

KIC 005653849

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})
005653849-01	OBS	3711.01	111.038105	152.789476	26972.2	38.473	520.9	556.5	0.78	5470	14.24	2.97
005653849-02	OBS	No	111.039042	161.940505	9481.0	26.295	301.7	260.8	0.78	5470	8.74	2.97

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005653849-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_UNRESOLVED_OFFSET
005653849-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_UNRESOLVED_OFFSET

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.

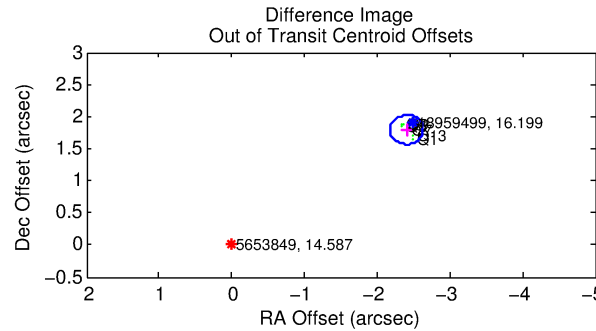
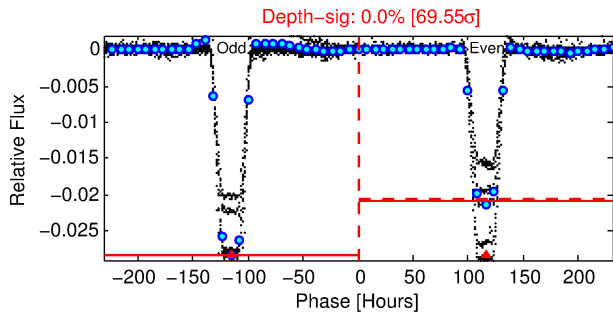
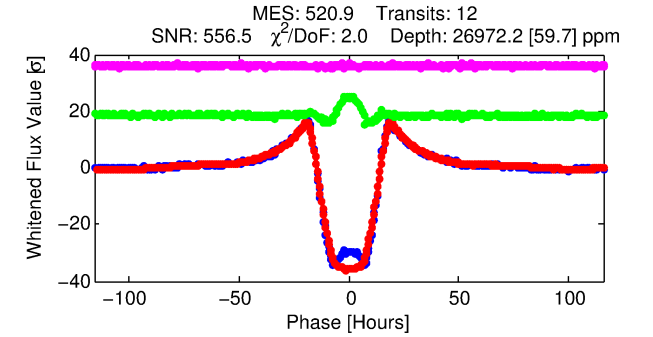
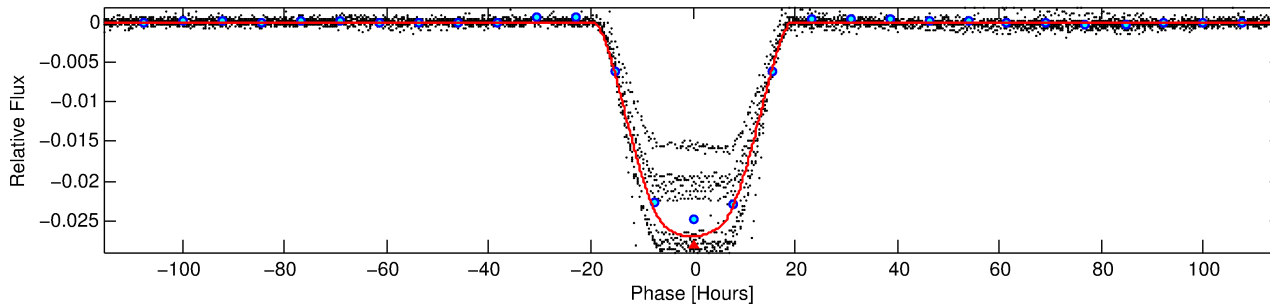
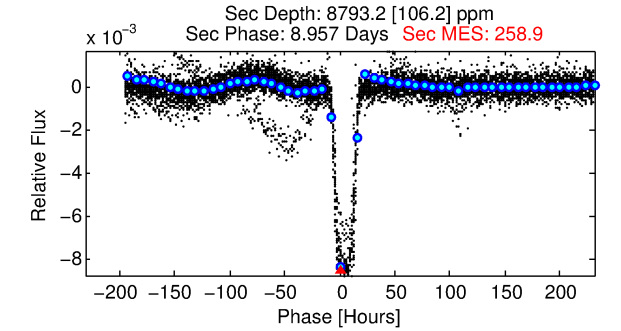
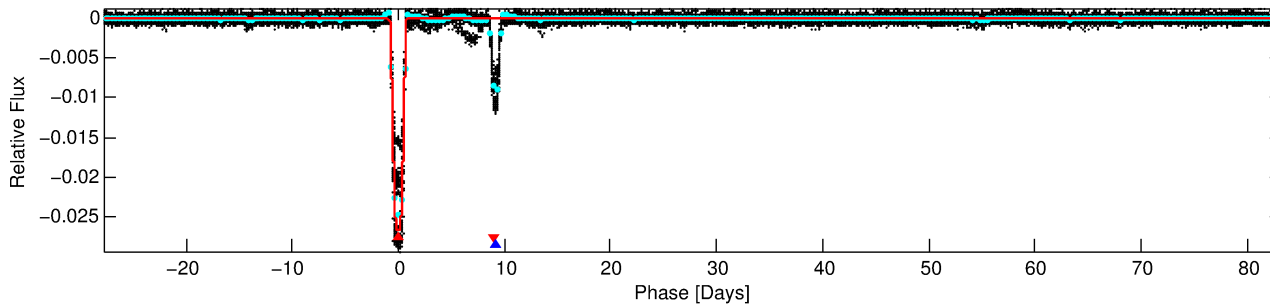
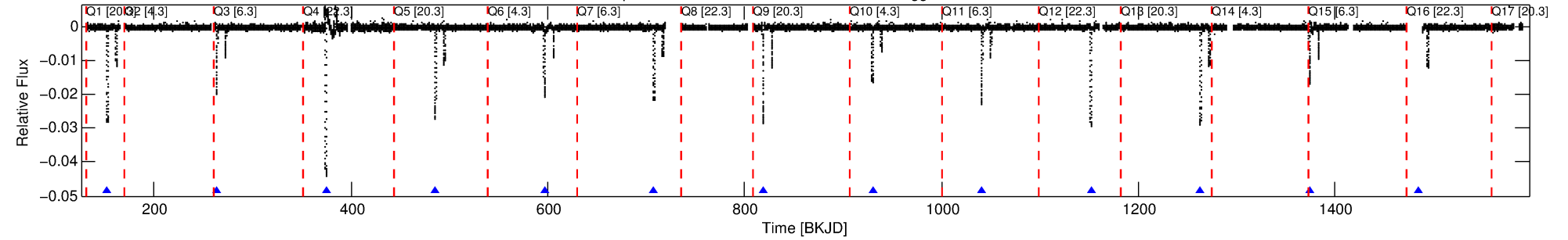
Ephemeris Match Information For 005653849-01

No Significant Match Found

DV One-Page Summary

KIC: 5653849 Candidate: 1 of 2 Period: 111.038 d
KOI: K03711 Corr: No Ephemeris Match

Kp: 14.59 R*: 0.78 Rs Teff: 5470.0 K Logg: 4.51 Fe/H: -0.580



DV Fit Results:

Period = 111.03810 [0.00018] d
Epoch = 152.7895 [0.0012] BKJD
Rp/R* = 0.1679 [0.0003]
a/R* = 18.98 [0.05]
b = 0.79 [0.00]
Seff = 2.97 [0.71]
Teq = 335 [20] K
Rp = 14.24 [2.25] Re
a = 0.4036 [0.0555] AU
Ag = 3888.52 [801.23] [4.85σ]
Teffp = 4088 [122] K [30.25σ]

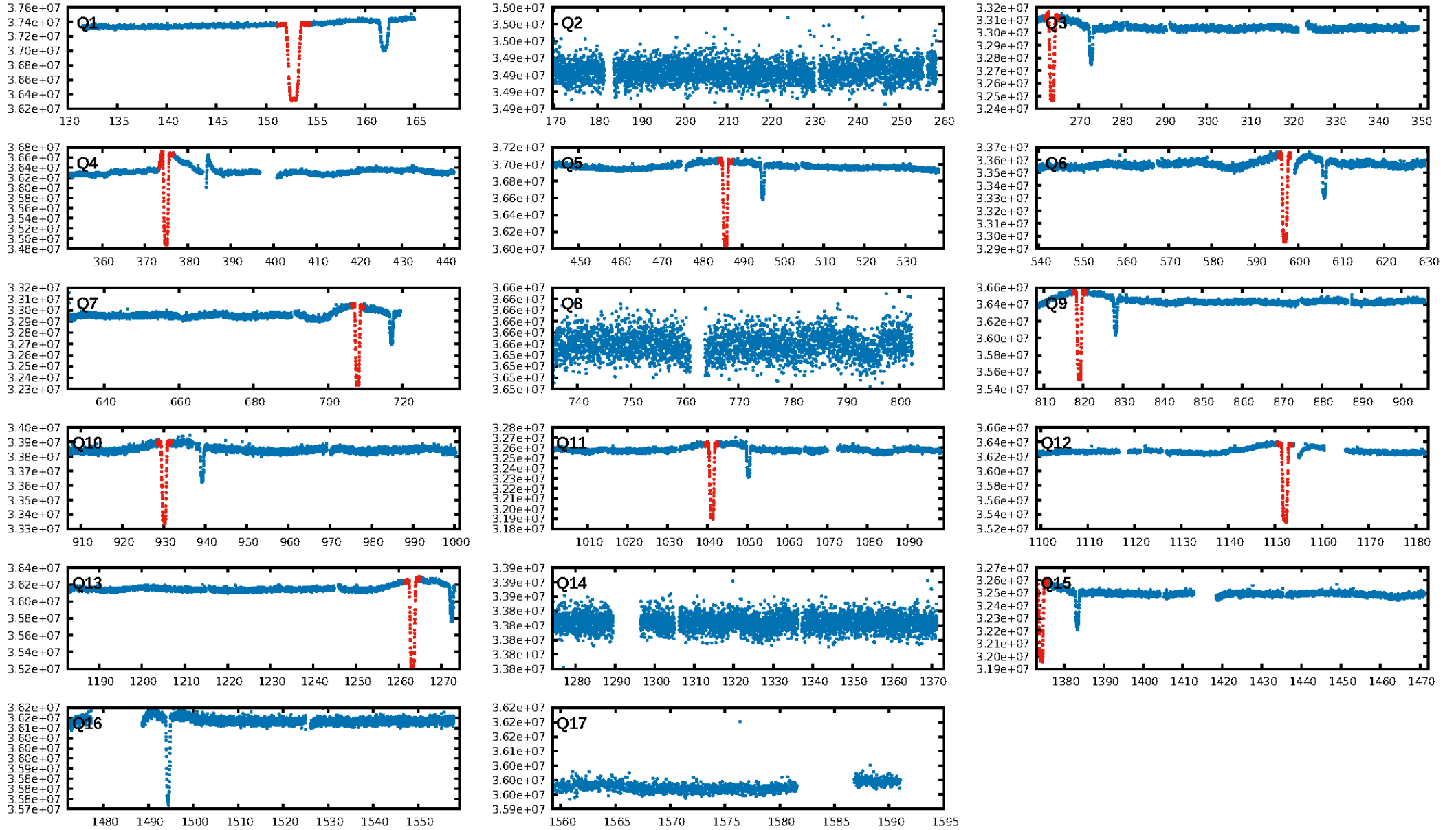
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [11/11]
GhostDiagnostic-chr: 1.732
Centroid-sig: 0.0%
Centroid-so: 2.320 arcsec [133.54σ]
OotOffset-rm: 2.998 arcsec [39.41σ]
KicOffset-rm: 2.957 arcsec [32.89σ]
OotOffset-st: 0/2/0/4 [6]
KicOffset-st: 0/2/0/4 [6]
DiffImageQuality-fgm: 1.00 [6/6]
DiffImageOverlap-fno: 1.00 [6/6]

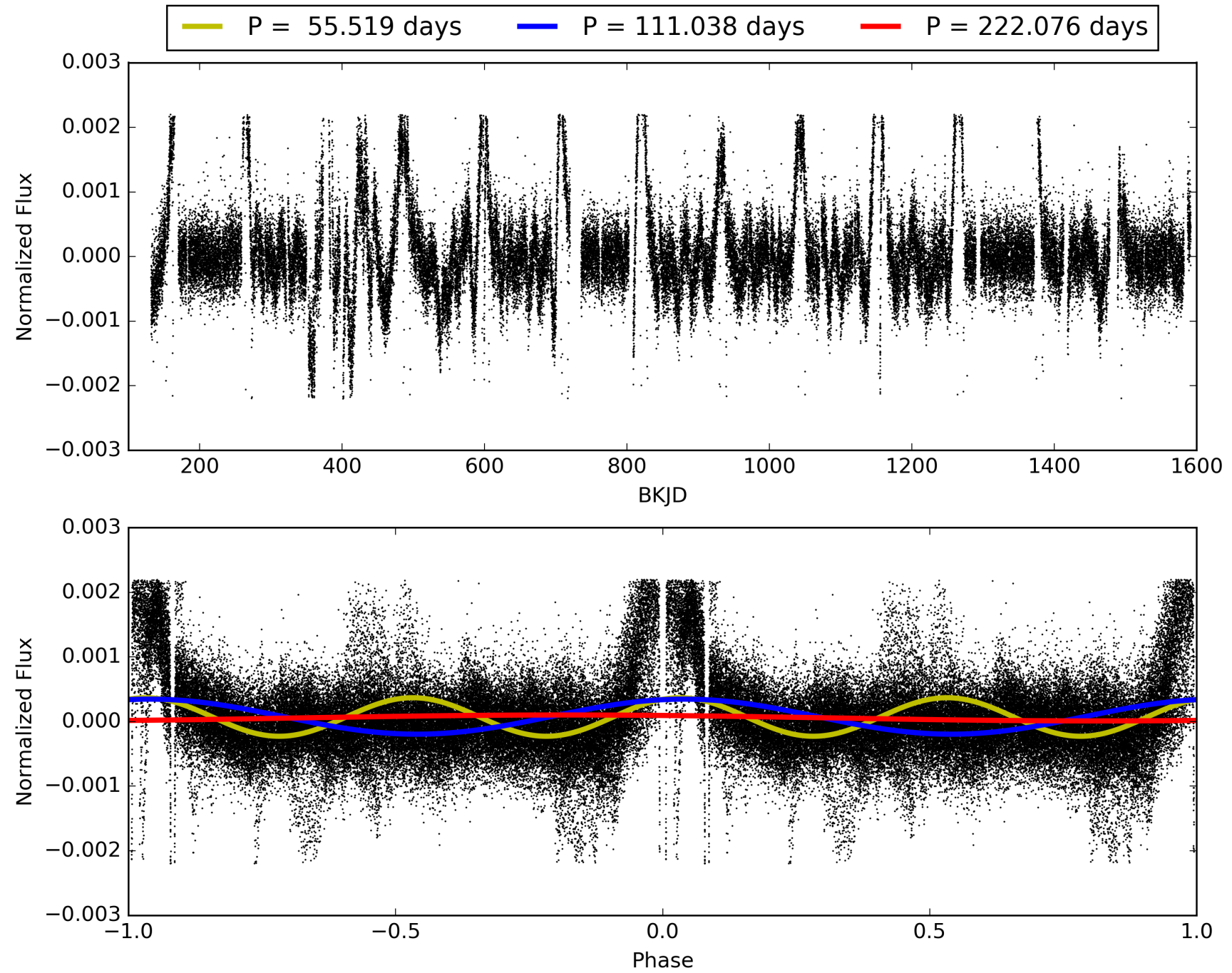
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:01:50 Z

