

KIC 005385151

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})
005385151-01	OBS	No	356.273086	470.431987	492.4	1.685	14.2	3.5	1.21	5755	2.94	1.58
005385151-02	OBS	No	378.961585	460.659853	2024.4	19.169	9.5	5.2	1.21	5755	6.37	1.45

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005385151-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
005385151-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—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.

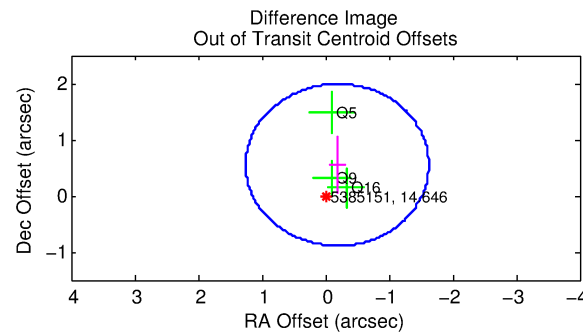
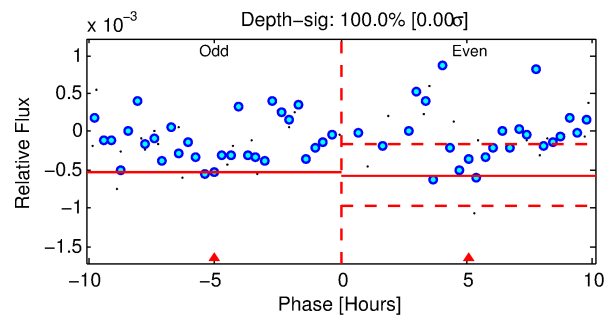
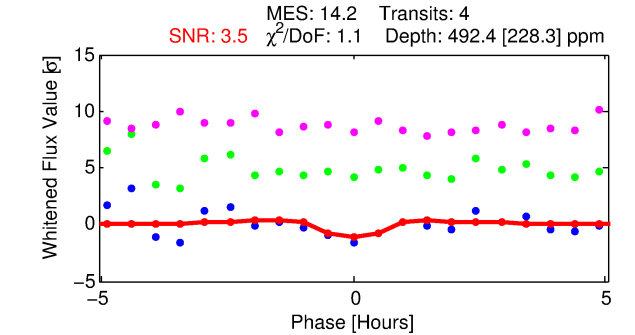
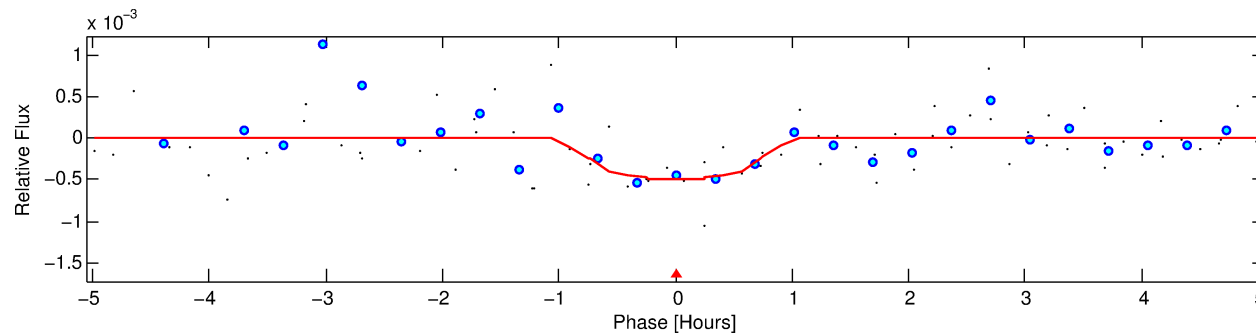
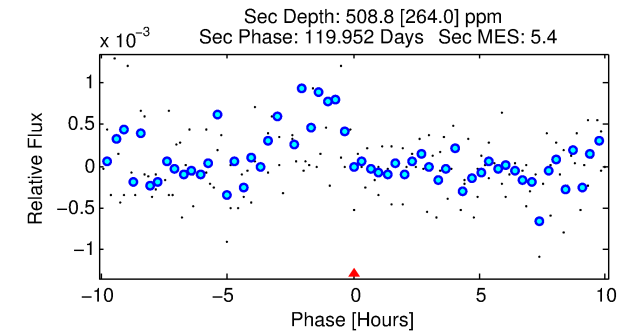
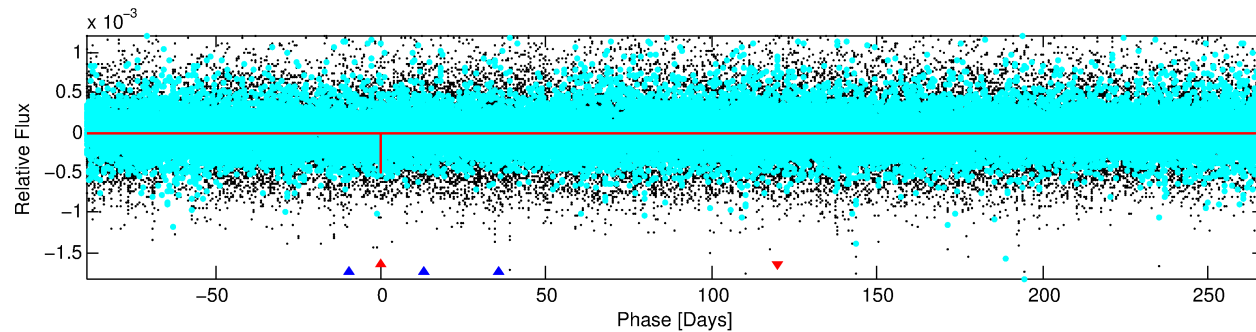
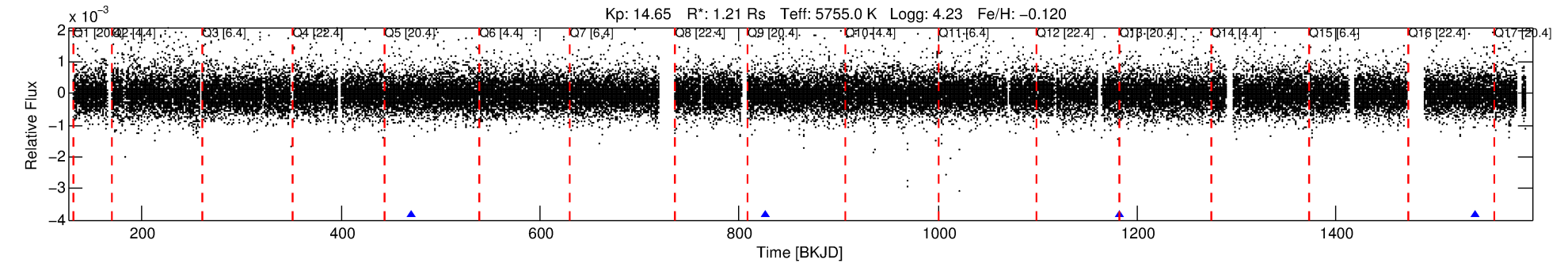
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005385151-01

No Significant Match Found

DV One-Page Summary

KIC: 5385151 Candidate: 1 of 2 Period: 356.273 d



DV Fit Results:

Period = 356.27309 [0.00750] d
Epoch = 470.4320 [0.0157] BKJD
Rp/R* = 0.0223 [0.0956]
a/R* = 1104.07 [21420.49]
b = 0.76 [10.93]
Seff = 1.58 [0.67]
Teq = 286 [30] K
Rp = 2.95 [12.67] Re
a = 0.9562 [0.2434] AU
Ag = 29503.67 [254050.63] [0.12σ]
Teffp = 5792 [12456] K [0.44σ]

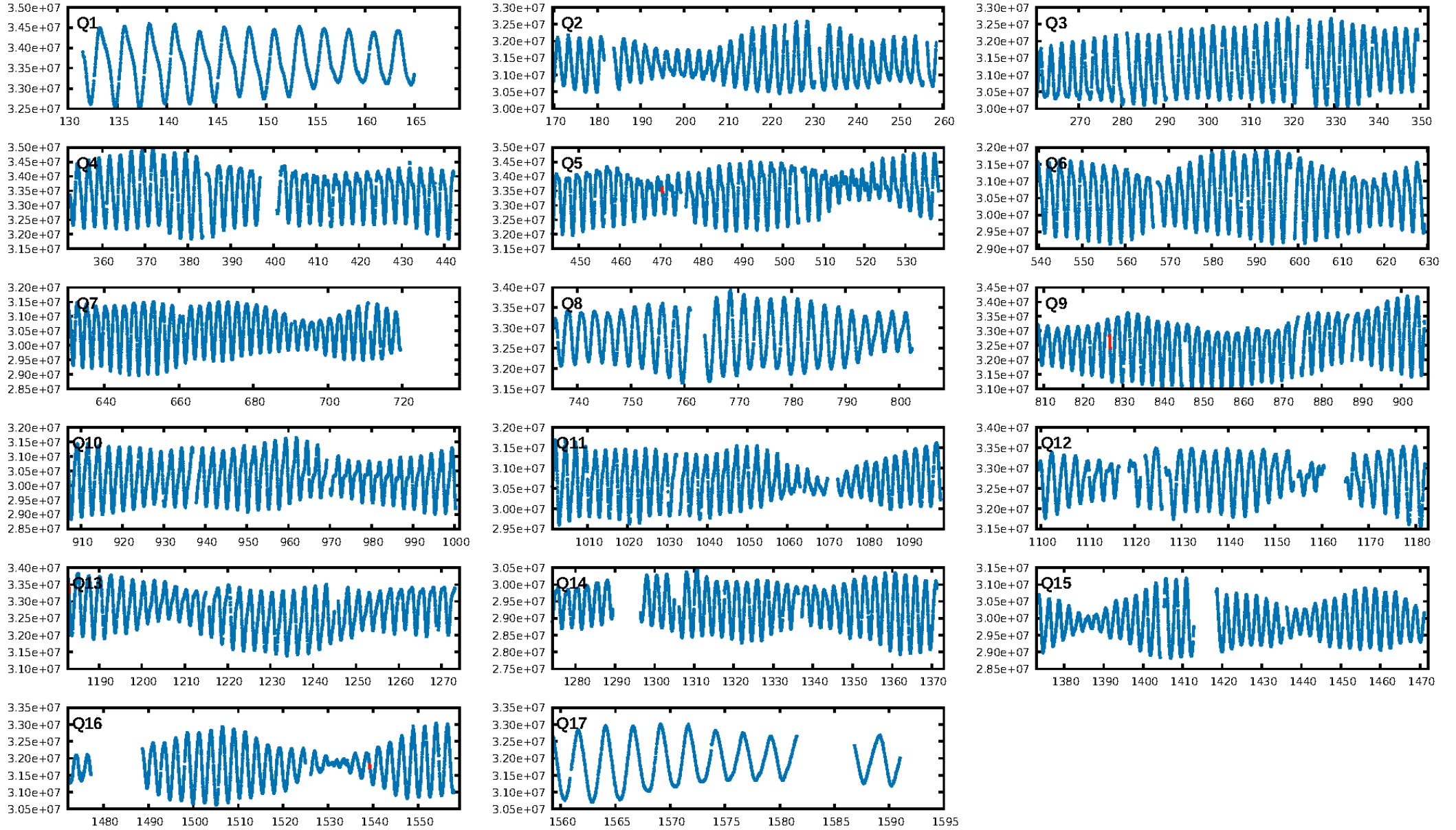
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [28.30σ]
ModelChiSquare2-sig: 66.3%
ModelChiSquareGof-sig: 99.2%
Bootstrap-pfa: 7.85e-15
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.06481
Centroid-sig: 33.0%
Centroid-so: 2.581 arcsec [0.80σ]
OotOffset-rm: 0.579 arcsec [1.21σ]
KicOffset-rm: 0.482 arcsec [1.09σ]
OotOffset-st: 0/0/1/2 [3]
KicOffset-st: 0/0/1/2 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

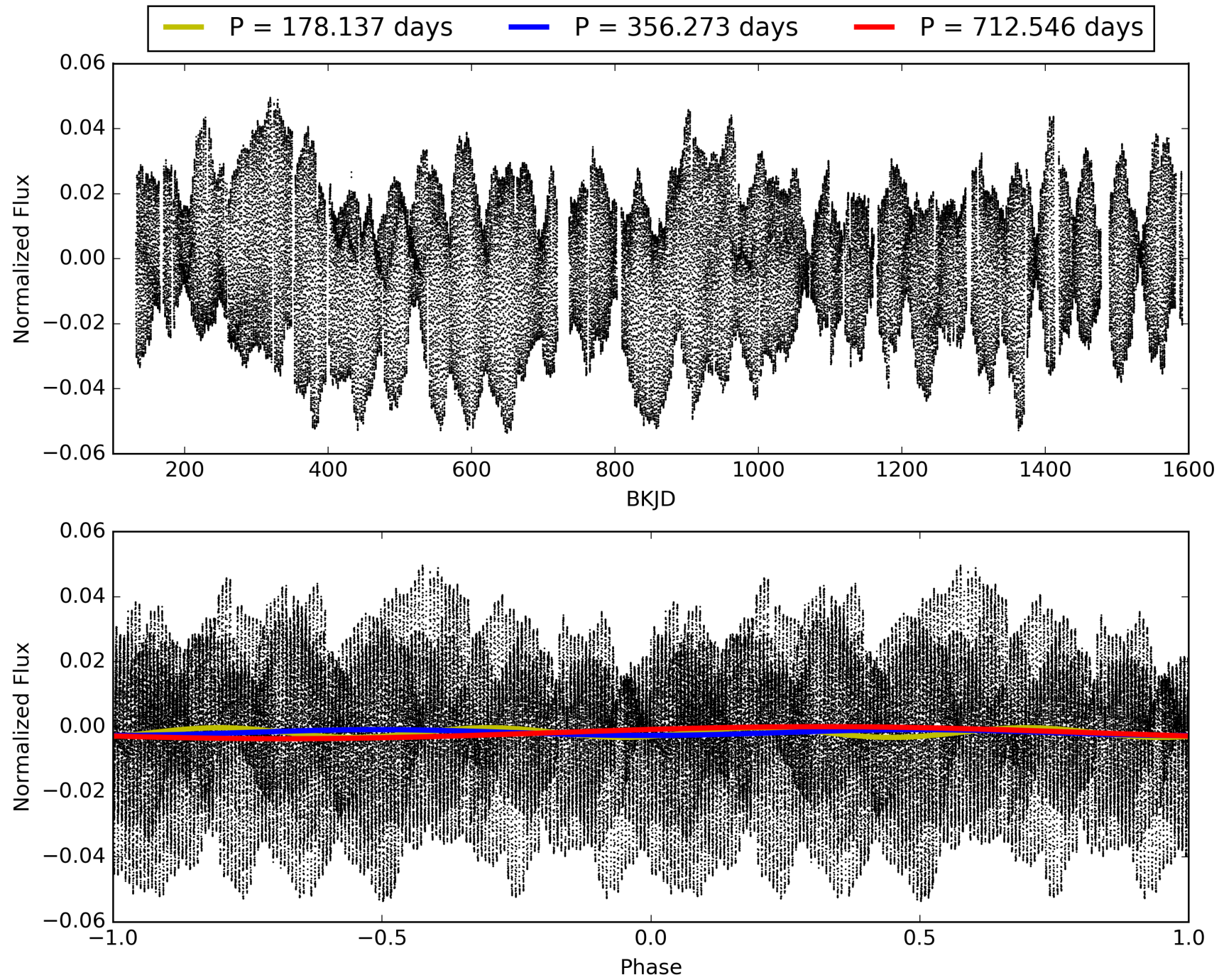
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 14:49:11 Z

