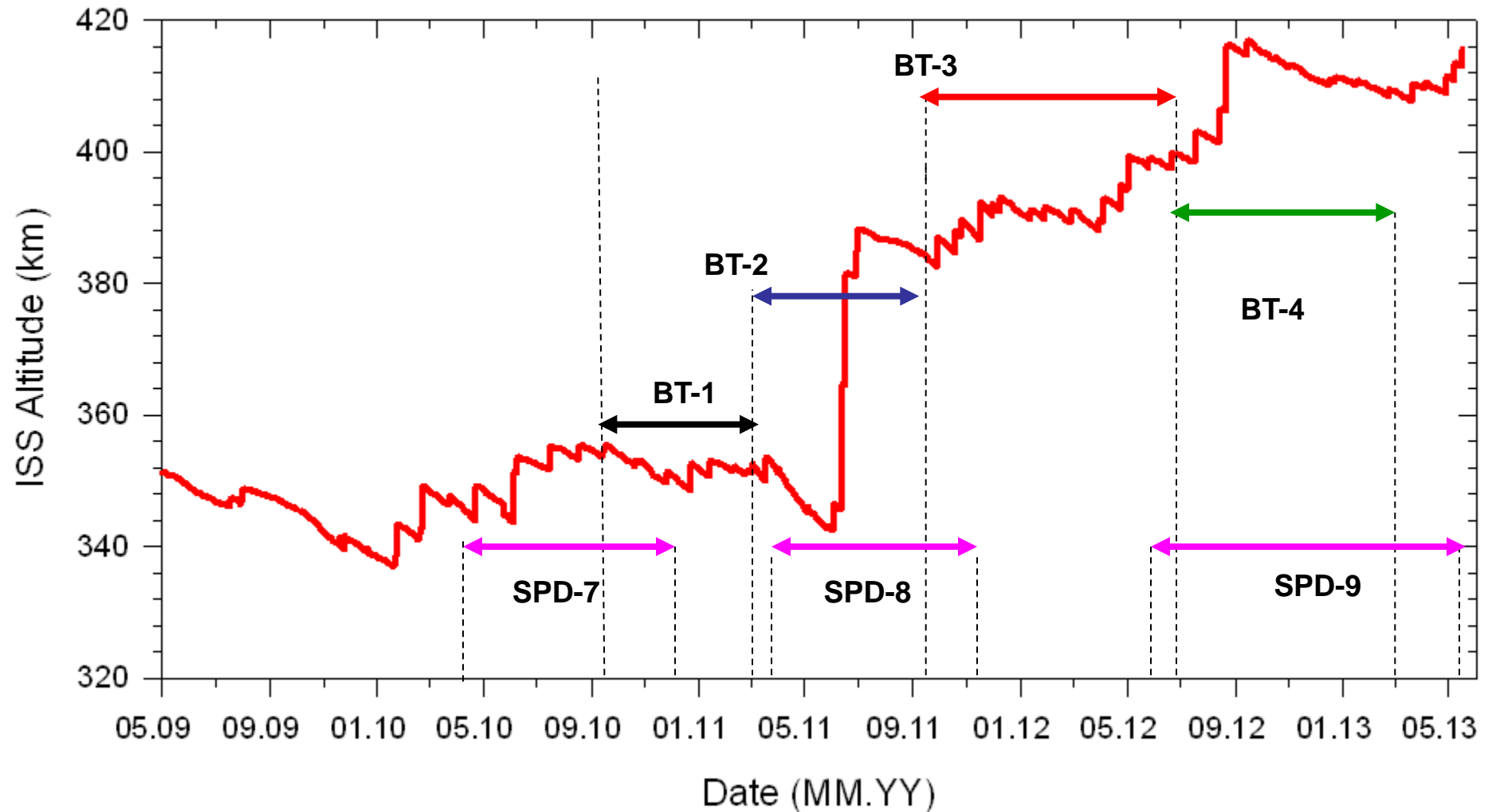
ISS altitude variation during the BioTrack experiment increments 1-4

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SPD experiments

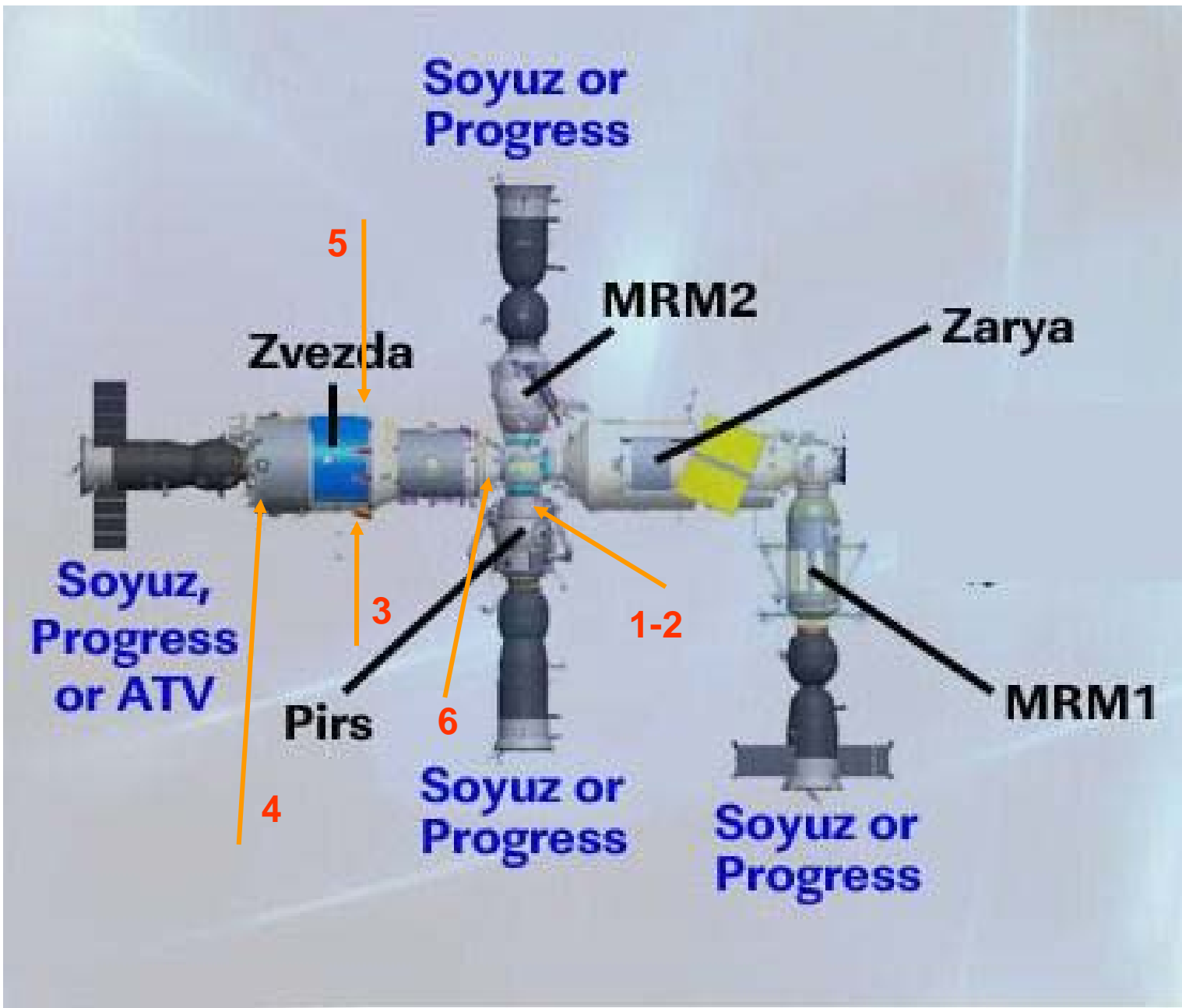
Experiment	Date		Vehicle	Duration, day
SPD-7	Launch	28.04.2010	Progress-05M/37P	211.5
	Landing	26.11.2010	Soyuz-TMA-19/24S	
SPD-8	Launch	04.04.2011	Soyuz-TMA-21/27S	233
	Landing	22.11.2011	Soyuz-TMA-02M/29S	
SPD-9	Launch	15.05.2012	Soyuz-TMA-04M/30S	364
	Landing	14.05.2013	Soyuz-TMA-07M/34S	



