The WEAVE archive: a User view

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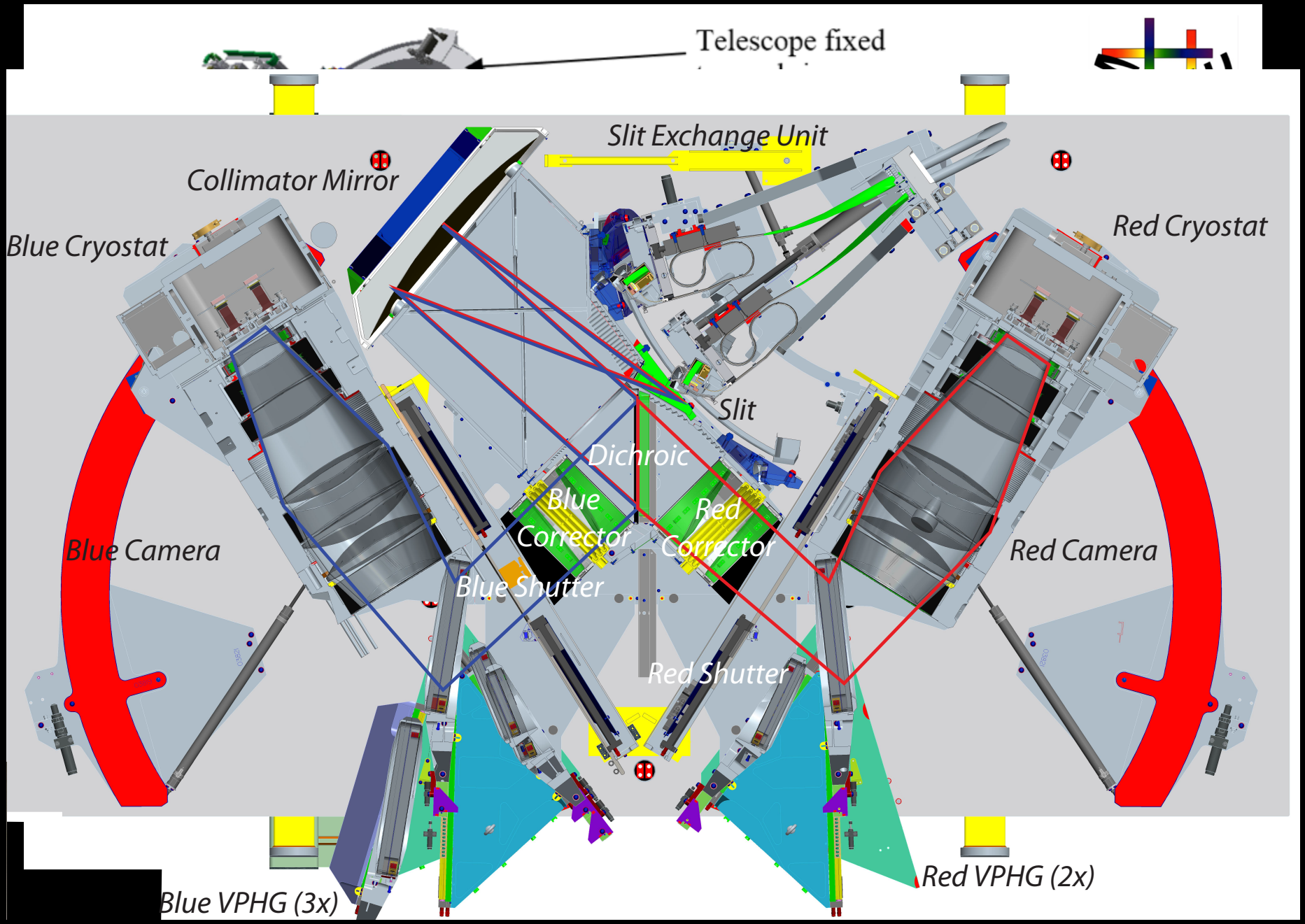
di Padova

WEAVE characteristics

Telescope, diameter	WHT, 4.2m
Field of view	2° ⌀
Number of fibers	960 (plate A)/940 (plate B)
Fiber size	1.3″
Number of small IFUs, size	20 x 11″x12″ (1.3″ spaxels)
LIFU size	1.3′x1.5′ (2.6″ spaxels)
Low-resolution mode resolution	5750 (3000–7500)
Low-resolution mode wavelength coverage (Å)	3660–9590
High-resolution mode resolution	21000 (13000–25000)
High-resolution mode wavelength coverage (Å)	4040–4650, 4730–5450 5950–6850


Telescope fixed
Slit Exchange Unit
Collimator Mirror
Blue Cryostat
Red Cryostat
Slit
Dichroic
Blue
Corrector
Red
Corrector
Blue Camera
Red Camera
Blue Shutter
Red Shutter
Blue VPHG (3x)
Red VPHG (2x)

The WEAVE Primary Science Surveys

There are eight primary science cases for WEAVE:

- Galactic Archaeology
- Stellar, Circumstellar, and Interstellar Physics
- Galaxy Clusters
- WEAVE-Apertif
- StePS
- WEAVE-LOFAR
- WEAVE-QSO
- White Dwarfs

WEAVE status & timeline

- PDR: successful 3/2013
  + data systems 6/2014; WAS 4/2015)
- FDR: 11/2014–11/2017
- Construction complete: Q3/2019
- Assembly and integration at WHT complete: Q1/2020
- First engineering light: Q2/2020
- First science light: Q3/2020
- Surveys begin: begin Q3/2020

