
Lincoln Near-Earth Asteroid Research Program (LINEAR)



This work is sponsored by the Department of the Air Force and Defense Advanced Research Projects Agency under Air Force Contract #FA8721-05-C-0002. Opinions, interpretations, conclusions and recommendations are those of the author and are not necessarily endorsed by the United States Government.



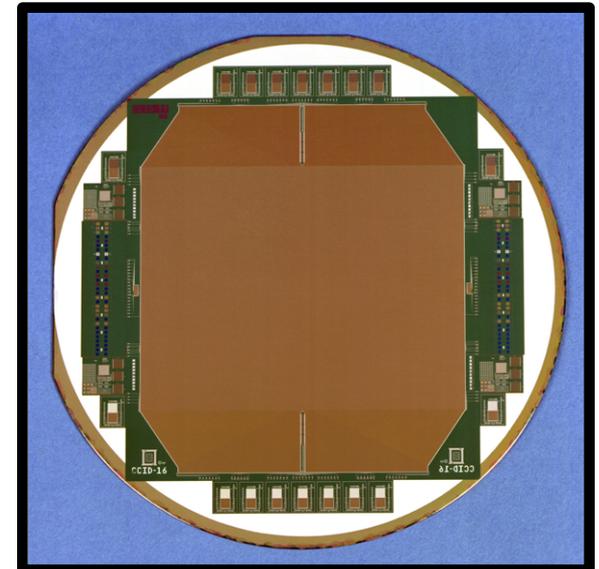
Asteroid Search at ETS

**Experimental Test Site
(ETS), Socorro, NM**



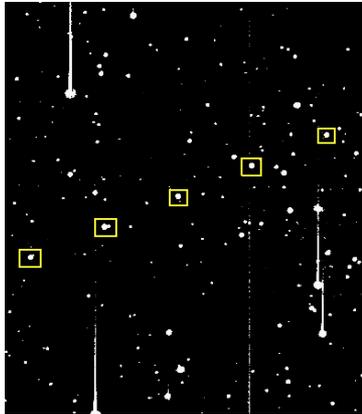
GTS-2 (GEODSS) Telescope

- Lincoln developed
CCD technology**
- Frame transfer
 - Low readout noise
 - Back illuminated
 - 1960x2560
 - 1024x1024

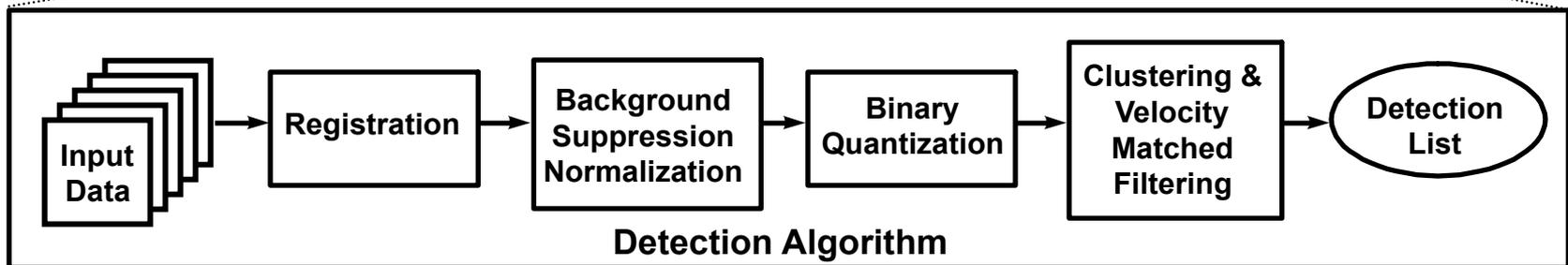
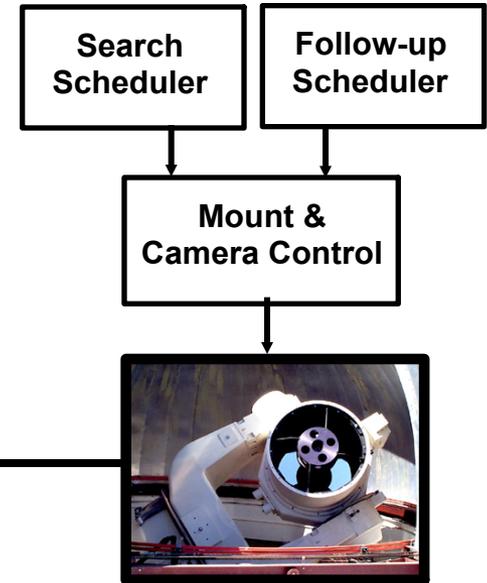


