

KIC 012307076

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
012307076-01	OBS	No	350.501090	392.826882	379.5	9.768	10.8	6.0	1.23	6270	2.59	2.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012307076-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

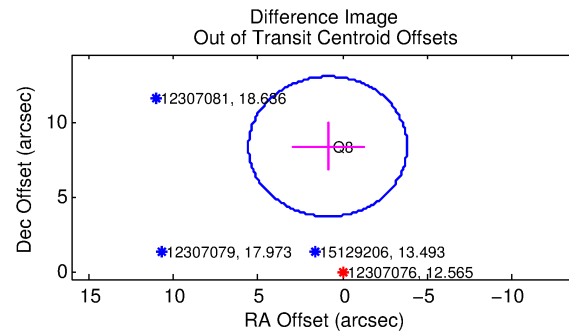
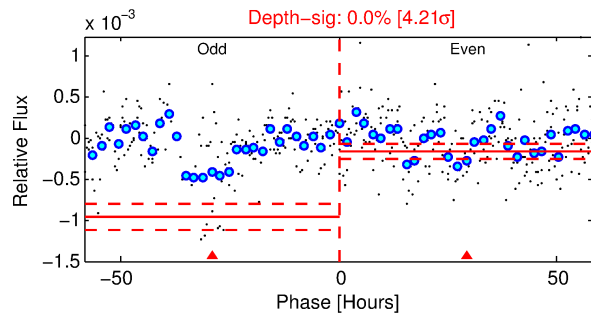
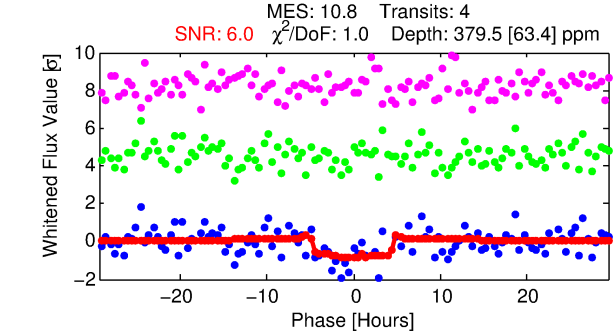
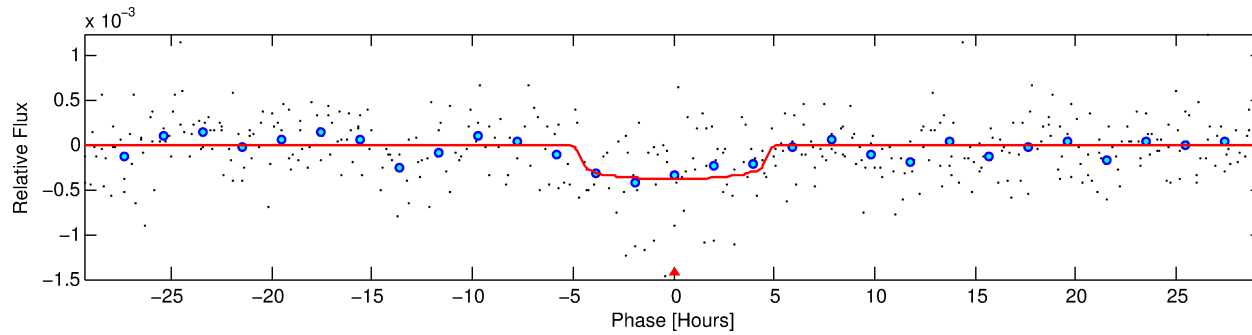
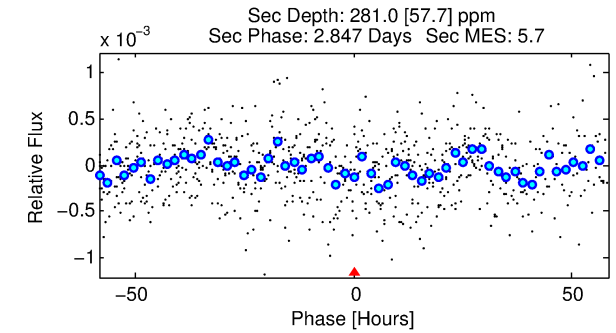
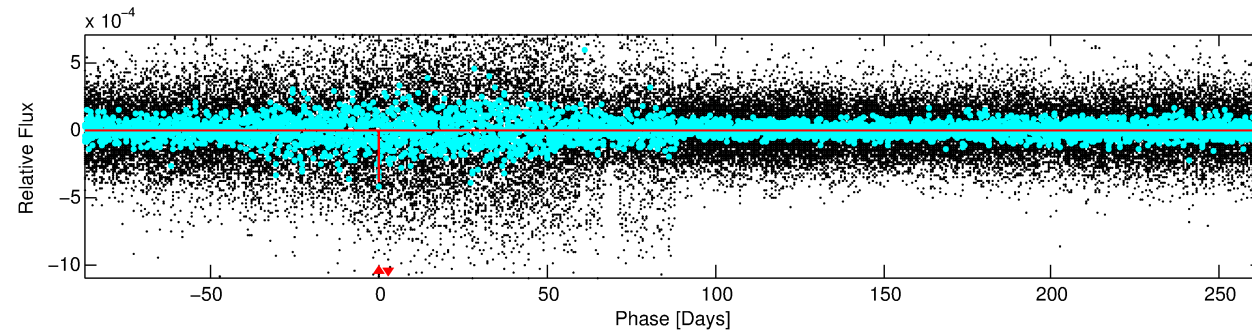
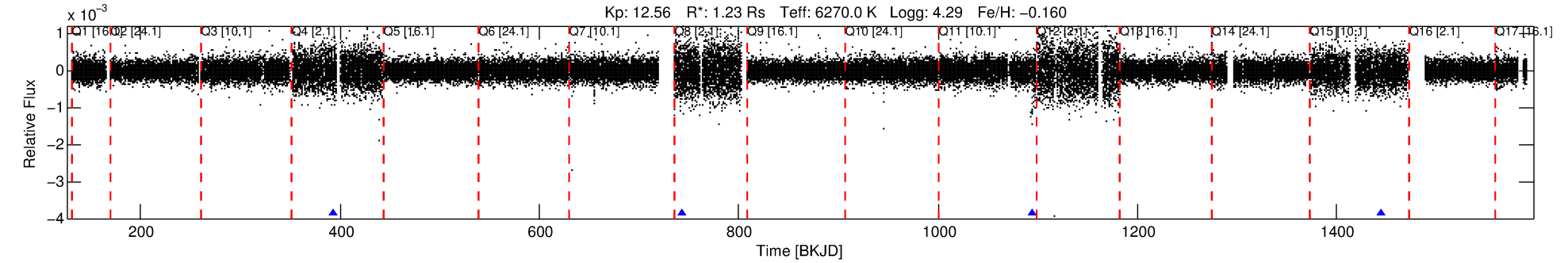
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012307076-01

No Significant Match Found

DV One-Page Summary

KIC: 12307076 Candidate: 1 of 1 Period: 350.501 d



DV Fit Results:

Period = 350.50109 [0.00840] d
Epoch = 392.8269 [0.0146] BKJD
Rp/R* = 0.0194 [0.0069]
a/R* = 189.49 [336.51]
b = 0.75 [1.04]
Seff = 2.11 [0.85]
Teq = 307 [31] K
Rp = 2.59 [1.24] Re
a = 0.9914 [0.2592] AU
Ag = 22663.15 [18788.15] [1.21σ]
Teffp = 5833 [1104] K [5.00σ]

