

# HSC Queue Mode Implementation Plan ~ Stage I , II, III ~

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# Basic Principle

- Start simple
- Satisfying users requirements
  - Information : Logs, completion reports
  - Feedback : Q/A staff assignment
- Do not drop quality of operation.
- Do not drop quality of data.
  - Some parts should be checked manually at the beginning
  - QWG will help proactively in all STAGEs.

# STAGEs for Queue Implementation

## STAGE I: S16 A & B (Beginning)

- Only applicants of queue Mode in OPEN USE



## STAGE II: S17 A & B (Stabilizing)

- 50% Queue + 50% Classical in OPEN USE only



## STAGE III: S18 A & B (Settle down)

- 80% Queue + 20% Classical in both OPEN USE and SSP

# STAGE I: S16A and B

- OPEN USE (< 5 nights) + 1<sup>st</sup> and last nights of SSP + Sukima Time
- In CfP, open “Subaru Open Use queue mode program” for HSC.
  - Queue mode will be allocated at “Sukima” (隙間時間) in classical mode program and several queue mode nights.
    - No additional target request of classical programs.
    - In bad weather, Queue program has higher priority than back-up programs.
    - The number of queue observation night depends on the number of the accepted queue programs.
  - Referees give science assessment for queue proposals.
  - SAs give technical assessment for queue proposals.

# STAGE I: Queue Mode Programs

- Normal Queue Programs
  - Normal Queue Program: No lower limitation of observing time = 0.14 – 5 nights (=1 - 35 hrs)
- Filler Queue Programs (from S16B)
  - Bad weather Condition
  - Less then 4 hrs.
  - Priority is lower than Normal Queue Program but it will be useful for Queue filling.

# STAGE I: Queue Operation Resources

## Manage of Queue Schedule and Completion rate

- Operation Center: Imanishi, Pyo, Nakano + FQA staff
- With Queue planning and simulation program

## Queue Observers

- SAs, SSAs, Operators, HSC Astronomers

## Queue Software Management

- OCS team & CDM ( ProMS and STARS system)

## Quality Assessment

- Initial QA during observation with HSC quick look programs by SAs
- Final QA will be done by FQA staff in the next morning.

# STAGE I : Software for S16 A & B

## Phase II Tools

- Input observation plan and parameters by PI
  - Make Observation block files
  - Spread Sheet Format

## Queue Planner

- Drafting and Investigation of Queue mode schedule
  - Semester base, Each two weeks (one run) base
- Checking and modifying Queue mode Schedule daily base
  - Update with the completeness of OBs .

## Queue Selection & Execution tools

- Show queue list satisfying conditions [sorted by priority]
- Weight control system.
- Generate HSC OPE commands from OB information
- Marking and Commenting for OBs which were done

## Data Delivery

- Distribute monitoring script to find new data acquisition to PIs.
- Observation Logs (Executed OBs)
- Weather Information
- Quality assessments

# STAGE II: S17 A & B

- Allocate Queue programs in fixed rate
  - 20% Queue + 80% Classical (S17A)
  - 50% Queue + 50% Classical (S17B)
  - The allocation rate can be changed by the results of S16A & B queue observations
  - Increase the queue observation rate up to 50%
- OPEN USE + 1<sup>st</sup> and last nights of SSP + Sukima Time
- Allocate proposals to Queue mode in TAC or Sci. Div.
  - High ranking proposals in referee judgment
  - Proposals
    - strict requirements for scientific achievement ( best seeing, photometric sky, dark night)
    - Targets with wide spreading over the all sky area
- Regular Queue scheduling is required



# STAGE II: Queue Scheduling

- Semester and Run base scheduling check
  - Before starting Semester and One week before run
  - Update queue filling and lists updated
  - Check the availability of queue list considering various environment conditions
- Daily base scheduling with fine tuning
  - Update and fine tune queue lists before the observation everyday.

# STAGE II: Queue Operation Resources

## Manage of Queue Schedule and Completion rate

- Operation Center: Nakano, Imanishi, Pyo + FQA staff

## Queue Observers

- SA, SSA, Operators, HSC Astronomers

## Queue Software Management

- OCS team

## Queue Scheduling

- SSA + SA + HSC Astronomers
- Run base schedule check and daily base schedule revision

## Quality Assessment

- FQA staff
- In the next morning, check frames commented by Queue observers with QA tools

# STAGE II : Software for S17A & B

Phase II Tools

Queue Planner

Queue Selection and  
Execution Tool

Data Delivery



Automatic  
Log analyzer

- Gen2 log analyzer
- Automatic Estimate and summarize times for each execution of proposal (OB), overhead, trouble down time

Quality  
Assessment  
tool

- Initial QA during observation with HSC software by Queue observers
- Final QA after observation by Queue Assessment Checker

# STAGE III: S18 A and B

- Both Open USE and SSP
  - 80% Queue + 20% Classical
  - Dead time of SSP will be increasing → mixing Open USE and SSP in queue mode
  - The policy of how to take balance OPEN USE and SSP with queue should be determined.

# Thanks

- Questions and Comments ?