

KIC 012204797

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})
012204797-01	OBS	No	406.933540	236.349505	58.5	17.888	8.7	6.8	1.01	6372	0.89	1.26

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012204797-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—CENT_SATURATED

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

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

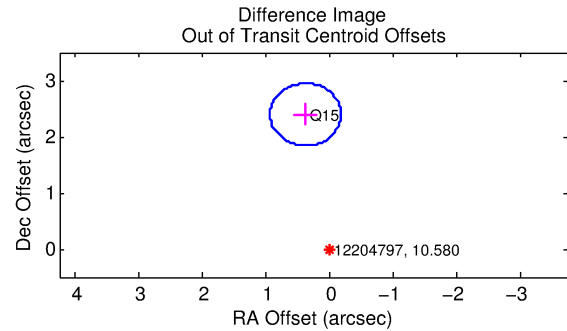
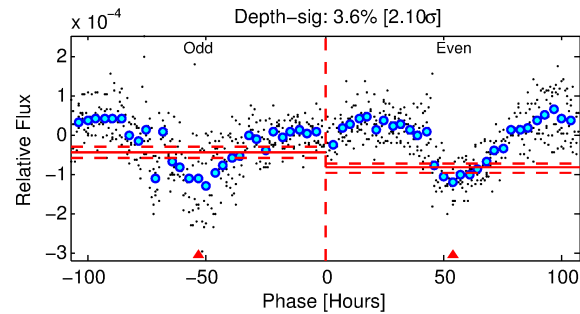
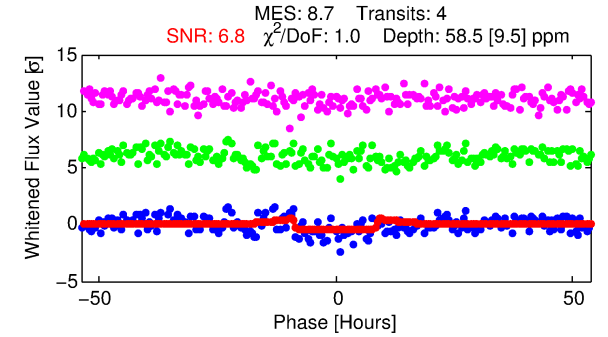
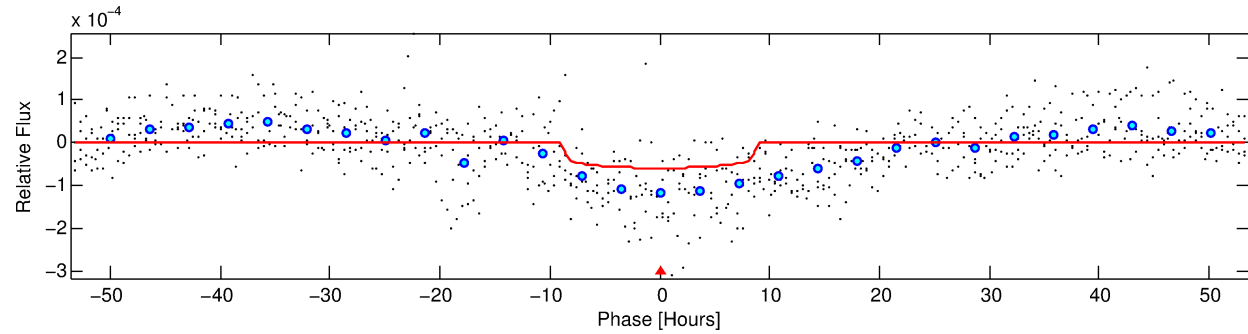
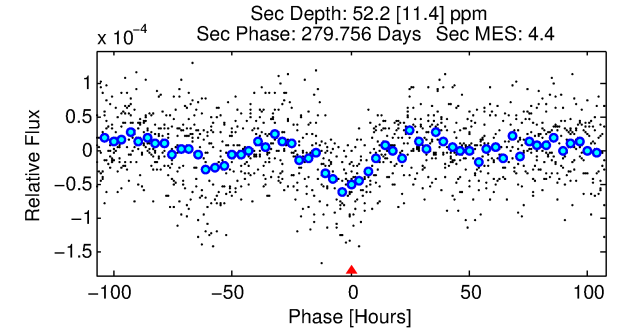
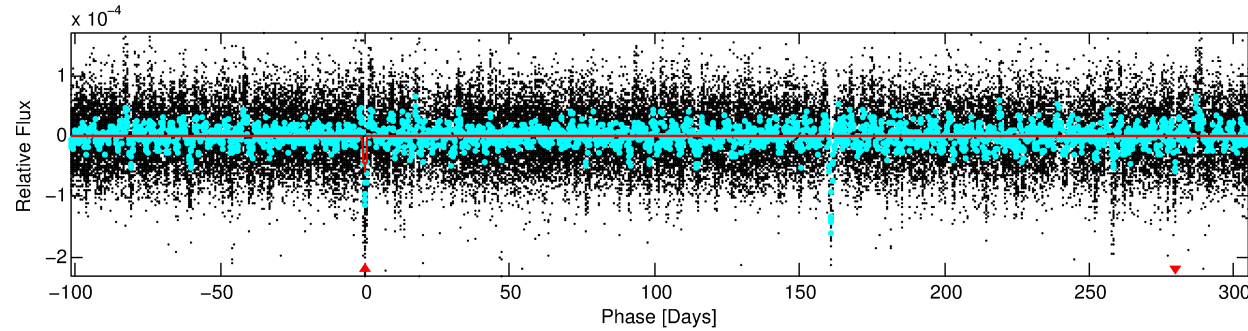
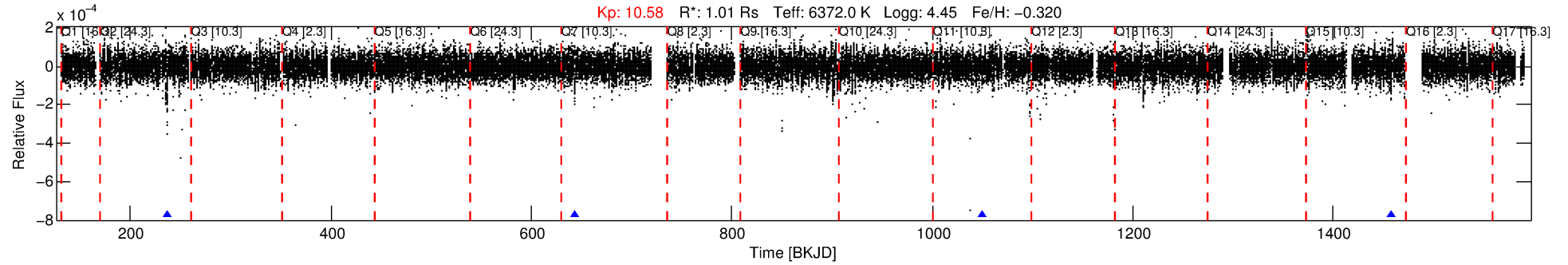
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012204797-01

No Significant Match Found

DV One-Page Summary

KIC: 12204797 Candidate: 1 of 1 Period: 406.934 d



DV Fit Results:

Period = 406.93354 [0.00821] d
Epoch = 236.3495 [0.0160] BKJD
 $R_p/R^* = 0.0080$ [0.0017]
 $a/R^* = 87.42$ [91.89]
 $b = 0.87$ [0.28]
 $\text{Seff} = 1.26$ [0.37]
 $T_{\text{eq}} = 270$ [20] K
 $R_p = 0.89$ [0.27] R_{e}
 $a = 1.0982$ [0.2080] AU
 $A_g = 43725.01$ [23914.90] [1.83σ]
 $T_{\text{eff}} = 6042$ [733] K [7.8σ]