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

TCE 005385151-01, PDC Light Curves

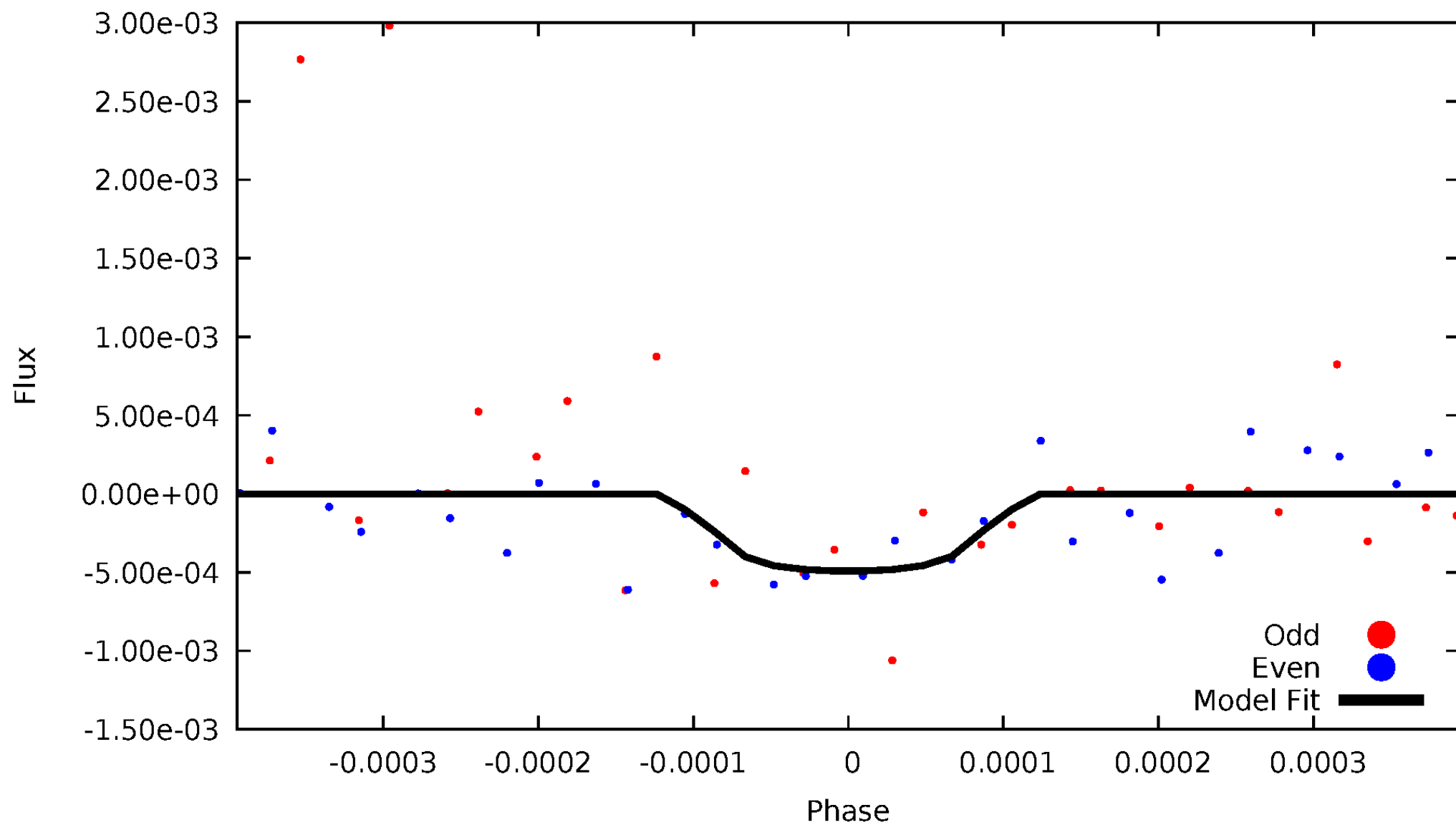


TCE 005385151-01



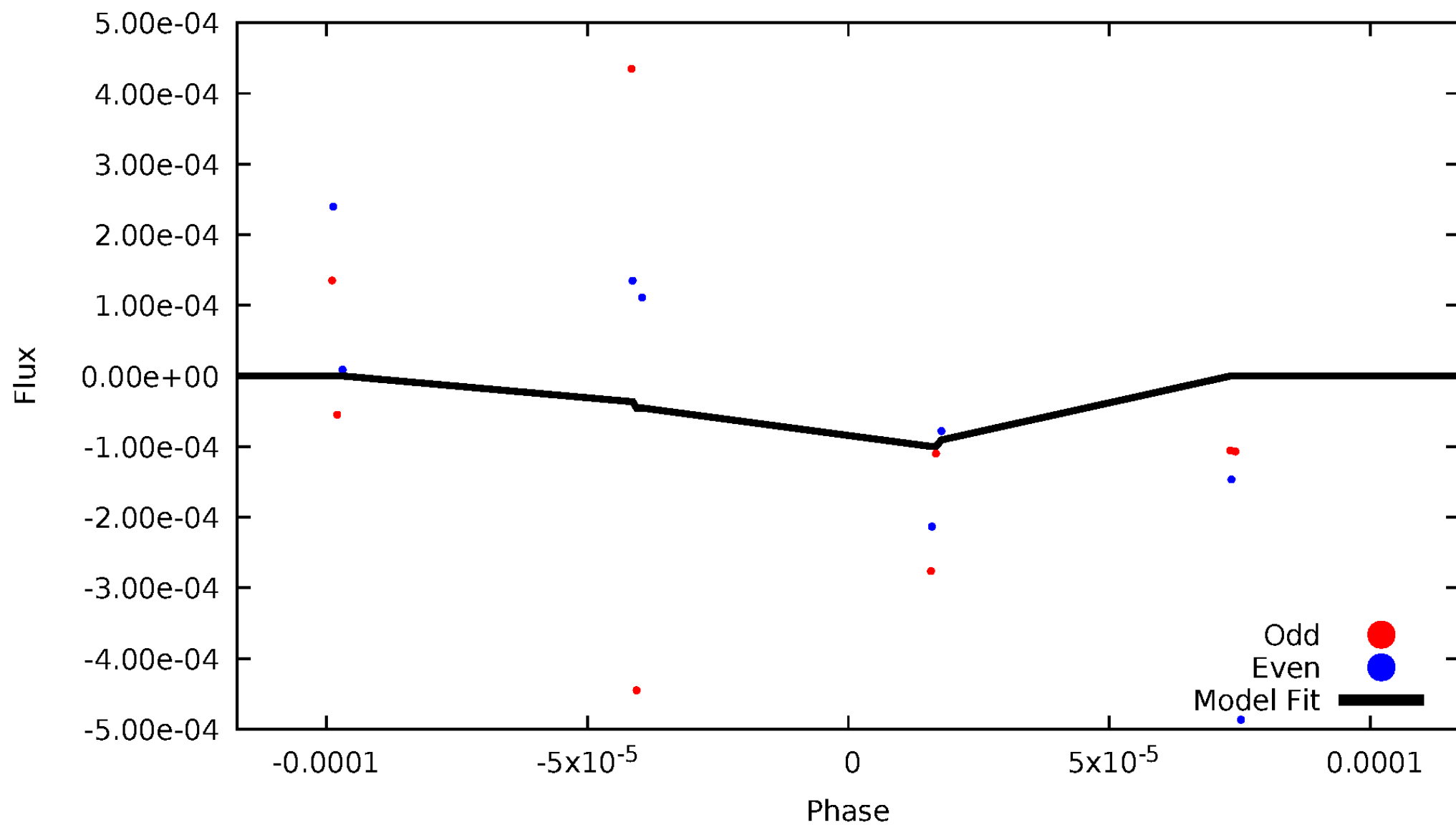
DV Odd/Even

TCE 005385151-01



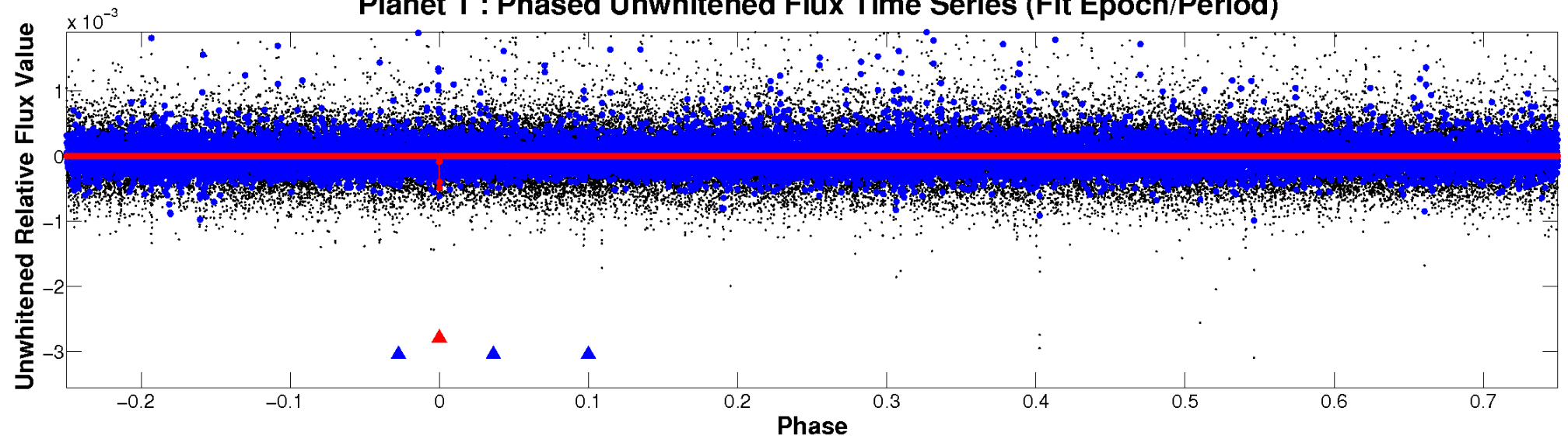
ALT Odd/Even

TCE 005385151-01

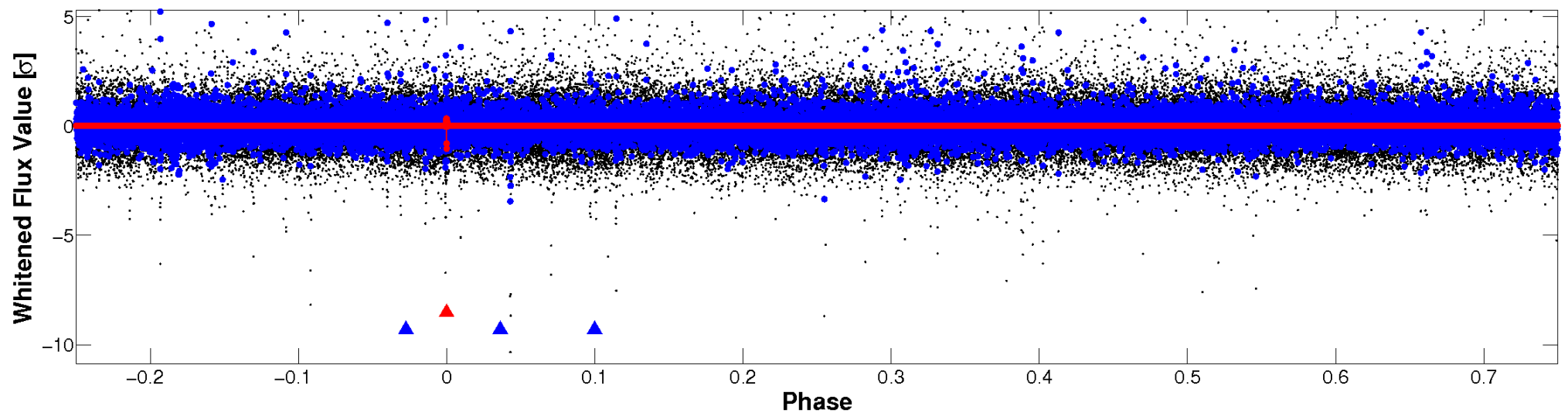


Non-Whitened Vs. Whitened Light Curve

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

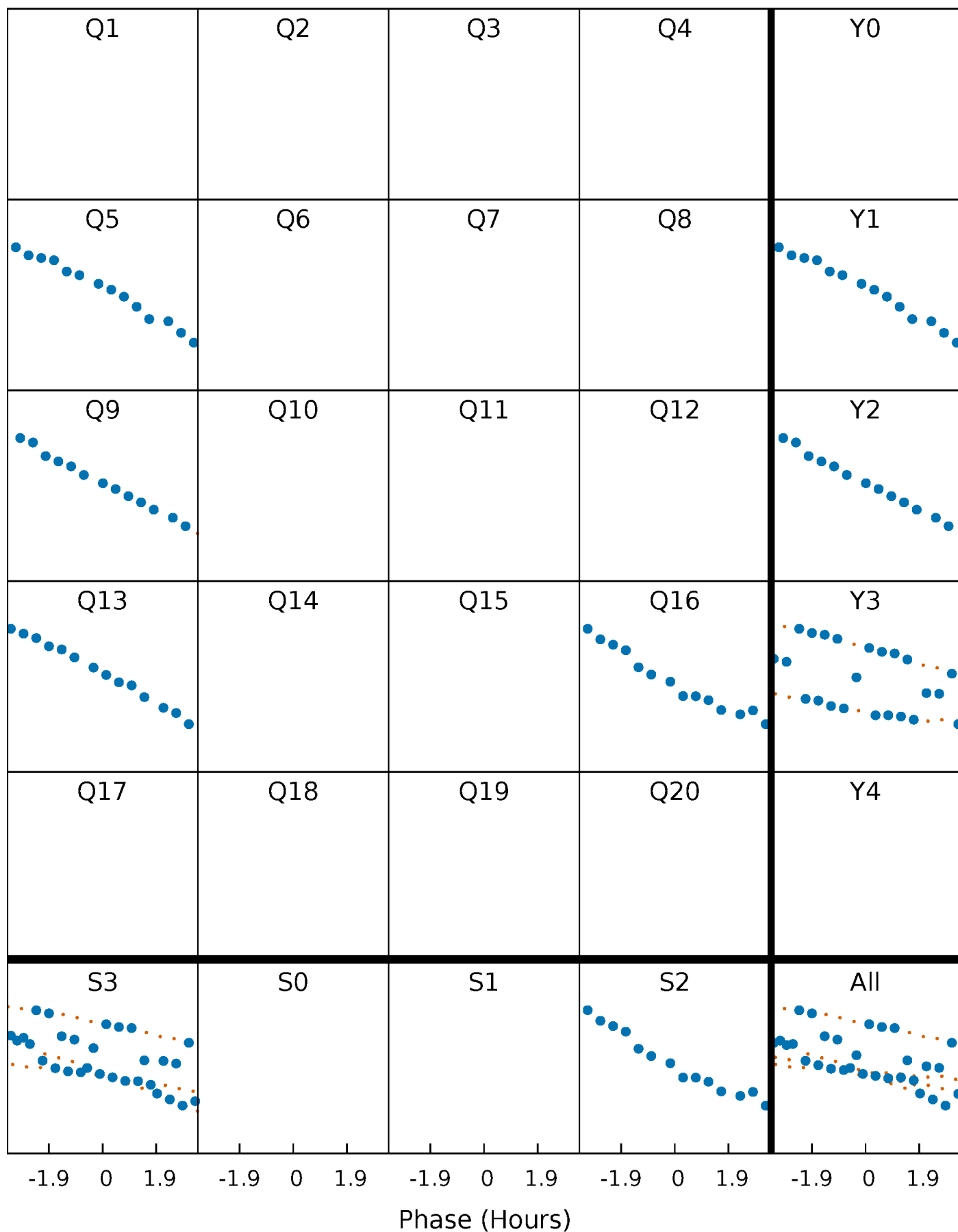


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



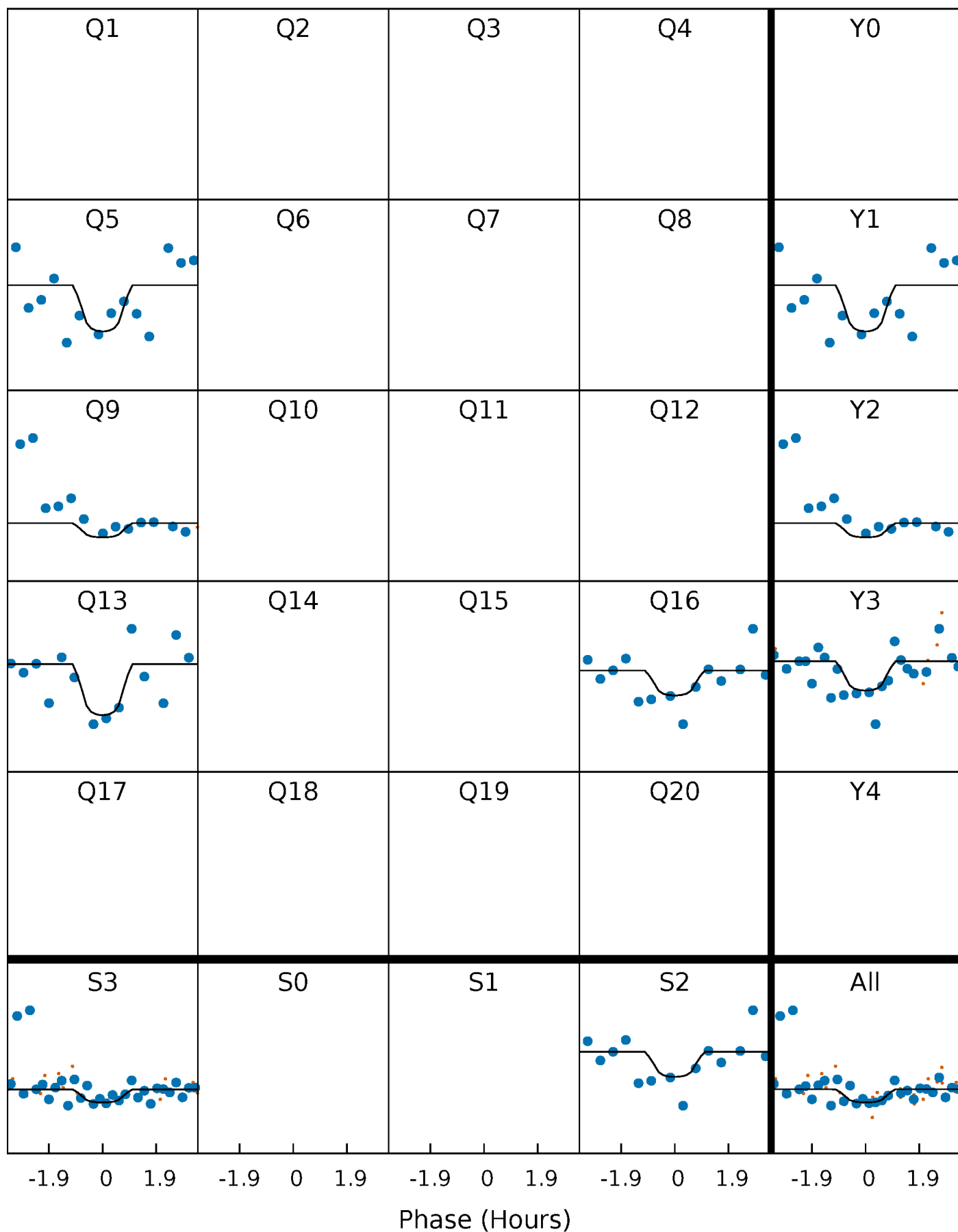
PDC Quarter-Phased Transit Curves

TCE 005385151-01 P=356.273086 Days $T_0=470.431987$ (BKJD)



