WAS IN MILAN

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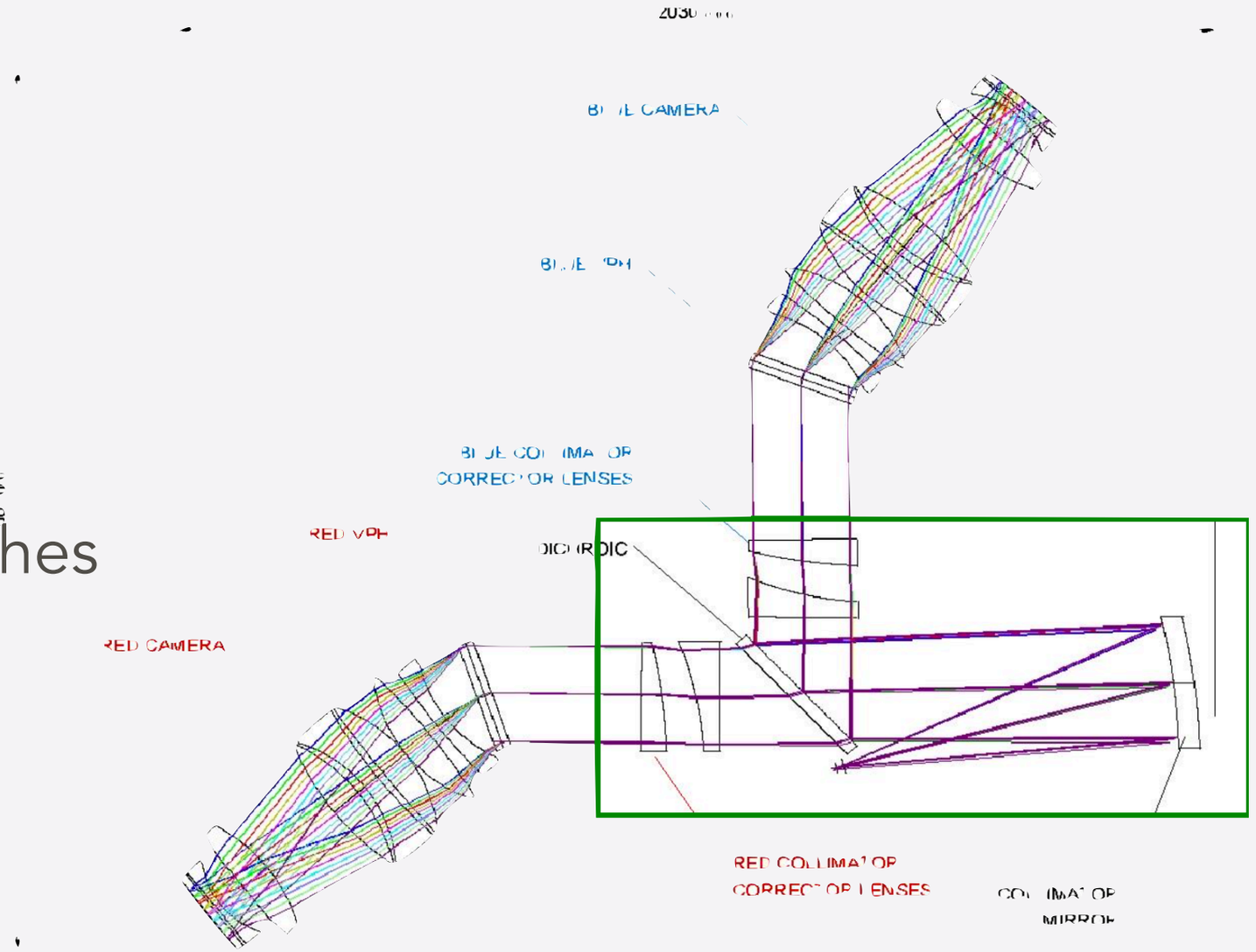
Milano, 12-13 December 2018

SUMMARY

- Archive overview
- Data products
- Data flow
- Data releases
- User Interface sketches
- Integral field units
- Virtual observatory



MILESTONES

WAS evolution

PDR

April 2015

FDR

November 2016

OPRS

2.0 March 2017
2.5 August 2017
3.0 July 2018
4.0 January 2019 (?)

COMMISSIONING

August 2019

WAS OVERVIEW

The WEAVE archive system (WAS) recollects the data from the WEAVE spectrograph as well as the reduced data provided by the Common Pipeline System (CPS), the Advanced Pipeline System (APS) and the external contribution in form of Contributed Data Products (CDPs).

DATA FLOW

Data recollection

WAS

ING

CASU

OCS

CPS

APS

CAT.

