P60/SEDm: target selection

- Average partnership time ~4 hs/night.
- Targets up to ~19 mag within reach for spectroscopy with SEDm.
- SNIa WP: SNR=5 @ 19.2 mag in 2600 s, A/B -> 90% classification efficiency using SNID (compatible with Nadia's numbers)
- Mickael: may be abe to do with shorter exposures
- Nadia:iPTF ~10 targets/full night (our share 65%).
- Don and Nadia: response in the blue is much poorer than expected, ongoing efforts to understand and improve the perfromance.

Transient simulations

- Uli Feindt has simulated the combo extragalactic (9 months) survey along with the MSIP 3-day cadence survey (assumed to go for a full year). The latter covers the largest piece of sky and therefore dominates the statistics.
- The simulations reject fields at low Galactic latitude and close to the moon. Thus, the available sky varies with moon phase and season.

Weekly catch LCs peaking at <19 median/(max)

ggg 1-day cadence (9 months):
5 (10) Ia's, 0 (2) Ib/c's, 1 (7) IIn's, 1 (9) IIP's, total 6 (28),

➔ ~1 (4) per night.

MSIP including i-band obs (4-day cadence, 9 months):
20 (39) Ia's, 1 (4) Ib/c's, 6 (21) IIn's, 7.5 (18) IIP's, total 34.5 (82),

➔~5 (12) per night.

MSIP + partnership (All SNe, 12 months)
32.5 (53) Ia's, 3 (6) Ib/c's, 10.5 (24) IIn's, 12 (23) IIP's, total 58 (106)

➔~8 (15) per night.

(For mag <18.5 rates about half of the above)

Some considerations

- Minimally biased or bias that can be easily modeled (e.g. magnitude limit) are preferable for *statistical* studies – also suitable to search rare (or new) phenomena
- Follow-up programs benefit from rapid typing
- Cutting edge of ZTF is young transients – but most will be too faint@discovery for SEDm.
- Photometric redshifts of nearest galaxy and photometric typing of transients can be used in ranking

Solar System Targets (from Tom)

QZ: 07/27/17

1. Regular targets

Rotationally resolved spectra of asteroids: about 1 hour (~5 targets) per night. The observation blocks (assuming 20 min per block) should be evenly distributed across the night to evenly sample the rotational phase of asteroids.

2. ToO targets

Rapid follow-up of special events (cometary outburst, active asteroids, dedicated targets): we expect 3 such events per month on average. Assuming 3 exposures (one exposure every two hours) per night for the period of a week, and 5 min for each exposure, we request 3x7x5x3/60 = 5.25 hours per month.

NCU researchers are leading a study of examining fast rotating asteroids using SEDM, but the project is conducted using the time purchased by NCU.

3. Total time requested

Assuming 75% system up time, we request a total of 1.25 hour per night on average.

Conclusions

- A WP exercise will be carried out to requesting proposals for P60/SEDm usage
- Before call is sent out, Nadia and Don to provide specs for performance
- When? Pending ongoing debugging of poor blue response. If understood and solved the performance of SEDm could improve very significantely.