

KIC 009602514

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})
009602514-01	OBS	1490.01	3.556548	133.513273	231.6	10.465	26.8	37.1	1.84	4951	6.03	921.82
009602514-02	OBS	No	261.358855	274.845606	533.5	15.000	11.4	-1.0	1.84	4951	4.11	3.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009602514-01	OBS	FP	0.00	0	0	1	1	CENT_UNRESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
009602514-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_NOFITS

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 009602514-01

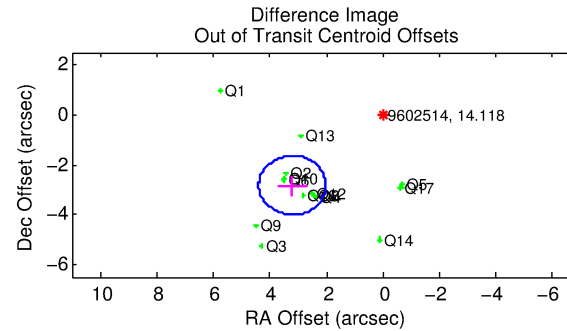
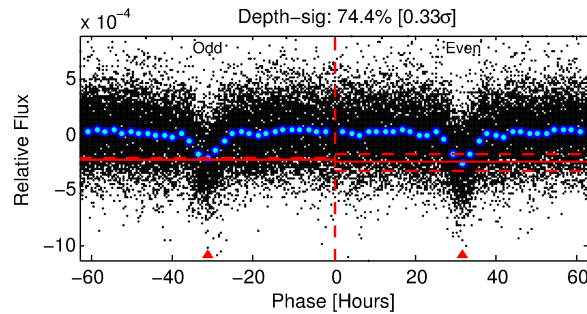
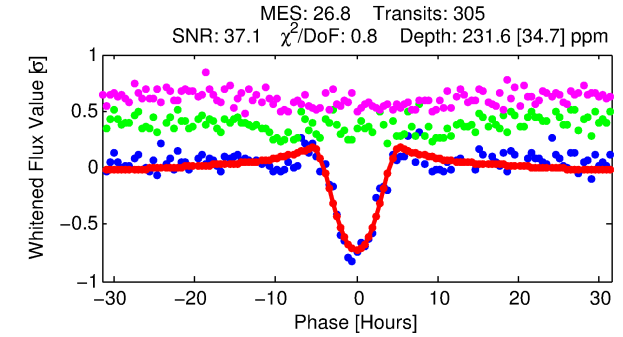
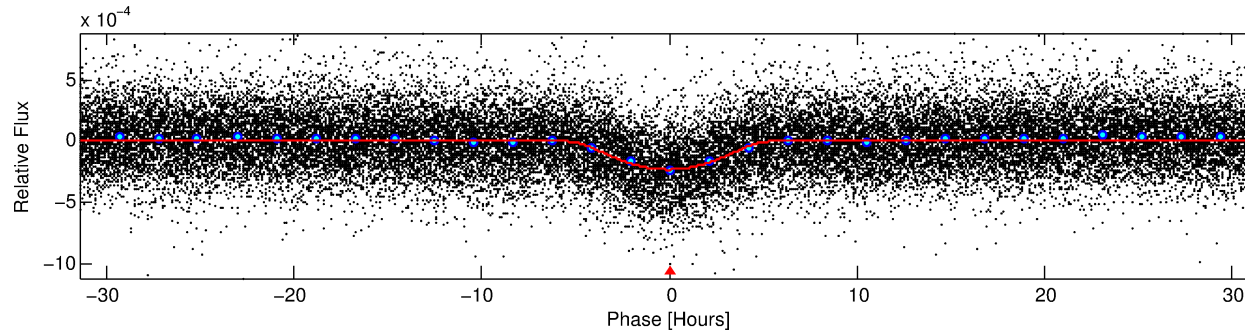
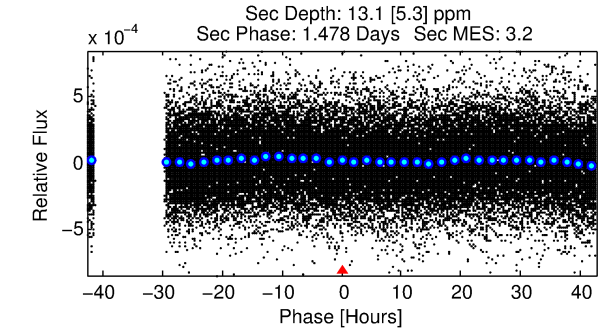
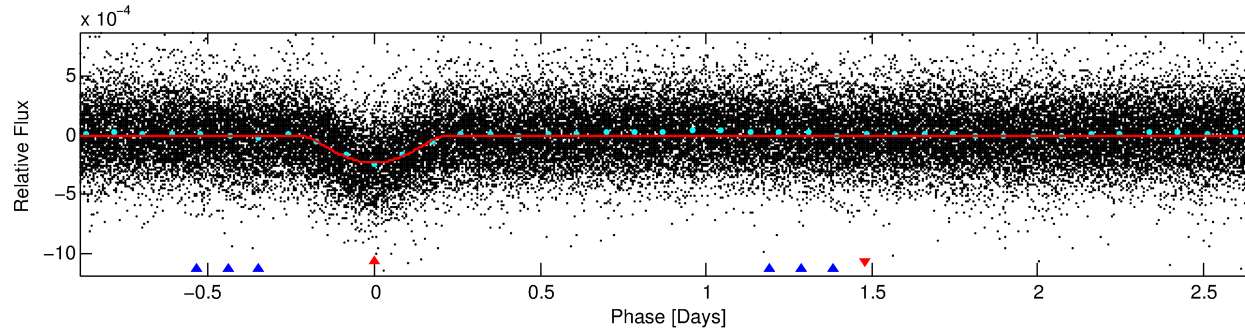
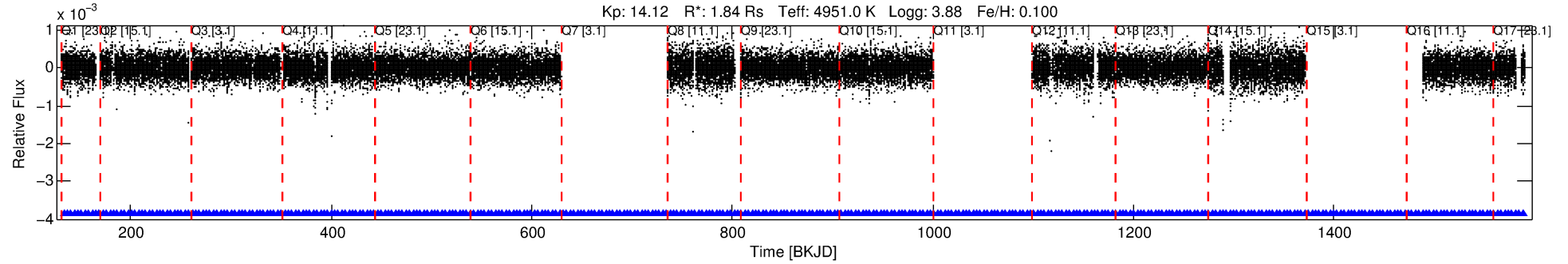
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
009602514-01	9602514	V995-Cyg-pri	9602595	1:1	58.7	-15	1	11.88	14.12	3322.90	Direct-PRF	0	0.39	0.42

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: 9602514 Candidate: 1 of 2 Period: 3.557 d
KOI: K01490.01 Corr: 0.898

Kp: 14.12 R*: 1.84 Rs Teff: 4951.0 K Logg: 3.88 Fe/H: 0.100



DV Fit Results:

Period = 3.55655 [0.00002] d
Epoch = 133.5133 [0.0046] BKJD
Rp/R* = 0.0300 [0.0220]
a/R* = 1.20 [0.04]
b = 1.00 [0.03]
Seff = 921.82 [1037.57]
Teq = 1405 [395] K
Rp = 6.03 [5.69] Re
a = 0.0445 [0.0292] AU
Ag = 0.39 [0.74] [-0.82σ]
Teffp = 1719 [656] K [0.41σ]

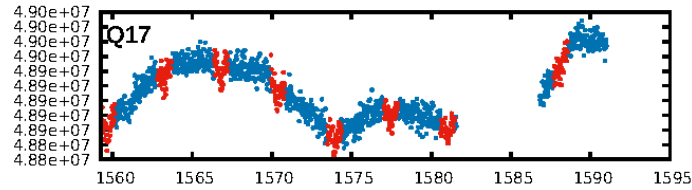
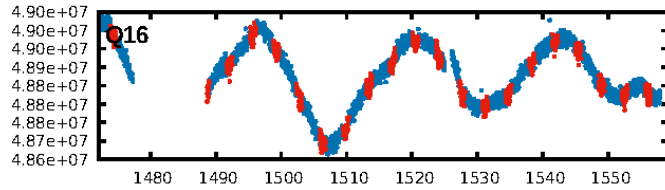
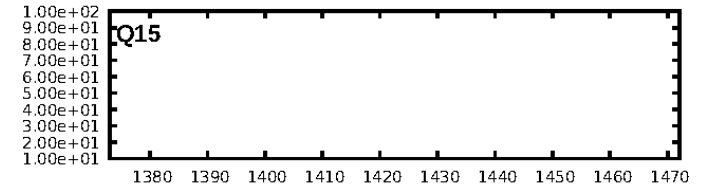
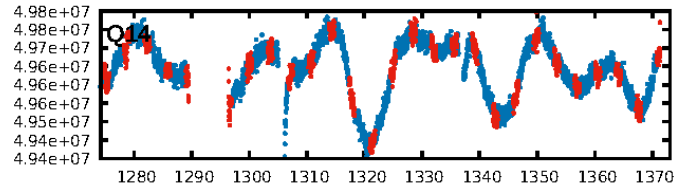
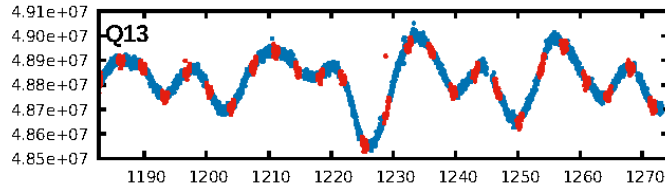
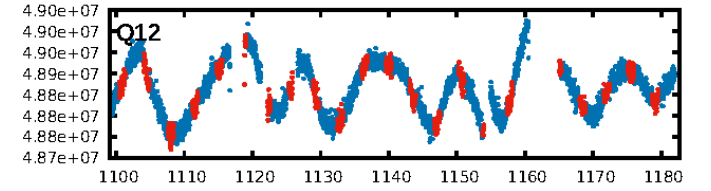
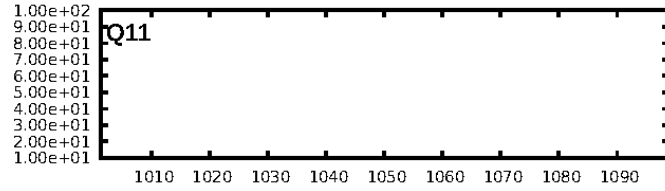
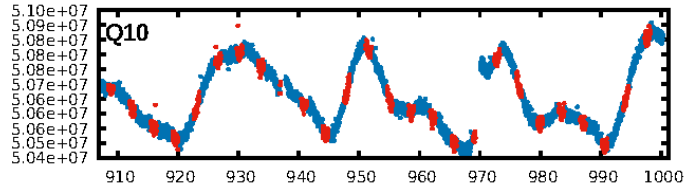
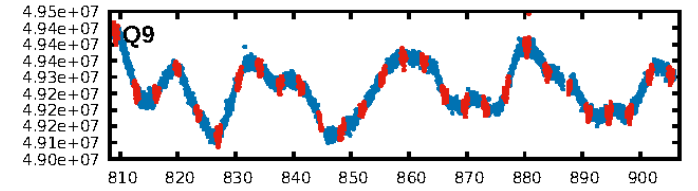
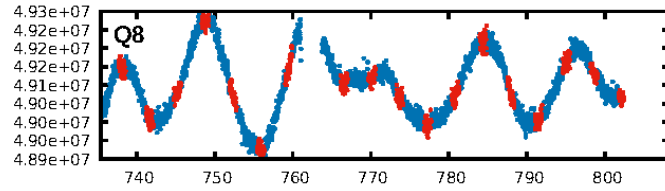
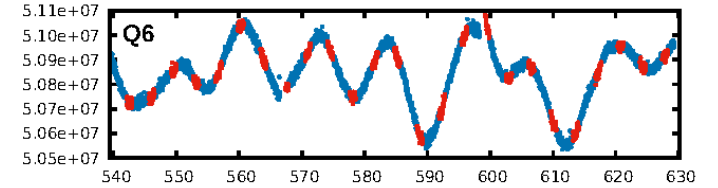
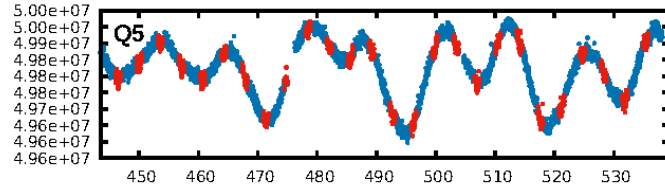
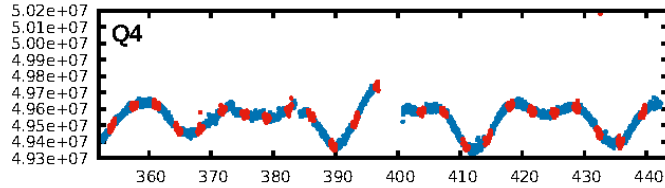
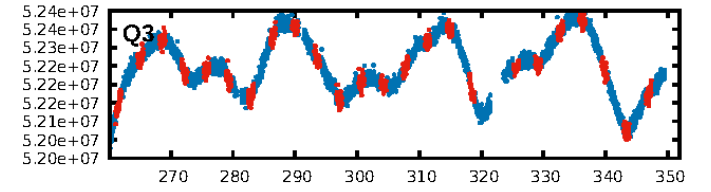
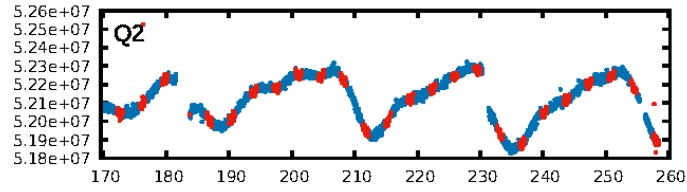
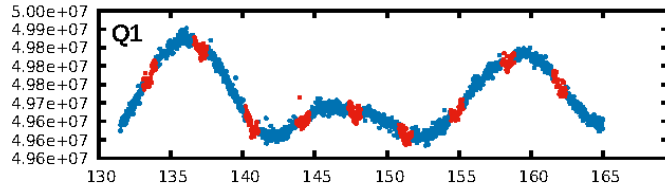
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [338.29σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.82e-140
RollingBand-fgt: 1.00 [288/288]
GhostDiagnostic-chr: -0.0493
Centroid-sig: 0.0%
Centroid-so: 1.979 arcsec [7.17σ]
OotOffset-rm: 4.277 arcsec [10.85σ]
KicOffset-rm: 4.286 arcsec [11.04σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 0.00 [0/14]
DiffImageOverlap-fno: 1.00 [14/14]

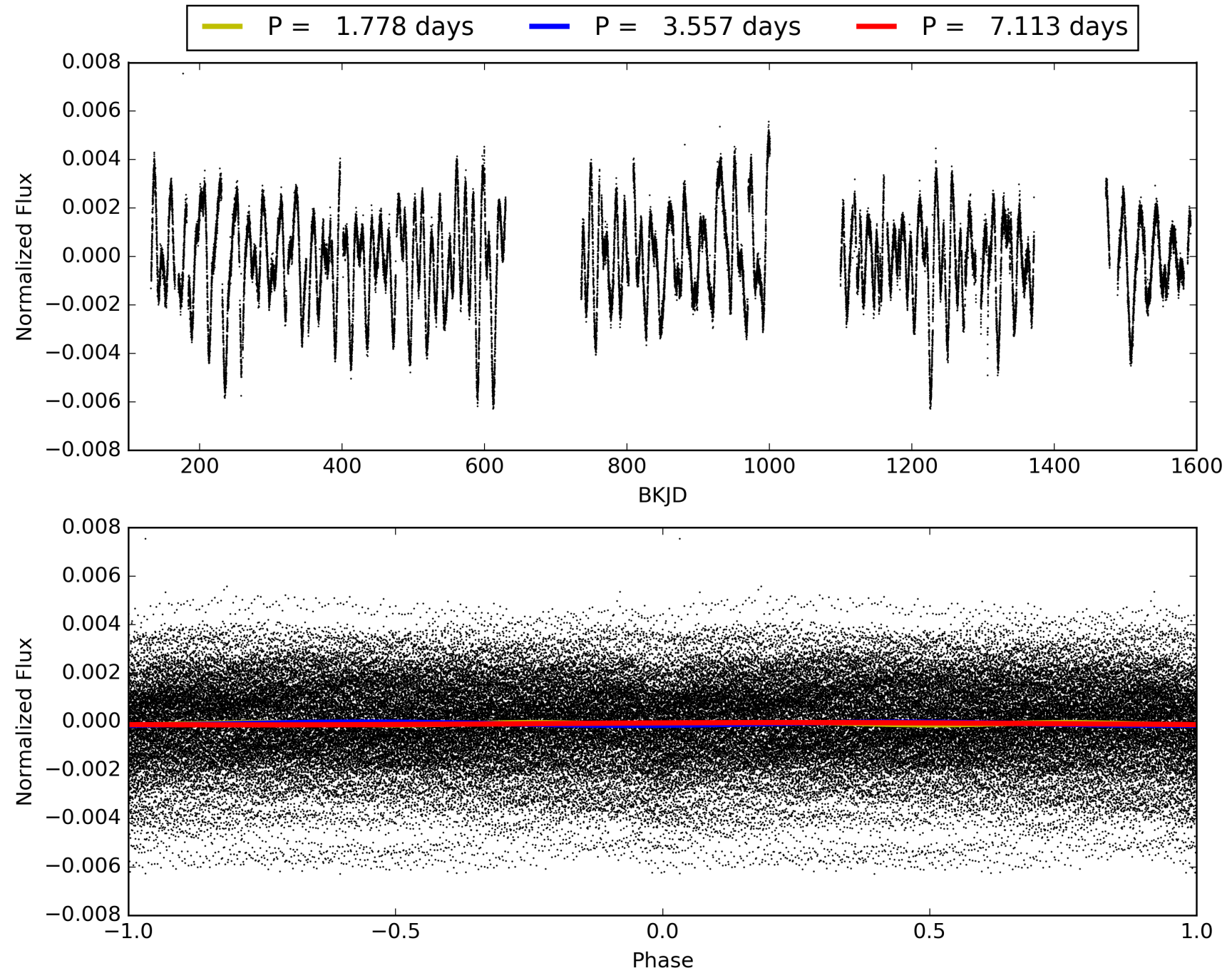
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009602514-01, PDC Light Curves

