

KIC 004735826

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})
004735826-01	OBS	3184.01	7.547426	134.413494	22.3	7.075	9.8	10.7	1.38	5788	0.74	326.86
004735826-02	OBS	3184.03	4.020175	134.847462	18.8	3.698	9.1	10.2	1.38	5788	0.67	757.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004735826-01	OBS	PC	1.00	0	0	0	0	CENT_SATURATED
004735826-02	OBS	PC	1.00	0	0	0	0	CENT_SATURATED

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.

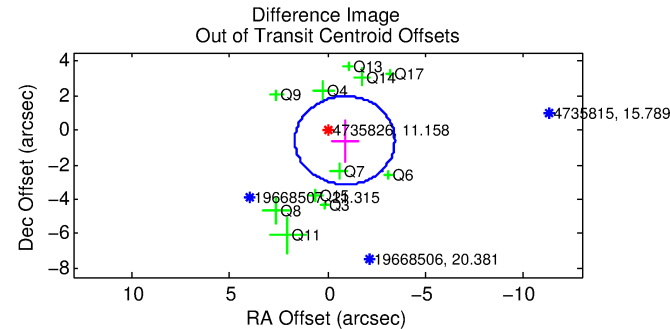
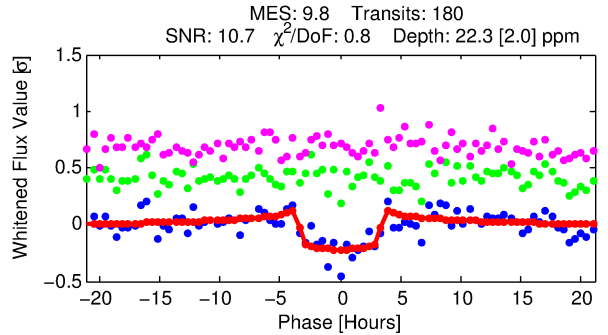
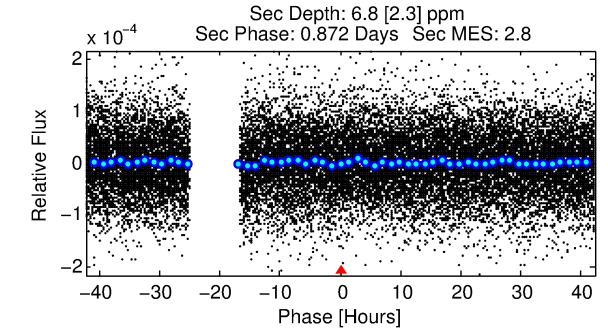
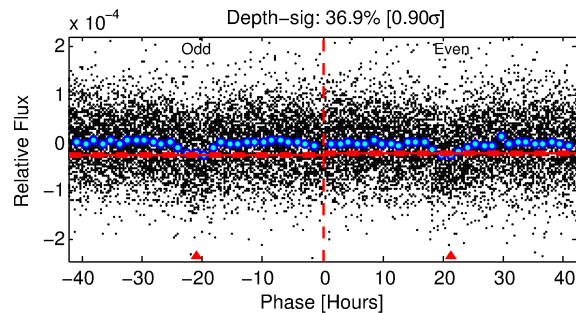
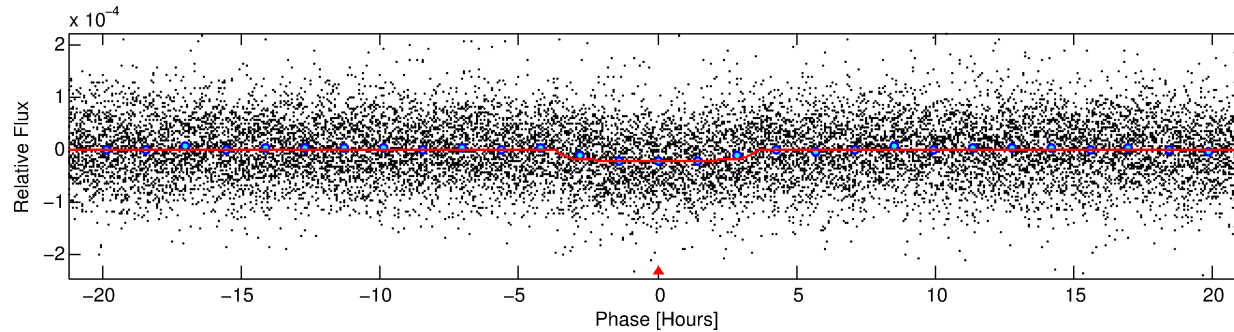
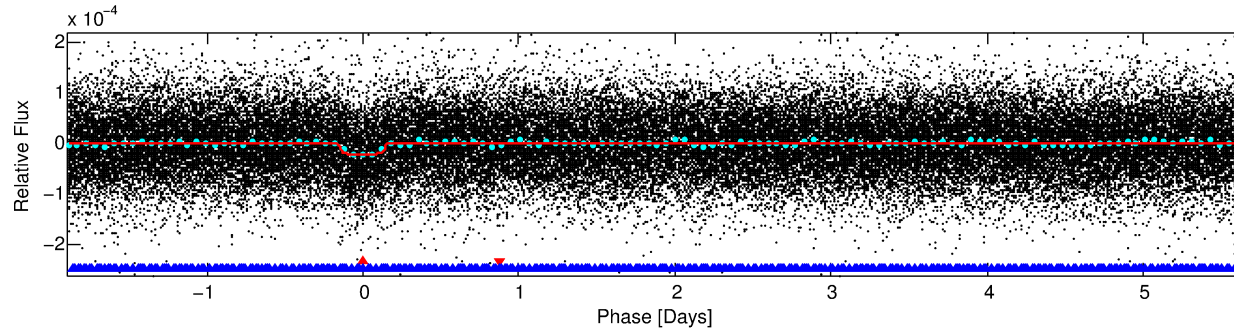
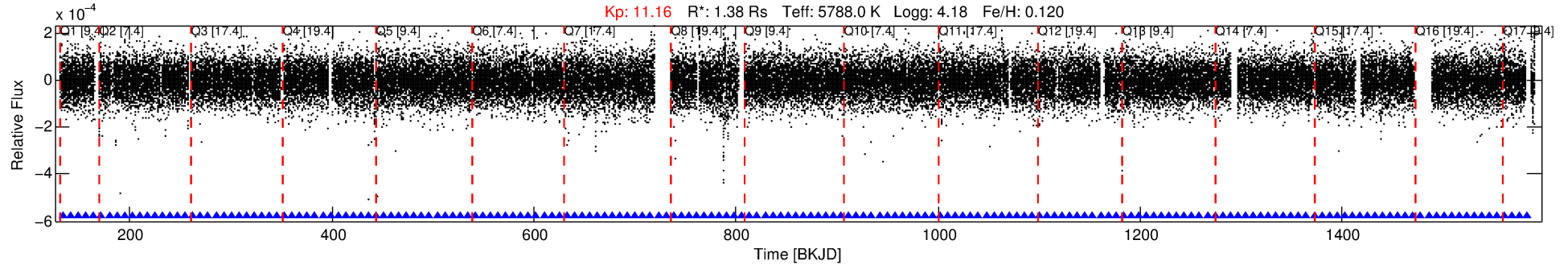
Ephemeris Match Information For 004735826-01

No Significant Match Found

DV One-Page Summary

KIC: 4735826 Candidate: 1 of 2 Period: 7.547 d
KOI: K03184 Corr: No Ephemeris Match

Kp: 11.16 R*: 1.38 Rs Teff: 5788.0 K Logg: 4.18 Fe/H: 0.120



DV Fit Results:

Period = 7.54743 [0.00007] d
Epoch = 134.4135 [0.0066] BKJD
Rp/R* = 0.0049 [0.0011]
a/R* = 4.58 [4.56]
b = 0.84 [0.37]
Seff = 326.86 [100.71]
Teq = 1084 [84] K
Rp = 0.74 [0.22] Re
a = 0.0763 [0.0140] AU
Ag = 40.28 [25.77] [1.52σ]
Teff = 4223 [604] K [5.15σ]

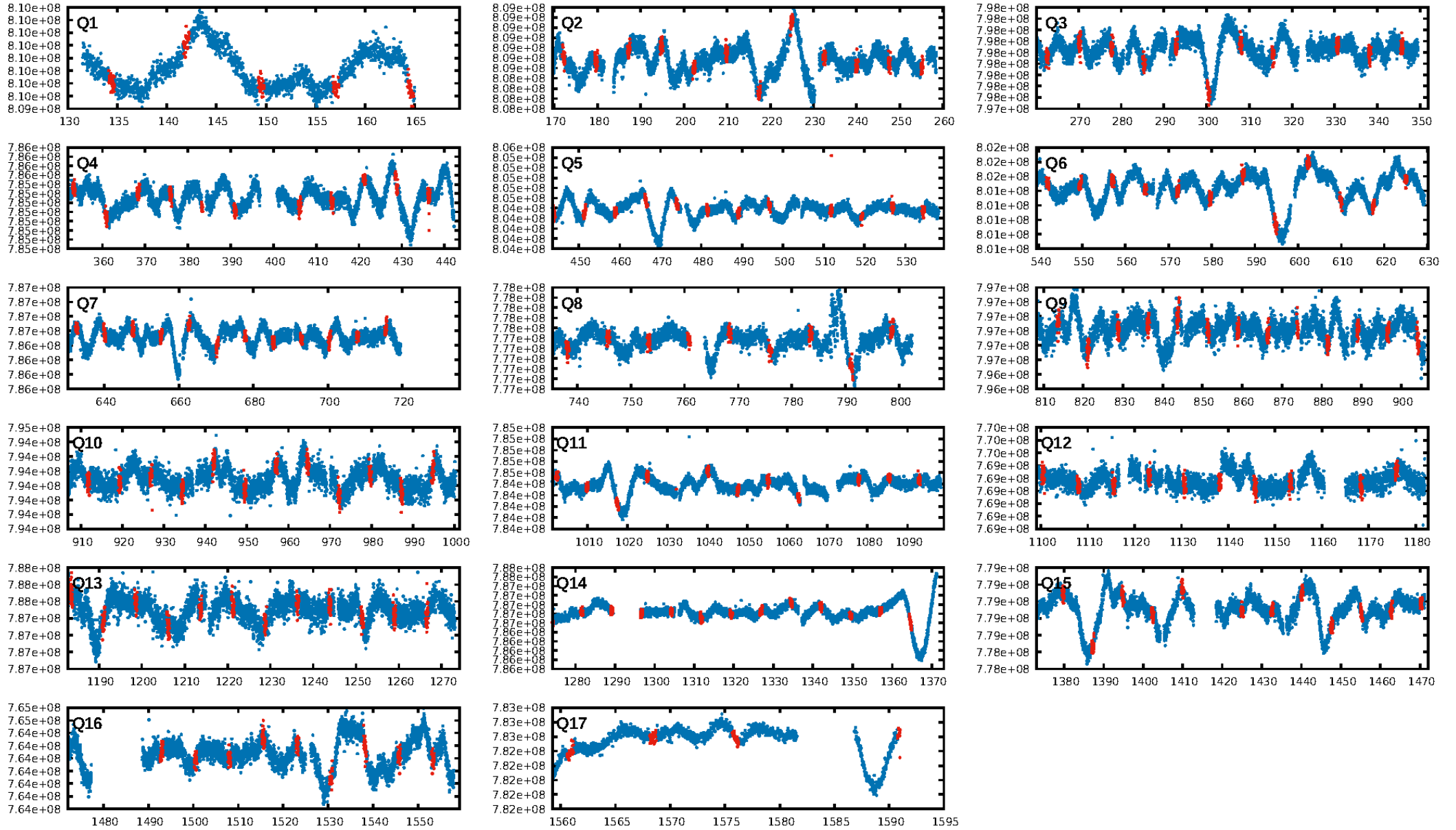
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [10.60σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.83e-20
RollingBand-fgt: 1.00 [171/171]
GhostDiagnostic-chr: -13.67
Centroid-sig: 33.1%
Centroid-so: 0.553 arcsec [0.56σ]
OotOffset-rm: 1.075 arcsec [1.26σ]
KicOffset-rm: 1.328 arcsec [1.38σ]
OotOffset-st: 2/4/2/3 [11]
KicOffset-st: 2/4/2/3 [11]
DiffImageQuality-fgm: 0.45 [5/11]
DiffImageOverlap-fno: 1.00 [17/17]

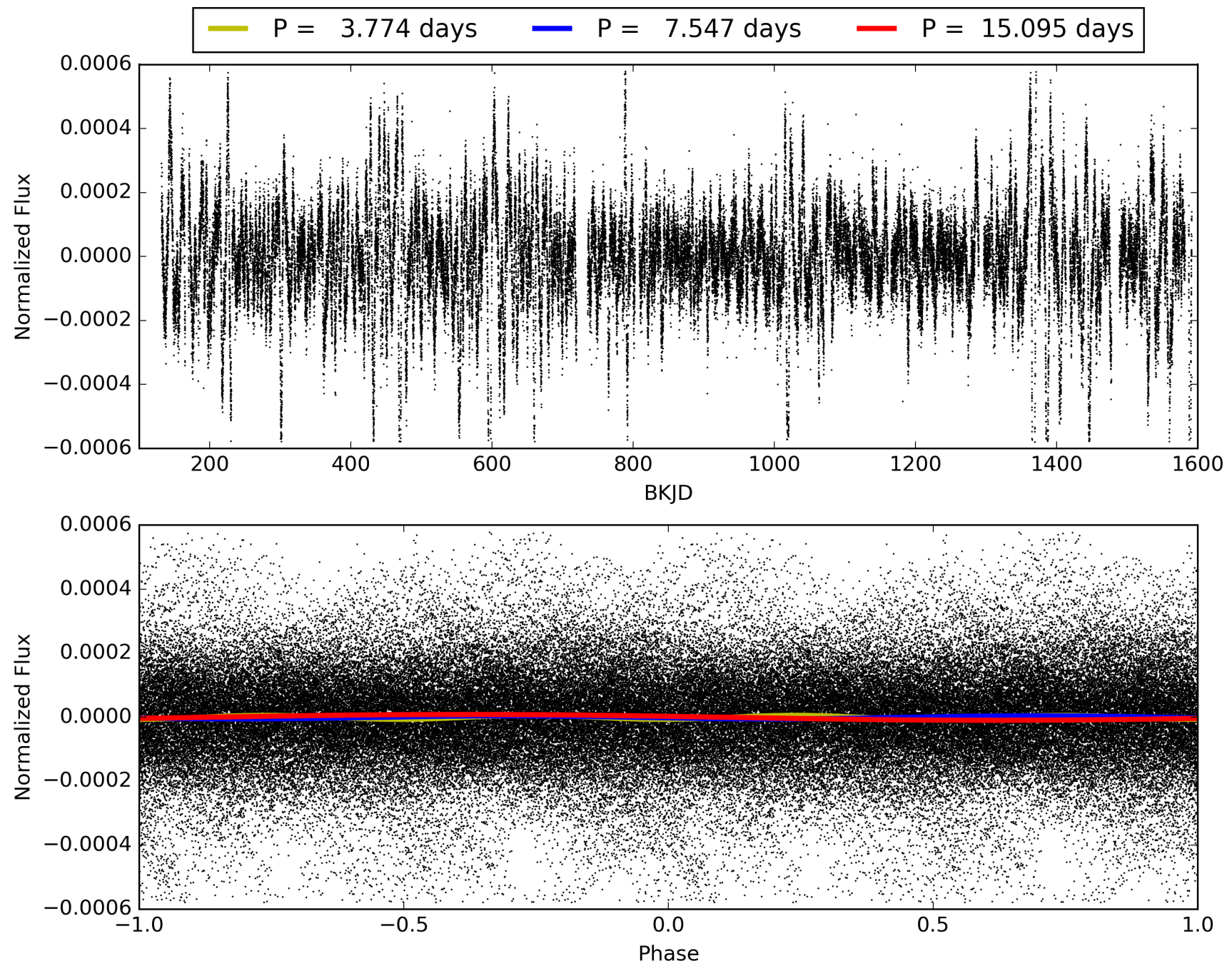
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:26:43 Z