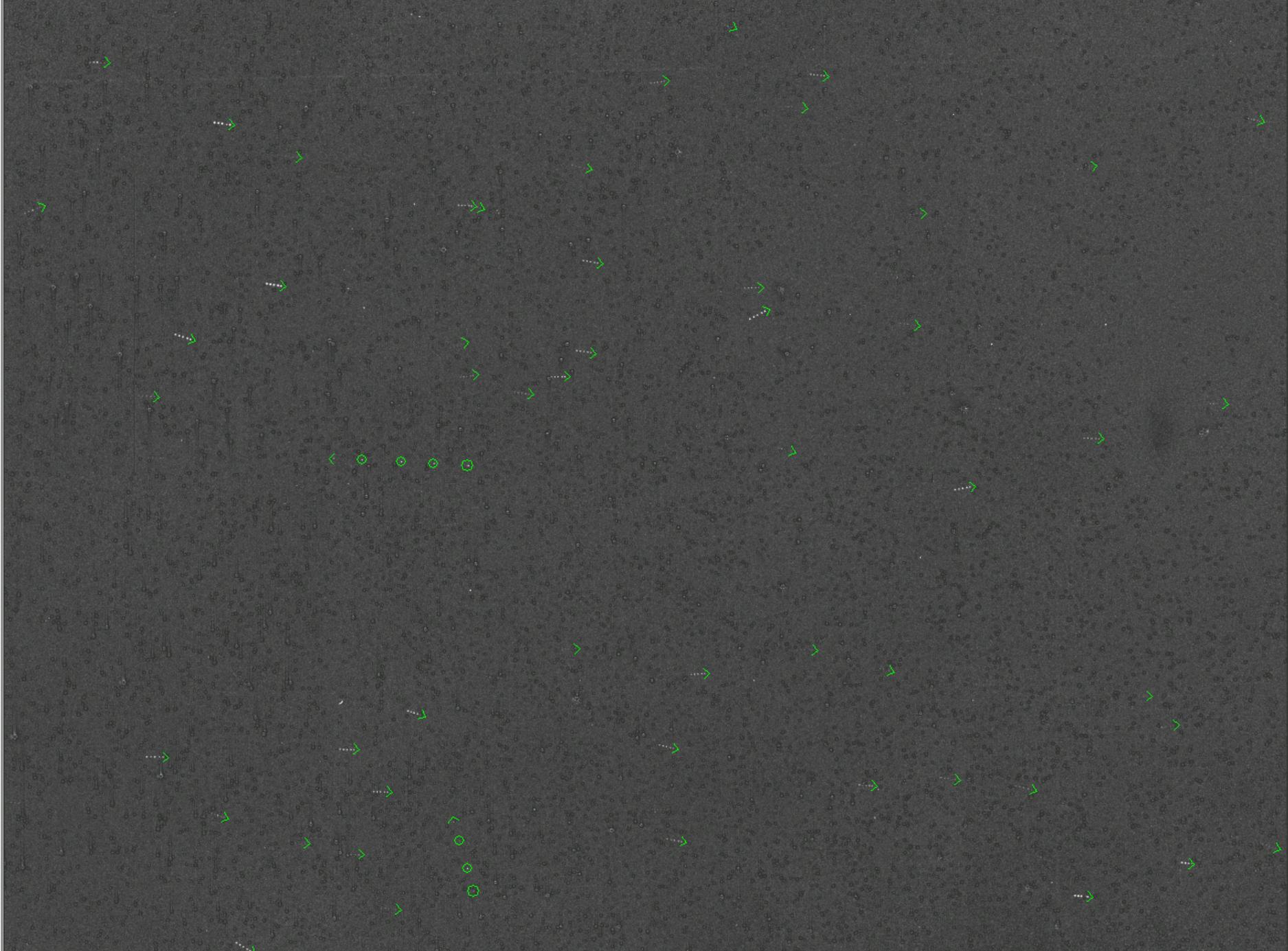


LINEAR Detection System