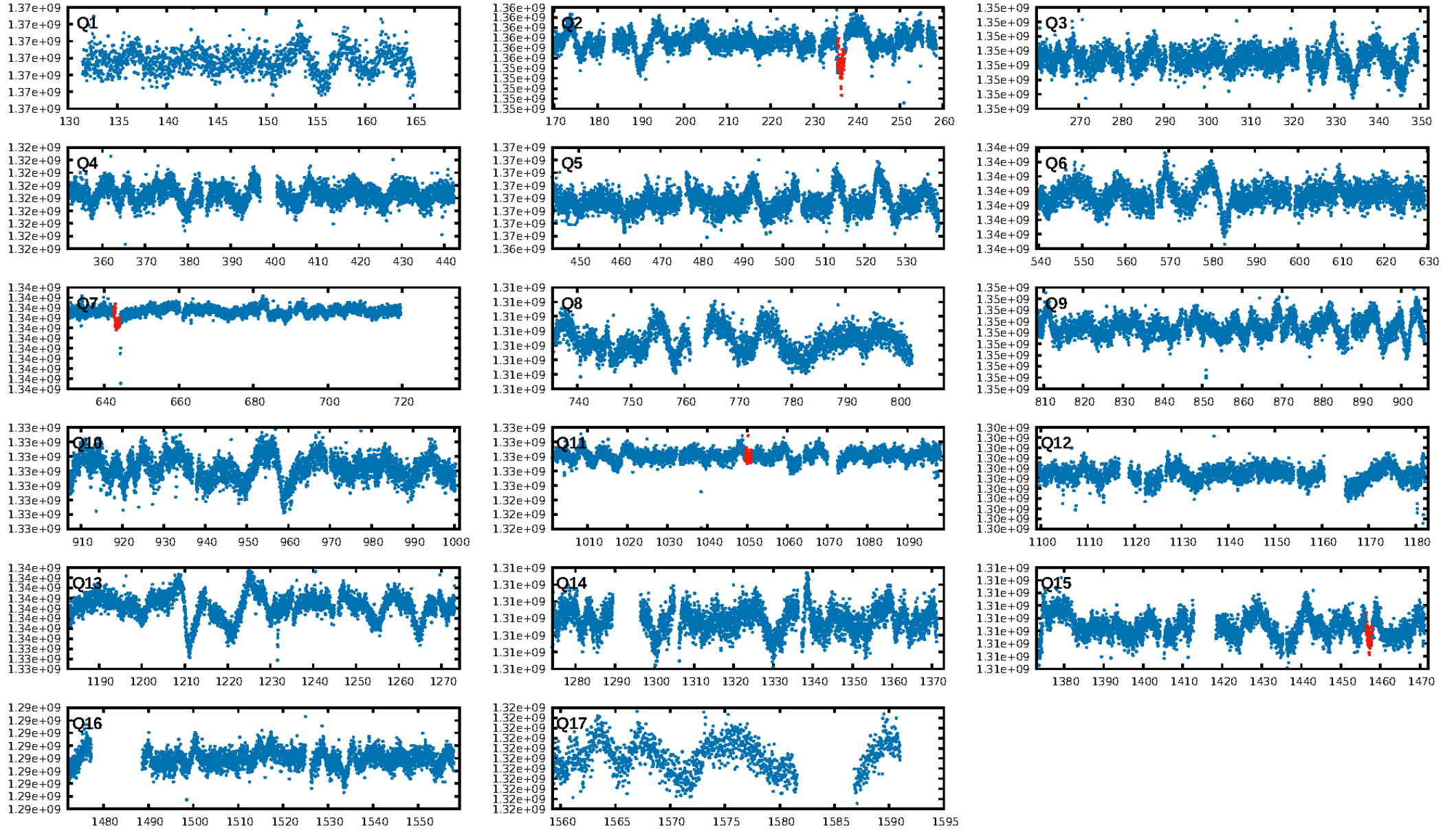
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.1%
ModelChiSquareGoF-sig: 99.9%
Bootstrap-pfa: 6.29e-12
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: N/A
Centroid-sig: 44.1%
Centroid-so: 2.780 arcsec [0.58σ]
OotOffset-rm: 2.423 arcsec [13.09σ]
KicOffset-rm: 2.833 arcsec [15.29σ]
OotOffset-st: 0/1/0/0 [1]
KicOffset-st: 0/1/0/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [3/3]

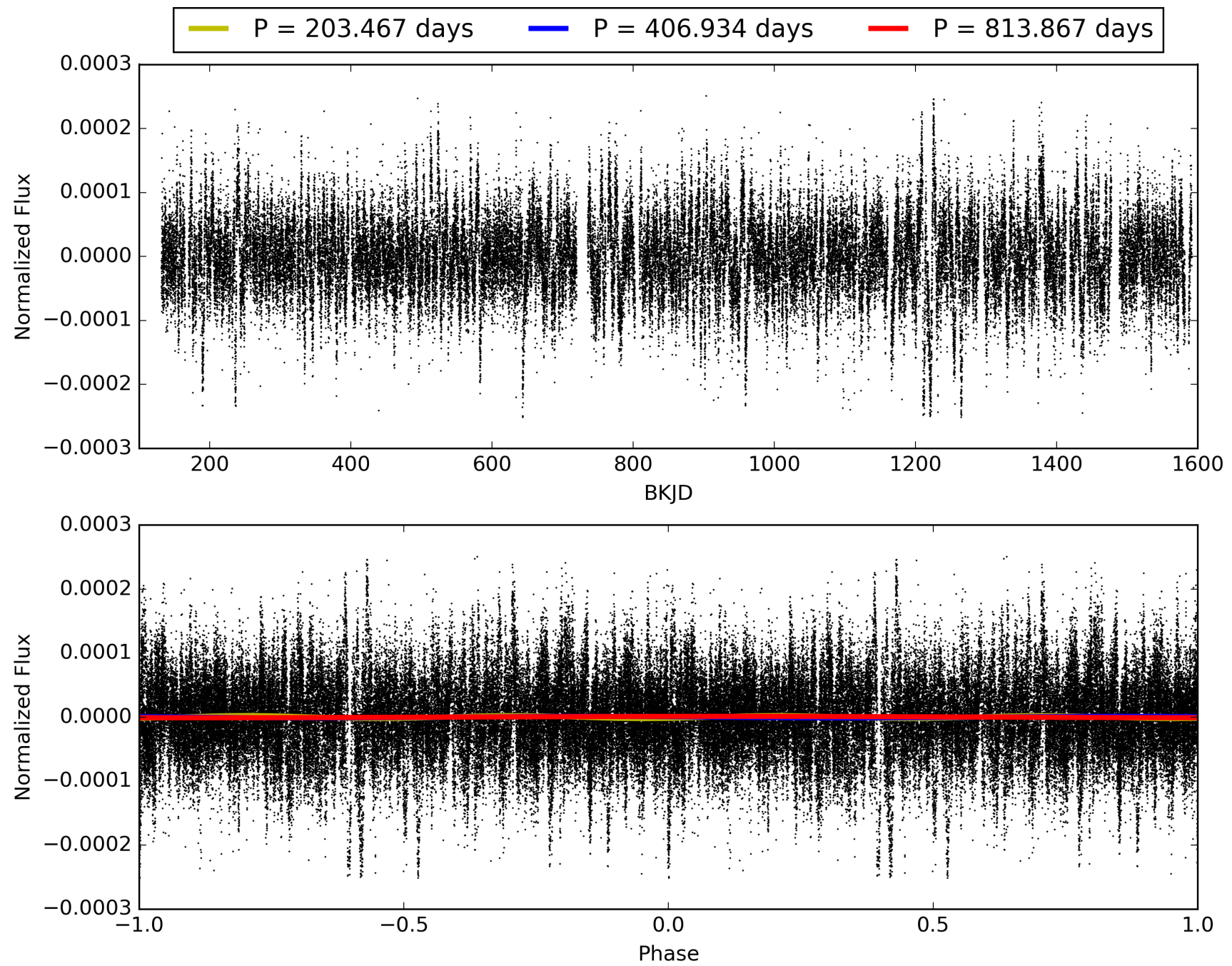
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 22:19:56 Z

