Pan-STARRS & Weak Lensing

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23 August 2007

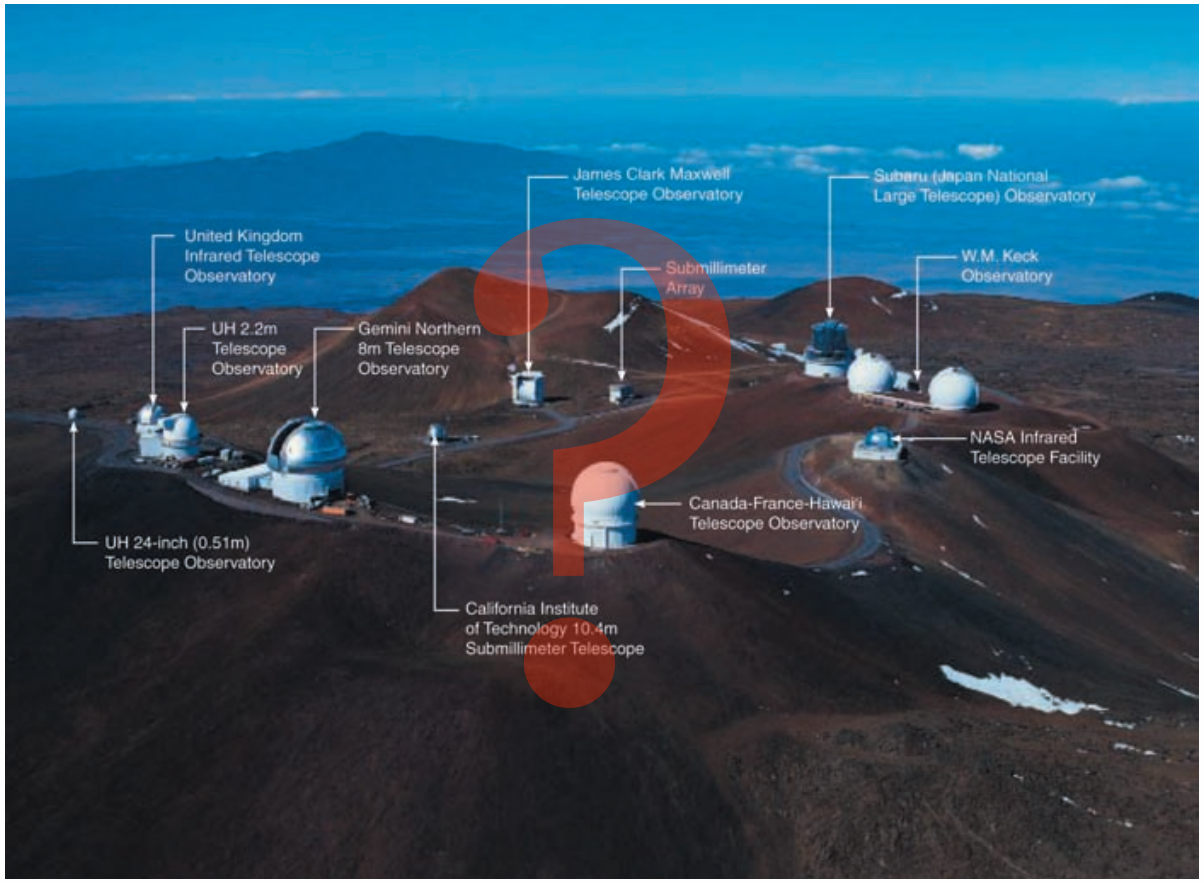
What is Pan-STARRS?

- The Panoramic Survey Telescope and Rapid Response System
- Main Goals:
  - Near Earth Objects
  - Everything Else
- PS1: The prototype at Mount Haleakala
- PS4: The magnum opus at Mauna Kea

PS1


Neutron
Monitor
Station
GEODSS
Airglow
Facility
MSSS
AEOS
Faulkes Telescope
North
Zodiacal
Observatory
Reber
Circle
Proposed
SLR 2000
Site
Mees Solar
Observatory
PS-1
(Old LURE Complex)
MAGNUM

PS I



Southwest Facing View of Wao Akua o Mauna Kea

PS4

Who is Pan-STARRS?