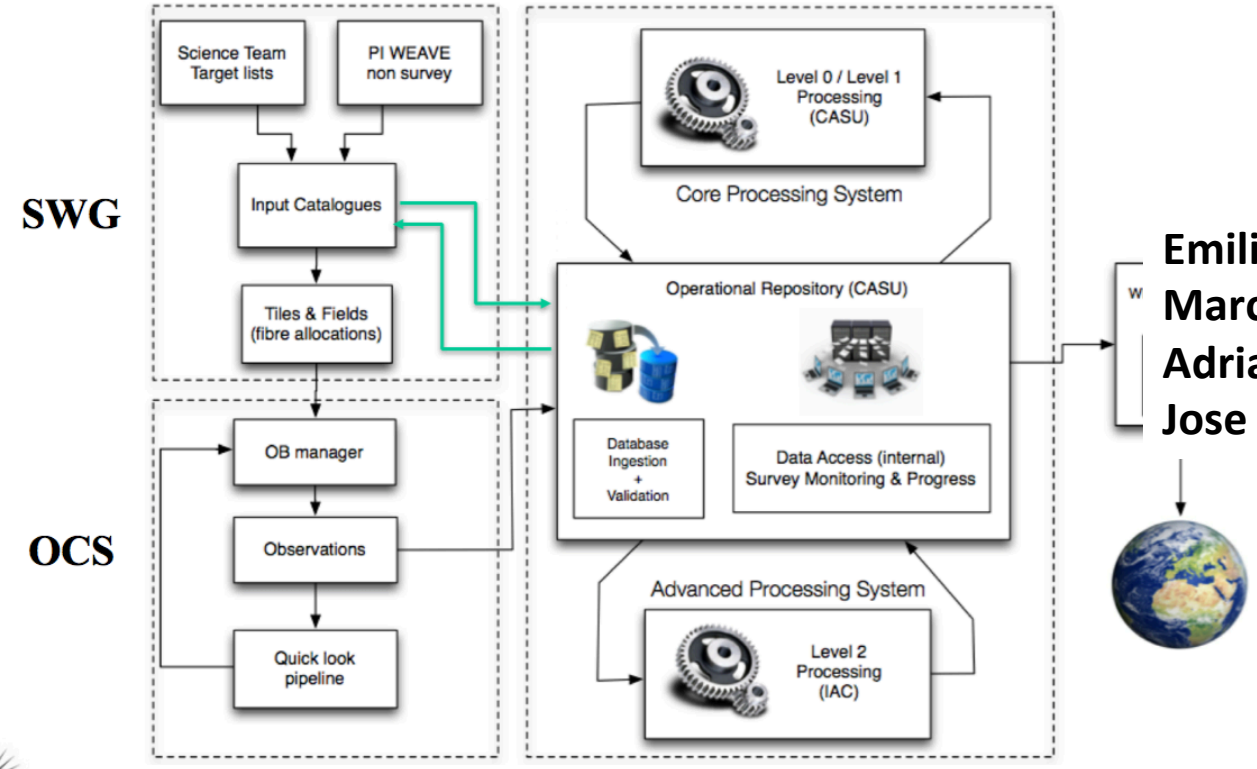
WEAVE science timeline: forward look

All dates below **TBC!**

- Science & survey docs v2.0: 15 January 2019
- Survey readiness review: May 2019
- Complete 1st-year survey plans: June 2019
- Science verification begins: Q2-Q3/2020
- Surveys begin: Q3/2020
  - 5 years at 70% of total available nights (=236 nights/year) *guaranteed*

Data Flow

WEAVE Data Flow (simplified)



