

KIC 008160030

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})
008160030-01	OBS	No	370.188188	296.830770	1796.9	42.007	7.9	14.7	0.96	6122	4.69	1.12

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008160030-01	OBS	FP	0.00	1	0	1	1	INDIV_TRANS_SKYE ALL_TRANS_CHASES INCONSISTENT_TRANS CENT_FEW_DIFFS HALO_GHOST EPHEM_MATCH

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.

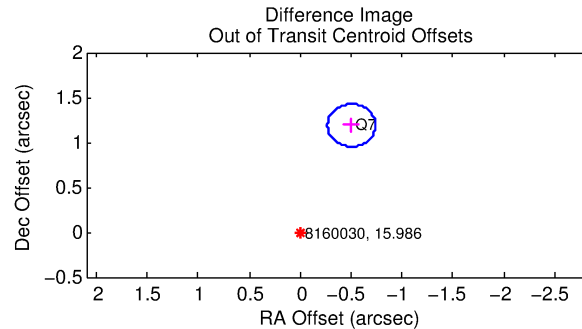
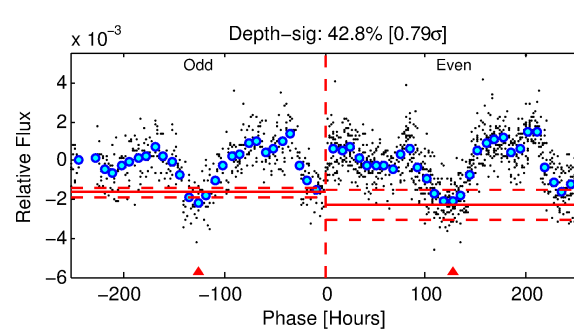
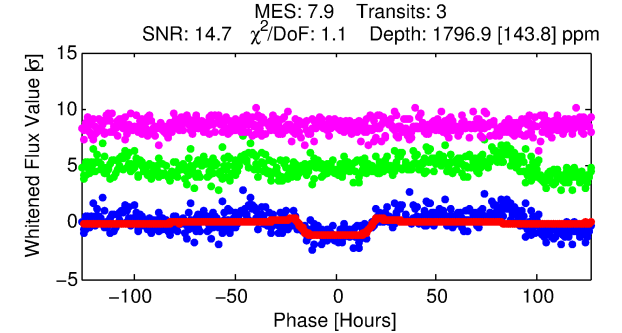
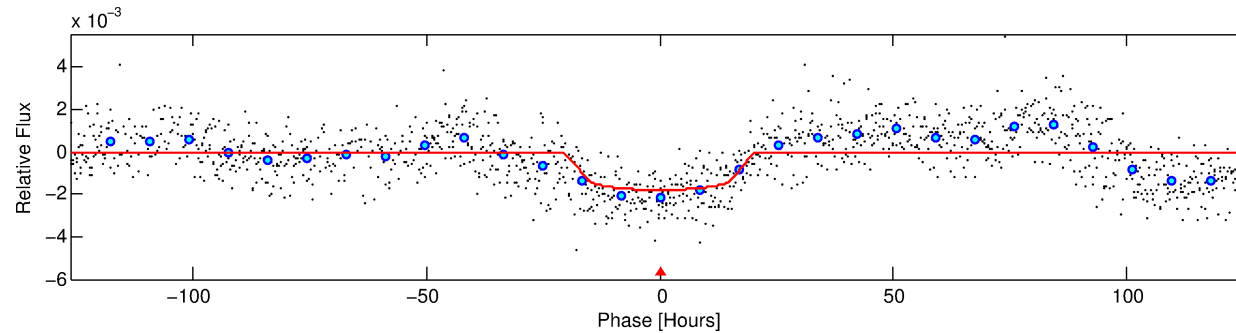
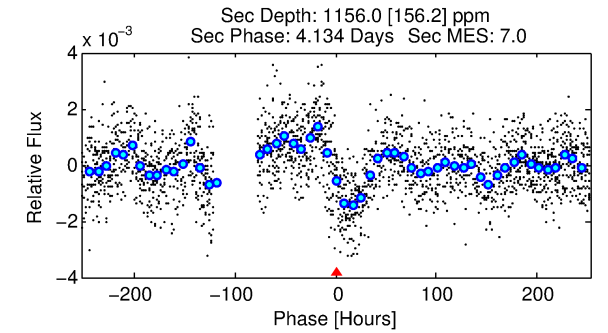
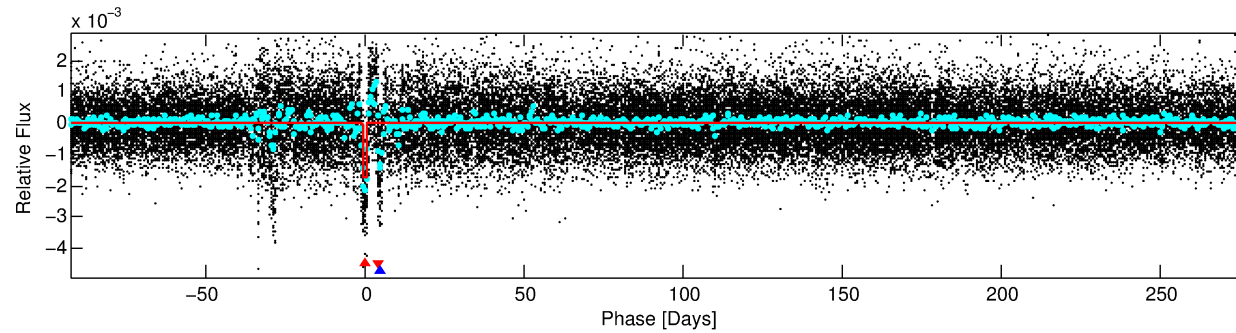
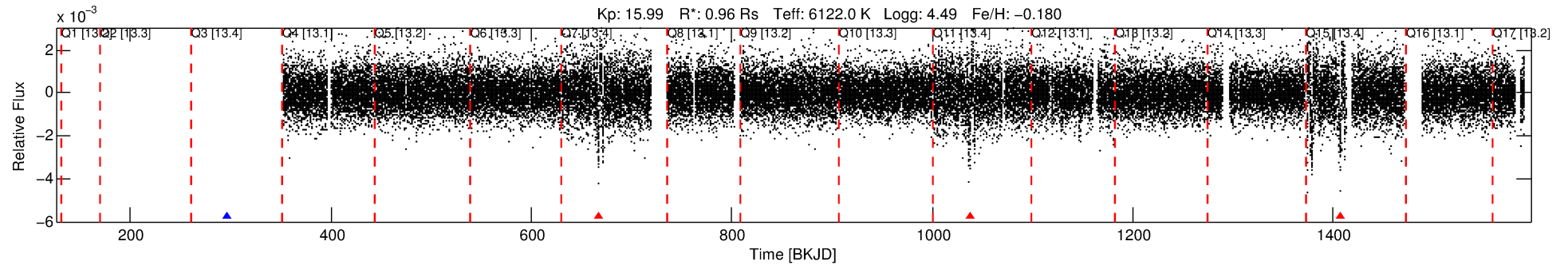
Ephemeris Match Information For 008160030-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist (\prime)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
008160030-01	8160030	008159807-01	8159807	1:1	289.0	73	1	12.04	15.99	1.76	Col-Anomaly	1	0.98	0.09

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 8160030 Candidate: 1 of 2 Period: 370.188 d



DV Fit Results:

Period = 370.18819 [0.02980] d
Epoch = 296.8308 [0.0609] BKJD
Rp/R* = 0.0446 [0.0026]
a/R* = 39.19 [7.38]
b = 0.87 [0.05]
Seff = 1.12 [0.46]
Teq = 262 [27] K
Rp = 4.69 [1.51] Re
a = 1.0226 [0.2699] AU
Ag = 30213.61 [12758.38] [2.37σ]
Teff = 5345 [314] K [16.14σ]