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

TCE 005653849-01, PDC Light Curves

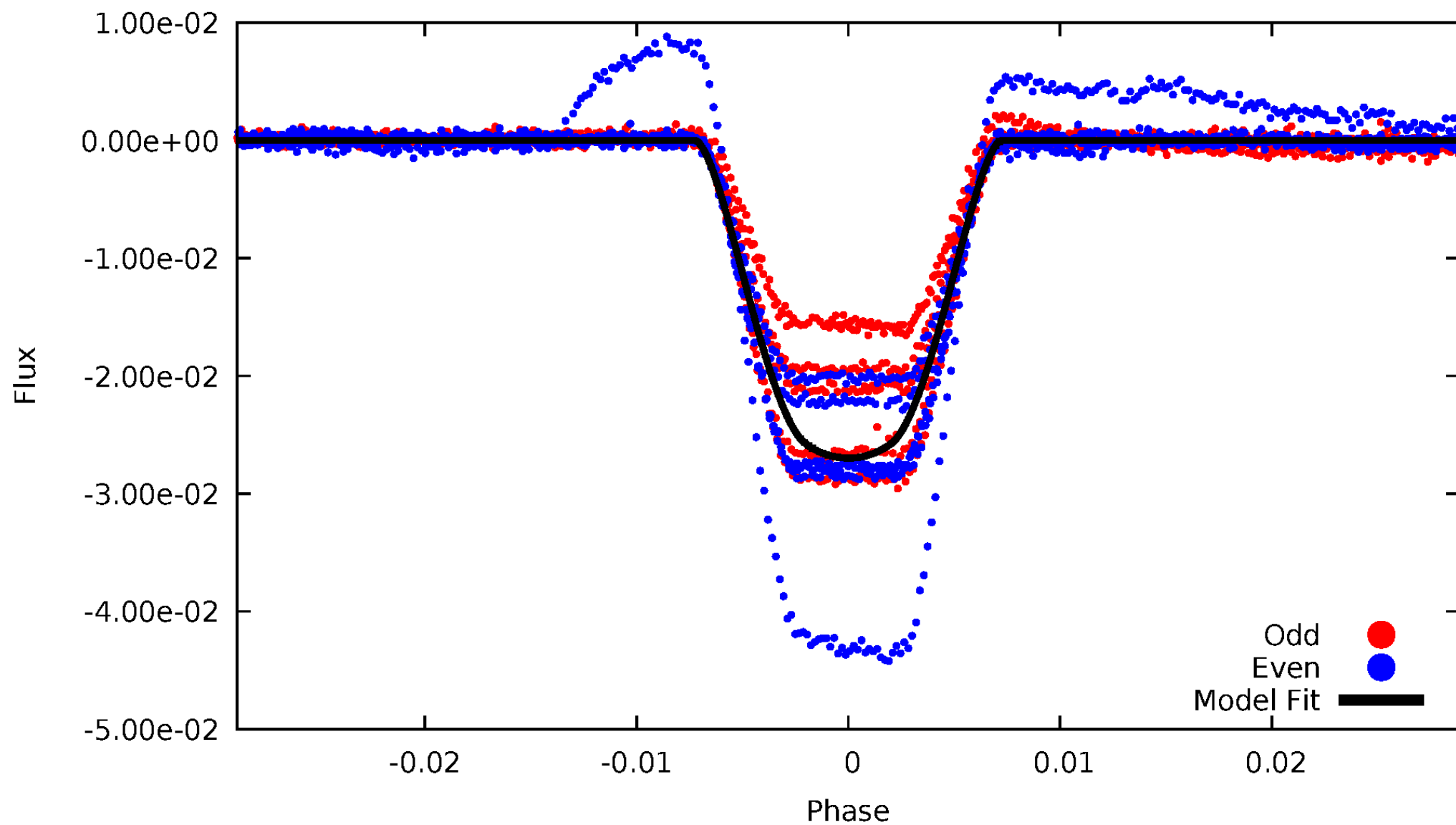


TCE 005653849-01



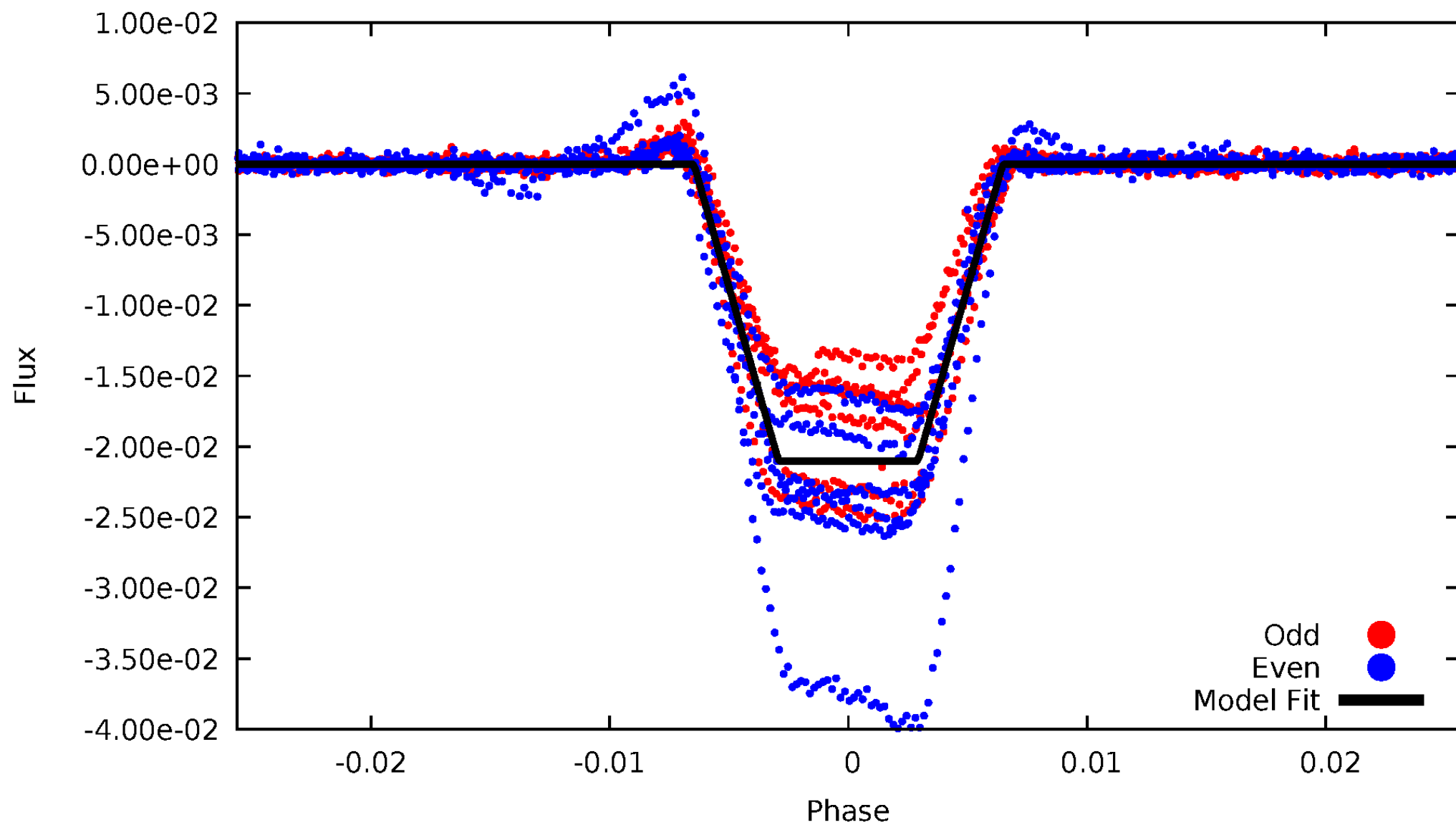
DV Odd/Even

TCE 005653849-01



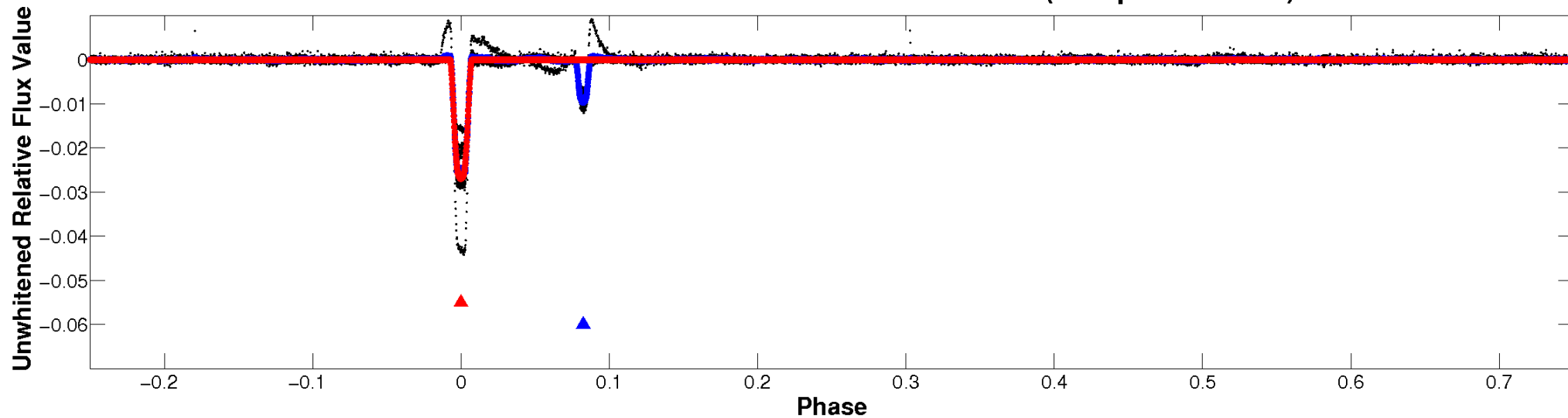
ALT Odd/Even

TCE 005653849-01

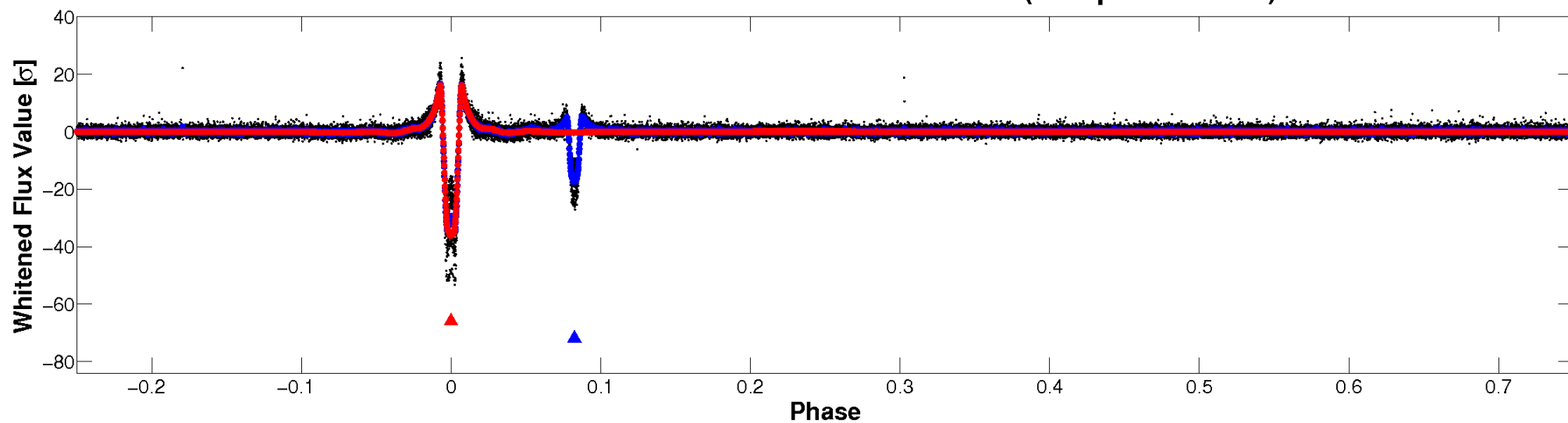


Non-Whitened Vs. Whitened Light Curve

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

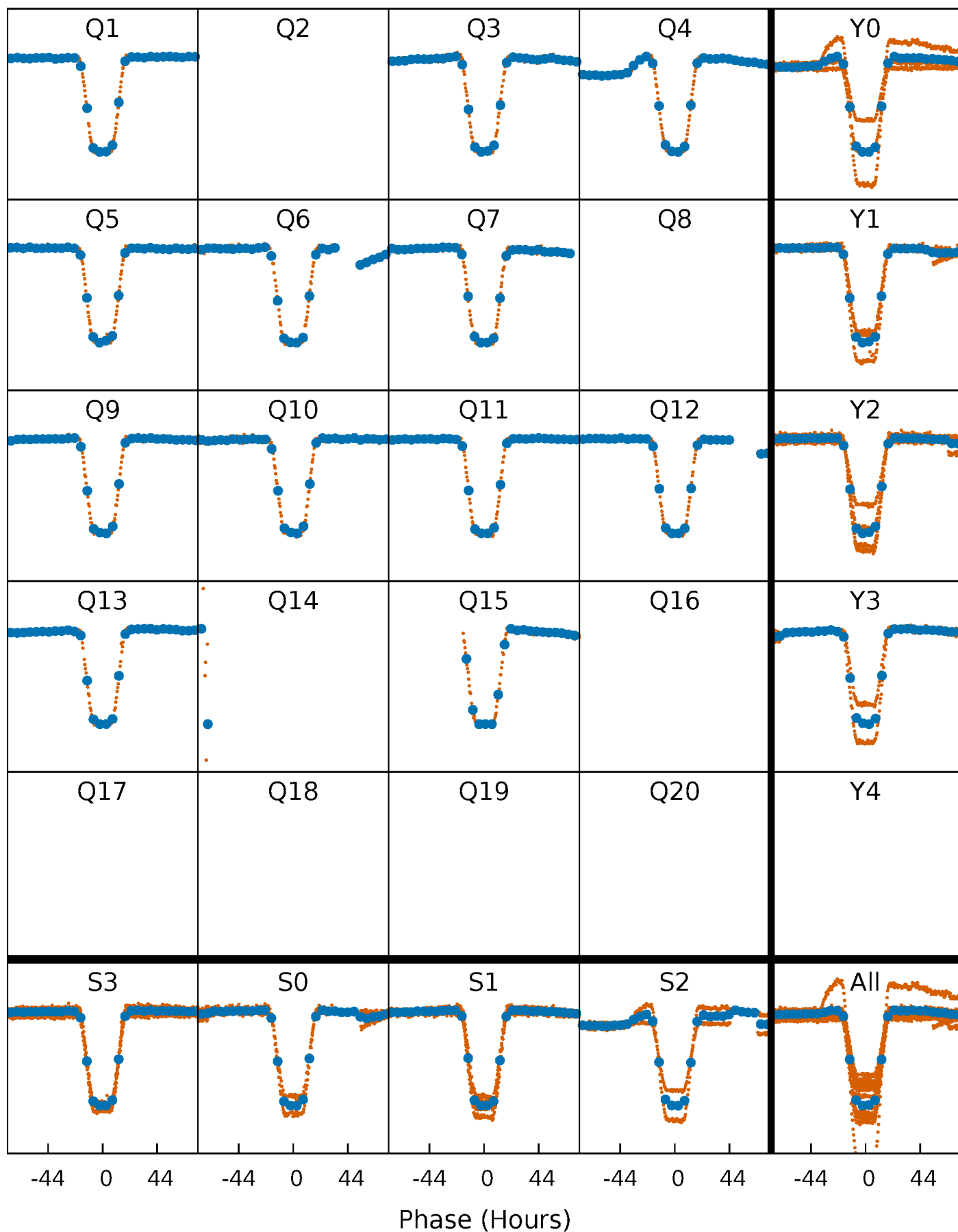


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



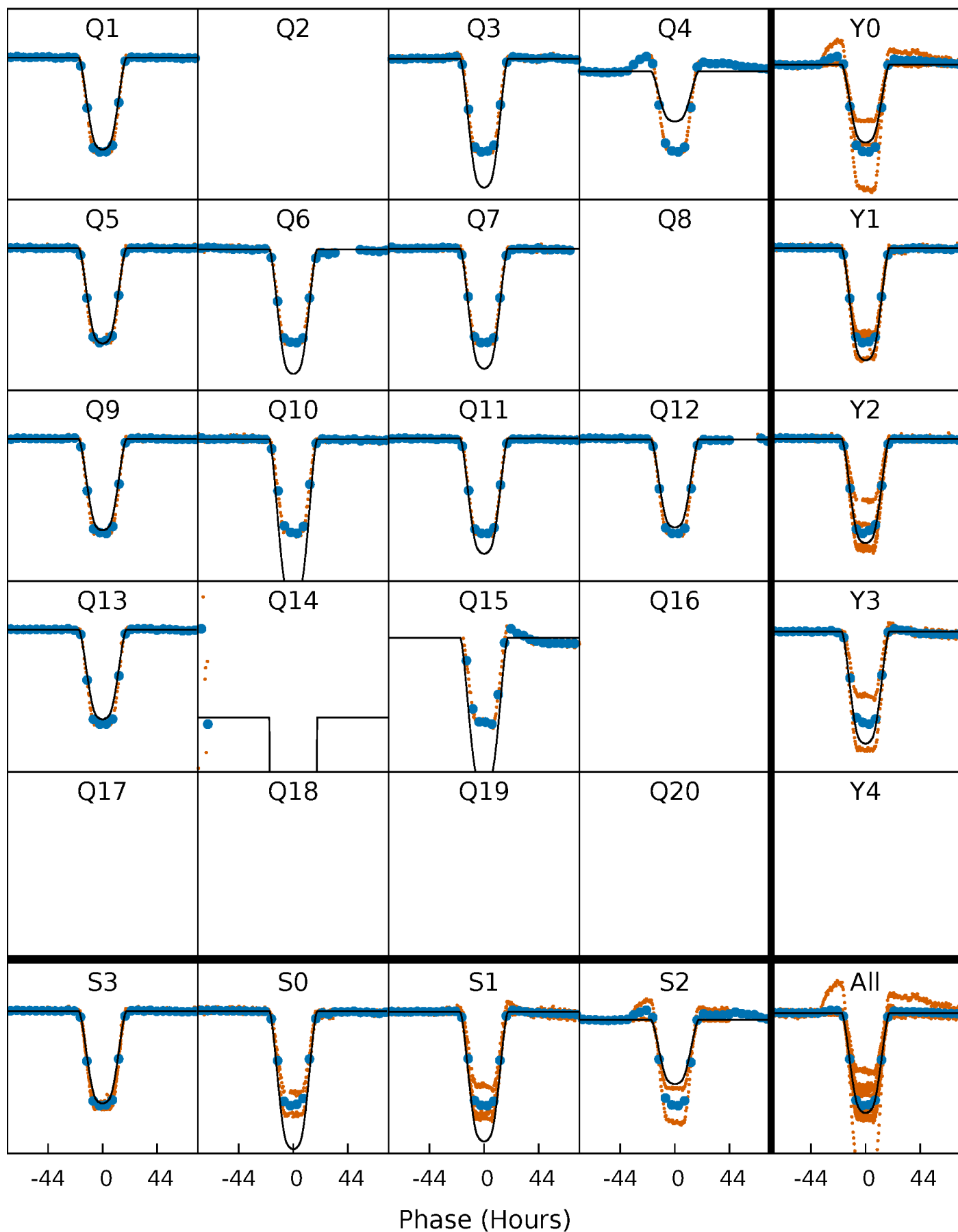
PDC Quarter-Phased Transit Curves

TCE 005653849-01 P=111.038105 Days $T_0=152.789476$ (BKJD)