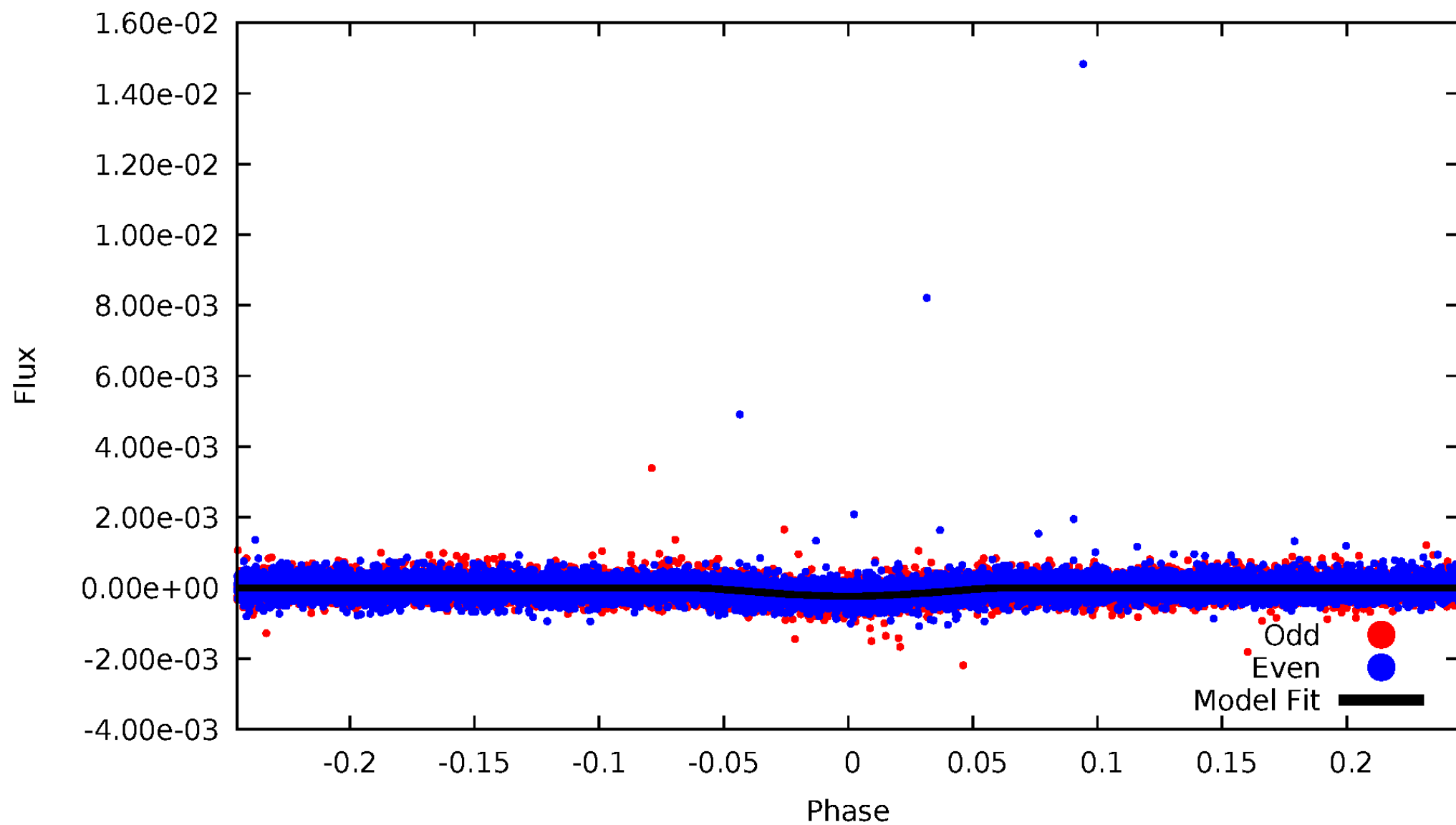


TCE 009602514-01



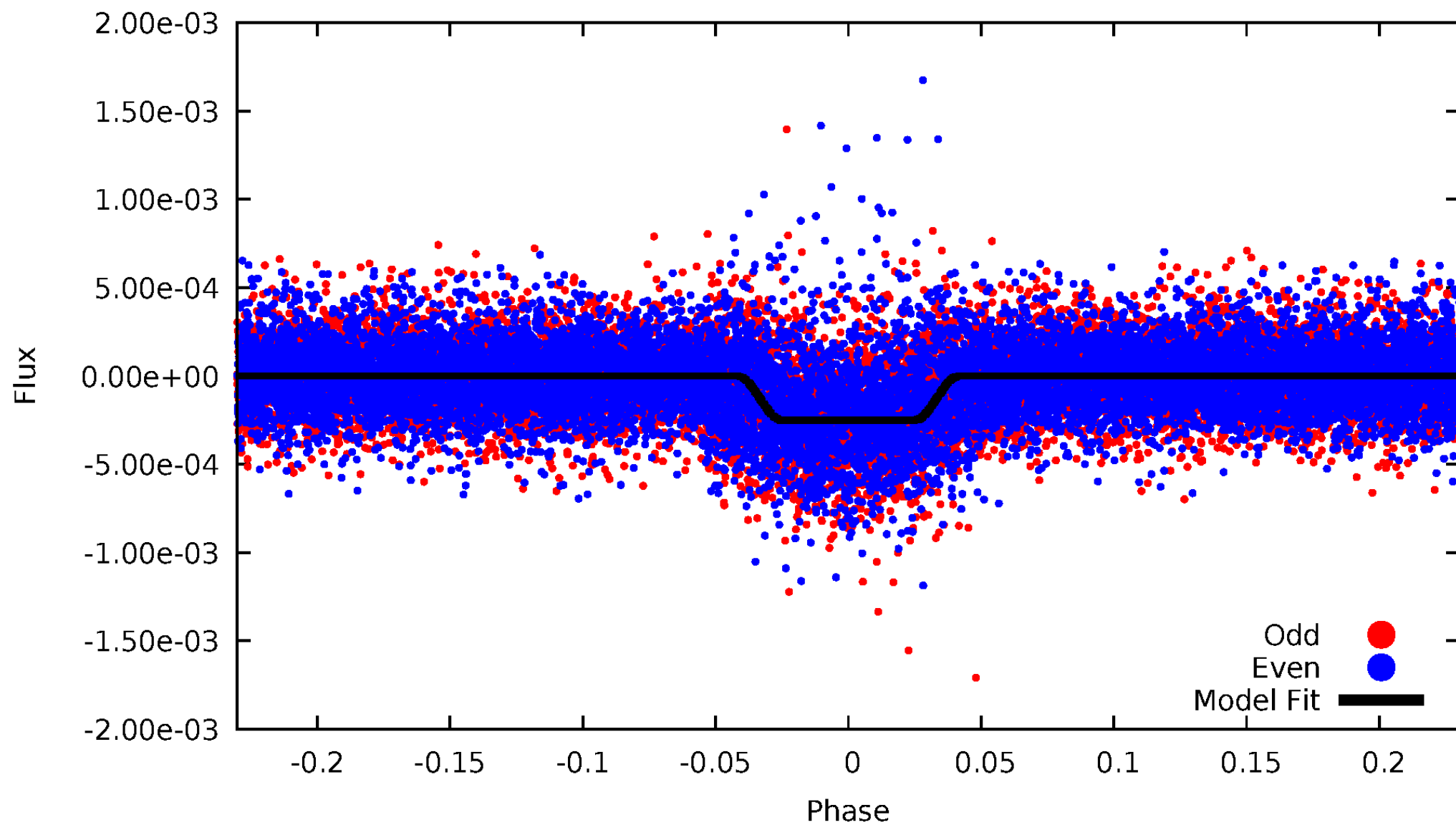
DV Odd/Even

TCE 009602514-01

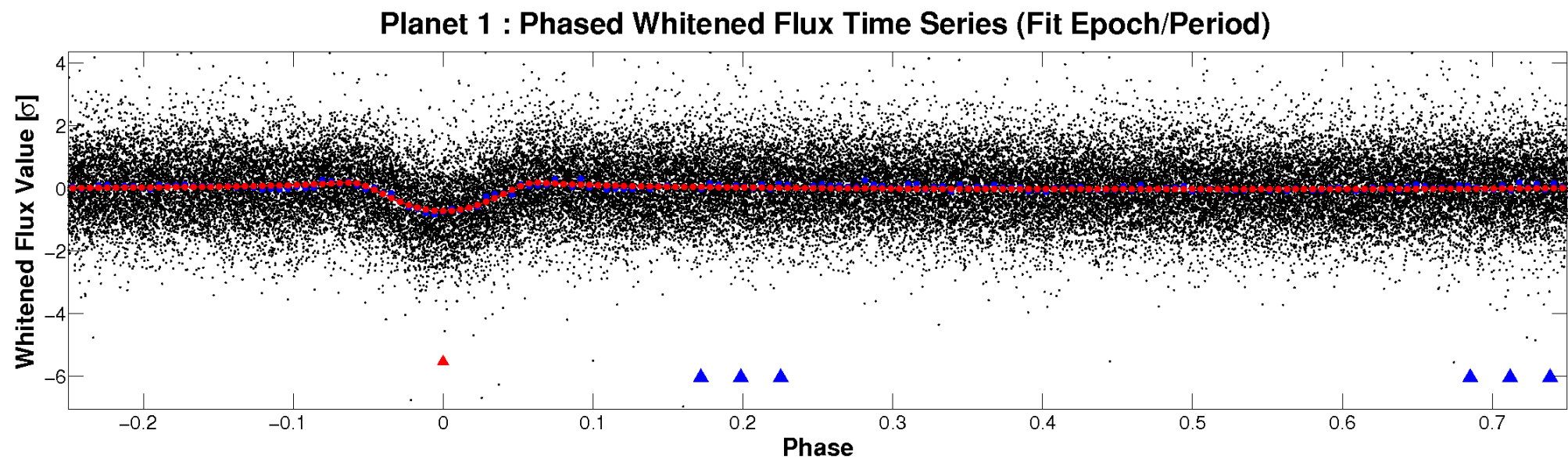
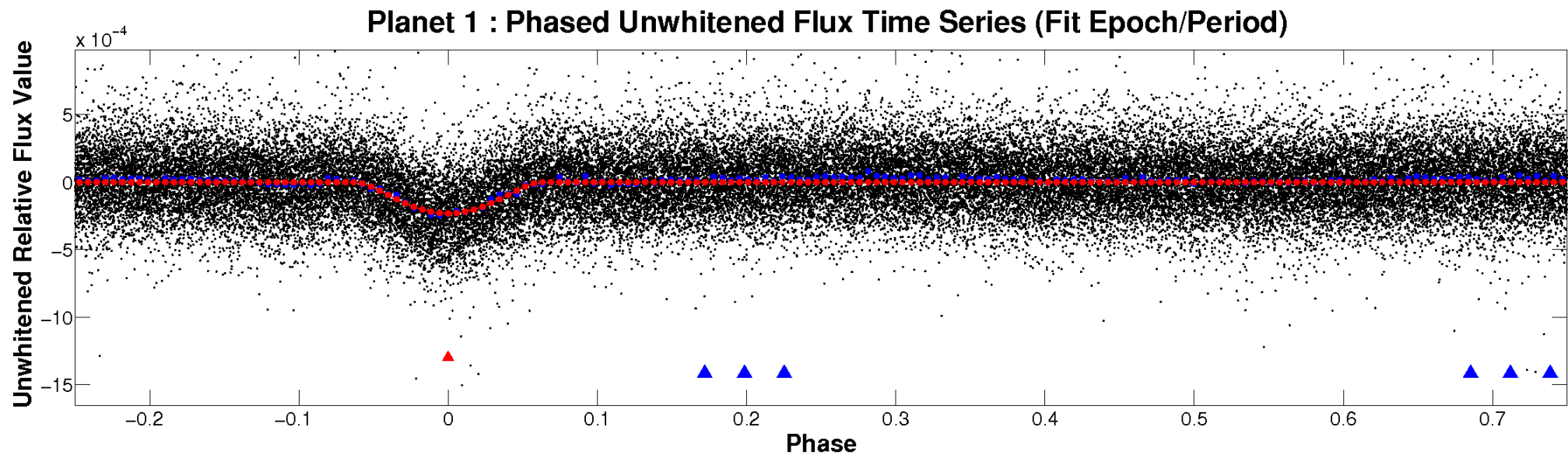


ALT Odd/Even

TCE 009602514-01

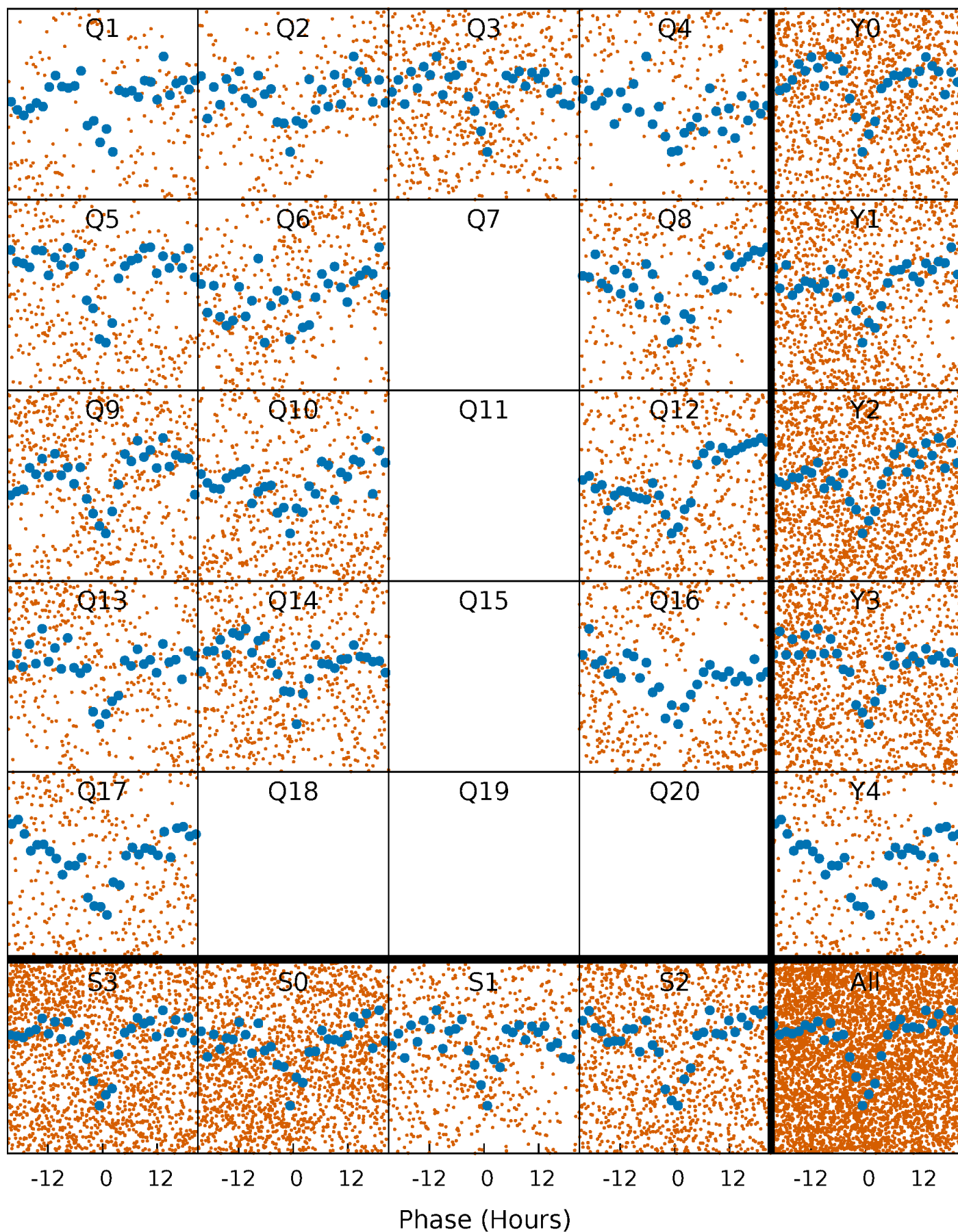


Non-Whitened Vs. Whitened Light Curve



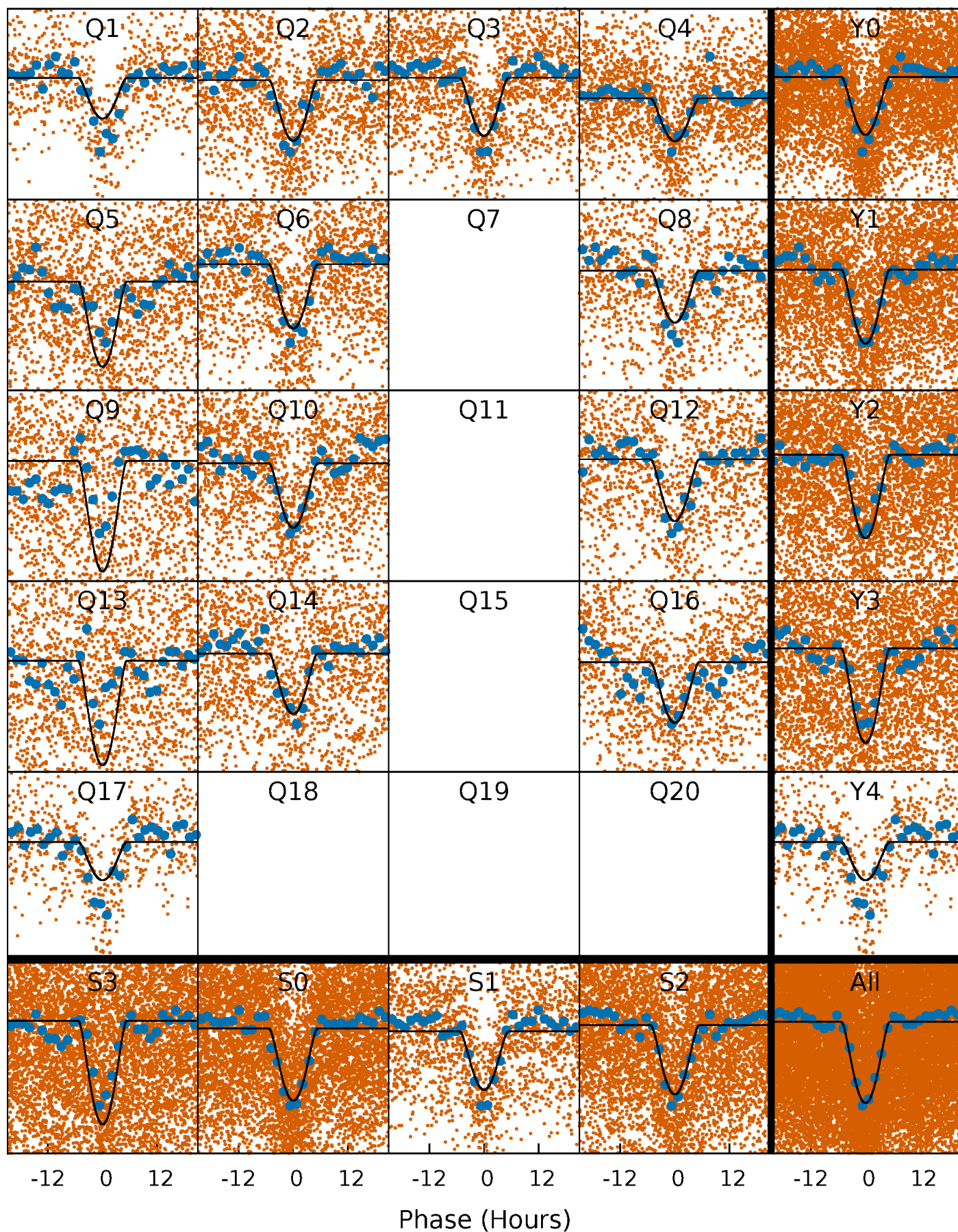
PDC Quarter-Phased Transit Curves

TCE 009602514-01 P= 3.556548 Days $T_0=133.513273$ (BKJD)



