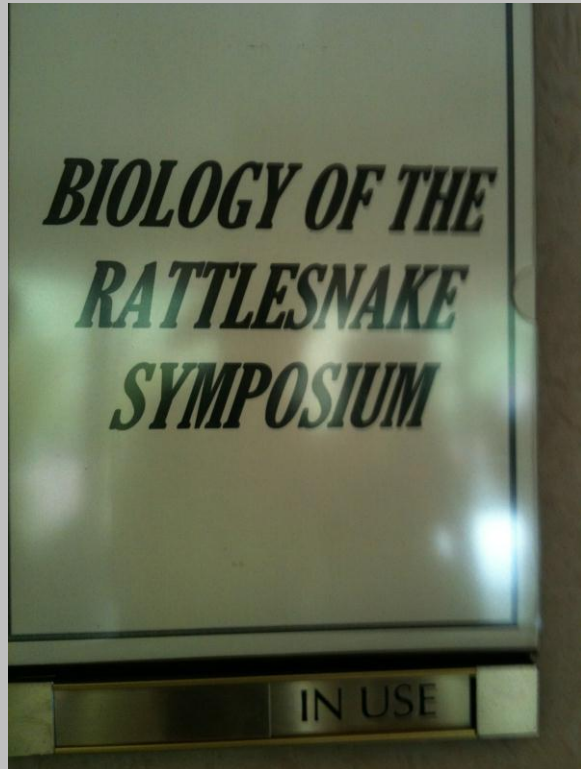
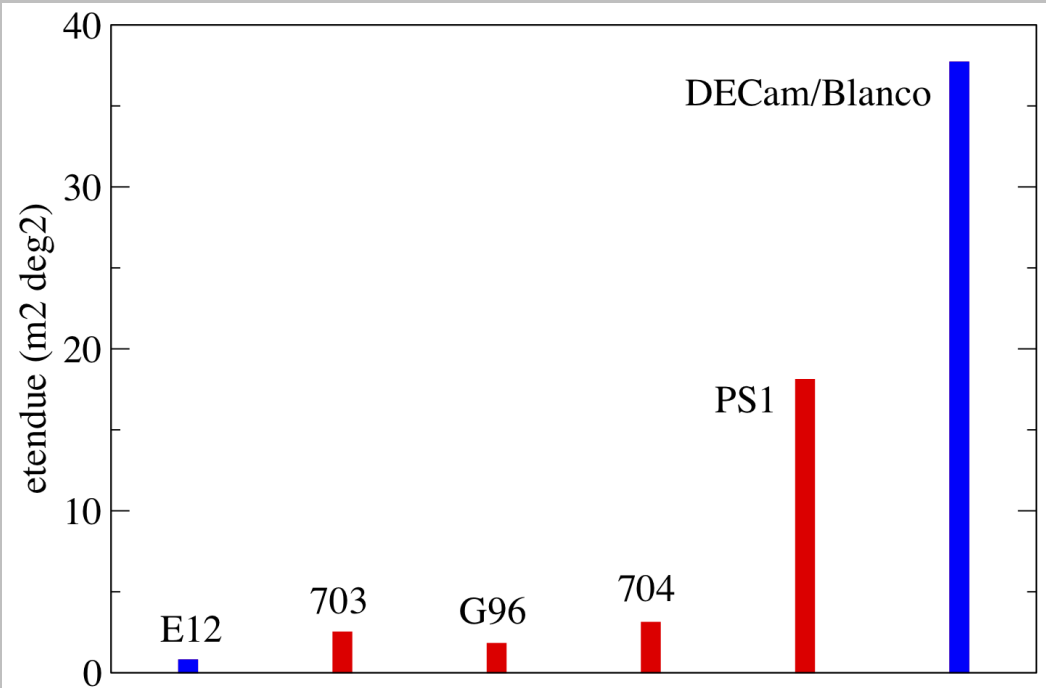


Snakes in the ballroom



DECam NEO Search



Lori Allen (NOAO)
David Trilling (NAU)
Tim Axelrod (LSST)
Ed Beshore (Catalina Sky Survey)
Mark Trueblood (NOAO)

The etendue of DECam/Blanco surpasses that of all existing NEO searches.

