

# Inter-Agency Space Debris Coordination Committee



**State Space Agency of Ukraine**

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## Status Report

**Dr. O. Kozhukhov**

IADC41

12-15/06/2023



# OPTICAL SENSORS OF SMAS



War is the main problem!

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# OPTICAL SENSORS OF SSAU IN 2022 - 2023



## QOS "Sazhen-S", Khmel'nitsky region



Operational (GEO, MEO, NEO, LEO)

## OEOS, type 1, Khmel'nitsky region



Operational (GEO, MEO, NEO)

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# OPTICAL SENSORS OF SSAU IN 2022 - 2023



## OEOS, type 2, Kyiv region



Operational (GEO, MEO, NEO, LEO),

## OEOS, type 3, Zakarpatska region



Operational (GEO, MEO, NEO, LEO),  
Additional alignment of the optics

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# SMAS 2022-2023



Decay messages – 200 for 584 space objects

Conjunction messages

Ukrainian SO – 266

Near-Earth SO with nuclear power unit – 476

Other separate SO – 346.

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# INTERNATIONAL COOPERATION



New Photometric Campaign: "Multi-site Photometry of Space Debris"

**Main goal:** to organize cooperative observational campaigns for SD photometry with a high-frequency of measurements, including synchronous base observations.

## 4 organizations - 6 sites:

Astronomical Observatory of the Odessa I.Mechnikov University (**Odessa**),  
Department of Astronomy and Astrophysics of the Comenius University in Bratislava (**Modra**),  
Space Research Laboratory of the Uzhgorod University (**Uzhgorod** and **Derenivka**),  
NSFCTC of the SSAU (**Mukachevo** and **Novoselki**)

10 observed SO:

06275 (DMSP 5B F3), 07411 (DMSP 5C F1), 09415 (OPS 5721),  
13736 (DMSP 5D-2 F6), 13777 (IRAS), 18123 (DMSP 5D-2 F8),  
21798 (DMSP 5D-2 F11), 23455 (NOAA 14), 26536 (NOAA 16),  
16908 (EGP or Ajisai)

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# INTERNATIONAL COOPERATION



## New Photometric Campaign: "Multi-site Photometry of Space Debris"

Preliminary results: 141 light curves including 13 cases of synchronous light curves (total 31 curves) are under processing.

Date	Observatory	06275	07411	09415	13736	13777	16908	18123	21798	23455	26536
	Cospar No	72089A	74063A	76091A	82118A	83004A	86061a	87053A	91082A	94089A	00055A
	Name	D MSP 5B F3	D MSP 5C F1	O PS 5721	D MSP 5D-2 F6	I RAS	E GP	D MSP 5D-2 F8	D MSP 5D-2 F11	N OAA 14	N OAA 16
08.02.2023	Odessa	16:15	16:48	17:08	15:59	15:48	16:37	16:58	17:12		
09.02.2023	Odessa	15:50	17:34	16:44	17:11		17:44	16:37	16:53		
	Novoselki		17:37	16:46	17:07	17:26	17:40		16:53	17:19	
	Mukachev	17:28	17:35	16:43	17:08	17:29	17:41	16:37	16:53	17:13	17:00
10.02.2023	Novoselki	16:59		17:56			16:49	16:18			
	Mukachev		17:07	17:57	16:43	17:29	16:46	18:02	16:37	16:59	18:29
12.02.2023	Novoselki	17:45	17:53		17:23		17:01	17:26	17:51		
	Mukachev	17:44	17:51	18:46	17:22	17:30	16:59			18:14	18:04
13.02.2023	Odessa						16:08			16:18	
14.02.2023	Modra		18:38				19:17				
	Novoselki	16:49			16:26		17:14				
	Mukachev	16:52	16:56	3:38	3:49		17:16	18:29(04:14)	17:13		
15.02.2023	Modra	18:07			17:41		18:22	18:13	18:38	17:34	
	Odessa	16:22	18:08	17:29			16:29	16:33	16:56		
	Mukachev	18:01	18:10	17:28	17:36		18:19	4:14	16:55		17:24
16.02.2023	Modra				17:11						
17.02.2023	Odessa							16:26			
20.02.2023	Odessa		17:30		16:55		16:00	16:38	17:18	16:25	
23.02.2023	Odessa	16:08	17:47	17:23	17:08				16:31		
	Novoselki			17:23					16:31		
28.02.2023	Odessa	17:08	17:10		16:25				16:52		18:00
01.03.2023	Odessa	16:40	17:45	16:29	17:37			17:16	16:36		17:47
	Uzhhorod				17:36			17:15			17:46
	Mukachev					17:31				17:44	
02.03.2023	Odessa		17:55		17:10			16:57			
	Uzhhorod		17:56	17:42		17:33					
	Mukachev	01:57		03:24	02:50	01:49		02:43			
03.03.2023	Uzhhorod								17:44		
	Derenivka		17:27(19:07)			17:34				18:34	