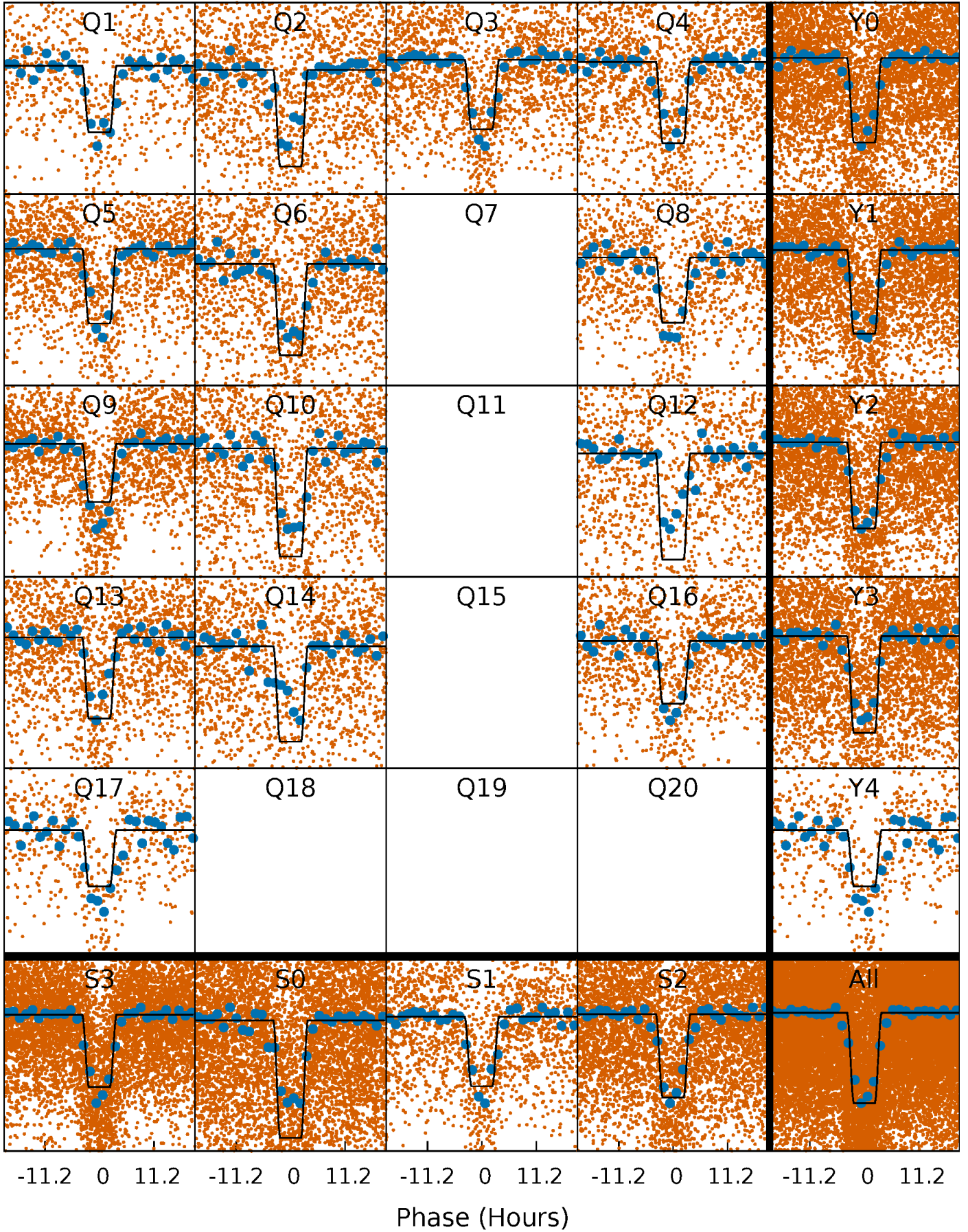
DV Quarter-Phased Transit Curves

TCE 009602514-01 P= 3.556548 Days $T_0=133.513273$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

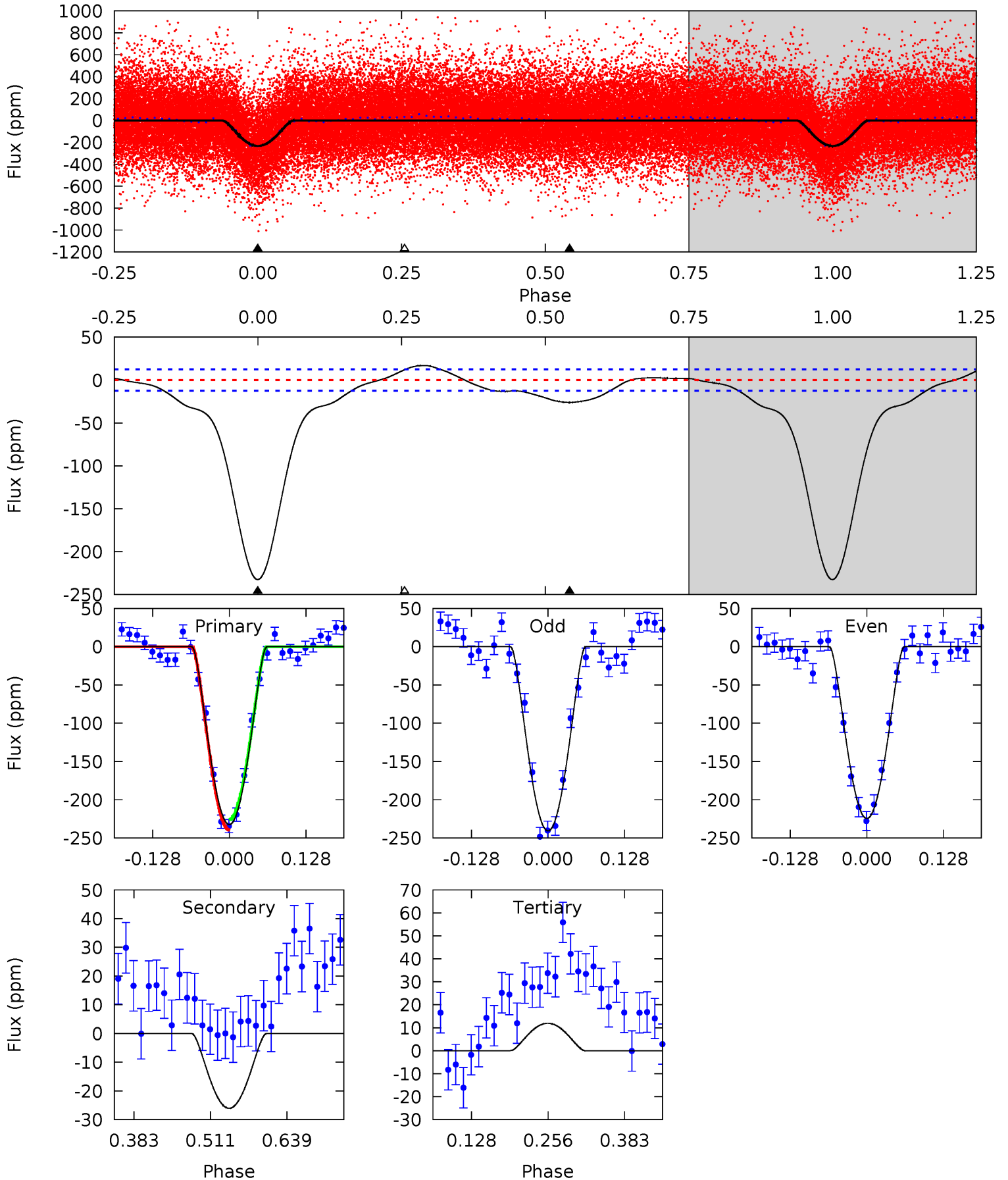
TCE 009602514-01 P= 3.556506 Days $T_0=133.517746$ (BKJD)



DV Model-Shift Uniqueness Test

009602514-01, P = 3.556548 Days, E = 129.956725 Days

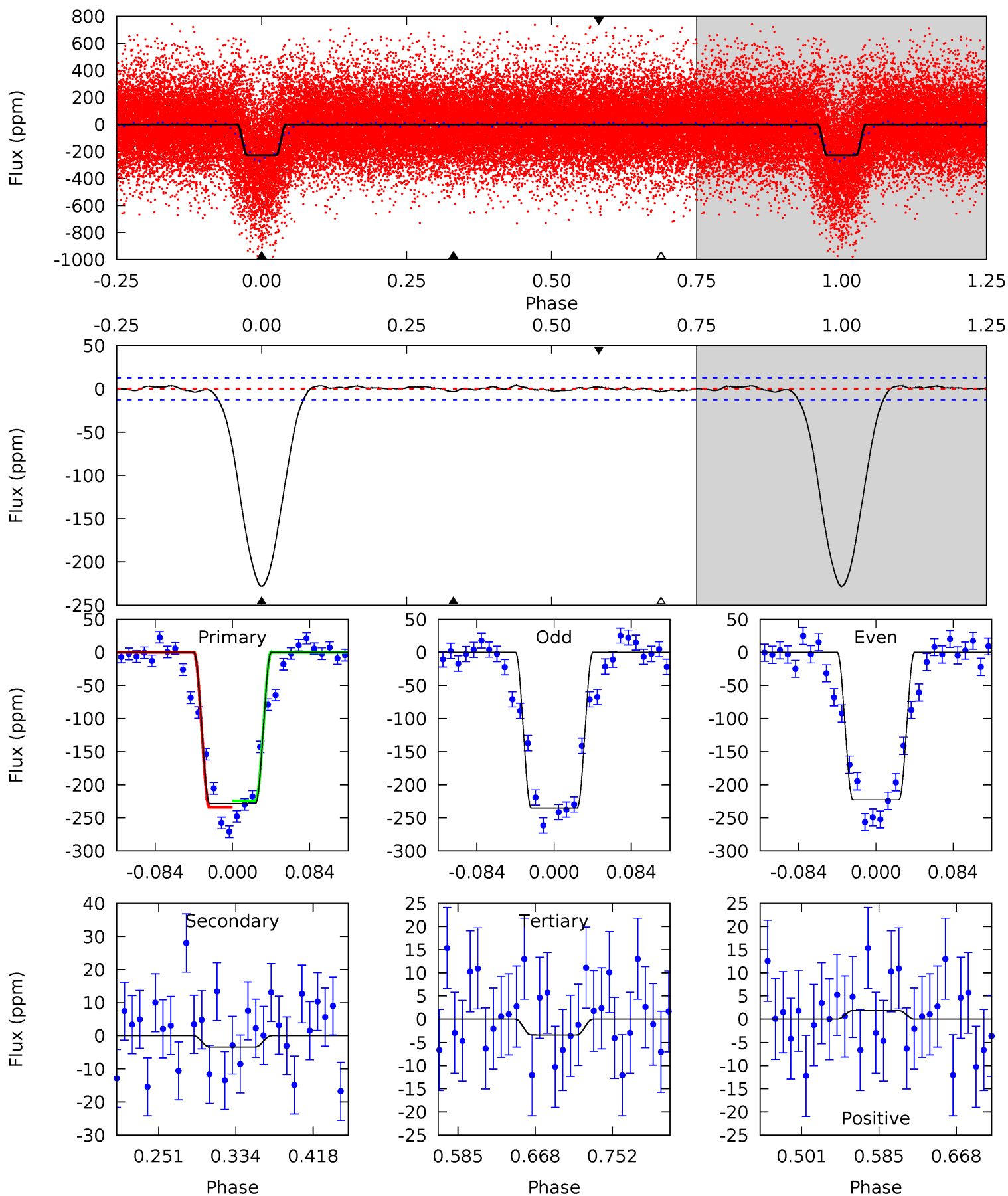
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
84.6	9.49	-4.34	0	4.51	1.52	3.92	89.0	84.6	13.8	9.49	2.96	1.08	0.07	2.45



Alt Model-Shift Uniqueness Test

009602514-01, P = 3.556506 Days, E = 129.961240 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
80.7	1.19	1.19	0.65	4.60	1.73	0.63	79.5	80.0	0.00	0.54	2.19	0.96	0.02	1.69



Stellar Parameters For KIC 009602514

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4951^{+148}_{-133}	$3.876^{+0.682}_{-0.367}$	$0.100^{+0.250}_{-0.300}$	$1.843^{+1.094}_{-1.094}$	$0.931^{+0.210}_{-0.153}$	$0.209^{+2.275}_{-0.157}$
	+3%/-3%	+18%/-9%	+250%/-300%	+59%/-59%	+23%/-16%	+1086%/-75%
Source	PHO1	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 009602514-01 / KOI 1490.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-26 ± 3	$6.15^{+5.66}_{-3.67}$	1970^{+333}_{-325}	2514^{+958}_{-4721}	$0.772^{+3.918}_{-0.572}$
Alt.	-3 ± 3	$4.40^{+4.26}_{-3.03}$	1943^{+324}_{-322}	-2164^{+5065}_{-377}	$0.171^{+1.465}_{-0.158}$

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

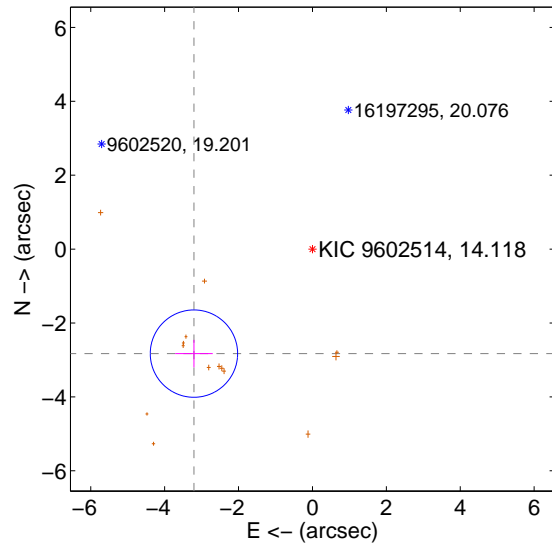
Supplemental centroid analysis for 009602514-01. Kepler magnitude: 14.12. Transit SNR 37.06

There are 0 quarters with good PRF difference image offsets

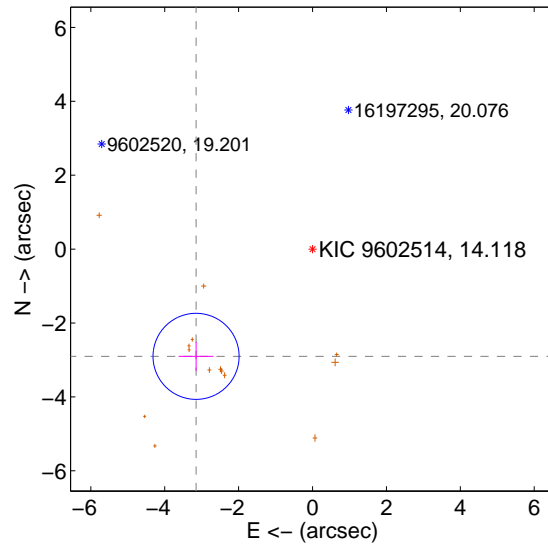
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.277 ± 0.394	10.85	3.208 ± 0.509	-2.829 ± 0.373
PRF-fit source offset from KIC position	4.286 ± 0.388	11.04	3.153 ± 0.472	-2.903 ± 0.390
photometric centroid source offset	1.98 ± 0.28	7.17	0.88 ± 0.25	-1.77 ± 0.28

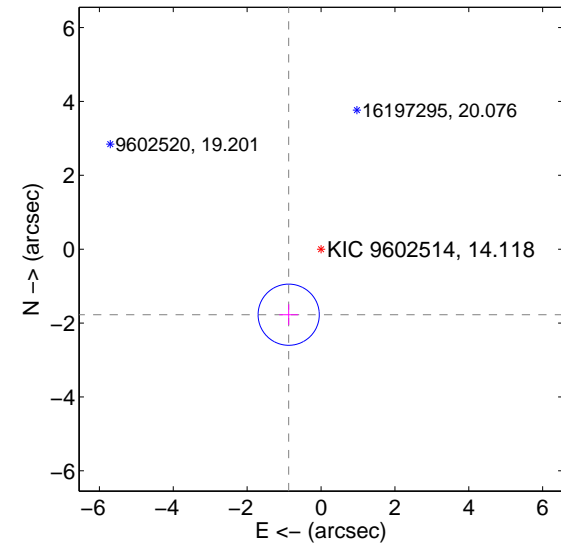
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