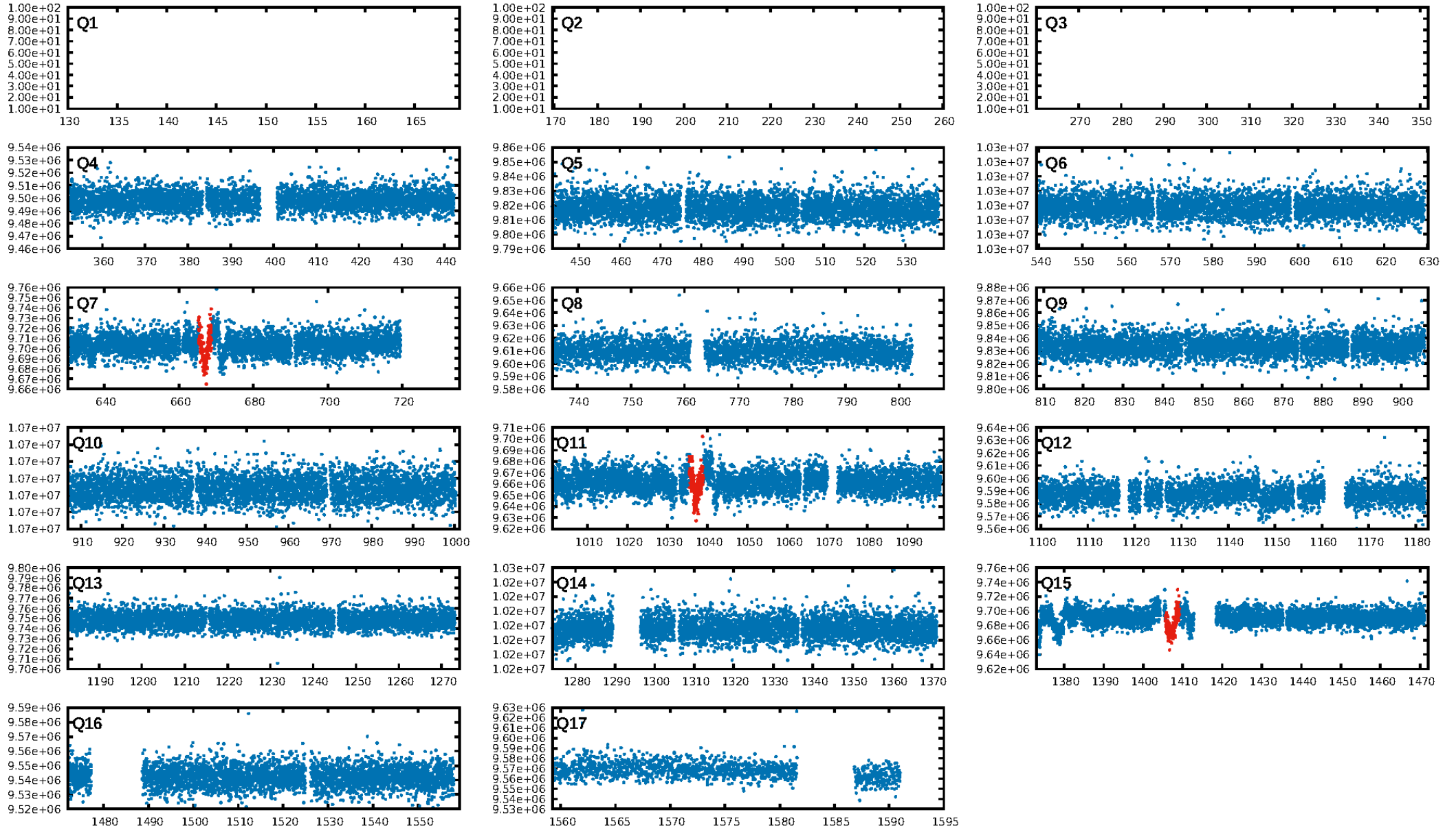
DV Diagnostic Results:

ShortPeriod-sig: 0.2% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 17.8%
ModelChiSquareGoF-sig: 100.0%
Bootstrap-pfa: 4.99e-10
RollingBand-fgt: 0.00 [0/3]
GhostDiagnostic-chr: -0.1189
Centroid-sig: 0.1%
Centroid-so: 1.530 arcsec [1.97σ]
OotOffset-rm: 1.291 arcsec [16.43σ]
KicOffset-rm: 1.260 arcsec [16.04σ]
OotOffset-st: 0/1/0/0 [1]
KicOffset-st: 0/1/0/0 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 1.00 [1/1]

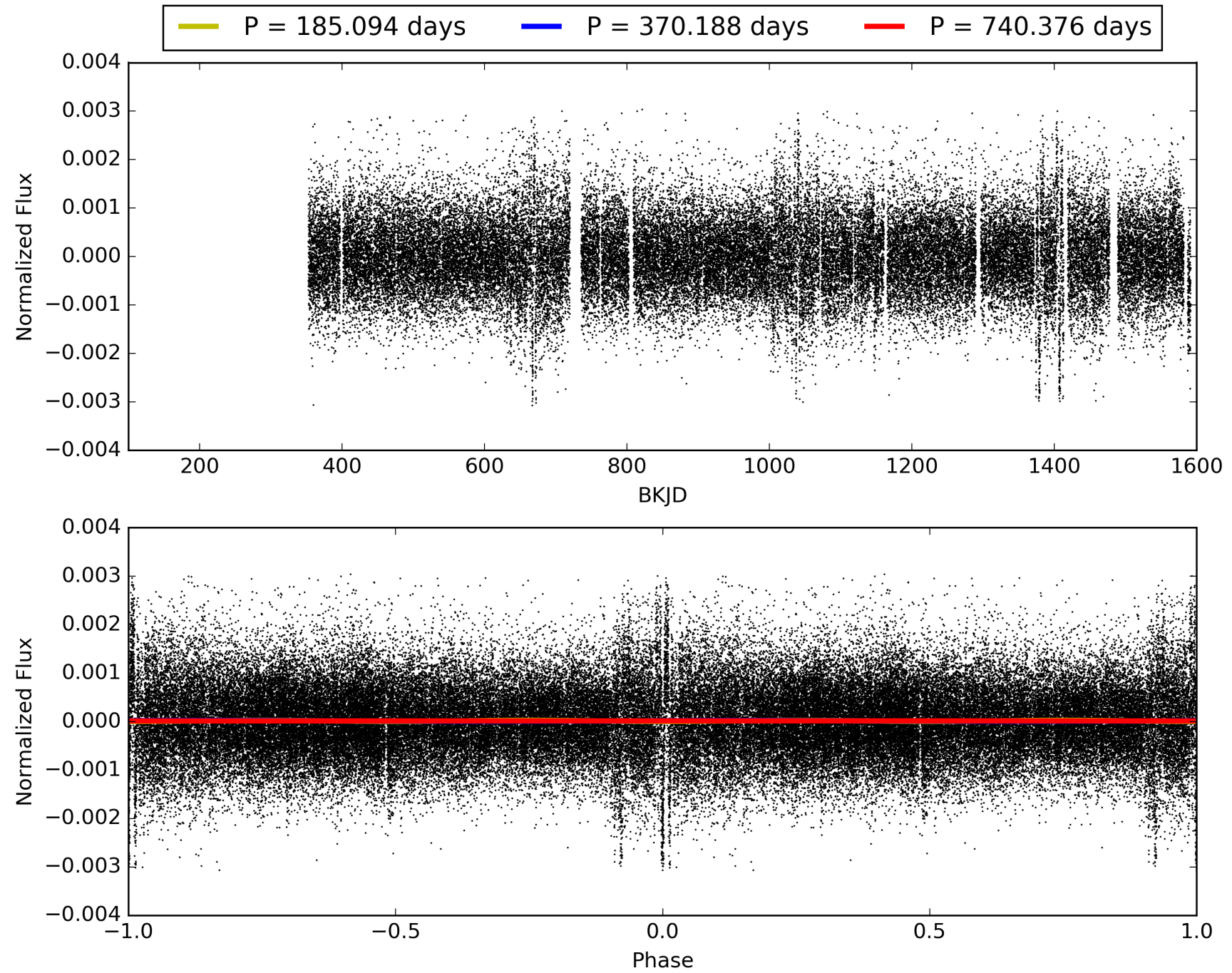
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 17:46:00 Z

