



The AAVSO Spectroscopic Database

Stella Kafka, John Weaver, Bert Pablo, George Silvis, Ryan Maderak et al.

a a v s o
be the legacy.
american association of variable star observers.

The AAVSO Spectroscopic Database

Stella Kafka, John Weaver, Bert Pablo, George Silvis, Ryan Maderak et al.





"The mission of the AAVSO is to enable anyone, anywhere, to participate in scientific discovery through variable star astronomy"

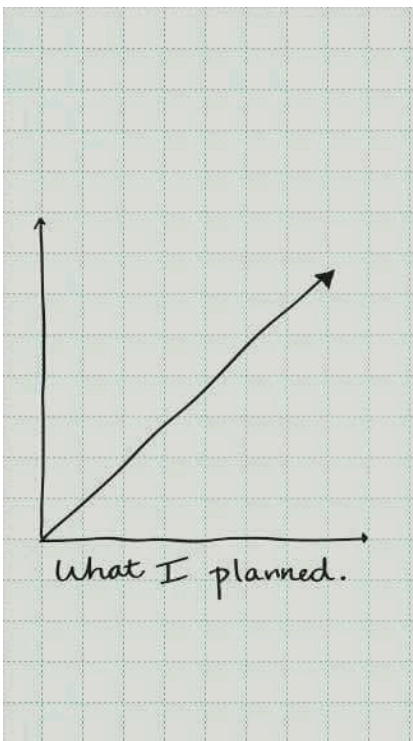
A long story...

2016:

- Task force
- Determine database requirements:
compatibility + communication with
existing/planned software (WebObs, VSX,
observer info registration)
- Project planning and management
- Start with coding

2017:

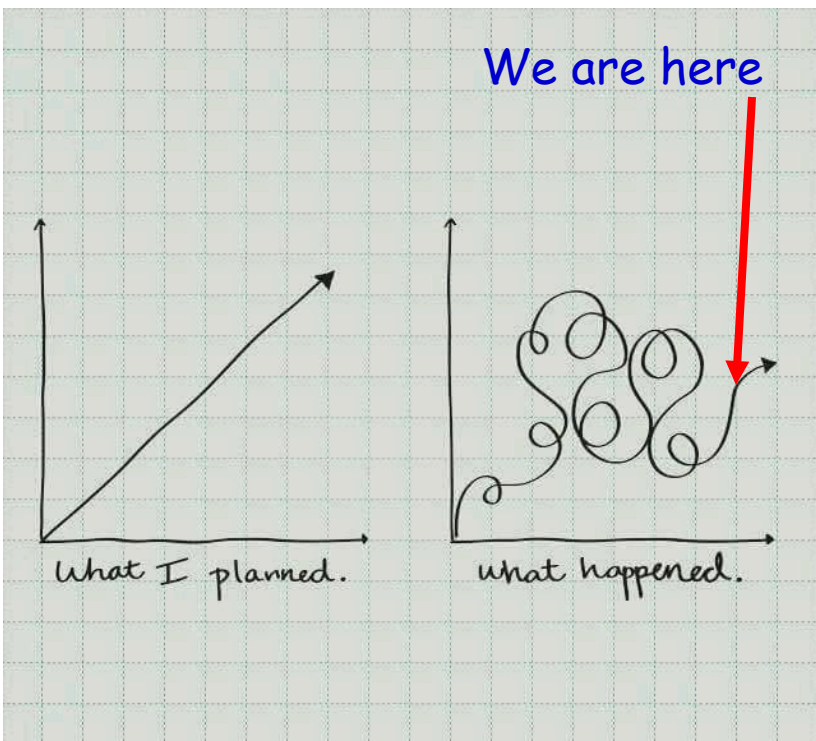
- Testing on New Dev Server
- Implement improvements/correct bugs
- Testing on live server





"The mission of the AAVSO is to enable anyone, anywhere, to participate in scientific discovery through variable star astronomy"

A long *LONG* story...



2018:

- ...test test test...
 - Find bugs
 - Improve functionality of tools
- More standard stars
- Documentation
 - Help, FAQ, manual...
- ...test test test...
- Open for submissions...





"The mission of the AAVSO is to enable anyone, anywhere, to participate in scientific discovery through variable star astronomy"

Get started: you need an observer code

<https://www.aavso.org/join-aavso>

AAVSO Membership

View

Edit

- [Click Here to Join the AAVSO](#) (you should have a web site account and be logged in)
- [Click Here to Renew Membership](#) (you should have a web site account and be logged in)

Returning members can also fill out and print this [Membership renewal form](#) and mail it to AAVSO, 49 Bay State Road, Cambridge, MA 02138, USA.

Membership Benefits

Your membership in the AAVSO has several benefits, including:

- Full and immediate access to the AAVSO's refereed research publication [Journal of the AAVSO](#),
- Waiver of page charges for publication in the *Journal* (currently \$100/page for non-members),
- Immediate access to the latest edition of the [AAVSO Newsletter](#),
- Use of the AAVSO's Robotic Telescope Network, [AAVSONet](#),
- Substantial discount on [CHOICE short courses](#) and [CCD School Streaming Video](#) downloads.
- Access to exclusive members-only CHOICE courses,
- Eligibility for the [Mentor Program](#),
- Use of the AAVSO's online photometric analysis tool, [VPHOT](#) and the [VPHOT Users Guide](#),



"The mission of the AAVSO is to enable anyone, anywhere, to participate in scientific discovery through variable star astronomy"

Register your equipment

<https://aavso.org/apps/site equip/>

Account

Site & Equipment

Email Settings

MyNewsFlash

Site and Equipment

Select site: TEST_SITE

Site name: TEST_SITE
Site lat: -29.0073
Site long: -70.70387
Site alt: 2380.0

Save

Delete

Select equipment package: TEST_EQUIP

My Equipment Name: TEST_EQUIP

Observing Type: Spec

Telescope/Binnoculars: DuPont

Aperture (mm): 2500

Focal Length (mm): 10000

Camera characteristics:

Camera: SITE2K-1

Gain (e/ADU): 0.000

Readout Noise (e): 0

Dark Current (e/pixel/sec): 0.000

Linearity Threshold (ADU): 0

The following is required for submitting Exoplanet data:

CCD Detector Pixel Count (width): 0

CCD Detector Pixel Count (height): 0

Filters:

The following is required for submitting Spectra

Spectroscop: SITE2K-1

Type: single-slit

Wavelength Units: nm

Wavelength, lower limit: 3000.0

Wavelength, upper limit: 8000.0

Resolving Power: 999.0

Comments:

Save

Delete



"The mission of the AAVSO is to enable anyone, anywhere, to participate in scientific discovery through variable star astronomy"

Register your equipment

- This equipment package has been added.

[Account](#)[Site & Equipment](#)[Email Settings](#)[MyNewsFlash](#)

Site and Equipment

Select site: TEST_SITE ▾

Site name: TEST_SITE
Site lat: -29.0073
Site long: -70.70387
Site alt: 2380.0

[Save](#)[Delete](#)

Select equipment package: TEST_EQUIP ▾

My Equipment Name: TEST_EQUIP

Observing Type: Spec ▾

Telescope/Binnoculars: DuPont

Aperture (mm): 2500

Focal Length (mm): 10000

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Readout Noise (e): 0

Dark Current (e/pixel/sec): 0.000

Linearity Threshold (ADU): 0

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Wavelength Units: nm ▾

Wavelength, lower limit: 3000.0

Wavelength, upper limit: 8000.0

Resolving Power: 999.0

Comments:

[Save](#)[Delete](#)



"The mission of the AAVSO is to enable anyone, anywhere, to participate in scientific discovery through variable star astronomy"

Access from WebObs

(Need to log into your AAVSO account)

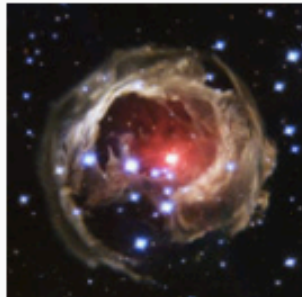
[Print This Page](#)

[Home](#) » [Data](#)

WebObs

WebObs is where you submit your observations to the AAVSO. You can also use this program to view, edit, and download **your own** observations. To upload a *file* of observations, please make sure your file adheres to one of the [AAVSO File Format Specifications](#).

