

KIC 005444549

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})
005444549-01	OBS	1551.01	31.138643	135.701570	10916.5	5.239	270.9	185.3	1.00	5919	12.88	27.26
005444549-02	OBS	No	31.138002	157.682920	521.8	5.297	12.2	13.4	1.00	5919	2.97	27.26

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005444549-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_UNRESOLVED_OFFSET
005444549-02	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.

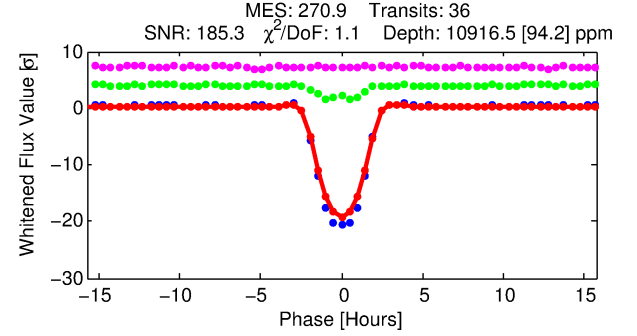
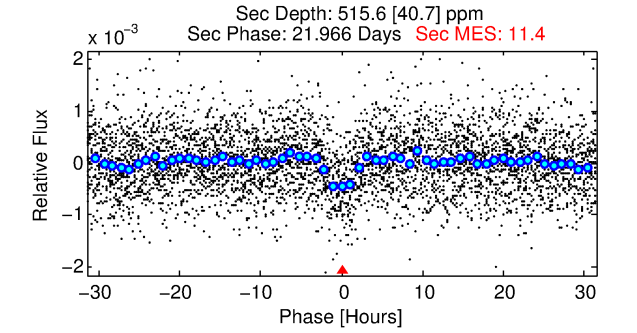
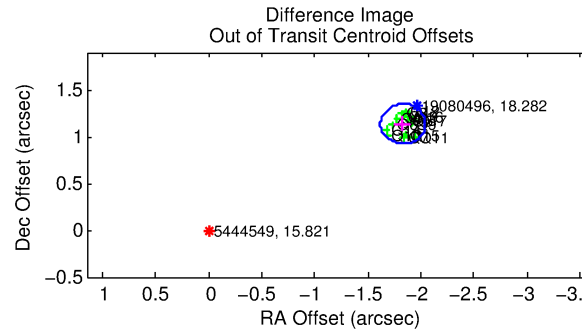
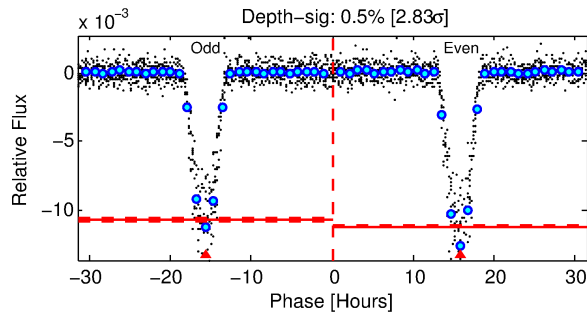
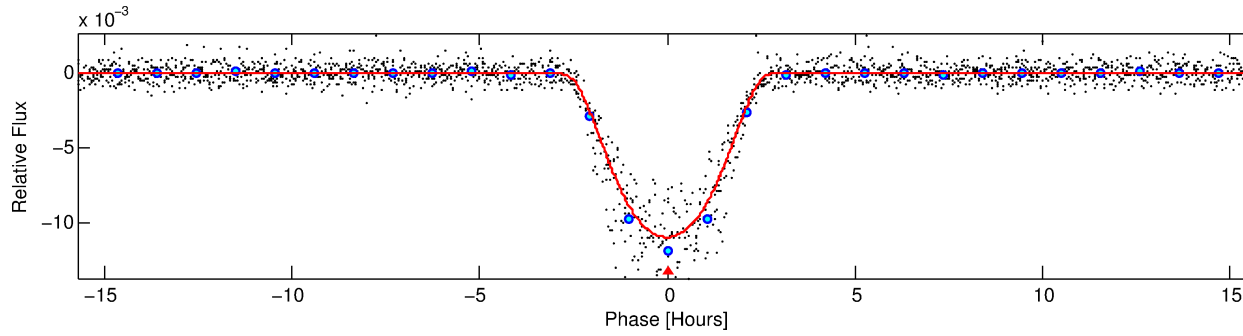
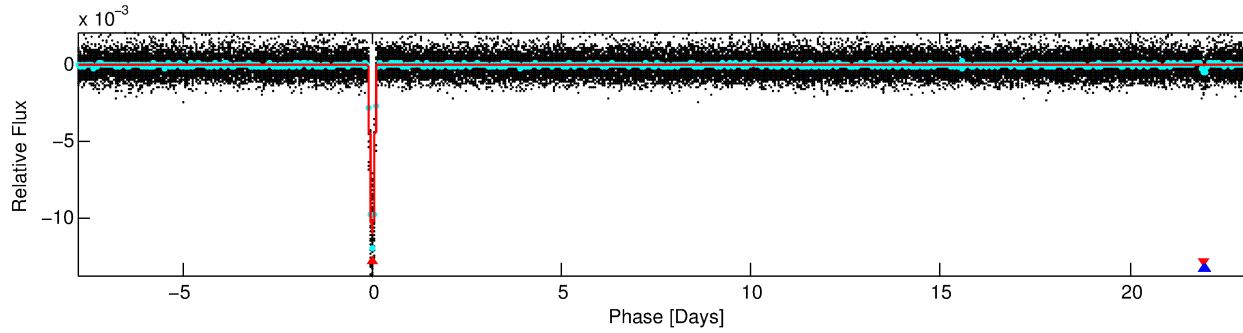
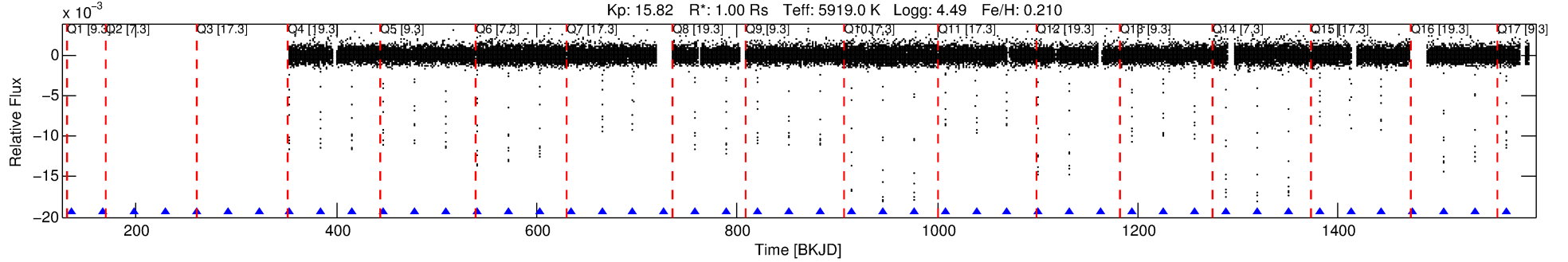
Ephemeris Match Information For 005444549-01

No Significant Match Found

DV One-Page Summary

KIC: 5444549 Candidate: 1 of 2 Period: 31.139 d
KOI: K01551.01 Corr: 0.996

Kp: 15.82 R*: 1.00 Rs Teff: 5919.0 K Logg: 4.49 Fe/H: 0.210



DV Fit Results:

Period = 31.13864 [0.00003] d
Epoch = 135.7016 [0.0007] BKJD
Rp/R* = 0.1180 [0.0030]
a/R* = 30.03 [0.47]
b = 0.90 [0.01]
Seff = 27.26 [10.70]
Teff = 583 [57] K
Rp = 12.88 [3.74] Re
a = 0.2009 [0.0495] AU
Ag = 69.02 [25.85] [2.63σ]
Teffp = 2596 [115] K [15.64σ]

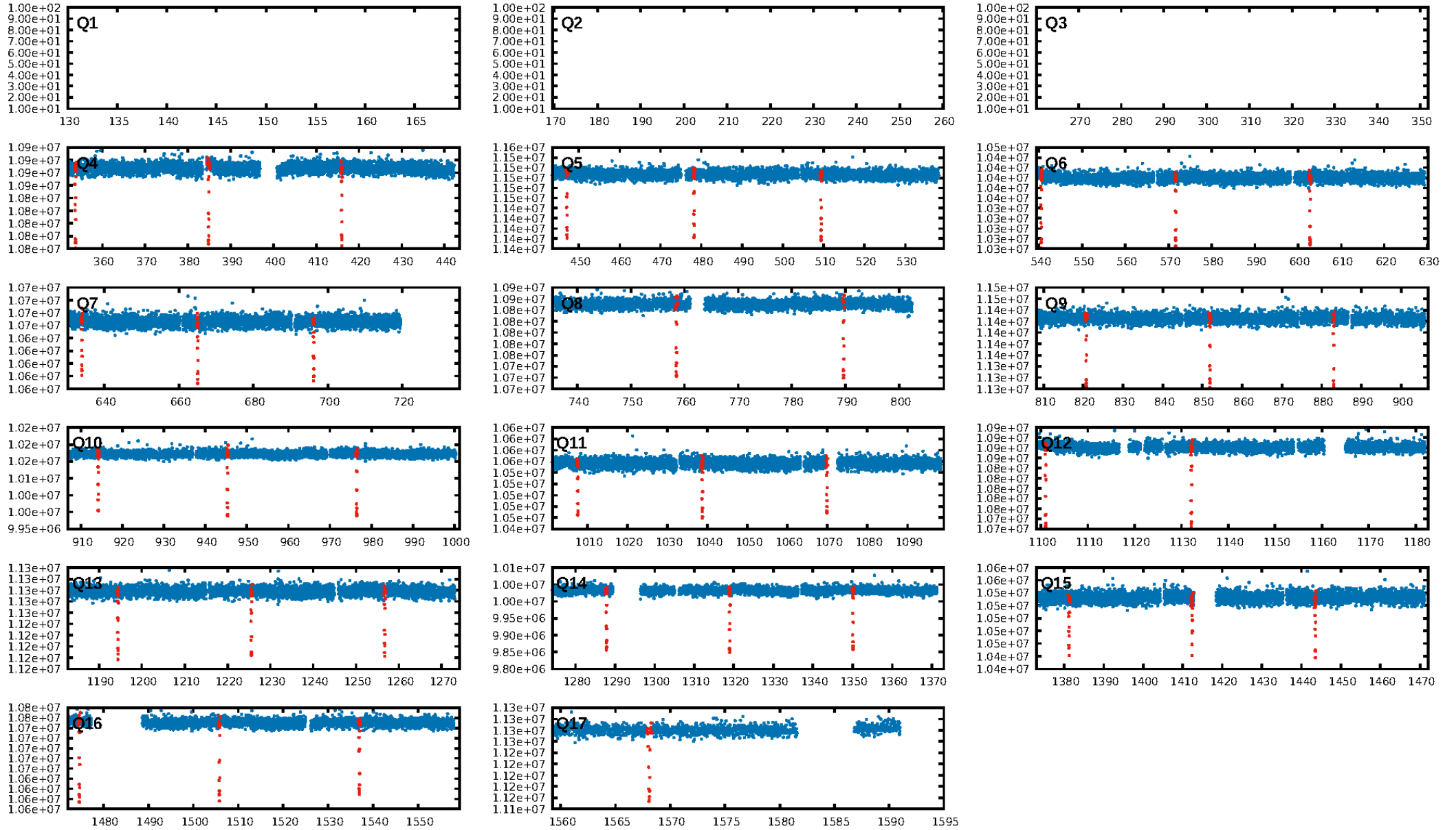
DV Diagnostic Results:

ShortPeriod-sig: 0.2% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [35/35]
GhostDiagnostic-chr: 1.482
Centroid-sig: 0.0%
Centroid-so: 2.645 arcsec [55.98σ]
OotOffset-rm: 2.154 arcsec [30.41σ]
KicOffset-rm: 2.359 arcsec [34.35σ]
OotOffset-st: 3/3/4/4 [14]
KicOffset-st: 3/3/4/4 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

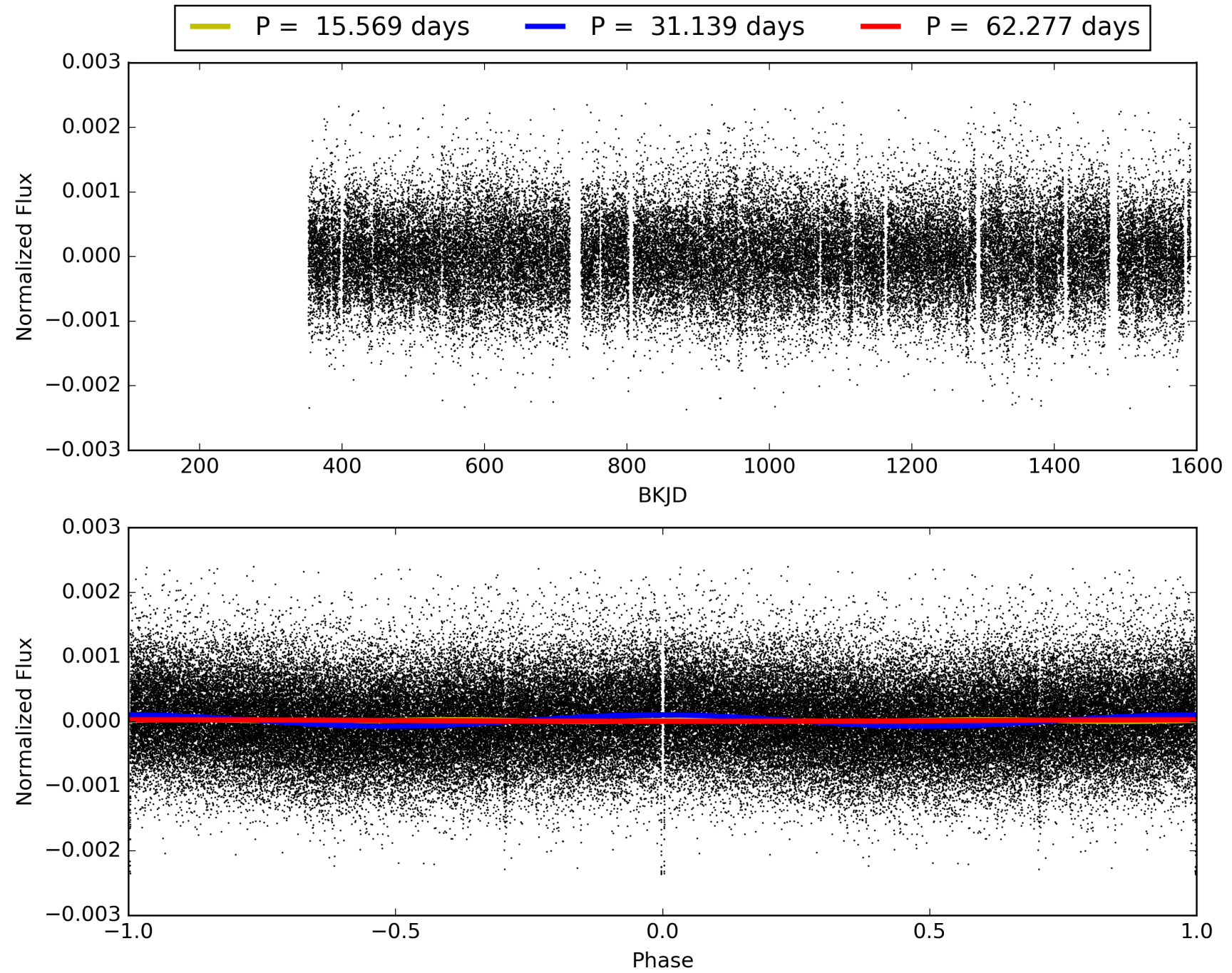
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 09:01:04 Z

