

KIC 006105462

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})
006105462-01	OBS	2098.01	25.082311	134.133994	237.1	6.301	23.2	25.0	1.26	6429	2.16	85.97
006105462-02	OBS	2098.02	89.722672	163.153607	254.2	10.889	18.9	19.8	1.26	6429	2.20	15.71

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006105462-01	OBS	PC	0.82	0	0	0	0	NO_COMMENT
006105462-02	OBS	PC	0.98	0	0	0	0	NO_COMMENT

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.

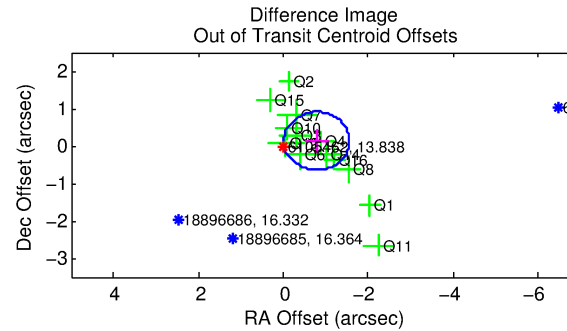
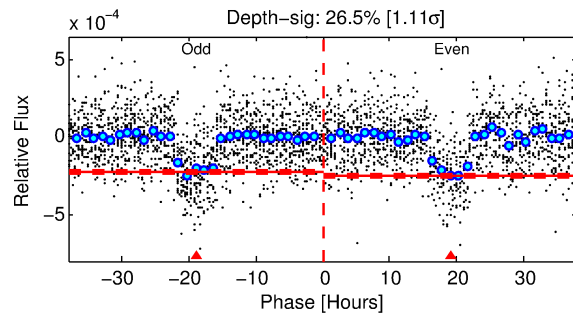
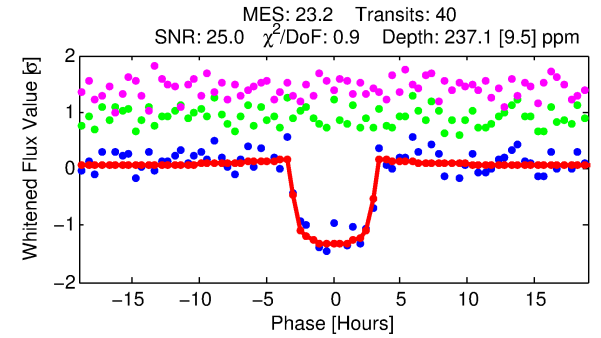
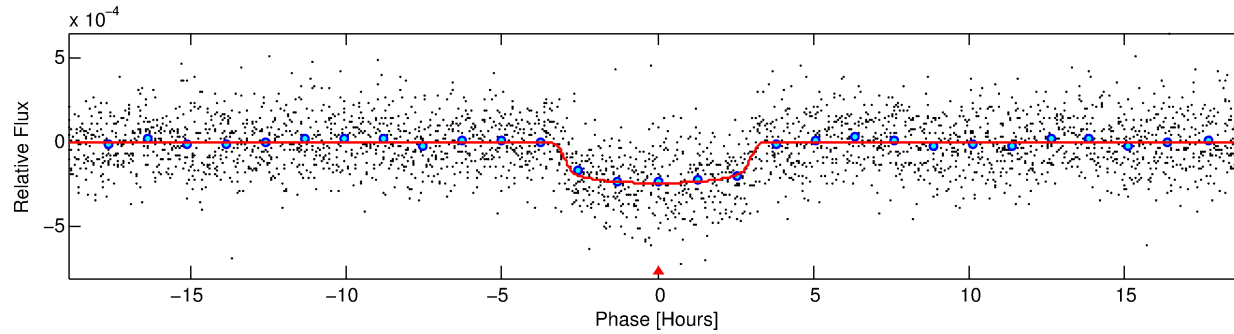
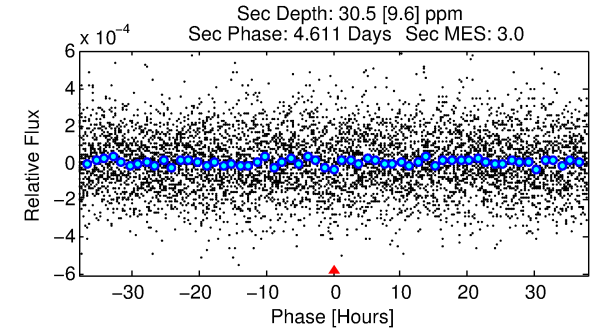
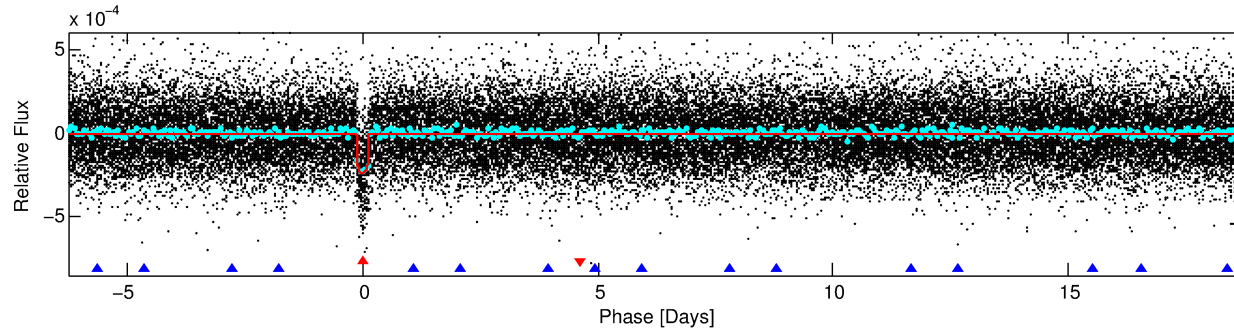
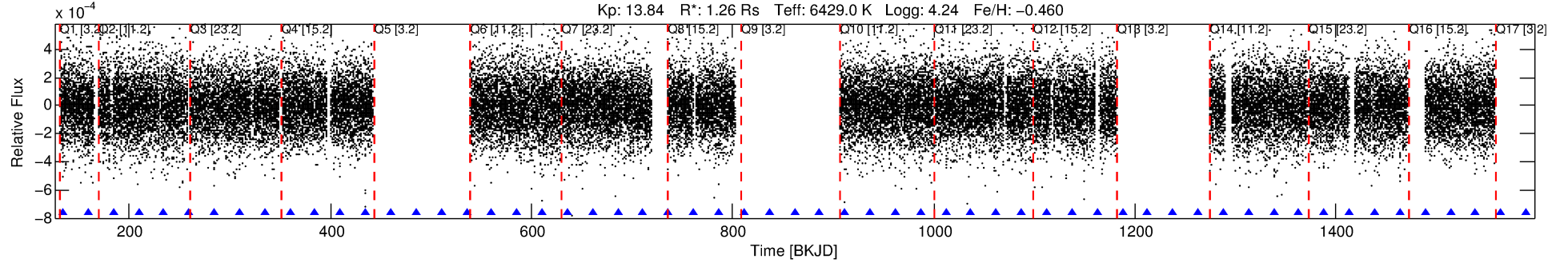
Ephemeris Match Information For 006105462-01

No Significant Match Found

DV One-Page Summary

KIC: 6105462 Candidate: 1 of 2 Period: 25.082 d

KOI: K02098.01 Corr: 0.985



DV Fit Results:

Period = 25.08231 [0.00013] d
Epoch = 134.1340 [0.0042] BKJD
Rp/R* = 0.0157 [0.0024]
a/R* = 18.54 [15.80]
b = 0.81 [0.36]
Seff = 85.97 [30.71]
Teq = 776 [69] K
Rp = 2.16 [0.66] Re
a = 0.1684 [0.0378] AU
Ag = 102.10 [56.16] [1.80σ]
Teffp = 3816 [442] K [6.79σ]

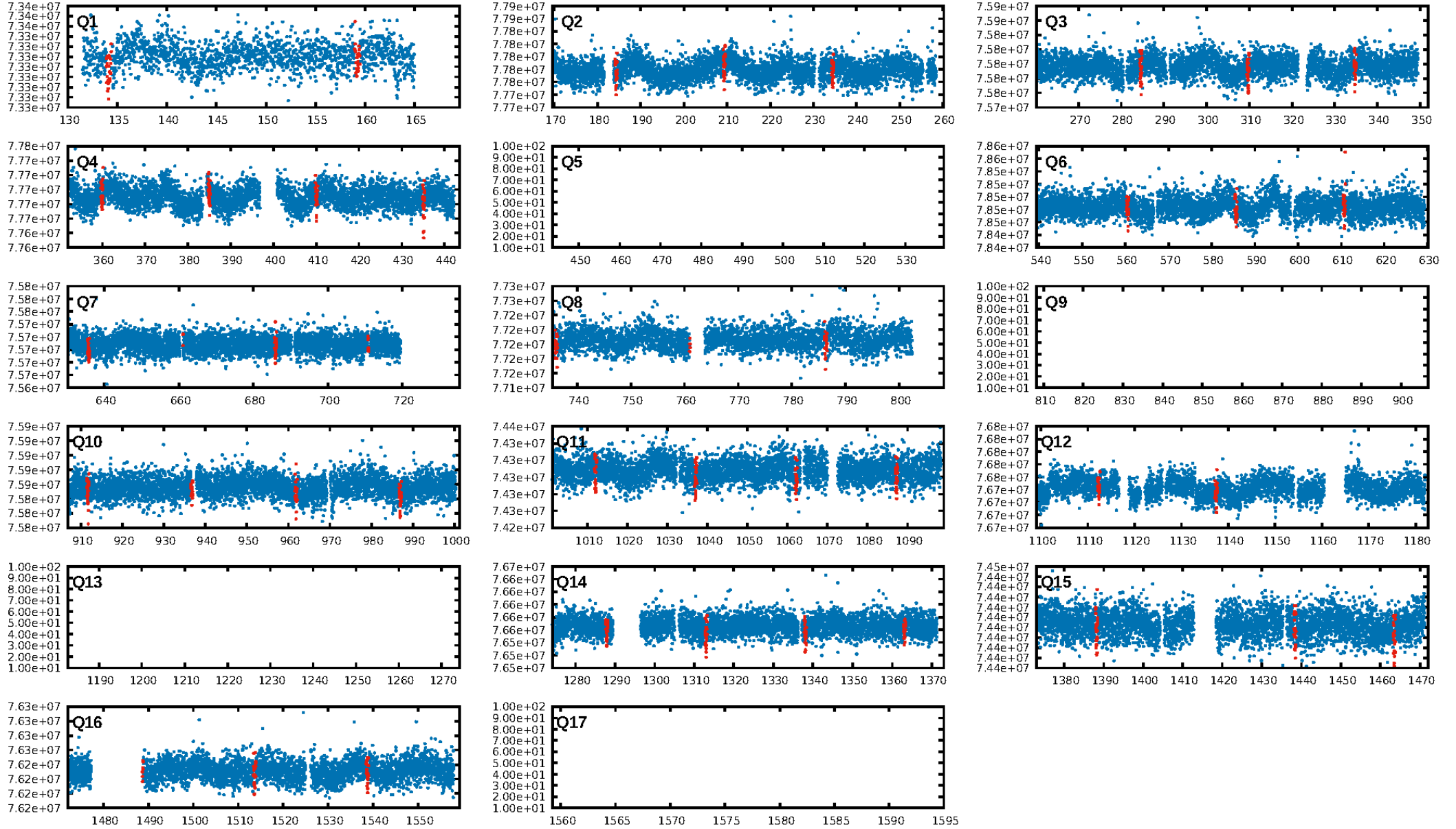
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [123.31σ]
ModelChiSquare2-sig: 33.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.07e-113
RollingBand-fgt: 1.00 [38/38]
GhostDiagnostic-chr: 2.678
Centroid-sig: 93.3%
Centroid-so: 0.196 arcsec [0.40σ]
OotOffset-rm: 0.798 arcsec [3.09σ]
KicOffset-rm: 0.655 arcsec [2.52σ]
OotOffset-st: 4/4/4/1 [13]
KicOffset-st: 4/4/4/1 [13]
DiffImageQuality-fgm: 1.00 [13/13]
DiffImageOverlap-fno: 1.00 [13/13]

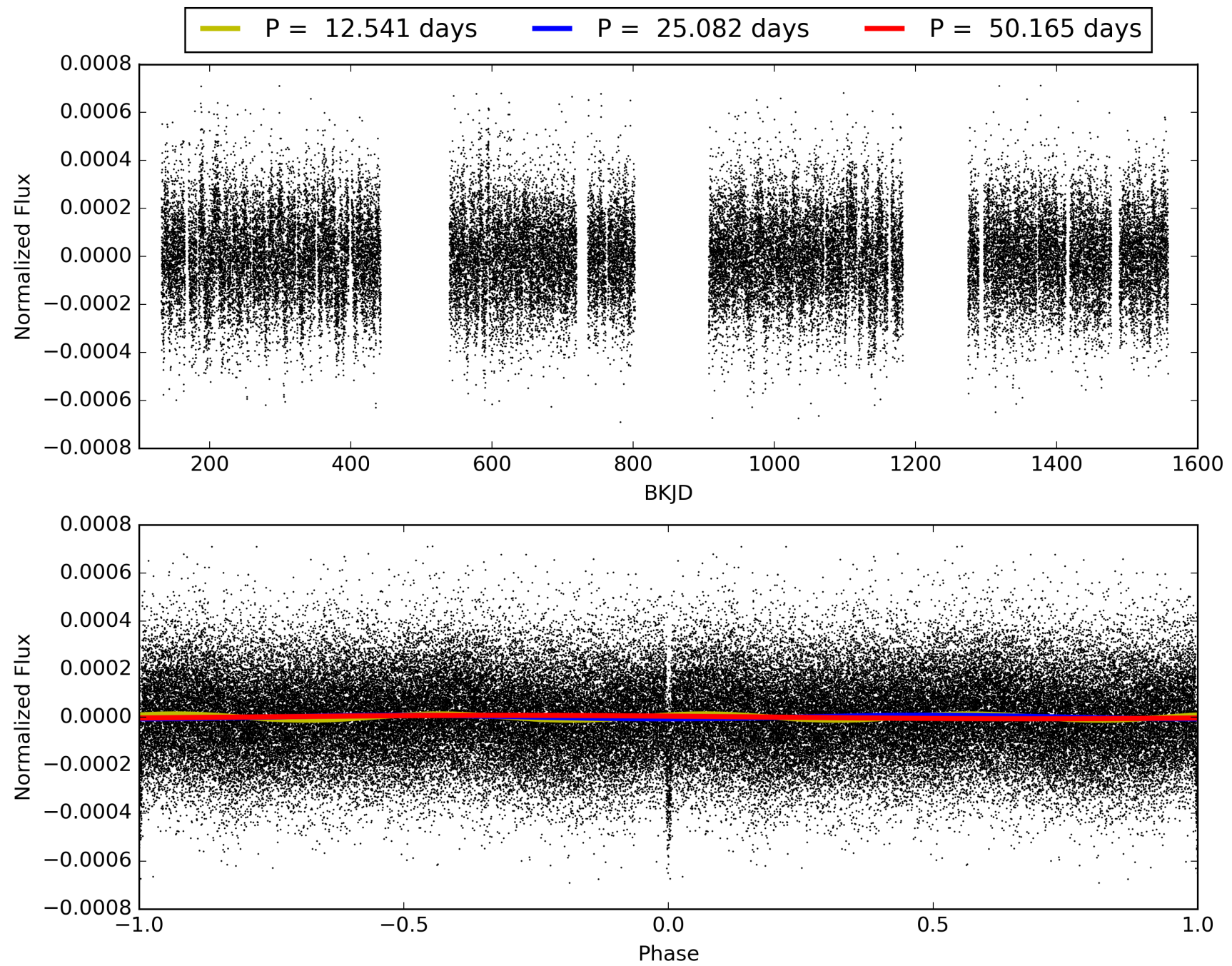
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 01:22:29 Z