DECam NEO Search

Size distribution of NEOs:

reasonably well known to few hundred m

predicted >140m ~15,000 (Harris 2008); about 1/3 cataloged

little known about population in the 50-100m size range

-- are small NEO isotropic on the sky?

Characterization of Inner Earth Objects:

semimajor axis < 1 AU

little is known about size distribution or other properties

DECam NEO Survey

A strawman observing plan:

20-night block for opposition search

60 pointings, each observed 4 times per night

10 nights discovery / 10 nights recovery

enables follow-up of faint objects ($V=24$)

Twilight search for earth-crossing objects

1 hour each at morning, evening twilight

piggyback on DES or other ?

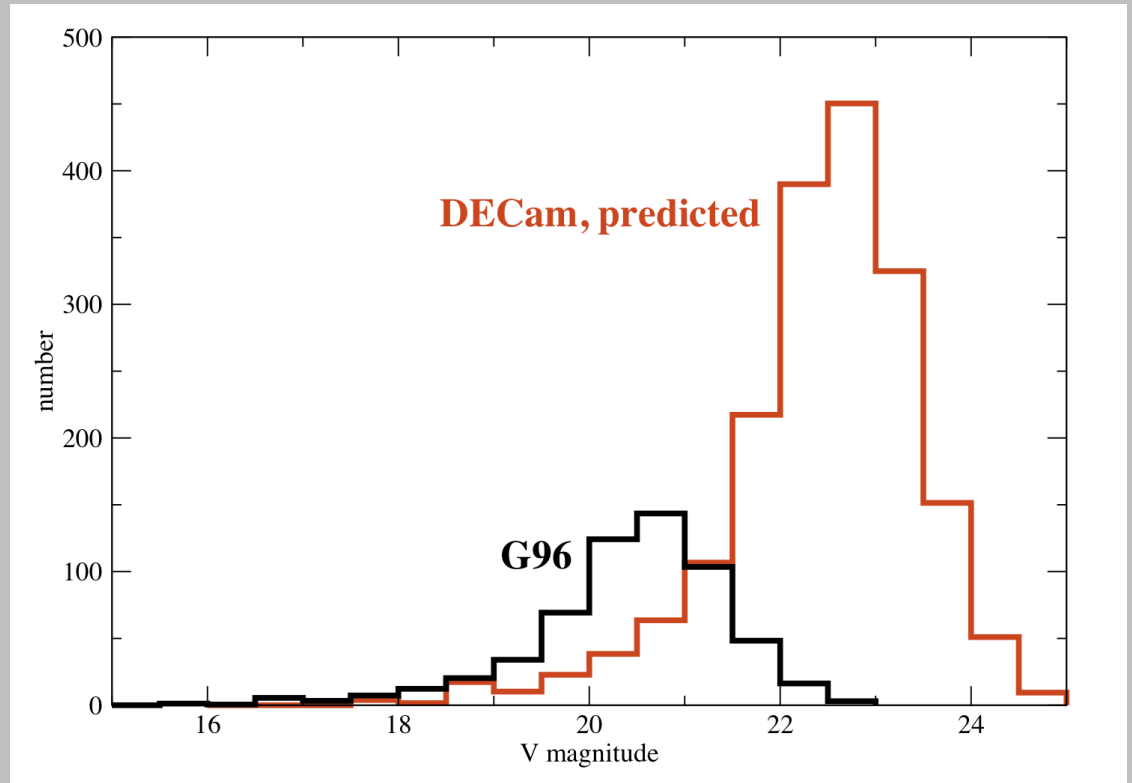
predicted result

Scale G96 (Catalina Sky Survey)

