Status of the Wide Survey

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Wide Survey Status

- Science Results
- Opening of W4
- Observations in 06A and 06B
- Prospects until 08A
- Extension

Scientific Results

- Impact of the release contents
  - T0002 was the first release with some Wide data
  - T0003 is the first release where large scales can be probed:
    - Test of analysis
    - The depth of the data is as expected
  - T0004 will bring in the very large scales, up to 7 degree in g, r, i

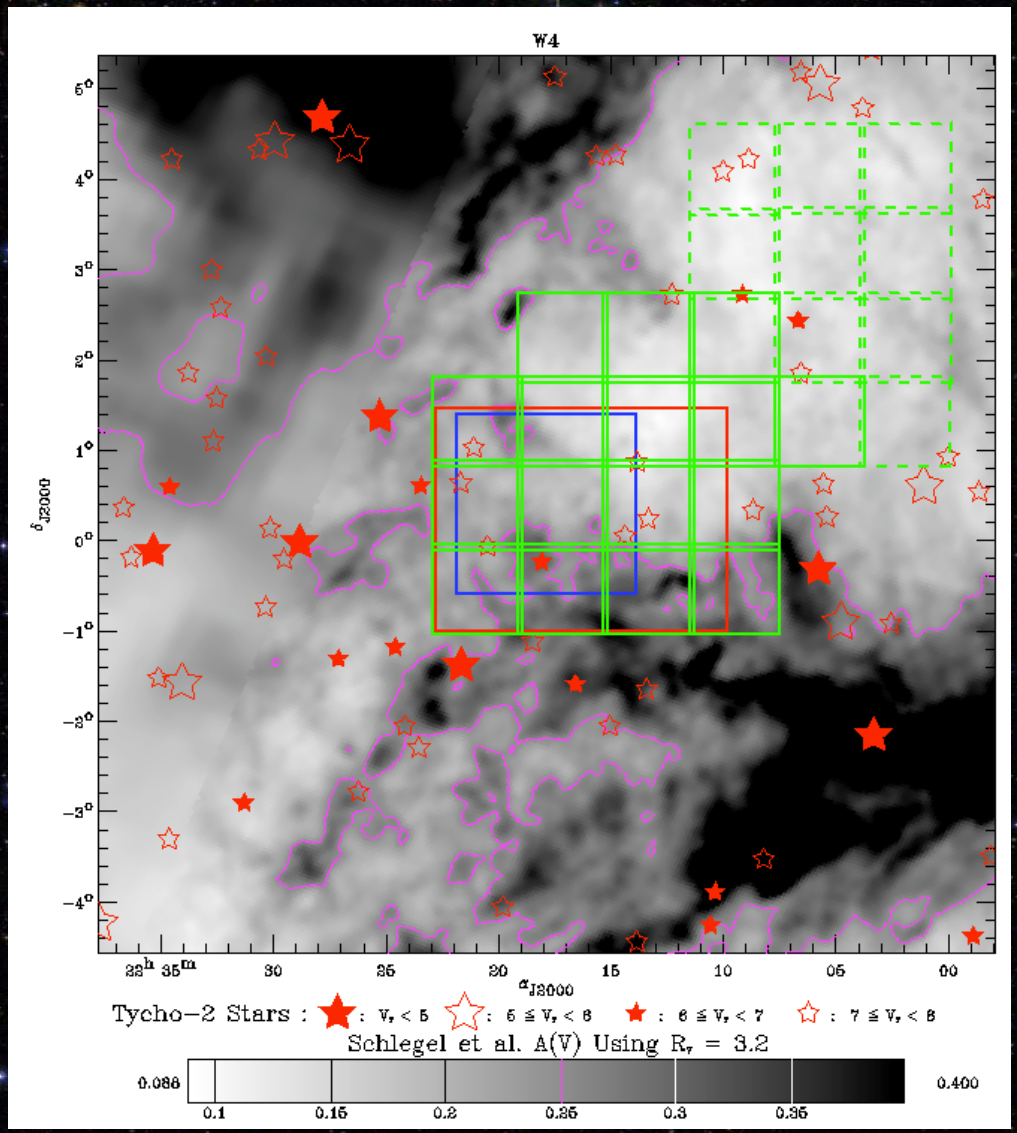
Scientific Results

- Weak Shear: see Fu & Berger talks Tuesday
  - Hoekstraa et al., 2006
    - Proble mostly up to 1 degree (T0002 data)
    - High value of σ_8
- Strong Lensing: see Alard talk
  - Cabanac et al., 2006 on the SL2S
- Clusters: see the talks on tuesday afternoon
  - Benoist et al., 2006 on optical selection
  - Pierre et al., 2006, on X-ray selected clusters