OBS. CONTROL SYSTEM

- MOS
- IFU
- CALIBs

CORE PROCESSING SOFTWARE

- CPS Reduced data
- CPS Stacked data

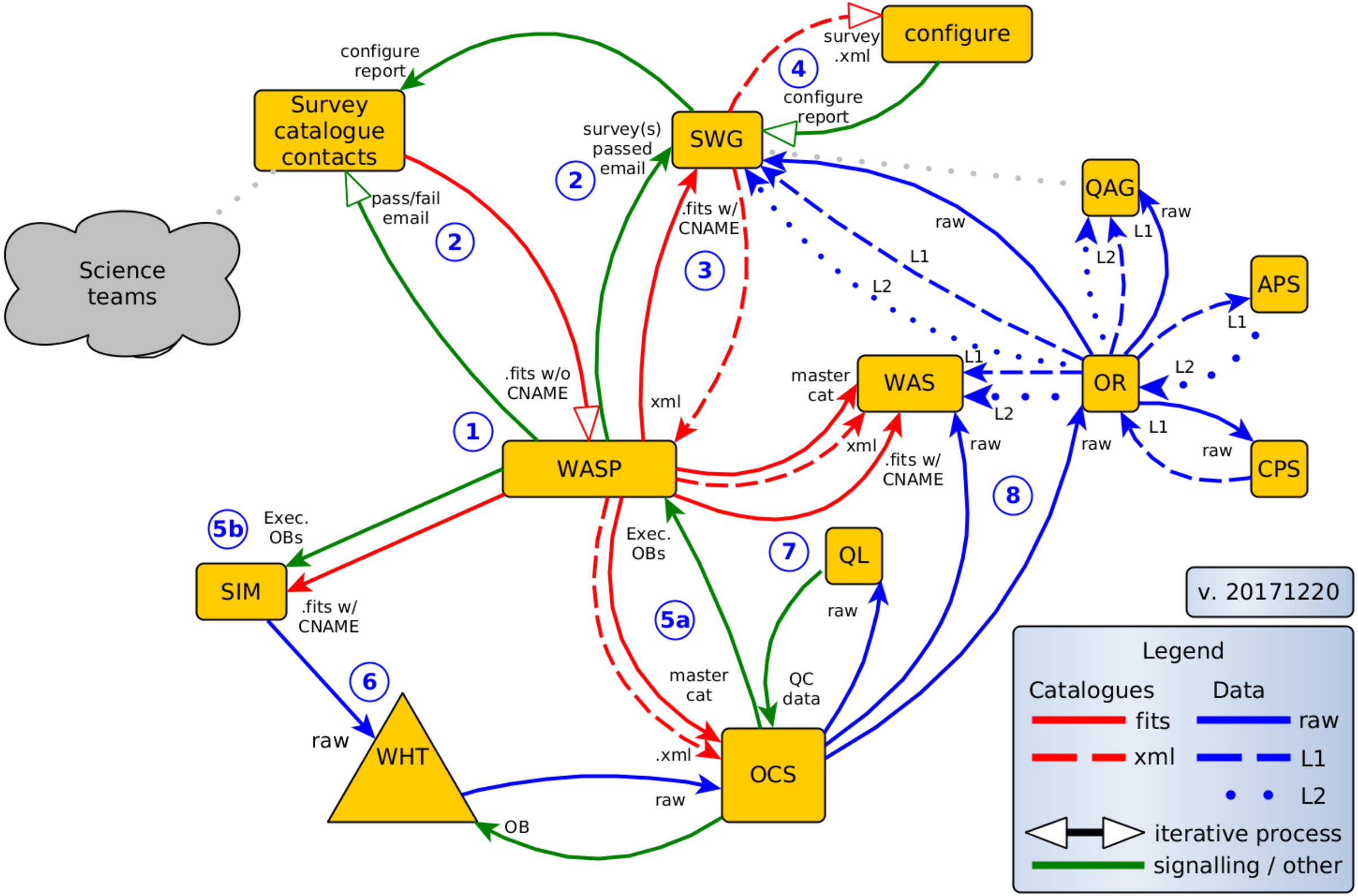
ADVANCED PROCESSING SOFTWARE

- APS stacked data (?)

CATALOGUES

- Survey catalogues

DATA FLOW


Science teams
Survey catalogue contacts
configure report
pass/fail email
SWG
survey(s) passed email
configure
survey .xml
configure report
.fits w/ CNAME
.fits w/o CNAME
xml
WASP
SIM
.fits w/ CNAME
Exec. OBs
WHT
raw
OB
Exec. OBs
master cat
.xml
OCS
QC data
QL
raw
WAS
master cat
xml
.fits w/ CNAME
QAG
raw
L1
L2
OR
APS
CPS
1
2
3
4
5a
5b
6
7
8
v. 20171220
Legend
Catalogues
fits
xml
Data
raw
L1
L2
iterative process
signalling / other

INTERNAL DATA RELEASES

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OCS	CASU	CDPs
DAILY BASIS	EVERY 3 MONTHS	NOT KNOWN
Every night raw data are pushed from the telescope to WAS.	Every 3 months CASU makes available both CPS and APS reduced data to WAS. This is an internal release.	There is no information about CDPs.

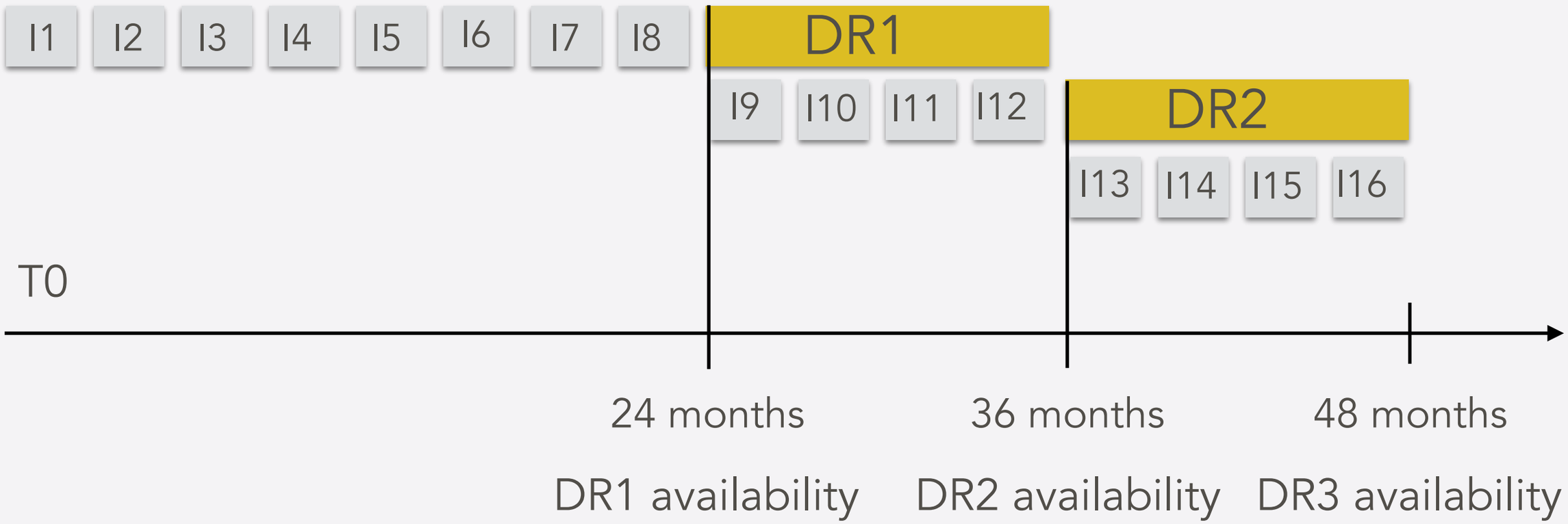
CASU is in charge to define what a data release is.

