CALIBRATION SERVER

Łukasz Wyrzykowski
Kris Rybicki
Warsaw University Astronomical Observatory, Poland

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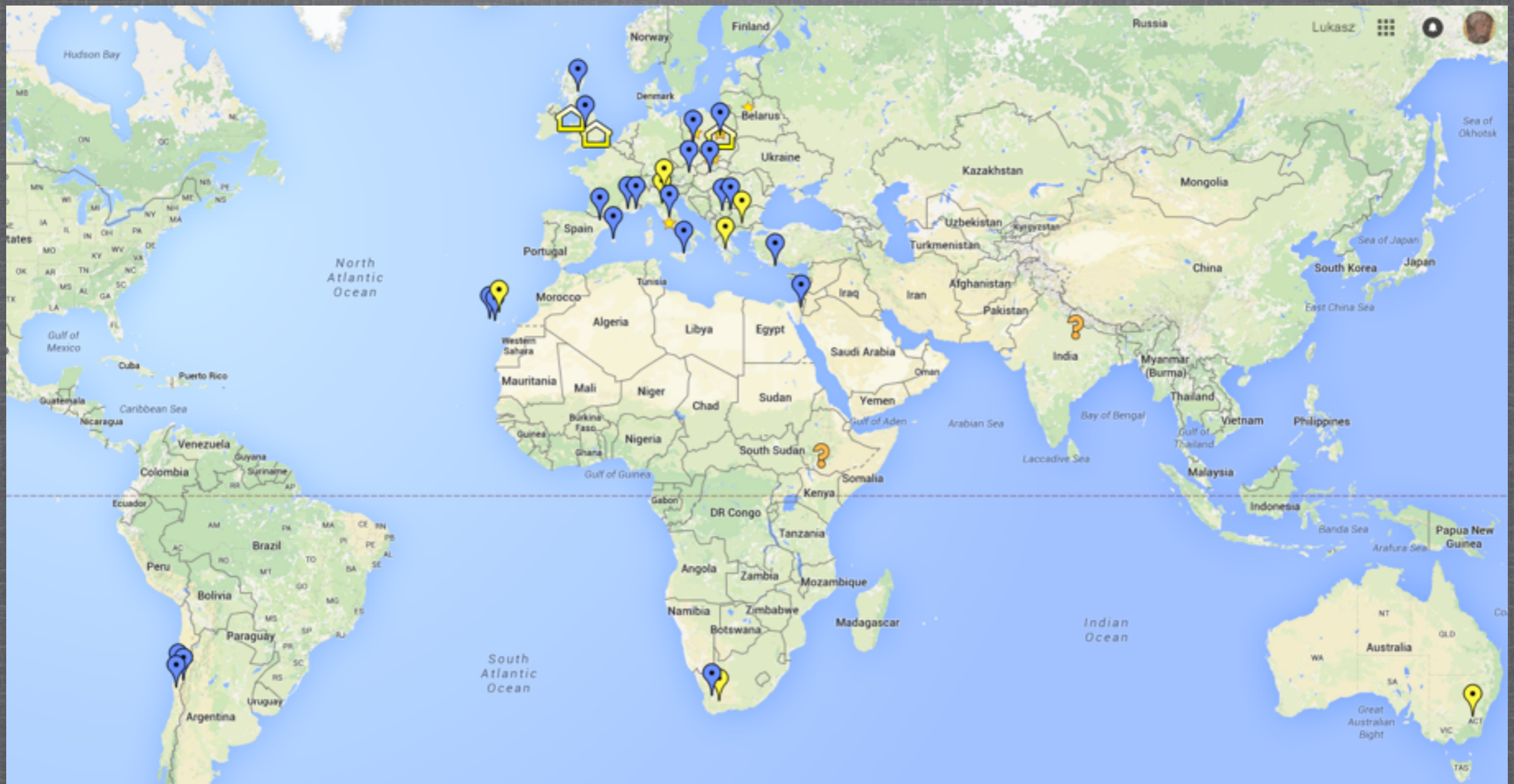# OPTICON FOLLOW-UP NETWORK

~20 active partners, ~30000 data points collected 2014-2016

HOW TO PARTICIPATE?

- fill the details on your telescope on http://tinyurl.com/telescopes-for-gaia

- join the mailing list of Gaia Alerts Working Group for photometric follow-up: email *LW AT astrouw.edu.pl* with your gmail.com address.

- read the Calibration Server manual: http://gsaweb.ast.cam.ac.uk/followup

- observe suggested targets from the mailing list in multiple filters (ugri,BVRI)

- reduce the images (bias, dark, flat-field)

- derive astrometric solution for your image(*)

- derive photometry for all stars on your image, using e.g., SExtractor(*)

- submit the file with the catalogue of alpha, delta, mag, magerr to Calib.Server(*)

- enjoy your datapoint present on the light curve!