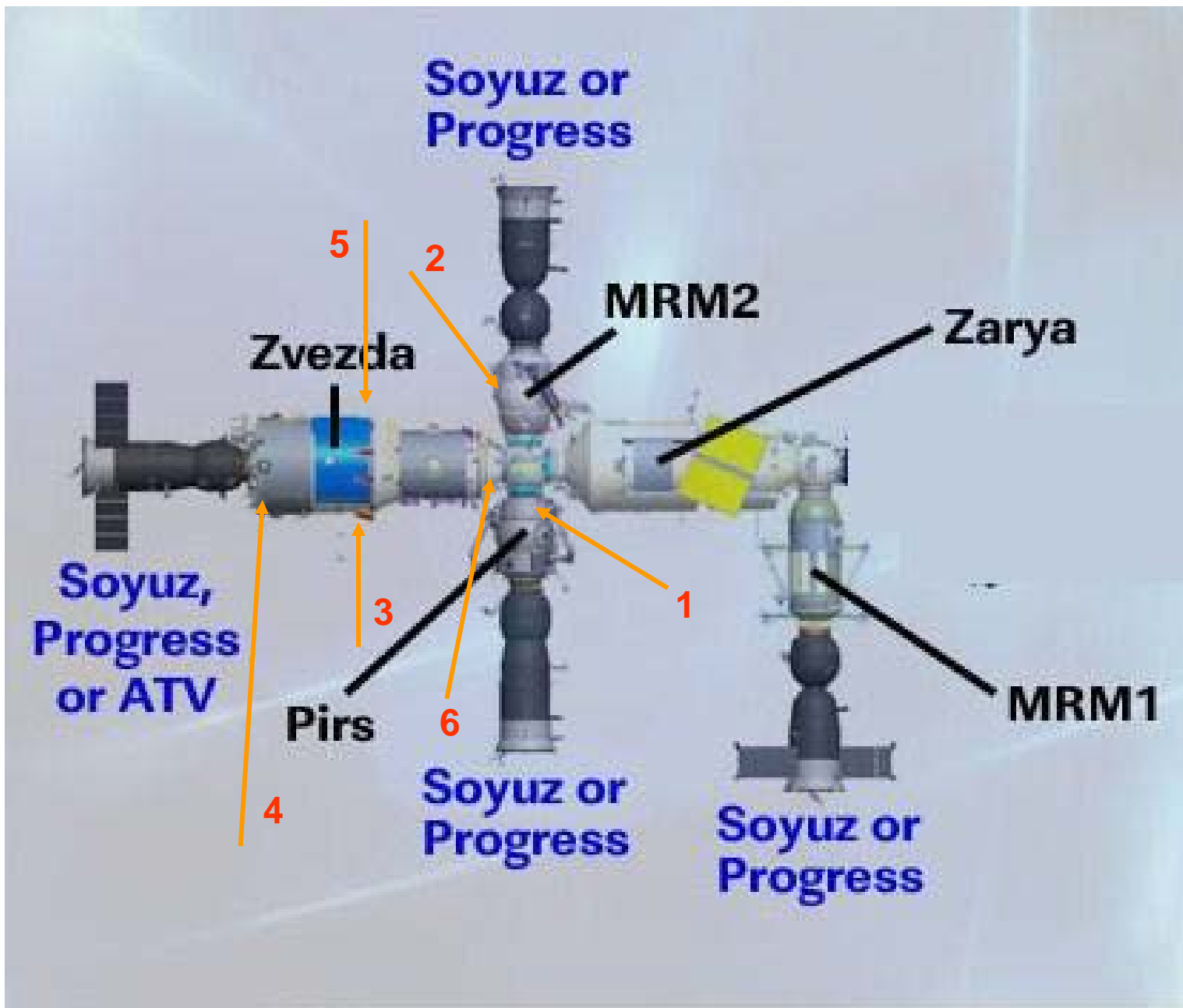
ISS altitude variation during the BioTrack experiment increments 1-4 and SPD 7-9.