- [Submit observations individually](#)
- [Upload a file of observations](#)
- [Search for observations](#) (to edit, delete, or view)
- [Download your observations](#)
- [Submit unreduced PER observations \(PERObs\)](#)
- [Submit observation to the Spectra DB](#)
- [Submit observation to the ExoPlanet DB](#)



Popular Web Tools

- **WebObs** - Search the AID or Submit data
- **VSP** - Variable Star Plotter
- **LCG** - Light Curve Generator
- **VSX** - Variable Star Index

For now:

<https://www.aavso.org/apps/specdb/>



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Home page

[Home](#) / [WebObs](#) / [SpecDB](#) / [Recent](#)



Recent

Search

Submit

Forum

MyDB

Help

Recently Published

Landing page: latest spectra submitted

Please find below some of the most recently published observations.

Published 21/01/19 15:05:32

T Hor -- by JPM

Equipment: JPM Setup 1 | Site: Pretoria B

Published 21/01/19 15:04:21

T Col -- by JPM

Equipment: JPM Setup 1 | Site: Pretoria B

Published 05/01/19 02:03:29

S Scl -- by JPM

Equipment: JPM Setup 1 | Site: Pretoria B

Published 05/01/19 02:03:06

S Car -- by JPM

Equipment: JPM Setup 1 | Site: Pretoria B

Published 05/01/19 02:02:44

R Scl -- by JPM

Equipment: JPM Setup 1 | Site: Pretoria B



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First-time Submissions

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[Recent](#) [Search](#) [Submit](#) [Forum](#) [MyDB](#) [Help](#)

Standard Stars

Name	V mag	RA	Dec
bet Gem	1.14	116.32896	28.02619
mu Leo	3.88	156.24958	24.51431
eps Vir	2.79	195.54417	10.95914
alf Boo	-0.05	213.91529	19.18242
mu UMa	1.76	173.90304	38.76606
alf UMa	1.79	165.93196	61.75103
eta Boo	2.68	208.67125	18.39778
32 Gem	6.47	101.47583	12.69356
HD 122563	6.19	210.63267	9.68608
HD 107328	8.26	185.08742	3.31258
bet UMi	2.08	222.67638	74.1555
HD 140283	7.21	235.76292	-10.9335
alf Ari	7.21	31.79338	23.46242
alf Cet	2.53	45.56987	4.08972
7 Psc	5.07	23.33905	80.71959
mu Her	3.42	249.24508	42.74725
gam Sge	3.47	299.6893	19.4921
zet Her	2.8	250.3215	31.60272
bet Boo	3.52	225.4865	40.39058
gam Aql	2.72	296.565	10.61333
alf Tau	0.86	68.98017	16.50931
delta CrB	4.63	237.39854	26.06839
alf Lep	2.57	83.18256708	-17.82228917
eps CMa	1.5	104.65645292	-28.97208611

Step 1:

- Select a target from the list of standard star targets, and observe it.
- Reduce the spectra using a package of your choice.
- Final product:
 - 1-d spectra
 - wavelength calibrated and normalized
 - .fits format



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First-time Submissions

Home / WebObs / SpecDB / Submit

Recent Search Submit Forum My

New Submission

Hello, KKS

Please select star observed from list below.

Equipment used:	TEST_EQUIP
Site used:	TEST_SITE
Star observed:	HR 222
Select file(s):	<input type="button" value="Choose Files"/> No file chosen

Cannot find your site and/or equipment? Add it here: [Site & Equipment](#)

Step 2: upload observations:

- Select your equipment/site
- Select your standard star from drop-down list
- Choose file
- Upload



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First-time Submissions

Home / WebObs / SpecDB / Submit

Recent Search Submit Forum My

New Submission

Hello, KKS

Please select star observed from list below.

Equipment used:	TEST_EQUIP
Site used:	TEST_SITE
Star observed:	HR 222
Select file(s):	Choose Files No file chosen

Upload

1: kks_hr222_fake.fits - **ERROR** (see log) ←

Observer does not match obscode

Cannot find your site and/or equipment? Add it here: [Site & Equipment](#)

Step 2: upload observations:

- Select your equipment/site
- Select your standard star from drop-down list
- Choose file
- Upload



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First-time Submissions

Home / WebObs / SpecDB / Submit

Recent Search Submit Forum MyDB Help

New Submission

Hello, KKS

Please wait while your first spectrum is being verified.

You may check your spectrum below.

[see record](#)

If everything is ok with the file, then you get a message



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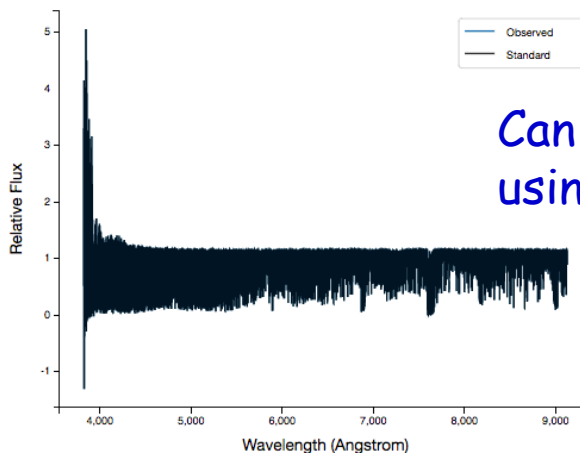
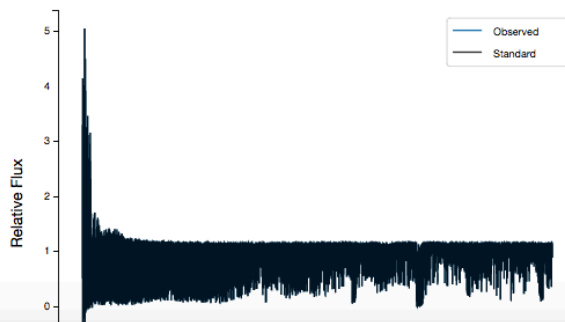
First-time Submissions record for observers

bet Gem | 2012-10-27 | [Download](#)

Record ID:	bet_Gem_KKS_2456228.246
Uploaded:	Feb. 12, 2018, 10:31 a.m.
Observer:	KKS
Date Observed:	2012-10-27 (2456228.246)
Equipment:	TEST_EQUIP
Site:	TEST_SITE

Spectrum

Please use the move and zoom tools to examine further.



Can check spectrum
using all available tools

Equipment: TEST_EQUIP

Telescope:	DuPont
Aperture:	[m]
Spectroscope:	SITE2K-1
Resolution:	999.0
Imager/CCD:	SITE2K-1

Site: TEST_SITE

Latitude	-29.0073 S
Longitude	19h17m11.0712s
Altitude	2380.0 [m]

User Self-Deletion

This will render the observation obsolete.

Delete



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What happens behind the scenes?

If you are a validator, you have a "validator mode" option

[Home](#) / [WebObs](#) / [SpecDB](#) / [Search](#)

[Recent](#) [+ Submit](#) [Forum](#) [MyDB](#) [Help](#)

Search Database

Search for published observations. Please note that the search terms are inclusive.