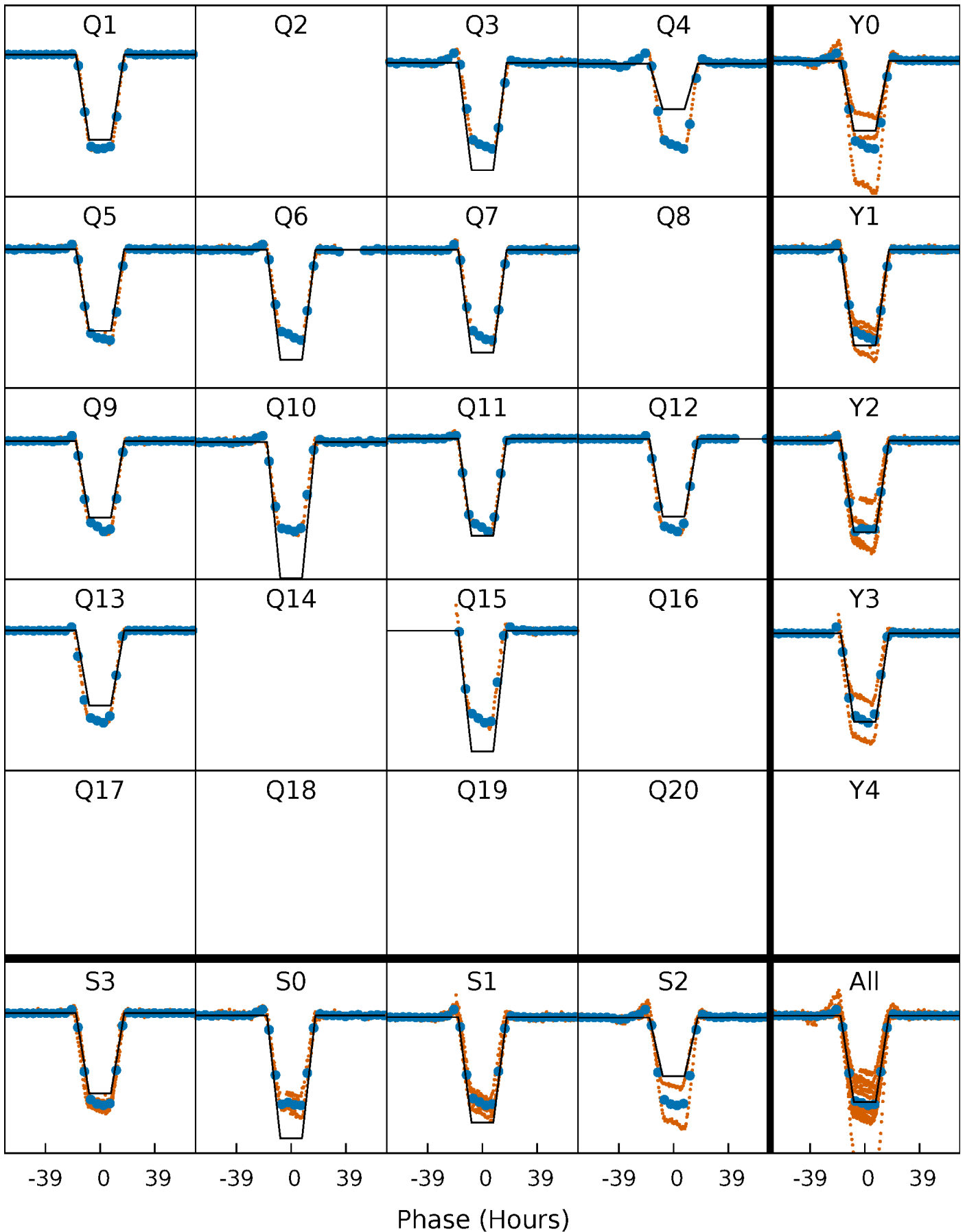
DV Quarter-Phased Transit Curves

TCE 005653849-01 P=111.038105 Days $T_0=152.789476$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

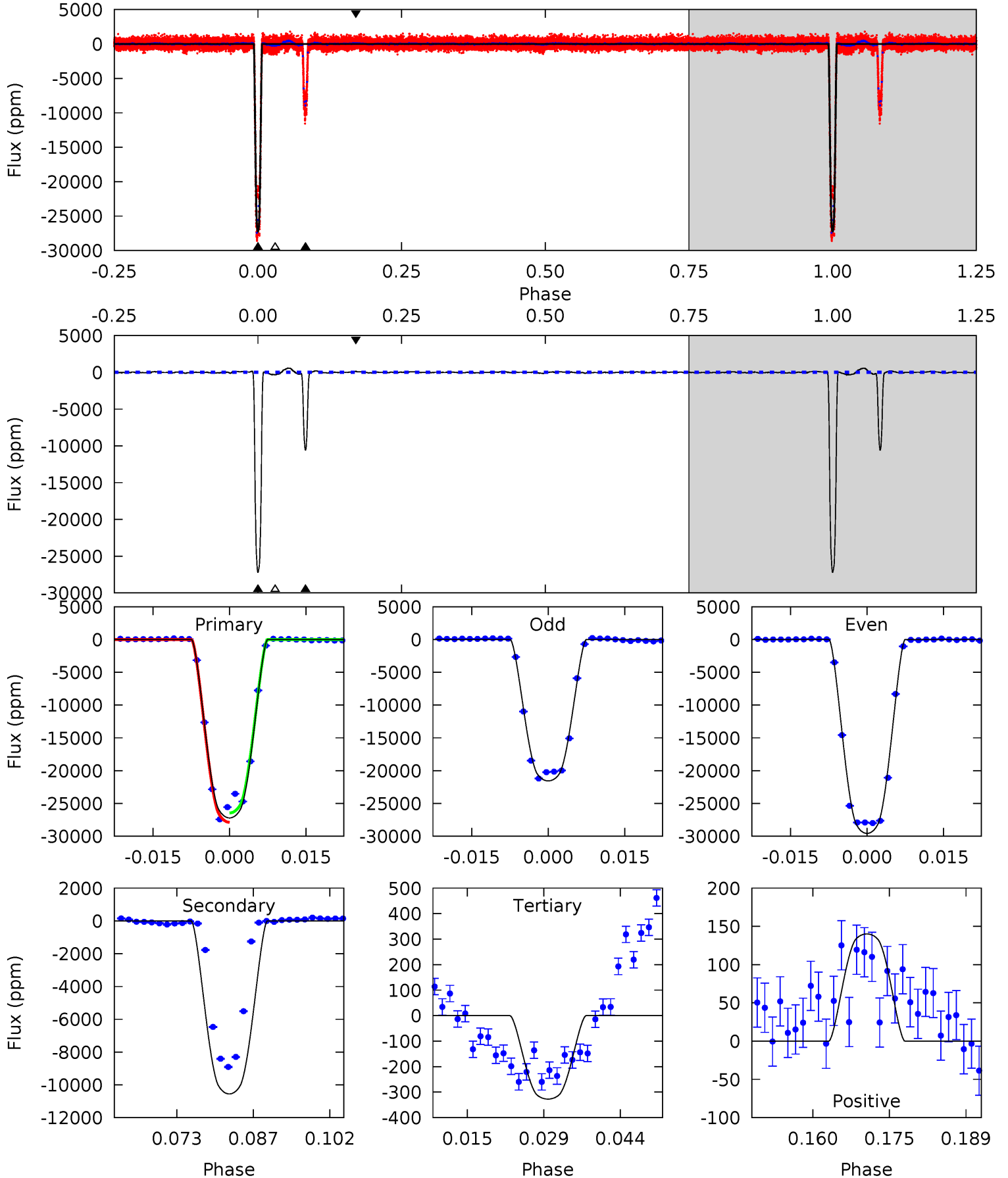
TCE 005653849-01 P=111.049587 Days $T_0=152.748735$ (BKJD)



DV Model-Shift Uniqueness Test

005653849-01, P = 111.038105 Days, E = 41.751371 Days

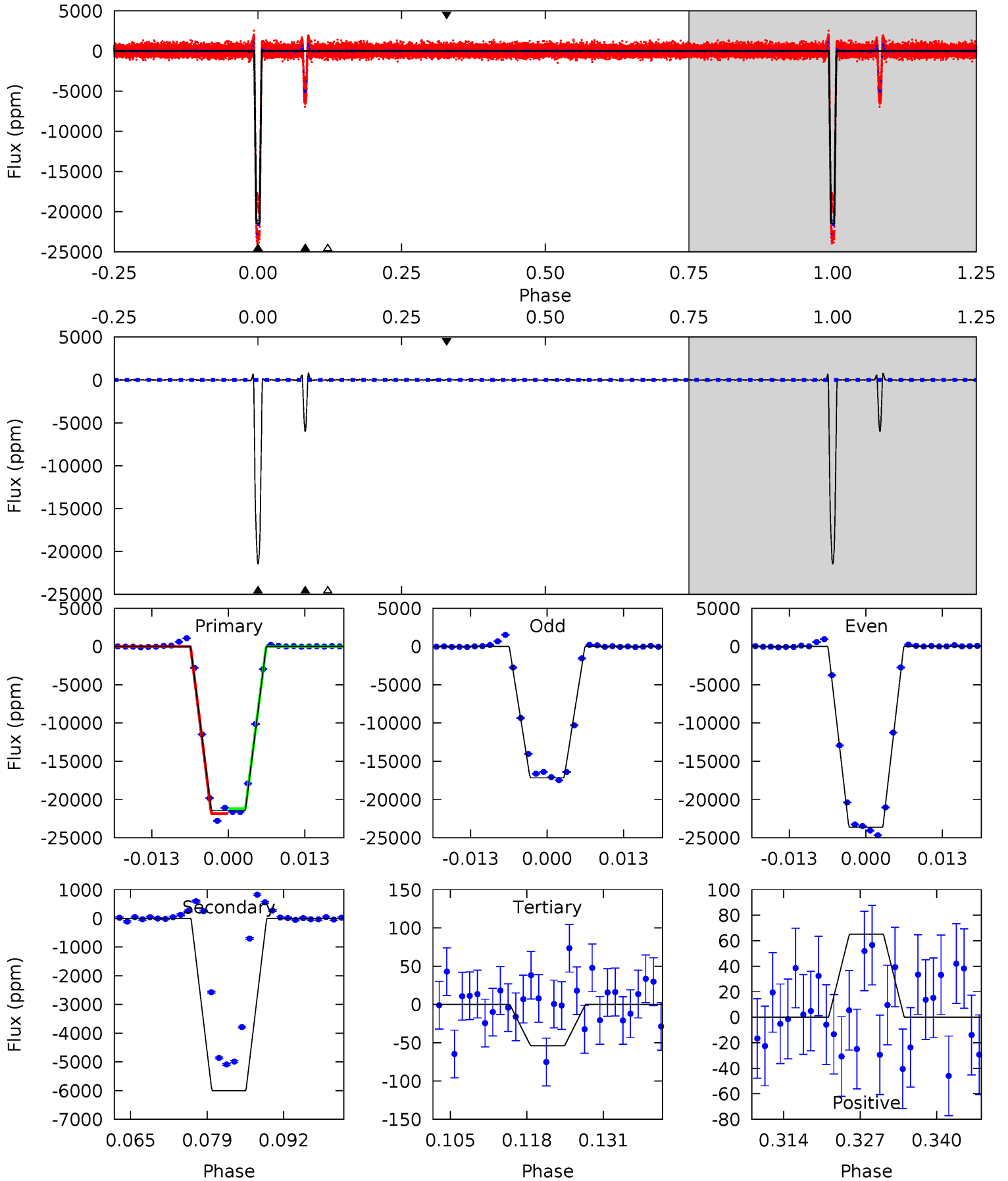
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1608	623.7	19.3	8.28	4.95	2.44	5.25	1589	1600	604.4	615.5	247.2	1.01	0.02	21.9



Alt Model-Shift Uniqueness Test

005653849-01, P = 111.049587 Days, E = 41.699148 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1161	325.3	2.91	3.52	4.97	2.48	1.01	1158	1157	322.3	321.7	202.8	1.01	0.03	12.3



Stellar Parameters For KIC 005653849

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5470^{+163}_{-163}	$4.509^{+0.115}_{-0.115}$	$-0.580^{+0.350}_{-0.300}$	$0.777^{+0.123}_{-0.101}$	$0.710^{+0.103}_{-0.037}$	$2.135^{+1.036}_{-0.700}$
	+3%/-3%	+3%/-3%	+60%/-52%	+16%/-13%	+15%/-5%	+49%/-33%
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 005653849-01 / KOI 3711.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-10554 ± 17	$14.25^{+1.38}_{-0.99}$	468^{+24}_{-23}	4467^{+110}_{-113}	4741^{+752}_{-722}
Alt.	-6006 ± 18	$12.37^{+1.25}_{-0.99}$	468^{+25}_{-24}	4235^{+102}_{-99}	3573^{+620}_{-577}

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 $A_{obs} \gg 1.0$

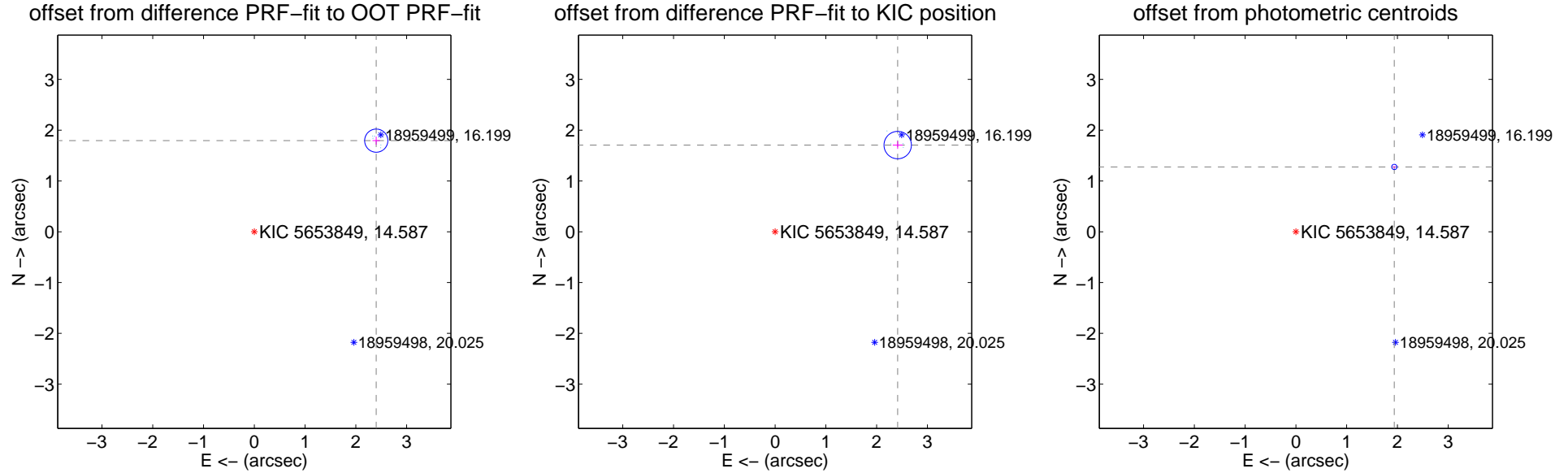
DV Centroid Data

Supplemental centroid analysis for 005653849-01. Kepler magnitude: 14.59. Transit SNR 556.52

There are 6 quarters with good PRF difference image offsets

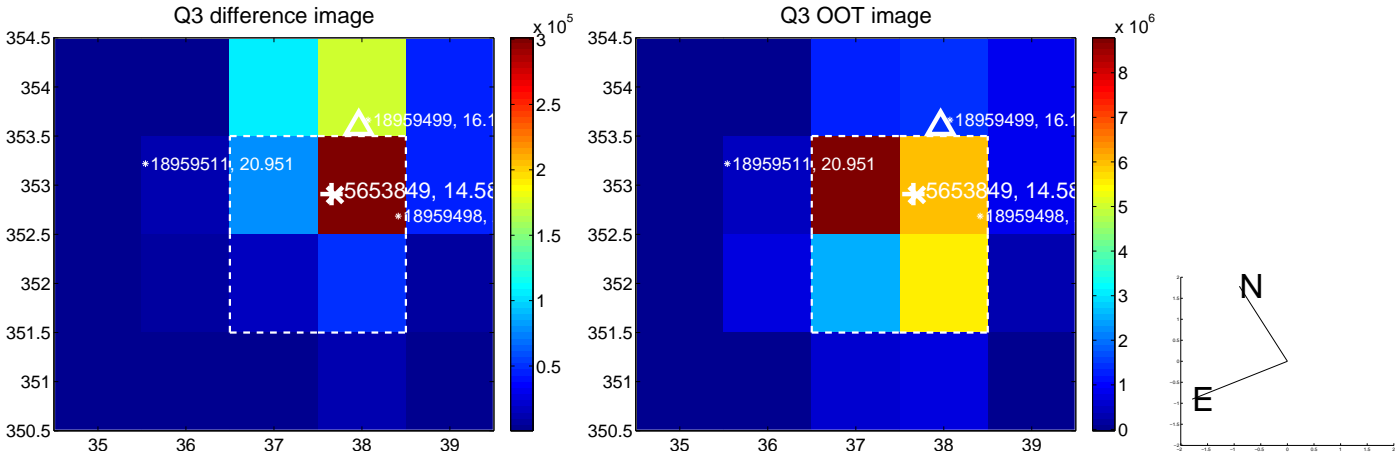
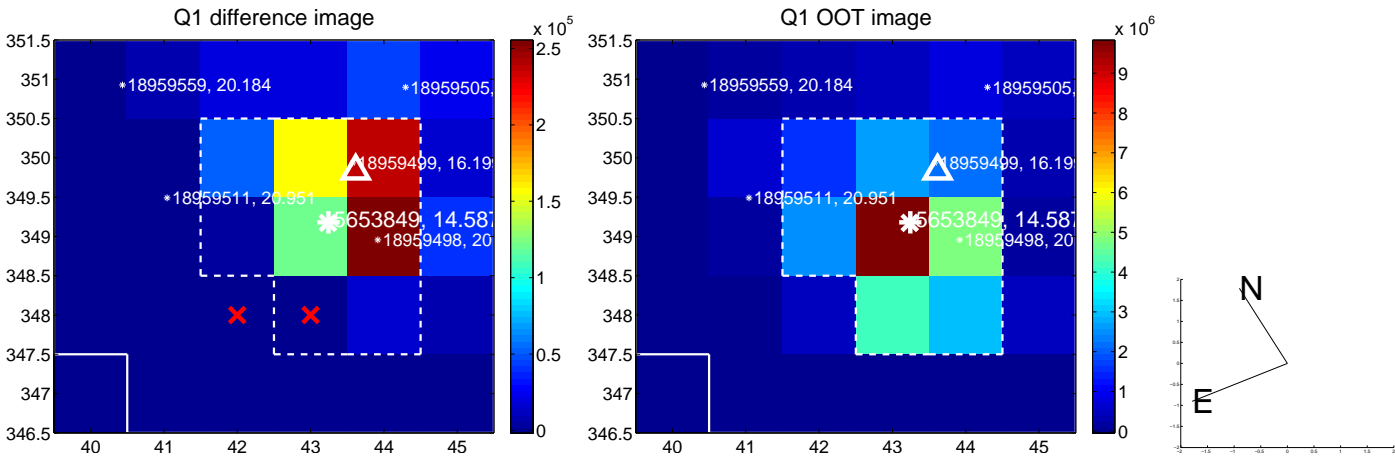
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.998 \pm 0.076	39.41	-2.402 \pm 0.074	1.794 \pm 0.079
PRF-fit source offset from KIC position	2.957 \pm 0.090	32.89	-2.414 \pm 0.097	1.707 \pm 0.075
photometric centroid source offset	2.32 \pm 0.02	133.54	-1.94 \pm 0.02	1.28 \pm 0.02