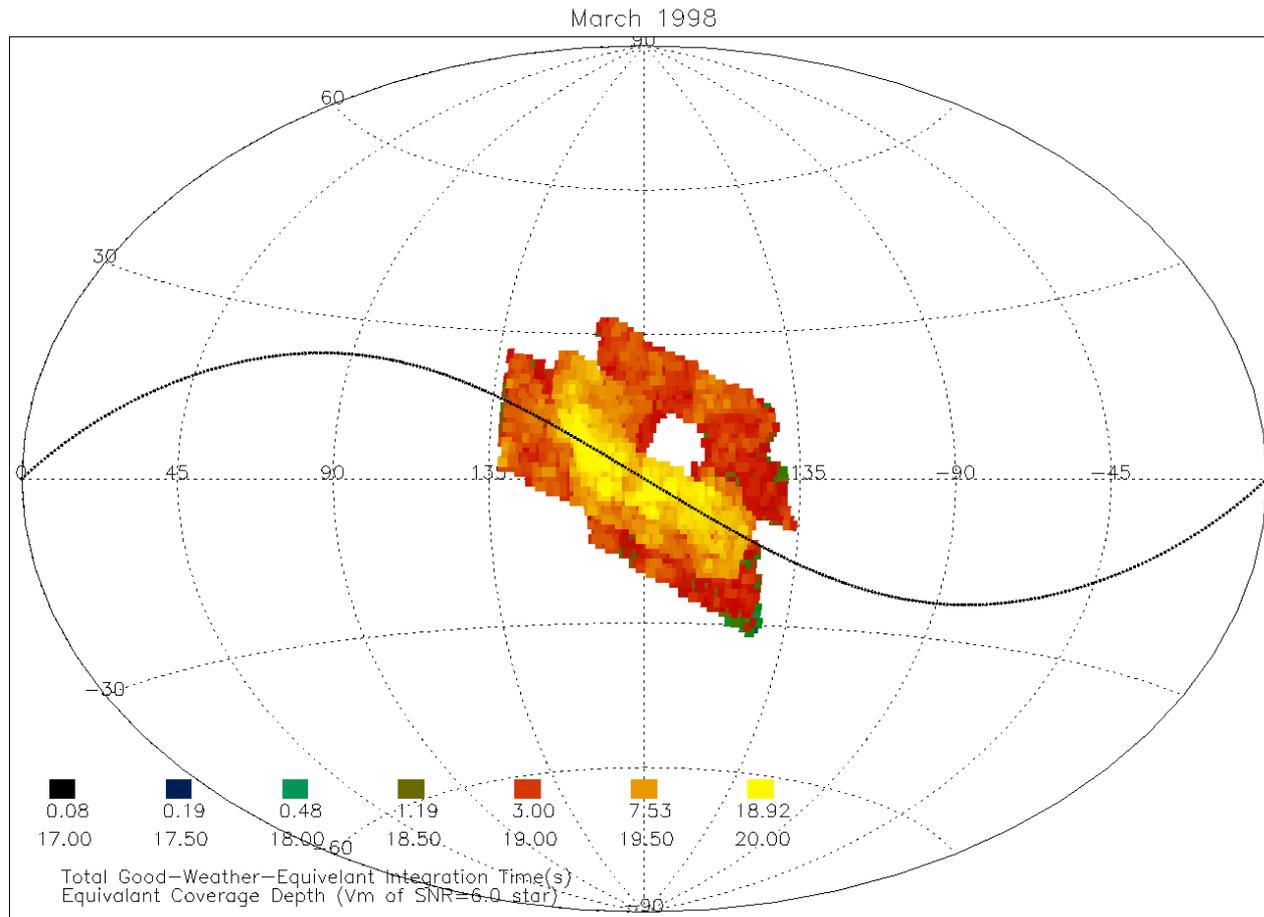
Composite of 5 Raw Discovery Frames