Validator Options (select only one)

- ☐ Standard stars
- ☐ Unpublished variable stars

Object Name:

Coordinates RA:

Dec:

Radius:

Observation Date Start:

End:

OR Observation JD Start:

End:

Resolution Low:

High:

Observer:



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[Home](#) / [WebObs](#) / [SpecDB](#) / [Search](#)

[Recent](#) [+ Submit](#) [Forum](#) [MyDB](#) [Help](#)

Search Database

Search for published observations. Please note that the search terms are inclusive.

Validator Options *(select only one)*

- ☐ Standard stars
- ☐ Unpublished variable stars

Object Name:

Coordinates RA:

Dec:

Radius:

Observation Date Start:

End:

OR Observation JD Start:

End:

Resolution Low:

High:

Observer:

[Submit](#)

num	Star	RA	Dec	Observer	Date	JD	Exposure Time [s]	Resolution	record	download
1	HR 222	00:03:13.534	+03:46:00	KKS	2012-10-27	2456228.246	1816.0	742	preview	download



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Validator screen

HR 222 | 2012-10-27 | [Download](#)

Verification Tools

Comments:

Record ID:

Uploaded:

Observer:

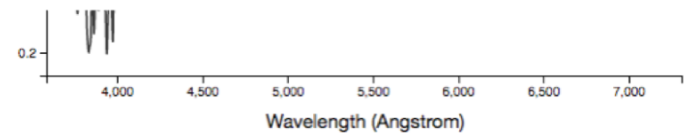
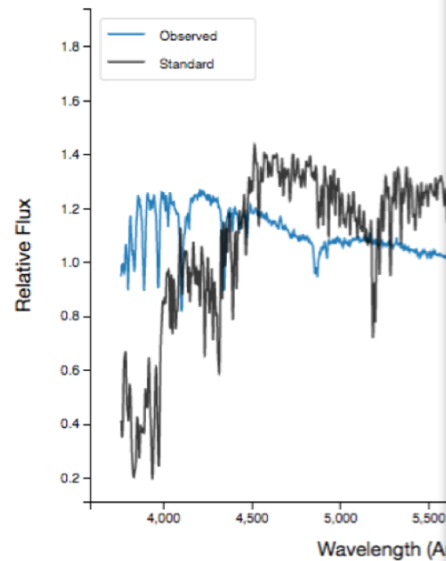
Date Observed:

Equipment:

Site:

Spectrum

Please use the move and zoom tools to examine further.



Equipment: TEST_EQUIP

Telescope:	DuPont
Aperture:	[m]
Spectroscope:	SITE2K-1
Resolution:	999.0
Imager/CCD:	SITE2K-1

Site: TEST_SITE

Latitude	-29.0073 S
Longitude	19h17m11.0712s
Altitude	2380.0 [m]

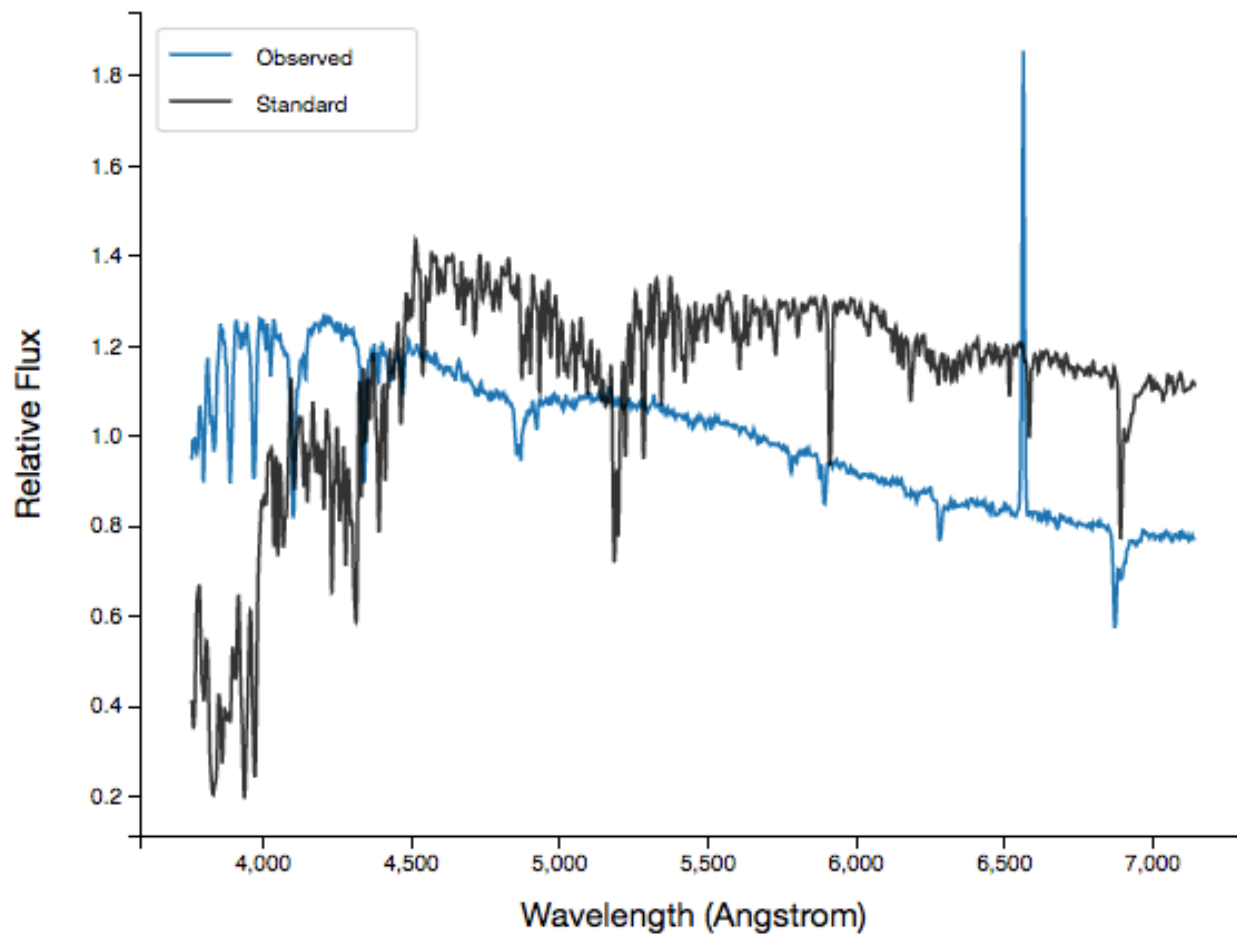
User Self-Deletion

This will render the observation obsolete.