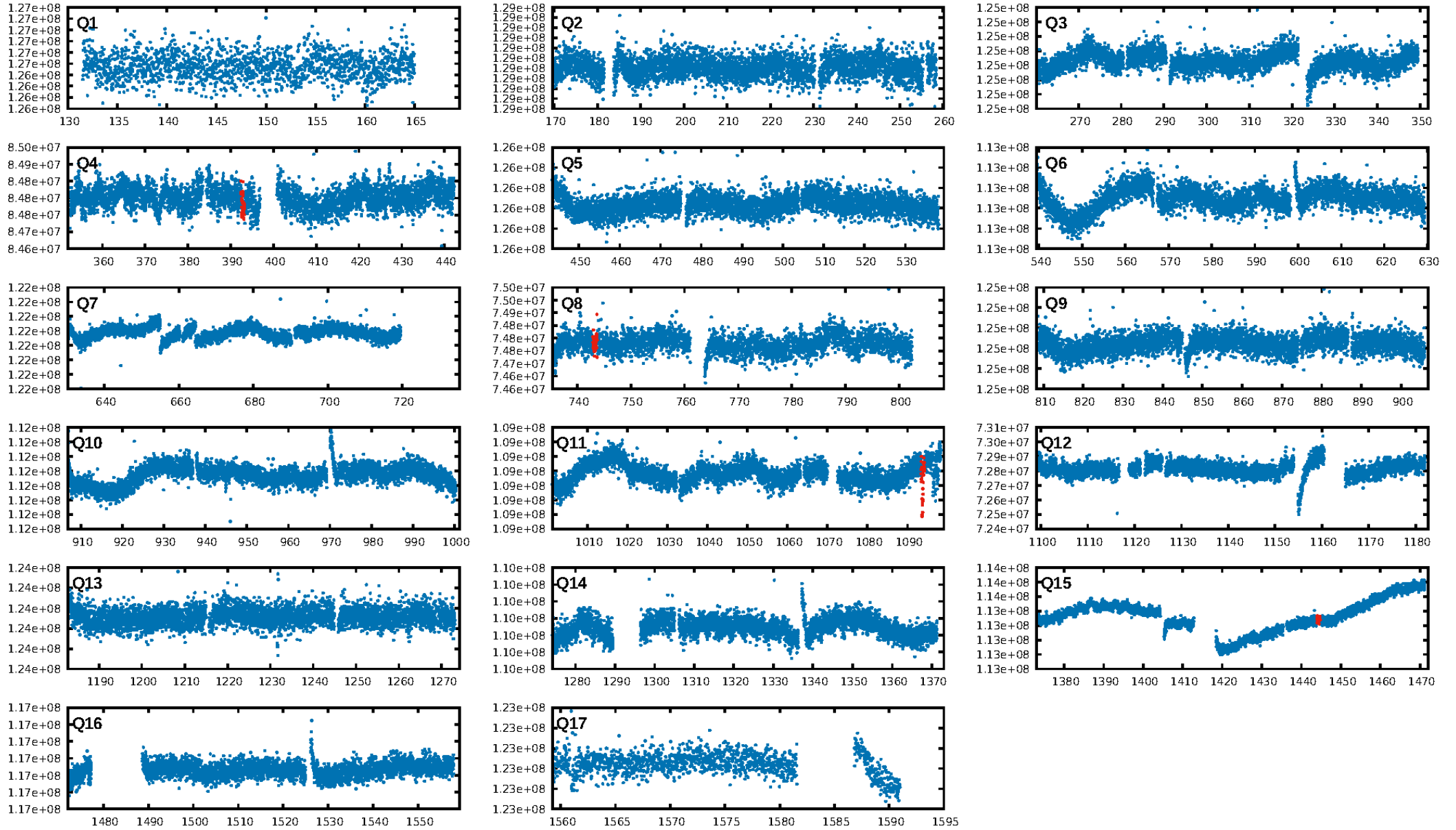
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 99.3%
Bootstrap-pfa: 6.01e-24
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 1.04
Centroid-sig: 46.8%
Centroid-so: 1.536 arcsec [2.69σ]
OotOffset-rm: 8.387 arcsec [5.39σ]
KicOffset-rm: 10.002 arcsec [6.30σ]
OotOffset-st: 0/0/1/0 [1]
KicOffset-st: 0/0/1/0 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 1.00 [3/3]

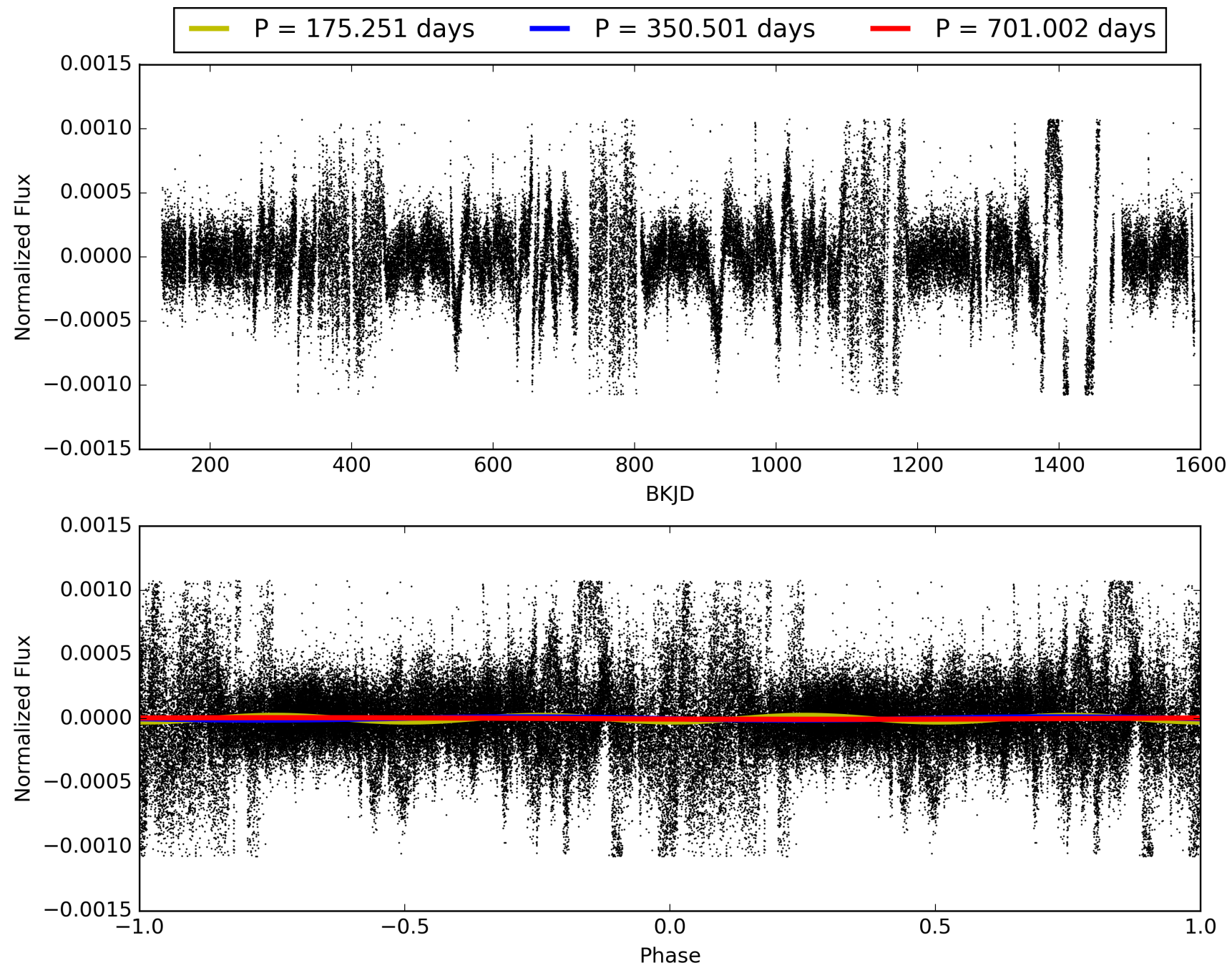
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 22:54:09 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 012307076-01, PDC Light Curves