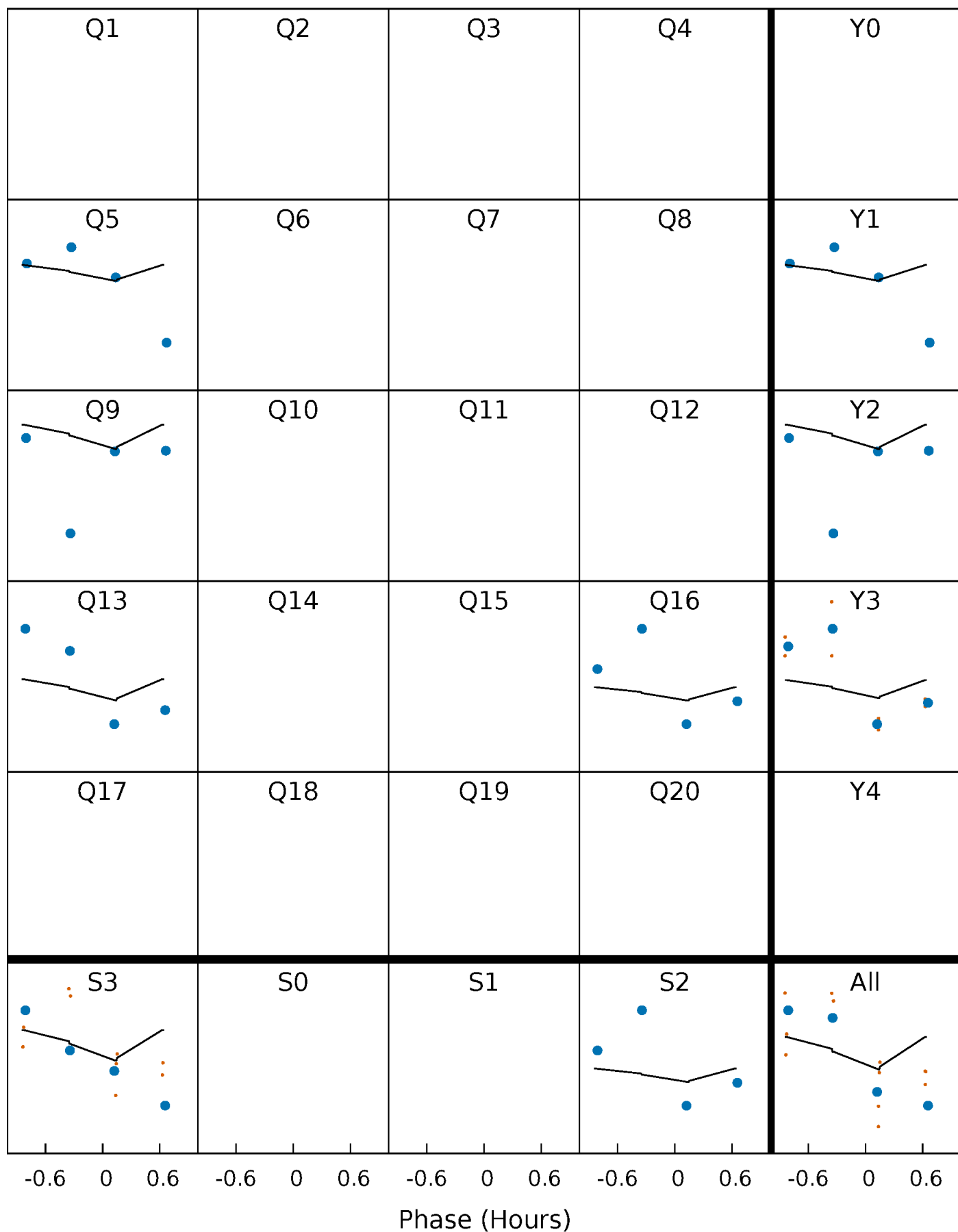
DV Quarter-Phased Transit Curves

TCE 005385151-01 P=356.273086 Days $T_0=470.431987$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

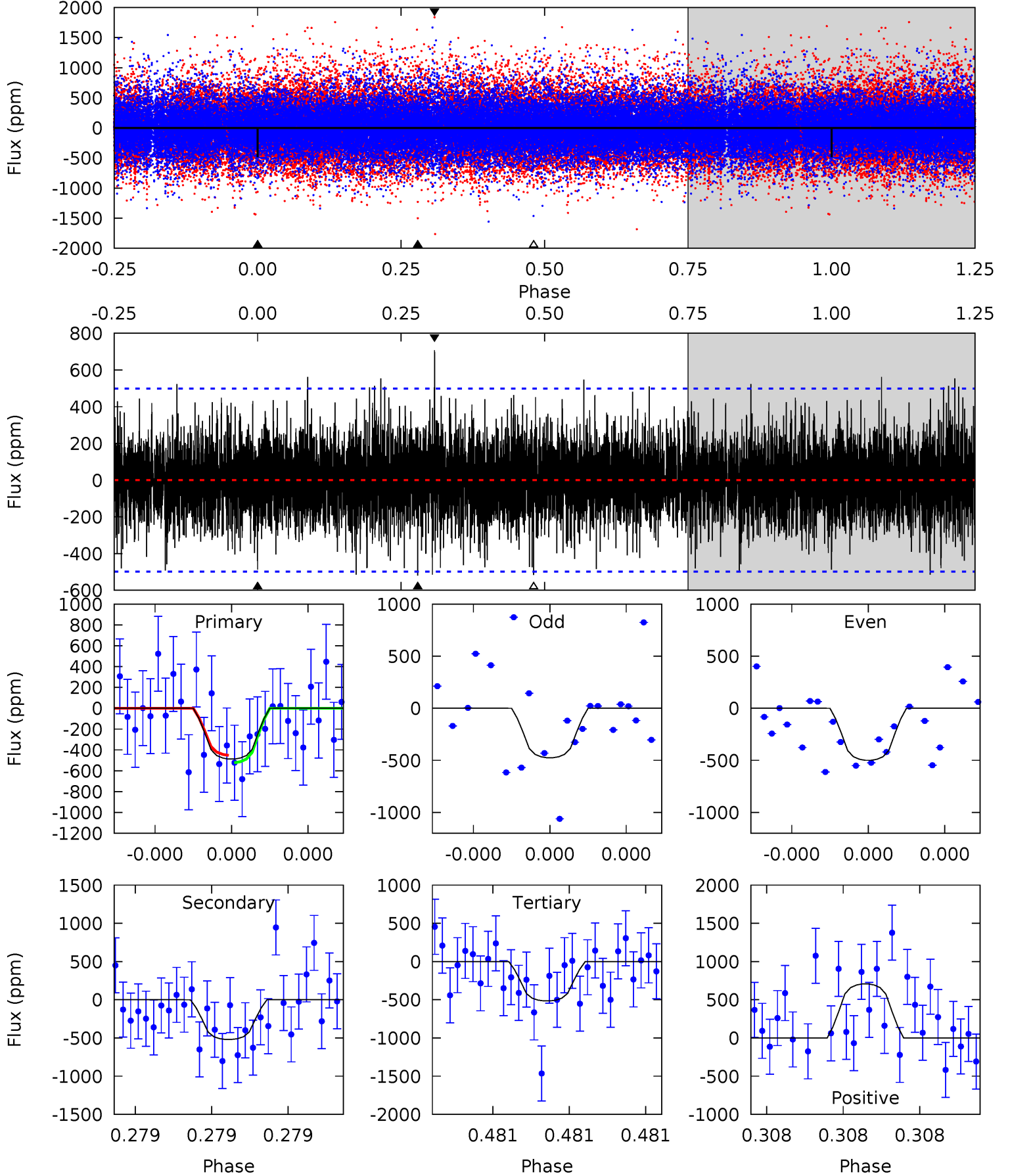
TCE 005385151-01 P=356.239078 Days $T_0=470.477184$ (BKJD)



DV Model-Shift Uniqueness Test

005385151-01, P = 356.273086 Days, E = 114.158901 Days

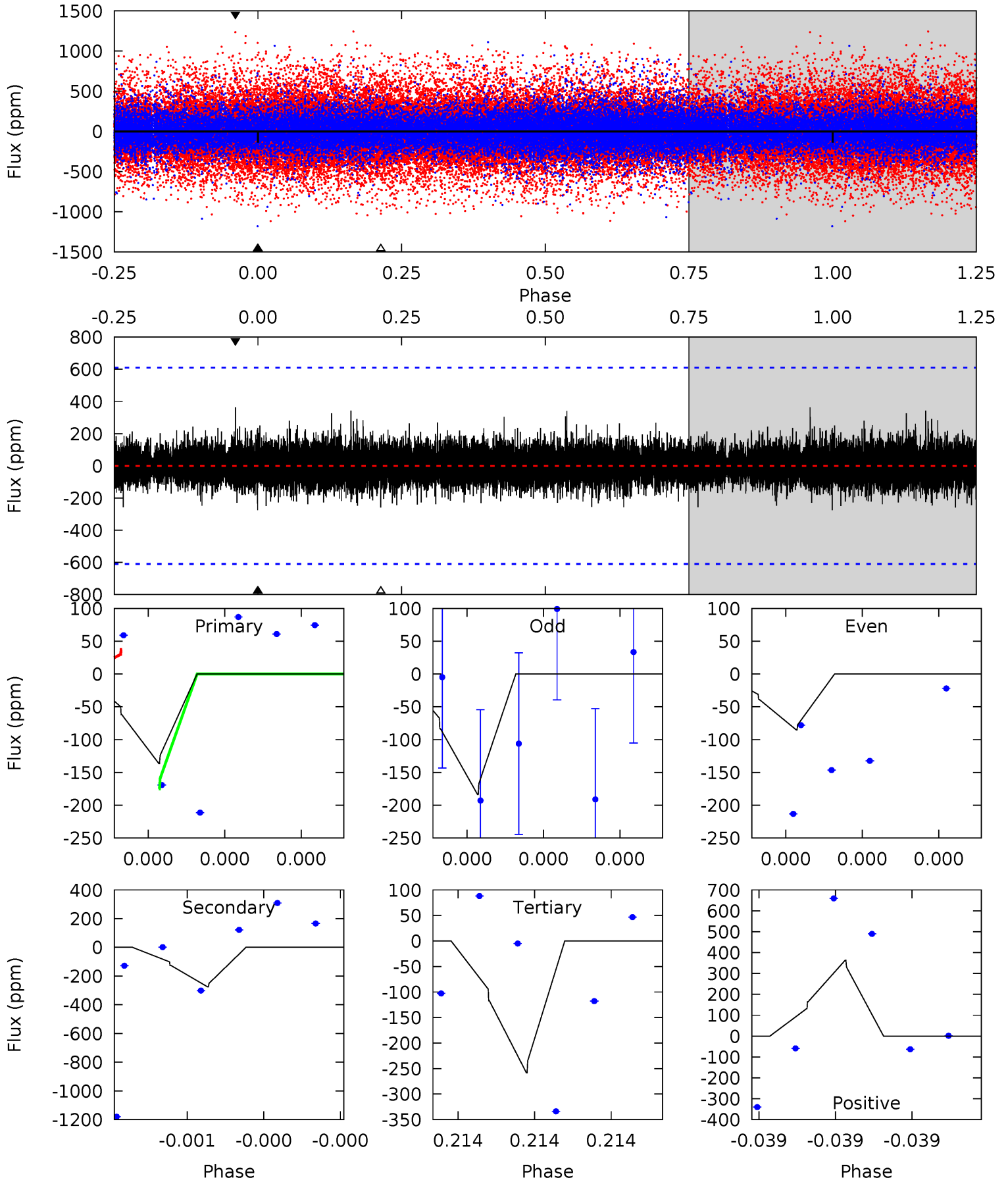
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.57	5.94	5.89	8.09	5.69	3.66	1.54	-0.32	-2.52	0.05	-2.14	0.14	0.99	0.58	0.41



Alt Model-Shift Uniqueness Test

005385151-01, P = 356.239078 Days, E = 114.238106 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.30	2.63	2.47	3.47	5.82	3.86	0.61	-1.16	-2.17	0.17	-0.83	0.50	1.06	0.57	0.63



Stellar Parameters For KIC 005385151

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5755^{+173}_{-173}	$4.234^{+0.236}_{-0.172}$	$-0.120^{+0.300}_{-0.300}$	$1.212^{+0.325}_{-0.325}$	$0.919^{+0.134}_{-0.083}$	$0.727^{+0.930}_{-0.357}$
	+3%/-3%	+6%/-4%	+250%/-250%	+27%/-27%	+15%/-9%	+128%/-49%
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 005385151-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-520 ± 87	$9.21^{+10.29}_{-6.15}$	399^{+30}_{-30}	3671^{+2017}_{-753}	3081^{+24439}_{-2413}
Alt.	-276 ± 105	$9.38^{+9.65}_{-6.48}$	395^{+31}_{-29}	3309^{+1727}_{-660}	1570^{+14282}_{-1240}

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 $A_{obs} \gg 1.0$

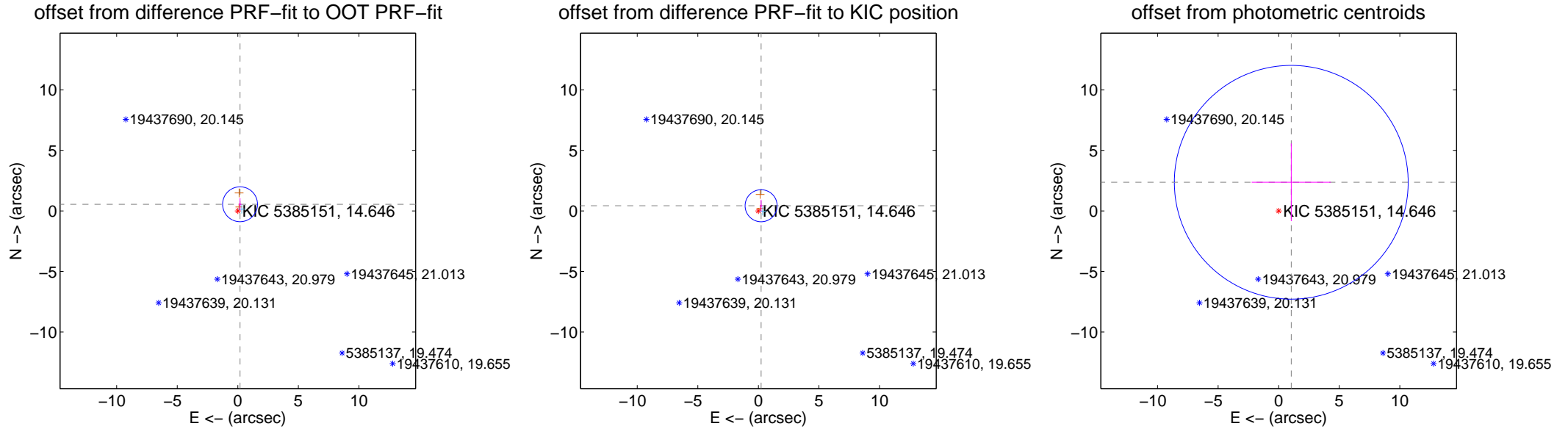
DV Centroid Data

Supplemental centroid analysis for 005385151-01. Kepler magnitude: 14.65. Transit SNR 3.55

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.579 ± 0.480	1.21	-0.185 ± 0.114	0.549 ± 0.505
PRF-fit source offset from KIC position	0.482 ± 0.441	1.09	-0.227 ± 0.111	0.425 ± 0.496
photometric centroid source offset	2.58 ± 3.22	0.80	-1.04 ± 3.27	2.36 ± 3.21