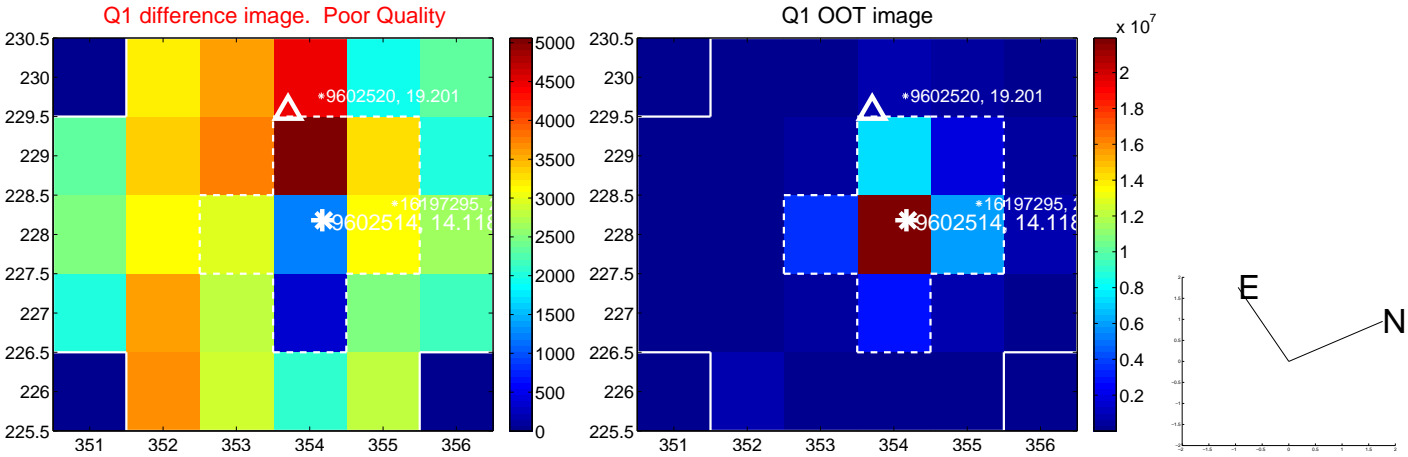


offset from photometric centroids

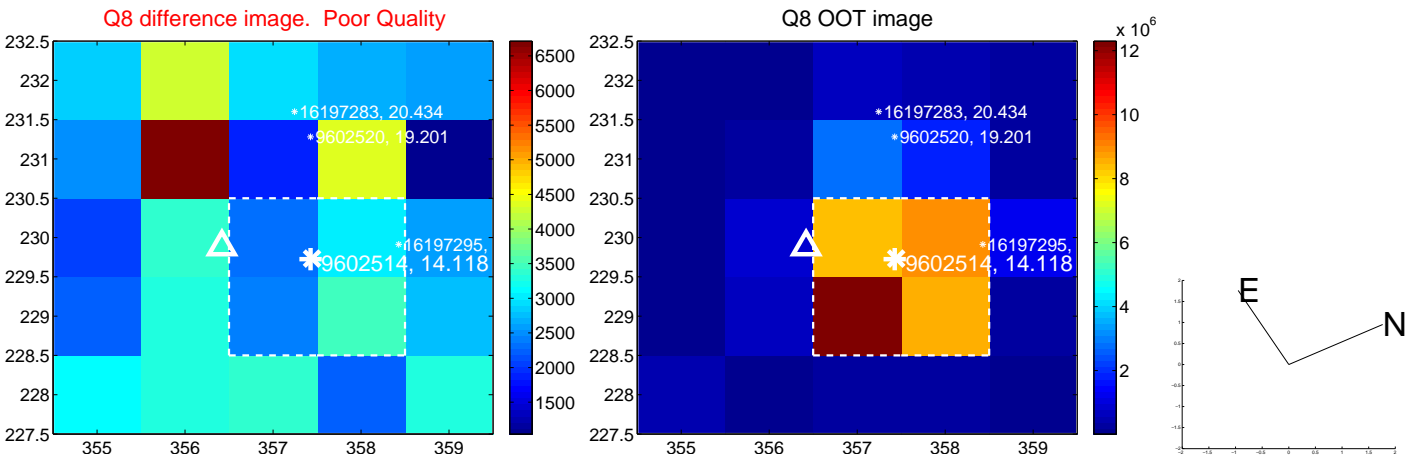
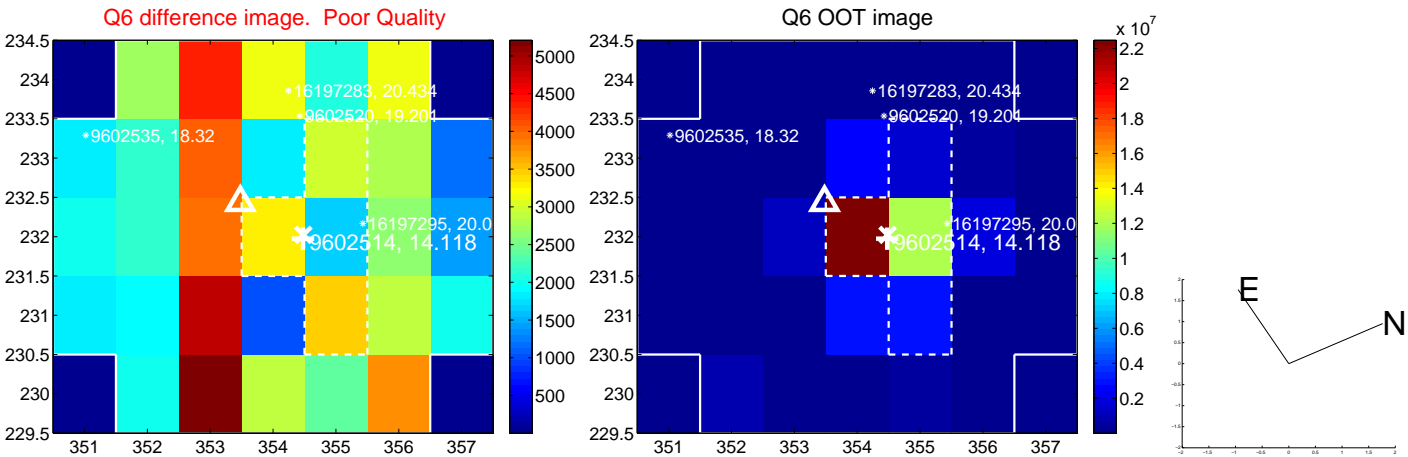
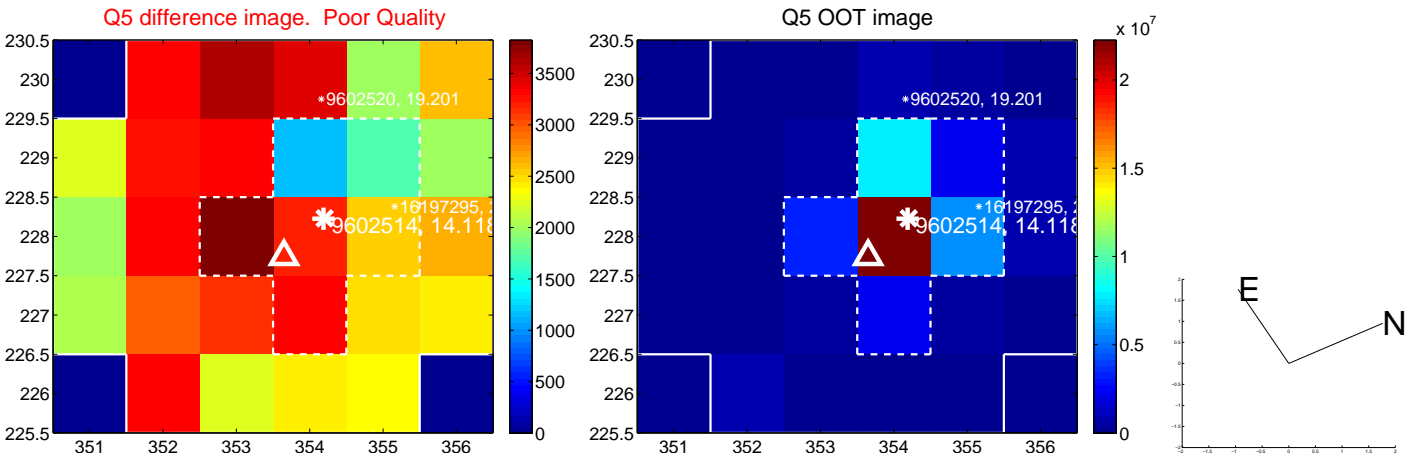


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . 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.

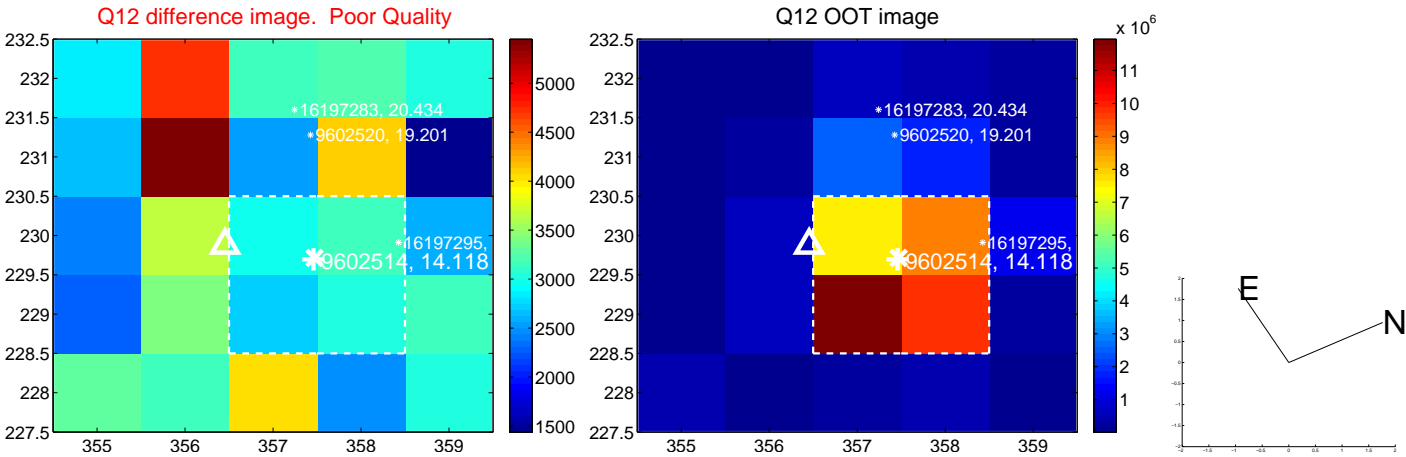
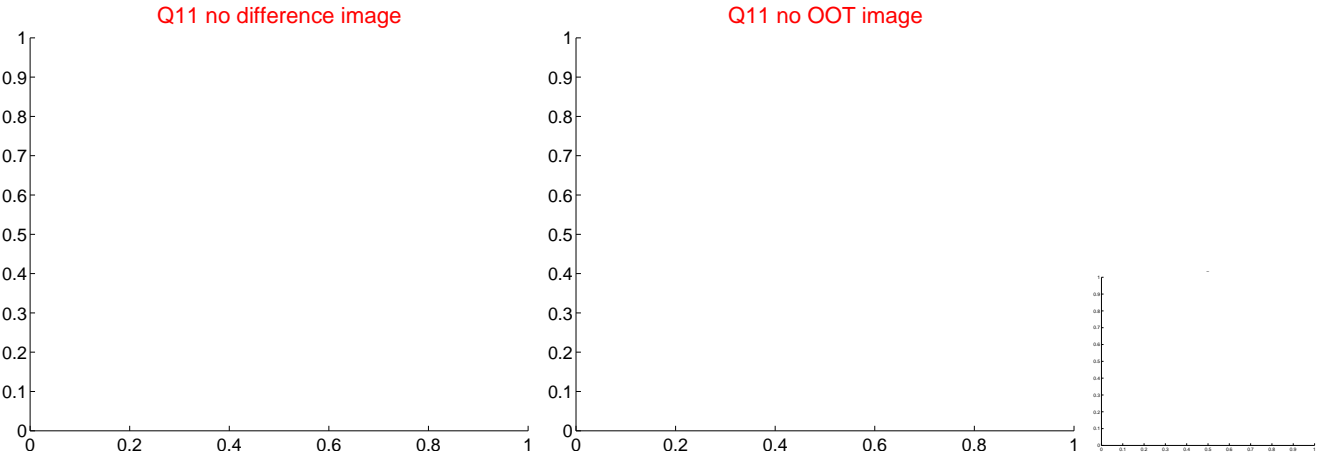
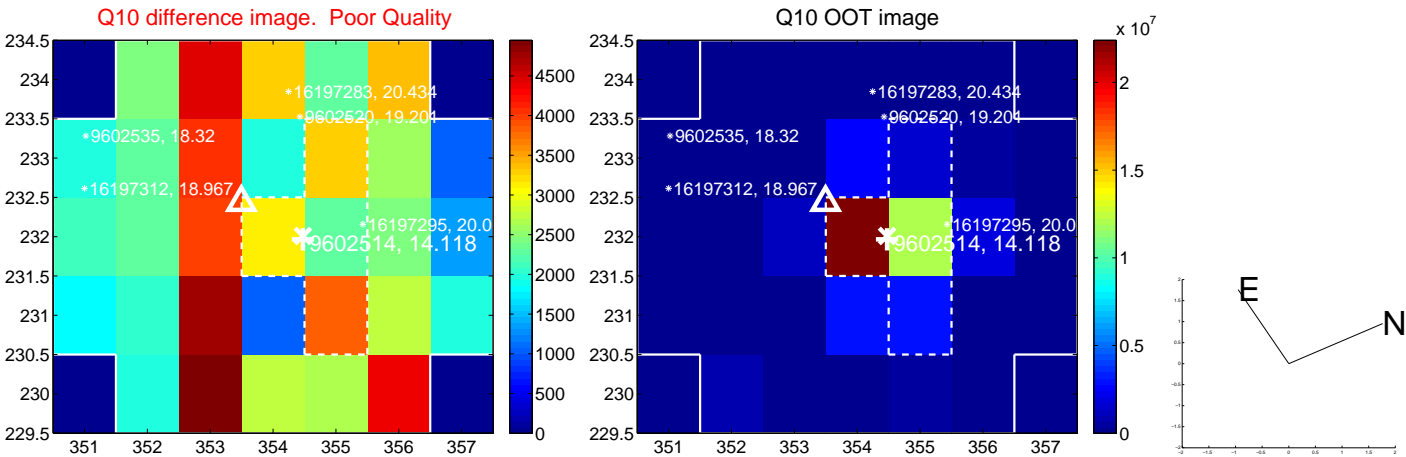
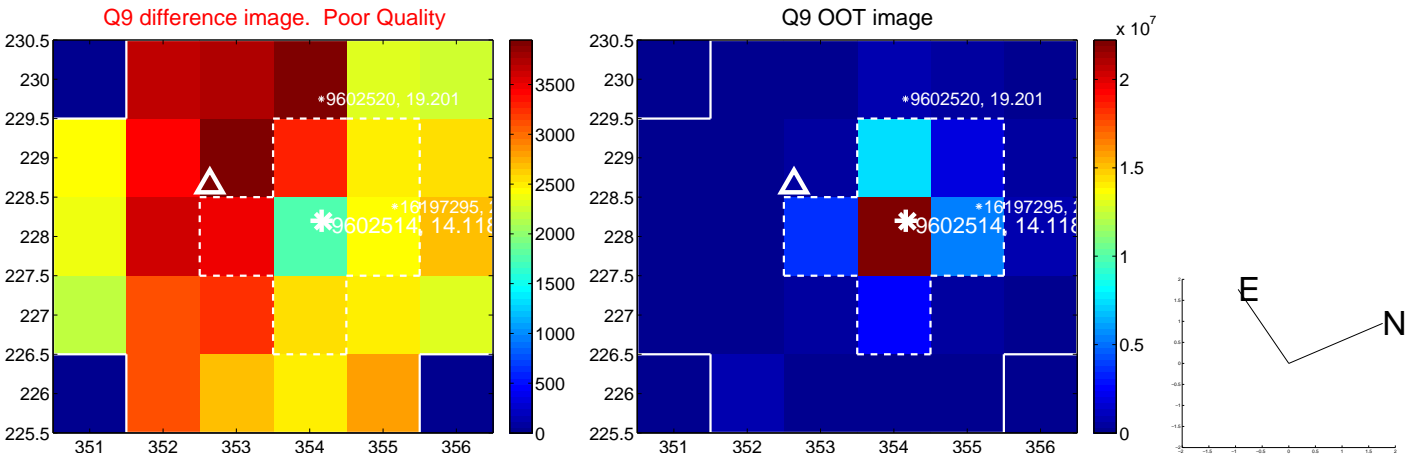
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



