

KIC 011706518

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})
011706518-01	OBS	No	6.936512	132.311718	47.6	16.415	9.5	9.3	3.27	6851	2.58	3053.19
011706518-02	OBS	No	2.775098	132.068329	32.8	10.442	8.4	9.0	3.27	6851	2.17	10357.08

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011706518-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
011706518-02	OBS	FP	0.00	1	0	1	0	LPP_DV—HALO_GHOST

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

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

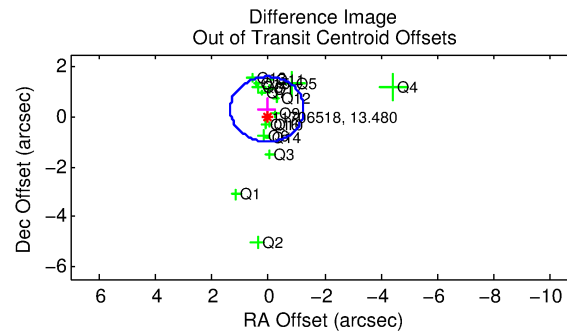
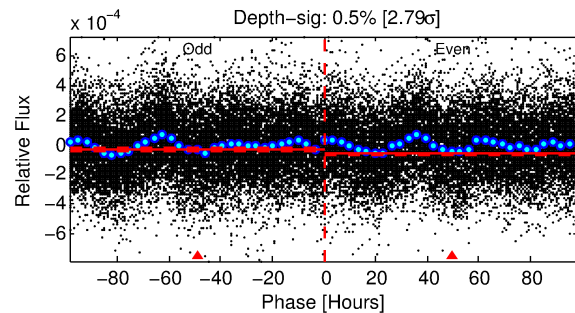
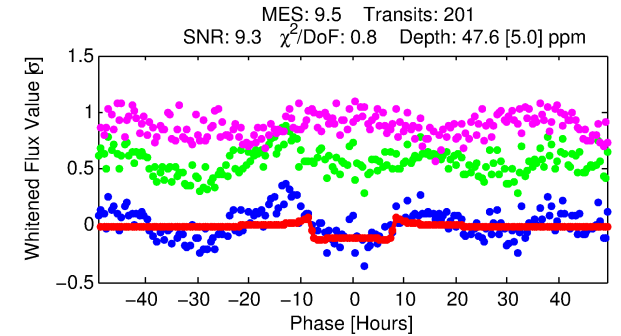
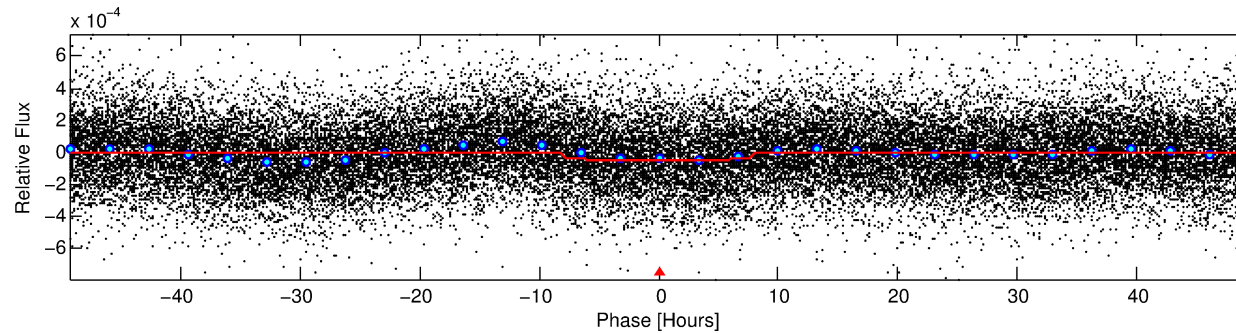
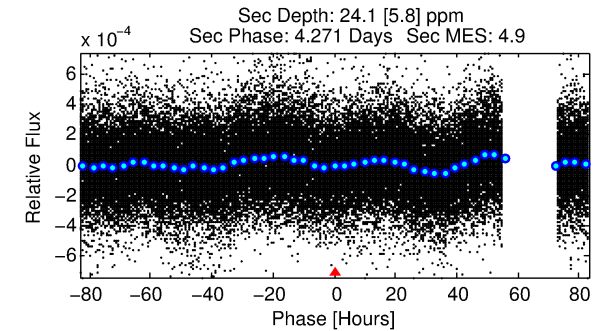
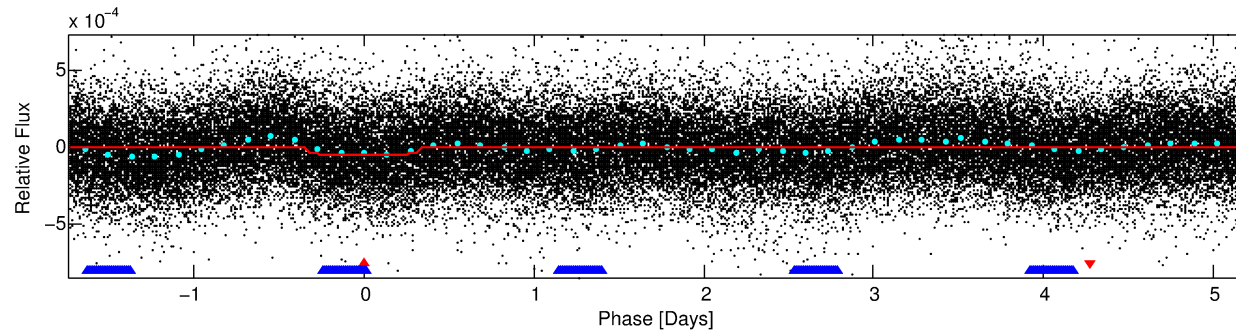
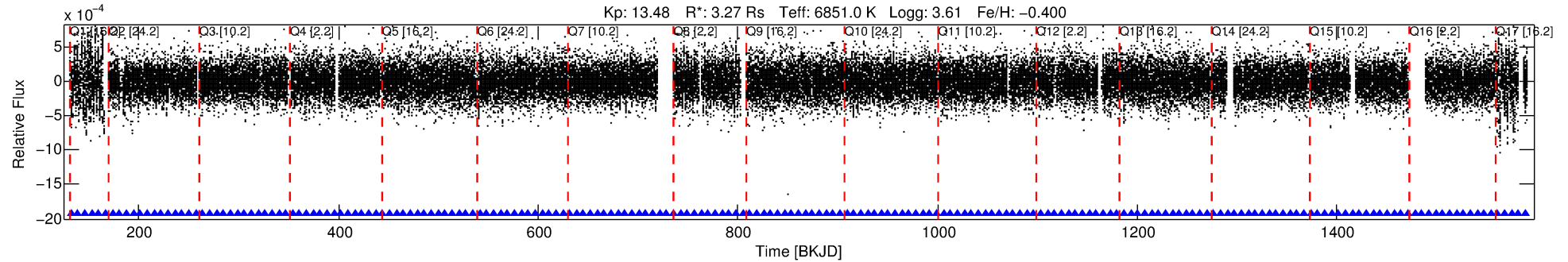
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011706518-01

No Significant Match Found

DV One-Page Summary

KIC: 11706518 Candidate: 1 of 2 Period: 6.937 d



DV Fit Results:

Period = 6.93651 [0.00011] d
Epoch = 132.3117 [0.0114] BKJD
Rp/R* = 0.0072 [0.0008]
a/R* = 1.83 [0.73]
b = 0.88 [0.15]
Seff = 3053.19 [1759.83]
Teq = 1895 [273] K
Rp = 2.58 [1.02] Re
a = 0.0831 [0.0297] AU
Ag = 13.71 [8.92] [1.42σ]
Teffp = 5639 [488] K [6.69σ]

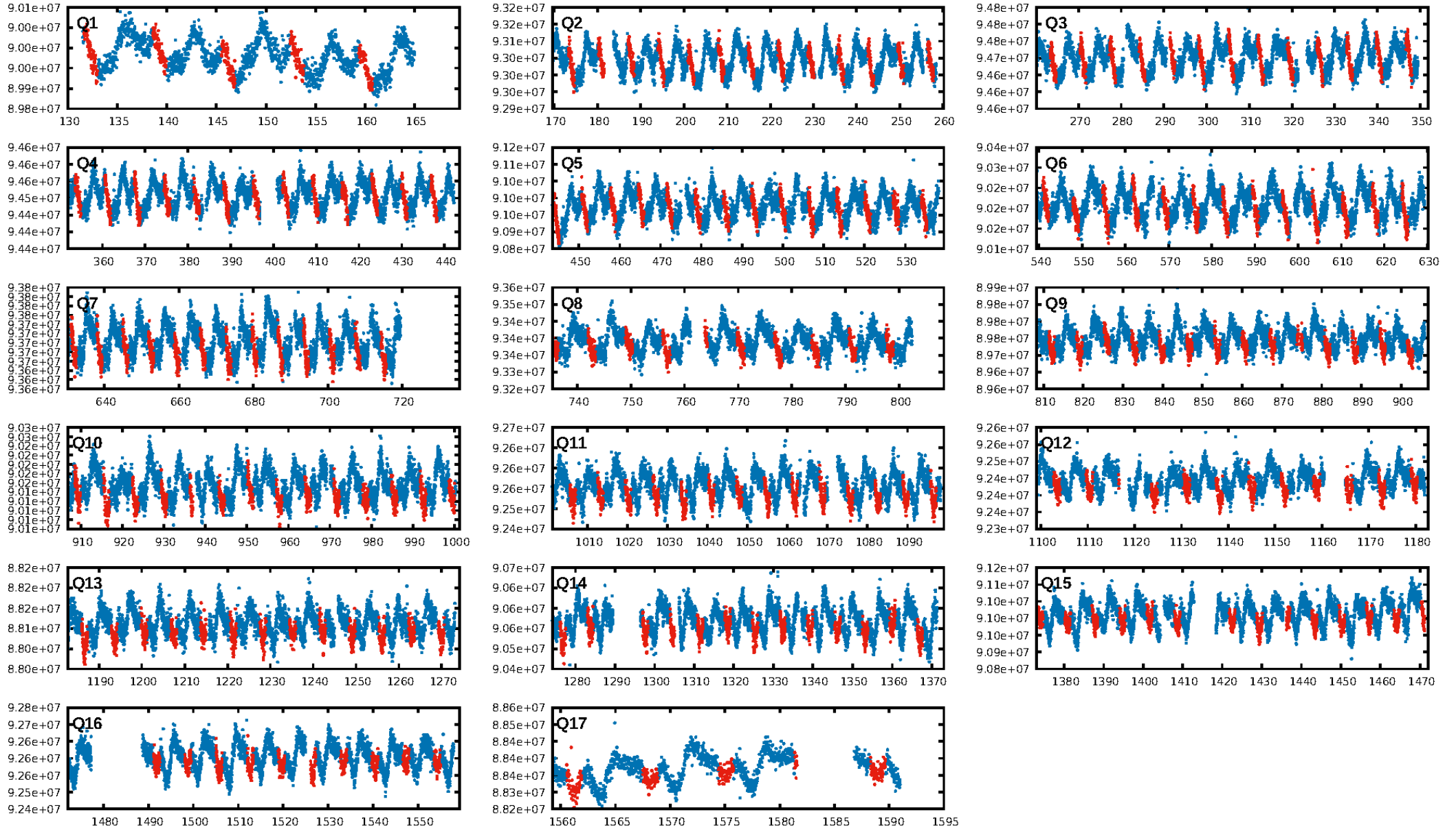
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [5.13σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.11e-13
RollingBand-fgt: 1.00 [192/192]
GhostDiagnostic-chr: 0.7707
Centroid-sig: 5.3%
Centroid-so: 1.196 arcsec [1.41σ]
OotOffset-rm: 0.301 arcsec [0.69σ]
KicOffset-rm: 0.072 arcsec [0.27σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.76 [13/17]
DiffImageOverlap-fno: 0.12 [2/17]

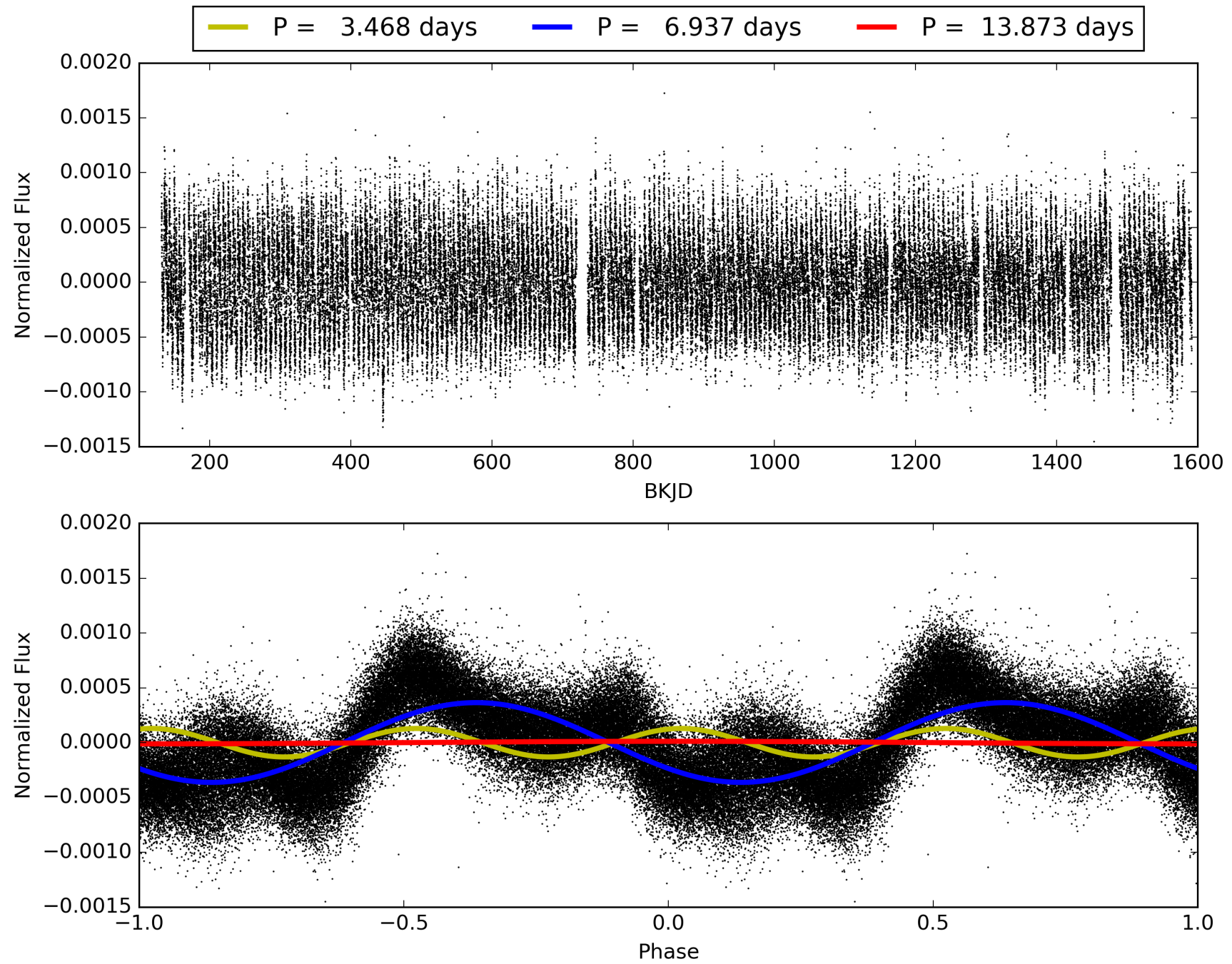
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 03:29:15 Z