Opening of a 4th Wide Field

- Requested by CFHT to help with Agency balance and low pressure around 22 hr
- Field located around 22 hr
- Size of at least 25 square degree
  - With reduction of an other field accordingly
- Low extinction
- Ancillary data
- Two finalists
  - VVDS 22hr Area
  - 21:45-05:00 : low extinction field

W4 Selection

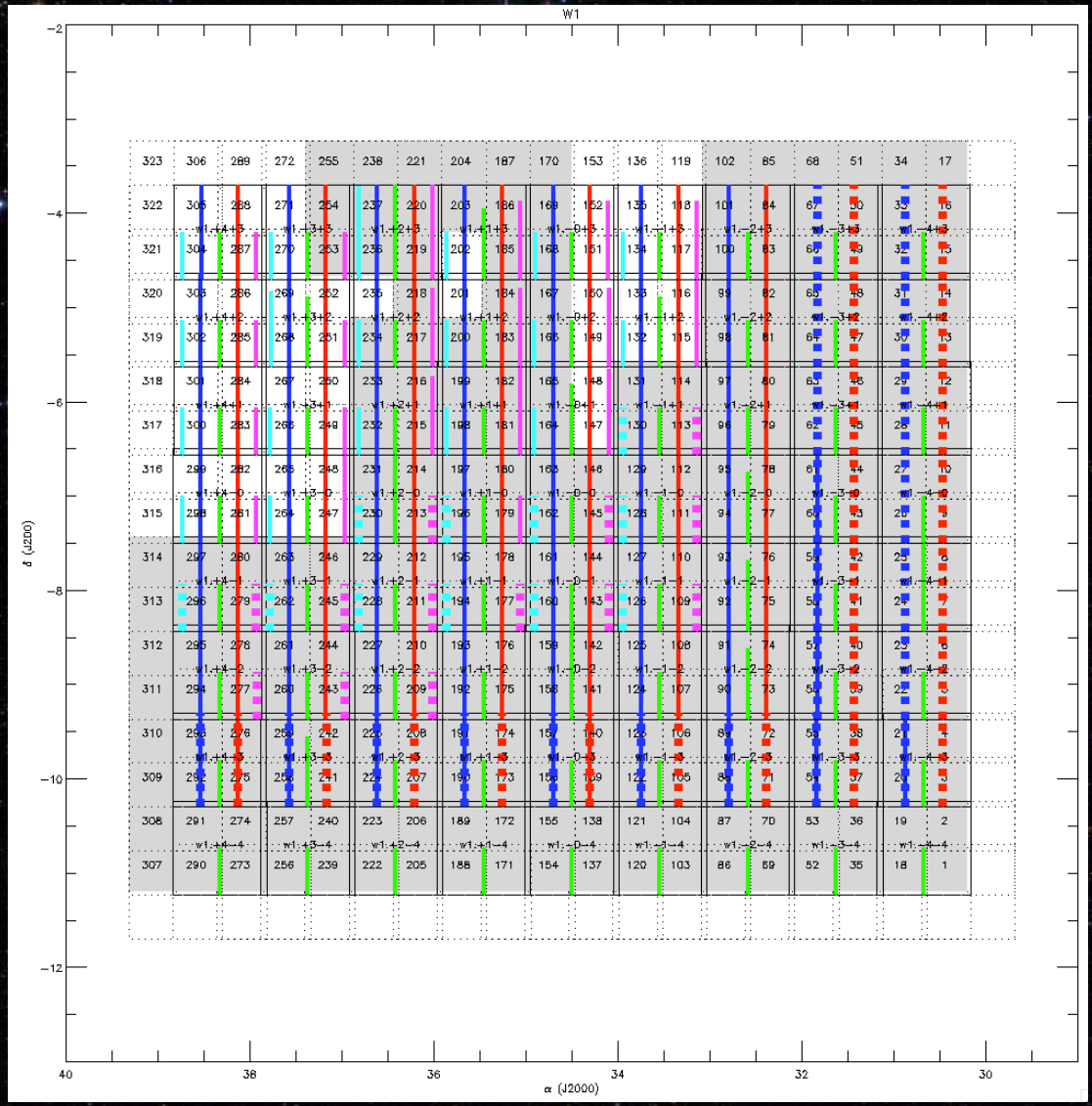


- W4 on the VVDS 22hr area
- Full coverage of the VVDS
- Full coverage of the UKIDSS/DXS
- Initial opening of 16 square degrees
- Extension to 25 square degree in 2007
