

CBK PAN BOROWIEC SECOND SATELLITE TRACKING SYSTEM LASBOR

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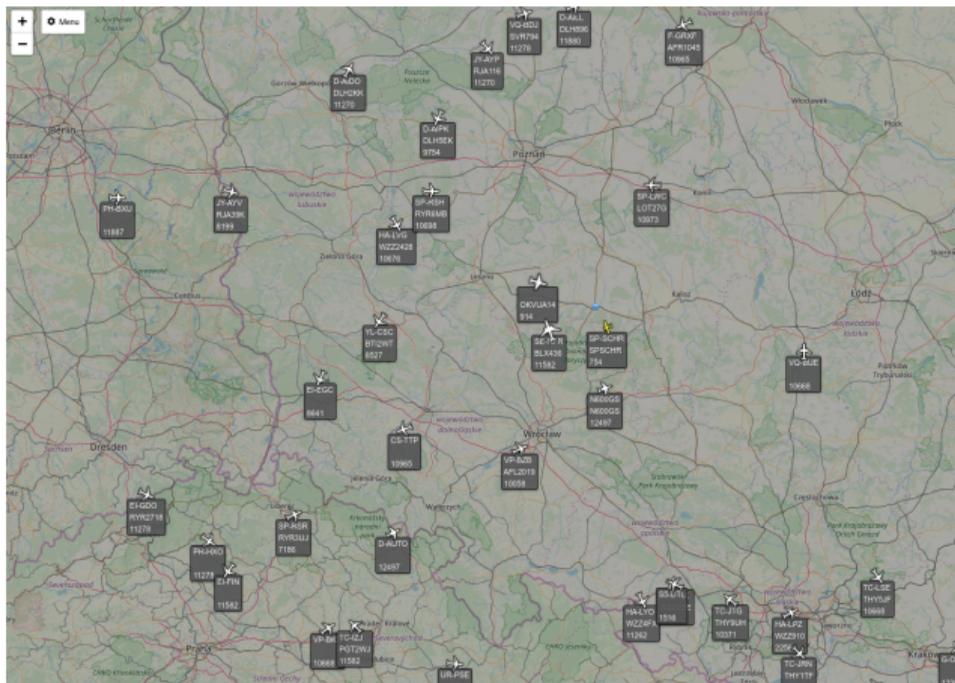
ILRS Workshop, DLR Stuttgart, 2019



FIGURE: LASBOR 1nd (credits: CBK PAN)



FIGURE: LASBOR 2nd (credits: CBK PAN)



SP-BLHM Private
 Poland
 Pipistrel Virus SW IS 100

Altitude: 754 m Vertical Speed: -55 m/min Speed: 289.1 km/h Heading: 299.0° Distance: 11.97 km Squawk: 7000 Engines: Single piston Species: Pipistrel Virus SW IS 100

Wake Turbulence: Light
 Route: Route not known

www.airport-data.com :: www.airliners.net :: www.airframes.org
 Show on map :: Disable auto-select :: Submit route

Tracking 75 aircraft

Silhouette	Flag	Reg.	ICAO	Callsign	Route	Altitude	Speed
						63945 m	
		8BCNCS	SPTDP*			564 m	
		4PC151	OKVJA14			914 m	254.5 km/h
		2718	909FA			3665 m	
		4X-EDL	Z393CA			10965 m	881.9 km/h
		B-KPW	780A18			9449 m	
		B-LID	78021A	CPA014	EDDF-VHHH	10668 m	946.7 km/h
		CS-TTP	495290			10865 m	758.0 km/h
		D-AMFB	SC4803			10973 m	
		D-AJTB	SC5640				
		D-AIDO	3C448F	DL-HOK	EDDM-EP-NA	11270 m	894.1 km/h
		D-ALL	3C459C	DL-H95	EDDF-EP-NA	11880 m	905.8 km/h
		D-APK	3C446B	DL-H0X	EP-NA-EDDM	9754 m	753.8 km/h
		D-AUTO	3C5931			12497 m	954.2 km/h
		D-SGA	301590			671 m	
		ED-IVY	4CAGFC			11582 m	
		ED-EGC	4C4789			8641 m	685.4 km/h
		ED-FIN	4C453F			11582 m	763.0 km/h
		ED-G00	4C493E	RYR2718	EGMC-L2K2	11278 m	892.8 km/h
		F-60XF	99446E	AFR1045	UUEE-LPPP	10965 m	738.2 km/h
		G-CPTO	123456				

FIGURE: ADSB (credits: CBK PAN)



FIGURE: ADSB - antenna (credits: CBK PAN)