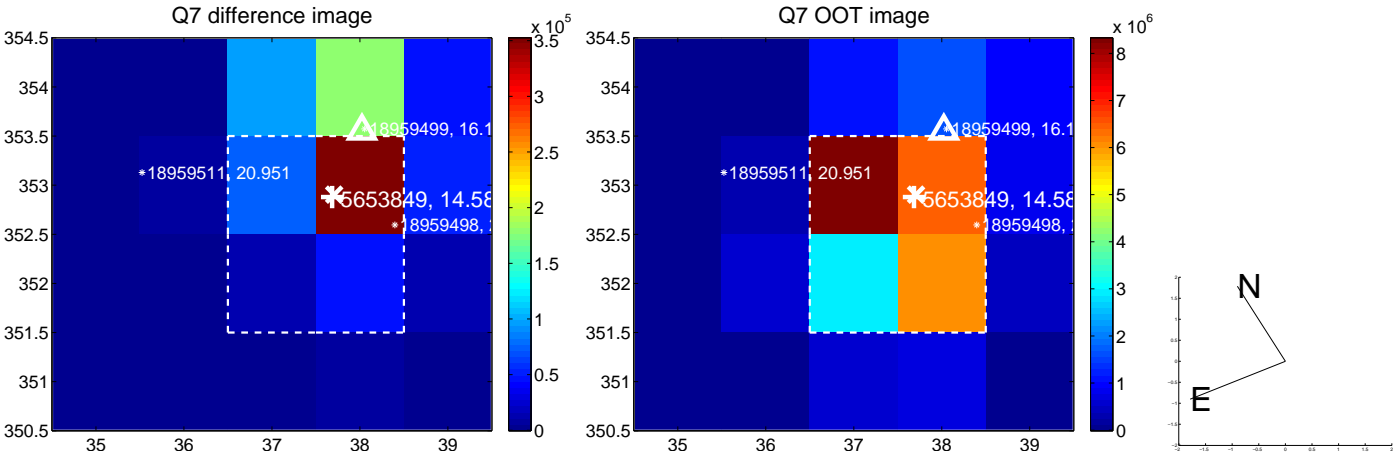
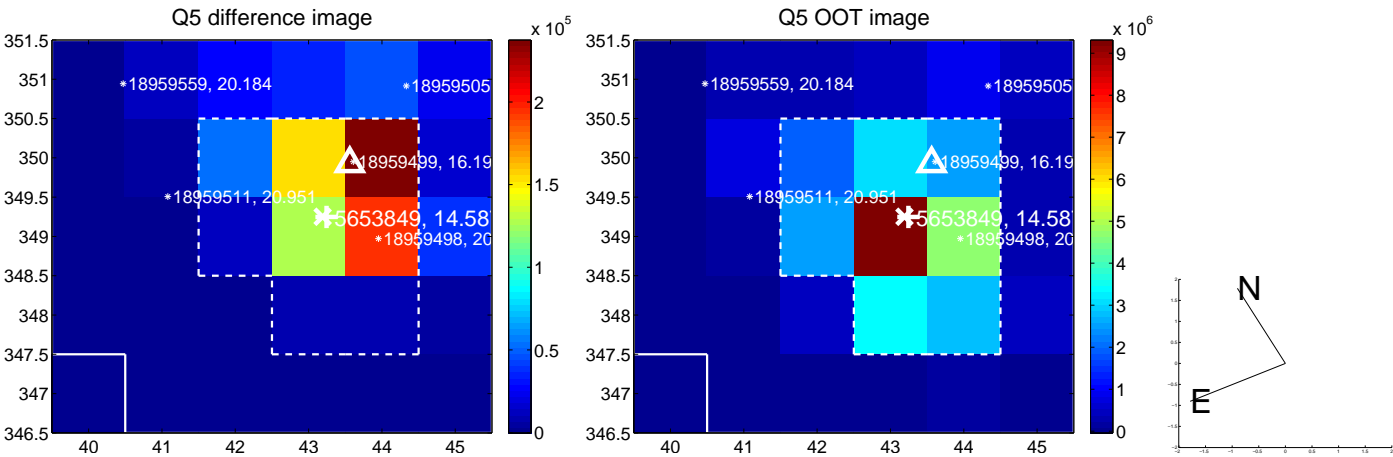


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

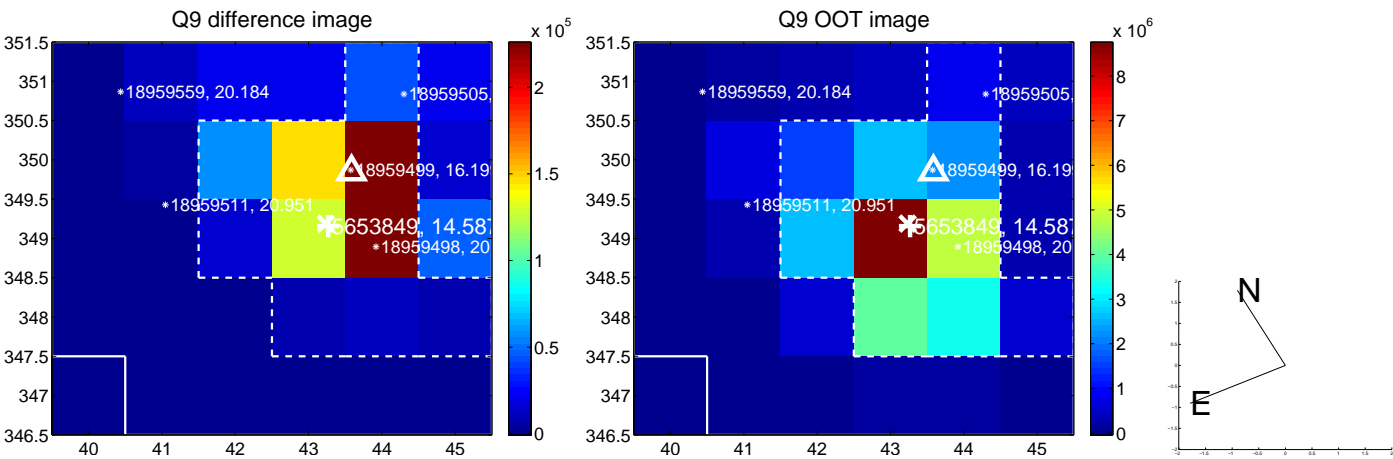
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



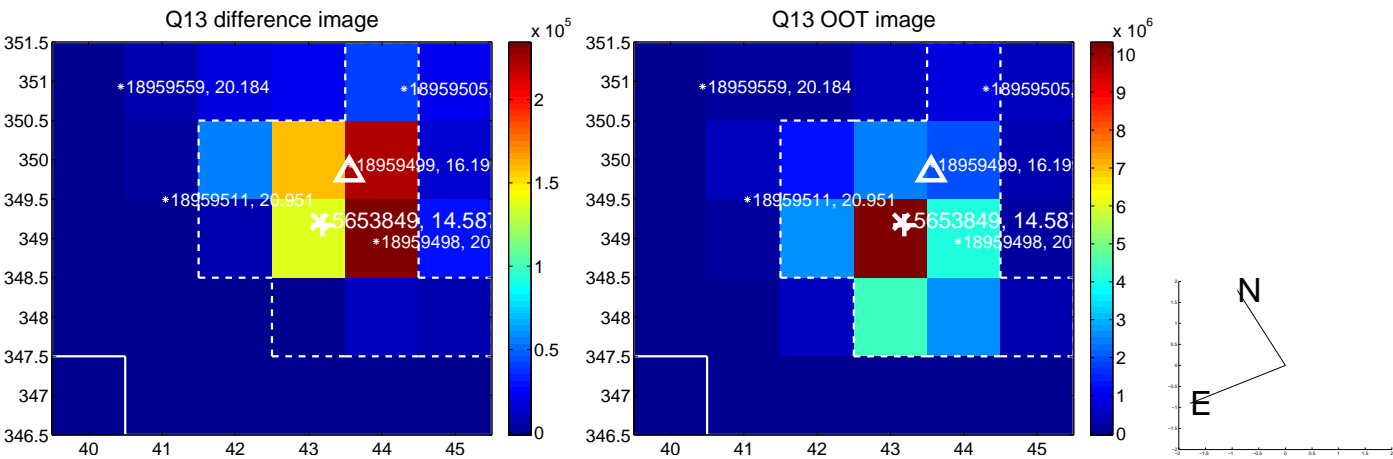
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



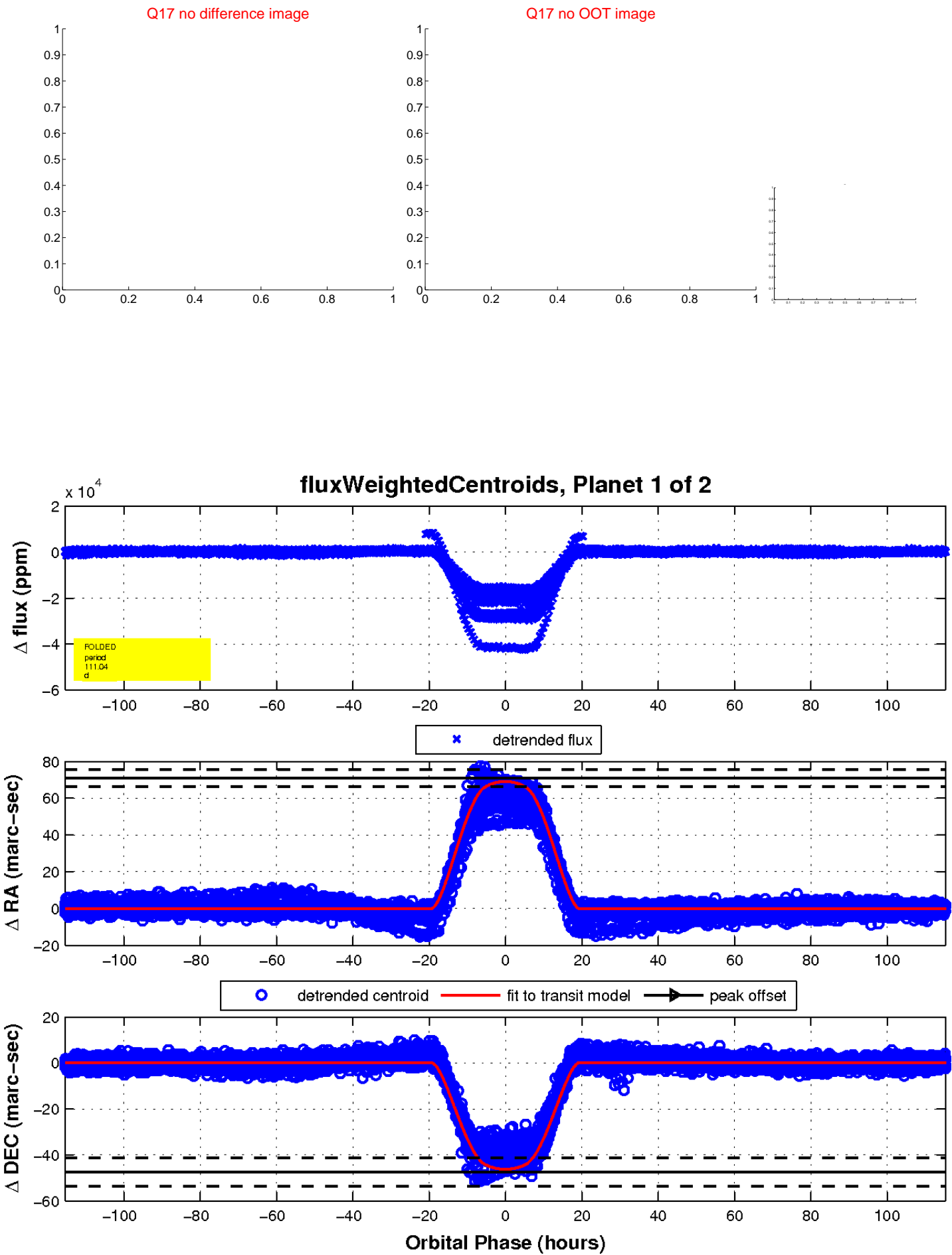
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

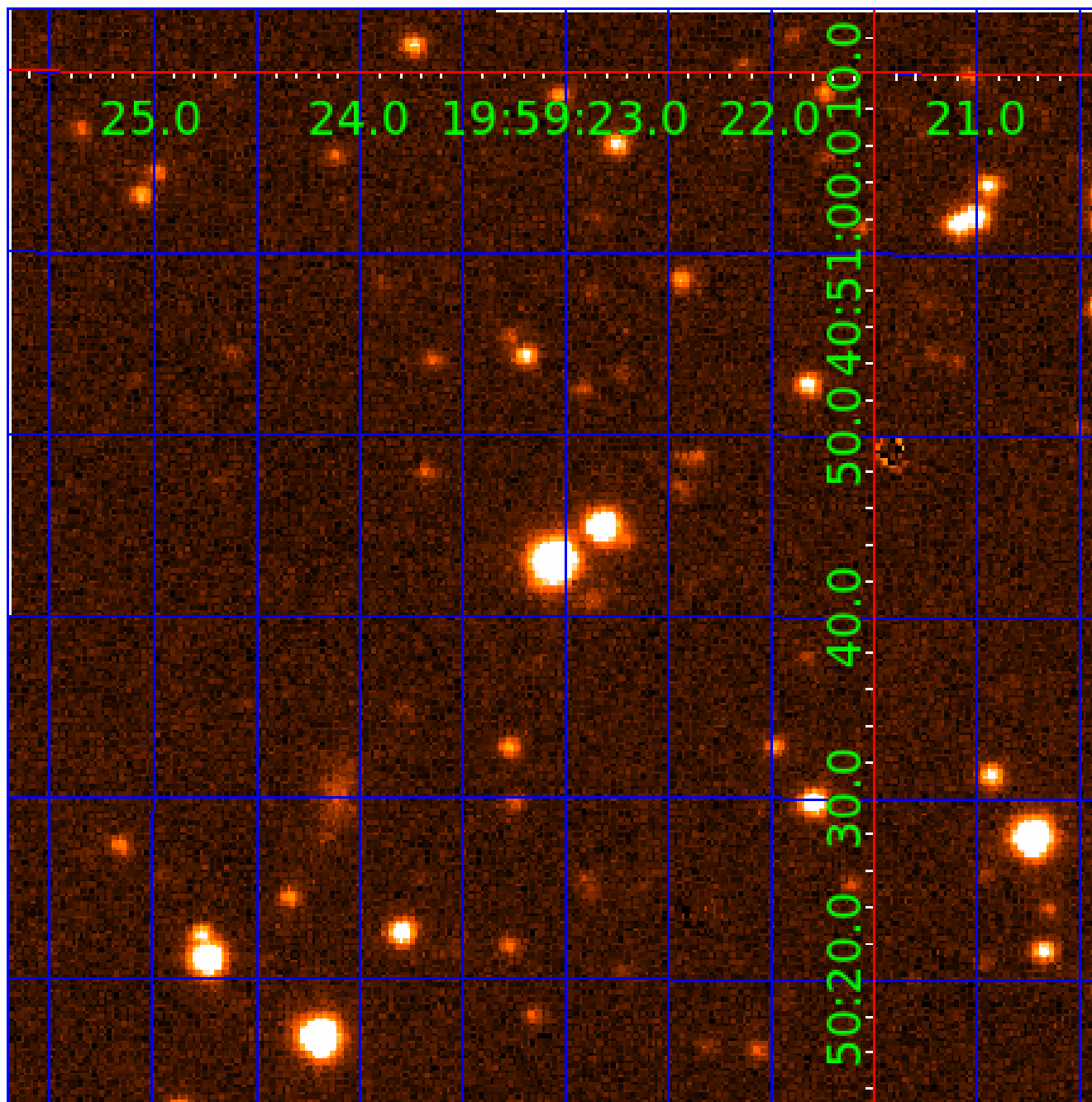


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005653849

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})
005653849-01	OBS	3711.01	111.038105	152.789476	26972.2	38.473	520.9	556.5	0.78	5470	14.24	2.97
005653849-02	OBS	No	111.039042	161.940505	9481.0	26.295	301.7	260.8	0.78	5470	8.74	2.97