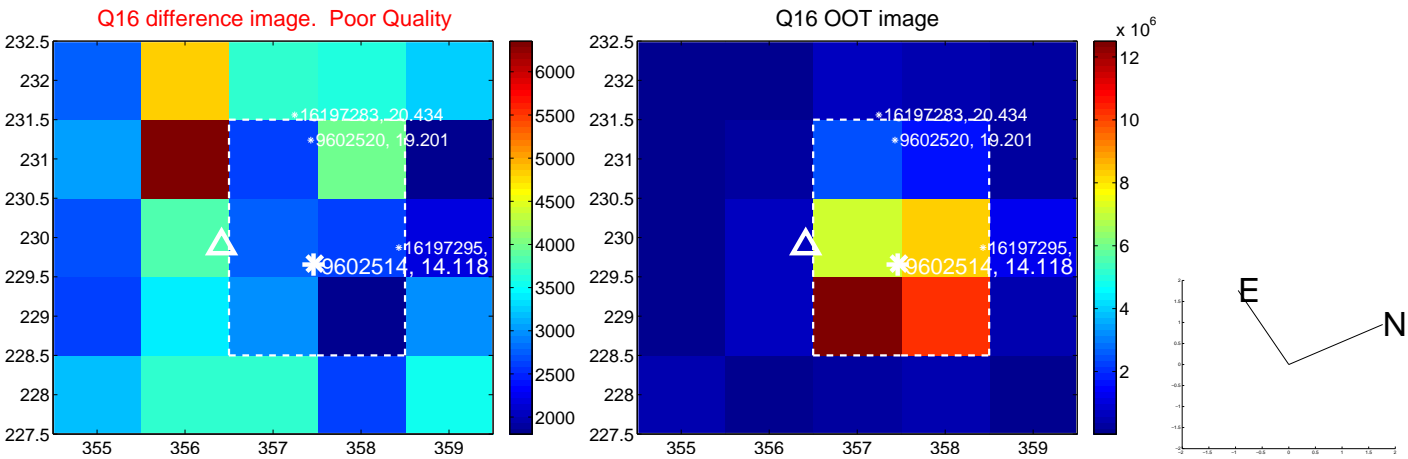
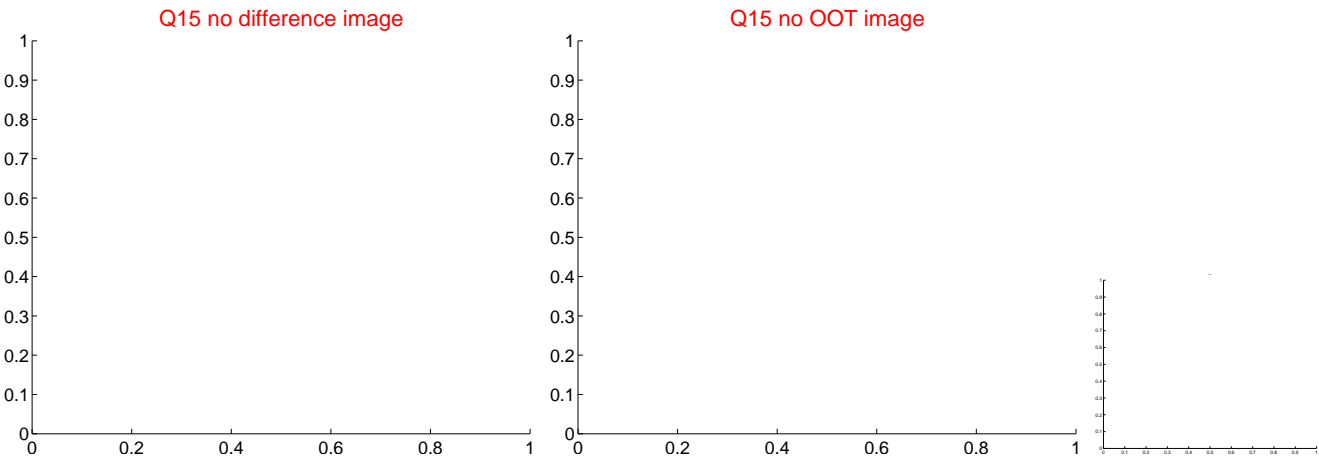
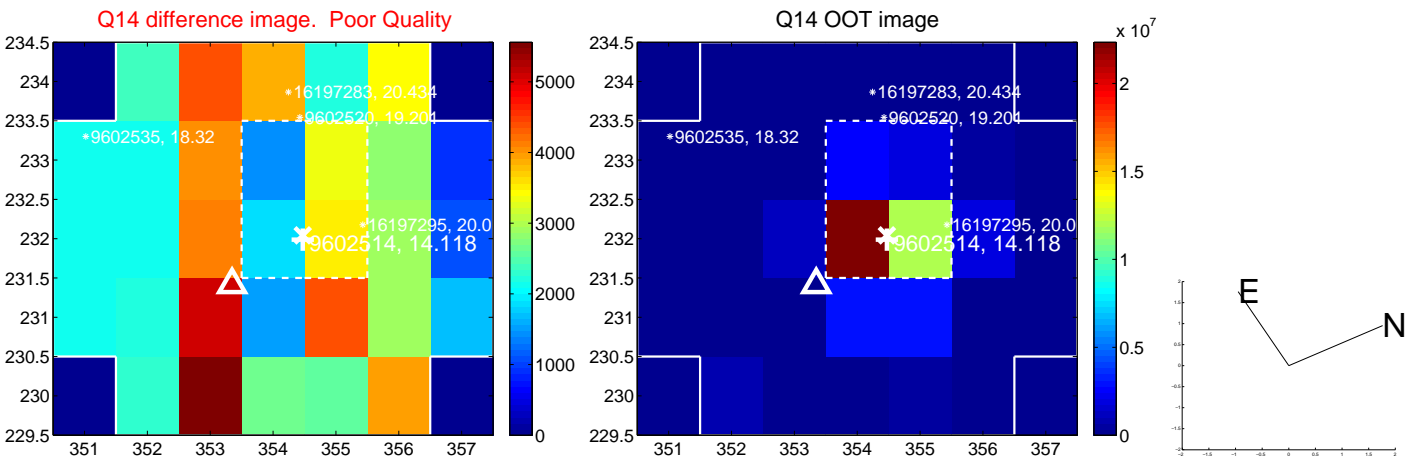
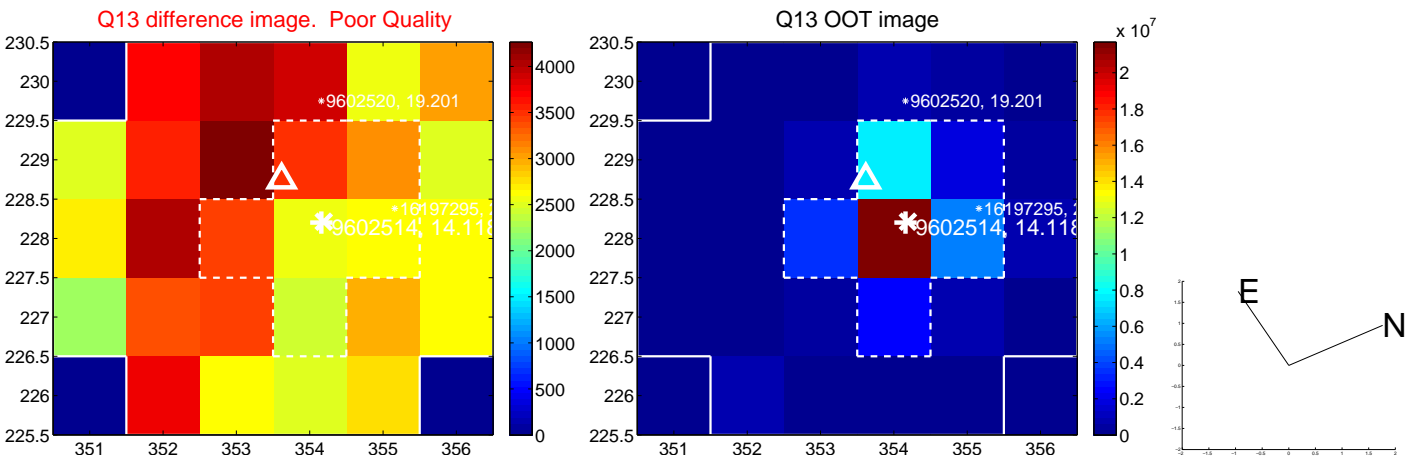
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



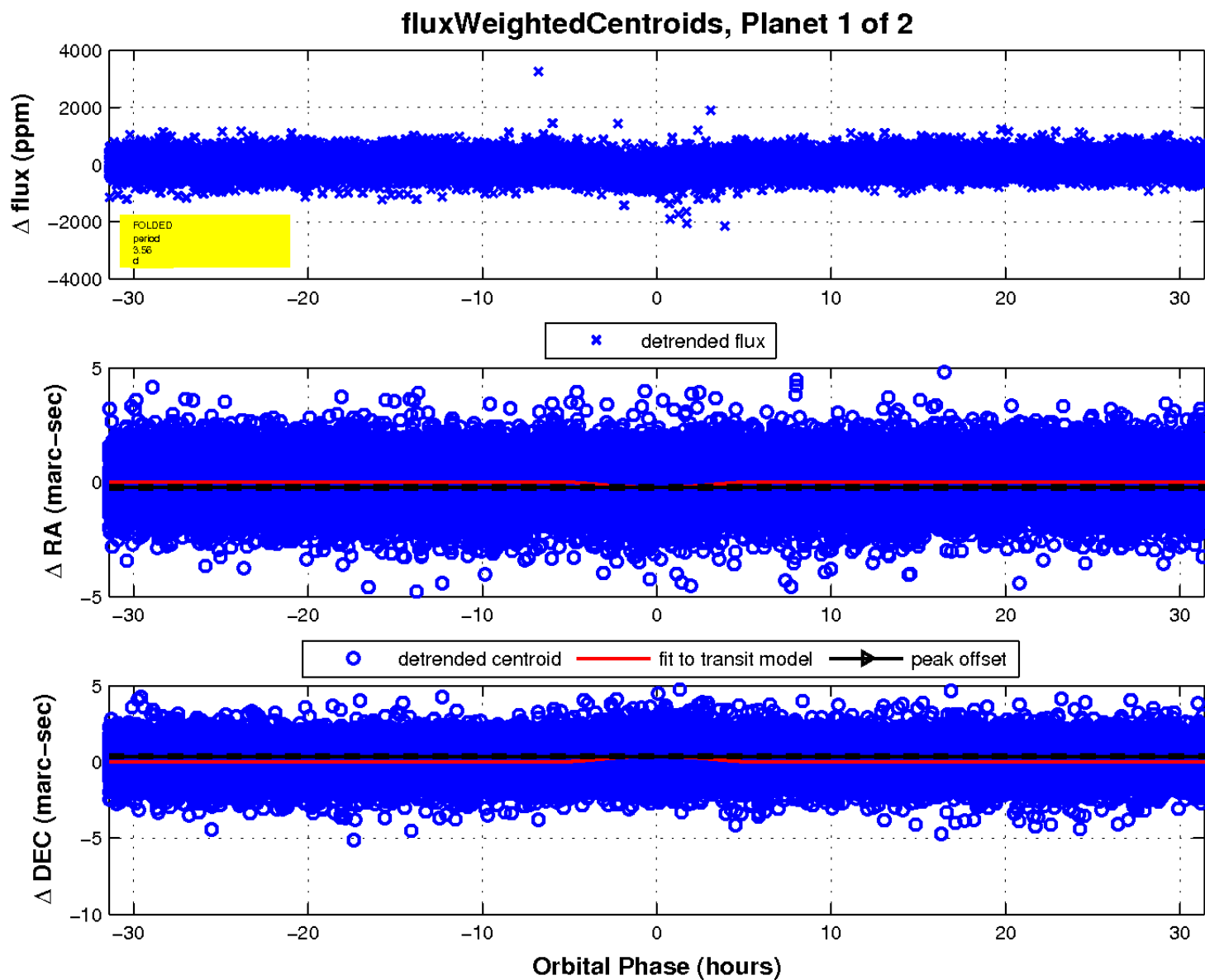
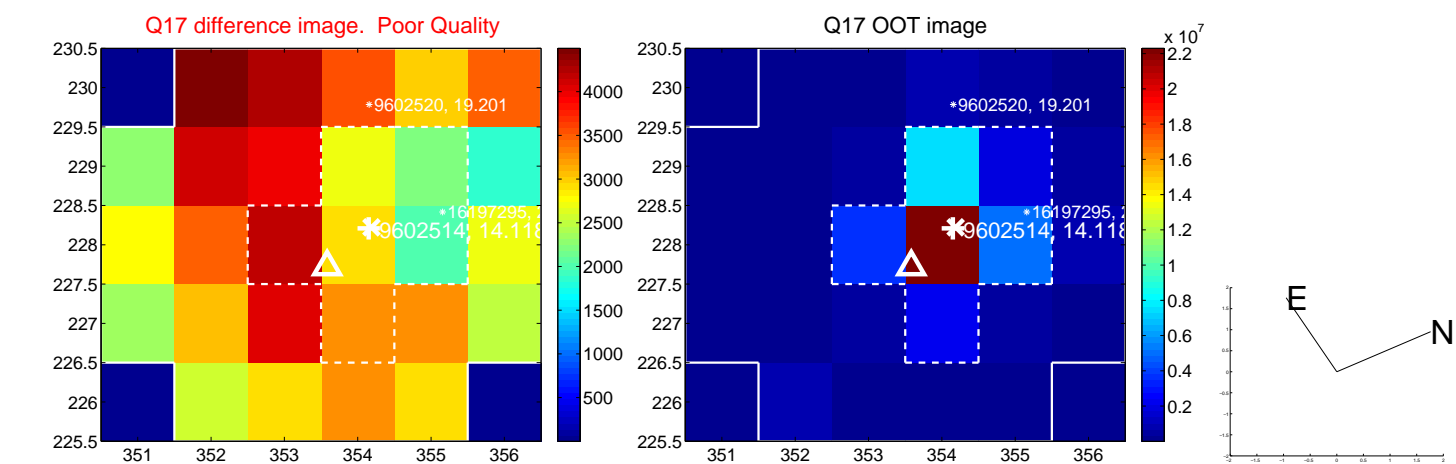
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

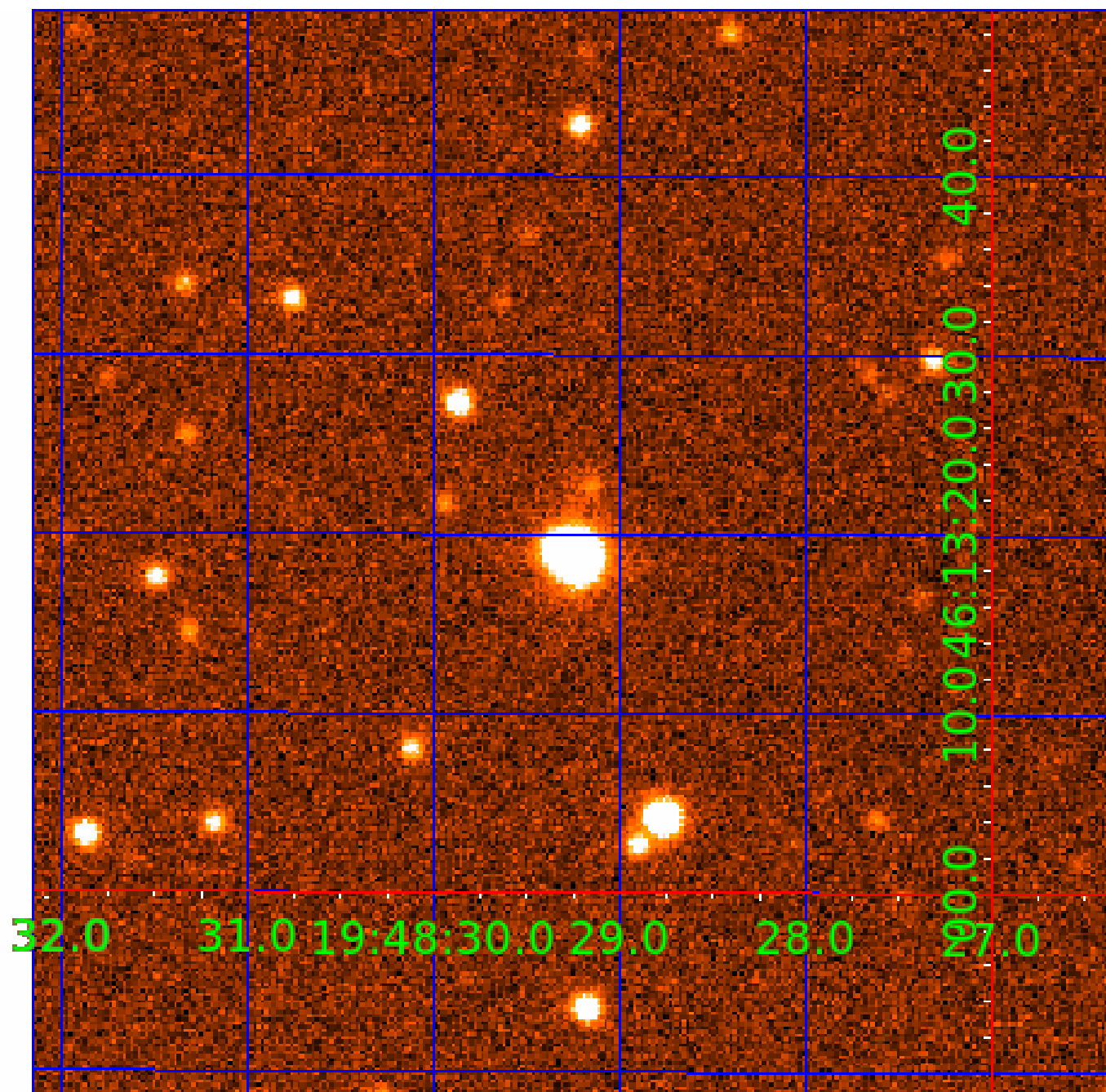


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009602514

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})
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009602514-02	OBS	No	261.358855	274.845606	533.5	15.000	11.4	-1.0	1.84	4951	4.11	3.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009602514-01	OBS	FP	0.00	0	0	1	1	CENT_UNRESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
009602514-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_NOFITS

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 009602514-02

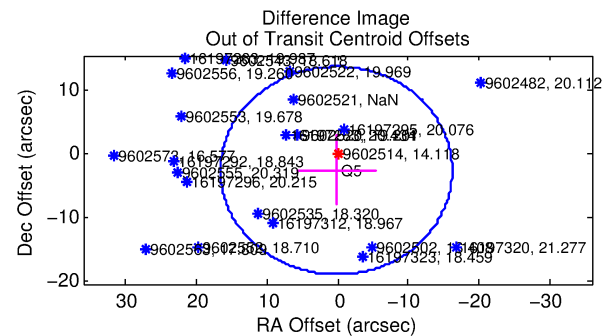
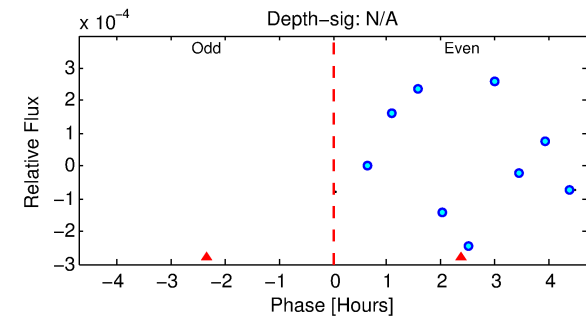
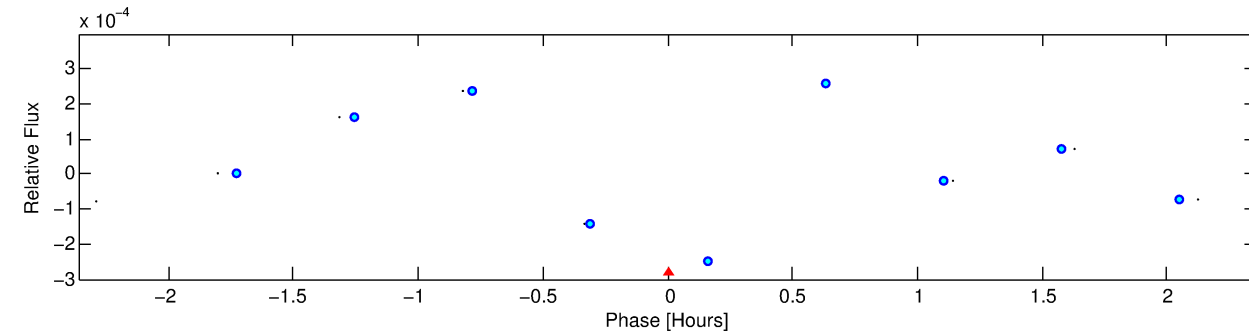
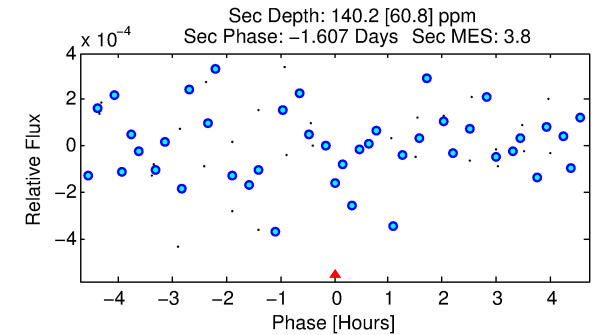
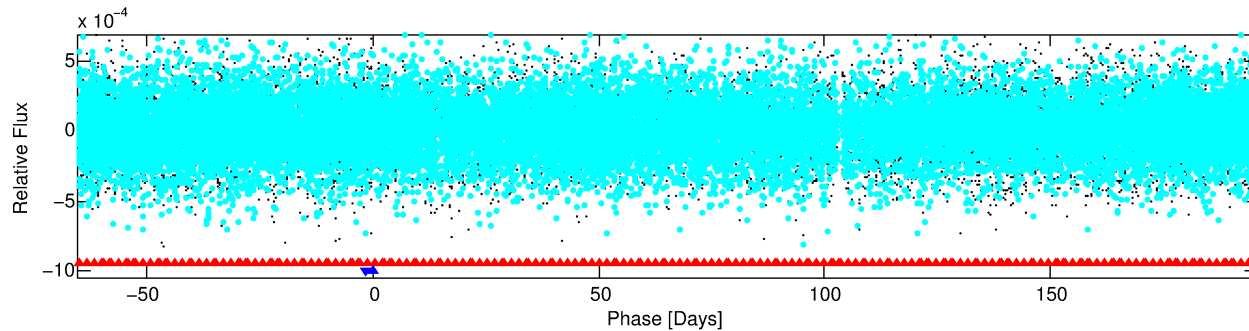
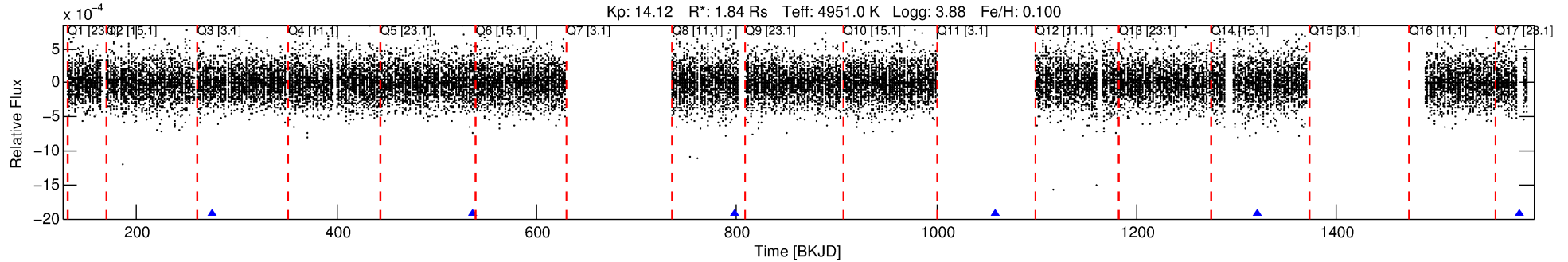
No Significant Match Found