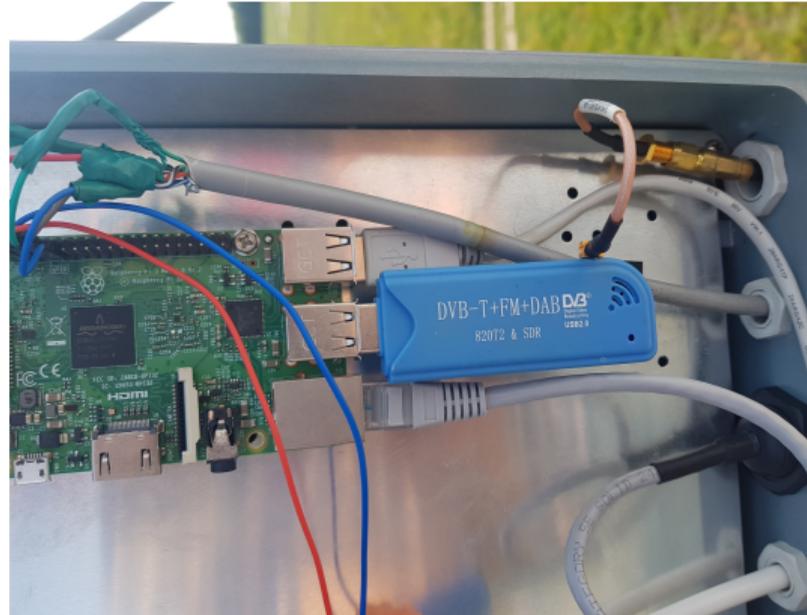


FIGURE: Raspberry (credits: CBK PAN)



FIGURE: ADSB/Meteo/APRS (credits: CBK PAN)

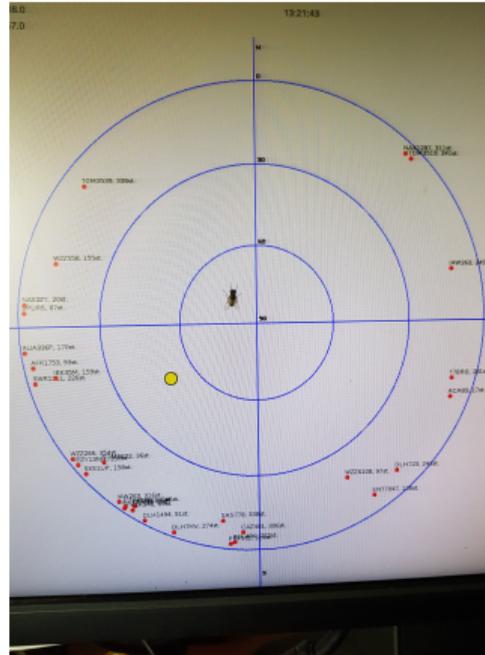


FIGURE: ADSB (credits: CBK PAN)

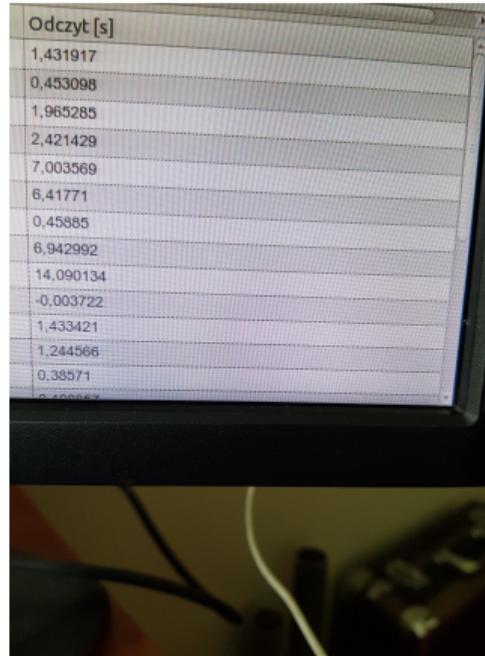


FIGURE: Aircraft .. time "lag" (credits: CBK PAN)



FIGURE: Meteo - Grafana (credits: CBK PAN)



FIGURE: Meteo sensor (credits: CBK PAN)



FIGURE: Meteo ... (credits: CBK PAN)



FIGURE: Weather balloon (credits: DWD Stuttgart)



FIGURE: Educational activities (credits: CBK PAN)