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

TCE 004735826-01, PDC Light Curves

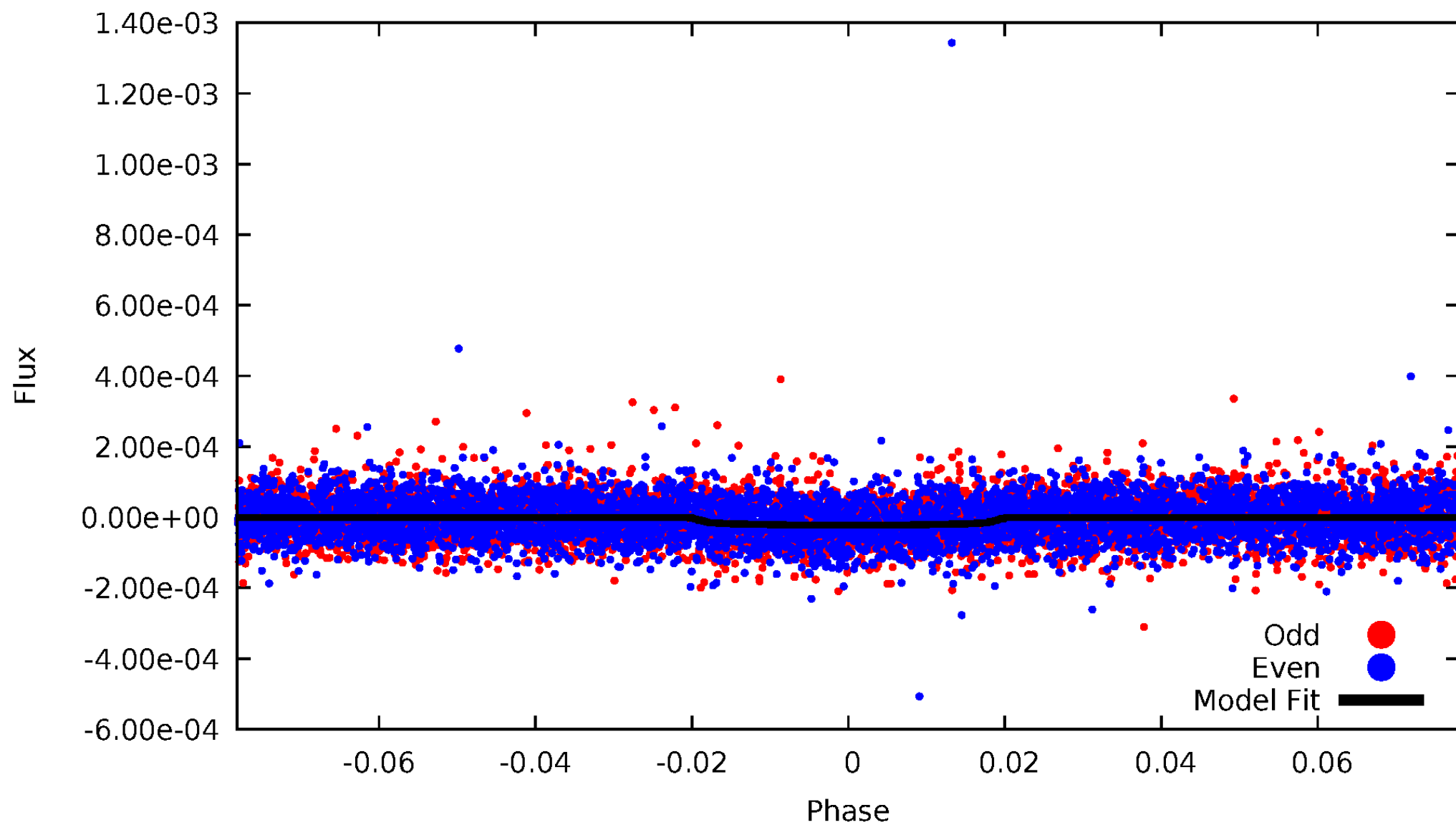


TCE 004735826-01



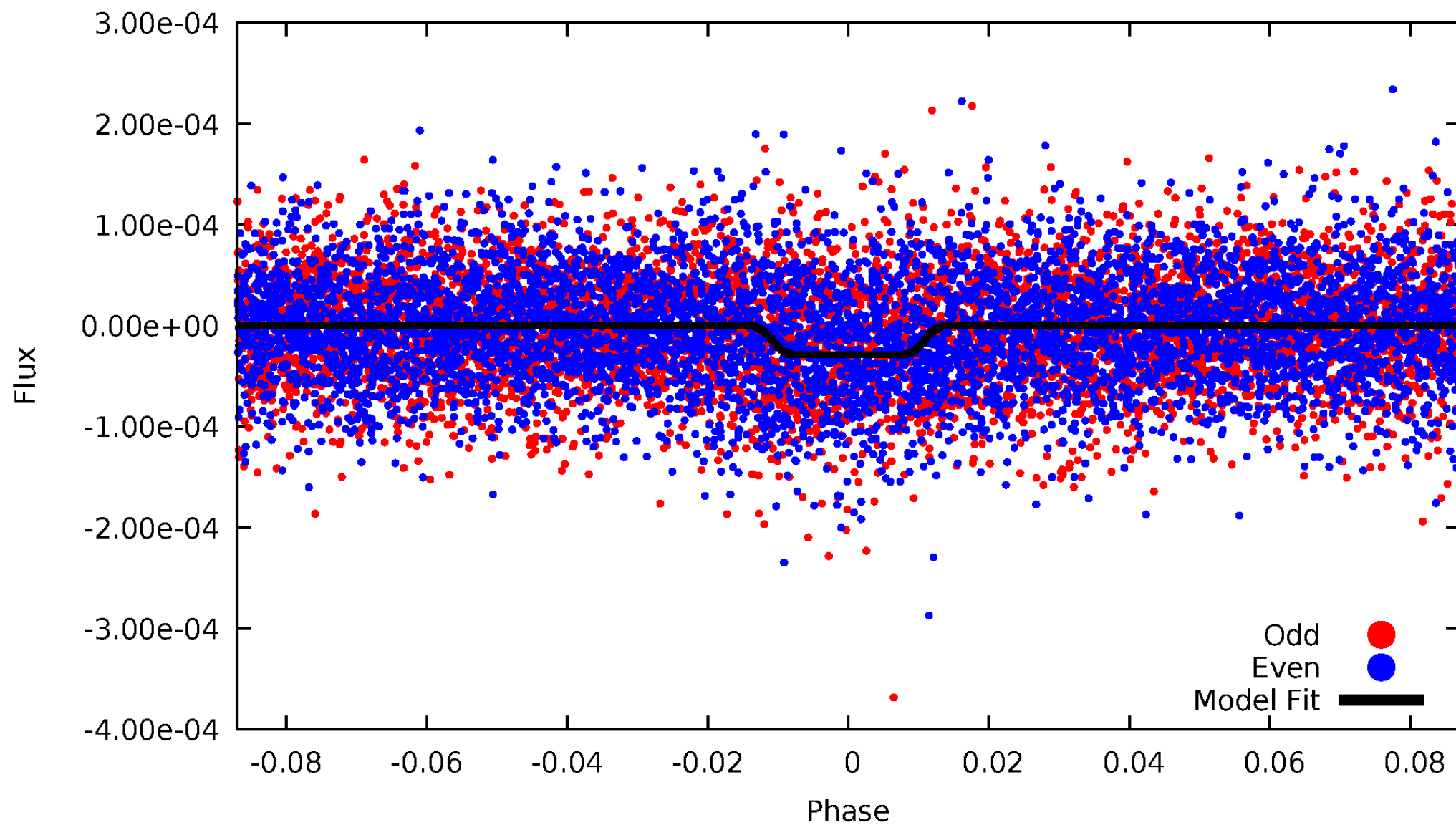
DV Odd/Even

TCE 004735826-01

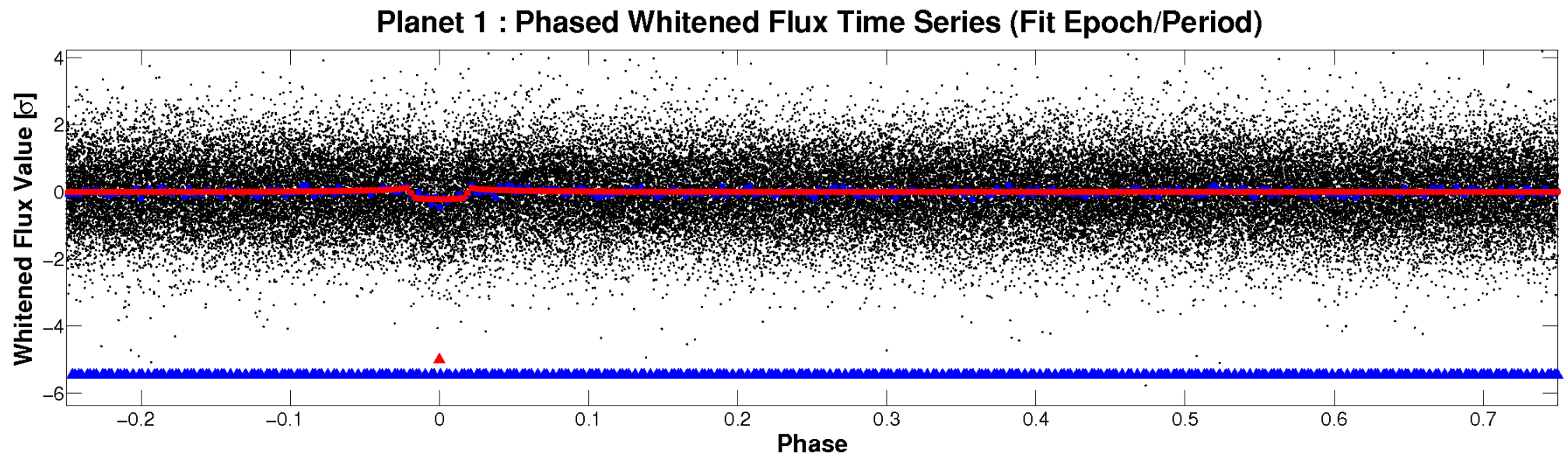
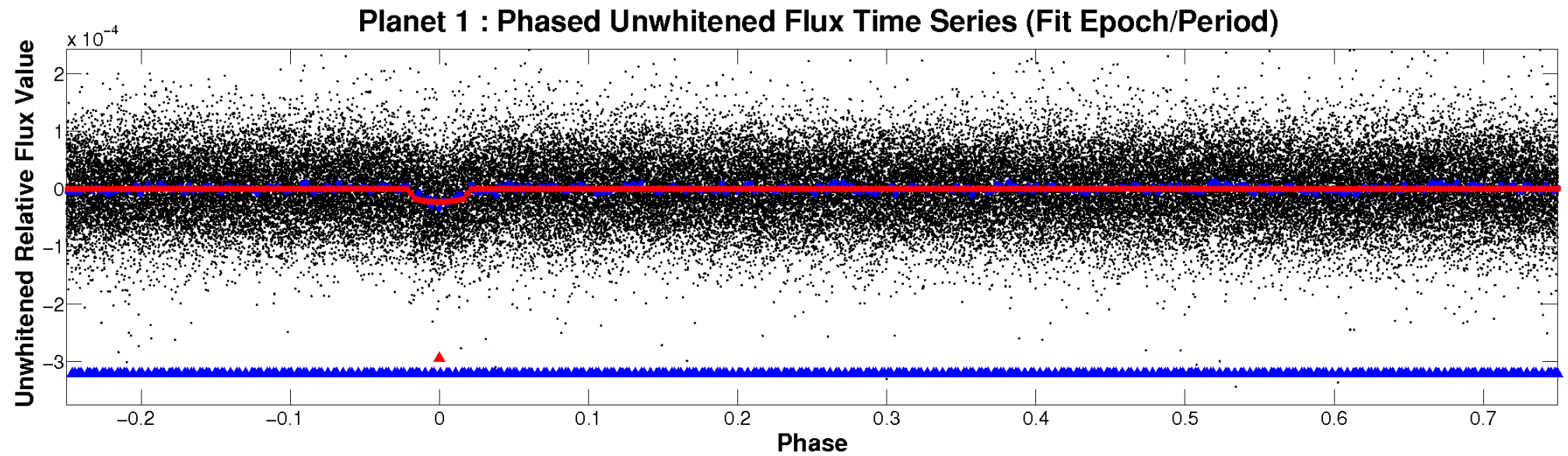


ALT Odd/Even

TCE 004735826-01

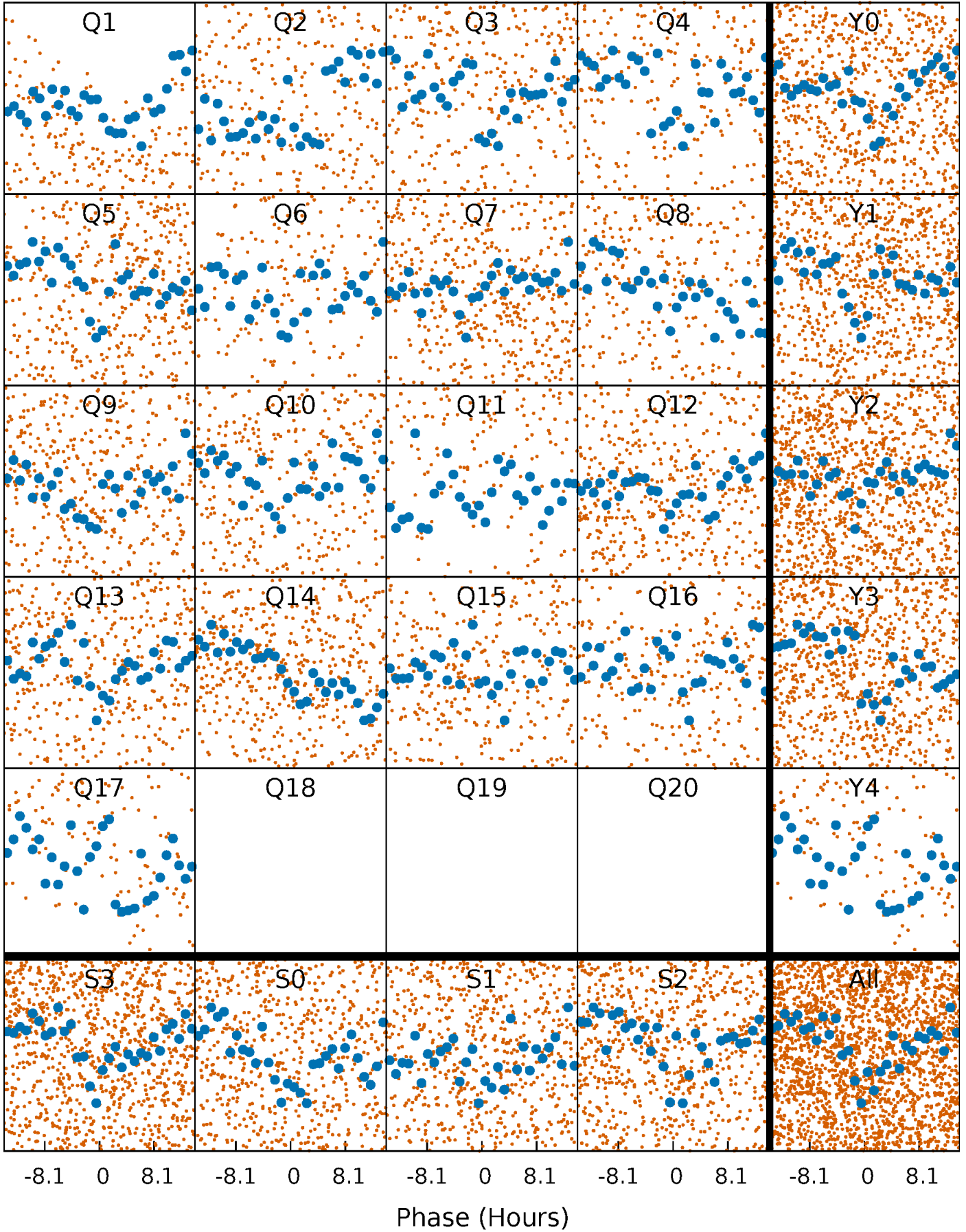


Non-Whitened Vs. Whitened Light Curve



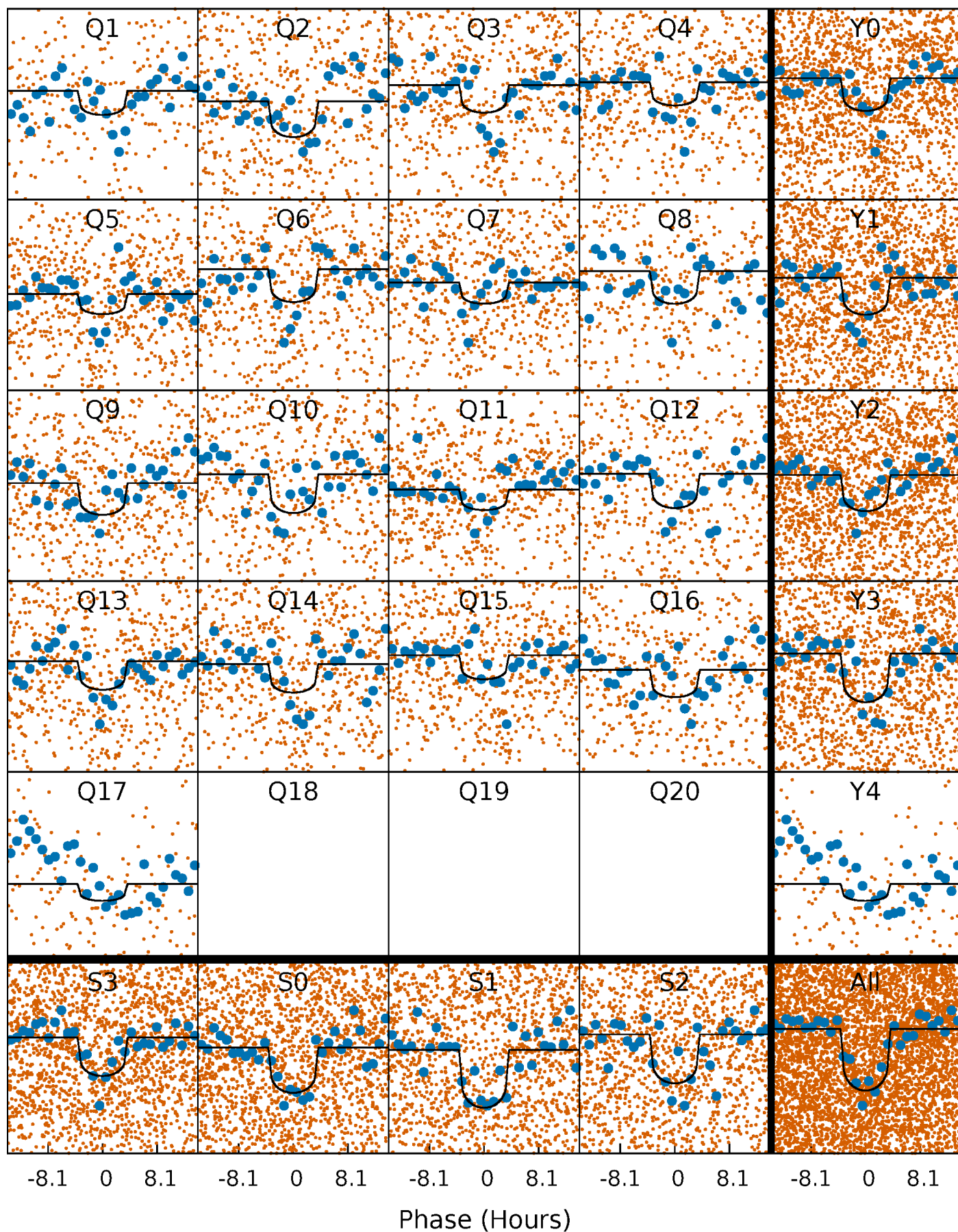
PDC Quarter-Phased Transit Curves

TCE 004735826-01 P= 7.547426 Days $T_0=134.413494$ (BKJD)



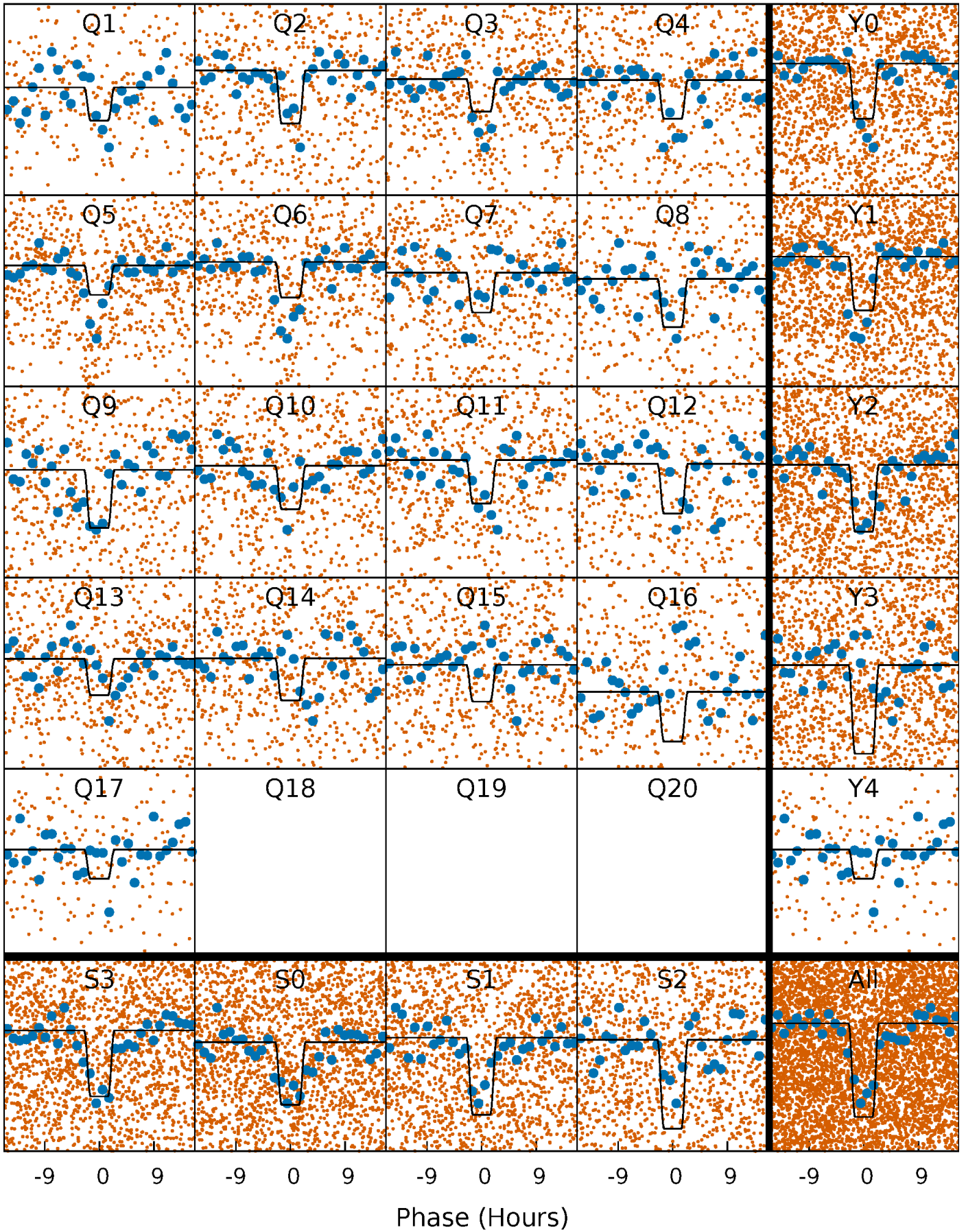
DV Quarter-Phased Transit Curves

TCE 004735826-01 P= 7.547426 Days $T_0=134.413494$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

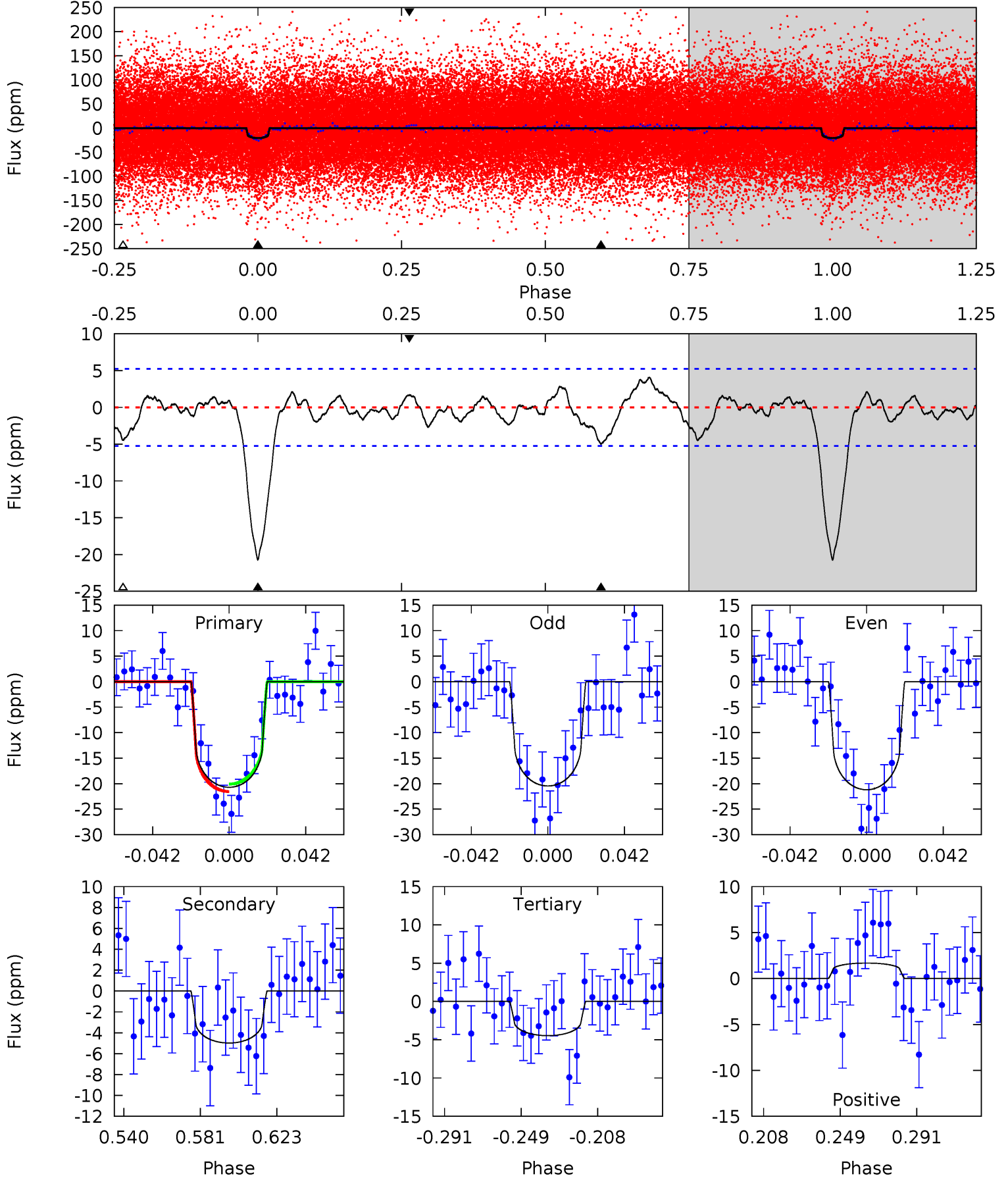
TCE 004735826-01 P= 7.546400 Days $T_0=134.477285$ (BKJD)