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

TCE 006105462-01, PDC Light Curves

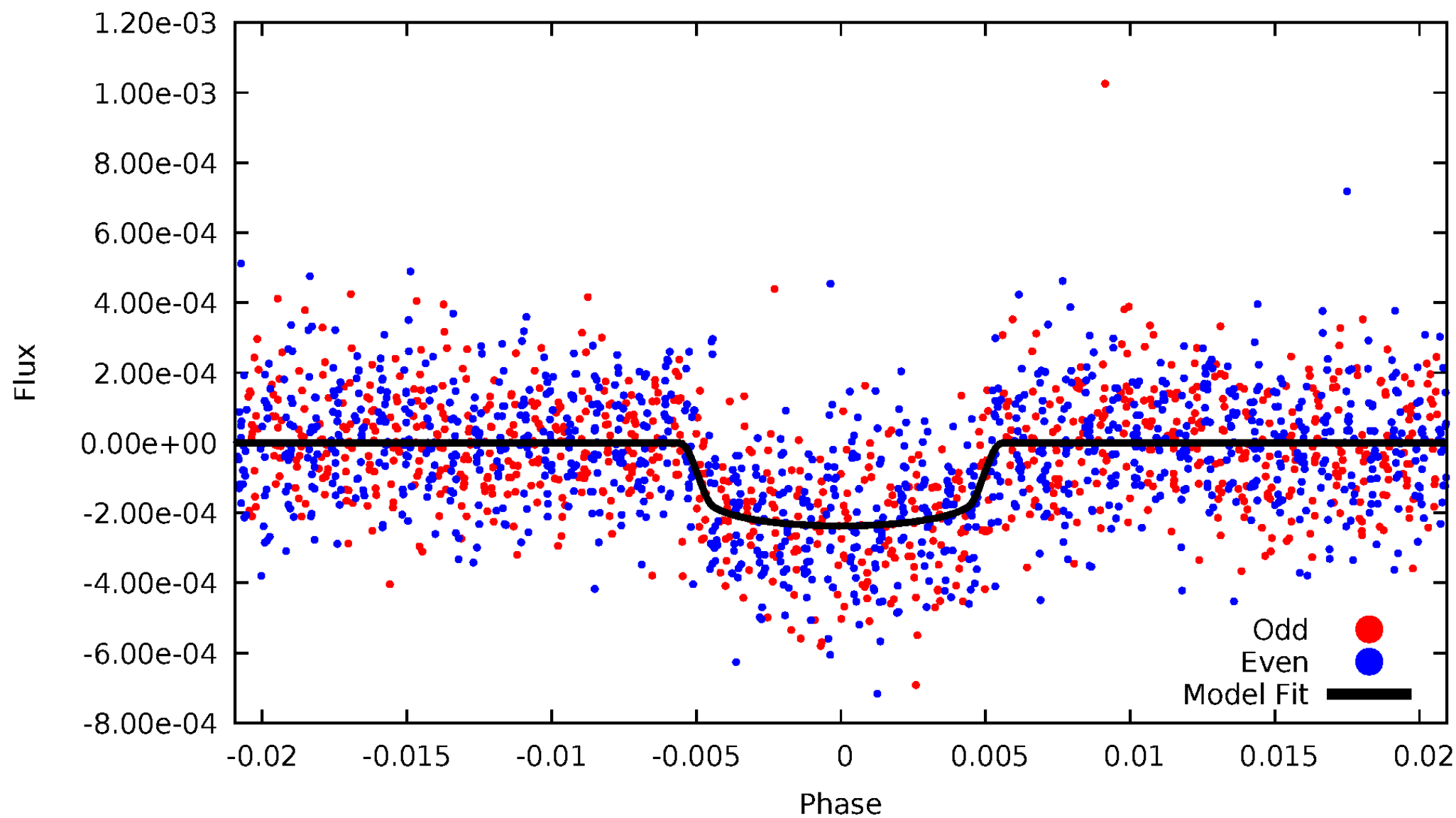


TCE 006105462-01



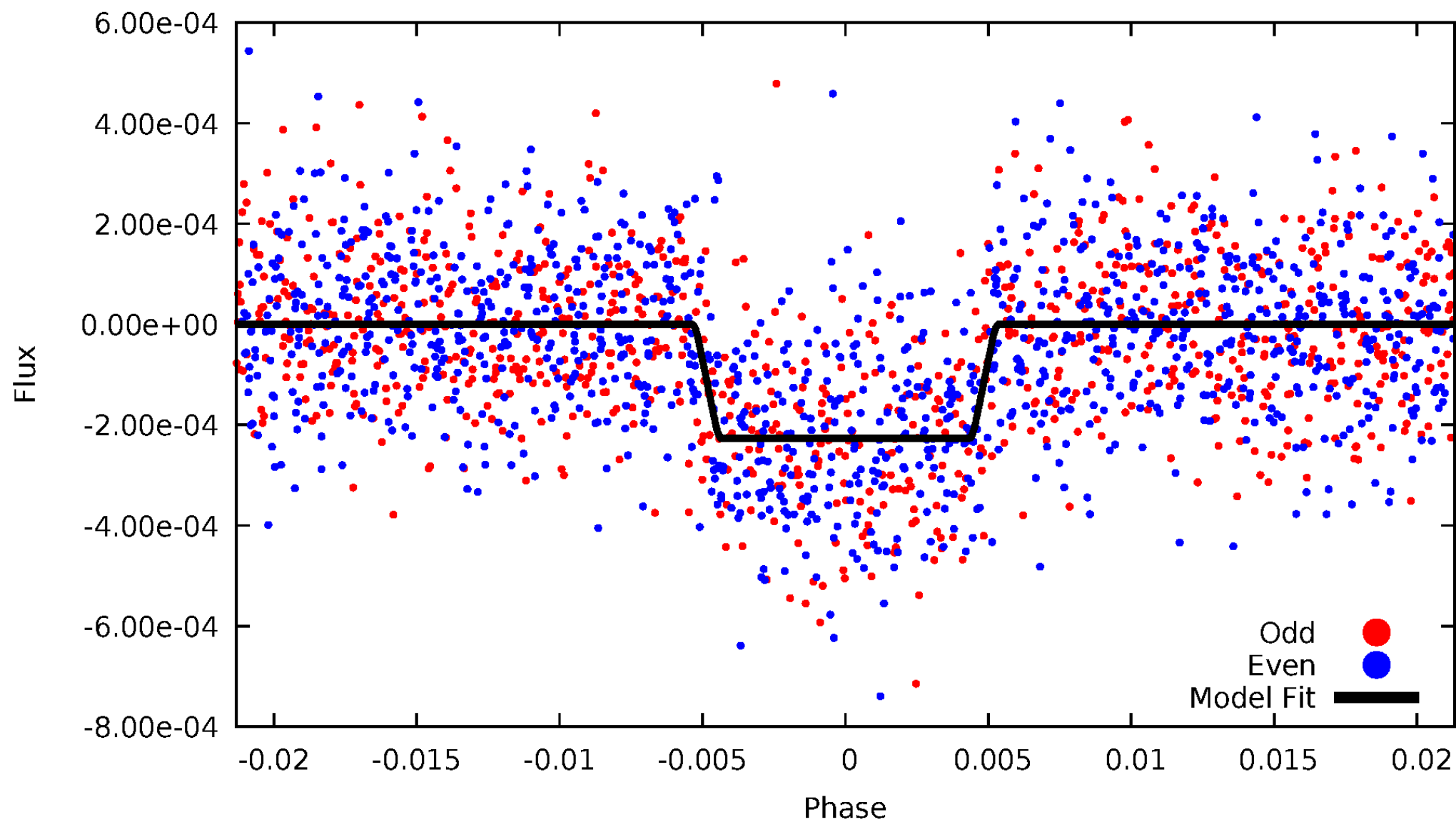
DV Odd/Even

TCE 006105462-01

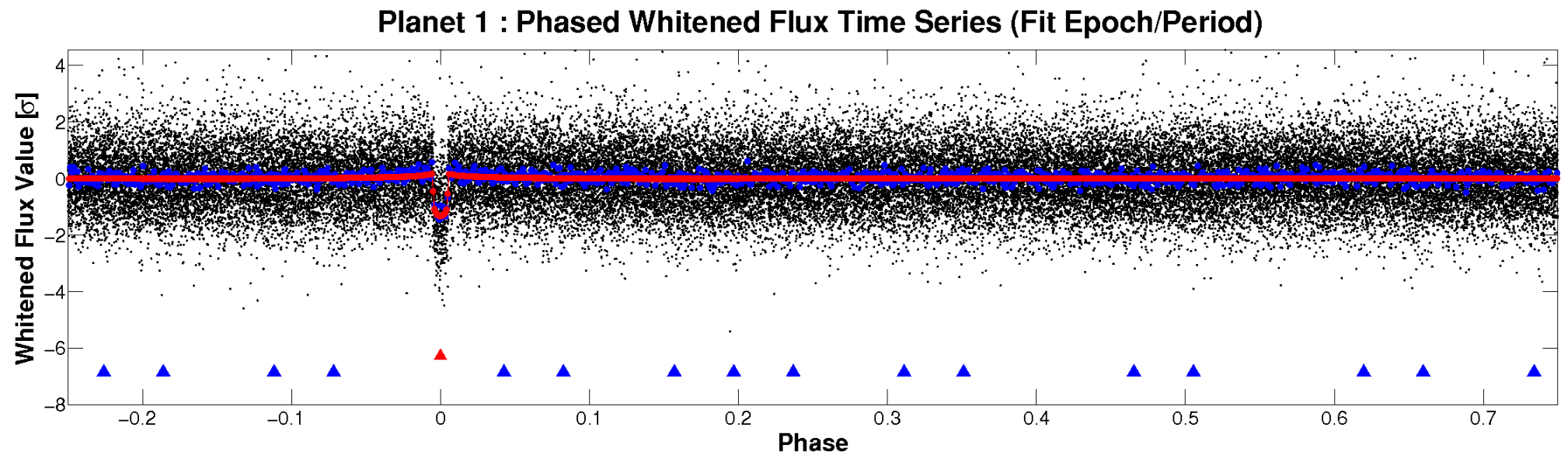
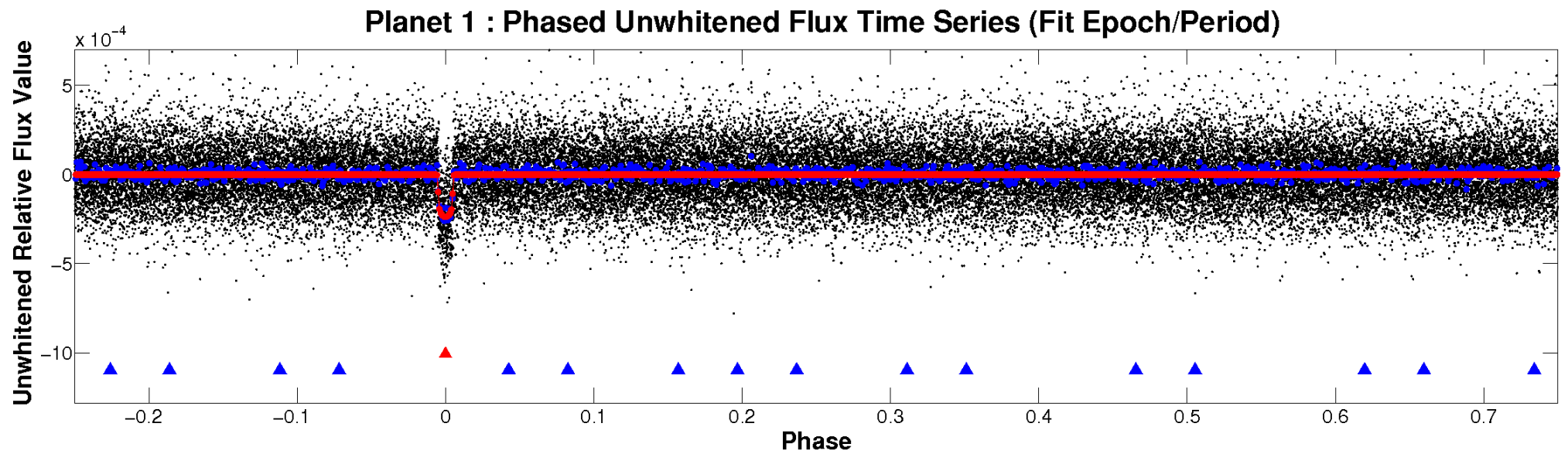


ALT Odd/Even

TCE 006105462-01

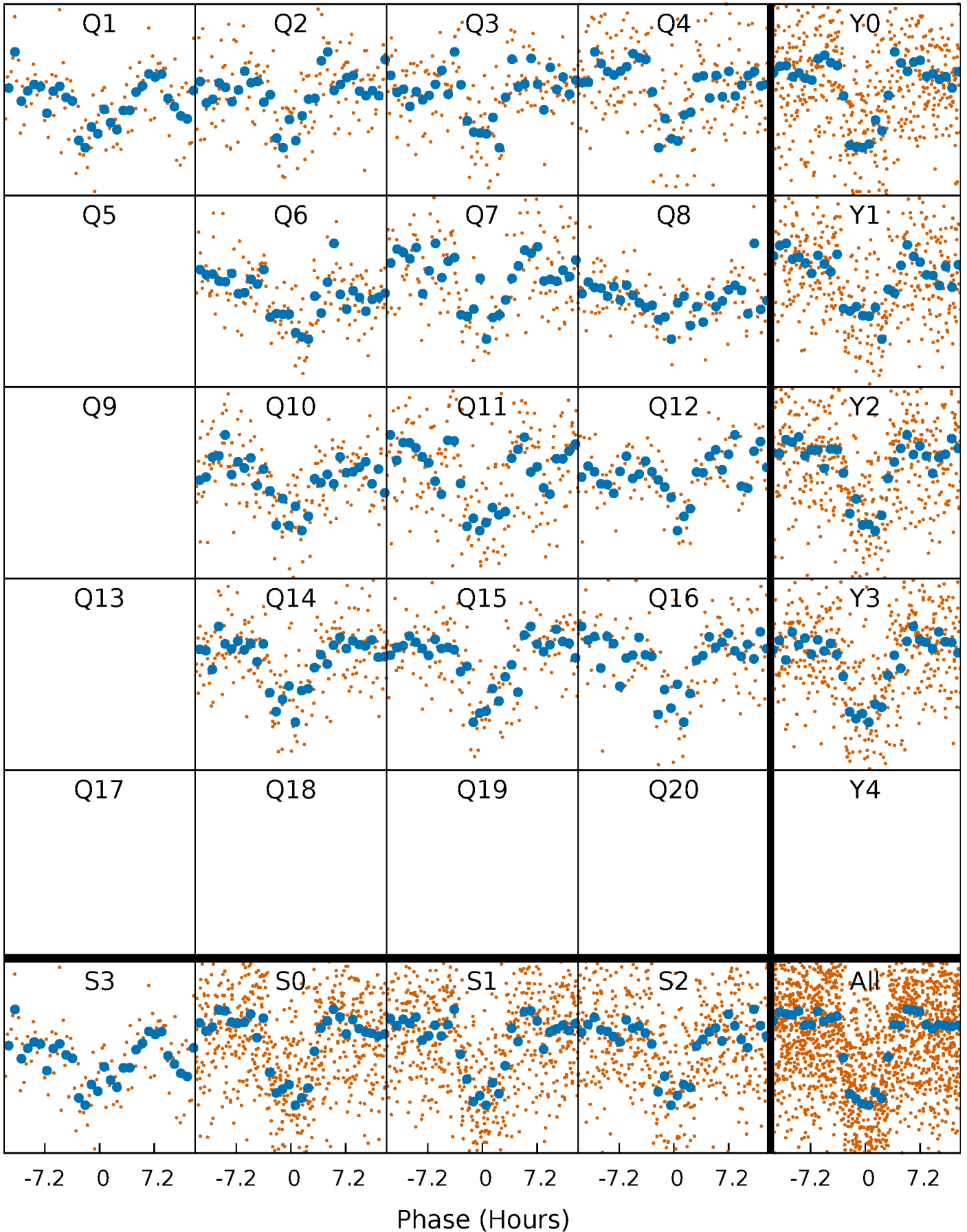


Non-Whitened Vs. Whitened Light Curve



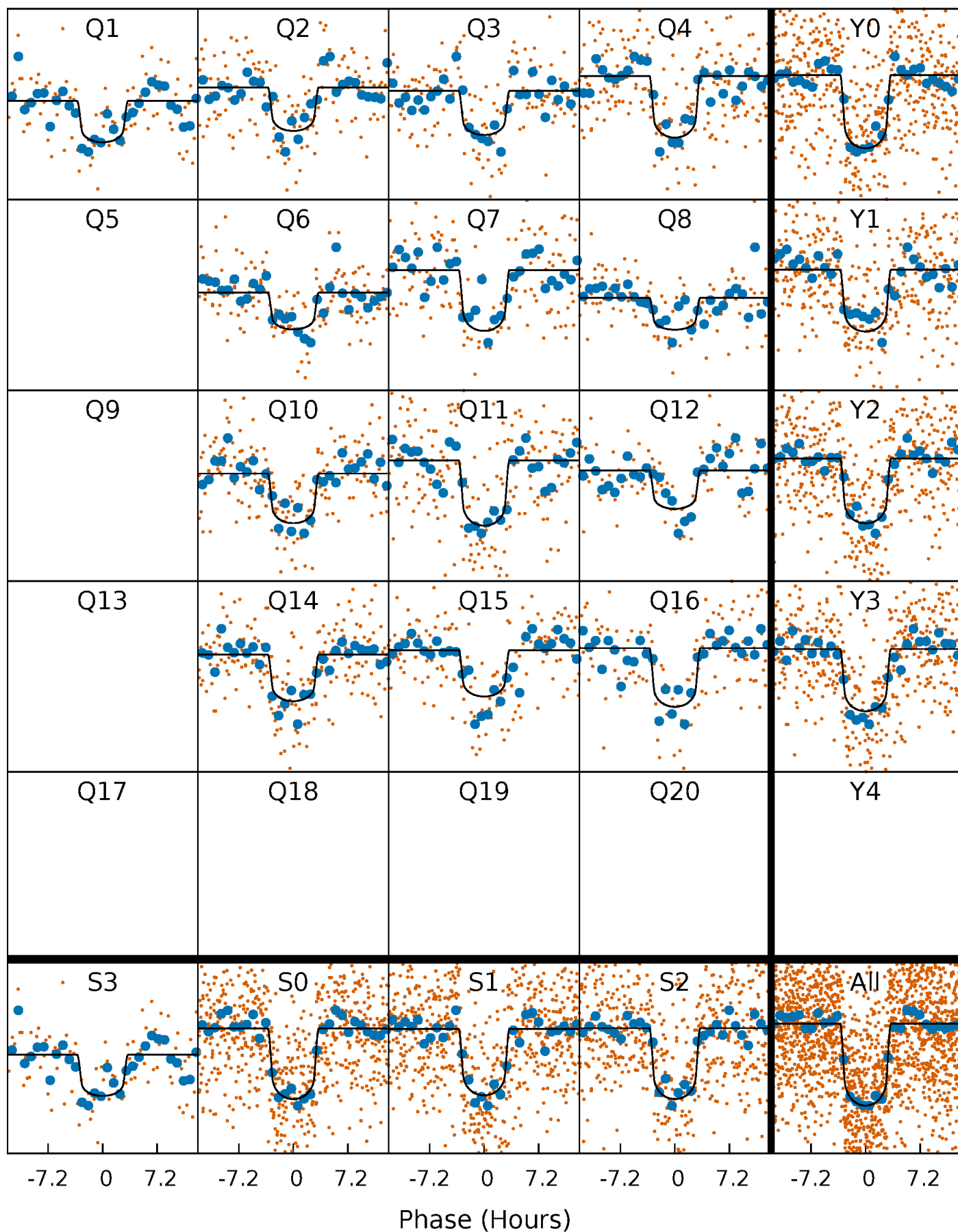
PDC Quarter-Phased Transit Curves

TCE 006105462-01 P= 25.082311 Days $T_0=134.133994$ (BKJD)



