VST KO Morning Agenda

10.30-11.00 Coffee
11.00-11.30 VST ATLAS - science goals + current observing plan
- science goals
- modified survey footprint
- exposure times
- overheads with/without binning
- mosaicing+overlaps+gaps
- order of observing ugr, iz
- order of observing fields

11.30-11.40 - Discussion
11.40-12.10 - CASU data reduction (Mike Irwin)
- pipline description
- data products
- astrometric accuracy
- UKIDSS/VISTA experience

12.10-12.20 - Discussion
12.20-12.50 - Global Calibration (Steve Maddox)
- method
- target accuracy for photometry

12.50-13.00 - Discussion

13.00-14.00 - Lunch

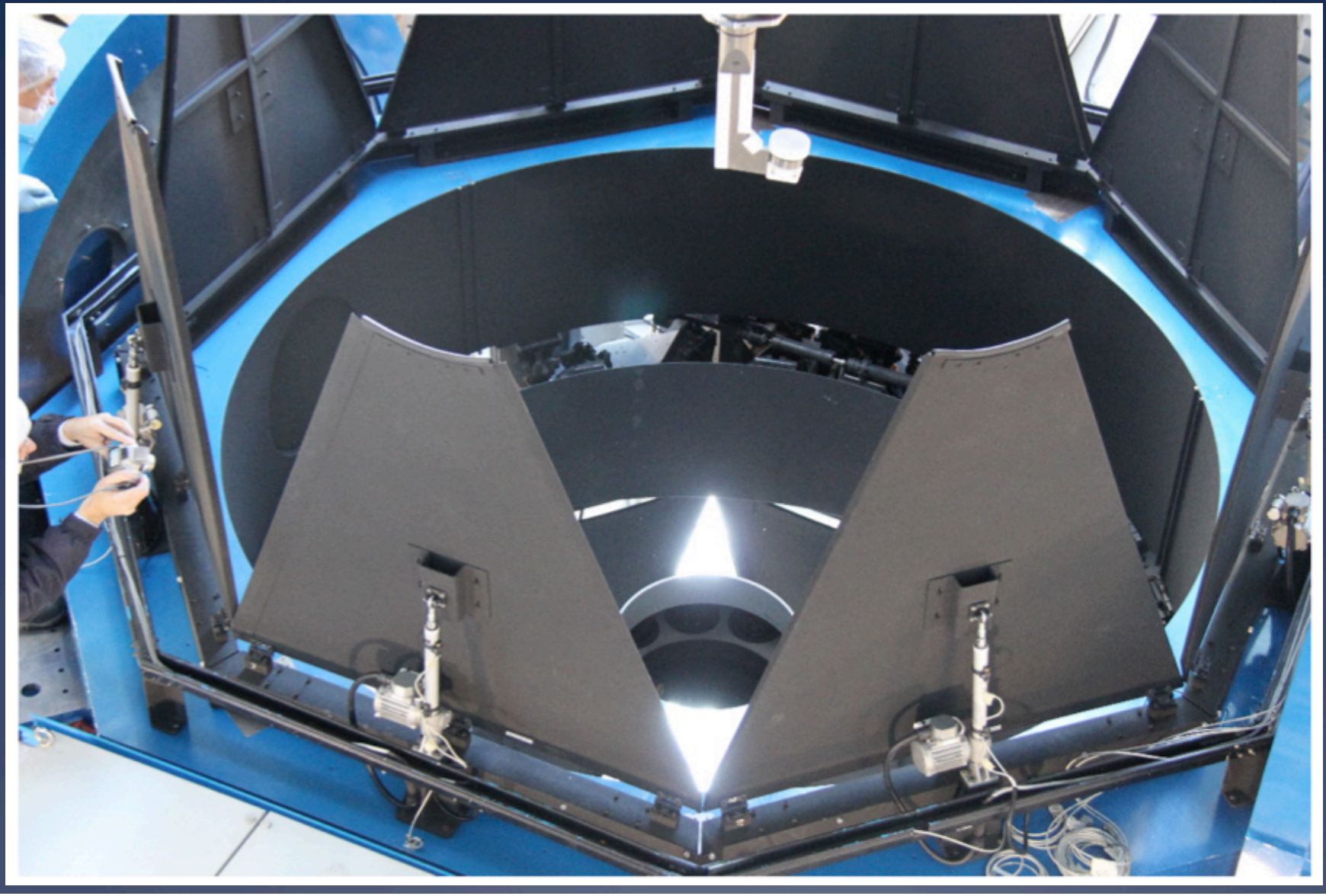
VST ATLAS Survey