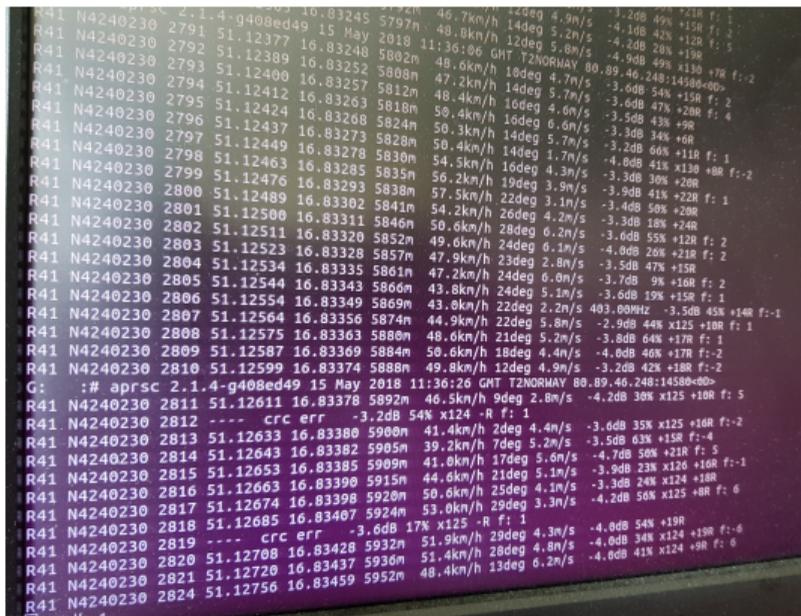


FIGURE: Decoding data (credits: CBK PAN)



FIGURE: AllSky.. in a different way (credits: CBK PAN)

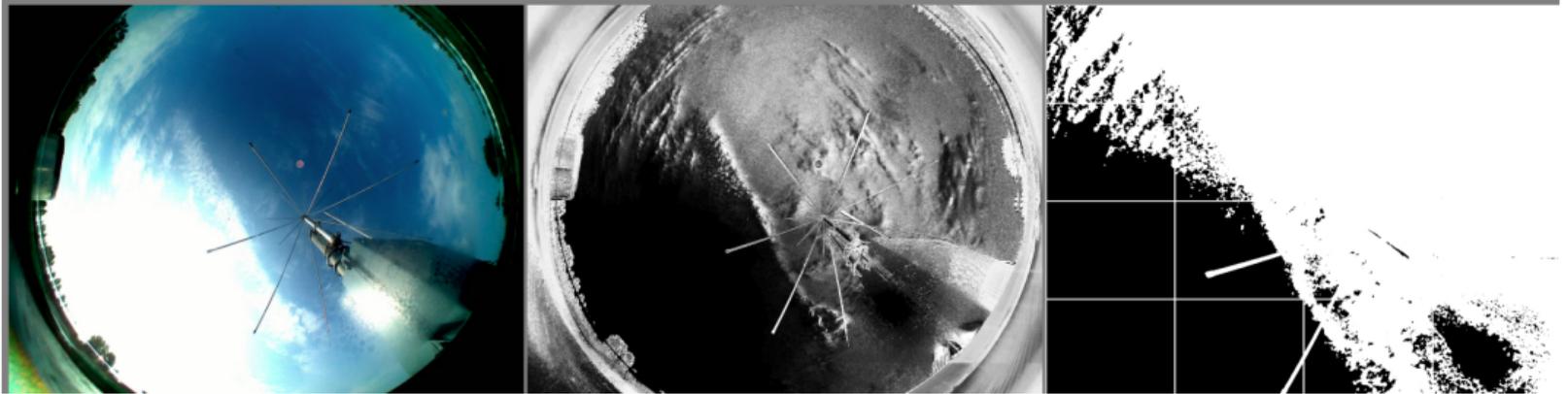


FIGURE: AllSky.. in a different way (credits: CBK PAN)

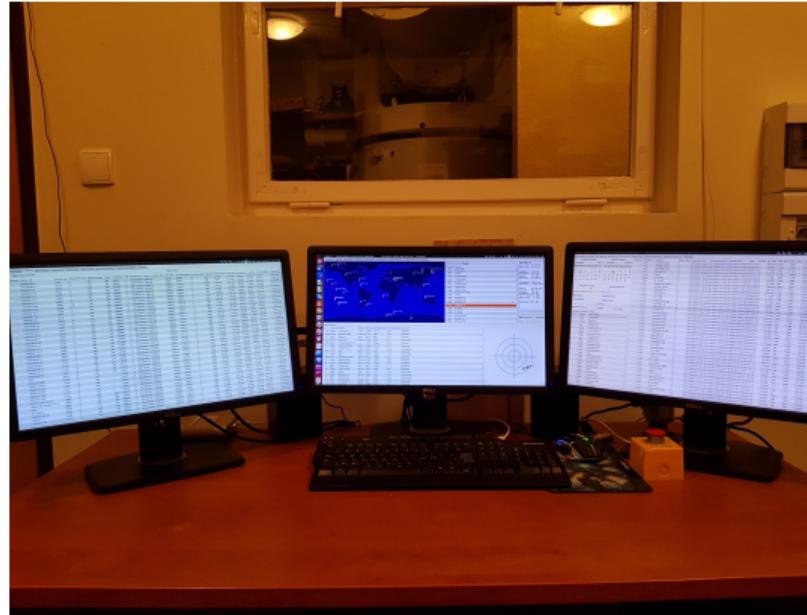


FIGURE: Control software (credits: CBK PAN)

INTRODUCTION
AUXILIARY ENVIRONMENT
SOFTWARE
TRACKING TESTS
QUESTIONS... ANSWERS?