"The mission of the AAVSO is to enable anyone, anywhere, to participate in scientific discovery through variable star astronomy"

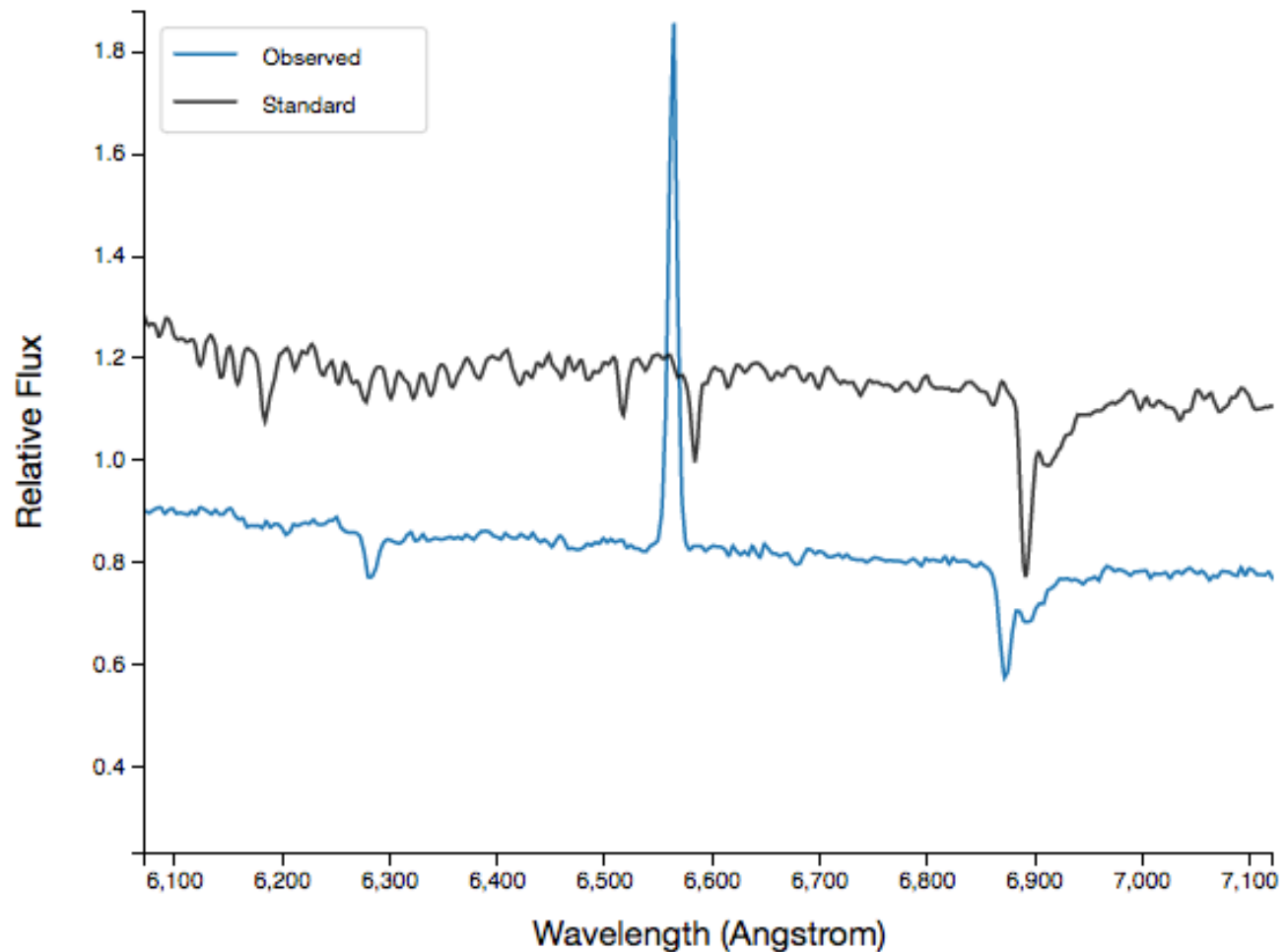
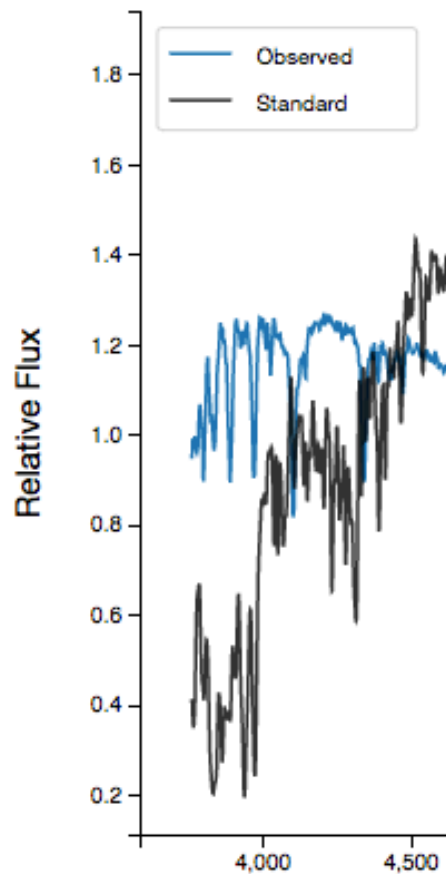
What validators look for...





"The mission of the AAVSO is to enable anyone, anywhere, to participate in scientific discovery through variable star astronomy"

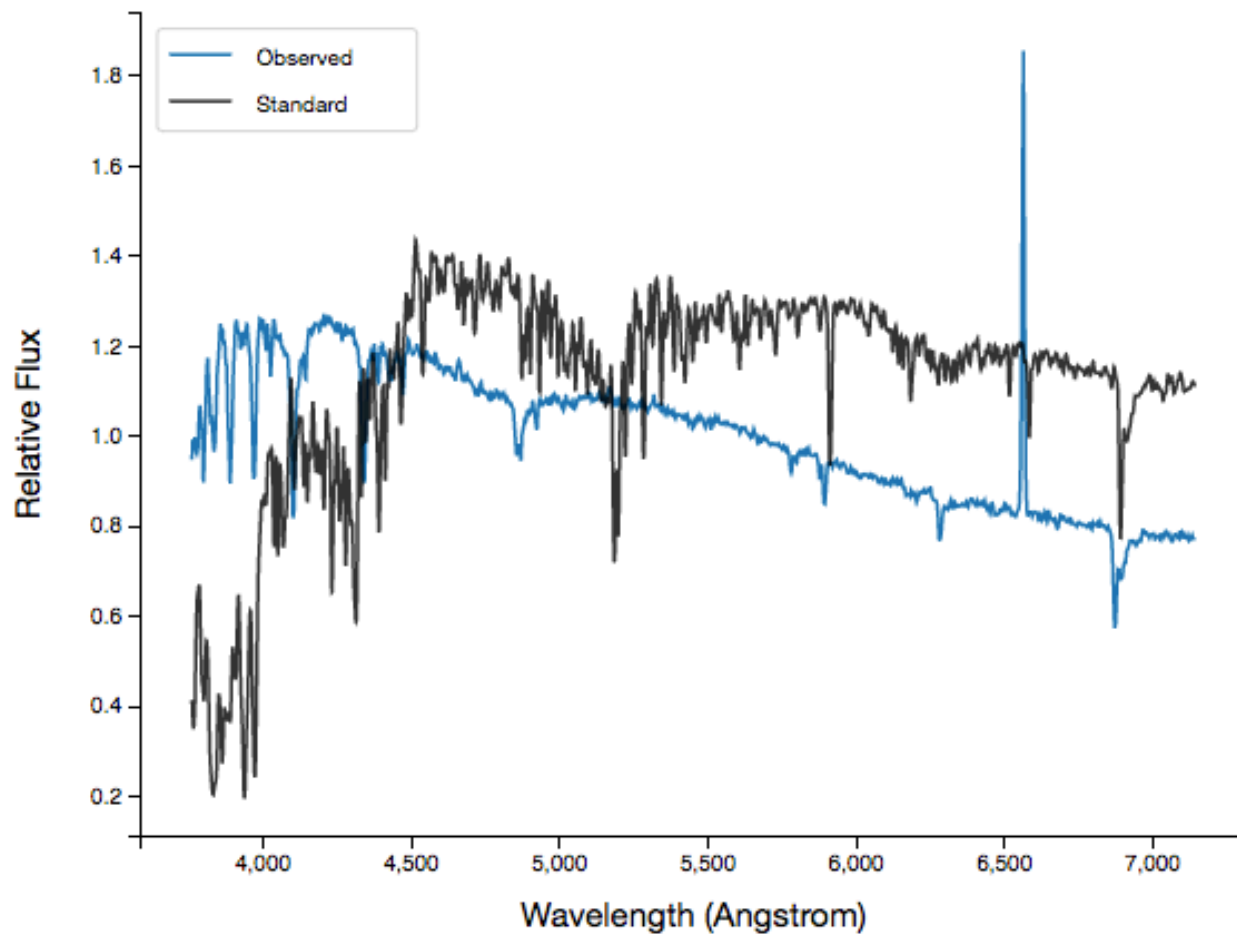
What validators look for...