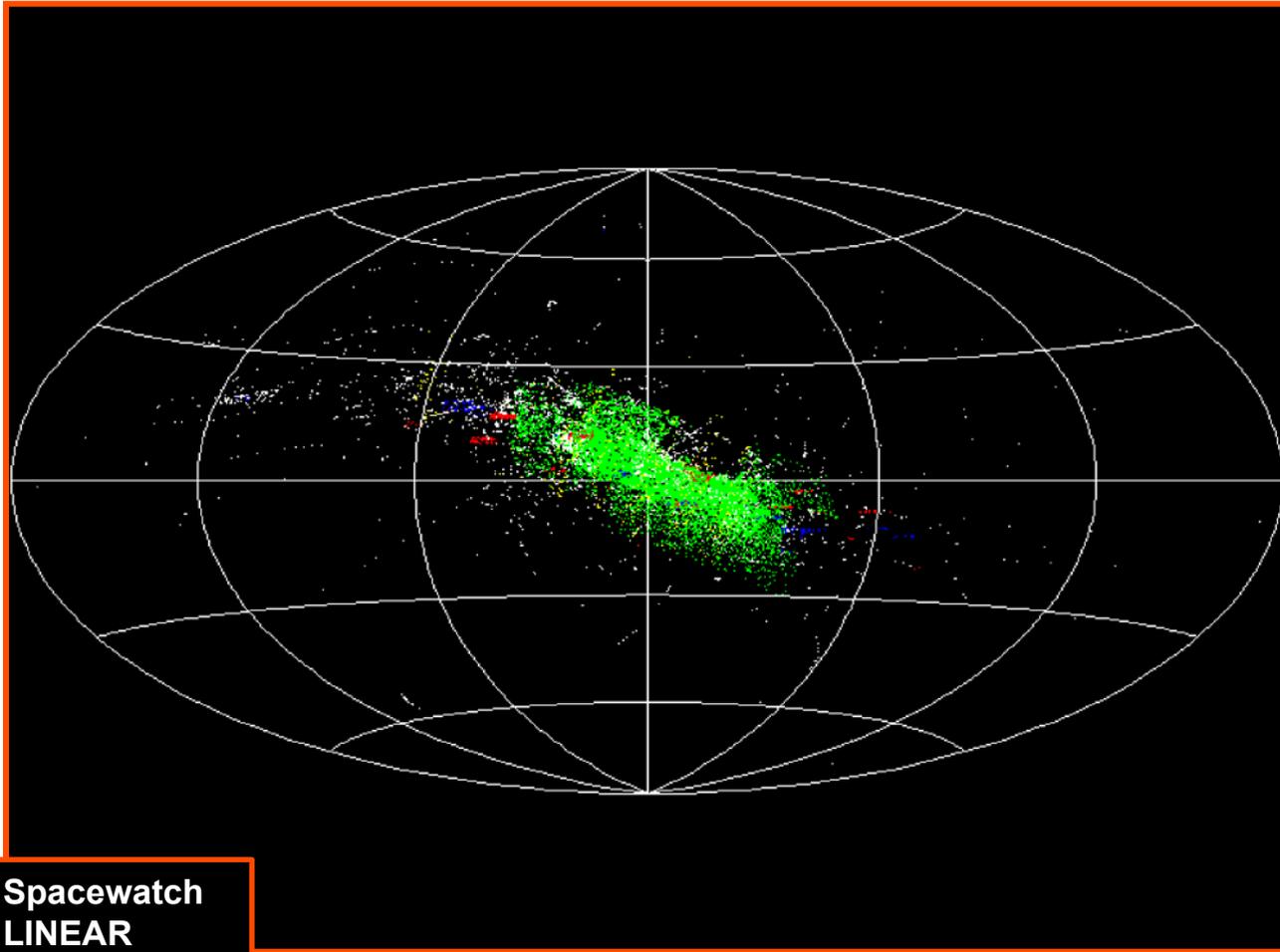




March 1998 Sky Coverage