FOLLOW-UP CALIBRATION SERVER

gsaweb.ast.cam.ac.uk/followup/

Welcome to the Cambridge Photometry Calibration Server (CPCS)

Logged as admin

Login into the system
List of alerts (observed only)
List of followup data
List of observatories
Upload new followup data
Enter new event
Delete a followup point from the system

Admin stuff

Add a new user into the system
Update the coordinates of an alert

Last data upload was done on Thu Aug 14 15:47:16 2014 for ivo://asassn/ASASSN-14bb

Logout

Manual

designed by Sergey Koposov and LW

FOLLOW-UP CALIBRATION SERVER

gsaweb.ast.cam.ac.uk/followup/

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Admin stuff

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Update the coordinates of an alert

Login

Login Form:

Hash tag: [   ]
Submit

Your unique access name/pass
(provided by LW)

LIST OF OBSERVATORIES

http://gsaweb.ast.cam.ac.uk/followup/observatories

id	Name	Longitude	Latitude	Observations
18	admin	None	None	6
49	Aleks Scholz James Gregory Telescope 0.94 St.Andrews,UK	-2.8	56.3	0
16	Alex Ball-SMARTS1.3	70.815	-30.16527778	145
76	Anna Hourihane	0.0	0.0	898
1	AnonymousFollowUpAccount	0.0	0.0	0
9	AshishMahabalEulerLaSillaChile	-70.73	-29.257	28
7	AshishMahabalIGOIndia	73.666667	19.083333	0
10	AshishMahabalP60	-116.863889	33.355833	0
8	AshishMahabalSAAO1.9SA	20.811642	-32.378961	0
15	AshishMahabal-SMARTS1.3	70.815	-30.16527778	0
27	BAS NAO 2m Rozhen	24.74	41.7	6
28	BAS NAO 60cm Rozhen	24.74	41.7	0
29	BAS NAO Rozhen 50/70cm Schmidt	24.74	41.7	8
30	Belogradchik, AO, 60cm, Bulgaria	22.67	43.62	19
66	Bialkow, A.Pigulski	16.66	51.48	16
64	Bialkow, D.Mozdzierski	16.66	51.48	0
63	Bialkow, G.Kopacki	16.66	51.48	0
65	Bialkow, Z.Kolaczkowski	16.66	51.48	467
61	BOOTES4,JJapelj,China	100.03	26.695	0
14	Colin Snodgrass, RoboNET	0.0	0.0	0
75	Euler Geneva Group	-70.73	-29.257	106
31	Gabor Marschalko, Konkoly, Piszkesteto Mountain Station, Hungary	19.8953	47.9181	60
5	GiuseppeAltavillaAPT2CataniaItaly	14.974722	37.693056	0
3	GiuseppeAltavillaAsiagoObservatoryItaly	11.571375	45.843389	0
2	GiuseppeAltavillaLoianoObservatoryItaly	11.333889	44.259167	44
4	GiuseppeAltavillaTNTTeramoItaly	13.733333	42.6575	0
6	GiuseppeAltavillaToppoNaplesItaly	15.463333	40.817778	0
43	Giuseppe Leto APT2 Catania	14.974722	37.693056	26
26	Goran Damljanovic, ASV, Serbia	21.55	43.15	619
36	Heather Campbell	0.0	0.0	7782

about ~40 active users

LIST OF ALERTS

http://gsaweb.ast.cam.ac.uk/followup/list_of_alerts

id	ivorn	published	ra	dec	nfollowup	LC	data
26139	ivo://Gaia15aff-bis	2015-10-29 13:36:13	306.69743	42.9949	0	LC	data
26138	ivo://PS15blq	2015-10-07 09:58:18	262.9266667	43.89269444	229	LC	data
26137	ivo://MASTEROTJ183934.91+414404.2	2015-09-25 17:20:51	279.895	41.7345	63	LC	data
26136	ivo://OGLE15gg	2015-09-22 13:10:29	0.695625	-73.51175	6	LC	data
26135	ivo://Gaia15agi	2015-08-31 19:08:59	43.08181	60.57638	1	LC	data
26134	ivo://OGLE15eo	2015-08-31 15:32:50	45.5647917	-74.28675	4	LC	data
26133	ivo://ASASSN-15nr	2015-08-13 22:04:55	261.6743333	13.9098528	16	LC	data
26132	ivo://PSN-J23470615+2929074	2015-08-13 02:23:57	356.775625	29.4853889	10	LC	data
26131	ivo://PS15bpa	2015-08-12 20:24:03	292.18175	56.6893611	18	LC	data
26130	ivo://PS15bpo	2015-08-12 20:22:34	346.5146667	33.6024444	18	LC	data
26129	ivo://ASASSN15nr	2015-08-11 17:02:50	261.67458	13.9095	0	LC	data
26128	ivo://OGLE15eb	2015-08-07 23:23:18	7.055	-76.9906944	2	LC	data
26127	ivo://OGLE15ej	2015-08-07 22:41:19	41.3385417	-73.6565556	9	LC	data
26126	ivo://OGLE15el	2015-08-07 22:08:55	58.011125	-64.991	6	LC	data
26125	ivo://OGLE15eg	2015-08-07 21:13:26	21.41525	-69.3641944	10	LC	data
26124	ivo://PS15bom	2015-08-06 16:15:30	351.654375	-0.2897222	284	LC	data
26123	ivo://v404cyg	2015-08-04 13:37:22	306.0159583	33.86727778	476	LC	data
26120	ivo://Borrar	2015-07-22 14:27:05	181.02133	14.06805	0	LC	data
26118	ivo://OGLE15ef	2015-07-21 12:38:33	353.025	-70.0915833	0	LC	data
26117	ivo://SwiftJ1753.5-0127	2015-07-15 13:06:03	268.36788	-1.45172	0	LC	data