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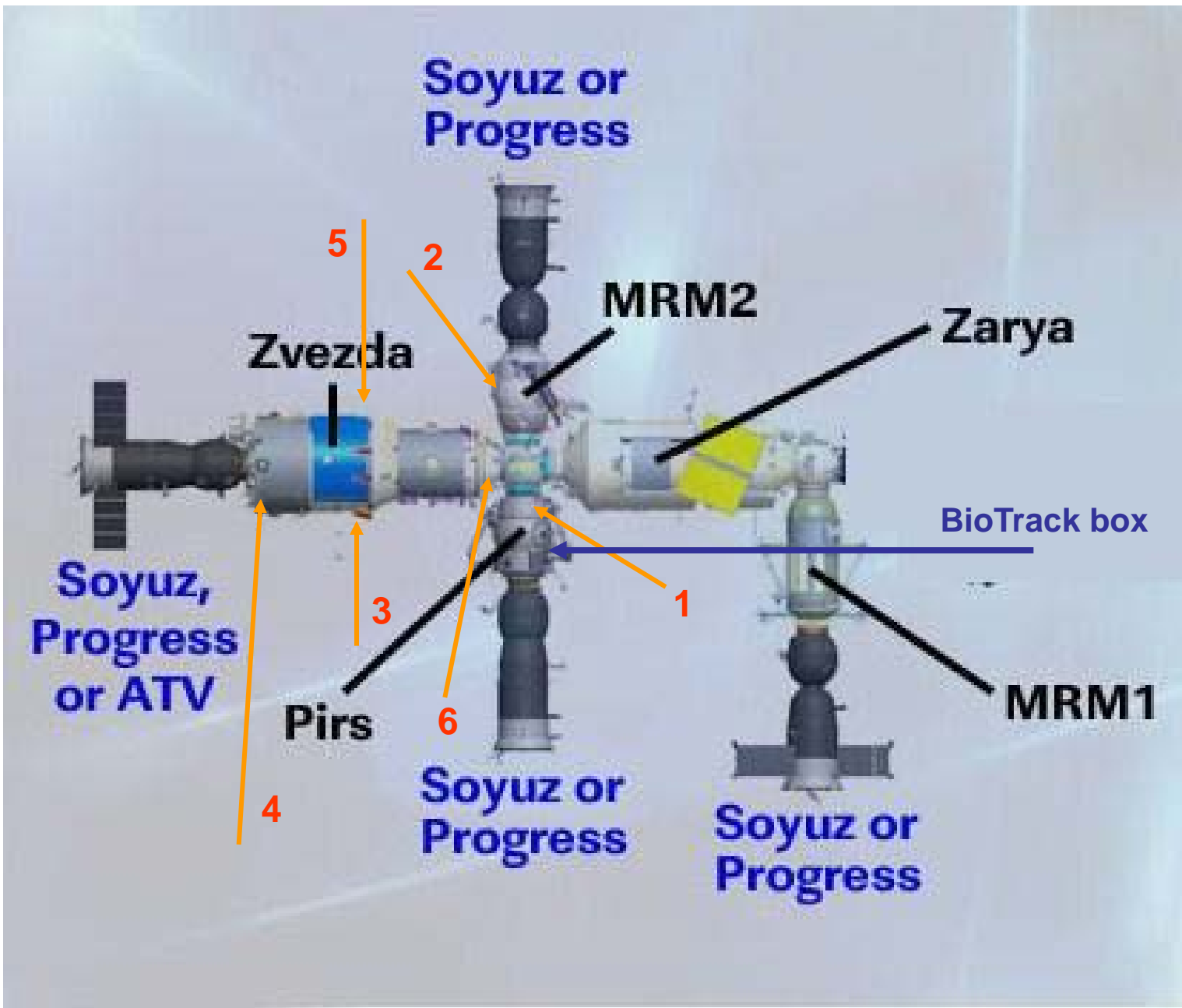
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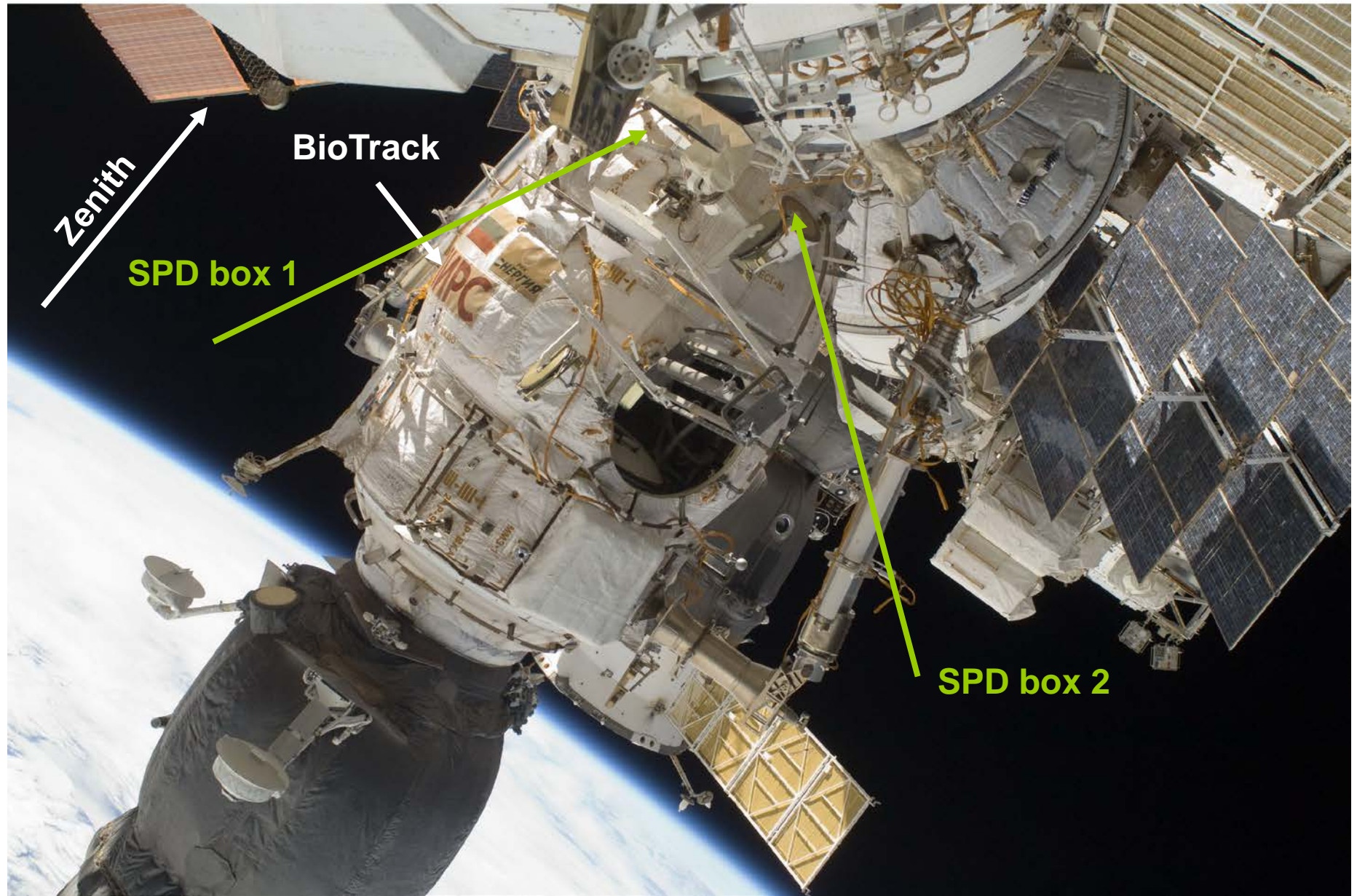
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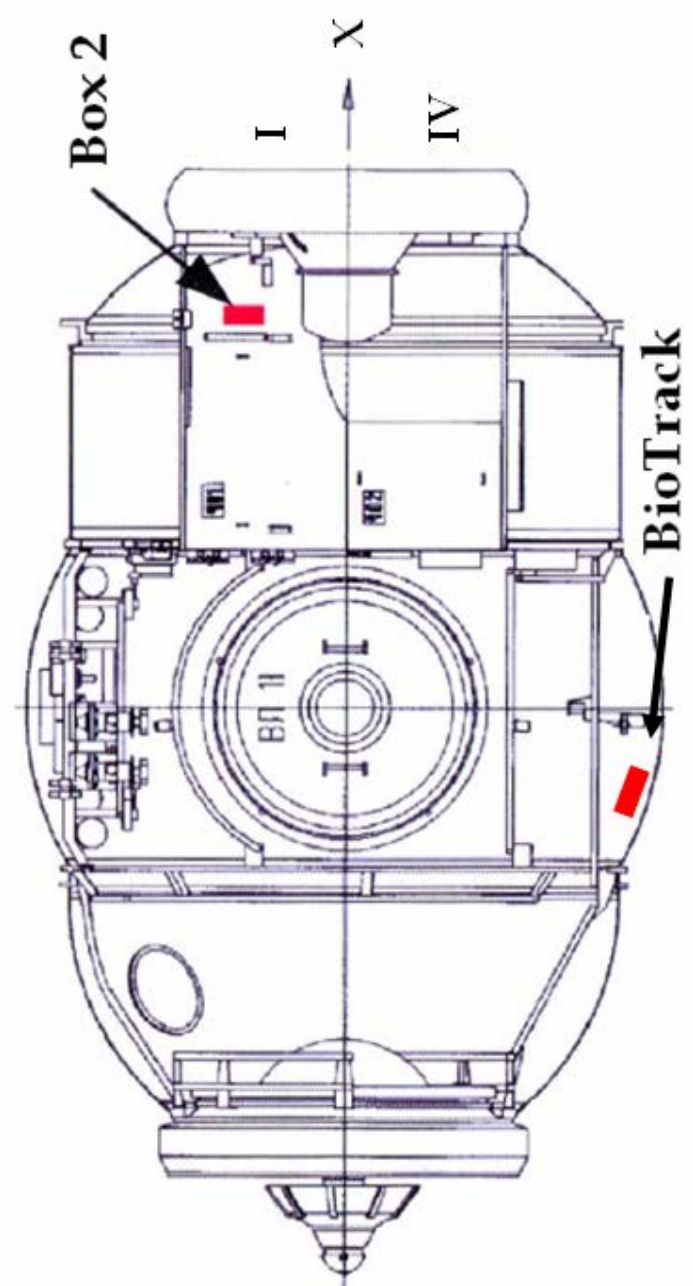