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

TCE 011706518-01, PDC Light Curves

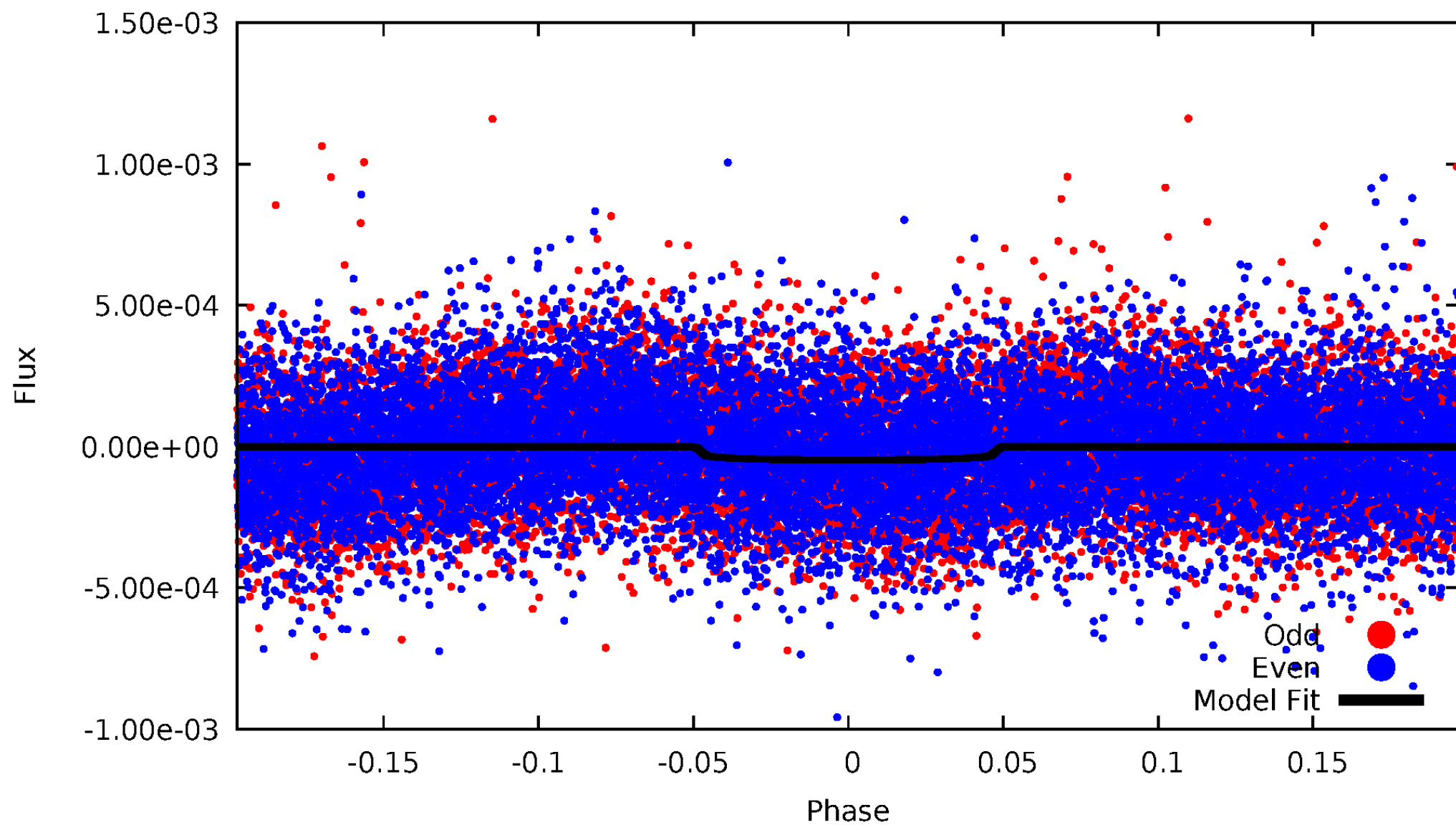


TCE 011706518-01



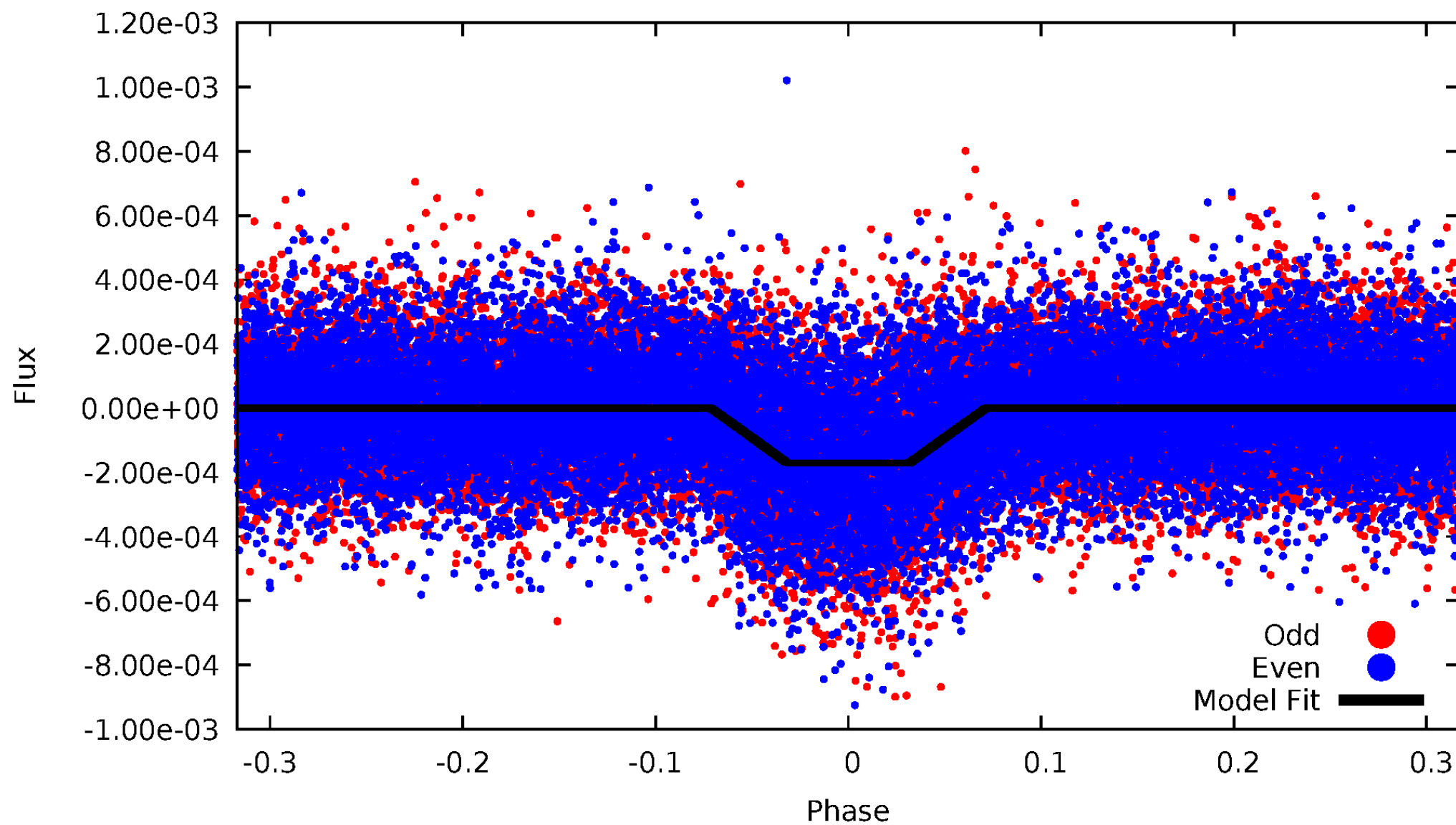
DV Odd/Even

TCE 011706518-01

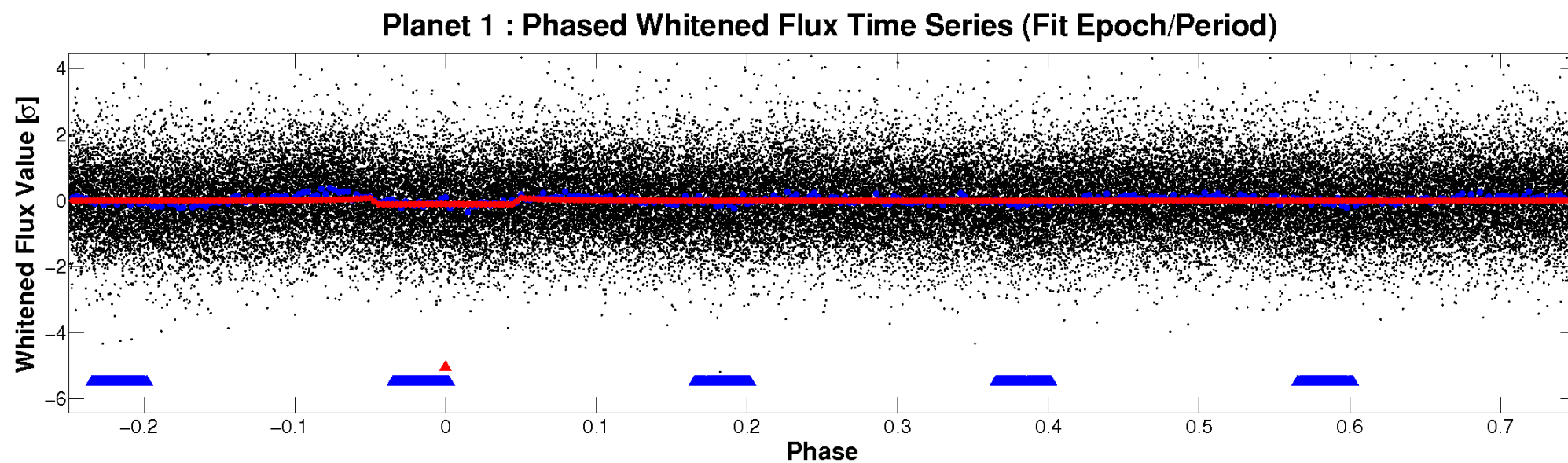
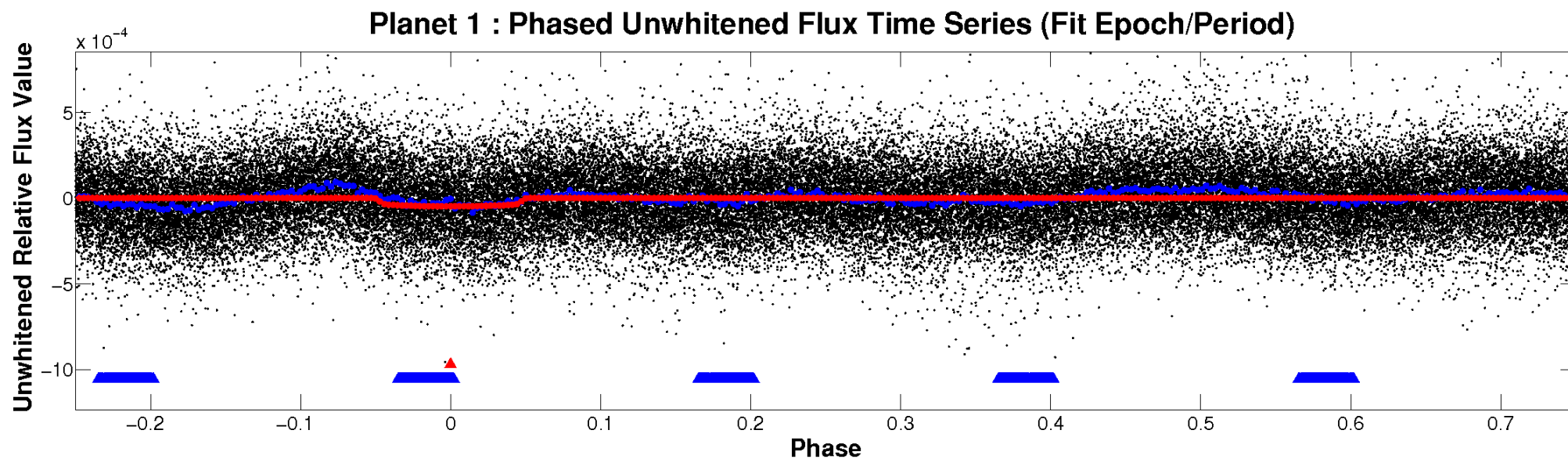


ALT Odd/Even

TCE 011706518-01

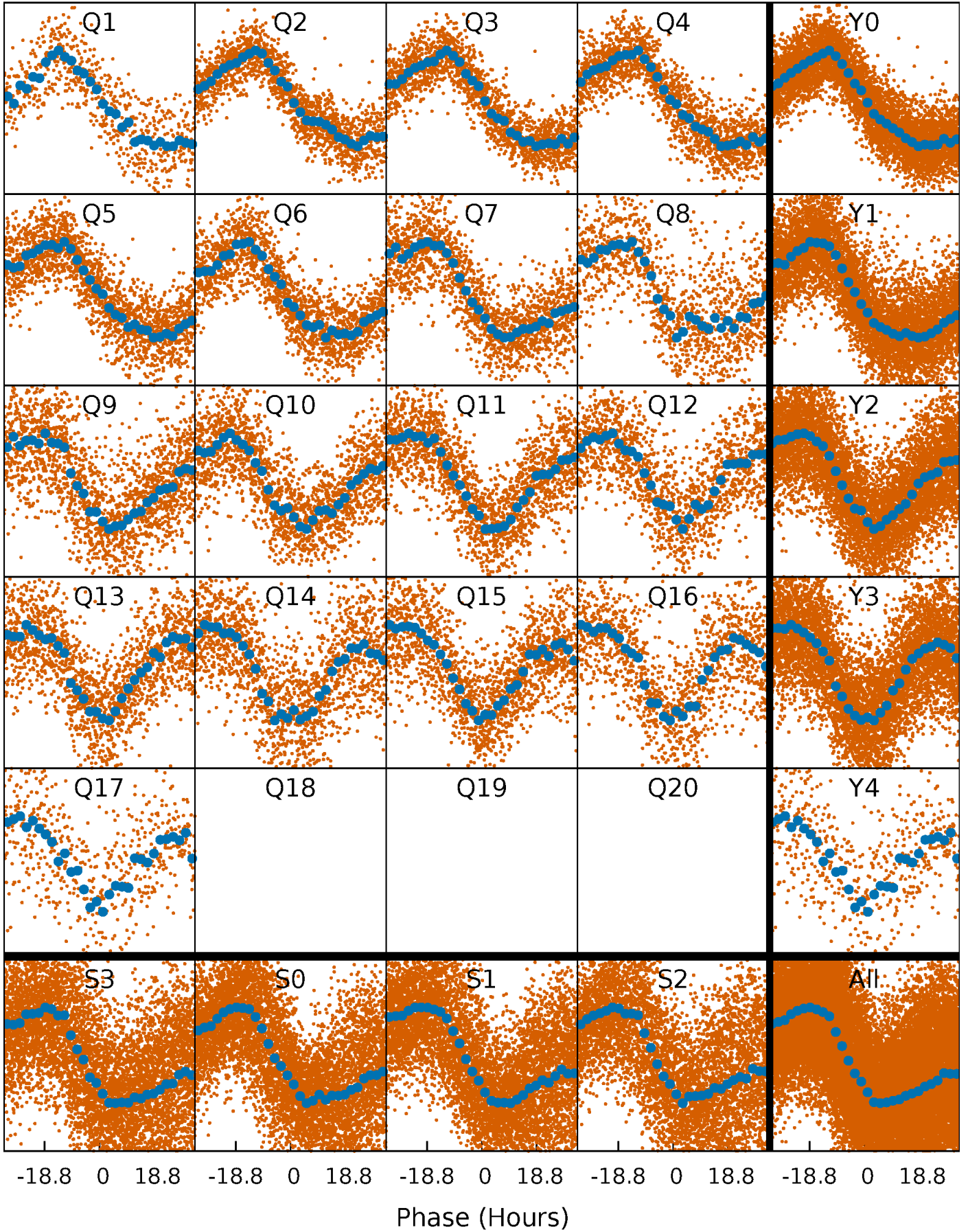


Non-Whitened Vs. Whitened Light Curve



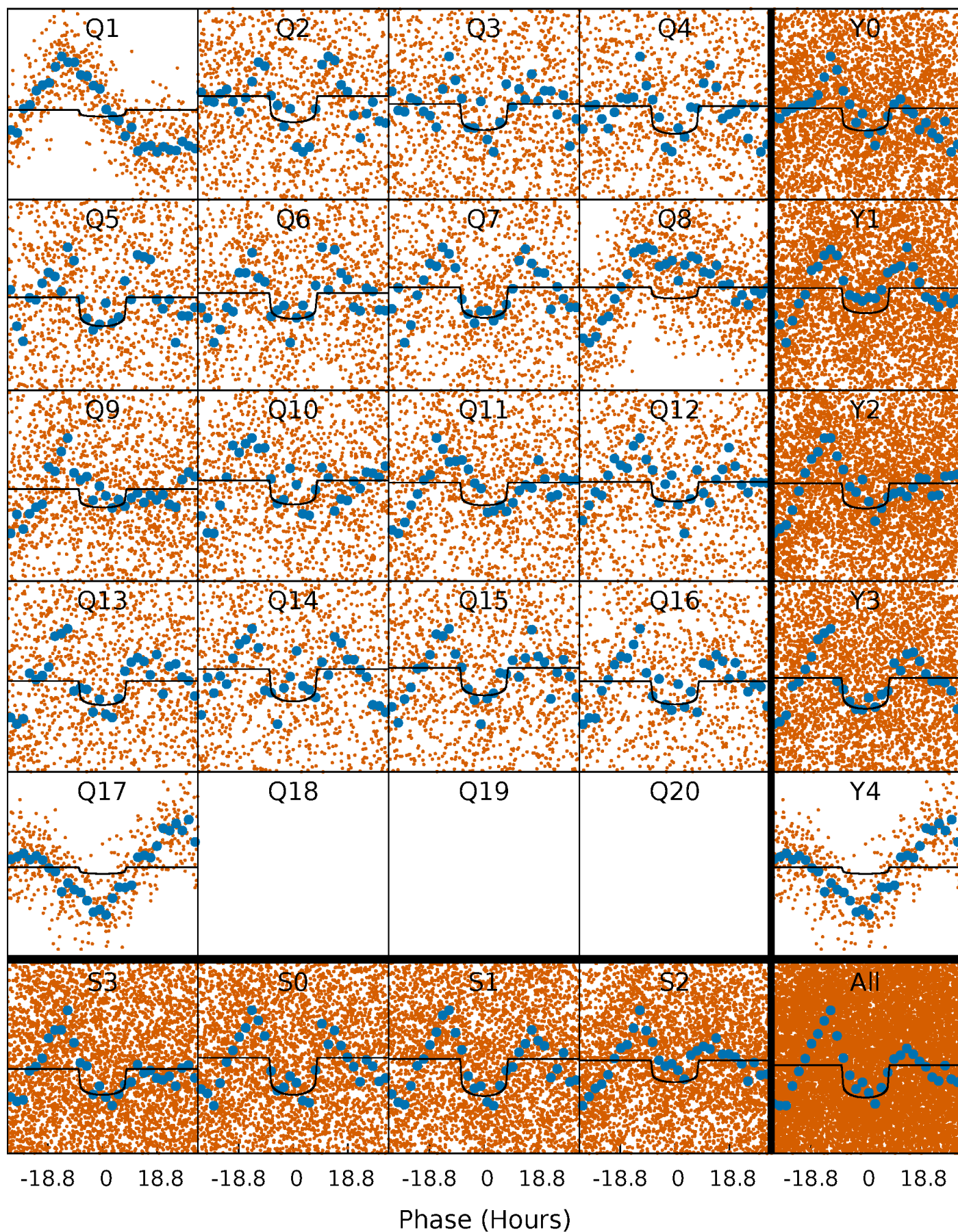
PDC Quarter-Phased Transit Curves

TCE 011706518-01 P= 6.936512 Days $T_0=132.311718$ (BKJD)