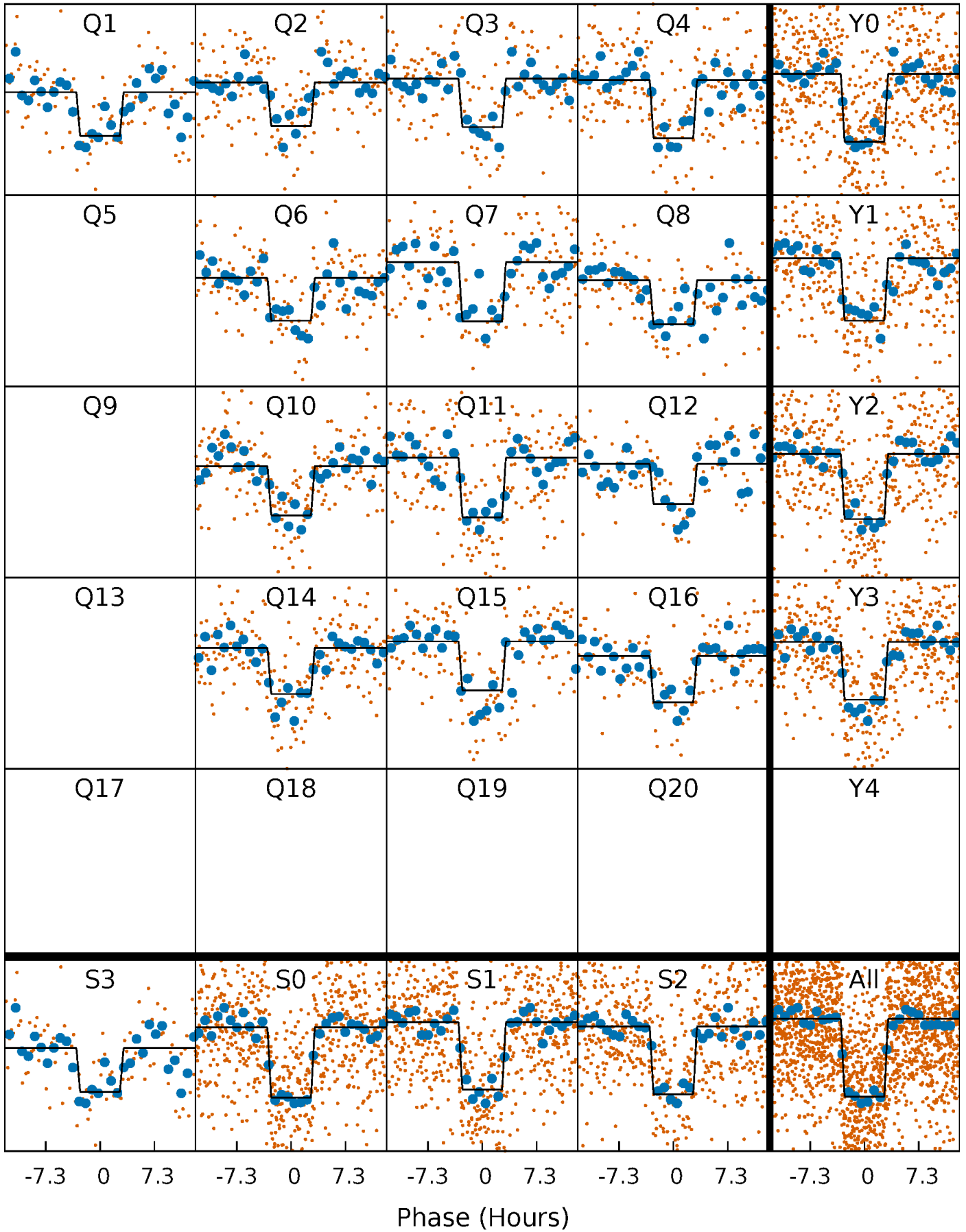
DV Quarter-Phased Transit Curves

TCE 006105462-01 P= 25.082311 Days $T_0=134.133994$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

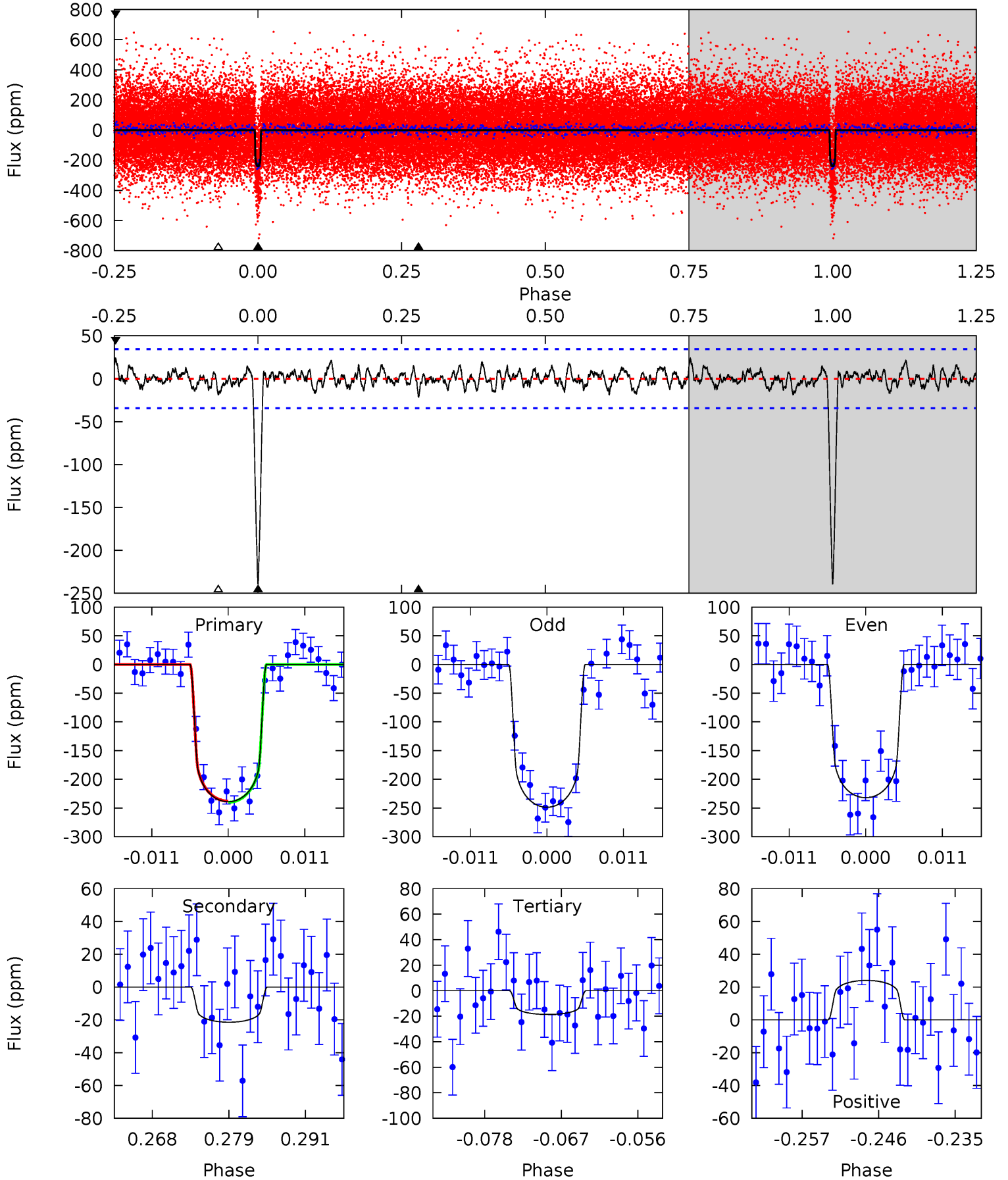
TCE 006105462-01 P= 25.082420 Days $T_0=134.133641$ (BKJD)



DV Model-Shift Uniqueness Test

006105462-01, $P = 25.082311$ Days, $E = 109.051683$ Days

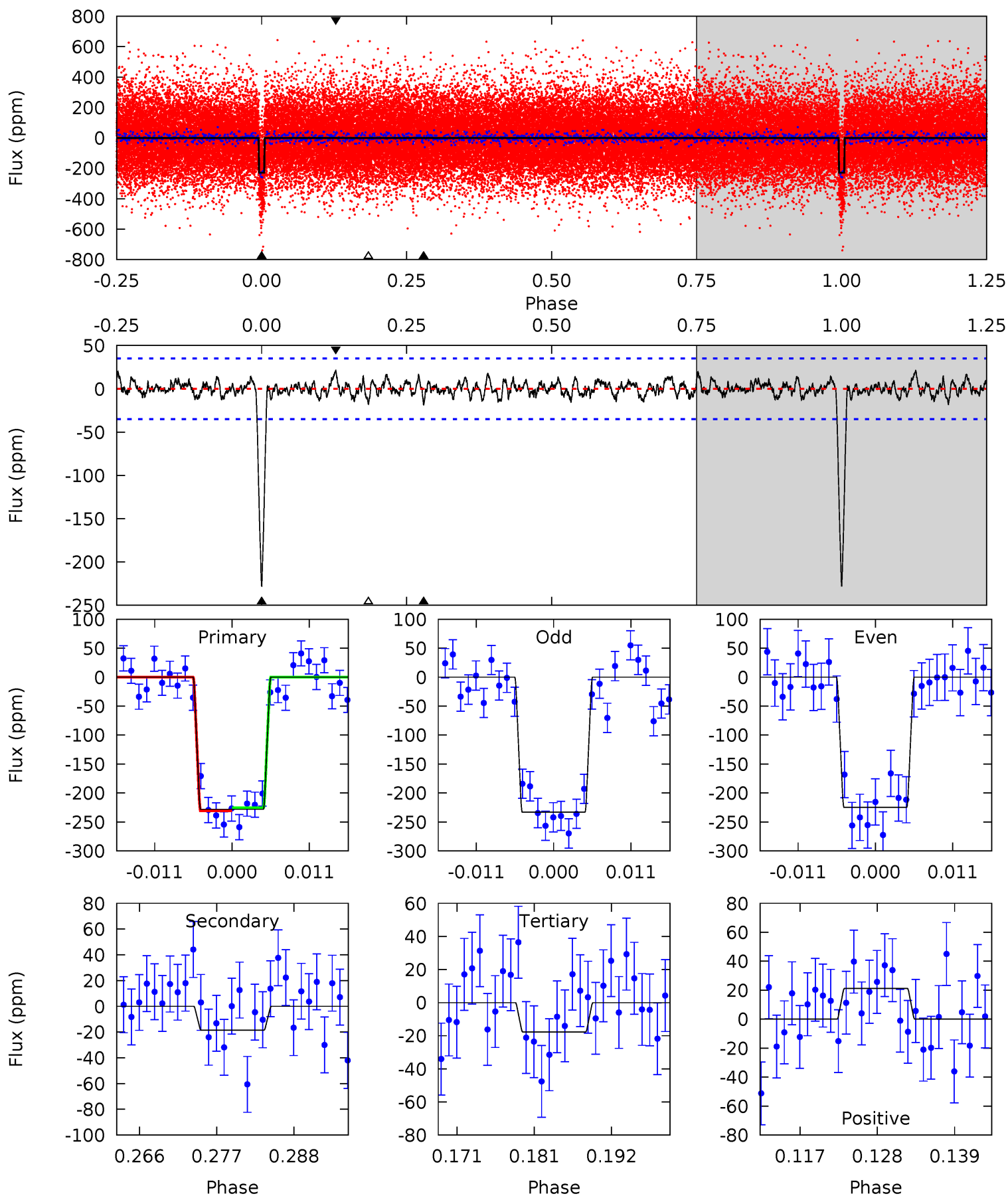
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34.8	3.12	2.71	3.50	5.00	2.54	1.06	32.1	31.3	0.41	-0.38	1.19	0.99	0.09	0.14



Alt Model-Shift Uniqueness Test

006105462-01, $P = 25.082420$ Days, $E = 109.051221$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
32.7	2.65	2.54	3.05	5.01	2.55	0.93	30.2	29.7	0.11	-0.40	0.58	1.03	0.09	0.37



Stellar Parameters For KIC 006105462

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6429^{+181}_{-227}	$4.241^{+0.180}_{-0.180}$	$-0.460^{+0.300}_{-0.300}$	$1.262^{+0.335}_{-0.274}$	$1.011^{+0.160}_{-0.117}$	$0.708^{+0.663}_{-0.344}$
	+3%/-4%	+4%/-4%	+65%/-65%	+27%/-22%	+16%/-12%	+94%/-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 006105462-01 / KOI 2098.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-21 ± 7	$2.17^{+0.51}_{-0.43}$	1088^{+74}_{-77}	3846^{+309}_{-323}	70^{+48}_{-30}
Alt.	-18 ± 7	$2.06^{+0.45}_{-0.41}$	1081^{+81}_{-70}	3792^{+354}_{-353}	65^{+51}_{-28}

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

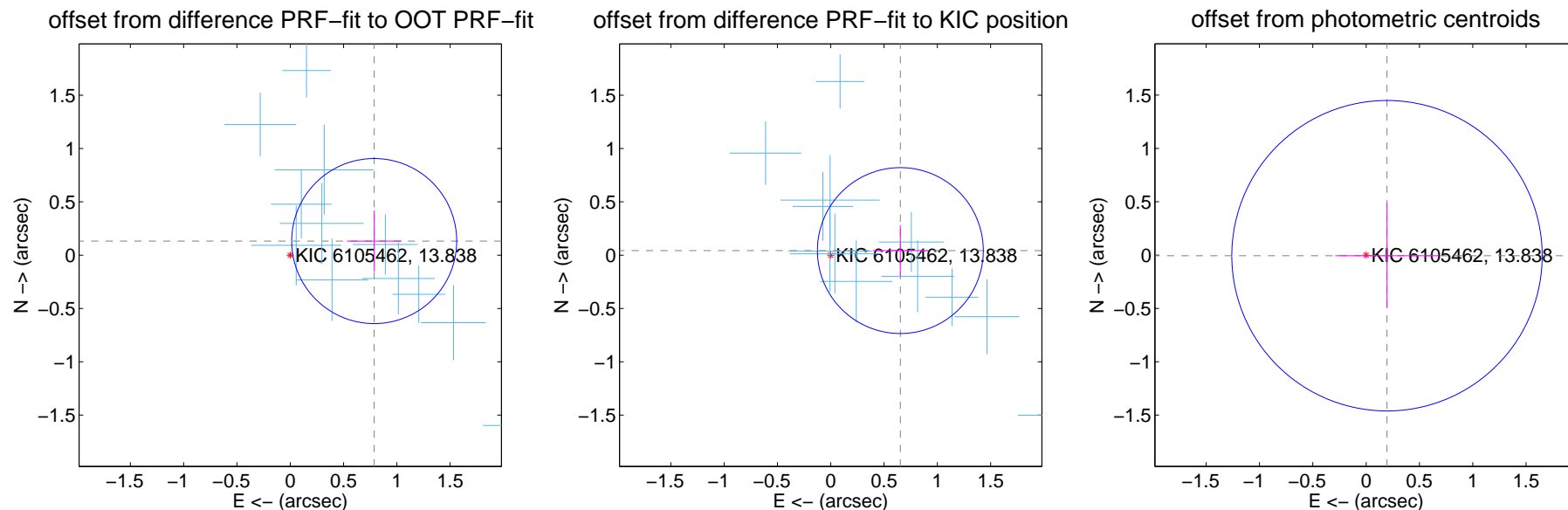
DV Centroid Data

Supplemental centroid analysis for 006105462-01. Kepler magnitude: 13.84. Transit SNR 25.03