DV One-Page Summary

KIC: 9602514 Candidate: 2 of 2 Period: 261.359 d

KOI: K01490 Corr: No Ephemeris Match

Kp: 14.12 R*: 1.84 Rs Teff: 4951.0 K Logg: 3.88 Fe/H: 0.100



TPS TCE Results:

Period = 261.35885 d
Epoch = 274.8456 BKJD

DV fit results are unavailable

DV Diagnostic Results:

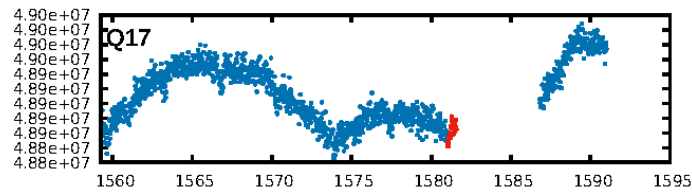
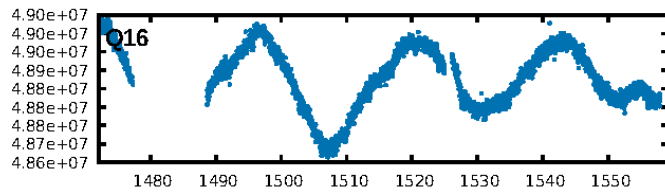
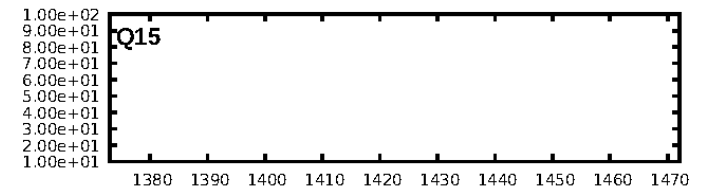
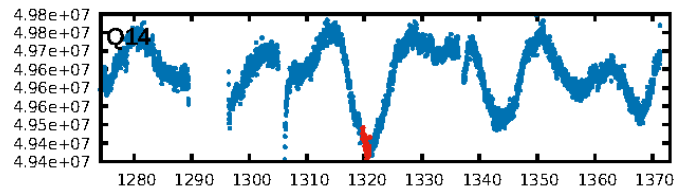
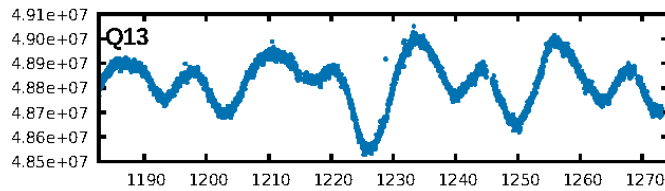
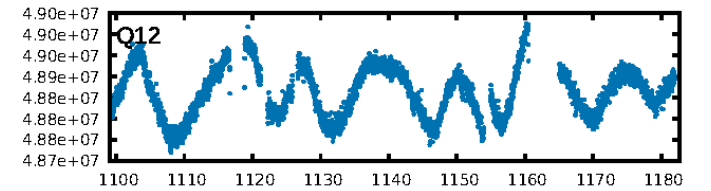
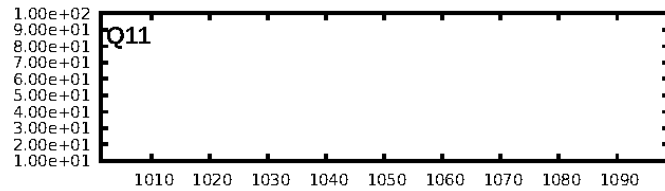
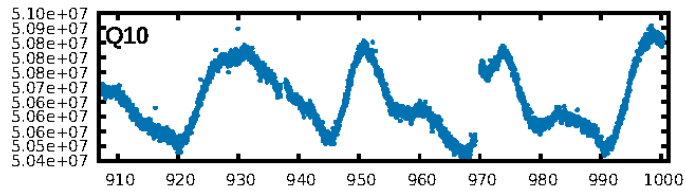
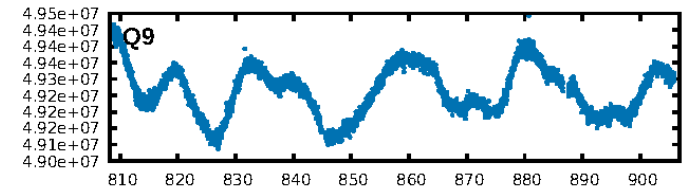
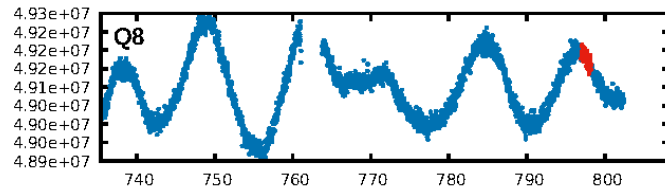
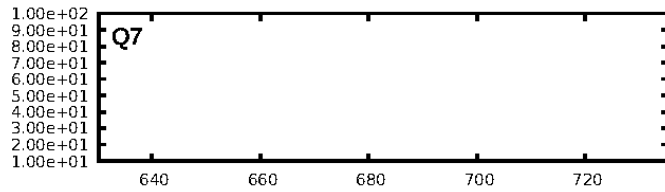
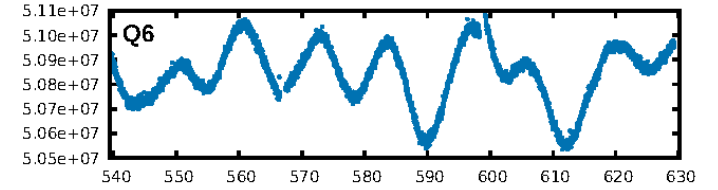
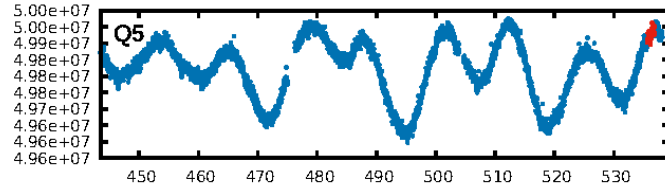
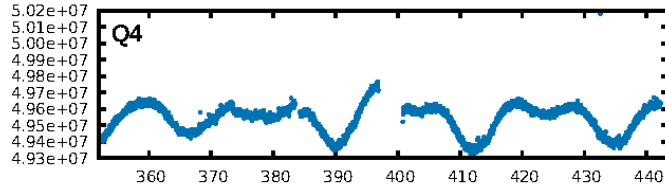
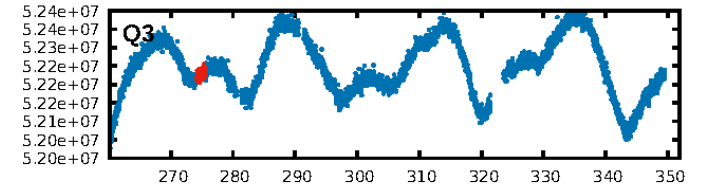
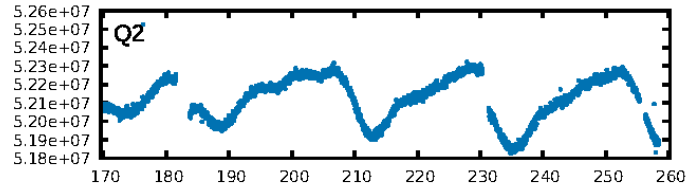
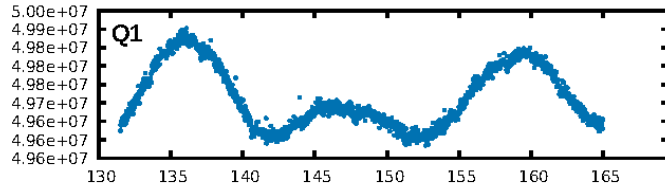
ShortPeriod-sig: 100.0% [338.29σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 9.02e-18
RollingBand-fgt: 1.00 [1/1]
GhostDiagnostic-chr: 2.062

Centroid-sig: 1.0%
Centroid-so: 6.468 arcsec [1.33σ]
OotOffset-rm: 2.629 arcsec [0.48σ]
KicOffset-rm: 2.634 arcsec [0.48σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/0/0/1 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 0.50 [1/2]

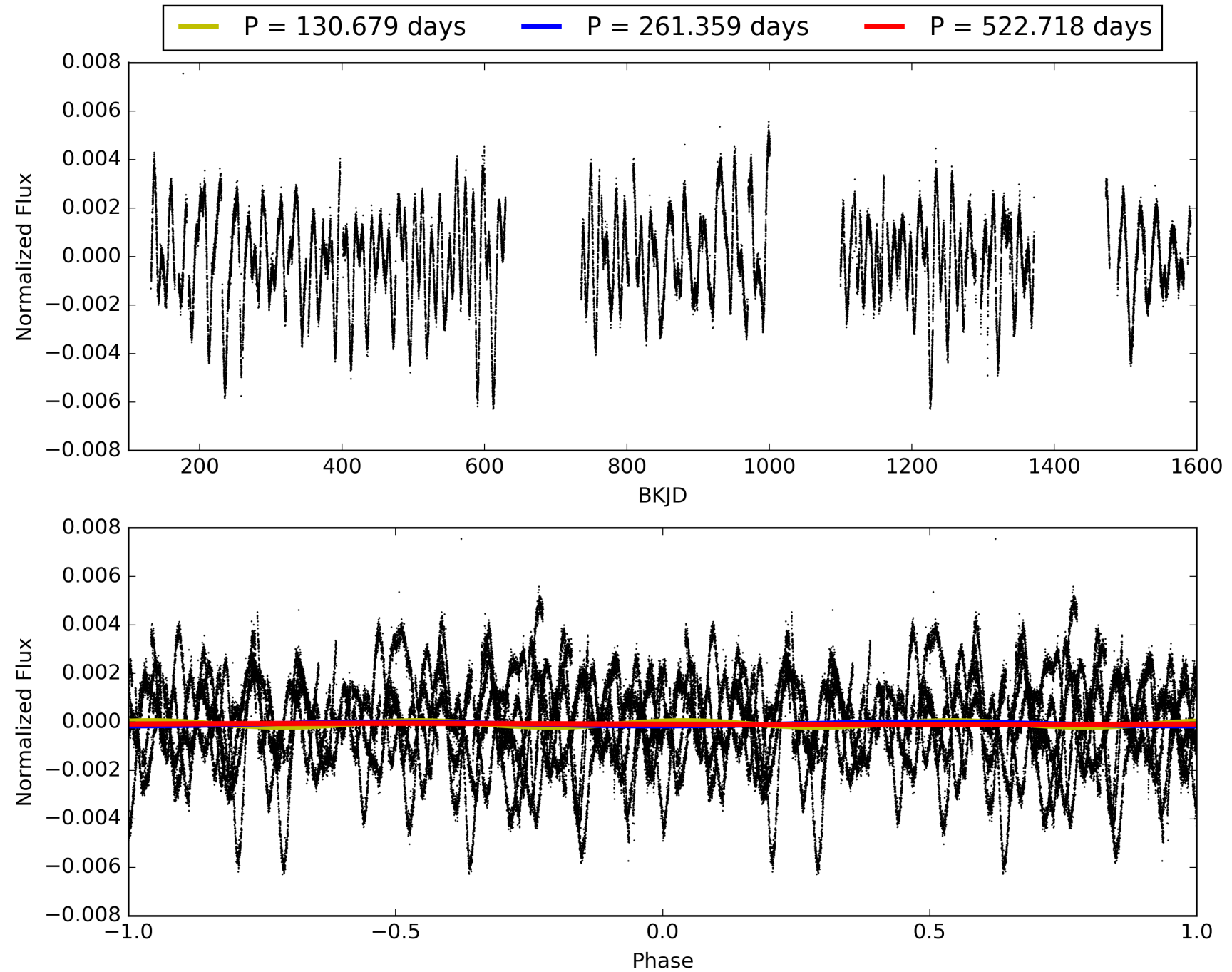
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 16:42:07 Z