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005653849-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_UNRESOLVED_OFFSET
005653849-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_UNRESOLVED_OFFSET

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 005653849-02

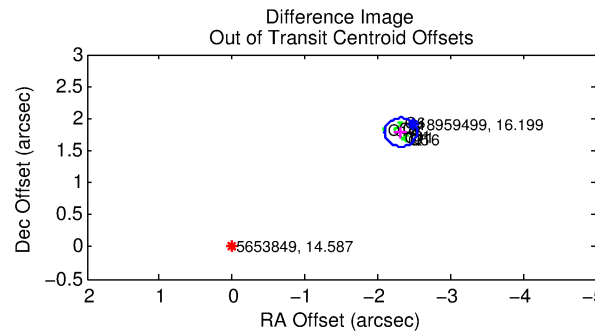
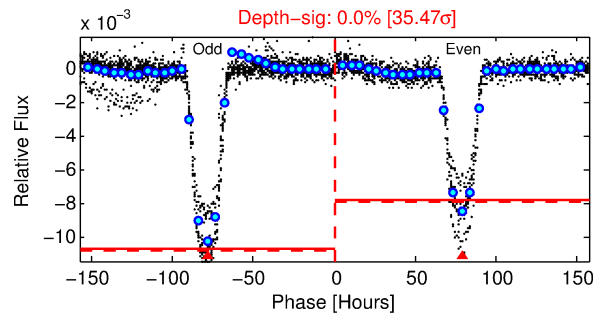
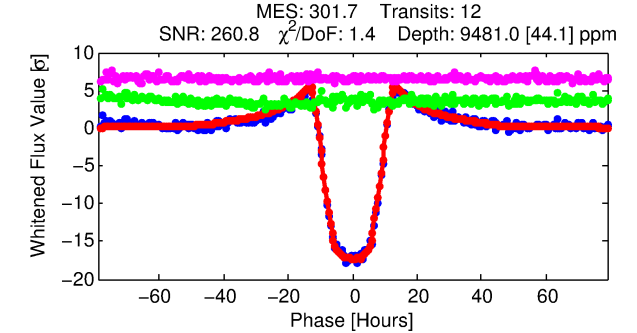
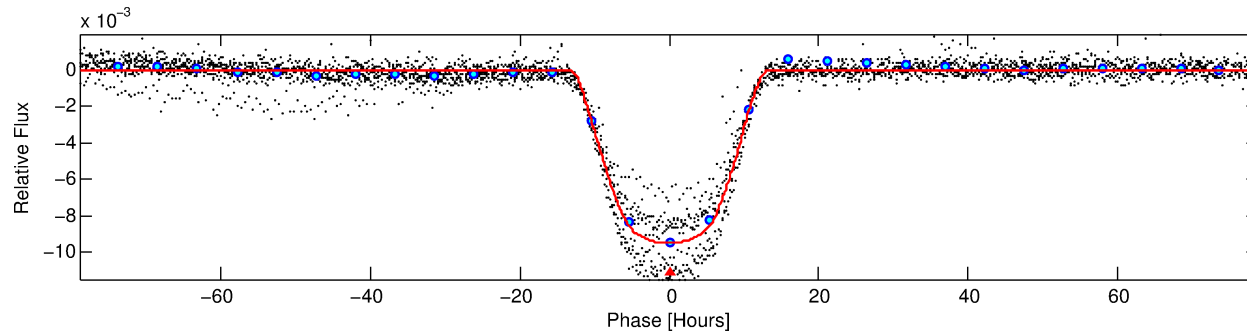
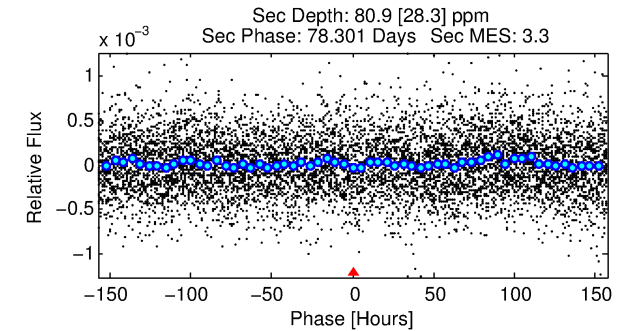
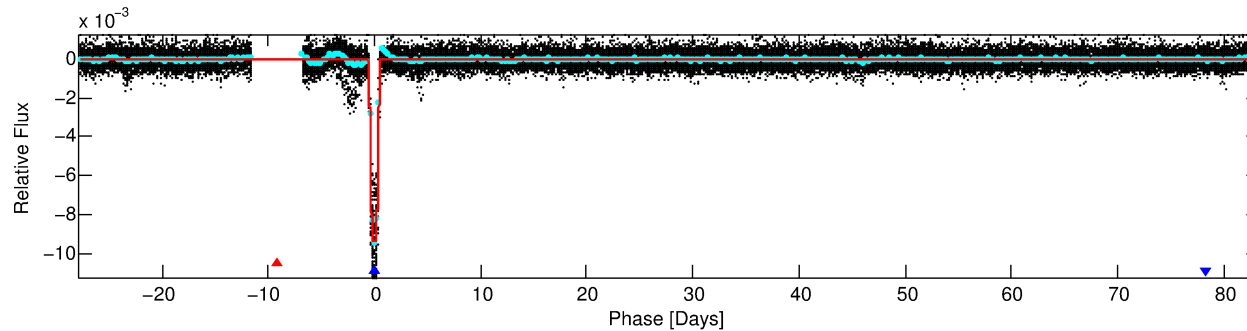
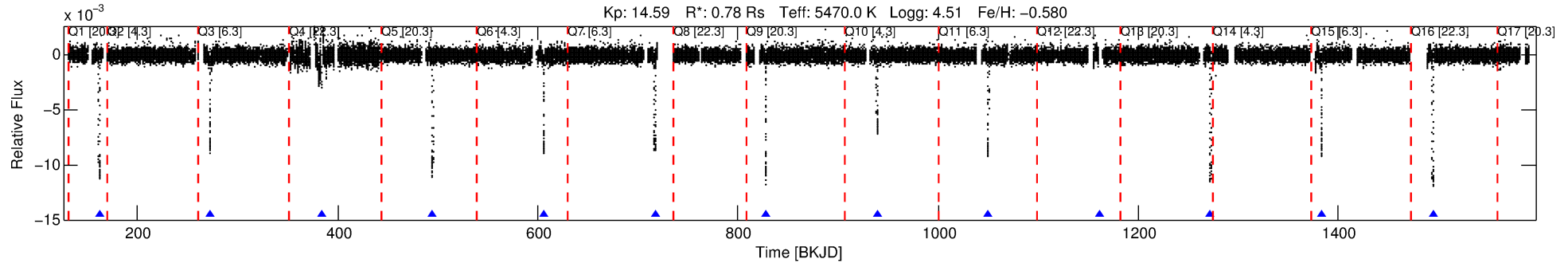
No Significant Match Found

DV One-Page Summary

KIC: 5653849 Candidate: 2 of 2 Period: 111.039 d

KOI: K03711.01 Corr: 0.987

Kp: 14.59 R*: 0.78 Rs Teff: 5470.0 K Logg: 4.51 Fe/H: -0.580



DV Fit Results:

Period = 111.03904 [0.00027] d
Epoch = 161.9405 [0.0019] BKJD
Rp/R* = 0.1031 [0.0004]
a/R* = 22.37 [0.15]
b = 0.86 [0.00]
Seff = 2.97 [0.71]
Teff = 335 [20] K
Rp = 8.74 [1.38] Re
a = 0.4036 [0.0555] AU
Ag = 94.80 [38.49] [2.44σ]
Teffp = 1615 [149] K [8.50σ]

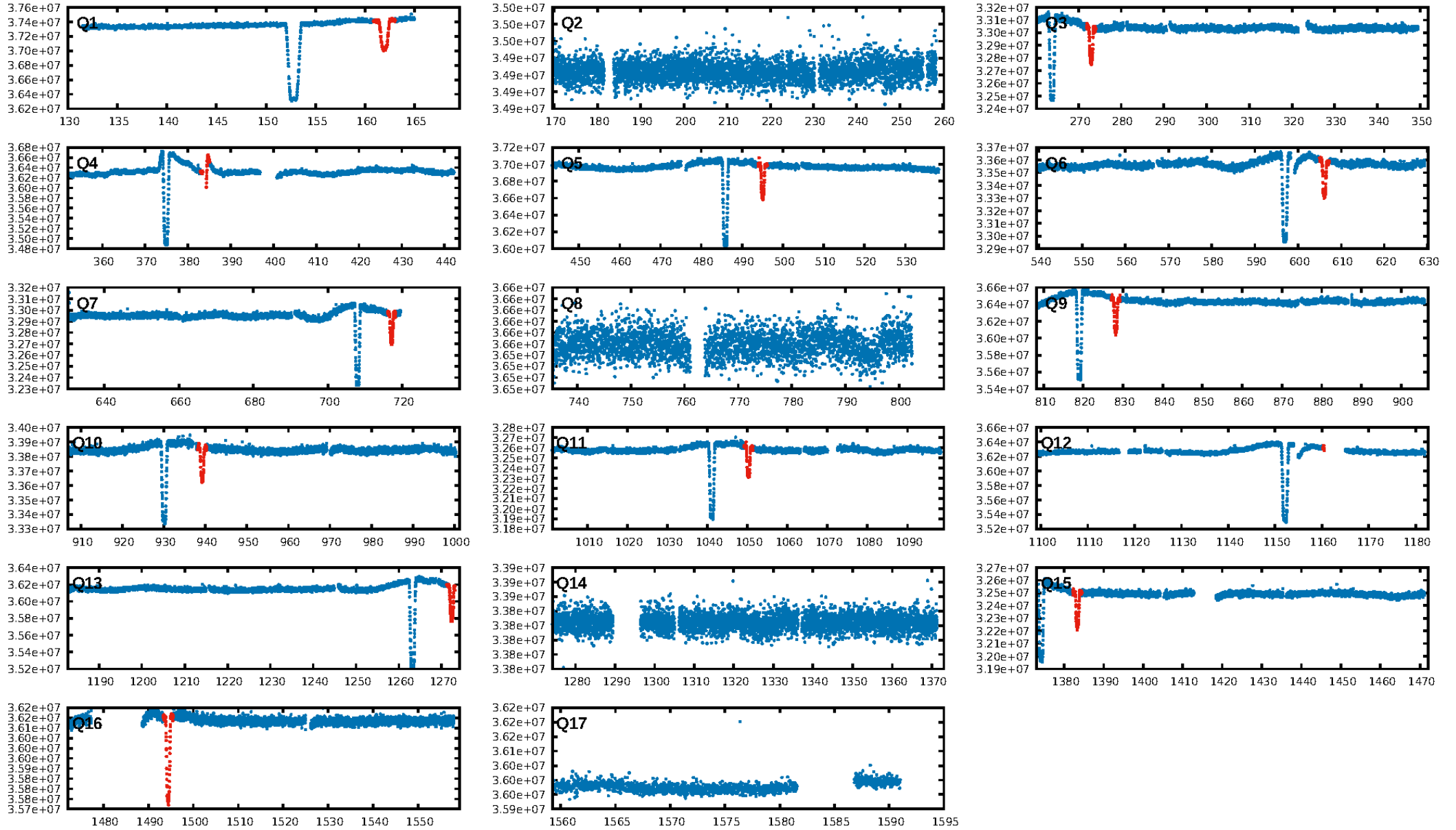
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.4%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [11/11]
GhostDiagnostic-chr: 1.415
Centroid-sig: 0.0%
Centroid-so: 2.039 arcsec [41.16σ]
OotOffset-rm: 2.923 arcsec [39.37σ]
KicOffset-rm: 2.874 arcsec [32.93σ]
OotOffset-st: 1/3/1/3 [8]
KicOffset-st: 1/3/1/3 [8]
DiffImageQuality-fgm: 1.00 [8/8]
DiffImageOverlap-fno: 1.00 [8/8]

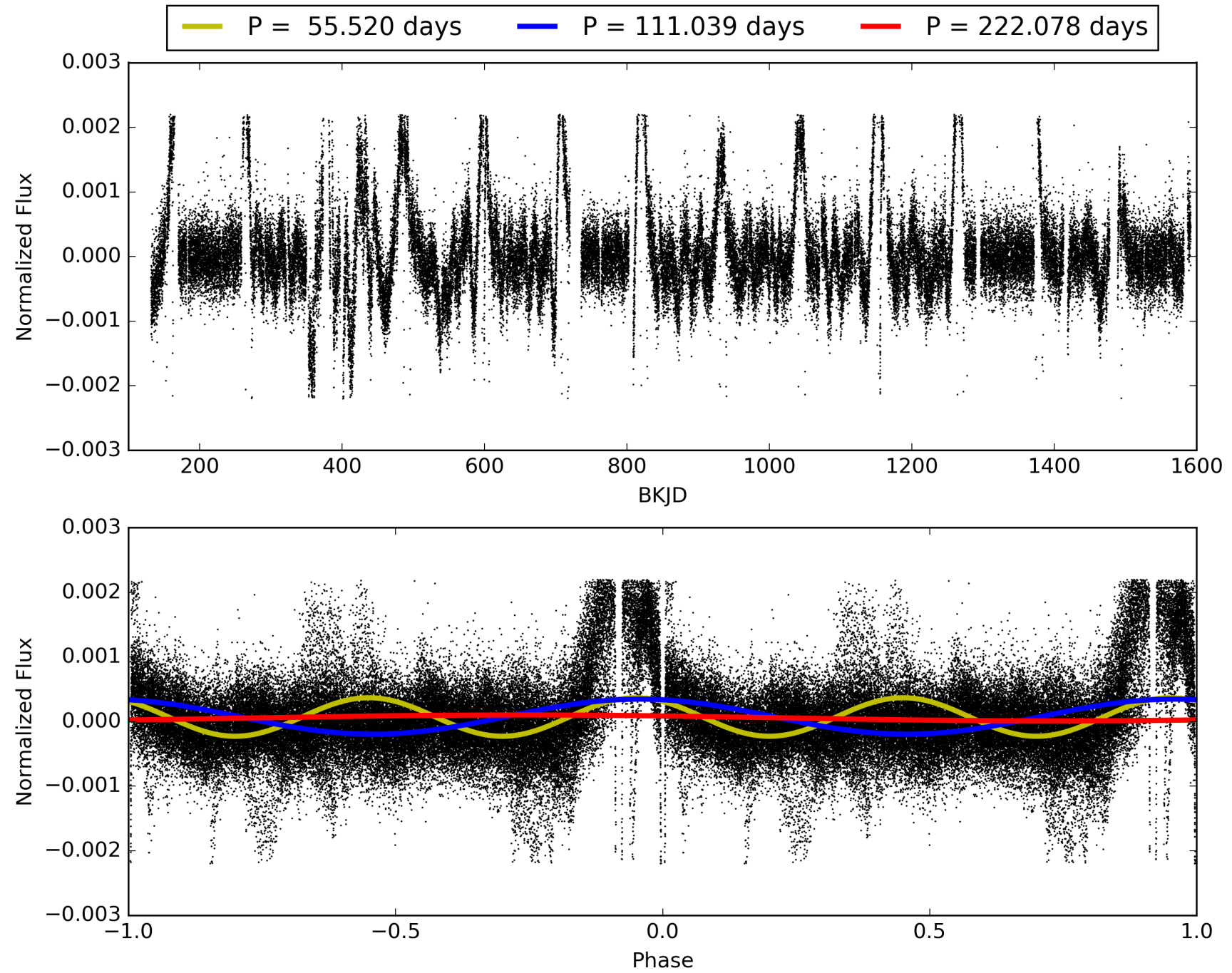
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:01:56 Z