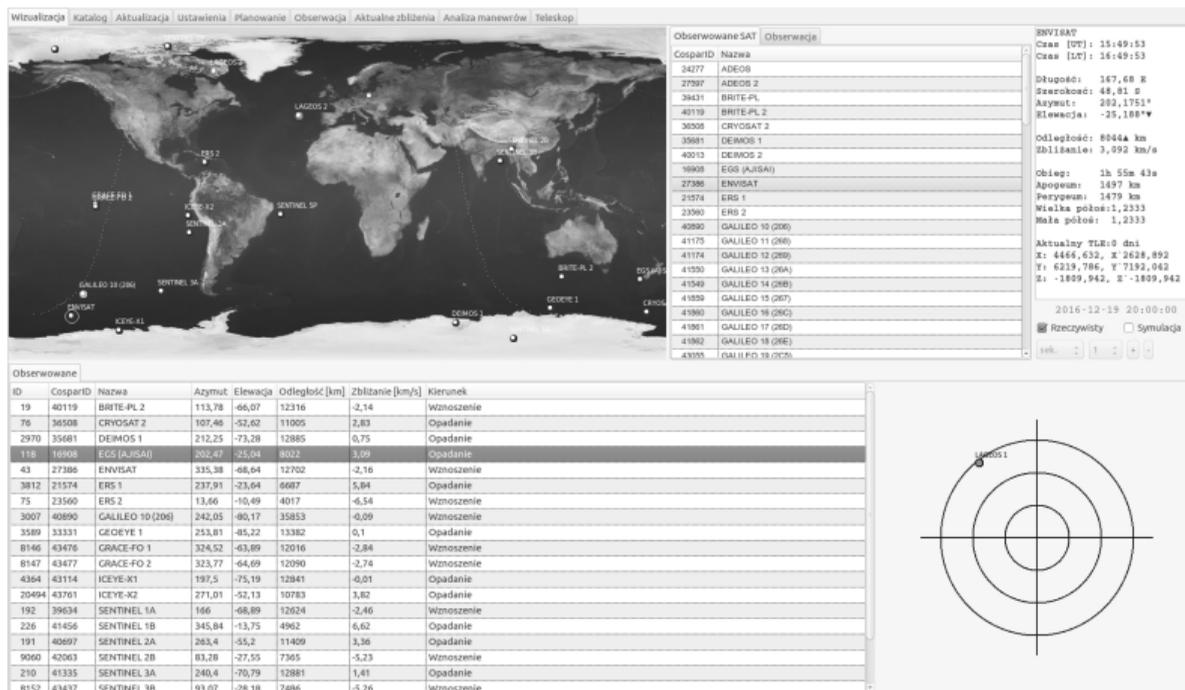


FIGURE: Control software (credits: CBK PAN)