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

TCE 012204797-01, PDC Light Curves

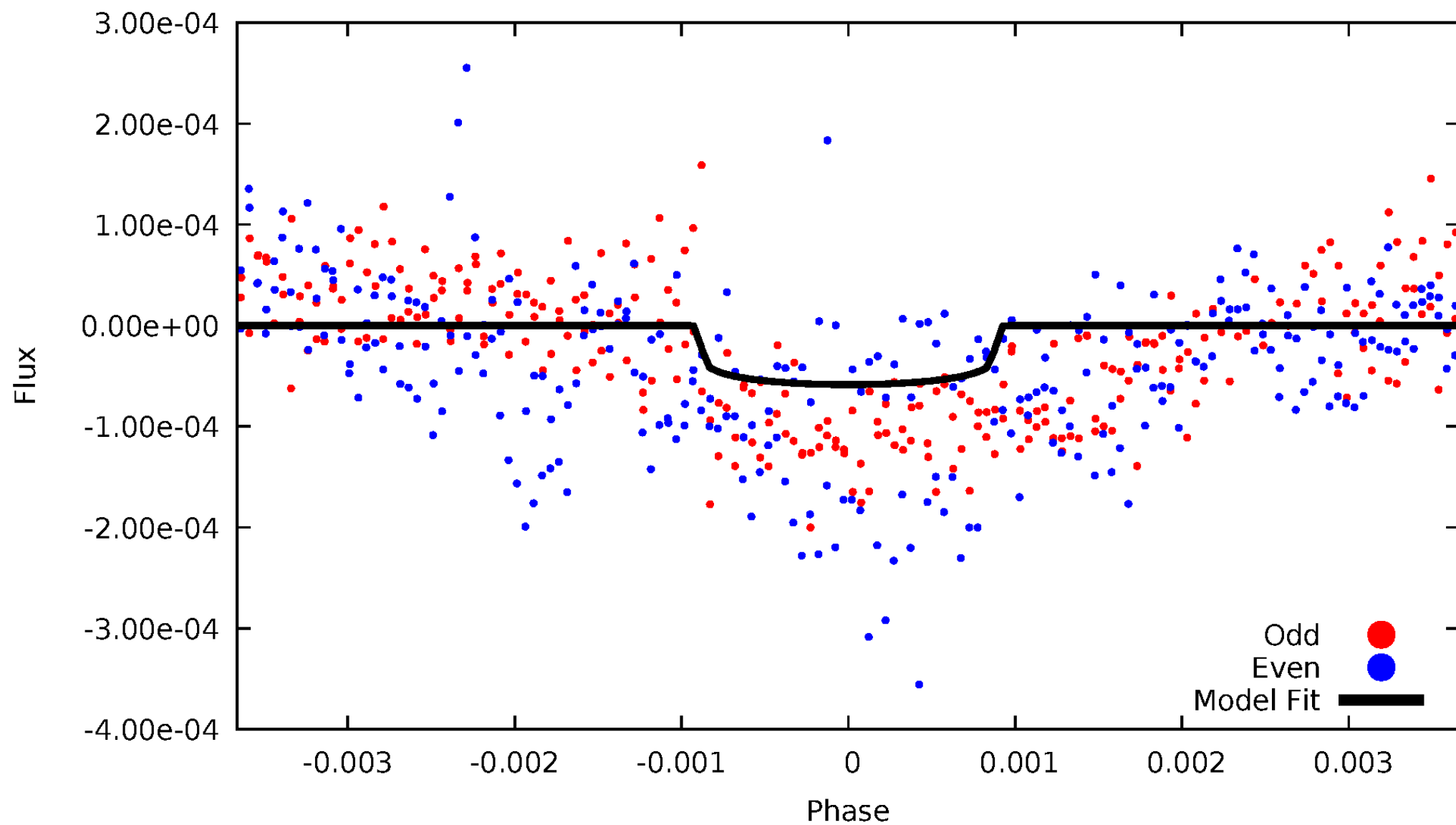


TCE 012204797-01



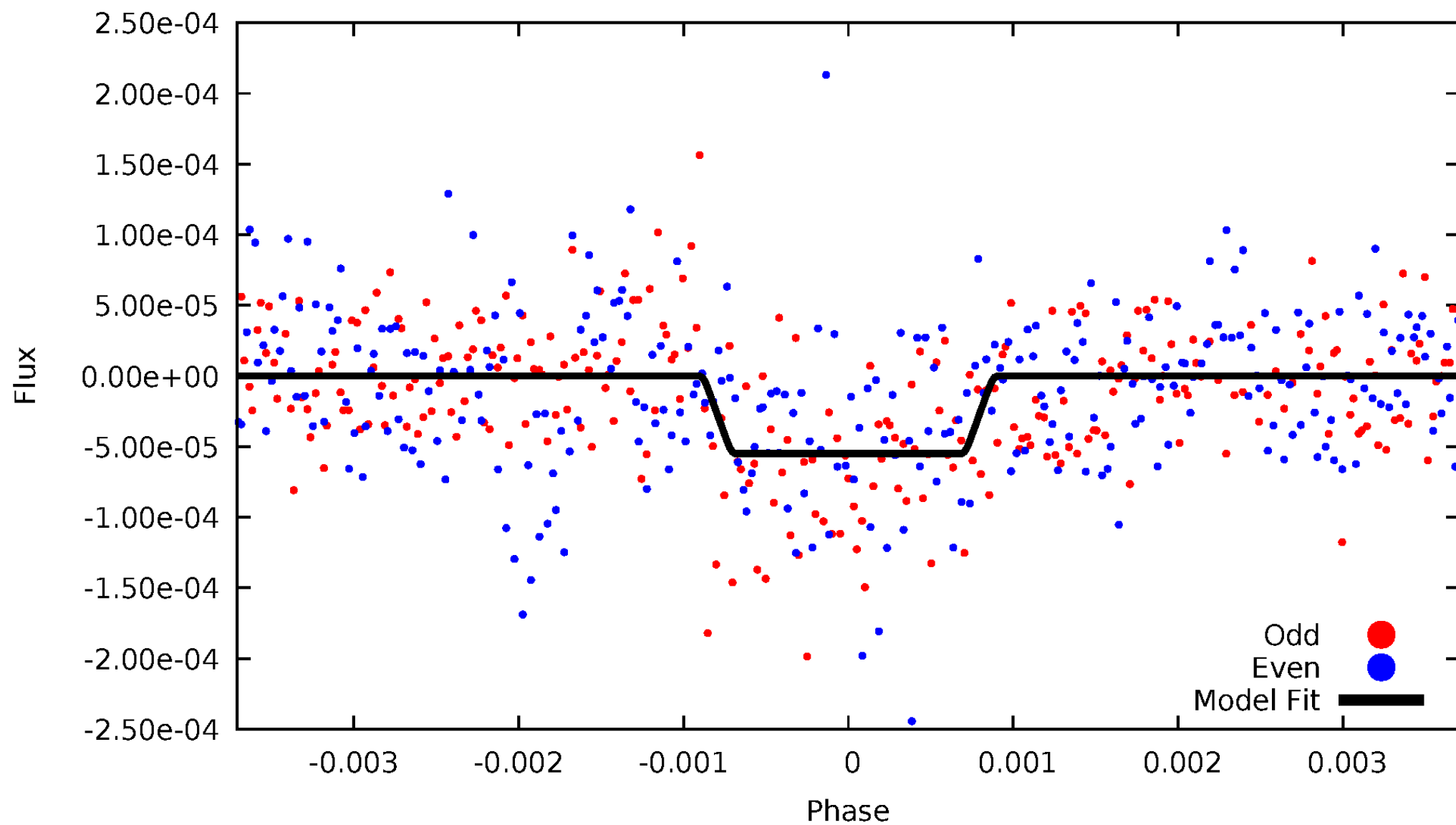
DV Odd/Even

TCE 012204797-01



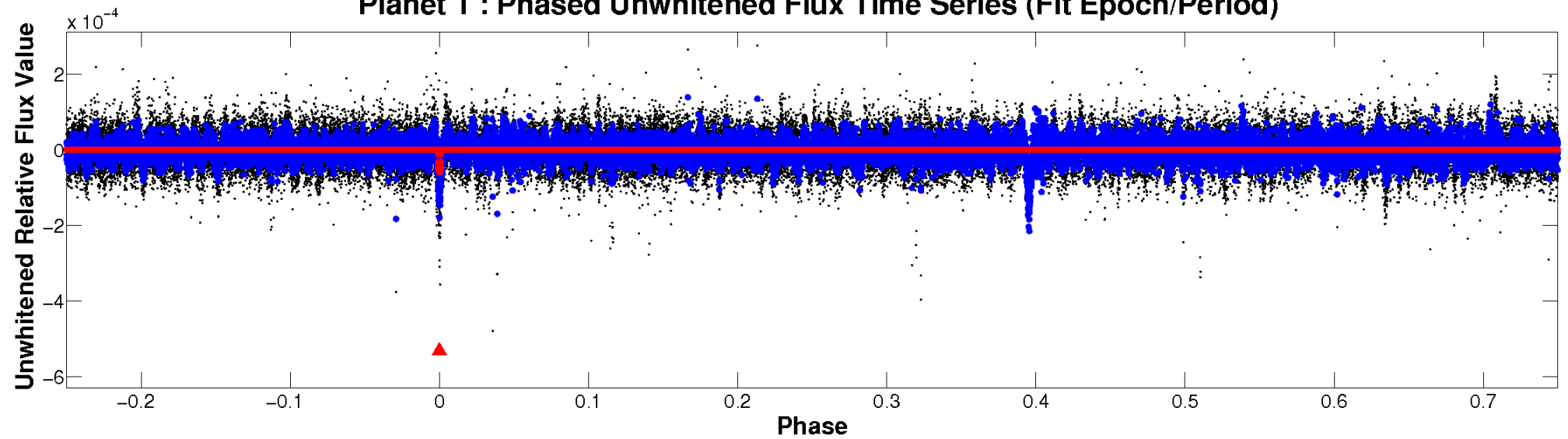
ALT Odd/Even

TCE 012204797-01