DV Model-Shift Uniqueness Test

004735826-01, P = 7.547426 Days, E = 126.866068 Days

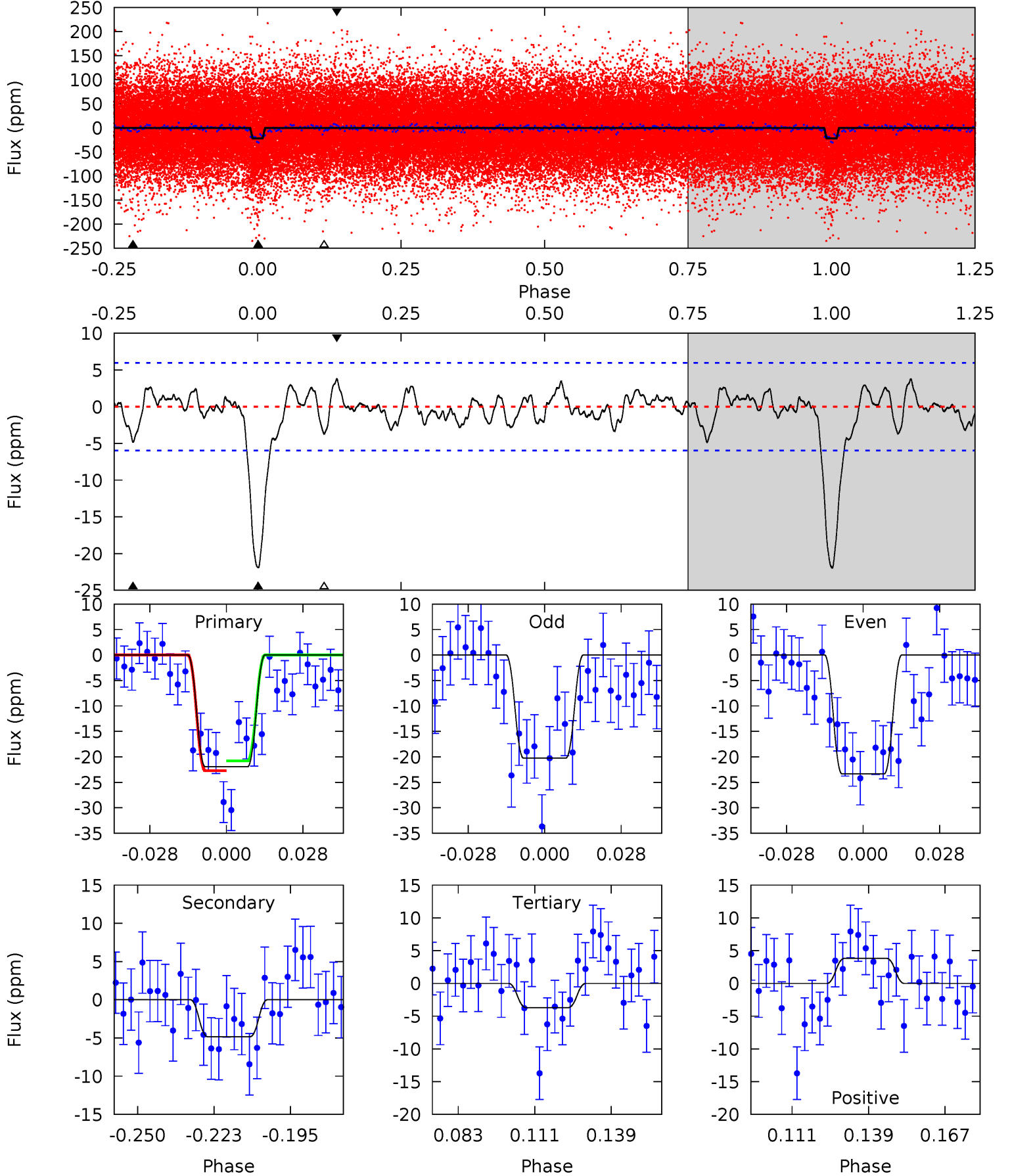
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.7	4.51	4.04	1.52	4.75	2.04	1.36	14.7	17.2	0.46	2.99	0.33	0.95	0.16	0.66



Alt Model-Shift Uniqueness Test

004735826-01, P = 7.546400 Days, E = 126.930885 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.7	3.92	2.99	3.09	4.83	2.20	1.24	14.7	14.6	0.93	0.83	1.24	1.07	0.15	0.79



Stellar Parameters For KIC 004735826

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5788^{+115}_{-115}	$4.178^{+0.176}_{-0.095}$	$0.120^{+0.150}_{-0.150}$	$1.376^{+0.232}_{-0.258}$	$1.039^{+0.106}_{-0.073}$	$0.562^{+0.462}_{-0.165}$
	+2%/-2%	+4%/-2%	+125%/-125%	+17%/-19%	+10%/-7%	+82%/-29%
Source	SPE59	SPE59	SPE59	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 004735826-01 / KOI 3184.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-5 ± 1	$0.72^{+0.18}_{-0.18}$	1500^{+70}_{-83}	4145^{+456}_{-329}	31^{+23}_{-13}
Alt.	-5 ± 1	$0.78^{+0.20}_{-0.18}$	1501^{+68}_{-80}	3995^{+440}_{-337}	25^{+18}_{-10}

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

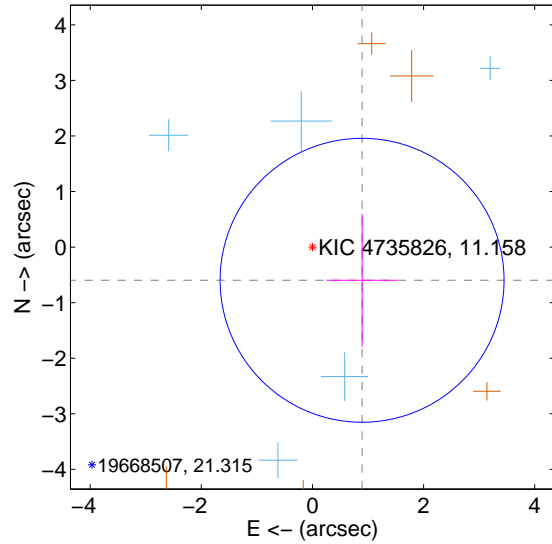
Supplemental centroid analysis for 004735826-01. **Kepler magnitude: 11.16.** Transit SNR 10.65

There are 5 quarters with good PRF difference image offsets

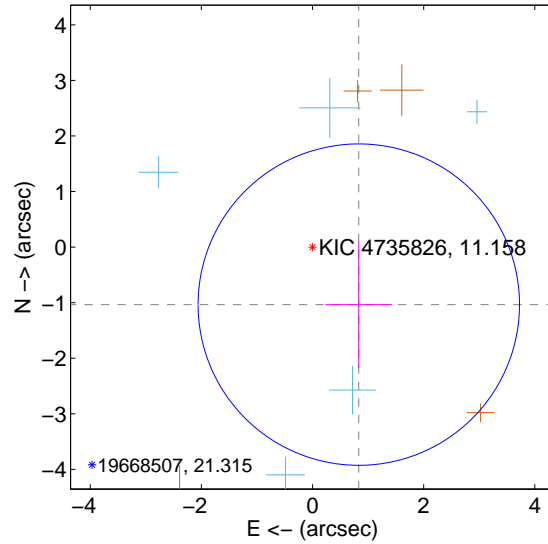
The direct PRF centroid is offset from the target star catalog position by about 0.82 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.075 ± 0.852	1.26	-0.893 ± 0.639	-0.597 ± 1.197
PRF-fit source offset from KIC position	1.328 ± 0.964	1.38	-0.833 ± 0.602	-1.035 ± 1.138
photometric centroid source offset	0.55 ± 0.99	0.56	0.22 ± 0.88	0.51 ± 1.01

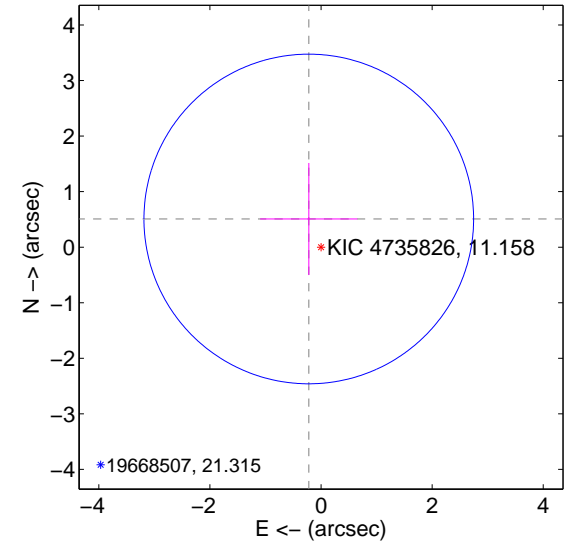
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

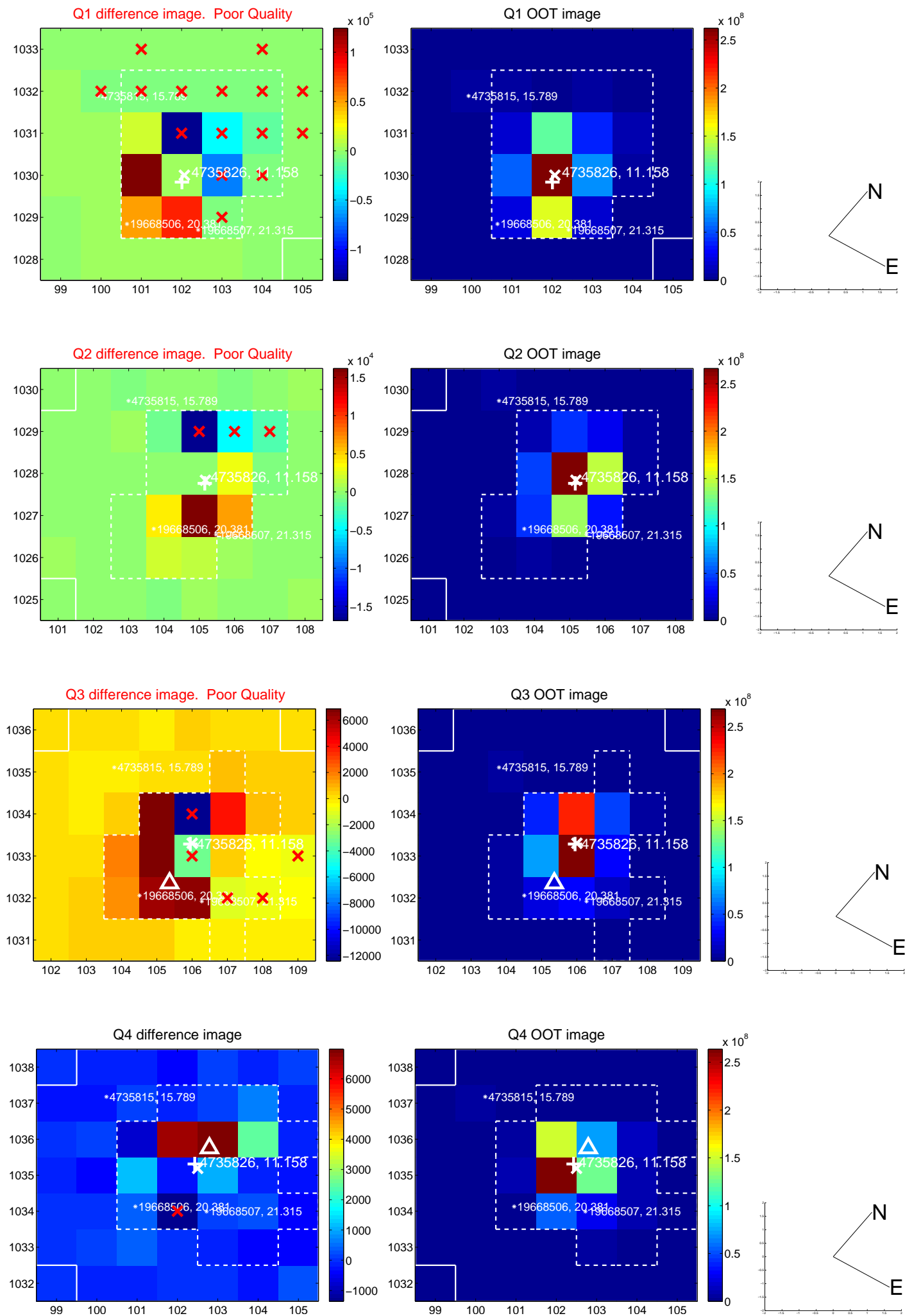


offset from photometric centroids

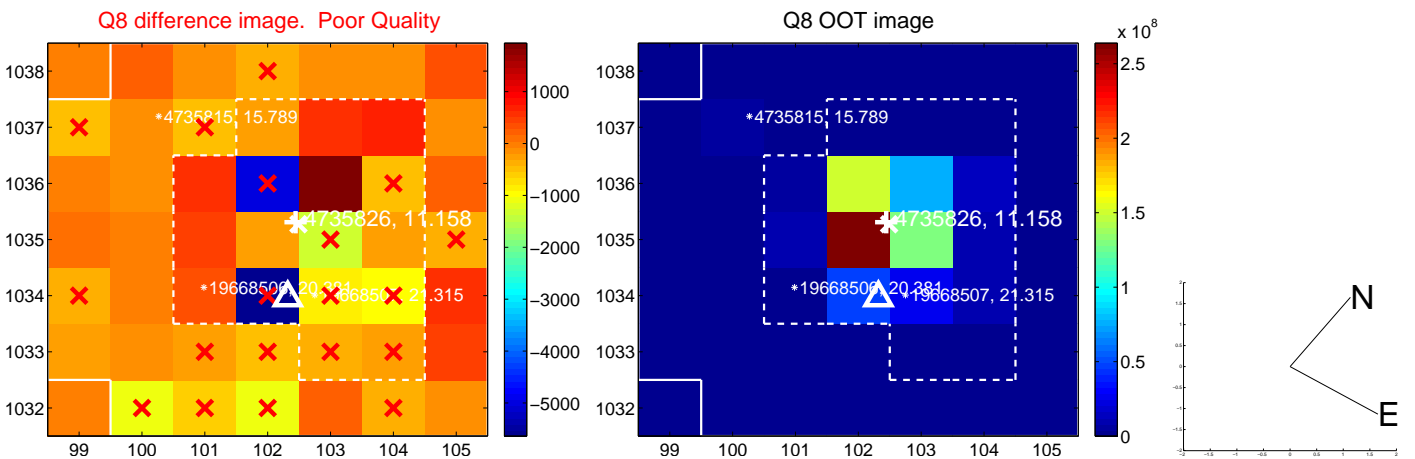
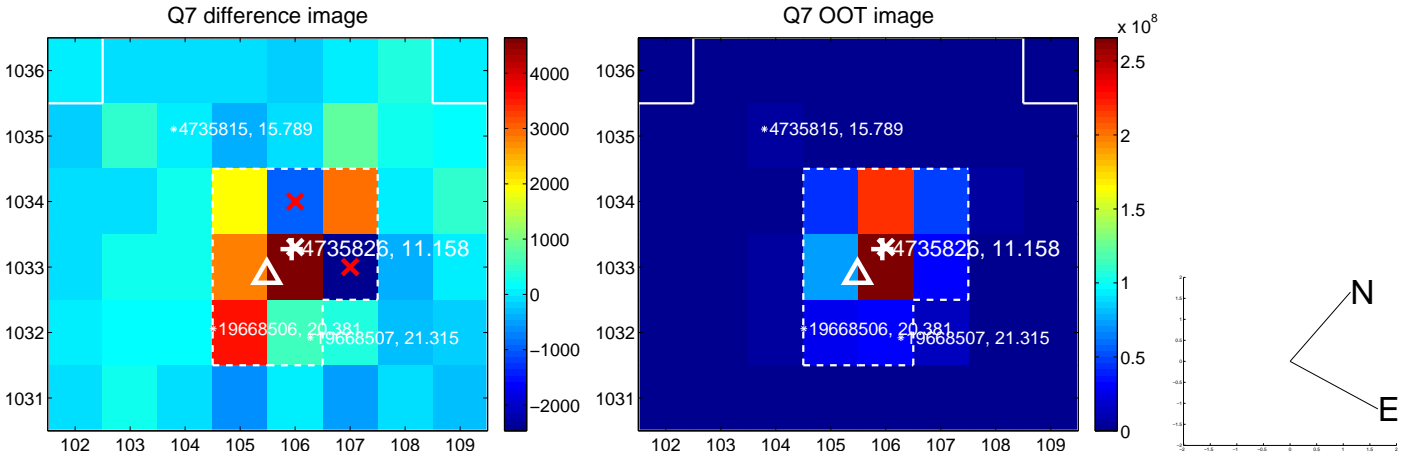
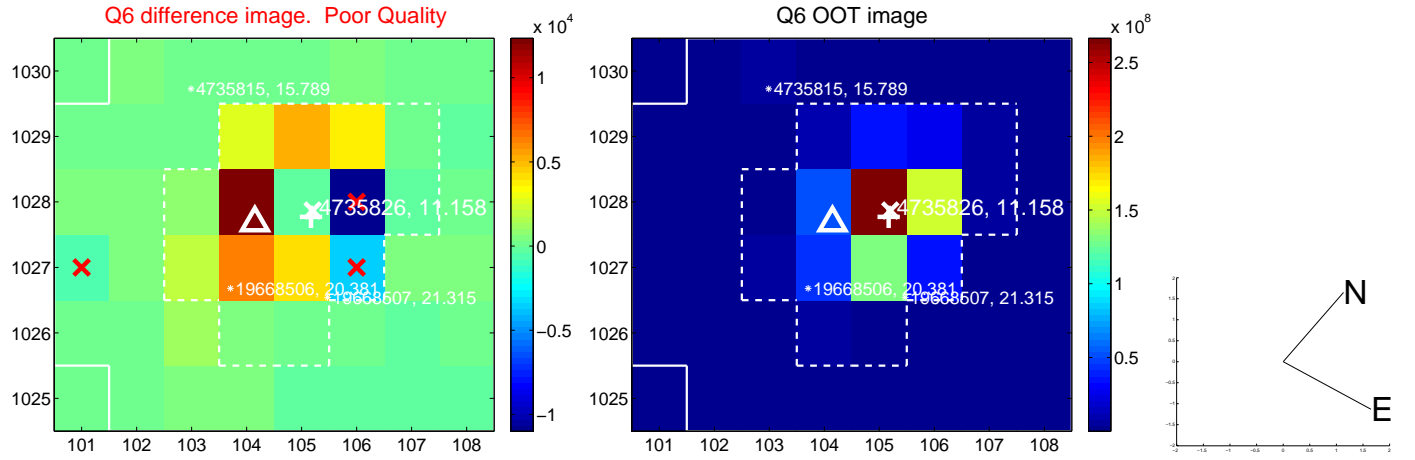
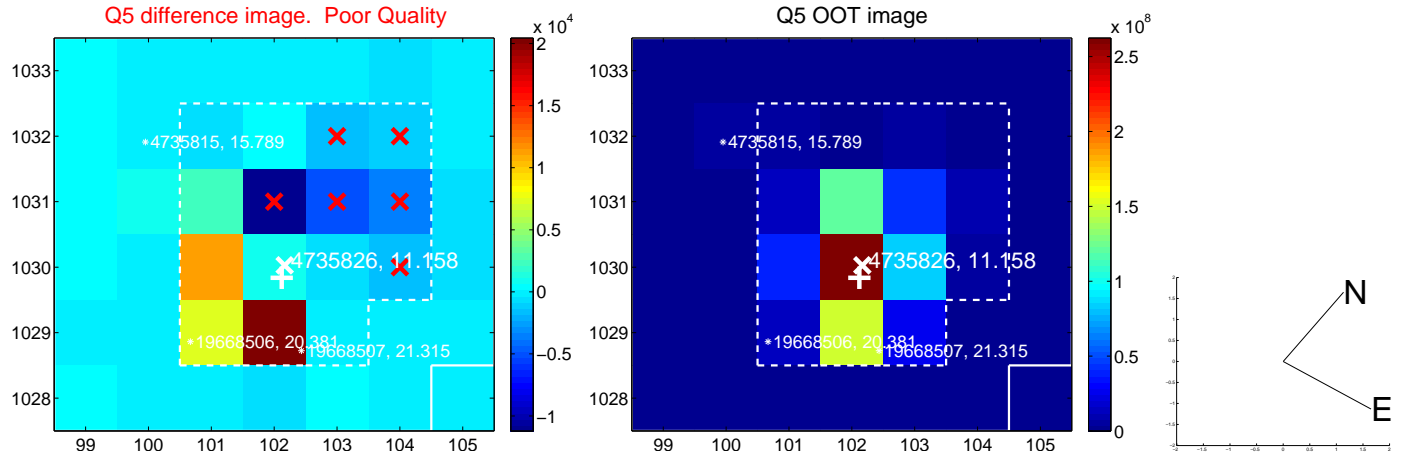