There are 13 quarters with good PRF difference image offsets

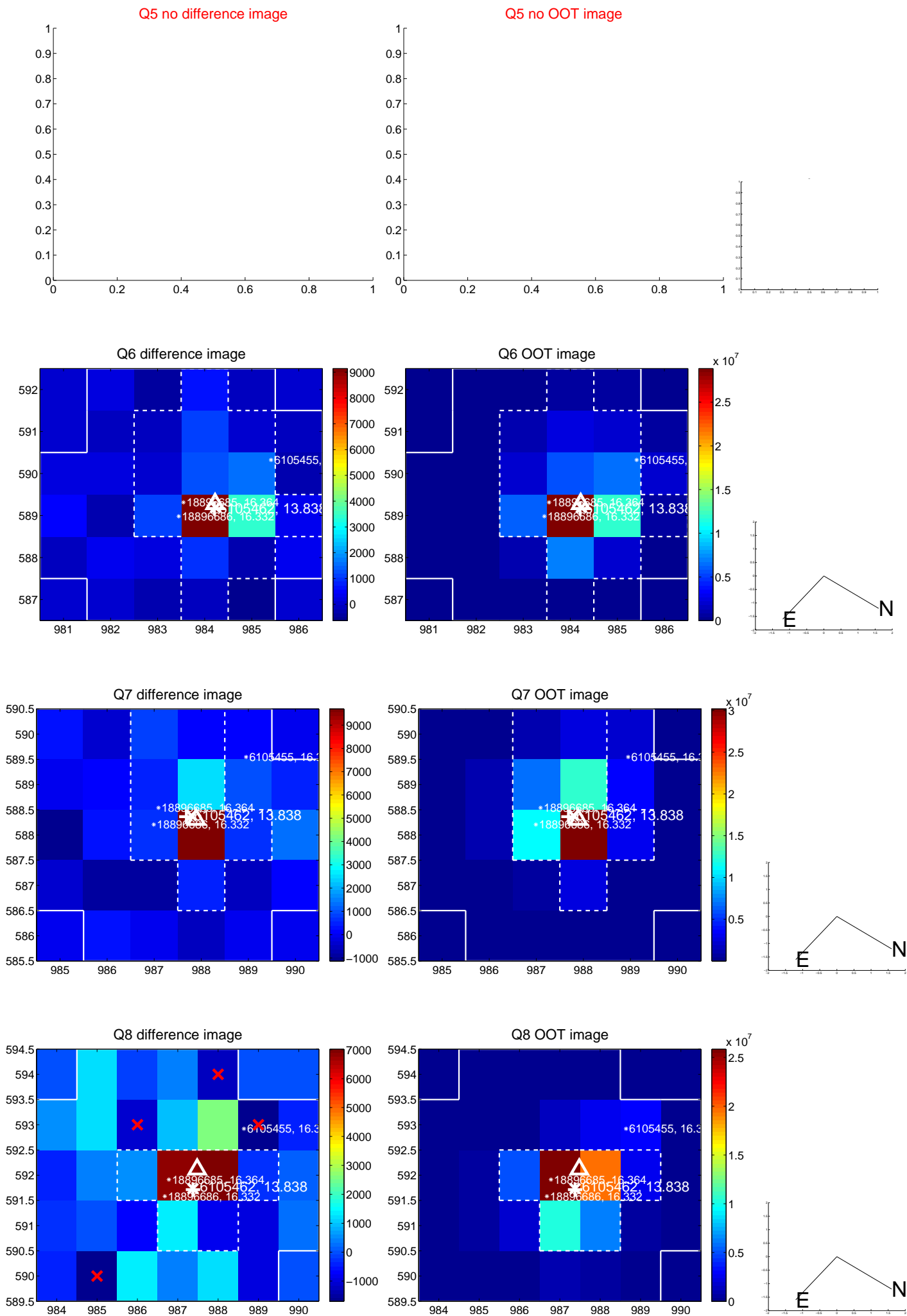
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.798 ± 0.258	3.09	-0.787 ± 0.257	0.132 ± 0.285
PRF-fit source offset from KIC position	0.655 ± 0.259	2.52	-0.653 ± 0.259	0.043 ± 0.236
photometric centroid source offset	0.20 ± 0.49	0.40	-0.20 ± 0.49	-0.01 ± 0.49

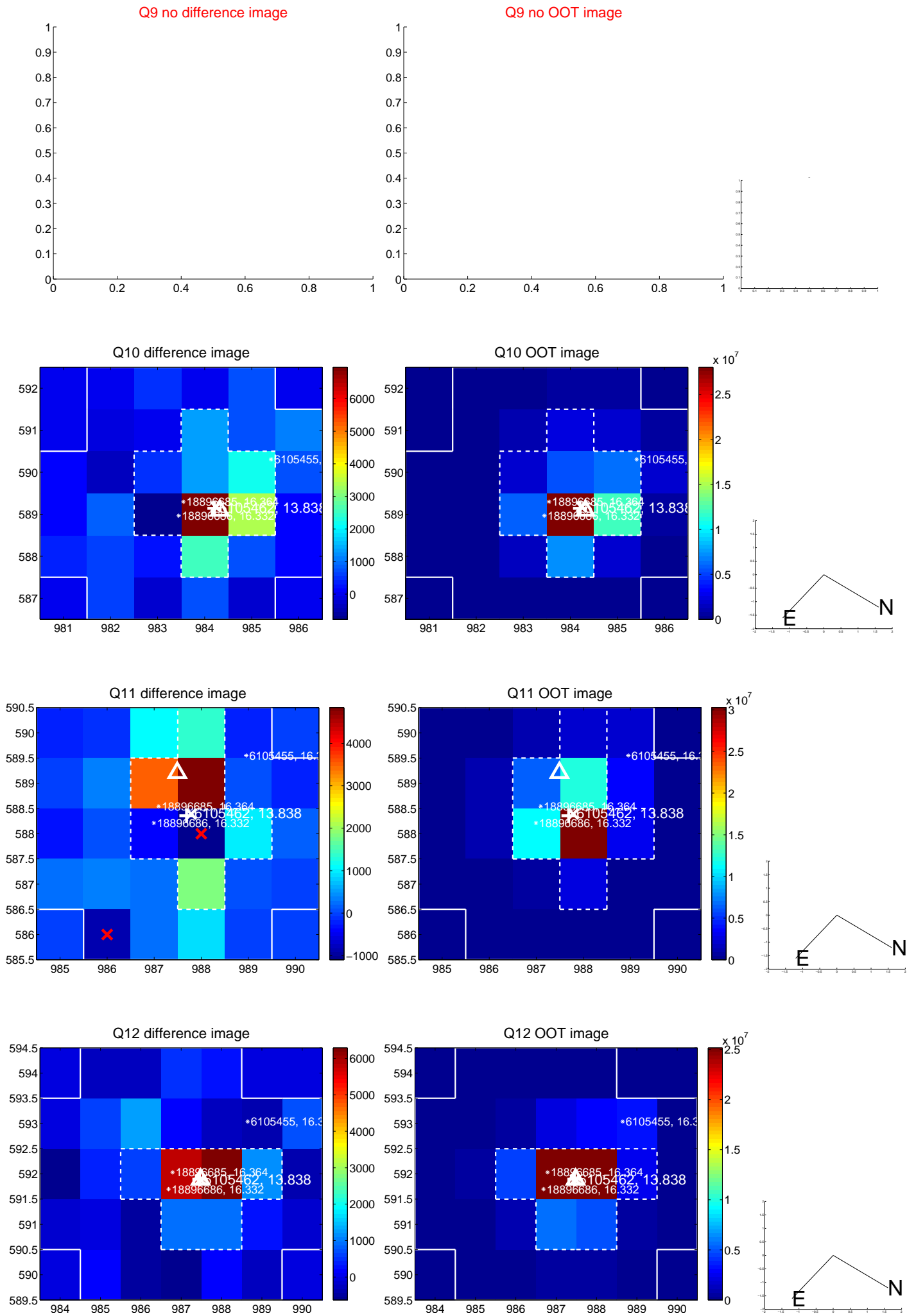


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

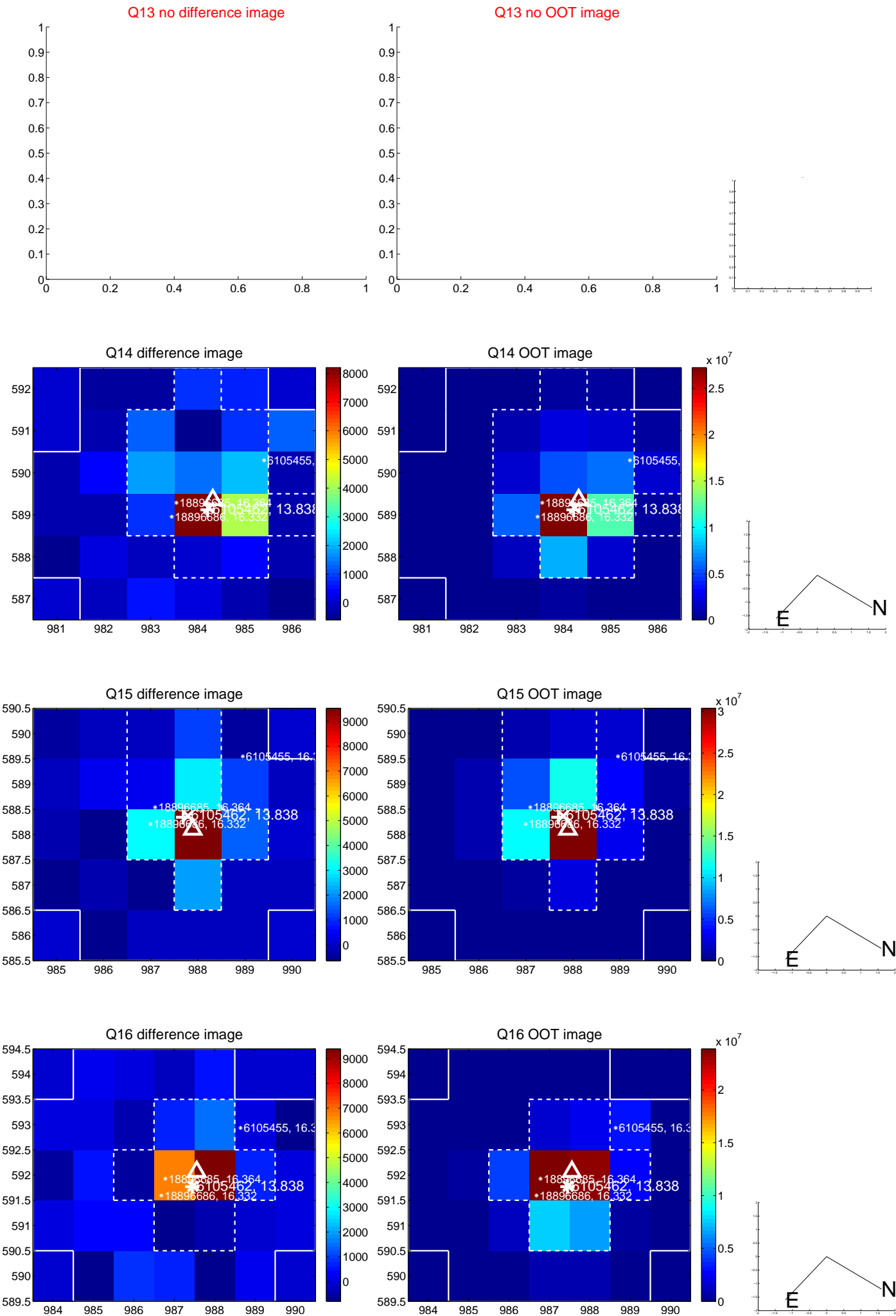
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



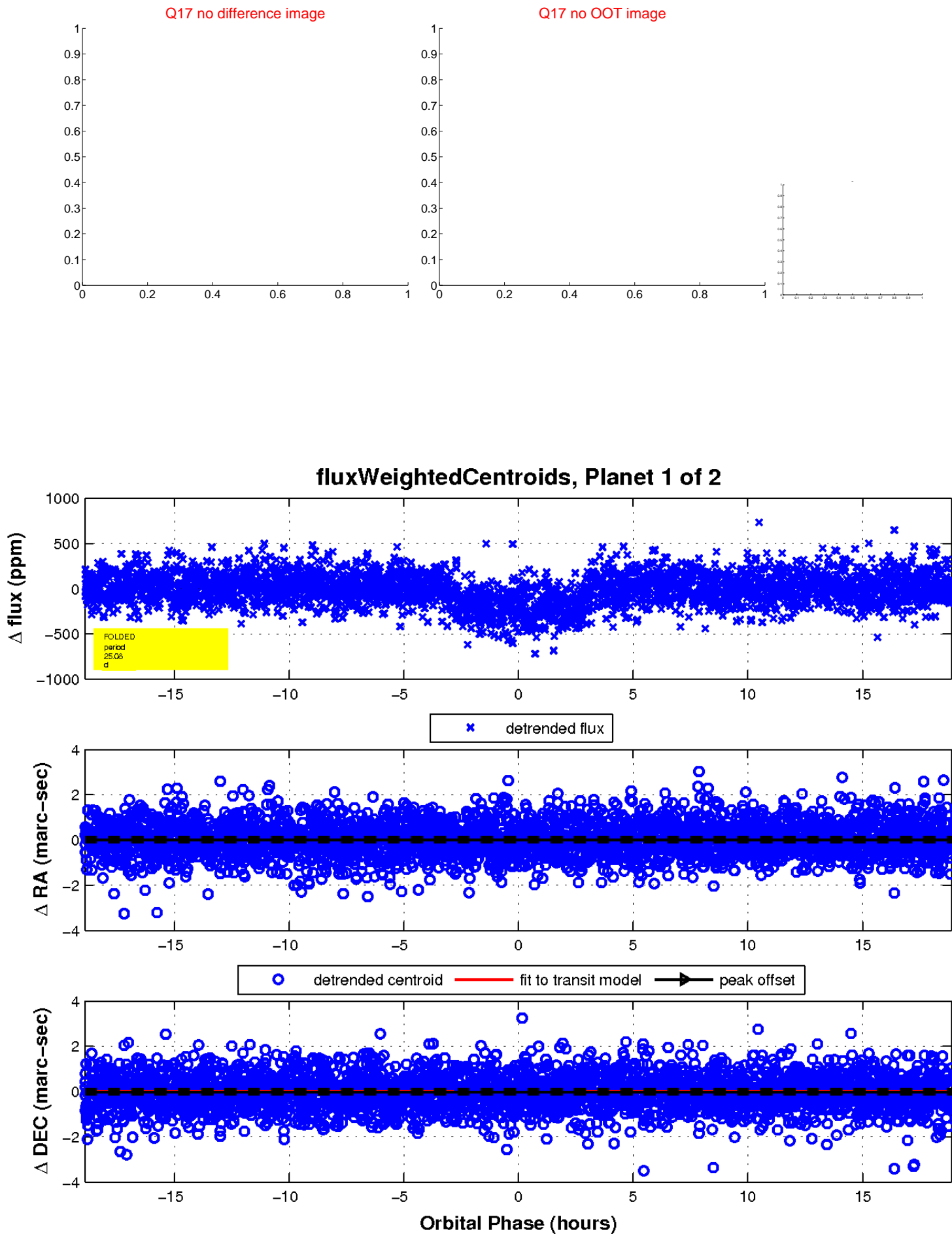
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

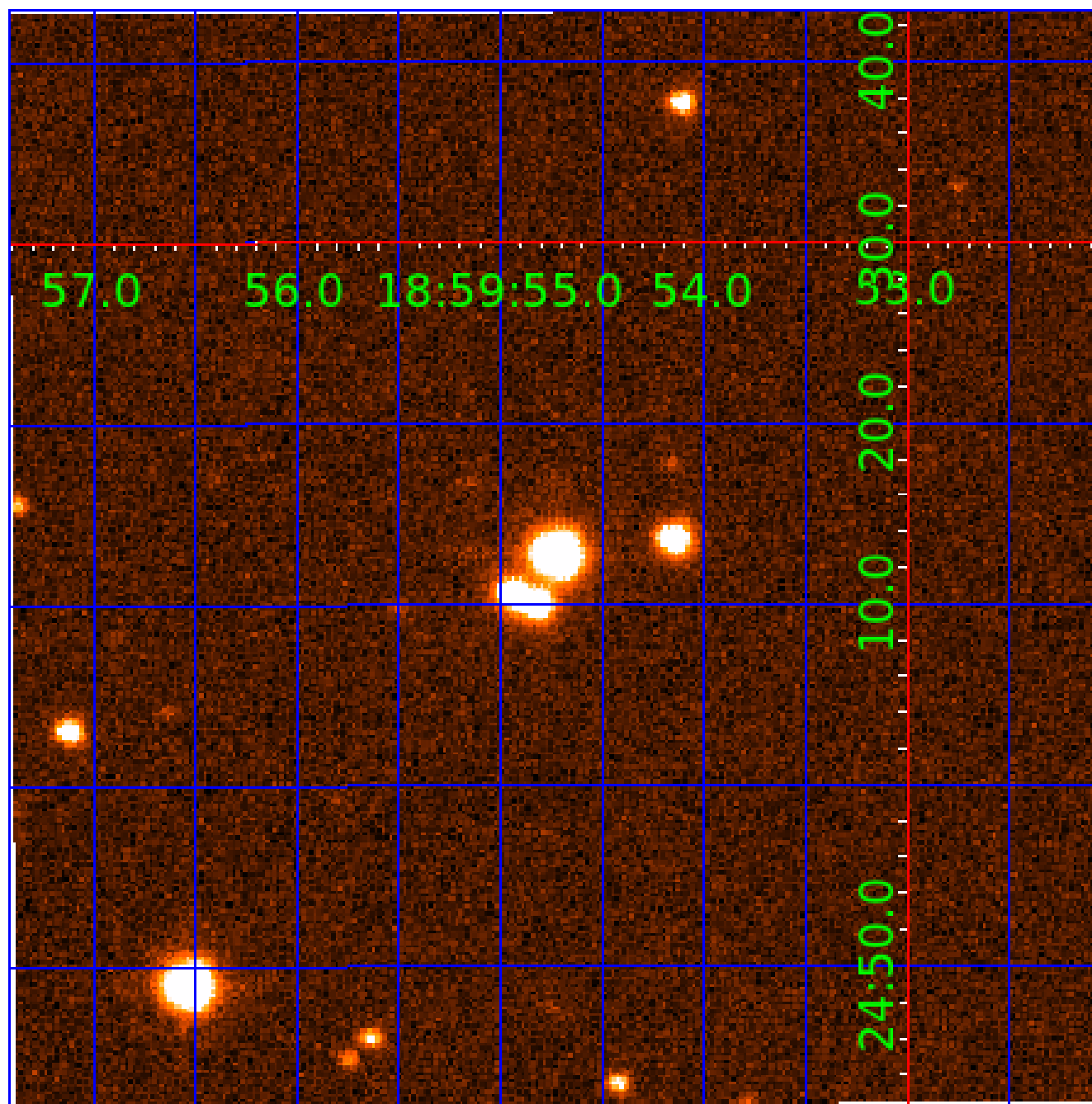


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006105462

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})
006105462-01	OBS	2098.01	25.082311	134.133994	237.1	6.301	23.2	25.0	1.26	6429	2.16	85.97
006105462-02	OBS	2098.02	89.722672	163.153607	254.2	10.889	18.9	19.8	1.26	6429	2.20	15.71