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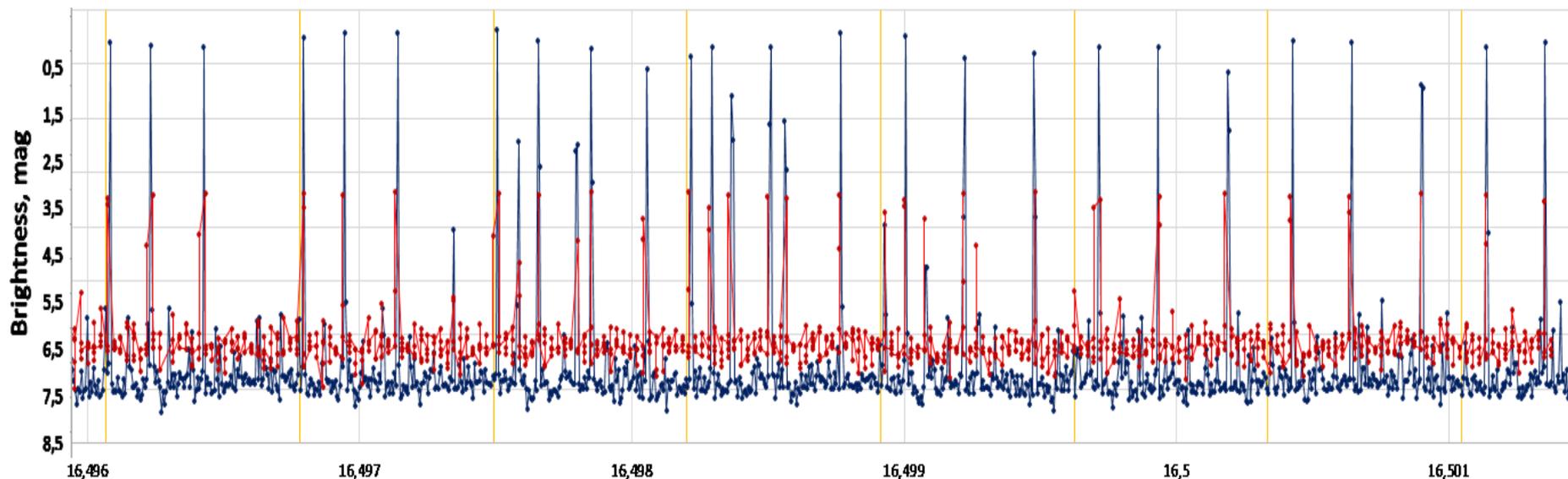


# INTERNATIONAL COOPERATION



New Photometric Campaign: "Multi-site Photometry of Space Debris"

Example: two light curves of 16908 EGS (from superimposed with a shift of -1.927 hour (2710 revolutions of EGS around its center of mass))



We invite our colleagues to join this program

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**THANK YOU FOR YOUR ATTENTION!**

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