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What validators look for...





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If there is an error... validator screen

HR 222 | 2012-10-27 | [Download](#)

Verification Tools

Comments:

☐ Inaccurate wavelength

- calibration

- ☐ Wrong normalization

- ☐ Incorrect object

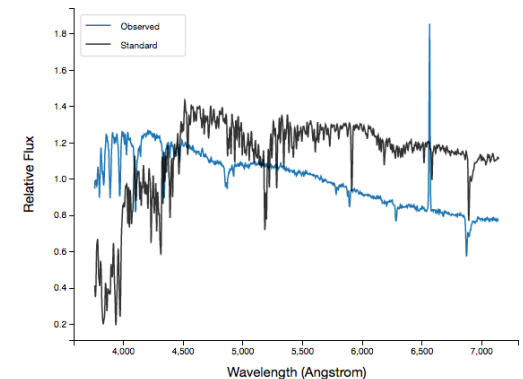
- ☐ Insufficient sky subtraction

Accept

Reject

Site:

TEST_SITE





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If there is an error... validator screen

HR 222 | 2012-10-27 | [Download](#)

Verification Tools

Comments:

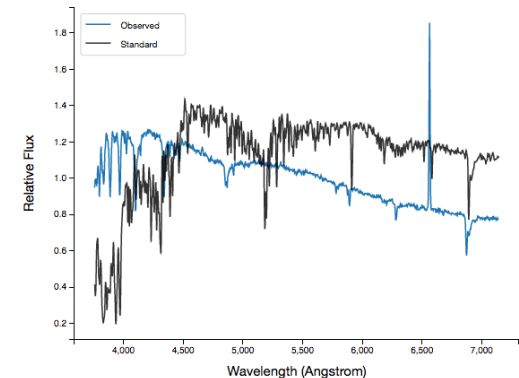
- ☐ Inaccurate wavelength
- calibration
- ☐ Wrong normalization
- ☐ **Incorrect object**
- ☐ Insufficient sky subtraction

Accept

Reject

Site:

TEST_SITE





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If there is an error... observer screen

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New Submission

Hello, KKS

You have a rejected spectrum. Please note suggestions below and resubmit.

Incorrect object

Equipment used:	TEST_EQUIP
Site used:	TEST_SITE
Star observed:	HR 222
Select file(s):	Choose Files No file chosen

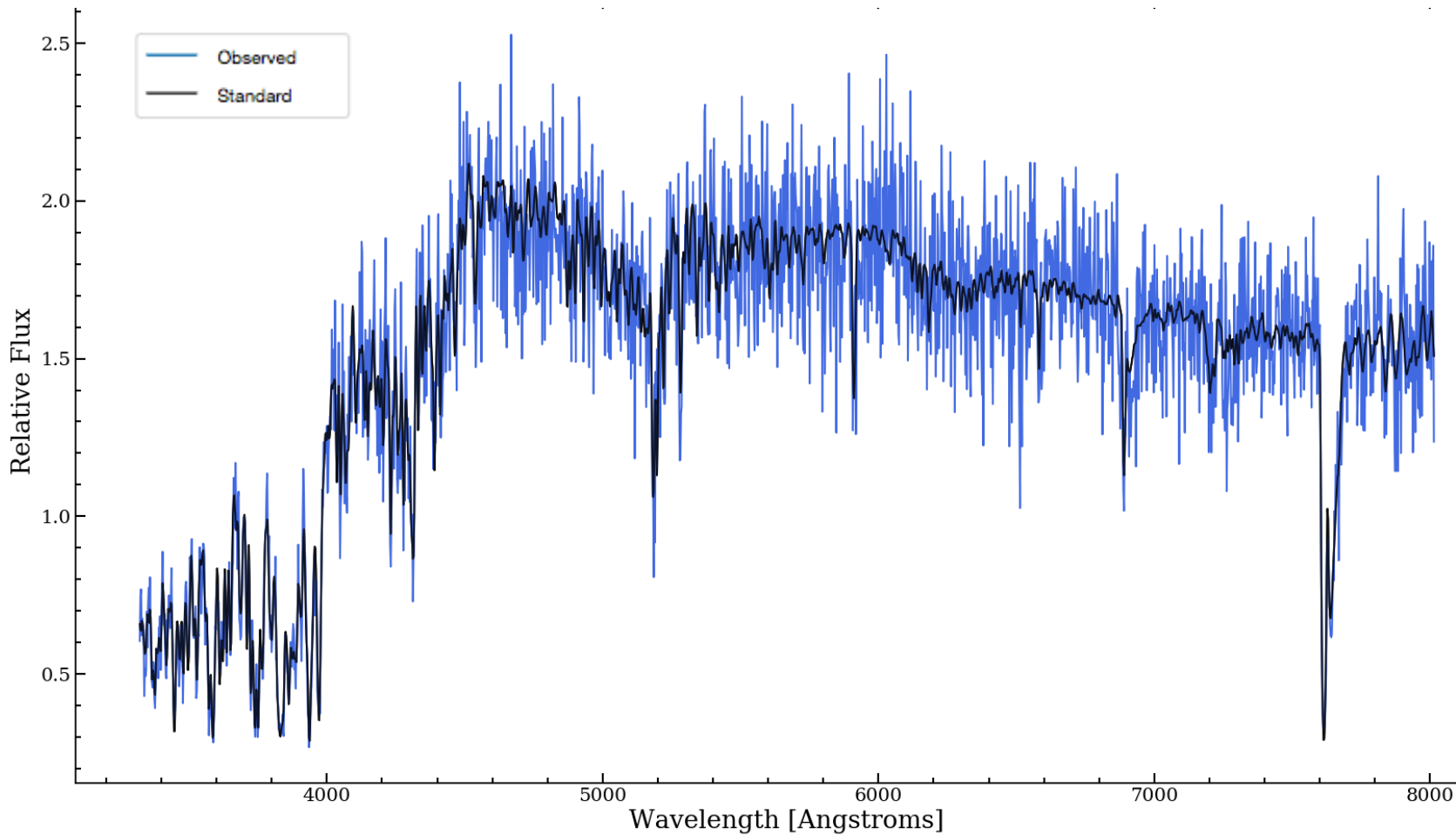
Upload

Cannot find your site and/or equipment? Add it here: [Site & Equipment](#)



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Successful spectrum - example #1:



