Research:LINEAR Catalog of Variable Objects

From Astronomy Facility Wiki

This page describes the creation and format of the LINEAR Catalog of Variable Objects

Contents

- 1 Selection Criteria
- 2 Catalog Format (Image:Media-LINEAR master file.dat.bz2)
- 3 Spectroscopic Parameters for LINEAR Variable Objects (Media:Var_candidates_w_spectra.dat.bz2)
- 4 Observed LINEAR Objects

Selection Criteria

- nptsGood > 29 AND
- mag_std > 0.1 AND
- mag_chi2dof > 3 AND
- mag_median between 14 and 17

These selection criteria select 203,026 objects for which A. Becker determined periods of variability using his implementation of the SuperSmoother algorithm.

Catalog Format (Image:Media-LINEAR master file.dat.bz2)

Field		Description
1	id	Ignore for now
2	filename	Ignore for now
3	sdss_ra	SDSS equatorial J2000.0 right ascension in degrees
4	sdss_dec	SDSS equatorial J2000.0 declination in degrees
5	ra	Median LINEAR equatorial J2000.0 right ascension in degrees
6	dec	Median LINEAR equatorial J2000.0 declination in degrees
7	objectID	LINEAR database objectID
8	objtype	galaxy = 3, star = 6
9	mag_median	Median LINEAR magnitude
10	rExt	Extinction in the SDSS r band (from Schlegel, Finkbeiner & Davis 1998)
11	noSATUR	not saturated in SDSS = 1, saturated in SDSS = 0
12	uMod	SDSS *ugriz* model magnitudes and corresponding errors
13	gMod	
14	rMod	
15	iMod	
16	zMod	
17	uErr	
18	gErr	
19	rErr	
20	iErr	

21	zErr	
22	J	2MASS *JHK* magnitudes and corresponding errors
23	H	
24	K	
25	JErr	
26	HErr	
27	KErr	
28	stdev	Standard deviation of the light curve
29	rms	Root-mean-square scatter of the light curve calculated from the inter-quartile range
30	chi2pdf	chi^2 per degree of freedom
31	nObs	Number of good (flag = 0) LINEAR observations
32	skew	Light curve skewness
33	kurt	Light curve kurtosis
34	p1	Top 3 periods and phase zeropoints given by SuperSmoother
35	phi1	
36	p2	
37	phi2	
38	p3	
39	phi3	
40	spec	no SDSS spectra = -1, only redshift (no SSPP parameters) = 0, has SSPP parameters = 1
41	RRc	not a RR Lyrae candidate = -1, RRab candidate = 0, RRc candidate = 1

Spectroscopic Parameters for LINEAR Variable Objects (Media:Var_candidates_w_spectra.dat.bz2)

	Field	Description
1	objectID	LINEAR objectID
2	specObjID	SDSS specObjID
3	z	SpecBS pipeline redshift
4	sptypea	Stellar Type Classification from SSPP
5	hammersptype	Stellar Type Classification from K. Covey's *Hammer* pipeline
6	rv	ELODIE template match RV (offset)
7	rvErr	ELODIE RV error
8	feh	Adopted [Fe/H] value, combination of good estimates
9	fehErr	Error on the [Fe/H] value, or -9.999
10	Teff	Adopted Teff -- weighted mean
11	TeffErr	Error on the Teff
12	logg	Adopted log g -- weighted mean
13	loggErr	Error on log g

Observed LINEAR Objects

objectID	R.A.	Dec	Observatory	Comments
12365386	221.599767	-0.115772	MRO	Not really observed