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006105462-01	OBS	PC	0.82	0	0	0	0	NO_COMMENT
006105462-02	OBS	PC	0.98	0	0	0	0	NO_COMMENT

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

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

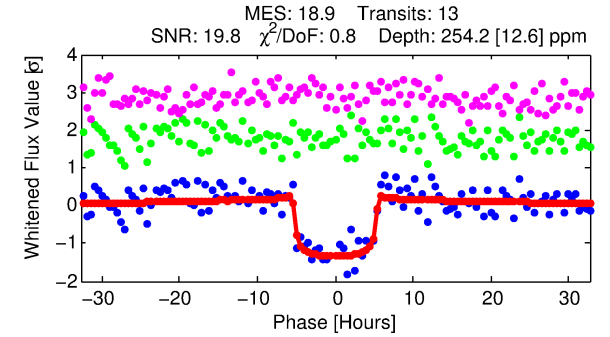
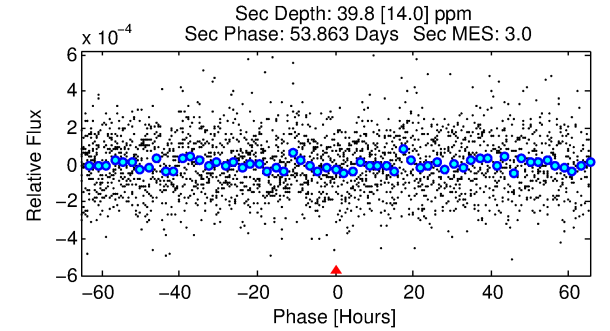
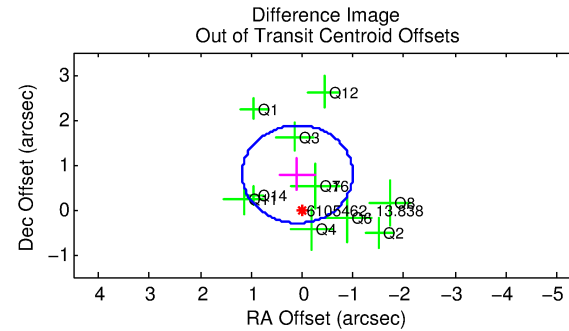
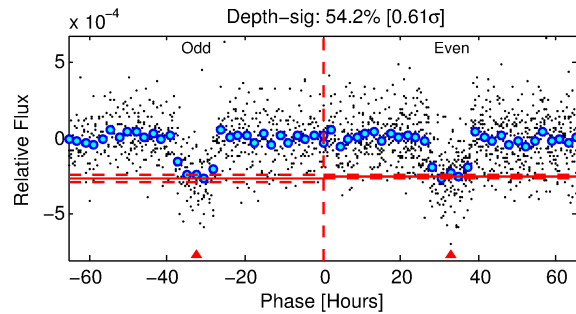
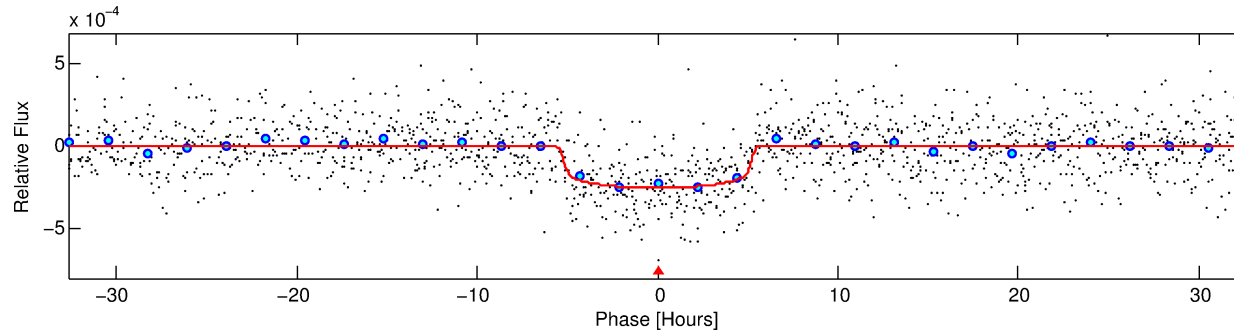
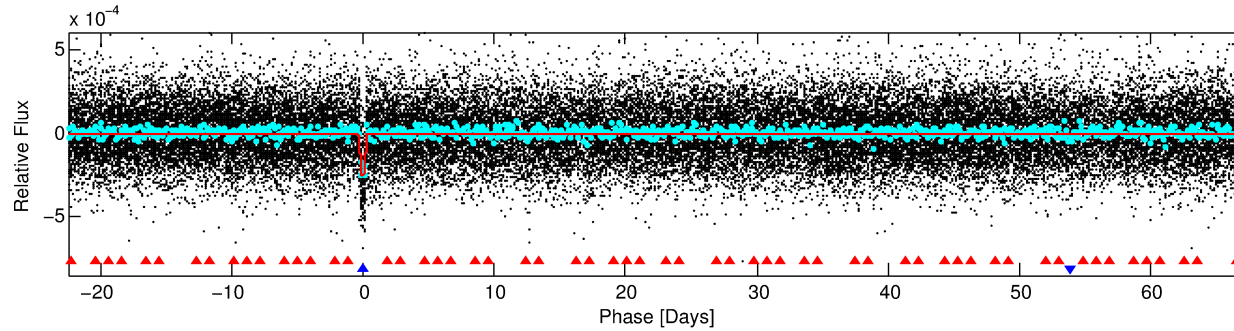
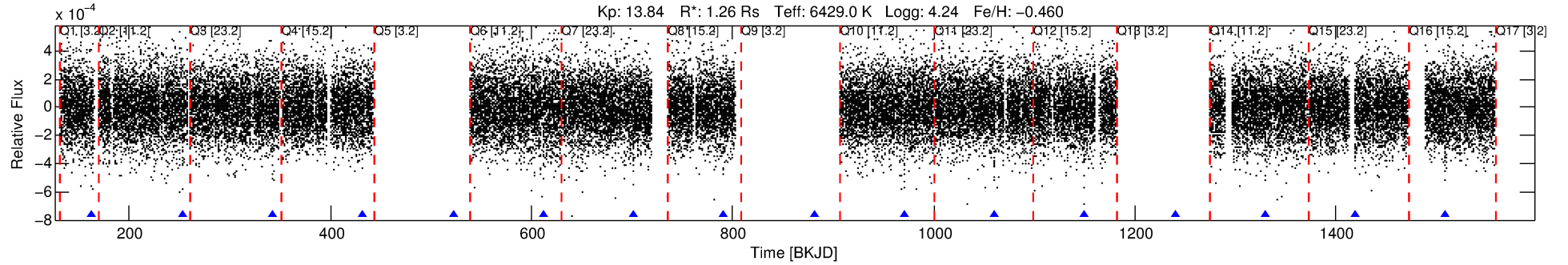
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006105462-02

No Significant Match Found

DV One-Page Summary

KIC: 6105462 Candidate: 2 of 2 Period: 89.723 d
KOI: K02098.02 Corr: 0.990



DV Fit Results:

Period = 89.72267 [0.00078] d
Epoch = 163.1536 [0.0070] BKJD
Rp/R* = 0.0160 [0.0028]
a/R* = 41.44 [39.33]
b = 0.77 [0.50]
Seff = 15.71 [5.61]
Teq = 508 [45] K
Rp = 2.20 [0.70] Re
a = 0.3939 [0.0884] AU
Ag = 700.66 [414.70] [1.69 σ]
Teffp = 4038 [517] K [6.80 σ]

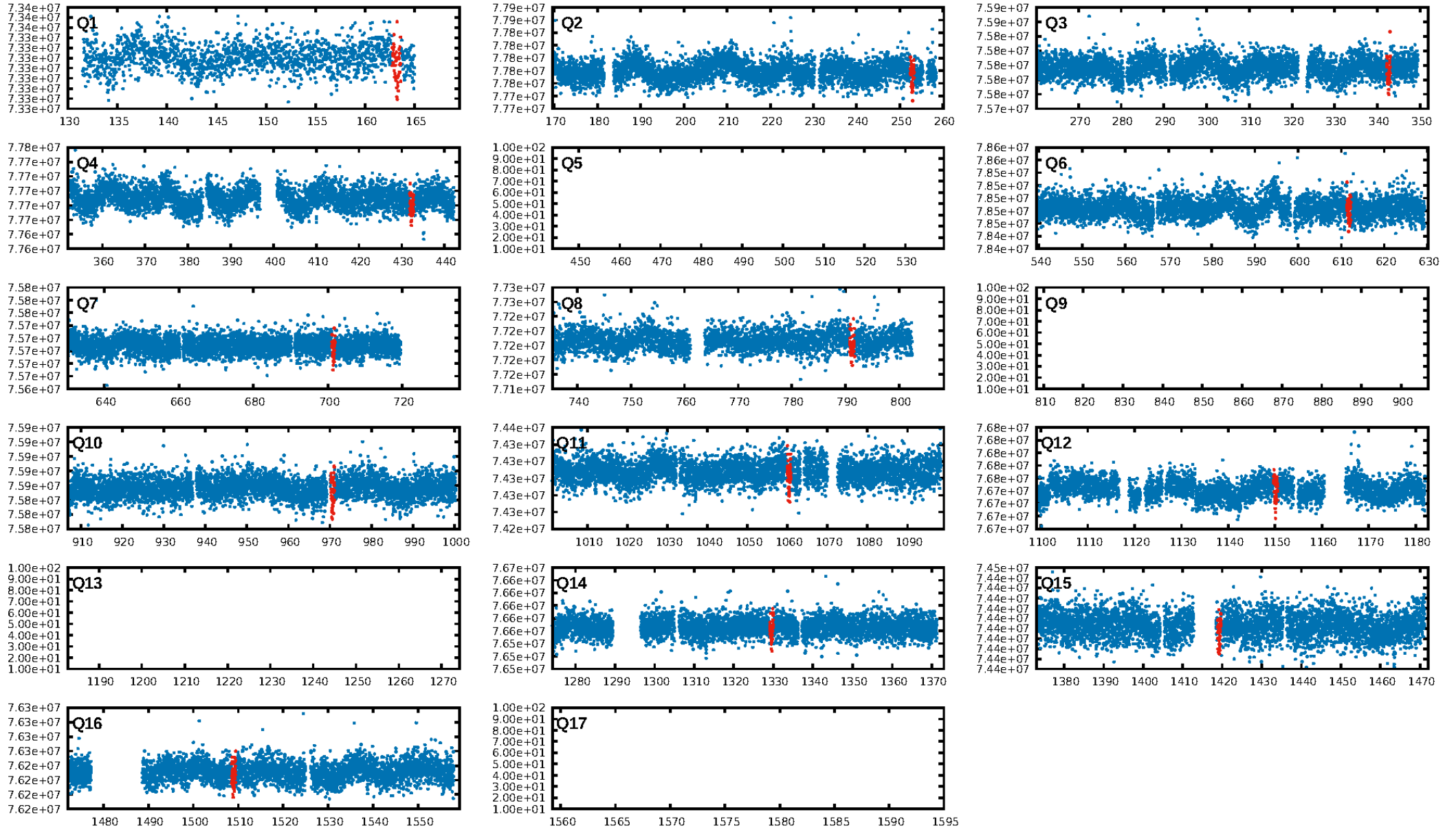
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [123.31 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 40.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.06e-70
RollingBand-fgt: 1.00 [12/12]
GhostDiagnostic-chr: 15
Centroid-sig: 4.8%
Centroid-so: 0.869 arcsec [1.44 σ]
OotOffset-rm: 0.792 arcsec [2.18 σ]
KicOffset-rm: 0.273 arcsec [0.73 σ]
OotOffset-st: 3/3/4/1 [11]
KicOffset-st: 3/3/4/1 [11]
DiffImageQuality-fgm: 1.00 [11/11]
DiffImageOverlap-fno: 1.00 [11/11]

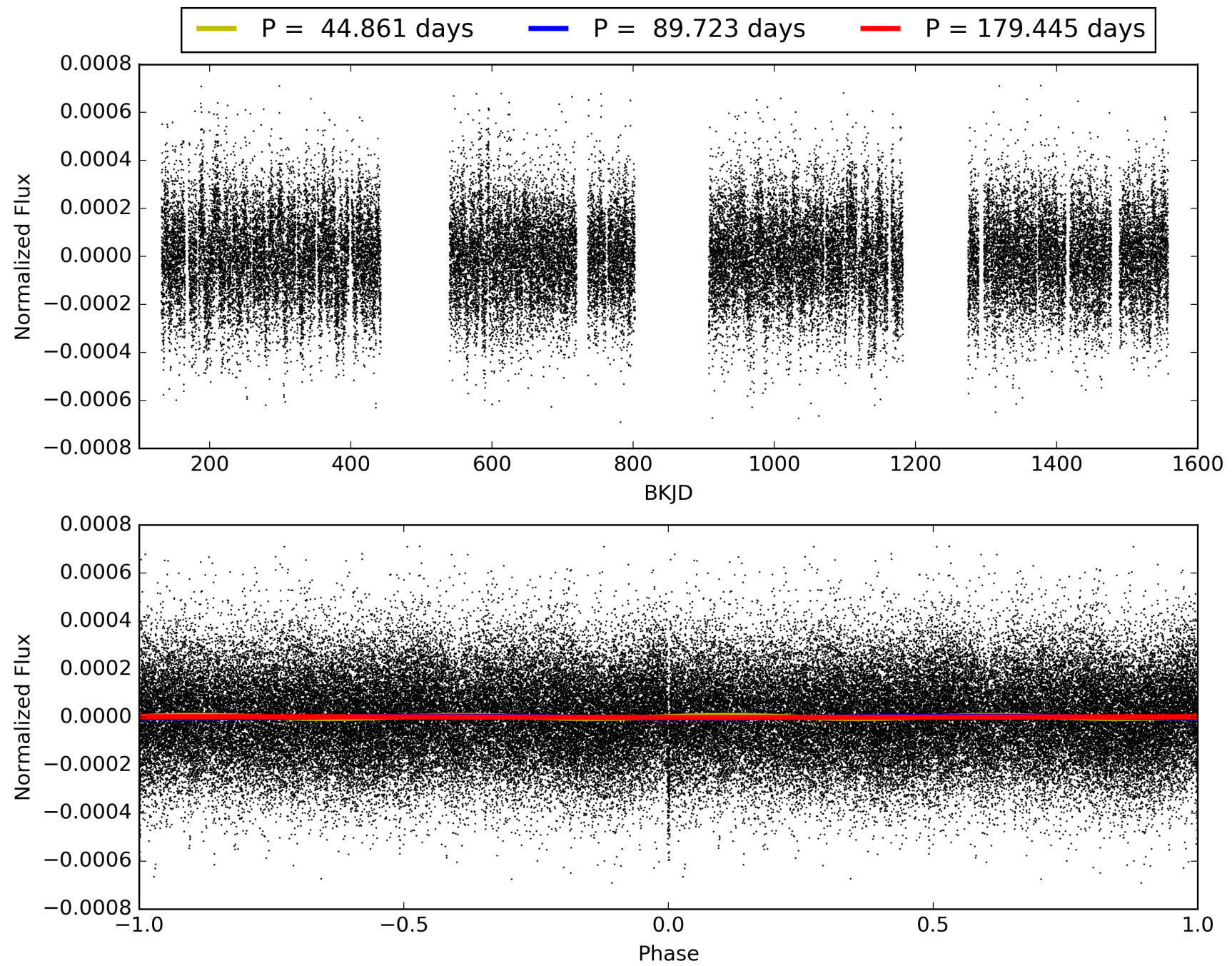
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 01:22:35 Z

