DKIST CSP Workshop
Nagoya University, Japan
26 February 2018

DKIST Critical Science Plan Workshop #4: Reconnection, Turbulence, Plasma Processes

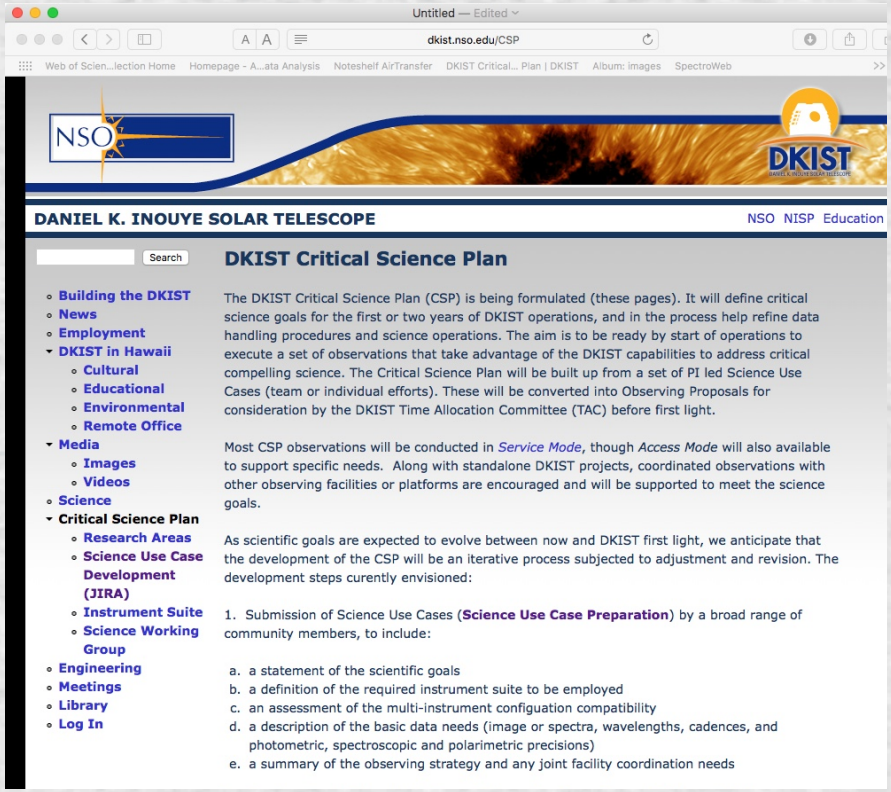
Introduction to the Critical Science Plan; Life cycle of a Science Use Case

DKIST Critical Science Plan (CSP)

Aim: To be ready *as a community*, by science first light, to execute a set of observations exploiting the DKIST capabilities to address critical, compelling science in the first two years of operations (nominally 2020, 2021).

Bottom-up approach, community based. Workshops one of the tools, but NOT exclusive

http://dkist.nso.edu/CSP



Critical Science Plan Structure:

- Research Areas
- Research Topics
- Science Use Cases

DKIST Critical Science Plan (CSP)

As a community we must:

- understand forthcoming capabilities
- define science goals
- compile Science Use Cases

- coordinate to form a complementary set of PI lead teams
- convert Science Use Cases into PI led Observing Proposals

This will enable:

- Service Mode observations
- Scientific analysis
- PI led publication of first-light results

At this workshop:

Compile a set of well defined, complementary Science Use Cases, detailing the topics to be investigated, the reasons why DKIST is necessary, and the type of DKIST observations necessary to address the science.

1. Formulate science context and goals; specify *why* DKIST
2. Identify observational needs (spectral lines of interest, pattern, cadence, sensitivities)
3. Determine useful DKIST instrument suite
4. Assess instrument performance capabilities

After this workshop

Role of the DKIST Science Working Group (DKIST SWG)

1	Bello-Gonzales	Nazaret	KIS	Germany	Member
2	Cao	Wenda	NJIT	US	Member
3	Cauzzi	Gianna	AO	Italy	Member
4	Cranmer	Steve	U. Colorado	US	Member
5	da Costa	Fatima Rubio	Stanford	US	Member
6	DeLuca	Ed	Harvard	US	Member
7	dePontieu	Bart	Lockheed	US	Member
8	Fletcher	Lyndsay	U. Glasgow	UK	Member
9	Gibson	Sarah	HAO	US	Member
10	Jeffries	Stuart	Georgia St	US	Member
11	Judge	Phil	HAO	US	Member
12	Katsukawa	Yukio	NAOJ	Japan	Member
13	Landi	Enrico	Michigan	US	Member
14	Petrie	Gordon	NSO	US	Member
15	Qiu	Jiong	MSU	US	Member
16	Rast	Mark	U. Colorado	US	Member
17	Rempel	Mattias	HAO	US	Member
18	Rubio	Luis Bellot	IAA	Spain	Member
19	Scullion	Eamon	TCD	Ireland	Member
20	Sun	Xudong	IfA	US	Member
21	Welsch	Brian	Wisconsin	US	Member
22	Goode	Phil	NJIT	US	Co-I
23	Knoelker	Michael	HAO	US	Co-I
24	Rosner	Robert	U. Chicago	US	Co-I
25	Kuhn	Jeff	IFA	US	Co-I & Instrument PI
26	Rimmele	Thomas	NSO	US	Ex-Officio
27	Casini	Roberto	HAO	US	Instrument PI
28	Lin	Haosheng	IFA	US	Instrument PI
29	Schmidt	Wolfgang	KIS	Germany	Instrument PI
30	Woeger	Friedrich	NSO	US	Instrument PI