- VST ATLAS (+VHS) → Southern SDSS in ugriz(+YJHK)!
- 60s exposures in ugriz – better throughput in u, z
- Footprint ~2600deg^2 in SGC and ~1450deg^2 in NGC
- 1"-1."4 seeing – better than SDSS median at 1."4
- Best seeing used for KiDS
- ~45 nights per year for 2 years – accelerated!

VST ATLAS Core Team

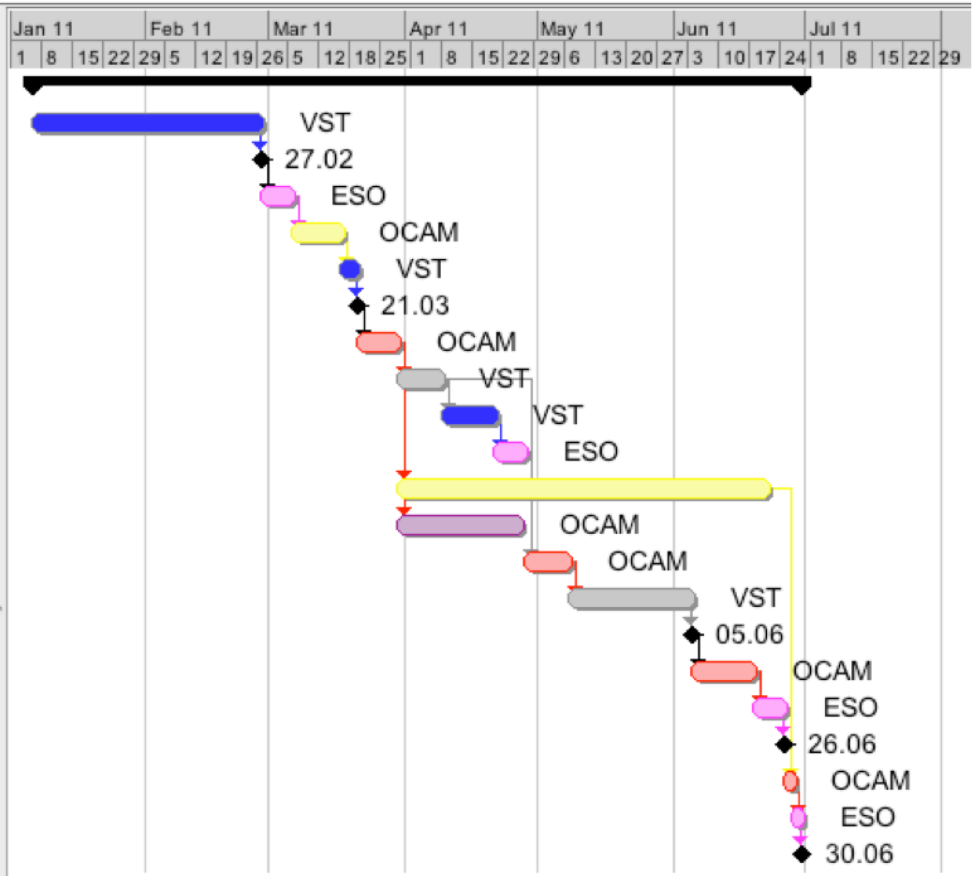
* CASU (Mike Irwin et al, Cambridge) does the basic reduction using the VST Data Flow pipeline
* Steve Maddox (Nottingham) leads the overall global calibration process
* Nigel Metcalfe, helped by Peter Draper (Durham) will do QC on the ATLAS products
* WFAU (Bob Mann et al, Edinburgh) to provide archiving facilities, additional to the ESO archive