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

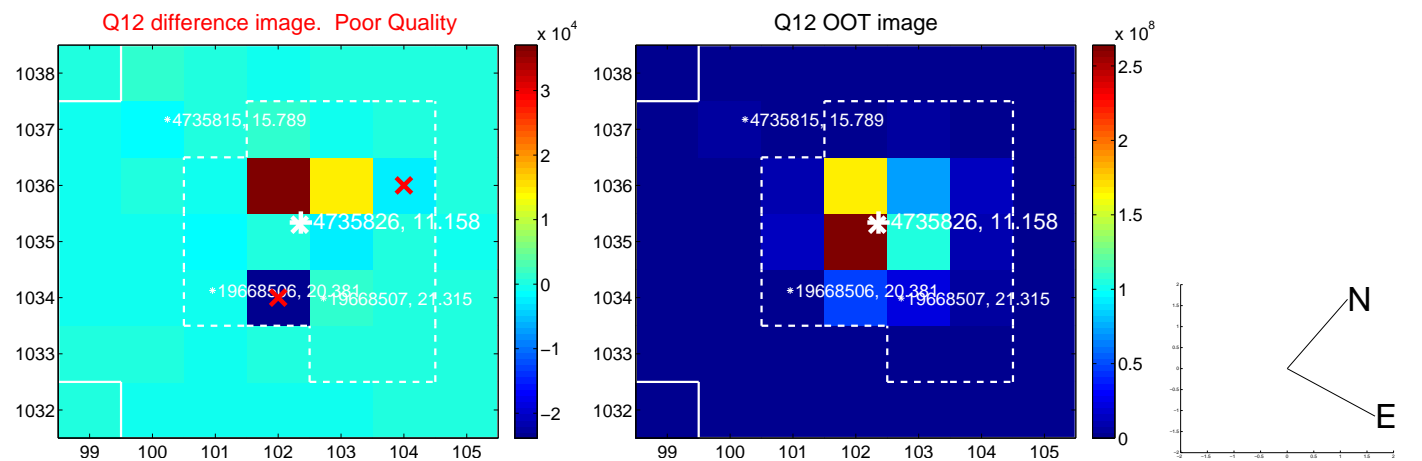
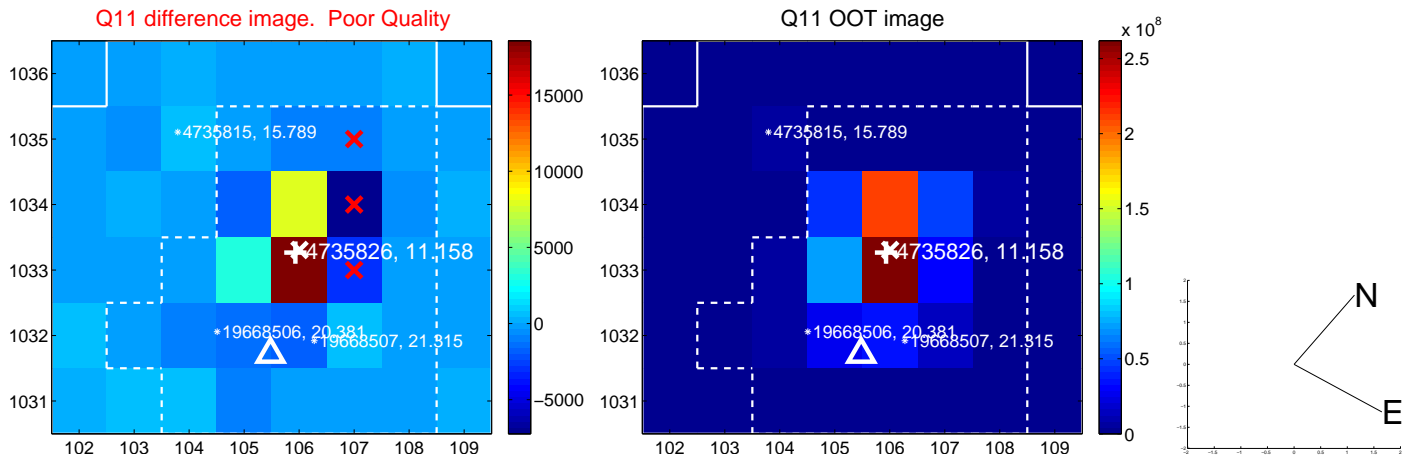
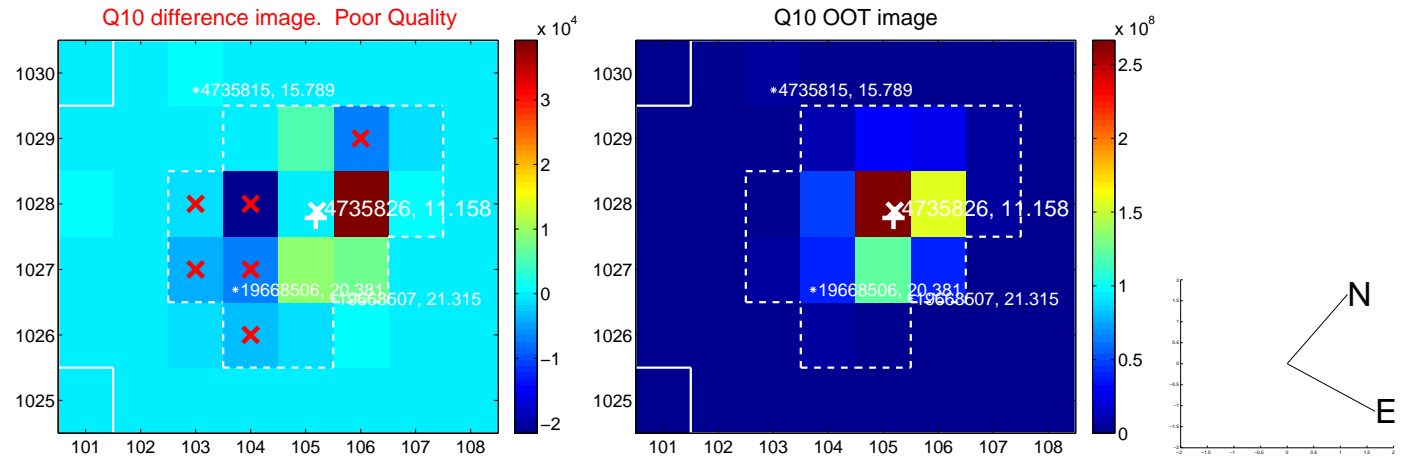
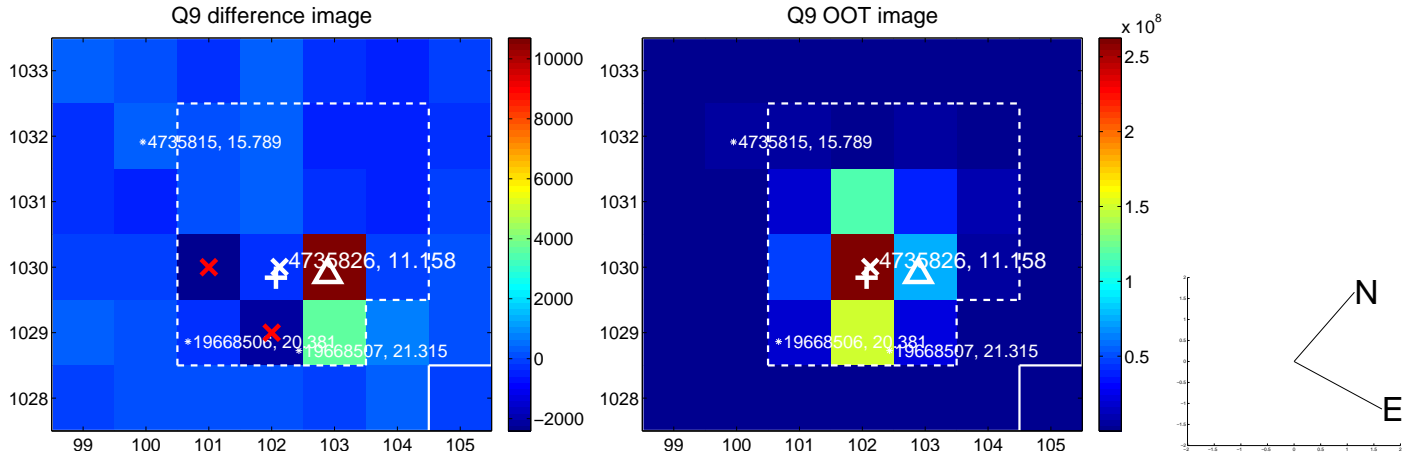
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



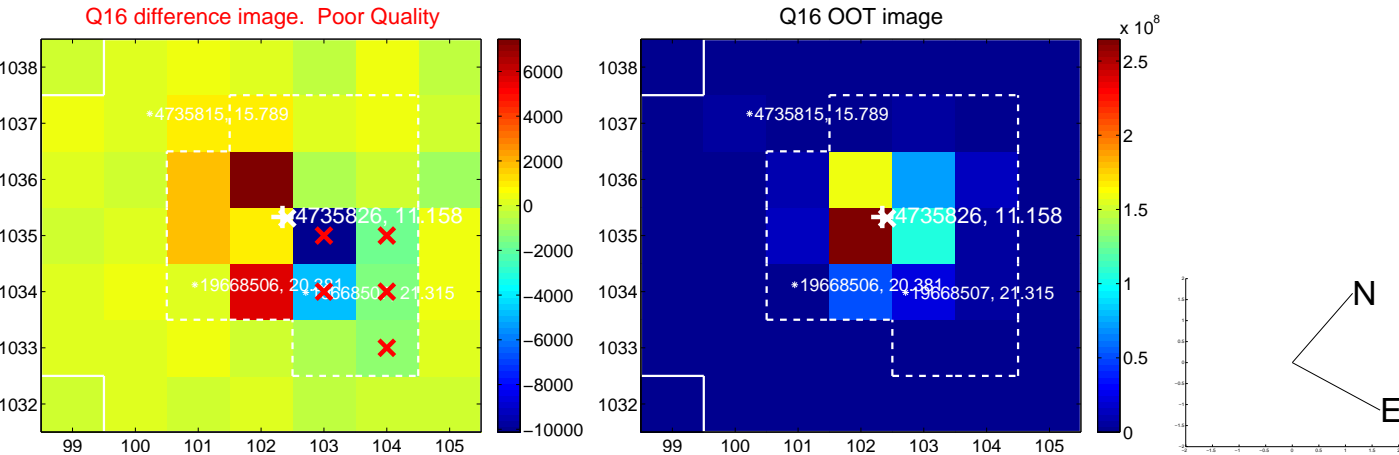
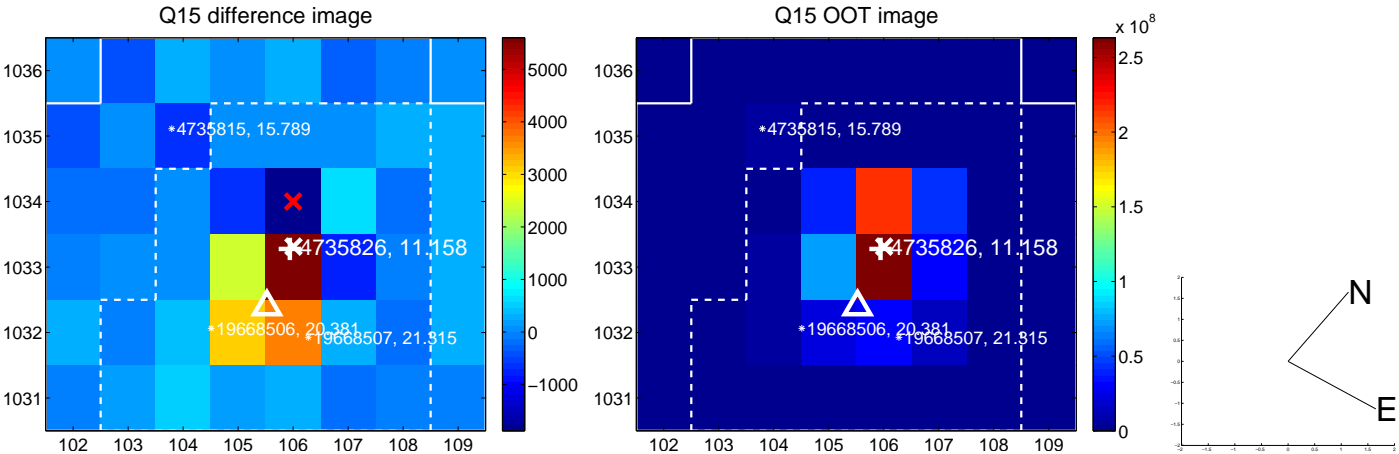
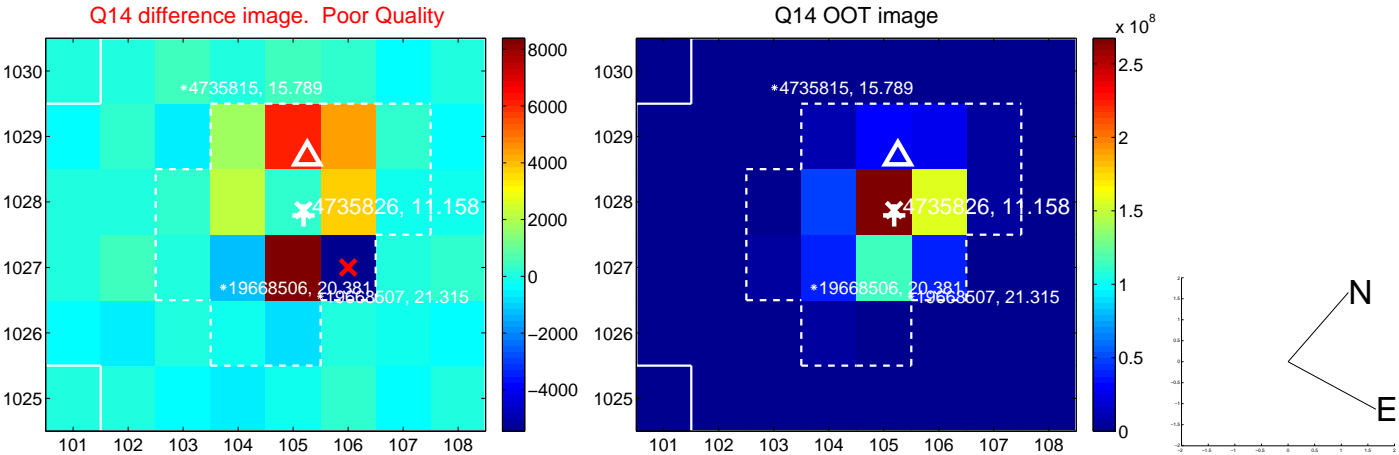
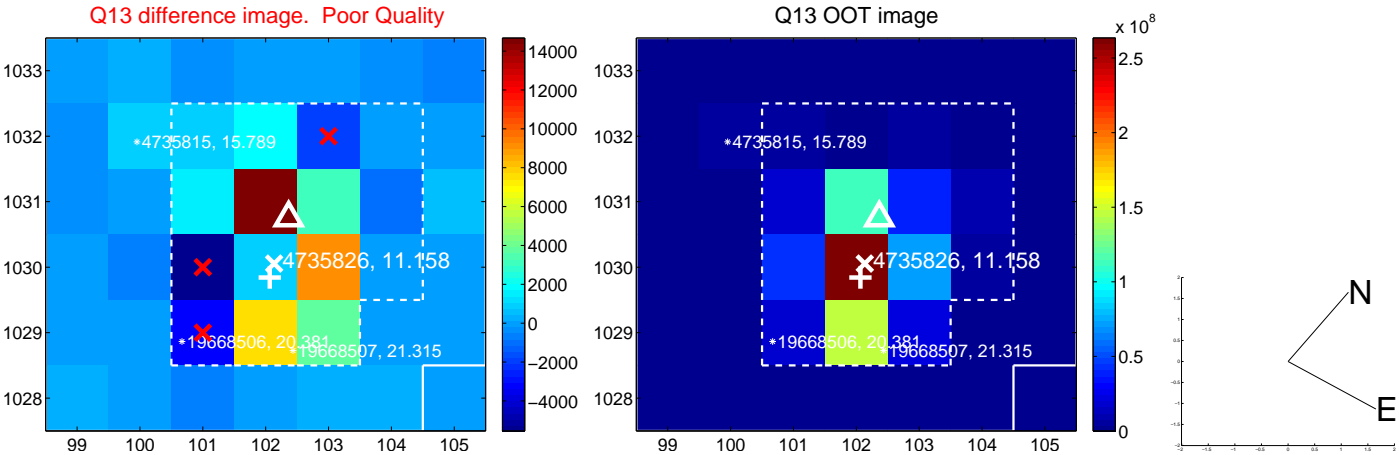
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



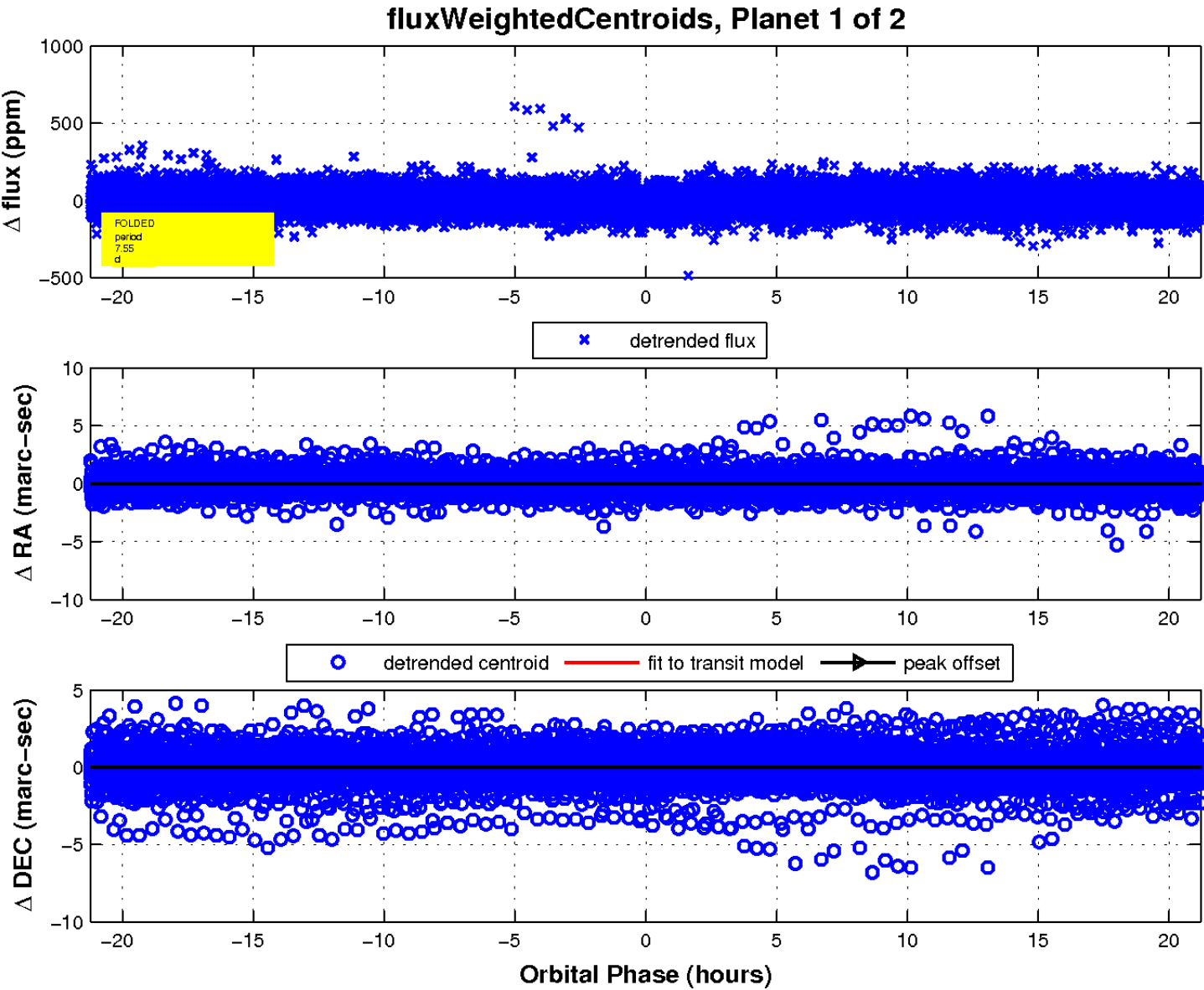
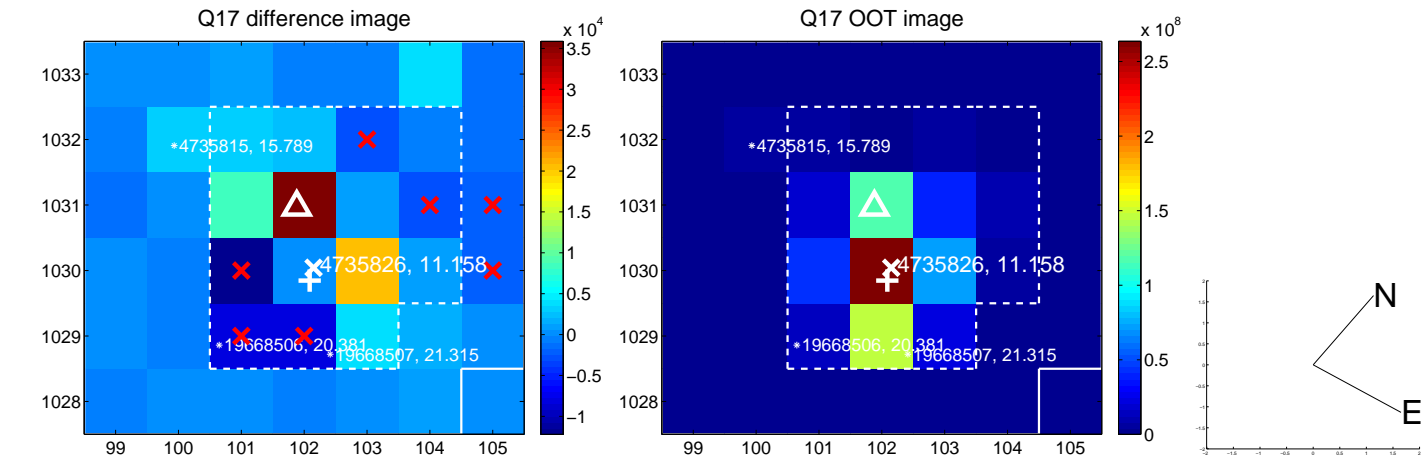
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



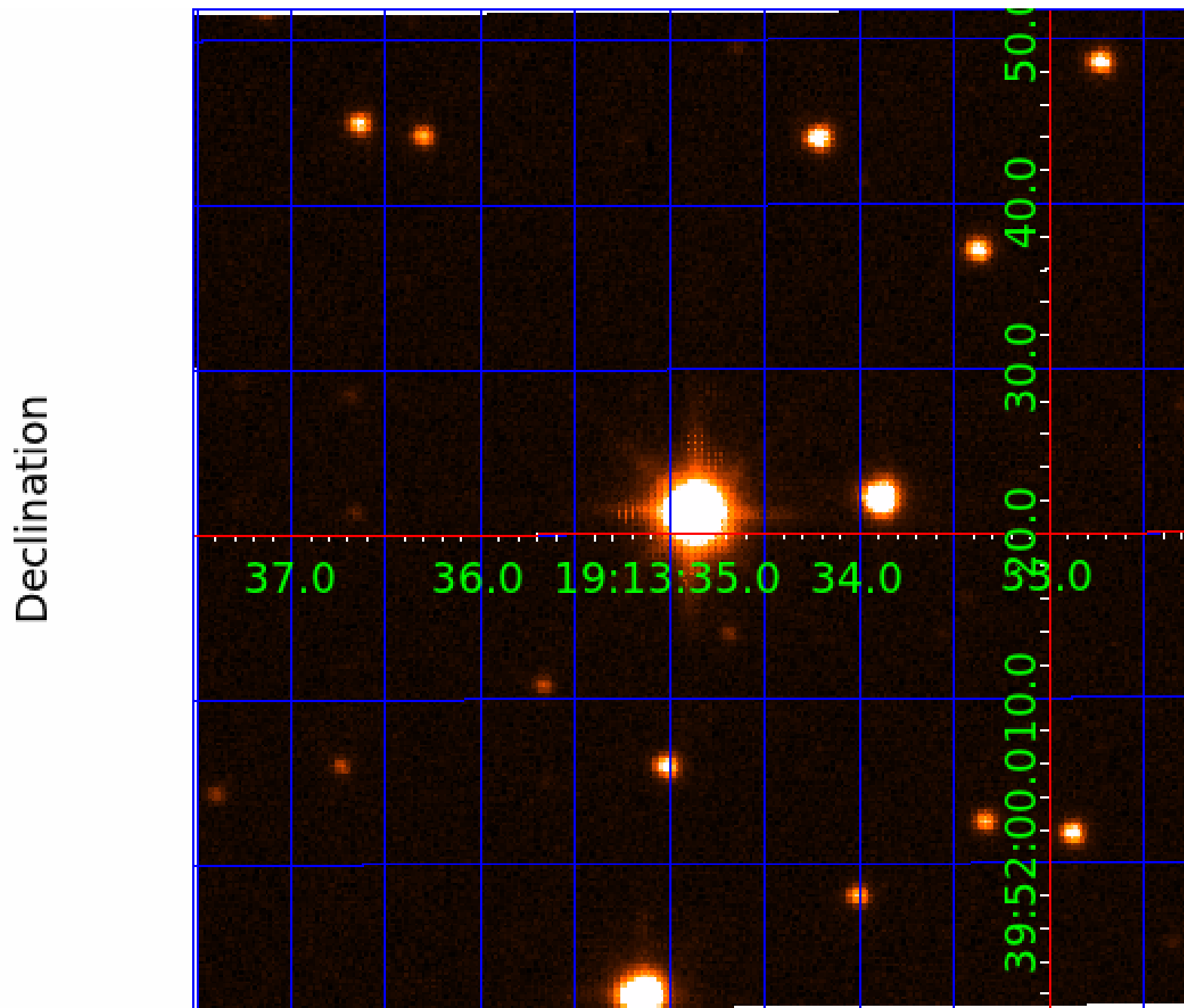
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 004735826