Emilio Molinari
Marcello Lodi
Adrian Martin
Jose Guerra

Data Flow

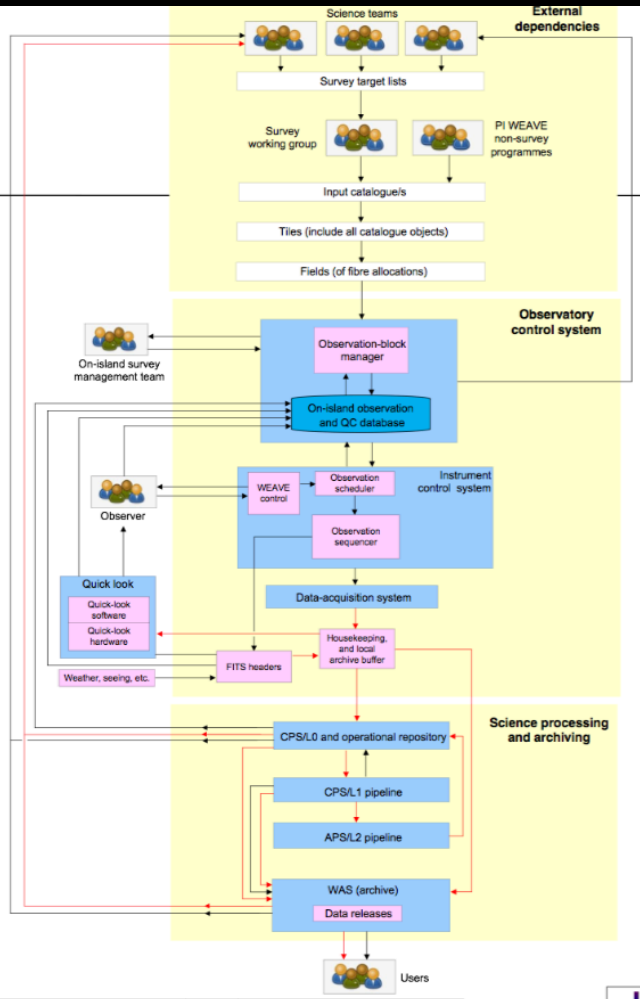
STL

OCS

CPS

APS

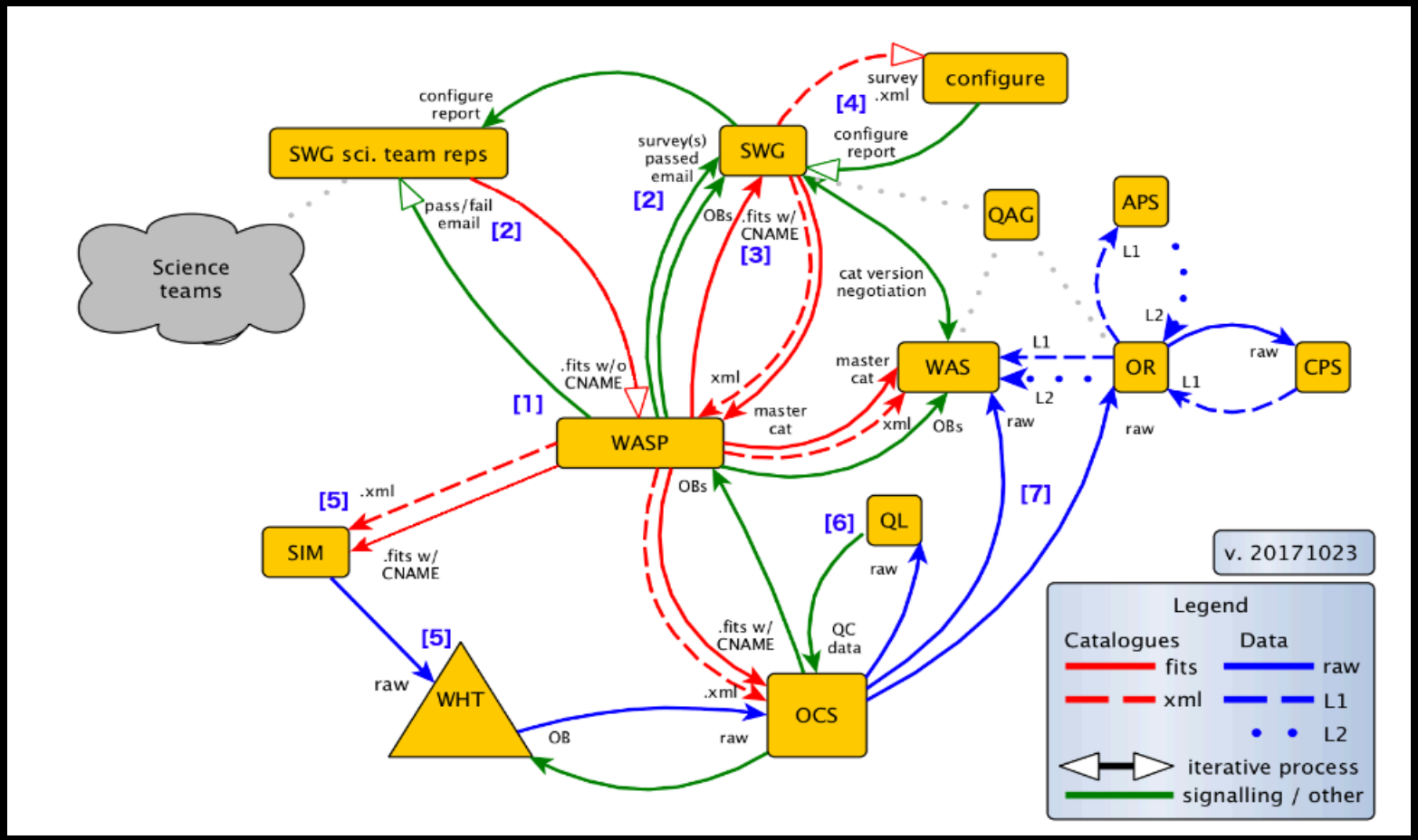
WAS



End-to-End Data Flow

QL, CPS and OR at CASU

Data Flow


configure
survey .xml
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SWG sci. team reps
configure report
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SWG
[2]
pass/fail email
[2]
OBs
.fits w/ CNAME
[3]
QAG
APS
Science teams
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signalling / other
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OCS
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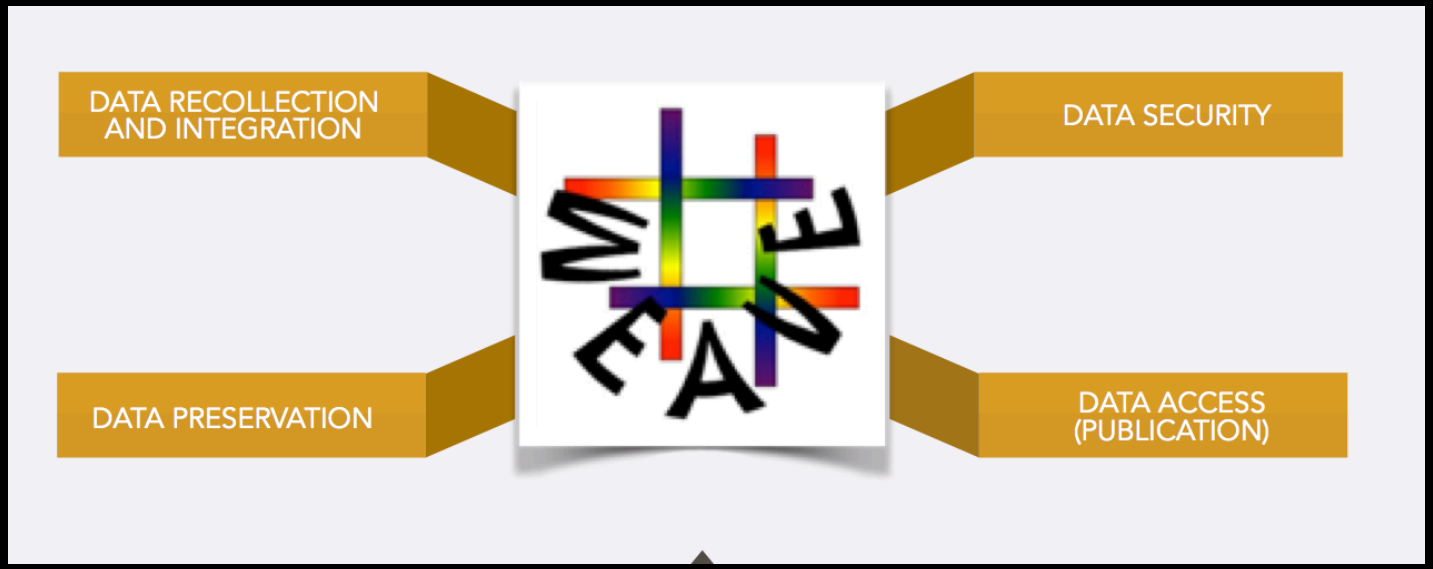
WEAVE Archive System (WAS) Overview

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



INTERNAL DATA RELEASES

OCS

DAILY BASIS
Every night raw data are pushed from the telescope to WAS.

CASU

EVERY 3 MONTHS
Every 3 months CASU makes available CPS reduced data to WAS. This is an internal release.

APS

EVERY 3 MONTHS
Every 3 months CASU makes available APS reduced data to WAS. This is an internal release.

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

In general, external users only have access rights to data that have been publicly released and their own data which are considered proprietary for one year.

Data release	Release date	Coverage of survey data	Coverage of proprietary period
DR1	T0+24 mon.	T0-T0+12mon.	T0-T0+24mon.
DR2	T0+36 mon.	T0-T0+24mon.	T0+12m - T0+36m
DR3	T0+48 mon.	T0-T0+36mon.	T0+24m - T0+48m
DR4	T0+60 mon.	T0-T0+48mon.	T0+36m - T0+60m
DR5	T0+72 mon.	all data	T0+48m - T0+60m

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.