- Core partners: IfA, MIT/LL, MHPCC, SAIC, UHH
- Science consortium: IfA, JHU, UK, NCU (Taiwan), MPE, MPIA, CfA, Princeton, Berkeley, Bonn, LCOGT

PS Features

- 1.8m telescopes
- 3 deg FOV
- 1.4 Gpix
- 64x64 Orthogonal Transfer CCDs at 600x600 pixels each
- 24mag in ~1min
- Terabytes per night
- 3π survey in *grizy* 4x per year to 23-25 mag
- 3.5 yr lifetime
- Other specialized surveys
- PS4: full sky every month

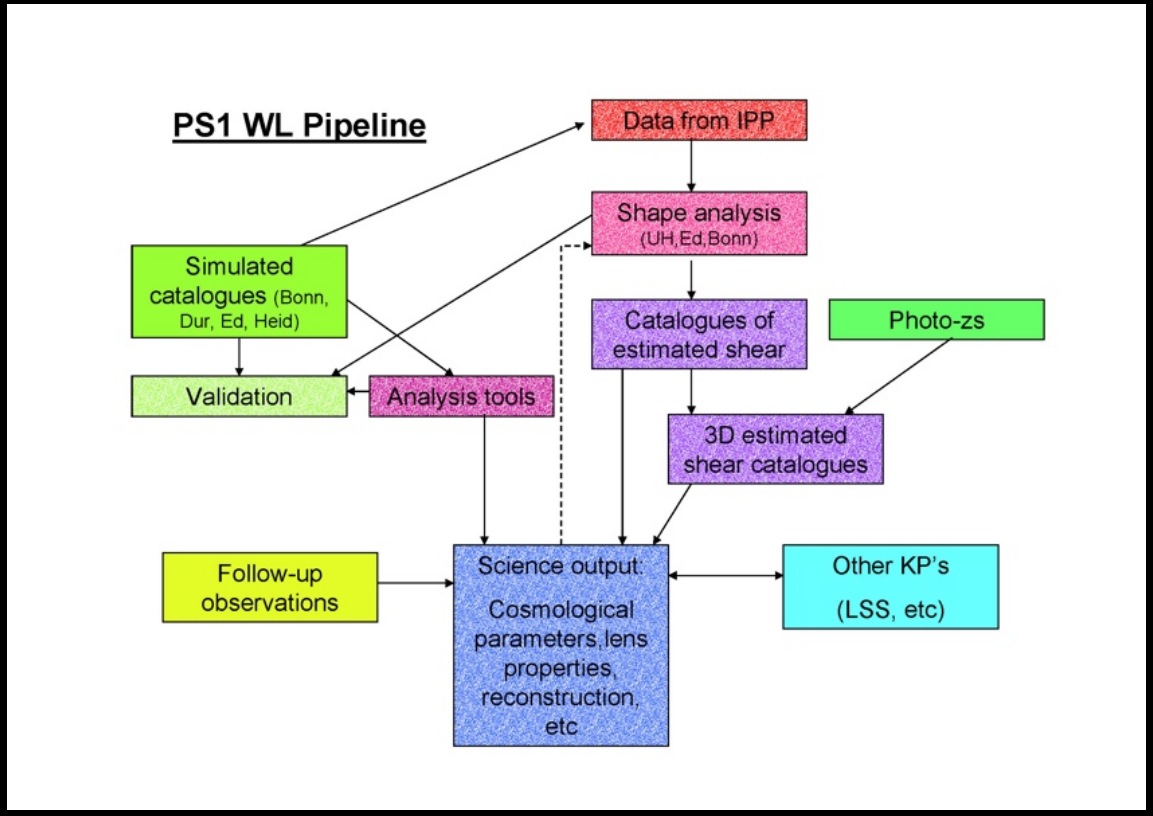
PS1 Key Projects

1. Inner solar system
2. Outer solar system
3. Stars
4. Exo-planets
5. Milky Way & Local Group
6. M31
7. SNae progenitors
8. Microlensing and SN Ia
9. Galaxies
10. AGN & high z Quasars
11. ***Cosmological lensing***
12. Large scale structure

Pan-STARRS WL

- 3π sr of sky observed 4x per year in *grizy* to 23-25 mag!
- All WL science from redshift 0 to 1
- Coordinated efforts with LSS, other groups
- Data not public