- Reduction of W2 accordingly: loss of 14 hrs of observations
- Beware ! Not a rectangular field !

Observations in 06A and 06B

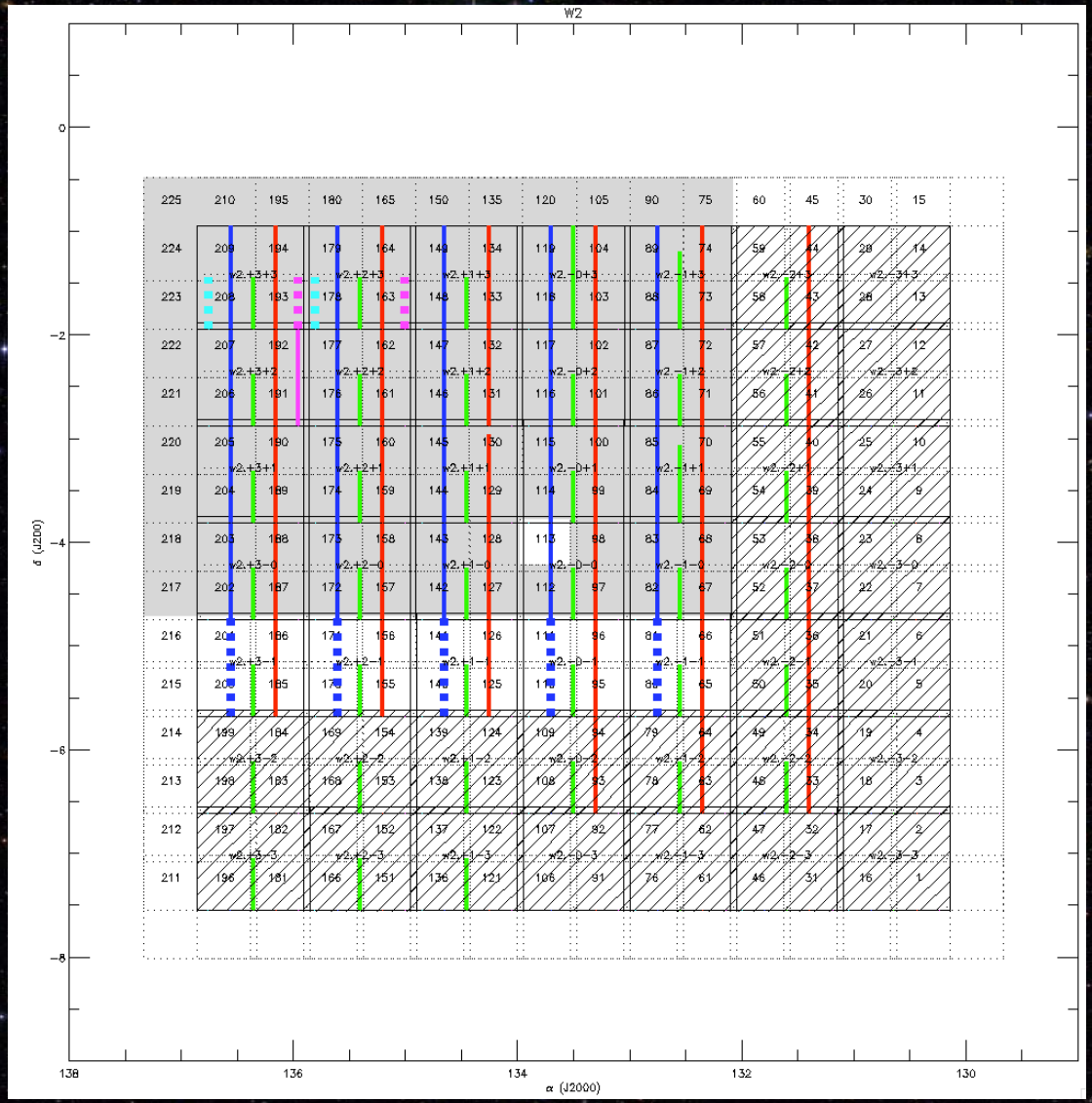
- O6A :
  - Poor Winter Conditions: almost no data on W2, and less than ideal on W3
  - Good Spring Condition + Low PI pressure: Good start of W4
    - W2 : 4.9 hrs
    - W3 : 44.4 hrs
    - W4 : 35.0 hrs
    - Total : 84.3 hrs
- 06B : 3 MegaCam runs so far
  - Low PI pressure on W4 + high PI pressure at 1-2hr: W4 takes time from W1
    - W4 : 37.8 hrs
    - W1 : 24.8 hrs