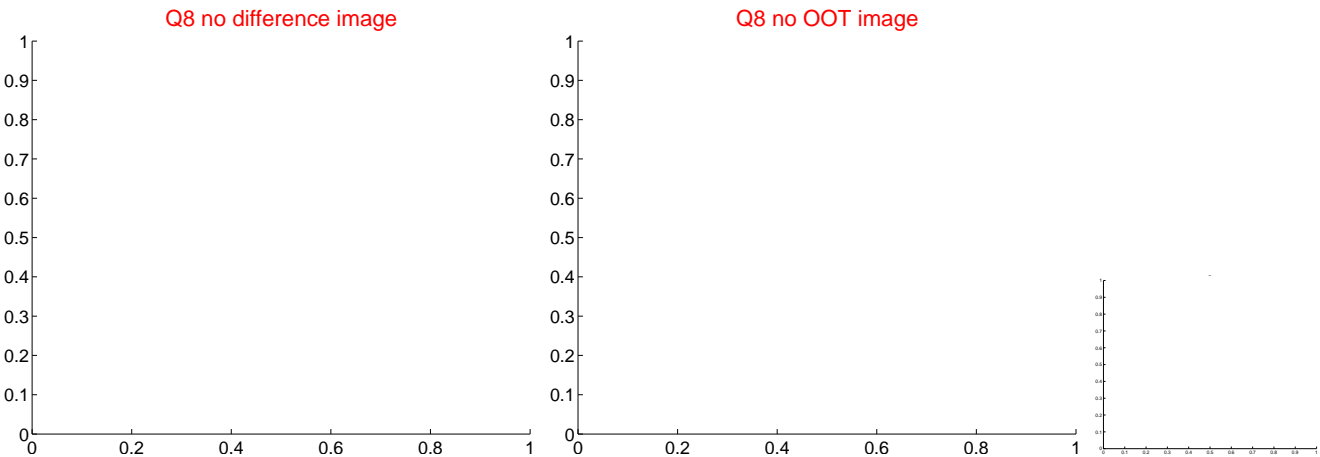
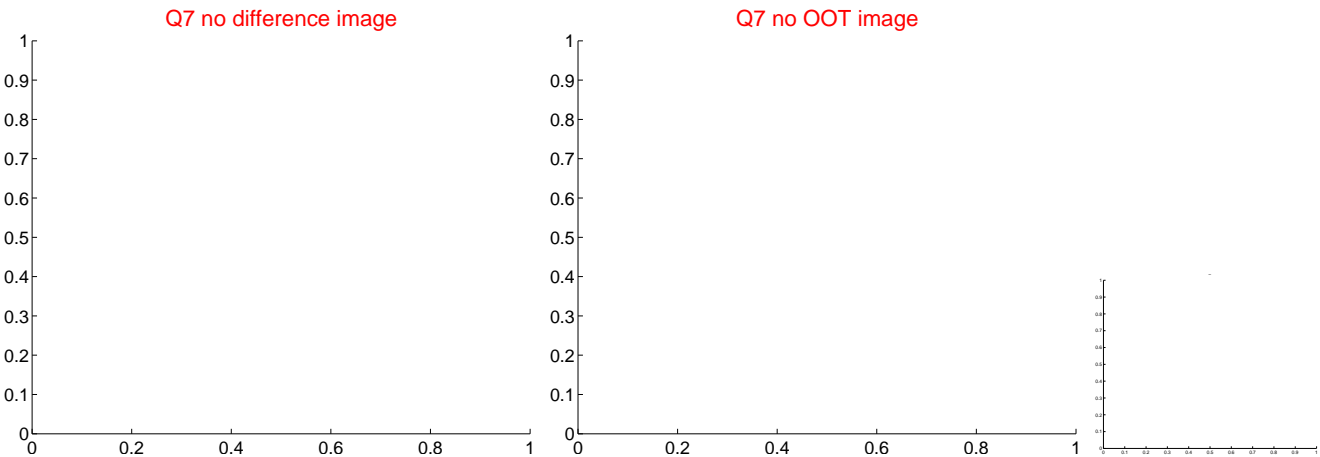
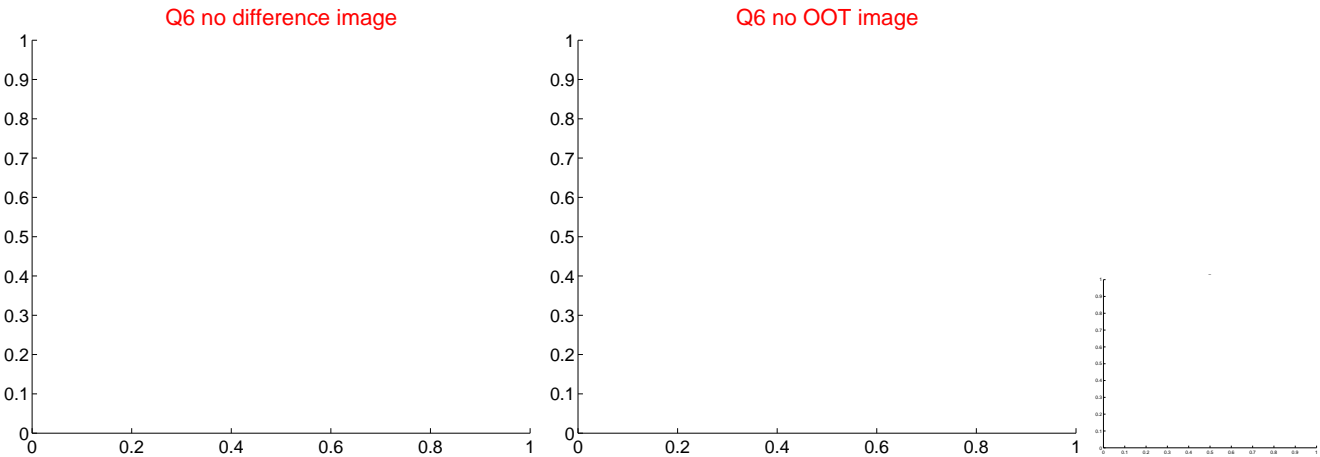
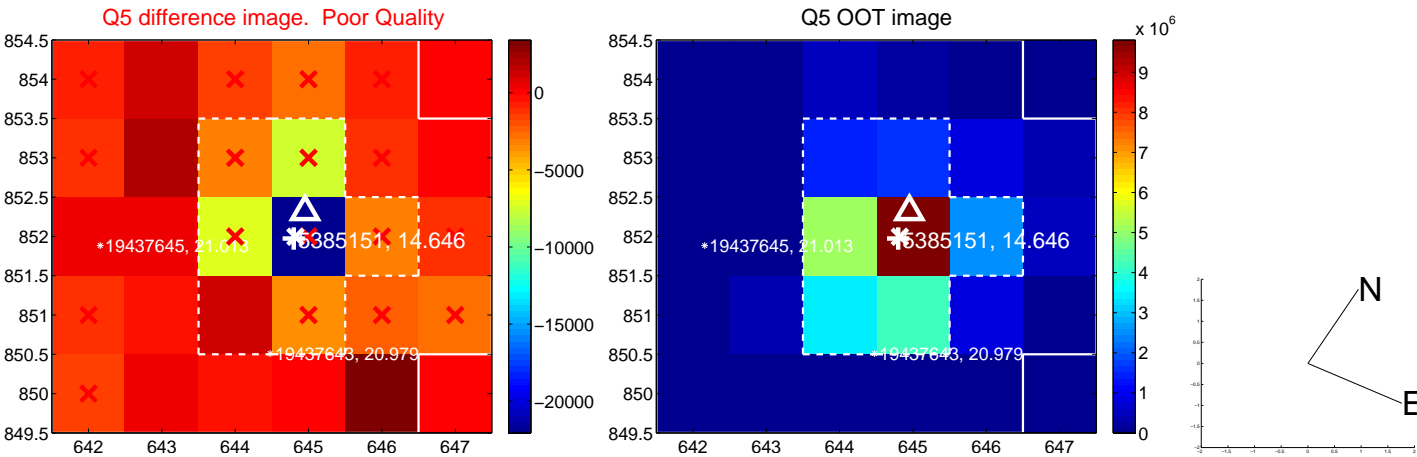


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

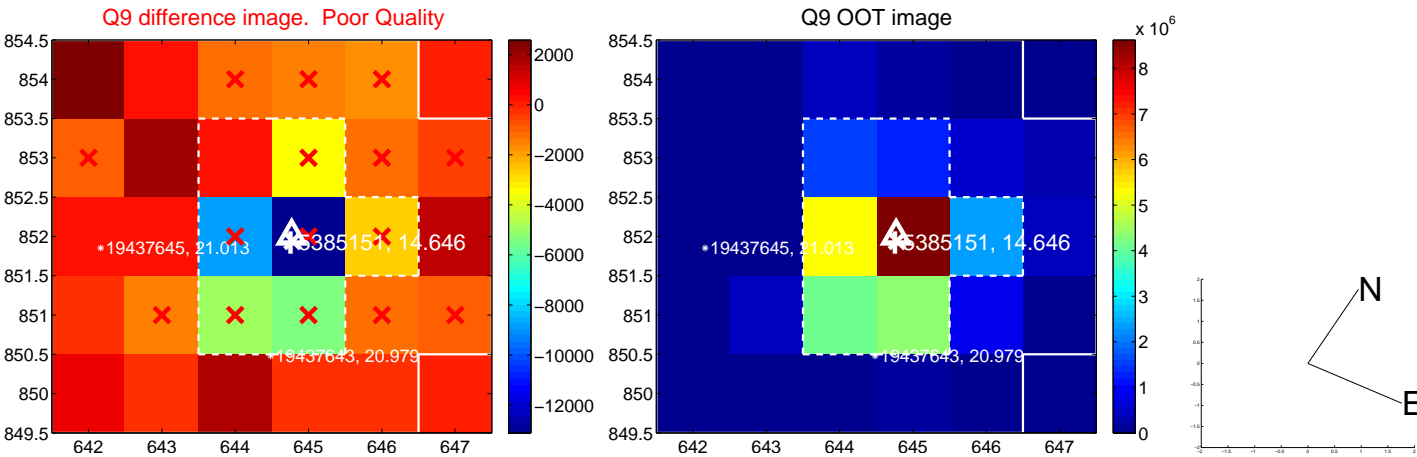
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



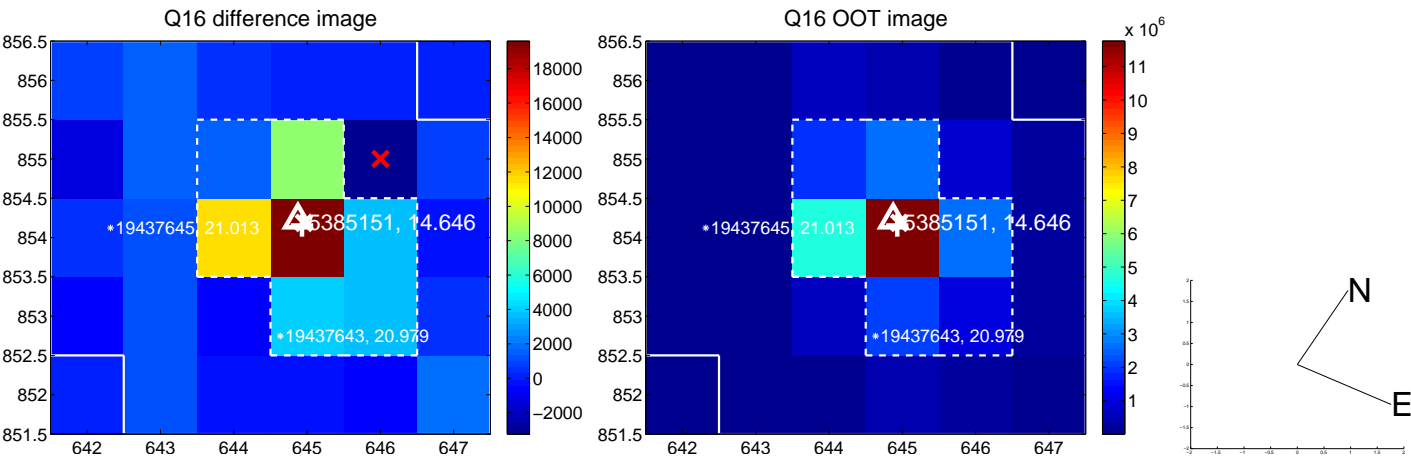
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



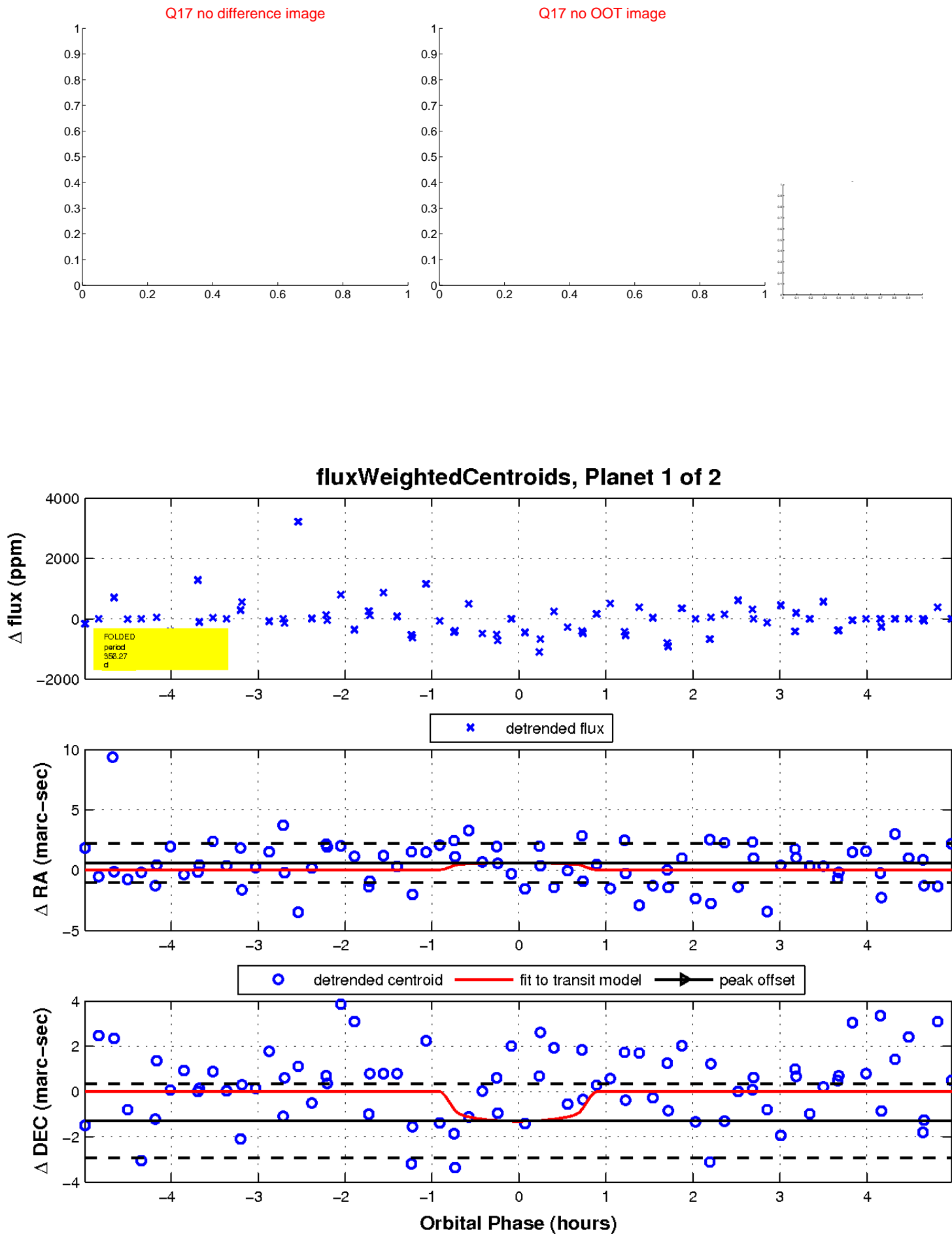
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

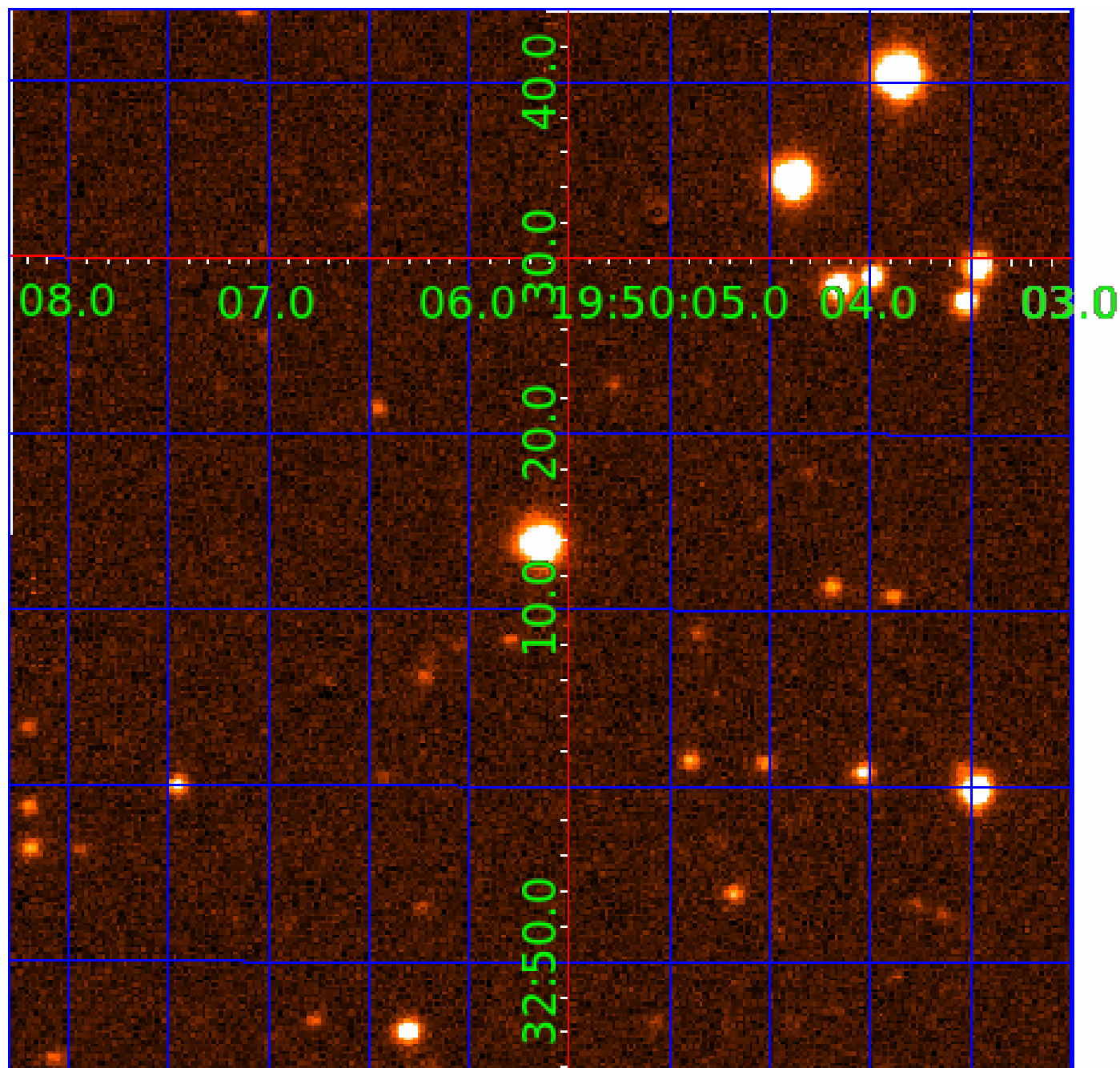


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005385151

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})
005385151-01	OBS	No	356.273086	470.431987	492.4	1.685	14.2	3.5	1.21	5755	2.94	1.58
005385151-02	OBS	No	378.961585	460.659853	2024.4	19.169	9.5	5.2	1.21	5755	6.37	1.45

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005385151-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
005385151-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—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.