- SWG will try to articulate the community vision of essential DKIST science through the Critical Science Plan
- The SWG will identify Science Use Case overlap and suggest team consolidation
- The SWG will assess whether the science proposed in the Science Use Cases requires DKIST capabilities
- The SWG will aim to minimize, NOT adjudicate, conflicts
- DKIST Time Allocation Committee is final arbitrator, and will determine the order by which the Observing Proposals are executed

Feedback to DKIST. The existing (and future) Science Use Cases will inform the project about:

- Science most relevant to the community;
- Instruments, lines, modes of operation most requested (desired?) by the community;

- Allow definition of efficient operation, data management

Important Points:

1. This process will likely be iterative – CSP structure (that you see on the website) is intended as a helpful but non-rigid framework and the science will evolve.

2. The CSP process is not exclusive (all welcome) nor unique (direct submission of observing proposals to the NSO DKIST Time Allocation Committee (TAC) under a standard submission and review process will also be possible). The CSP (and this workshop) advantage is informational.

3. Observing proposals developed as a result of participation in the DKIST Critical Science Plan effort (including this workshop) will be reviewed by the DKIST TAC along with proposals submitted outside of the CSP structure.

4. There is *no* automatic conversion of Science Use Cases to Observing Proposals – success is dependent on continued engagement beyond this workshop proper and beyond the completed Science Use Case.

5. The development of the CSP in advance of the start of operations helps the project beyond science definition – it helps in the development of essential operations and data management toolsAt breakout sessions

At beginning of breakout sessions today:

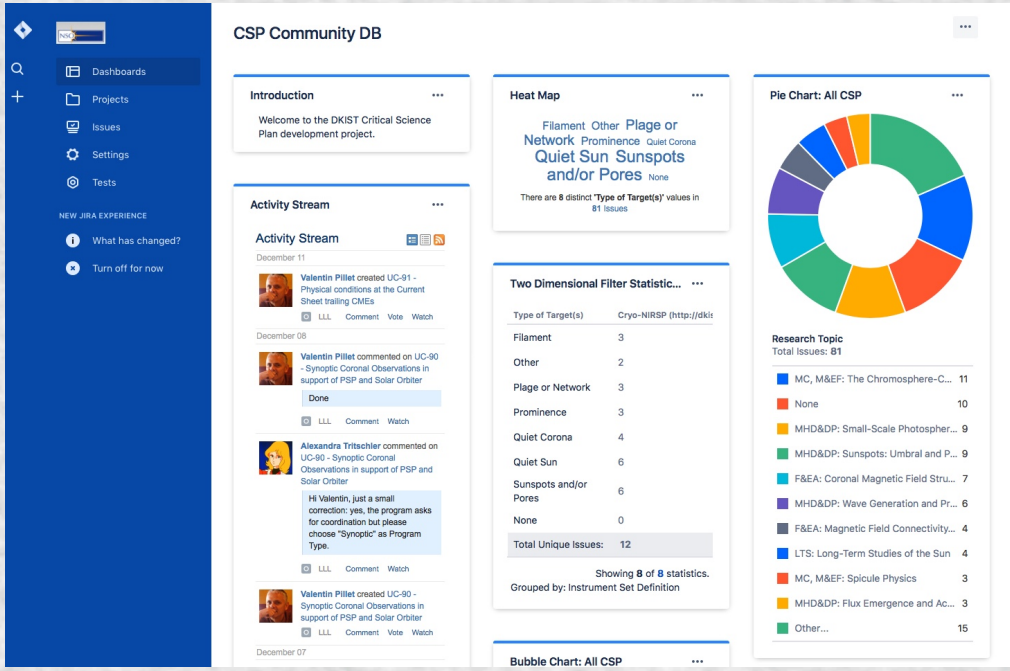
Writing a Science Use Case –

Strategy and details of JIRA interface

http://nso-atst.atlassian.net/

If you do not yet have an account, email an account request to:

DKISTCSP@nso.edu



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- Critical science description (living document) with links to Science Use Case titles and abstracts, and ultimately their full text
- Links to Instrument and other summary documents
- Links to beam-splitter configuration and data rate analysis tool (FIDO)

NOTE: Links to ALL documents can be found at MASTER LINK: https://dkist.nso.edu/CSP/instruments. Everything can be found through this one link.

http://nso-atst.atlassian.net/

Collaborative JIRA environment for Science Use Case development, and ultimately Observing Proposal development

https://www.dropbox.com/sh/uzwdc03ayovxr5o/AABuZbWtCnfPqG8F2zHaeCFta?dl=0

Dropbox link with summary documents (Instruments, Data Handling System (DHS), Facility Instrument Distribution Optics (FIDO), JIRA User's guide), and Instrument Performance Calculators (IPCs)