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

TCE 008160030-01, PDC Light Curves

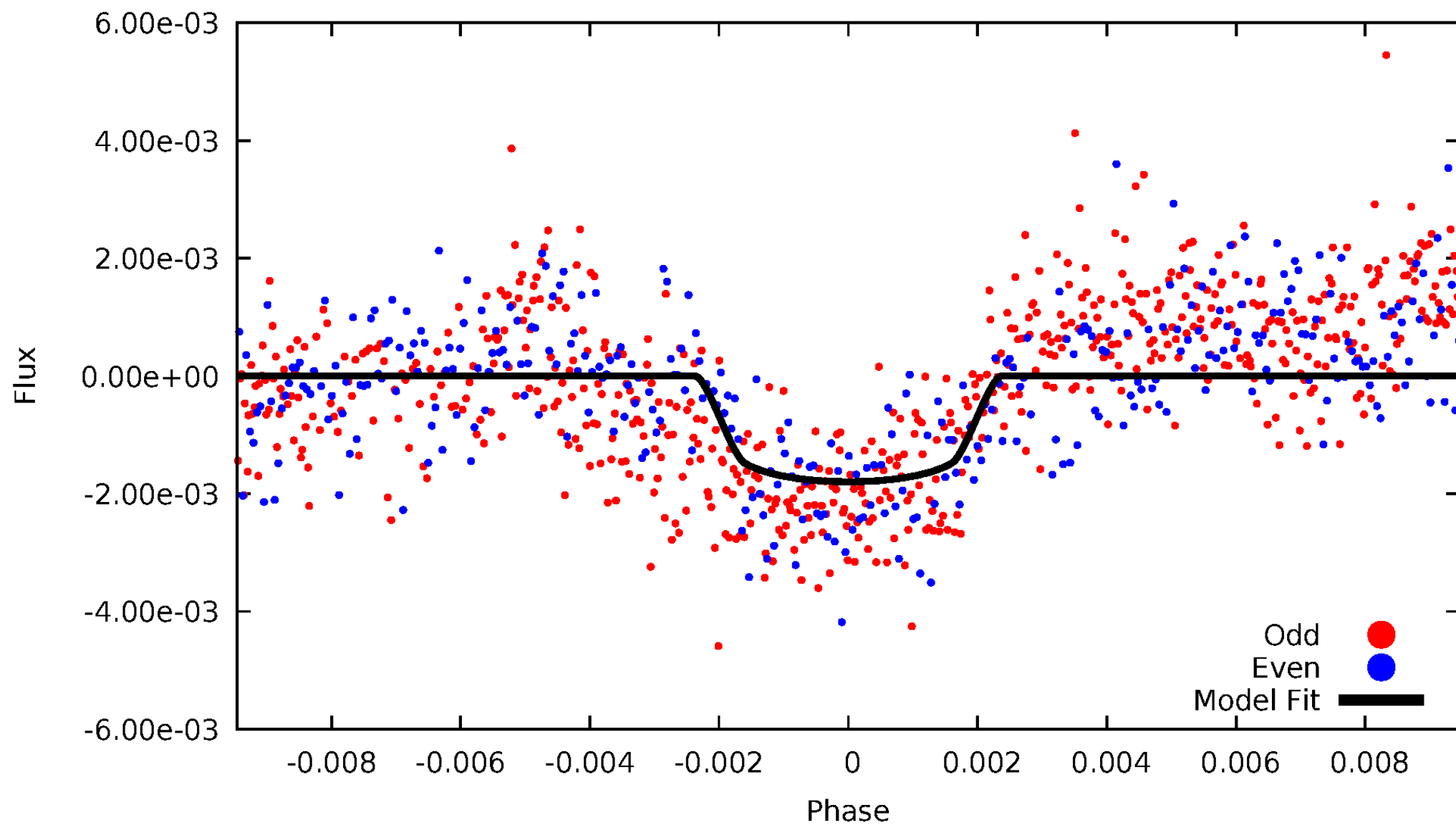


TCE 008160030-01



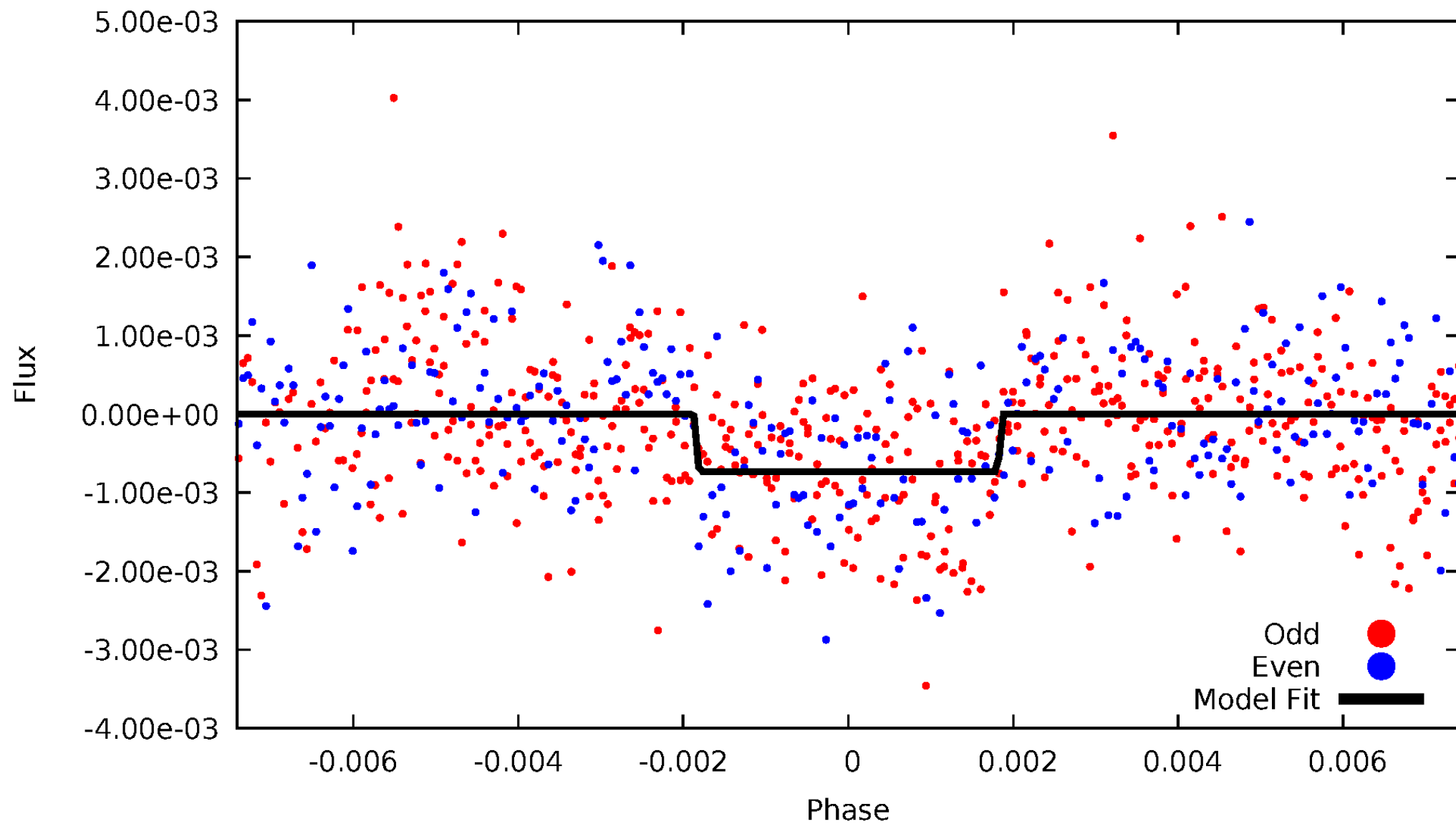
DV Odd/Even

TCE 008160030-01



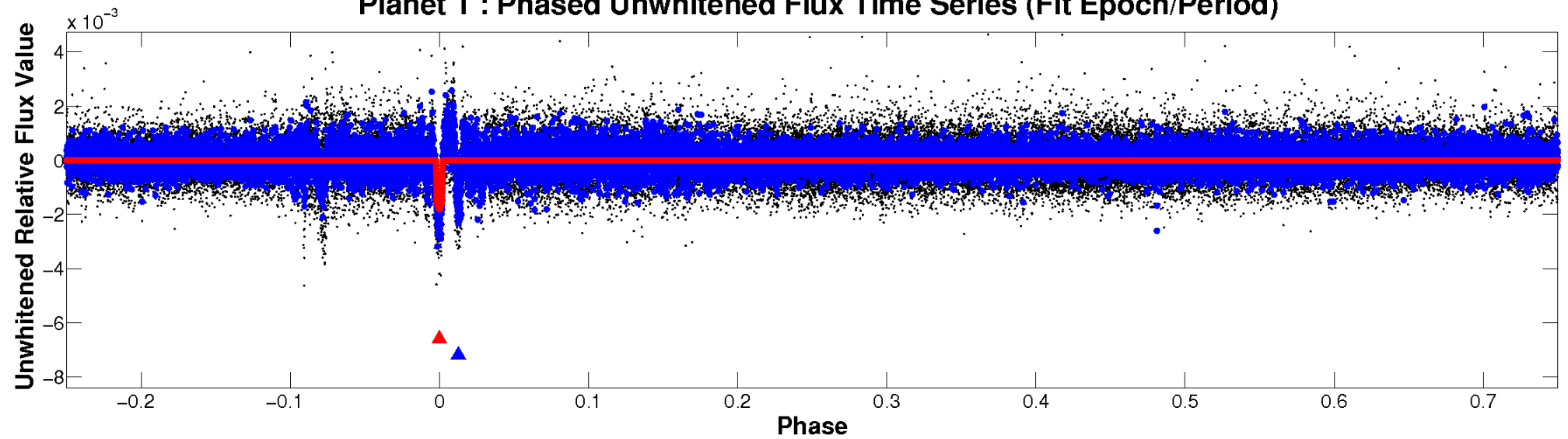
ALT Odd/Even

TCE 008160030-01

