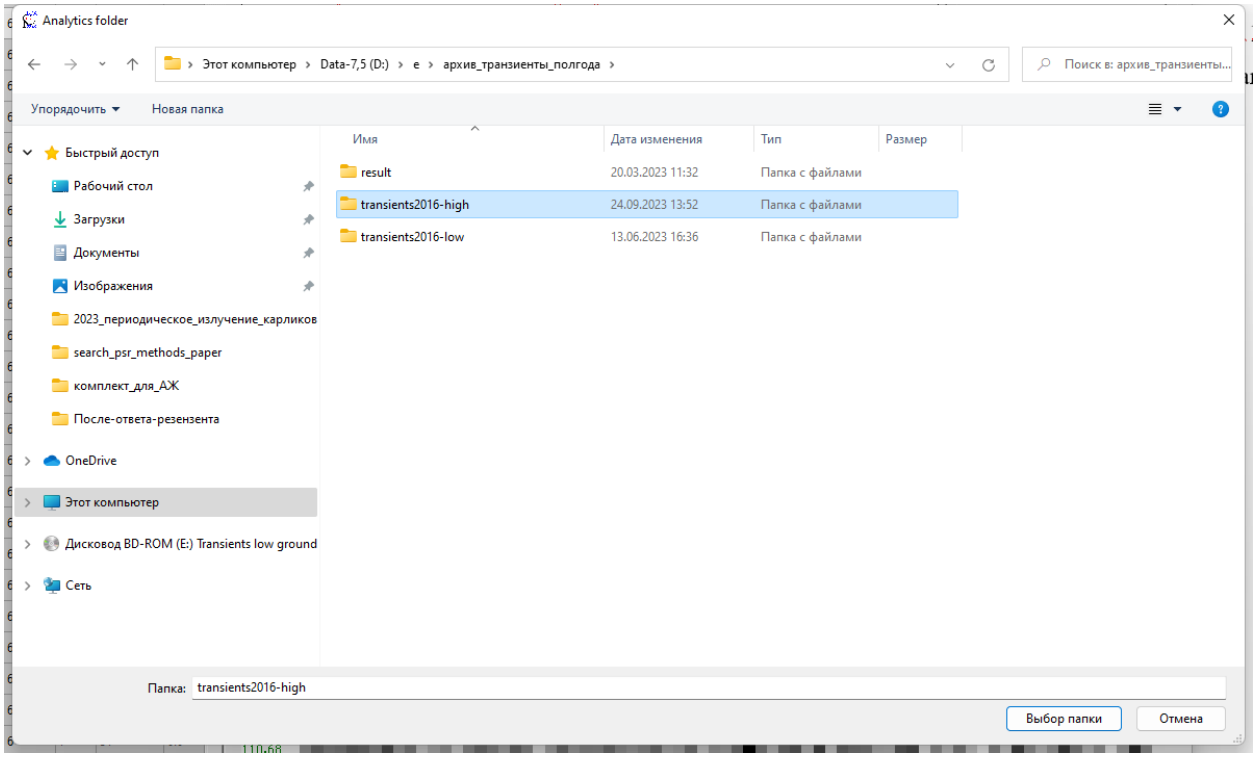
I. Program BSA-Analytics
II. Weights/training data
III. Antenna beam