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})
004735826-01	OBS	3184.01	7.547426	134.413494	22.3	7.075	9.8	10.7	1.38	5788	0.74	326.86
004735826-02	OBS	3184.03	4.020175	134.847462	18.8	3.698	9.1	10.2	1.38	5788	0.67	757.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004735826-01	OBS	PC	1.00	0	0	0	0	CENT_SATURATED
004735826-02	OBS	PC	1.00	0	0	0	0	CENT_SATURATED

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 004735826-02

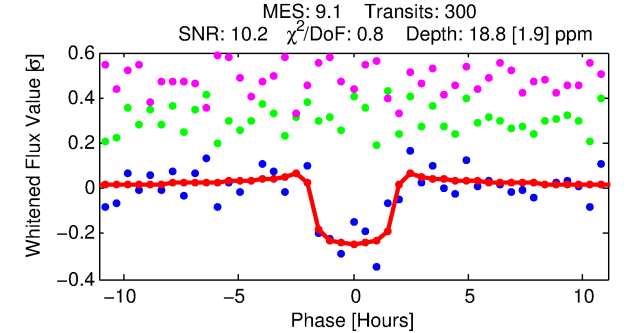
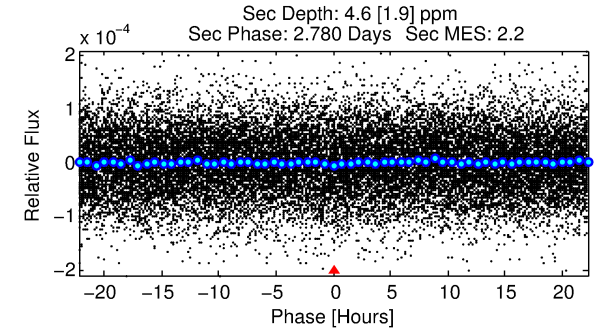
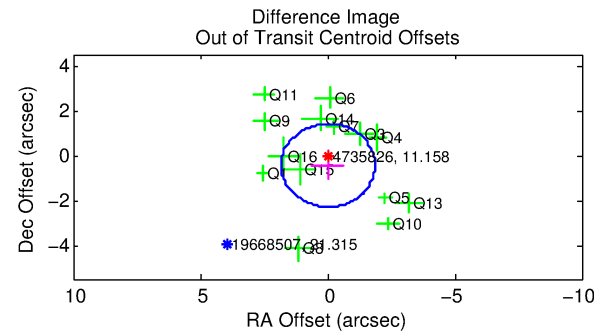
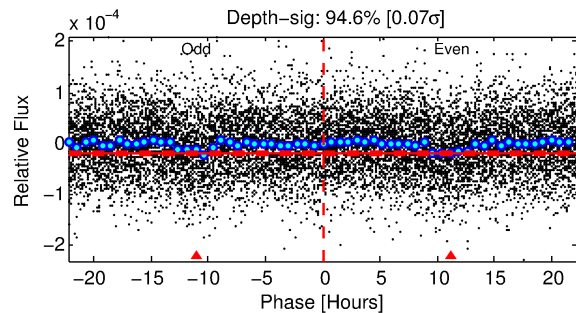
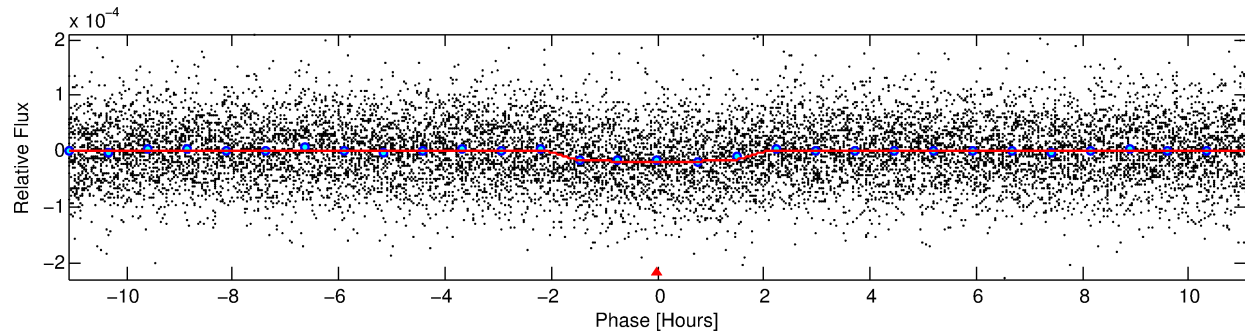
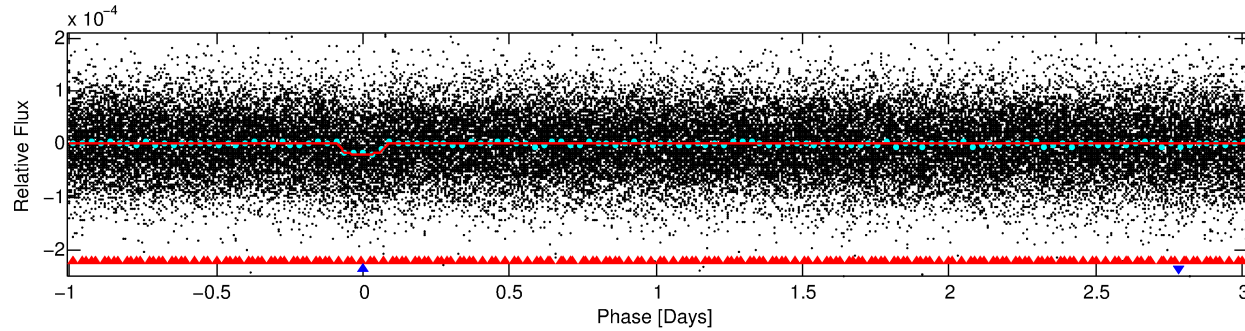
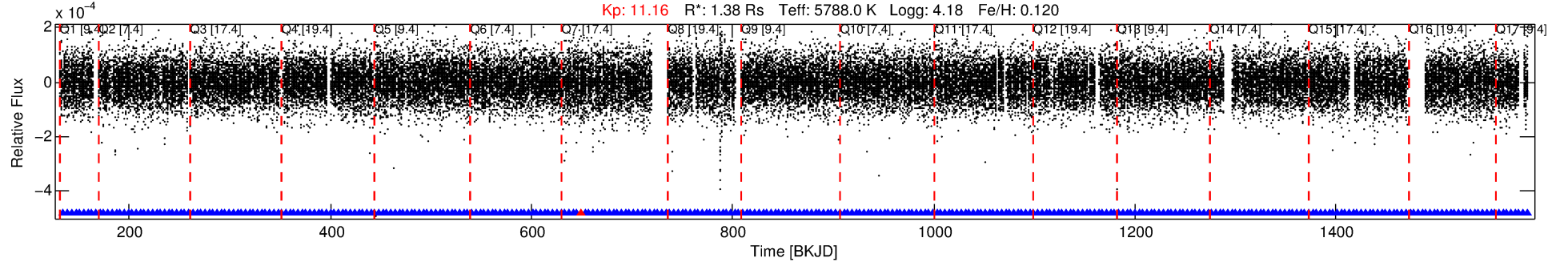
No Significant Match Found

DV One-Page Summary

KIC: 4735826 Candidate: 2 of 2 Period: 4.020 d

KOI: K03184.03 Corr: 0.954

Kp: 11.16 R*: 1.38 Rs Teff: 5788.0 K Logg: 4.18 Fe/H: 0.120



DV Fit Results:

Period = 4.02017 [0.00003] d
Epoch = 134.8475 [0.0044] BKJD
Rp/R* = 0.0045 [0.0012]
a/R* = 4.81 [5.77]
b = 0.83 [0.49]
Seff = 757.00 [233.24]
Teff = 1338 [103] K
Rp = 0.67 [0.23] Re
a = 0.0502 [0.0092] AU
Ag = 14.17 [10.75] [1.22σ]
Teffp = 4012 [705] K [3.76σ]

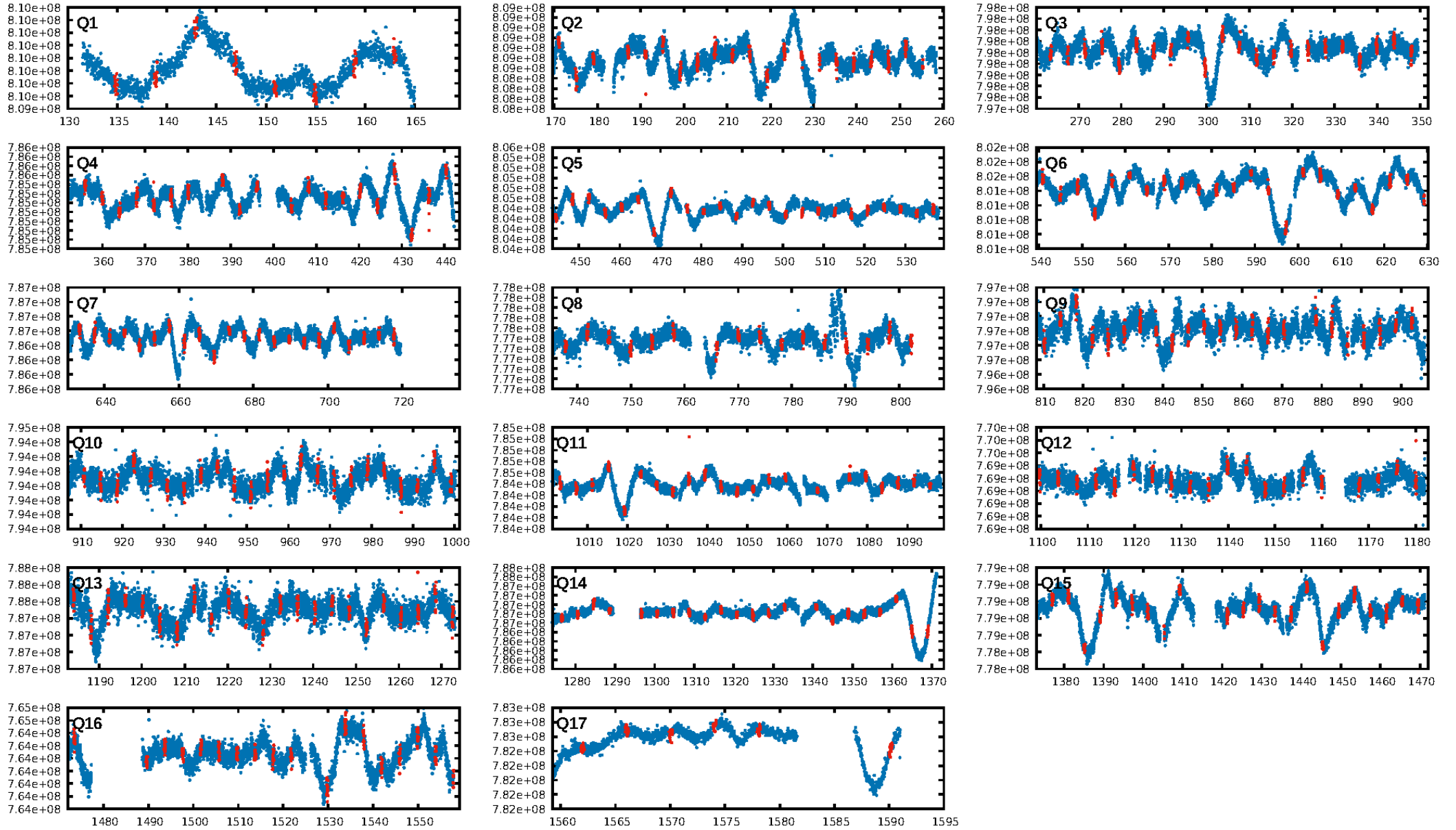
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [10.60σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.81e-17
RollingBand-fgt: 1.00 [285/286]
GhostDiagnostic-chr: 1.517
Centroid-sig: 0.0%
Centroid-so: 2.737 arcsec [2.76σ]
OotOffset-rm: 0.443 arcsec [0.72σ]
KicOffset-rm: 0.921 arcsec [1.41σ]
OotOffset-st: 3/4/3/4 [14]
KicOffset-st: 3/4/3/4 [14]
DiffImageQuality-fgm: 0.36 [5/14]
DiffImageOverlap-fno: 1.00 [17/17]

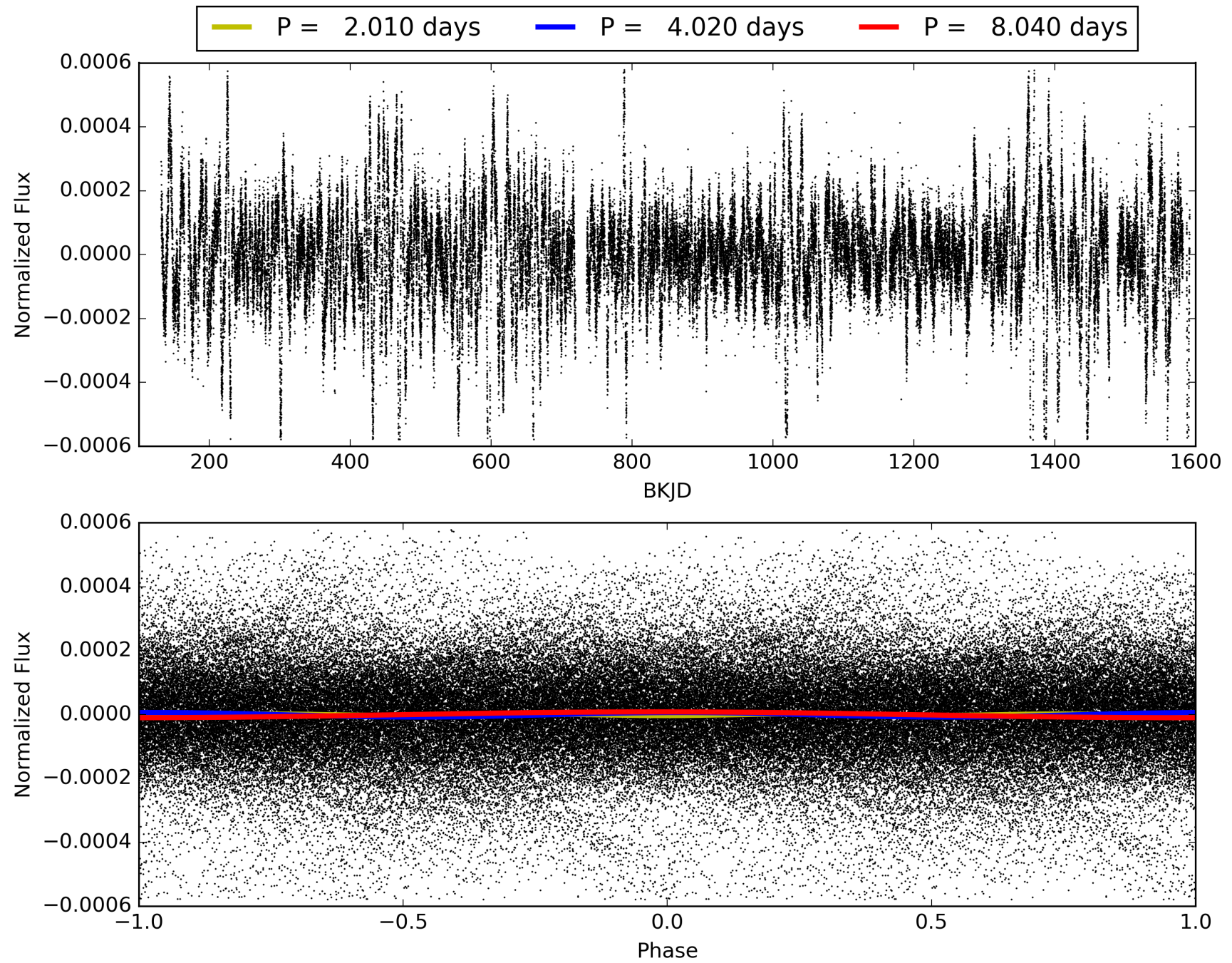
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:26:51 Z