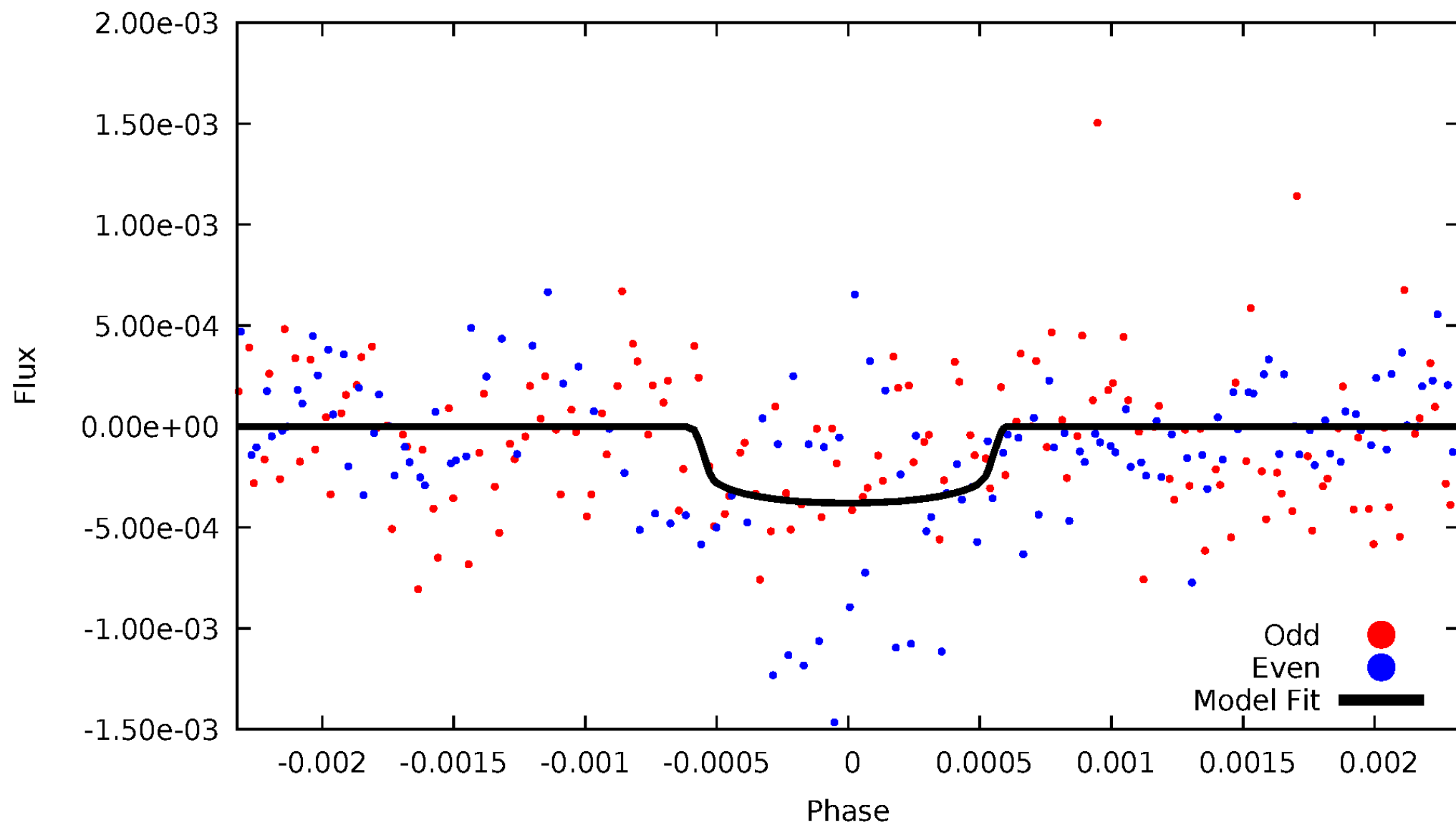


TCE 012307076-01



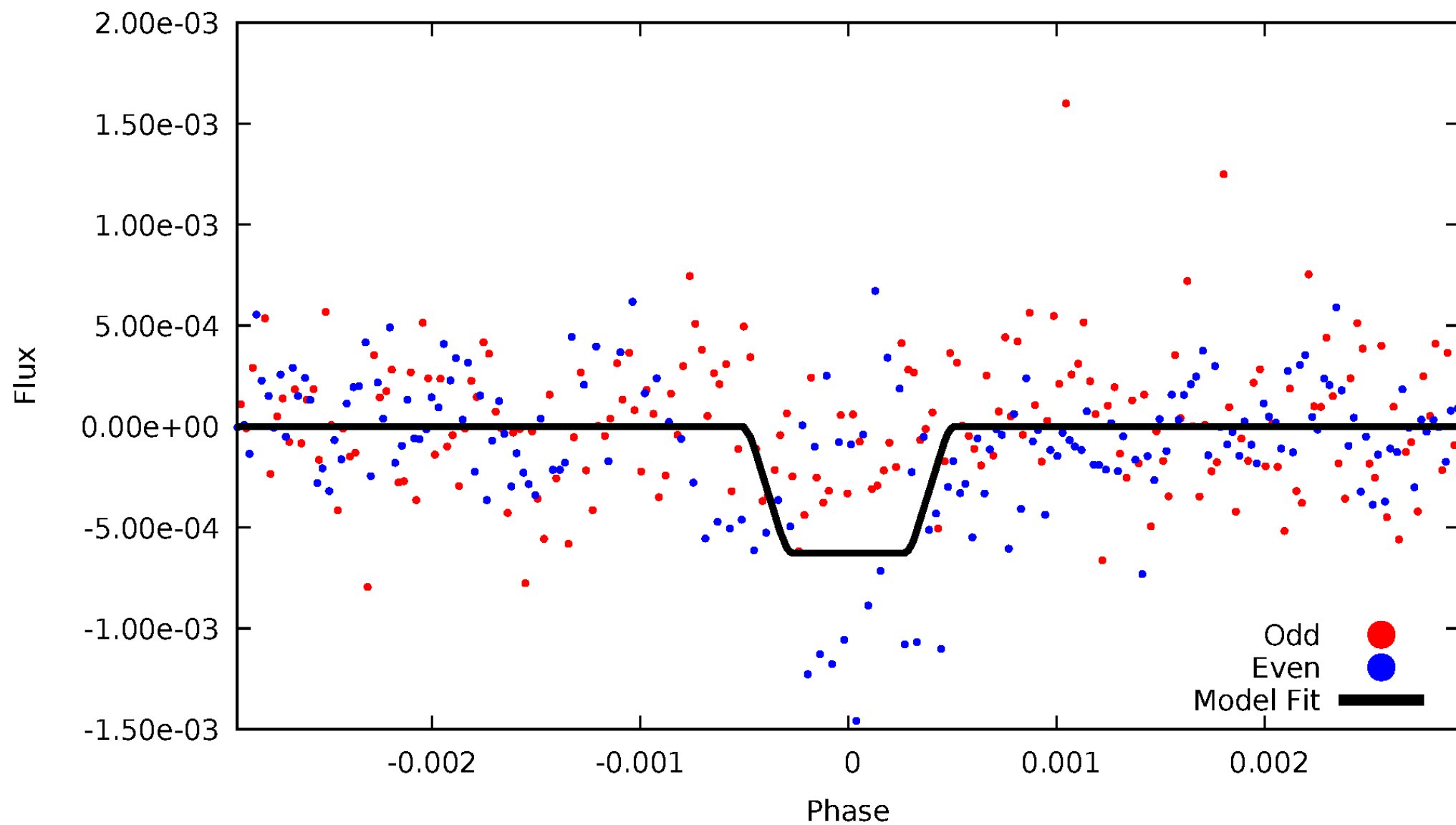
DV Odd/Even

TCE 012307076-01

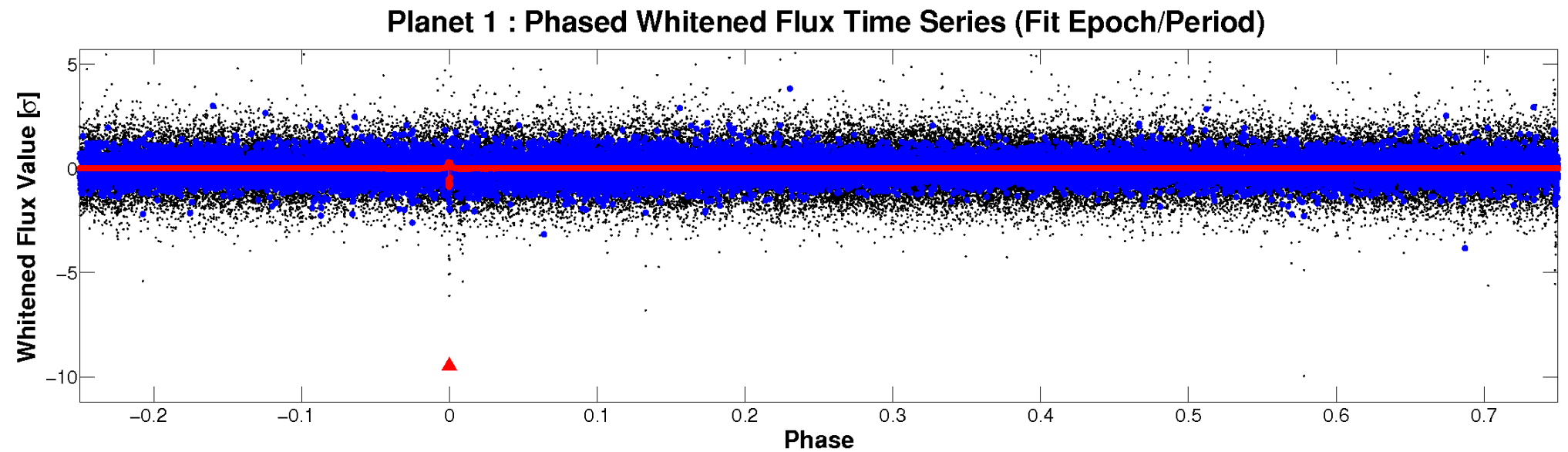
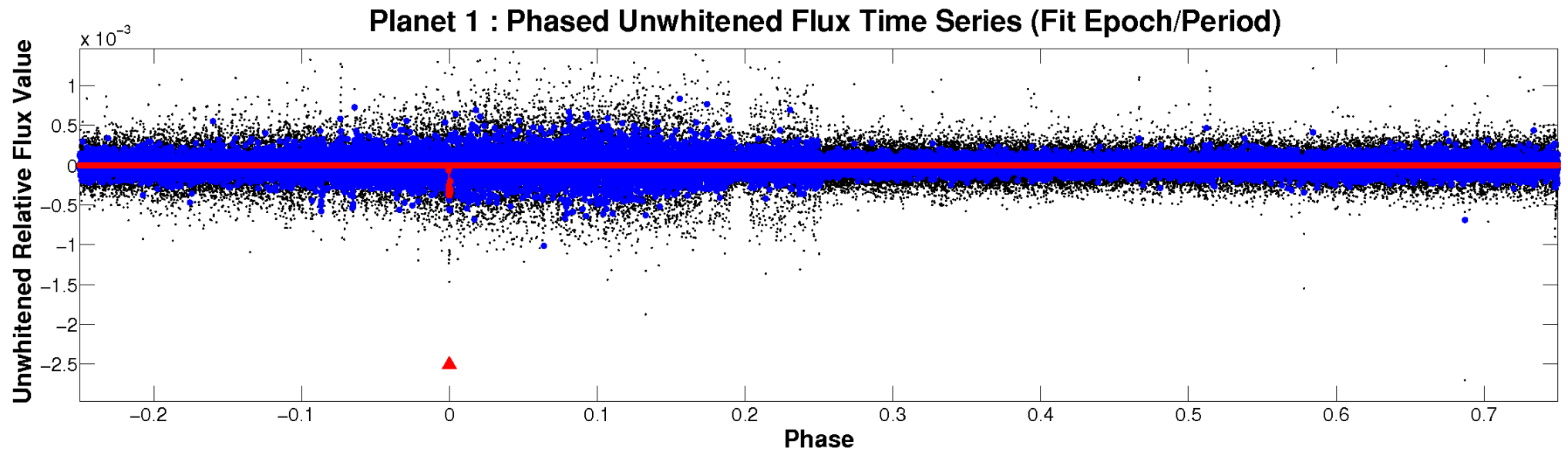