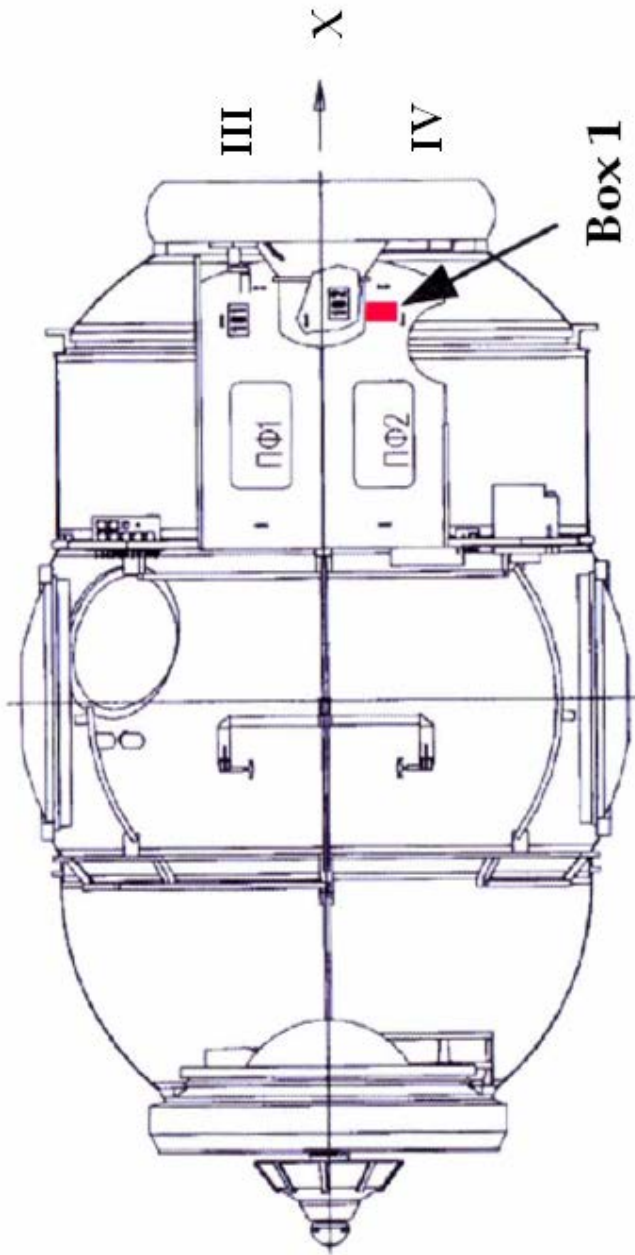
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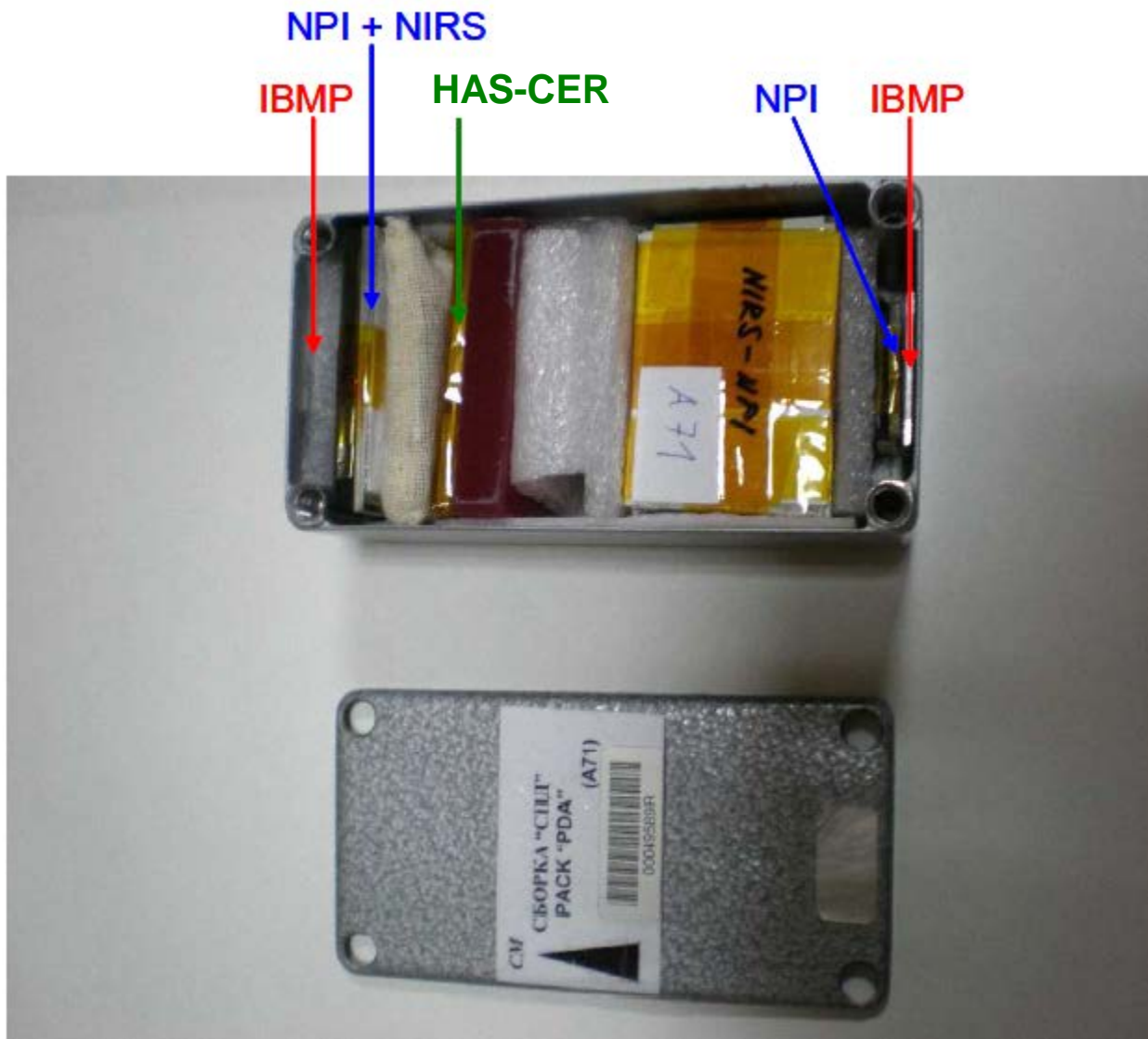
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PIRS docking module with Soyuz and Earth