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

TCE 009602514-02, PDC Light Curves

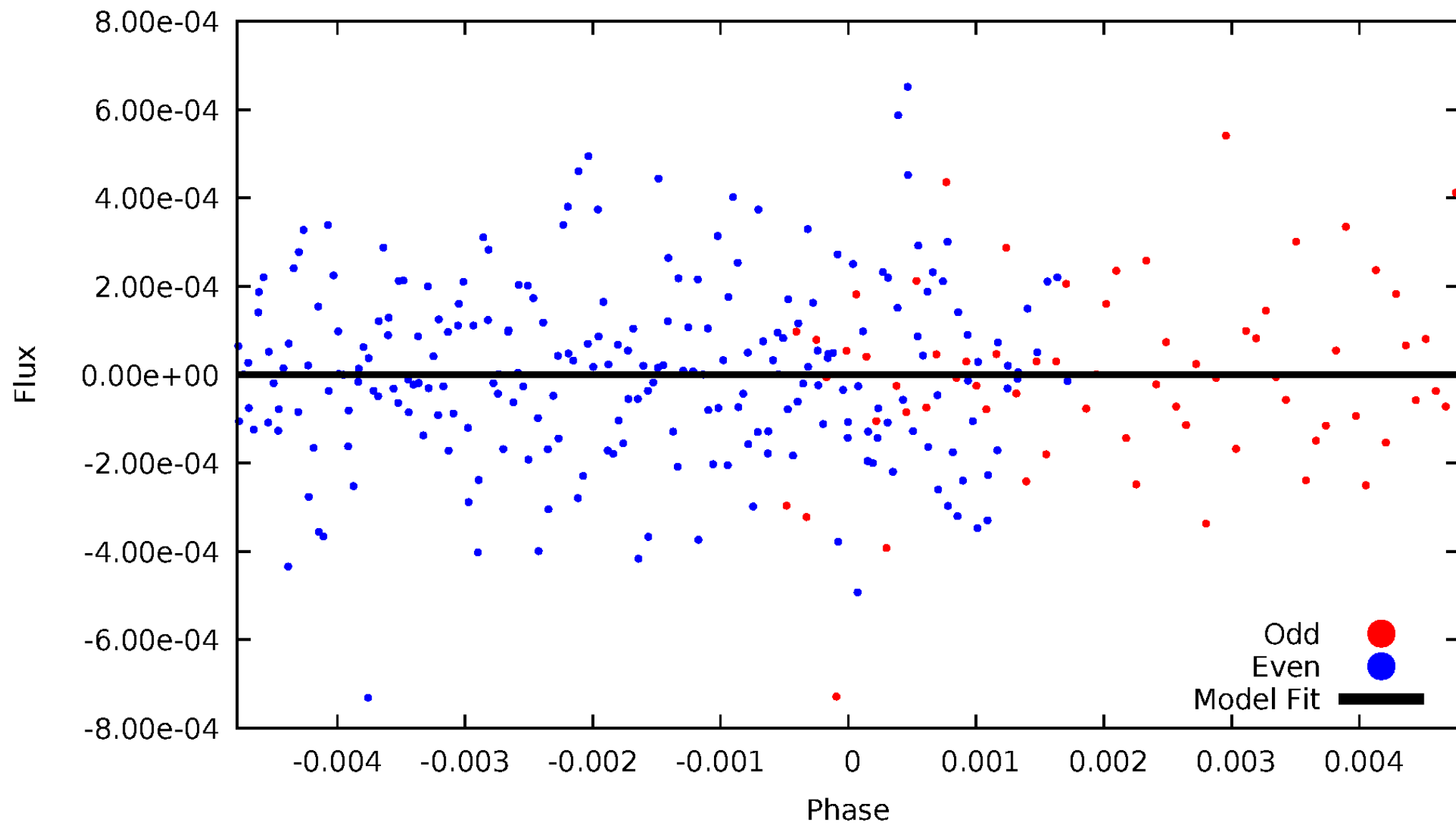


TCE 009602514-02



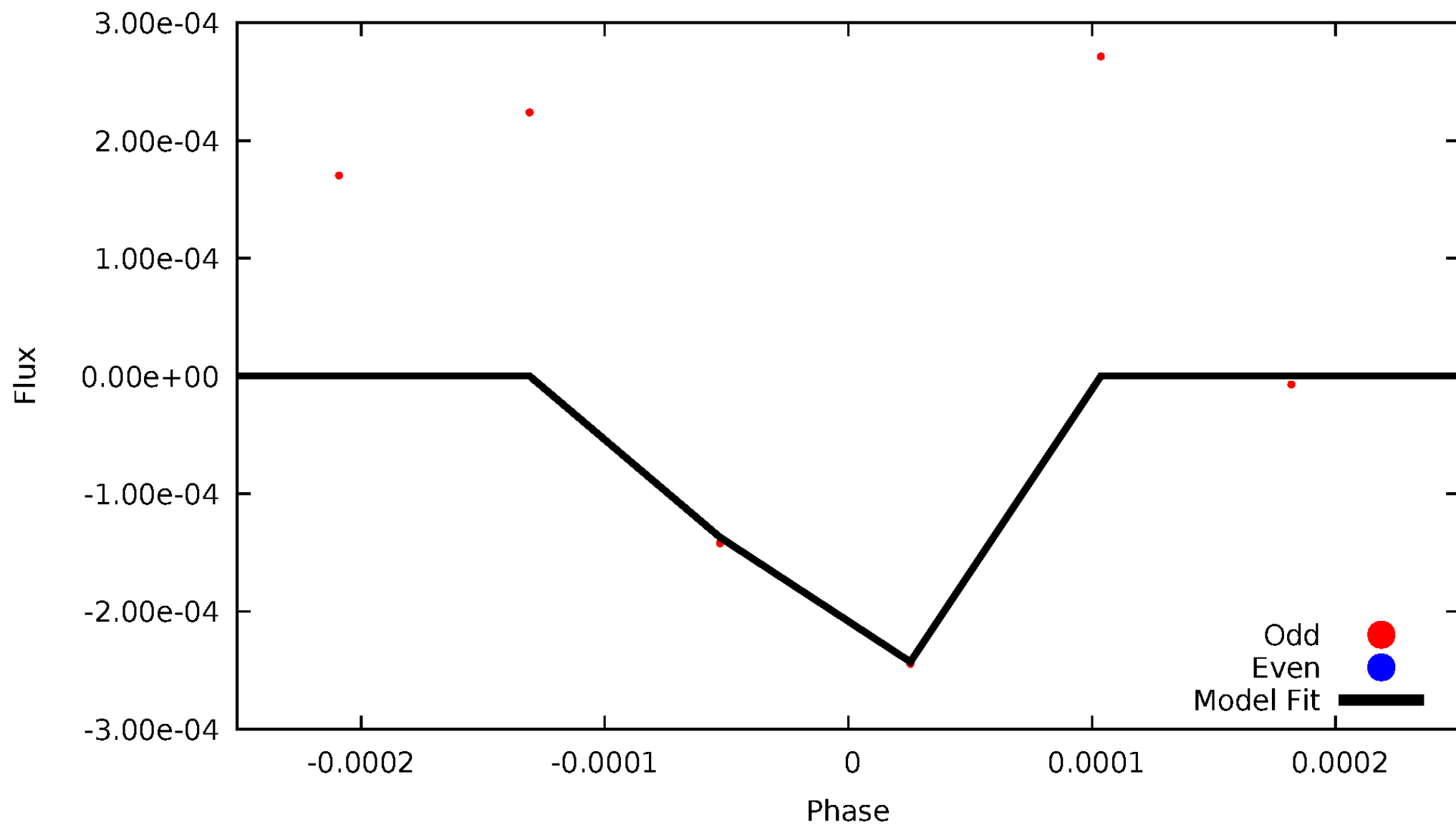
DV Odd/Even

TCE 009602514-02



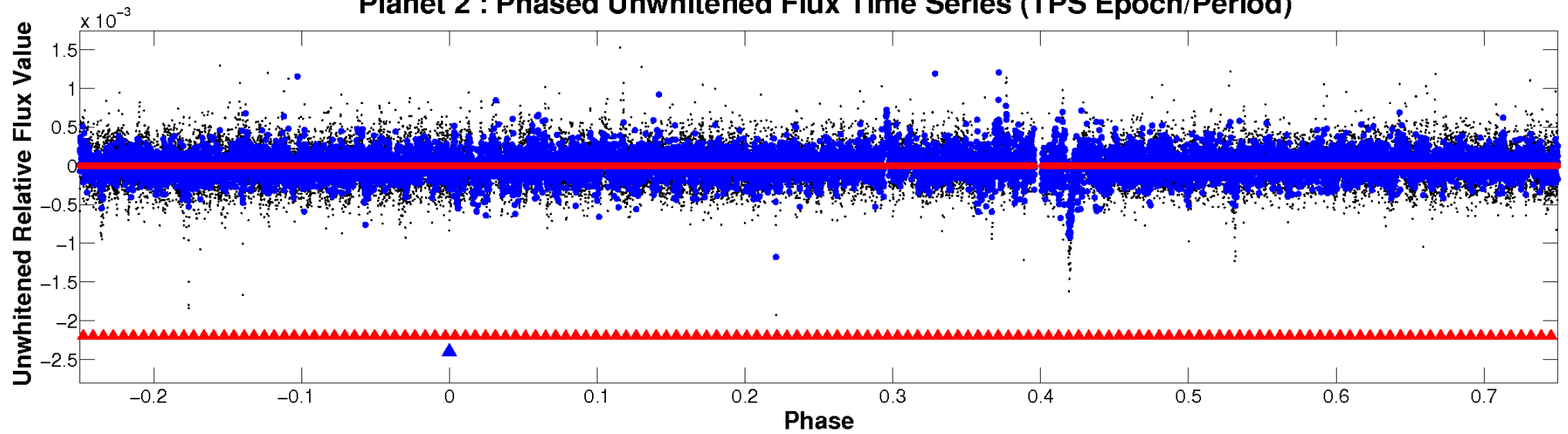
ALT Odd/Even

TCE 009602514-02

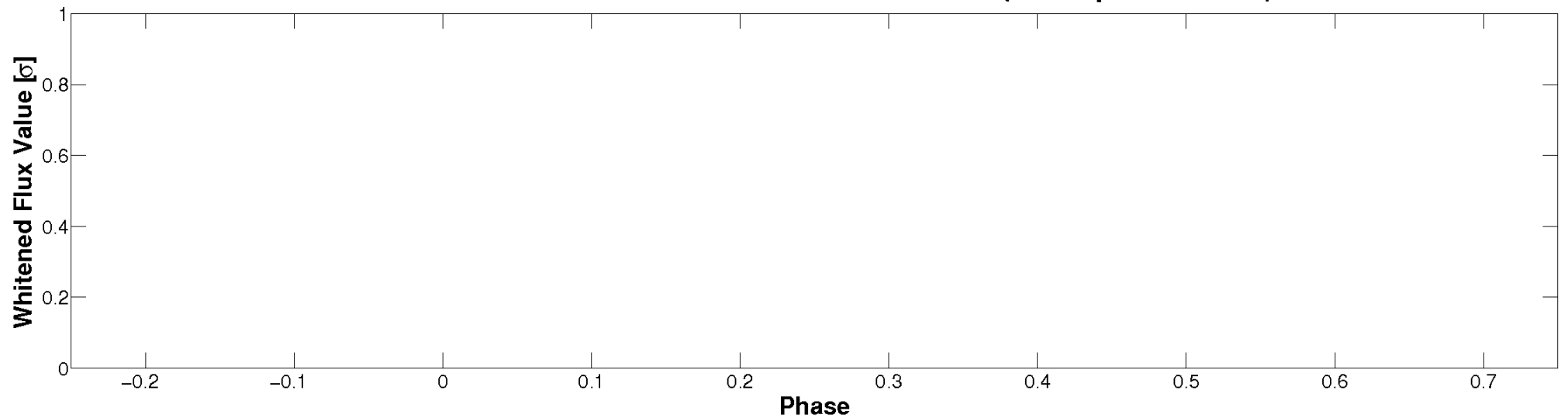


Non-Whitened Vs. Whitened Light Curve

Planet 2 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)

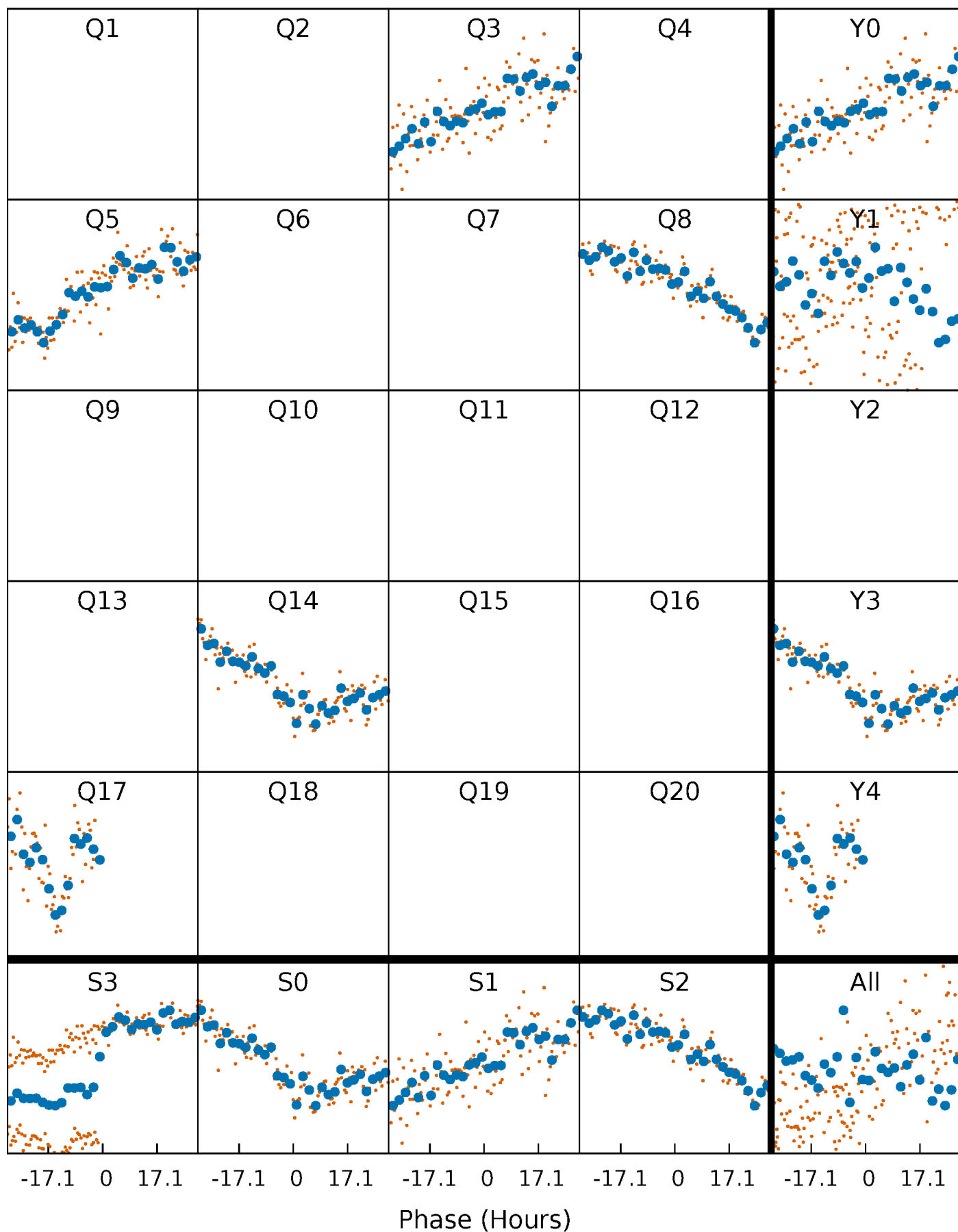


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



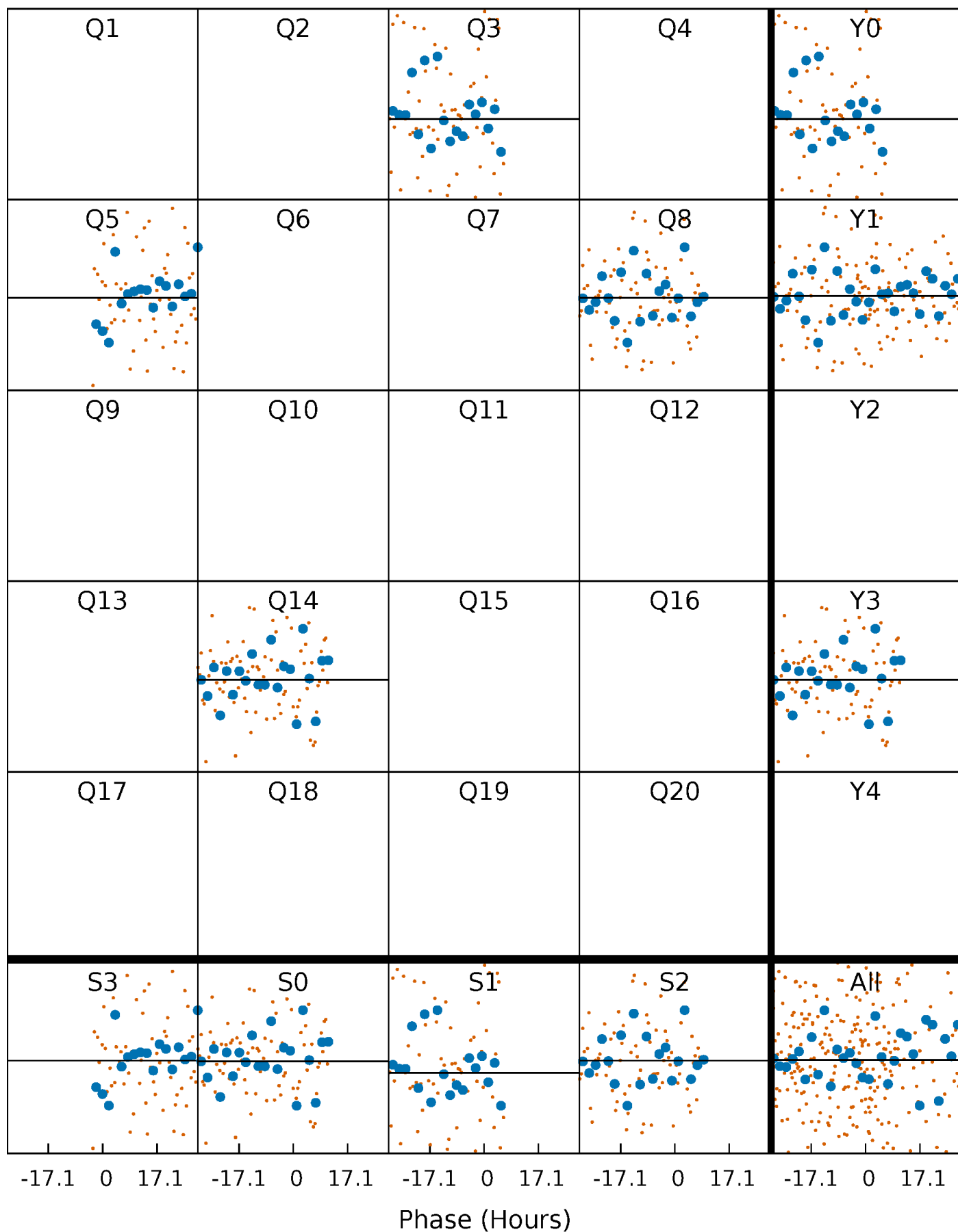
PDC Quarter-Phased Transit Curves

TCE 009602514-02 $P=261.358855$ Days $T_0=274.845606$ (BKJD)



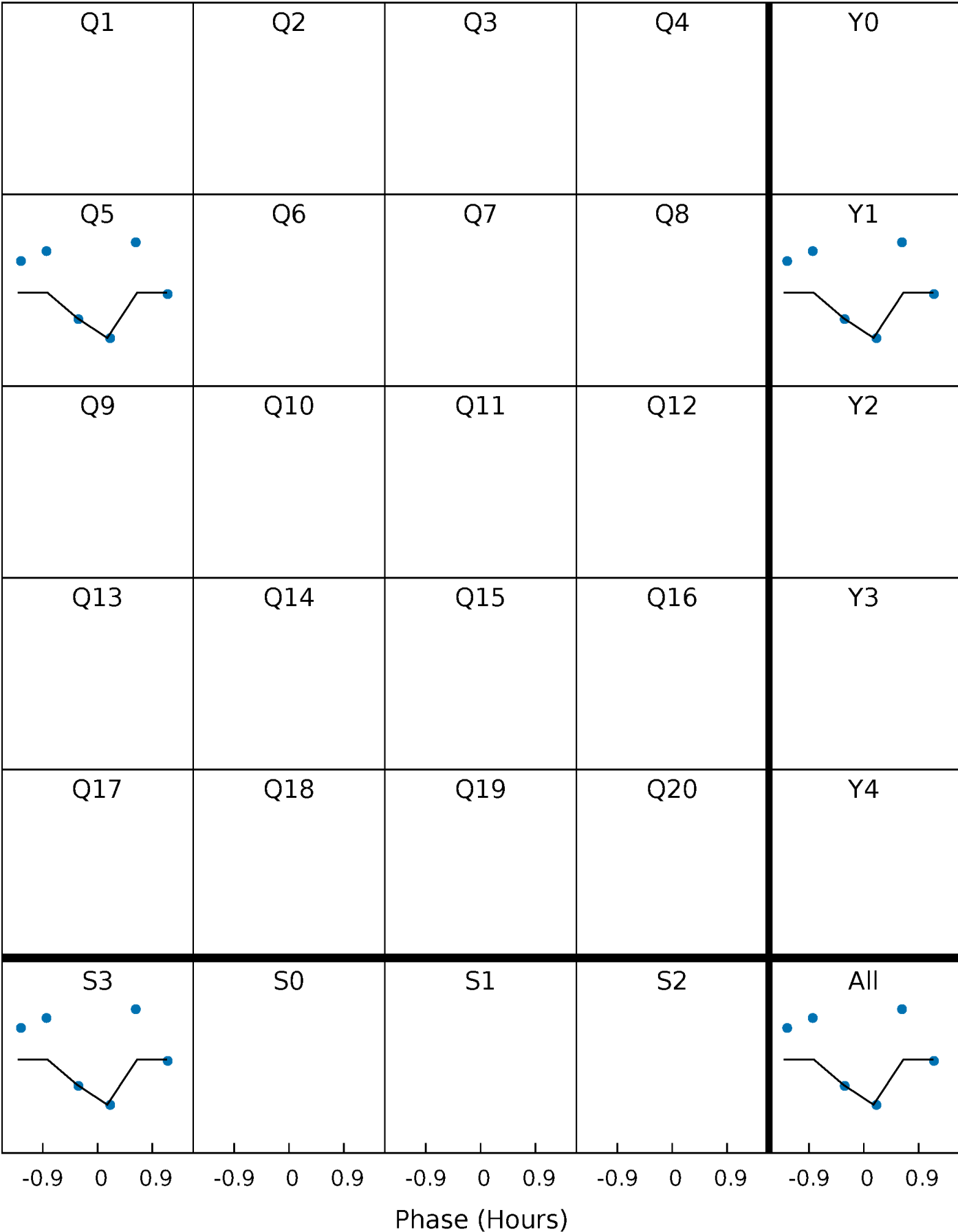
DV Quarter-Phased Transit Curves

TCE 009602514-02 P=261.358855 Days $T_0=274.845606$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