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

TCE 004735826-02, PDC Light Curves

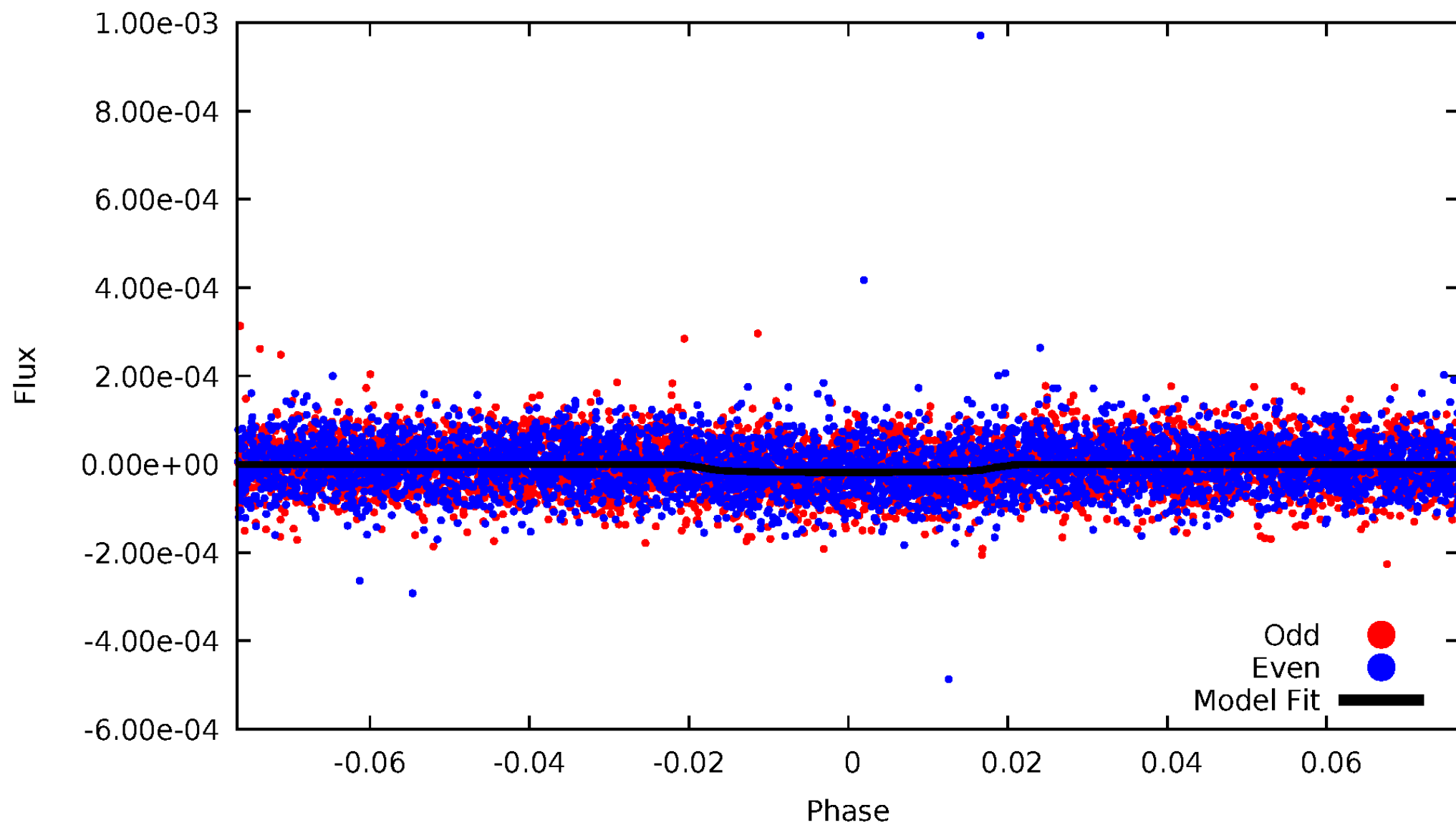


TCE 004735826-02



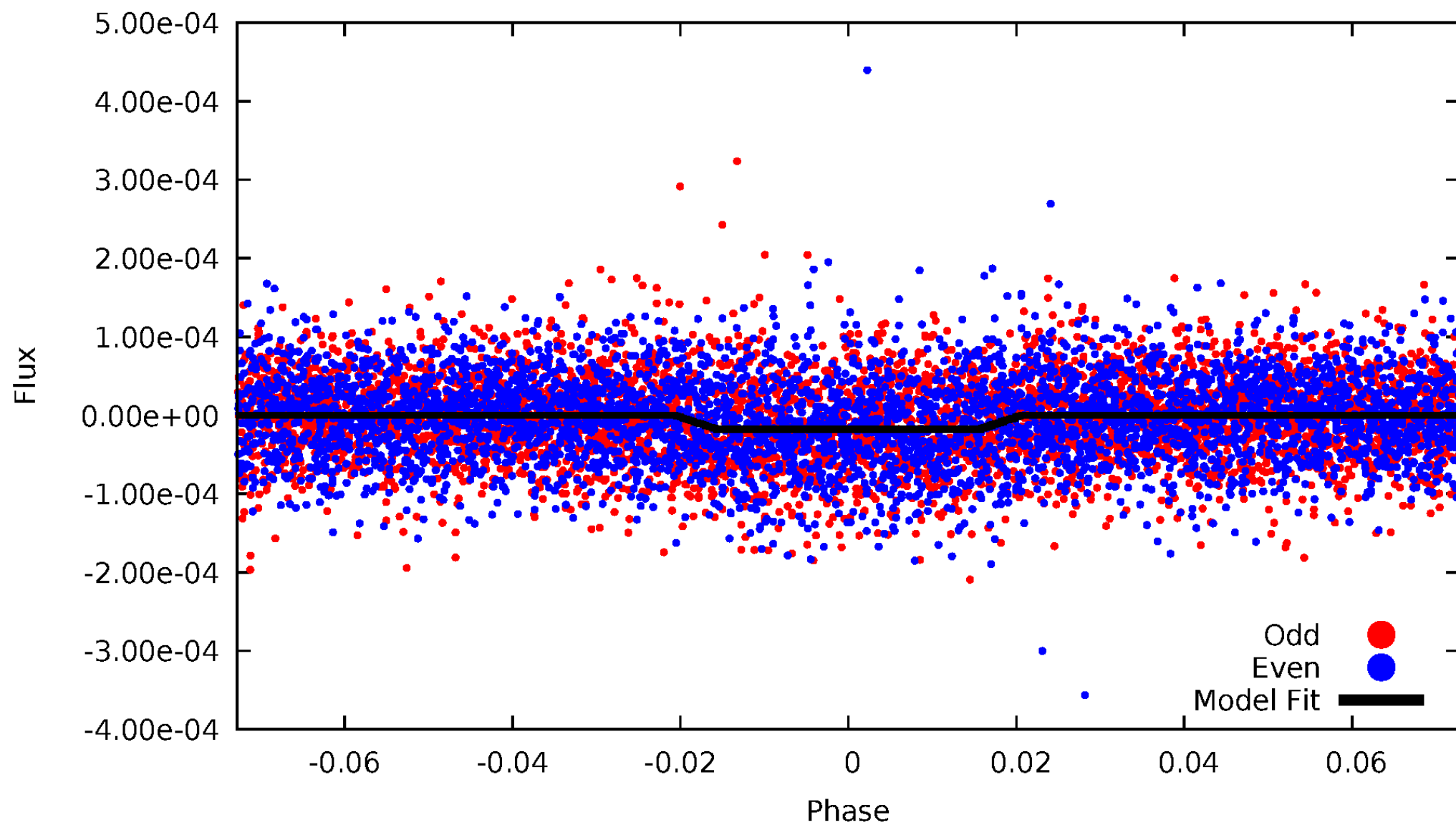
DV Odd/Even

TCE 004735826-02



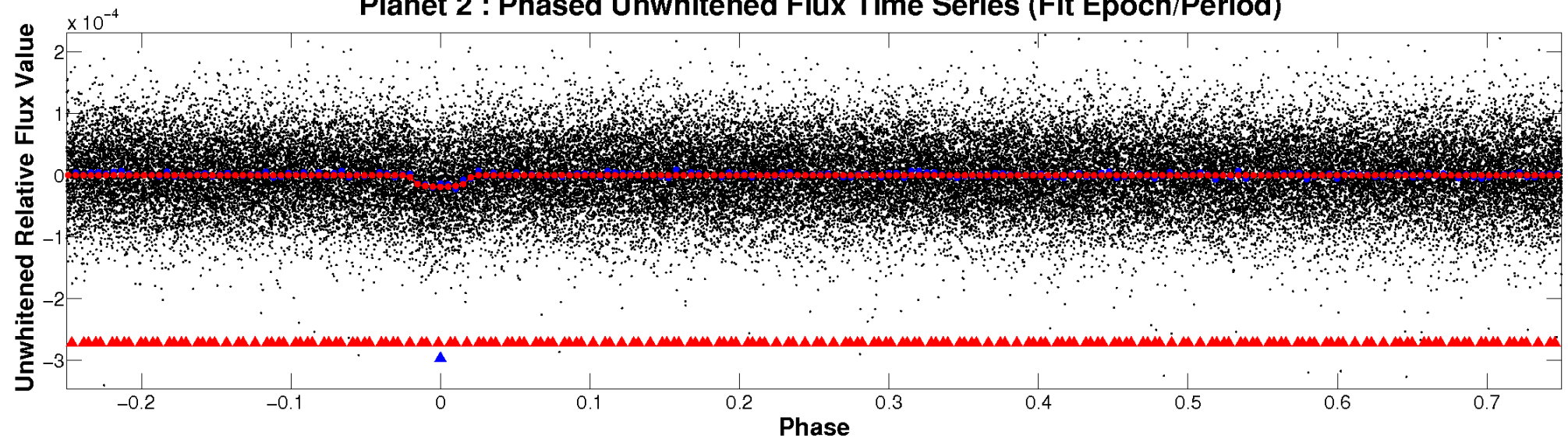
ALT Odd/Even

TCE 004735826-02

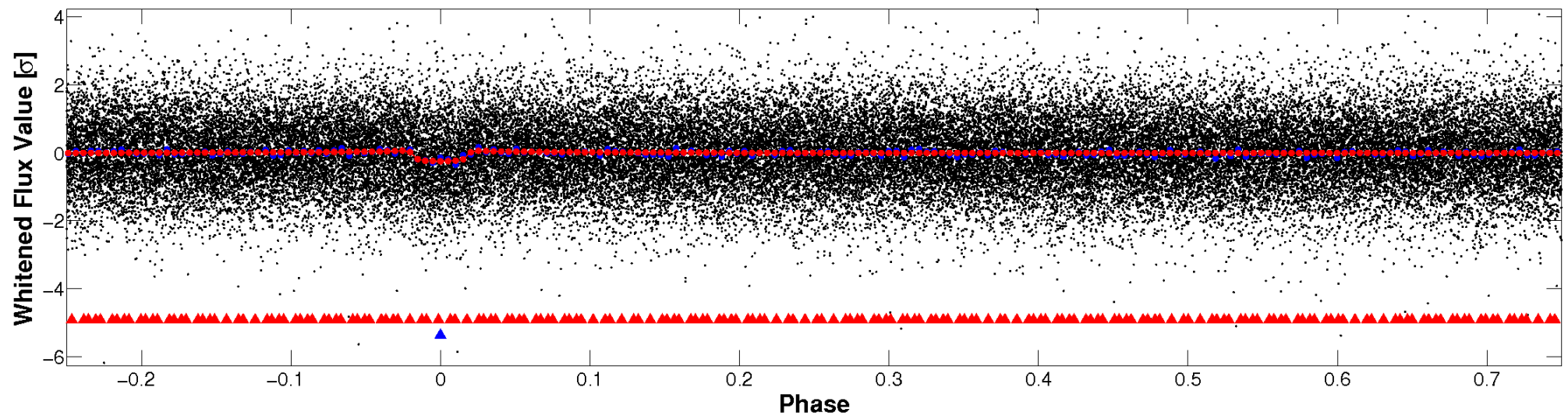


Non-Whitened Vs. Whitened Light Curve

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

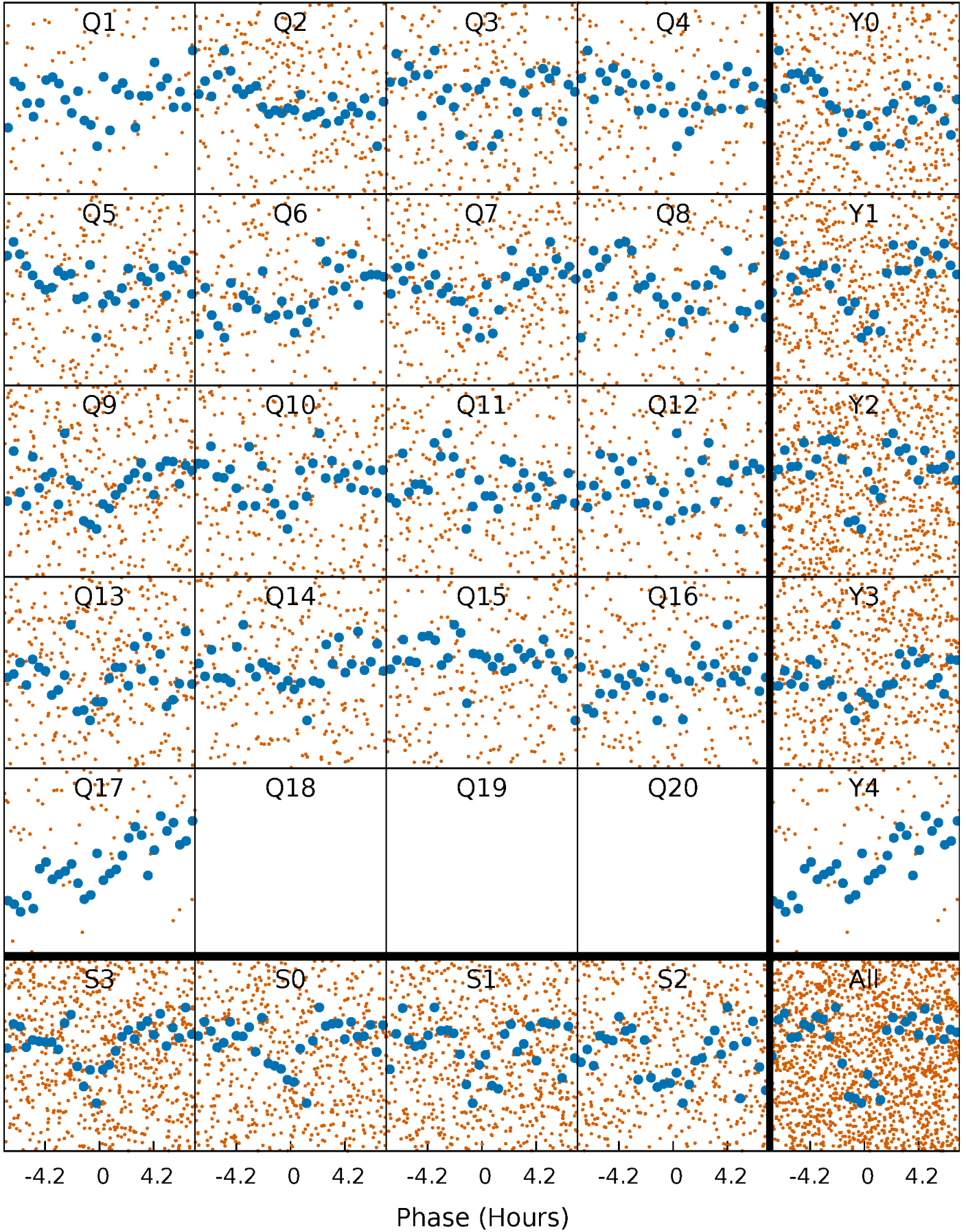


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



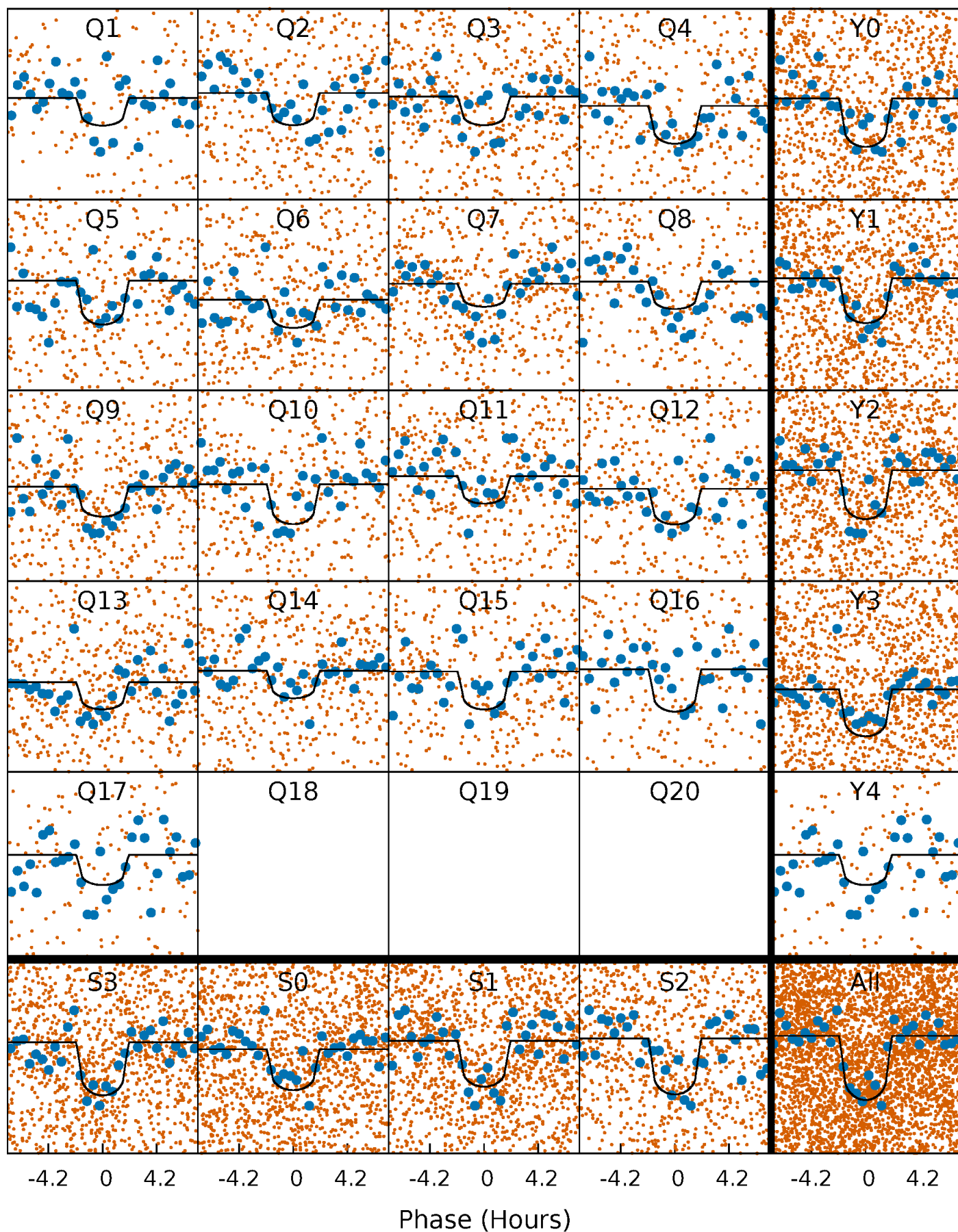
PDC Quarter-Phased Transit Curves

TCE 004735826-02 P= 4.020175 Days $T_0=134.847462$ (BKJD)



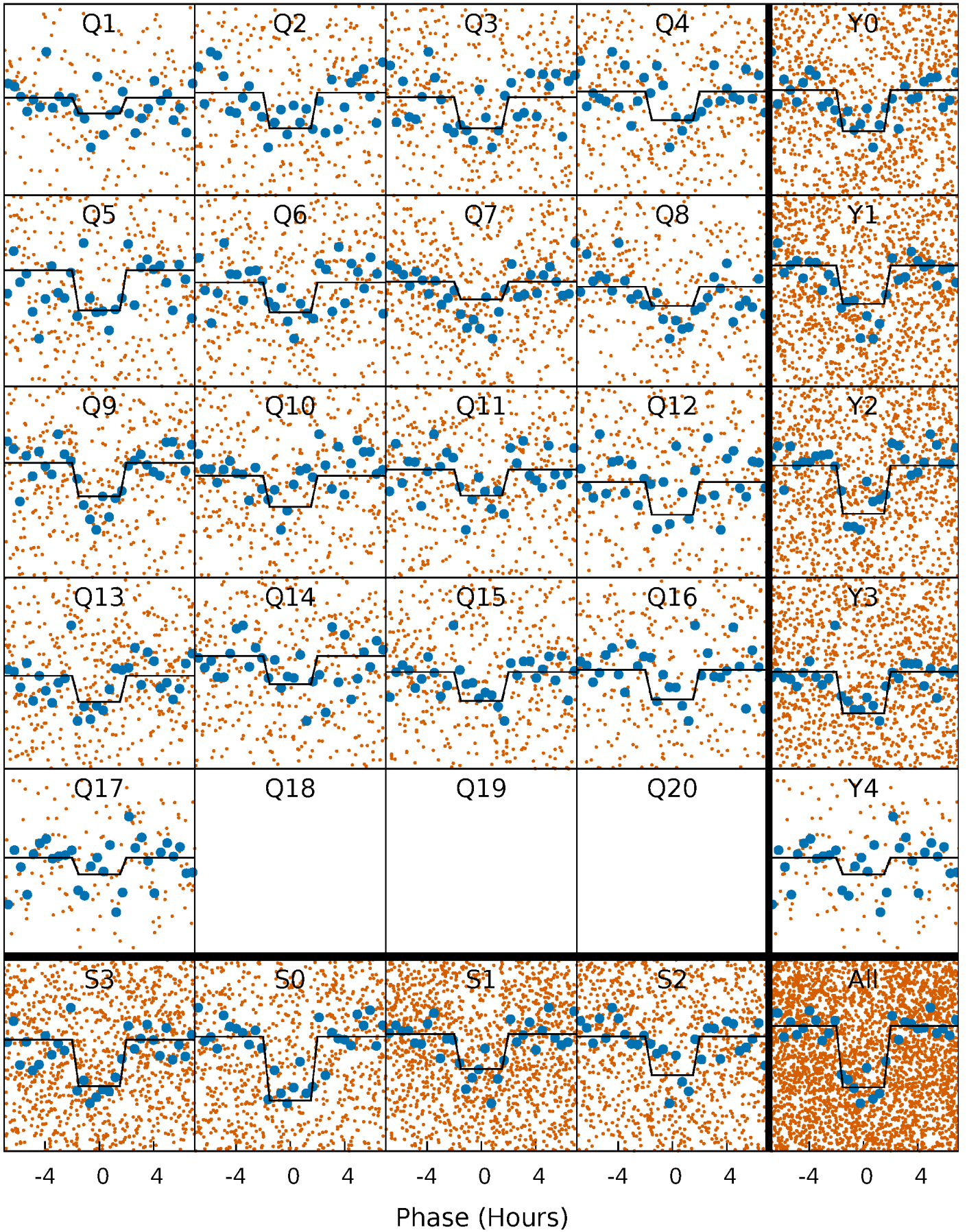
DV Quarter-Phased Transit Curves

TCE 004735826-02 P= 4.020175 Days $T_0=134.847462$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

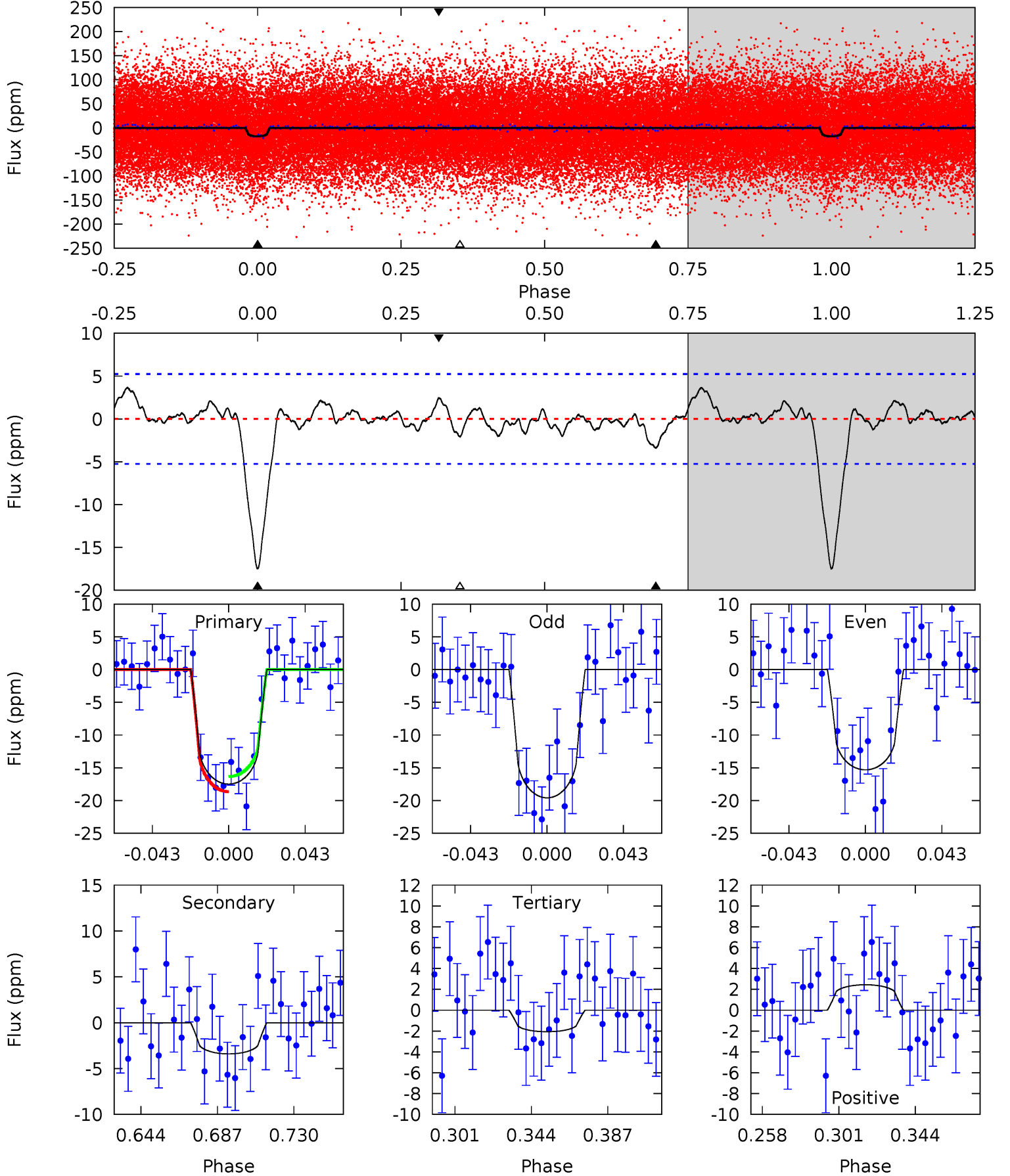
TCE 004735826-02 P= 4.020131 Days $T_0=134.857586$ (BKJD)