ALT Odd/Even

TCE 012307076-01

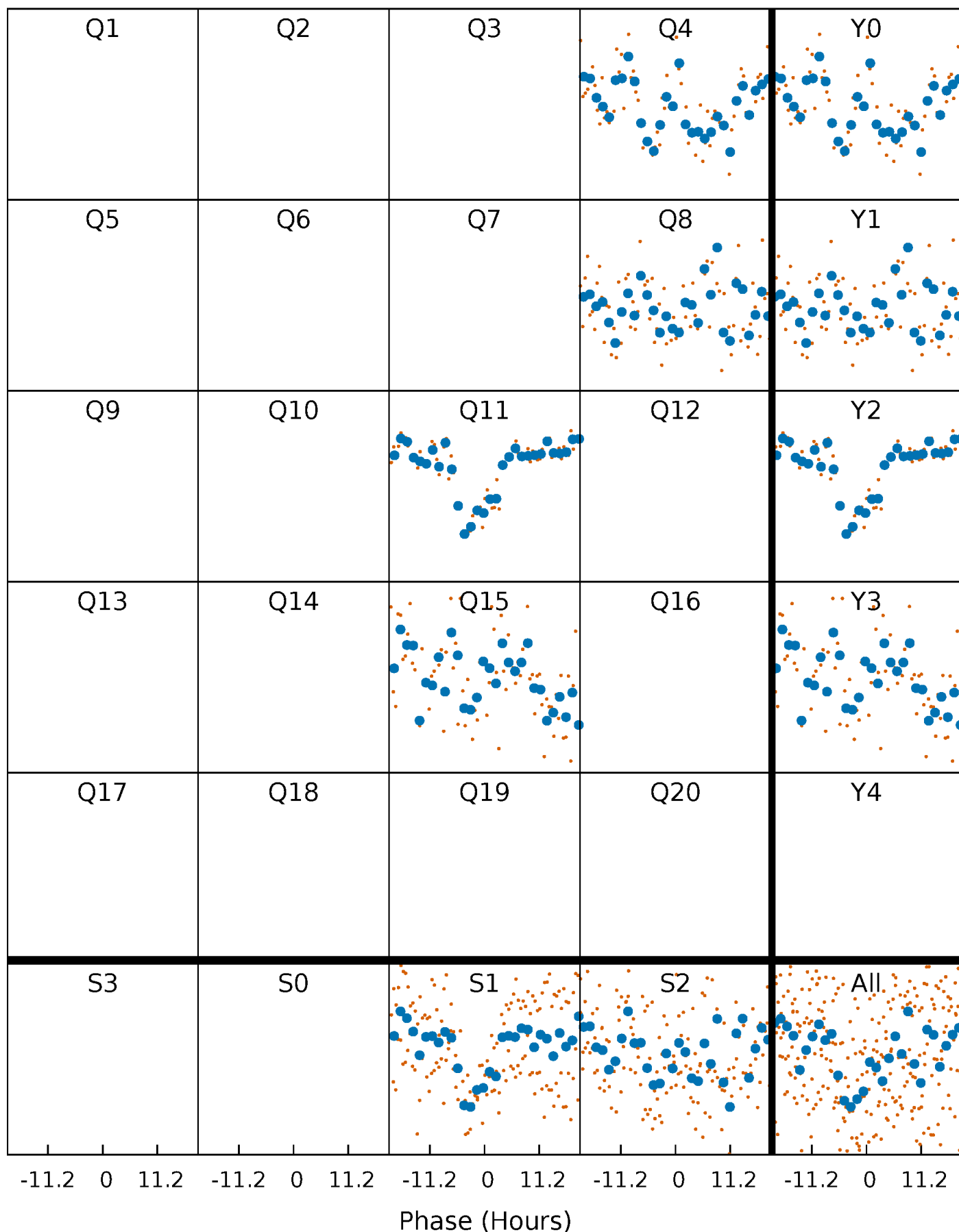


Non-Whitened Vs. Whitened Light Curve



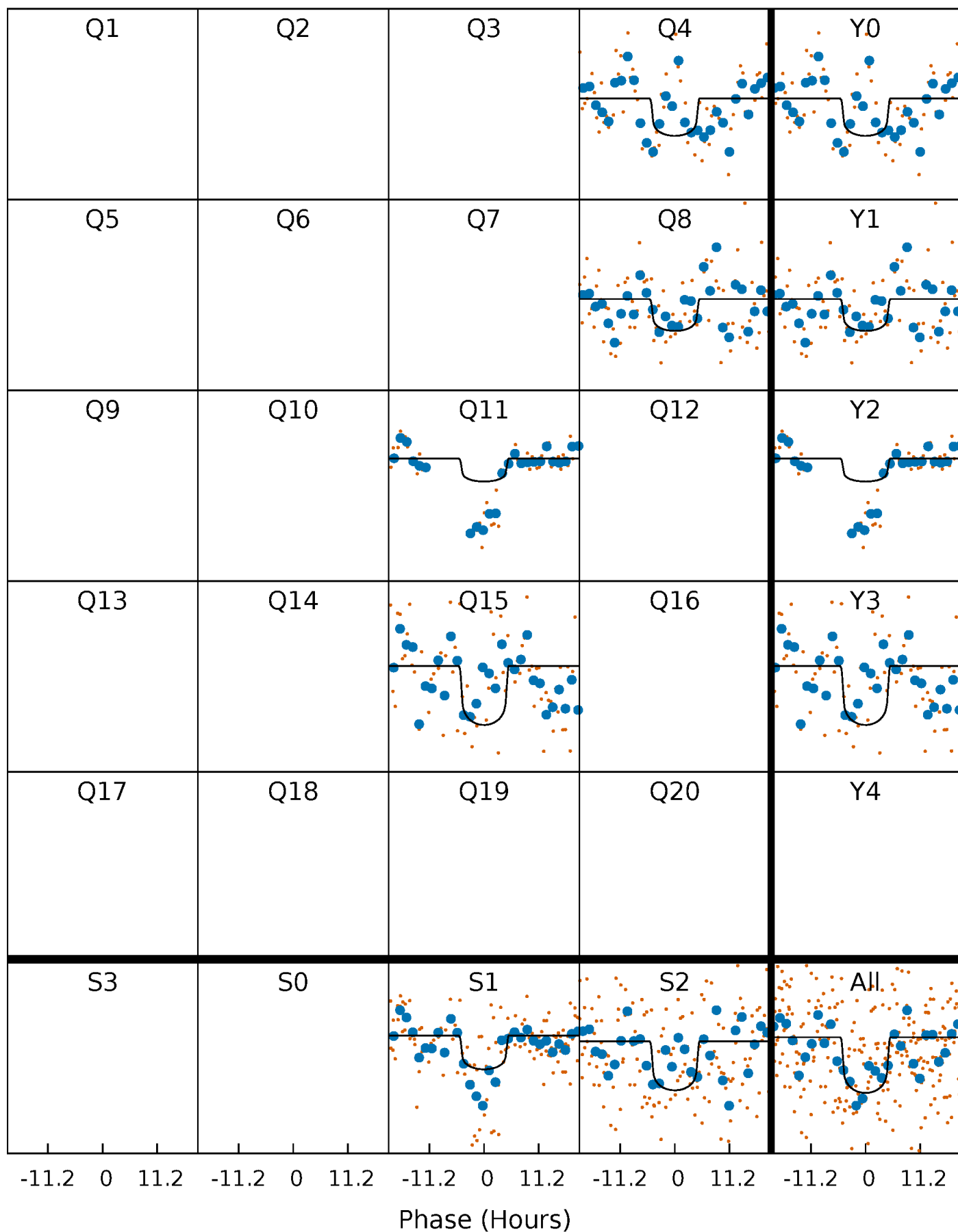
PDC Quarter-Phased Transit Curves

TCE 012307076-01 P=350.501090 Days $T_0=392.826882$ (BKJD)