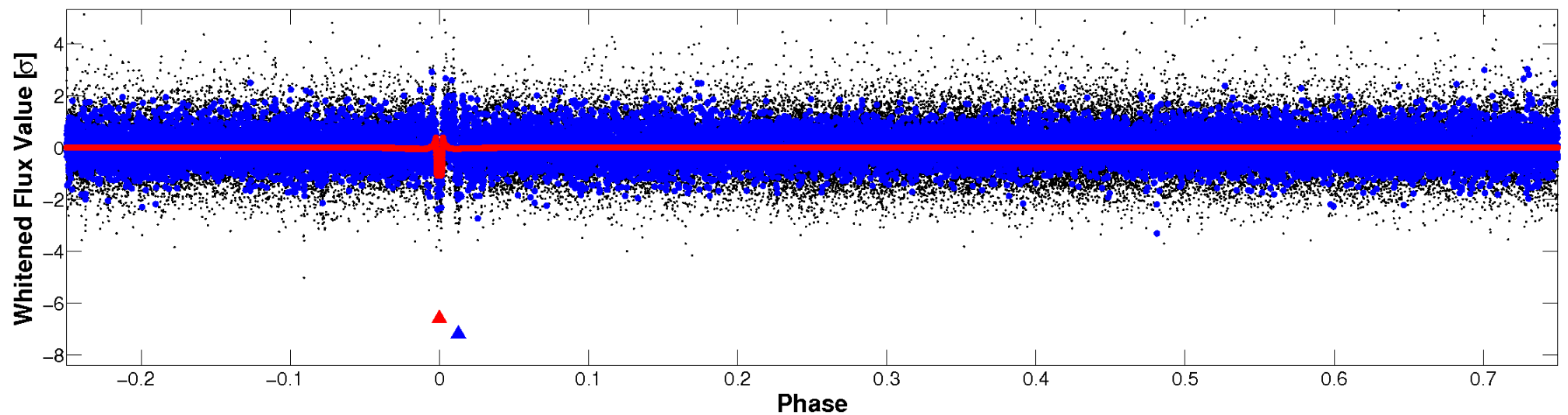


Non-Whitened Vs. Whitened Light Curve

Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

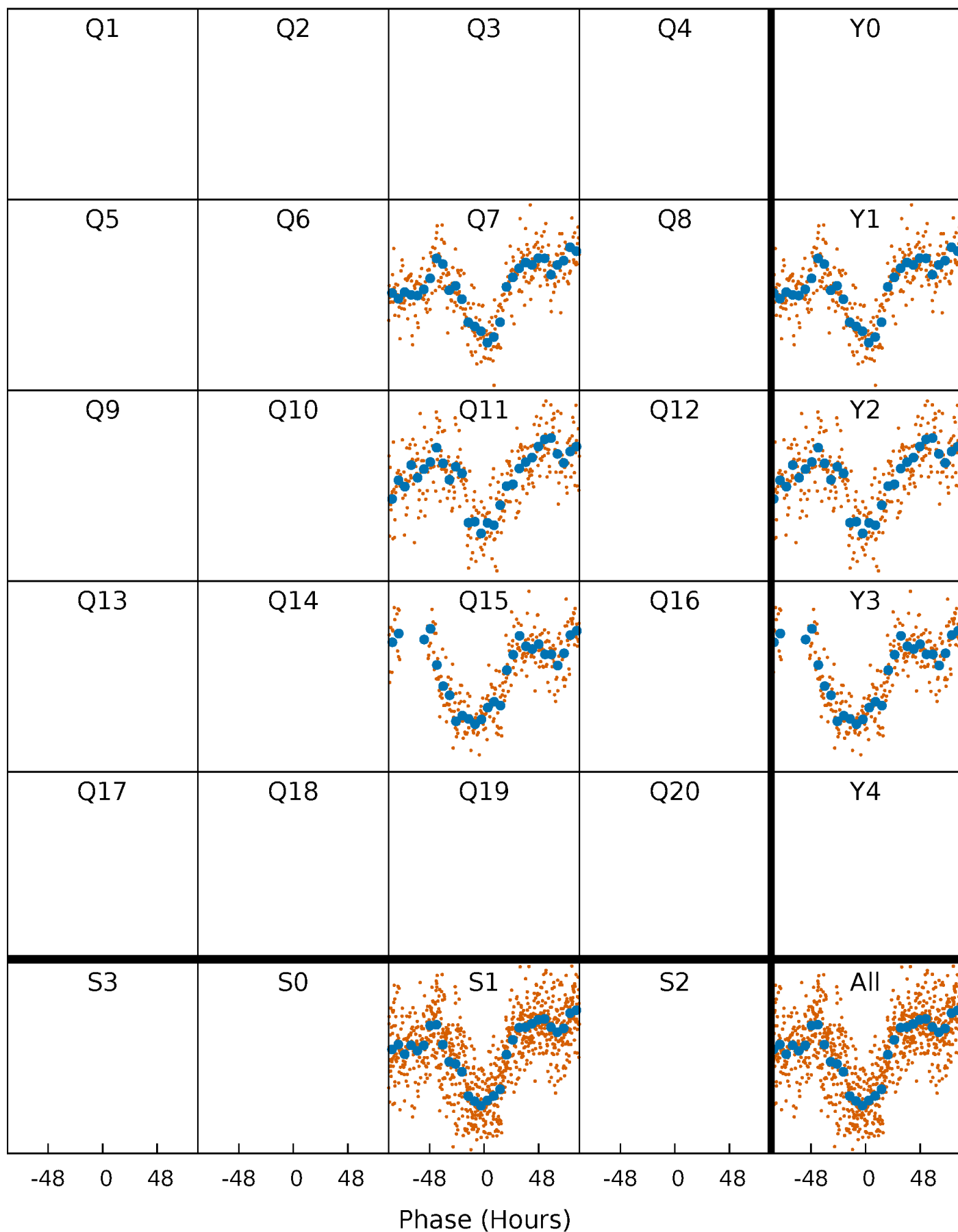


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



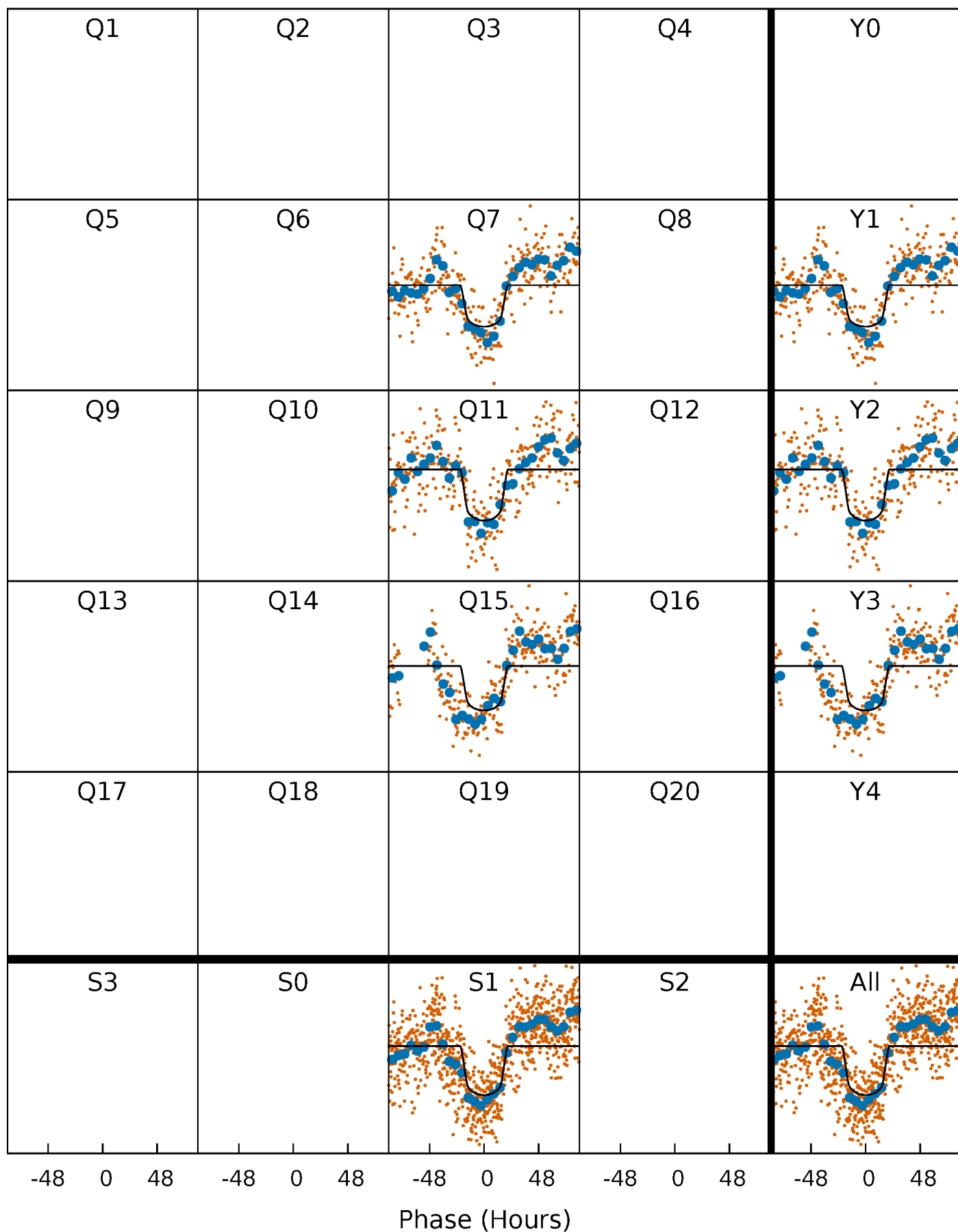
PDC Quarter-Phased Transit Curves