LIST OF ALERTS

http://gsaweb.ast.cam.ac.uk/followup/list_of_alerts?observed_only=1

id	ivorn	published	ra	dec	nfollowup	LC	data
26138	ivo://PS15blq	2015-10-07 09:58:18	262.9266667	43.89269444	229	LC	data
26137	ivo://MASTEROTJ183934.91+414404.2	2015-09-25 17:20:51	279.895	41.7345	63	LC	data
26136	ivo://OGLE15gg	2015-09-22 13:10:29	0.695625	-73.51175	6	LC	data
26135	ivo://Gaia15agi	2015-08-31 19:08:59	43.08181	60.57638	1	LC	data
26134	ivo://OGLE15eo	2015-08-31 15:32:50	45.5647917	-74.28675	4	LC	data
26133	ivo://ASASSN-15nr	2015-08-13 22:04:55	261.6743333	13.9098528	16	LC	data
26132	ivo://PSN-J23470615+2929074	2015-08-13 02:23:57	356.775625	29.4853889	10	LC	data
26131	ivo://PS15bpa	2015-08-12 20:24:03	292.18175	56.6893611	18	LC	data
26130	ivo://PS15bpo	2015-08-12 20:22:34	346.5146667	33.6024444	18	LC	data
26128	ivo://OGLE15eb	2015-08-07 23:23:18	7.055	-76.9906944	2	LC	data
26127	ivo://OGLE15ej	2015-08-07 22:41:19	41.3385417	-73.6565556	9	LC	data
26126	ivo://OGLE15el	2015-08-07 22:08:55	58.011125	-64.991	6	LC	data
26125	ivo://OGLE15eg	2015-08-07 21:13:26	21.41525	-69.3641944	10	LC	data
26124	ivo://PS15bom	2015-08-06 16:15:30	351.654375	-0.2897222	284	LC	data
26123	ivo://v404cyg	2015-08-04 13:37:22	306.0159583	33.86727778	476	LC	data
26115	ivo://Gaia15aev	2015-06-24 13:01:35	200.48016	35.35886	8	LC	data
26114	ivo://Gaia15agm	2015-06-22 02:36:28	358.98623	-43.72412	25	LC	data
26113	ivo://Gaia15agl	2015-06-22 02:19:51	337.79327	-37.82735	8	LC	data
26112	ivo://Gaia15agk	2015-06-22 01:55:28	337.7066	-43.04732	3	LC	data
26111	ivo://Gaia15agf	2015-06-22 01:38:01	330.62236	-20.32945	11	LC	data

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LIST OF ALERTS

id	ivorn	published	ra	dec	nfollowup	LC	data
26109	ivo://Gaia15afs	2015-06-21 09:13:33	171.99183	-11.71668	6	LC	data
26108	ivo://Gaia15afp	2015-06-21 09:12:28	208.90046	-55.8158	3	LC	data
26105	ivo://Gaia15afi	2015-06-17 01:30:54	275.01309	45.58684	4	LC	data
26104	ivo://Gaia15afq	2015-06-12 12:35:01	234.62443	27.29889	61	LC	data
26095	ivo://Gaia15agj	2015-06-10 11:53:55	147.74682	37.96674	30	LC	data
26092	ivo://Gaia15agc	2015-06-05 12:32:07	184.59674	35.61824	69	LC	data
26087	ivo://Gaia15agh	2015-06-05 11:18:23	181.02133	14.06805	48	LC	data
26086	ivo://Gaia15aft	2015-06-03 14:45:28	273.68224	39.61261	34	LC	data
26085	ivo://Gaia15afc	2015-05-27 10:19:48	236.11003	55.66468	2	LC	data
26084	ivo://Gaia15aet	2015-05-25 17:11:12	135.65769	25.93442	1	LC	data
26083	ivo://Gaia15afl	2015-05-24 23:29:53	154.26841	-30.51285	4	LC	data
26082	ivo://Gaia15afj	2015-05-24 23:29:34	26.61369	-16.6738	1	LC	data
26067	ivo://Gaia15aff	2015-05-21 11:55:39	306.69743	42.9949	306	LC	data
26066	ivo://Gaia15afd	2015-05-21 11:32:43	269.87408	43.39004	373	LC	data
26065	ivo://Gaia15afh	2015-05-20 13:25:00	284.66998	43.46885	1	LC	data
26062	ivo://Gaia15afe	2015-05-19 20:28:13	210.46355	21.5594	3	LC	data
26051	ivo://Gaia15aer	2015-05-19 15:43:56	353.96774	23.61441	26	LC	data
26050	ivo://Gaia15afb	2015-05-18 16:33:02	49.0776	-45.28281	1	LC	data
26049	ivo://Gaia15aez	2015-05-18 16:32:39	352.86494	22.84956	2	LC	data
26048	ivo://Gaia15aex	2015-05-18 16:32:18	36.95977	-58.63564	2	LC	data