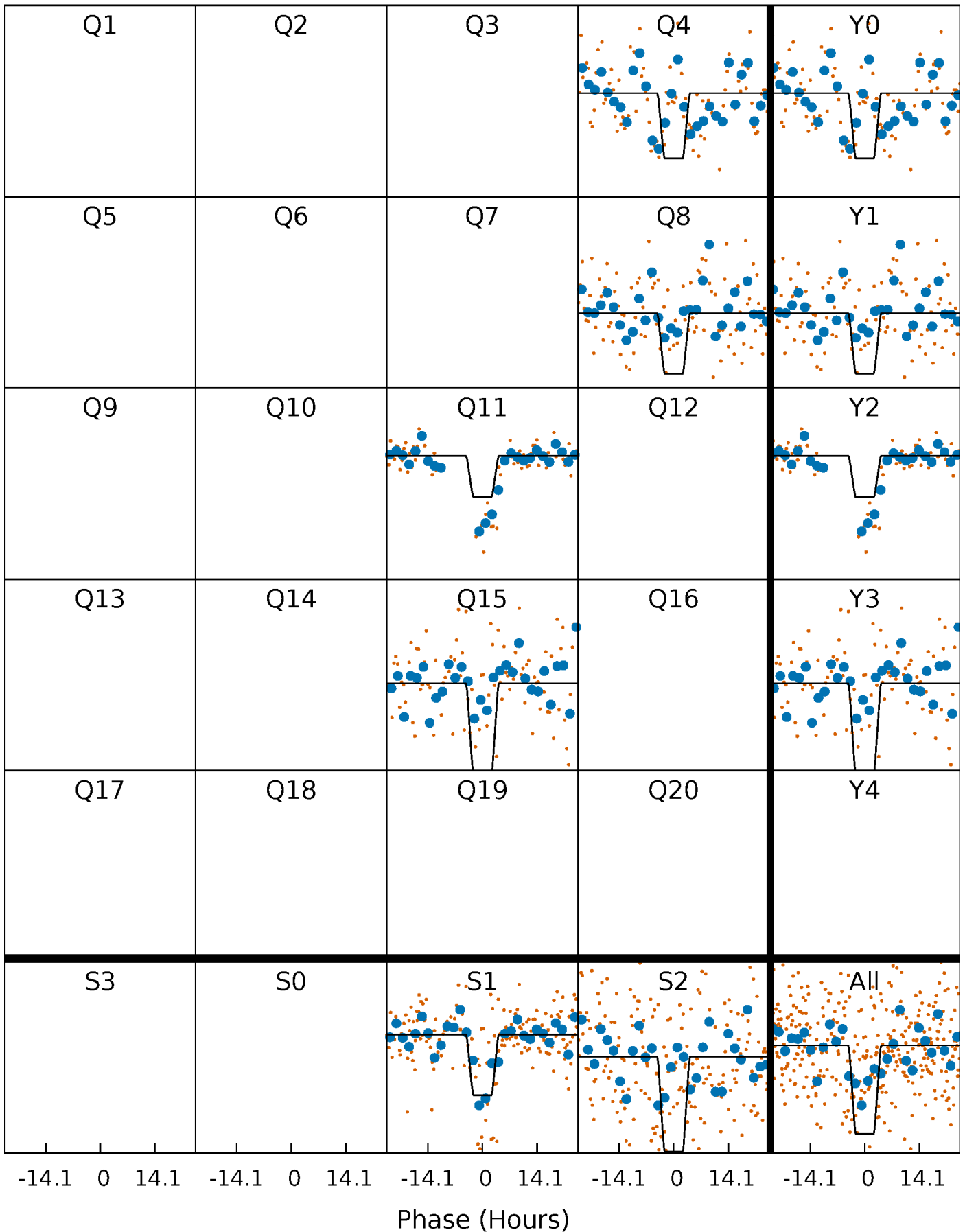
DV Quarter-Phased Transit Curves

TCE 012307076-01 P=350.501090 Days $T_0=392.826882$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

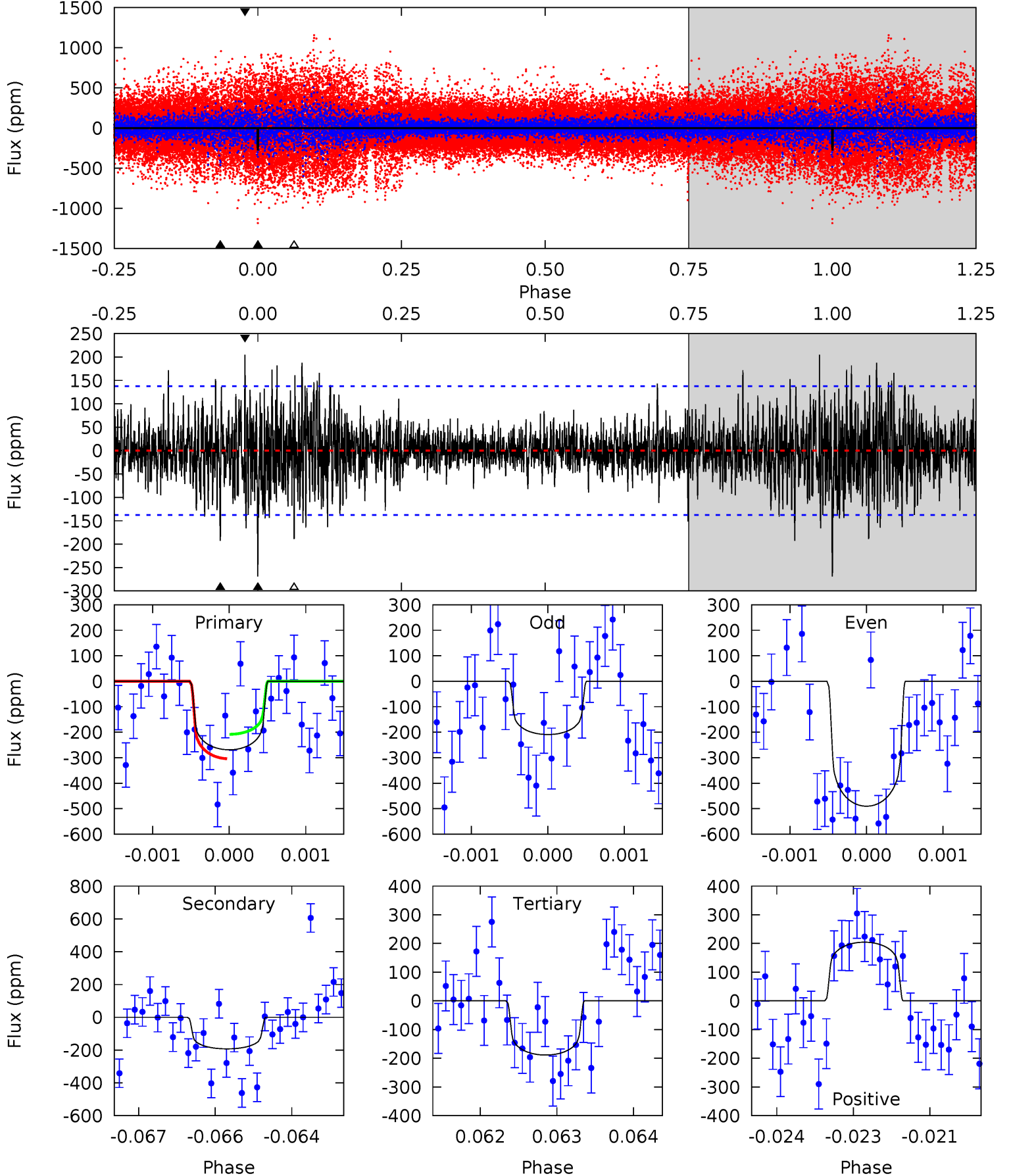
TCE 012307076-01 P=350.503666 Days $T_0=392.789805$ (BKJD)