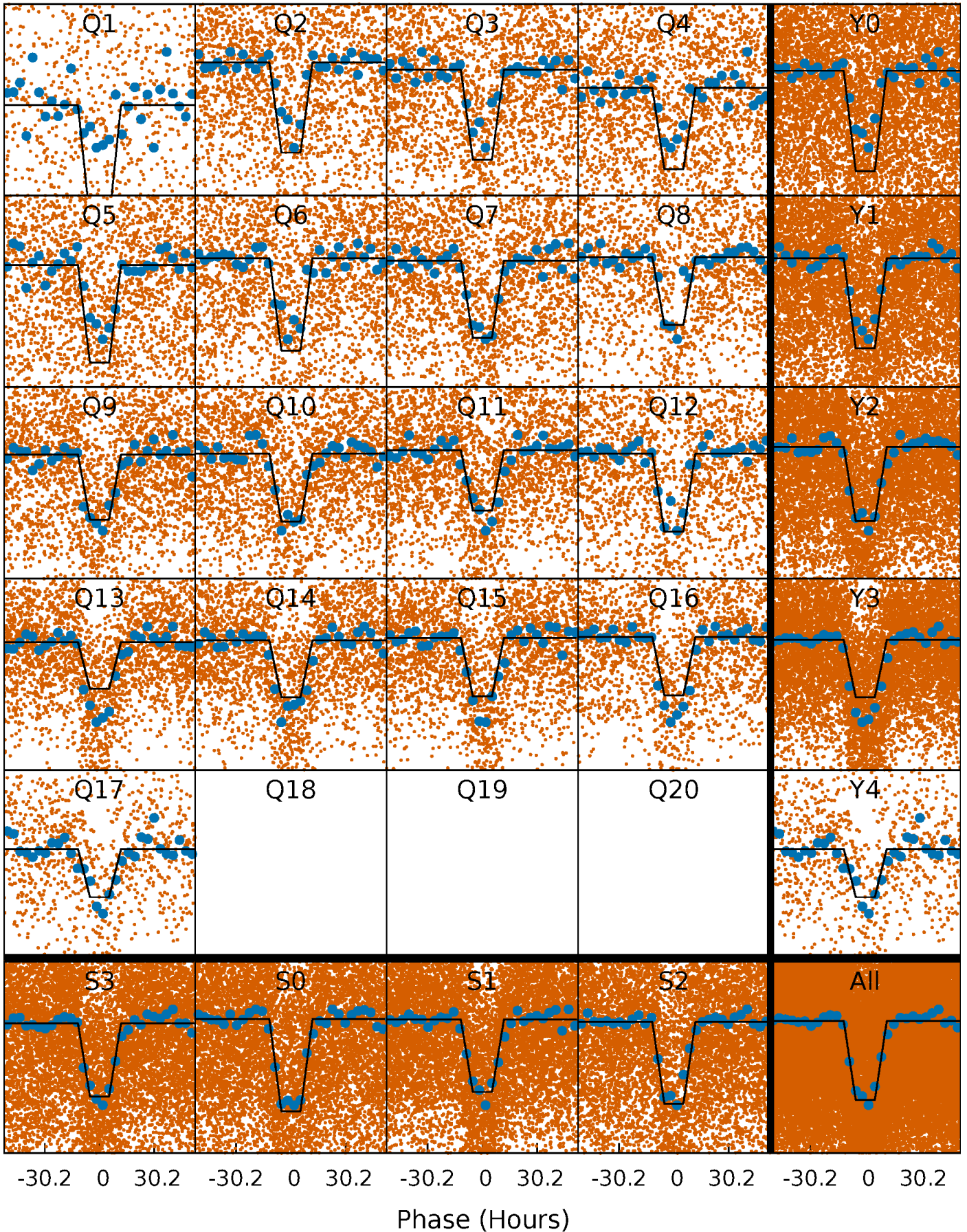
DV Quarter-Phased Transit Curves

TCE 011706518-01 P= 6.936512 Days $T_0=132.311718$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

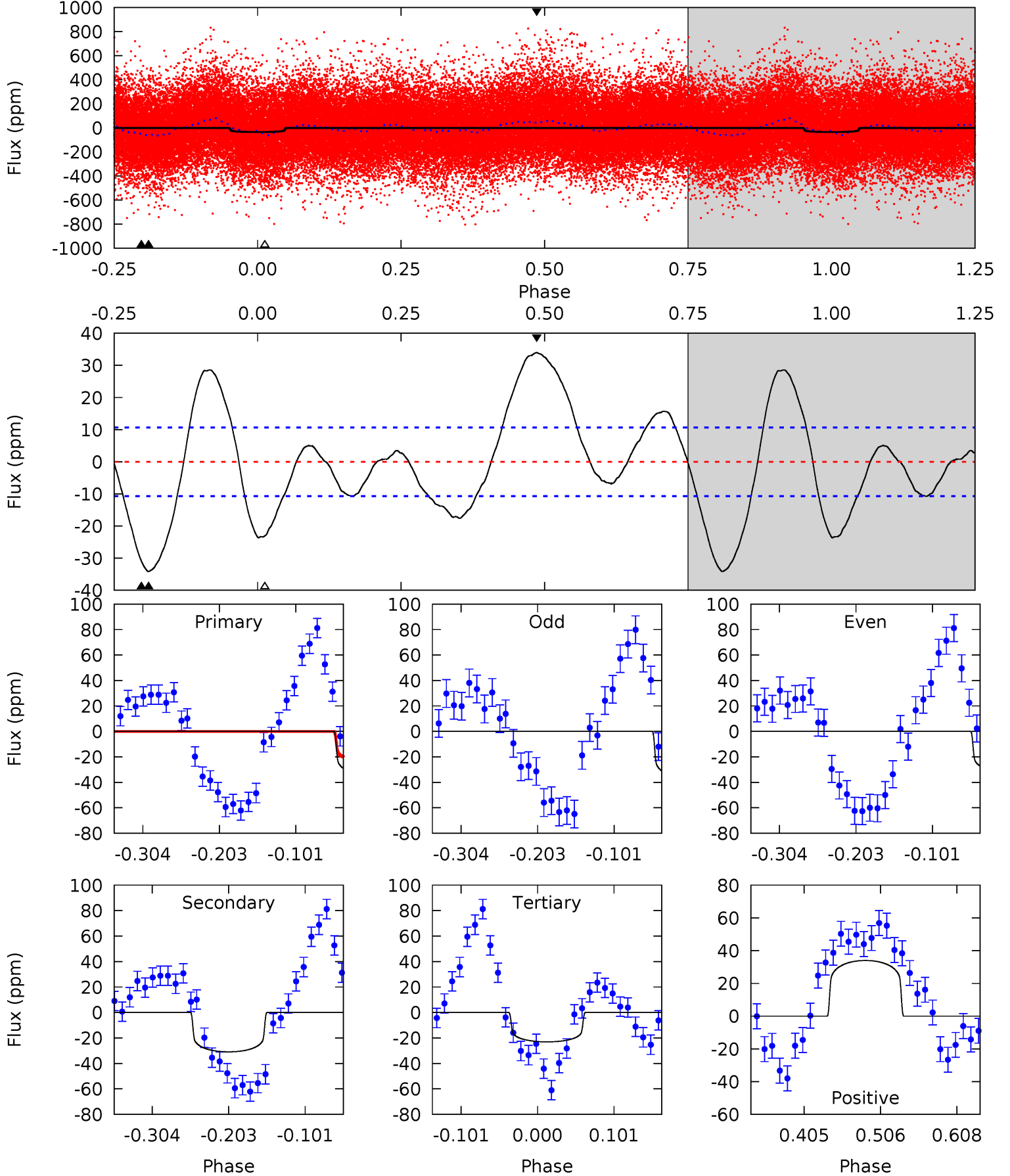
TCE 011706518-01 P= 6.935892 Days $T_0=132.391204$ (BKJD)



DV Model-Shift Uniqueness Test

011706518-01, P = 6.936512 Days, E = 125.375206 Days

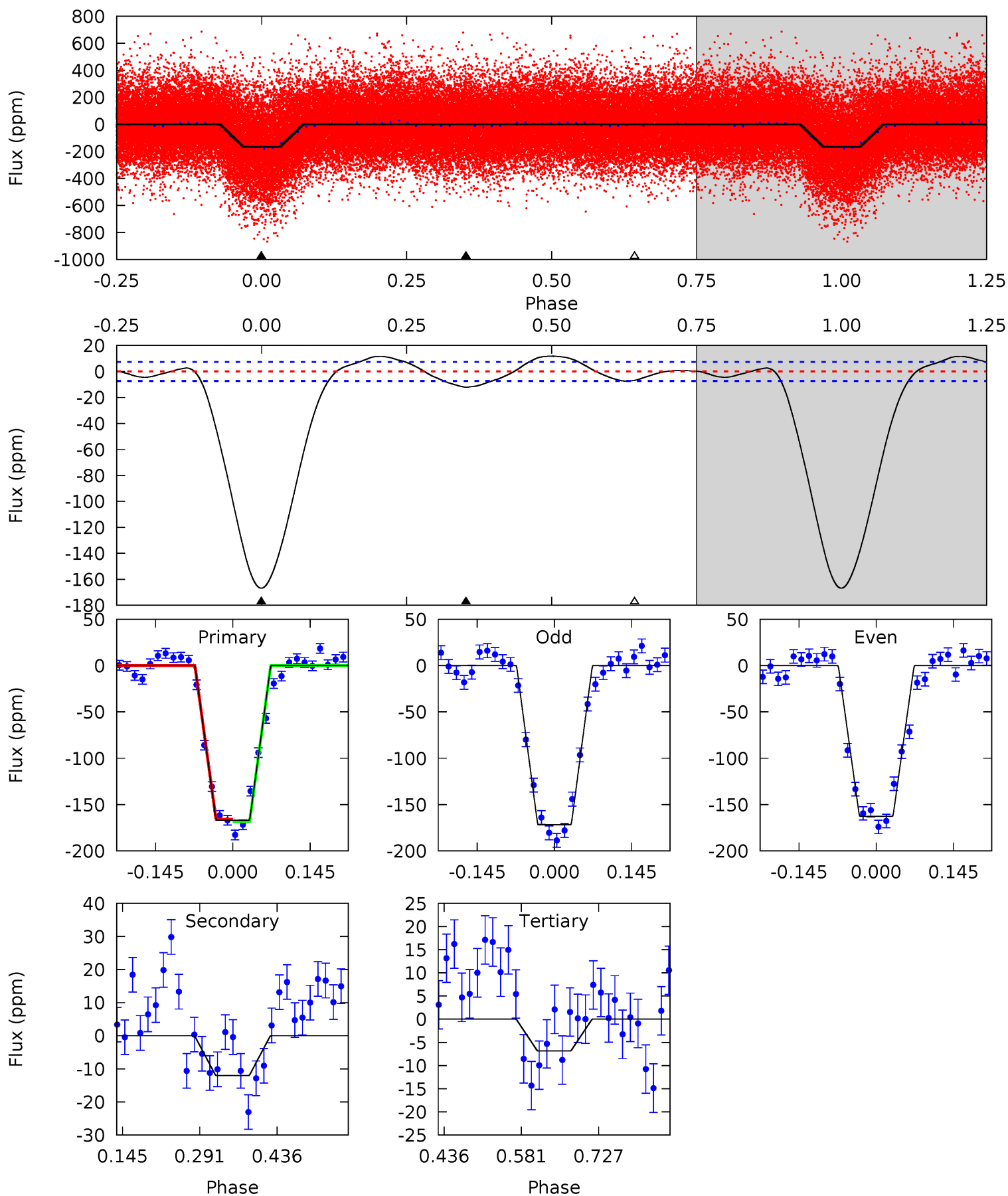
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.6	13.2	9.85	14.5	4.56	1.64	6.37	4.73	0.07	3.35	-1.31	0.94	0.87	0.50	4.49



Alt Model-Shift Uniqueness Test

011706518-01, P = 6.935892 Days, E = 125.455312 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
101.6	7.32	4.16	0	4.49	1.46	3.53	97.4	101.6	3.16	7.32	2.78	1.04	0.07	0.75



Stellar Parameters For KIC 011706518

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6851^{+170}_{-204}	$3.611^{+0.328}_{-0.082}$	$-0.400^{+0.350}_{-0.250}$	$3.270^{+0.415}_{-1.246}$	$1.594^{+0.238}_{-0.357}$	$0.064^{+0.160}_{-0.017}$
	+2%/-3%	+9%/-2%	+87%/-62%	+13%/-38%	+15%/-22%	+249%/-27%
Source	PHO1	FLK73	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 011706518-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-31 ± 2	$2.49^{+0.40}_{-0.55}$	2593^{+145}_{-251}	5949^{+404}_{-334}	20^{+10}_{-5}
Alt.	-12 ± 2	$4.55^{+0.56}_{-0.97}$	2594^{+139}_{-224}	3776^{+159}_{-144}	$2.303^{+1.094}_{-0.530}$

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

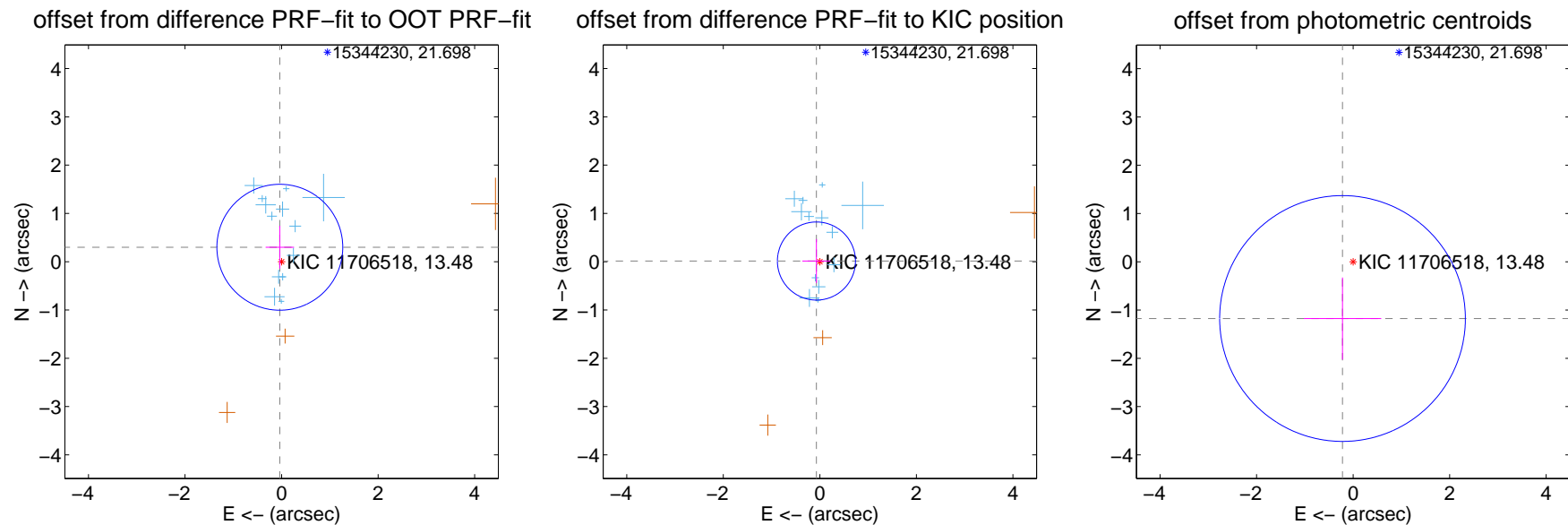
DV Centroid Data

Supplemental centroid analysis for 011706518-01. Kepler magnitude: 13.48. Transit SNR 9.32

There are 13 quarters with good PRF difference image offsets

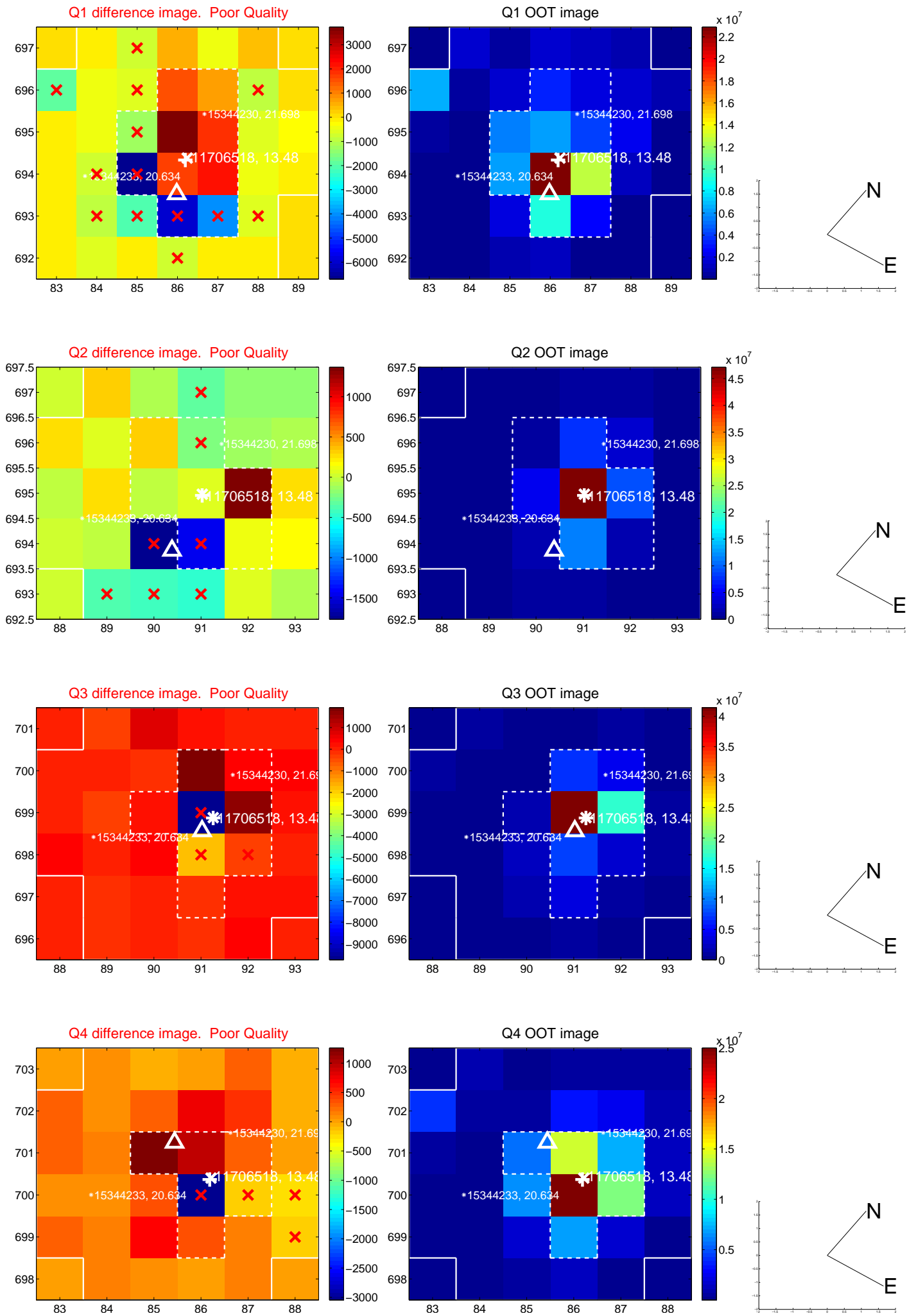
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.301 ± 0.435	0.69	0.036 ± 0.294	0.299 ± 0.443
PRF-fit source offset from KIC position	0.072 ± 0.270	0.27	0.071 ± 0.292	0.014 ± 0.454
photometric centroid source offset	1.20 ± 0.85	1.41	0.22 ± 0.80	-1.18 ± 0.85