Data **retention** is used to provide to WAS only “verified” data (stacking).

Public data releases are available in general once a year and DR1 = T0 + 24 months.

Data are subject to WEAVE data policy and publication policy (WEAVE-EXE-004 and WEAVE-EXE-005).

PUBLIC DATA RELEASES



Internal data release (every 3 months)

Public data release (every year)

DATA PRESERVATION

TRIESTE (ITALY)

THE MAIN BACKUP SITE IS LOCATED AT THE IA2 INAF (ITALY). DAILY.

GRONINGEN (HOLLAND)

THE SECOND BACKUP IS LOCATED IN HOLLAND. DAILY.

Other Institutions interested to have a backup copy may ask to the Weave Consortium.

Only original FITS files are backed up.

DATA VOLUME

MOS

	File size	File num.	Total size
Draw	100 MB	100 files	10 GB
Dcps	240 MB	100 files	24 GB
Daps	600 MB	50 files	30 GB

~ 64GB/day

IFU (? APS now ~1.3GB?)

This is an approximated (over?) estimation of the data rates separated by sources.

At present time the full content of Contributed Data Products (CDPs) is not fully defined and as consequence their data rate/volume.

DATA INGESTION

Data ingestion (MOS) is done in four steps:

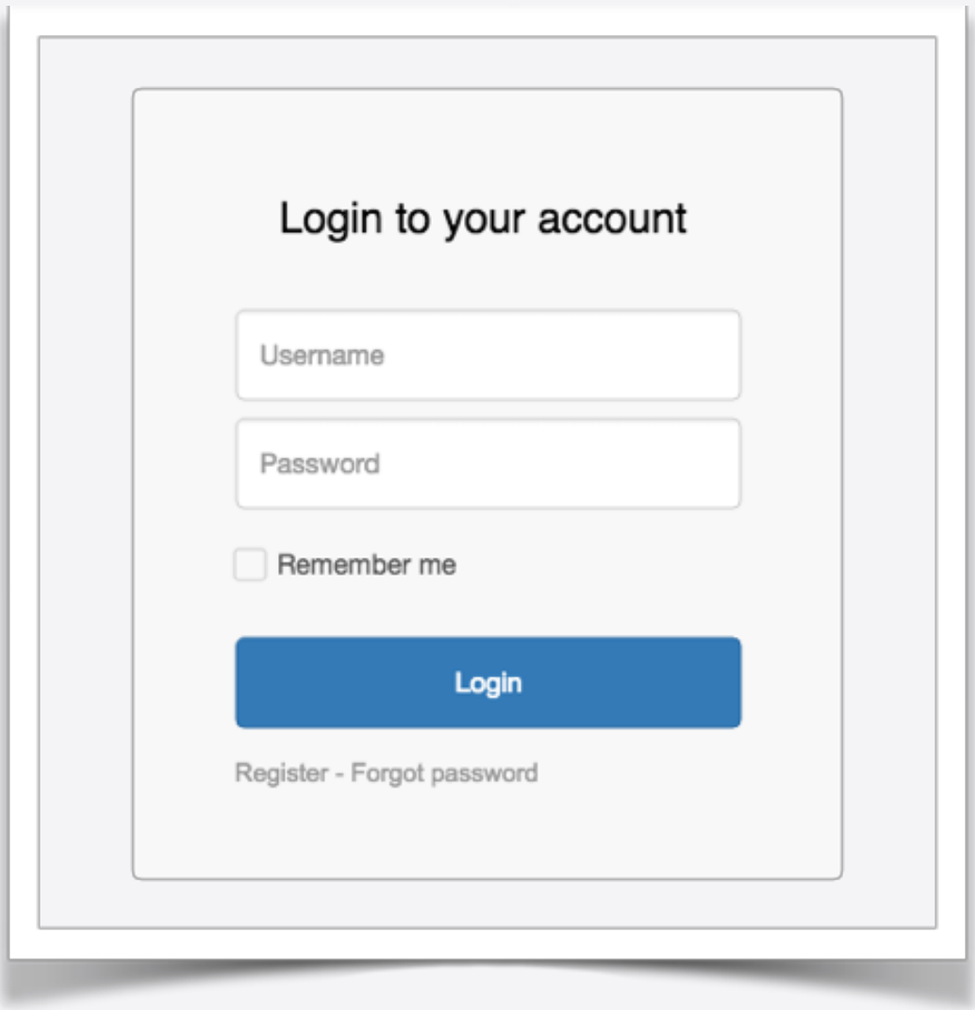
- Data transfer to a local WAS staging area (from CASU and ING)
- Fibre split which produces a new file for each fibre (policy)
- Metadata ingestion into the database for data extraction
- File store to its final location

A similar procedure is applied also for IFU:

- No fibre split
- IFU integral flux generation (only for IFU)

The catalogues are only ingested to the database as they are not provided for external access.

DATA ACCESS



DATA ARE ACCESSIBLE VIA WEB THROUGH A USER INTERFACE.