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

TCE 006105462-02, PDC Light Curves

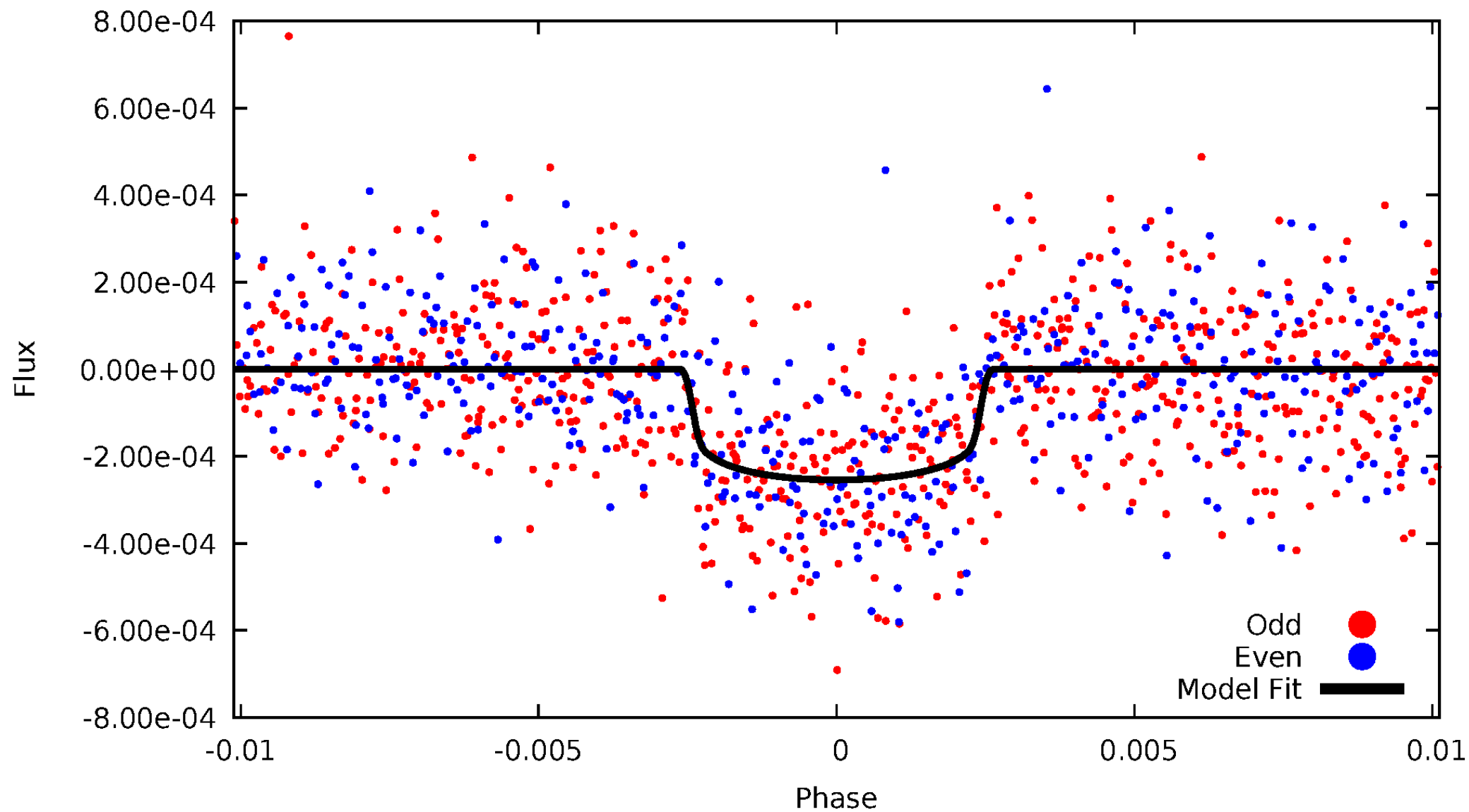


TCE 006105462-02



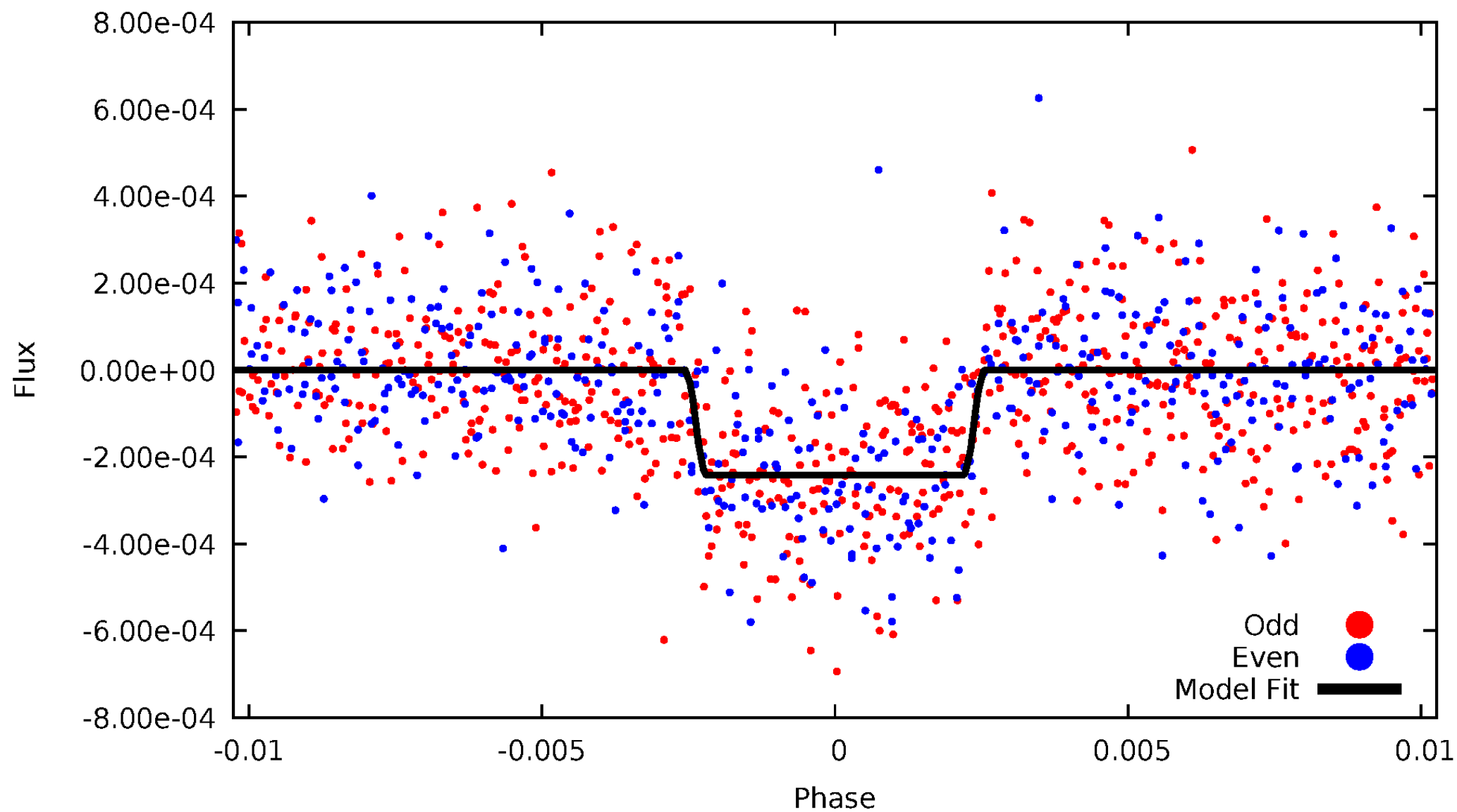
DV Odd/Even

TCE 006105462-02



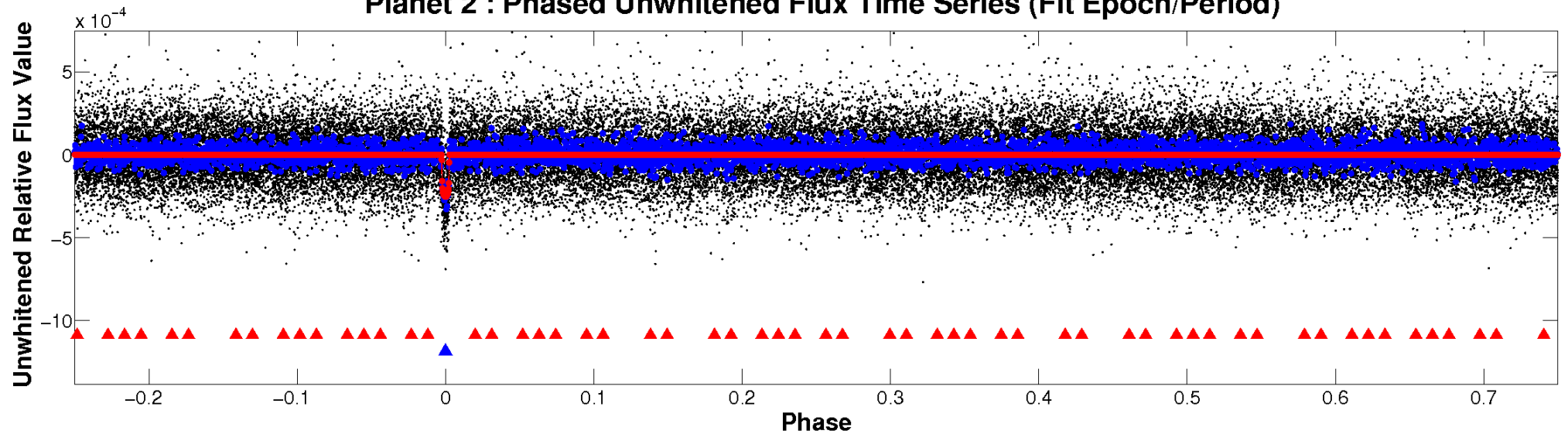
ALT Odd/Even

TCE 006105462-02

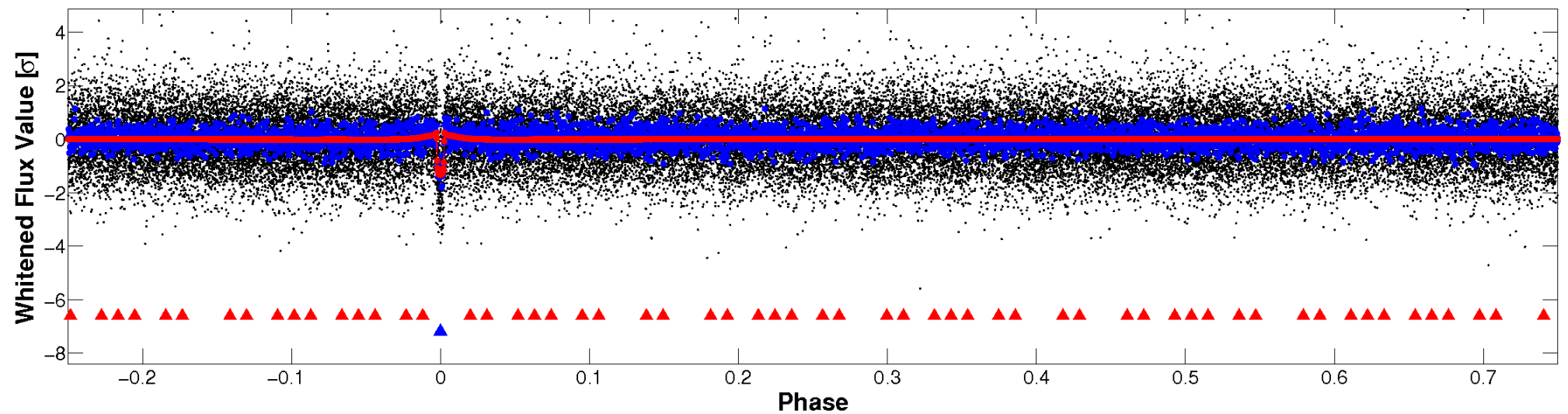


Non-Whitened Vs. Whitened Light Curve

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

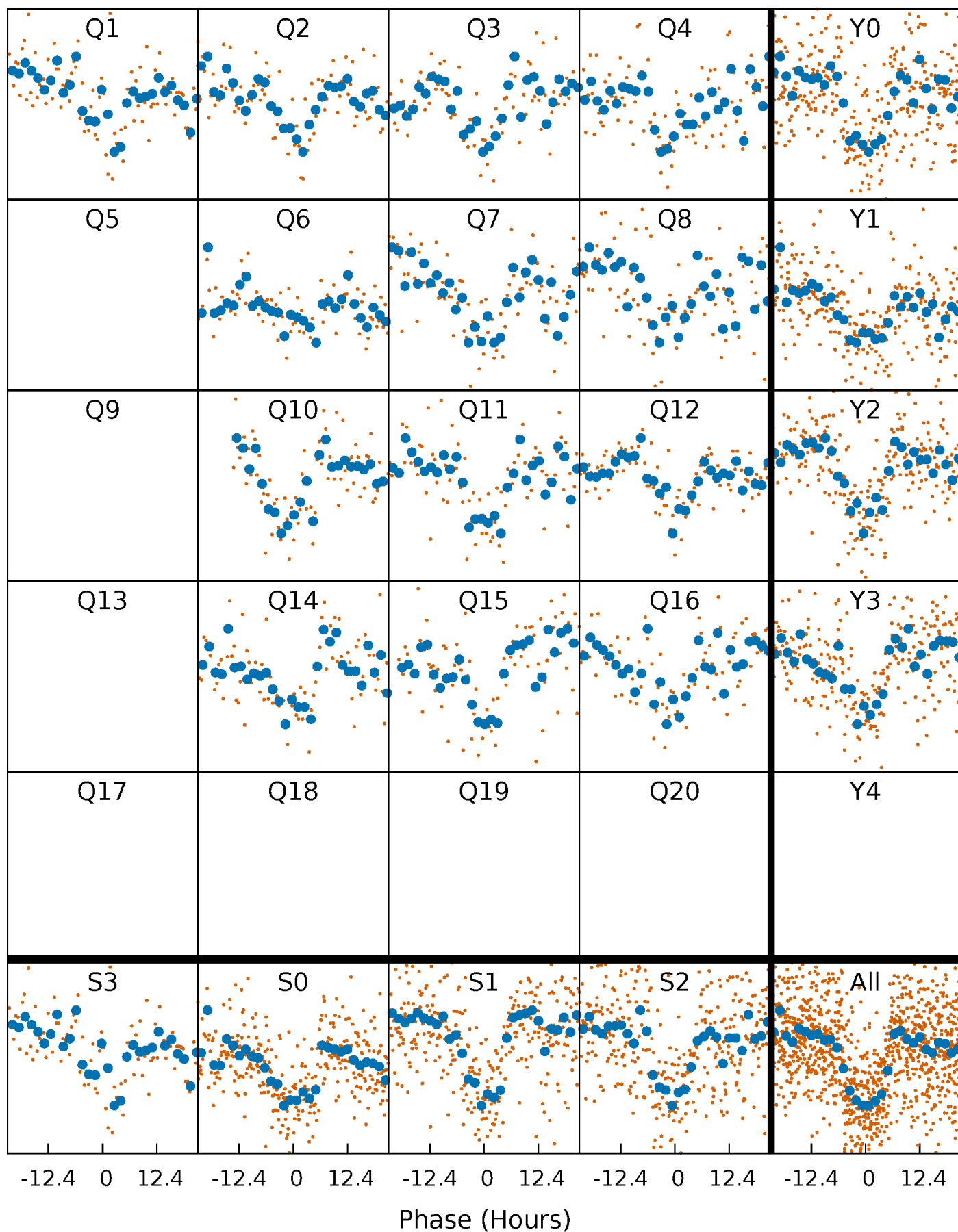


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



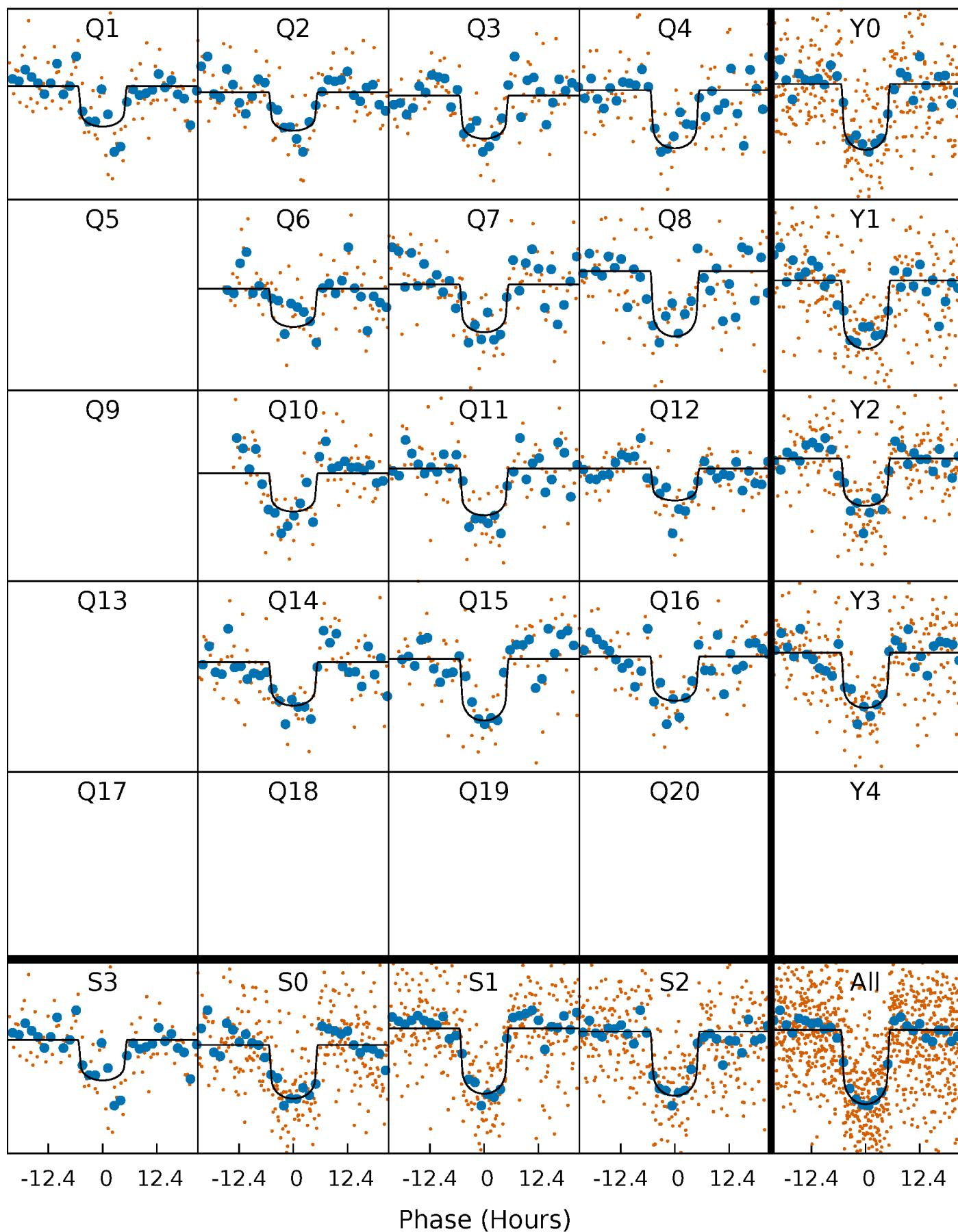
PDC Quarter-Phased Transit Curves

TCE 006105462-02 P= 89.722672 Days $T_0=163.153607$ (BKJD)