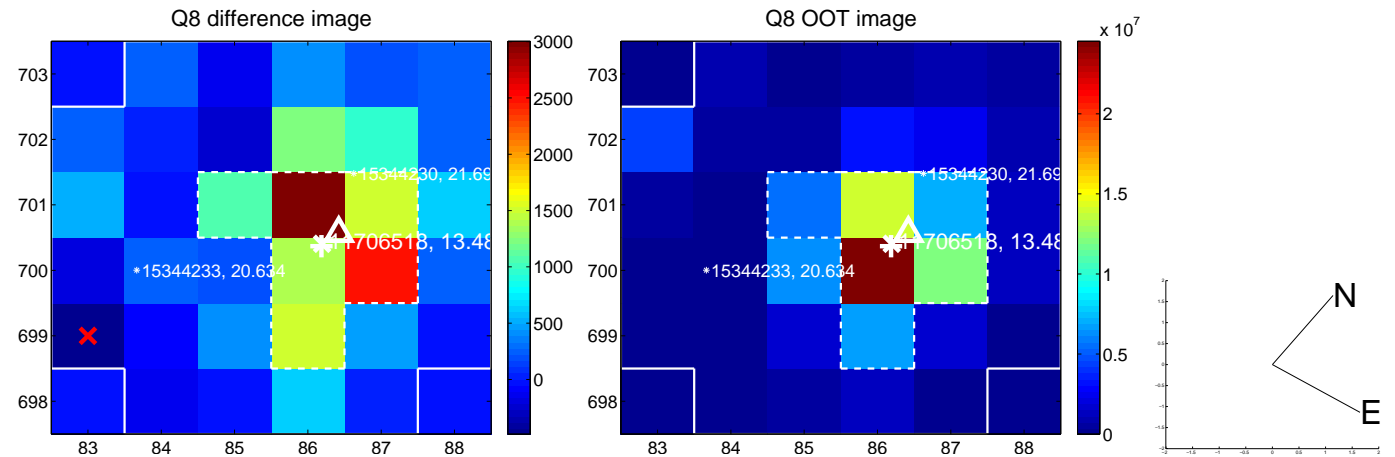
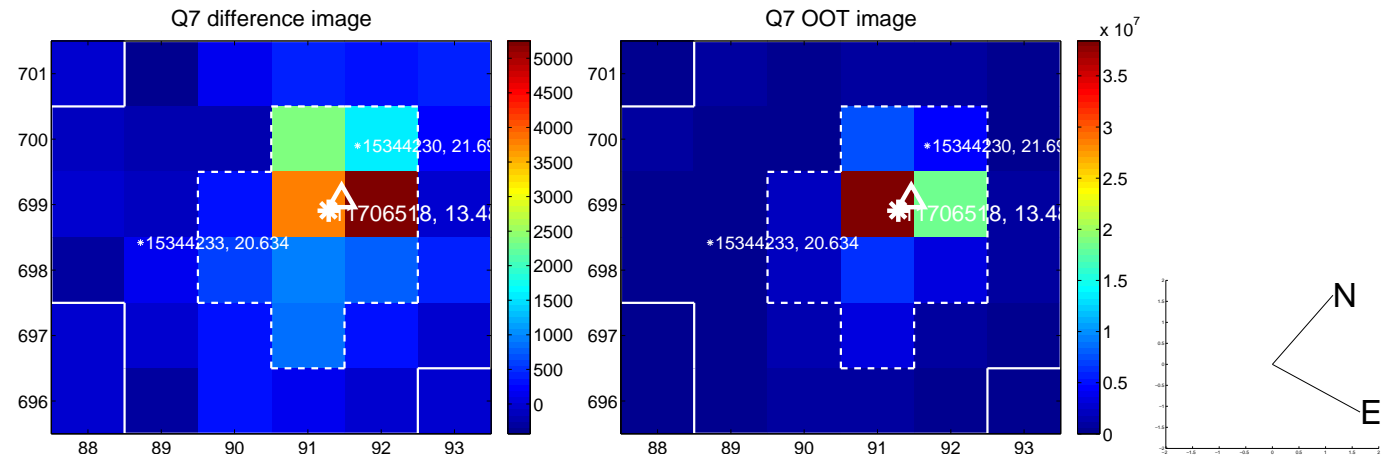
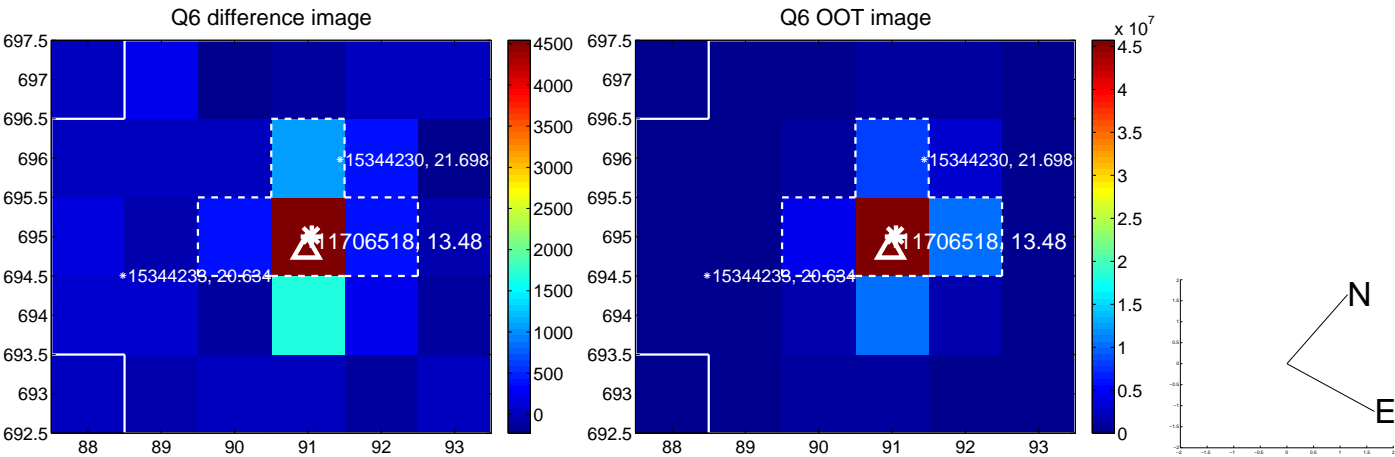
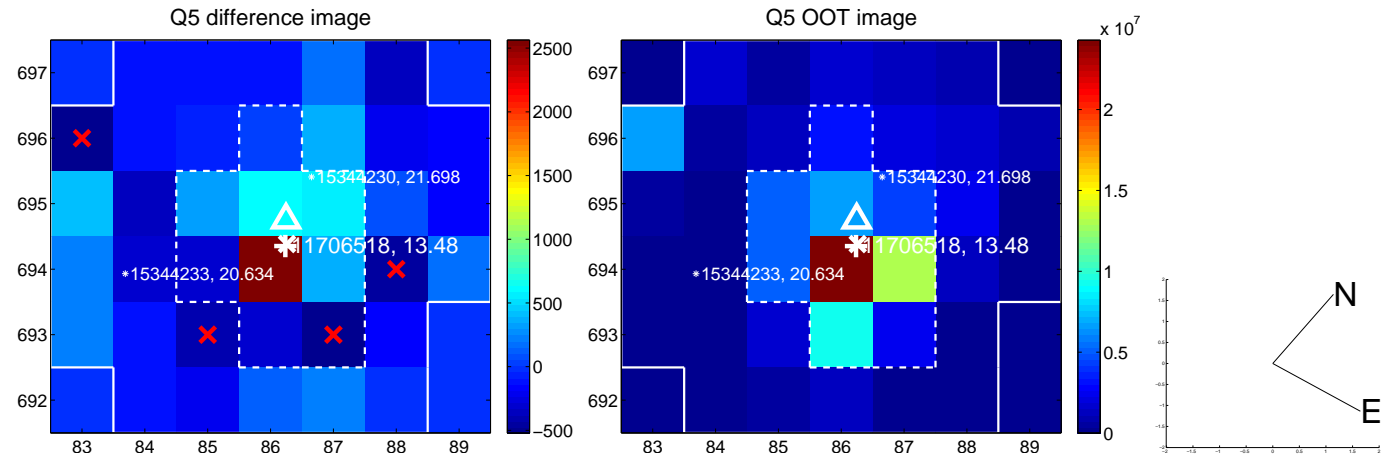


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

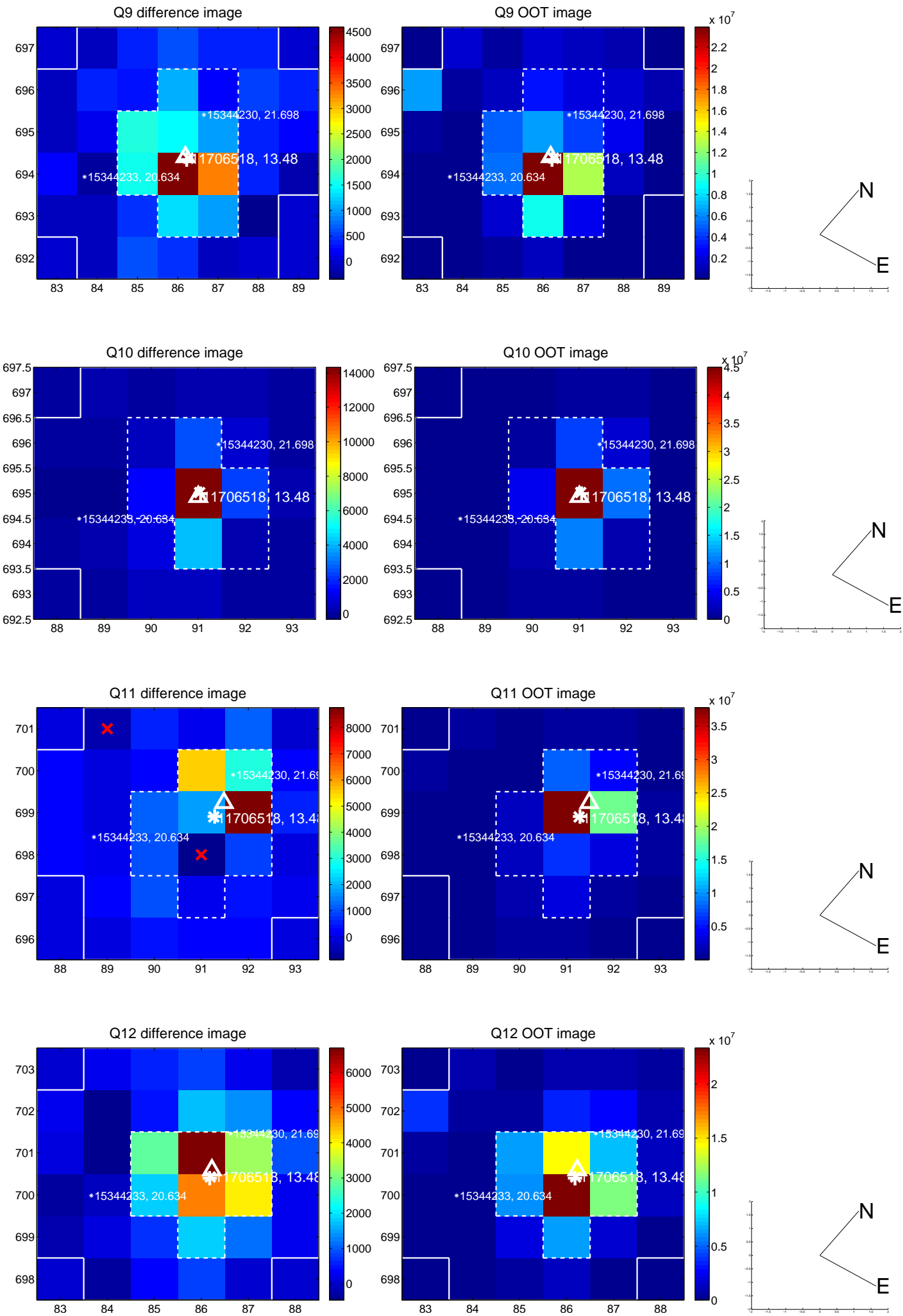
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



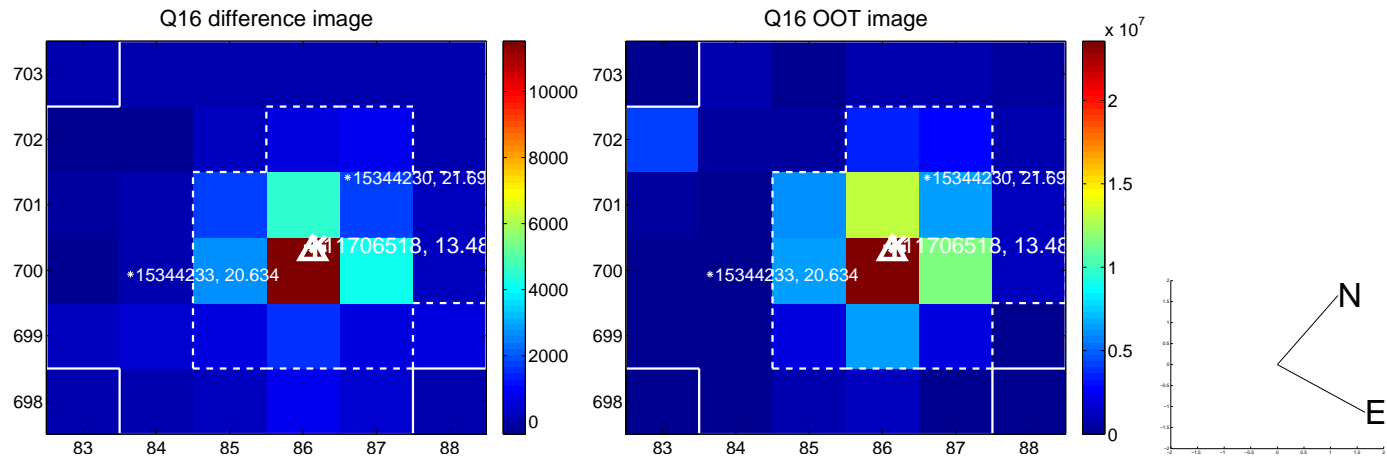
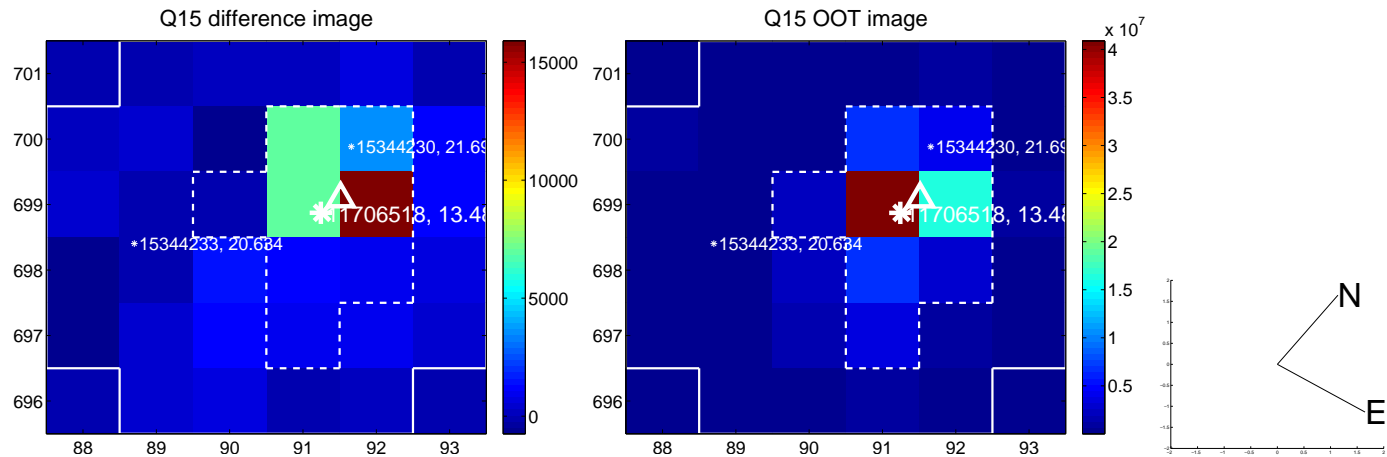
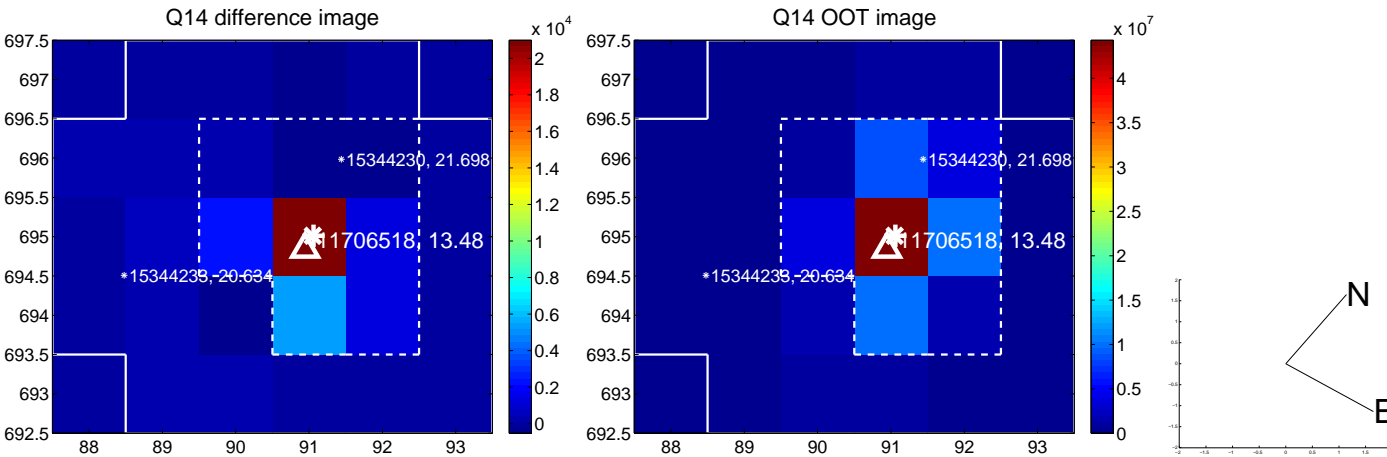
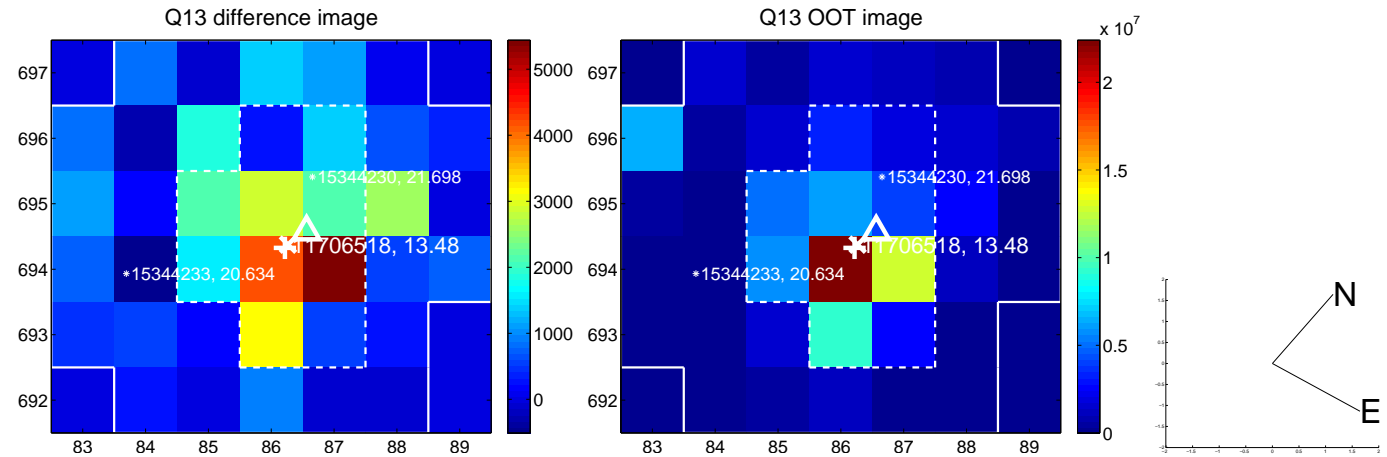
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