CALIBRATION SERVER

List of alerts

id	ivorn	published	ra	dec	nfollowup	LC	data
25987	ivo://Gaia15acw	2015-04-16 17:39:51	132.33462	36.71581	1	LC	data
25986	ivo://Gaia15ads	2015-04-16 14:33:15	251.47004	32.11807	32	LC	data
25973	ivo://Gaia15ado	2015-04-13 18:46:52	347.09059	-50.72458	8	LC	data

Light curve with all data collected for a given object

Light curve of ivo://Gaia15agc
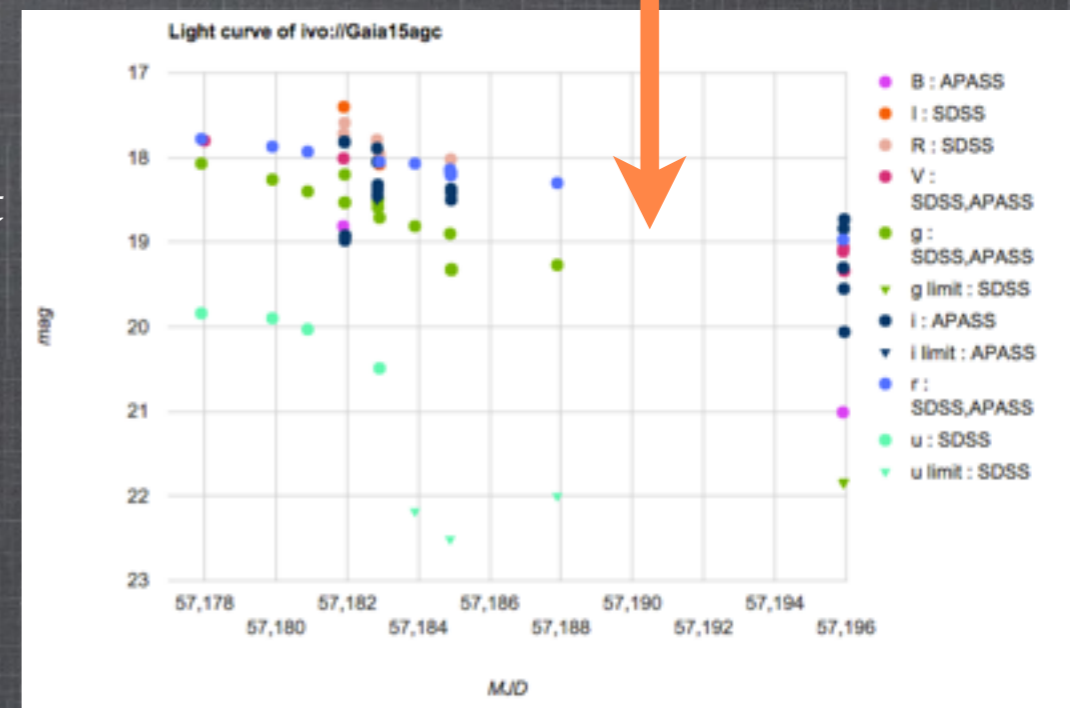
http://gsaweb.ast.cam.ac.uk/followup/get_alert_lc?alert_id=25955

http://gsaweb.ast.cam.ac.uk/followup/get_alert_lc?alert_name=ivo://Gaia15ael

CALIBRATION SERVER

List of alerts

id	ivorn	published	ra	dec	nfollowup	LC	data
25987	ivo://Gaia15acw	2015-04-16 17:39:51	132.33462	36.71581	1	LC	data
25986	ivo://Gaia15ads	2015-04-16 14:33:15	251.47004	32.11807	32	LC	data
25973	ivo://Gaia15ado	2015-04-13 18:46:52	347.09059	-50.72458	8	LC	data

JSON format
(only available after login!)

{"mjd": [57121.979638299999, 57125.995006999998, 57130.994694000001, 57132.004650499999, 57132.9880643], "magerr": [0.010099999606609344, -1.0, -1.0, -1.0, -1.0], "observatory": ["Euler Geneva Group", "Euler Geneva Group", "Euler Geneva Group", "Euler Geneva Group", "Euler Geneva Group"], "mag": [19.31570531005859, 19.723800659179688, 19.765199661254883, 27.658000946044922, 19.523700714111328], "filter": ["r", "r", "r", "r", "r"], "catalog": ["APASS", "APASS", "APASS", "APASS", "APASS"], "caliberr": [0.16949599981307983, 0.063841402530670166, 0.059290699660778046, 0.029510200023651123, 0.0607932992279529571}

http://gsaweb.ast.cam.ac.uk/followup/get_alert_lc_data?alert_id=25960

http://gsaweb.ast.cam.ac.uk/followup/get_alert_lc_data?alert_name=ivo://Gaia15ael

CALIBRATION SERVER

List of follow-up data

Lists all individual follow-up observations, original data (dat)
and results of the calibration