by aperture, fov, nights observed

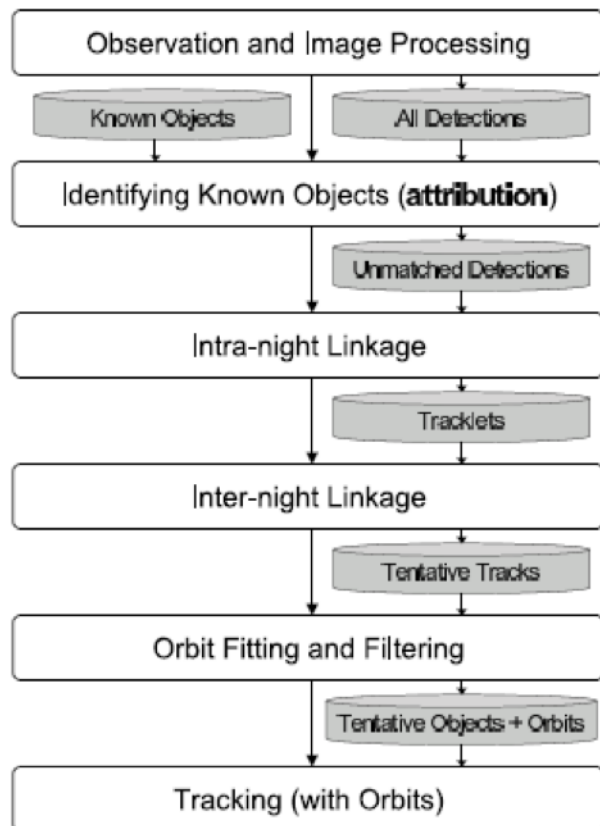
→ 1,000 objects in 10 nights

→ 80% fainter than any existing survey would detect

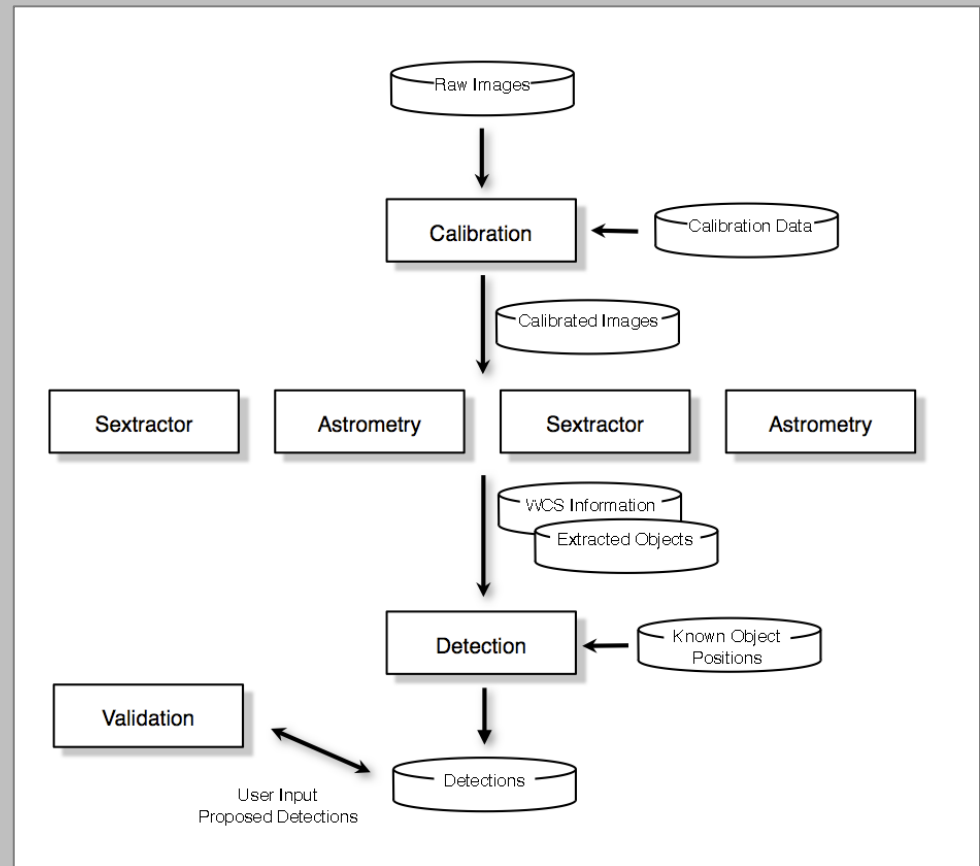


software

MOPS



CSSP



timeline

- Fall 2011: get MOPS and CSSP running, look at parallelizing (simulated data)
- Winter/Spring 2012: obtain commissioning / SV data, refine pipeline
- Spring 2013: Observe / Survey