VST Mirror in Cell, 13 November

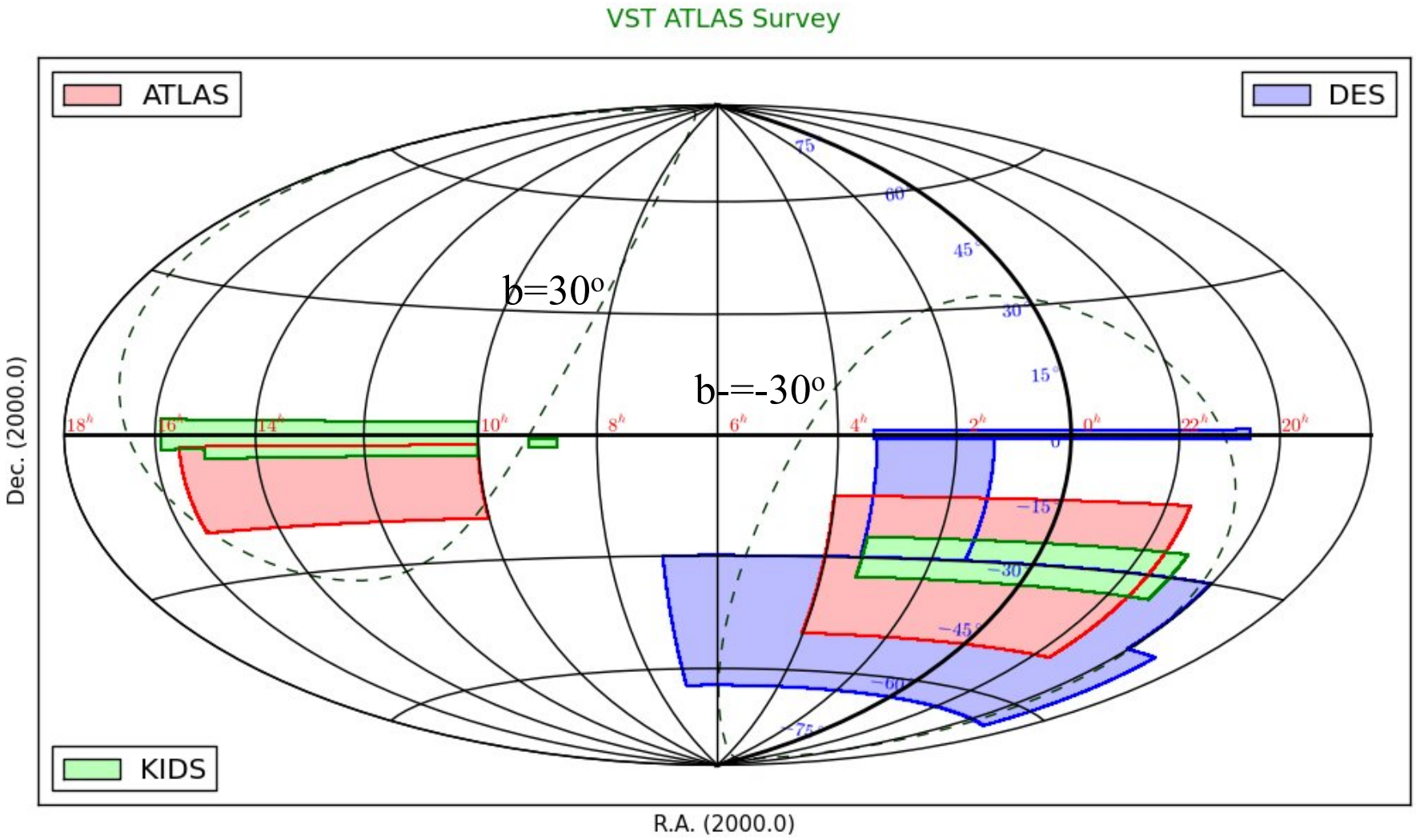


VST Commissioning Schedule

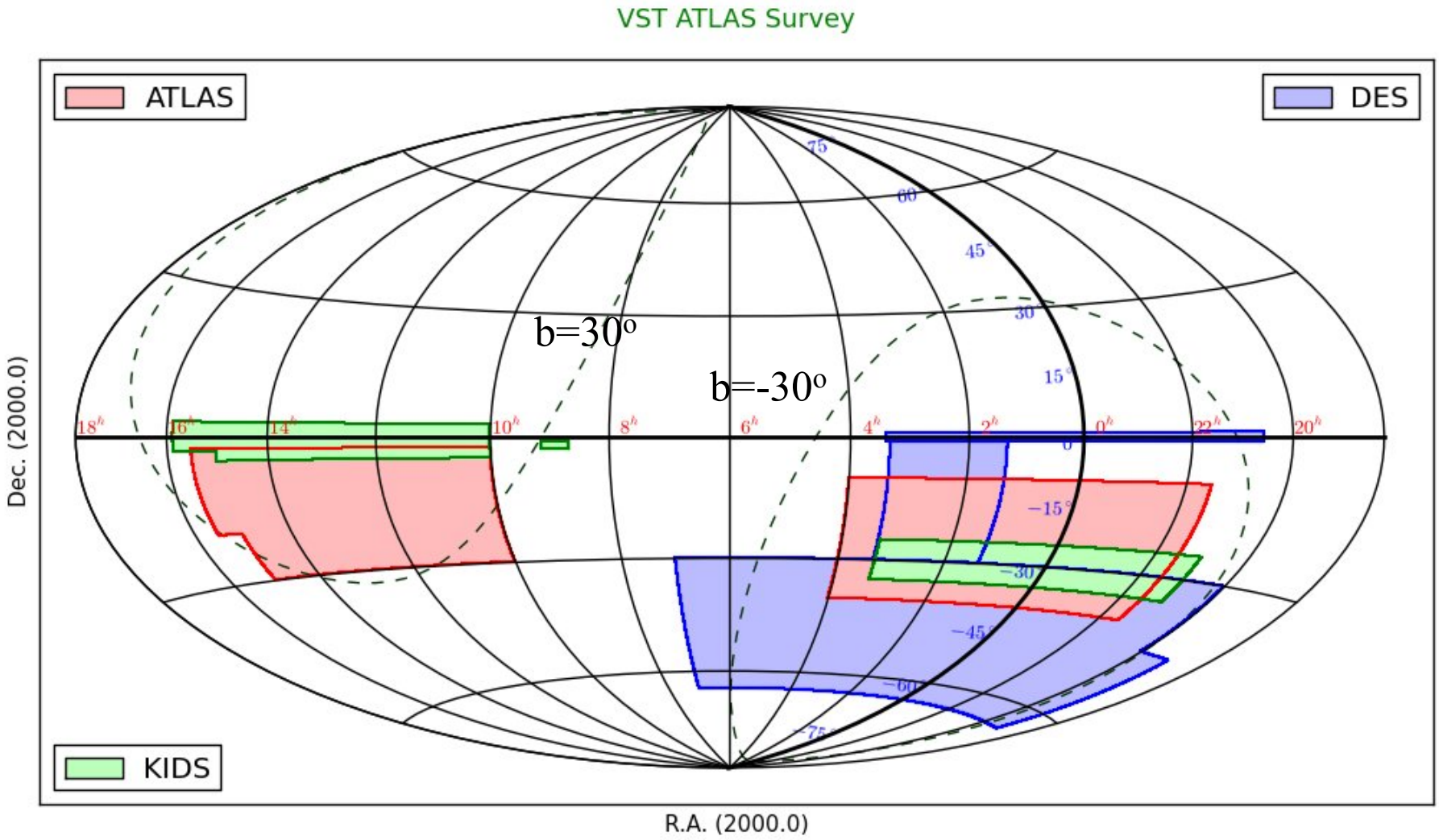
ID	Task Name	Duration	Start	Finish
1	**VST Commissioning**	**100d**	**06.01.11**	**30.06.11**
2	VST1A: Tracking/Guiding, AO S...	52	06.01.11	27.02.11
3	MS: Performance reached	0d	27.02.11	27.02.11
4	ESO Acceptance Tests 1	7	27.02.11	06.03.11
5	OmegaCam Installation	11	06.03.11	17.03.11
6	VST1B: Tracking Tuning with O...	4	17.03.11	21.03.11
7	MS: Ready for OCAM1	0d	21.03.11	21.03.11
8	OCM1A	9	21.03.11	30.03.11
9	VST1C: Realignment	10	30.03.11	09.04.11
10	VST2A: ADC Tuning	12	09.04.11	21.04.11
11	ESO Acceptance Test 2	7	21.04.11	28.04.11
12	Spacer Manufacturing	84	30.03.11	22.06.11
13	Analysis Data of OCM1A	28	30.03.11	27.04.11
14	OCM1B	10	28.04.11	08.05.11
15	VST2B: Details not specified	28	08.05.11	05.06.11
16	MS: Ready for OCAM2	0d	05.06.11	05.06.11
17	OCM2	14	05.06.11	19.06.11
18	ESO Acceptance Test 3	7	19.06.11	26.06.11
19	MS: End of Acceptance	0d	26.06.11	26.06.11
20	Spacer Installation	2	26.06.11	28.06.11
21	Verification	2	28.06.11	30.06.11
22	**MS: End of Commissioning**	0d	30.06.11	30.06.11