24088	ivo://Gaia15afq	Goran Damljanovic, ASV, Serbia	57244.8311806	18.8181	0.05	0.12	34	APASS	r	AUTO	2015-08-11 10:46:02	I D
24087	ivo://Gaia15afq	Goran Damljanovic, ASV, Serbia	57244.8348264	18.52	0.07	0.12	214	SDSS	I	AUTO	2015-08-11 10:45:57	I D
24077	ivo://Gaia15afd	Goran Damljanovic, ASV, Serbia	57243.8690509	19.349	0.10	0.13	63	APASS	r	AUTO	2015-08-11 10:25:38	I D

Calibration plots
for each filter
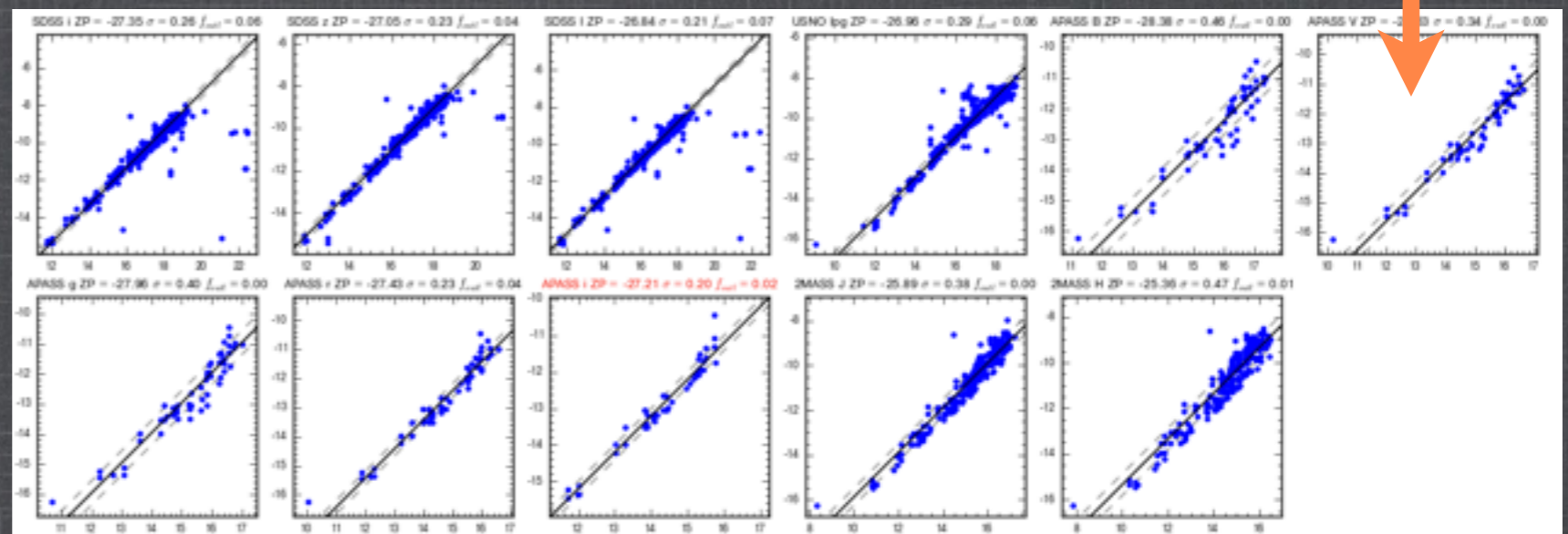
DELETING A DATA POINT

Welcome to the Cambridge Photometry Calibration Server (CPCS)

Logged as admin

Login into the system
List of alerts (observed only)
List of followup data
List of observatories
Upload new followup data
Enter new event
Delete a followup point from the system

Delete a followup point Form:

Logged in as admin
ID of the followup point:

Submit

Admin stuff

Add a new user into the system
Update the coordinates of an alert

Last data upload was done on Thu Aug 14 15:47:16 2014 for ivo://asassn/ASASSN-14bb

Logout

Manual

UPLOADING THE FOLLOW-UP DATA

http://gsaweb.ast.cam.ac.uk/followup/uploader

only alerts present in the database can be calibrated
if the event is not there it can be added manually - see later

UPLOADING THE FOLLOW-UP DATA

http://gsaweb.ast.cam.ac.uk/followup/uploader

Follow-up Data Uploading Form

Event ID:

MJD OBS:

for SDSS there are also standard filters available (B,V,I,R) (conversion following Jordi et al. 2006)

Exposure time (sec):

Comment(optional):

Sextractor catalog (ASCII, FITS, FITS-LDAC): Choose File   No file chosen

Matching radius: 2
- 1 arcsec
- ✓ 2 arcsec
- 4 arcsec
- 6 arcsec

Force filter: No (automatic determination)

Dry Run (no data will be stored in the database):