TCE 008160030-01 P=370.188188 Days $T_0=296.830770$ (BKJD)



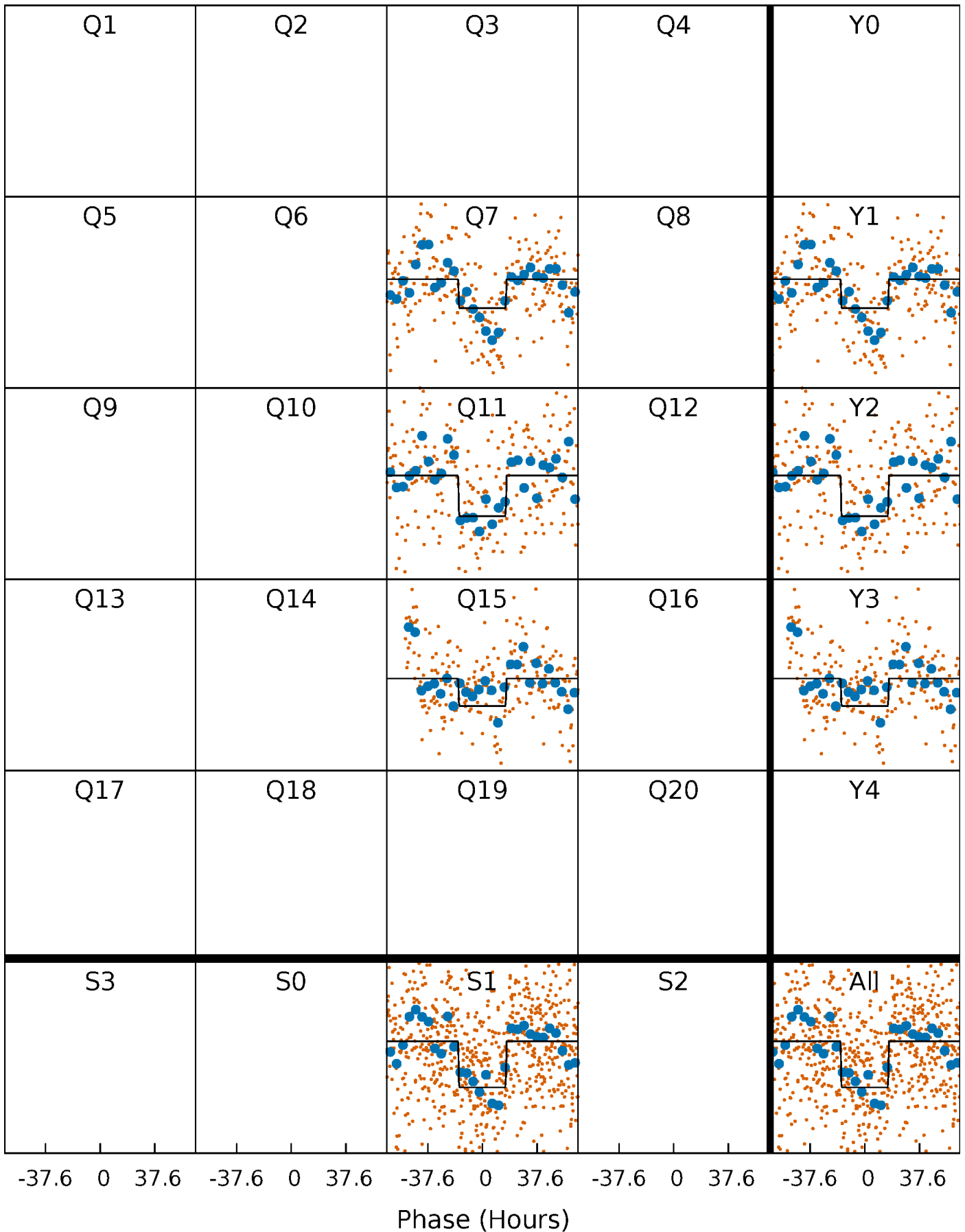
DV Quarter-Phased Transit Curves

TCE 008160030-01 P=370.188188 Days $T_0=296.830770$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

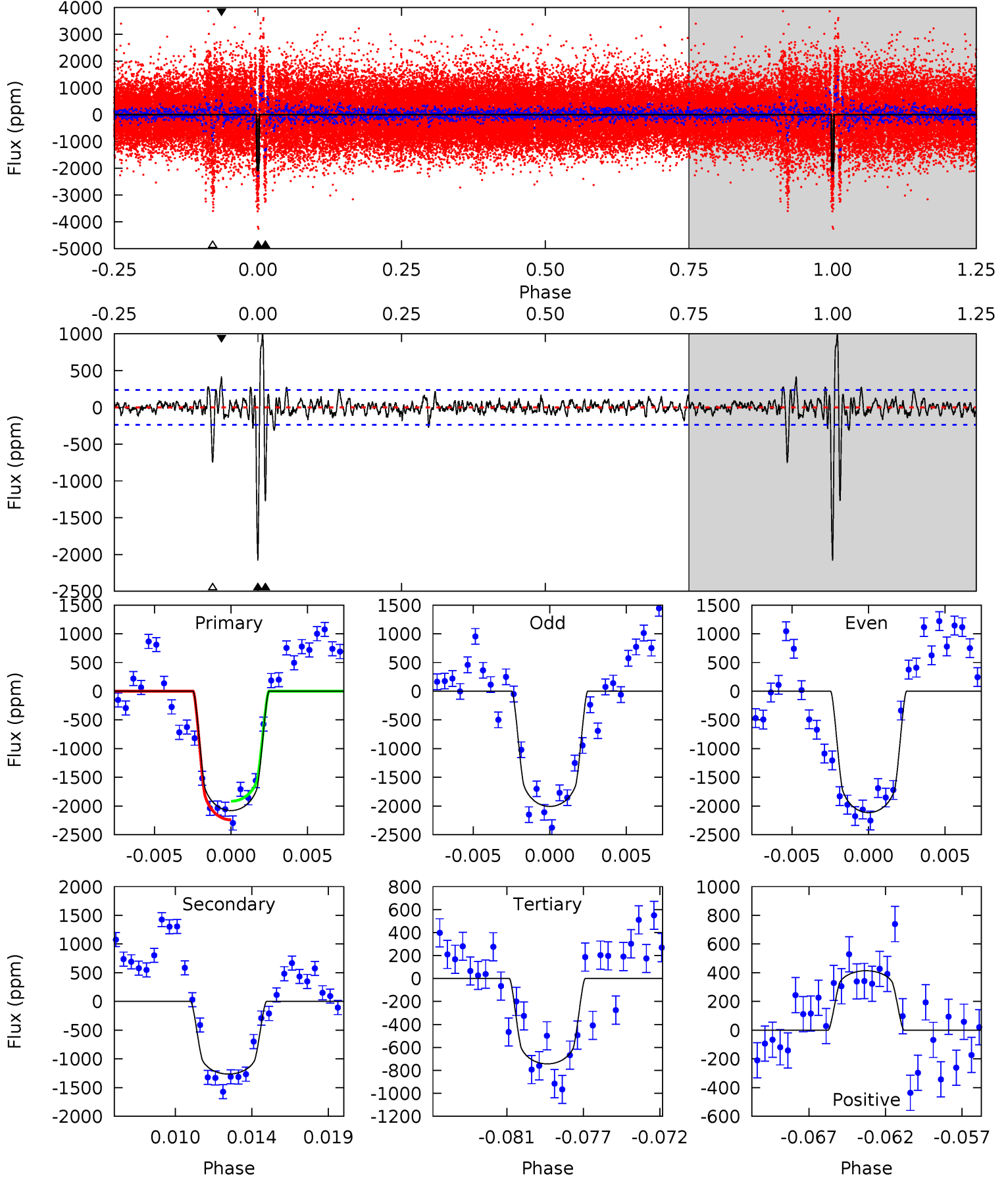
TCE 008160030-01 P=370.235674 Days $T_0=296.798647$ (BKJD)