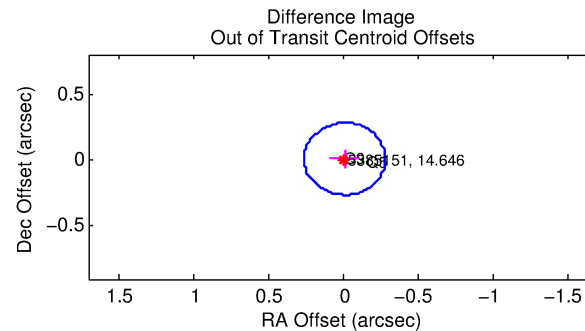
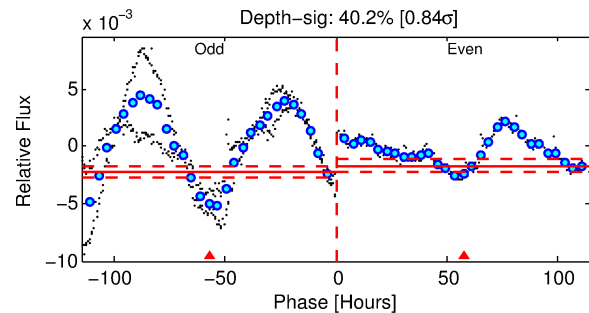
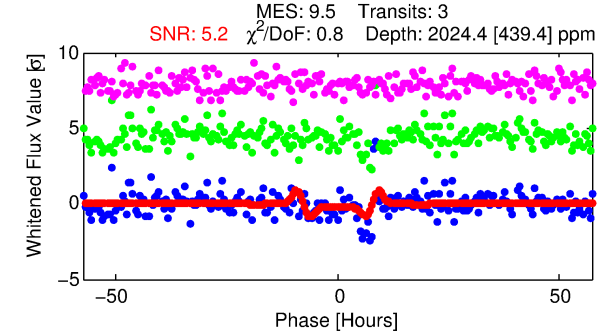
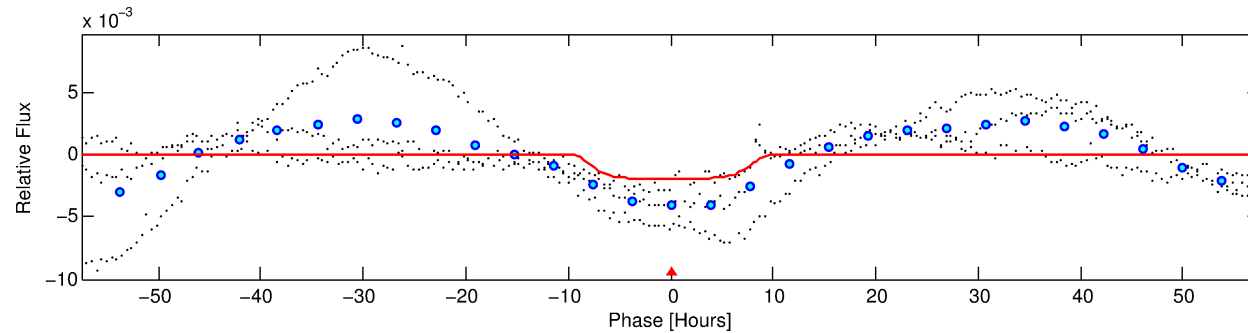
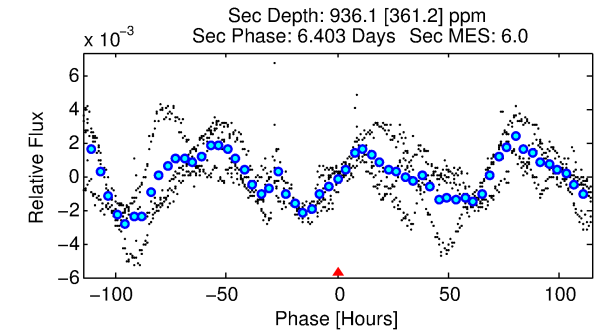
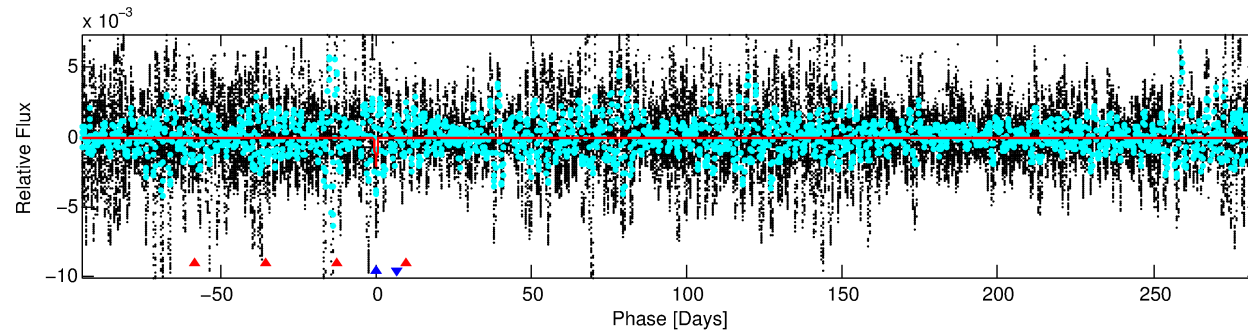
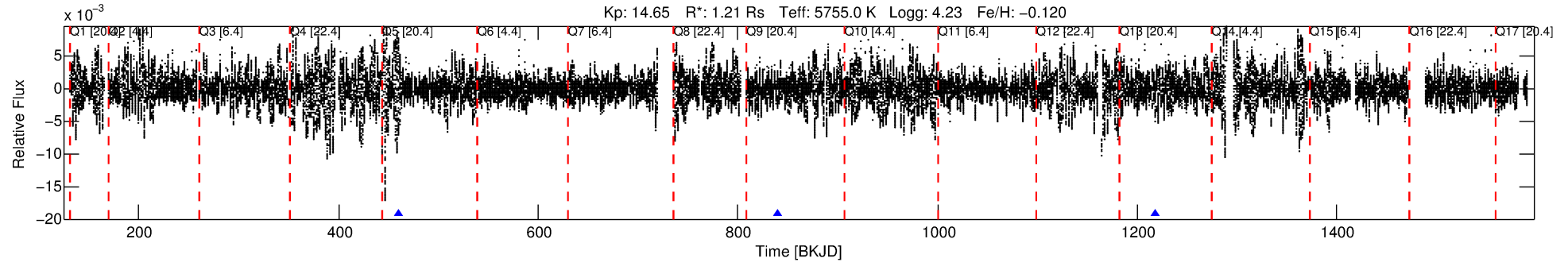
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005385151-02

No Significant Match Found

DV One-Page Summary

KIC: 5385151 Candidate: 2 of 2 Period: 378.962 d



DV Fit Results:

Period = 378.96158 [0.01145] d
Epoch = 460.6599 [0.0152] BKJD
Rp/R* = 0.0482 [0.0055]
a/R* = 85.84 [8.08]
b = 0.88 [0.02]
Seff = 1.45 [0.61]
Teff = 280 [30] K
Rp = 6.37 [1.86] Re
a = 0.9964 [0.2536] AU
Ag = 12598.06 [7601.78] [1.66 σ]
Teffp = 4587 [532] K [8.08 σ]

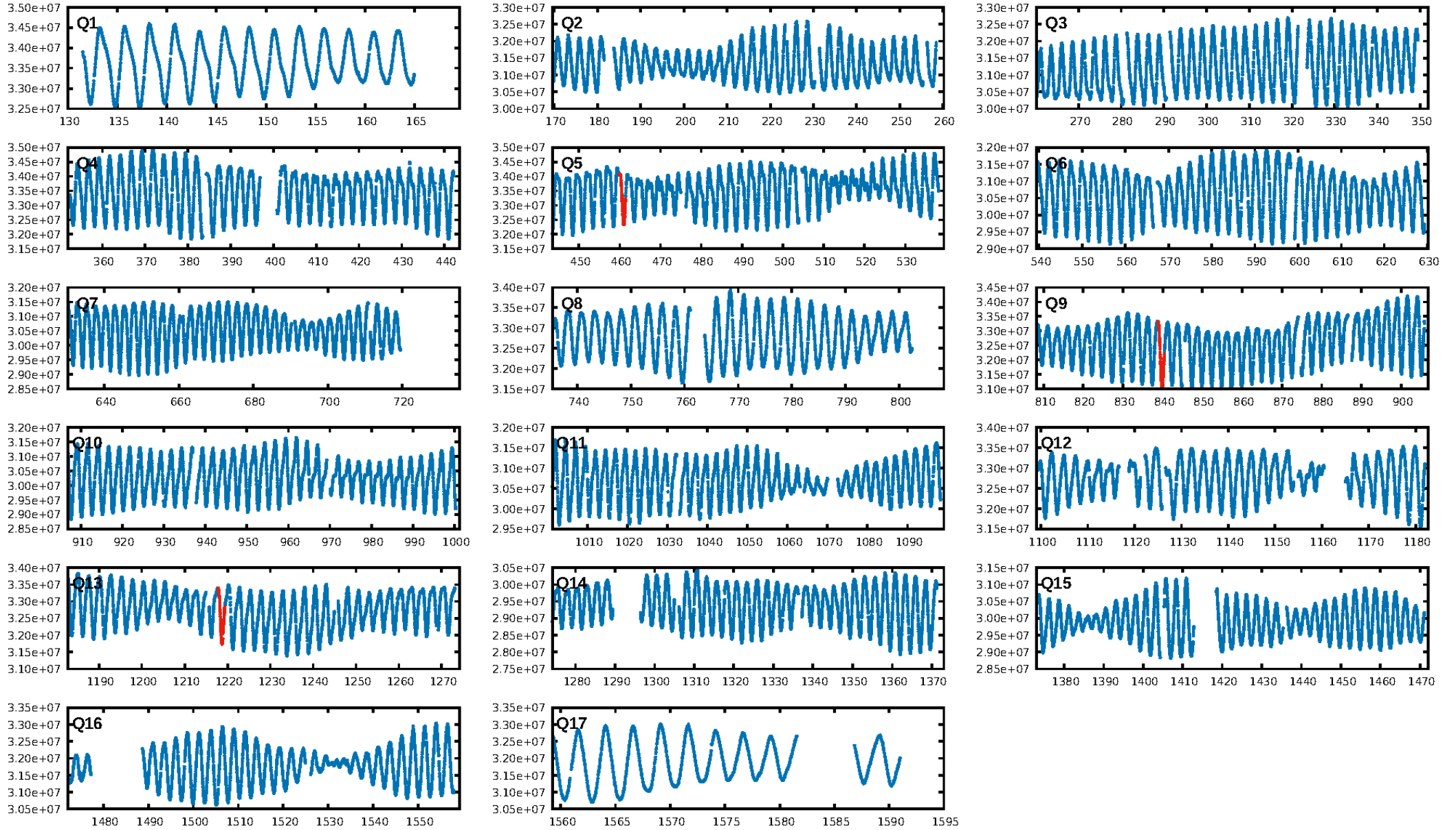
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [28.30 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 86.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 6.51e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.008
Centroid-sig: 24.3%
Centroid-so: 0.499 arcsec [1.40 σ]
OotOffset-rm: 0.016 arcsec [0.18 σ]
OotOffset-st: 0/0/0/2 [2]
KicOffset-rm: 0.129 arcsec [1.70 σ]
KicOffset-st: 0/0/0/2 [2]
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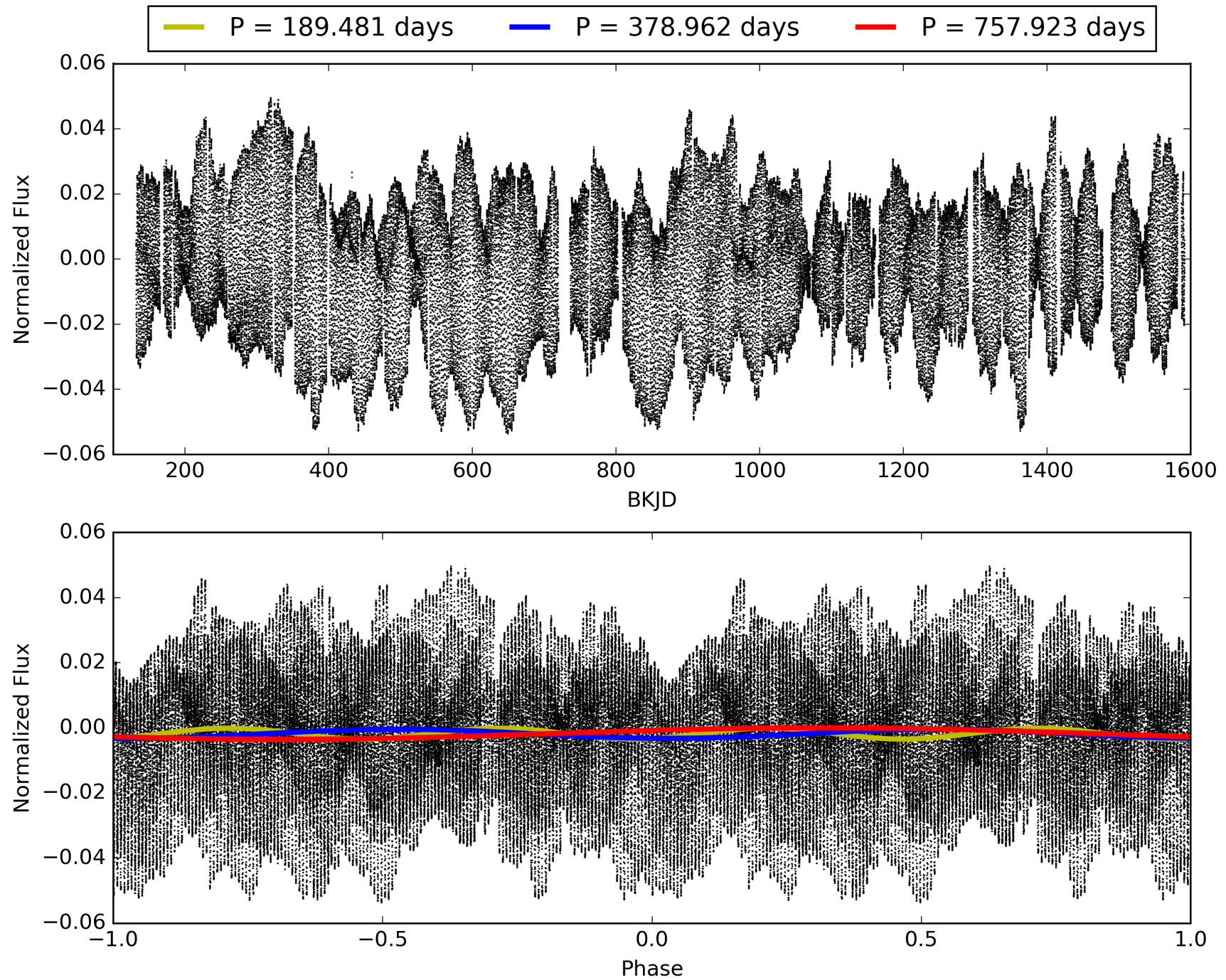
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005385151-02, PDC Light Curves