Submit

✓ No (automatic determination)
SDSS/B
SDSS/g
SDSS/i
SDSS/I
SDSS/r
SDSS/u
SDSS/V
SDSS/R
SDSS/z
APASS/i
APASS/r
APASS/B
APASS/g
APASS/V
VSTATLAS/i
VSTATLAS/r
VSTATLAS/u
VSTATLAS/z
VSTATLAS/g
OGLE3/I
OGLE3/V
USNO/R1pg
USNO/R2pg
USNO/B1pg
USNO/Ipg
USNO/B2pg
PS1/i
PS1/r
PS1/g
2MASS/H
2MASS/K
2MASS/J
any/B
any/V
any/R
any/u
any/g
any/r
any/i
any/z

any, i.e. whichever is available and matches best

REQUIRED SEXTRACTOR FIELDS:

\# ALPHA_J2000   Right ascension of barycenter (J2000) [deg]
\# DELTA_J2000   Declination of barycenter (J2000) [deg]
then, either:
\# MAG_APER   Fixed aperture magnitude vector [mag]
\# MAGERR_APER   RMS error vector for fixed aperture mag. [mag]
or:
\# MAG_AUTO   Automatic aperture magnitude [mag]
\# MAGERR_AUTO   RMS error for automatic aperture mag. [mag]

Maximum distance allowed for cross-matching your objects with the db (reflects the astrometric accuracy)

Output filter:
select the best matching filter to your filter or select "**No**" to find the best matching

Selecting "**Dry Run**" prevents data from being stored in the database. It allows for submitting the same data many times (e.g. for filter testing) **Don't forget to submit the data after the tests!**

Hi AnonymousFollowUpAccount!

Upload done from IP 131.111.70.231

Filename: 110610_B.cat

EventId : ivo://nvo.caltech/voeventnet/catot#1201131150224104750

Ra : 62.09121

Dec : 14.25436

Filter: SDSS / B ← best matching filter (data will be stored as in this filter)

Magnitude: 19.9669992403 +/- -1 mag ← calibrated magnitude

ZP: -29.43 mag ← zero point

Scatter: 0.05 mag

Number of datapoints used for calibration: 37

Outlier fraction: 0.11

Matching radius[arcsec]: 2.0

Dry run: True

best matching filter
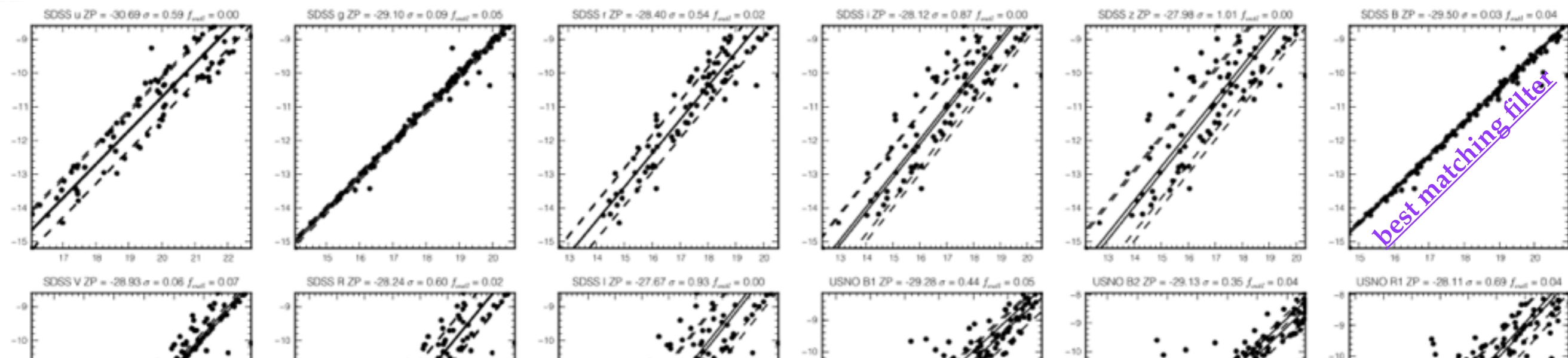
plots show calibration results for each available filter/survey