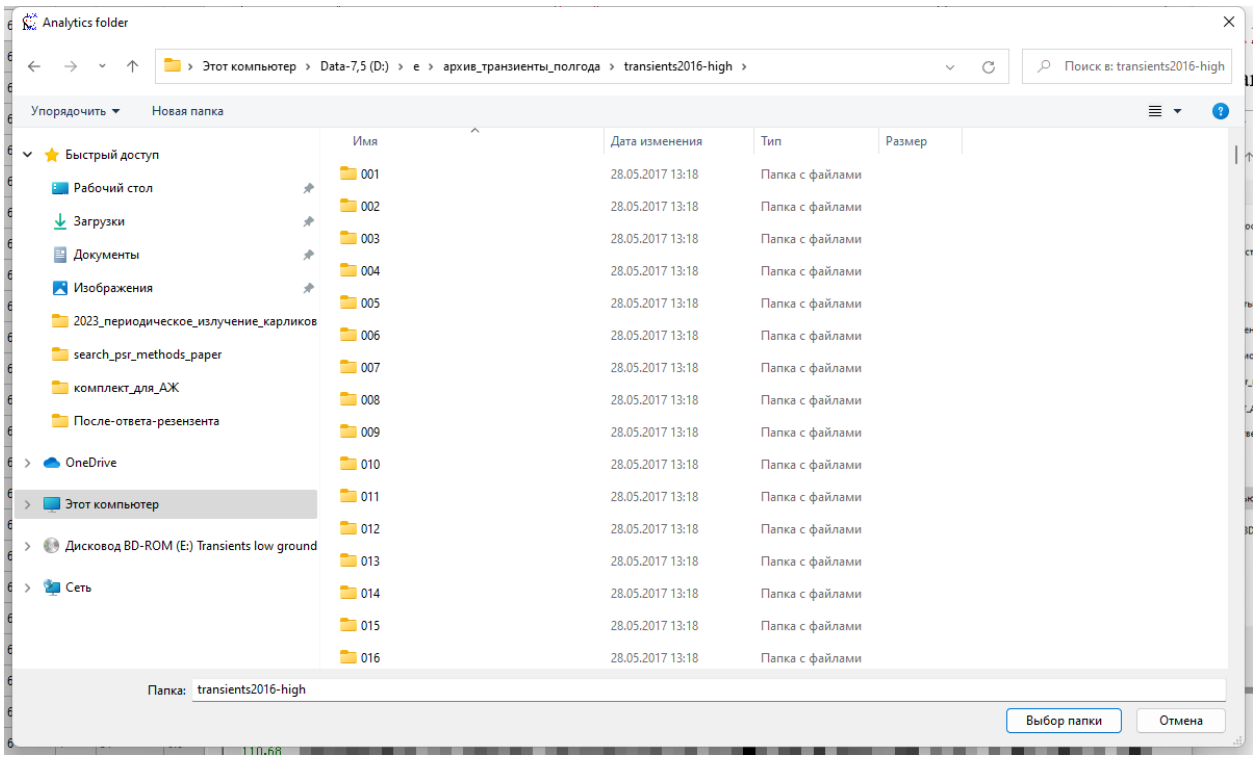
I. Using the program BSA-Analytics

Pulsar search → Pulsar analytics low memory



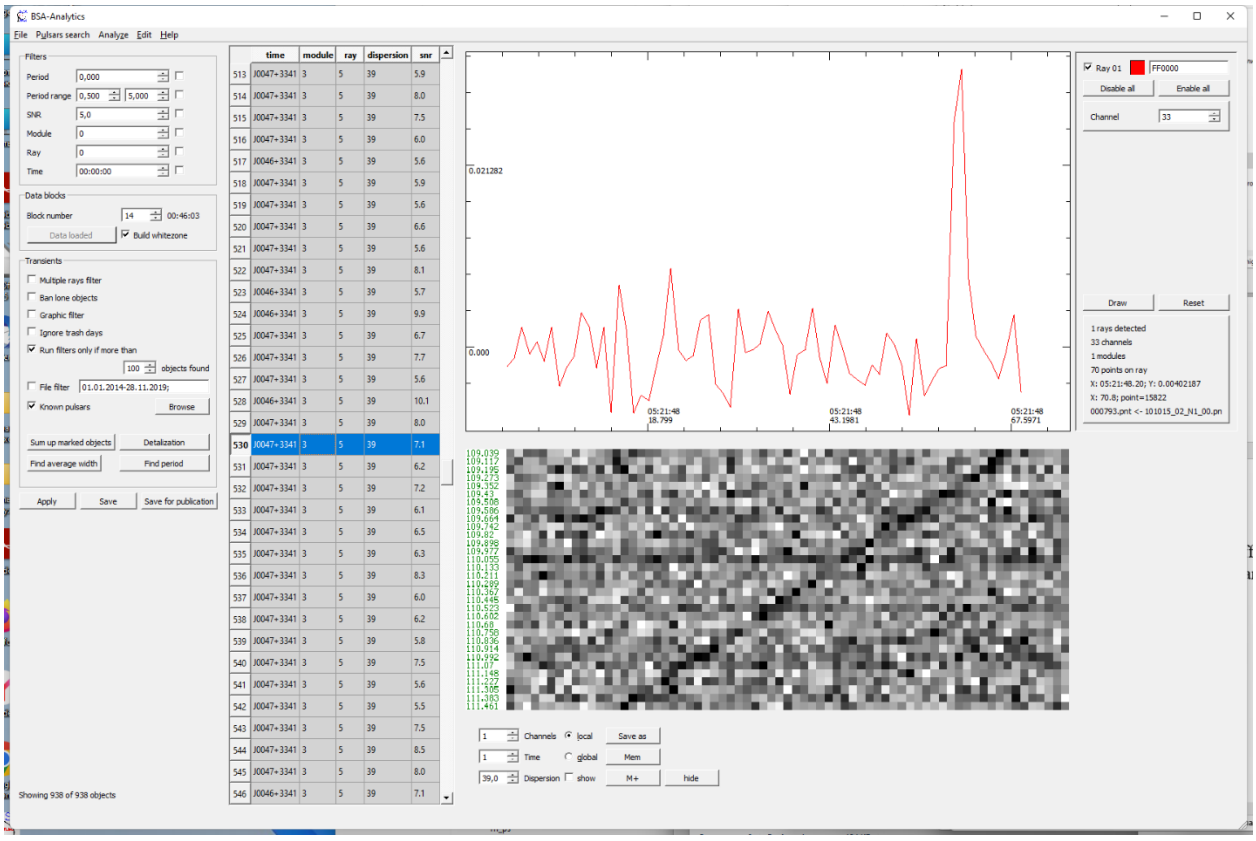
“high” – declination between +21o and +42o