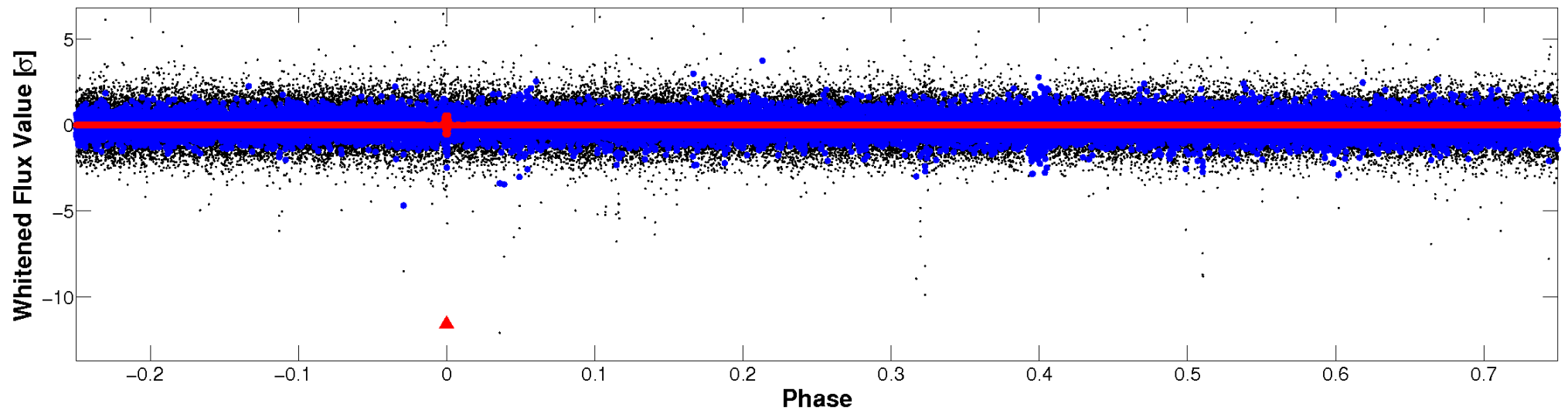


Non-Whitened Vs. Whitened Light Curve

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



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



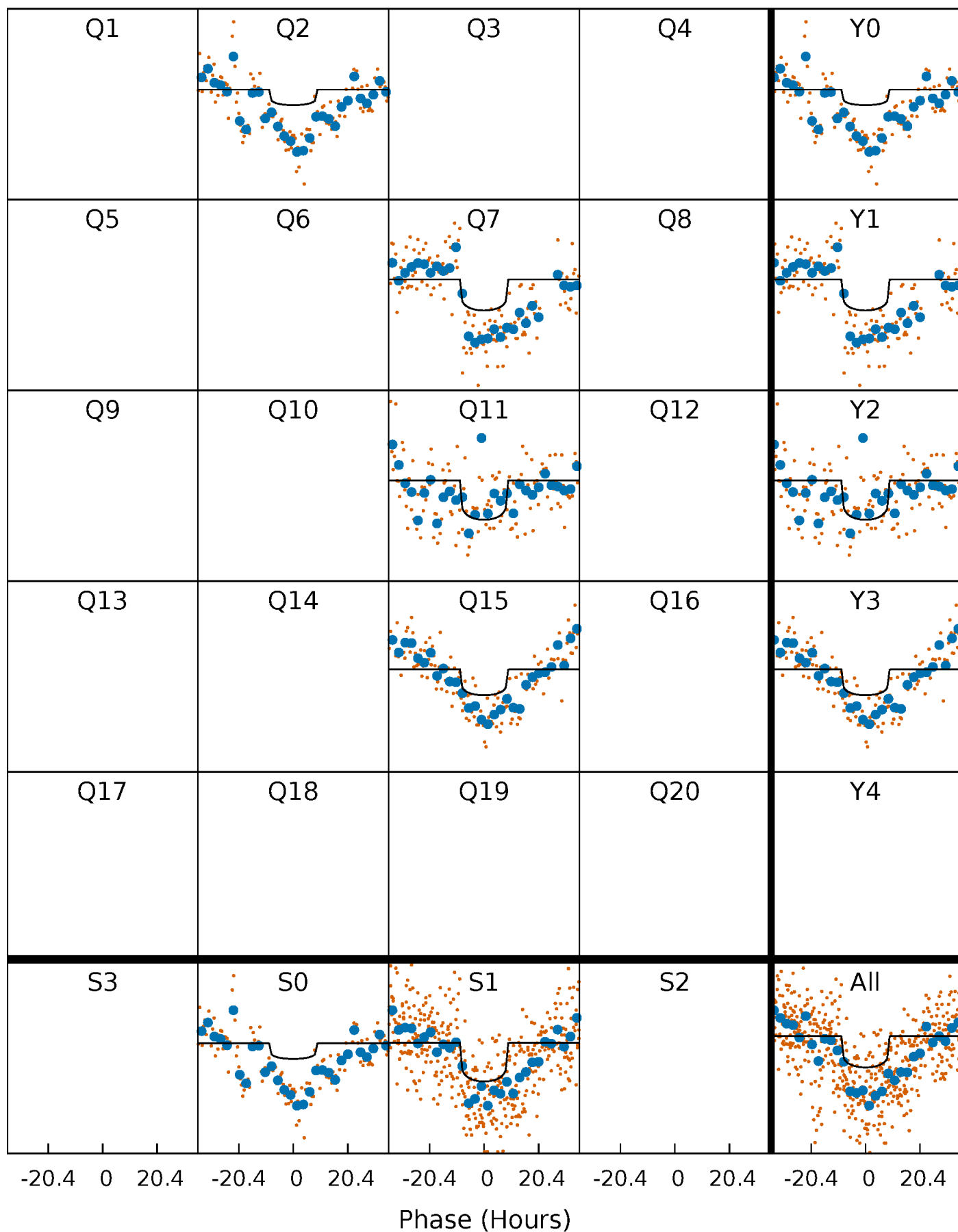
PDC Quarter-Phased Transit Curves

TCE 012204797-01 P=406.933540 Days $T_0=236.349505$ (BKJD)