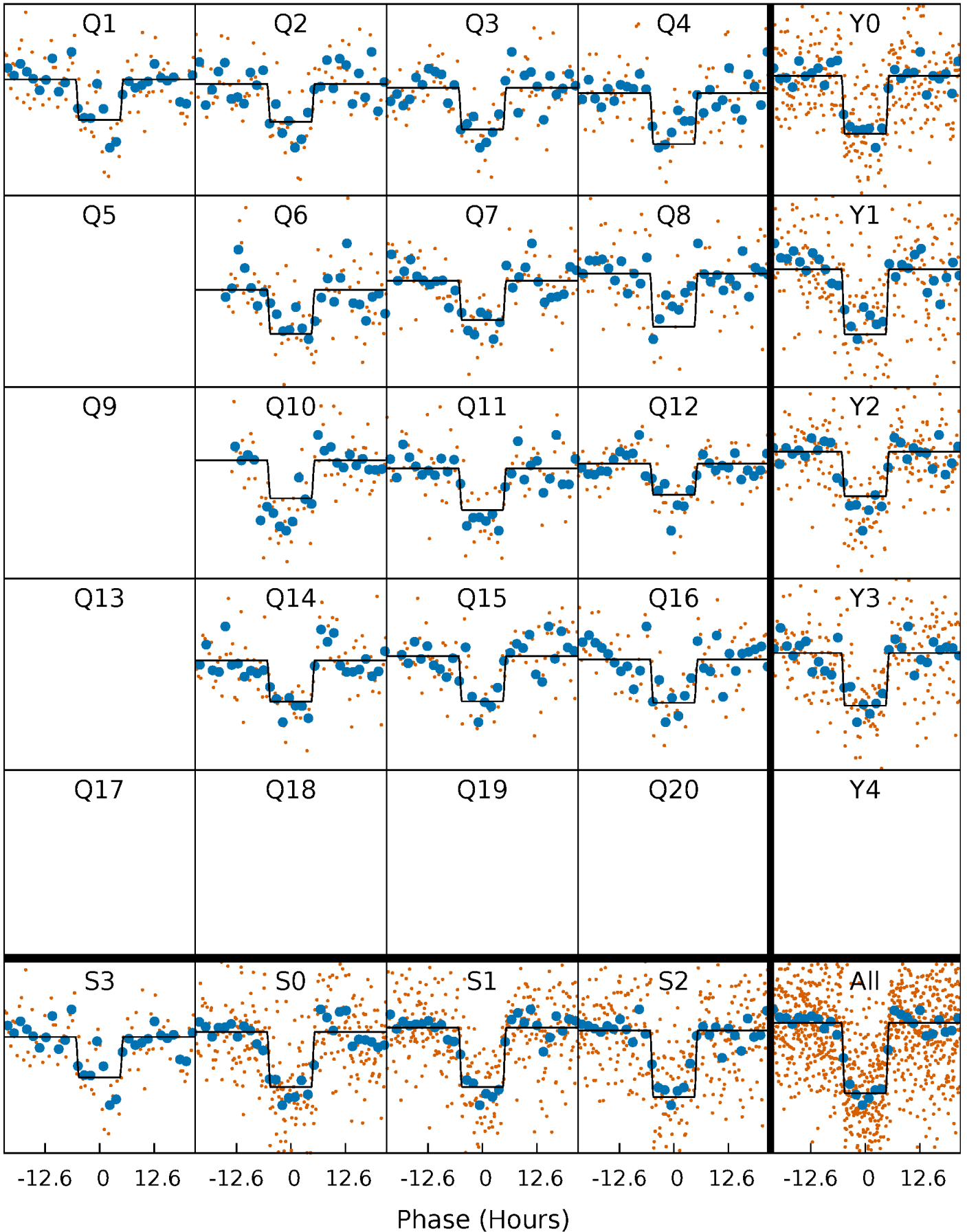
DV Quarter-Phased Transit Curves

TCE 006105462-02 P= 89.722672 Days $T_0=163.153607$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

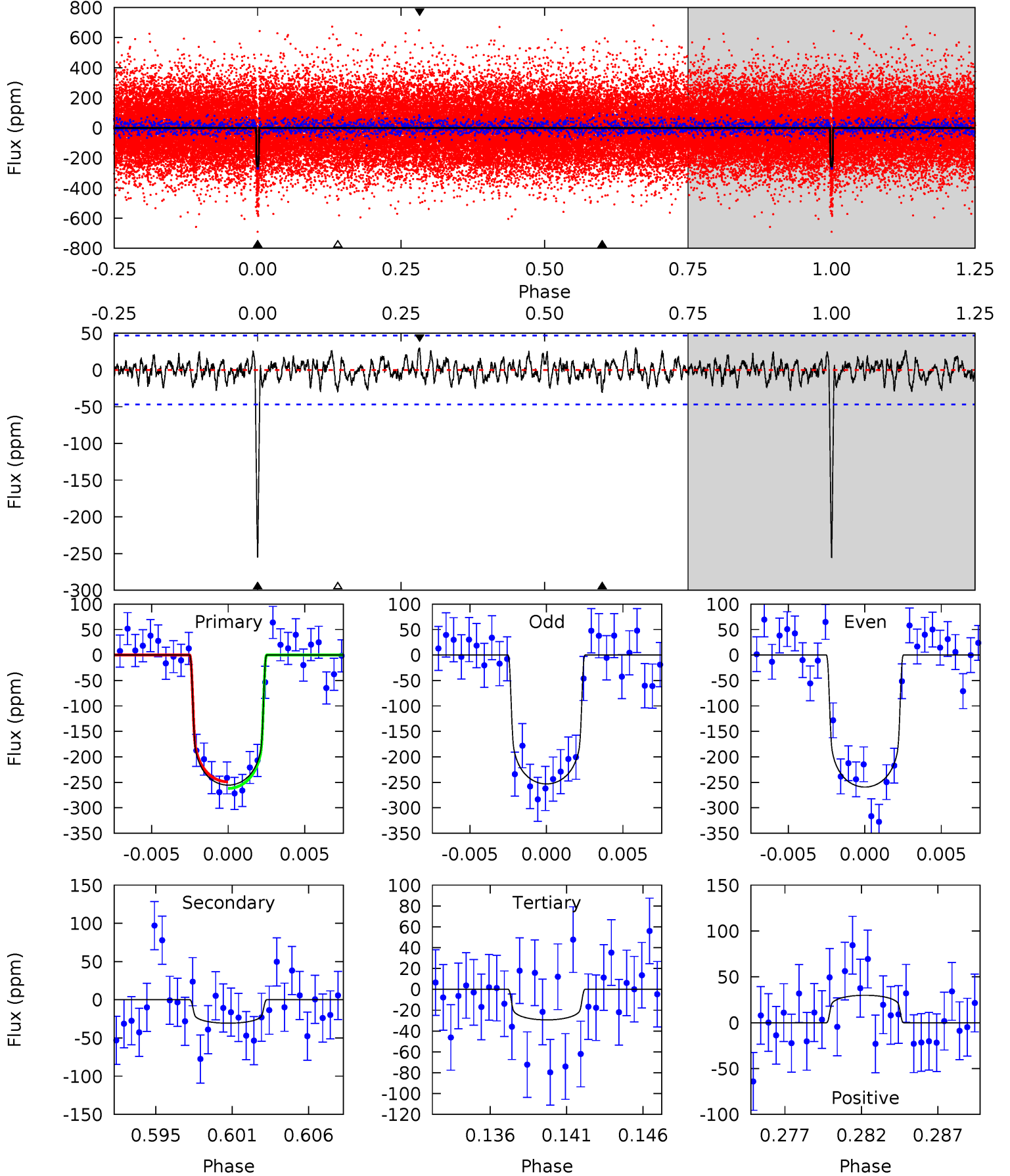
TCE 006105462-02 P= 89.721899 Days $T_0=163.159980$ (BKJD)



DV Model-Shift Uniqueness Test

006105462-02, P = 89.722672 Days, E = 73.430935 Days

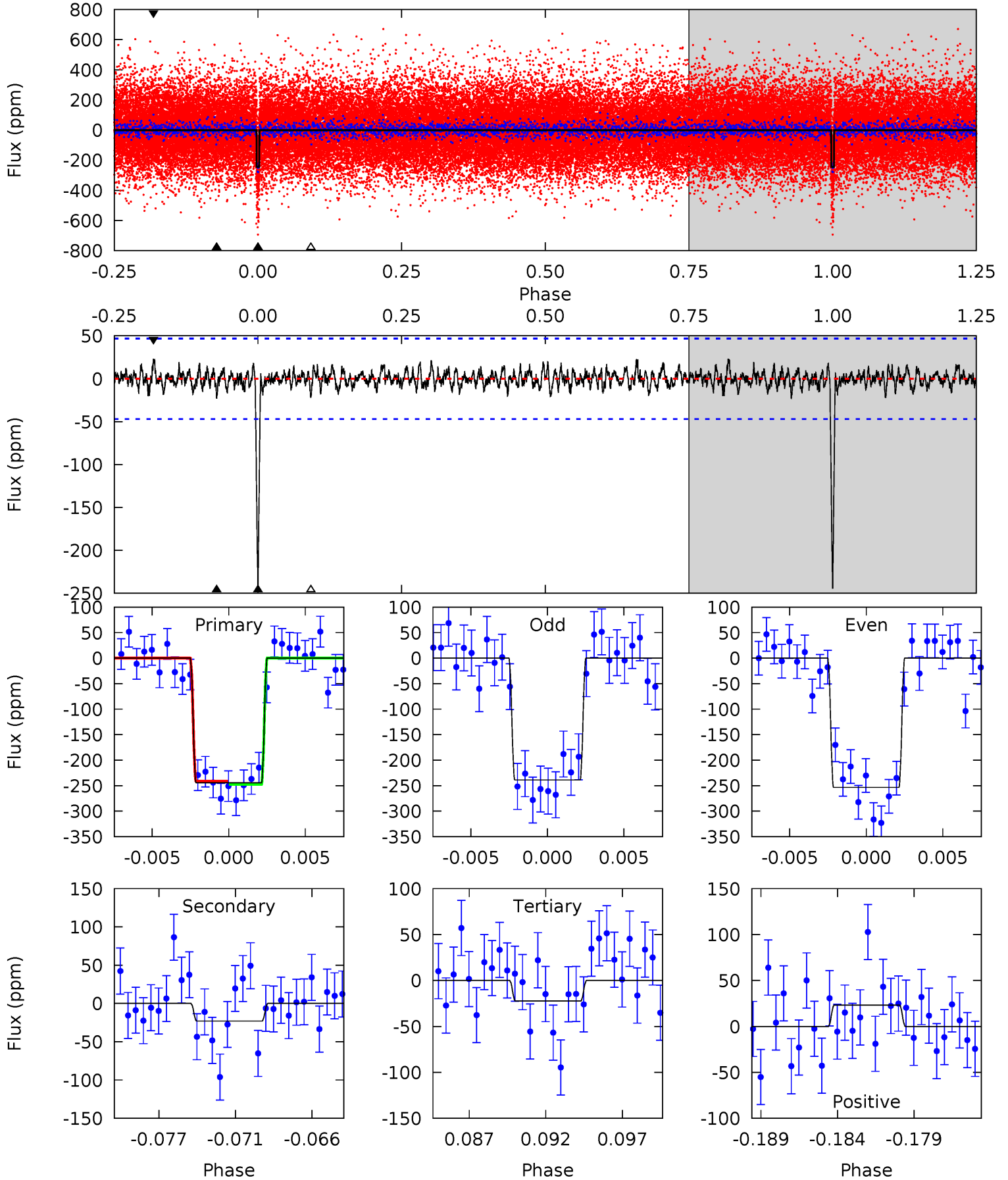
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.1	3.37	3.22	3.29	5.15	2.79	1.13	24.9	24.8	0.15	0.08	0.33	0.96	0.10	0.71



Alt Model-Shift Uniqueness Test

006105462-02, P = 89.721899 Days, E = 73.438081 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.9	2.53	2.45	2.55	5.15	2.80	0.83	24.4	24.3	0.07	-0.02	0.78	1.00	0.09	0.35



Stellar Parameters For KIC 006105462

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6429^{+181}_{-227}	$4.241^{+0.180}_{-0.180}$	$-0.460^{+0.300}_{-0.300}$	$1.262^{+0.335}_{-0.274}$	$1.011^{+0.160}_{-0.117}$	$0.708^{+0.663}_{-0.344}$
	+3%/-4%	+4%/-4%	+65%/-65%	+27%/-22%	+16%/-12%	+94%/-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 006105462-02 / KOI 2098.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-31 ± 9	$2.21^{+0.51}_{-0.46}$	711^{+47}_{-46}	4061^{+364}_{-348}	527^{+343}_{-232}
Alt.	-23 ± 9	$2.17^{+0.54}_{-0.44}$	711^{+50}_{-50}	3893^{+374}_{-395}	403^{+333}_{-200}

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

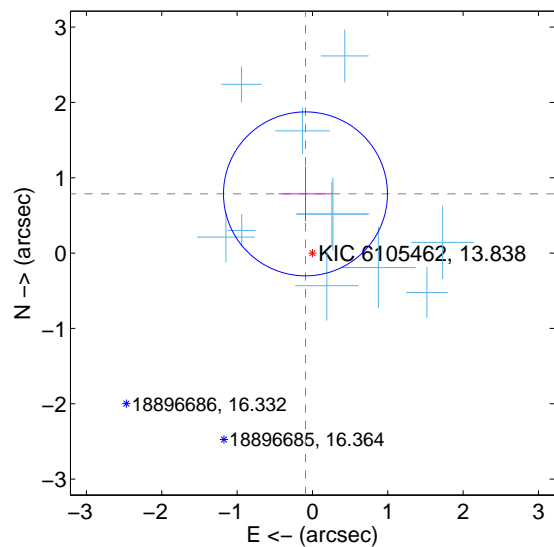
Supplemental centroid analysis for 006105462-02. Kepler magnitude: 13.84. Transit SNR 19.85

There are 11 quarters with good PRF difference image offsets

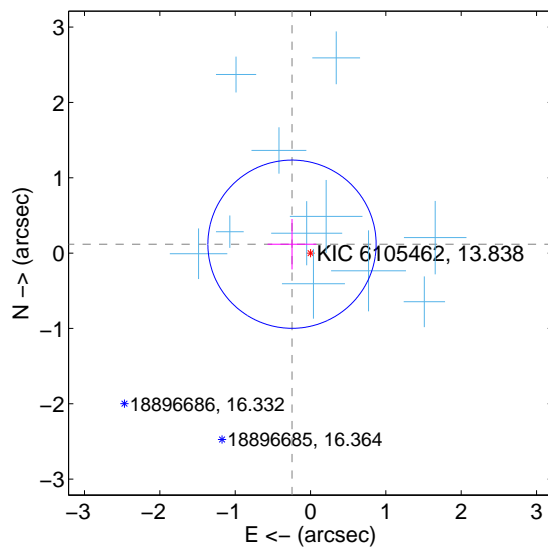
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.792 ± 0.363	2.18	0.092 ± 0.355	0.786 ± 0.363
PRF-fit source offset from KIC position	0.273 ± 0.372	0.73	0.246 ± 0.323	0.118 ± 0.334
photometric centroid source offset	0.87 ± 0.60	1.44	-0.58 ± 0.60	0.64 ± 0.60