Status & 06B Schedule of W1



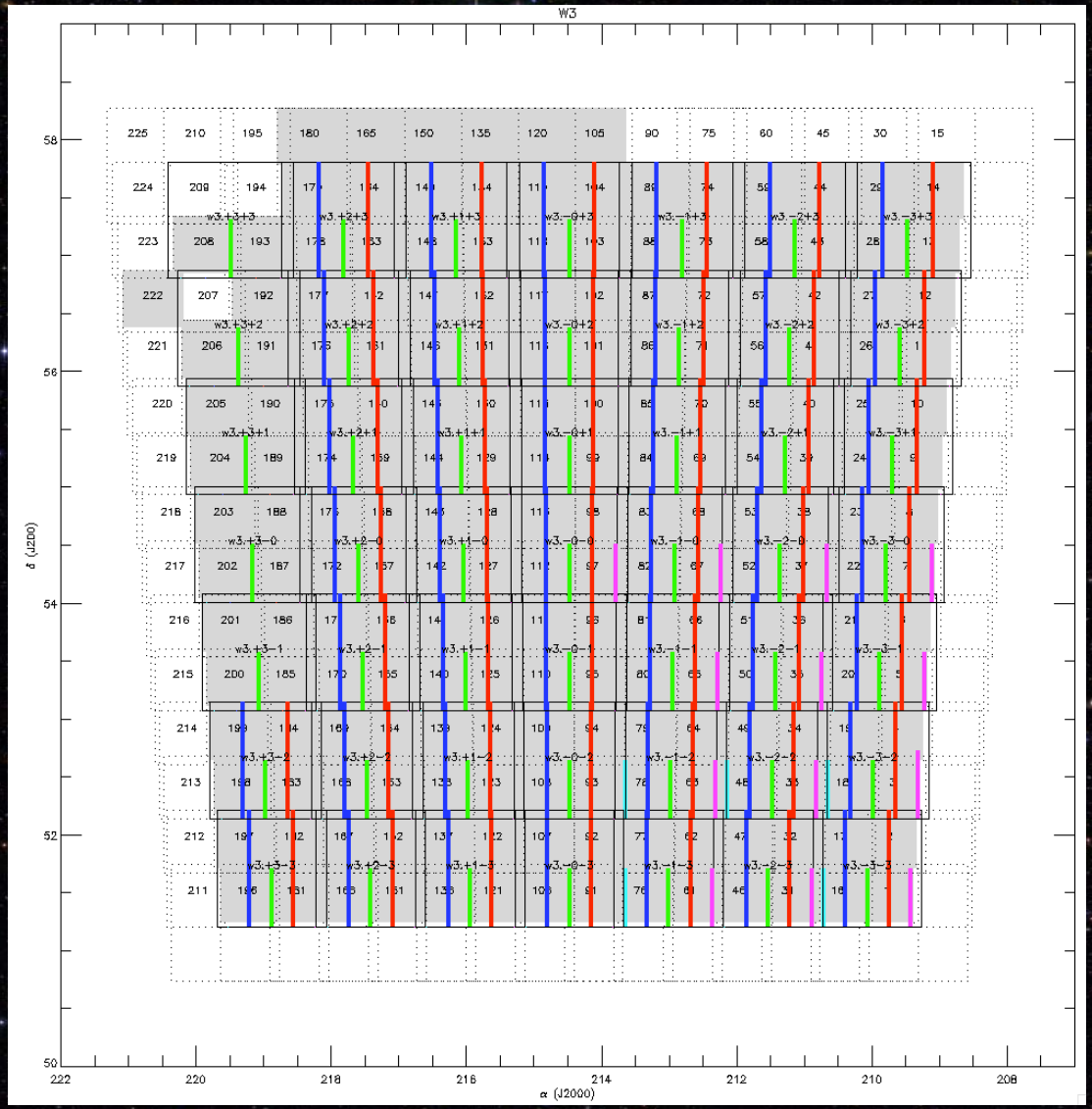
- 72 sq. deg.
  - r/2
  - all in T0004
- 64 sq. deg.
  - g, r/2, i
  - 42 sq. deg. in T0004
- 33 sq. deg.
  - g, r/2, i, z/2
  - 19 sq. deg. in T0004
- 30 sq. deg.
  - u/2, g, r/2, i, z/2
  - 19 sq. deg. in T0004

