Sergii Khlamov - CoLiTec Team member

CoLiTec-multifunction software for the CCD image processing
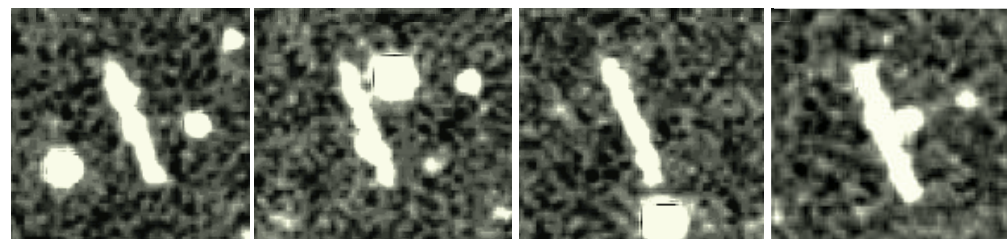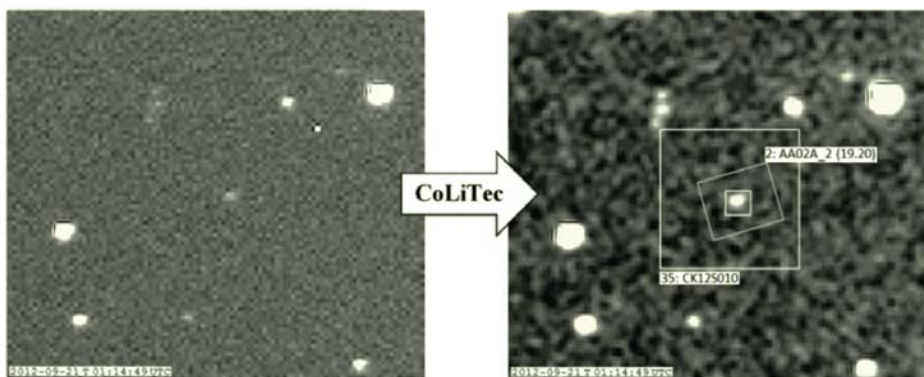
Top world asteroid surveys according to 2012

(1) N	(2) Observatory code	(3) Measurements, objects	(4) Discoveries	(5) D, m	(6) S_{pix}	(7) $\bar{\Delta}_\alpha ; \bar{\Delta}_\delta$	(8) $\sigma_\alpha ; \sigma_\delta$	(9) σ''	(10) σ_{pix}	(11) ARM
1	G96	2080033, 384204	17676	1.50	1.00	0.2; 0.2	0.33; 0.28	0.305	0.305	0.028
2	F51	1948353, 467091	13785	1.80	0.30	0.07; 0.04	0.15; 0.17	0.16	0.53	0.081
3	703	1723293, 282864	2278	0.68	2.60	-0.22; 0.07	0.65; 0.62	0.635	0.24	0.231
4	704	1681504, 262209	224	1.00	2.20	0.26; 0.43	0.67; 0.64	0.655	0.29	0.502
5	691	896972, 163714	7600	0.90	1.00	-0.16; 0.10	0.32; 0.29	0.305	0.27	0.189
6	E12	259295, 62621	430	0.50	1.80[1]	-0.01; 0.29	0.51; 0.50	0.505	0.28	0.290
7	J43	102641, 22682	531	0.50[2]	1.20[2]	0.19; 0.05	0.48; 0.40	0.44	0.36	0.196
8	926	100161, 29986	454	0.81, 0.41	0.87	0.02; 0.05	0.37; 0.35	0.36	0.41	0.54
9	**H15**	**97878, 24170**	**338**	**0.45**	**2.00**	**-0.06; -0.01**	**0.50; 0.53**	**0.515**	**0.25**	**0.061**
10	106	72192, 17451	120	0.60	2.00	0.04; -0.12	0.36; 0.34	0.35	0.17	0.126
11	A14	57243, 16239	159	0.50		0.06; -0.02	0.37; 0.32	0.345		0.063
12	J04	43209, 10708	513	1.00	0.62[3]	0.21; 0.20	0.28; 0.27	0.275	0.44	0.29
13	**D00**	**31494, 7403**	**61**	**0.40**	**2.06**	**0,00; -0,06**	**0,57; 0,41**	**0,49**	**0,23**	**0.06**
14	291	24272, 6224	28	1.80	0.60	0.07; 0.13	0.33; 0.28	0.305	0.50	0.148
15	461	23847, 5615	170	0.60, 1.02	1.10	0.00; 0.15	0.27; 0.27	0.27	0.24	0.15
16	644	22714, 4486	332	1.20[4]	1.00[4]					
17	H21	22672, 3870	181	0.61, 0.81, 0.76	0.80[2]	0.03; 0.01	0.34; 0.36	0.35	0.43	0.032
18	I41	21245, 2392	1790	1.20[5]	1.01[5]	0.11; -0.03	0.23; 0.23	0.23	0.22	0.114
19	A24	18940, 2412	0	0.36	1.40	0.14; 0.24	0.37; 0.33	0.35	0.25	0.278
22	**A50**	**11559, 3725**	**13**	**0.60**	**2.07**	**0.25; -0.04**	**0.50; 0.46**	**0.48**	**0.23**	**0.253**