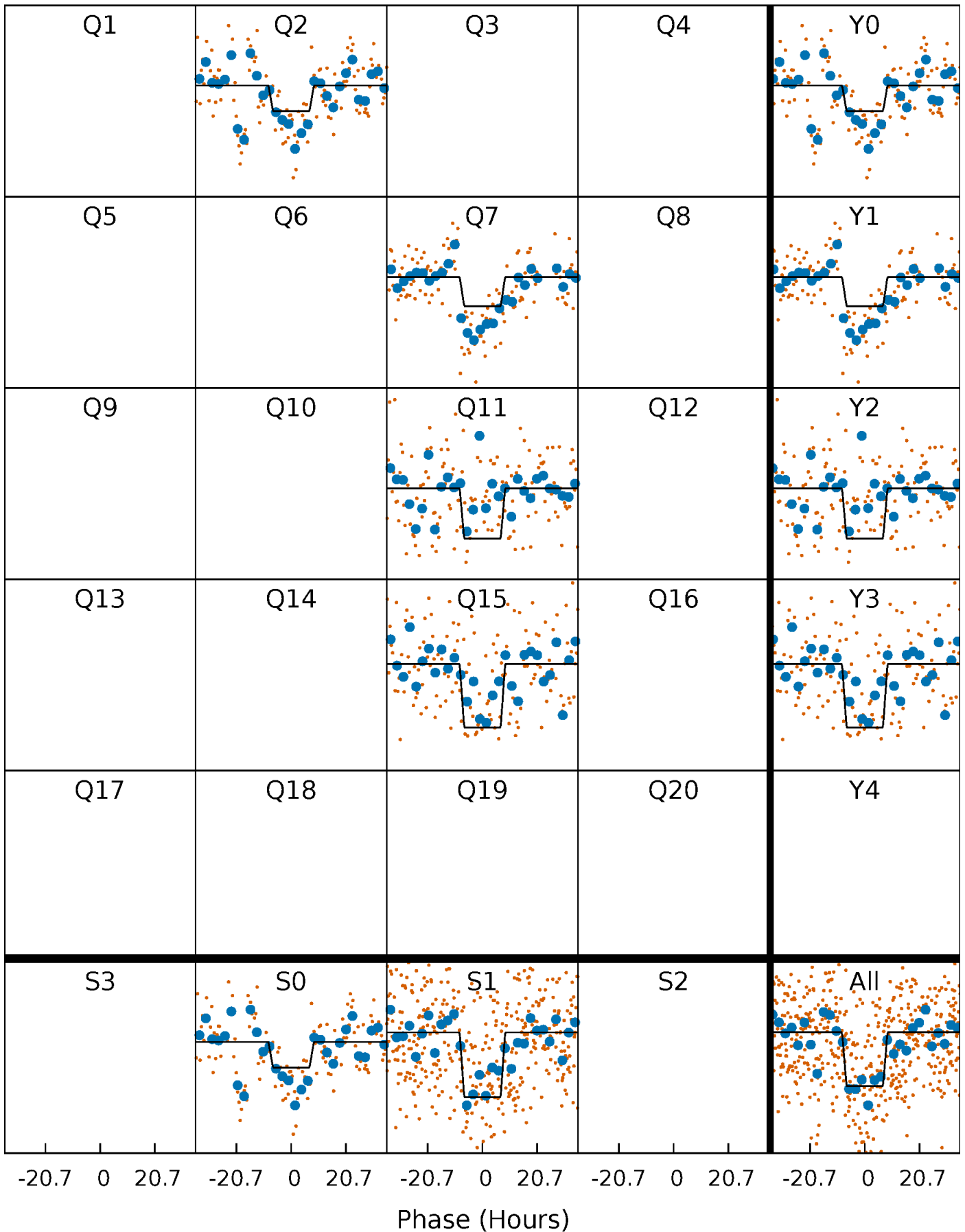
DV Quarter-Phased Transit Curves

TCE 012204797-01 P=406.933540 Days $T_0=236.349505$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

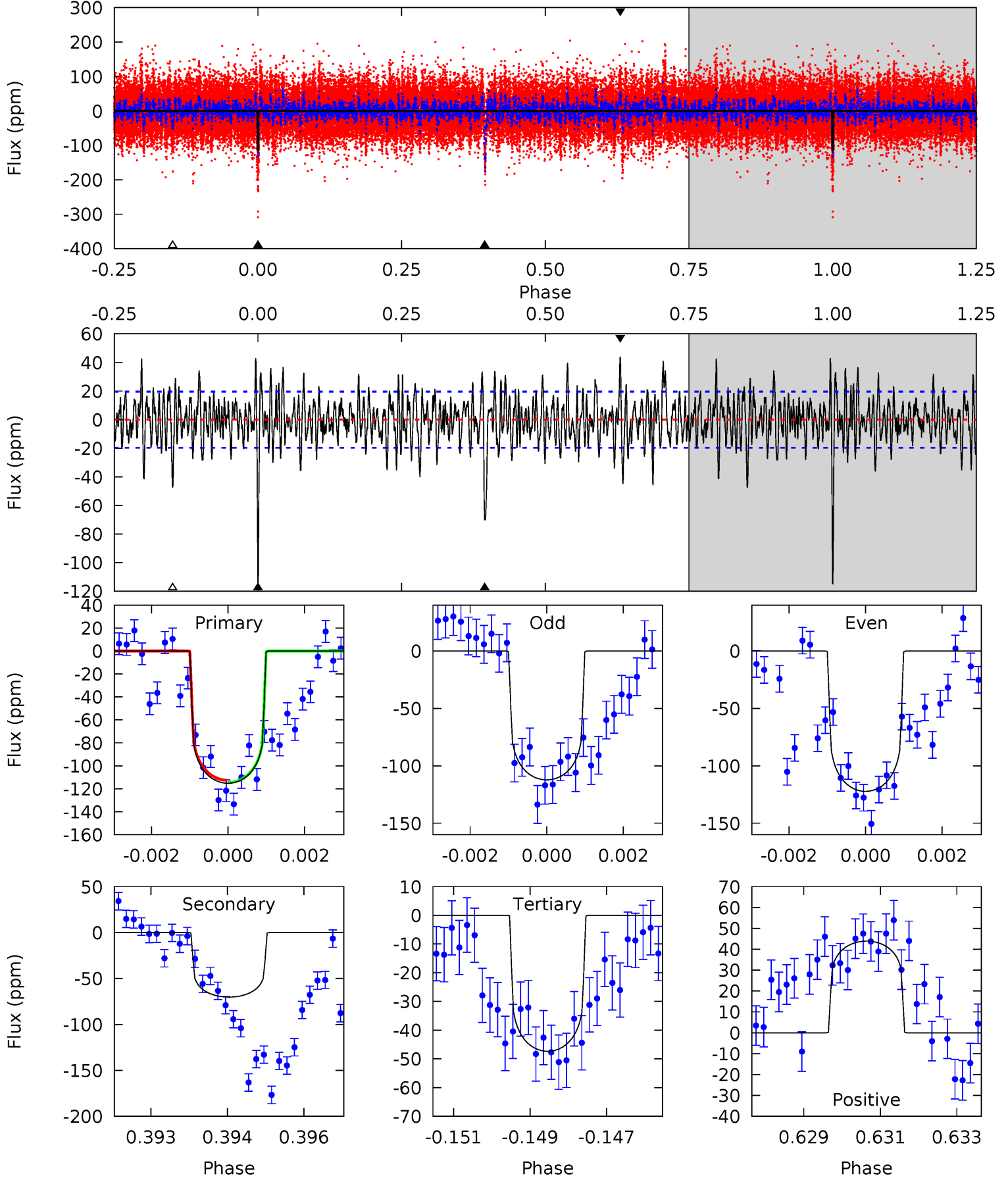
TCE 012204797-01 P=406.927536 Days $T_0=236.365020$ (BKJD)