Status & 06B Schedule of W2



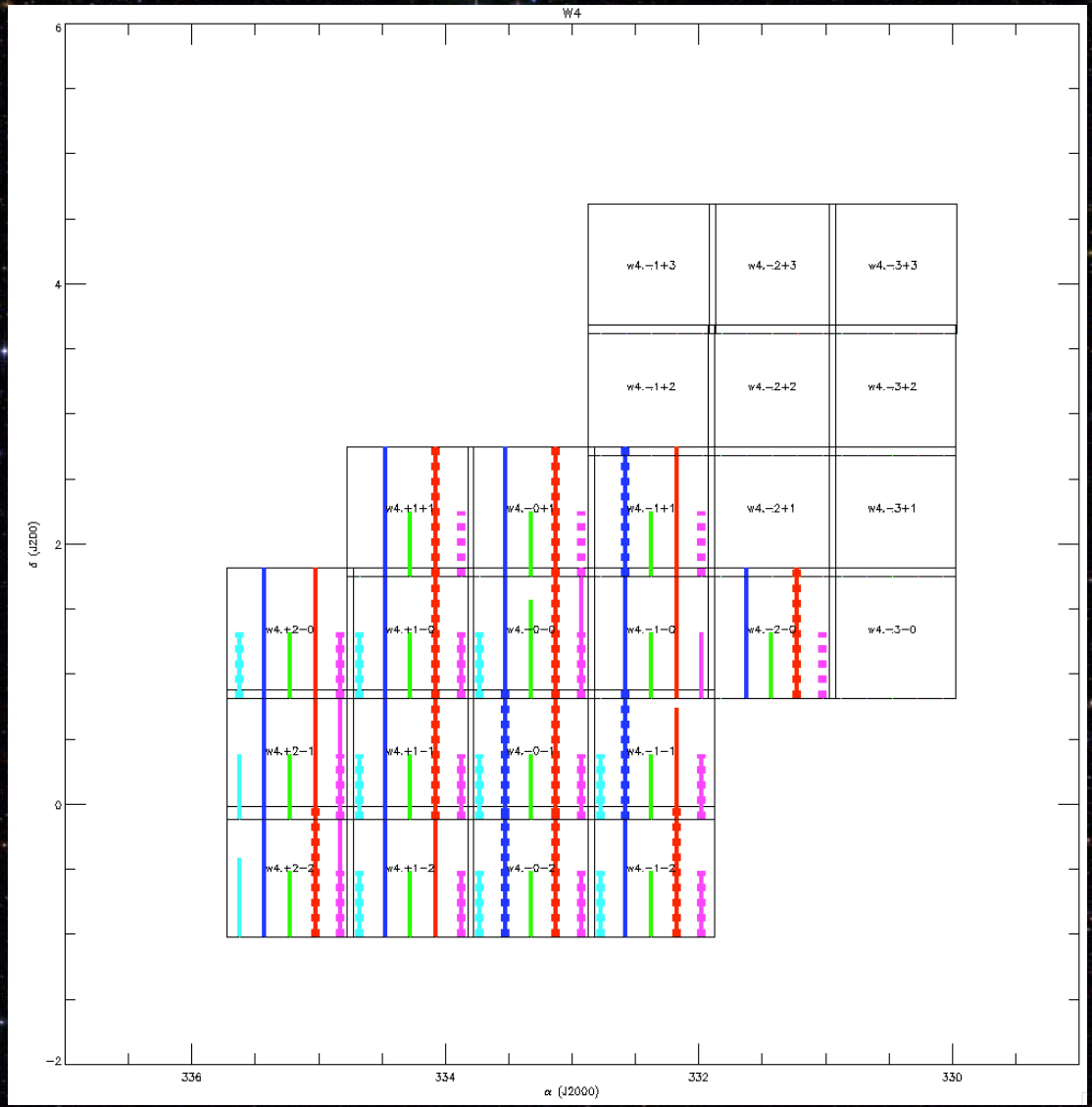
- 25 sq deg
  - g, r/2, r
- 2 sq deg
  - u/2, z/2
- 1 sq deg
  - full z
- Field cut to 25 square degrees
- Most in T0004 (- 5 sq. deg. in g band)