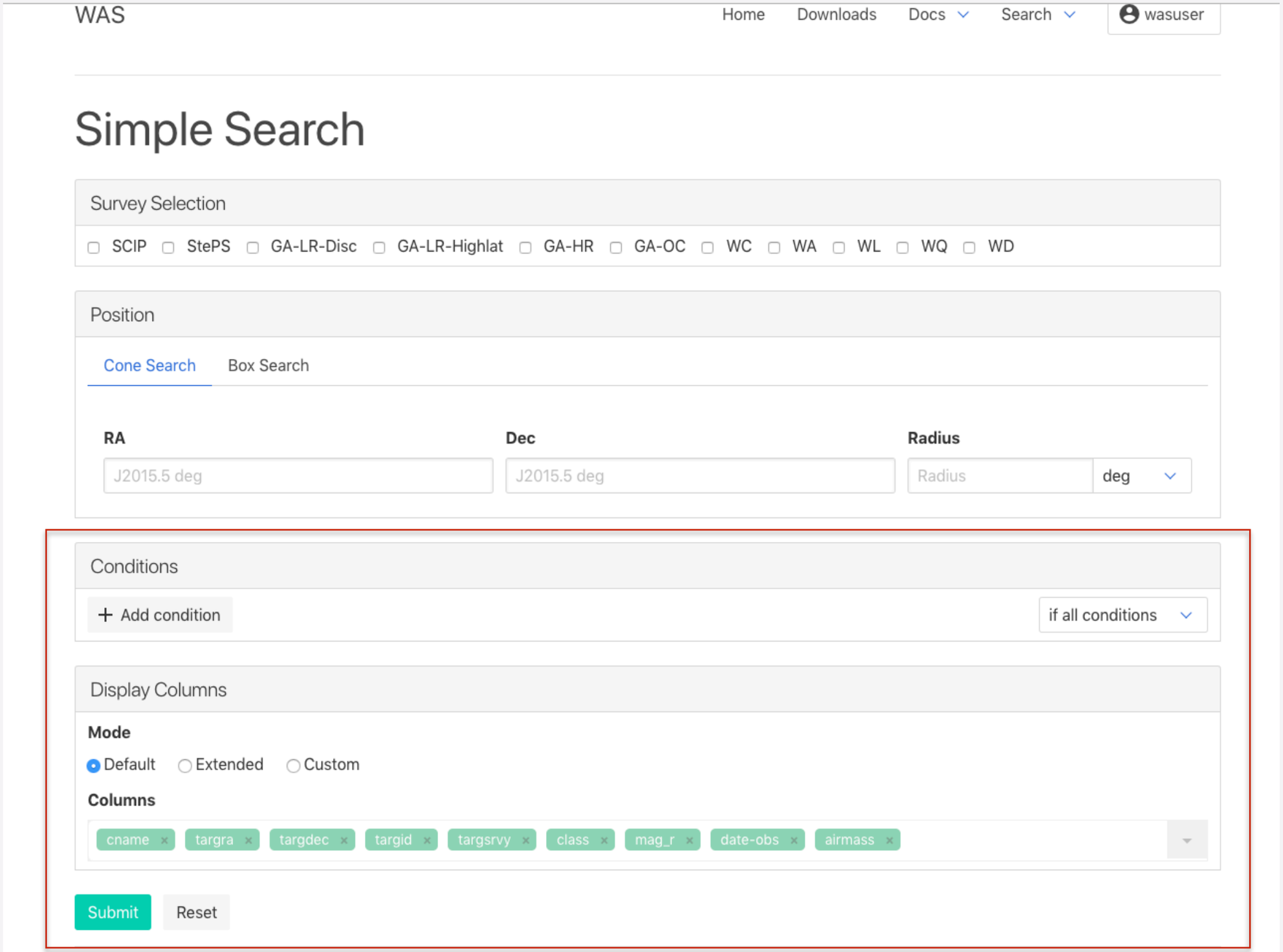
The user interface will permit the data access to registered users.

Every user has to sign up to access the data.

UI is web-based and provides tools for data downloads and data visualisation.

UI

The UI look and feel has been reworked to offer a clear and immediate possibility for each survey to choose the parameters to query and the columns to display.



UI

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Conditions

+ Add condition

if all conditions

mag_r | >= | 16.5 | ×

Display Columns

Mode

○ Default ○ Extended ◉ Custom

Columns

Observational	Type to search
Position & Kinematics	Type to search
Photometry	Type to search
Stellar Parameters	Type to search
Extragalactic Parameters	Type to search
Spectral Information	Type to search
All	Type to search

Submit Reset

RESULTS

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WAS

Home Downloads Docs Search wasuser

Result List

25 per page | Columns | Plot | Export | Download

Export: CSV, FITS, VO Table

	cname	targra	targdec	targid	targsrvy	ate-os	airmass
		0.0	0.0		[""]	NaN	
	WVE_18491267-002637	282.302778952	-0.443720440837	J184912.67-002637.4	["scip"]		17.90061
	WVE_18493638-001701	282.401587727	-0.283621618213	18505121+0020133	["scip"]		23.080034
	WVE_18492051-000808	282.335457374	-0.135606383518	18503534+0029062	["scip"]		24.443867
	WVE_18490404-002351	282.266851178	-0.397716140269	YSO_035	["scip"]		16.862345
	WVE_18492481+000910	282.353373162	0.152869581083	J184924.81+000910.3	["scip"]		17.826654
	WVE_18494913-001517	282.45469144	-0.254924698971	J184949.13-001517.7	["scip"]		15.905544
	WVE_18495985-001836	282.499362733	-0.310171788408	J184959.85-001836.6	["scip"]		12.677886
	WVE_18500370-001636	282.515399405	-0.276779855451	18511853+0020380	["scip"]		22.702904
	WVE_18493653-001108	282.402227312	-0.185730535873	J184936.53-001108.6	["scip"]		17.830393