DV Model-Shift Uniqueness Test

012204797-01, P = 406.933540 Days, E = 236.349505 Days

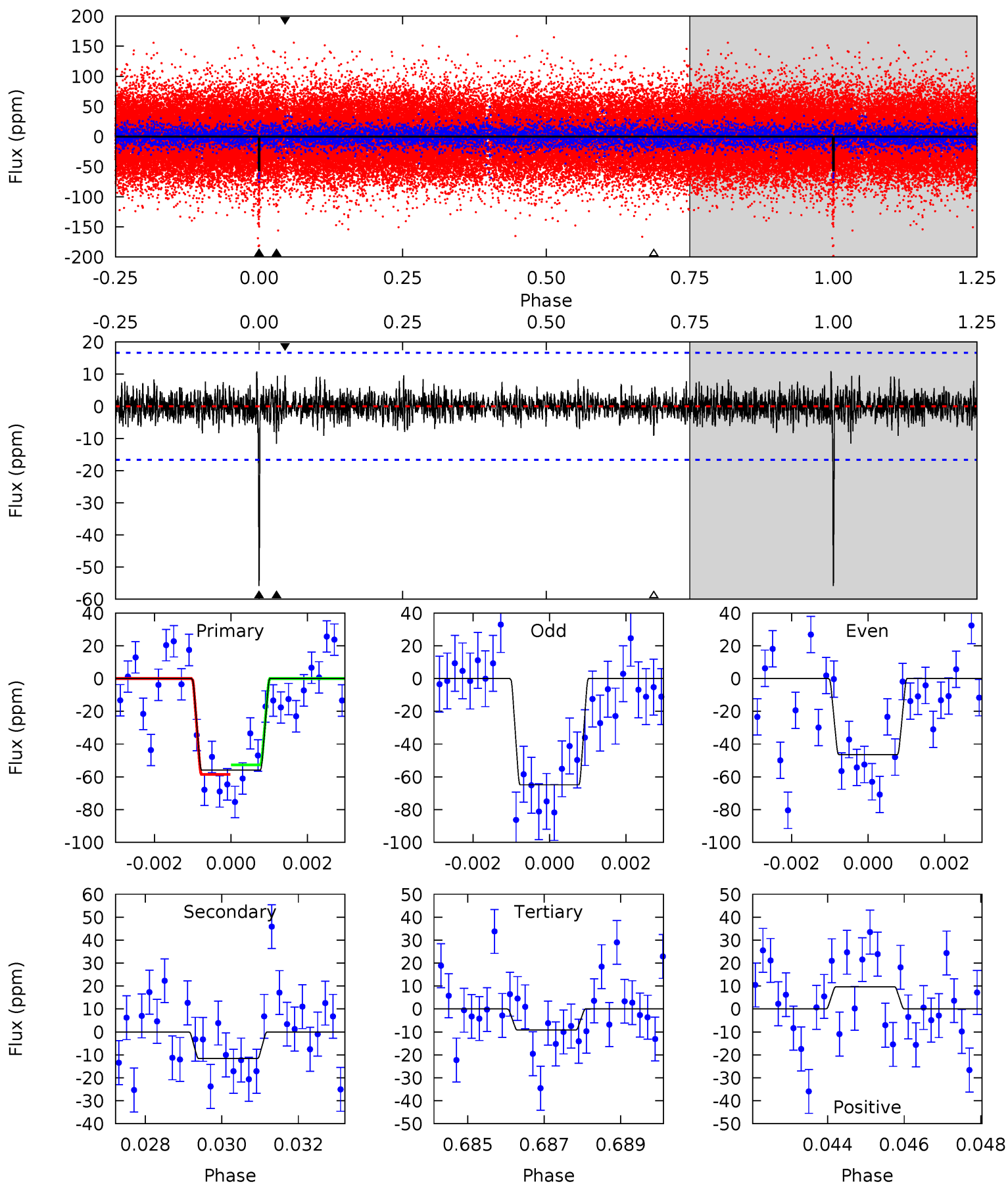
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.4	19.1	12.9	12.0	5.34	3.11	3.73	18.5	19.4	6.23	7.17	1.37	1.02	0.28	0.27



Alt Model-Shift Uniqueness Test

012204797-01, P = 406.927536 Days, E = 236.365020 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.9	3.72	2.94	3.10	5.35	3.13	0.85	15.0	14.8	0.78	0.62	2.96	0.95	0.16	0.93



Stellar Parameters For KIC 012204797

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6372^{+142}_{-174}	$4.453^{+0.050}_{-0.150}$	$-0.320^{+0.250}_{-0.300}$	$1.015^{+0.229}_{-0.098}$	$1.066^{+0.110}_{-0.134}$	$1.435^{+0.373}_{-0.594}$
	+2%/-3%	+1%/-3%	+78%/-94%	+23%/-10%	+10%/-13%	+26%/-41%
Source	PHO1	FLK73	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 012204797-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-70 ± 4	$0.91^{+0.23}_{-0.19}$	382^{+20}_{-15}	6474^{+926}_{-610}	55566^{+33616}_{-19976}
Alt.	-12 ± 3	$0.85^{+0.21}_{-0.21}$	383^{+19}_{-15}	4489^{+595}_{-420}	10420^{+8841}_{-4340}