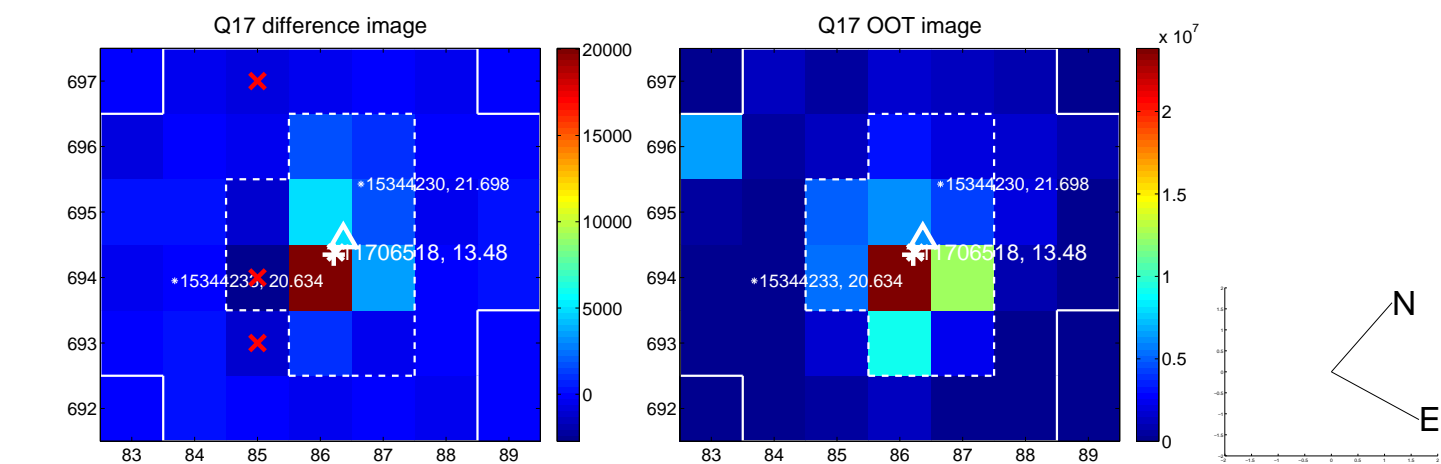
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



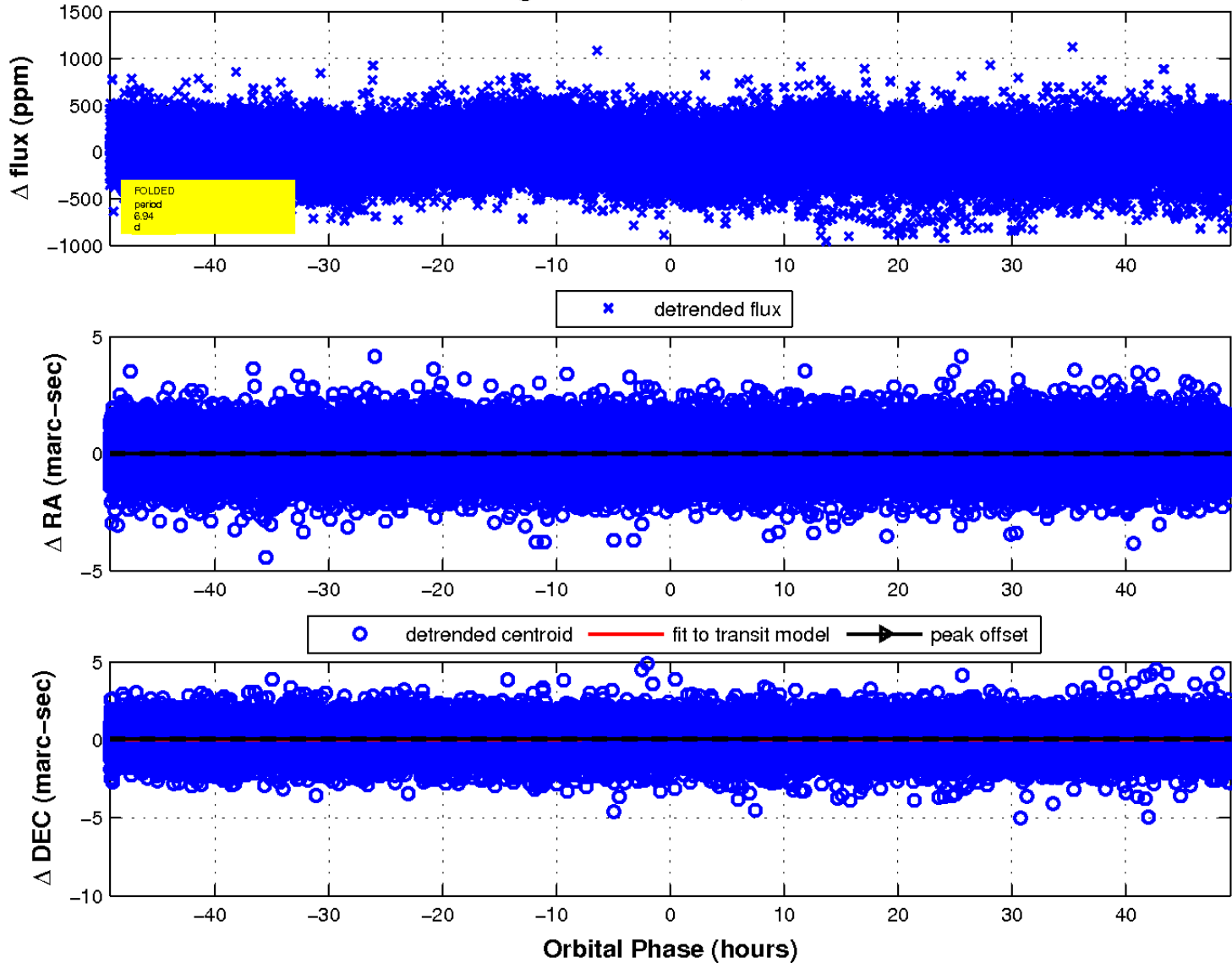
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

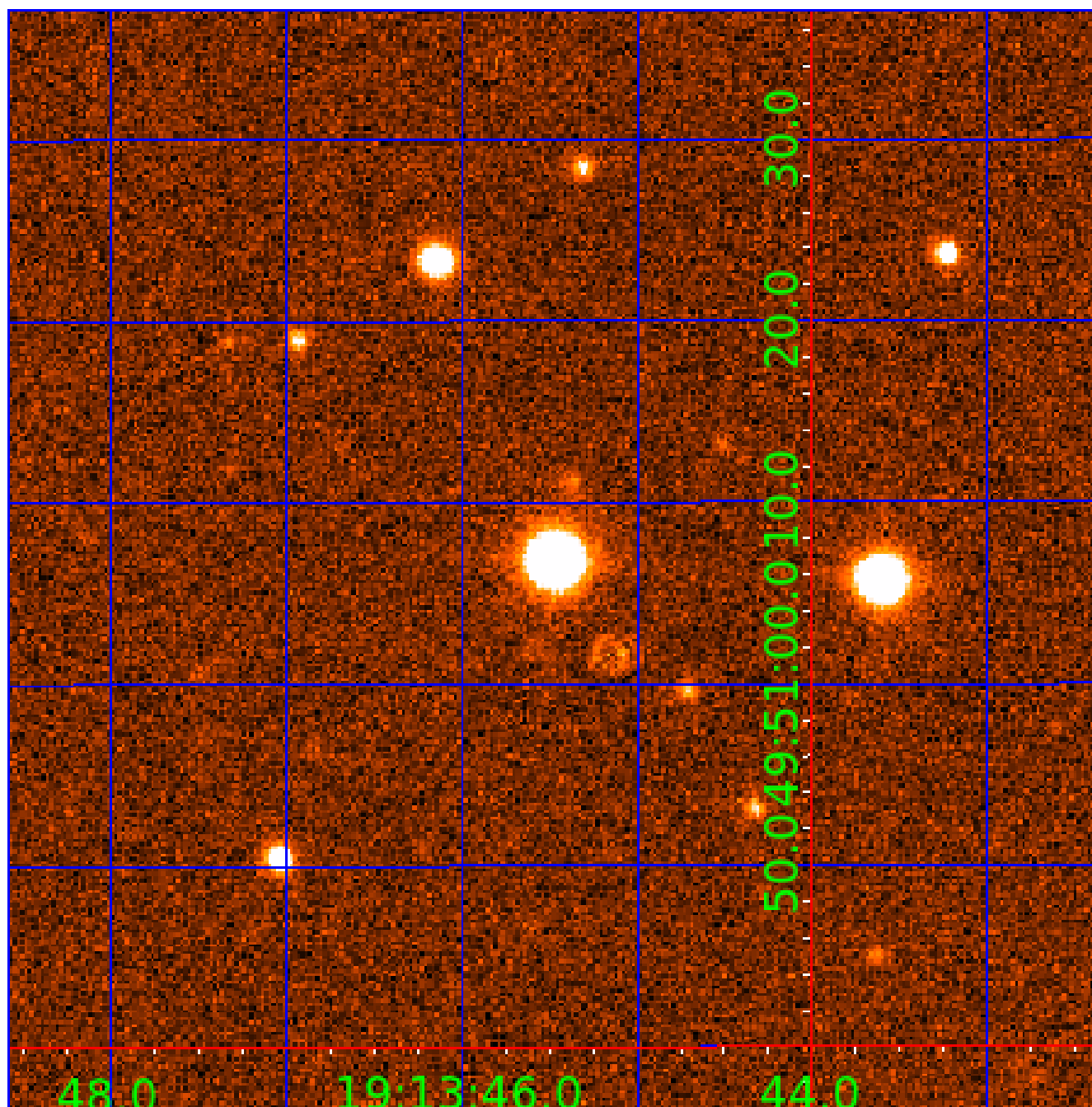


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 011706518

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})
011706518-01	OBS	No	6.936512	132.311718	47.6	16.415	9.5	9.3	3.27	6851	2.58	3053.19
011706518-02	OBS	No	2.775098	132.068329	32.8	10.442	8.4	9.0	3.27	6851	2.17	10357.08

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011706518-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
011706518-02	OBS	FP	0.00	1	0	1	0	LPP_DV—HALO_GHOST

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

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

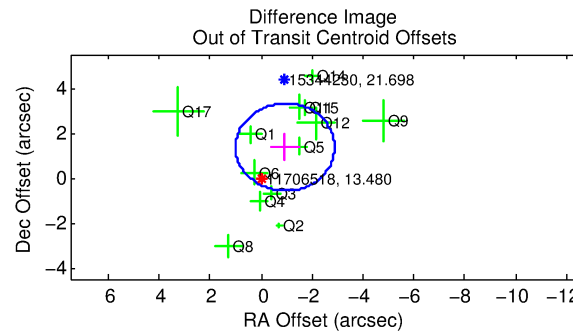
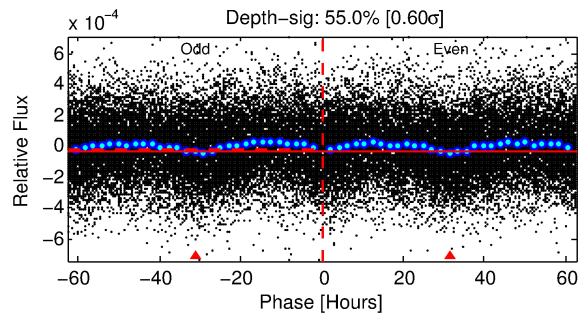
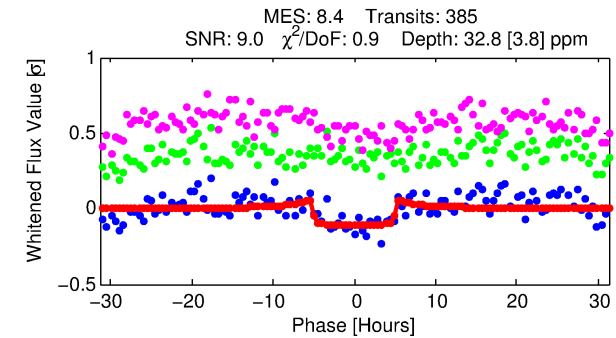
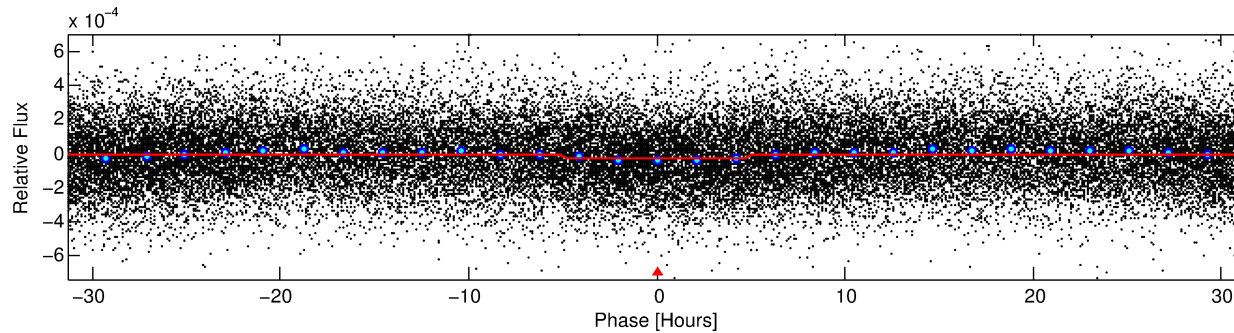
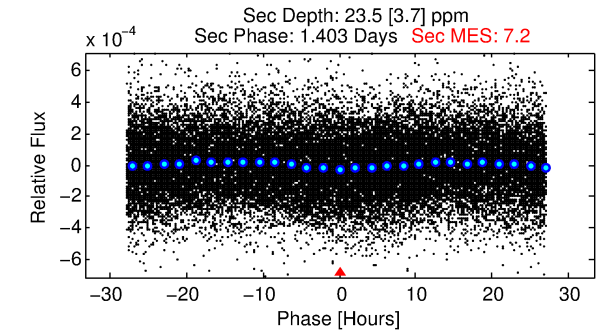
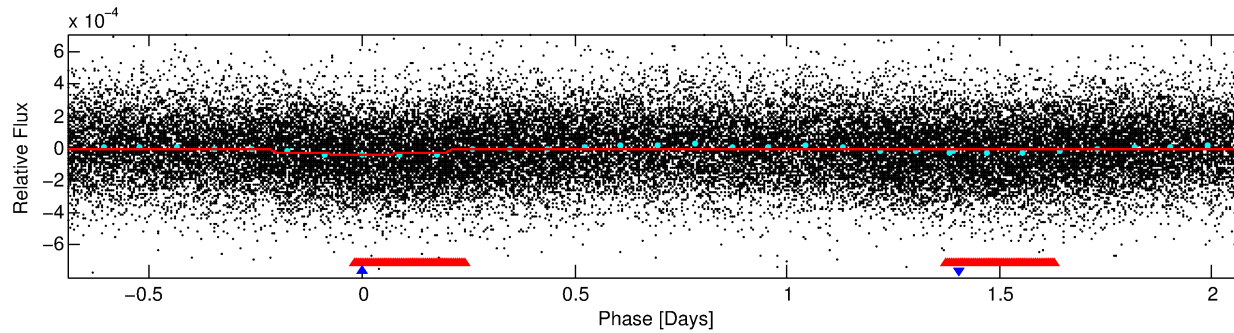
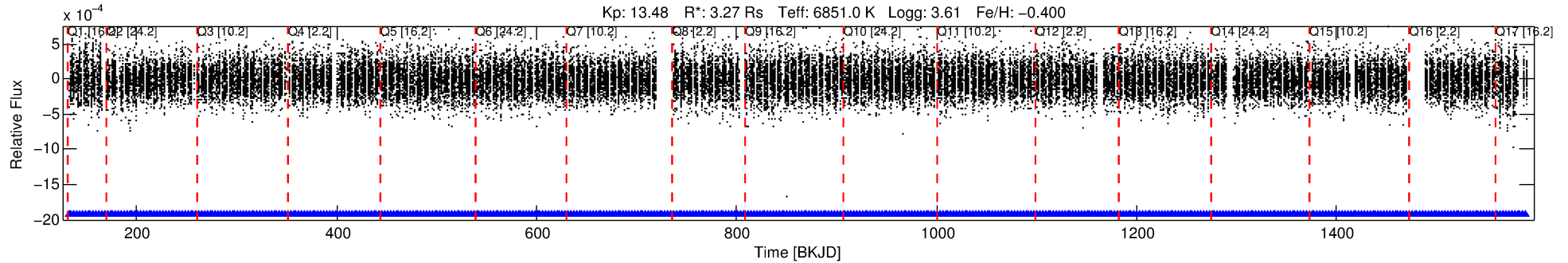
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011706518-02