51487 to 1287175 of 1,287,160

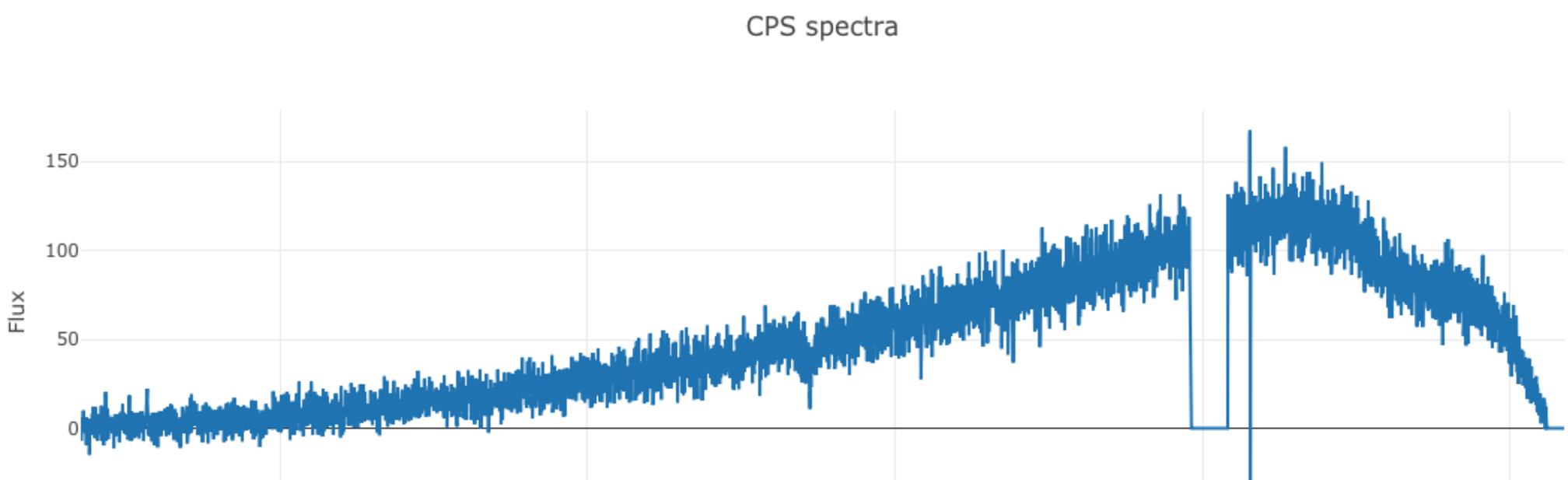
1 ... 51486 51487

DETAILED VIEW

Result Detail

cname	WVE_18490404-002351
targra	282.266851178
targdec	-0.397716140269
targid	YSO_035
targsrvy	["scip"]
class	
mag_r	16.862345
date-obs	
airmass	
subclass	

Download



PLOTS

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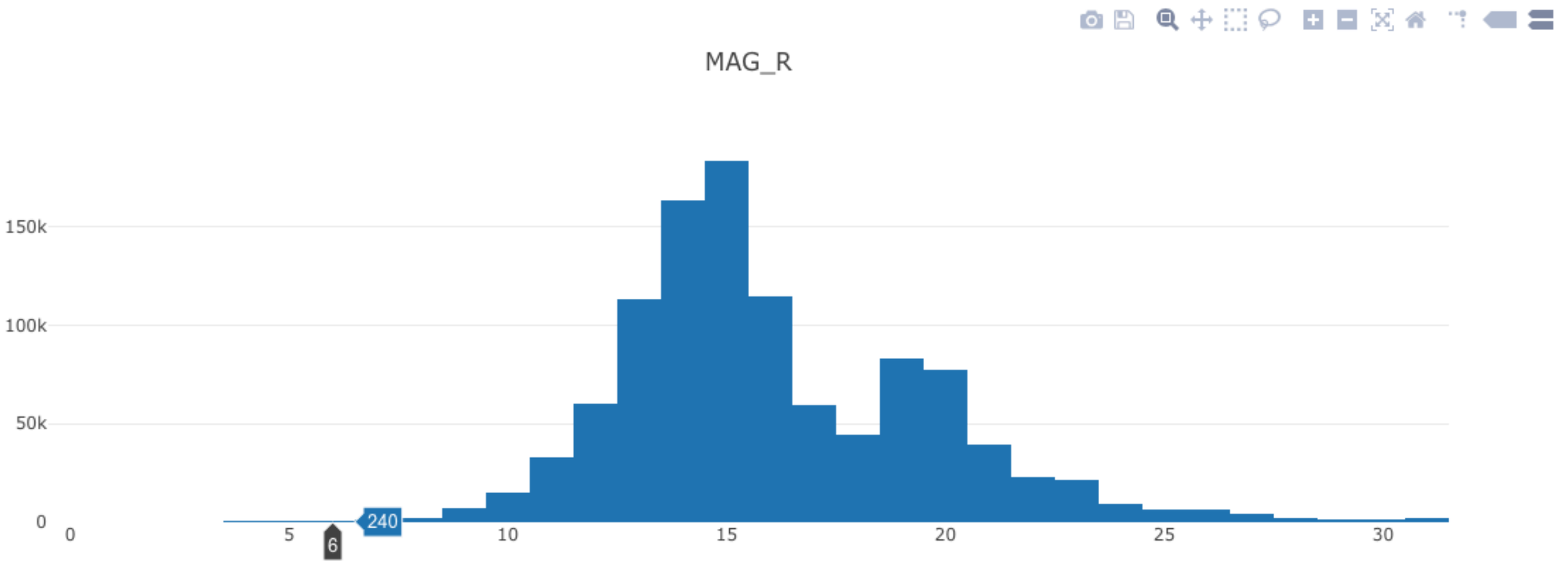
Histogram Plot