DATA VOLUME

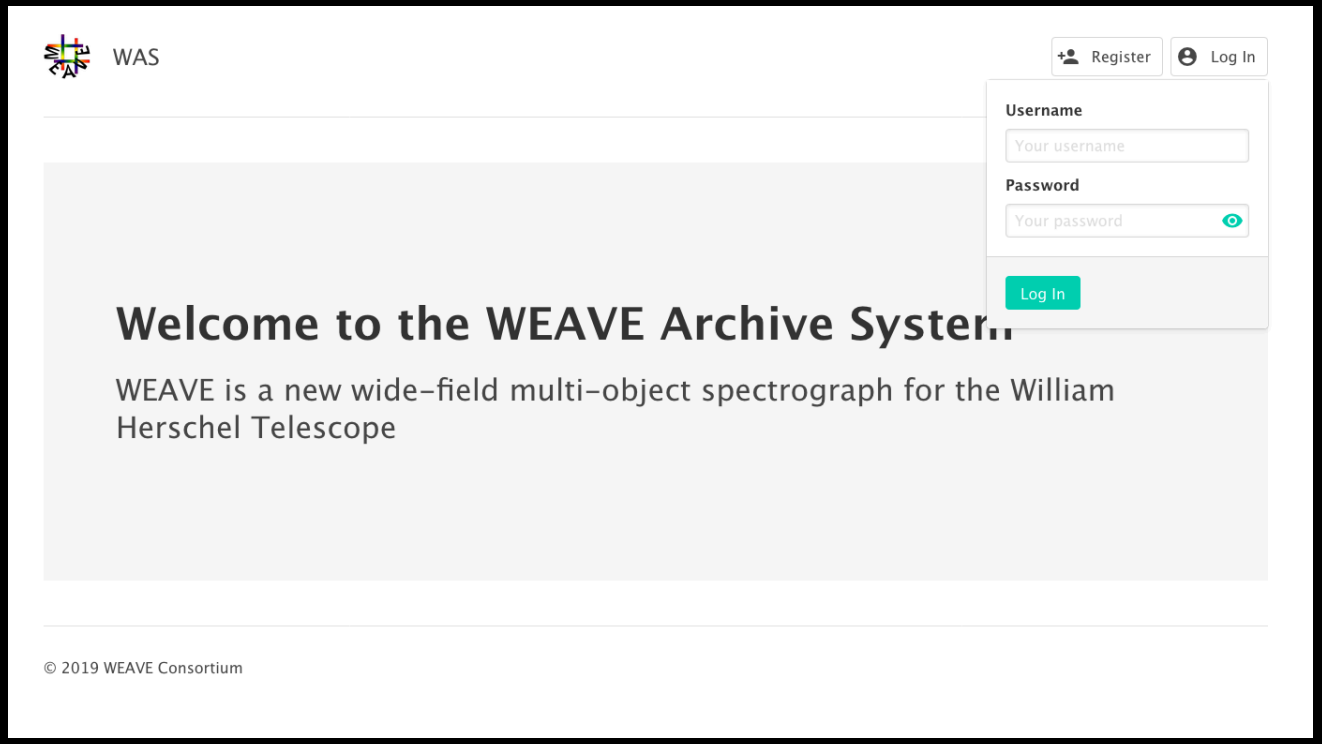
MOS

	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

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 or accessing the data.
UI is web-based and provides tools for data downloads and data visualization.



WAS

Home Search Downloads Docs wasuser

Search

Release

R2: opr3bv3

Position

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RA: J2015.5 deg OR hh:mm:ss.s

Dec: J2015.5 deg OR (-/+)dd:mm:ss

Radius: Radius deg

Query

Upload file

AND

e.g. cname

Display Columns

Column Selection

Default

cname targra ta

Submit Reset

Display Columns

Column Selection

Custom

Observational	e.g. cname
Position & Kinematics	e.g. cname
Photometry	e.g. cname
Stellar Parameters	e.g. cname
Extragalactic Parameters	e.g. cname
Spectral Information	e.g. cname
All	e.g. cname

Submit Reset

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Result List *3d967525-3269-4f5c-9a5a-8e01f4781238*

was.targcoords: "Intersects(BUFFER(POINT(23:17:12 18:42:17), 10))"

50 per page | Columns | Plot | Export | Download

actions	obs
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1 to 17 of 17 targets (33

Result List *f674e853-6e14-49a4-87a9-ed8f26f1f9fc*

was.targcoords: "Intersects(BUFFER(POINT(23:17:12 18:42:17), 10))"

50 per page | Columns | Plot | Export | Download

actions	obs	distance	z	vdisp	cname	targra	targdec	targid	targsrvy	class	mag_r	date_obs	airmass	subclass
	2	0.15370263178390564	0.25505012	444.25845	WVE_23171743+1833091	349.322625	18.55252222	SDSSJ231631.05+182803.9	["wc"]		20.491	2016-09-27	1.020960491251303	
	2	0.15624632297156935	0.3459466	1000.0	WVE_23172856+1833461	349.369	18.56281389	SDSSJ231642.19+182840.8	["wc"]	GALAXY	20.529	2016-09-27	1.020960491251303	
	2	0.10818375181906428	3.2665915E-4	73.03604	WVE_23172506+1836346	349.35441667	18.60961389	SDSSJ231638.68+183129.3	["wc"]		21.134	2016-09-27	1.020960491251303	
	2	0.14940501601160863	2.9893313E-4		WVE_23171169+1833192	349.29870833	18.55532222	SDSSJ231625.32+182814.0	["wc"]	STAR	20.386	2016-09-27	1.020960491251303	F2III (89254)
	2	0.15952922351134022	0.14023319	1000.0	WVE_23165866+1833149	349.24441667	18.55413889	SDSSJ231612.30+182809.7	["wc"]	GALAXY	19.053	2016-09-27	1.020960491251303	
	2	0.05514211250461082	0.25735885	87.02641	WVE_23170944+1839019	349.28933333	18.65051389	SDSSJ231623.07+183356.7	["wc"]	GALAXY	21.888	2016-09-27	1.020960491251303	
	2	0.05807627297195076	2.7646768E-4	174.76602	WVE_23171488+1838520	349.312	18.64776944	SDSSJ231628.52+183346.7	["wc"]		20.56	2016-09-27	1.020960491251303	
	2	0.07976012876098247	0.094980374	69.36777	WVE_23165995+1838265	349.24979167	18.64069722	SDSSJ231613.60+183321.3	["wc"]	GALAXY	21.375	2016-09-27	1.020960491251303	
	2	0.08363108799771163	2.65186E-4	45.329422	WVE_23165081+1842195	349.21170833	18.70540833	SDSSJ231604.46+183714.3	["wc"]		21.647	2016-09-27	1.020960491251303	
	2	0.1172219650354595	0.0034598473	34.89793	WVE_23165148+1837120	349.2145	18.61999167	SDSSJ231605.13+183206.8	["wc"]		22.098	2016-09-27	1.020960491251303	
	2	0.07757650154025594	0.26934034	36.413013	WVE_23165335+1843453	349.22229167	18.72924444	SDSSJ231607.01+183840.2	["wc"]		21.175	2016-09-27	1.020960491251303	
	2	0.06862960070285791	0.19215804	57.444977	WVE_23165501+1841244	349.22920833	18.69010833	SDSSJ231608.66+183619.2	["wc"]		22.132	2016-09-27	1.020960491251303	
	2	0.03732633474583262	3.295781E-4	129.69725	WVE_23170262+1842342	349.26091667	18.70950556	SDSSJ231616.27+183729.1	["wc"]		20.567	2016-09-27	1.020960491251303	
	2	0.11820658287454187	5.296485E-4	1.2185266	WVE_23164739+1846196	349.19745833	18.772125	SDSSJ231601.05+184114.6	["wc"]		22.092	2016-09-27	1.020960491251303	
	2	0.1623360077710659	1.3943927E-4		WVE_23163524+1837550	349.14683333	18.63194444	SDSSJ231548.90+183249.9	["wc"]	STAR	20.688	2016-09-27	1.020960491251303	F2III (89254)
	1	0.12801408293774966	0.71284723	819.2977	WVE_23163984+1841171	349.166	18.68808889	A2572a-F06-Sky0005	["wc"]			2016-09-27	1.020960491251303	
	2	0.16521418192437887	4.5487506E-4	41.897667	WVE_23163217+1839142	349.13404167	18.65394167	SDSSJ231545.82+183409.2	["wc"]		21.783	2016-09-27	1.020960491251303	