VST ATLAS – previous footprint



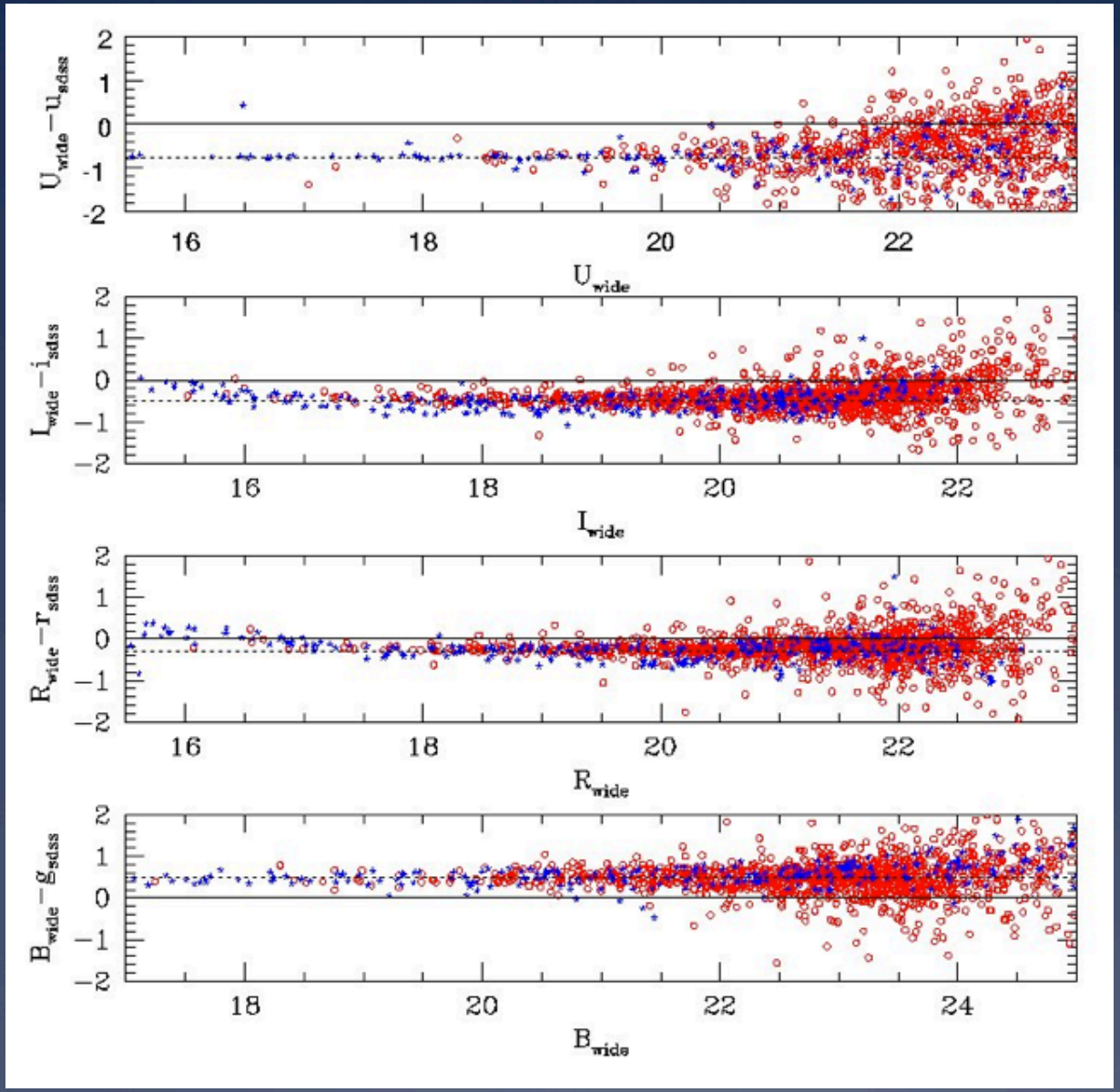
VST ATLAS – new footprint



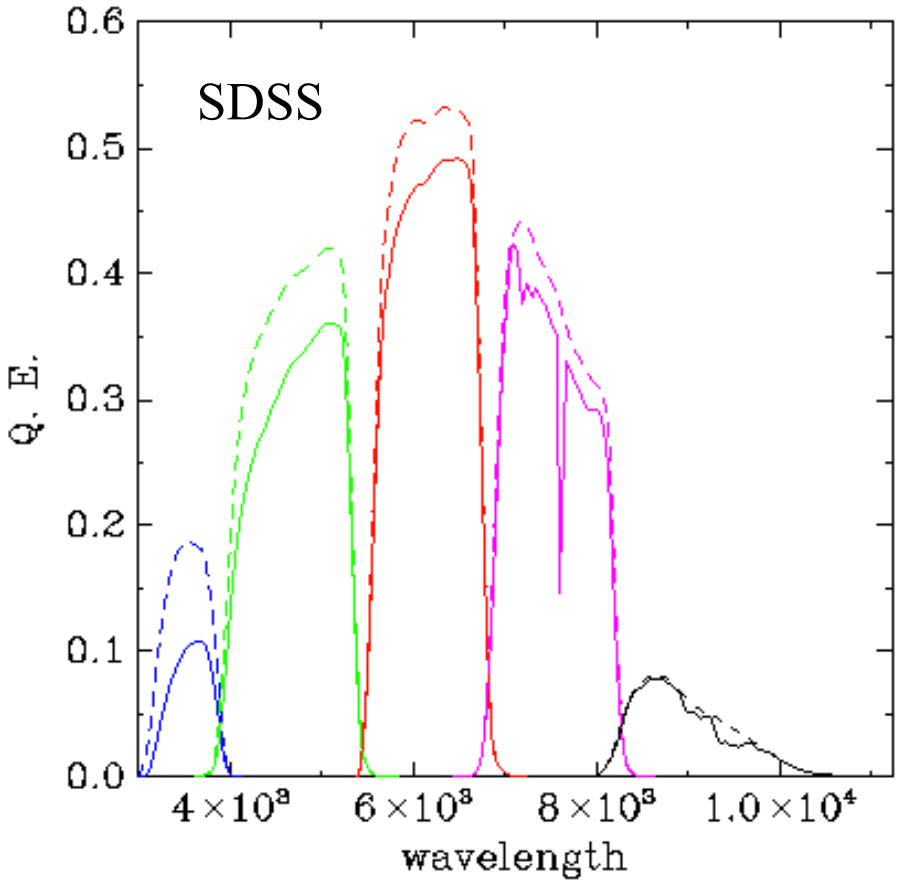
ATLAS Science Summary

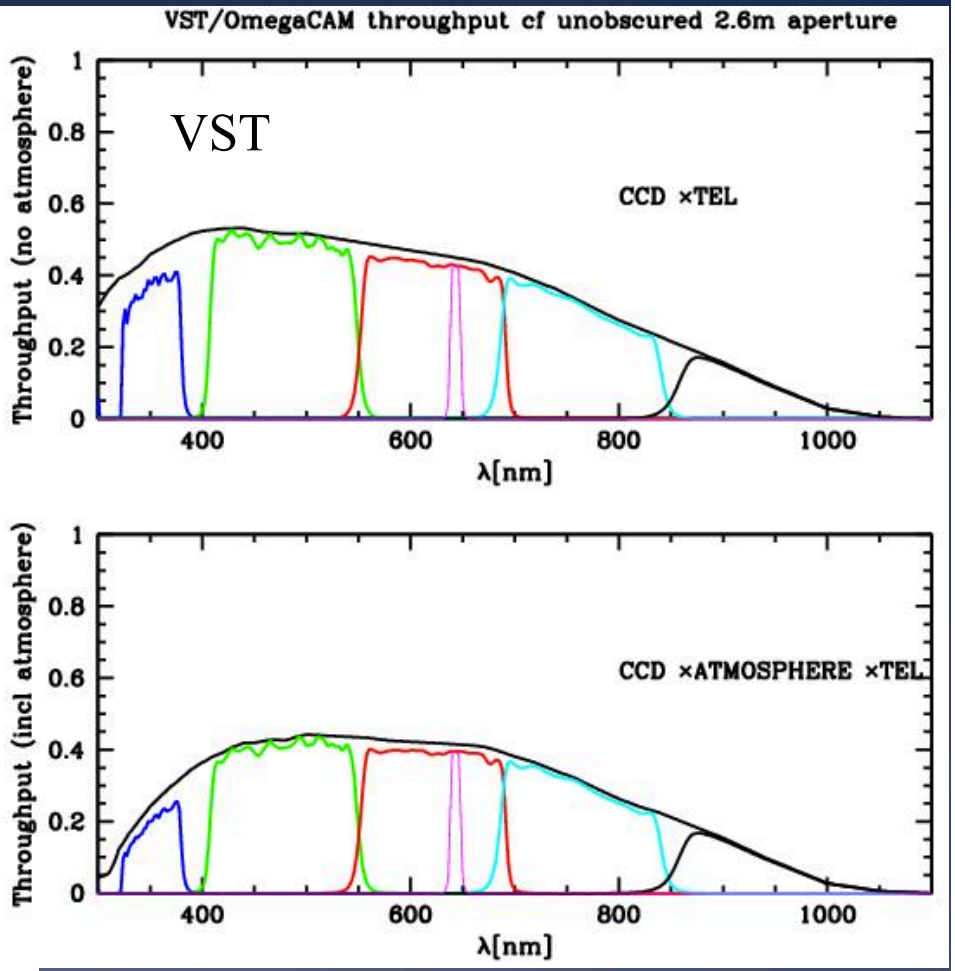
- VST ATLAS offers high quality science at low cost
- Cosmology Package to rival WFIRST!
  - BAO at z~1.5 via QSO clustering
  - BAO at z~3 via QSO Lyman α forest
  - Gravitational Growth rate at z=1-3 via QSOs
  - ISW via LRGs
  - QSO Lensing vs galaxy ugrizYJHK photo-z
- Other Science
  - Stellar Streams + Galactic Archaeology
  - Z~7 QSOs via ATLAS+VHS z dropouts
  - Beyond the Great Attractor….