DV Model-Shift Uniqueness Test

012307076-01, $P = 350.501090$ Days, $E = 42.325792$ Days

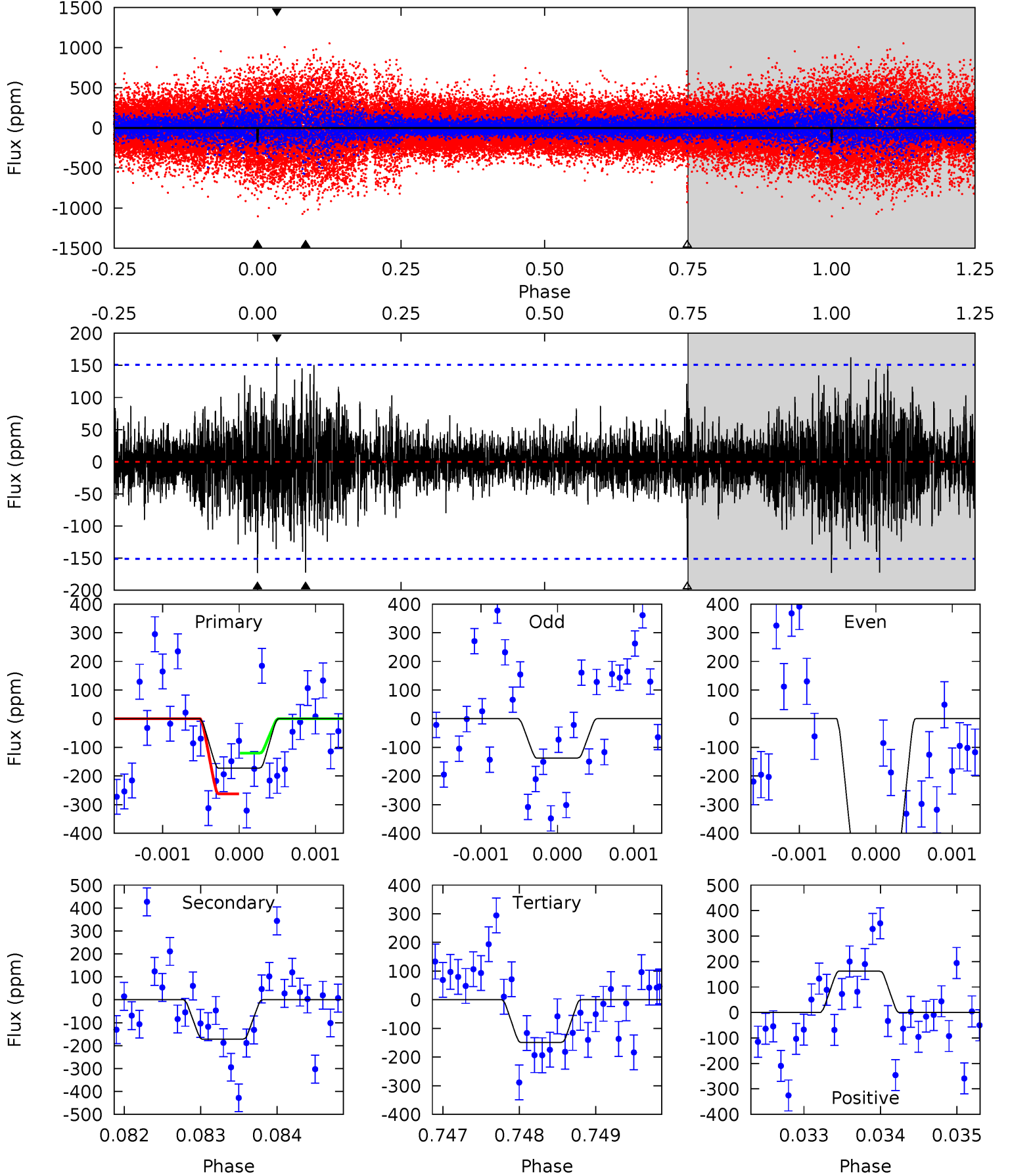
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.6	7.59	7.43	8.06	5.42	3.24	1.65	3.16	2.53	0.16	-0.47	5.75	1.80	0.43	1.89



Alt Model-Shift Uniqueness Test

012307076-01, P = 350.503666 Days, E = 42.286139 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.24	6.22	5.37	5.87	5.45	3.29	1.15	0.87	0.37	0.85	0.35	6.84	2.60	0.48	2.59



Stellar Parameters For KIC 012307076

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6270^{+197}_{-241}	$4.286^{+0.148}_{-0.198}$	$-0.160^{+0.250}_{-0.300}$	$1.225^{+0.391}_{-0.210}$	$1.055^{+0.185}_{-0.123}$	$0.808^{+0.590}_{-0.394}$
	+3%/-4%	+3%/-5%	+156%/-188%	+32%/-17%	+18%/-12%	+73%/-49%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 012307076-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-193 ± 25	$2.62^{+1.20}_{-0.94}$	431^{+35}_{-26}	5348^{+1327}_{-726}	15357^{+20656}_{-8166}
Alt.	-172 ± 28	$3.38^{+1.06}_{-1.03}$	431^{+36}_{-29}	4732^{+671}_{-492}	8377^{+8465}_{-3800}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

DV Centroid Data

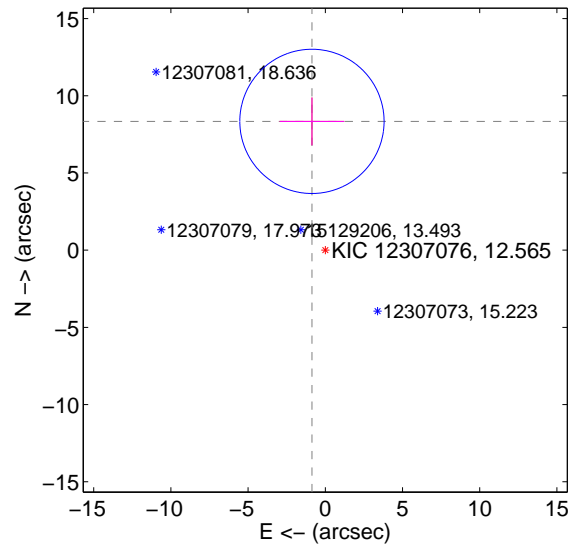
Supplemental centroid analysis for 012307076-01. Kepler magnitude: 12.56. Transit SNR 5.99

There are 0 quarters with good PRF difference image offsets

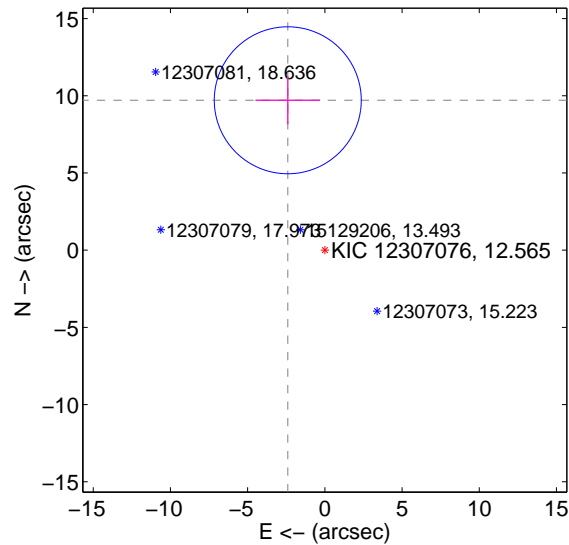
The OOT PRF centroid is offset from the target star catalog position by about 2.06 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	8.387 ± 1.557	5.39	0.865 ± 2.091	8.343 ± 1.551
PRF-fit source offset from KIC position	10.002 ± 1.587	6.30	2.401 ± 2.091	9.709 ± 1.551
photometric centroid source offset	1.54 ± 0.57	2.69	1.19 ± 0.49	0.97 ± 0.68

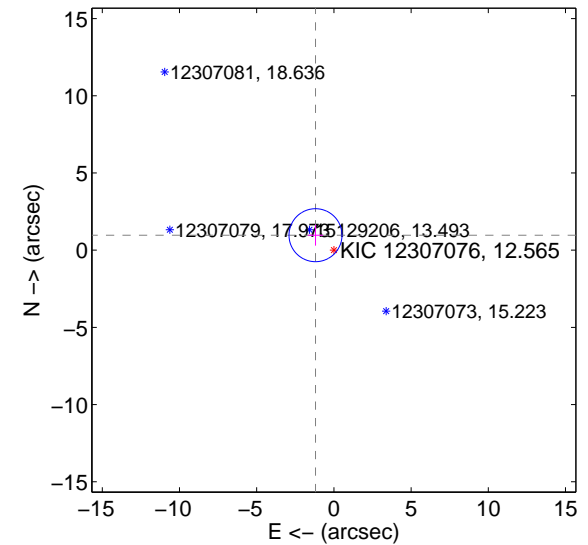
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