No Significant Match Found

DV One-Page Summary

KIC: 11706518 Candidate: 2 of 2 Period: 2.775 d



DV Fit Results:

Period = 2.77510 [0.00003] d
Epoch = 132.0683 [0.0076] BKJD
Rp/R* = 0.0061 [0.0012]
a/R* = 1.32 [0.66]
b = 0.90 [0.26]
Seff = 10357.09 [5969.73]
Teq = 2572 [371] K
Rp = 2.17 [0.93] Re
a = 0.0451 [0.0161] AU
Ag = 5.61 [3.97] [1.16 σ]
Teffp = 6120 [682] K [4.57 σ]

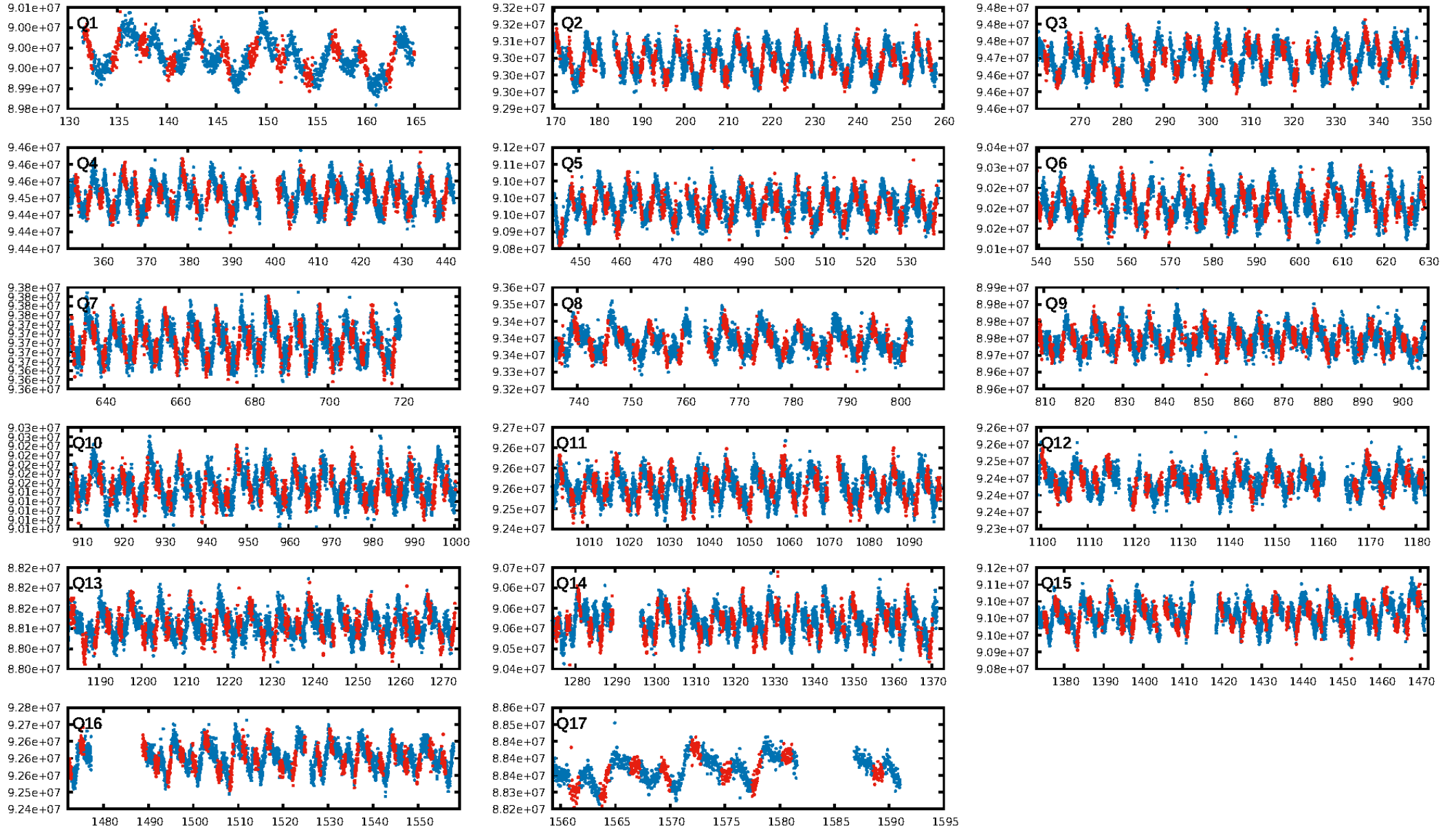
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [5.13 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.22e-11
RollingBand-fgt: 1.00 [370/370]
GhostDiagnostic-chr: 0.1633
Centroid-sig: 96.5%
Centroid-so: 0.092 arcsec [0.10 σ]
OotOffset-rm: 1.658 arcsec [2.55 σ]
OotOffset-st: 3/3/3/4 [13]
KicOffset-rm: 1.583 arcsec [2.21 σ]
KicOffset-st: 3/3/3/4 [13]
DiffImageQuality-fgm: 0.46 [6/13]
DiffImageOverlap-fno: 1.00 [17/17]

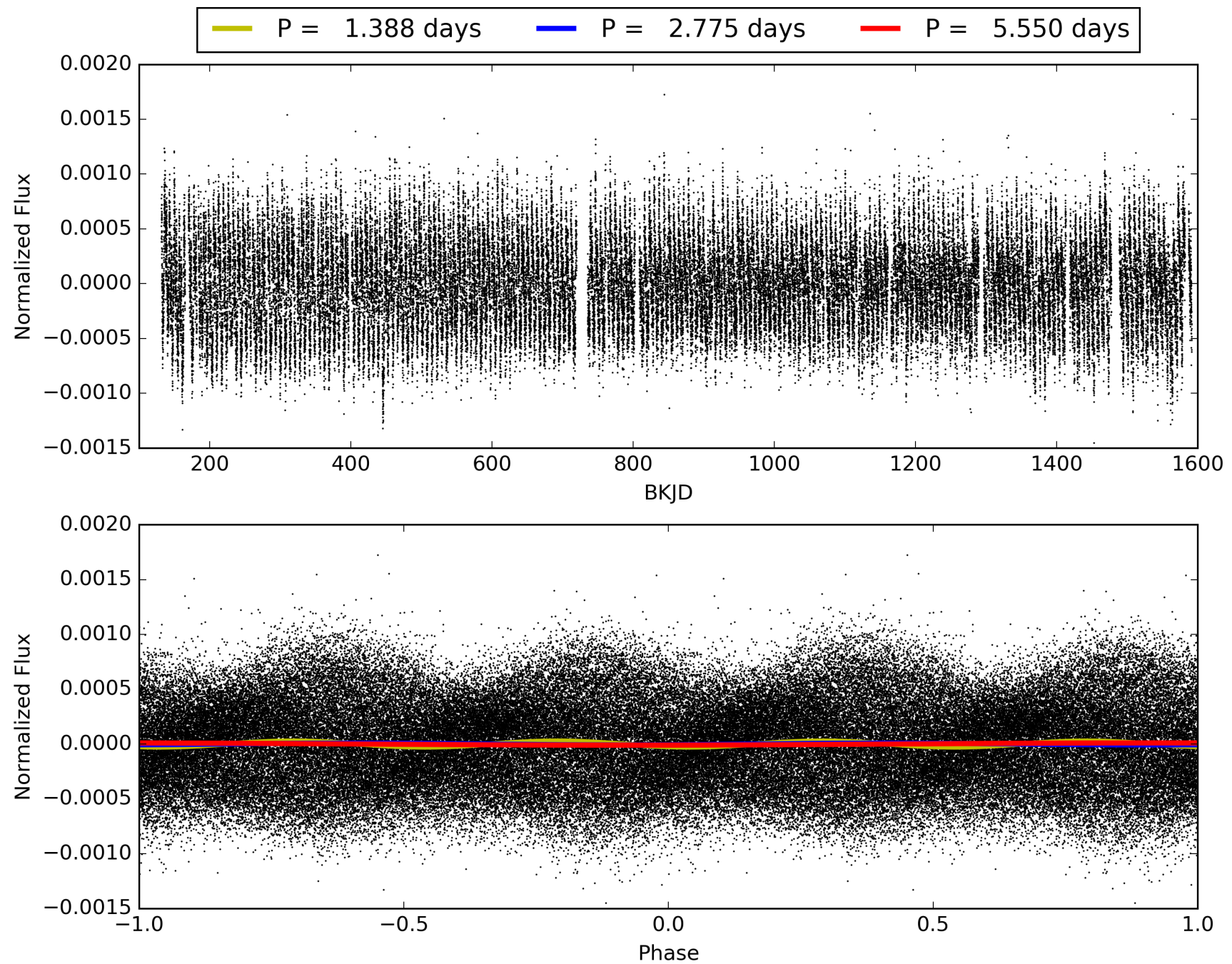
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 011706518-02, PDC Light Curves

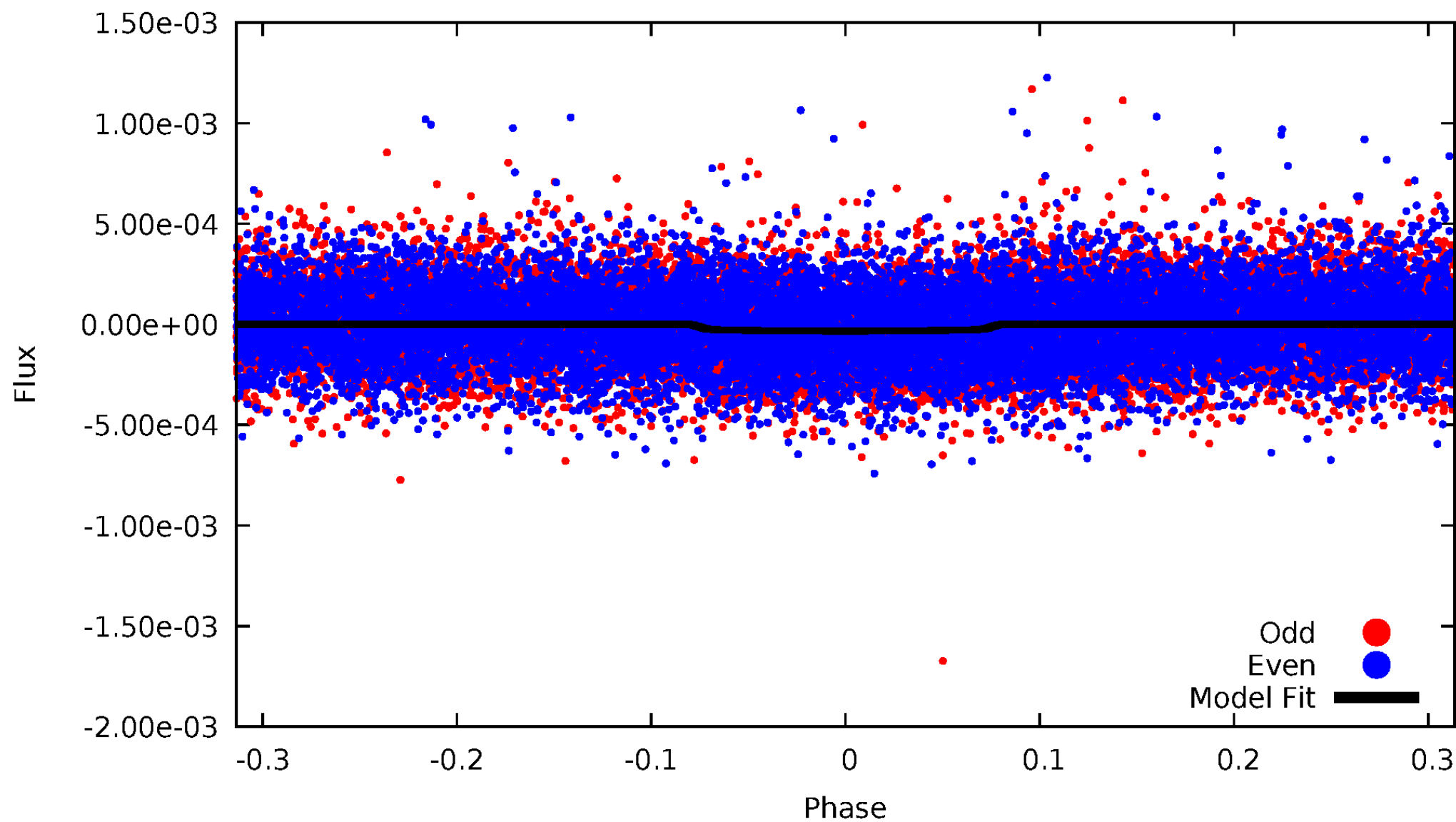


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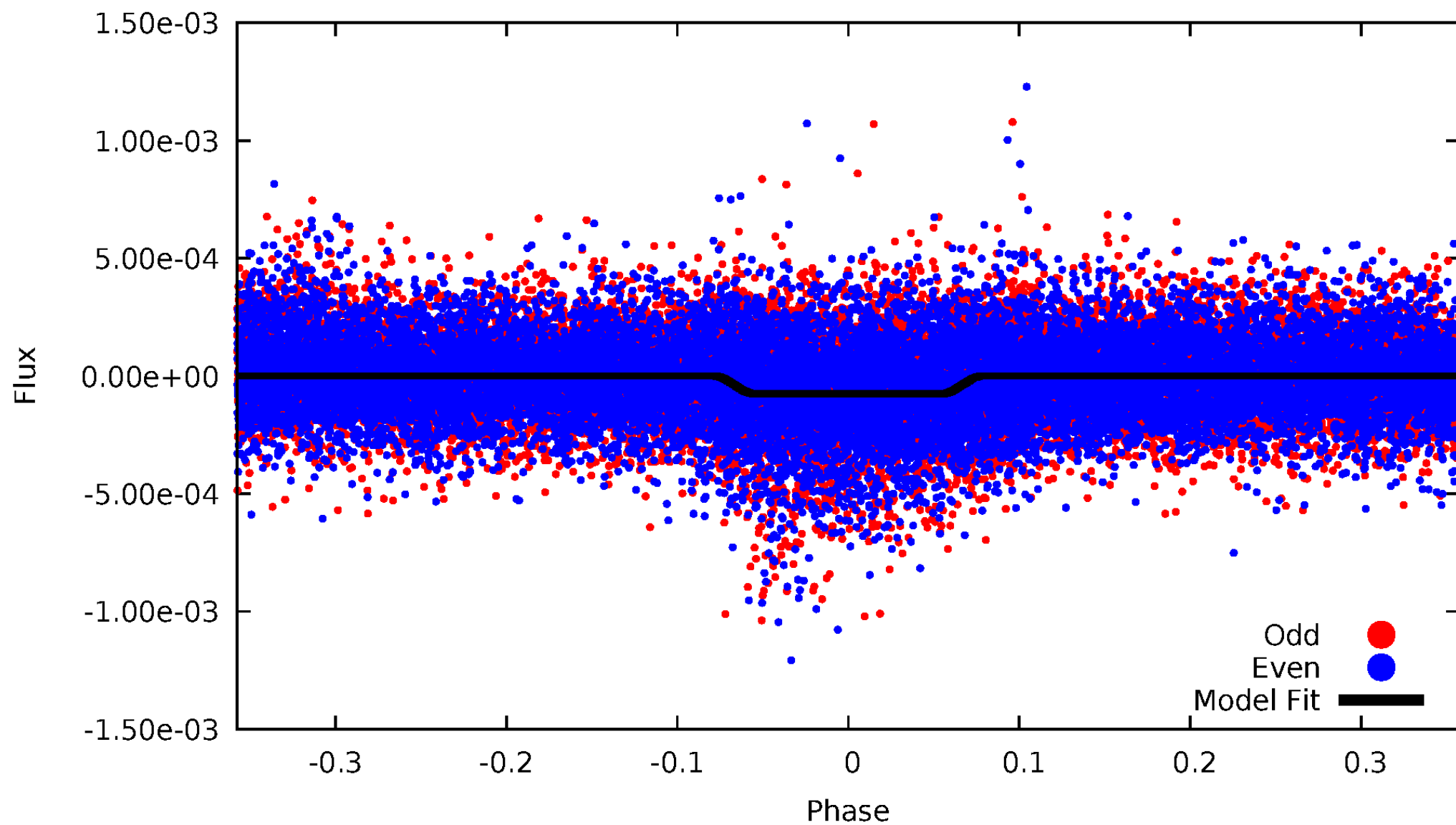
DV Odd/Even