1 to 17 of 17 targets (33 observations)

1

Result List *3d967525-3269-4f5c-9a5a-8e01f*

was.targcoords: "Intersects(BUFFER(POINT(23:17:12 18:42:17), 10))"

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actions	obs	distance	cname							date_obs	airmass
	2	0.15370263178390564	WVE_23171743+1833091							2016-09-27	1.020960491251303
	2	0.15624632297156935	WVE_23172856+1833461							2016-09-27	1.020960491251303
	2	0.10818375181906428	WVE_23172506+1836346							2016-09-27	1.020960491251303
	2	0.14940501601160863	WVE_23171169+1833192	349.29870833	18.55532222	SDSSJ231625.32+182814.0	["wc"]		20.386	2016-09-27	1.020960491251303
	2	0.15952922351134022	WVE_23165866+1833149	349.24441667	18.55413889	SDSSJ231612.30					
	2	0.05514211250461082	WVE_23170944+1839019	349.28933333	18.65051389	SDSSJ231623.07					
	2	0.05807627297195076	WVE_23171488+1838520	349.312	18.64776944	SDSSJ231628.52					
	2	0.07976012876098247	WVE_23165995+1838265	349.24979167	18.64069722	SDSSJ231613.60					
	2	0.08363108799771163	WVE_23165081+1842195	349.21170833	18.70540833	SDSSJ231604.46					
	2	0.1172219650354595	WVE_23165148+1837120	349.2145	18.61999167	SDSSJ231605.13					
	2	0.07757650154025594	WVE_23165335+1843453	349.22229167	18.72924444	SDSSJ231607.01					
	2	0.06862960070285791	WVE_23165501+1841244	349.22920833	18.69010833	SDSSJ231608.66					
	2	0.03732633474583262	WVE_23170262+1842342	349.26091667	18.70950556	SDSSJ231616.27					
	2	0.11820658287454187	WVE_23164739+1846196	349.19745833	18.772125	SDSSJ231601.05					
	2	0.1623360077710659	WVE_23163524+1837550	349.14683333	18.63194444	SDSSJ231548.90					
	1	0.12801408293774966	WVE_23163984+1841171	349.166	18.68808889	A2572a-F06-Sky					
	2	0.16521418192437887	WVE_23163217+1839142	349.13404167	18.65394167	SDSSJ231545.82					

1 to 17 of 17 targets (33 observations)

Plot | Export | Download

- Histogram
- Scatter 2D
- Heatmap

	mag_r	date_obs	airmass	subclass
	20.491	20	303	
AXY	20.529	20	303	
	21.134	2016-09-27	1.020960491251303	
	20.386	2016-09-27	1.020960491251303	F2III (89254)
AXY	19.053	2016-09-27	1.020960491251303	
AXY	21.888	2016-09-27	1.020960491251303	

Plot | Export | Download

- CSV
- FITS
- VO

ate_obs		bclass
016-09-27		
016-09-27		
016-09-27	1.020960491251303	
016-09-27	1.020960491251303	F2III (89254)

Result List *3d967525-*

was.targcoords: "Intersects(BUFFER(POINT(23:17

50 per page | Columns | Plot | Export | Download

Download

Product

- [ ] Red Arm Spectrum
- [ ] Blue Arm Spectrum
- [ ] Stitched Spectrum
- [ ] Derived Data Products

Stack Level

- [ ] Single
- [ ] Stacked
- [ ] Super-stacked

Submit | Cancel

actions	obs	distance	cname	targra	targdec	targid			targsrvy	class	airmass
	2	0.1537026317839056									1.020960491251303
	2	0.1562463229715693									1.020960491251303
	2	0.1081837518190642									1.020960491251303
	2	0.1494050160116086									1.020960491251303
	2	0.1595292235113402									1.020960491251303
	2	0.0551421125046108									1.020960491251303
	2	0.0580762729719507									1.020960491251303
	2	0.0797601287609824	WVE_23165335+1843453	349.22229167	18.72924444	SDSSJ231607.01+183840.2	["wc"]				1.020960491251303
	2	0.0836310879977116	WVE_23165501+1841244	349.22920833	18.69010833	SDSSJ231608.66+183619.2	["wc"]				1.020960491251303
	2	0.117221965035459									1.020960491251303
	2	0.0775765015402559									1.020960491251303
	2	0.06862960070285791	WVE_23165501+1841244	349.22920833	18.69010833	SDSSJ231608.66+183619.2	["wc"]	GALAXY	22.132	2016-09-27	1.020960491251303
	2	0.03732633474583262	WVE_23170262+1842342	349.26091667	18.70950556	SDSSJ231616.27+183729.1	["wc"]		20.567	2016-09-27	1.020960491251303
	2	0.11820658287454187	WVE_23164739+1846196	349.19745833	18.772125	SDSSJ231601.05+184114.6	["wc"]	STAR	22.092	2016-09-27	1.020960491251303
	2	0.1623360077710659	WVE_23163524+1837550	349.14683333	18.63194444	SDSSJ231548.90+183249.9	["wc"]	STAR	20.688	2016-09-27	1.020960491251303
	1	0.12801408293774966	WVE_23163984+1841171	349.166	18.68808889	A2572a-F06-Sky0005	["wc"]			2016-09-27	1.020960491251303
	2	0.16521418192437887	WVE_23163217+1839142	349.13404167	18.65394167	SDSSJ231545.82+183409.2	["wc"]		21.783	2016-09-27	1.020960491251303