INTRODUCTION
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Wizualizacja katalog		Aktualizacja		Ustawienia		Planowanie		Obserwacja		Aktualne zbliżenia		Analiza manewrów		Teleskop	
Początek predykcji								Koniec predykcji							
styczeń 2019								« styczeń » « 2019 »							
Znמצח	Predykcja nr	Satelita	Efem. (dni)	Początek (UTC)	Kulminacja (UTC)	Koniec (UTC)	Czas	El. min.	El. max.	Min. [km]	Max. [km]	Efem. nr			
<input type="checkbox"/>	1489	ENVISAT	0	2019-01-07 16:26:53	2019-01-07 16:26:33	2019-01-07 16:32:12	00:05:19	20	32	1307	1722	577805			
<input type="checkbox"/>	1534	GEO IR	0	2019-01-07 16:27:09	2019-01-07 16:32:11	2019-01-07 16:37:11	00:10:02	20	32	2304	2960	578481			
<input type="checkbox"/>	1537	AOES 2	0	2019-01-07 16:30:40	2019-01-07 16:32:37	2019-01-07 16:36:30	00:05:25	20	31	1362	1772	578687			
<input type="checkbox"/>	1532	GEOEYE 1	0	2019-01-07 16:30:54	2019-01-07 16:36:38	2019-01-07 16:41:50	00:06:26	20	68	723	1572	580164			
<input type="checkbox"/>	1498	JASON 2	0	2019-01-07 16:36:01	2019-01-07 16:40:40	2019-01-07 16:45:19	00:09:15	20	34	2039	2961	580137			
<input type="checkbox"/>	1523	LANDSAT 8	0	2019-01-07 16:39:59	2019-01-07 16:43:15	2019-01-07 16:46:38	00:06:40	20	94	713	1601	582642			
<input type="checkbox"/>	1514	JASON	0	2019-01-07 16:55:24	2019-01-07 17:00:18	2019-01-07 17:05:11	00:09:47	20	36	1907	2660	577529			
<input type="checkbox"/>	1509	TOPEX/POSEIDON	0	2019-01-07 16:55:32	2019-01-07 17:01:36	2019-01-07 17:07:43	00:12:11	20	68	1435	2701	576630			
<input type="checkbox"/>	1490	ENVISAT	0	2019-01-07 16:55:31	2019-01-07 16:56:44	2019-01-07 18:11:56	00:06:25	20	45	1038	1724	577805			
<input type="checkbox"/>	1483	LARES	0	2019-01-07 16:58:05	2019-01-07 18:22:27	2019-01-07 18:28:50	00:12:40	20	67	1047	2851	582222			
<input type="checkbox"/>	1479	LAGOS 2	0	2019-01-07 16:21:17	2019-01-07 16:27:51	2019-01-07 16:34:33	00:13:16	20	22	8105	8321	578261			
<input type="checkbox"/>	1535	GEO IR	0	2019-01-07 16:25:13	2019-01-07 16:32:38	2019-01-07 16:39:56	00:13:40	20	85	1537	2060	576481			
<input type="checkbox"/>	1520	DARPA	0	2019-01-07 16:23:03	2019-01-07 16:31:18	2019-01-07 16:34:21	00:06:18	20	43	832	1737	585643			
<input type="checkbox"/>	1497	JASON 2	0	2019-01-07 16:33:46	2019-01-07 16:38:22	2019-01-07 16:42:57	00:09:11	20	33	2008	2642	580137			
<input type="checkbox"/>	1494	TERRA SAR X	0	2019-01-07 16:37:29	2019-01-07 16:38:52	2019-01-07 16:42:13	00:04:44	20	91	648	1228	579730			
<input type="checkbox"/>	1515	JASON	0	2019-01-07 16:51:09	2019-01-07 16:57:16	2019-01-07 16:59:21	00:12:12	20	75	1379	2682	577529			
<input type="checkbox"/>	1510	TOPEX/POSEIDON	0	2019-01-07 16:54:13	2019-01-07 16:59:02	2019-01-07 17:03:51	00:09:38	20	35	2045	2702	576630			
<input type="checkbox"/>	1524	SEASAT 1	0	2019-01-07 16:25:55	2019-01-07 16:28:23	2019-01-07 16:32:51	00:06:56	20	74	783	1687	573286			
<input type="checkbox"/>	1518	DEIMOS 1	0	2019-01-07 16:47:32	2019-01-07 16:48:55	2019-01-07 16:52:18	00:04:46	20	33	1109	1015	581282			
<input type="checkbox"/>	1501	SARAL	0	2019-01-07 20:07:34	2019-01-07 20:10:35	2019-01-07 20:13:36	00:06:02	20	38	1199	1750	582643			
<input type="checkbox"/>	1506	LAGOS 1	0	2019-01-07 20:08:20	2019-01-07 20:16:17	2019-01-07 20:23:02	00:17:43	20	33	6273	8486	572785			