Zenith



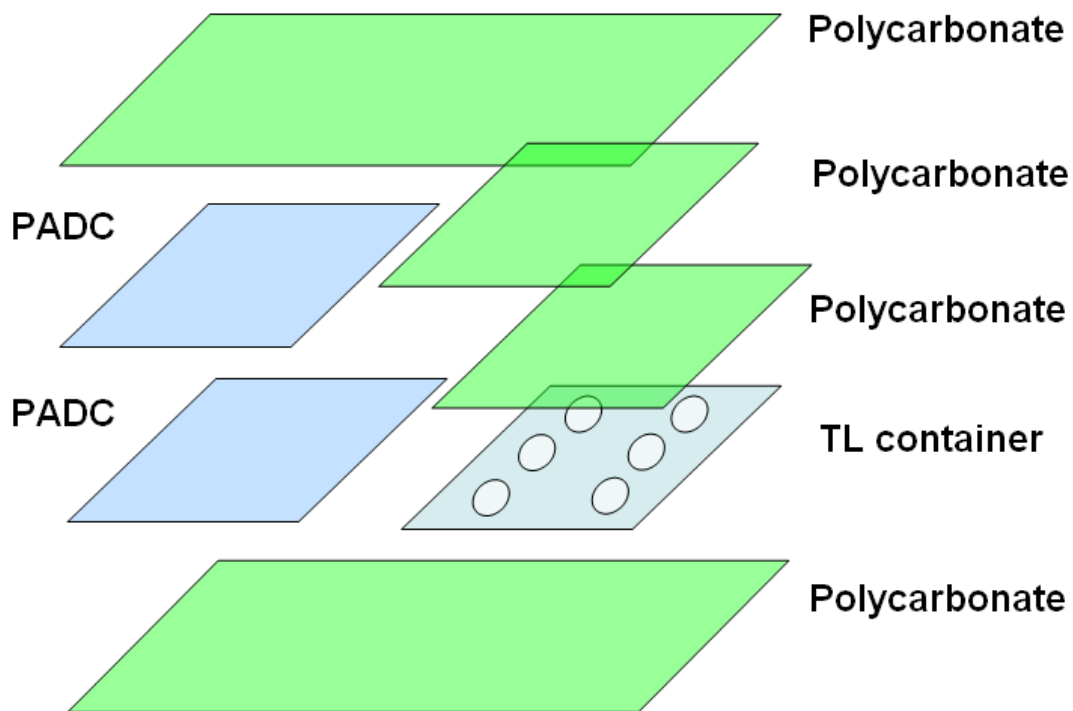
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Arrangement of SPD-7, Box No. 1 in PIRS module

TOP SIDE



HAS CER passive detector stack

IBMP TL detector stack

TL container



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The cumulative absorbed dose in water of low LET radiation, obtained by TLD measurements during the BioTrack experiment by CER and IBMP. The TLD signal was corrected for background, but not corrected for the high LET (>10 keV/μm) portion of the radiation.

Experiment name	Exposure duration, day	CER Total dose mGy	IBMP Total dose mGy	Mean Total dose mGy	SD	SD %
TTD-6-1	187	73.2	60.0	66.6	9.3	14
TTD-7-2	371	167.4	128.5	148.0	27.5	19
TTD-6-2	661	342.9	266.2	304.6	54.2	18
TTD-6-3	917	486.5	542.7	514.6	39.7	8

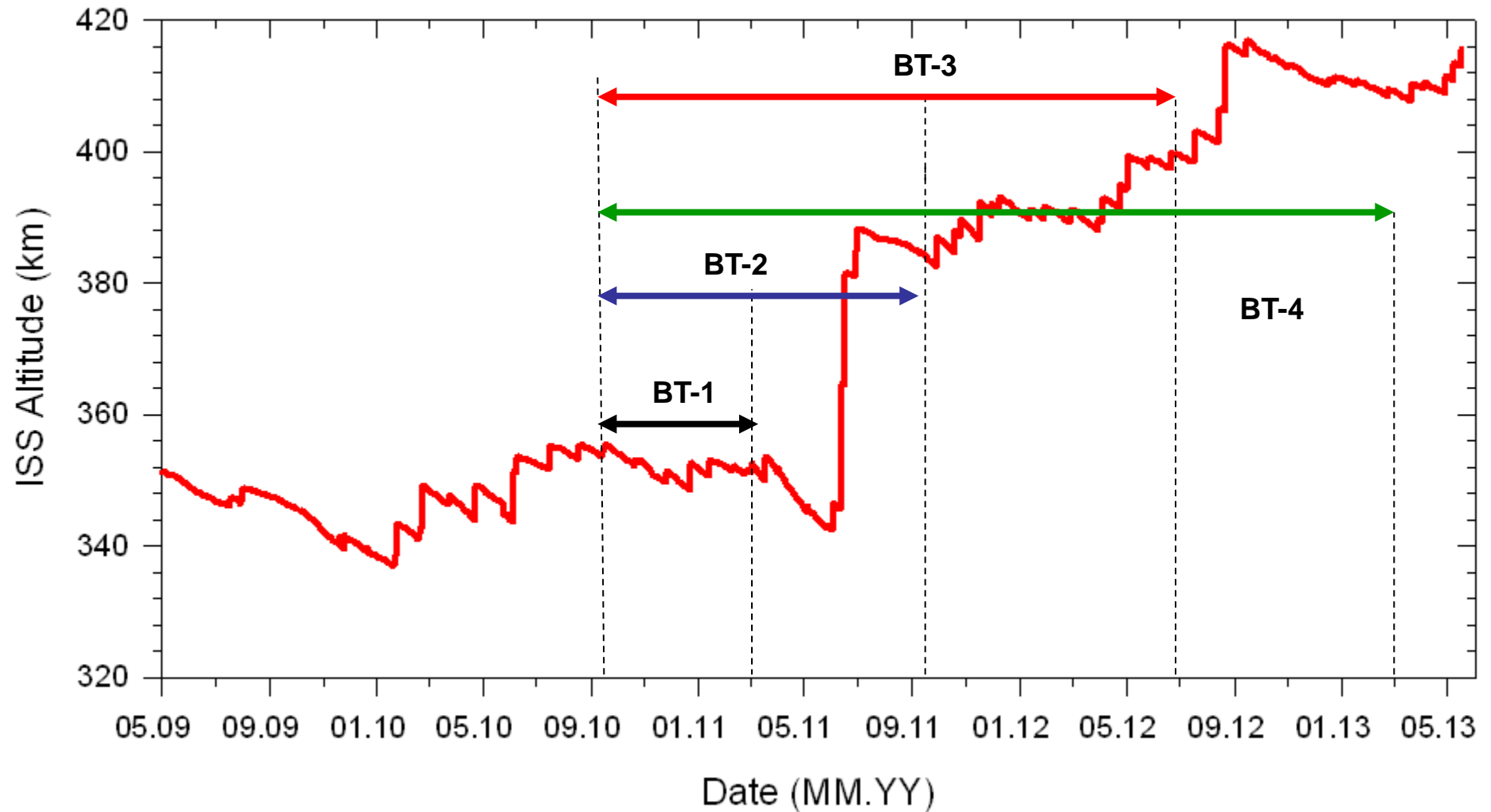
Differential absorbed dose- and dose equivalent rates of high LET radiation, obtained by PADC measurements during the BioTrack experiment. The values are corrected for background.