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 $A_{\text{obs}} \gg 1.0$

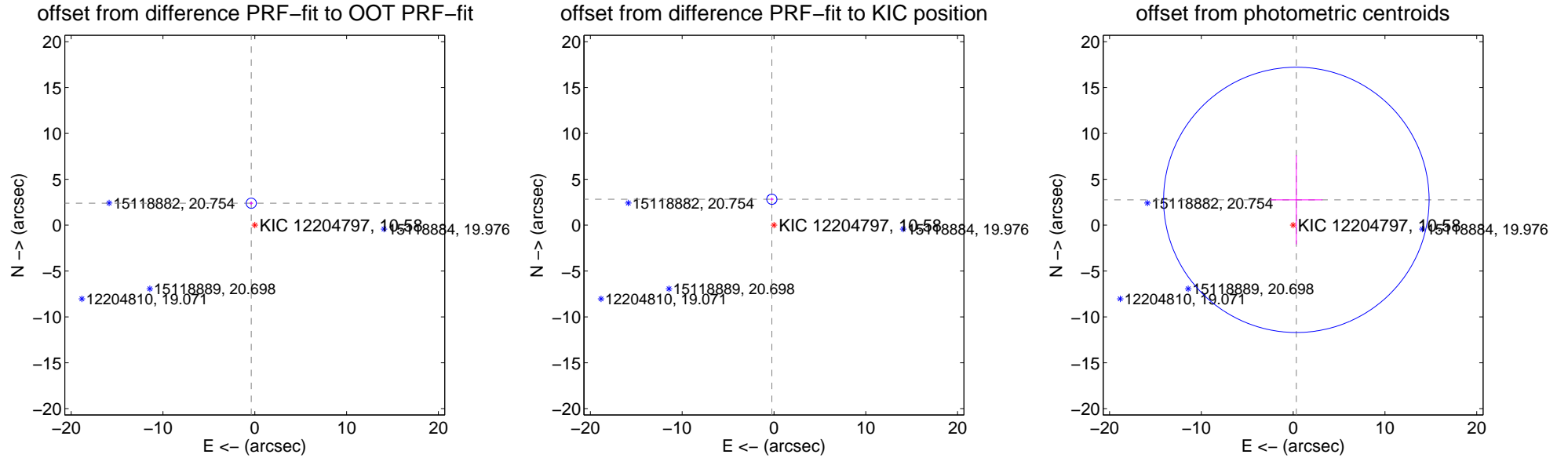
DV Centroid Data

Supplemental centroid analysis for 012204797-01. **Kepler magnitude: 10.58.** Transit SNR 6.77

There are 1 quarters with good PRF difference image offsets

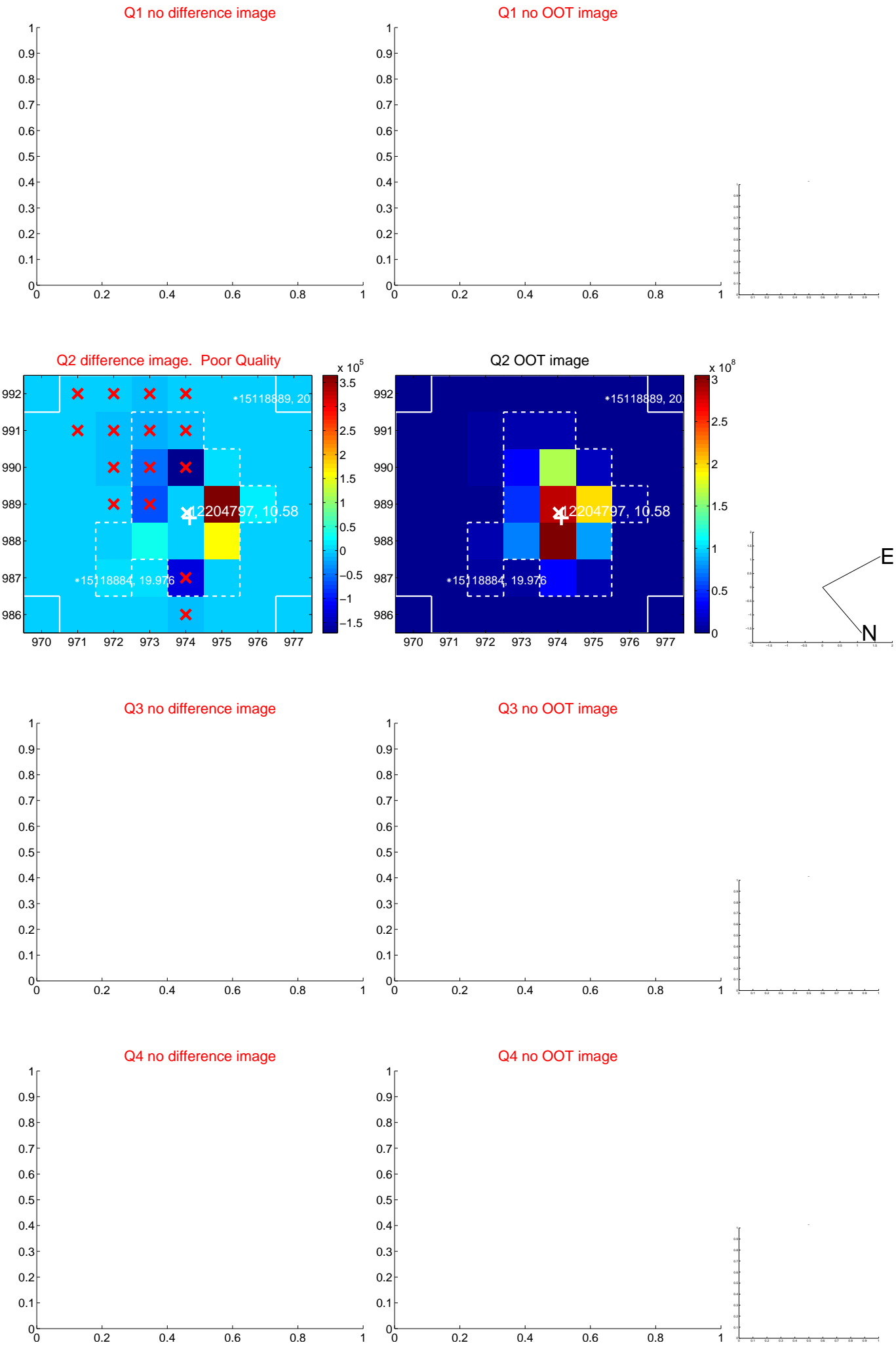
The direct PRF centroid is offset from the target star catalog position by about 0.46 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.423 \pm 0.185	13.09	0.382 \pm 0.180	2.393 \pm 0.185
PRF-fit source offset from KIC position	2.833 \pm 0.185	15.29	0.230 \pm 0.180	2.824 \pm 0.185
photometric centroid source offset	2.78 \pm 4.82	0.58	-0.35 \pm 2.84	2.76 \pm 4.84



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.

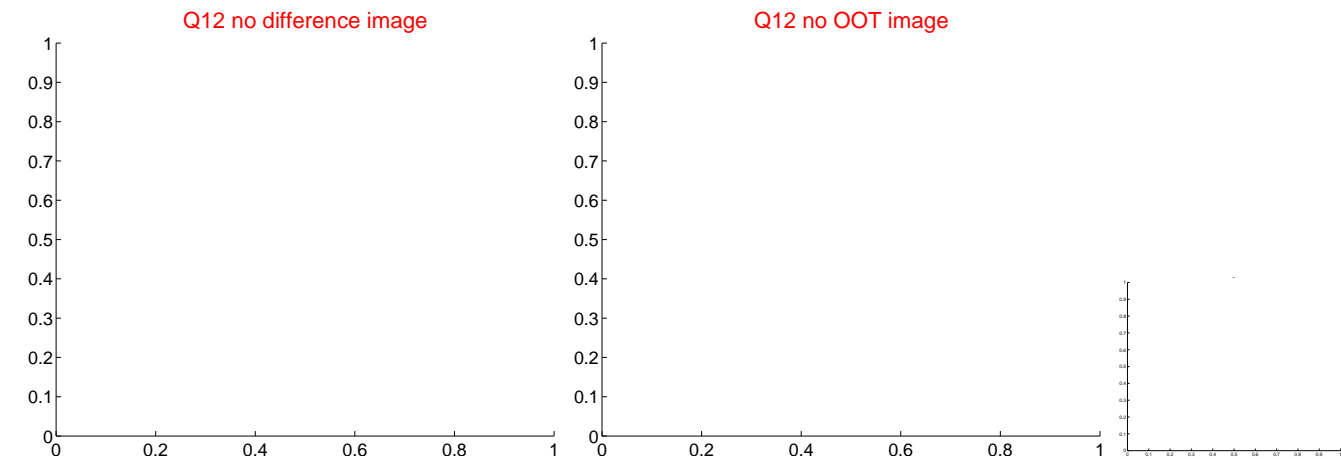
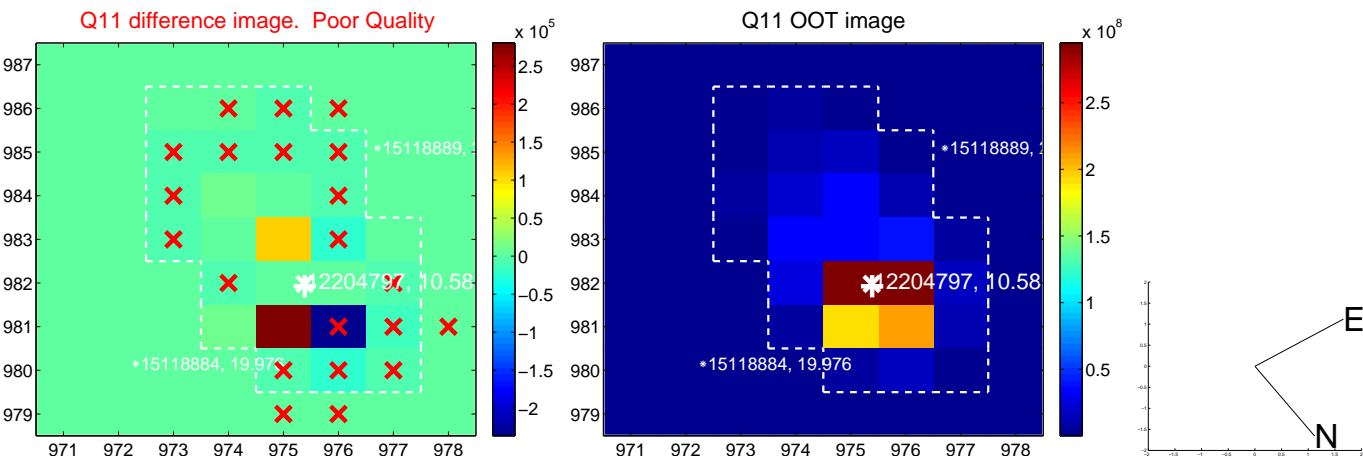
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