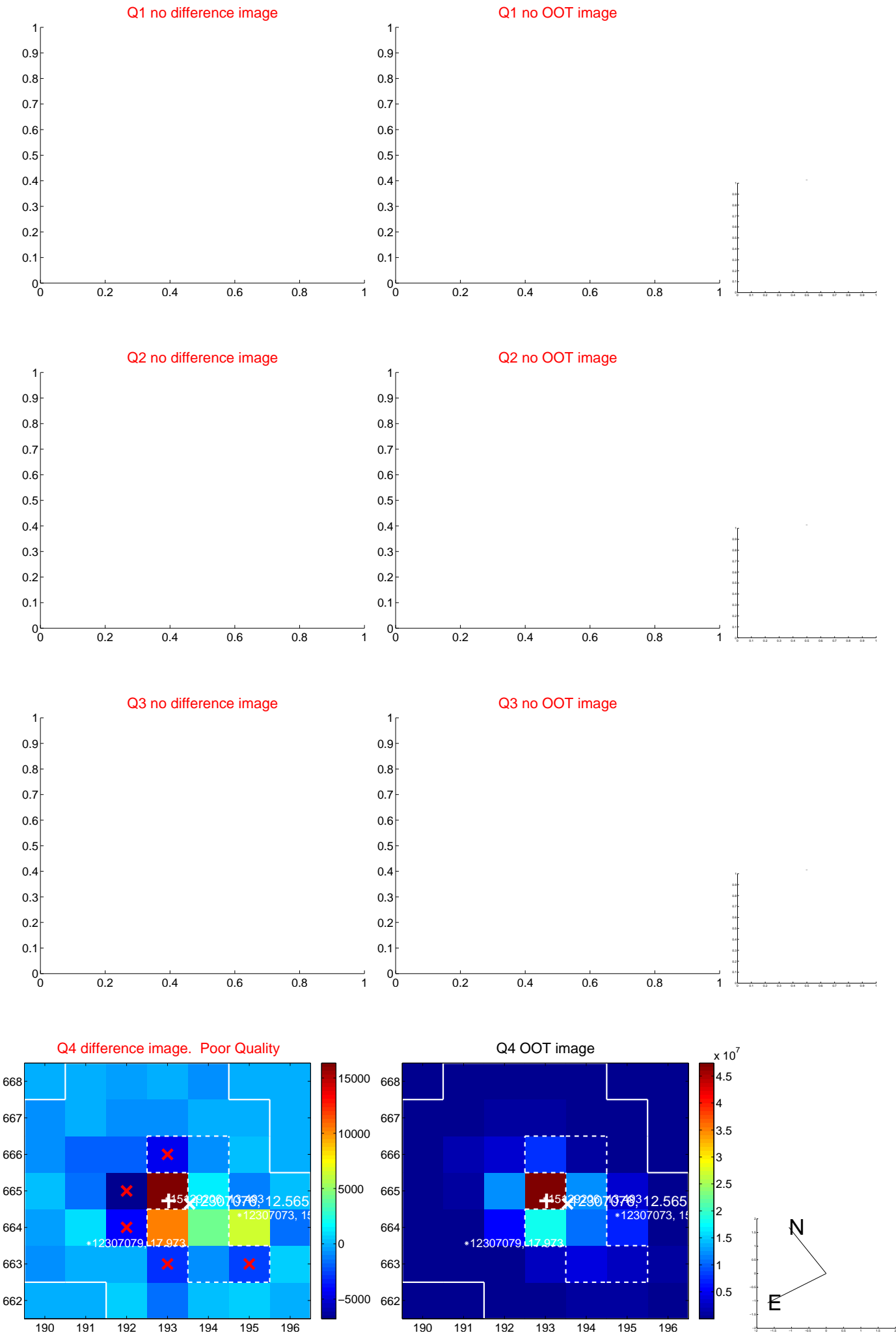


offset from photometric centroids

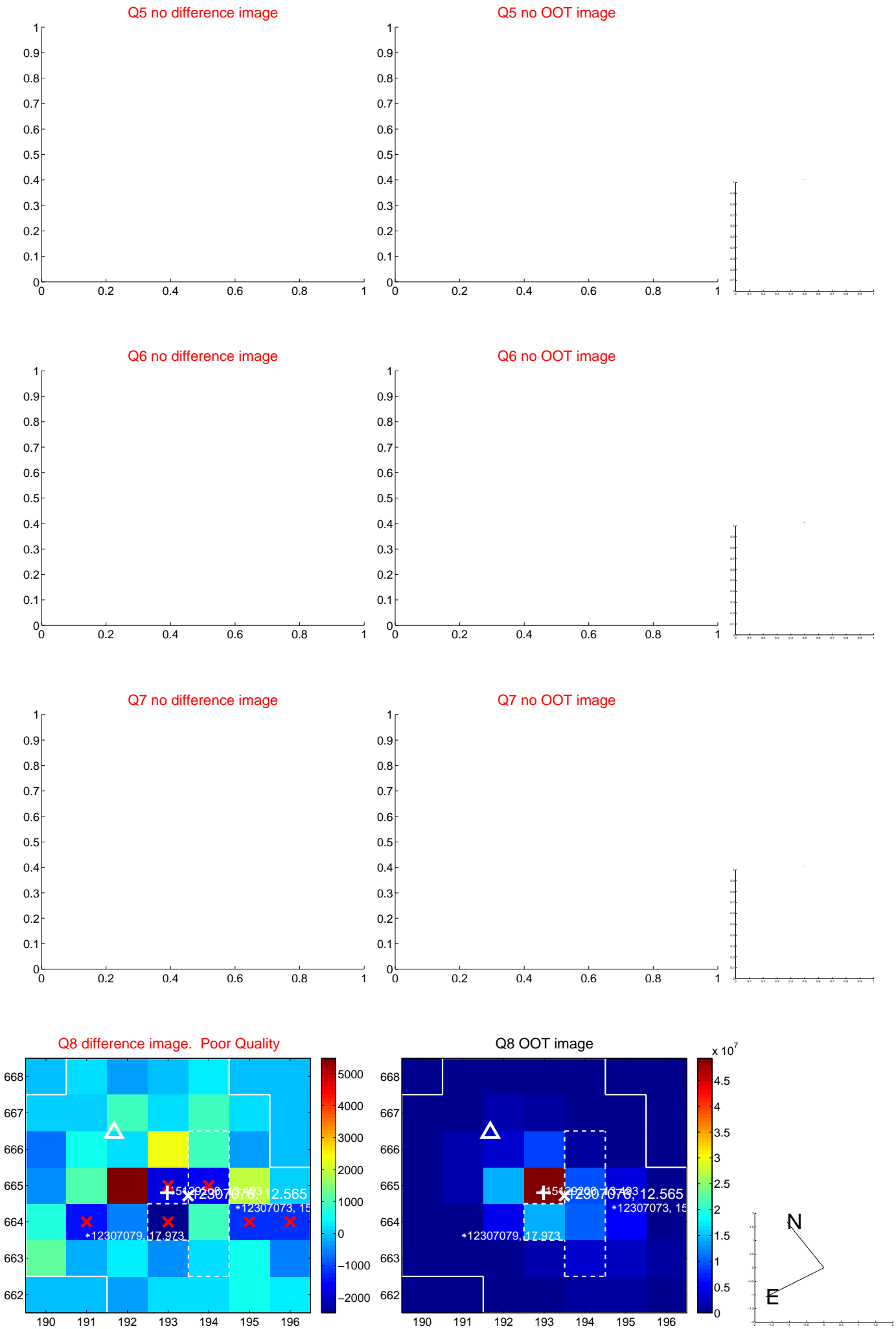


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



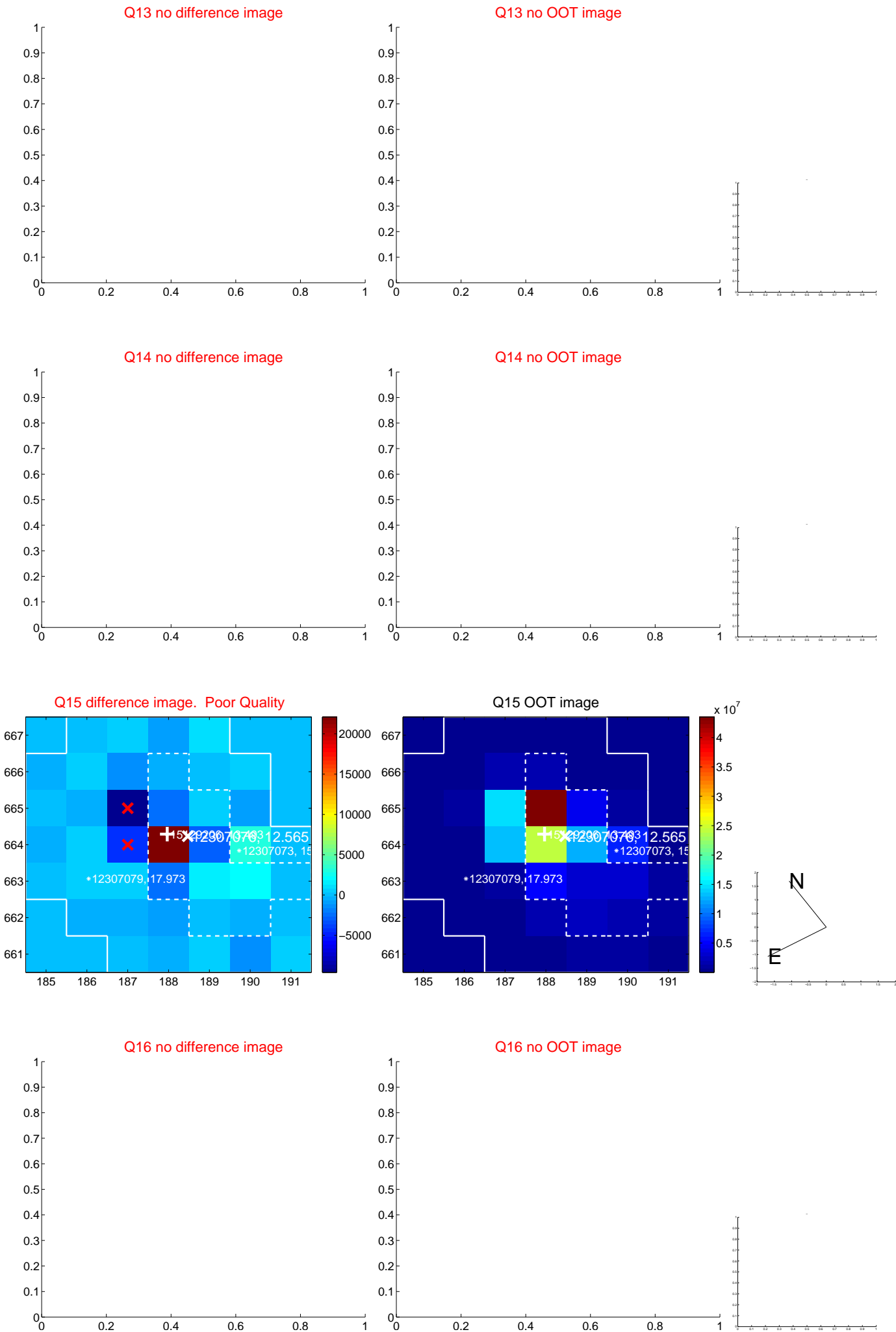
