

BigBOSS and You

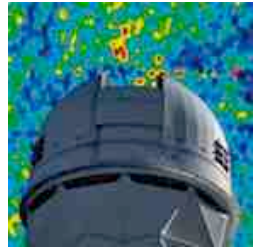
Arjun Dey
NOAO

BigBOSS Community Workshop
Sep 13-14, 2011 in Tucson, AZ





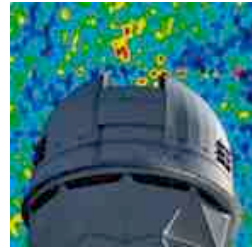
Outline



- Baseline Concept for BigBOSS Survey
- Concept for BigBOSS Observing Modes
- How you can help

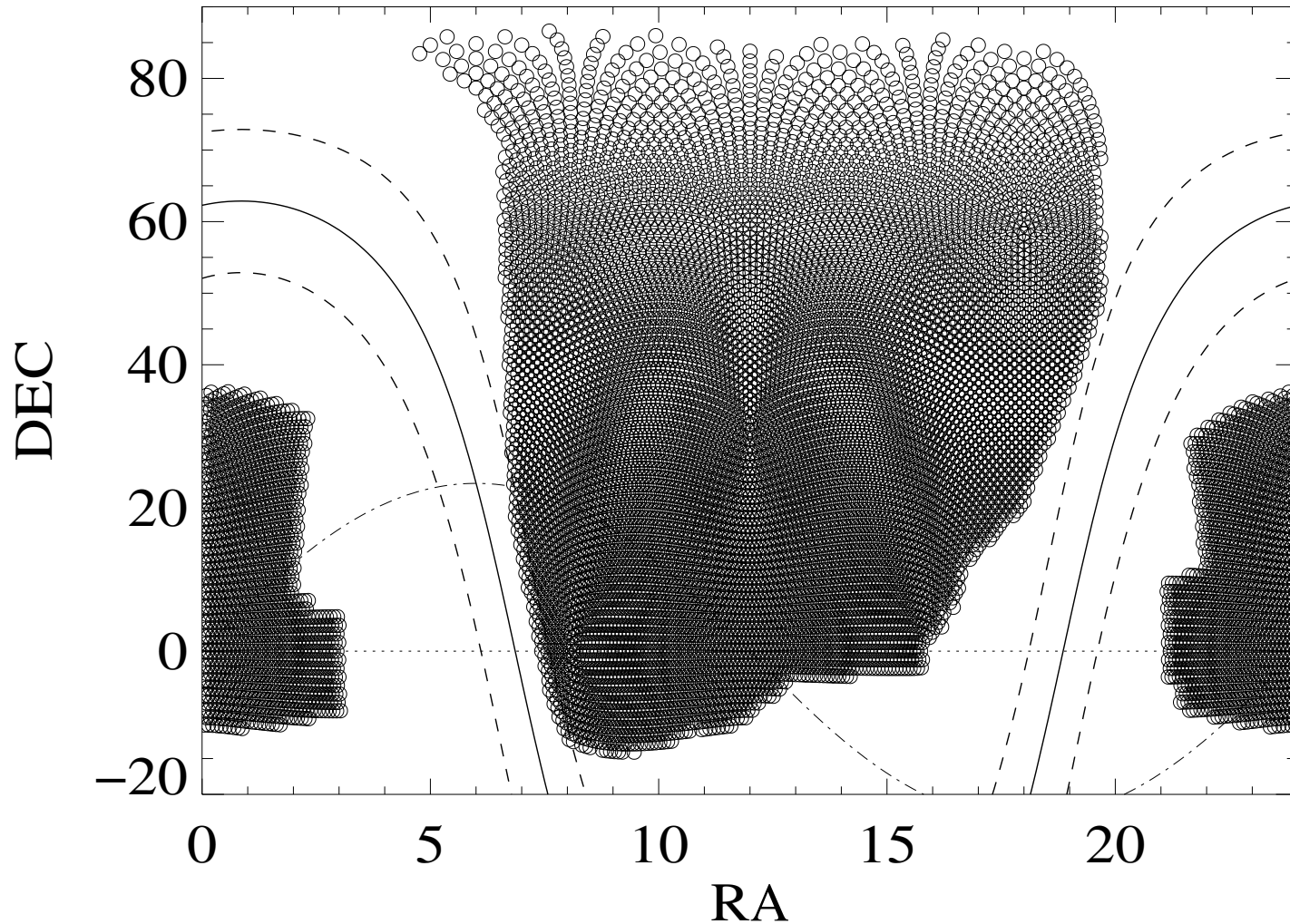
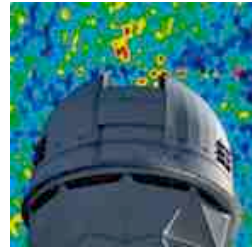


Baseline Survey



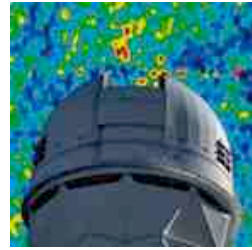
- 495 nights
 - Many are partial nights
 - 10-20% of fibers available for ancillary science
- 14,000 deg² at (mostly) high Galactic latitude
 - survey footprint = SDSS+4000 deg² (~9800 pointings)
- Primary targets:
 - 17 million emission-line galaxies ($0.6 < z < 1.6$)
 - 4 million luminous red galaxies ($0.6 < z < 1$)
 - 2 million QSOs ($1 < z < 5$)
- Exposure times designed to provide redshifts
 - Typically: 15-20 min per ELG, 30-40 min per LRG, 60-90 min per QSO

BigBOSS Survey Footprint (2011)