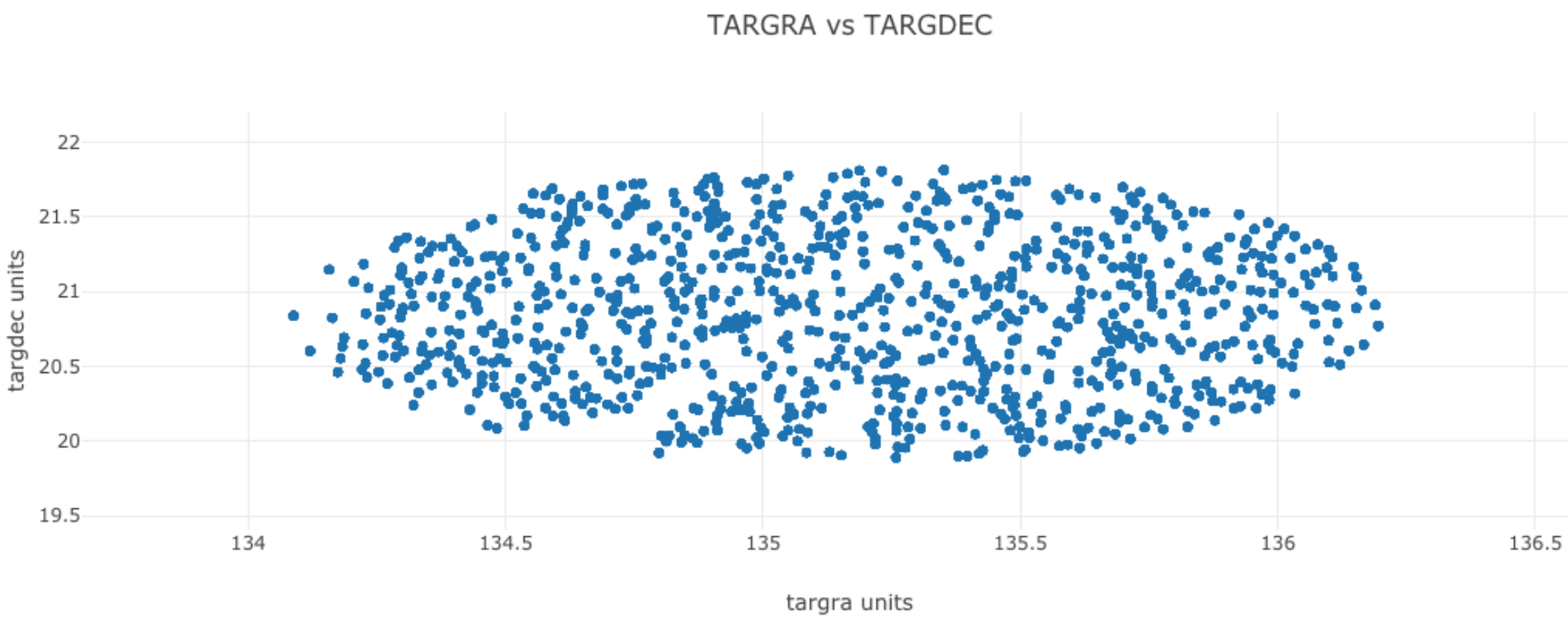


PLOTS

WAS

Home Downloads Docs Search wasuser

Scatter 2D Plot



IFU PRODUCTS

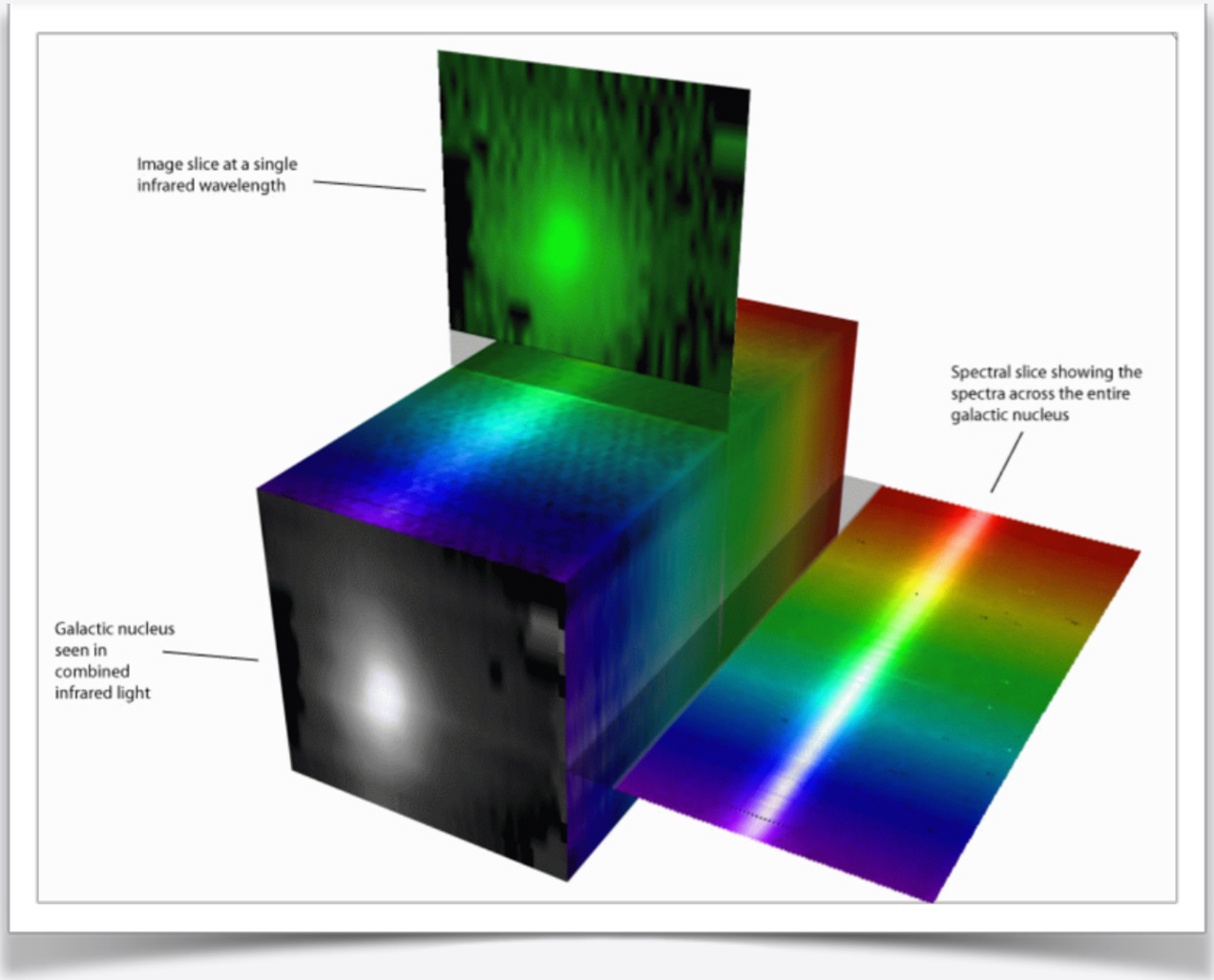


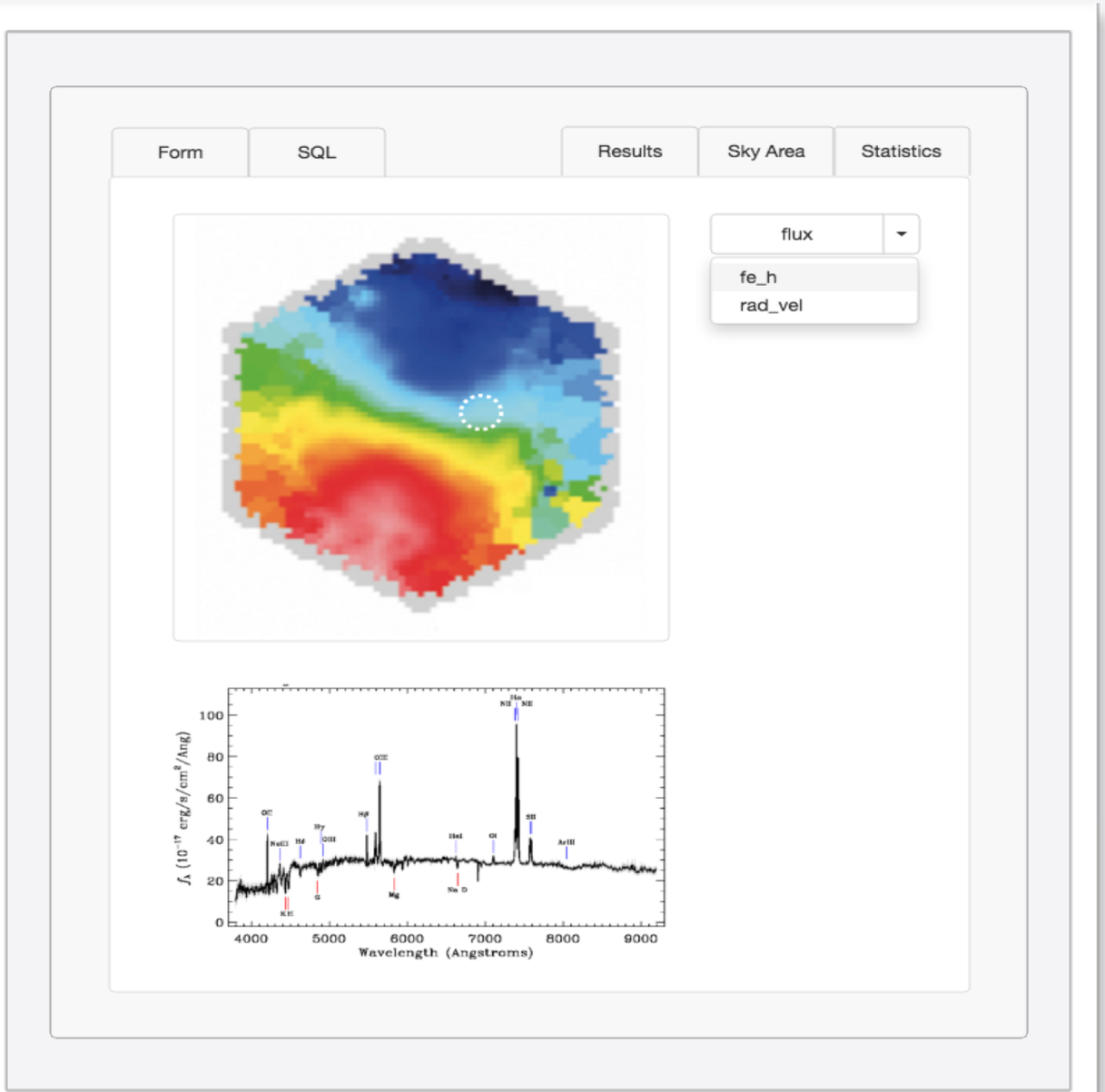
Image credit: Stephen Todd (ROE) and Douglas Pierce-Price (JAC)

