Today

• Part 1
  qplan inputs
  qplan layout and function
  qplan outputs

• Part 2
  Effects of different weights

• Part 3
  Simulation scenarios
Observing blocks

<table>
<thead>
<tr>
<th>Code</th>
<th>tgtcfg</th>
<th>inscfg</th>
<th>telcfg</th>
<th>envcfg</th>
<th>On-src Time</th>
<th>Total Time</th>
<th>Priority</th>
<th>Comment</th>
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<tbody>
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<td>dark_s0.8_am2_trans0.8</td>
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<td>3</td>
<td></td>
</tr>
</tbody>
</table>

"codes" defined in targets, envcfg, inscfg, telcfg

Customized OB codes reported in qplan

OB priorities within one proposal
1 is highest
Note:
Priority 1 OBs are not always executed first
qplan input 1: load OB info

qplan: developed by OCS, a python-based software
qplan input 1: load OB info

data loading log, reports status, errors, etc.

qplan: developed by OCS, a python-based software
qplan input 2: weights

<table>
<thead>
<tr>
<th>Slew</th>
<th>Delay</th>
<th>Filter</th>
<th>Rank</th>
<th>Priority</th>
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<tbody>
<tr>
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<td>0.2</td>
<td>0.3</td>
<td>0.3</td>
<td>0.1</td>
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</table>
Proposal rank and filter exchange overheads are most important
Schedule one night, selected nights, entire semester, etc.
Can edit transparency and seeing during the night then reschedule.
Schedule one night, selected nights, entire semester, etc.
Can edit transparency and seeing during the night then reschedule.
qplan sanity check:
Planned OB hours cannot exceed allocated hours.
qplan input 4: programs

qplan sanity check:
Planned OB hours cannot exceed allocated hours.
qplan output 1: schedule summary

Scheduled nights

Proposal Completion Percentage

Graph showing proposal completion percentage for different SISA numbers.
qplan output 1: schedule summary

Scheduled nights

unexecuted OB codes
qplan output 2: nightly report

3/22 schedule
qplan output 2: nightly report

3/22 schedule
qplan output 3: nightly activity
qplan output 4: semester chart

Total for Semester S15A = 83 Hours

Grades:
- A
- B
- C
- D
- F
Questions?
Weights in \textit{qplan}

- Slew, Delay, Filter, Rank, Priority

- The higher the number, the more important such weight is considered in the scheduling algorithm

- The higher the number, the more severe the “penalty” is, i.e. makes OBs “heavier”, less likely to be scheduled in \textit{qplan}

- \textit{Except “Rank”}; higher ref. score means better proposal; \textit{qplan} considers the inverse value of ref. score to make high-rank OBs “lighter”, more likely to be scheduled
Weights: Slew

Minimum long slews
Weights: Delay

Minimum delay
Weights: Filter

Minimum filter change
Weights: Rank

Spend every effort to finish highest ranked program
Weights: Rank

Caveat: poorer overall completion rate
# Weights

## Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
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</thead>
<tbody>
<tr>
<td>2015-03-20</td>
<td>19:26</td>
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<tr>
<td>2015-03-22</td>
<td>19:26</td>
</tr>
<tr>
<td>2015-03-23</td>
<td>19:26</td>
</tr>
<tr>
<td>2015-05-13</td>
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<td>19:55</td>
</tr>
<tr>
<td>2015-05-26</td>
<td>19:56</td>
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</table>

## Weights Table

<table>
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<tr>
<th>Slew</th>
<th>Delay</th>
<th>Filter</th>
<th>Rank</th>
<th>Priority</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>0.2</td>
<td>0.2</td>
<td>0.3</td>
<td>0.3</td>
</tr>
</tbody>
</table>

## Diagrams

- **Proposal Completion Percentage**: A bar chart showing the percentage completion for different proposals (SI5a-1 to SI5a-8) with grades A, B, C, and F.
- **Slew Chart**: A radar chart indicating the positions of various celestial bodies such as Venus, Saturn, and Mercury.
Weights: Priority
Weights: Priority

<table>
<thead>
<tr>
<th>Date</th>
<th>Code</th>
<th>Program</th>
<th>Rank</th>
<th>Time Target</th>
<th>Filter</th>
<th>AM</th>
<th>Comment</th>
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<td>S1SA-2</td>
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<td>35.00</td>
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<td>1.9 Long slew for ob0868</td>
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<td>S1SA-2</td>
<td>3</td>
<td>9.00</td>
<td>221.15</td>
<td>M</td>
<td>1.9 Filter change for ob</td>
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<tr>
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<td>9.00</td>
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<td>M</td>
<td>1.9 Filter change for ob</td>
</tr>
</tbody>
</table>

1 targets 2 filter exch Time: avail=606.00 sched=286.85 unsched=319.15 min

Airmass for the night of 2015-03-21

- HST
- Moon Altitude (deg)
Questions?
Simulation scenarios

- Weather lost, 3 high-ranked program nights, 15A schedule
Simulation scenarios

- 15A HSC open-use nights + 5 April dark nights

Completed all programs
(over 9 nights)
77.6 hrs; 55.6 hrs dead time
(c.f. 83.3 hrs in classical over 9 nights)

5.7 hrs difference between queue and classical schedules

Simulation scenarios

Good weather

3 bad-weather nights

50%
100%
0%
001 002 003 004 005 006 007 008
pseudo proposal ID

Queue

OB completion rate
Simulation scenarios

- 15A HSC open-use nights with actual weather info (as of 5/31)

[Graphs showing OB completion rate for Classical and Queue scenarios.]

- Classical: Data taken under non-optimal envcfg
- Queue: Data taken under desired envcfg without system malfunction

[Icons representing system trouble time lost are indicated.]
Simulation remarks

- Partially completed queue program data may be useful and/or publishable.

- Few relatively high-ranked programs are not granted time due to classical schedule constraints. *In queue simulations they get data.*

- High demand for March and April (popular RA) and dark time (g & NB filters).

- Classical observations: take what you can
  Queue observations: take the best when you can
June 17

- Phase 2 Tool spreadsheets

- Go through all functions in ph2-spdsht-exp.xls

- Hands-on session using ph2-spdsht-prac.xls