	Exp. day	D, Absorbed dose rate μGy/day	H, Dose equivalent rate μSv/day	Q, Mean quality factor
Phase 1	187	52.53	504.71	9.61
Phase 2	184	61.94	592.13	9.56
Phase 3	290	66.07	838.74	12.69
Phase 4	256	61.35	760.21	12.39

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Differential dose rates obtained by TLD and PADC detectors during the BioTrack experiment, measured by the CER detector assemblies. (The TLDs were corrected for background and high LET radiation, PADC detector were corrected for background.)

Exp.	D, Absorbed dose rate			H, Dose equivalent rate		Q, Mean quality factor
	$\mu\text{Gy/day}$			$\mu\text{Sv/day}$		
Day	TLD	PADC	Total	Total		factor
Phase 1	187	370.1	52.5	422.6	875.2	2.07
Phase 2	184	479.0	61.9	540.9	1070.0	1.98
Phase 3	290	572.5	66.1	638.6	1411.3	2.21
Phase 4	256	530.9	61.4	592.3	1291.0	2.18

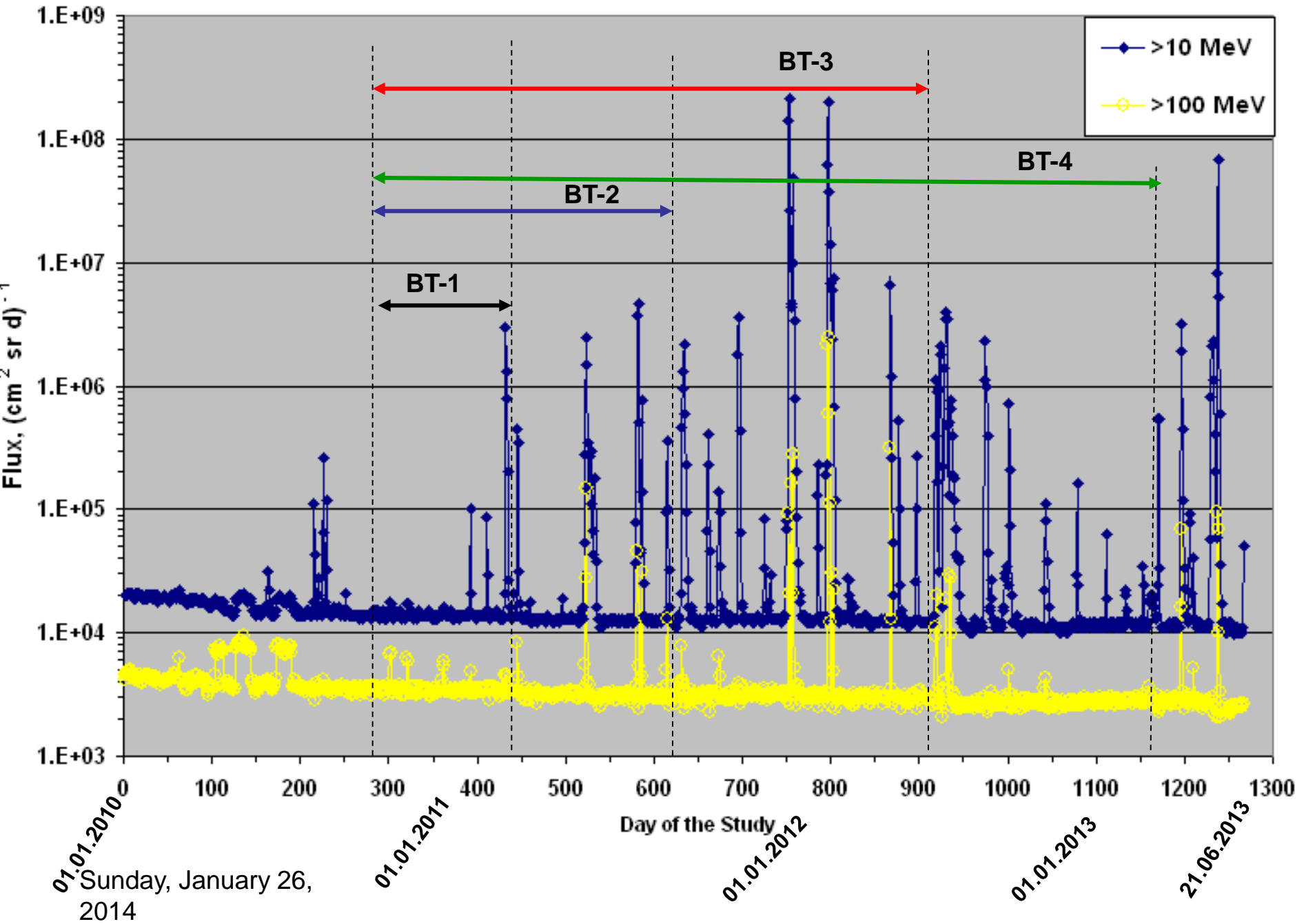


ISS altitude variation during the BioTrack experiment increments 1-4

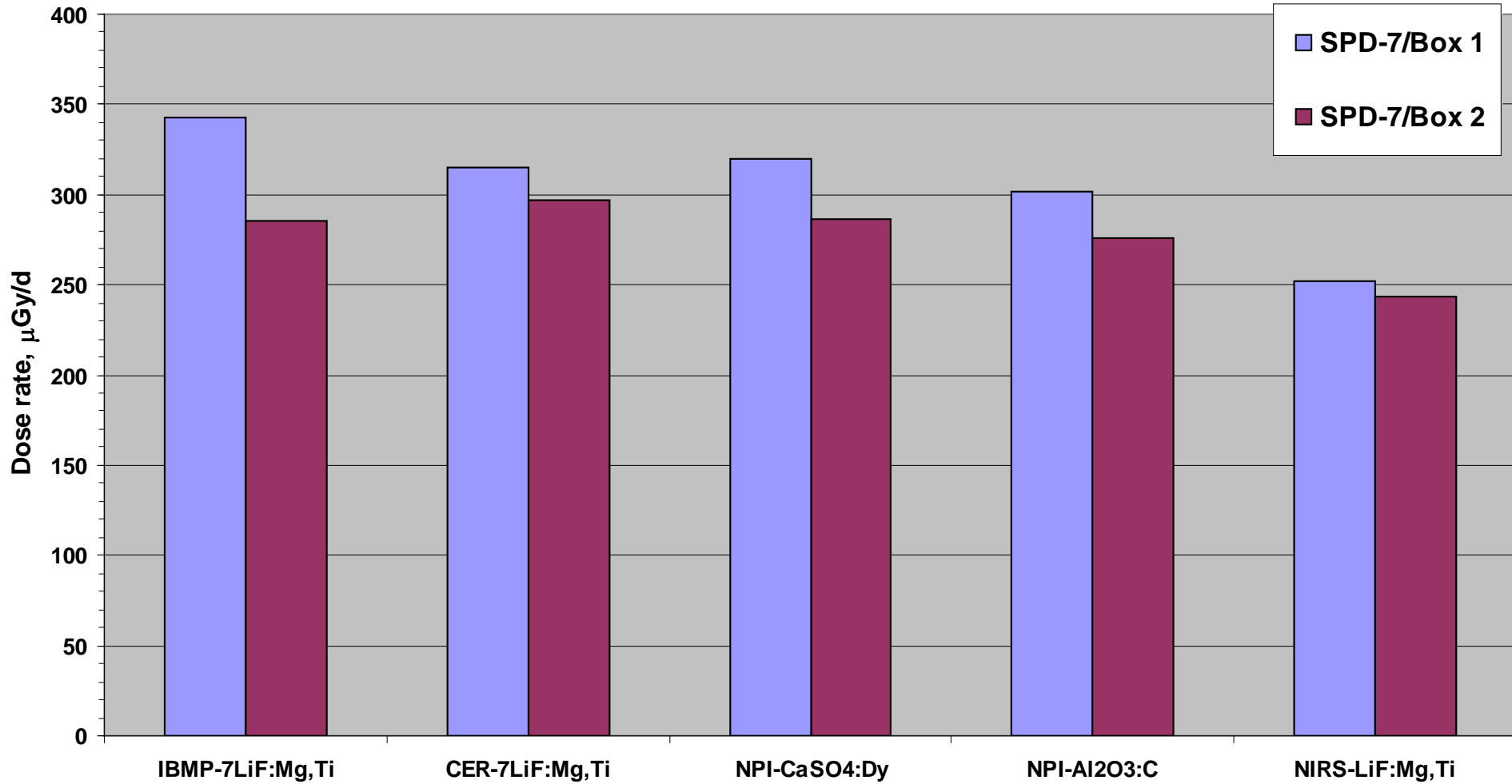
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GOES-13 Daily proton flux