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

TCE 005444549-01, PDC Light Curves

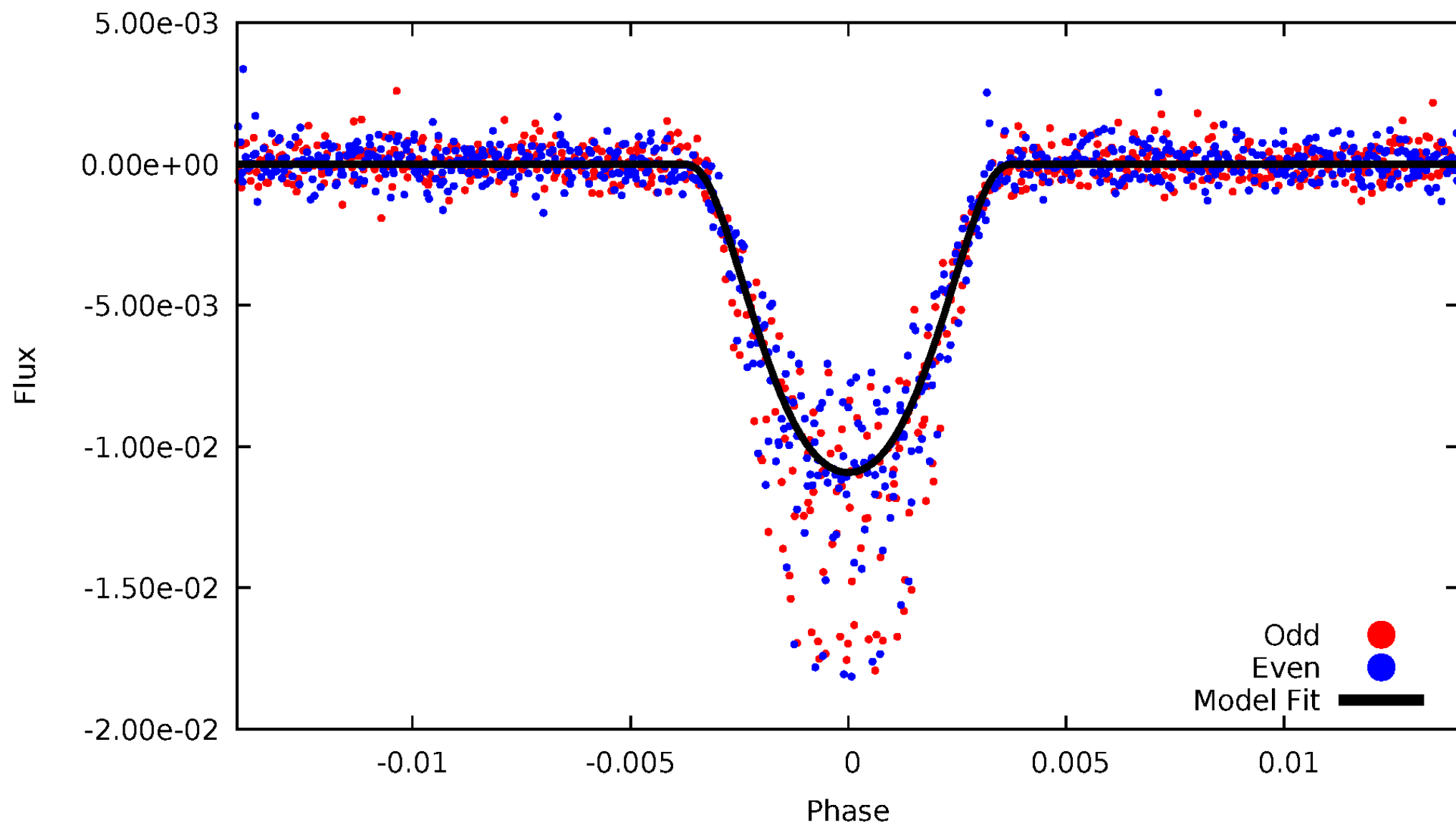


TCE 005444549-01



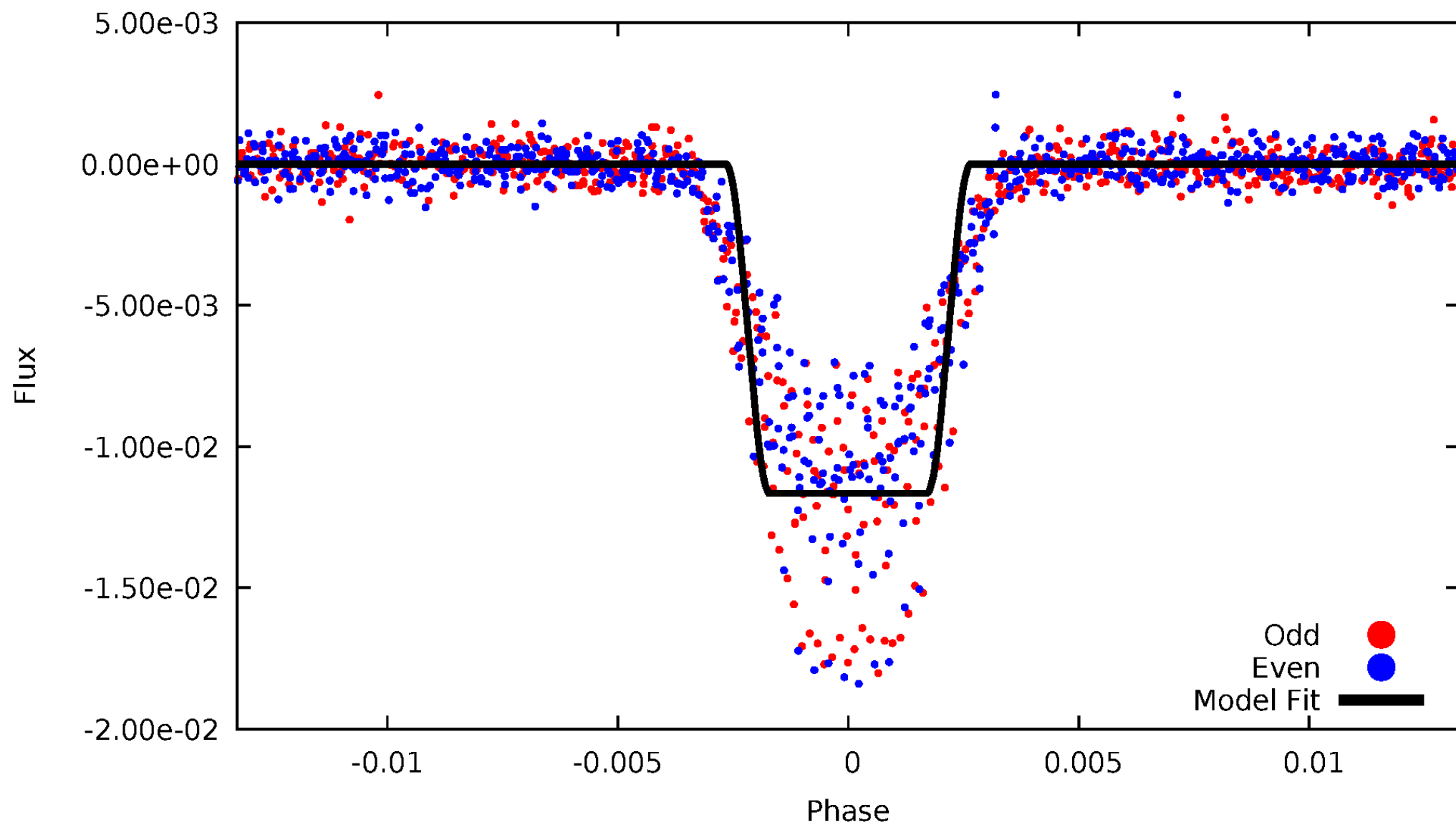
DV Odd/Even

TCE 005444549-01



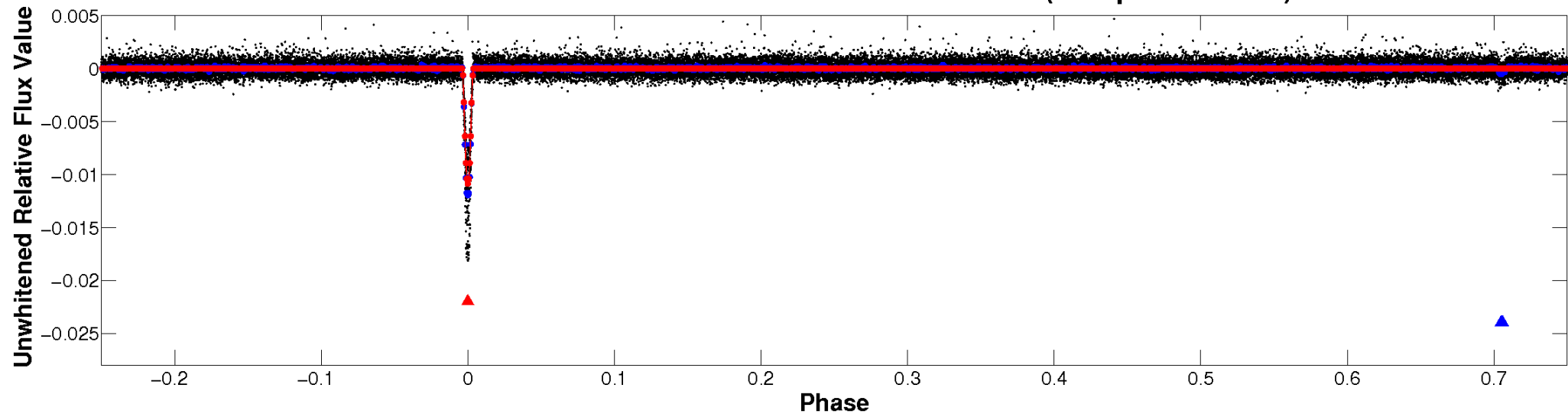
ALT Odd/Even

TCE 005444549-01

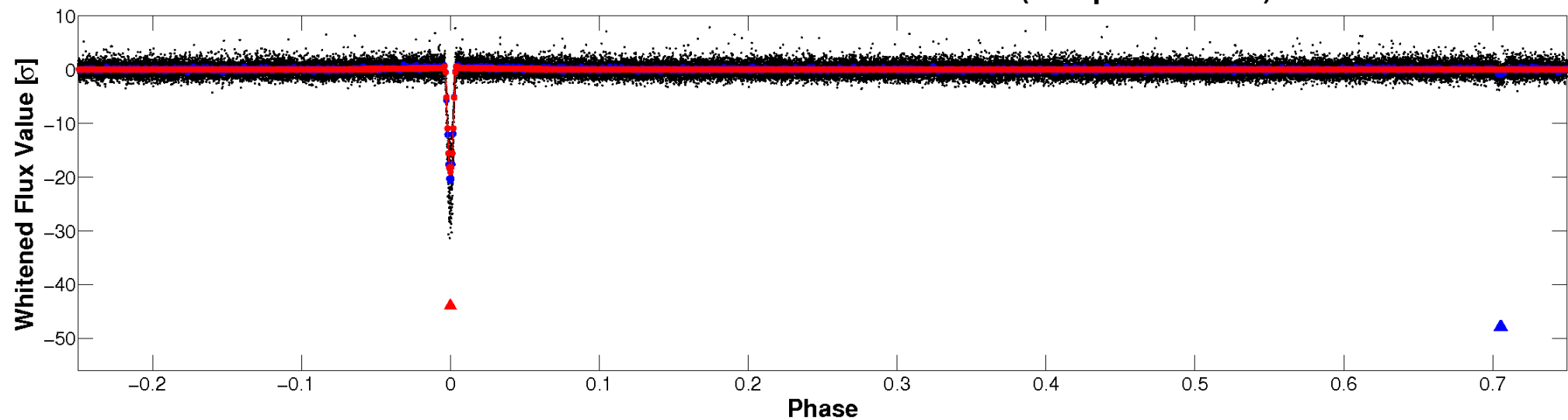


Non-Whitened Vs. Whitened Light Curve

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

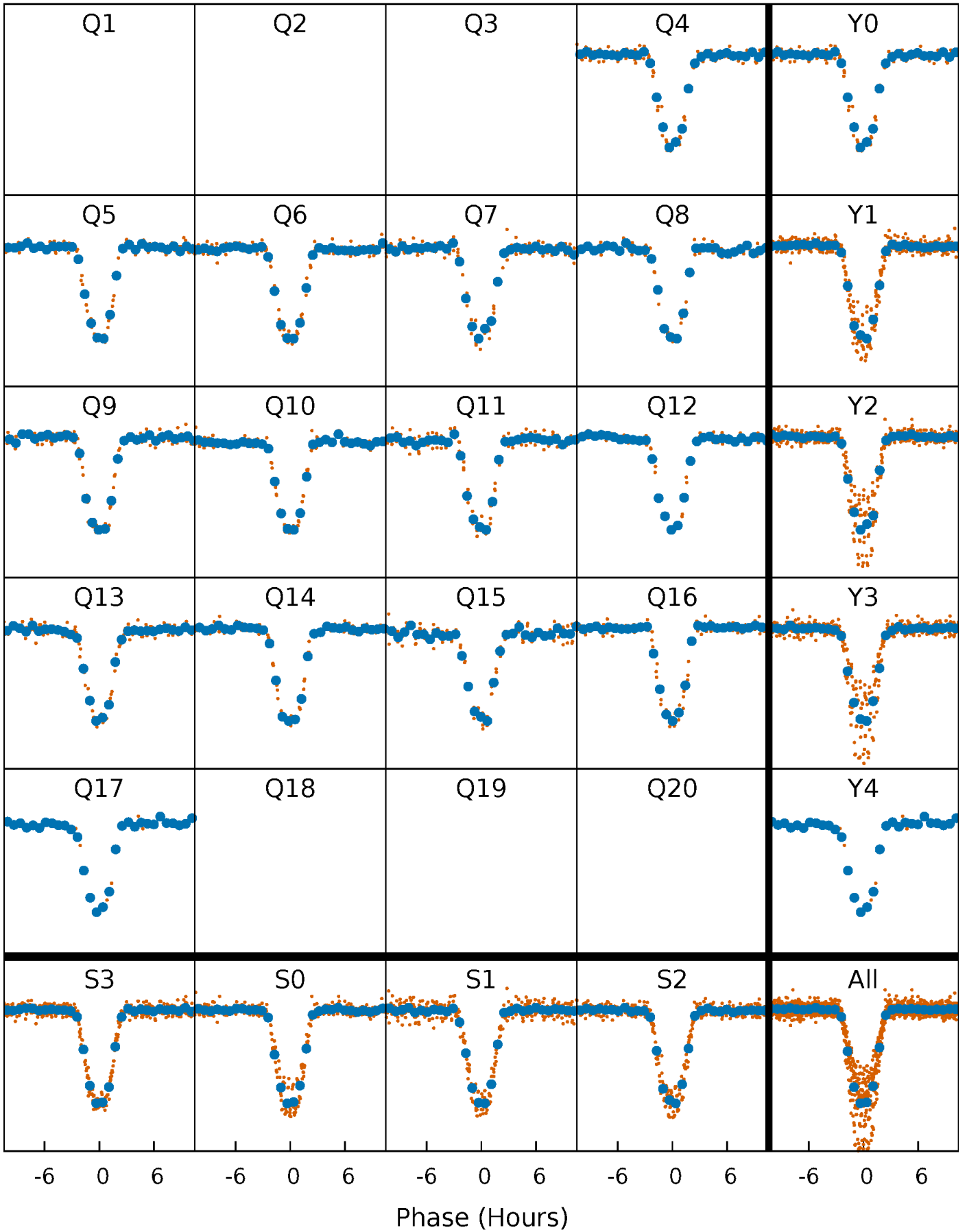


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



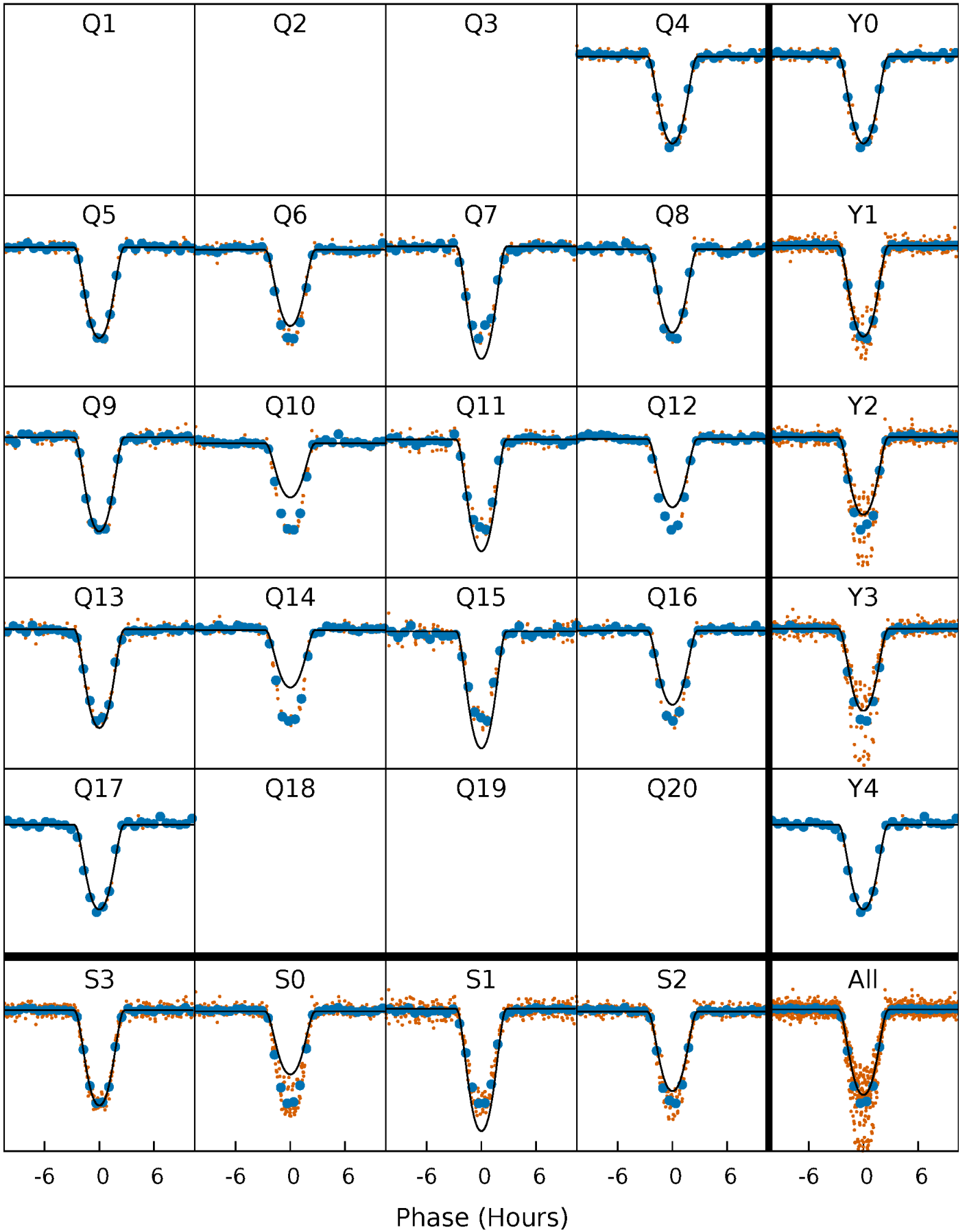
PDC Quarter-Phased Transit Curves

TCE 005444549-01 P= 31.138643 Days $T_0=135.701570$ (BKJD)



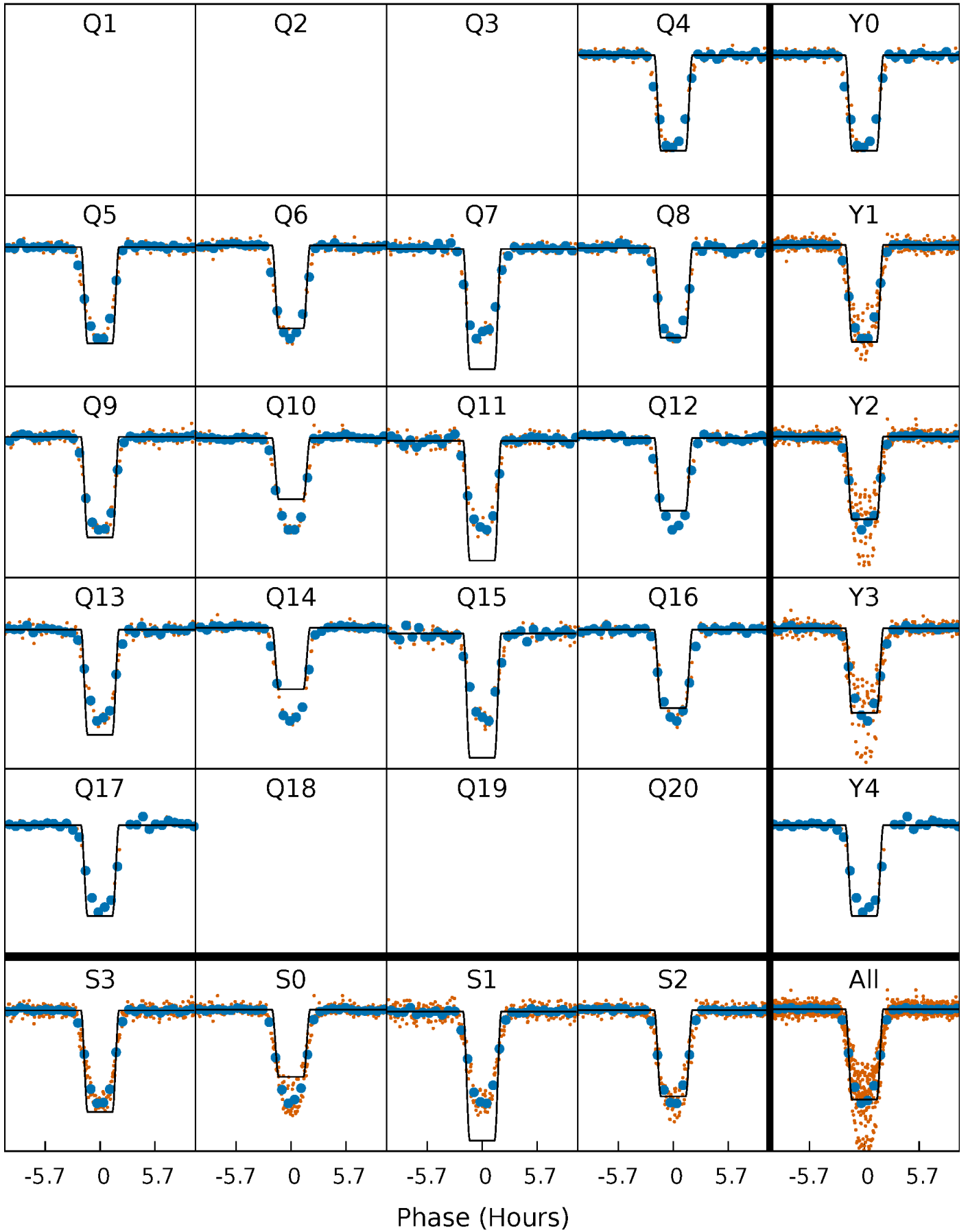
DV Quarter-Phased Transit Curves

TCE 005444549-01 P= 31.138643 Days $T_0=135.701570$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