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



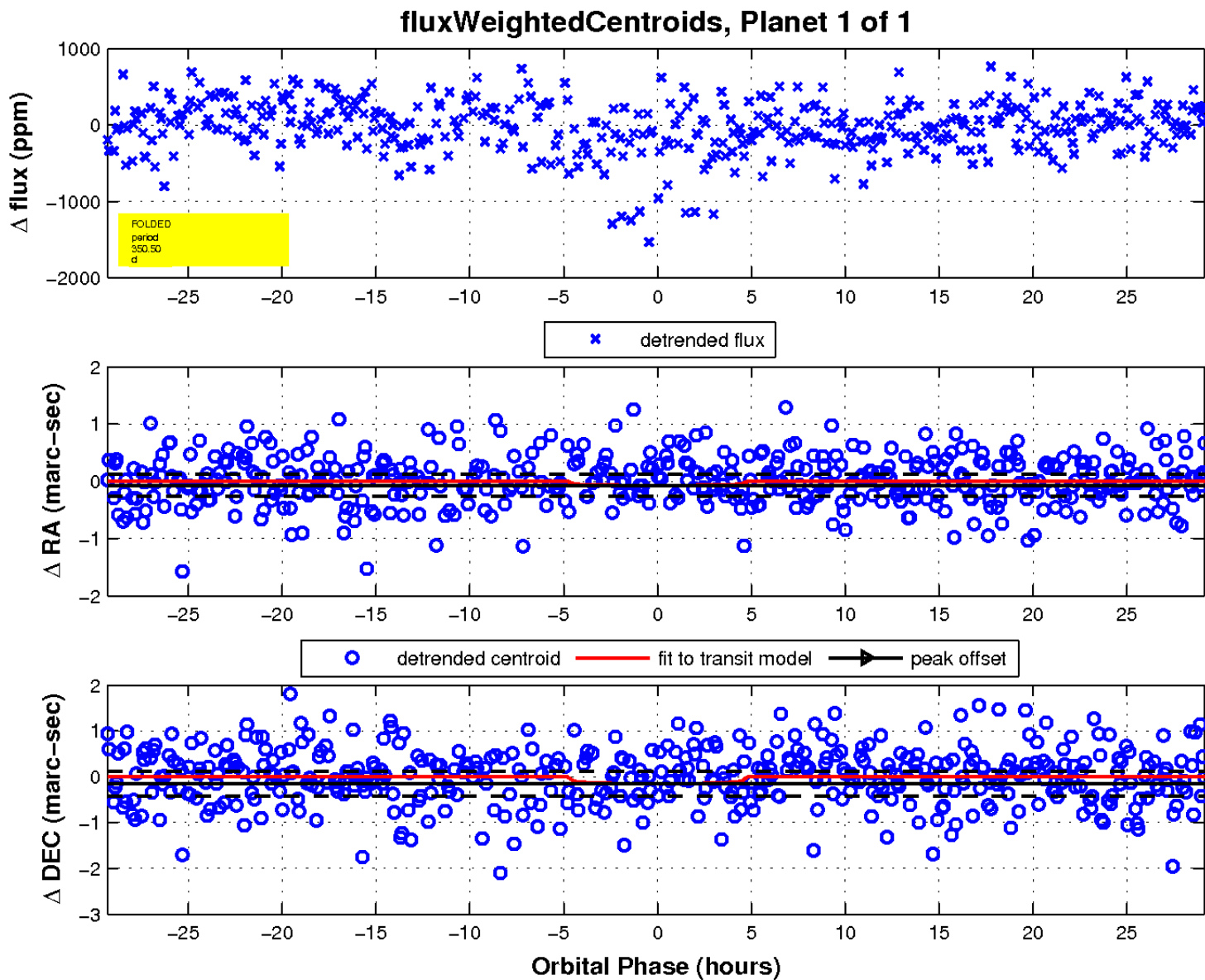
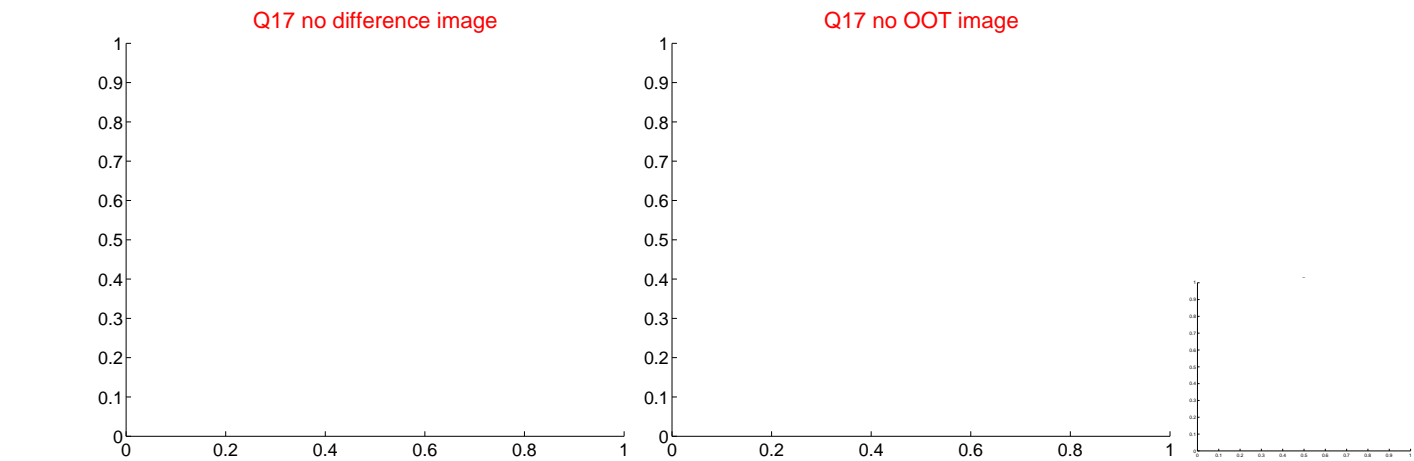
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UKIRT Image

Declination