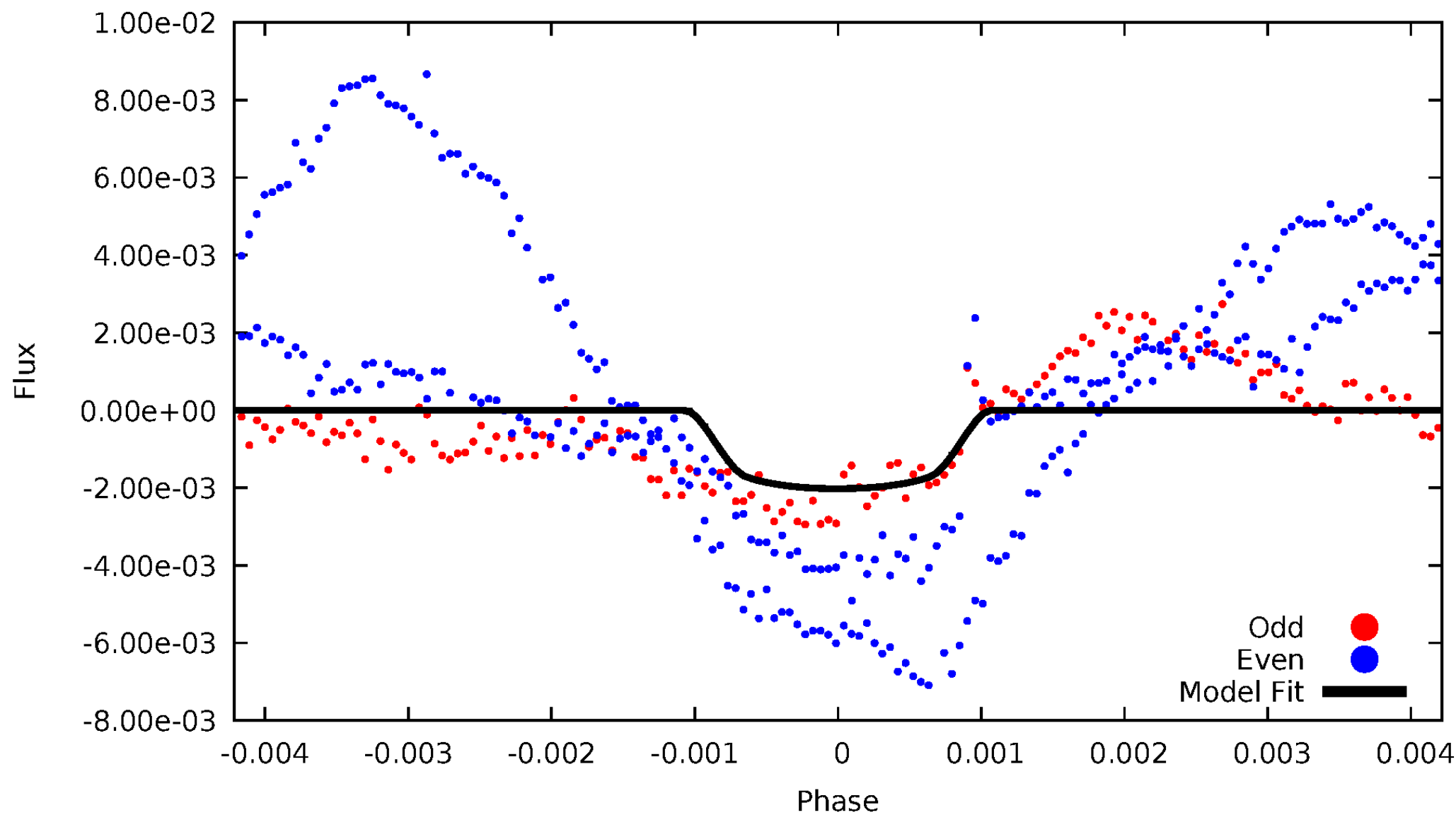


TCE 005385151-02



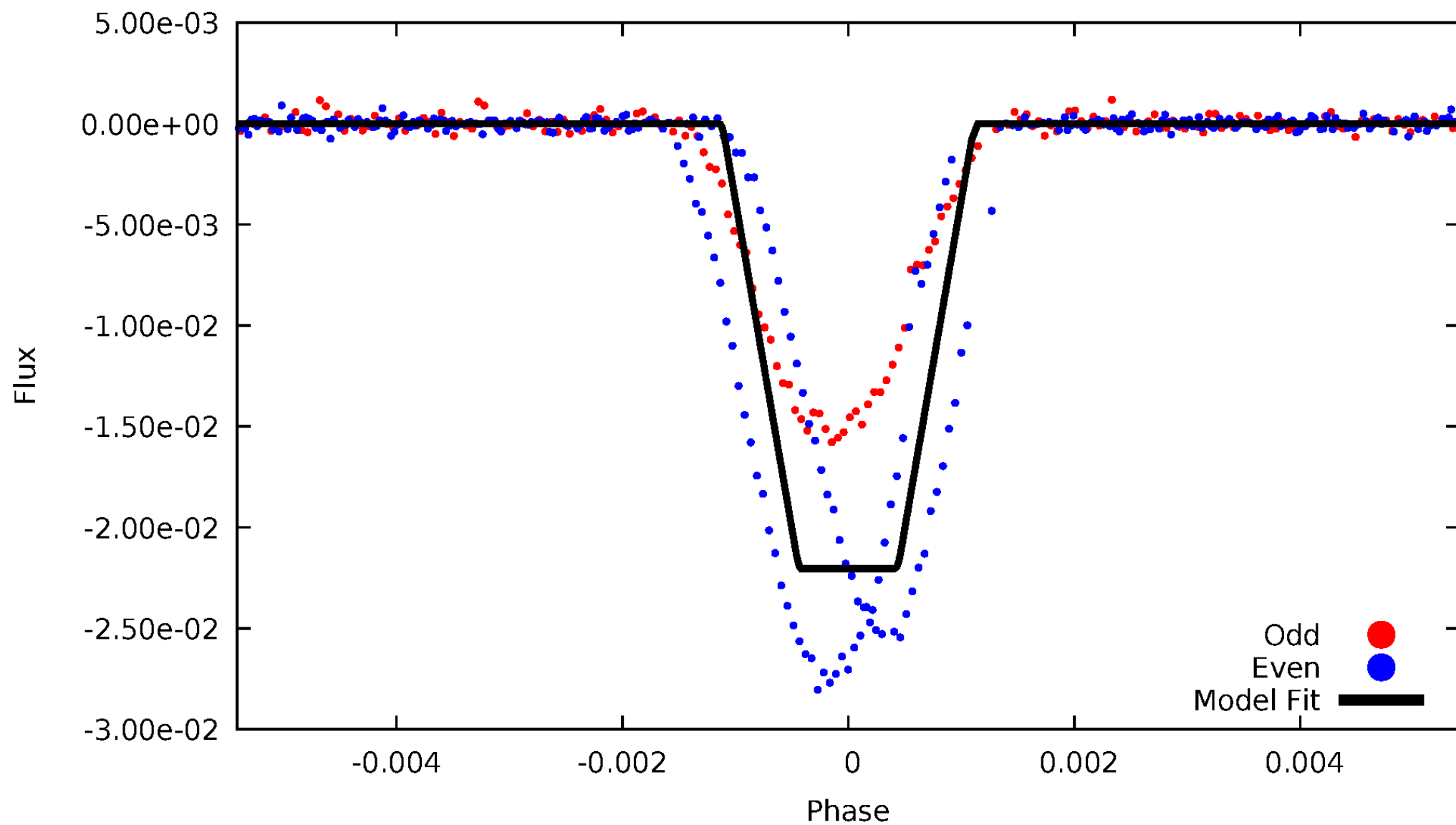
DV Odd/Even

TCE 005385151-02



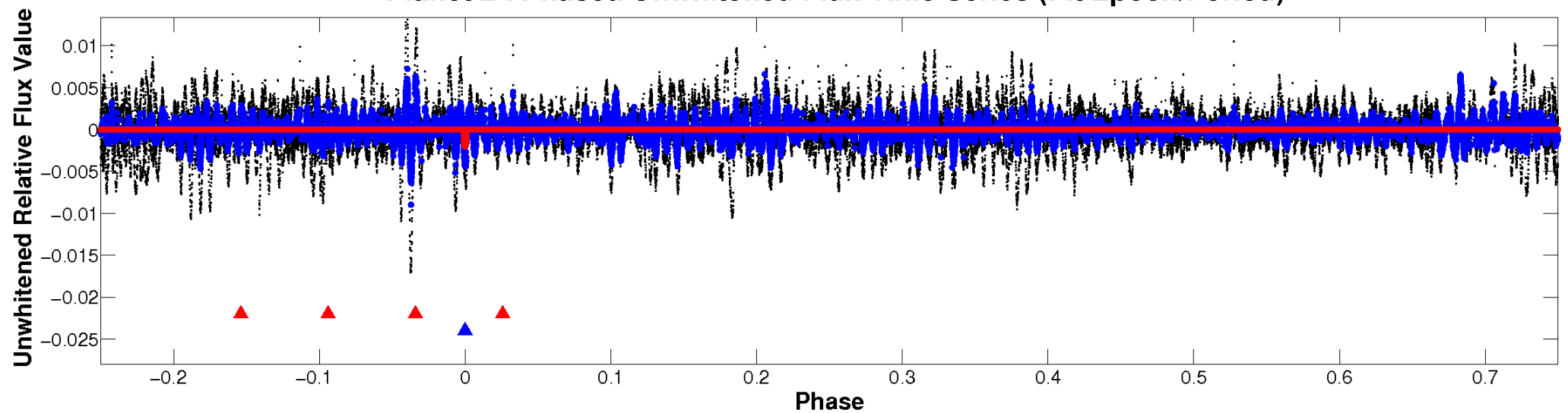
ALT Odd/Even

TCE 005385151-02

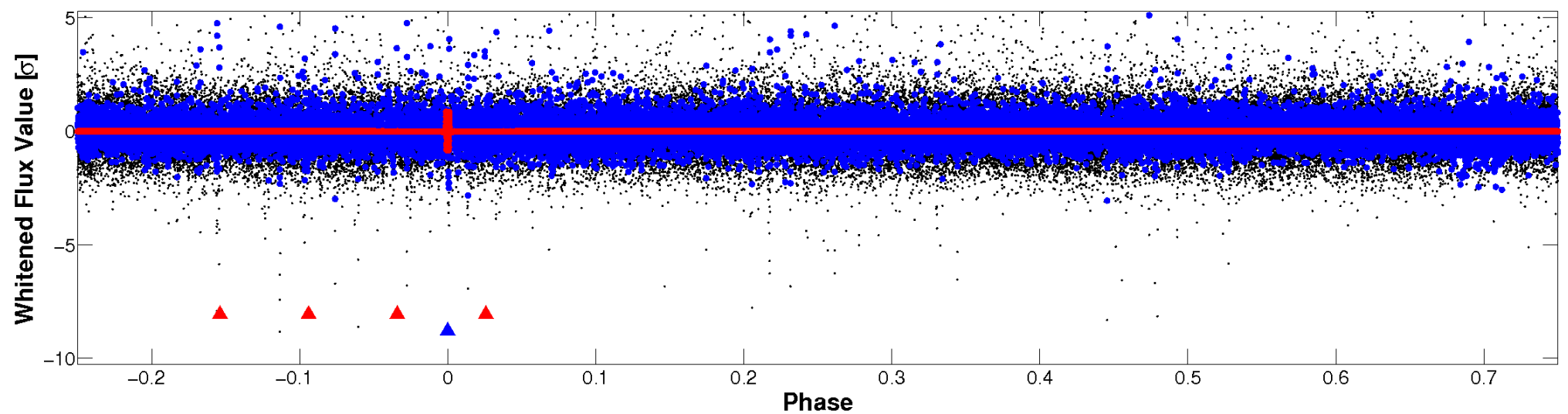


Non-Whitened Vs. Whitened Light Curve

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

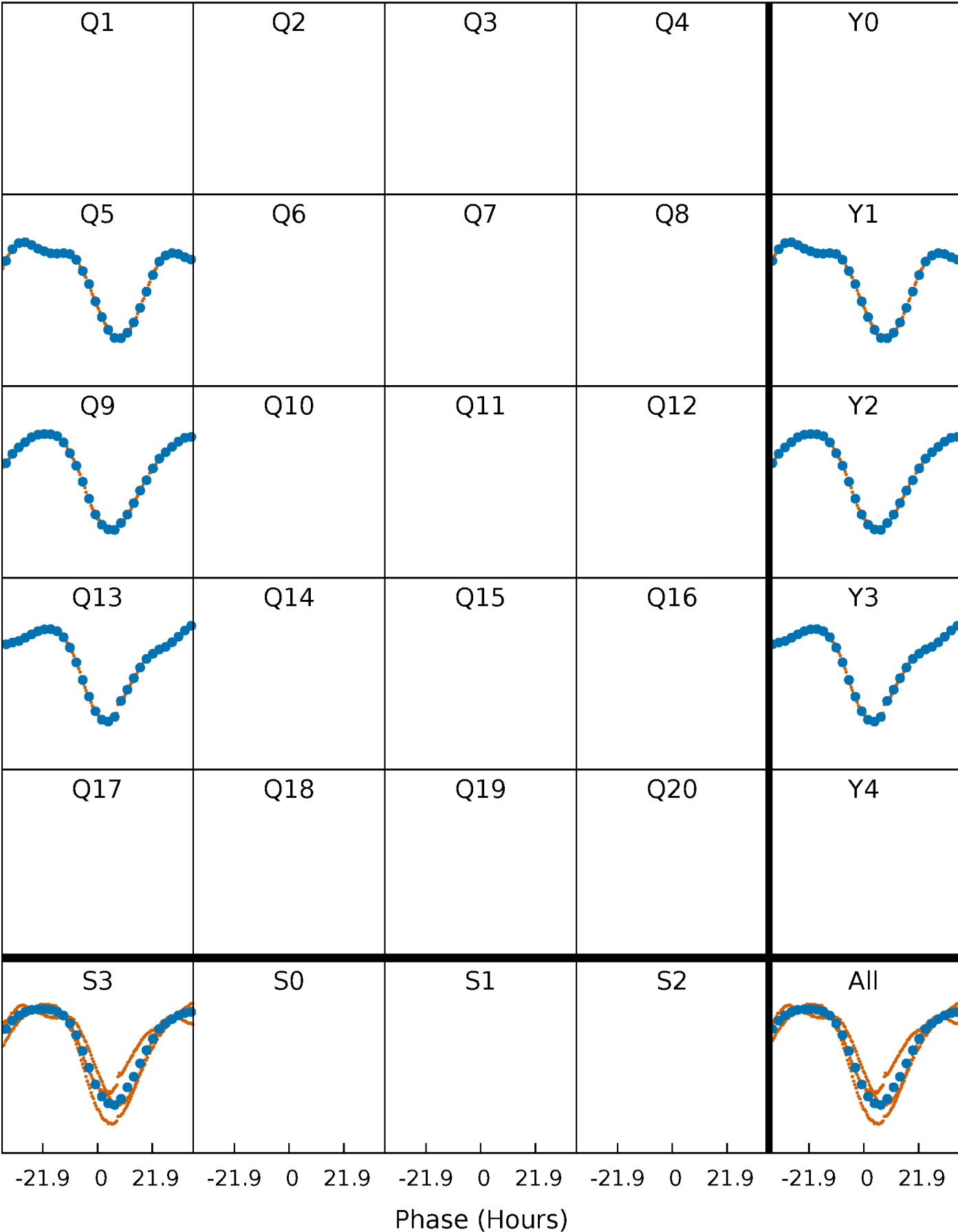


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



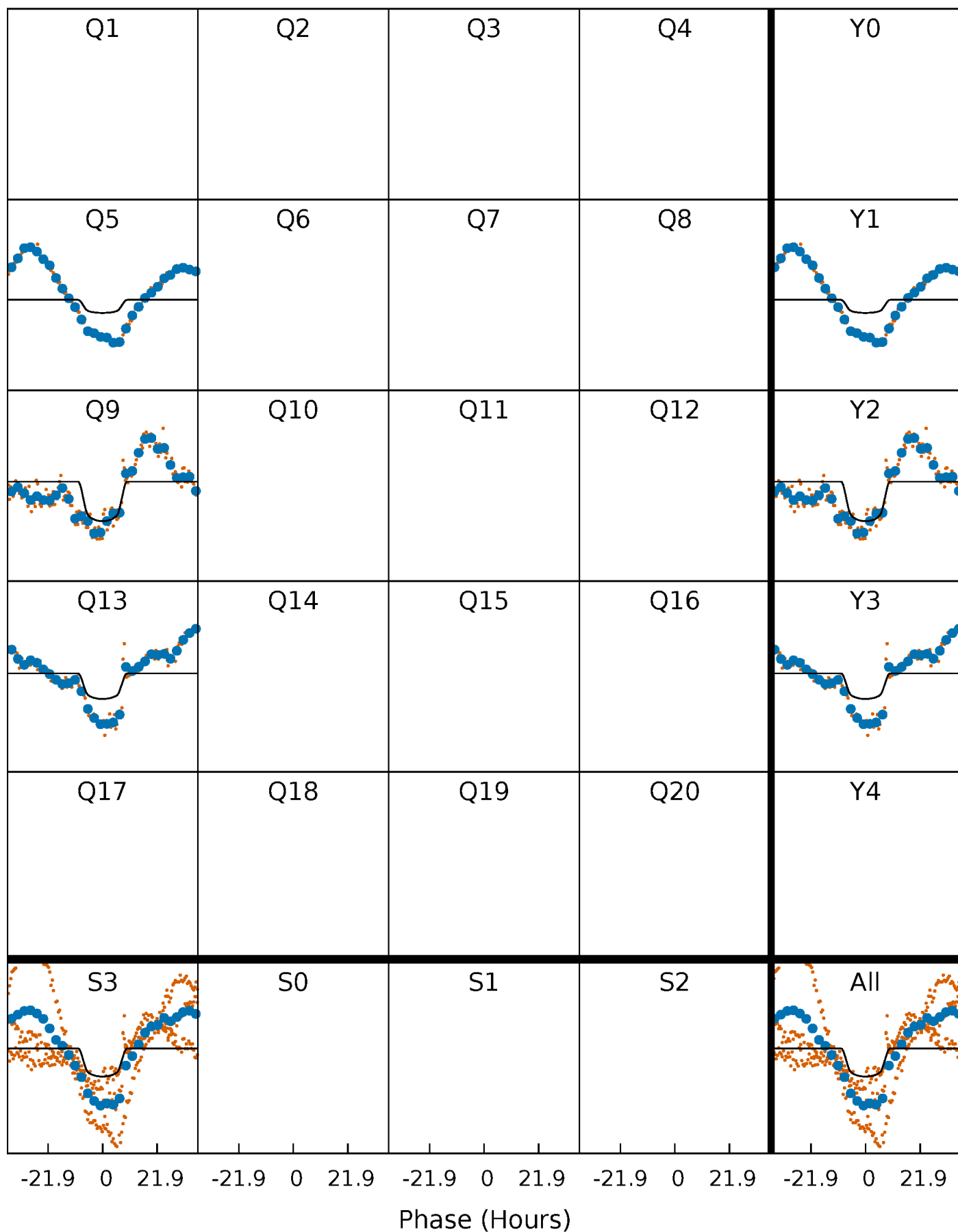
PDC Quarter-Phased Transit Curves

TCE 005385151-02 P=378.961585 Days $T_0=460.659853$ (BKJD)