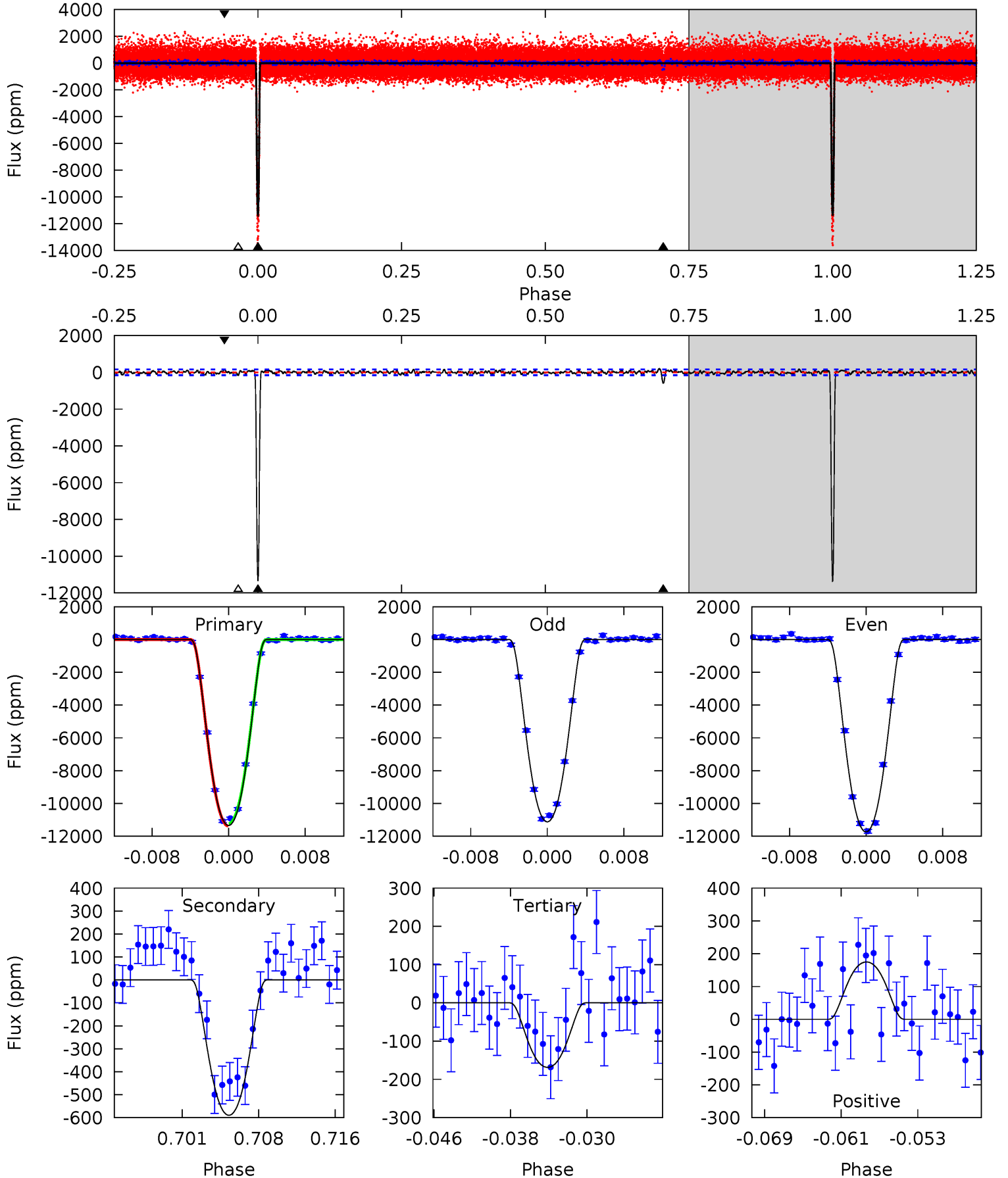
TCE 005444549-01 P= 31.138288 Days $T_0=135.710234$ (BKJD)



DV Model-Shift Uniqueness Test

005444549-01, P = 31.138643 Days, E = 135.701570 Days

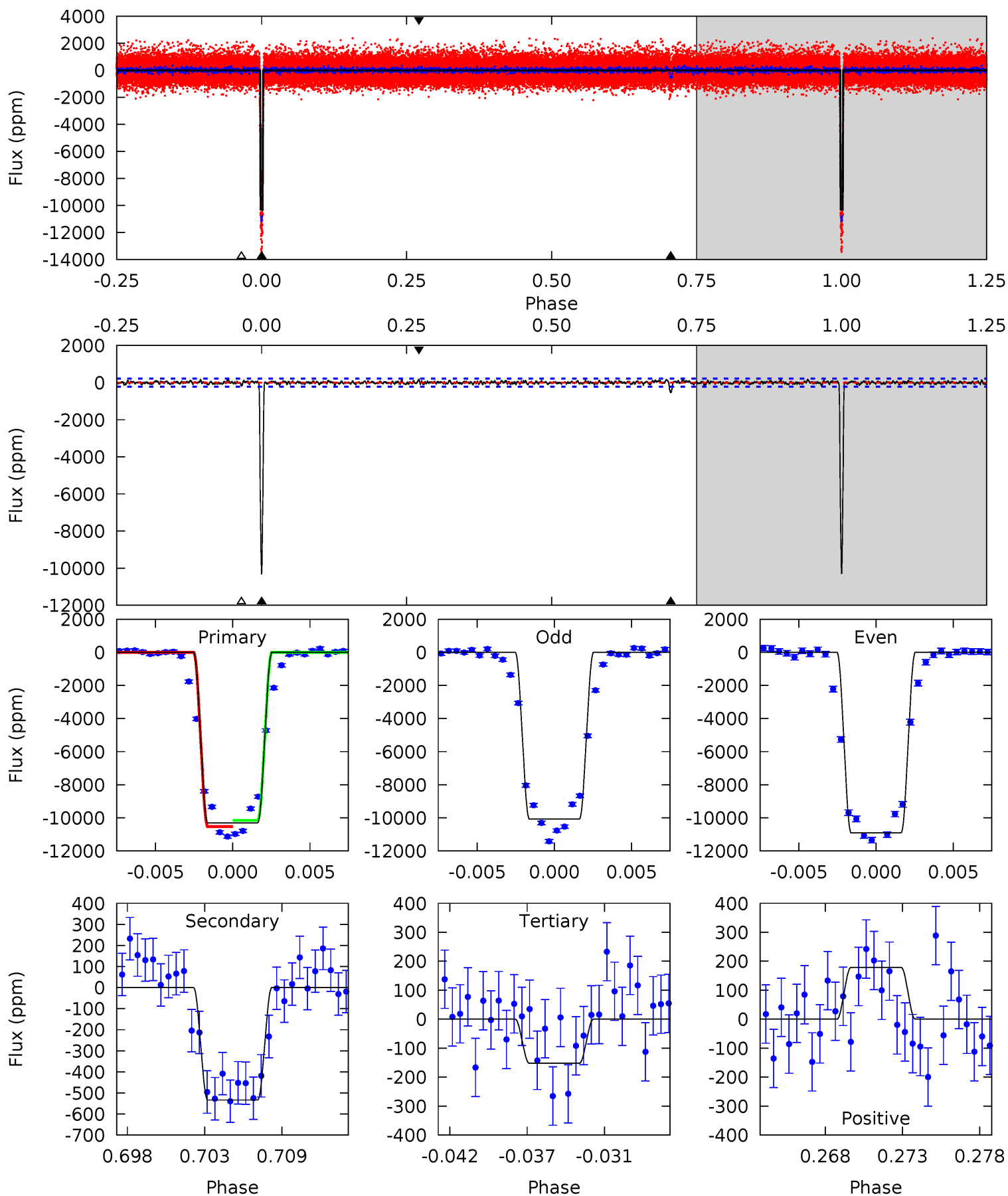
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
368.3	19.1	5.47	5.68	5.08	2.67	1.69	362.9	362.7	13.7	13.5	9.81	1.07	0.02	0



Alt Model-Shift Uniqueness Test

005444549-01, P = 31.138288 Days, E = 135.710234 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
245.3	12.7	3.63	4.26	5.15	2.79	1.15	241.7	241.0	9.08	8.44	9.63	1.06	0.02	4.42



Stellar Parameters For KIC 005444549

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5919^{+182}_{-223}	$4.485^{+0.050}_{-0.200}$	$0.210^{+0.200}_{-0.300}$	$1.000^{+0.289}_{-0.096}$	$1.114^{+0.109}_{-0.150}$	$1.570^{+0.324}_{-0.836}$
	+3%/-4%	+1%/-4%	+95%/-143%	+29%/-10%	+10%/-13%	+21%/-53%
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 005444549-01 / KOI 1551.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-589 ± 31	$13.21^{+1.97}_{-1.12}$	832^{+56}_{-45}	3254^{+71}_{-83}	72^{+13}_{-17}
Alt.	-534 ± 42	$12.10^{+1.77}_{-0.99}$	830^{+59}_{-39}	3297^{+82}_{-95}	79^{+15}_{-19}

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

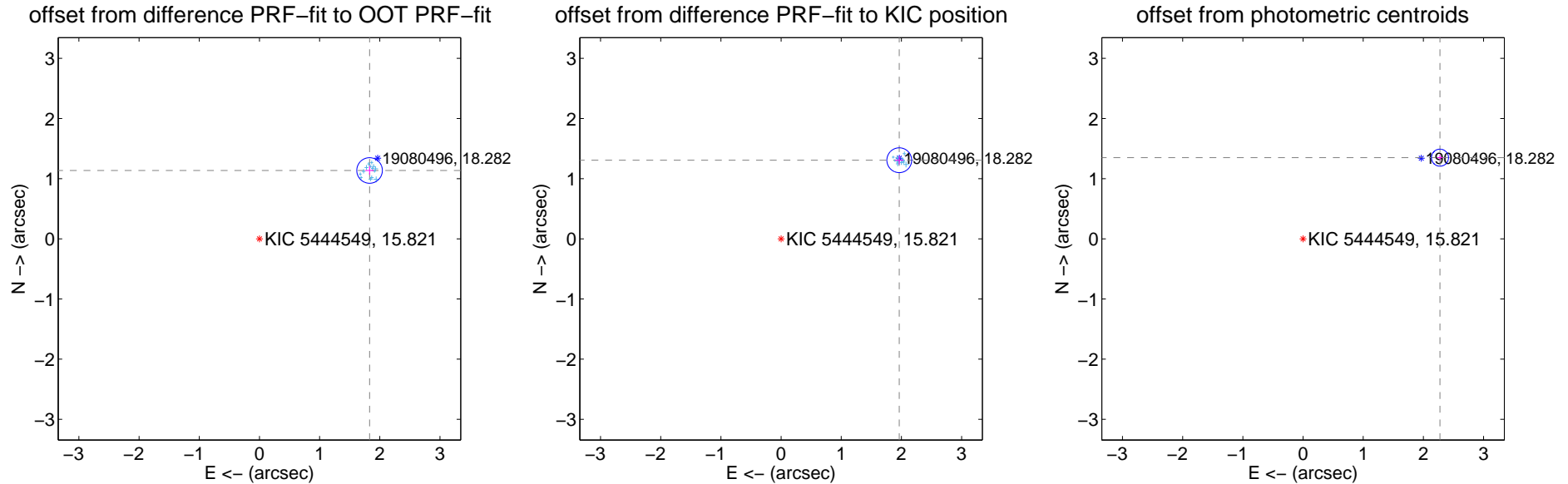
DV Centroid Data

Supplemental centroid analysis for 005444549-01. Kepler magnitude: 15.82. Transit SNR 185.26

There are 14 quarters with good PRF difference image offsets

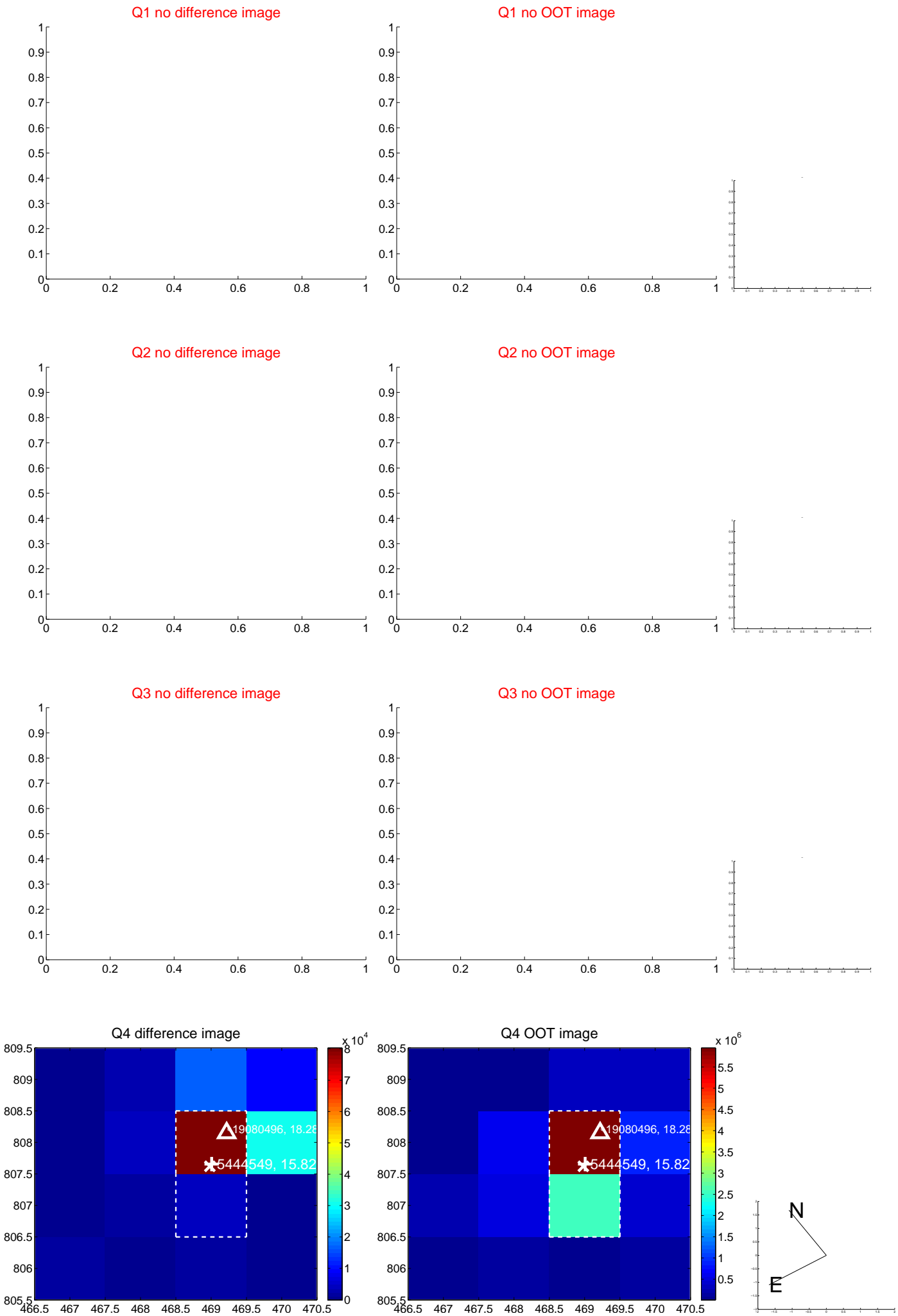
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.154 ± 0.071	30.41	-1.830 ± 0.071	1.136 ± 0.071
PRF-fit source offset from KIC position	2.359 ± 0.069	34.35	-1.964 ± 0.069	1.307 ± 0.068
photometric centroid source offset	2.65 ± 0.05	55.98	-2.28 ± 0.05	1.35 ± 0.05