WHAT IS DELIVERED TO WAS?

Individual ditherings, data cubes or both?

For data cubes, we need a tool for display the data (Qfits View? Aladin? DS9?)

IFU DISPLAY



IFU DISPLAY IMPLEMENTATION

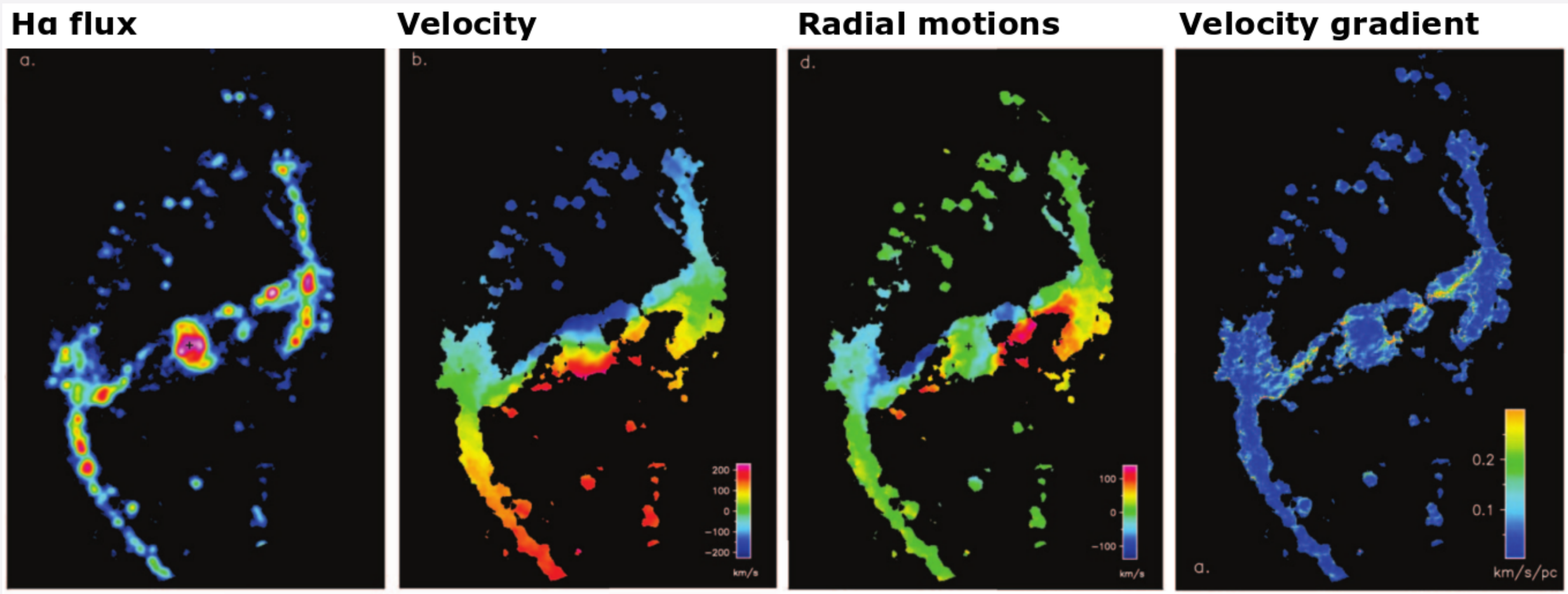
The IFU will be displayed as the integrated flux.

