Gregg's PPT: Science Aspect

GRBs

Supernovae

TDEs

Brown Dwarfs

AGN

Stellar Flares
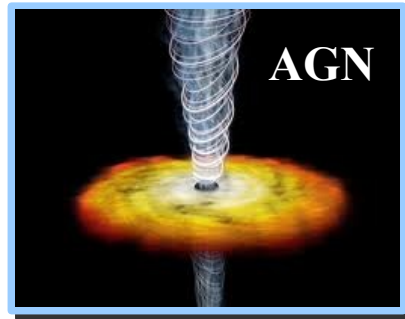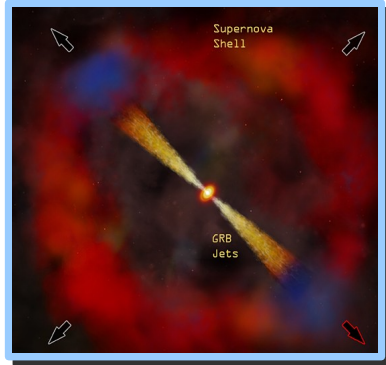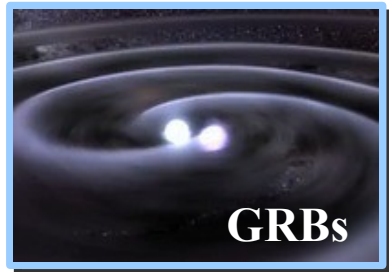
CVs
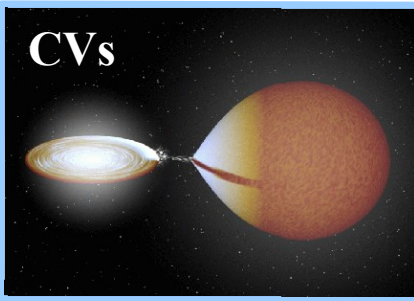
This PPT: Technical Aspect
(Near-real-time data processing and followup)

How much computing power is necessary?
What is the turnaround timescale?
– Keep hardware as close to the data stream as possible
– Pipelines must be largely automated
– Turnaround time of <12 hours possible

How robust is the transient search?
– Reliability and completeness of source catalogs
– Robust RFI excision is key
– Manually inspect transient candidates

What should be the followup strategy?
– An existing deep optical catalog is often key
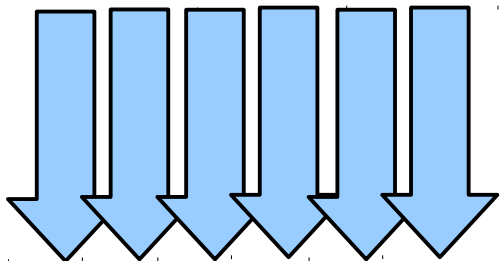– Followup triggered via VOEvent / ATel
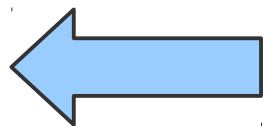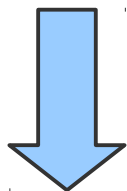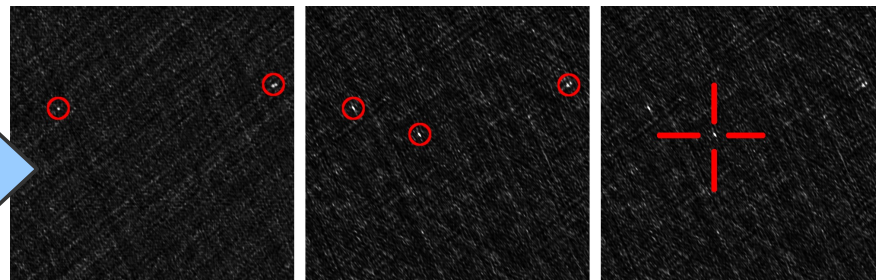
2.5 deg^2

SDSS Stripe 82

109 deg^2

AIPS *Lite*

1. Calibration

- 25 deg^2, 2000 scans
- 3 hours, int=0.5-sec
- 2–4 GHz, 1024 channels
- 250 GB of visibility data

2. Distributed Imaging

3. Mosaicking

4. Source finding
5. Catalog cross-matching & Transient search
6. Elimination of false positives

Take Aways

- Radio transient science with the VLASS is very promising

- Fully automated near-real-time transient pipeline ready to be deployed at Socorro

- Transient alerts via VOEvent / ATel <12 hours after observation