<input type="checkbox"/>	1494	LARES	0	2019-01-07 20:14:35	2019-01-07 20:20:48	2019-01-07 20:26:42	00:11:47	20	48	1928	2852	582222			
<input type="checkbox"/>	1536	GEO IR	0	2019-01-07 20:25:25	2019-01-07 20:28:41	2019-01-07 20:33:55	00:08:30	20	29	2524	2664	576481			
<input type="checkbox"/>	1498	JASON 2	0	2019-01-07 20:29:21	2019-01-07 20:30:17	2019-01-07 20:41:11	00:11:50	20	63	1454	2858	580137			
<input type="checkbox"/>	1516	JASON	0	2019-01-07 20:47:36	2019-01-07 20:52:24	2019-01-07 20:57:11	00:09:20	20	37	1963	2680	577529			
<input type="checkbox"/>	27386	ENVISAT	0	2019-01-07 20:52:40	2019-01-07 20:57:22	2019-01-07 21:02:03	00:09:23	20	34	2096	2703	576630			
<input type="checkbox"/>	36452	SWARM A	0	2019-01-07 21:24:08	2019-01-07 21:26:43	2019-01-07 21:29:18	00:05:10	20	37	1031	1014	581282			
<input type="checkbox"/>	36451	SWARM B	0	2019-01-07 22:01:41	2019-01-07 22:05:07	2019-01-07 22:08:31	00:06:50	20	80	735	1635	581616			
<input type="checkbox"/>	36453	SWARM C	0	2019-01-07 22:17:27	2019-01-07 22:21:08	2019-01-07 22:24:52	00:07:25	20	26	2527	2858	582222			
<input type="checkbox"/>	32560	ERS 3	0	2019-01-07 22:25:05	2019-01-07 22:30:36	2019-01-07 22:36:46	00:10:41	20	46	1766	2857	580137			
<input type="checkbox"/>	36500	CRYOSAT 2	0	2019-01-07 22:48:55	2019-01-07 22:54:57	2019-01-07 23:00:56	00:12:01	20	62	1489	2700	576630			
<input type="checkbox"/>	31666	TERRA SAR X	0	2019-01-07 23:19:28	2019-01-07 23:22:08	2019-01-07 23:24:48	00:05:21	20	31	1383	1790	576333			
<input type="checkbox"/>	32010	JASON 2	0	2019-01-07 23:34:28	2019-01-07 23:37:54	2019-01-07 23:41:21	00:06:53	20	70	795	1677	575870			
<input type="checkbox"/>	36666	SARAL	0	2019-01-07 23:35:46	2019-01-08 00:00:03	2019-01-08 00:23:54	00:48:08	20	79	5915	8827	572785			
<input type="checkbox"/>	18966	EOS (A/RAI)	0	2019-01-07 23:36:35	2019-01-07 23:36:33	2019-01-07 23:42:29	00:05:54	20	43	991	1604	577529			
<input type="checkbox"/>	27844	LARES	0	2019-01-08 00:17:41	2019-01-08 00:22:10	2019-01-08 00:26:38	00:08:57	20	30	2354	2855	582222			
<input type="checkbox"/>	06820	LAGOS 1	0	2019-01-08 00:45:14	2019-01-08 00:50:49	2019-01-08 00:56:13	00:10:59	20	48	1711	2700	576630			
<input type="checkbox"/>	22076	TOPEX/POSEIDON	0	2019-01-08 01:07:38	2019-01-08 01:10:36	2019-01-08 01:15:08	00:07:33	20	52	1000	1791	576333			
<input type="checkbox"/>	26607	JASON	0	2019-01-08 01:05:44	2019-01-08 01:08:10	2019-01-08 01:10:37	00:04:53	20	68	949	1107	580137			
<input type="checkbox"/>	40607	SENTINEL 2A	0	2019-01-08 01:14:46	2019-01-08 01:17:11	2019-01-08 01:19:36	00:04:50	20	31	1222	1602	577529			
<input type="checkbox"/>	36034	SENTINEL 1A	0	2019-01-08 02:08:14	2019-01-08 02:12:10	2019-01-08 02:16:07	00:07:53	20	95	1071	1696	573185			
<input type="checkbox"/>	41240	JASON 3	0	2019-01-08 02:15:25	2019-01-08 02:21:51	2019-01-08 02:28:15	00:12:50	20	65	1908	2854	582222			
<input type="checkbox"/>	41335	SENTINEL 3A	0	2019-01-08 02:18:20	2019-01-08 02:18:58	2019-01-08 02:21:38	00:05:18	20	88	548	1296	574257			
<input type="checkbox"/>	41456	SENTINEL 1B	0	2019-01-08 02:20:33	2019-01-08 02:24:16	2019-01-08 02:27:38	00:06:40	20	36	1403	1682	572598			
<input type="checkbox"/>	40125	QUALIED 0 (P01)	0	2019-01-08 02:49:19	2019-01-08 02:50:49	2019-01-08 02:52:21	00:03:03	20	23	1441	1579	577820			