FOLLOW-UP CALIBRATION SERVER

gsaweb.ast.cam.ac.uk/followup/
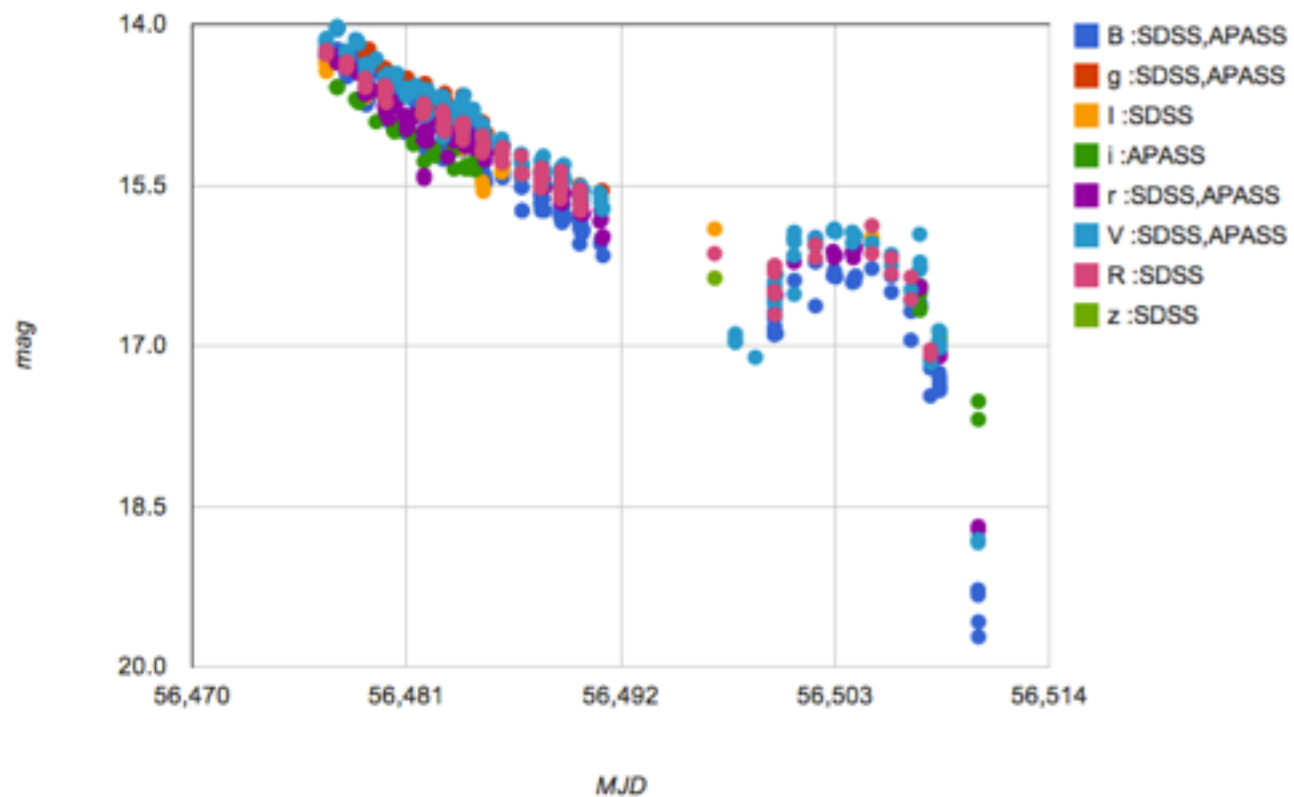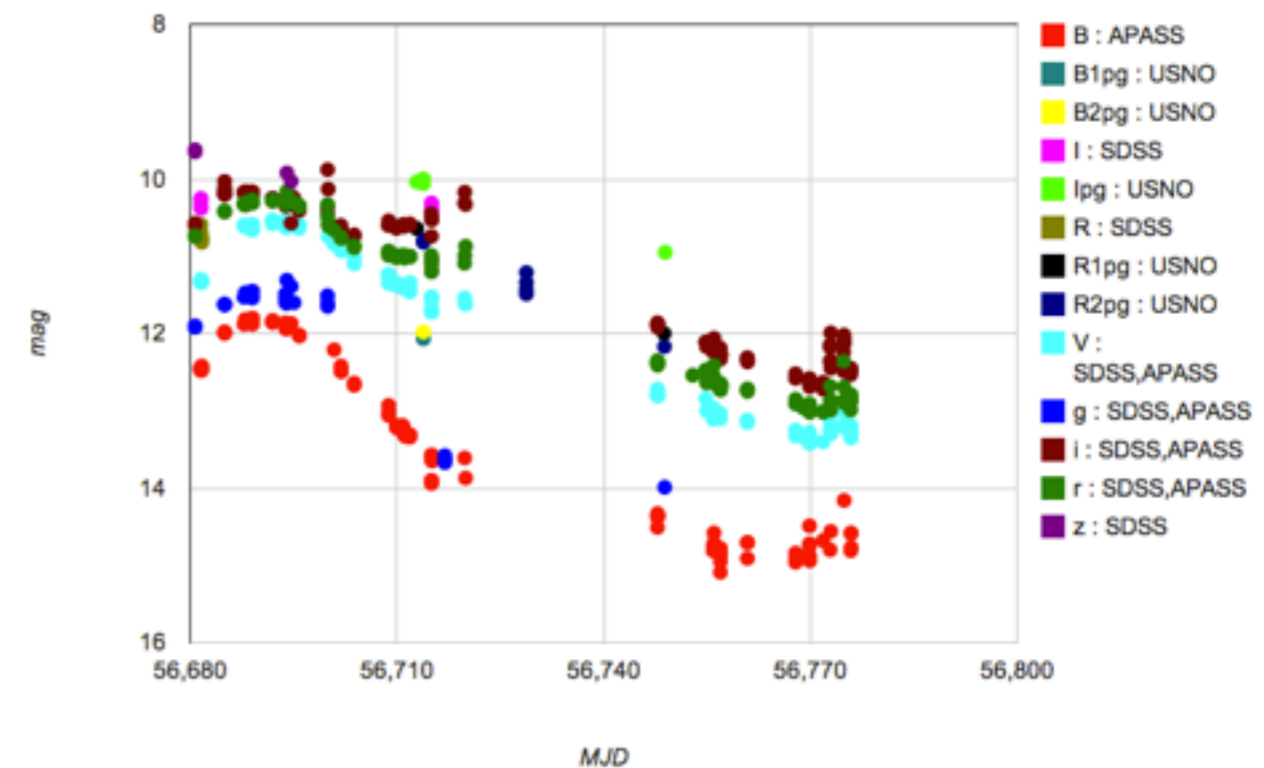
MANUAL

https://www.ast.cam.ac.uk/ioa/wikis/gsawgwiki/index.php/Calibration_Server

Contents [hide]