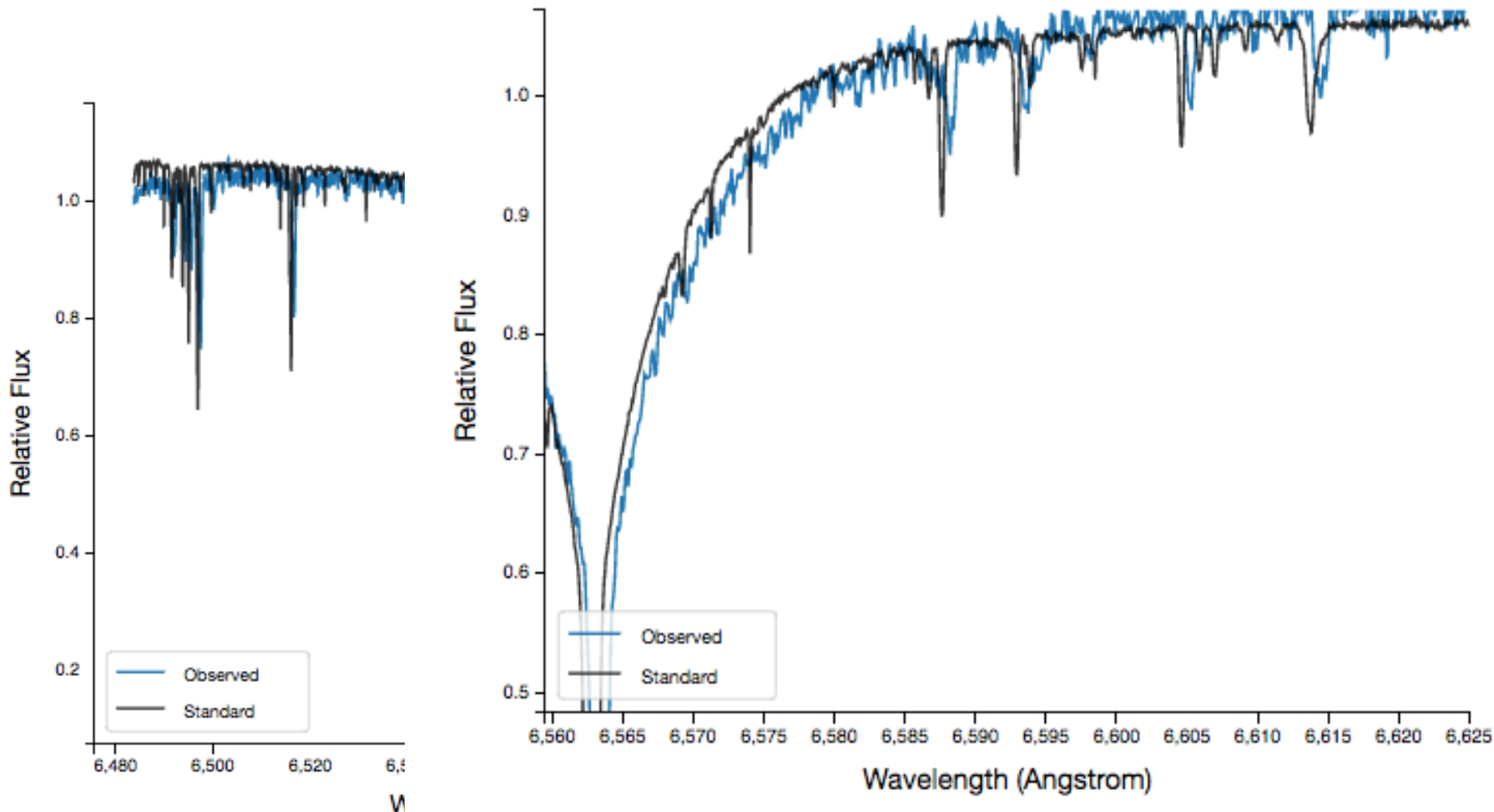


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Successful spectrum - example #2:

Spectrum

Please use the move and zoom tools to e





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If there is not an error... validator screen

HR 222 | 2012-10-27 | [Download](#)

Verification Tools

Comments:

- ☐ Inaccurate wavelength
- calibration
- ☐ Wrong normalization
- ☐ Incorrect object
- ☐ Insufficient sky subtraction

Accept

Reject

Record ID:	HR_222_KKS_2456228.246
Uploaded:	Feb. 2, 2018, 3:06 p.m.
Observer:	KKS
Date Observed:	2012-10-27 (2456228.246)
Equipment:	TEST_EQUIP
Site:	TEST_SITE

You are ready to submit data on science targets



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Home page

[Home](#) / [WebObs](#) / [SpecDB](#) / [Recent](#)

 [Recent](#)

 [Search](#)

 [Submit](#)

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 [MyDB](#)

 [Help](#)

Recently Published

Please find below some of the most recently published observations.

Published 21/01/19 15:05:32

T Hor -- by JPM

Equipment: JPM Setup 1 | Site: Pretoria B

Published 21/01/19 15:04:21

T Col -- by JPM

Equipment: JPM Setup 1 | Site: Pretoria B

Published 05/01/19 02:03:29

S Scl -- by JPM

Equipment: JPM Setup 1 | Site: Pretoria B

Published 05/01/19 02:03:06

S Car -- by JPM

Equipment: JPM Setup 1 | Site: Pretoria B

After individual target validation, all science targets will be posted here



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Search the db

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[Home](#) / [WebObs](#) / [SpecDB](#) / [MyDB](#)

[Recent](#) [Search](#) [Submit](#) [Forum](#) [MyDB](#) [Help](#)

My Database

Hello, Styliani! (KKS)

At a glance: 0 published observations with 0 downloads in total, with an average 0.0 downloads per observation.

Science Observations

Gray rows indicate unaccepted or unpublished observations.

Star	RA	Dec	Downloads	Date	JD	Exposure [s]	Resolution	Record	Download
------	----	-----	-----------	------	----	--------------	------------	--------	----------

Observer:

JPM

Submit

Results limited to 100 rows.



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Search the db

Recent Search Submit Forum **MyDB** Help

Home / WebObs / SpecDB / MyDB

Recent Search Submit Forum **MyDB** Help

Published observations
of downloads
downloads per observation

My Database

Hello, Styliani! (KKS)

At a glance: 0 published observations with 0 downloads in total, with an average 0.0 downloads per observation.

Science Observations

Gray rows indicate unaccepted or unpublished observations.

Star	RA	Dec	Downloads	Date	JD	Exposure [s]	Resolution	Record	Download
------	----	-----	-----------	------	----	--------------	------------	--------	----------

Observer:

JPM

Submit

Results limited to 100 rows.



"The mission of the AAVSO is to enable anyone, anywhere, to participate in scientific discovery through variable star astronomy"

Search the db

[Recent](#) [Search](#) [Submit](#) [Forum](#) [MyDB](#) [Help](#)

Search Database

Search for published observations. Please note that the search terms are inclusive.

Object Name:

Coordinates RA:

Dec:

Radius:

Observation Date Start:

End:

OR Observation JD Start:

End:

Resolution Low:

High:

Observer:

Submit

Results limited to 100 rows.



"The mission of the AAVSO is to enable anyone, anywhere, to participate in scientific discovery through variable star astronomy"

Search the db

[Recent](#) [Search](#) [+ Submit](#) [Forum](#) [MyDB](#) [Help](#)

Search Database

Search for published observations. Please note that the search terms are inclusive.

Object Name:

Mira

Coordinates RA:

02:19:20.79

Dec:

-02:58:39.5

Radius:

10" (default)

Observation Date Start:

YYYY-MM-DD

End:

YYYY-MM-DD

OR Observation JD Start:

End:

Resolution Low:

High:

Observer:

JPM

Submit

Results limited to 100 rows.