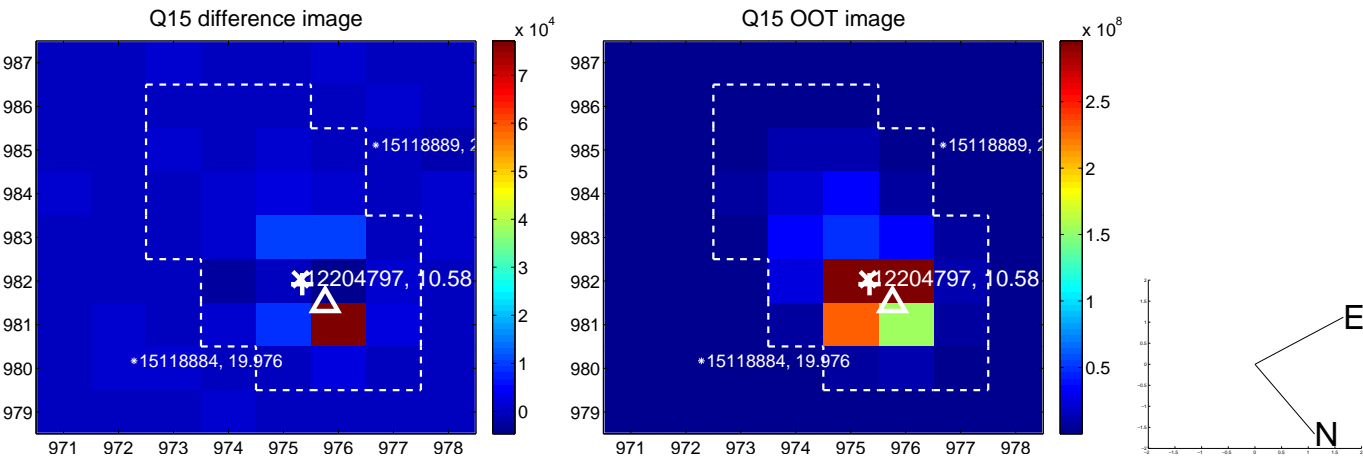
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



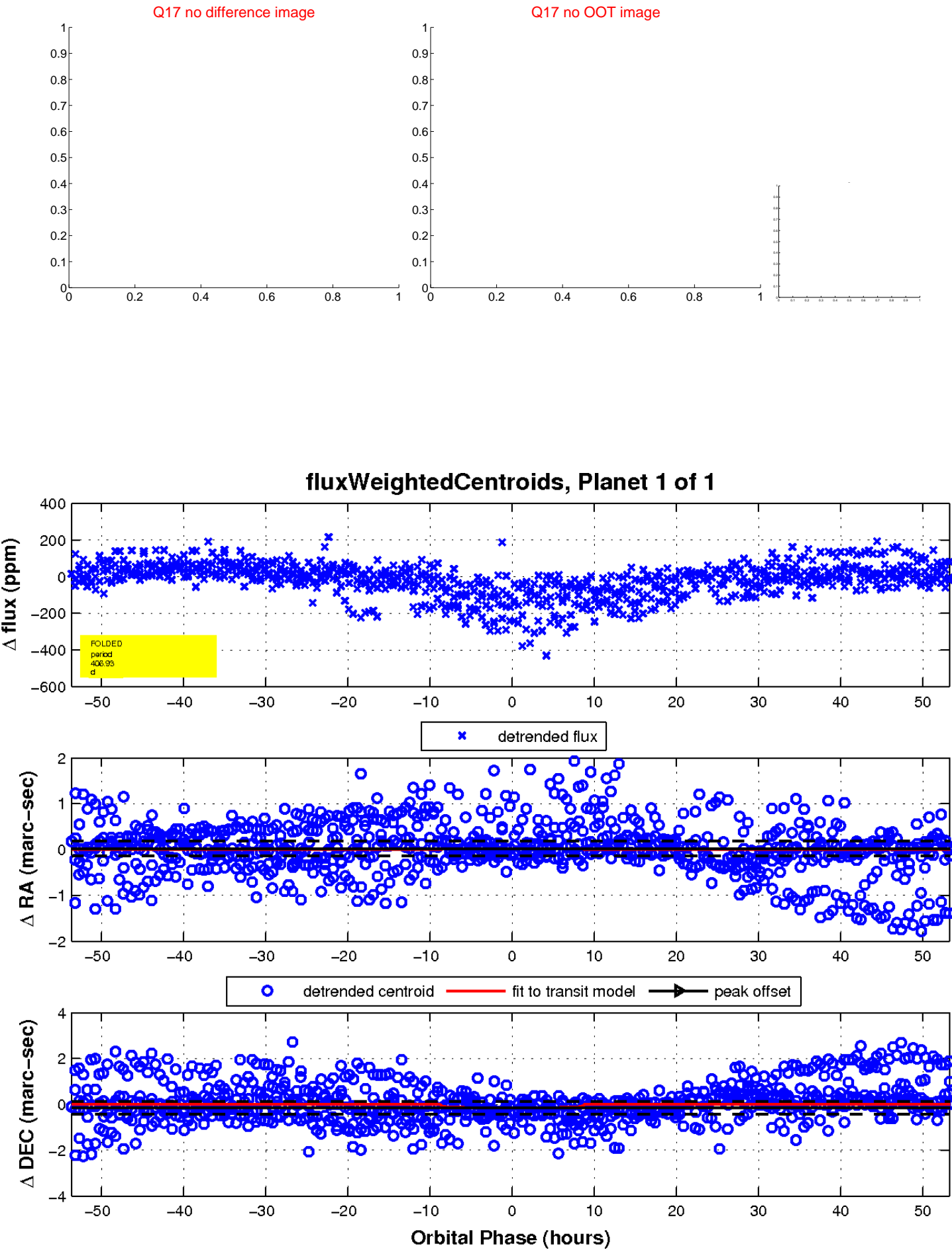
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