FIGURE: Control software (credits: CBK PAN)

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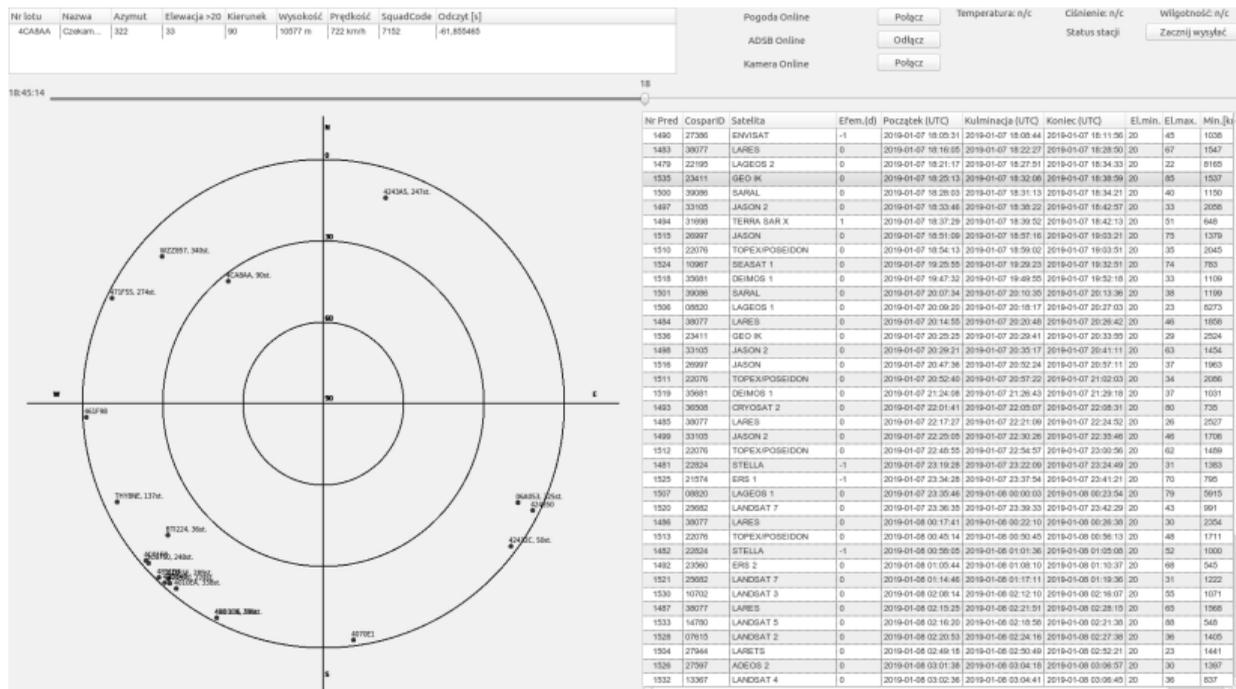


FIGURE: Control software (credits: CBK PAN)

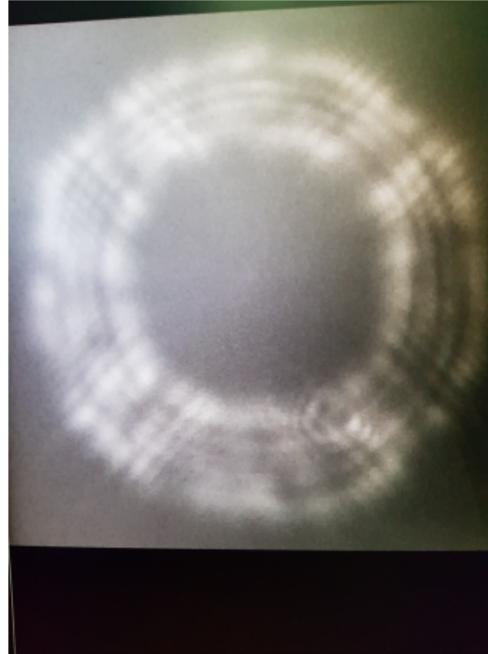


FIGURE: RC8" colimation tests (credits: CBK PAN)



FIGURE: Target from 250m (credits: CBK PAN)

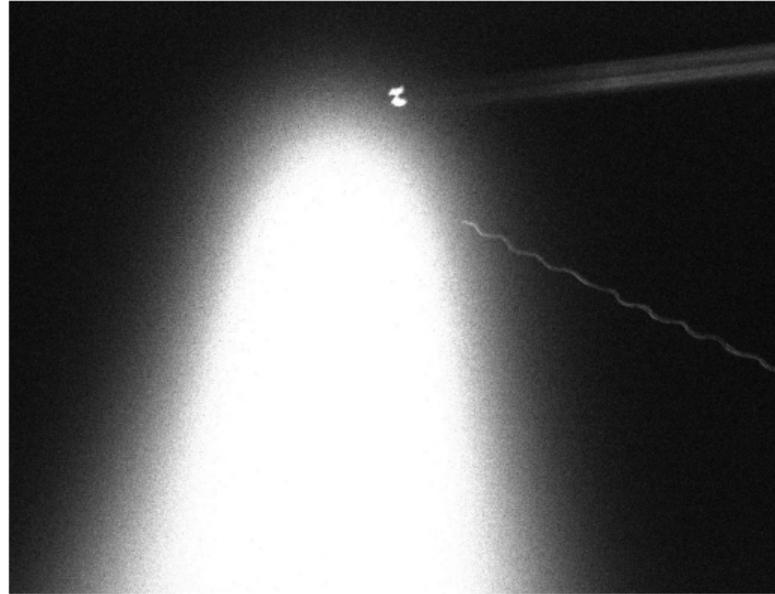


FIGURE: INITIAL tracking tests (credits: CBK PAN)