	Star	RA	Dec	Observer	Date	JD	Exposure [s]	Resolution	Record	Download
1	T Hor	3:00:52	-50:38:31	JPM	2019-01-21	2458505.43854	60.0	1000	View	Download
2	T Col	5:19:17	-33:42:29	JPM	2019-01-21	2458505.4274	55.0	1000	View	Download



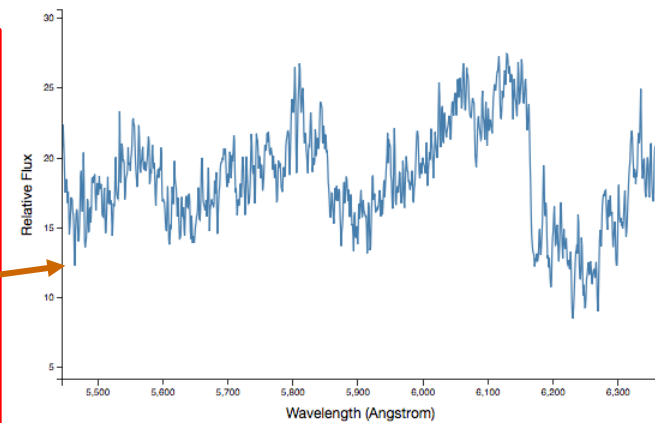
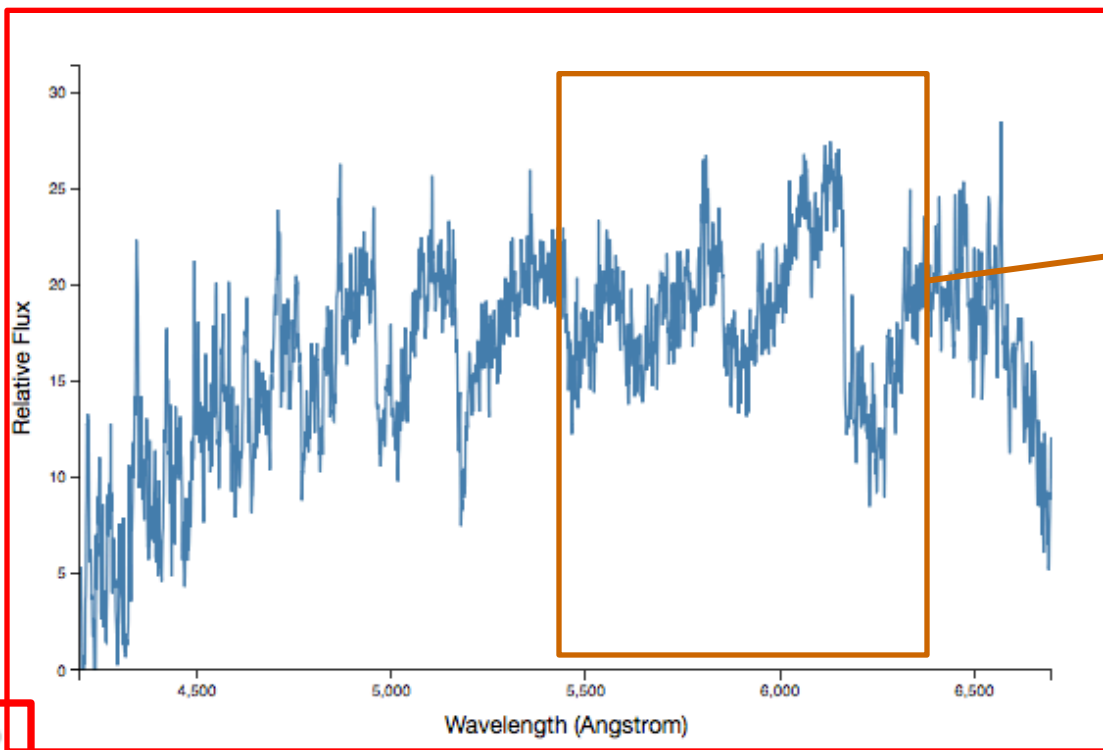
"The mission of the AAVSO is to enable anyone, anywhere, to participate in scientific discovery through variable star astronomy"

Record

Recent Search Submit Forum MyDB Help

T Hor -- 2019-01-21

Download



Spectrum and tools
for quick lookup



Record ID:	000-BBF-650_JPM_2458505.43854
Uploaded:	2019-01-21 15:05:32
Observer:	JPM



"The mission of the AAVSO is to enable anyone, anywhere, to participate in scientific discovery through variable star astronomy"

Record (cont)

Record ID:	000-BBF-650_JPM_2458505.43854
Uploaded:	2019-01-21 15:05:32
Observer:	JPM
Date Observed:	2019-01-21 (2458505.43854)
Equipment:	JPM Setup 1
Site:	Pretoria B

Observer and
data acquisition
info

Star Info

Name:	T Hor
Right Ascension:	3:00:52.1208 (45.21717)
Declination:	-50:38:31.884 (-50.64219)
Variability Type:	M
Period:	217.6
Epoch:	2441957
Maximum Magnitude:	7.2 V
Minimum Magnitude:	13.7 V
Spectral Type:	M5Ile
Discoverer:	Not found
Category:	Variable

Star info from VSX



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Record (cont)

Period:	217.6
Epoch:	2441957
Maximum Magnitude:	7.2 V
Minimum Magnitude:	13.7 V
Spectral Type:	M5Ile
Discoverer:	Not found
Category:	Variable

Equipment: JPM Setup 1

Telescope:	Maksutov 200mm / 2400mm
Aperture:	[m]
Spectroscope:	DIY LOWSPEC 600L/mm
Resolution:	1000.0
Imager/CCD:	Canon 650D

Instrument
and telescope
info

Site: Pretoria B

Latitude:	-25.746111
Longitude:	28.188056
Altitude:	1300.0 [m]



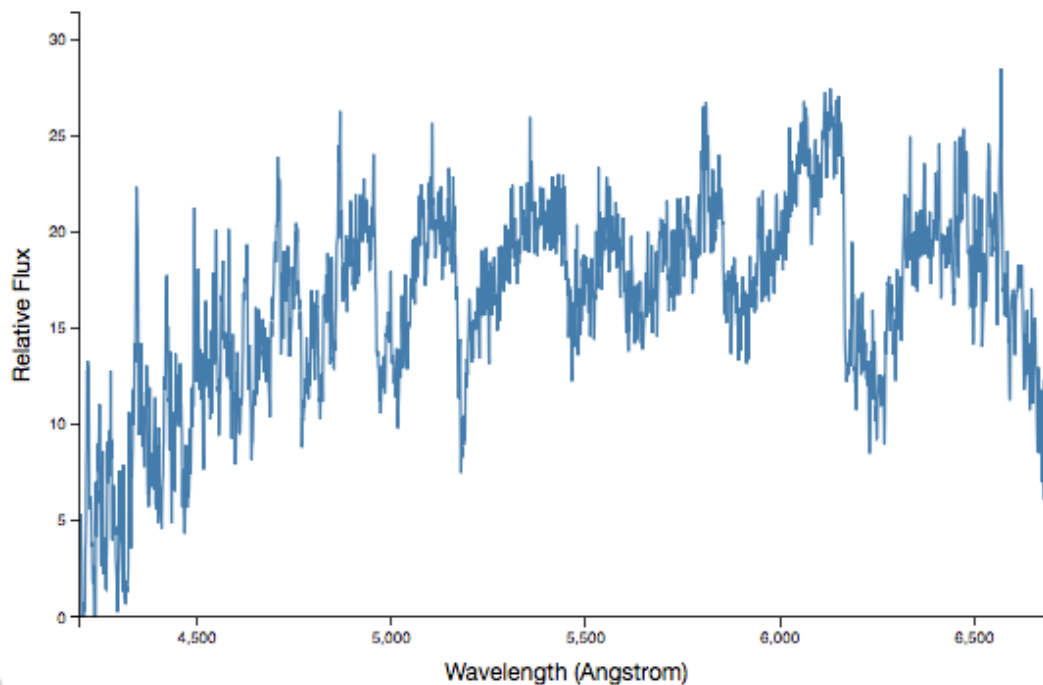
"The mission of the AAVSO is to enable anyone, anywhere, to participate in scientific discovery through variable star astronomy"

Record (cont)