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

TCE 005653849-02, PDC Light Curves

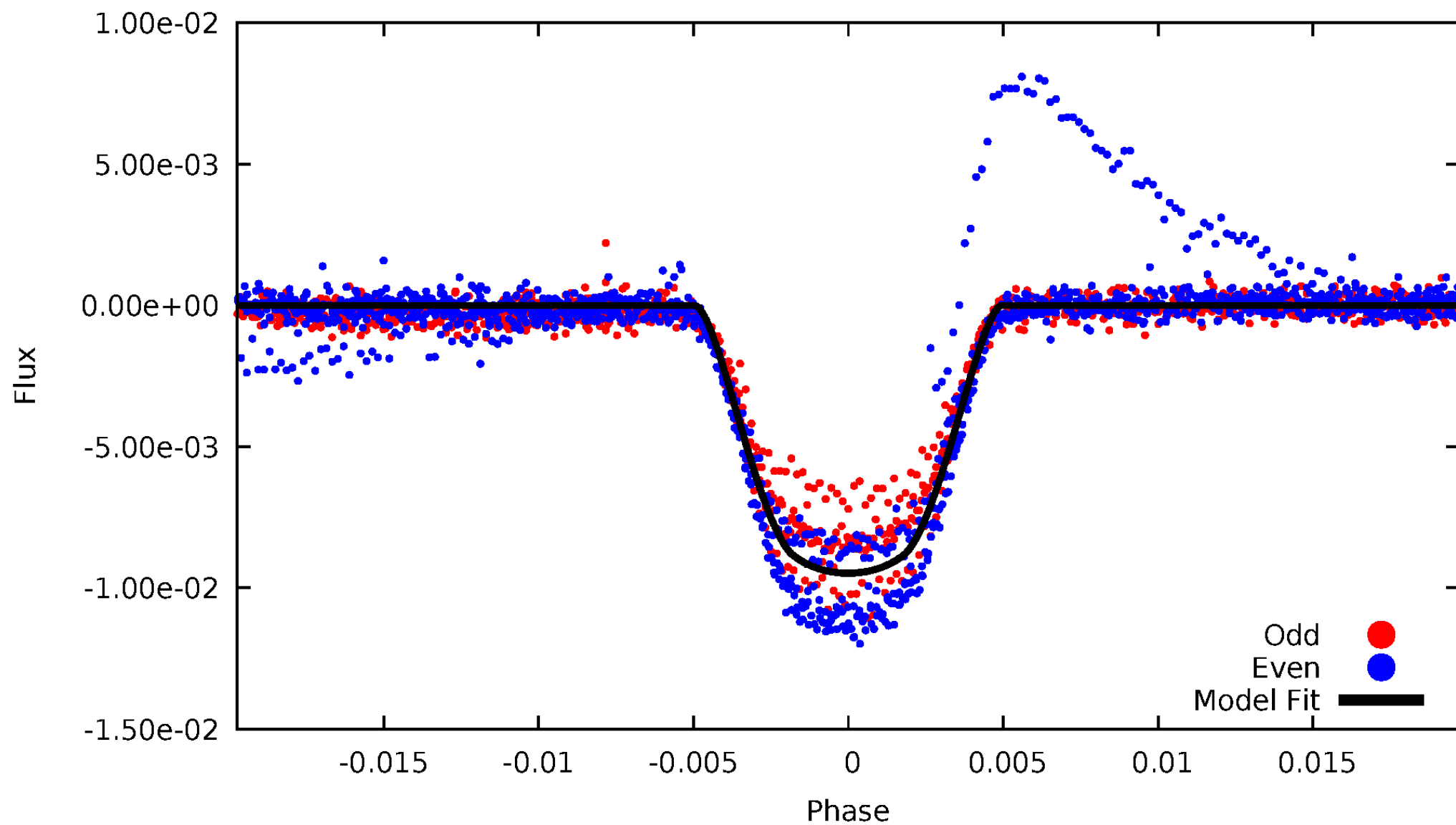


TCE 005653849-02



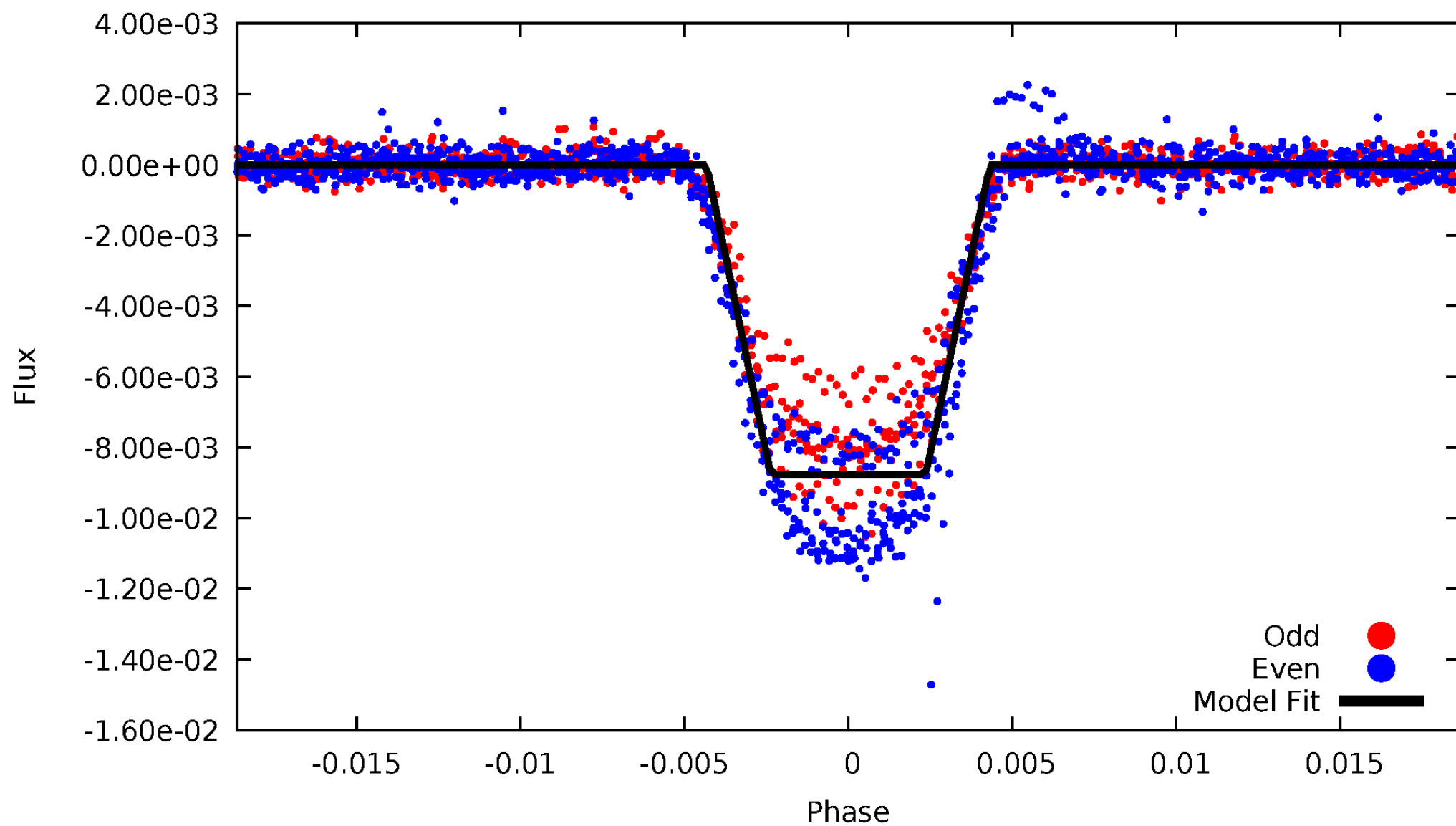
DV Odd/Even

TCE 005653849-02



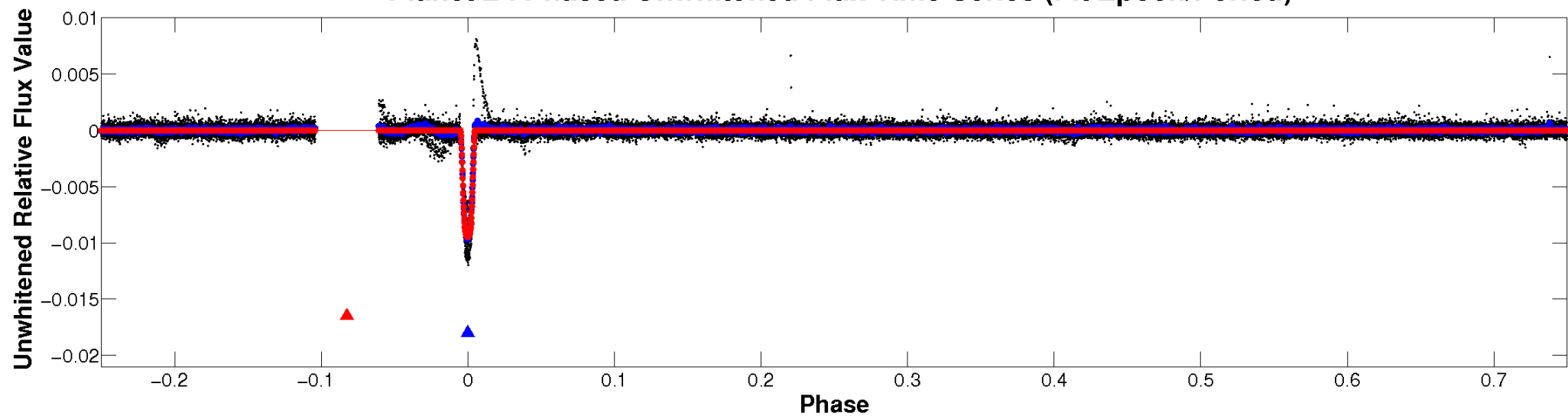
ALT Odd/Even

TCE 005653849-02

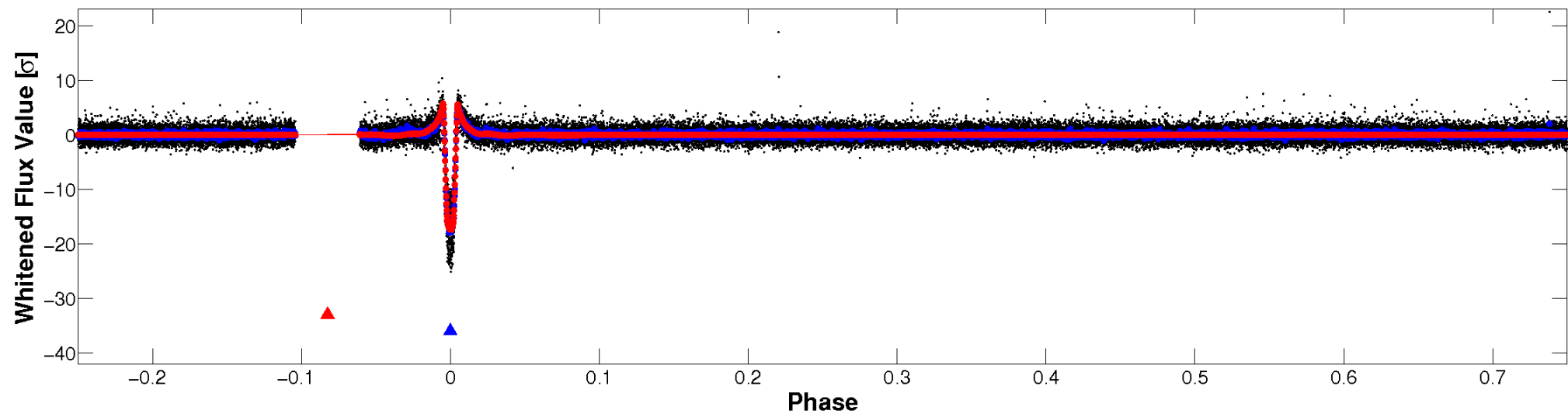


Non-Whitened Vs. Whitened Light Curve

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

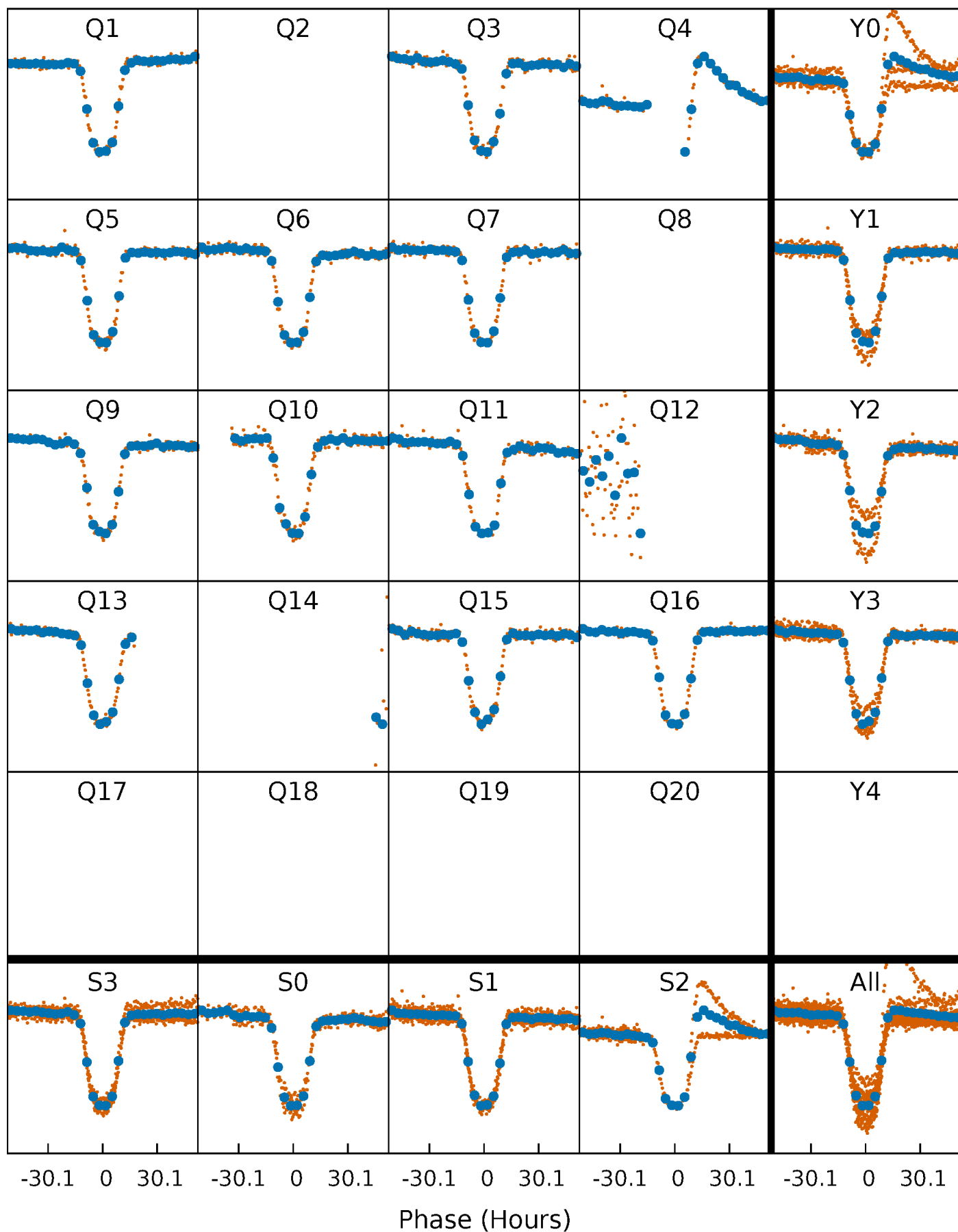


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



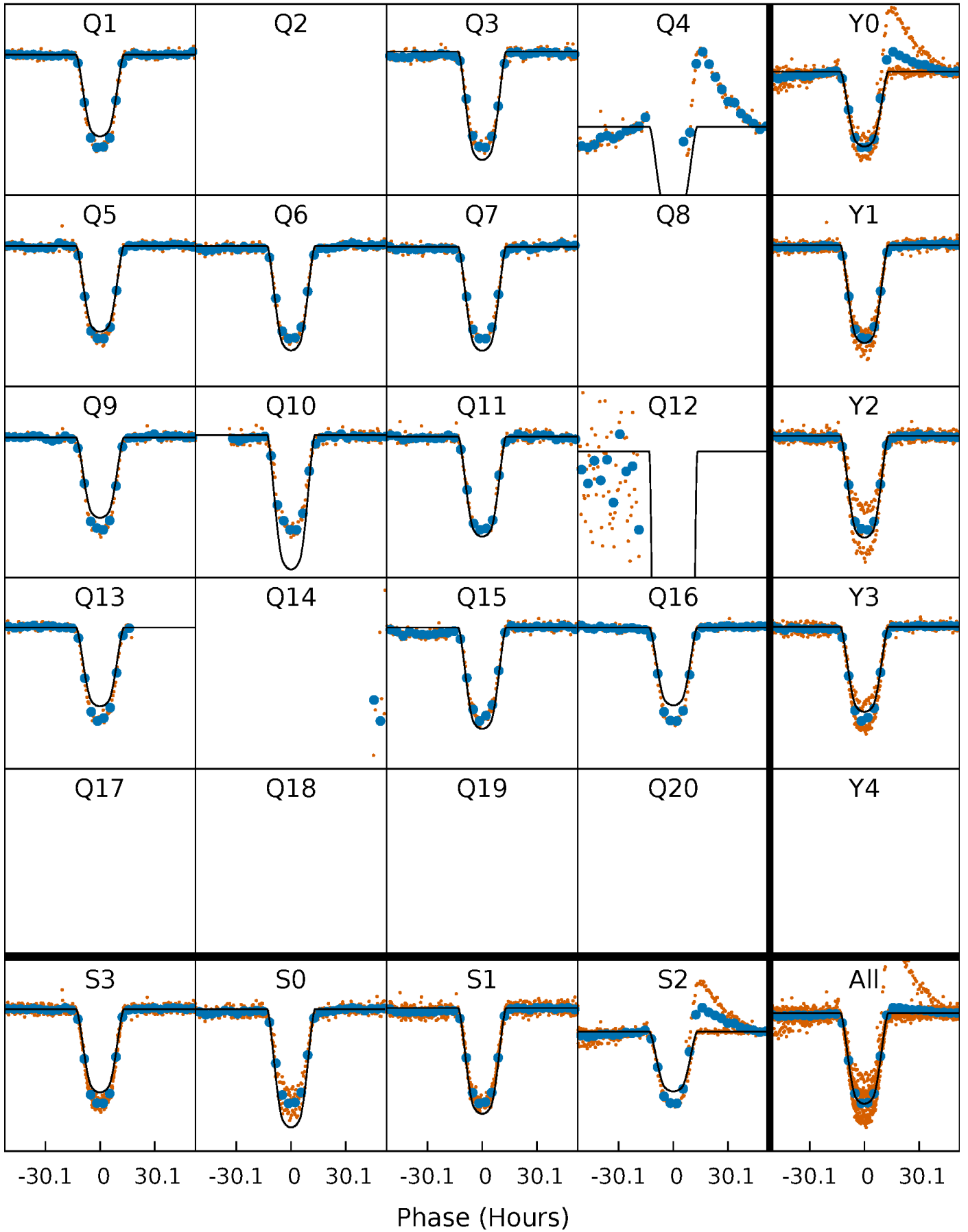
PDC Quarter-Phased Transit Curves

TCE 005653849-02 P=111.039042 Days $T_0=161.940505$ (BKJD)