“low” – declination between -9o and +21o



From 001 to 423 – different right ascensions between 0h to 24h. Directory (we use the word “block”) contain approximately 3.5 minutes for 48 beams of LPA

Sample of data



Left panel: Block number 14; module 3; beam (ray) 5 + different filtres

We have 48 beams for “high” and “low” areas. These 48 beams we use as 6 modules, and 8 beams in module.

Right panel of picture are contain information about quantity of pixels in OX (70 points), name of file with raw data (101015_02_N1_00.pnthr 10 October 2015, N1 – “high” areas, pnthr – data with 32 channals and sampling 12.5 ms), name of file with dynamic spectrum is located in “block” directory (000793.pnt), number of point from start of file.

Program BSA-Analytics used only for first detection. After first detection we use another program for search of additional pulses and for estimation of RRAT parameters.

II. Weights/training data

The training data were received from paper Tyul’bashev et al., A&A, 2018. For testing of neuron network we put file “pred_stars_538613” which work with data “transient2016-high/low”.

	A	B	C	D
1	id,pred_label,true_label			
2	L-001-000000,0.029033014550805,			
3	L-001-000001,0.0027355626225471,			
4	L-001-000002,0.0013358059804886,			
5	L-001-000003,0.800297737121582,			
6	L-001-000004,0.141242429614067,			
7	L-001-000005,0.0008328679250553,			
8	L-001-000006,0.0012215740280225,			
9	L-001-000007,0.002901003928855,			
10	L-001-000008,0.1332706809043884,			
11	L-001-000009,0.3189988732337951,			
12	L-001-000010,0.0042698136530816,			
13	L-001-000011,0.0021226692479103,			
14	L-001-000012,0.0507799759507179,			

L-001-000000, 0.0029

L – low area (-9o<decl.<+21o)

001 – number of directory (number of “block”)

000000 – name of file in directory (000000.pnt)

0.0029 – probability to see RRAT

We put also iso files with …fuller… in name. These are primary candidates from BSA-Analytics program.

III. Antenna beam

				Регистратор (Recorder) 0				
	beam	N каб.	109.21 MHz	109.62 МГц	110.04 МГц	110.45 МГц	110.87 МГц	111.29 МГц
	1	1	55,22	55,22	55,22	55,22	55,17	55,09
	2	2	55,07	54,99	54,92	54,84	54,76	54,69
	3	3	54,67	54,59	54,51	54,44	54,36	54,29
modul 3	4	4	54,25	54,19	54,11	54,04	53,96	53,89
	5	5	53,85	53,78	53,70	53,63	53,56	53,49
	6	6	53,44	53,37	53,30	53,23	53,16	53,09
	7	7	53,03	52,97	52,90	52,83	52,76	52,69
	8	8	52,63	52,56	52,49	52,42	52,36	52,29
	1	9	52,26	52,18	52,09	52,02	51,94	51,86
	2	10	51,84	51,77	51,69	51,61	51,54	51,46
	3	11	51,44	51,36	51,29	51,21	51,13	51,06
modul 4	4	12	51,03	50,95	50,88	50,81	50,73	50,66
	5	13	50,62	50,55	50,47	50,40	50,33	50,26
	6	14	50,21	50,14	50,07	50,00	49,92	49,85
	7	15	49,80	49,73	49,66	49,59	49,52	49,45
	8	16	49,39	49,32	49,25	49,19	49,12	49,05

It is the beam table for 6-channals data.

For example: beam 1, modul 3. At the frequency channel 109.21 MHz, the declination is 55.22o (or 55o13’). The beams of LPA have fixed declinations. We recalculate these declinations from the year of observation to the year 2000.