TCE 011706518-02



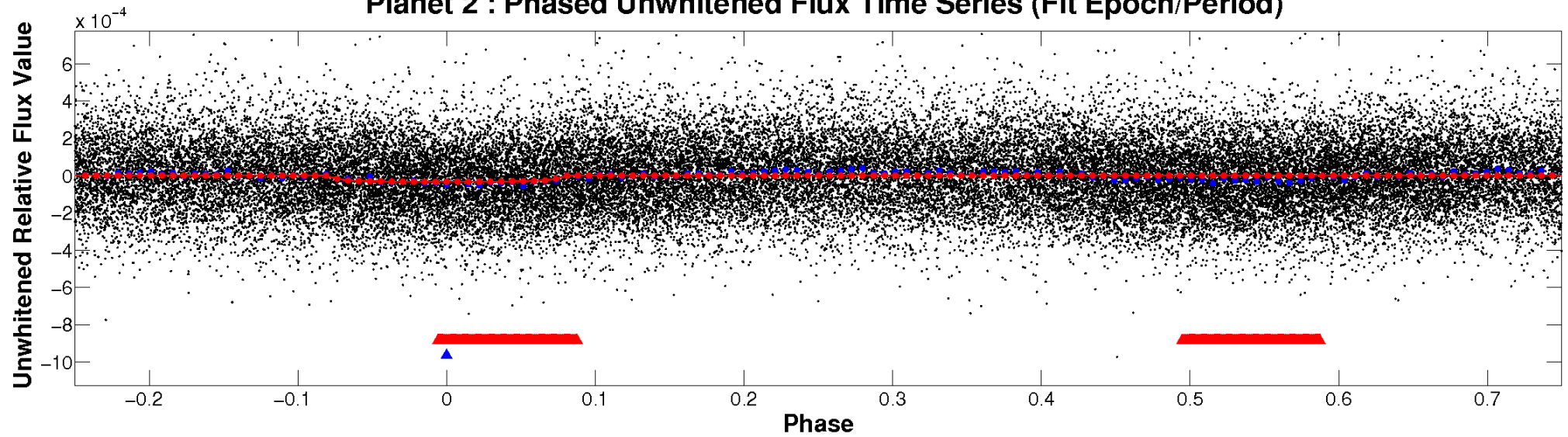
ALT Odd/Even

TCE 011706518-02

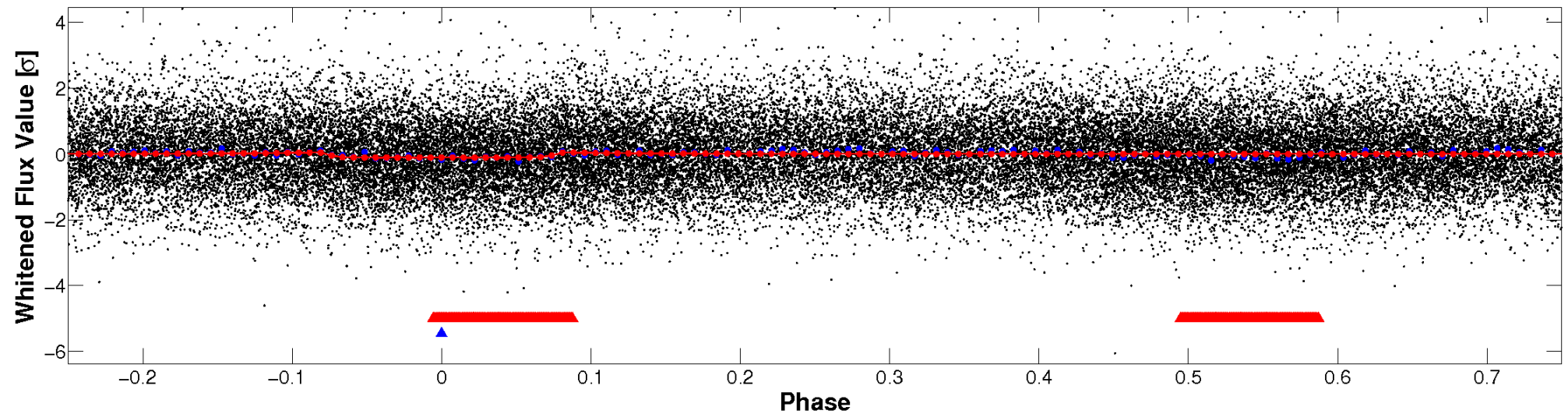


Non-Whitened Vs. Whitened Light Curve

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

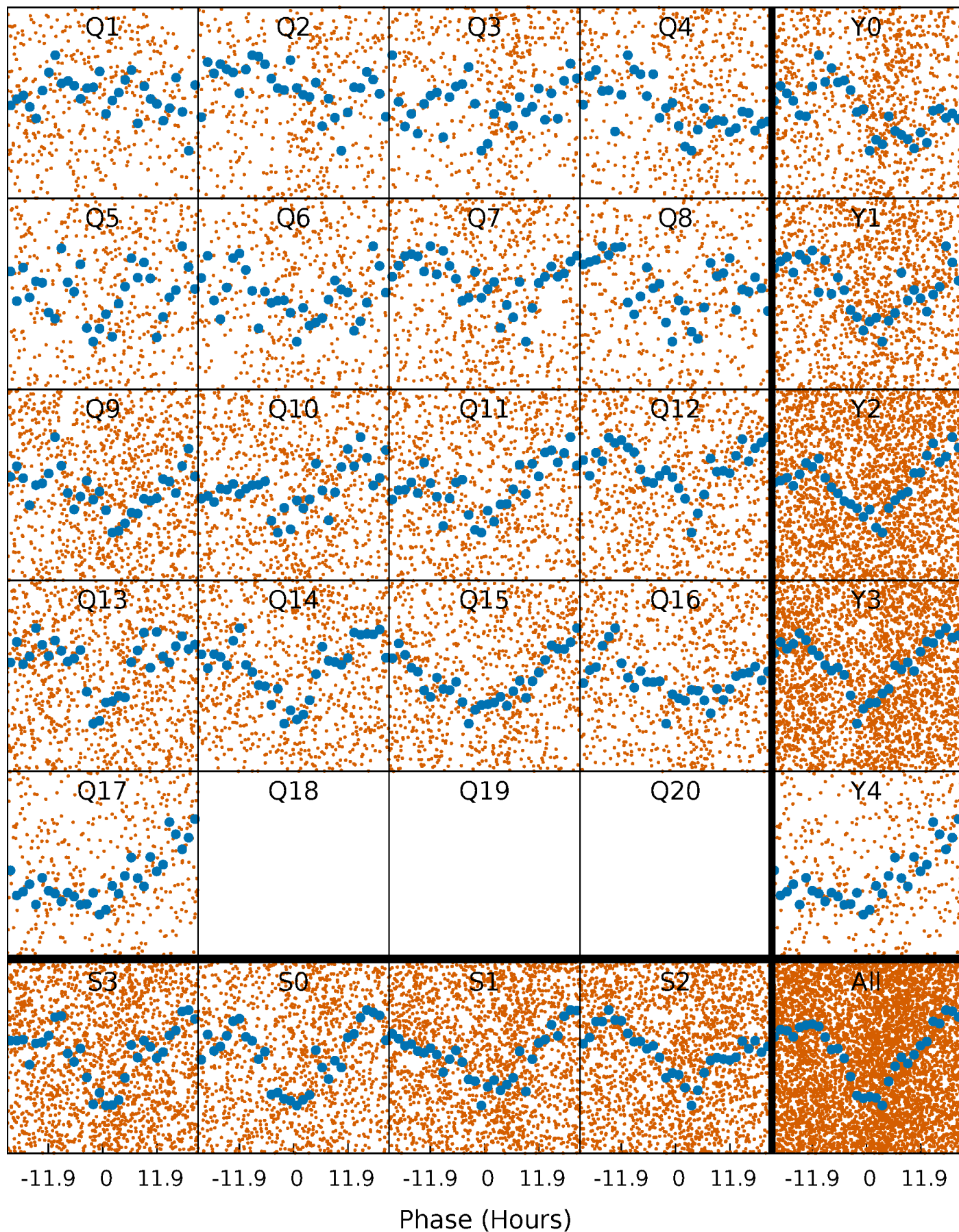


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



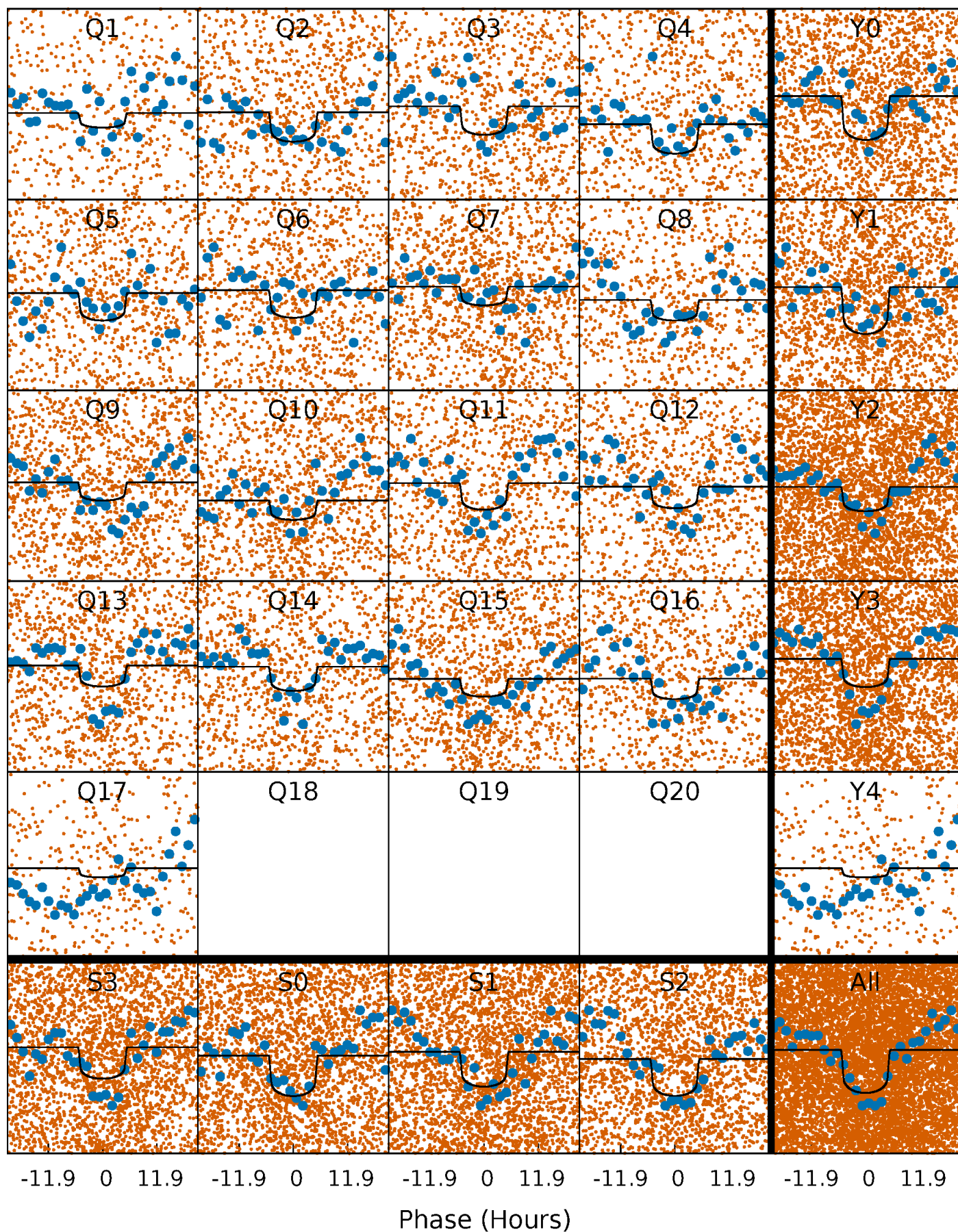
PDC Quarter-Phased Transit Curves

TCE 011706518-02 P= 2.775098 Days $T_0=132.068329$ (BKJD)



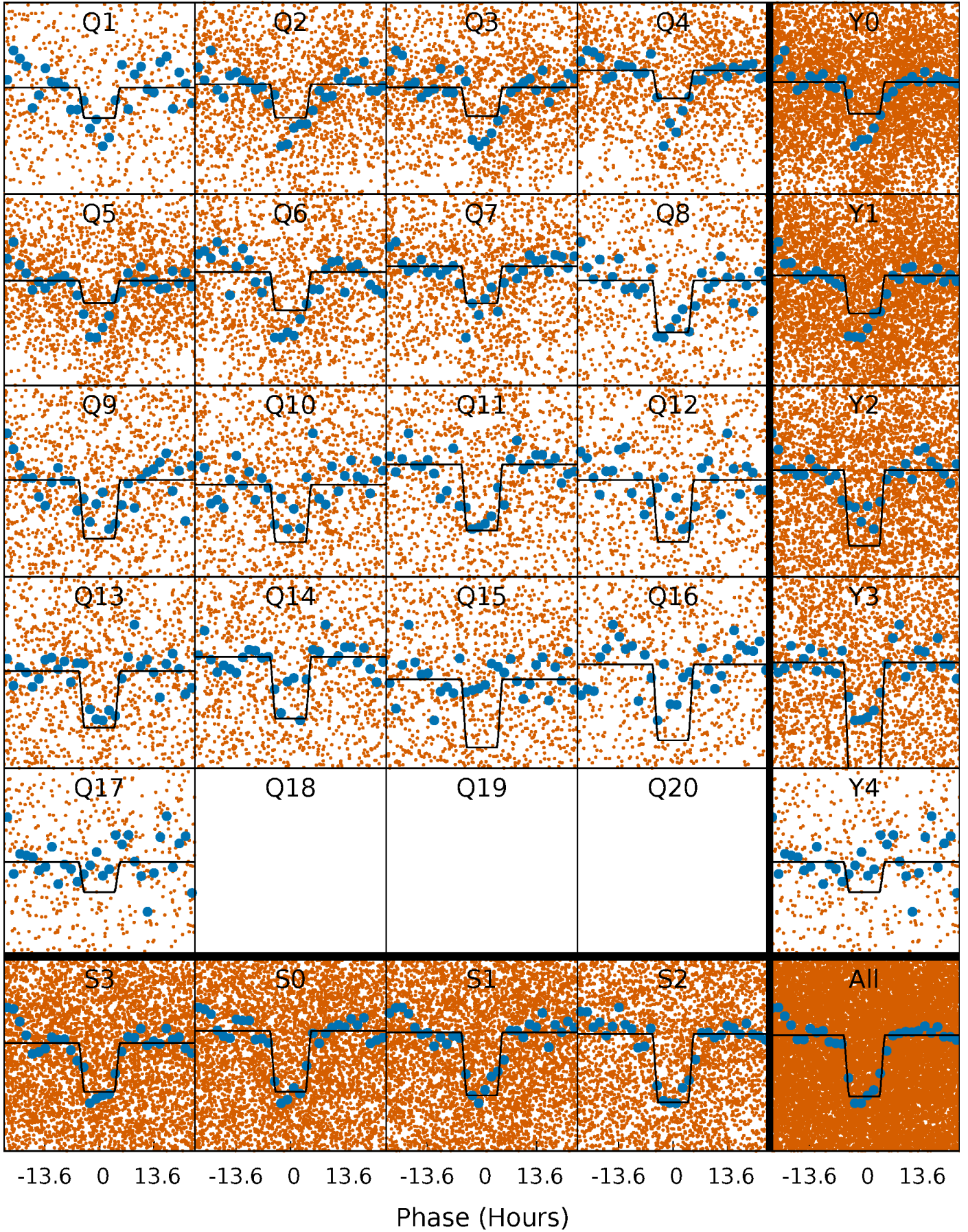
DV Quarter-Phased Transit Curves

TCE 011706518-02 P= 2.775098 Days $T_0=132.068329$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

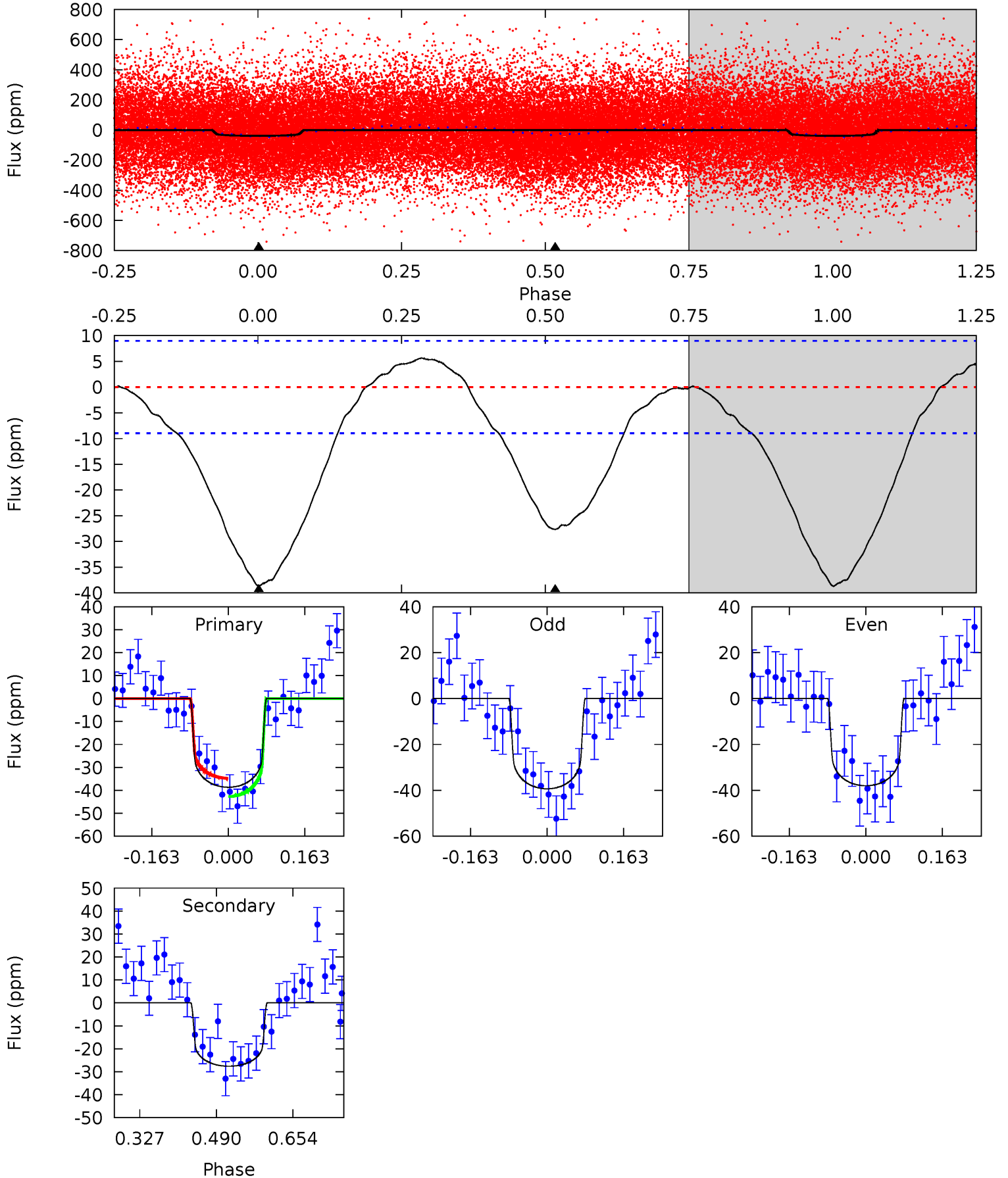
TCE 011706518-02 P= 2.775036 Days $T_0=132.076011$ (BKJD)