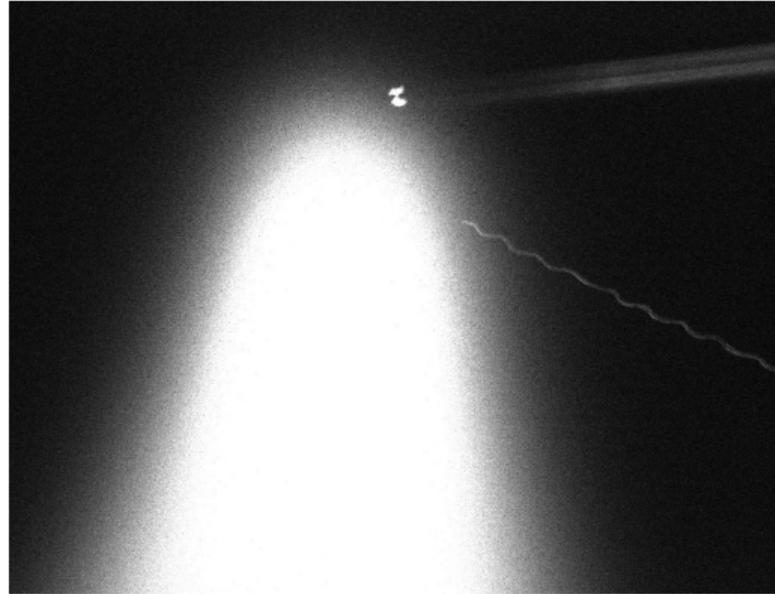


FIGURE: INITIAL tracking tests (credits: CBK PAN)



FIGURE: Astra positioning tests (credits: CBK PAN)

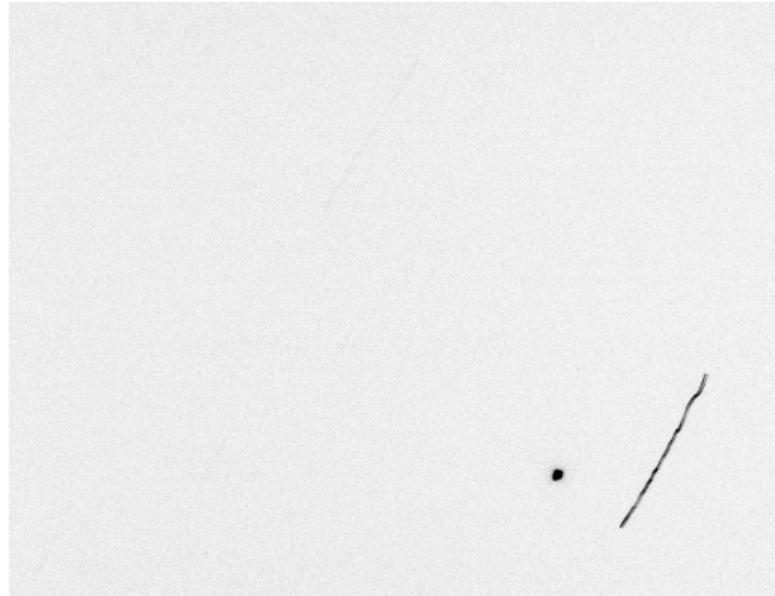


FIGURE: Cryosat2 tracking tests (credits: CBK PAN)



FIGURE: Envisat tracking tests (credits: CBK PAN)



FIGURE: Spectro INITIAL tests (credits: CBK PAN)

OTHER ACTIVITIES / COOPERATION

- Airbus Defence and Space
- DLR
- ESA
- EUSST
- POLSA

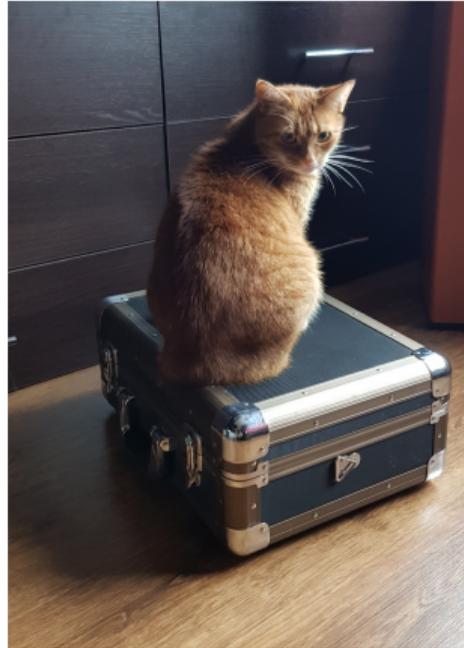


FIGURE: Always before leaving for work (credits: me)

Questions? Answers? :)
Thank you for your attention.
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