DV Model-Shift Uniqueness Test

008160030-01, P = 370.188188 Days, E = 296.830770 Days

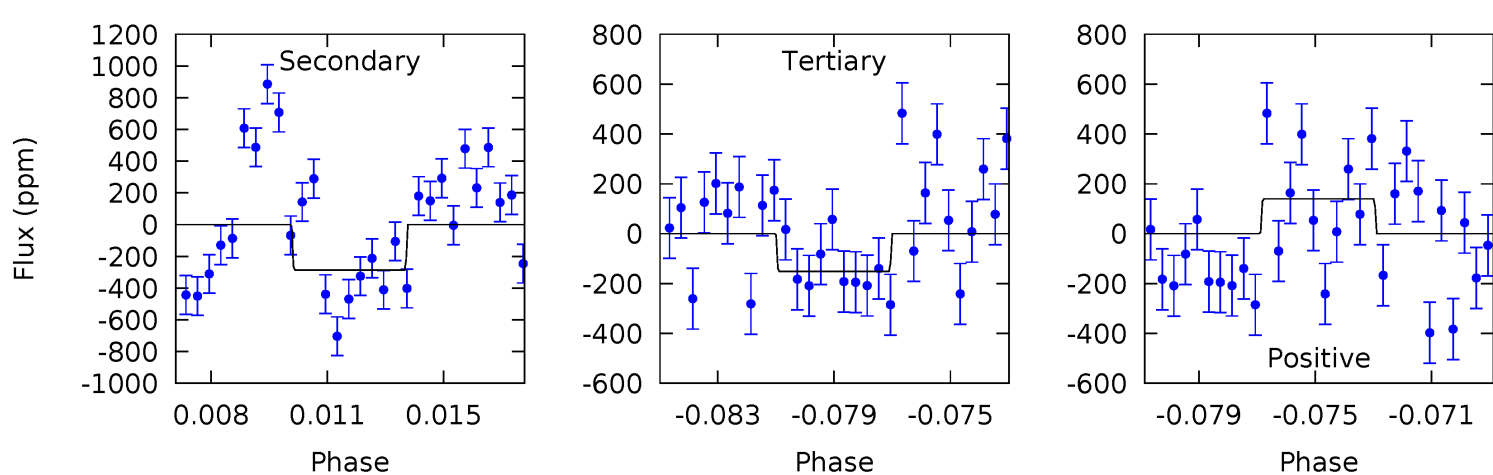
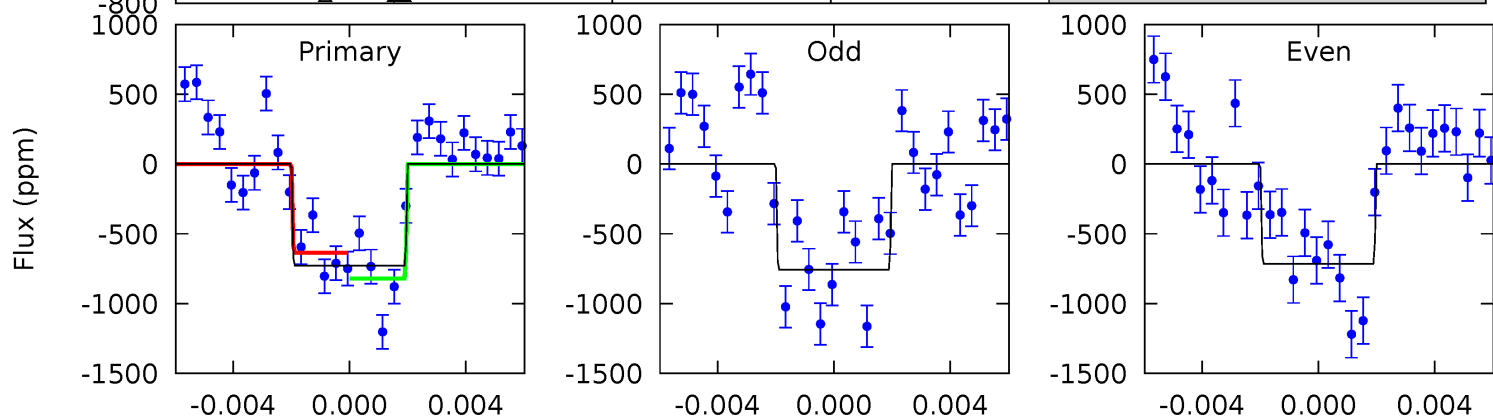
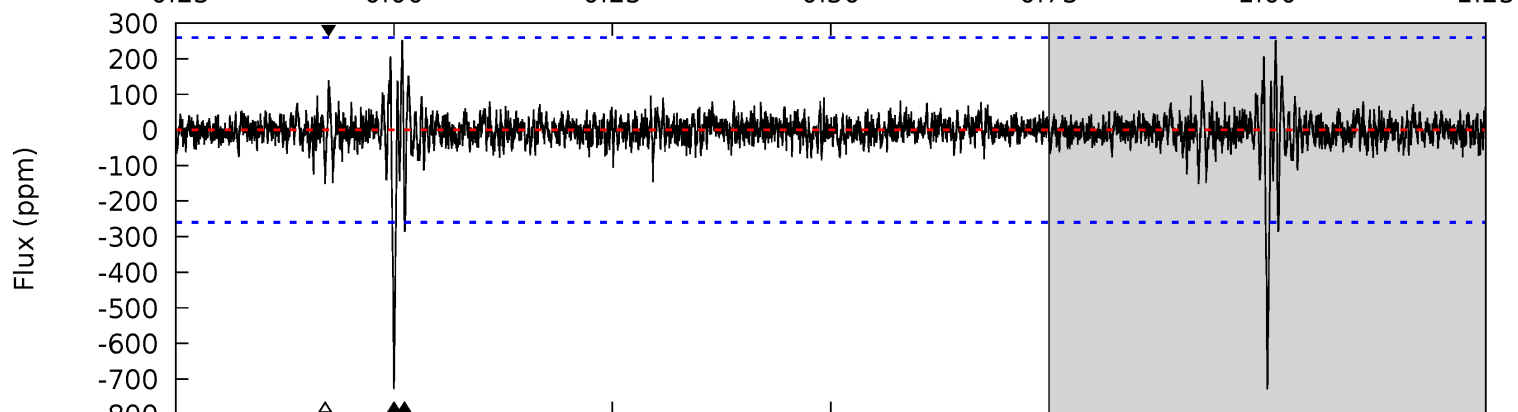
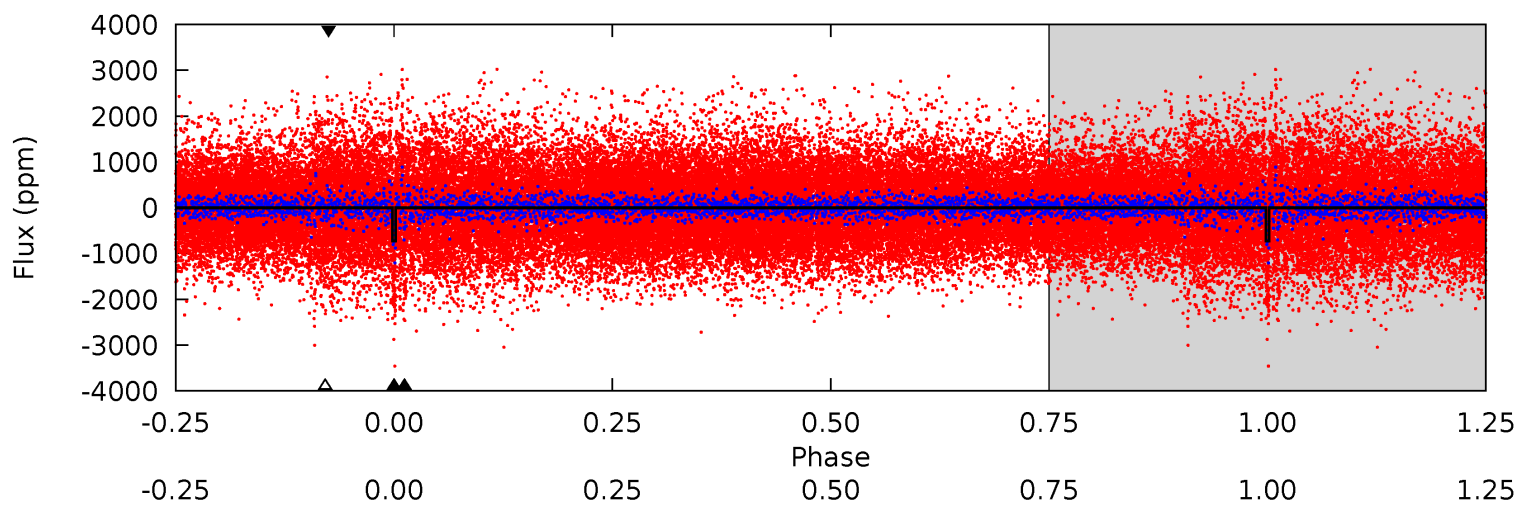
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
45.3	27.6	16.2	9.03	5.17	2.82	2.16	29.1	36.3	11.4	18.5	1.11	1.01	0.32	3.51