WHDF vs SDSS

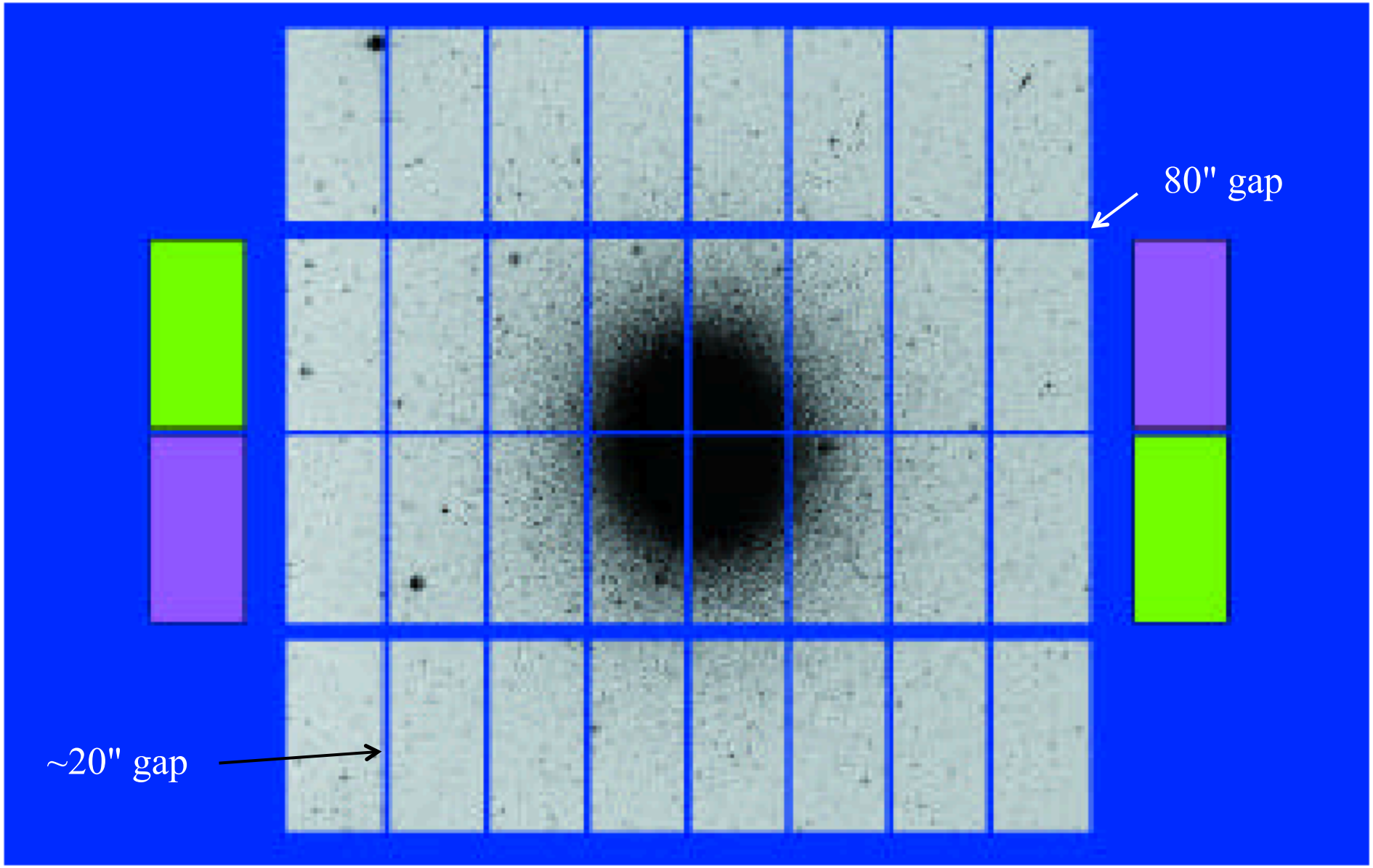

$U_{wide} - u_{sdss}$
U_{wide}
$I_{wide} - i_{sdss}$
I_{wide}
$R_{wide} - r_{sdss}$
R_{wide}
$B_{wide} - g_{sdss}$
B_{wide}

VST vs SDSS Bands





OmegaCAM



Overheads

- Telescope preset - 10secs - 5mins????
- Filter exchange 50-110secs
- Acquisition of guide stars?
- CCD Read out - 29secs
- Write to file - 12secs
- Ordered into fits file – 20secs
- Although in SMP we use 38s for r/o+write

Observing Sequence (1)

- ugr sequentially in dark time, iz in bright time
- Guide star acqn (if needed) during first exposure
- CR split assumed unnecessary
- Filter change/read out dominates at 50s/40s
- ~100% overhead
- Offset by 54' between pointings
- 10% overlap in RA and Dec for photometric calibration
- 80" and 20" gaps left – 43' offsets needed in RA to eliminate 80" gaps – 25% increase in survey time

Observing Sequence (2)

* 2x2 binning reduces r/o+write time to ~10s
* 2x30s exposures CR split – 4' offset in RA, 7' in Dec
* Observe sequentially in one filter
* Preset/acquisition main overhead 10s.
* 33% overhead - can double exposure to 60s?
* Or just double u band exposure?

Other Issues

- Does ATLAS image the KiDS South area first for calibration?
- Does VHS do KiDS area before VIKING?
- Coordination between VISTA Hemisphere Survey and ATLAS

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VST KO Afternoon Agenda

14.00-14.30 - Quality Control (Nigel Metcalfe/Peter Draper)
- DQC for VST ATLAS
- PanSTARRS experience

14.30-14.40 - Discussion

14.40-15.10 - Data Archiving (Eckhard Sutorius)
- ESO Archive
- WFAU Archive
- UKIDSS/VISTA experience

15.10-15.20 - Discussion

15.20-15.40 - Tea

15.40-17.00 - General Discussion
- Coordination with VST KIDS+VISTA VHS/VIKING (Will Sutherland)
- Data release policy
- communications - wiki etc
- Science Goals v pipeline+archive check

17.00 End of meeting