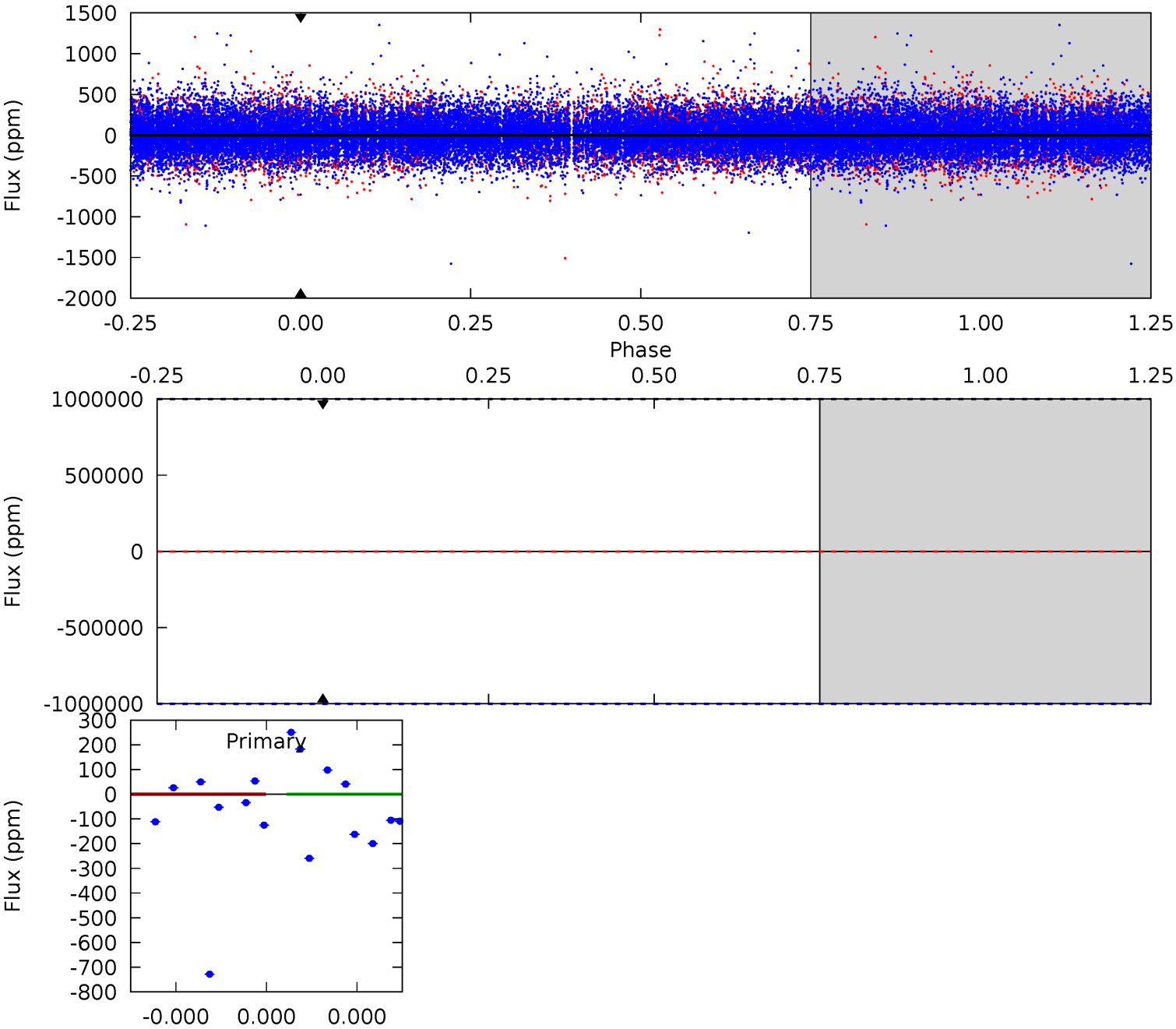
TCE 009602514-02 P=261.358855 Days $T_0=275.427655$ (BKJD)



DV Model-Shift Uniqueness Test

009602514-02, P = 261.358855 Days, E = 13.486751 Days

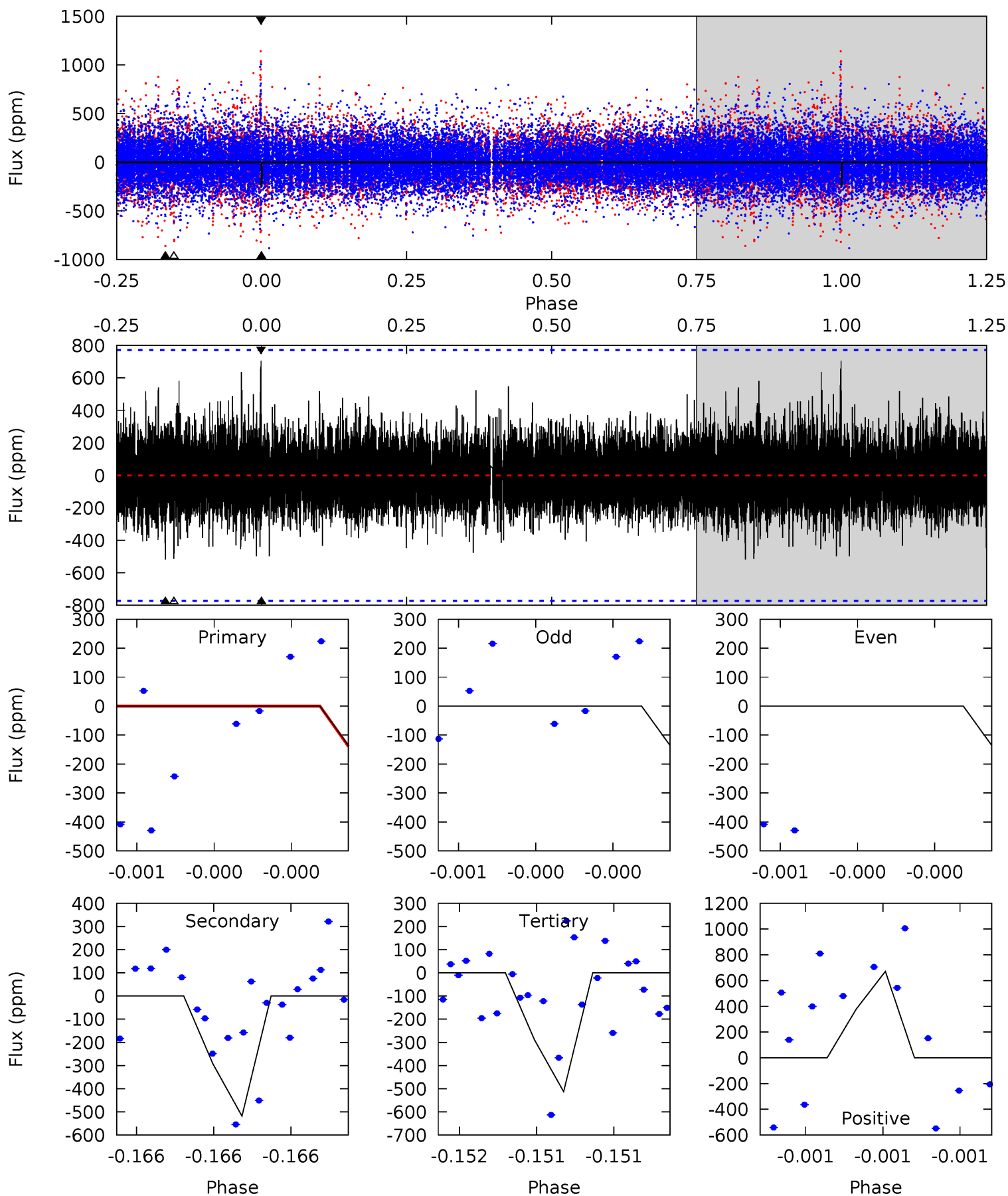
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

009602514-02, P = 261.358855 Days, E = 14.068800 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.82	3.84	3.80	4.98	5.72	3.71	0.87	-1.98	-3.15	0.04	-1.13	0	1.00	0.58	0.38



Stellar Parameters For KIC 009602514

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4951^{+148}_{-133}	$3.876^{+0.682}_{-0.367}$	$0.100^{+0.250}_{-0.300}$	$1.843^{+1.094}_{-1.094}$	$0.931^{+0.210}_{-0.153}$	$0.209^{+2.275}_{-0.157}$
	+3%/-3%	+18%/-9%	+250%/-300%	+59%/-59%	+23%/-16%	+1086%/-75%
Source	PHO1	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 009602514-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$14.64^{+18.24}_{-10.03}$	469^{+79}_{-85}	4686^{+10878}_{-17715}	$5644^{+367881}_{-249460}$
Alt.	-518 ± 135	$13.68^{+17.04}_{-9.68}$	468^{+71}_{-82}	3274^{+1667}_{-620}	884^{+9567}_{-714}

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 $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

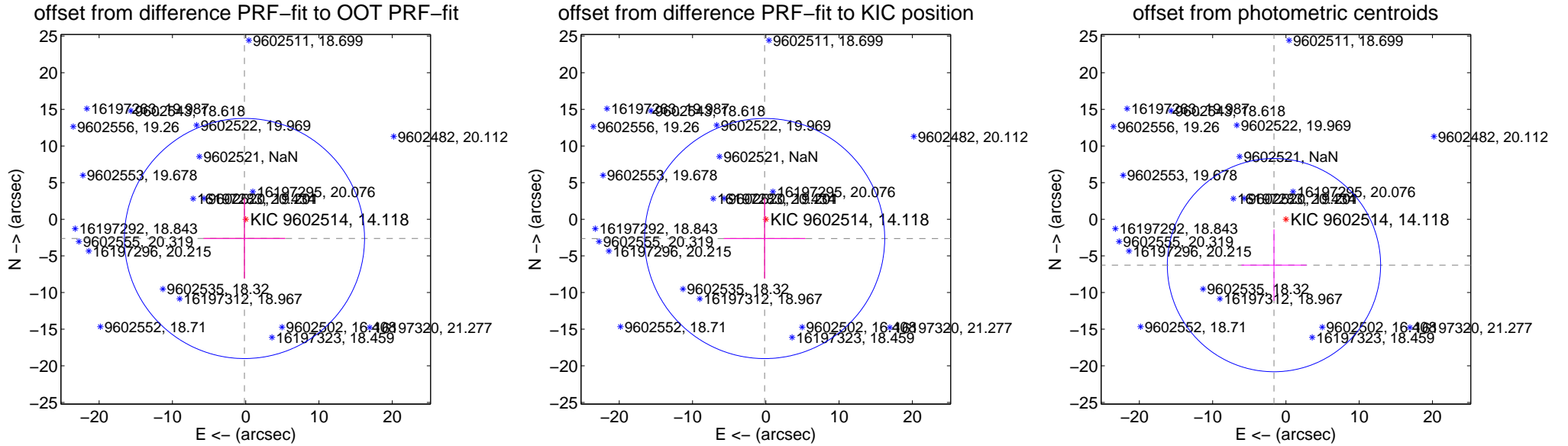
DV Centroid Data

Supplemental centroid analysis for 009602514-02. Kepler magnitude: 14.12. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.01 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.629 ± 5.462	0.48	0.171 ± 5.578	-2.623 ± 5.462
PRF-fit source offset from KIC position	2.634 ± 5.462	0.48	0.162 ± 5.578	-2.629 ± 5.462
photometric centroid source offset	6.47 ± 4.85	1.33	1.63 ± 4.44	-6.26 ± 4.88



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.

Q1 no difference image



Q1 no OOT image



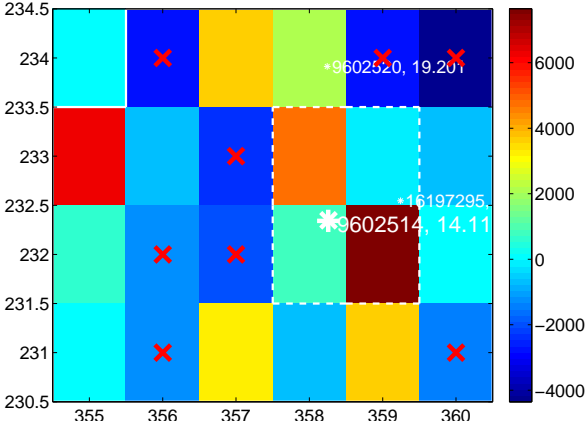
Q2 no difference image



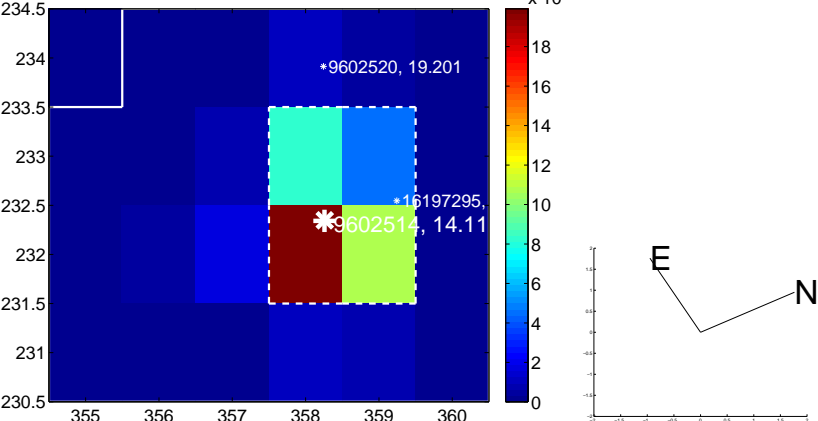
Q2 no OOT image



Q3 difference image. Poor Quality



Q3 OOT image



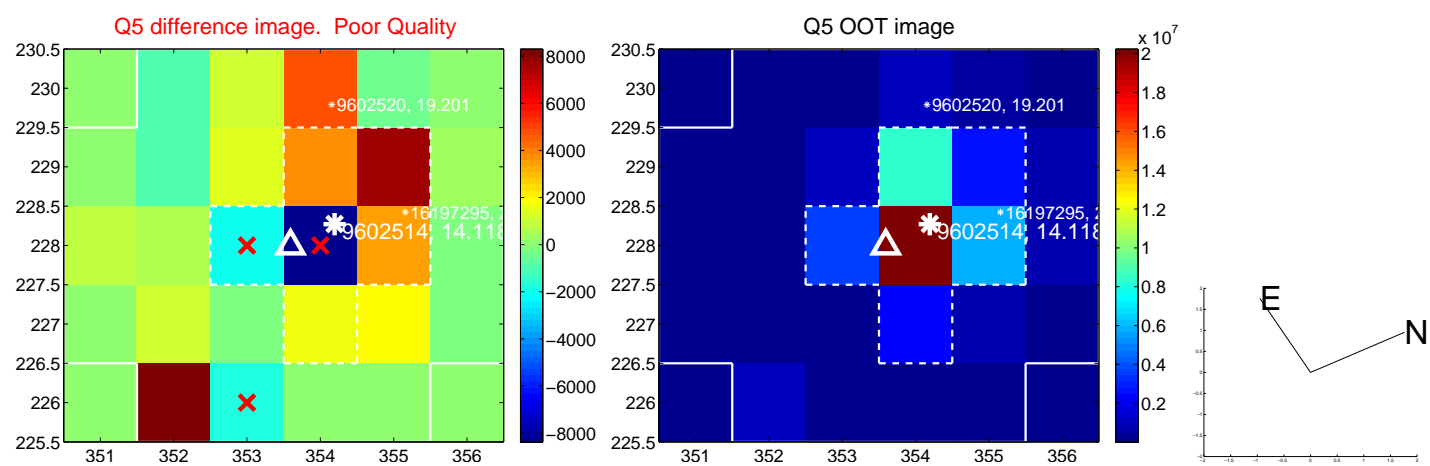
Q4 no difference image



Q4 no OOT image



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



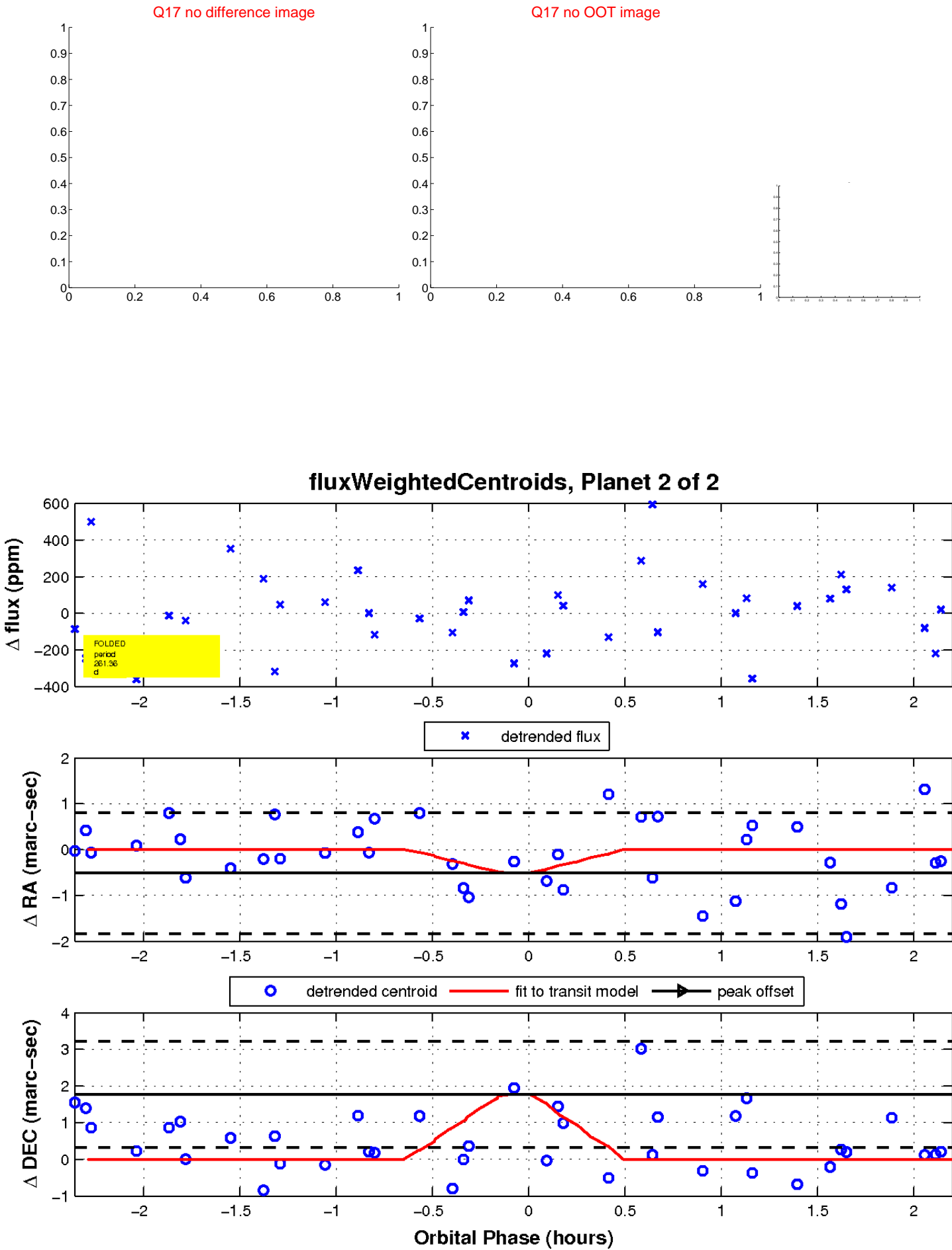
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