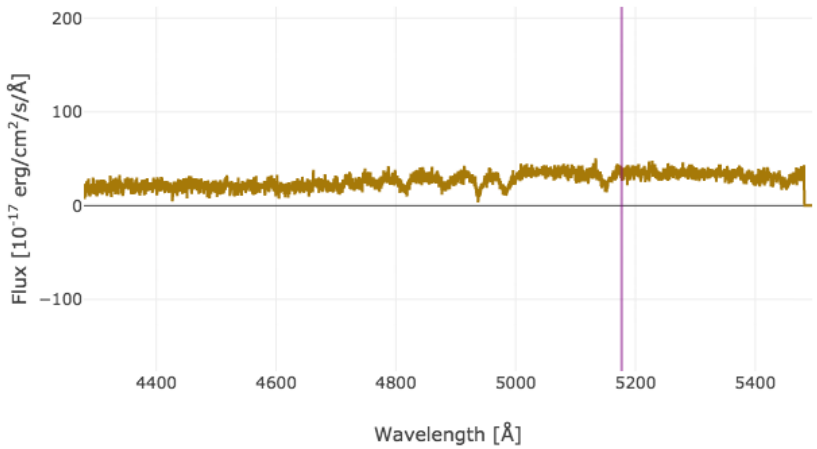
1 to 17 of 17 targets (33 observations)

1

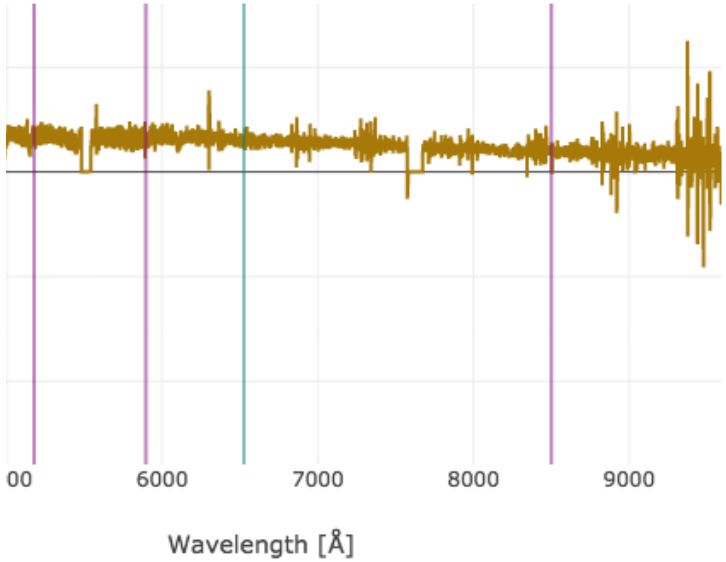
Resu

Obsen

Spectra Plot



Spectra Plot



Absorption Lines | Emission Lines | Add Redshift | 0.2552263

Blue Arm Data | Red Arm Data | Stitched Data | Derived Data

cname	WVE_23171743+1833091
targra	349.322625
targdec	18.55252222
targid	SDSSJ231631.05+182803.9
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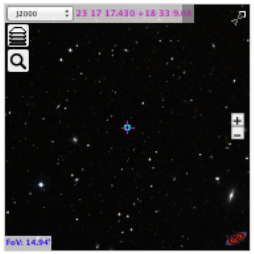

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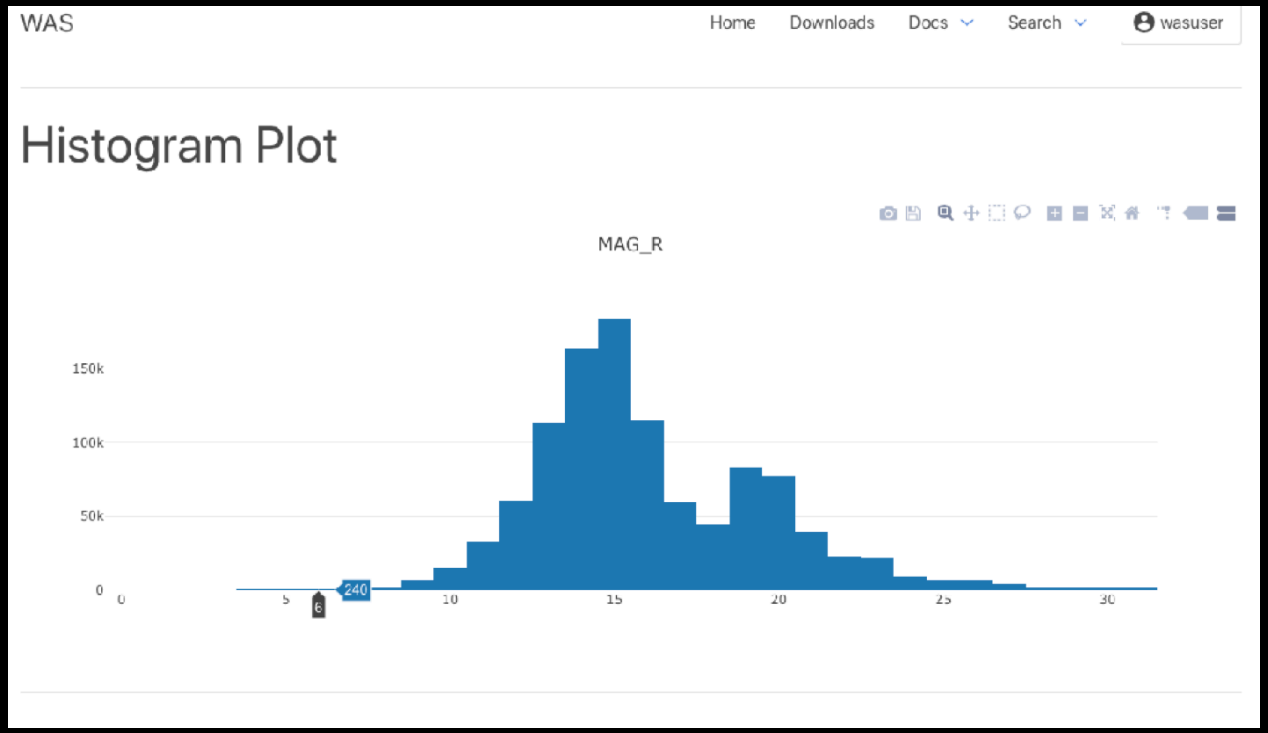
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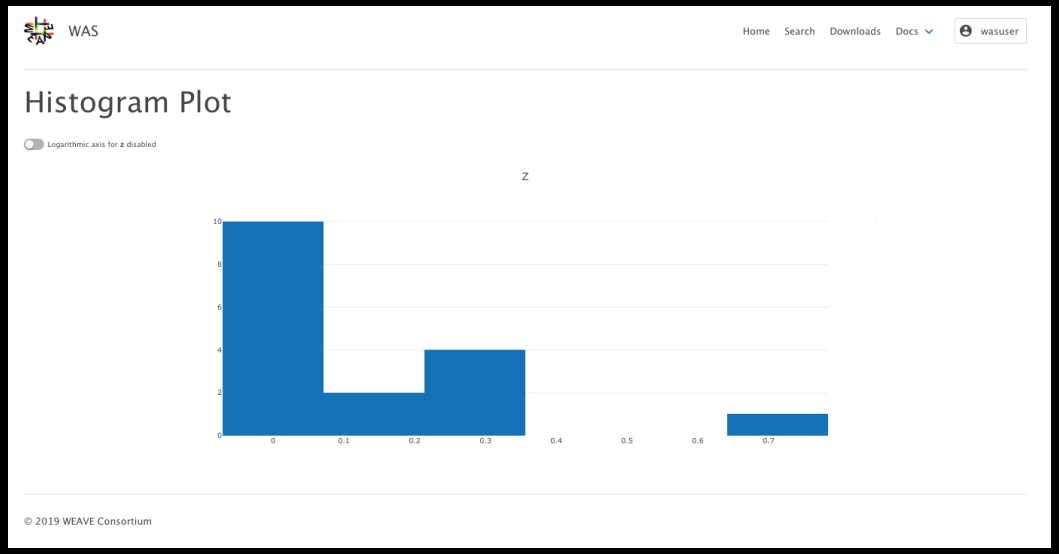
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WAS