Status & 06B Schedule of W3



- 49 sq. deg.
  - ➢ r/2
- 42 sq. deg.
  - ➢ g, r/2, i
- 13 sq. deg
  - ➢ g, r/2, i, z/2
- 5 sq. deg.
  - ➢ u/2, g, r/2, i, z/2
- All in T0004

Status & 06B Schedule of W4



- 16 sq. deg.
  - g, r/2, i, z/2
- 11 sq. deg.
  - u/2, g, r/2, i, z/2
- All in T0004 ?

Toward the End of the Survey

- Difficulty to estimate how much time will be available per semester
  - Efficiency should remain constant at the level of 05B (not much left to be gained)
  - Weather: the main unknown
  - Allocation of the LS has changed.
- Best estimation: Direct Scaling between semesters

Example: estimation for 06B

- 1st method: balance between components
  - B semester:
    - Good Weather ⇨5.5 hrs / night
      - Based on 05B where the LS obtained 313 hrs in 57 nights (the 4+4) was still in effect.
    - LS has 49.0 nights ⇨265.0 hrs
    - SNLS/Deep uses 148 hrs
    - Very Wide uses 20 hrs
    - Remains: 102 hrs for the Wide
    - If the 2+2 was still in effect:
      - 4 more hours for the Deep
      - Remains : 116 hrs for the Wide
      - Equivalent to 9 more sq. deg. in z/2 or u/2

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    - LS has 49.0 nights ⇨265.0 hrs
    - SNLS/Deep uses 148 hrs
    - Very Wide uses 20 hrs
    - Remains: 102 hrs for the Wide
    - If the 2+2 was still in effect:
      - 4 more hours for the Deep
      - Remains : 120 hrs for the Wide
      - Equivalent to 18 more sq. deg. in z/2 or u/2

Assumes that no iterations are lost due to a long streak of bad weather.