DV Model-Shift Uniqueness Test

004735826-02, P = 4.020175 Days, E = 130.827287 Days

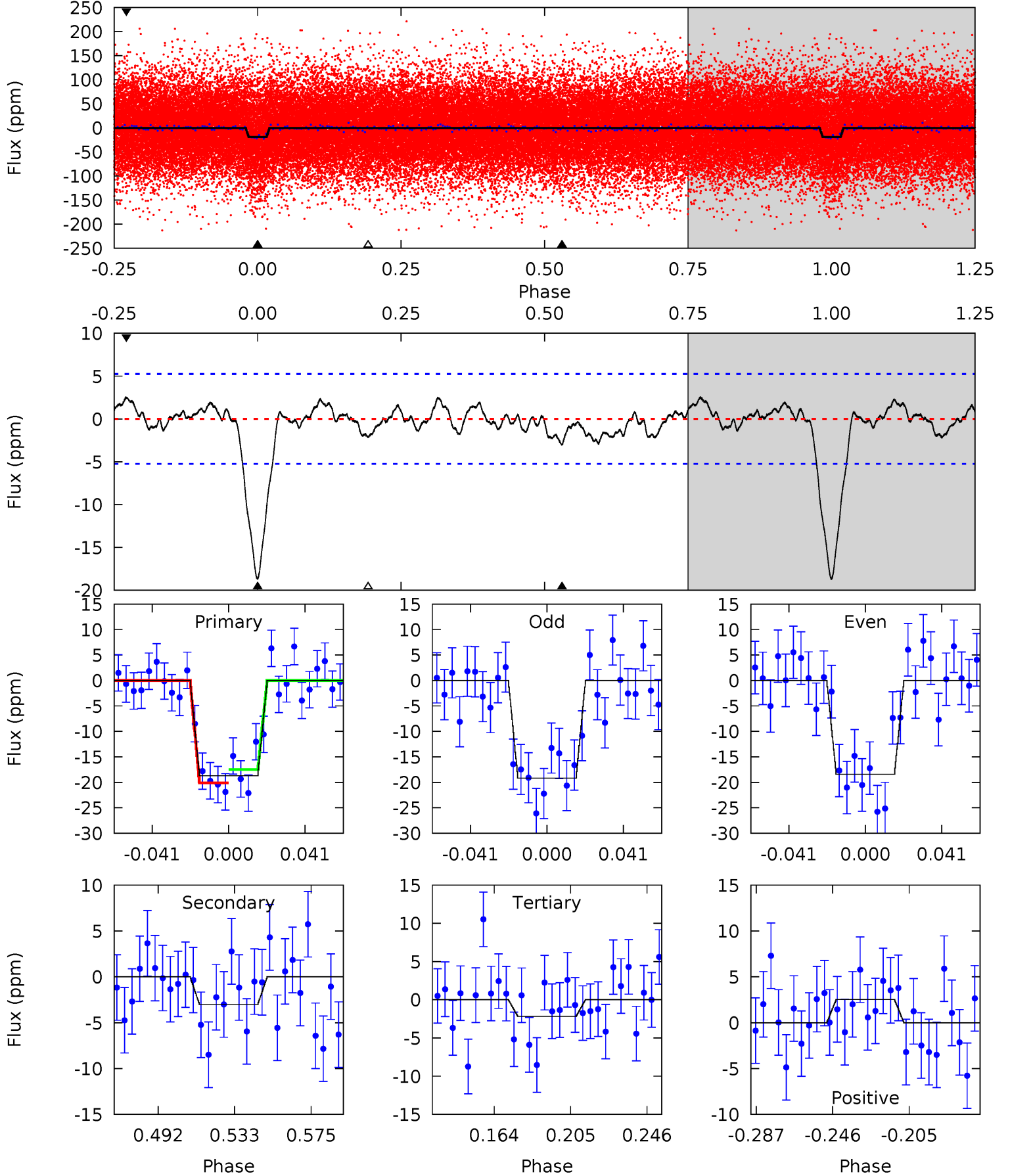
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.8	3.07	1.86	2.20	4.74	2.02	0.97	13.9	13.6	1.20	0.87	1.93	0.96	0.17	1.04



Alt Model-Shift Uniqueness Test

004735826-02, P = 4.020131 Days, E = 130.837455 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.0	2.74	1.98	2.29	4.75	2.04	1.04	15.0	14.7	0.76	0.45	0.34	0.93	0.12	1.19



Stellar Parameters For KIC 004735826

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5788^{+115}_{-115}	$4.178^{+0.176}_{-0.095}$	$0.120^{+0.150}_{-0.150}$	$1.376^{+0.232}_{-0.258}$	$1.039^{+0.106}_{-0.073}$	$0.562^{+0.462}_{-0.165}$
	+2%/-2%	+4%/-2%	+125%/-125%	+17%/-19%	+10%/-7%	+82%/-29%
Source	SPE59	SPE59	SPE59	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 004735826-02 / KOI 3184.03

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-3 ± 1	$0.66^{+0.20}_{-0.20}$	1852^{+80}_{-100}	3984^{+640}_{-445}	11^{+14}_{-6}
Alt.	-3 ± 1	$0.61^{+0.20}_{-0.19}$	1845^{+95}_{-98}	4037^{+639}_{-529}	12^{+14}_{-7}

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

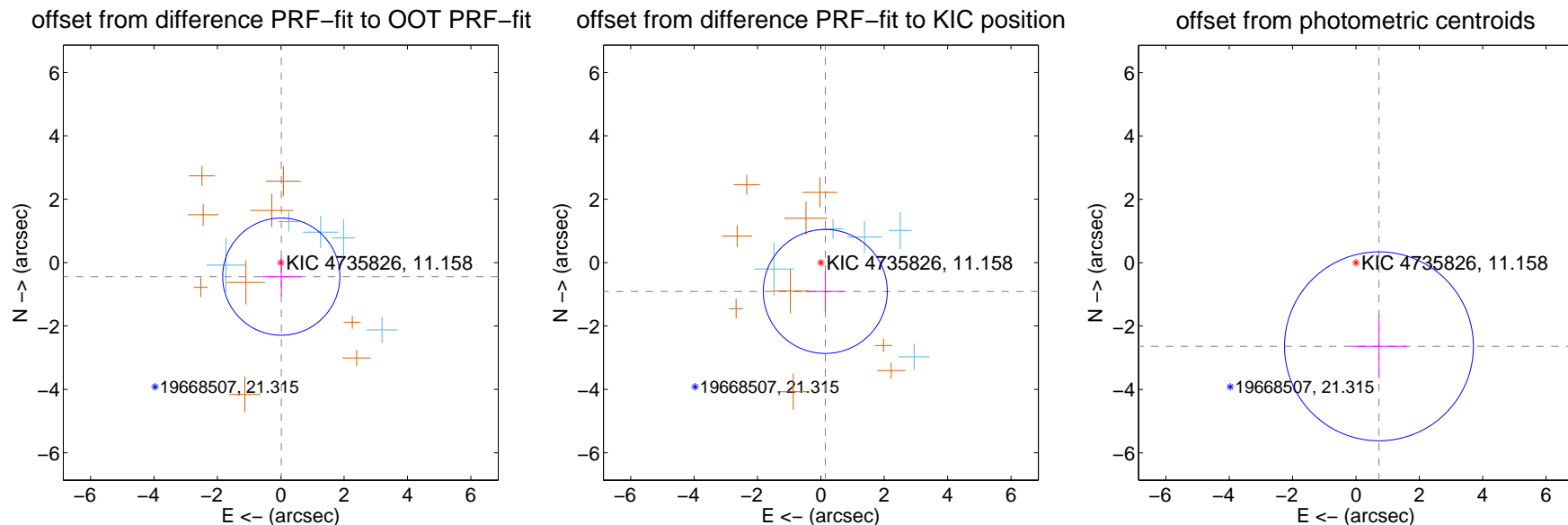
DV Centroid Data

Supplemental centroid analysis for 004735826-02. **Kepler magnitude: 11.16.** Transit SNR 10.23

There are 5 quarters with good PRF difference image offsets

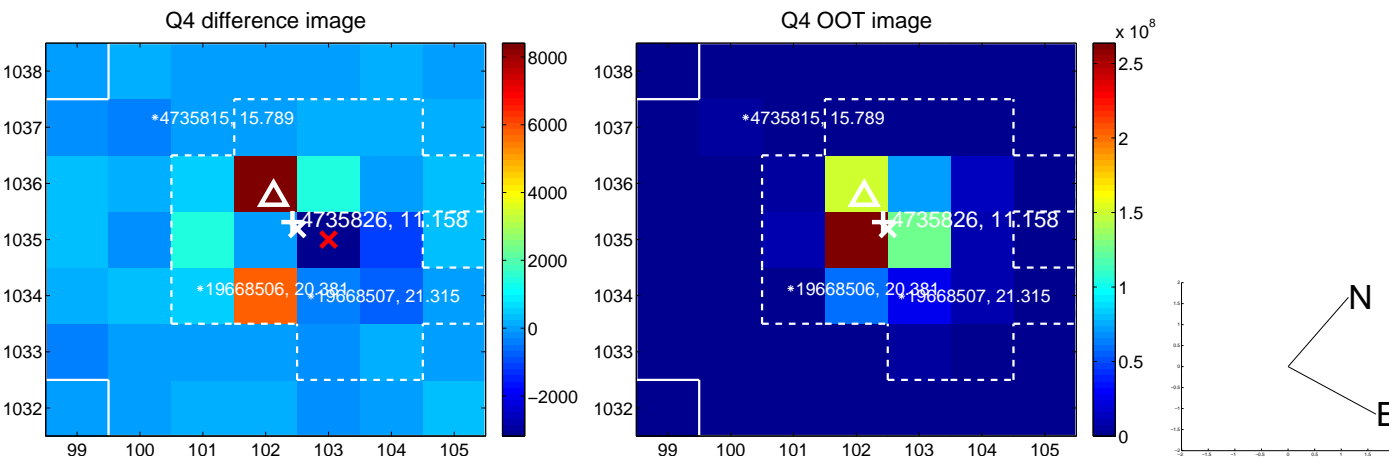
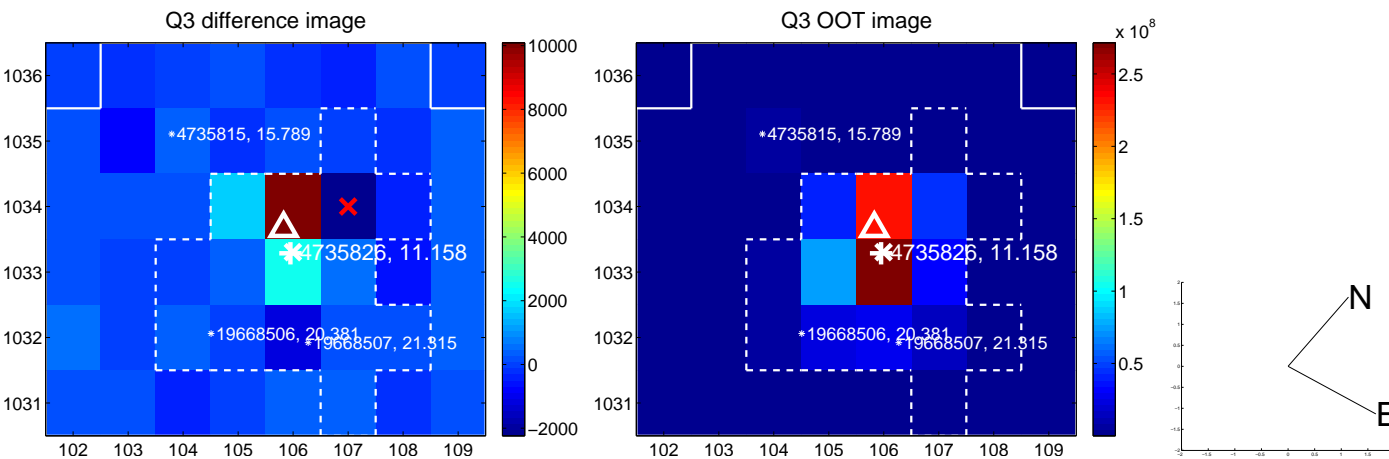
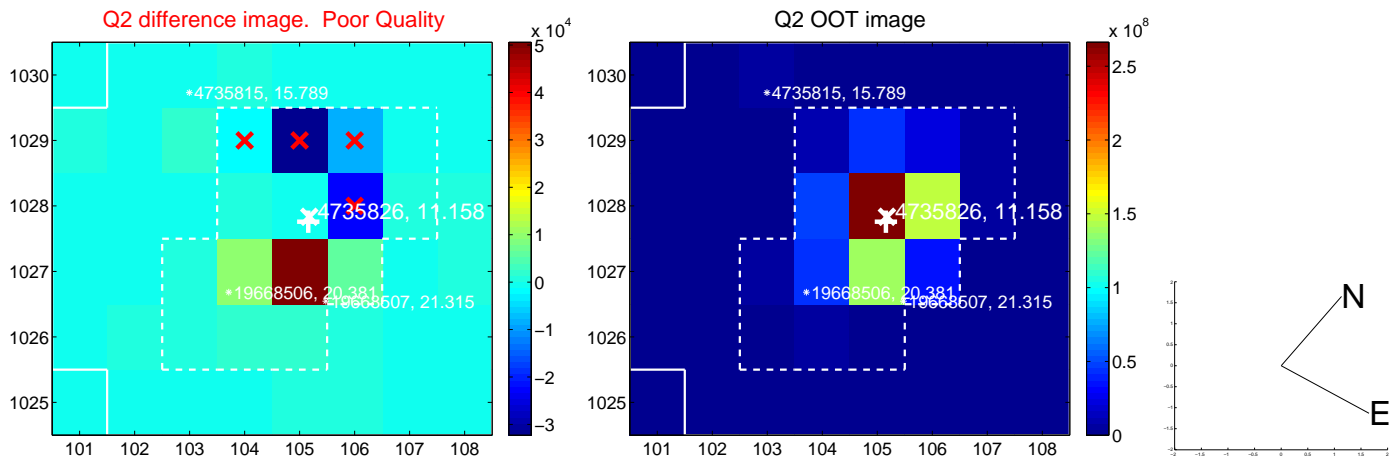
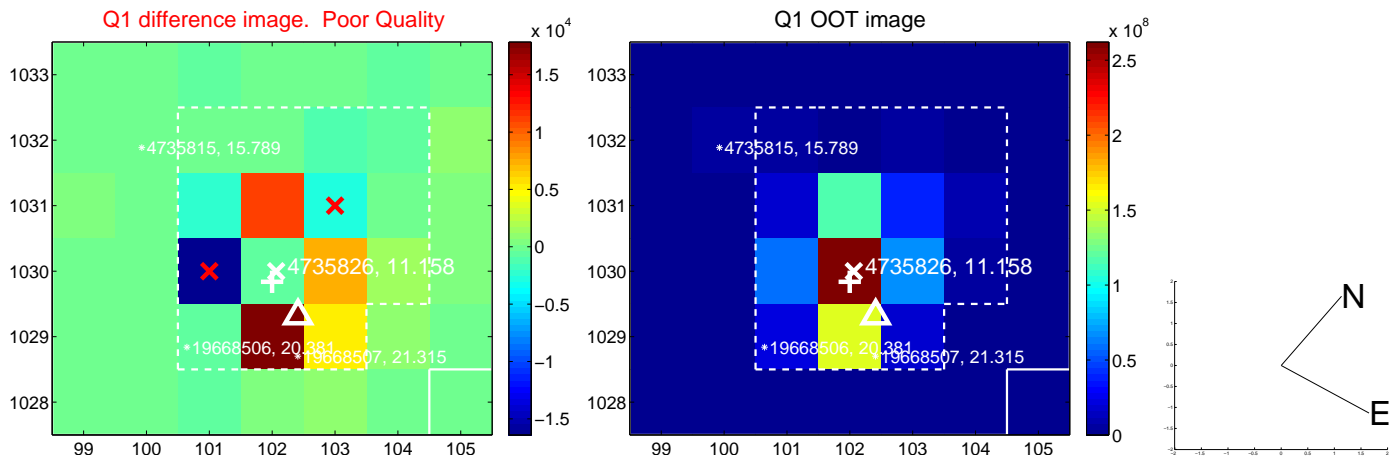
The direct PRF centroid is offset from the target star catalog position by about 0.28 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.443 ± 0.616	0.72	-0.017 ± 0.613	-0.442 ± 0.616
PRF-fit source offset from KIC position	0.921 ± 0.652	1.41	-0.140 ± 0.606	-0.910 ± 0.653
photometric centroid source offset	2.74 ± 0.99	2.76	-0.73 ± 0.89	-2.64 ± 1.00

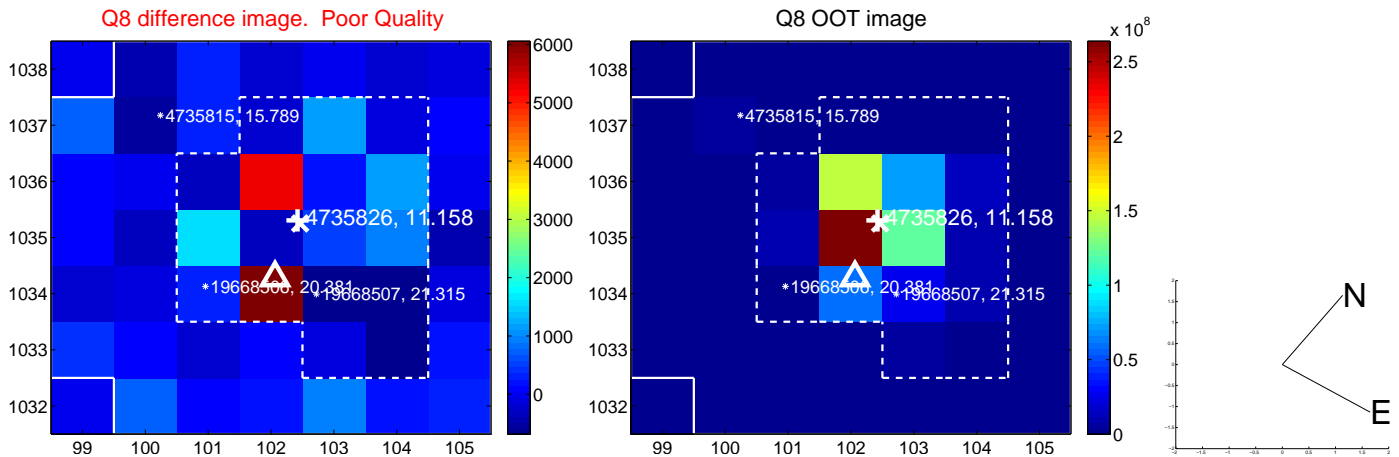
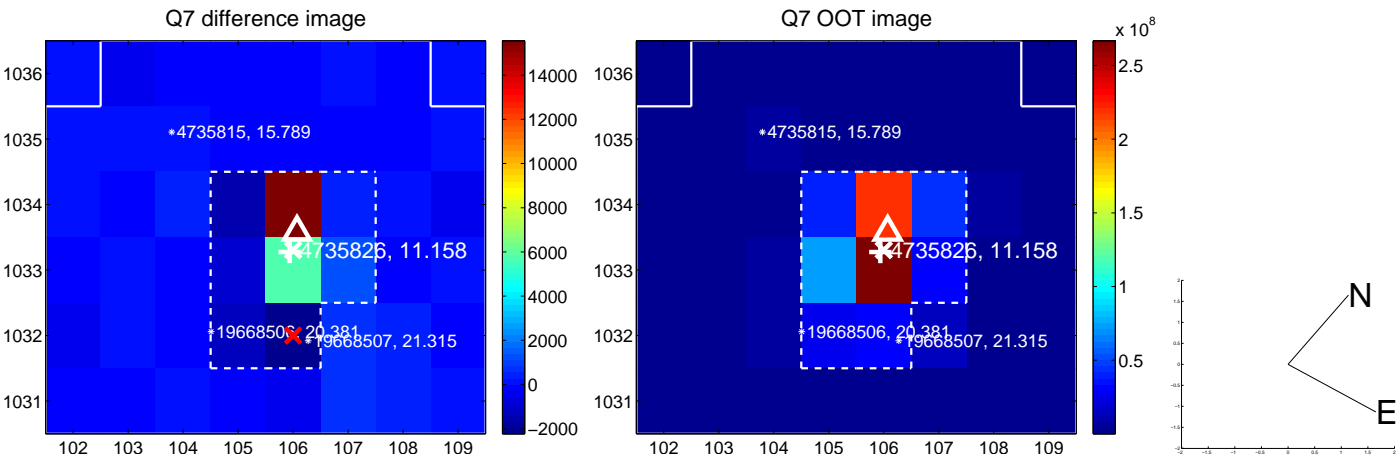
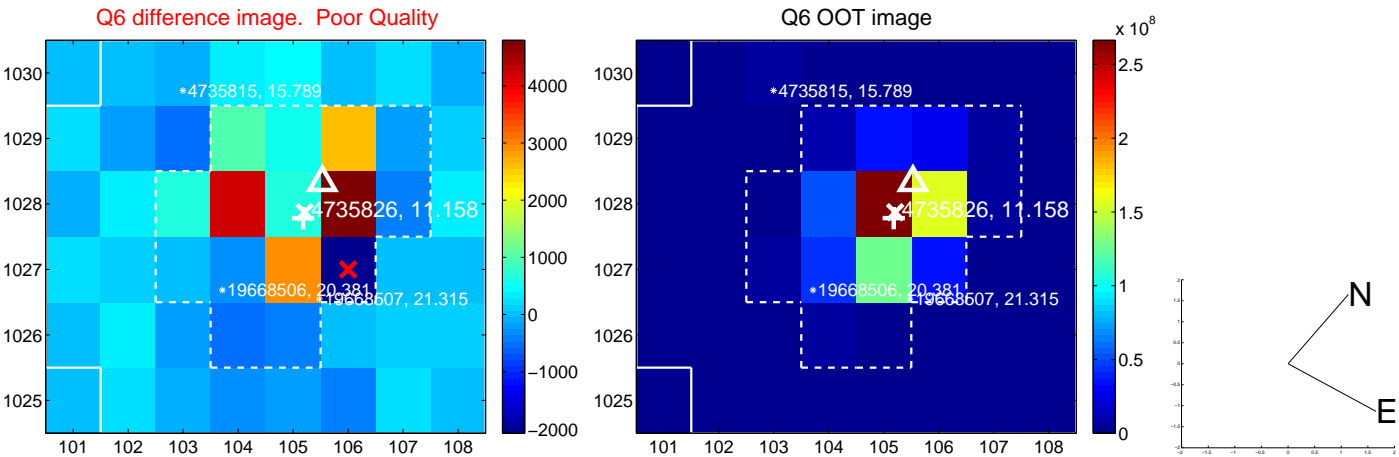
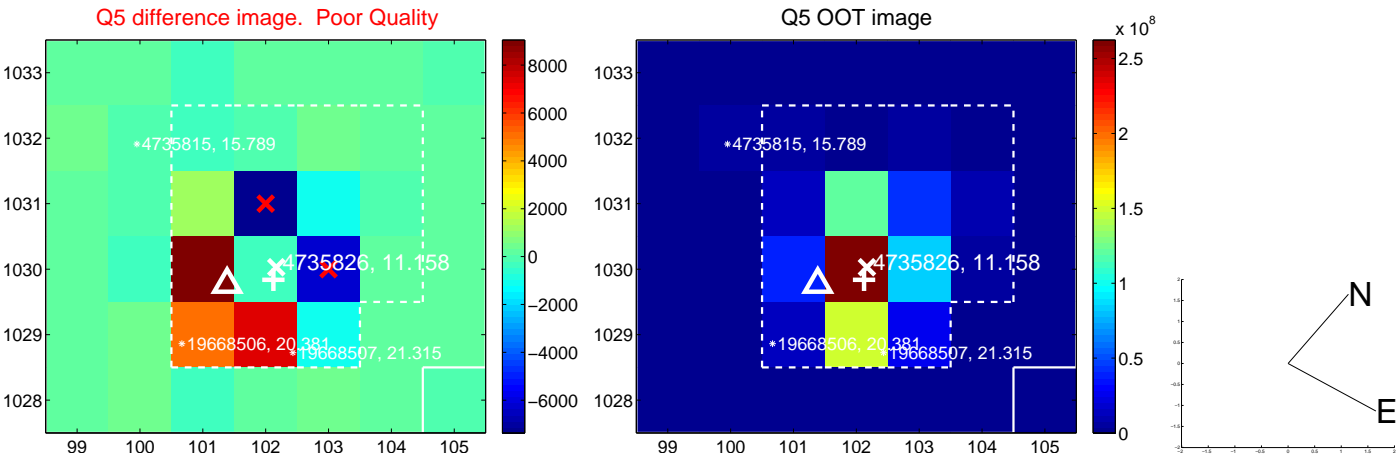