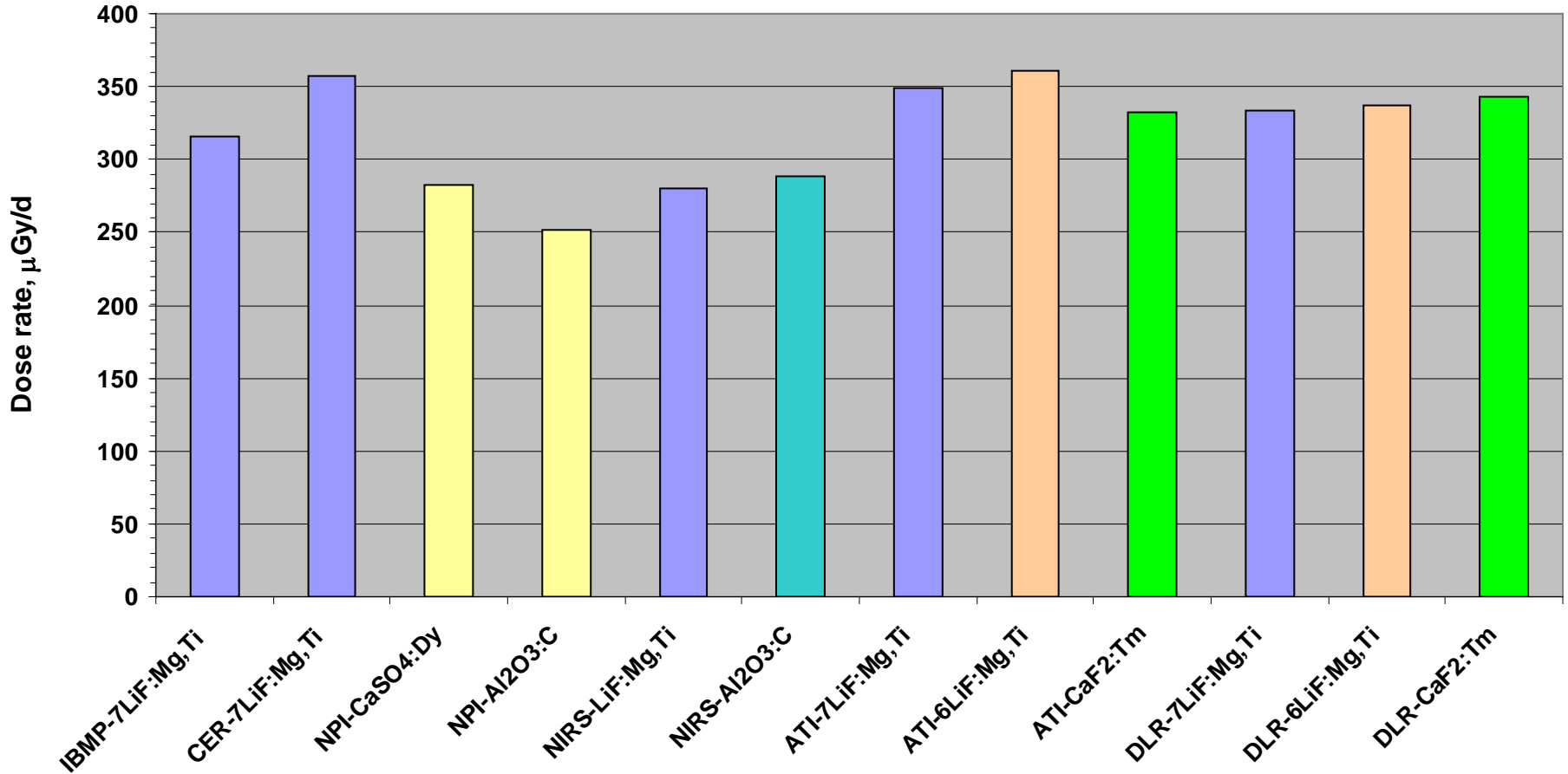


SPD-7



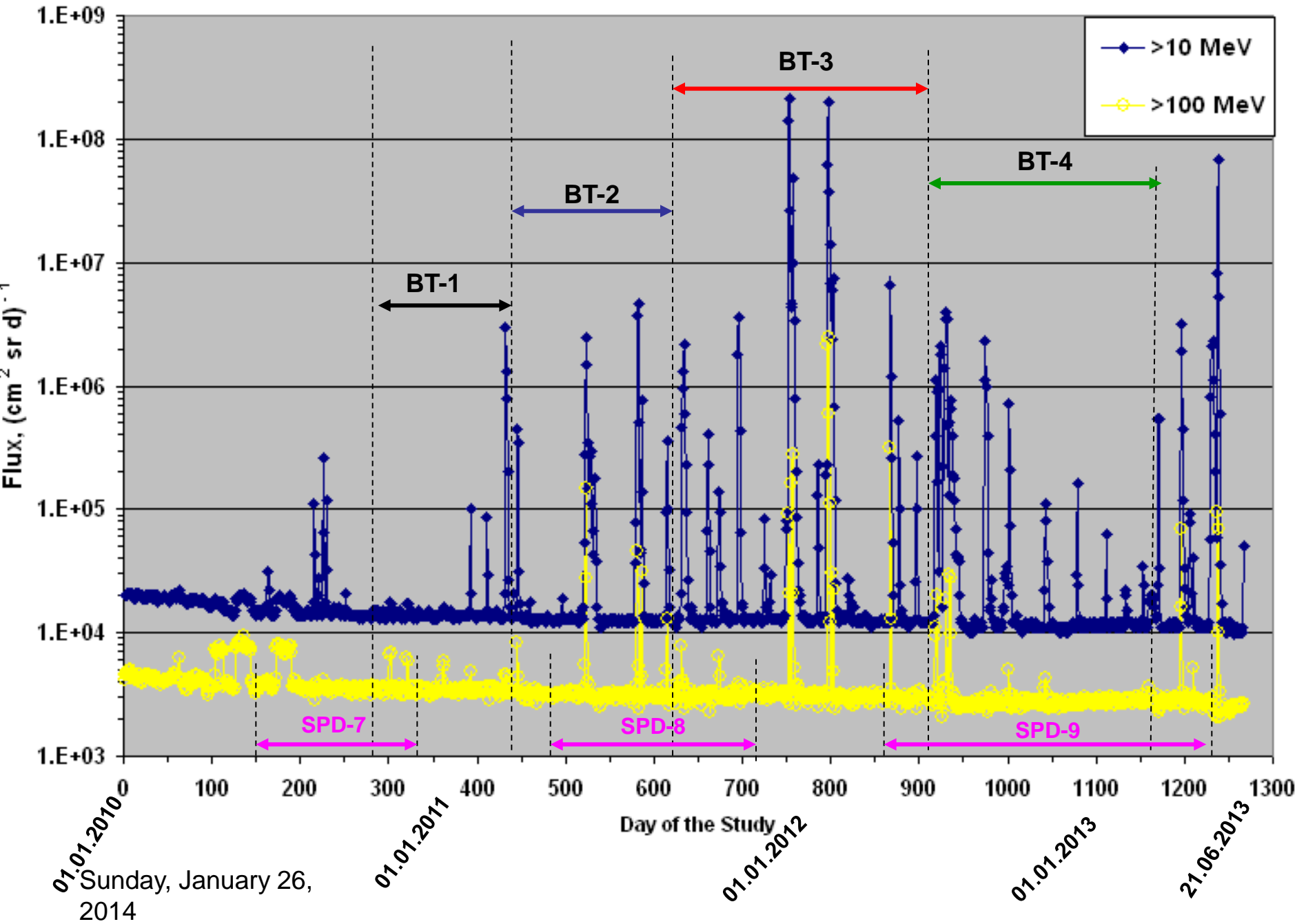
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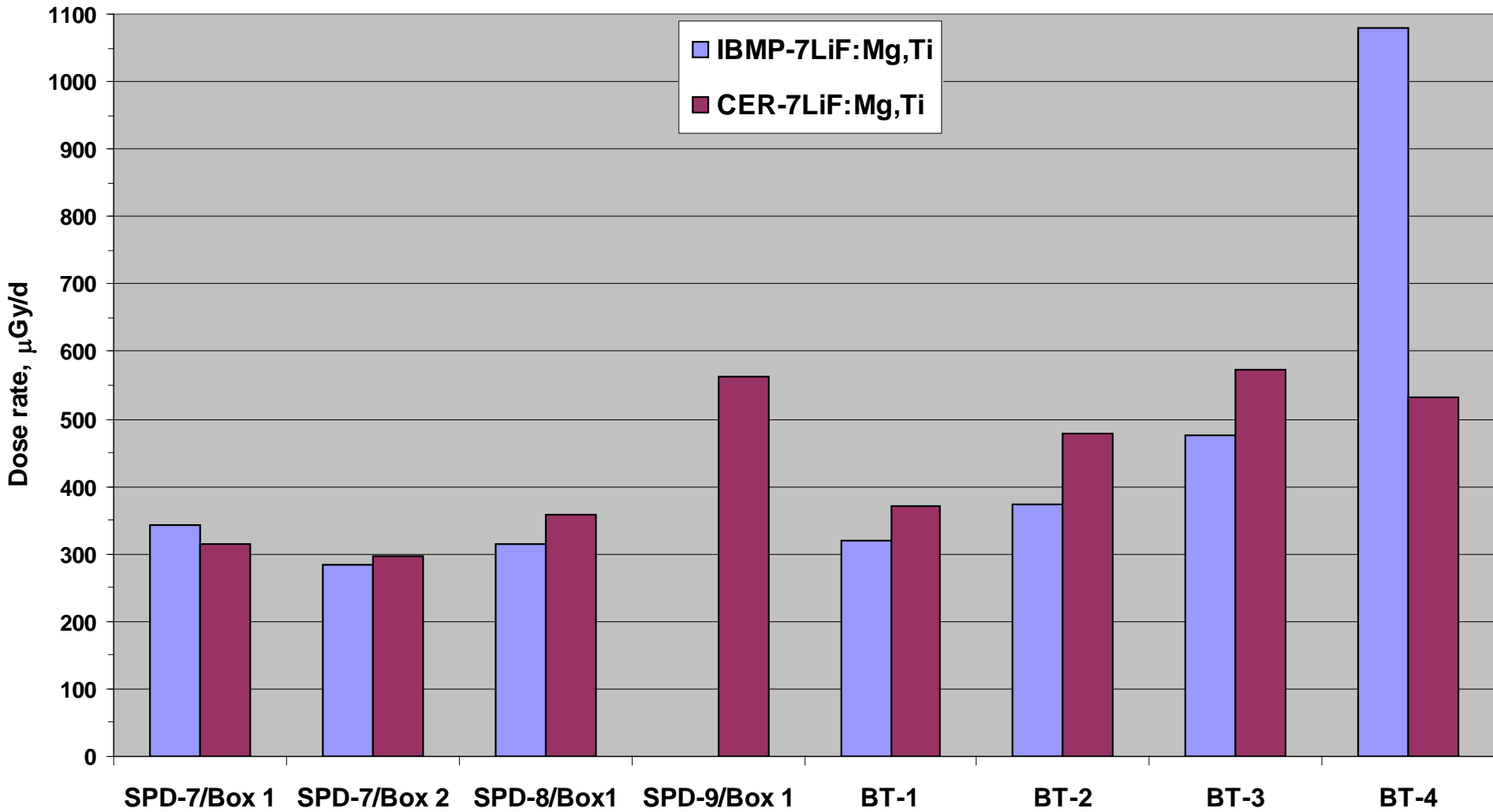
SPD-8/Box 1



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GOES-13 Daily proton flux





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