[1]Mahabal et al. (2011), [2]Ory et al. (2012), [3]Abreu et al. (2011), [4]NEAT-PALOMAR (2013), [5]Waszczak et al. (2013)

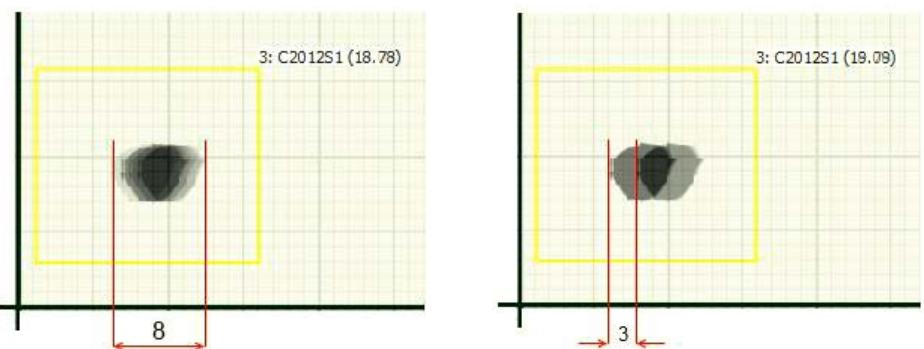(fn) Highlighted columns: CoLiTec users.

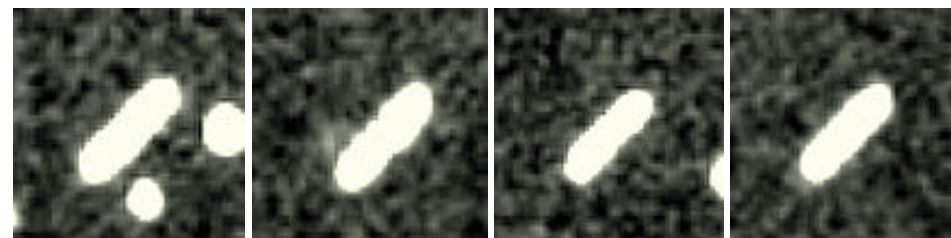# Plugins for detecting very slow and very fact objects

CoLiTec

3: C2012S1 (18.78)

3: C2012S1 (19.09)

8

3

Comet C/2012 S1 (ISON), having an image size of 5 pixels, has been shifted by 3 pixels on a set of four CCD frames

Velocity of object is 102 pix./frame

Frame	X	Y	Eccentricity	Angle	Length	Width	Radius	SN3
1	1575	1655	1.0	120.7	35.7	6.0	8.7	25.1
2	1539	1559	1.0	111.0	35.5	5.2	9.0	18.7
3	1503	1465	1.0	116.6	33.7	3.9	7.8	19.2
4	1467	1366	1.0	114.2	34.3	6.1	8.7	22.3

Average angle - 115.6; angle RMS - 3.54; average length - 34.8; length RMS - 0.83

Velocity of object is 109 pix./frame

Frame	X	Y	Eccentricity	Angle	Length	Width	Radius	SN3
1	2557	284	0.9	135.0	26.0	6.3	7.6	49.3
2	2637	200	0.9	130.6	26.4	7.0	8.0	41.8
3	2707	127	0.9	137.9	24.8	7.2	7.3	56.7
4	2779	53	0.9	131.7	26.6	8.0	7.6	46.6

Average angle - 133.8; angle RMS - 2.87; average length - 25.95; length RMS - 0.69

Planetary Defense Conference
PROTECTING EARTH FROM ASTEROIDS

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Collection Light Technology
Software for automated asteroids and comets discoveries