Alt Model-Shift Uniqueness Test

008160030-01, P = 370.235674 Days, E = 296.798647 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.6	5.74	3.04	2.81	5.21	2.90	0.61	11.6	11.8	2.70	2.94	0.40	0.96	0.26	1.85



Stellar Parameters For KIC 008160030

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6122^{+190}_{-232}	$4.487^{+0.052}_{-0.208}$	$-0.180^{+0.300}_{-0.300}$	$0.964^{+0.304}_{-0.101}$	$1.041^{+0.140}_{-0.140}$	$1.635^{+0.443}_{-0.835}$
	+3%/-4%	+1%/-5%	+167%/-167%	+32%/-10%	+13%/-13%	+27%/-51%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 008160030-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1264 ± 46	$4.89^{+0.82}_{-0.54}$	375^{+26}_{-20}	5475^{+241}_{-217}	30003^{+6752}_{-6995}
Alt.	-286 ± 50	$2.94^{+0.52}_{-0.40}$	373^{+26}_{-20}	4914^{+350}_{-291}	18089^{+7199}_{-5338}

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

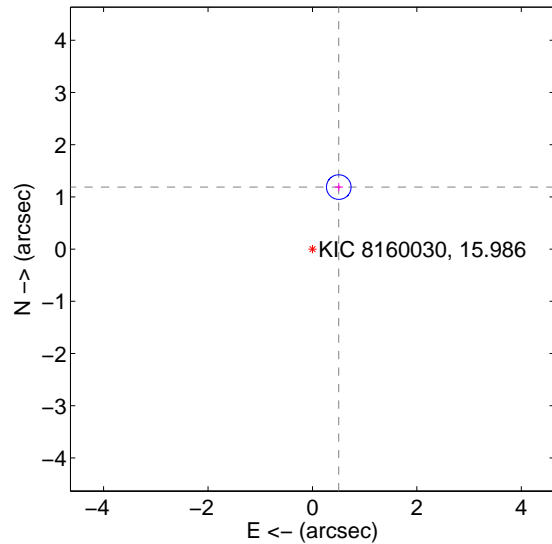
Supplemental centroid analysis for 008160030-01. Kepler magnitude: 15.99. Transit SNR 14.73

There are 0 quarters with good PRF difference image offsets

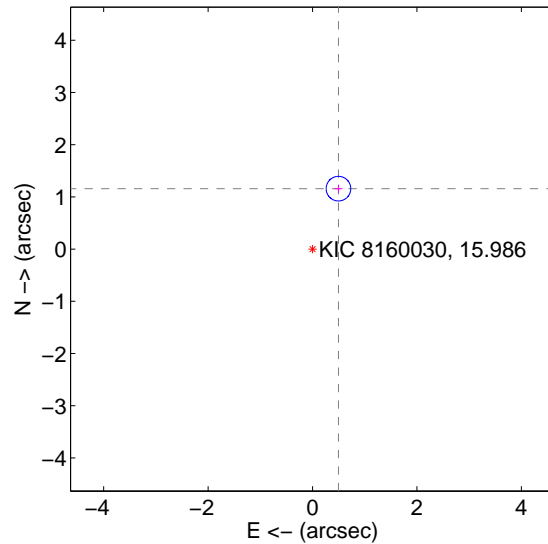
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.291 ± 0.079	16.43	-0.504 ± 0.078	1.188 ± 0.079
PRF-fit source offset from KIC position	1.260 ± 0.079	16.04	-0.497 ± 0.078	1.158 ± 0.079
photometric centroid source offset	1.53 ± 0.78	1.97	-0.61 ± 0.87	-1.40 ± 0.76

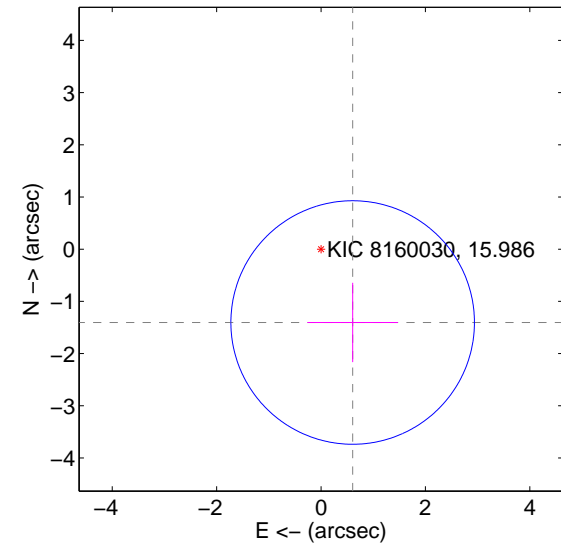
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



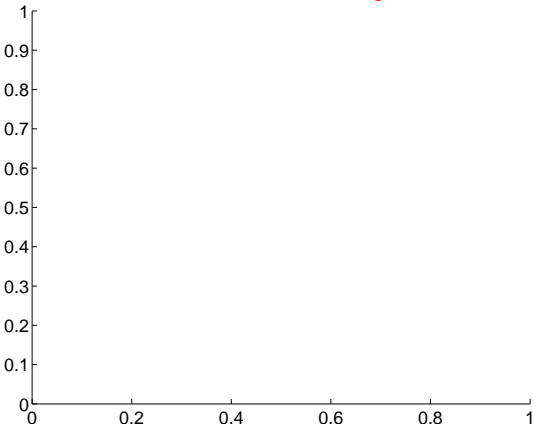
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . 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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