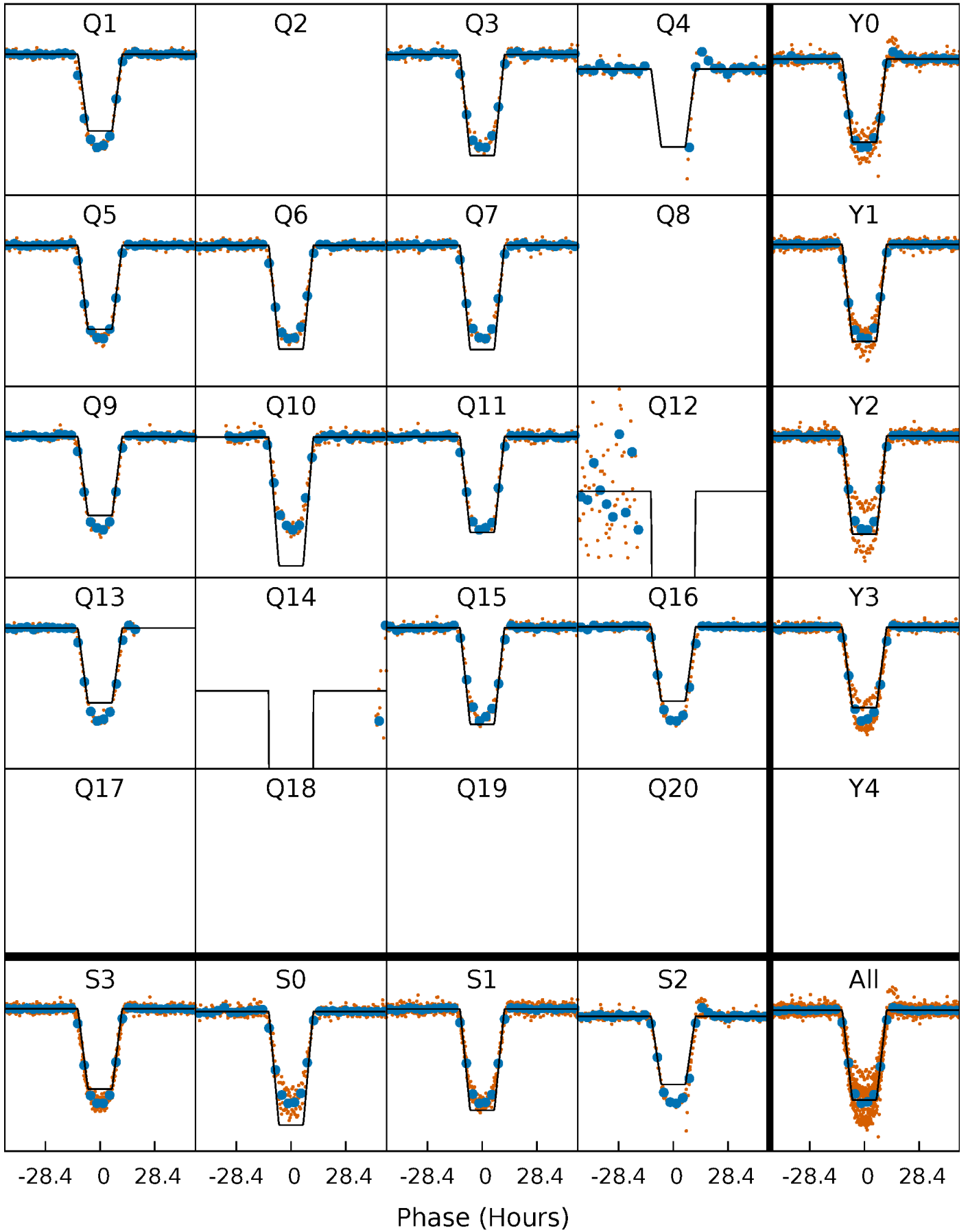
DV Quarter-Phased Transit Curves

TCE 005653849-02 P=111.039042 Days $T_0=161.940505$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

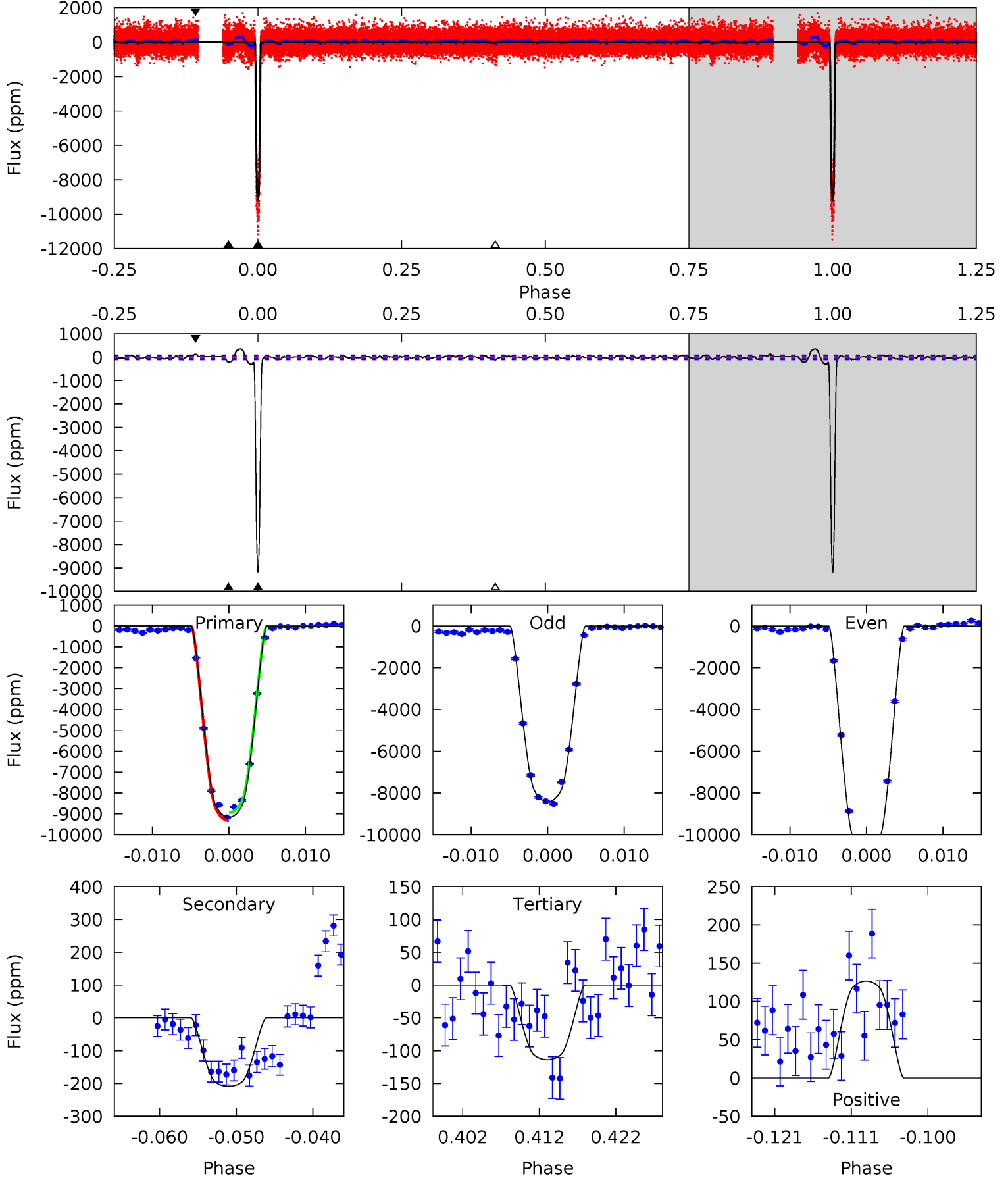
TCE 005653849-02 P=111.035965 Days $T_0=161.961069$ (BKJD)



DV Model-Shift Uniqueness Test

005653849-02, P = 111.039042 Days, E = 50.901463 Days

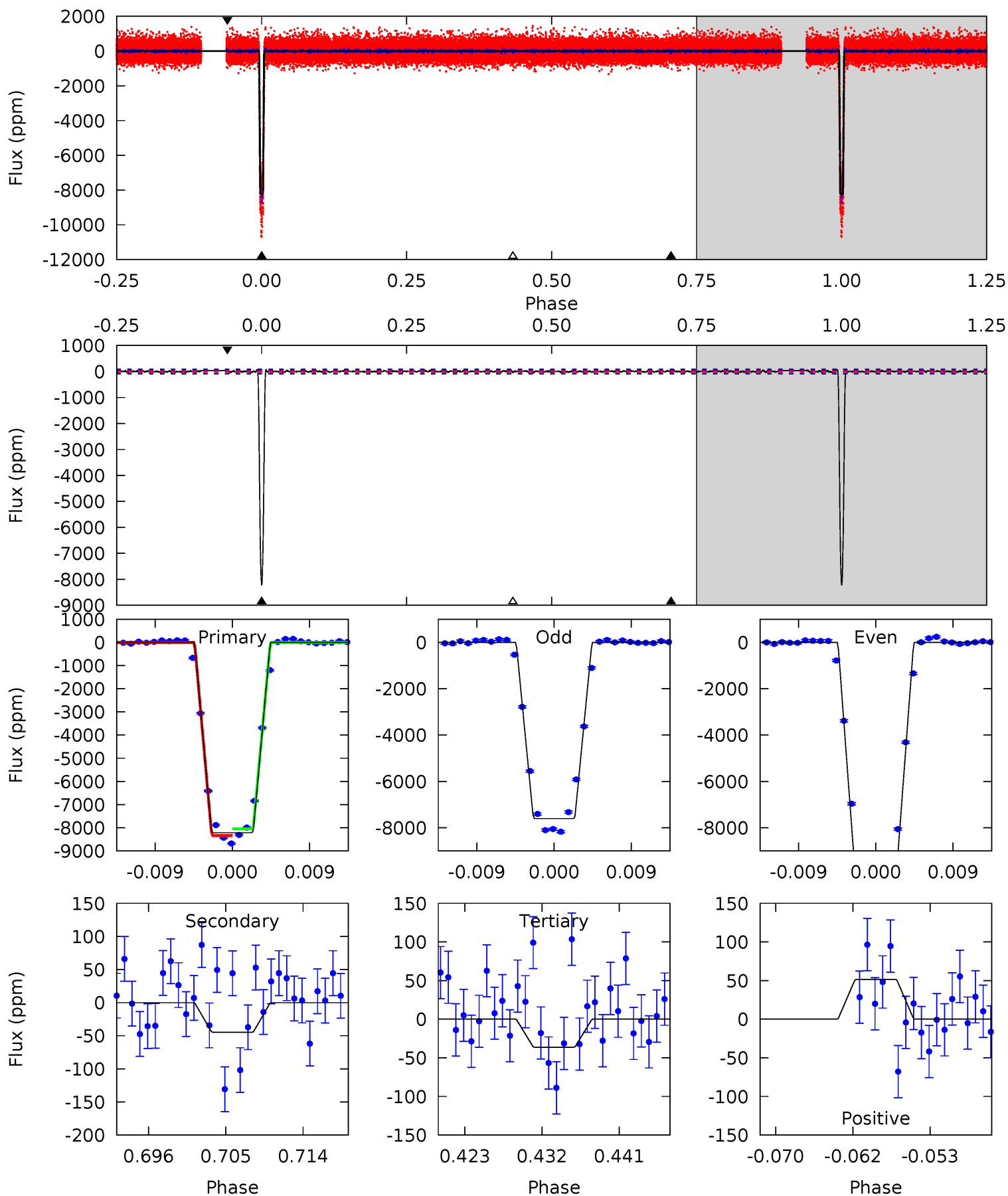
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
581.0	13.2	7.21	8.02	5.03	2.57	3.76	573.8	573.0	6.03	5.21	80.8	1.01	0.04	0



Alt Model-Shift Uniqueness Test

005653849-02, P = 111.035965 Days, E = 50.925104 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
505.1	2.75	2.23	3.16	5.05	2.62	0.79	502.9	502.0	0.52	-0.41	74.5	1.04	0.01	8.81



Stellar Parameters For KIC 005653849

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5470^{+163}_{-163}	$4.509^{+0.115}_{-0.115}$	$-0.580^{+0.350}_{-0.300}$	$0.777^{+0.123}_{-0.101}$	$0.710^{+0.103}_{-0.037}$	$2.135^{+1.036}_{-0.700}$
	+3%/-3%	+3%/-3%	+60%/-52%	+16%/-13%	+15%/-5%	+49%/-33%
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 005653849-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-209 ± 16	$8.88^{+0.81}_{-0.73}$	469^{+26}_{-23}	2787^{+56}_{-57}	241^{+47}_{-41}
Alt.	-45 ± 16	$7.99^{+0.75}_{-0.58}$	469^{+22}_{-23}	2358^{+96}_{-133}	63^{+27}_{-24}

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

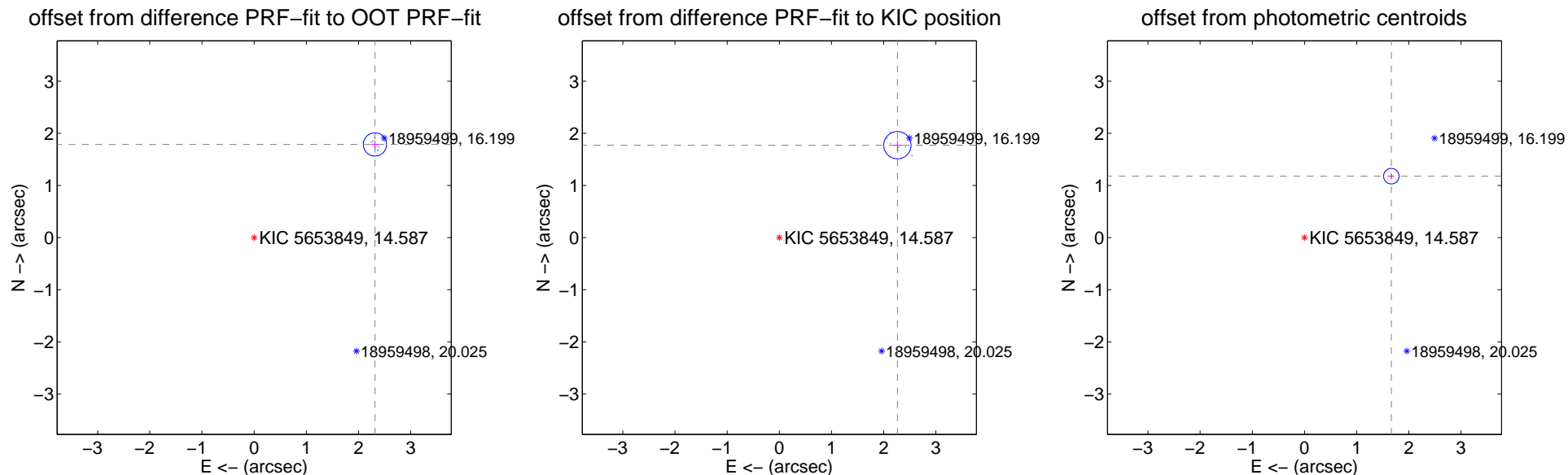
DV Centroid Data

Supplemental centroid analysis for 005653849-02. Kepler magnitude: 14.59. Transit SNR 260.79

There are 8 quarters with good PRF difference image offsets

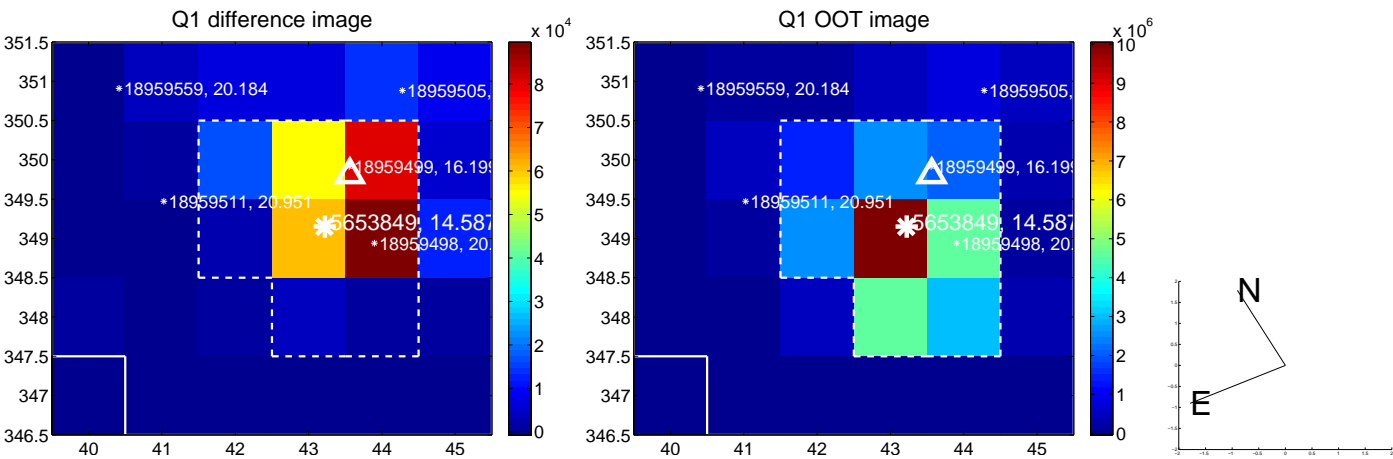
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.923 ± 0.074	39.37	-2.314 ± 0.074	1.786 ± 0.075
PRF-fit source offset from KIC position	2.874 ± 0.087	32.93	-2.262 ± 0.088	1.772 ± 0.086
photometric centroid source offset	2.04 ± 0.05	41.16	-1.66 ± 0.05	1.18 ± 0.04