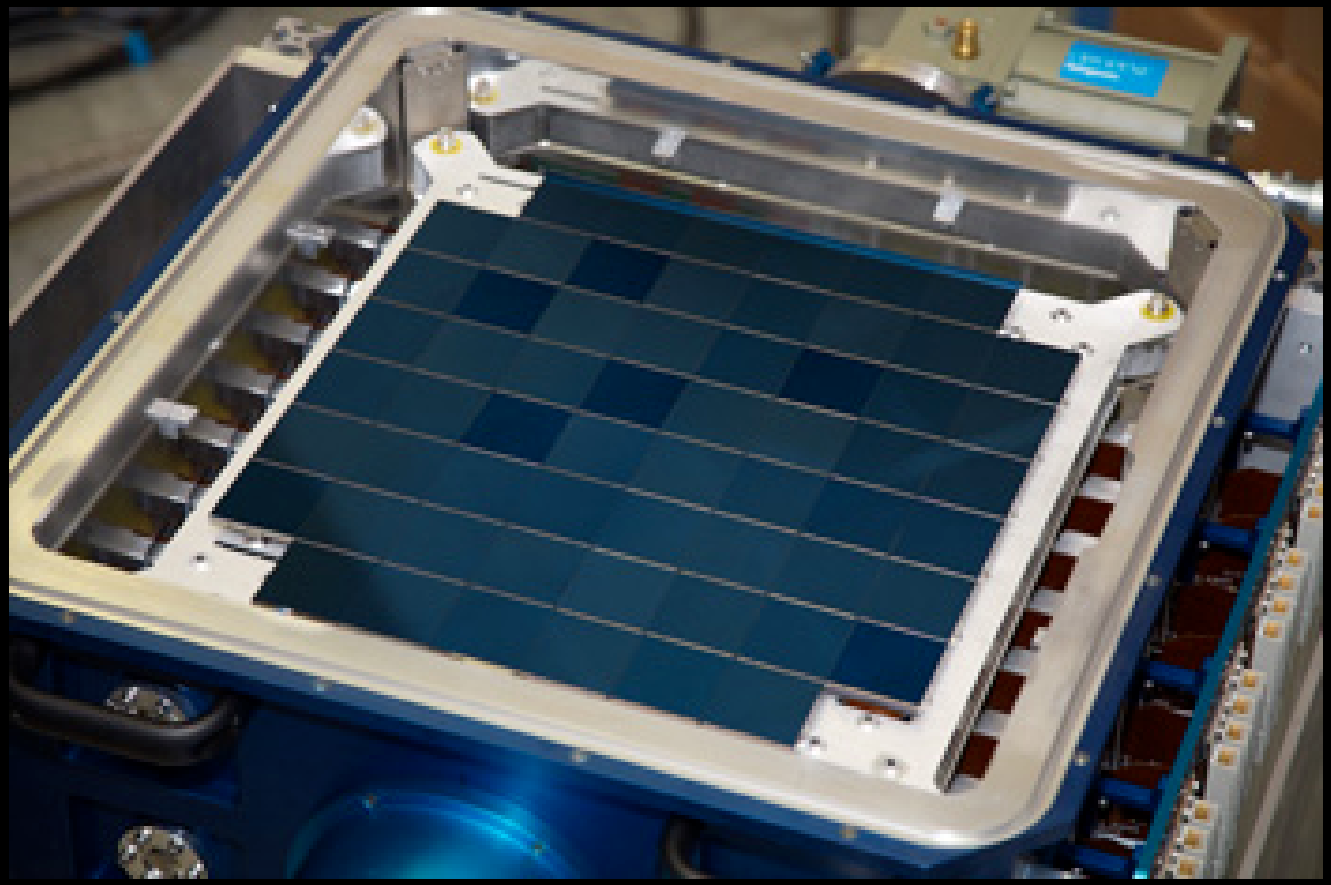
Pan-STARRS WL



PS1 Status

- New secondary is installed
- Pushing hard on cable wrap, focal plane, ...
- Fully integrated camera and optics ***literally any day now***
- Good progress being made on pipeline

Status



Summary

- Pan-STARRS is immediate and very promising
- Full-visible-sky lensing a possibility!
- Keep your eye out for first light