Recent Search Submit Forum MyDB Help

T Hor -- 2019-01-21

Download



Record ID: 000-BBF-650_JPM_2458505.43854

Uploaded: 2019-01-21 15:05:32

Observer: JPM



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Header information

```
Terminal File Edit View Search Terminal Help
SIMPLE = T / conforms to FITS standard
BITPIX = -32 / array data type
NAXIS = 1 / number of array dimensions
NAXIS1 = 3817
CRVAL1 = 3759.9873775 / Coordinate at reference pixel
CDELTA1 = 0.8863775 / Coordinate increment
VERSION = 'ISIS V5.0.3' / Software version
OBJNAME = 'R Leo' / Current name of the object
DATE-OBS= '2012-10-27T17:39:04' / Date of observation start
EXPTIME = 1816 / [s] Total time of exposure
EXPTIME2= '6 x 300 s' / Exposure decomposition
AAV_INST= 'C9 LISA ATIK460EX' / Instrument
AAV_SITE= 'Castanet' / Observation site
AAV_ITRP= 742 / Typical resolving power
OBSERVER= 'CBCA'
CUNIT1 = 'Angstrom' / Wavelength unit
CTYPE1 = 'Wavelength' / Axis type
CRPIX1 = 1 / Reference pixel
BSS_VHEL= 0 / [km/s] Heliocentric speed
BSS_COSM= 'Removed'
BSS_TELL= 'None'
BSS_NORM= 'None'
JD-OBS = 2456228.2355 / JD start observation
JD = 2456228.246 / JD mid observation
JD-HEL = 0 / JD heliocentric mid-obs
```

~~COMMENT following keywords added by AAVSO~~

```
NAME = 'R Leo' / Object name in AAVSO database
RA2000 = '146.88954' / Right ascension
DEC2000 = '11.42881' / Declination
VARTYPE = 'M' / Variability Type
PERIOD = '309.95' / Period
COMMENT Renamed JD-MID to JD
COMMENT Renamed BSS_INST to AAV_INST
COMMENT Renamed BSS_SITE to AAV_SITE
COMMENT Renamed BSS_ITRP to AAV_ITRP
```




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Resources



LINKS & RESOURCES



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Resources: Discussion Forum

[Home](#) » [Forums](#) » [Variable Star Observing](#)

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Spectroscopy

[New topic](#)

[2](#) [3](#) [4](#) [5](#) [6](#) [next](#) » [last](#) »

	Topic / Topic starter	Replies	Last post▼
	February 2018 b Per observing campaign - Spectroscopy new by weo » Fri, 01/26/2018 - 11:21	2 View 2 new	by perdiguero Wed, 01/31/2018 - 17:17
	SpecDB new by gka » Thu, 01/11/2018 - 20:29	12 View 12 new	by andyjwilson Mon, 01/22/2018 - 06:08
	Interesting Low-Rez Target(s) Needed by B.P.Vietje » Wed, 12/27/2017 - 12:44	0	by B.P.Vietje Wed, 12/27/2017 - 12:44
	The new issue of the BAV magazine SPECTROSCOPY by Ernst Pollmann » Sat, 12/02/2017 - 11:16	0	by Ernst Pollmann Sat, 12/02/2017 - 11:16
	V594 Cas - a B[e] star currently ejecting mass by Olivier Thizy » Mon, 11/20/2017 - 10:55	0	by Olivier Thizy Mon, 11/20/2017 - 10:56
	BeSS Be Stars Spectra 10th anniversary symposium - my notes by Olivier Thizy » Mon, 11/06/2017 - 17:35	2	by Olivier Thizy Tue, 11/07/2017 - 02:43
	Be stars (GCAS variable) spectroscopy newsletter by Olivier Thizy » Mon, 11/06/2017 - 03:48	0	by Olivier Thizy Mon, 11/06/2017 - 03:48

Please Read:

- [Rules for Participation in AAVSO Forums](#)
- [Guidelines for Forum Use](#)
- [Navigating and Subscribing to Forums](#)



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Resources: Help page

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Help and FAQ

New to SpecDB?

Welcome! The AAVSO invites any and all interested in advancing science the submission, collection, and retrieval of the different colors of light emit

Given that these stars vary in brightness over time, the variation in differ which is produced by separating the light into its component colors. Done and the plethora of stars within it.

How to use SpecDB to find spect

Finding observations of variable star spectra is easy with SpecDB. One

- [SpecDB - Spectral Database for AAVSO](#)
- [Observer Requirements and Uploading a File](#)
- [Observation Requirements](#)
- [Recommended Keywords](#)
- [Error Checking](#)
- [Standard stars](#)
- [How Files are Checked](#)
- [Other useful documentation](#)

Documentation

If you wish to know more about spectroscopy, observation files, or the technical details of the database:

[Quick guide](#): Get started submitting spectra

[Spectroscopy field guide](#): In-depth guide to spectroscopic observations

[Technical manual](#): Header requirements, processing structure, code documentation



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Resources: Documentation

AAVSO | Quick Guide to Submitting Spectroscopic Observations

1. Get an AAVSO observer code (obscode):
<https://www.aavso.org/apps/member/>
2. In your account, register your observing site
3. Acquire one spectrum of one of the standard stars:
<https://aavso.dev.aas.org/apps/spectdb/star>
4. Reduce your data to produce an 1-d wavelength spectrum and submit the .fits file (we need the header):
<https://aavso.dev.aas.org/apps/spectdb/submit>
5. If there is a problem, please check the relevant documentation and pay attention to all errors.
6. If your submission is uploaded successfully, clicking on the [view] button. Uses the zoom feature to pay attention to:
 - a. Is your acquired spectrum similar to the reference spectrum (star)?
 - b. Do you see the same strong absorption features?
 - c. Are all absorption features aligned (within error)?
 - d. Is your spectrum normalized (the continuum is flat)?
7. Your spectrum will now be validated by a member. Please check the same items as step 6, and send your suggestions. During this time you will not be able to submit another spectrum.
8. When your test spectrum is validated, you can submit your final spectrum.

If you need suggestions on which objects to observe, see the suggested projects section page for suggested projects: <https://www.aavso.org/suggested-projects>

Clear skies!

The AAVSO Spectroscopy Manual

Version 1.1 - October 2018



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SPECDB

Spectral Database Users Manual
American Association of Variable Star Observers

Written by J. Weaver (2018)

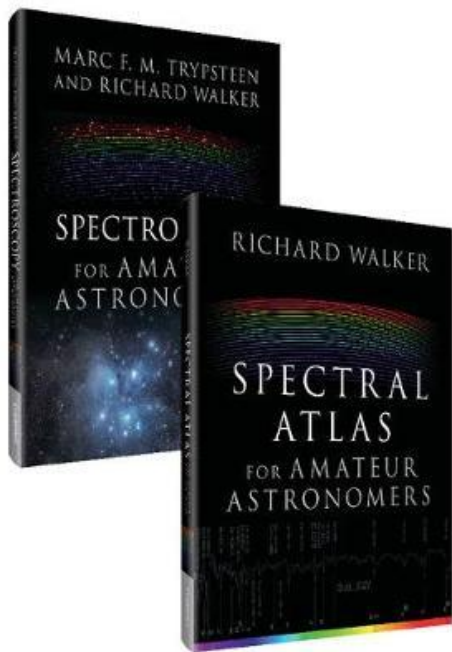
Developed by J. Weaver
with G. Silvius, B. Pablo, S. Beck, & S. Kafka

Version 1.3



"The mission of the AAVSO is to enable anyone, anywhere, to participate in scientific discovery through variable star astronomy"

Resources: books, videos ...



How to capture star spectra in your backyard

Tom Field @YouTube



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Join us!

Action items:

-Get Obscode

<https://www.aavso.org/join-aavso>

-Register Site + Equipment

<https://aavso.org/apps/site equip/>

-Take standard spectrum

<https://www.aavso.org/apps/specdb/>

-DO SCIENCE - have fun!



Become a member: www.aavso.org

Contact: skafka@aavso.org