Spitzer Cycle-4 and 5 Scheduling

Introduction:

As we approach the end of the cryogenic mission we are introducing science priorities into the scheduling process. When the cryogen runs out we want to make sure that the highest priority science selected in the review process has been executed. In Cycles 1 and 2 observations were scheduled to create the most efficient schedule possible without explicitly attempting to schedule the highest ranked science programs first. Large programs and those with tight timing constraints therefore drove the layout of the basic instrument campaigns. In Cycle-3 we began implementing scheduling priorities for the small programs based on the science ranking from the review process. For observations selected in Cycles 1-3 we have effectively promised to execute every observation selected. Observations from previous cycles were given the highest priority if not executed before the end of the cycle. Starting with observations selected in Cycle-4 we can no longer expect to execute every observation selected in the cycle.

Cycle-4 Scheduling:

All observations selected in cycle-4 will be assigned an explicit scheduling priority (1,2,3). For the GO program, one-third of the selected hours will be assigned to each priority based on the science ranking from the Cycle-4 review. During the first six months of the cycle we expect to primarily schedule observations with priority 1 and 2. In general, priority 3 observations will be scheduled if nothing in the higher priority bins can be scheduled. The majority of priority 3 observations will not move into the scheduling pool until early 2008. The GTO programs selected in Cycle-4 will also be assigned scheduling priorities. For each GTO (Rieke, Houck and Fazio), one-third of their selected program will be assigned to each priority bin based on the science ranking in the Cycle-4 review. These will be scheduled in the same way as the GO program. Observations with scheduling priority 3 with tight timing constraints may be very difficult to schedule. All observations eligible for funding in Cycle-4 will be funded without regard to scheduling priority.

Cycle-4/5 Scheduling Transition:

All observations selected in Cycle-4 will be not executed by the end of the Cycle. The observations remaining in the pool at the end of Cycle-4 will mostly be those with priority 3. When the Cycle-5 program is selected, observations from Cycle-4 will not immediately be given top priority for scheduling but they will be moved up one priority level. For example, Cycle-4 observations with priority 3 will be given priority 2 in Cycle-5.

Cycle-5 Scheduling:

Cycle-5 is the last cryogenic cycle. We expect it to last 8-10 months but will select an entire year of observations at the Cycle-5 review. Observations will again be assigned scheduling priorities. 25% of the selected Cycle-5 observations will be assigned priority 1, 25% will be assigned priority 2 and 50% will be assigned priority 3. We will make

every effort to schedule all priority 1 observations. Priority 2 observations will also be placed immediately into the scheduling pool. Observations with priority 3 will not enter the scheduling pool until 6 months into the cycle or until nothing else is available for scheduling. We will accept a slight decrease in scheduling efficiency (<5%) to ensure that the highest priority science is executed first. Completion of programs that are started will be our goal. We will fund eligible priority 1 and 2 observations at the beginning of Cycle-5. Observations with priority 3 will be not funded until the program begins execution.