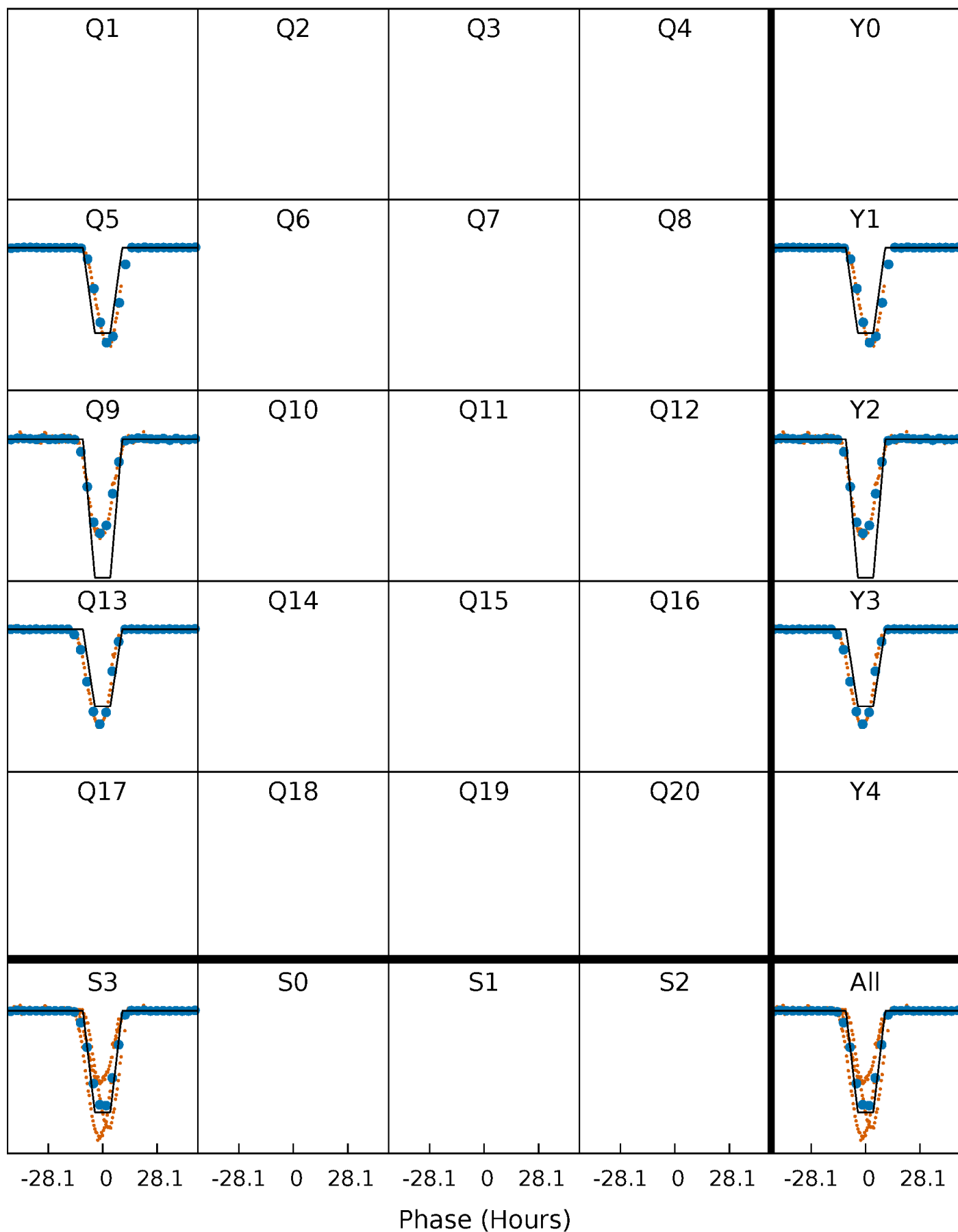
DV Quarter-Phased Transit Curves

TCE 005385151-02 $P=378.961585$ Days $T_0=460.659853$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

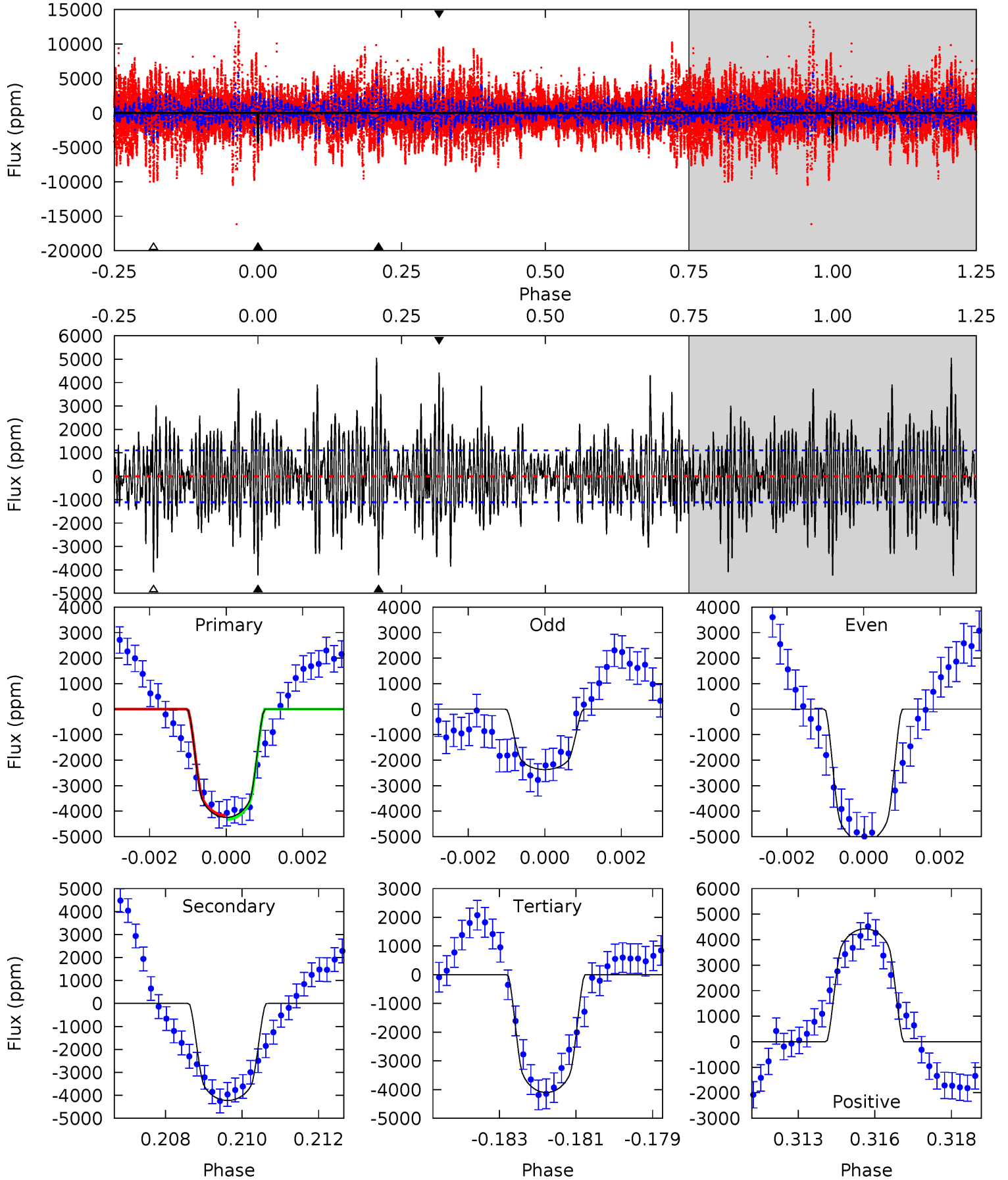
TCE 005385151-02 P=378.967615 Days $T_0=460.786558$ (BKJD)



DV Model-Shift Uniqueness Test

005385151-02, $P = 378.961585$ Days, $E = 81.698268$ Days

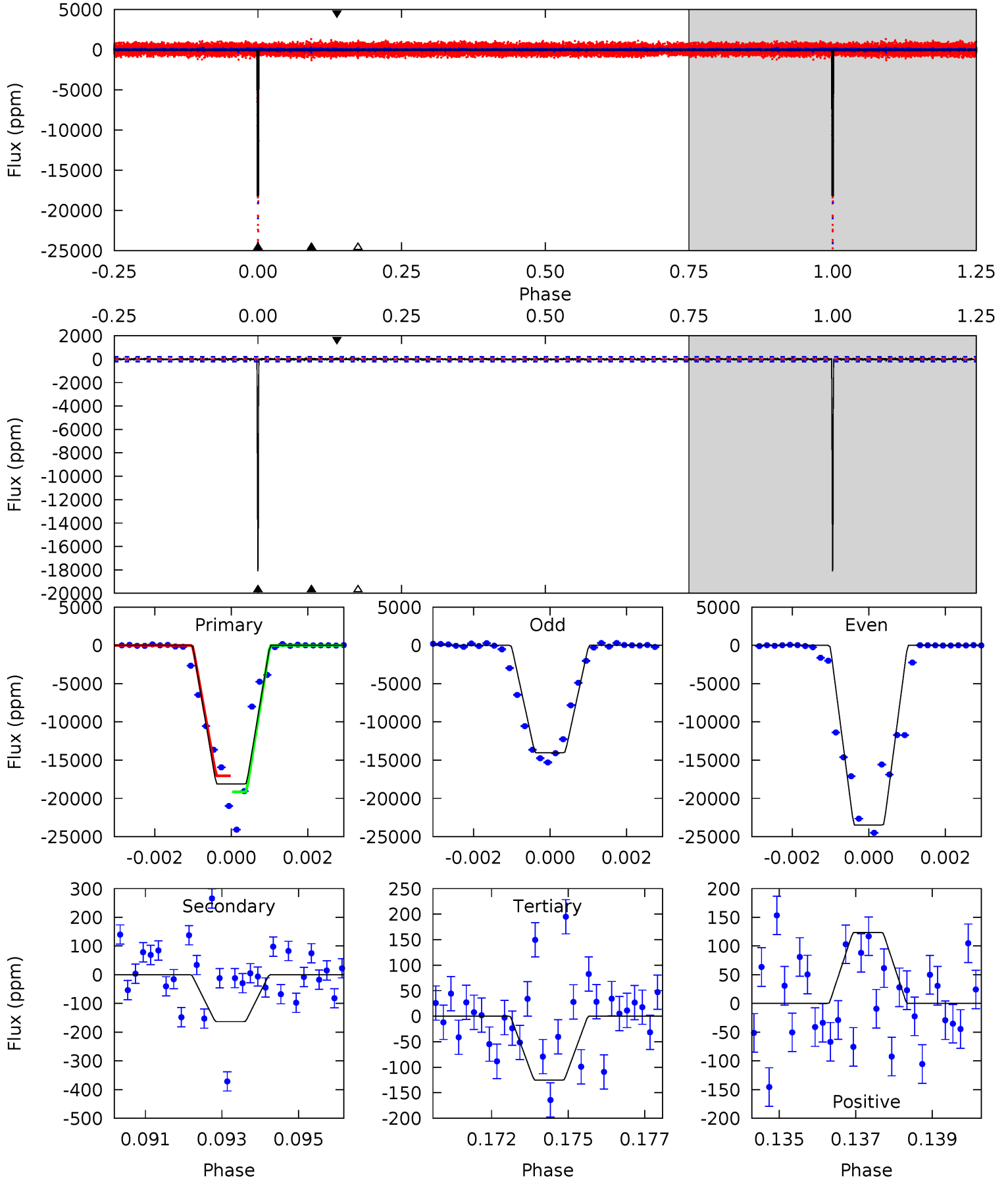
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.4	20.3	19.7	21.3	5.32	3.08	5.86	0.68	-0.86	0.59	-0.96	6.49	1.07	0.54	0.38



Alt Model-Shift Uniqueness Test

005385151-02, P = 378.967615 Days, E = 81.818943 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
487.7	4.40	3.37	3.32	5.31	3.06	0.64	484.3	484.3	1.03	1.07	173.6	0.94	0.01	0



Stellar Parameters For KIC 005385151

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5755^{+173}_{-173}	$4.234^{+0.236}_{-0.172}$	$-0.120^{+0.300}_{-0.300}$	$1.212^{+0.325}_{-0.325}$	$0.919^{+0.134}_{-0.083}$	$0.727^{+0.930}_{-0.357}$
	+3%/-3%	+6%/-4%	+250%/-250%	+27%/-27%	+15%/-9%	+128%/-49%
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 005385151-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-4224 ± 208	$6.42^{+1.35}_{-1.22}$	390^{+31}_{-30}	6661^{+582}_{-400}	57154^{+28443}_{-17620}
Alt.	-163 ± 37	$19.67^{+3.11}_{-3.02}$	390^{+29}_{-32}	2528^{+85}_{-89}	232^{+109}_{-74}

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

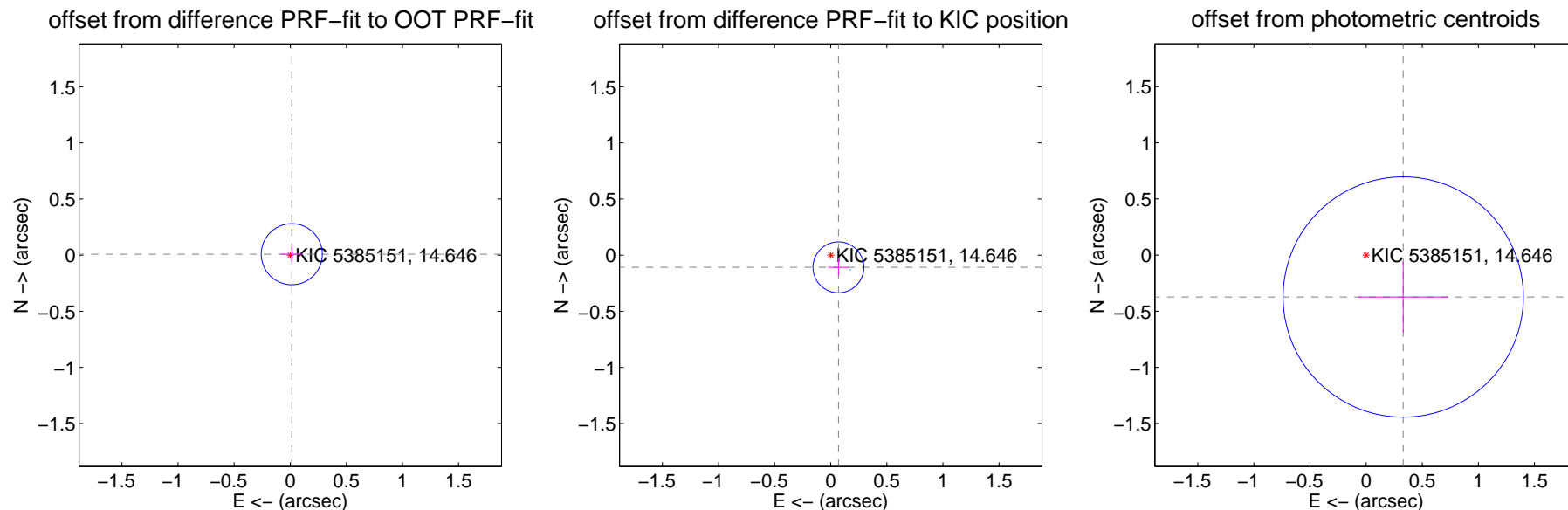
DV Centroid Data

Supplemental centroid analysis for 005385151-02. Kepler magnitude: 14.65. Transit SNR 5.22

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.016 ± 0.091	0.18	-0.014 ± 0.098	0.008 ± 0.068
PRF-fit source offset from KIC position	0.129 ± 0.076	1.70	-0.069 ± 0.092	-0.109 ± 0.068
photometric centroid source offset	0.50 ± 0.36	1.40	-0.33 ± 0.40	-0.37 ± 0.32