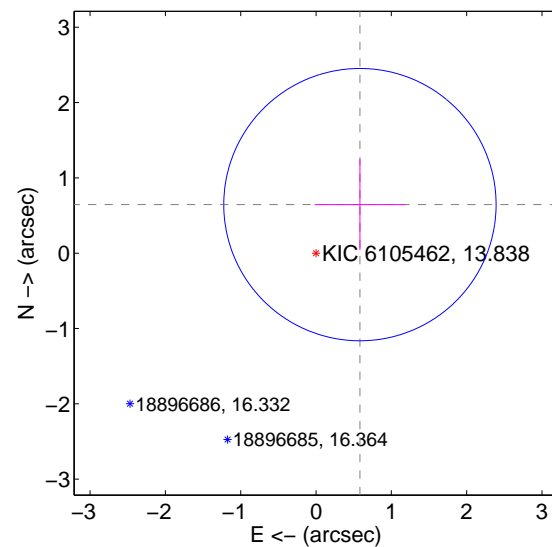
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

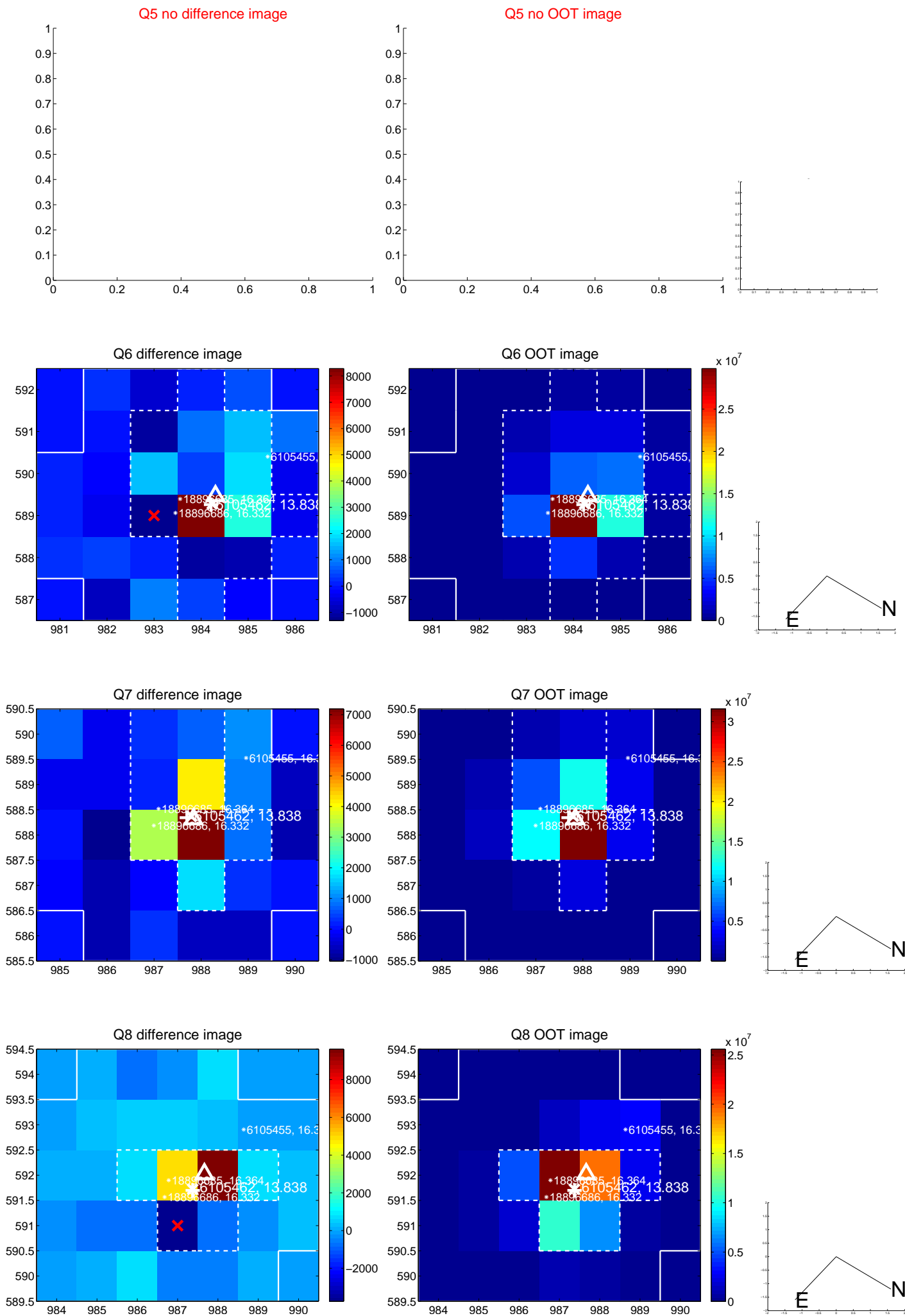


offset from photometric centroids



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.

Q9 no difference image



Q9 no OOT image



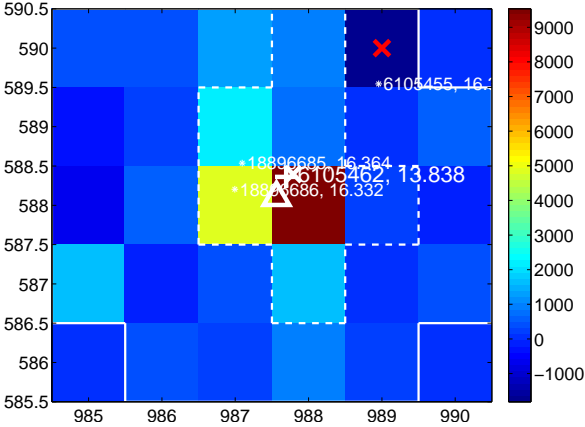
Q10 no difference image



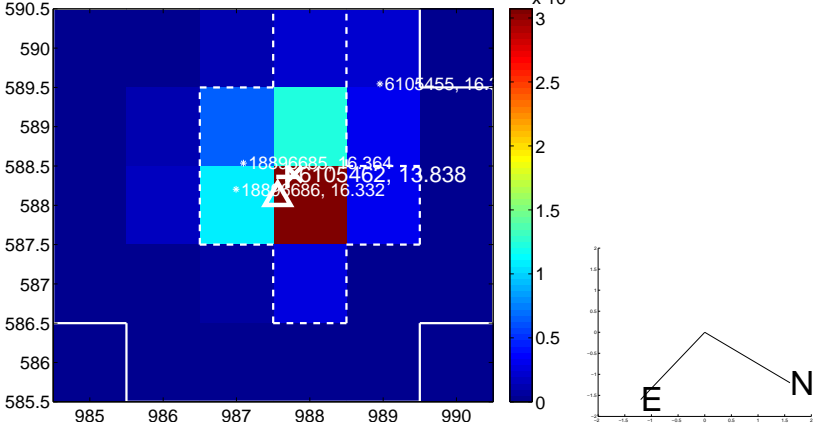
Q10 no OOT image



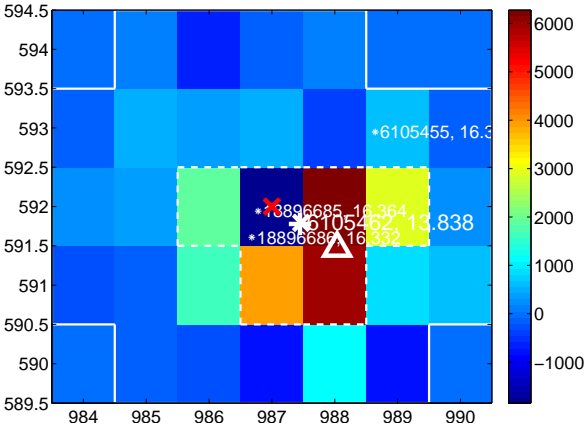
Q11 difference image



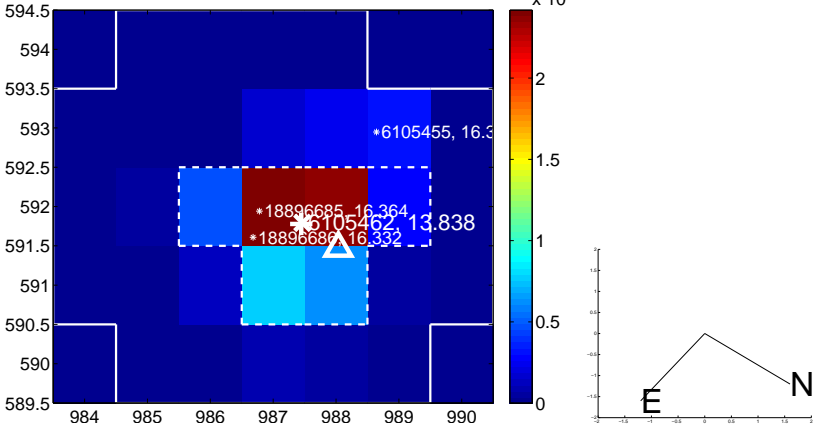
Q11 OOT image



Q12 difference image



Q12 OOT image



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

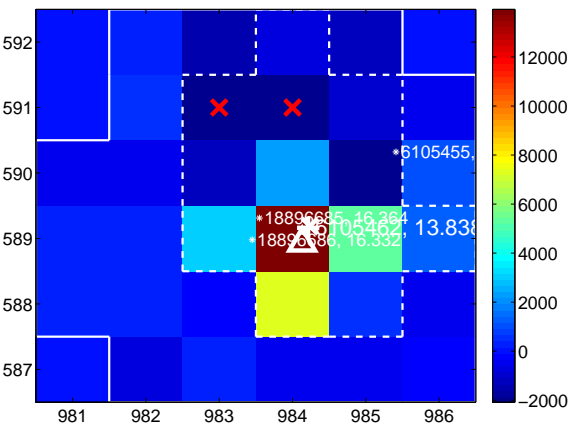
Q13 no difference image



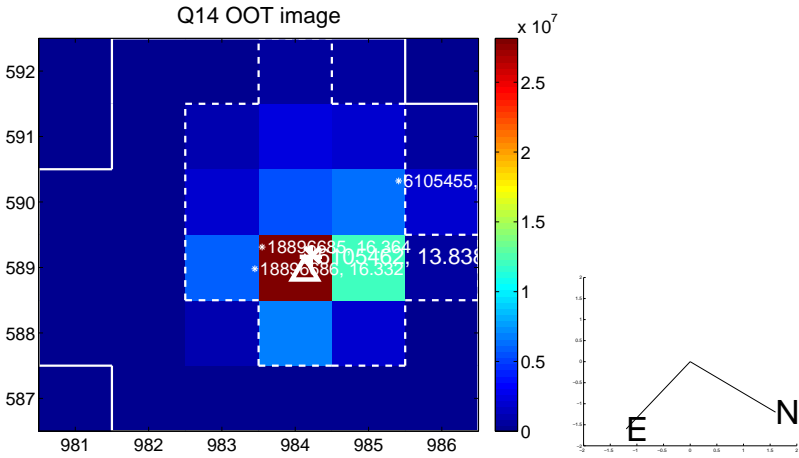
Q13 no OOT image



Q14 difference image



Q14 OOT image



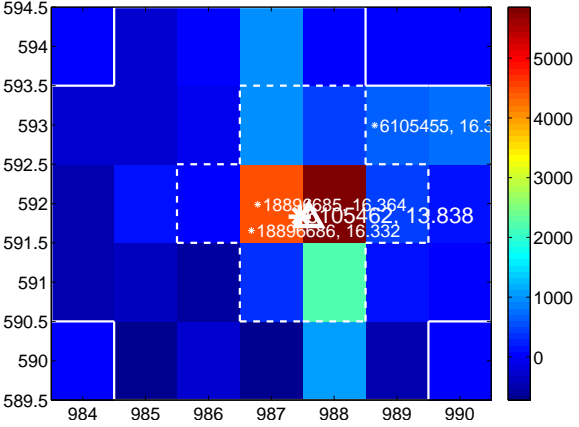
Q15 no difference image



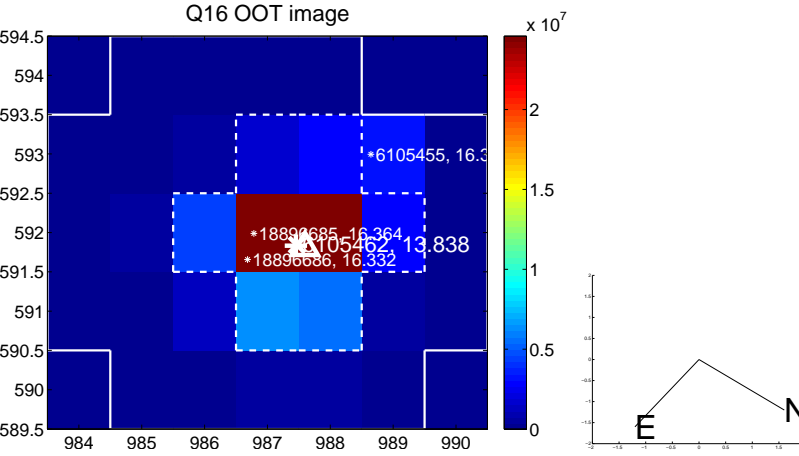
Q15 no OOT image



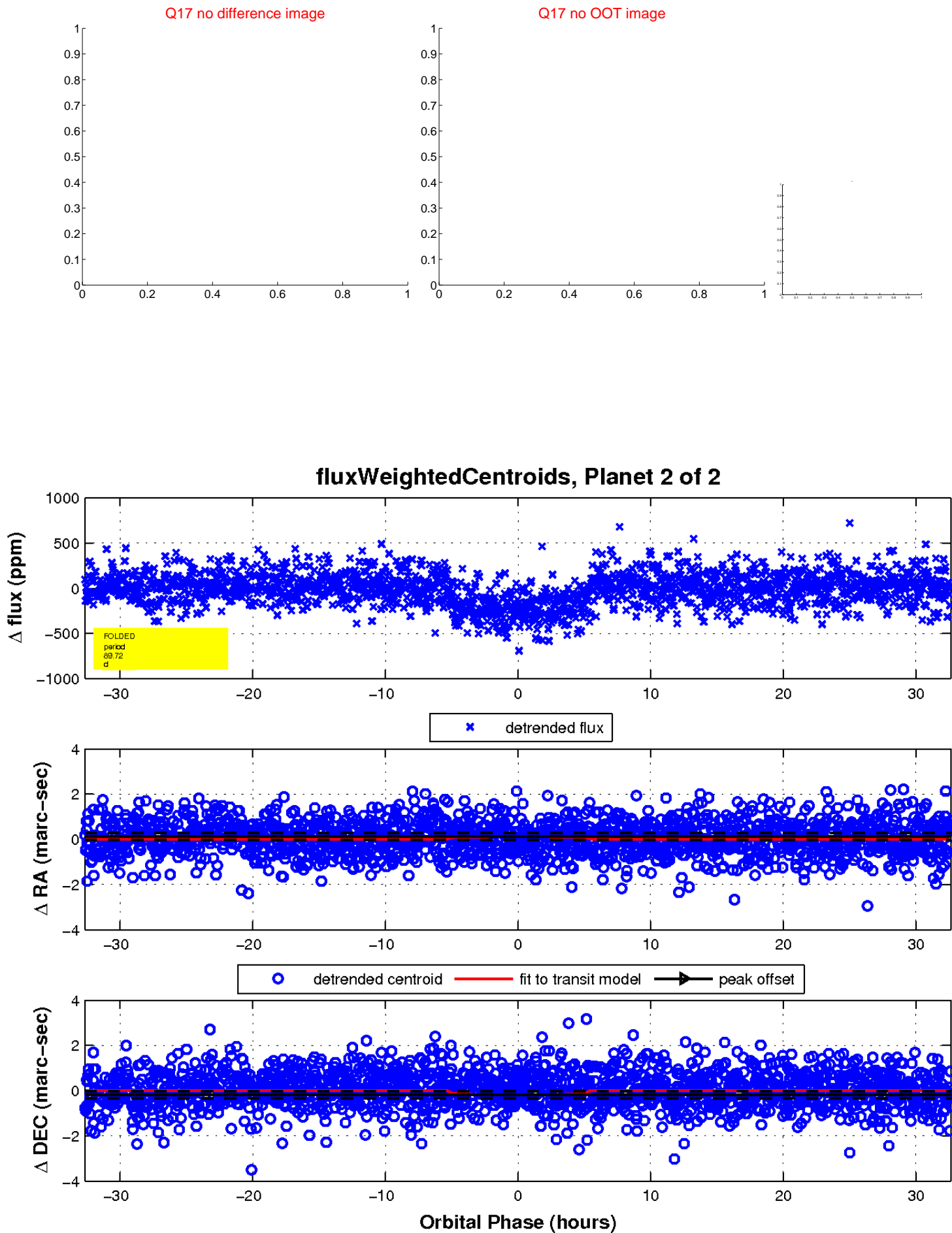
Q16 difference image



Q16 OOT image



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



UKIRT Image

Declination