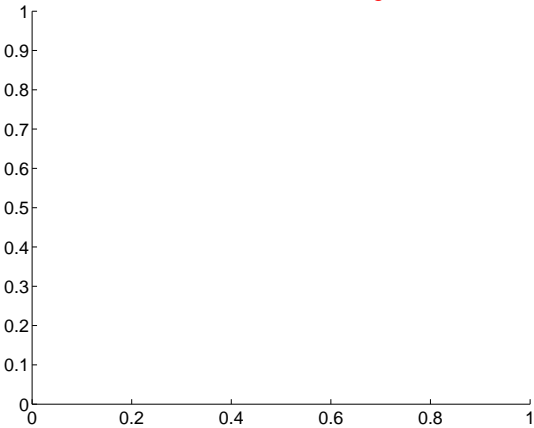
Q5 no difference image



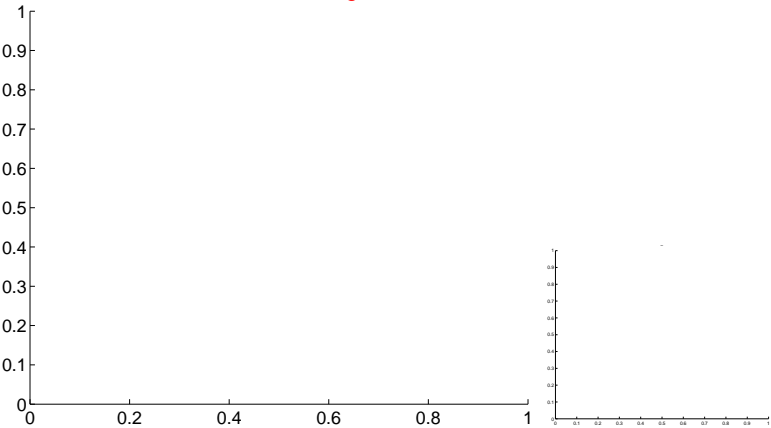
Q5 no OOT image



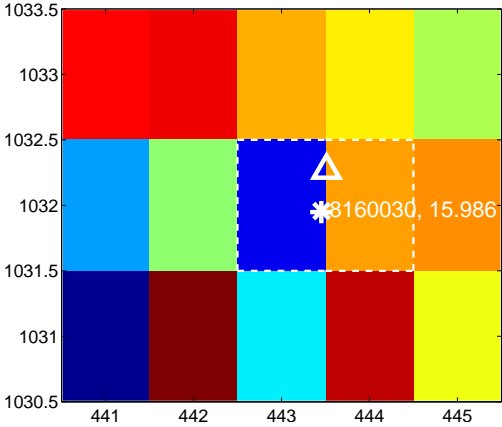
Q6 no difference image



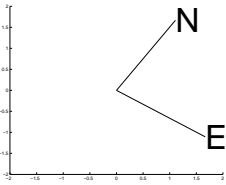
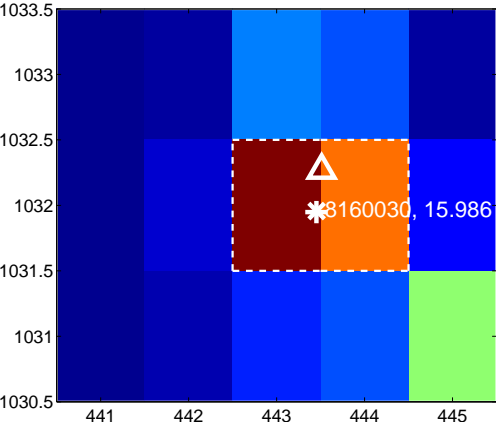
Q6 no OOT image



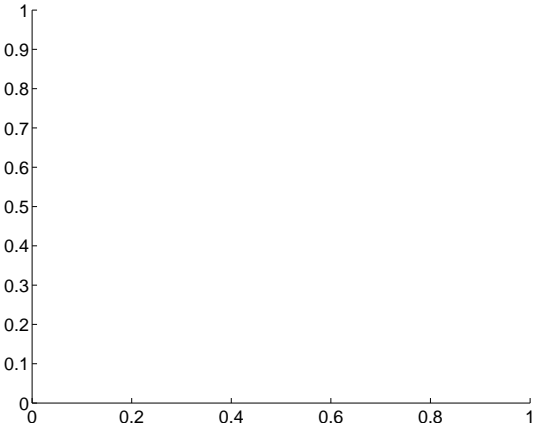
Q7 difference image. Poor Quality



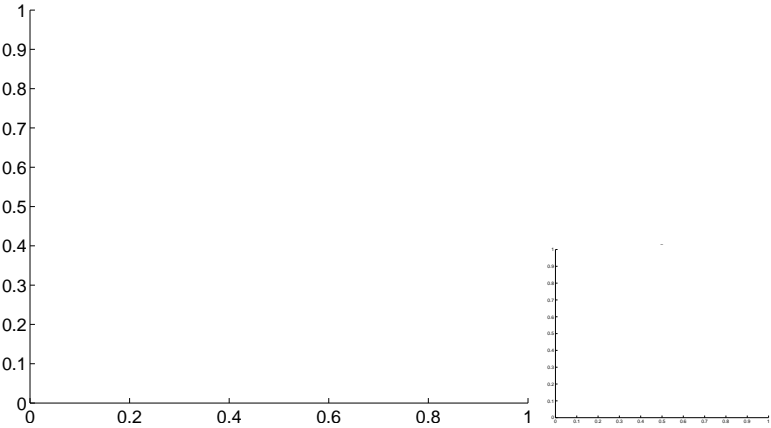
Q7 OOT image



Q8 no difference image



Q8 no OOT image



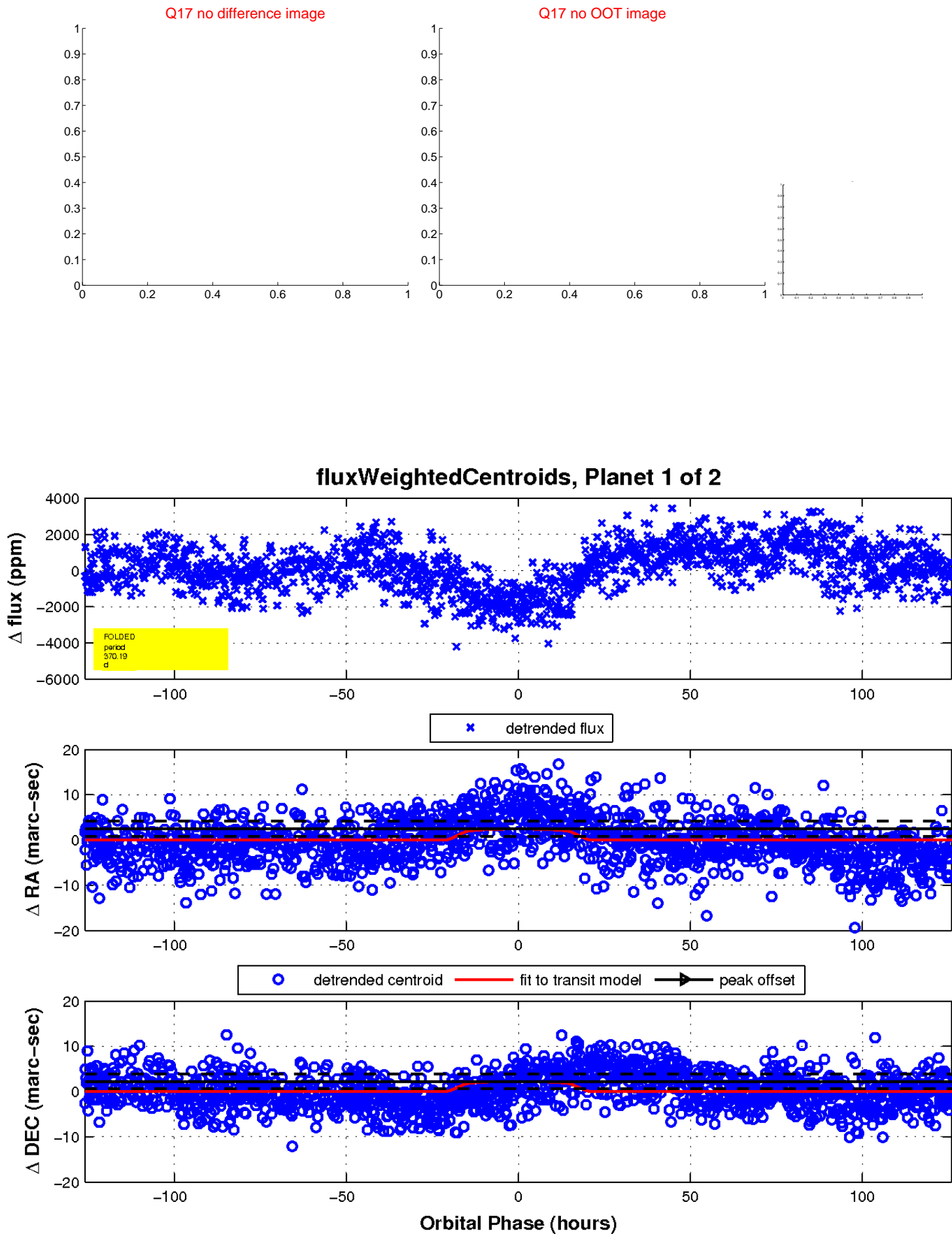
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