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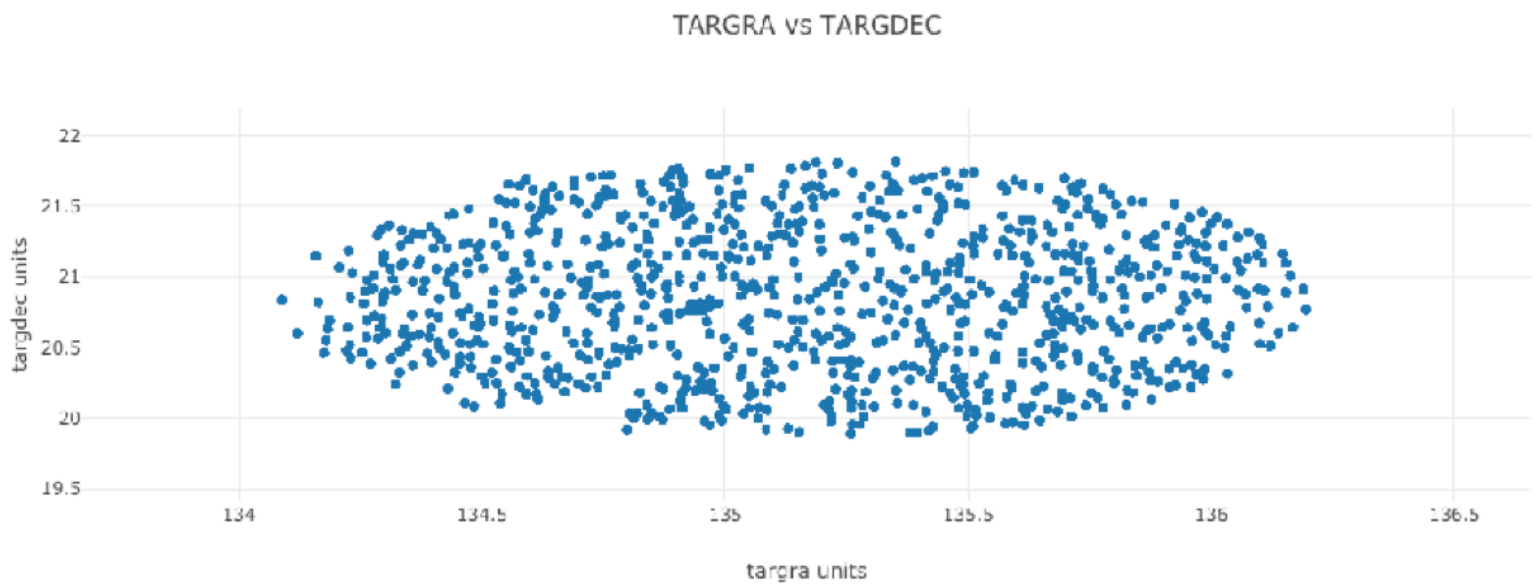
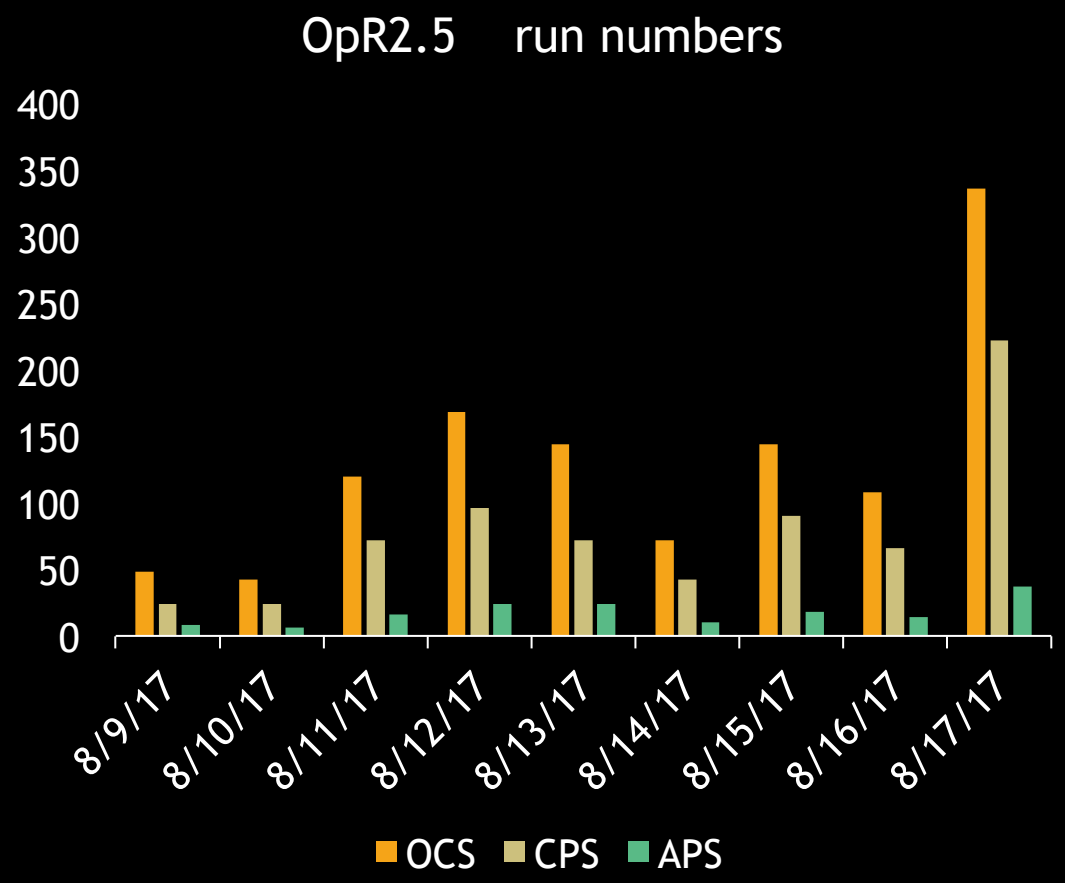
Scatter 2D Plot