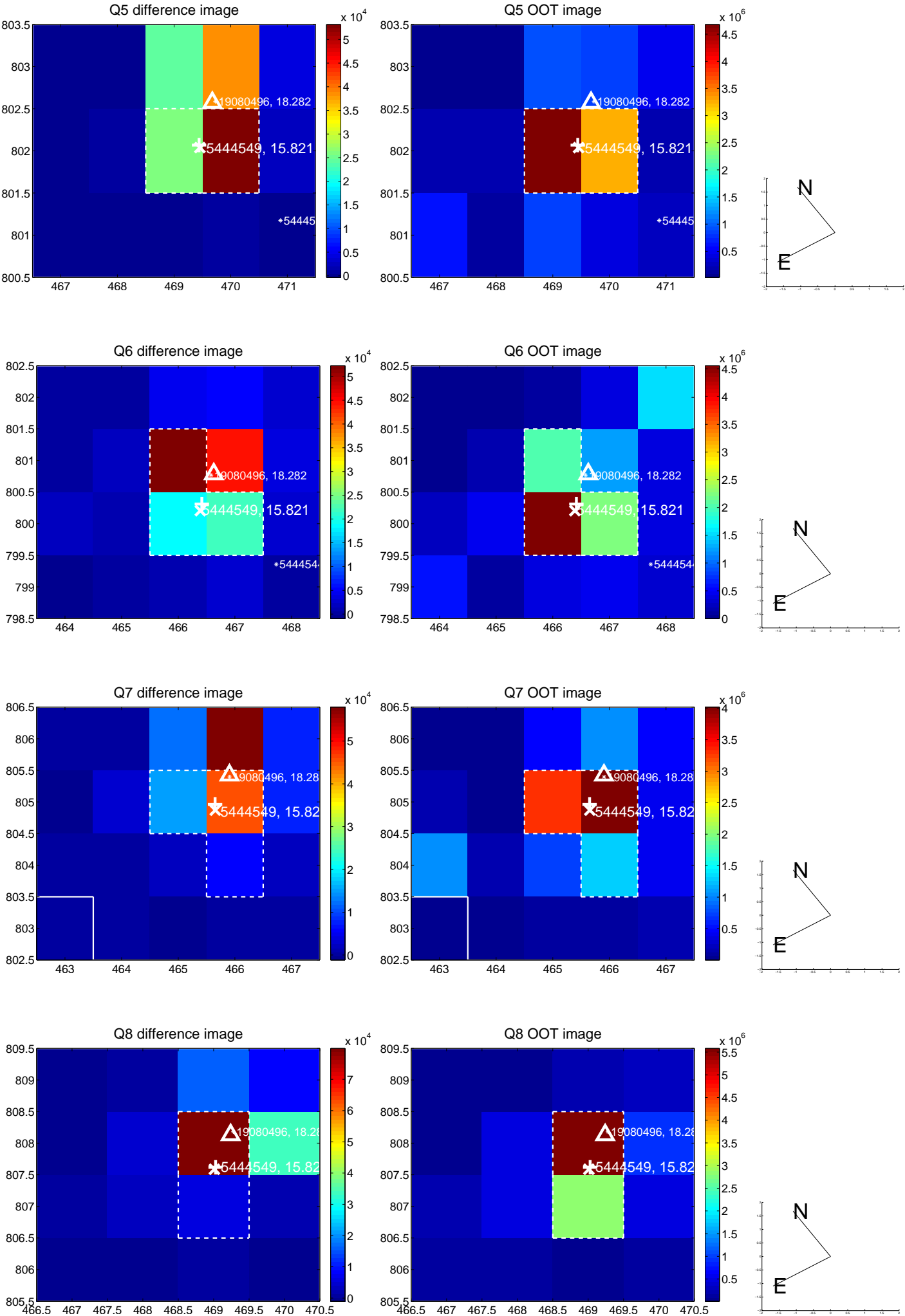


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

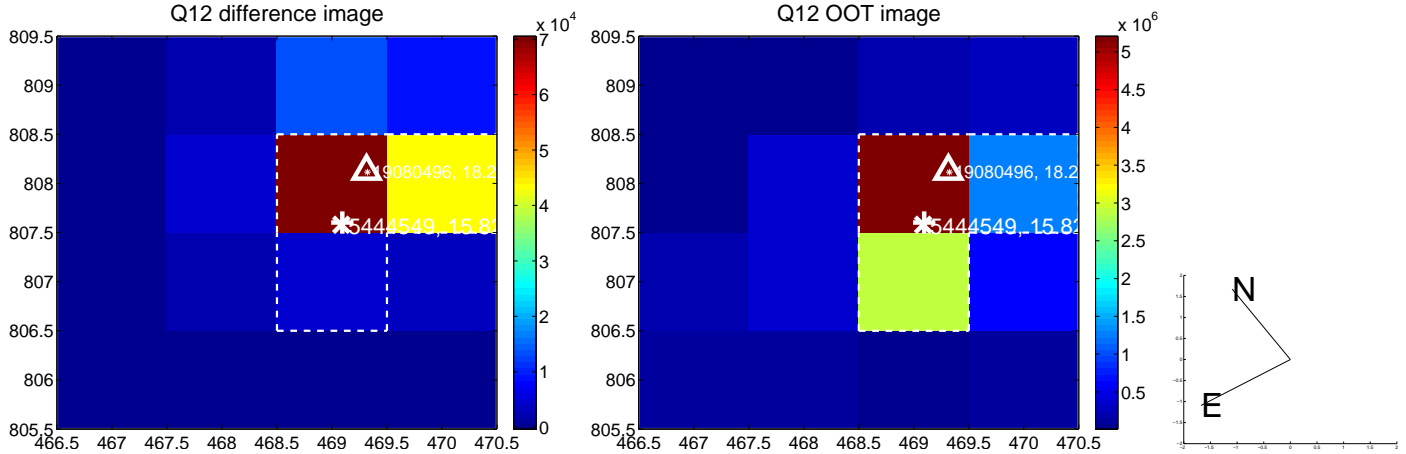
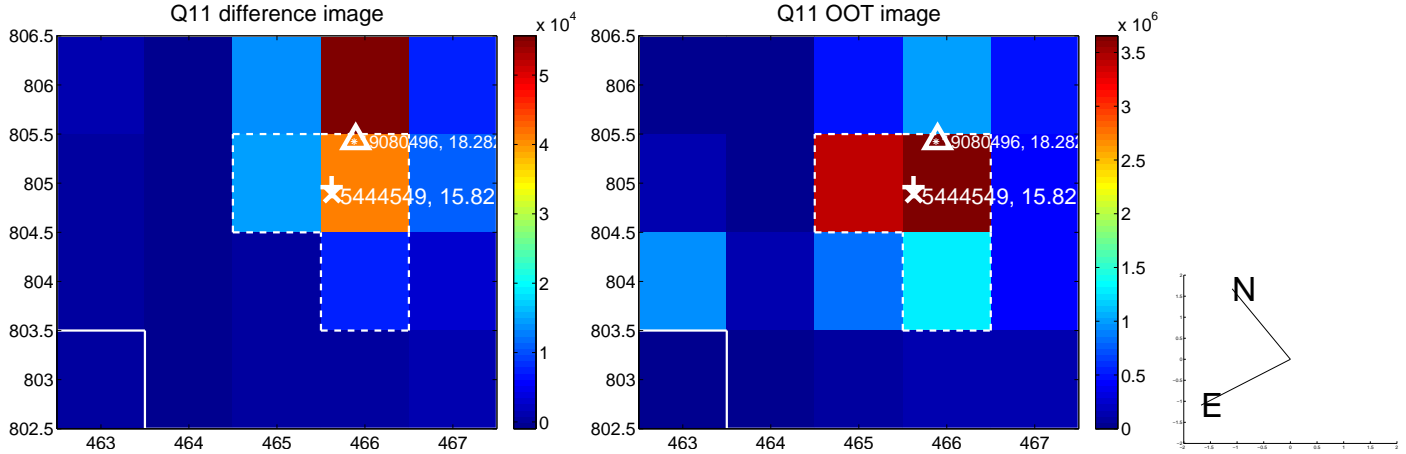
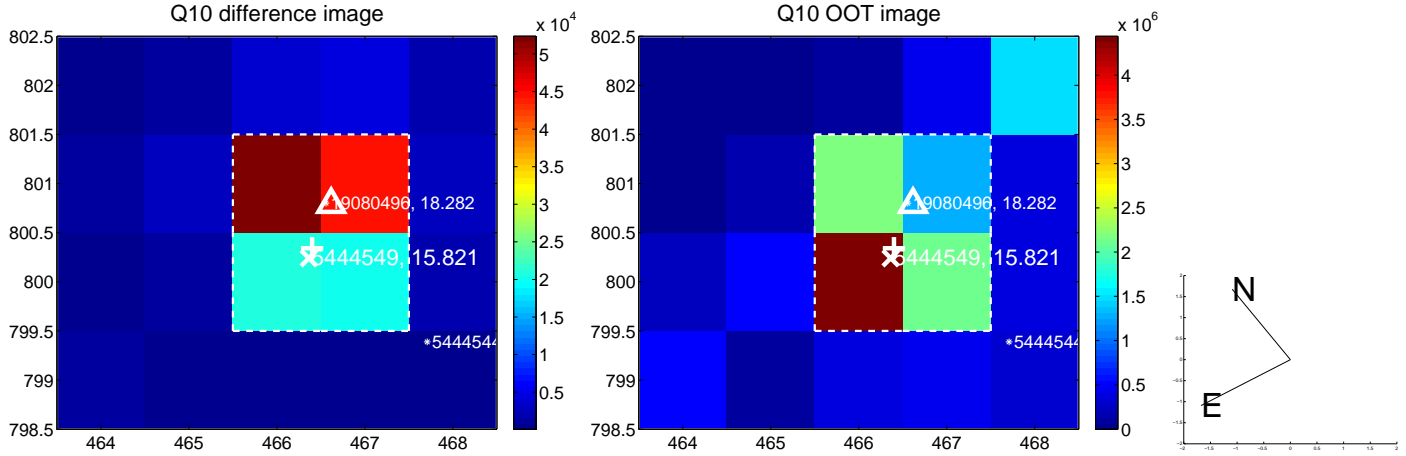
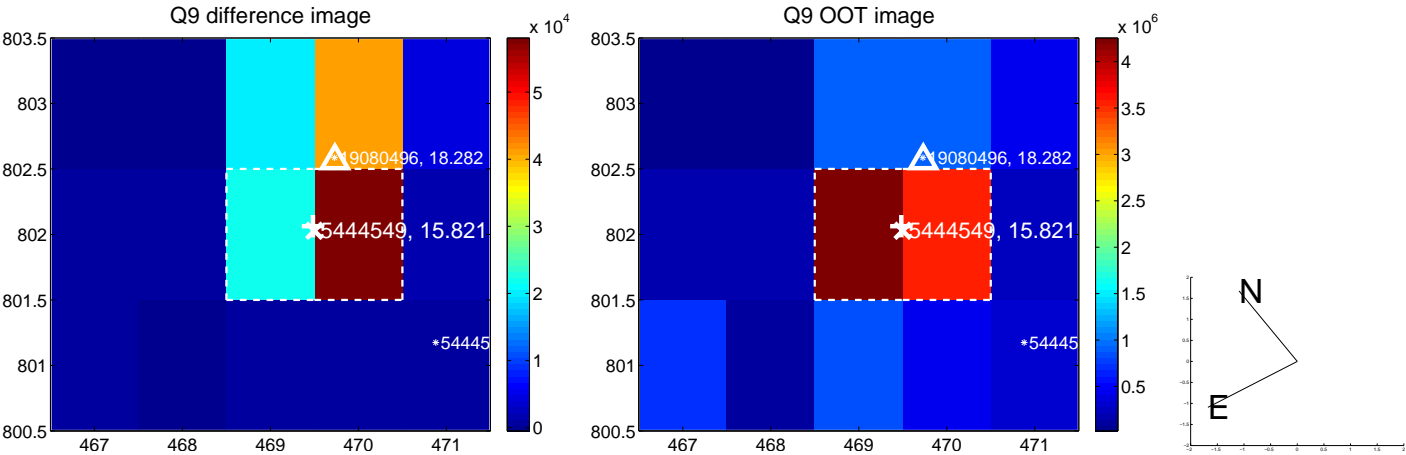
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



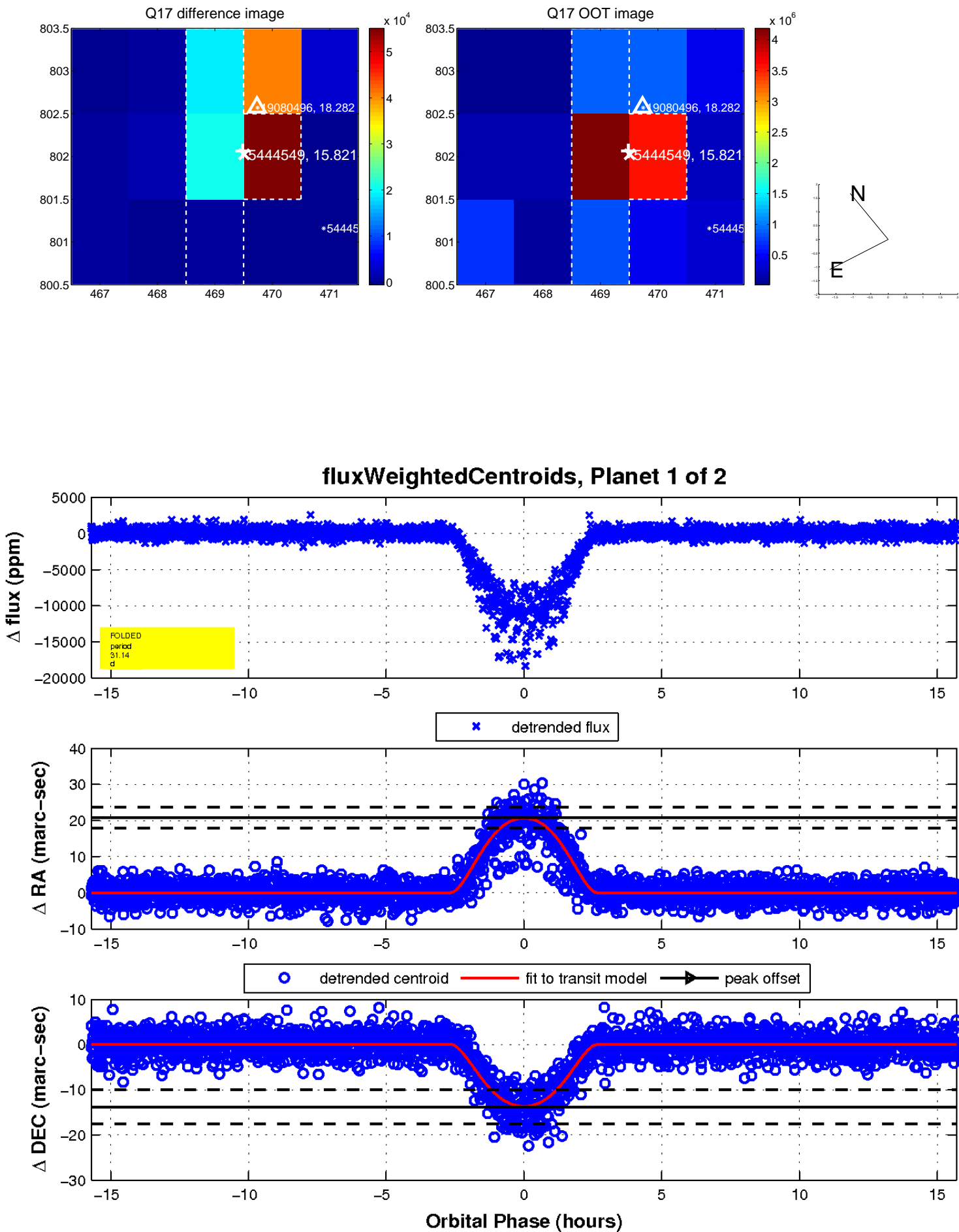
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

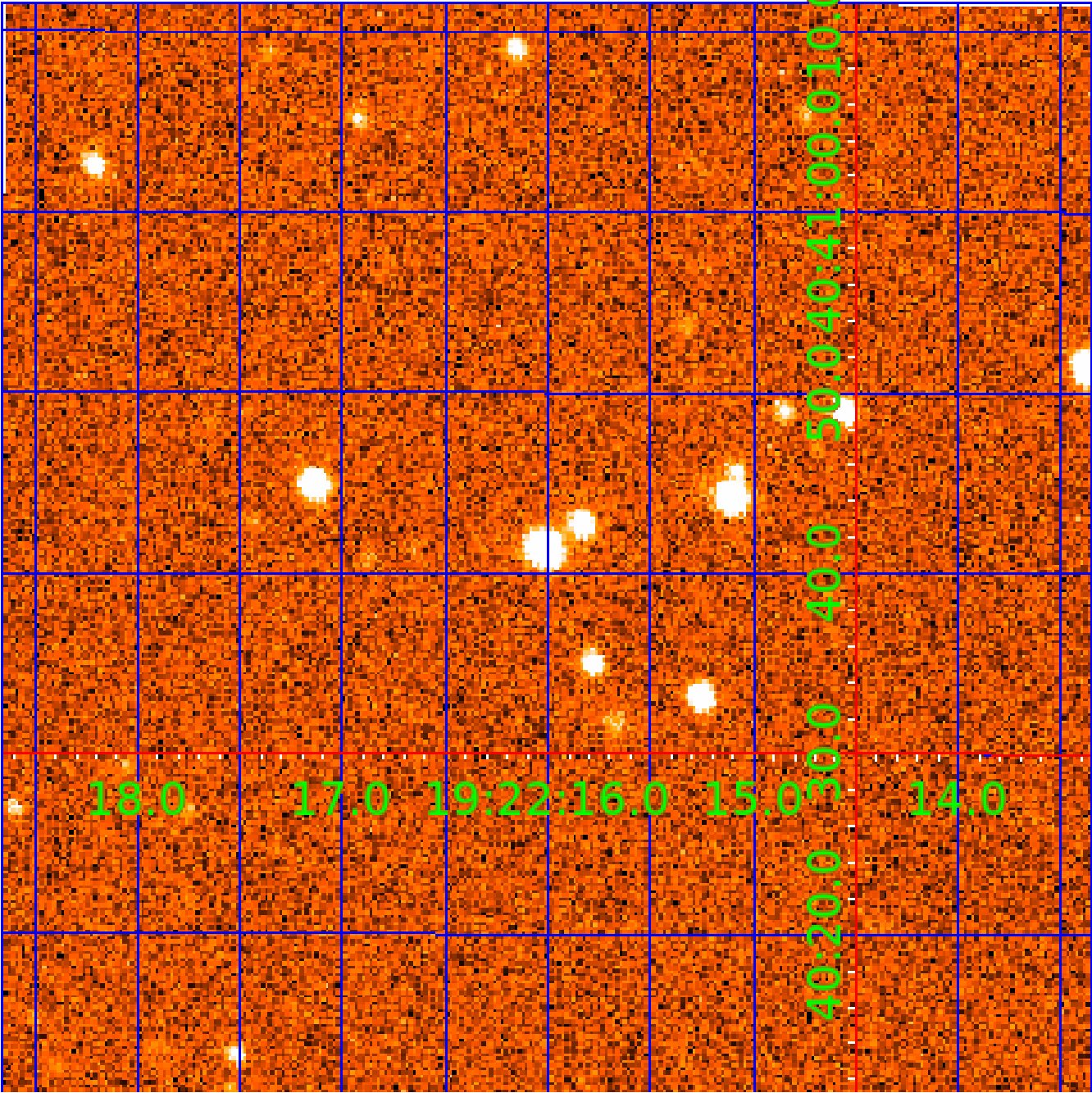


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005444549

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})
005444549-01	OBS	1551.01	31.138643	135.701570	10916.5	5.239	270.9	185.3	1.00	5919	12.88	27.26
005444549-02	OBS	No	31.138002	157.682920	521.8	5.297	12.2	13.4	1.00	5919	2.97	27.26

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005444549-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_UNRESOLVED_OFFSET
005444549-02	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.

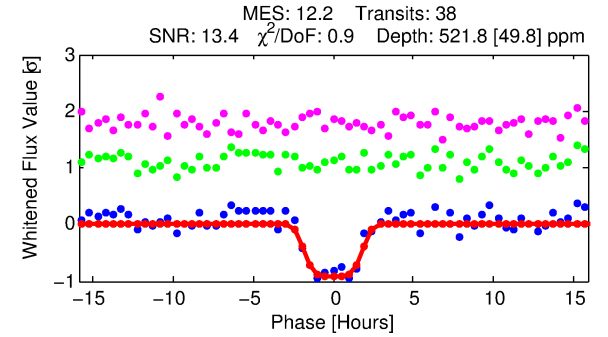
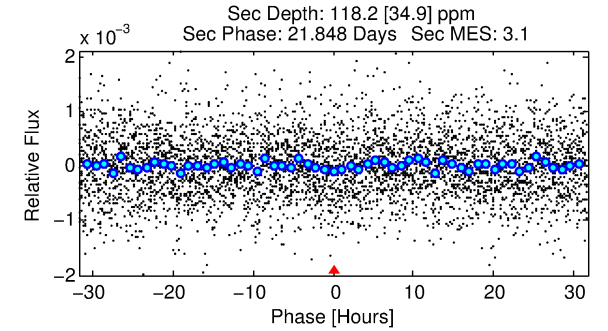
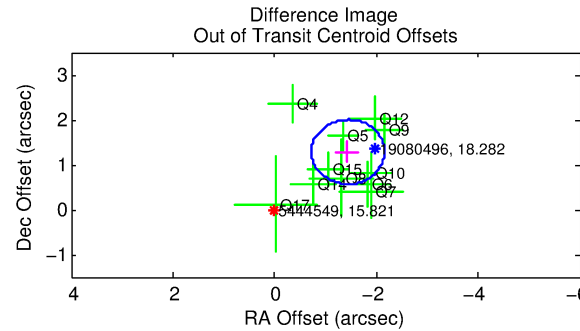
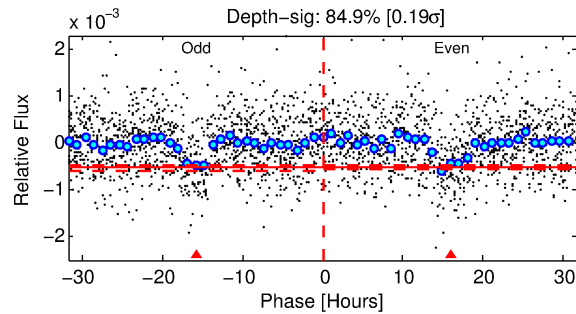
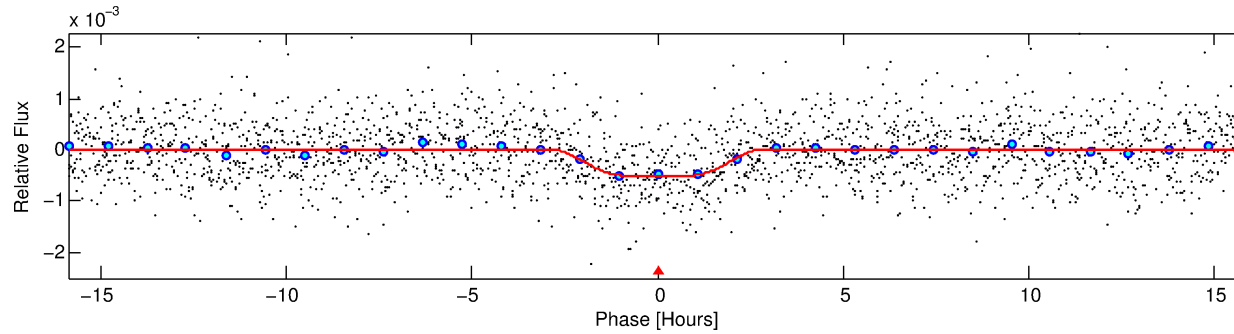
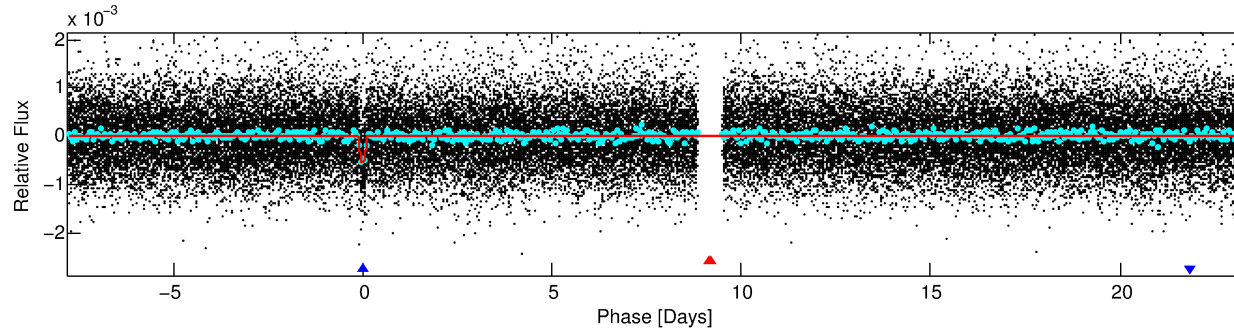
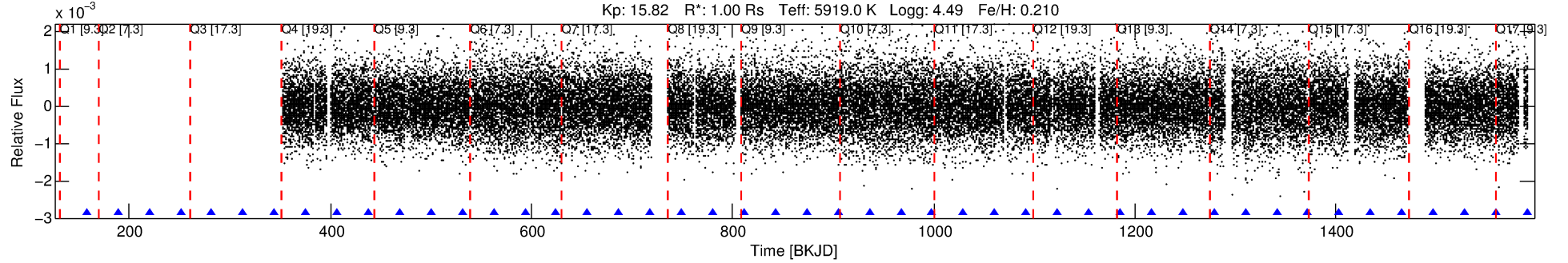
Ephemeris Match Information For 005444549-02