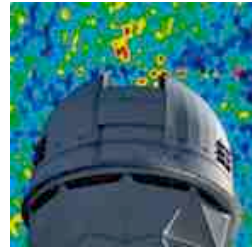
Baseline strategy



- Pilot survey of calibration fields (13 nights)
 - Finalize / refine target selection
- Year 1: First pass on full survey footprint
 - Focus on the QSO selection
- Year 2-5 : Four more passes over footprint
- Roughly 20% of fibers/tile not allocated to primary targets:
 - Scattered randomly through FoV
 - Available for sky, standards, ancillary targets
 - Increasing fraction in later passes



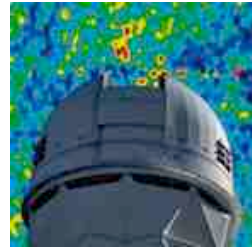
Calibration Fields



- 4 to 6 deep fields ($\sim 30 - 40 \text{ deg}^2$) used to characterize instrument and survey performance, sampling and completeness functions, etc.
- Targeted in Pilot Survey and also ~ 1 per run:
 - Denser sampling
 - Deeper exposures ($\sim 4.5 \text{ h}$ for some targets)
 - Sampling / targeting TBD – input welcome
- High legacy value for other science projects



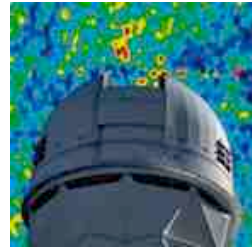
Survey Operations



- BigBOSS Queue jointly supported by BB Team and NOAO
- P.I.-programs interlaced into BBQ
- Other large survey programs may need to provide their own observing resources
- f/8 availability currently planned and will depend on demand (NEWFIRM, KOSMOS, +?)



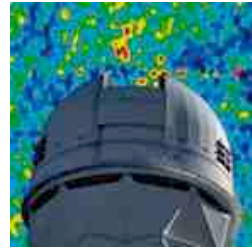
Observing Modes



- Synchronous Observing
 - Tied to survey strategy
 - Possibly with priority?
 - Survey pointing strategy known in advance: $\Delta t < -1$ day
 - Good for targets distributed across survey footprint
 - Could influence baseline survey strategy
- P.I.-driven projects
 - Small: folded in through the BB Survey Queue
 - Large: (i.e., other surveys) – supported by proposing teams
- Projects using archival data
 - Based on public release through NOAO or BB archives



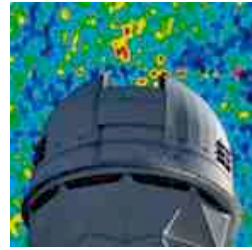
What NOAO Would Like From You



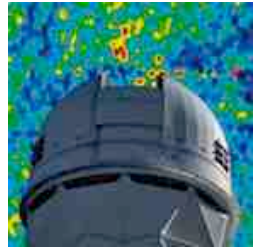
- Community Science Requirement Document for BigBOSS
 - Example science projects
 - Modes of usage
 - Data quality requirements
 - Pipeline requirements
 - Any other advice
- NOAO will interface with BB Team to preserve capabilities/modes important for community science
 - Constraints: Available resources & Key Project requirements



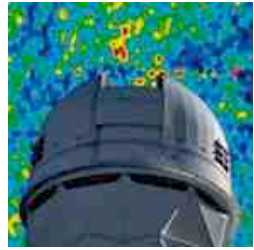
In closing ...



- We are not awarding telescope time or other resources at this workshop!
- Once BigBOSS is commissioned, time / fibers will be assigned through the regular NOAO TAC process.
- NOAO wants to understand your scientific needs, how best to serve them with this instrument, what additional requirements (if any) need to be placed on the instrument, and how to proceed with the BB team.



Thank you all for coming!



Break-out Session Guidance

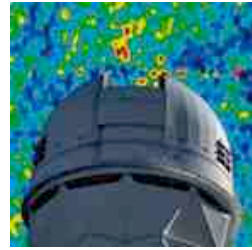
Arjun Dey
NOAO

BigBOSS Community Workshop
Sep 13-14, 2011 in Tucson, AZ





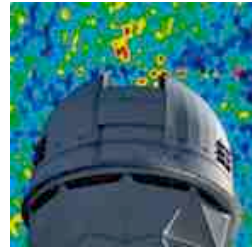
Break-out Sessions



- Identify the most interesting science questions that BigBOSS can address in your field
 - Any scale (small or large, synchronous, etc.)
- Define how BigBOSS would be used
 - Exposure times, number of pointings/fields, etc.
- Identify resources that are necessary for success
 - operational modes, reduction/analysis software, meta data, supporting capabilities, precursor capabilities



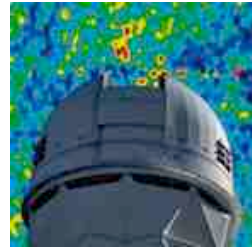
Break-out Sessions



- Format of break-out sessions:
 - At discretion of session leader
 - Include contributions, discussion
 - Focus on what, if any, requirements your project would need to place on the instrument/data pipeline/data archive
- Meet this afternoon (2pm to 5:30pm) and tomorrow morning (9am to 10am)
- Goal: Written Report on the Community Science Requirements
 - Will be drawn from the Break-out Session reports
 - Reports presented orally tomorrow at Plenary Session



Break-out Sessions



- Room assignments: Today / Tomorrow:
 - << need to finalize – show of hands>>
 - Plenary Session : Sabino / Sabino
 - Galactic : Sabino / Canyon C
 - Extragalactic : Pima / Canyon B
 - Transients : Canyon A / Canyon A
 - Diffuse media : Boardroom / Boardroom
- We're here to help!
- Reception today at 6pm.