OpR2, OpR2.5


OpR2.5 run numbers
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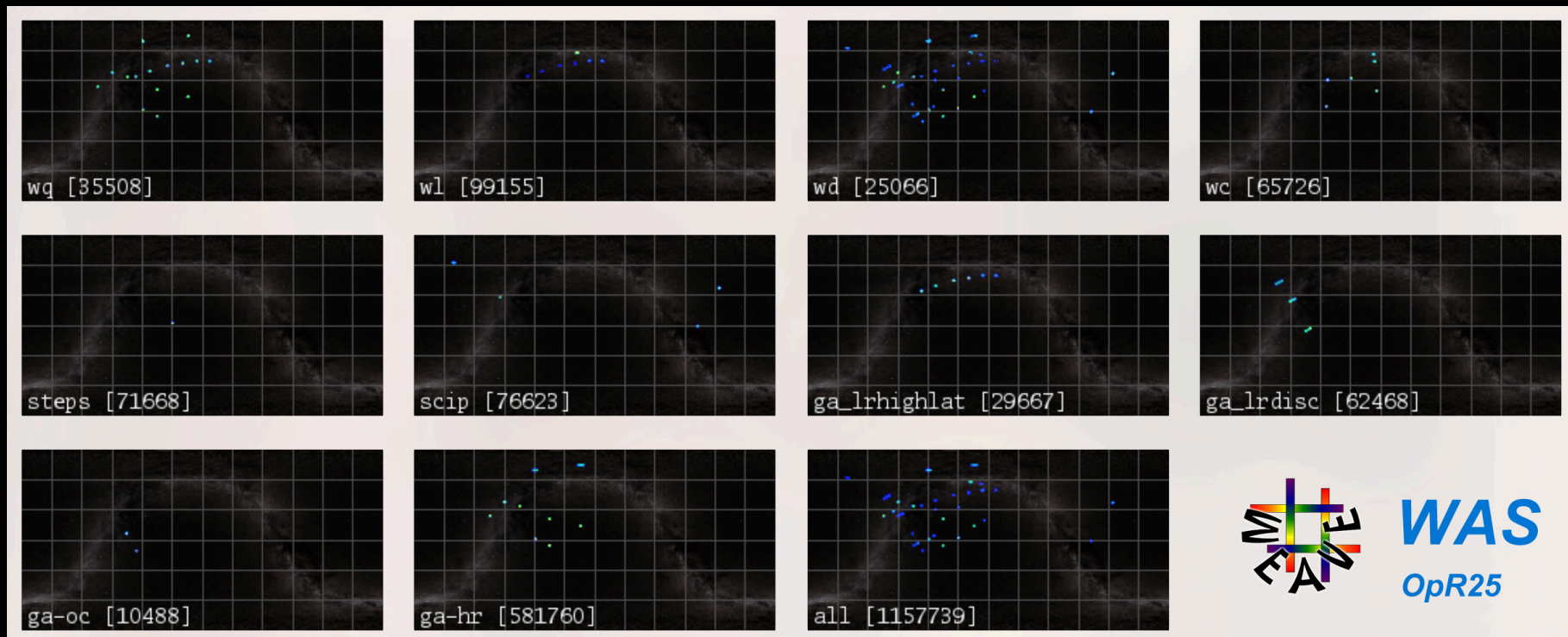
50
0
8/9/17
8/10/17
8/11/17
8/12/17
8/13/17
8/14/17
8/15/17
8/16/17
8/17/17
OCS
CPS
APS

One night at the OpR (9 Aug 2017)

```
- NIGHT    2017_08_09
-      OCS                                        CPS                s CPS                APS
- [ ] r1000811.fit   2017_09_06 10:54    60M
- [ ] r1000812.fit   2017_09_06 10:55    55M
- [ ] r1000813.fit   2017_09_06 10:55    48M
- [ ] r1000814.fit   2017_09_06 10:55    44M
- [ ] r1000815.fit   2017_09_06 11:47    50M        final_1000815.fit     stacked_1000815.fit   stacked_1000815.aps.fits     PROV
  815+817+819
- [ ] r1000816.fit   2017_09_06 11:47    49M        final_1000816.fit     stacked_1000816.fit   stacked_1000816.aps.fits
- [ ] r1000817.fit   2017_09_06 11:47    50M            final_1000817.fit
- [ ] r1000818.fit   2017_09_06 11:47    49M         final_1000818.fit
- [ ] r1000819.fit   2017_09_06 11:47    50M            final_1000819.fit
- [ ] r1000820.fit   2017_09_06 11:47    49M            final_1000820.fit
- [ ] r1000821.fit   2017_09_06 10:55    48M
- [ ] r1000822.fit   2017_09_06 10:55    44M
- [ ] r1000823.fit   2017_09_06 10:55    59M
- [ ] r1000824.fit   2017_09_06 10:55    55M
- [ ] r1000825.fit   2017_09_06 10:55    48M
- [ ] r1000826.fit   2017_09_06 10:55    44M
- [ ] r1000827.fit   2017_09_06 11:49    44M            final_1000827.fit    stacked_1000827.fit   stacked_1000827.aps.fits
- [ ] r1000828.fit   2017_09_06 11:49    41M            final_1000828.fit   stacked_1000828.fit   stacked_1000828.aps.fit
- s[ ] r1000829.fit   2017_09_06 11:49    44M            final_1000829.fit
- [ ] r1000830.fit   2017_09_06 11:49    41M            final_1000830.fit
- [ ] r1000831.fit   2017_09_06 11:49    44M            final_1000831.fit
- [ ] r1000832.fit   2017_09_06 11:49    41M            final_1000832.fit
- [ ] r1000833.fit   2017_09_06 10:55    48M
- [ ] r1000834.fit   2017_09_06 10:55    44M
- [ ] r1000835.fit   2017_09_06 10:55    60M
- [ ] r1000836.fit   2017_09_06 10:55    55M
- ... ...
```

1 night ingestion time is ~40 minutes. The whole OpR2.5 was ingested in 6 hours.


wq [35508]
wl [99155]
wd [25066]
wc [65726]
steps [71668]
scip [76623]
ga_lrhighlat [29667]
ga_lrdisc [62468]
ga-oc [10488]
ga-hr [581760]
all [1157739]
WAS
OpR25

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.