No Significant Match Found

DV One-Page Summary

KIC: 5444549 Candidate: 2 of 2 Period: 31.138 d
KOI: K01551 Corr: No Ephemeris Match

Kp: 15.82 R*: 1.00 Rs Teff: 5919.0 K Logg: 4.49 Fe/H: 0.210



DV Fit Results:

Period = 31.13800 [0.00043] d
Epoch = 157.6829 [0.0120] BKJD
Rp/R* = 0.0272 [0.0021]
a/R* = 16.31 [3.44]
b = 0.96 [0.02]
Seff = 27.26 [10.70]
Teq = 583 [57] K
Rp = 2.97 [0.89] Re
a = 0.2009 [0.0495] AU
Ag = 297.00 [146.25] [2.02σ]
Teffp = 3740 [342] K [9.11σ]

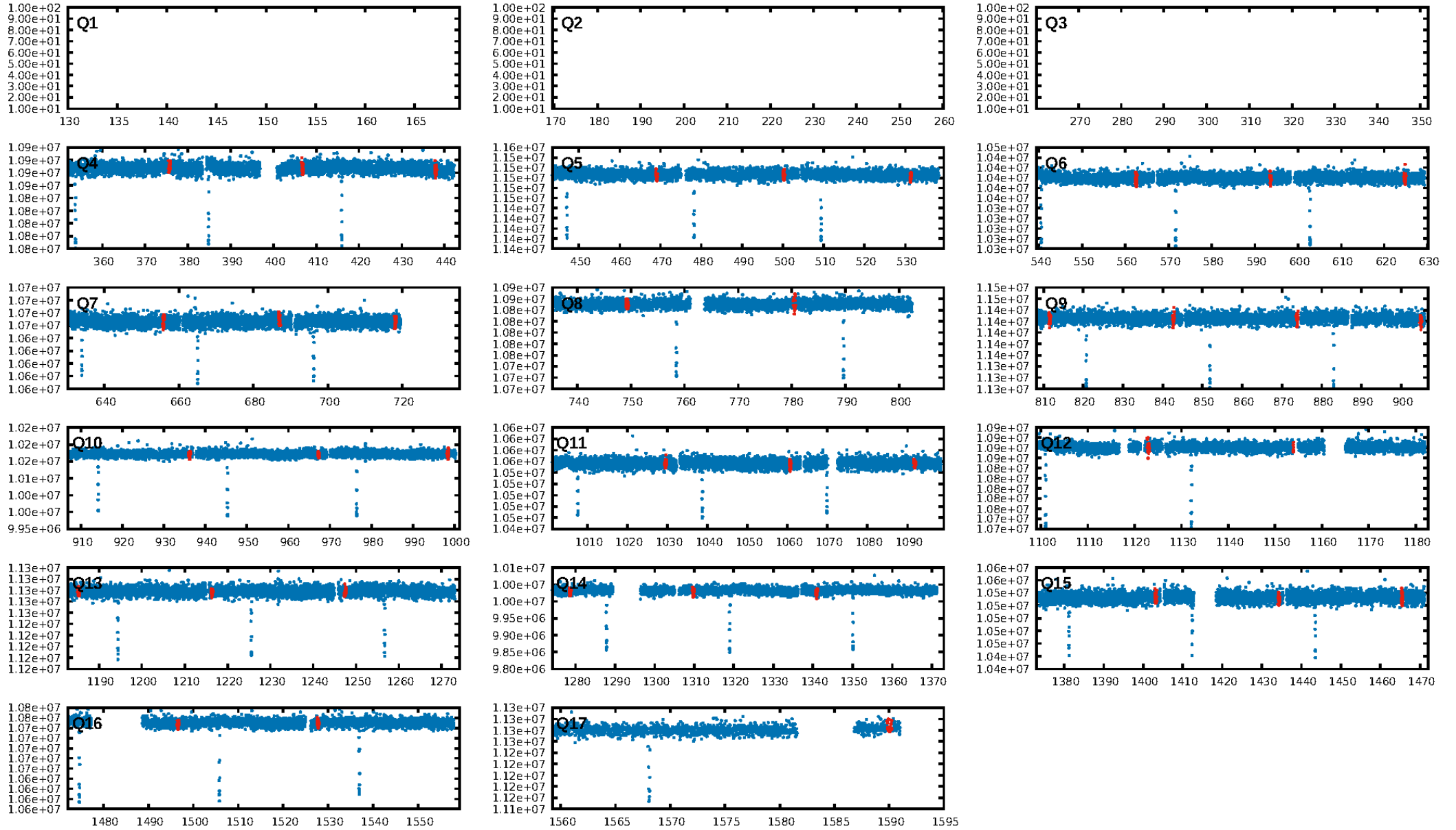
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.2% [0.00σ]
ModelChiSquare2-sig: 31.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.02e-34
RollingBand-fgt: 1.00 [37/37]
GhostDiagnostic-chr: 1.48
Centroid-sig: 0.0%
Centroid-so: 2.997 arcsec [3.54σ]
OotOffset-rm: 1.926 arcsec [8.05σ]
KicOffset-rm: 2.172 arcsec [9.08σ]
OotOffset-st: 3/2/3/3 [11]
KicOffset-st: 3/2/3/3 [11]
DiffImageQuality-fgm: 1.00 [11/11]
DiffImageOverlap-fno: 1.00 [14/14]

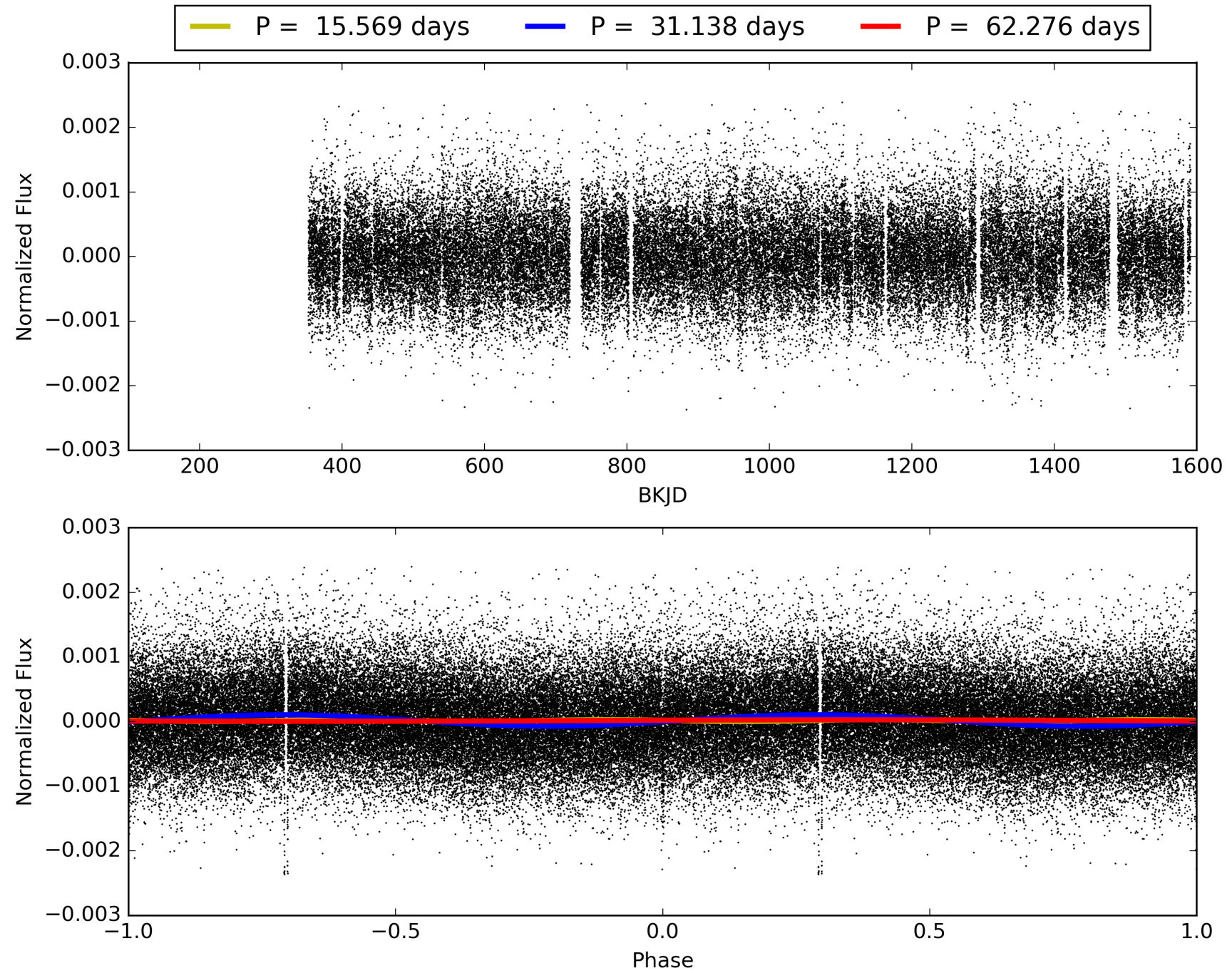
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 09:01:10 Z