Depending on the requirements, some other APS products like radial velocity can be shown (example in the next slide).

By clicking on a particular region, it is possible to extract the spaxel from the data cube and plot it as shown.

IFU DISPLAY

These are other examples of interesting features to be displayed.



(Adapted from Zurita et al. (2004)

VIRTUAL OBSERVATORY

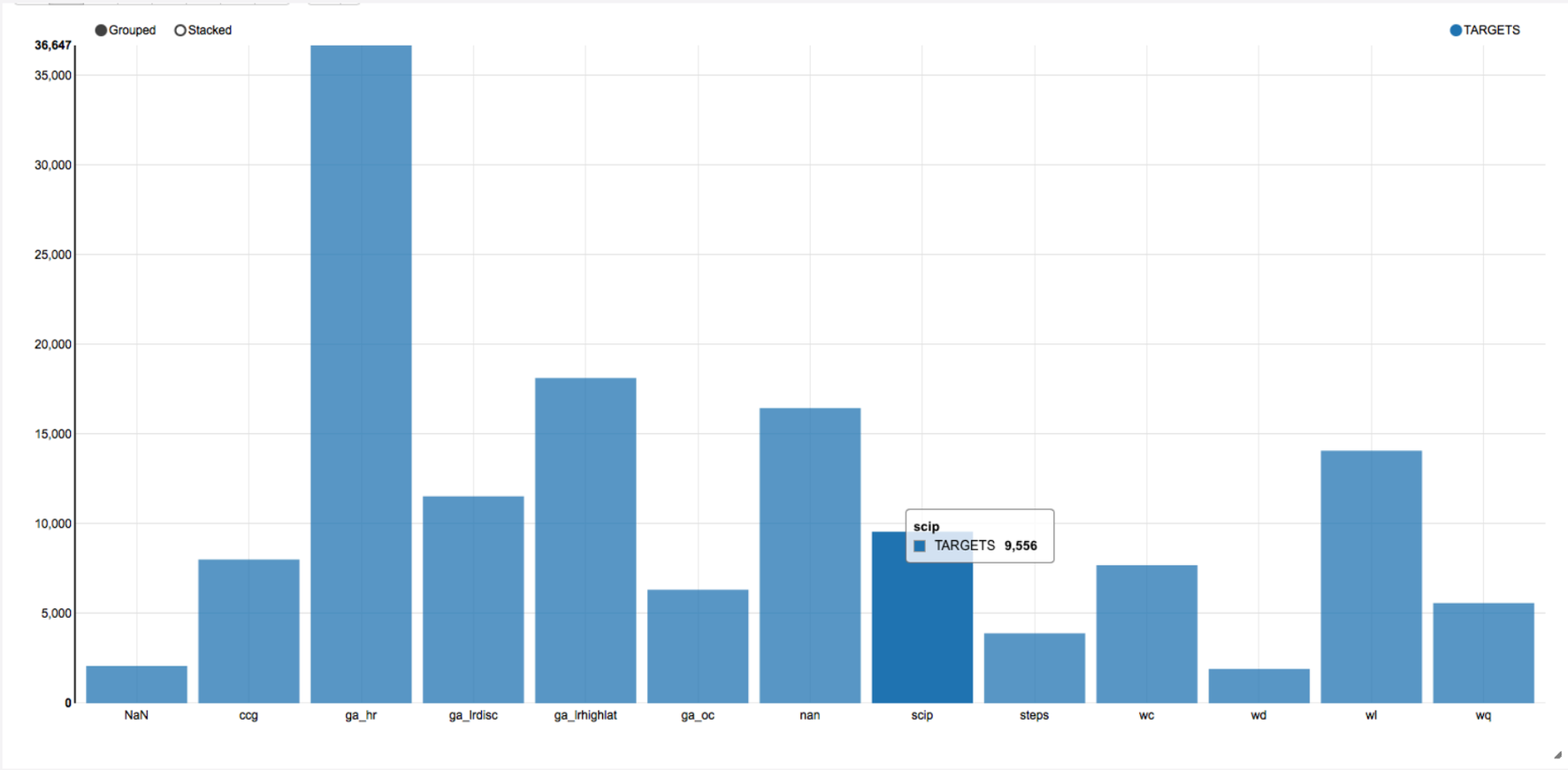
WAS makes use of the GAVO DaCHs tool in order to publish the data to the Virtual Observatory.

Only public data releases are published to the Virtual Observatory.

APS products are ingested into the V.O., but spectra will not be included into V.O.

TAP (table access protocol) is the only protocol implemented and offered by WAS.

Operational rehearsal 3 ingesting now …



OPEN ISSUES

There are still open issues for WAS:

INTERNAL

- Data model is still changing
  - APS (L2) is delayed: files still need to fix some inconsistence (after joining the red and blue arms)
  - Contributed data products not known yet
  - CASU CPS (l1) data format still changing
- UI development strictly depends on data model: any delay in previous steps is directly reflected in WAS. Be patients, please!

EXTERNAL

* we(ave) and IA2, collaboration or divorce ?
* (almost) big data and big data analysts, collaboration or divorce ?

OAC Osservatorio Astronomico di Cagliari

telescopio nazionale galileo

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THANKS

MEAVE