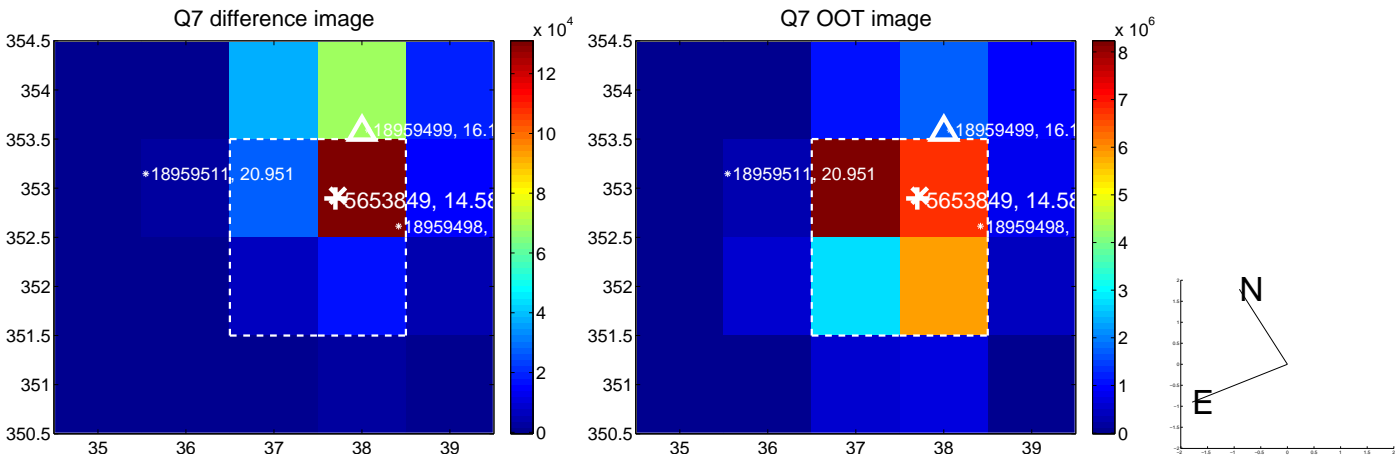
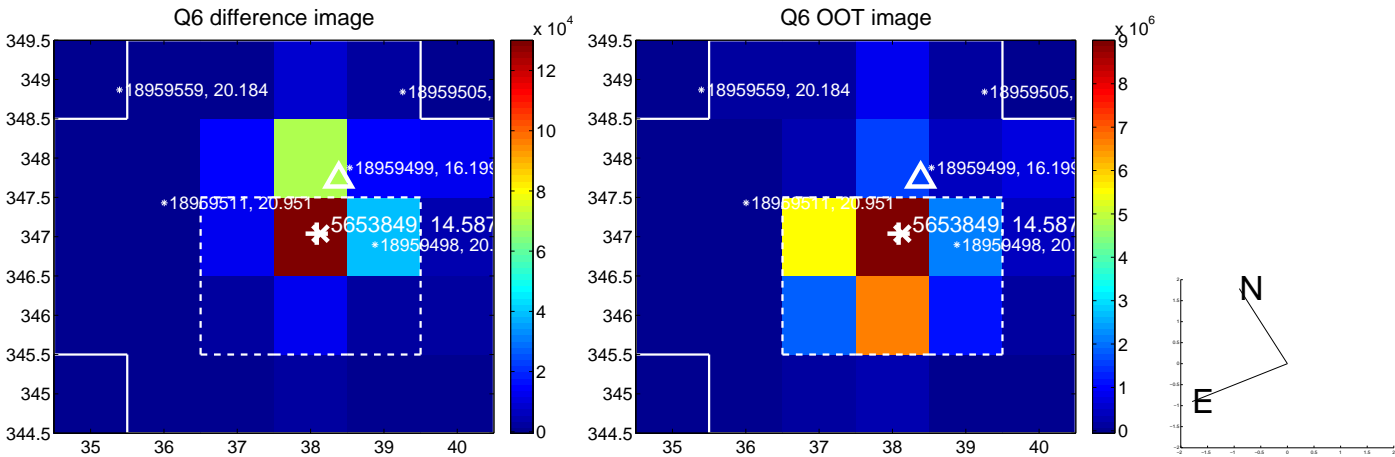
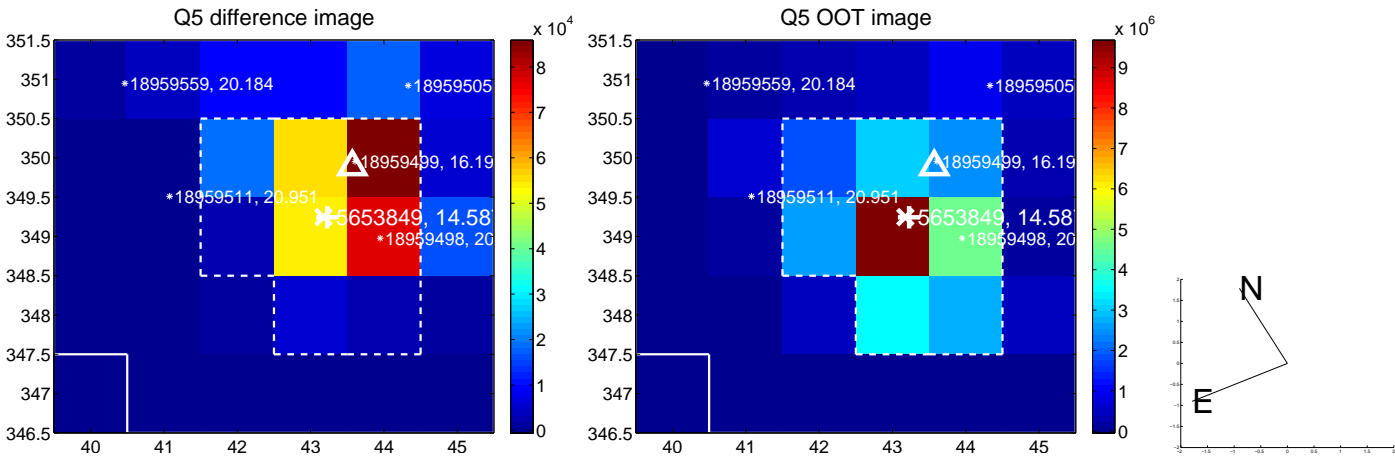


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

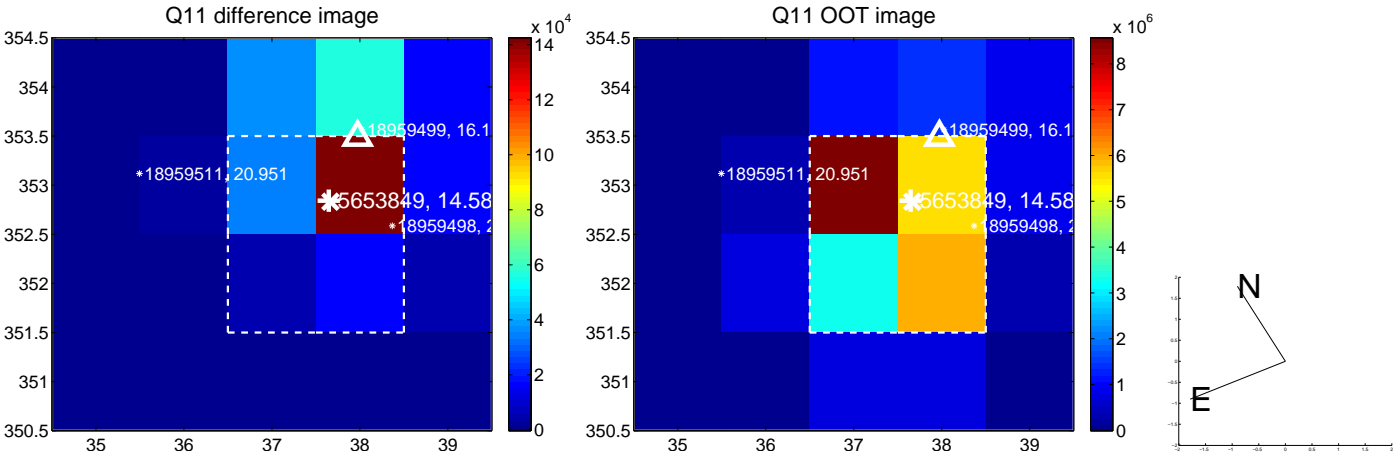
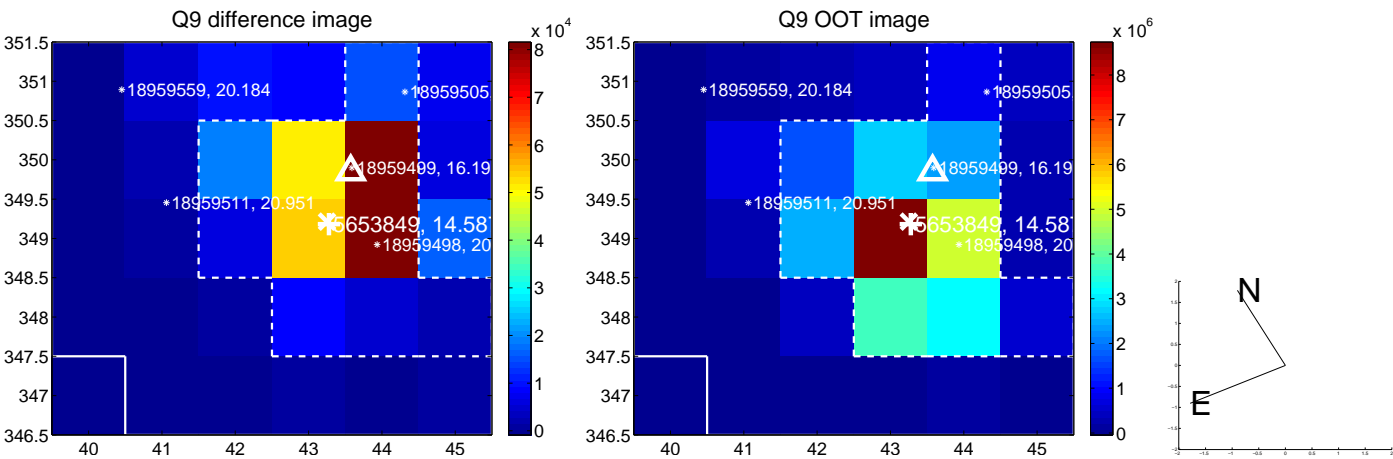
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



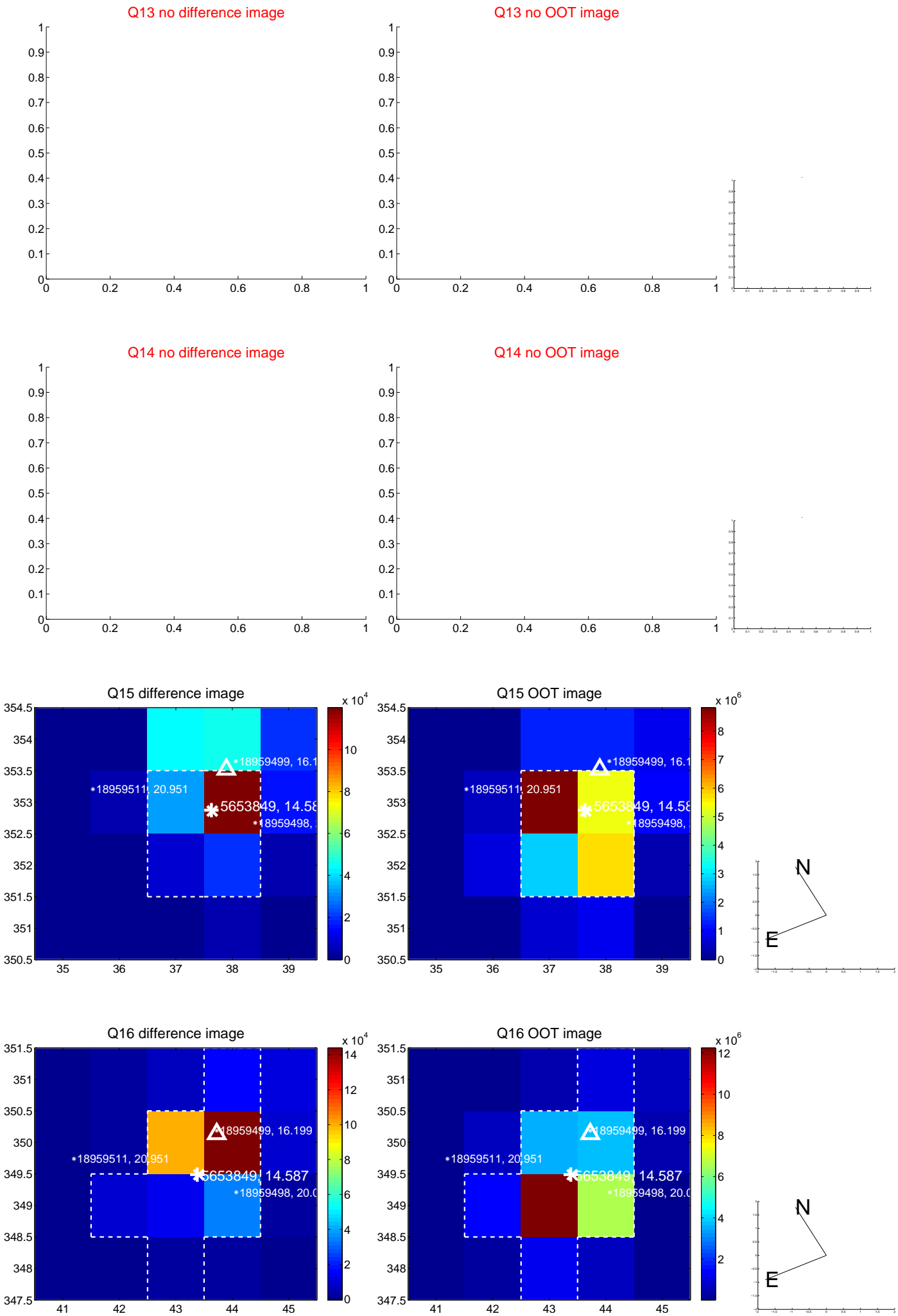
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



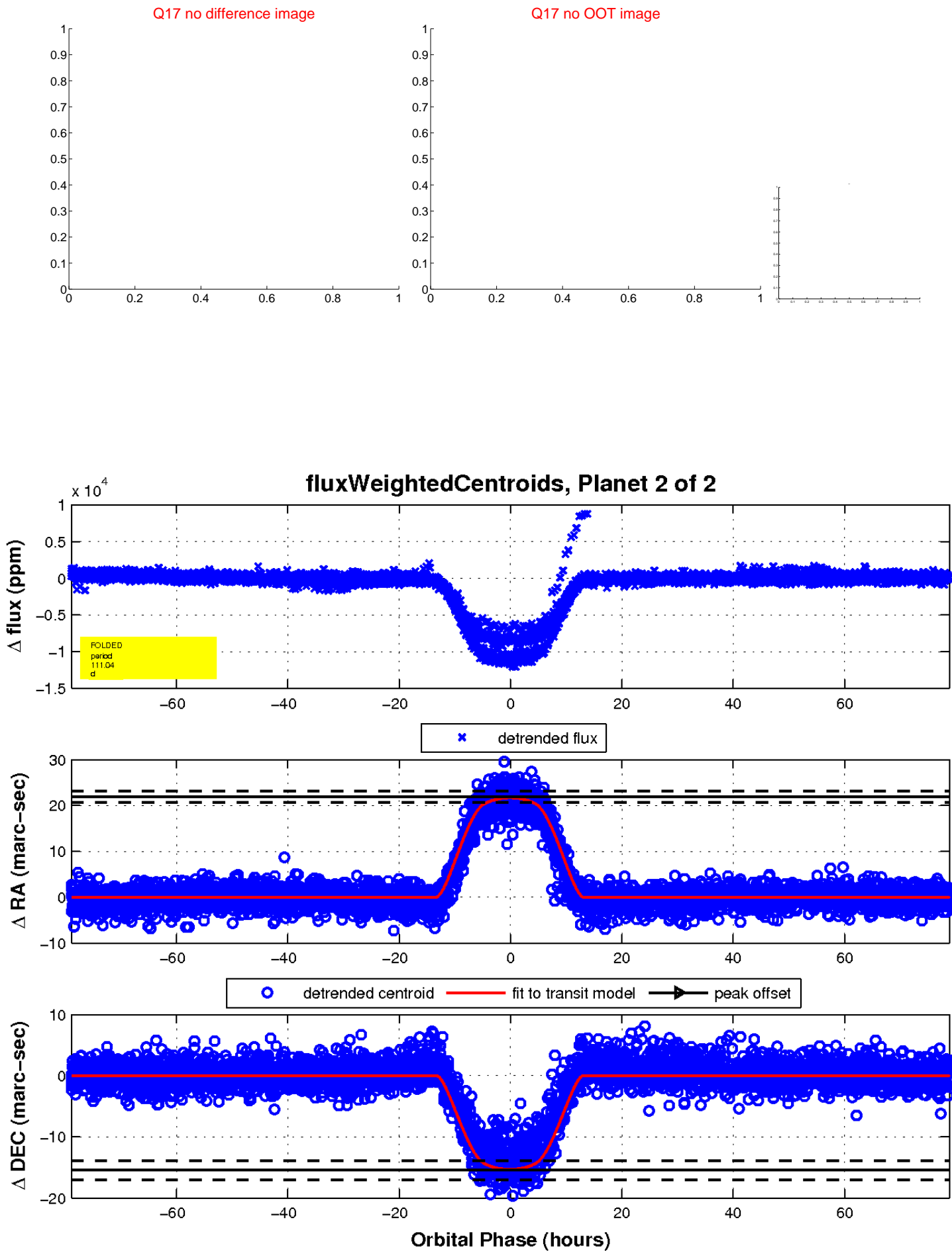
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