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

TCE 005444549-02, PDC Light Curves

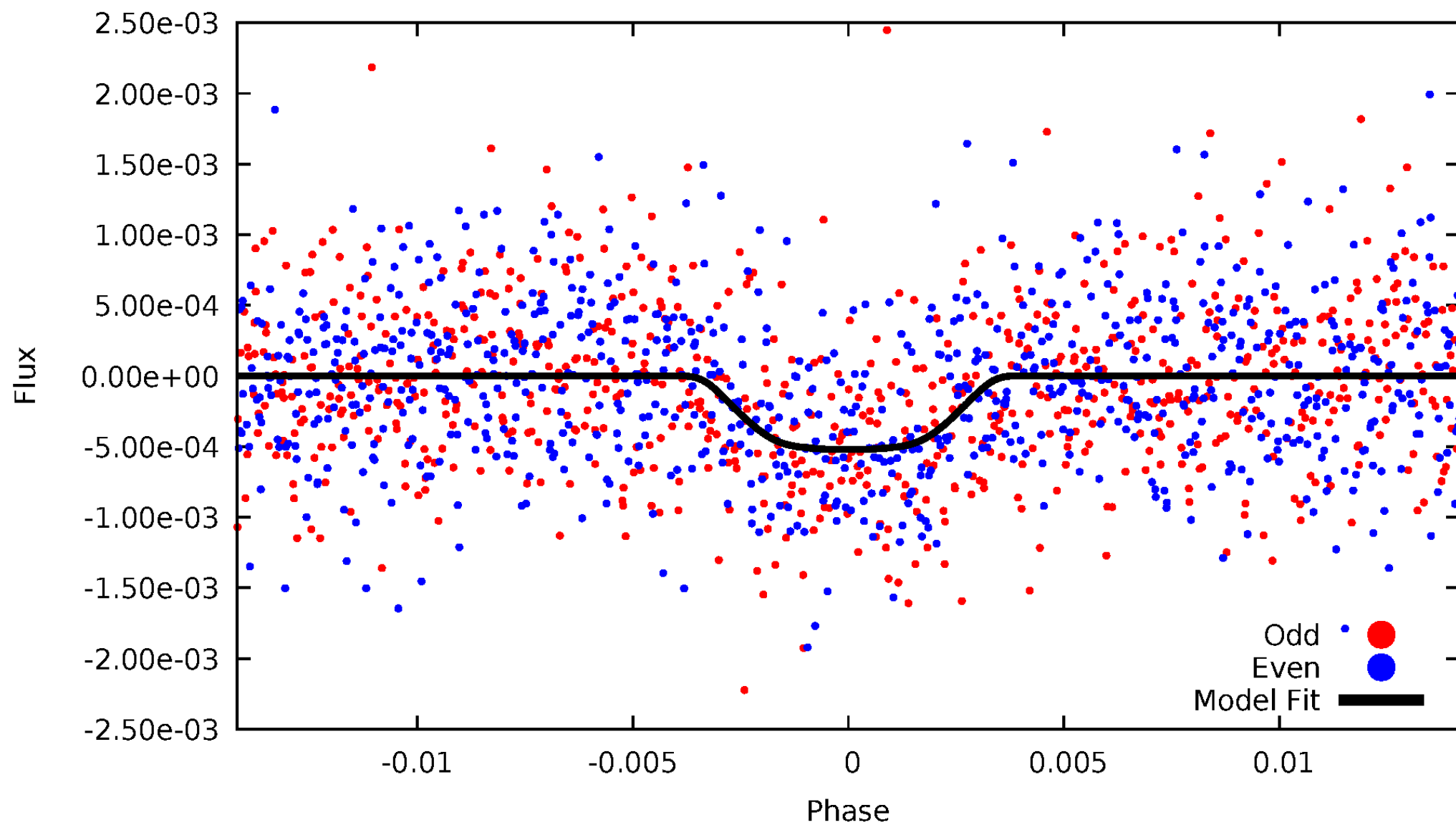


TCE 005444549-02



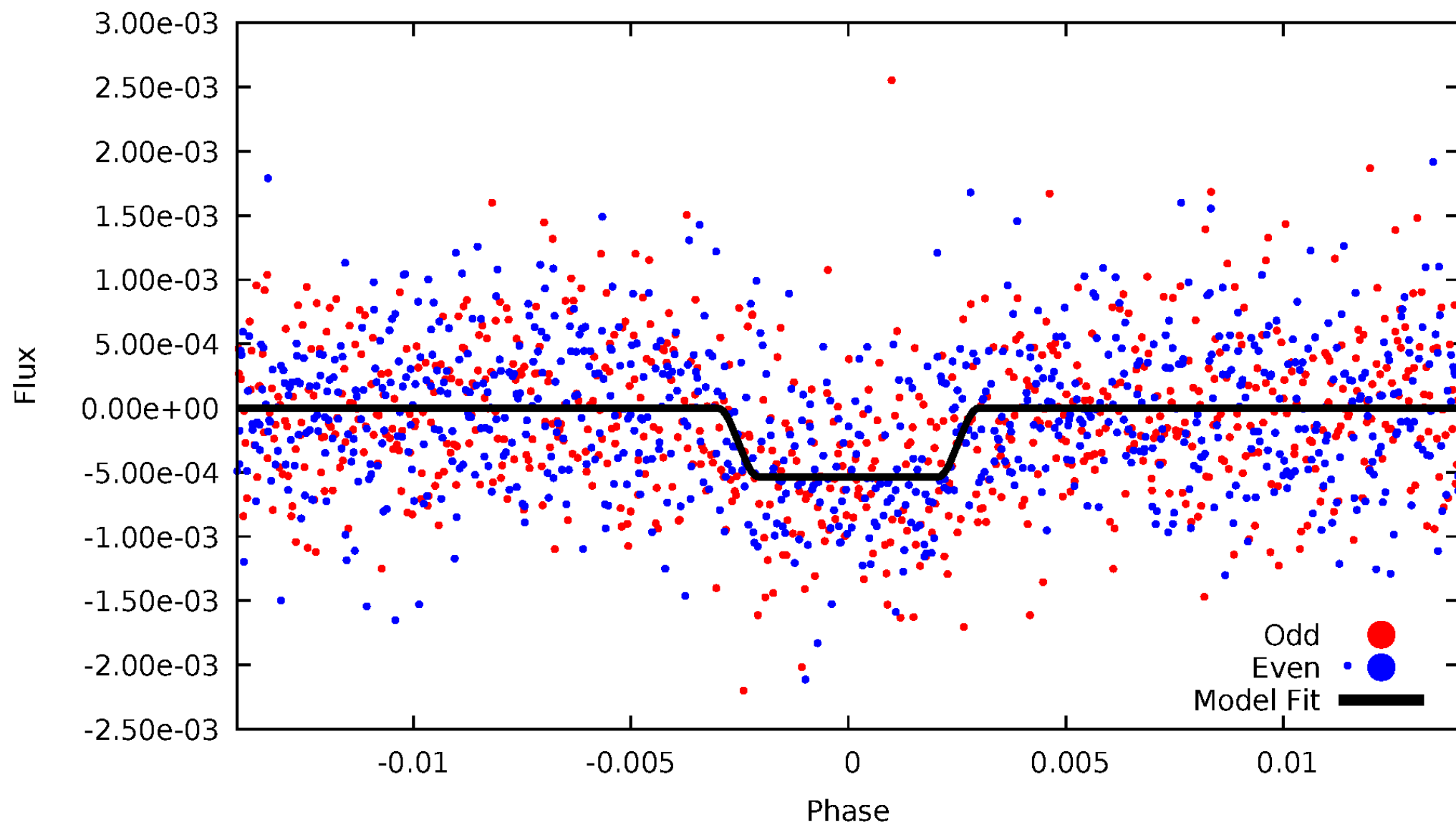
DV Odd/Even

TCE 005444549-02



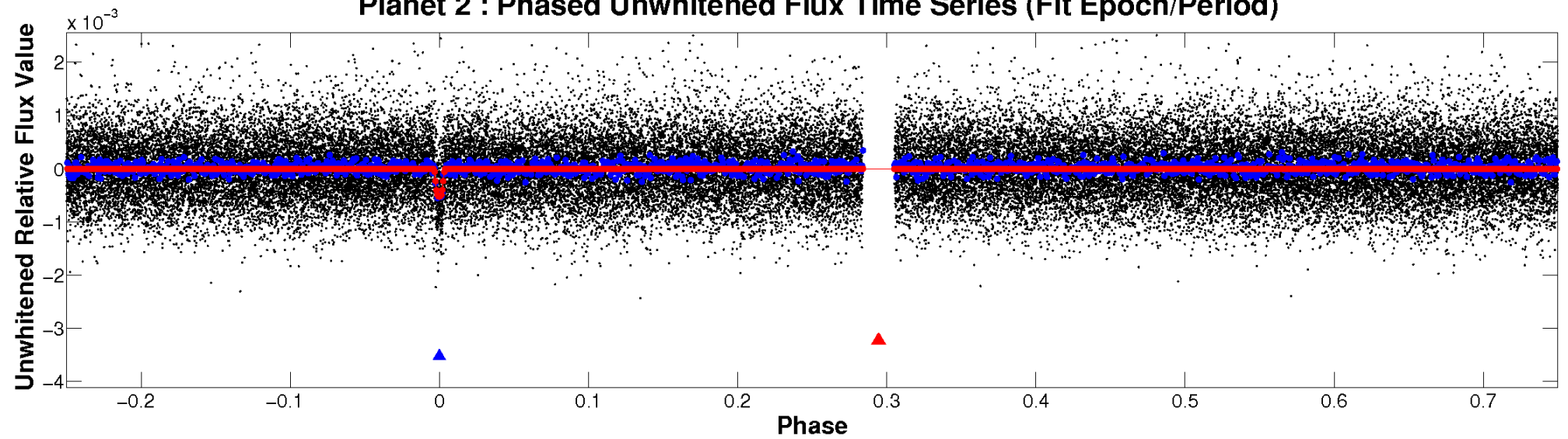
ALT Odd/Even

TCE 005444549-02

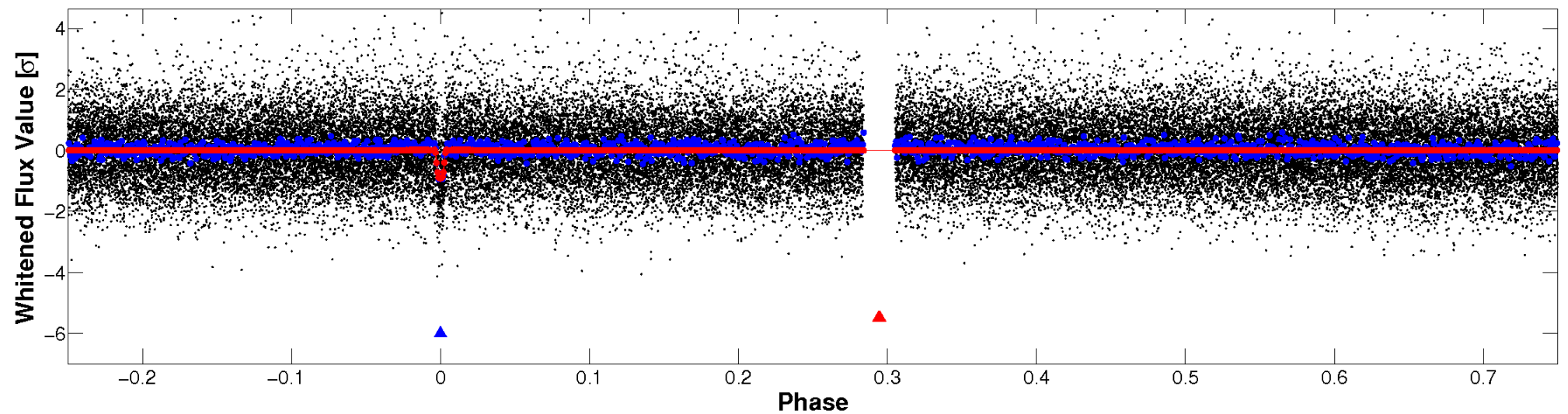


Non-Whitened Vs. Whitened Light Curve

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

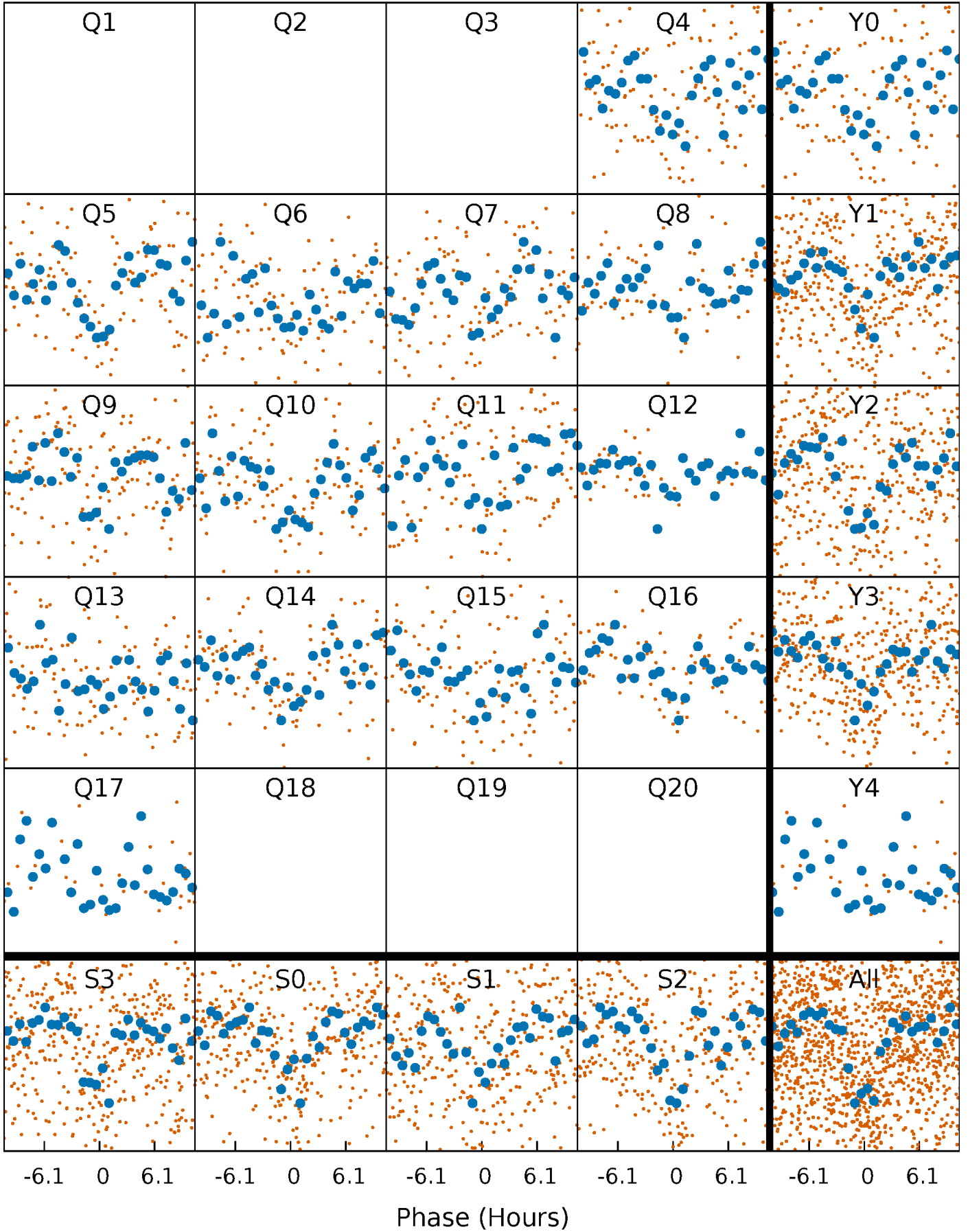


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



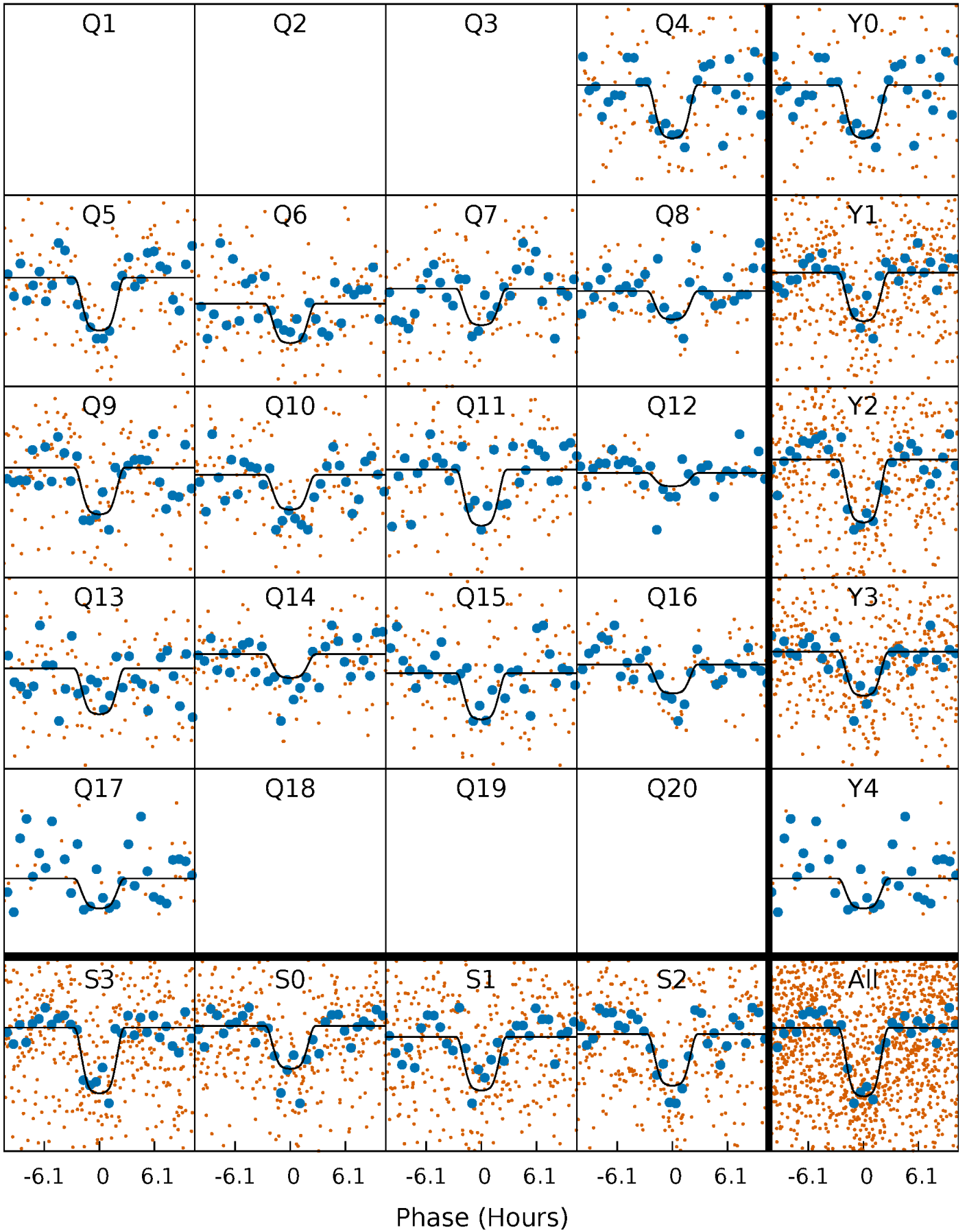
PDC Quarter-Phased Transit Curves

TCE 005444549-02 P= 31.138002 Days $T_0=157.682920$ (BKJD)



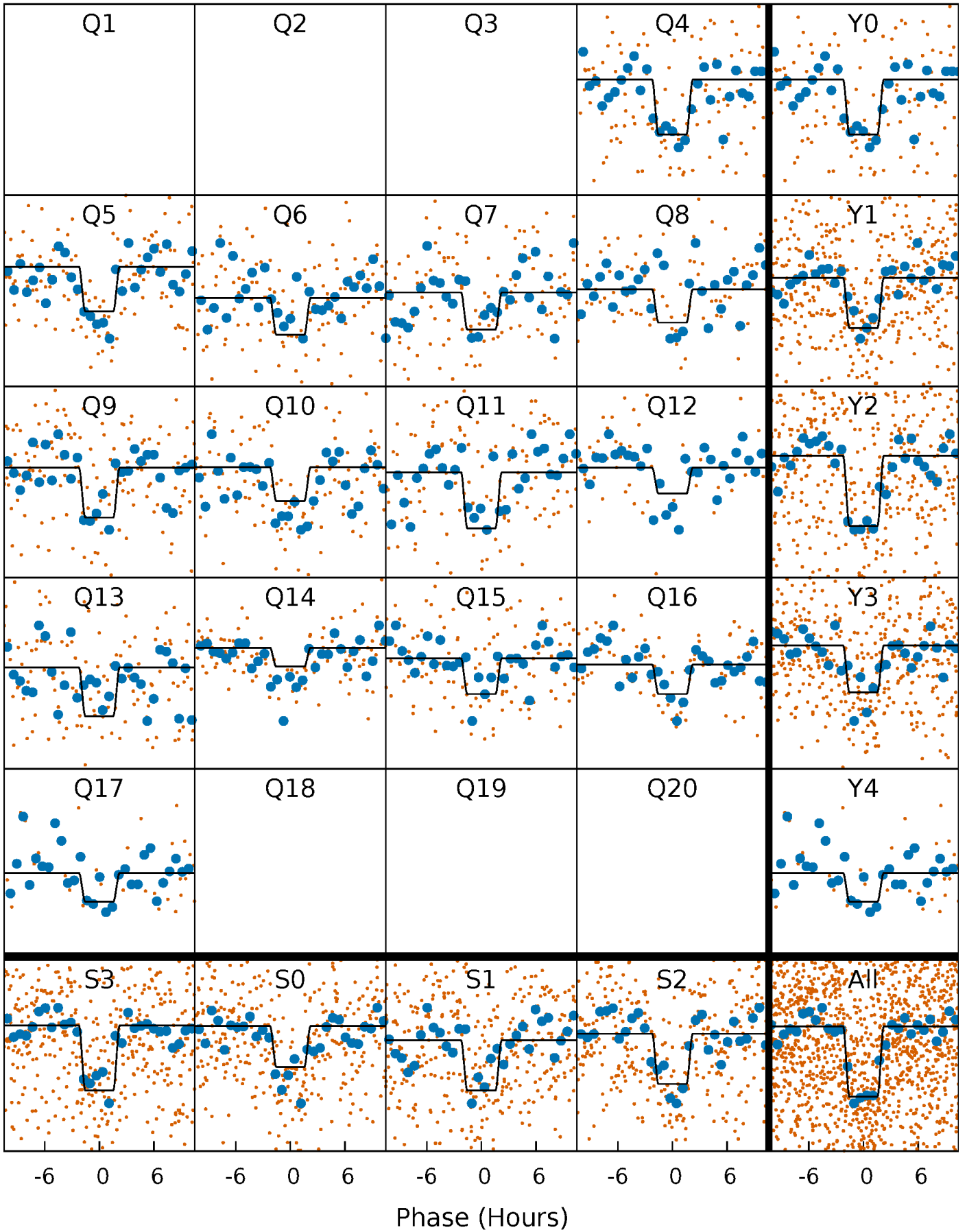
DV Quarter-Phased Transit Curves

TCE 005444549-02 P= 31.138002 Days $T_0=157.682920$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

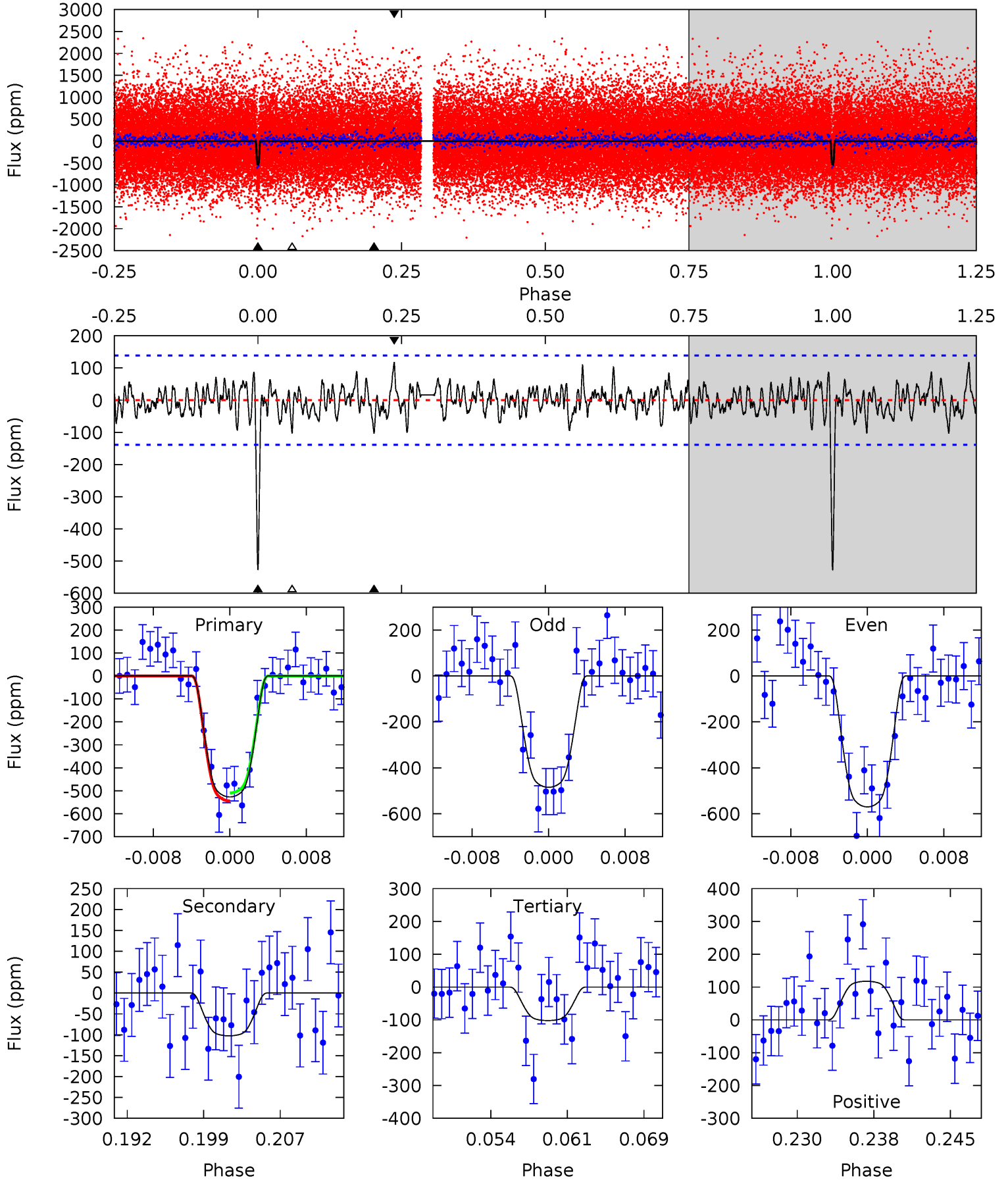
TCE 005444549-02 P= 31.138182 Days $T_0=157.677291$ (BKJD)



DV Model-Shift Uniqueness Test

005444549-02, P = 31.138002 Days, E = 157.682920 Days

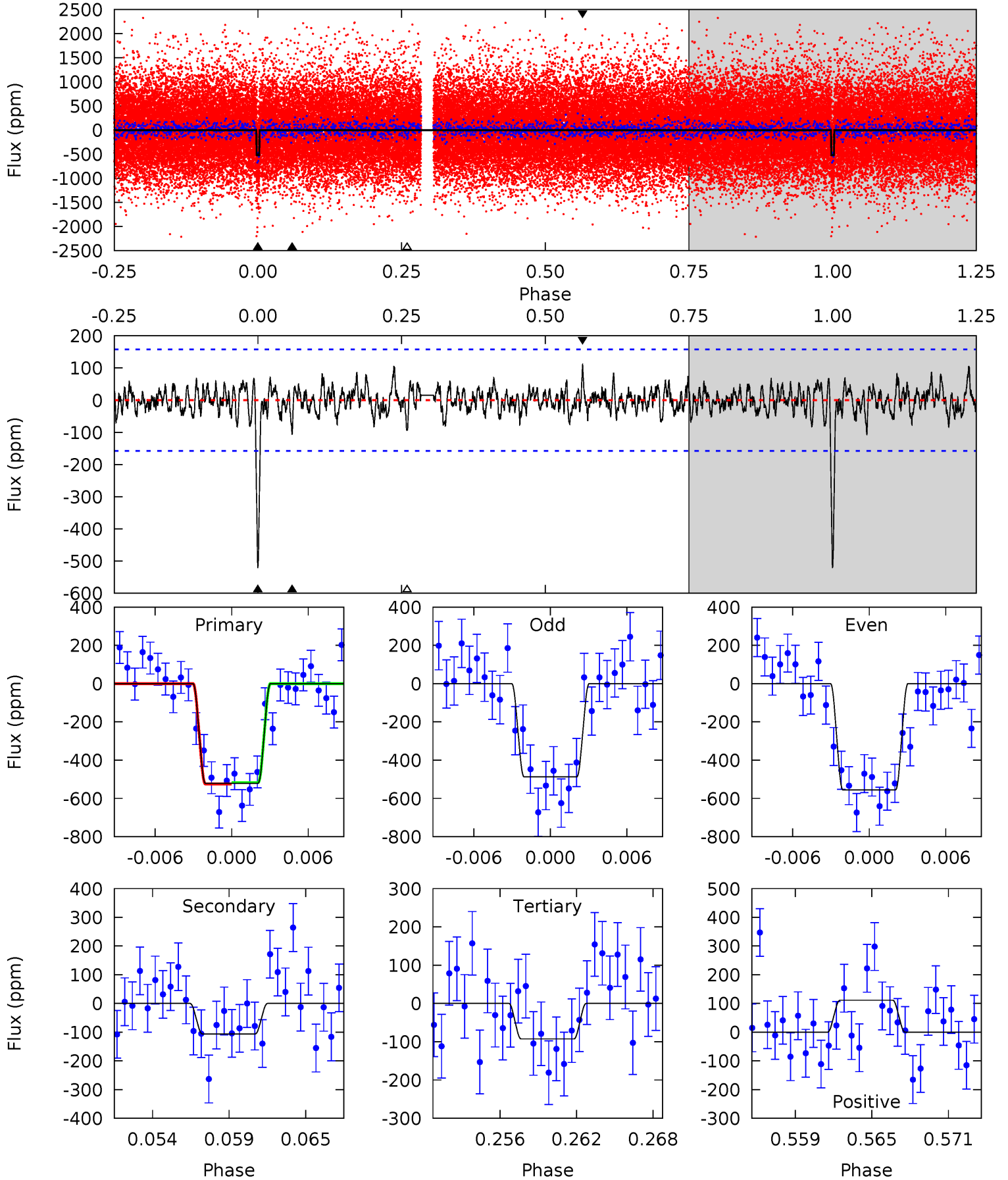
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.3	3.75	3.74	4.30	5.08	2.67	1.26	15.5	15.0	0.01	-0.55	1.56	1.00	0.18	0.64