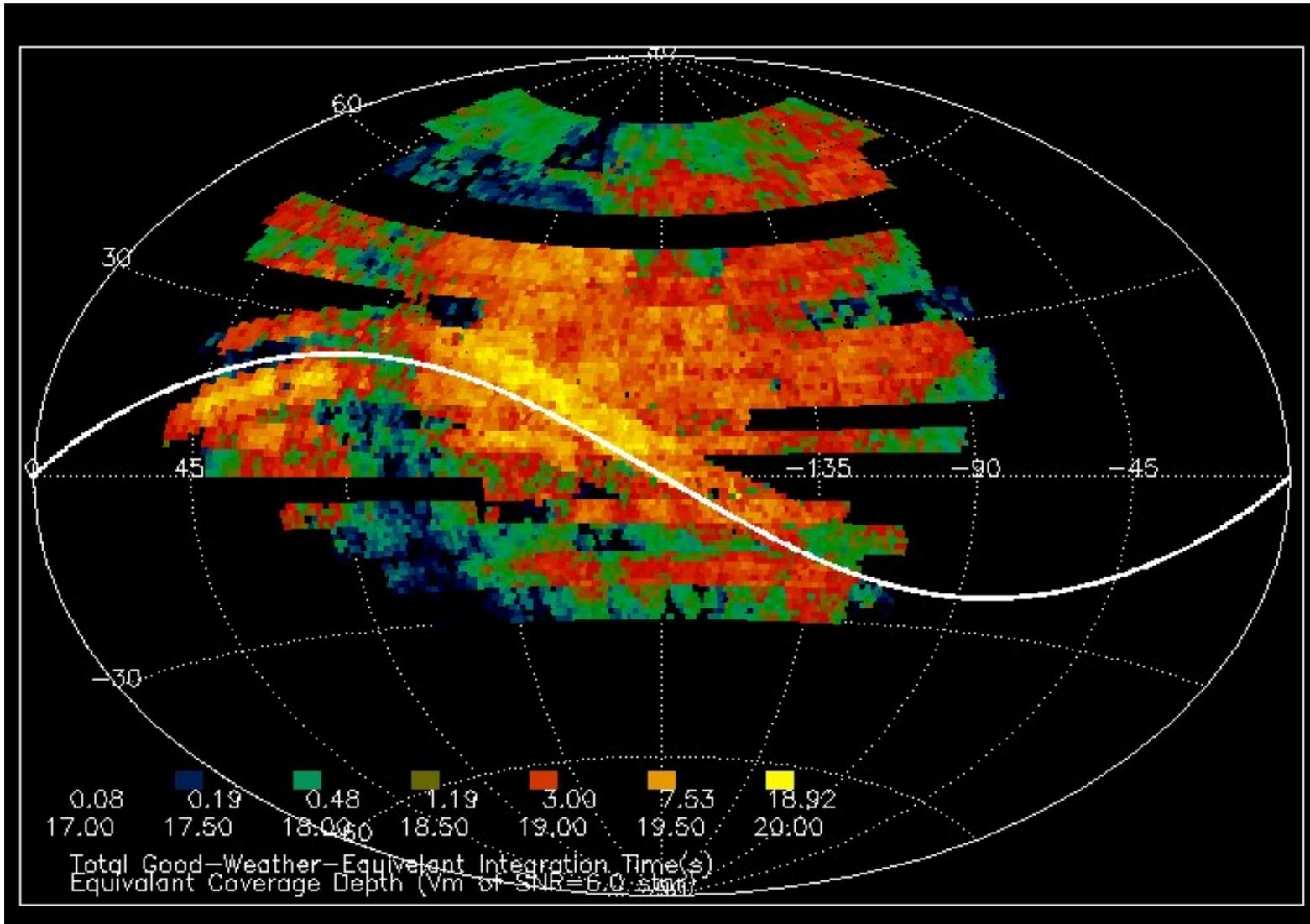
Asteroid Detections Reported to MPC in March 1998