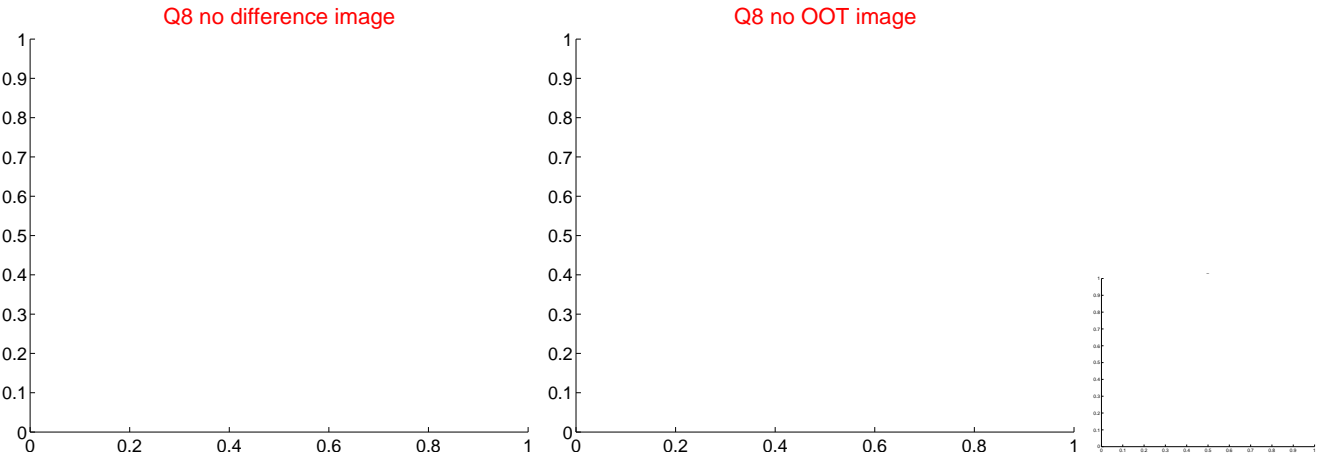
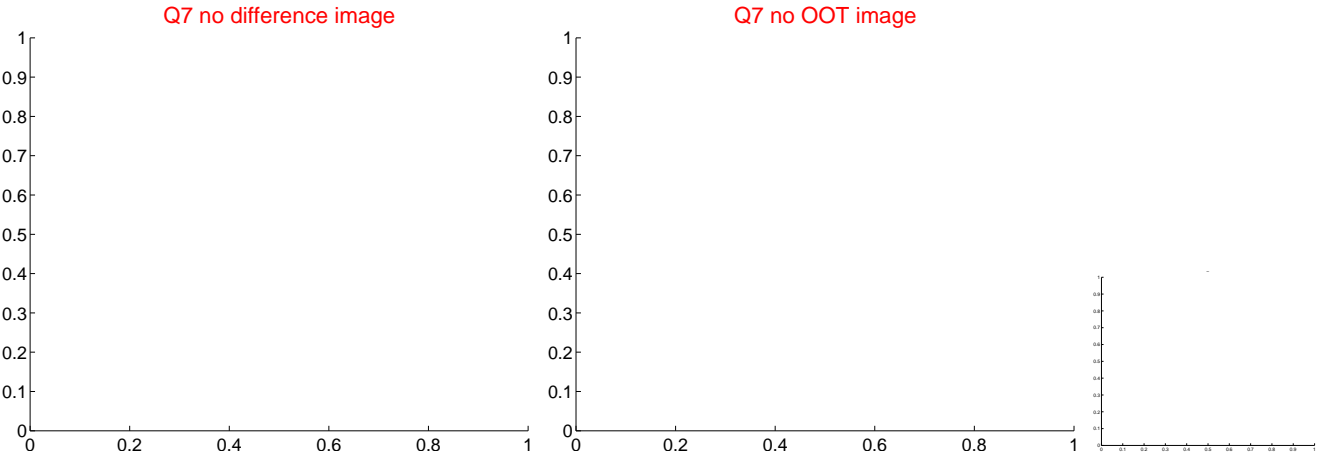
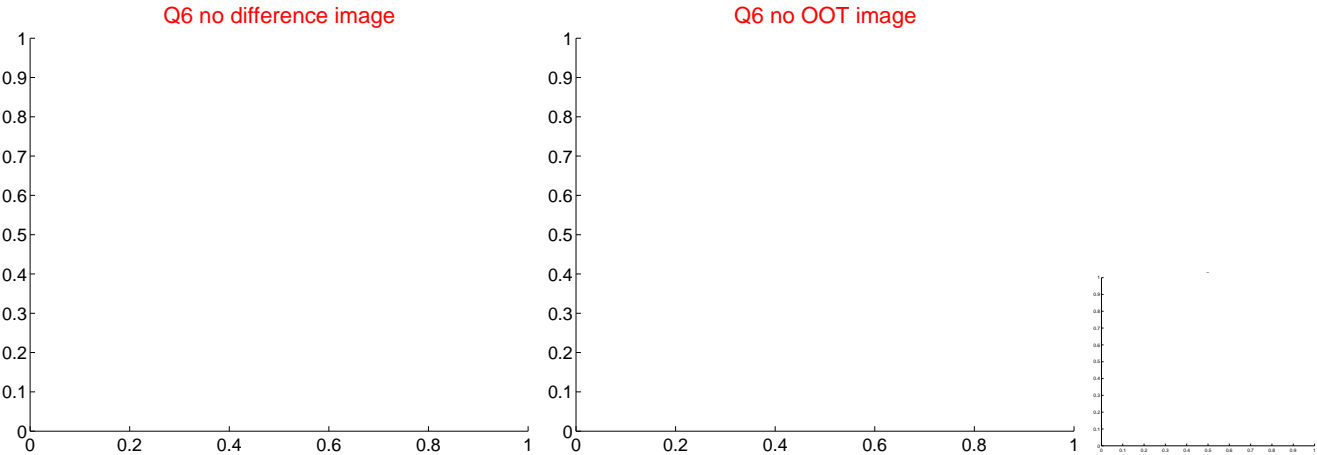
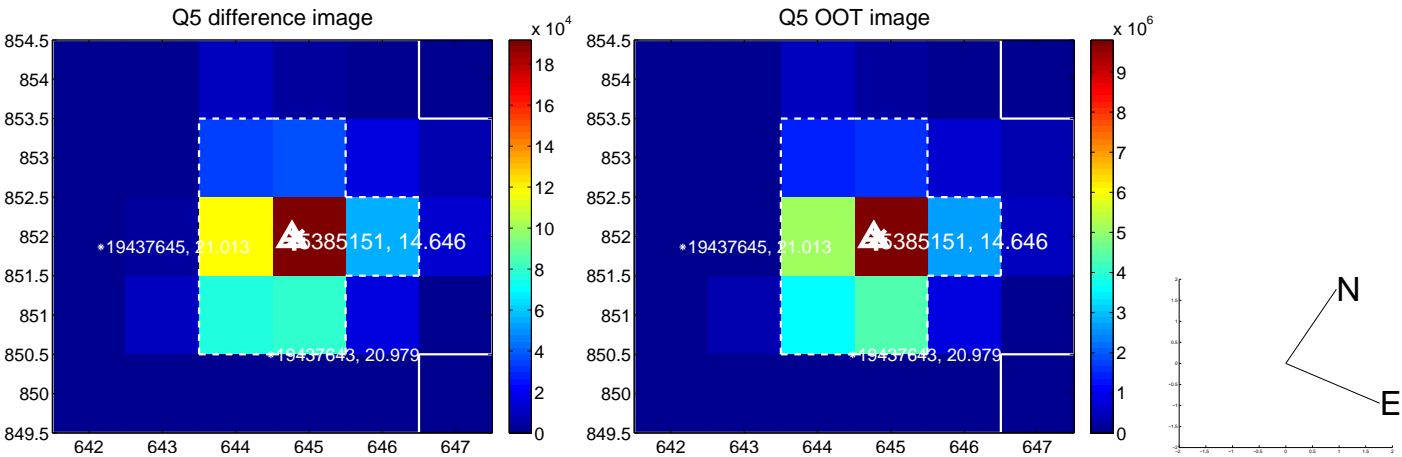


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

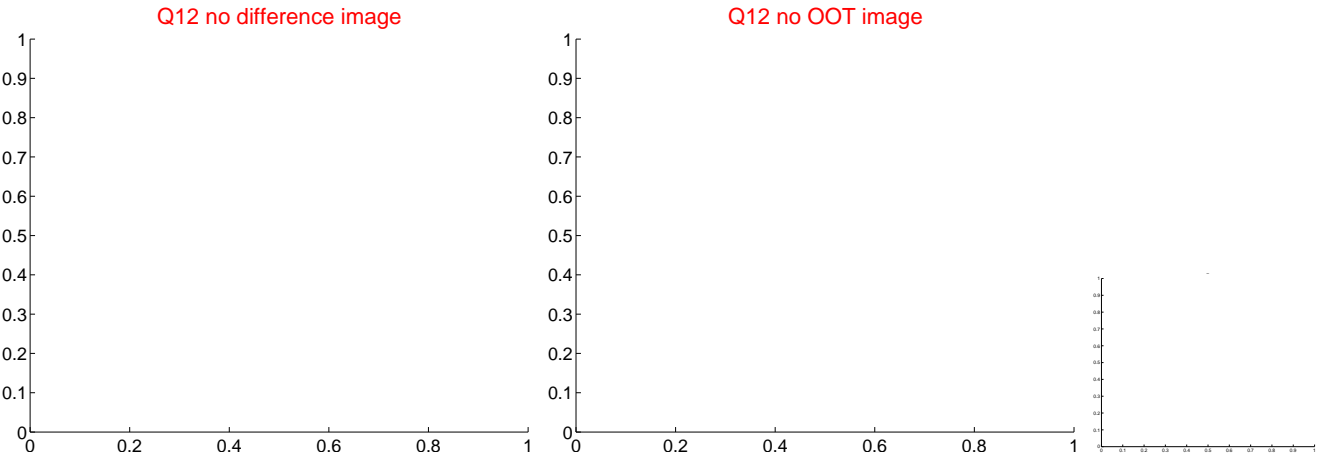
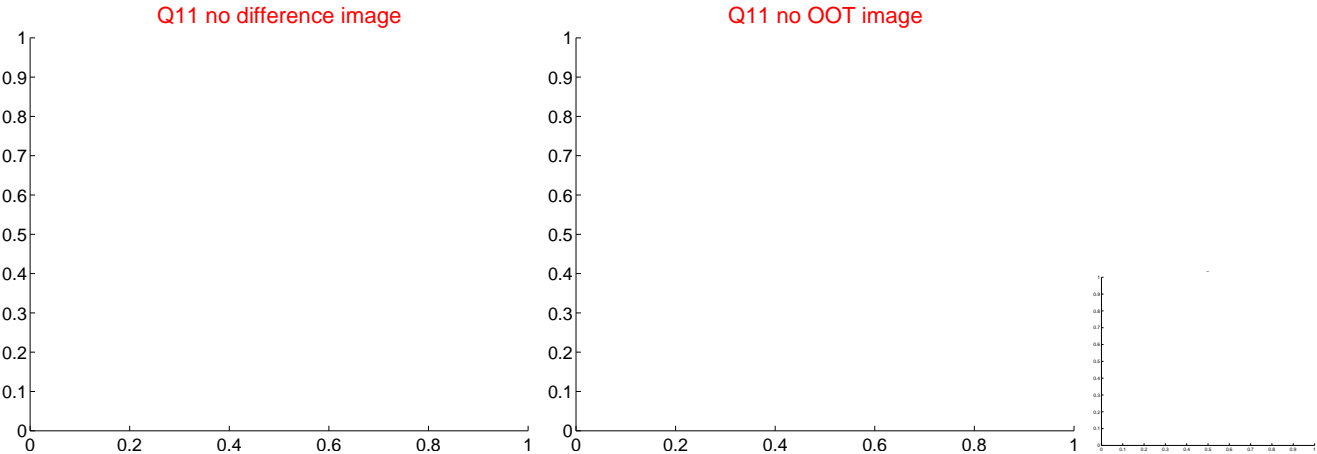
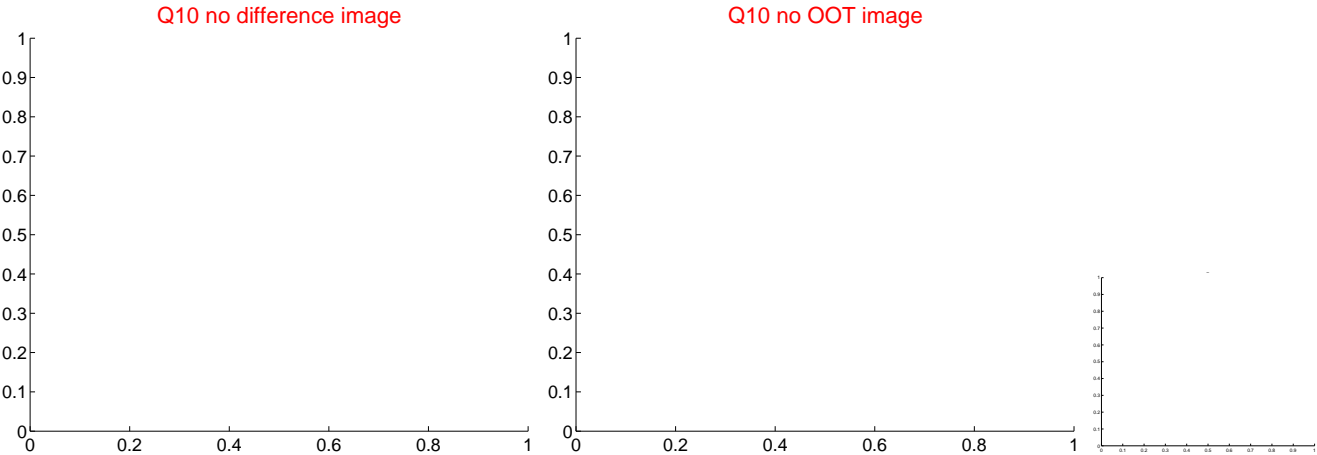
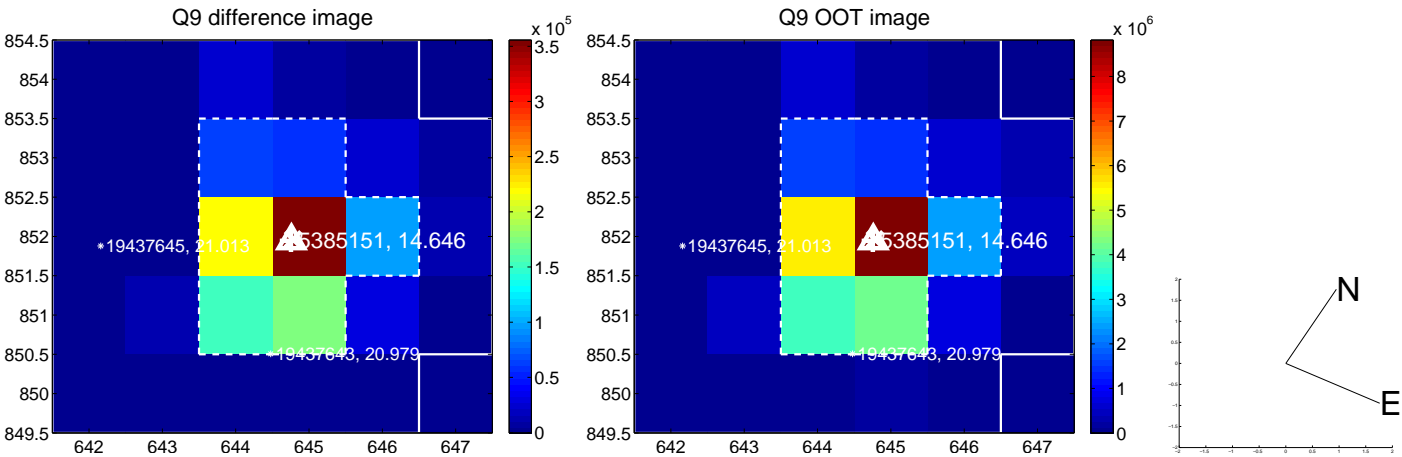
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



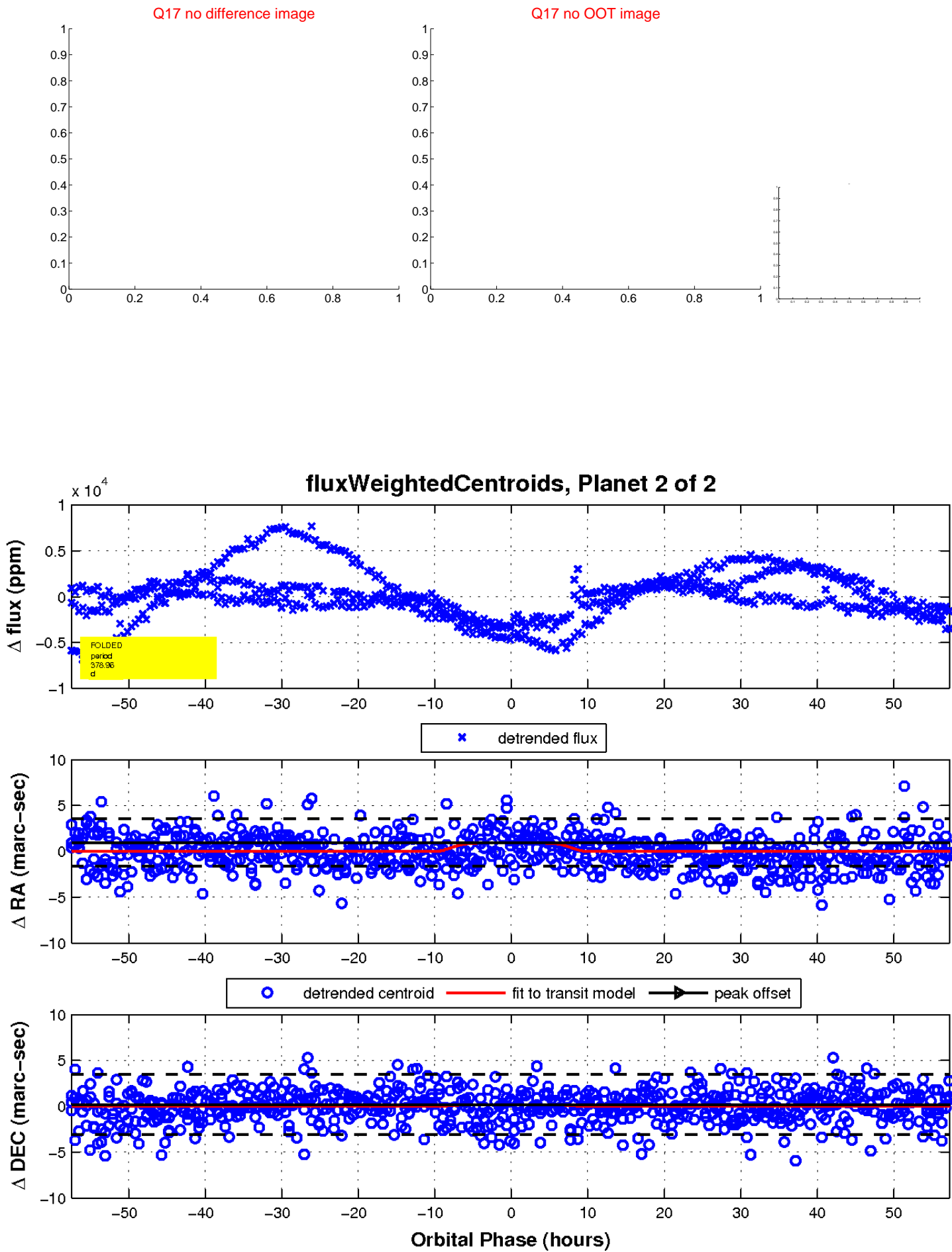
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