Alt Model-Shift Uniqueness Test

005444549-02, P = 31.138182 Days, E = 157.677291 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.9	3.46	3.01	3.62	5.13	2.75	1.02	13.9	13.3	0.44	-0.16	1.10	1.03	0.18	0.12



Stellar Parameters For KIC 005444549

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5919^{+182}_{-223}	$4.485^{+0.050}_{-0.200}$	$0.210^{+0.200}_{-0.300}$	$1.000^{+0.289}_{-0.096}$	$1.114^{+0.109}_{-0.150}$	$1.570^{+0.324}_{-0.836}$
	+3%/-4%	+1%/-4%	+95%/-143%	+29%/-10%	+10%/-13%	+21%/-53%
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 005444549-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-103 ± 27	$3.04^{+0.53}_{-0.32}$	828^{+62}_{-42}	3919^{+245}_{-238}	229^{+94}_{-81}
Alt.	-106 ± 31	$2.59^{+0.44}_{-0.29}$	831^{+58}_{-43}	4210^{+274}_{-320}	337^{+140}_{-125}

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 $A_{obs} \gg 1.0$

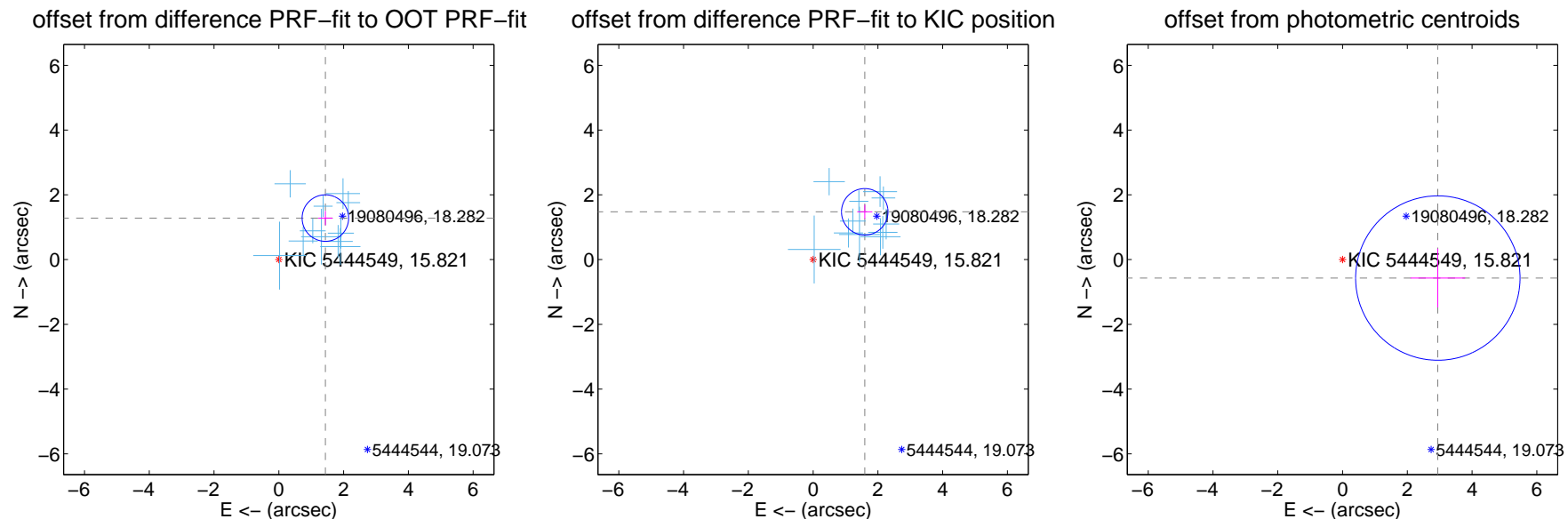
DV Centroid Data

Supplemental centroid analysis for 005444549-02. Kepler magnitude: 15.82. Transit SNR 13.43

There are 11 quarters with good PRF difference image offsets

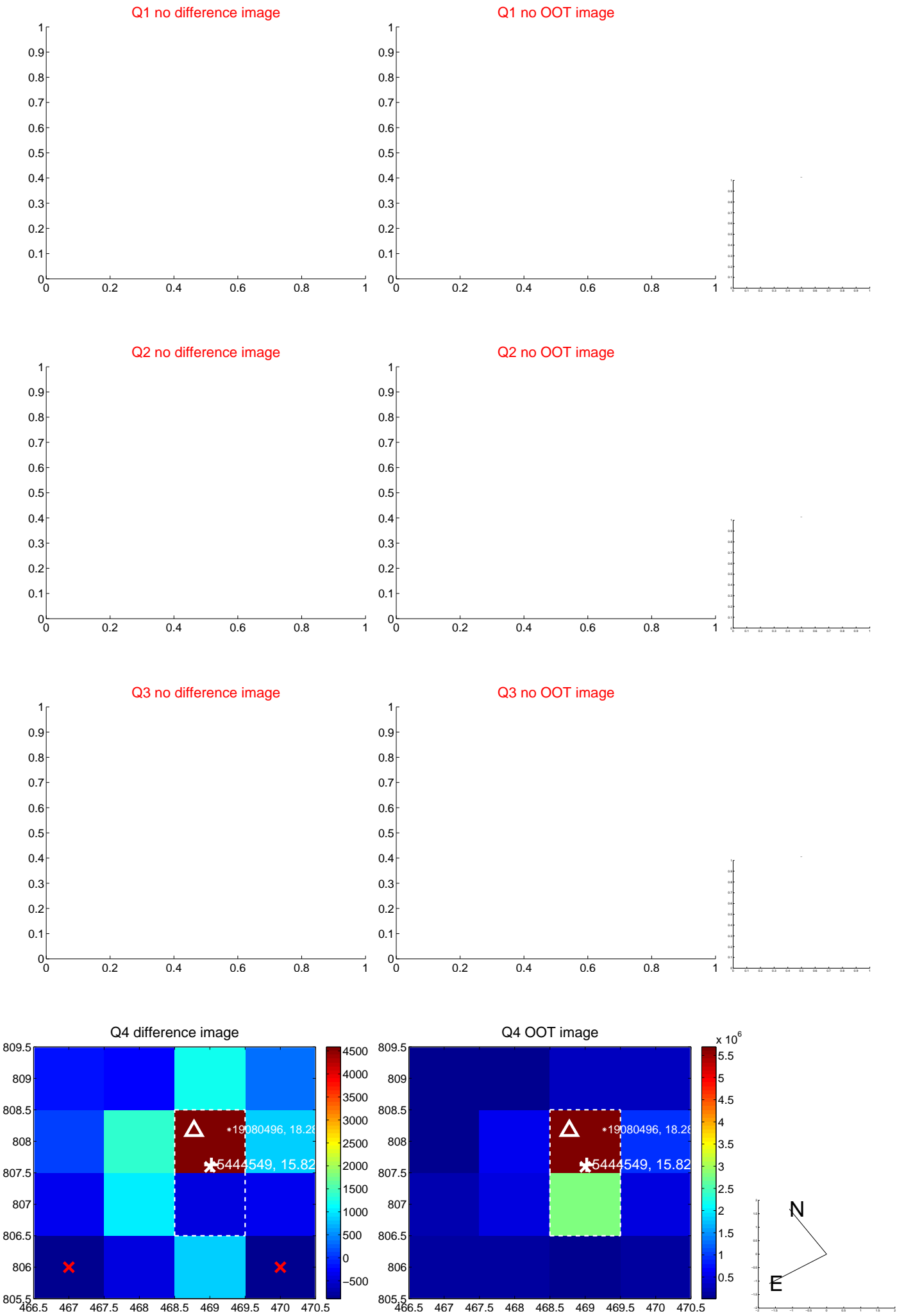
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.926 ± 0.239	8.05	-1.437 ± 0.219	1.282 ± 0.220
PRF-fit source offset from KIC position	2.172 ± 0.239	9.08	-1.594 ± 0.233	1.475 ± 0.217
photometric centroid source offset	3.00 ± 0.85	3.54	-2.94 ± 0.84	-0.57 ± 0.91

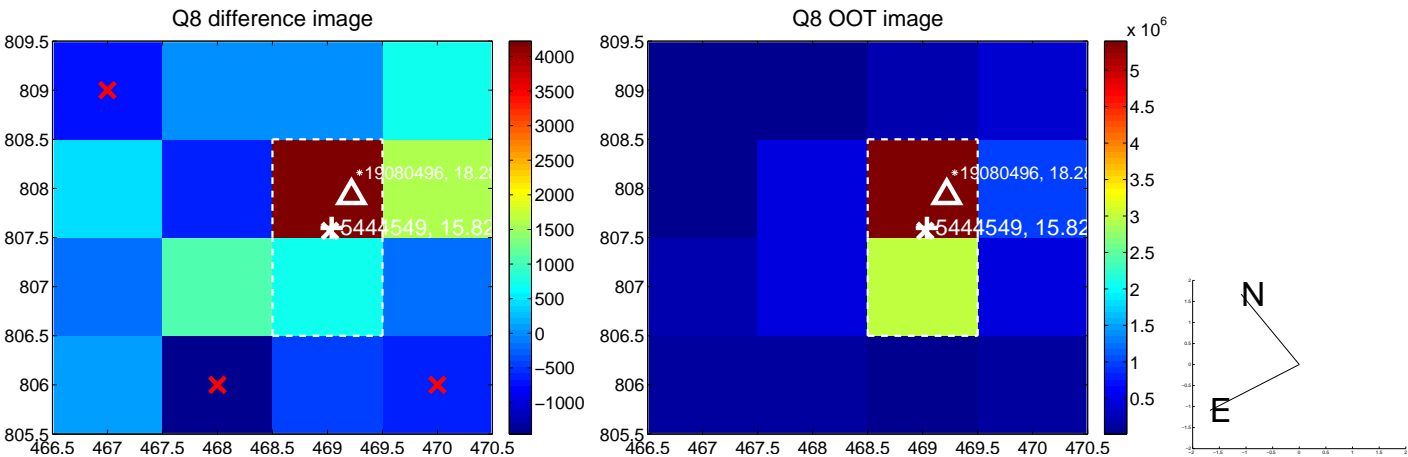
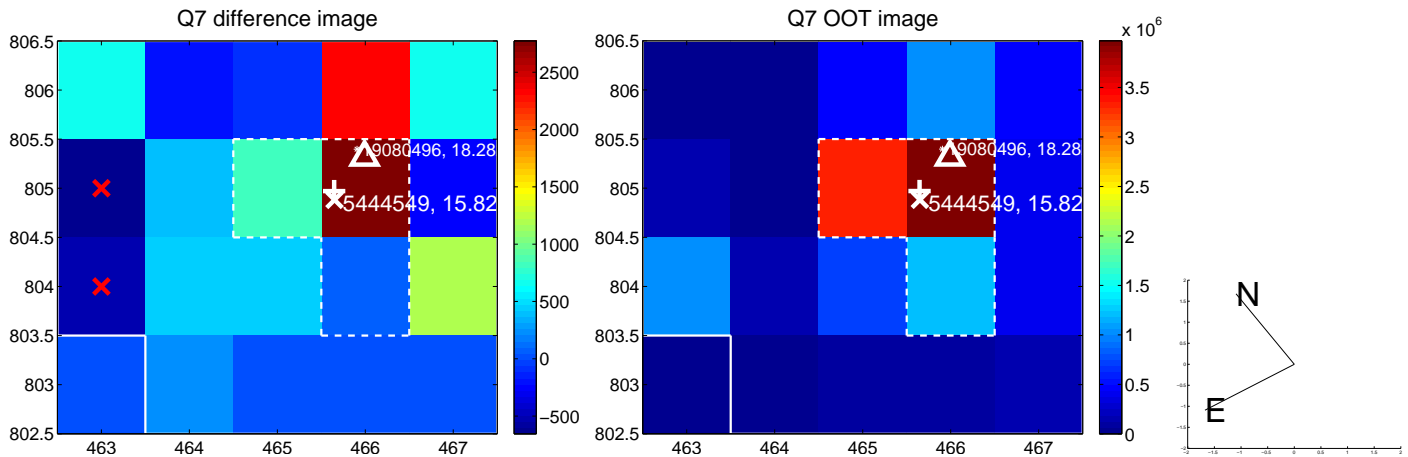
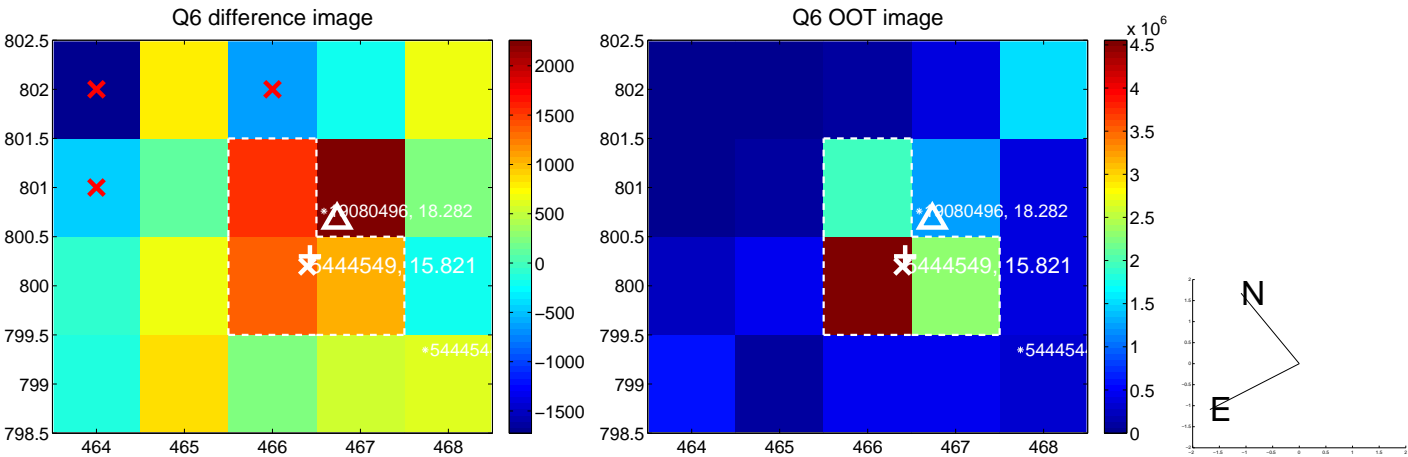
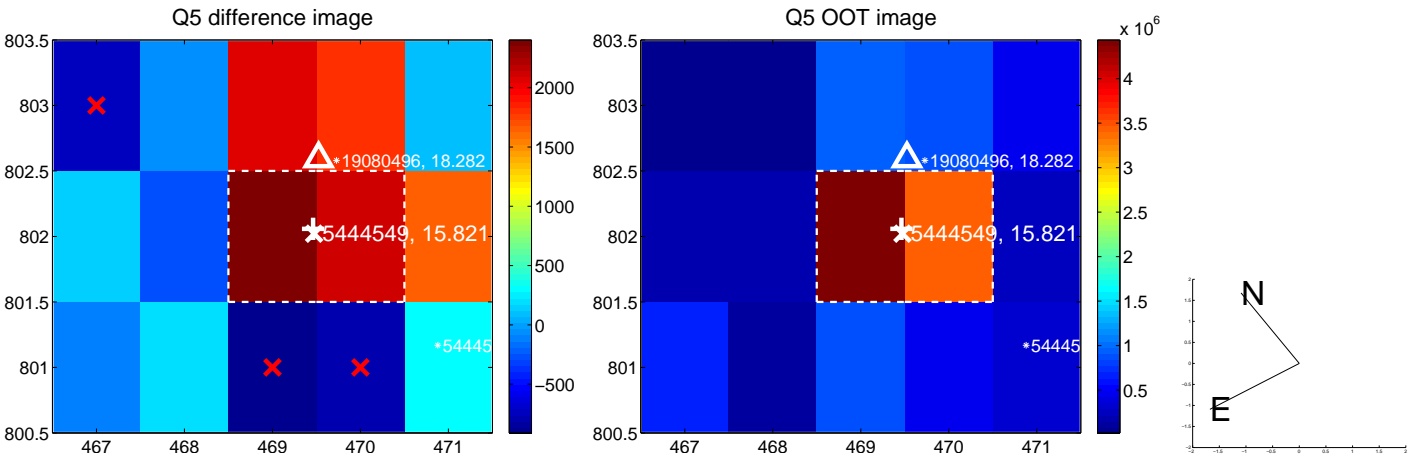