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

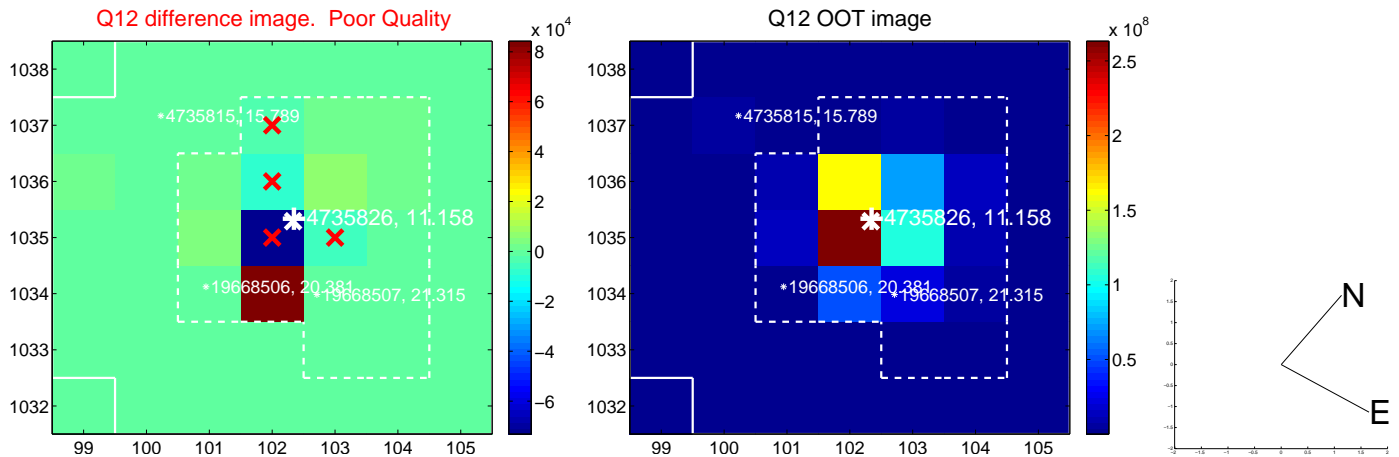
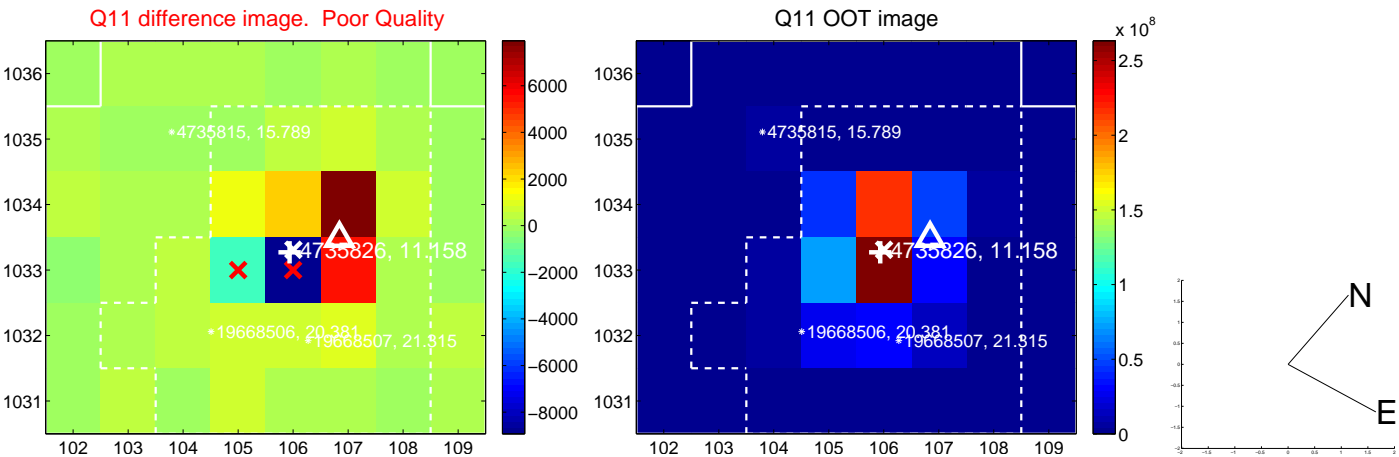
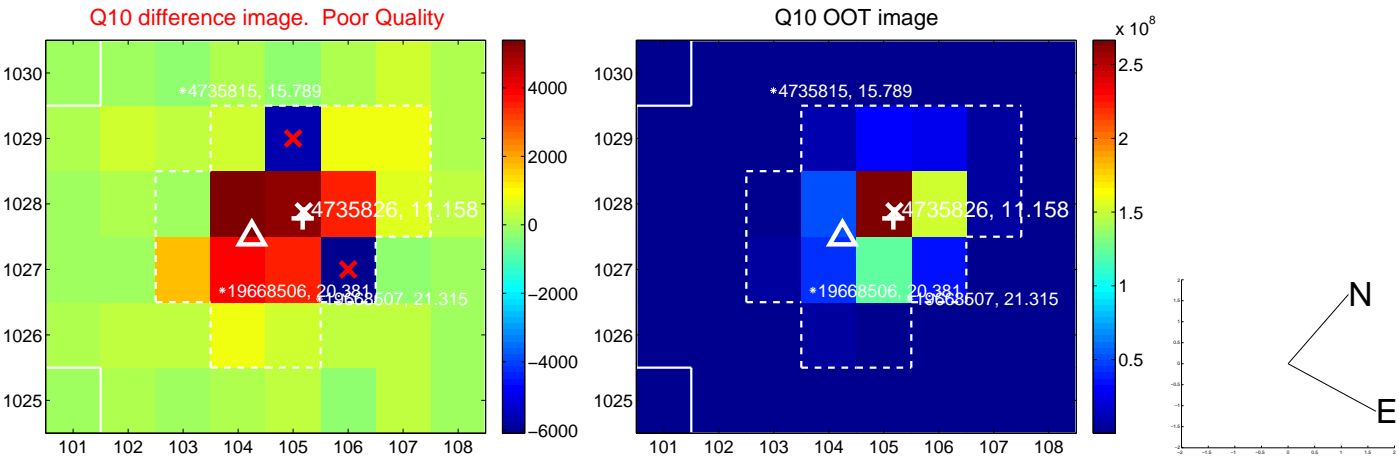
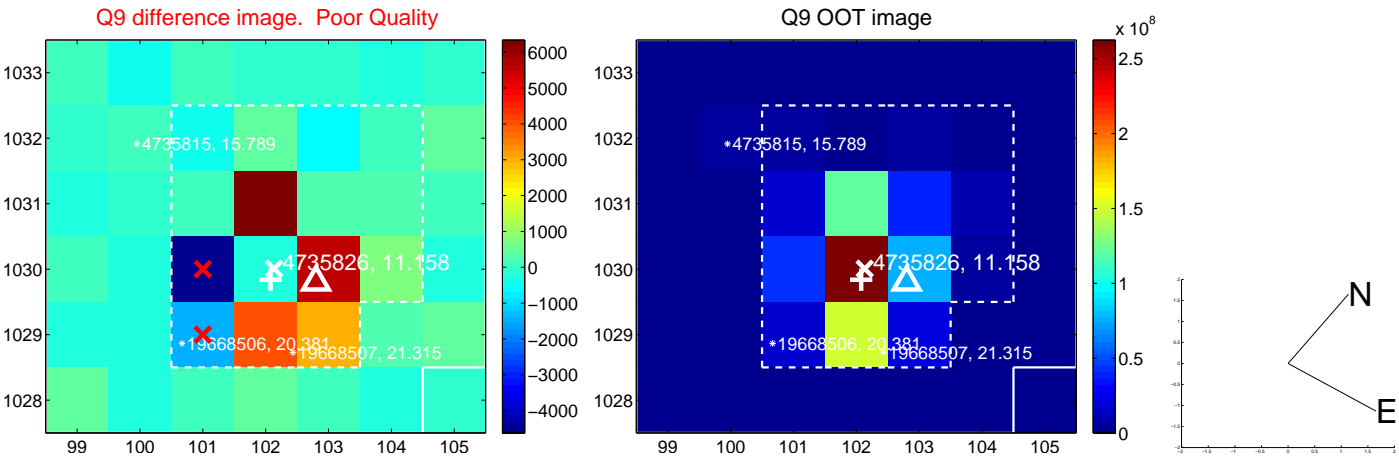
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



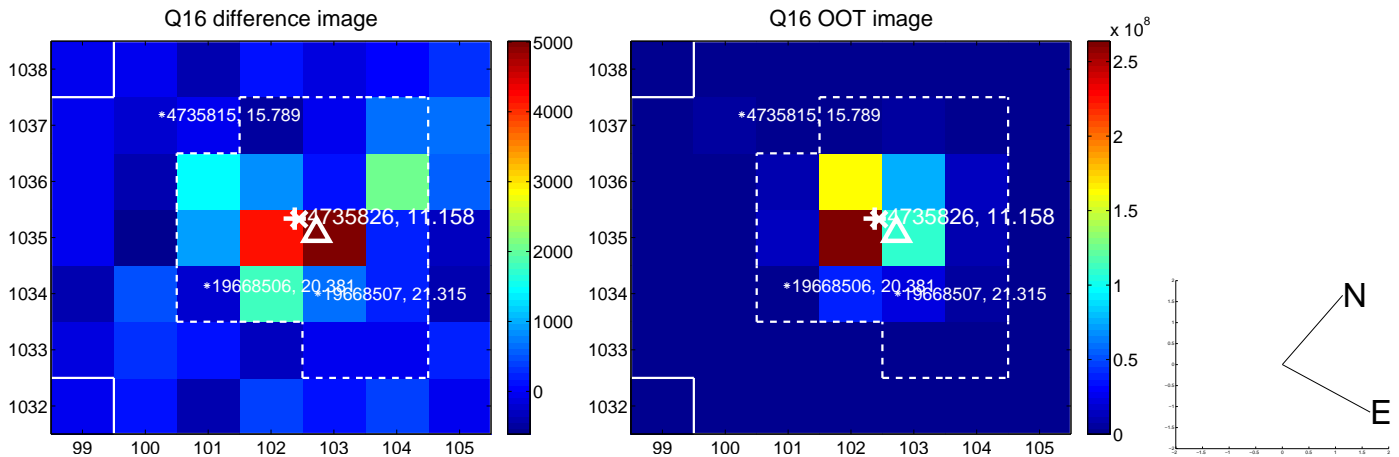
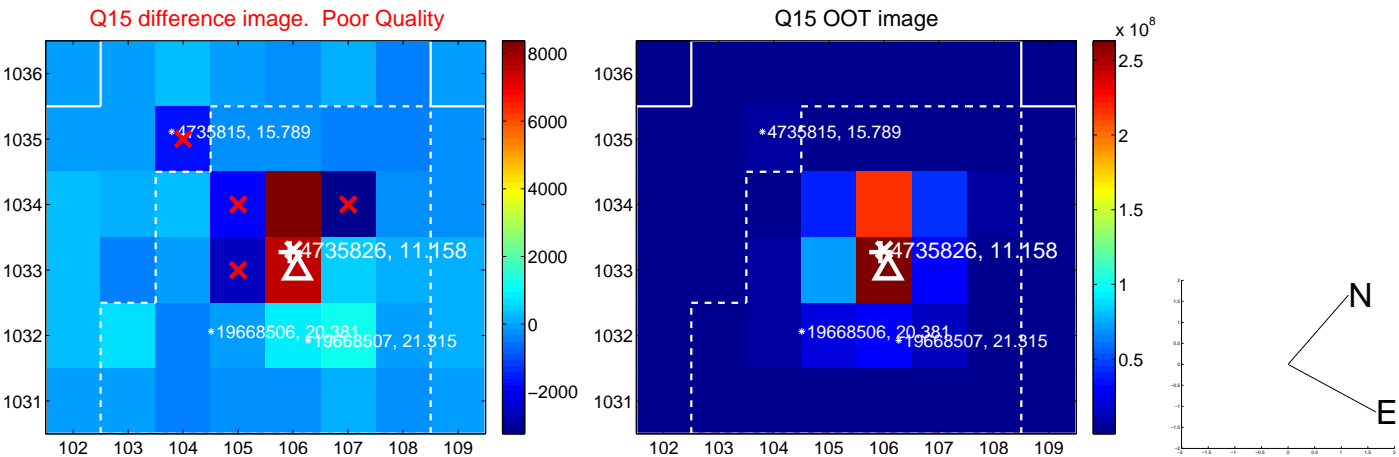
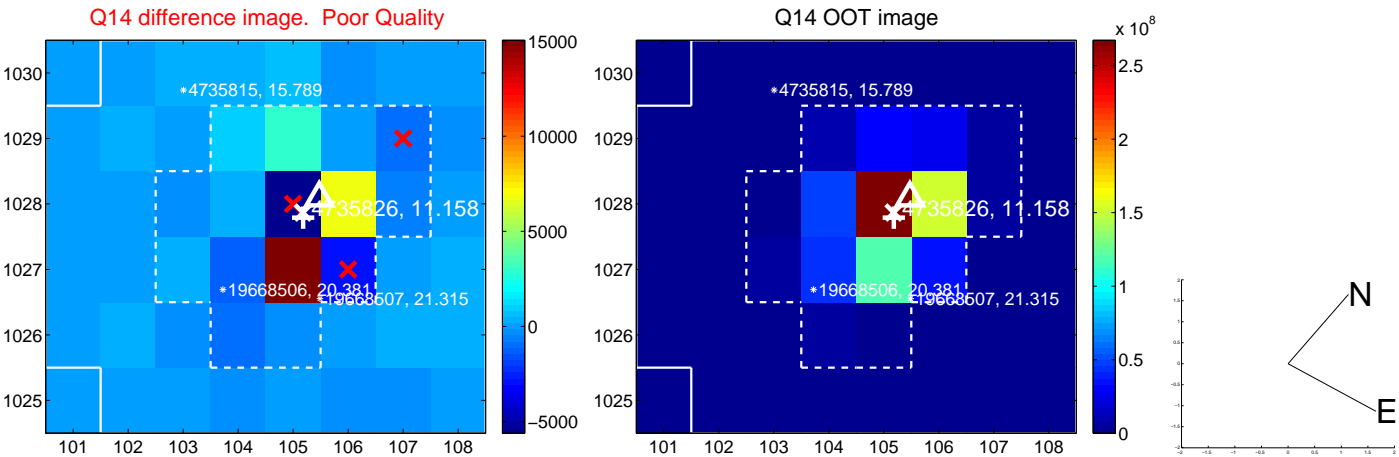
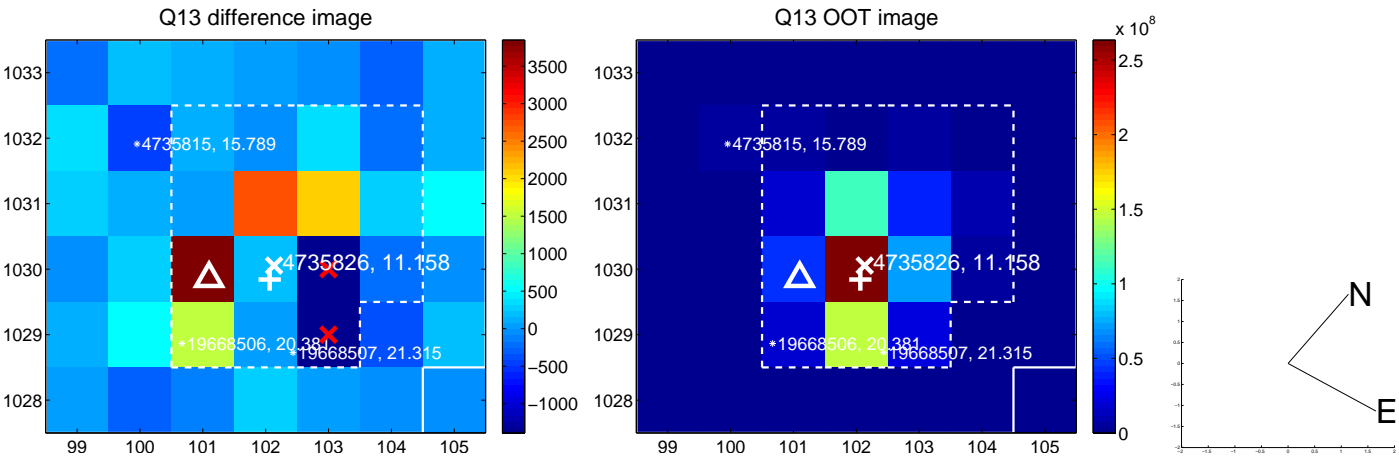
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



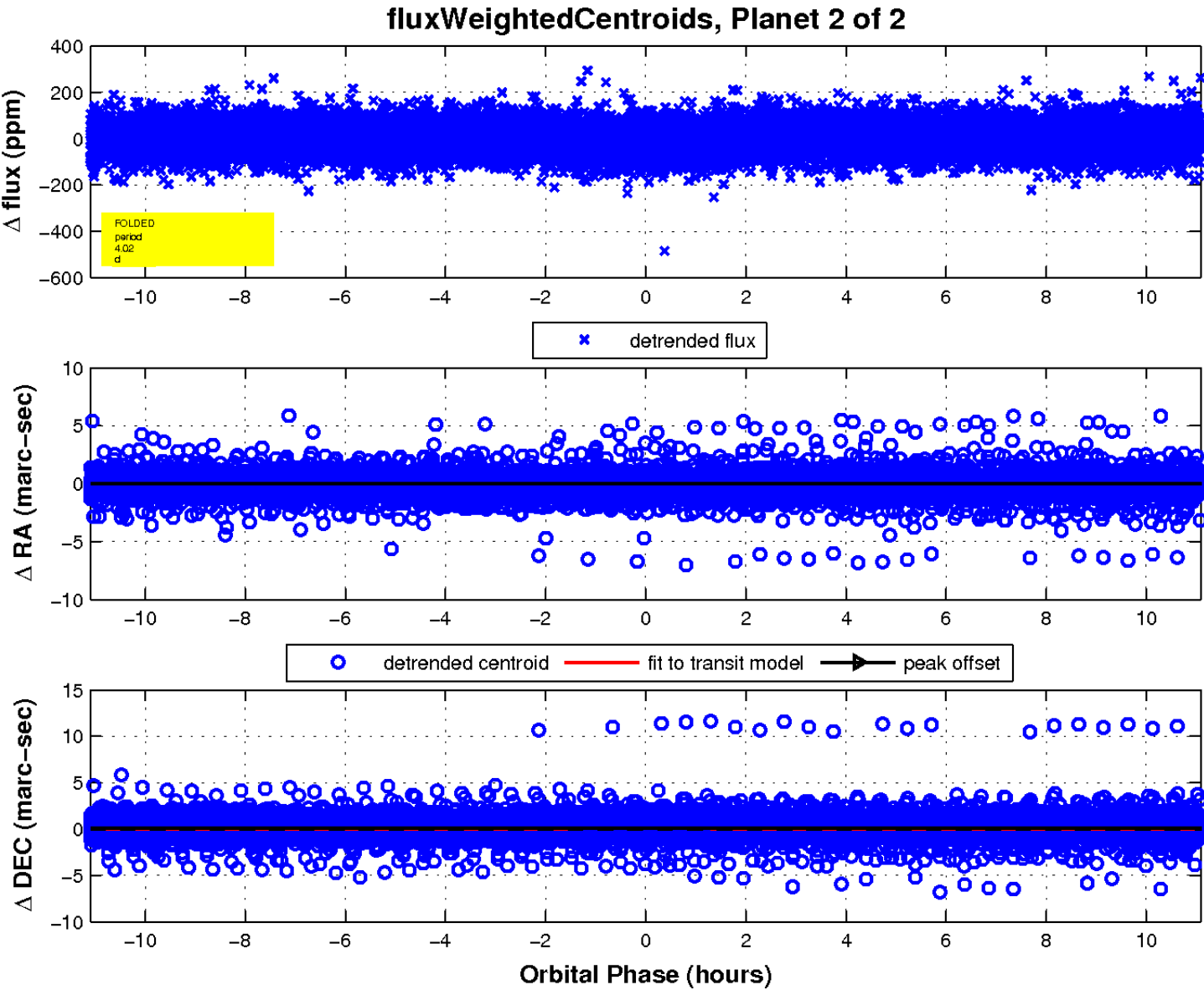
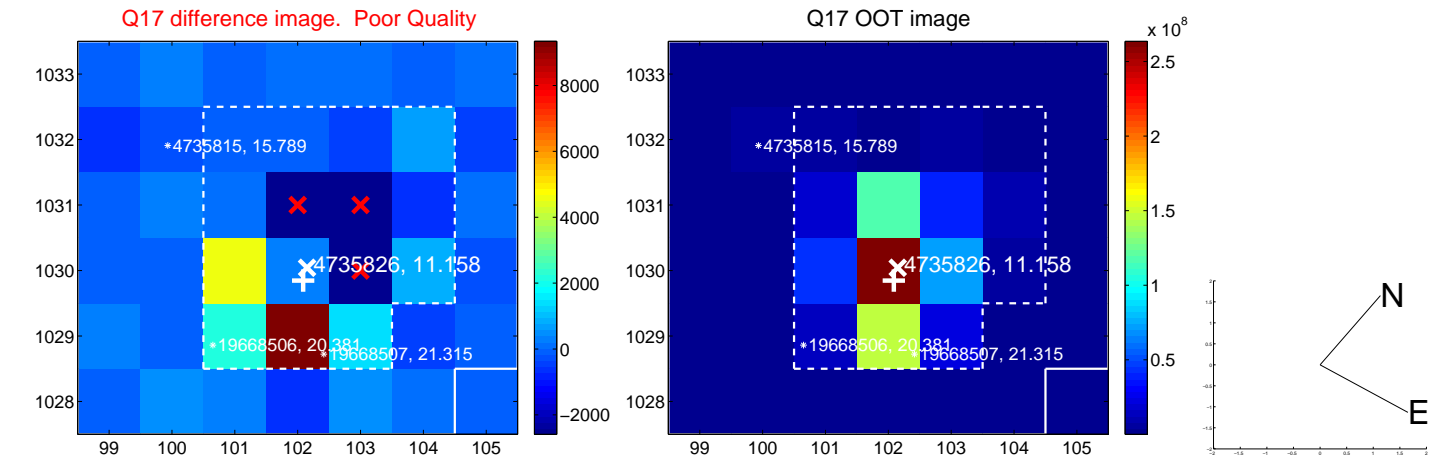
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