691 – Spacewatch
704 – LINEAR
910 – ODAS
560 – NEAT
Other



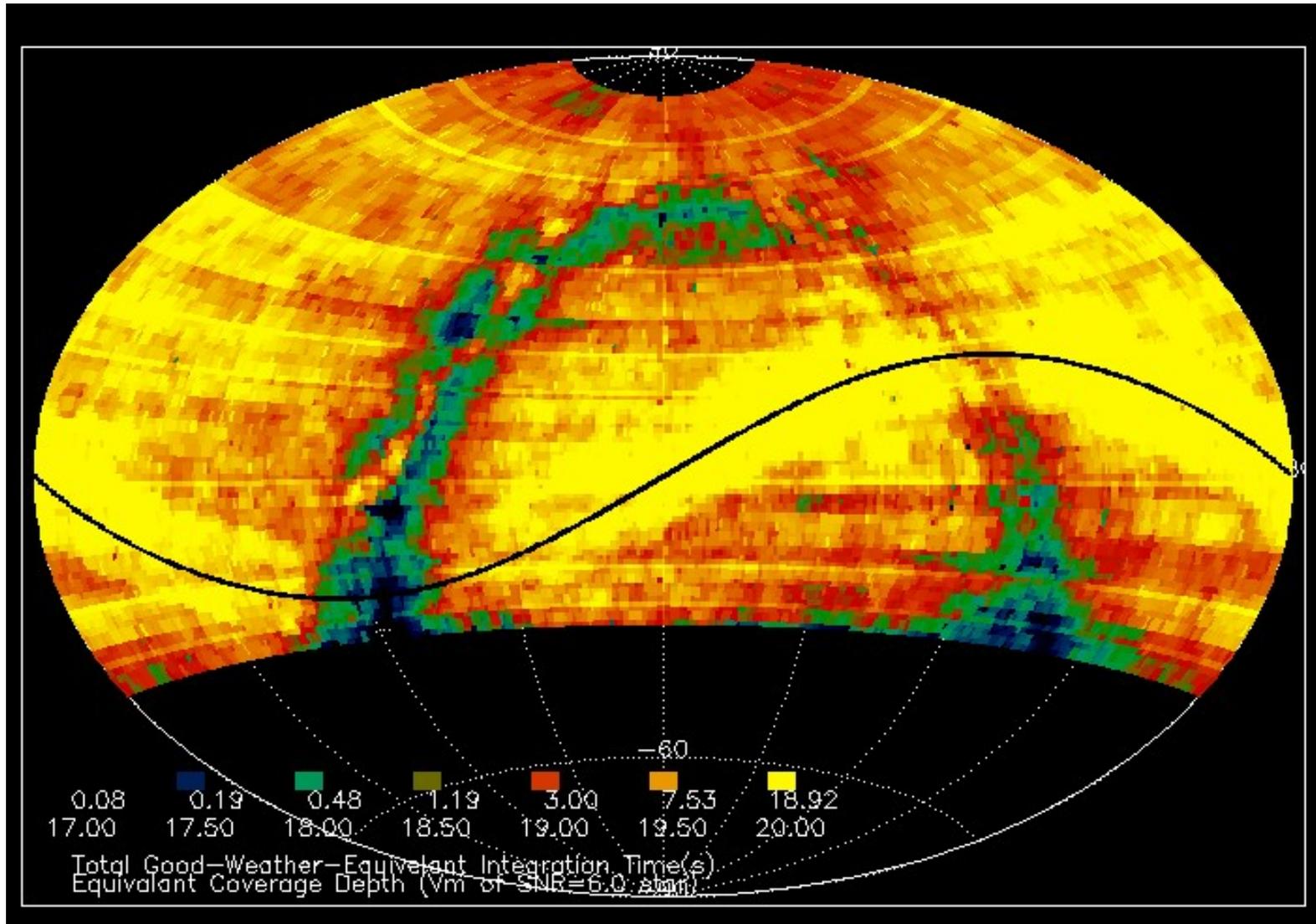
February 2011 Sky Coverage





Annual Sky Coverage

Jan 2011 – Dec 2011



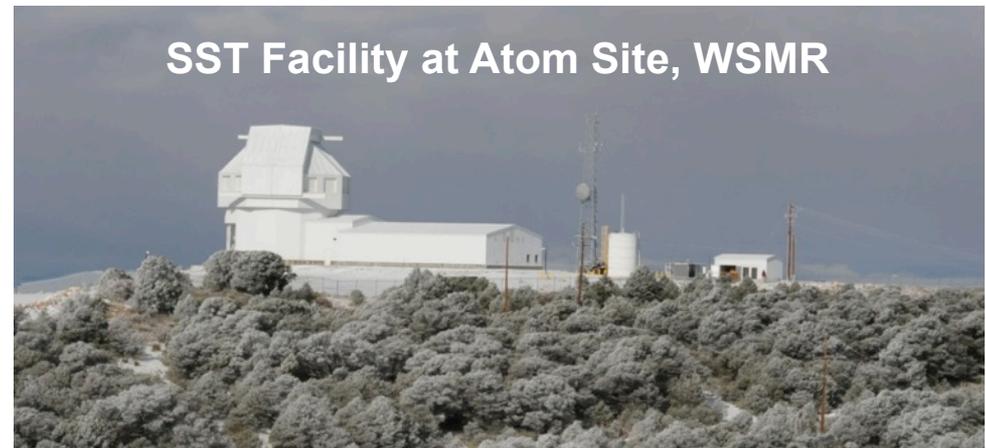


LINEAR's Discovery Statistics

Year	Obs Accepted by MPC	NEO Discoveries	Comet Discoveries	Other Discoveries
2012	1,480,069	46	9	164
2011	1,717,351	70	7	368
2010	2,193,495	104	11	891
2009	1,861,072	108	16	900
2008	2,511,332	140	8	2181
2007	2,492,493	112	13	3569
2006	2,234,995	96	11	1765
2005	2,056,466	137	12	4621
2004	3,219,318	304	25	17443
2003	3,005,532	235	27	15622
2002	3,076,259	286	34	31543
2001	3,096,728	279	33	48107
2000	2,094,399	258	29	52523
1999	1,107,675	161	36	29218
1998	585,480	136	17	18152
Pre-1998	79,379	18	0	2126
Total	32,812,043	2,487	286	229,193



SST – The Next Asteroid Hunter



Design combines rapid step-and-settle, significant aperture, and wide field-of-view



SST Asteroid Discovery Potential

- **Performing simulations of small NEO detection with SST**
- **SST asteroid survey planning underway**



Simulations suggest that a dedicated SST asteroid survey should be able improve our knowledge of the NEO size distribution