AUTOMATED SUBMISSION

https://www.ast.cam.ac.uk/ioa/wikis/gsawgwiki/index.php/Calibration_Server

Automated submission [edit]

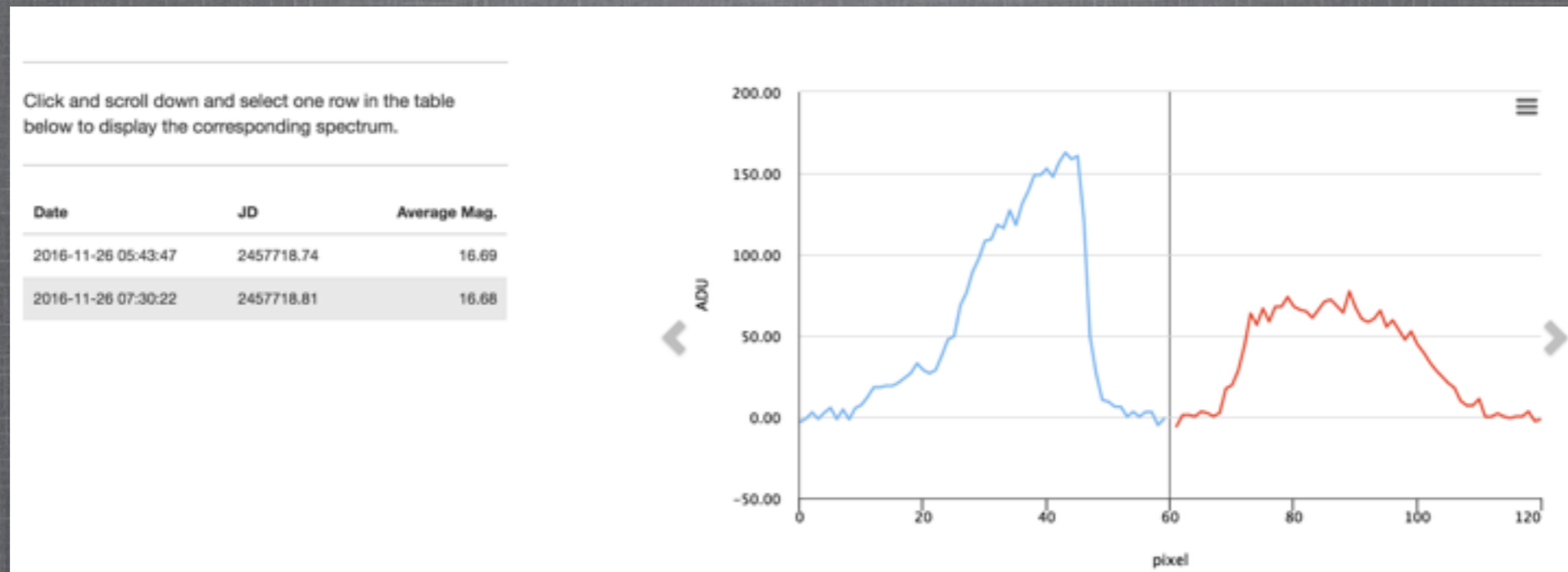You can also do that from the command line using HTTP POST protocol

```
curl -F matchDist=2 -F EventID='ivo://110610' -F sexCat="@path_to_your_sex_catalog_with_filename;filename=test.cat"
     -F "hashtag=XXXX" -F "MJD=2" -F expTime=1 -F noPlot=1
     -F forceFilter=no -F dryRun=1 -F outputFormat=json "http://gsaweb.ast.cam.ac.uk/followup/cgi/upload ⌐"
```

Parameters of the http://gsaweb.ast.cam.ac.uk/followup/cgi/upload ⌐

- matchDist -- matching radius in arcseconds
- hashtag -- your authorization key
- MJD -- mjd of the observations
- expTime -- exposure time
- comment -- comments
- EventID -- the ivorn of the alert
- dryRun -- the value of 1 allows you to check the results of the calibration without inserting anything into our DB
- forceFilter -- "no" means that the calibration will be fully automated. But You can also specify APASS/V if you want to calibrate using a particular survey/filter
- sexCat -- that's the Sextractor catalog you are trying to submit
- outputFormat -- at the moment the only allowed values are json and html

DISCUSSION

1- What is the resolution/dispersion of the RP and BP spectra seen in the alerts page? and wavelength range?

2- Where are the individual astrometric measurements?

DISCUSSION

3- Which catalogues are used for each filter in the photometric calibration server?