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

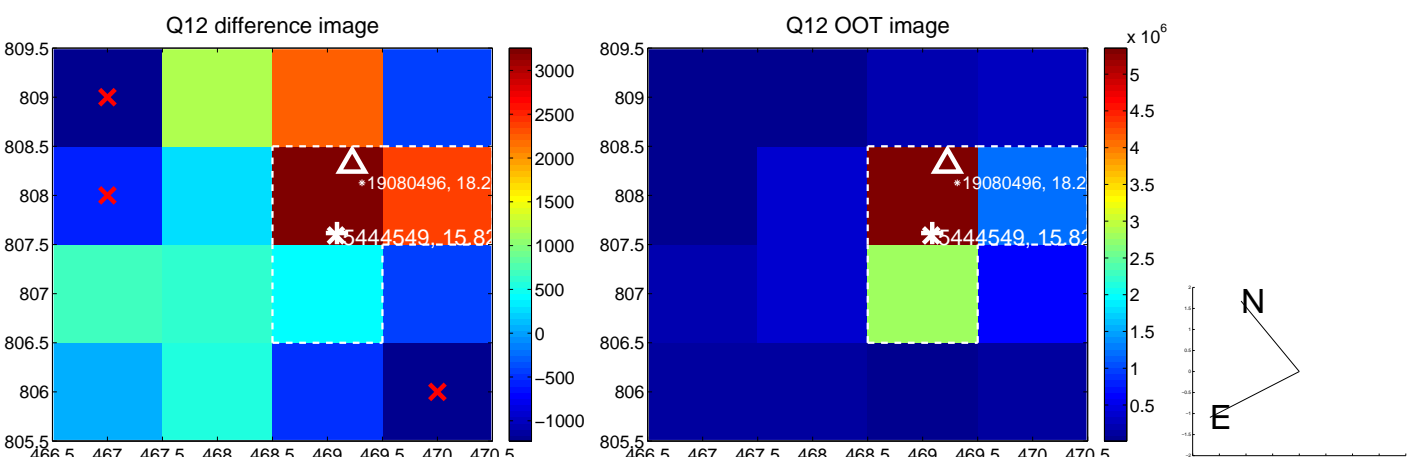
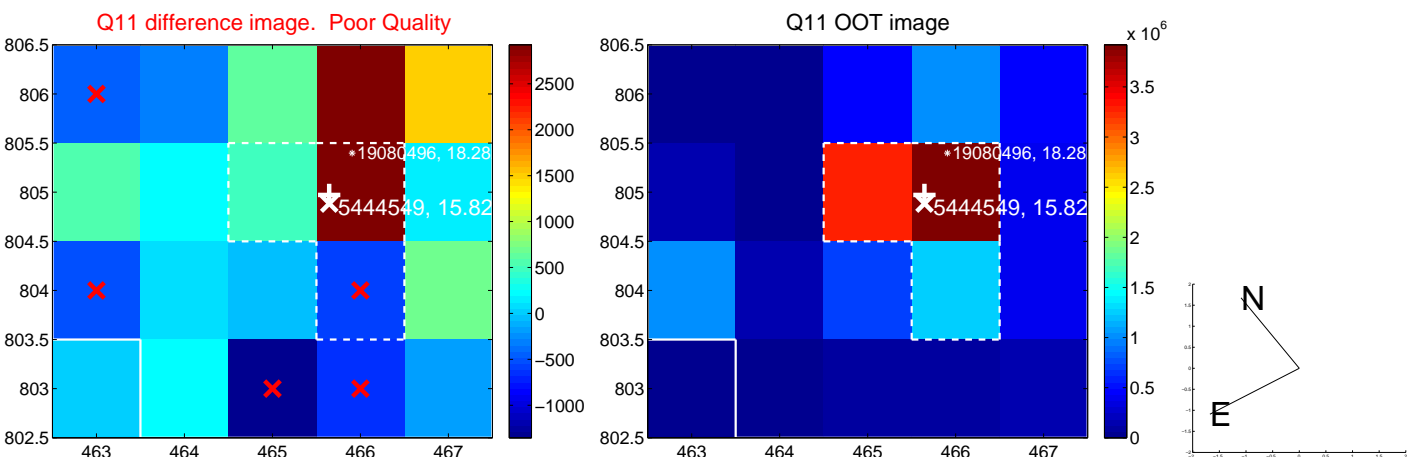
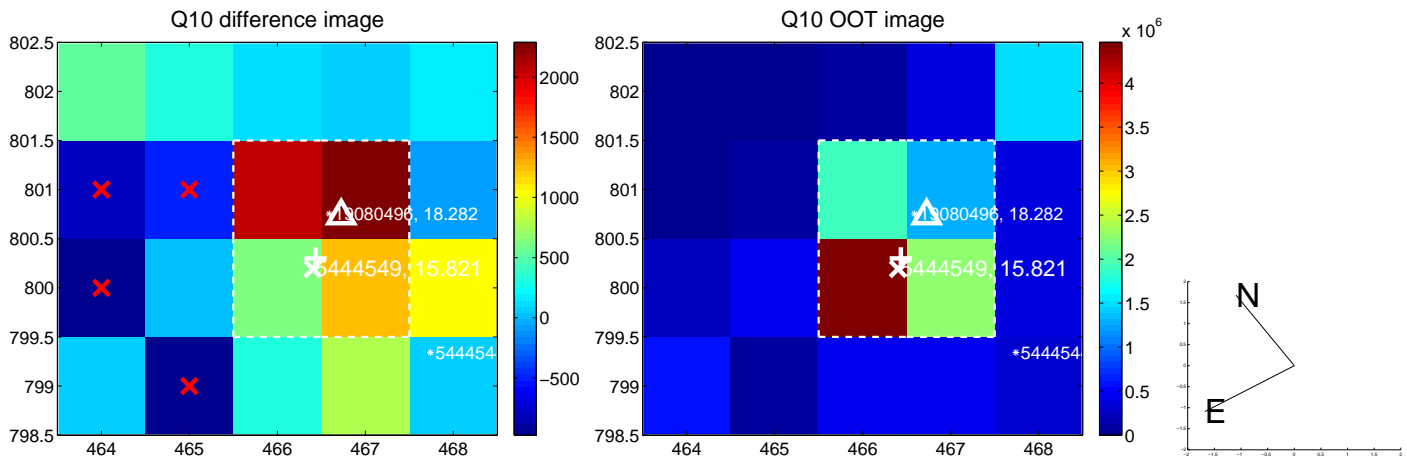
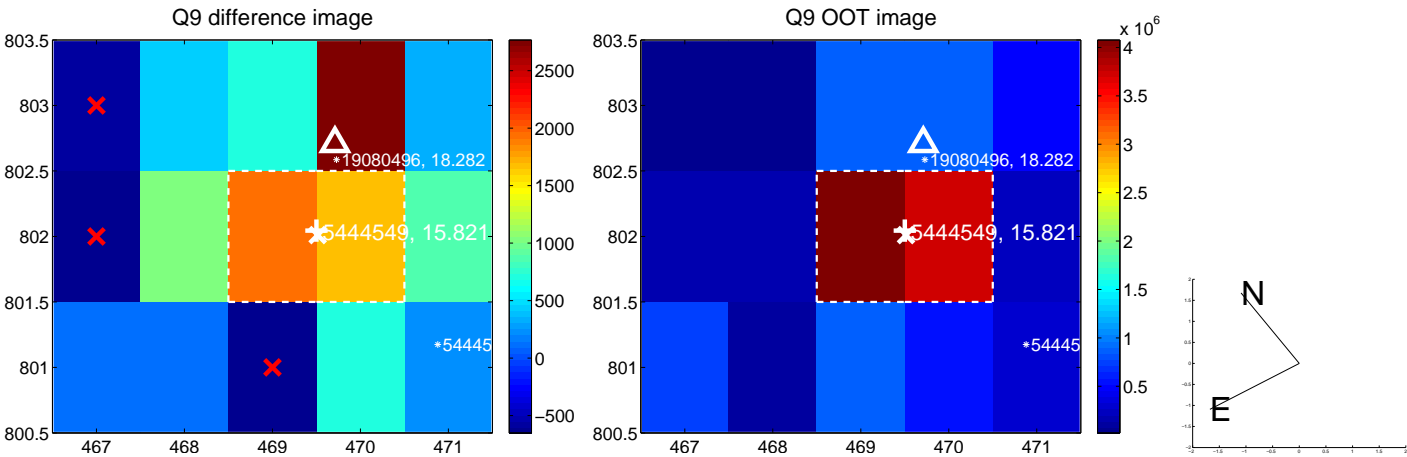
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



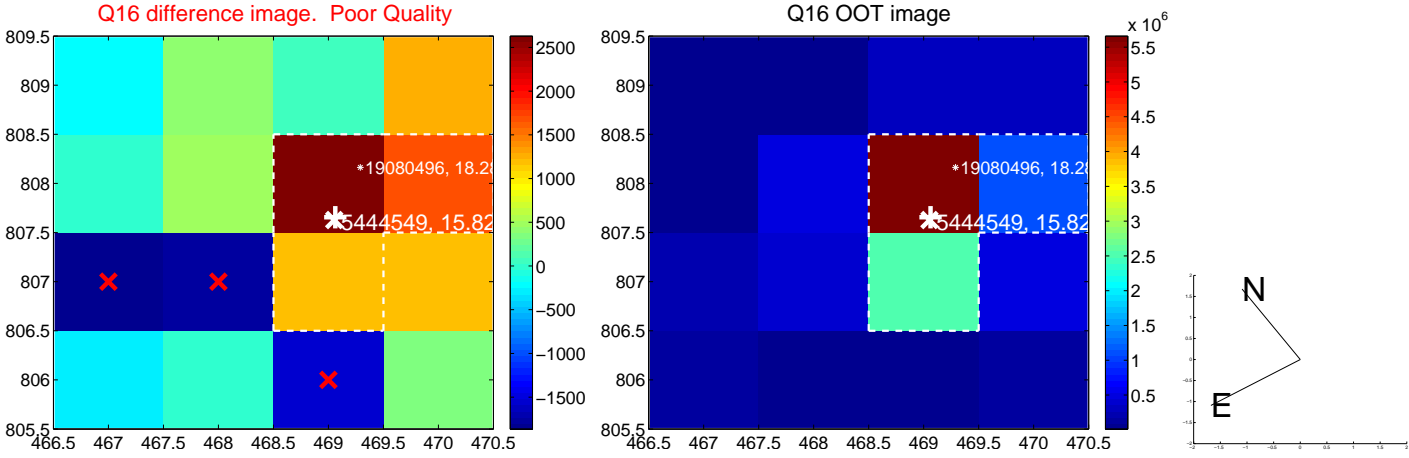
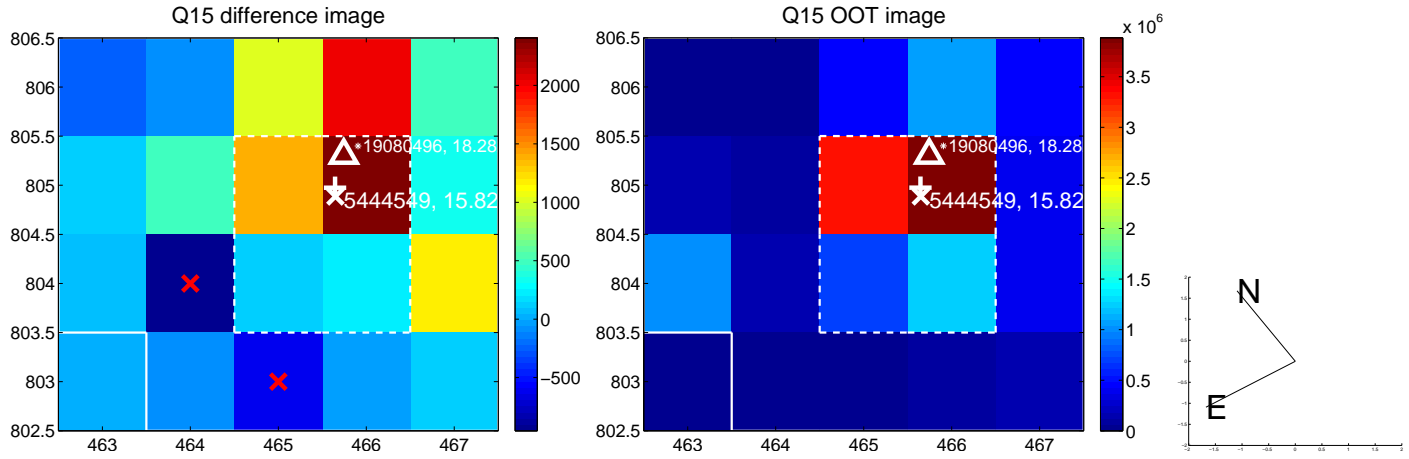
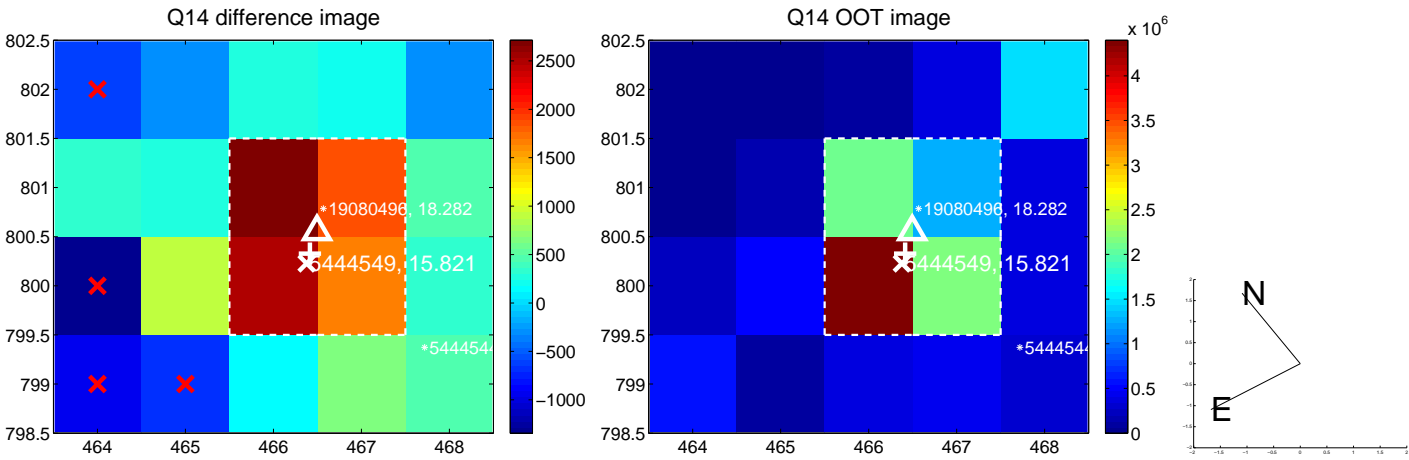
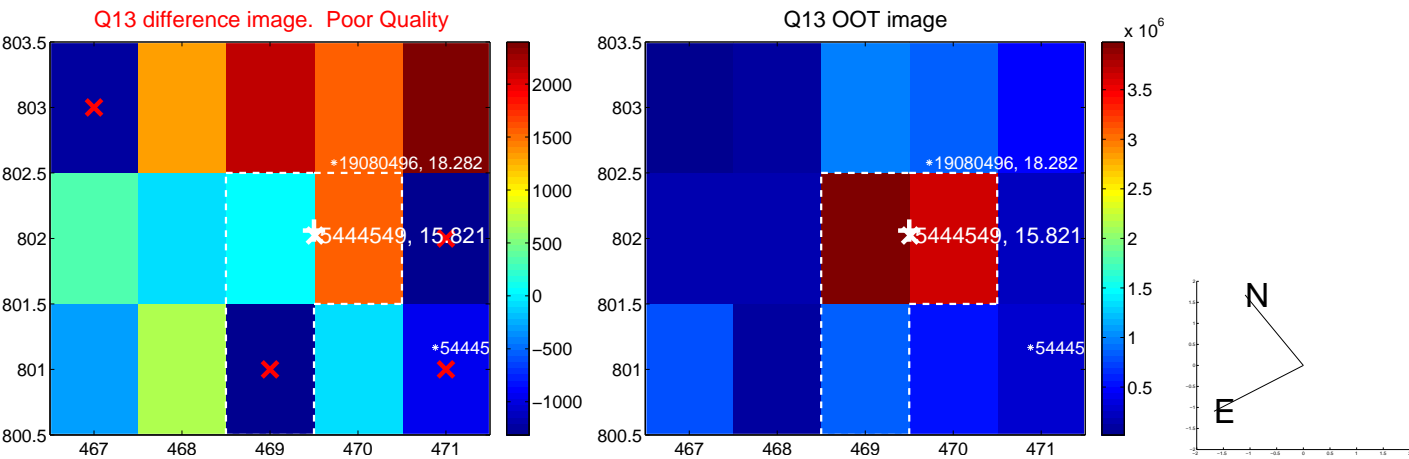
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



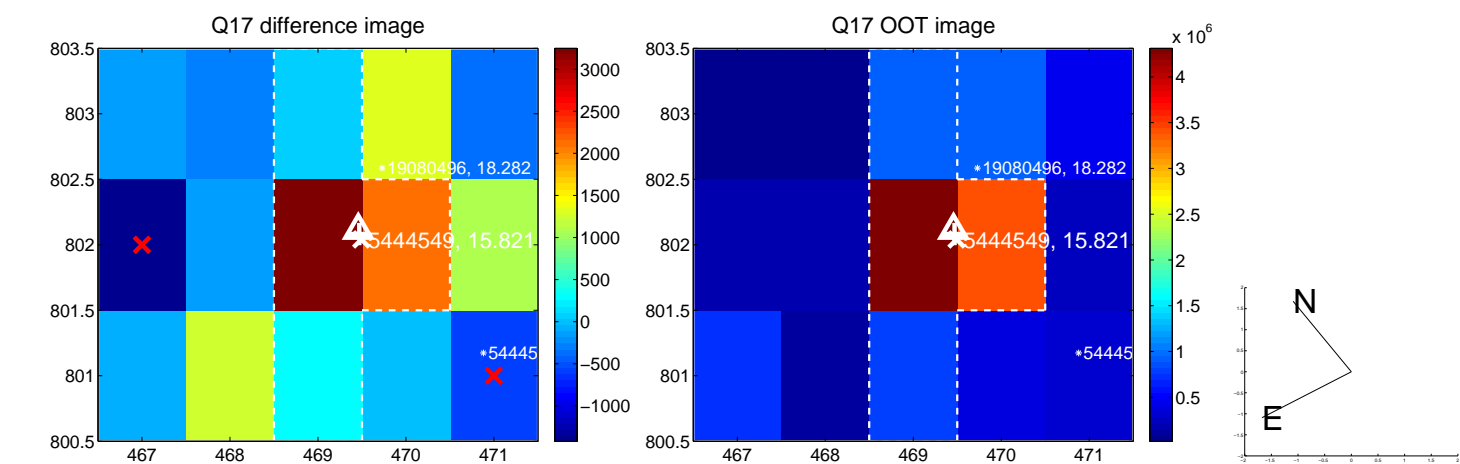
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



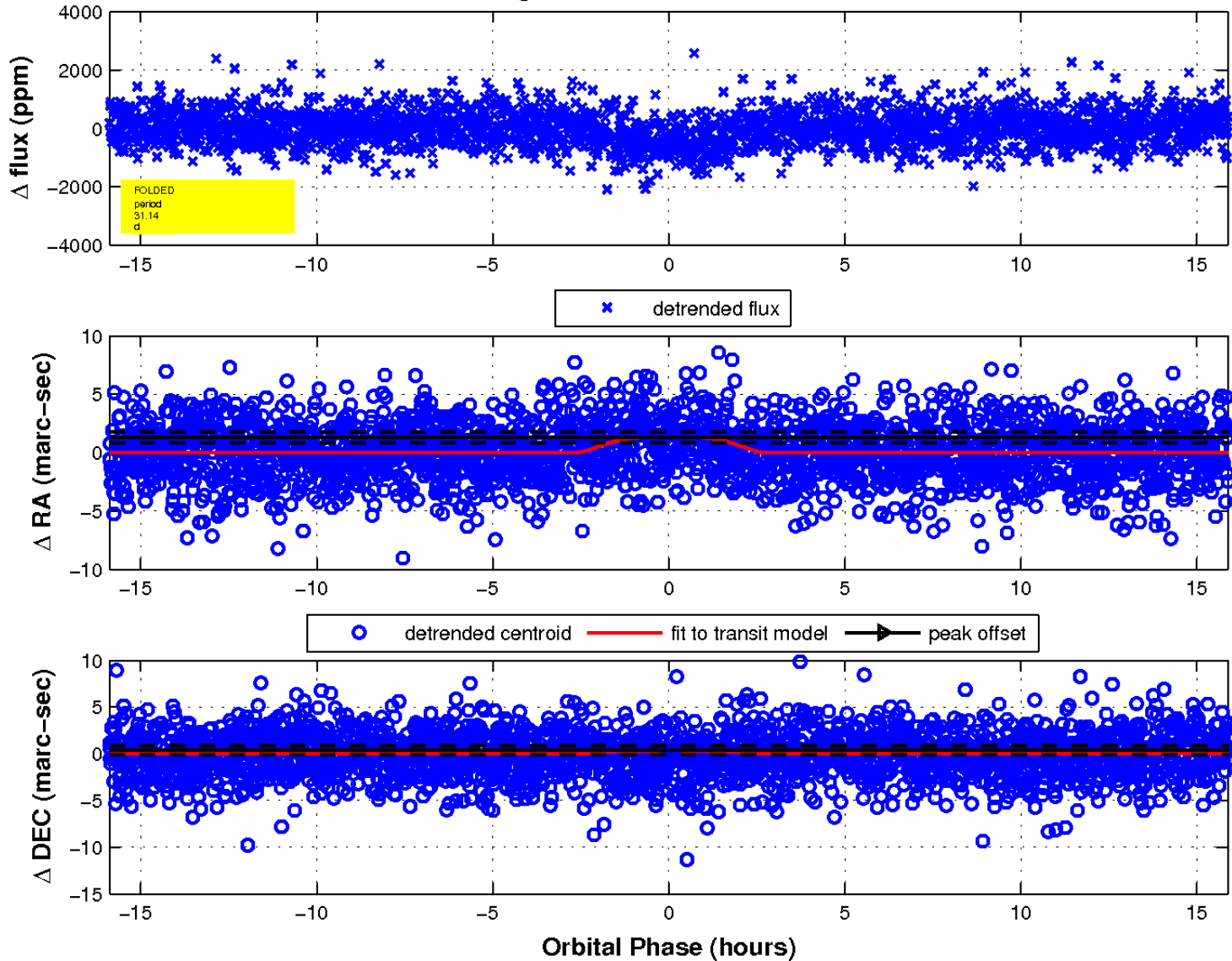
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