Example: estimation for 06B

- 2nd Method: Scale directly from previous semesters
  - 05B:
    - 57 Nights for the LS (4 + 4) in effect
    - 138 hrs for the Wide
  - 06B:
    - 49 Nights for the LS (0 + 0)
    - 138 / 57 x 49 = 118 hrs for the Wide
  - For 06A:
    - Computed: 138 / 57 x 54 / 5.5 x 3.7 = 86 hrs
    - Observed: 84 hrs
  - So far for 06B
    - After 52 MegaCam nights : Wide has 62 hrs
    - After 100 MegaCam nights : Wide ~120 hrs

The Effects of Additional Nights

- The Wide and Deep u* observations are done in practise after the SNLS and the VW recoveries
  - Any variation of the time allocation, the observing efficiency or the weather has a direct impact on the Wide time
  - Exemple, the effect of the 4+4
    - 05B: 4+4 in effect, 138 hrs of observations for the Wide
    - 06B: 0+0 - we are likely to get 119.0 hours
      - 138.0 / 57.0 x 49.0 = 119.0
    - 06B with 2+2:
      - We could have 128 hrs
      - At least 9 more square degree in u/2 or z/2

Wide PH2 Hours / Semester

Sem.	Wide	Plan	Notes	2+2
03B	42.4	115.8		42.4
04A	67.0	115.8		67.0
04B	66.0	115.8		66.0
05A	67.3	115.8	4+4	67.3
05B	138.0	115.8	4+4 VW tracking	138.0
06A	84.4	115.8	2+2 VW tracking	84.4
06B	119.0	115.8	0+0 VW tracking	119.0
07A	78.0	115.8	0+0 VW tracking	84.0
07B	127.0	115.8	0+0 VW completion	137.0
08A	96.0	115.8	0+0 VW completed	104.0
Total	870.0	1158.0	-273.0 / -249.0	894.0

Remaining to Observe after 06B

	W1		W2		W3		W4	
r/2	0	0.0	0	0.0	0	0.0	9	2.7
g	9	6.8	0	0.0	5	3.8	9	6.8
i	9	10.8	0	0.0	5	6.4	9	10.8
u/2	42	37.4	23	20.5	45	40.0	14	12.5
z/2	39	41.6	22	23.5	36	38.4	9	9.6
r	72	21.6	25	7.5	49	14.7	25	7.5
Pre	62	3.8	23	1.5	25	1.6	125	7.6
Core		17.6		0.0		10.2		20.3
Total:		122.0		53.0		104.9		57.5

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g	9	6.8	0	0.0	5	3.8	9	6.8
i	9	10.8	0	0.0	5	6.4	9	10.8
u/2	42	37.4	22	20.5	45	40.0	14	12.5
z/2	39	4					9	9.6
r	72	2					25	7.5
Pre	62						125	7.6
Core		17.6		0.0		10.2		20.3
Total:		122.0		53.0		104.9		57.5

Easily Done by 07B as requested by the SAC

Remaining to Observe after 06B

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g	9	6.8	0	0.0	5	3.8	9	6.8
i	9	10.8	0	0.0	5	6.4	9	10.8
u/2	42	37.4	23	20.5	45	40.0	14	12.5
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	8.4	9	9.6
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4.7	25	7.5
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.6	125	7.6
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.2		20.3
Total:		122.0		53.0		104.9		57.5

Impossible in only one B semester !
Need Observations in 08B

Observing Plan until 08B

	Without 2+2					With 2+2				
	W1	W2	W3	W4	Tot	W1	W2	W3	W4	Tot
07A	0	12	53	13	78	0	15	53	16	84
07B	73	28	0	26	127	96	22	0	18	137
08A	0	13	52	20	85*	0	16	52	24	92*
08B	49	0	0	0	49	26	0	0	0	26
Tot	122	53	105	58		122	53	105	58	

For the Users Meeting Review

- The baseline so far is to request observations into 08B for :
  - u/2, g, r/2 + r/2, i, z/2 over the 171 sq. deg.
  - Need to assess:
    - Loss of 0.5 mag in depth in u and z
    - For all science cases
- Other options below the baseline:
  - Loss of a band (u/2 or z/2) over some area ?
    - Needs to be assessed
  - Loss of 2nd r band epoch + presurvey ?
    - Needs to be assessed
      - For astrometry
      - For proper motions
      - For depth in r

Conclusion

- The Wide is making good progress now
- The ‘core’ program will be completed in 07B
- But the level of completion for the rest is still uncertain
  - ➢ The community has an important role:
    - to prepare the review of the Users Meeting of May 07
    - At the meeting itself, where other communities will be present.