DV Model-Shift Uniqueness Test

011706518-02, P = 2.775098 Days, E = 132.068329 Days

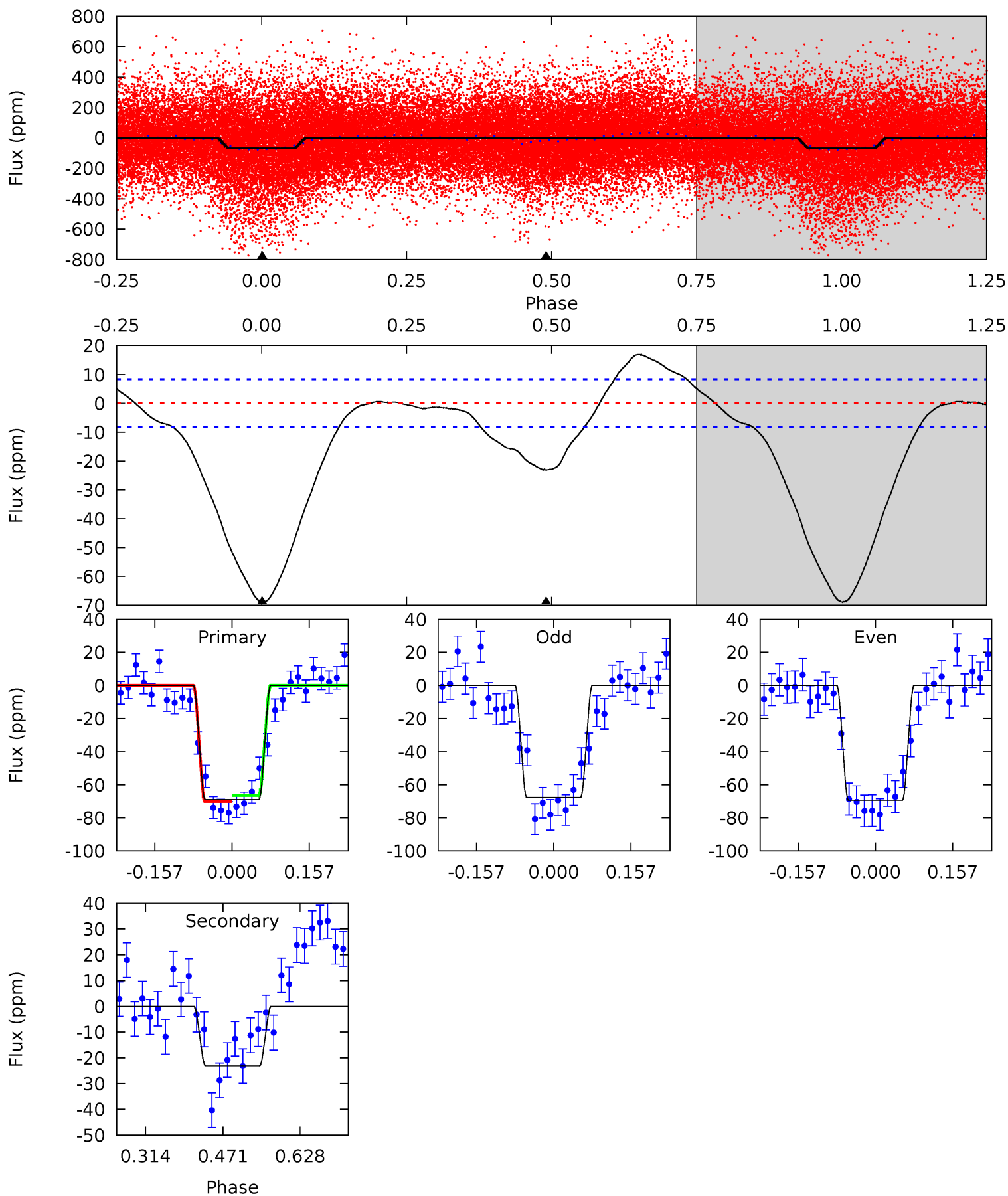
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.2	13.7	0	0	4.46	1.39	1.65	19.2	19.2	13.7	13.7	0.33	0.88	0.13	1.98



Alt Model-Shift Uniqueness Test

011706518-02, P = 2.775036 Days, E = 132.076011 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
36.9	12.4	0	0	4.47	1.42	3.66	36.9	36.9	12.4	12.4	0.49	1.82	0.20	0.99



Stellar Parameters For KIC 011706518

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6851^{+170}_{-204}	$3.611^{+0.328}_{-0.082}$	$-0.400^{+0.350}_{-0.250}$	$3.270^{+0.415}_{-1.246}$	$1.594^{+0.238}_{-0.357}$	$0.064^{+0.160}_{-0.017}$
	+2%/-3%	+9%/-2%	+87%/-62%	+13%/-38%	+15%/-22%	+249%/-27%
Source	PHO1	FLK73	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 011706518-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-28 ± 2	$2.03^{+0.52}_{-0.53}$	3517^{+197}_{-351}	6261^{+885}_{-560}	$7.612^{+5.871}_{-2.745}$
Alt.	-23 ± 2	$2.98^{+0.56}_{-0.66}$	3514^{+197}_{-299}	4993^{+387}_{-328}	$3.001^{+1.568}_{-0.904}$

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 $A_{obs} \gg 1.0$

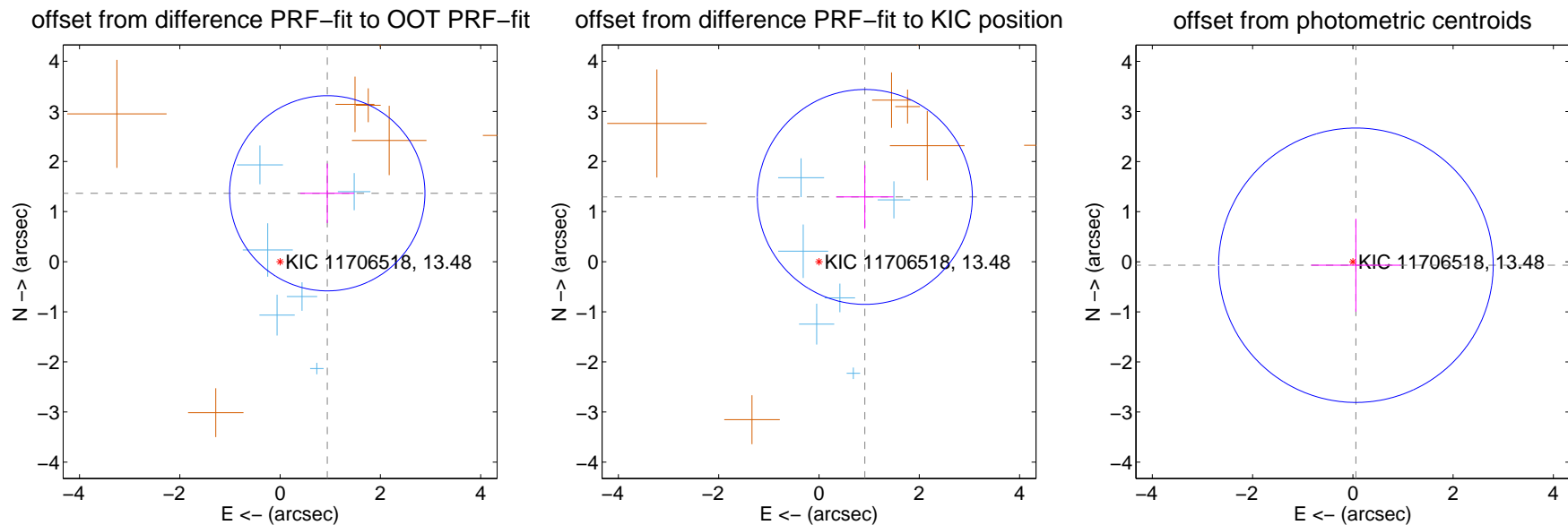
DV Centroid Data

Supplemental centroid analysis for 011706518-02. Kepler magnitude: 13.48. Transit SNR 9.02

There are 6 quarters with good PRF difference image offsets

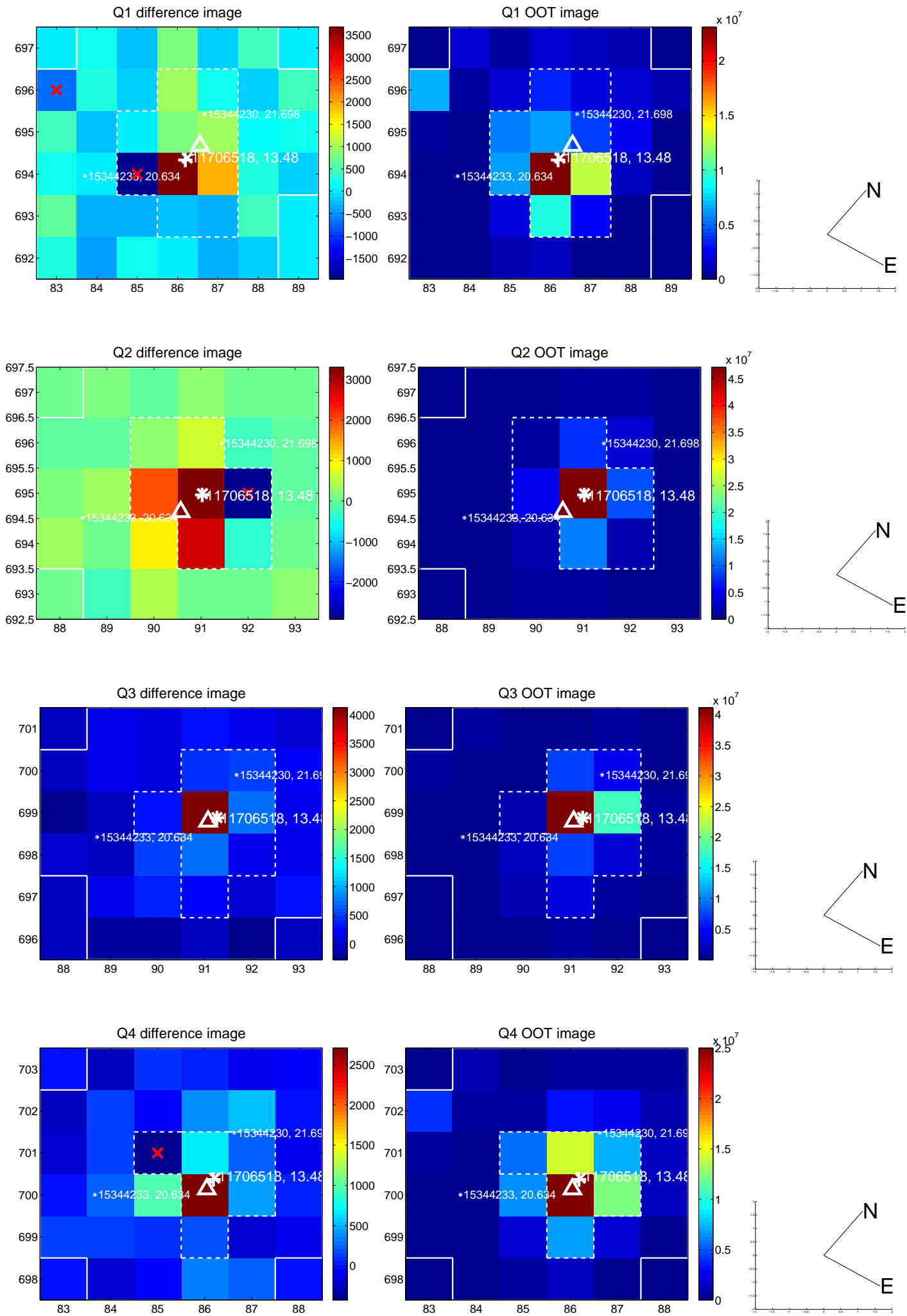
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.658 ± 0.649	2.55	-0.941 ± 0.537	1.365 ± 0.594
PRF-fit source offset from KIC position	1.583 ± 0.715	2.21	-0.914 ± 0.571	1.293 ± 0.635
photometric centroid source offset	0.09 ± 0.91	0.10	-0.06 ± 0.89	-0.07 ± 0.93

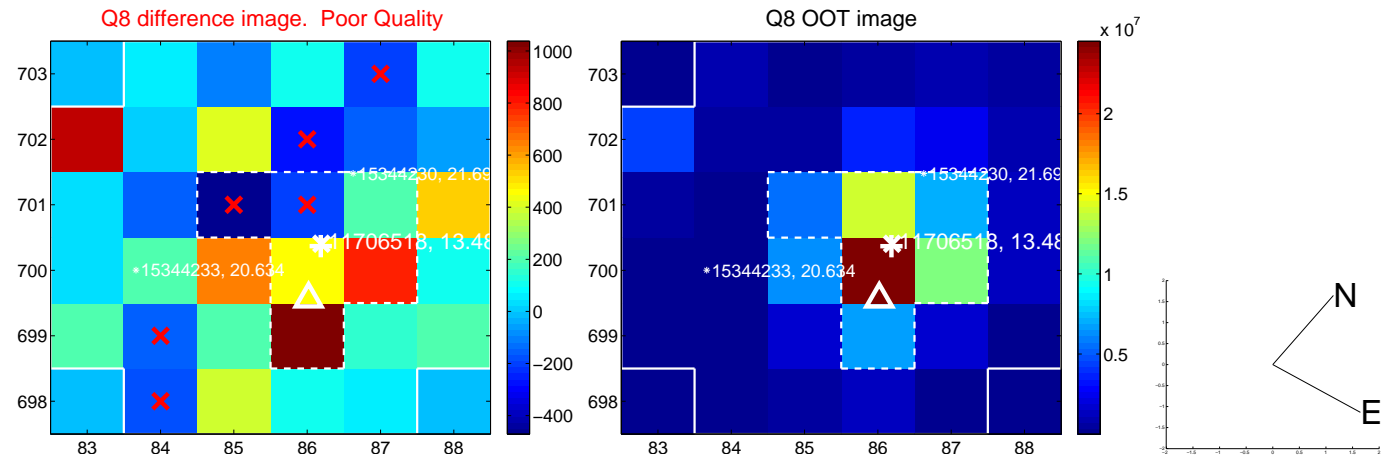
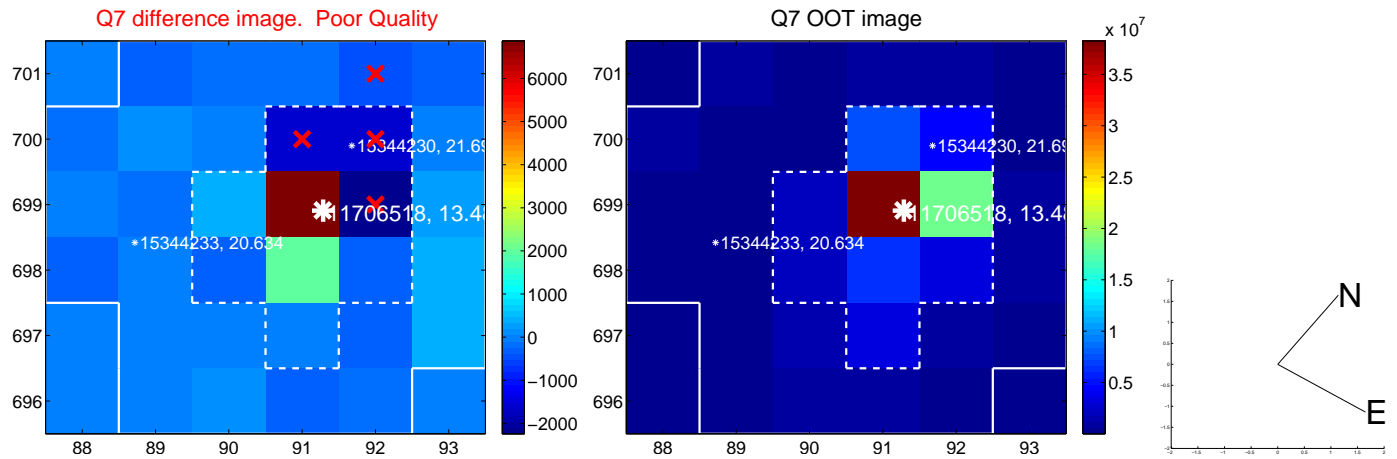
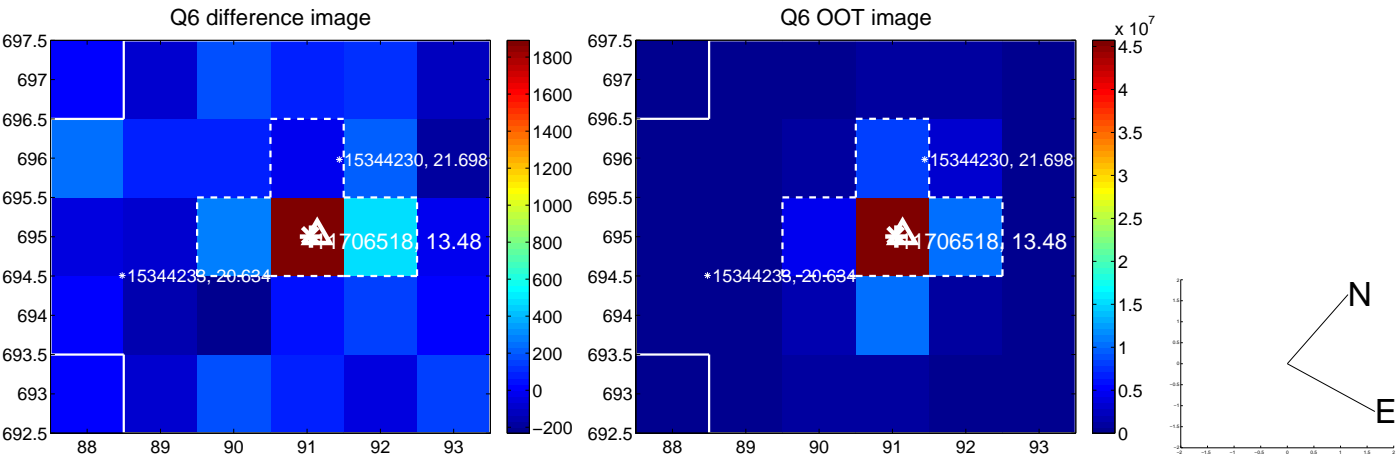
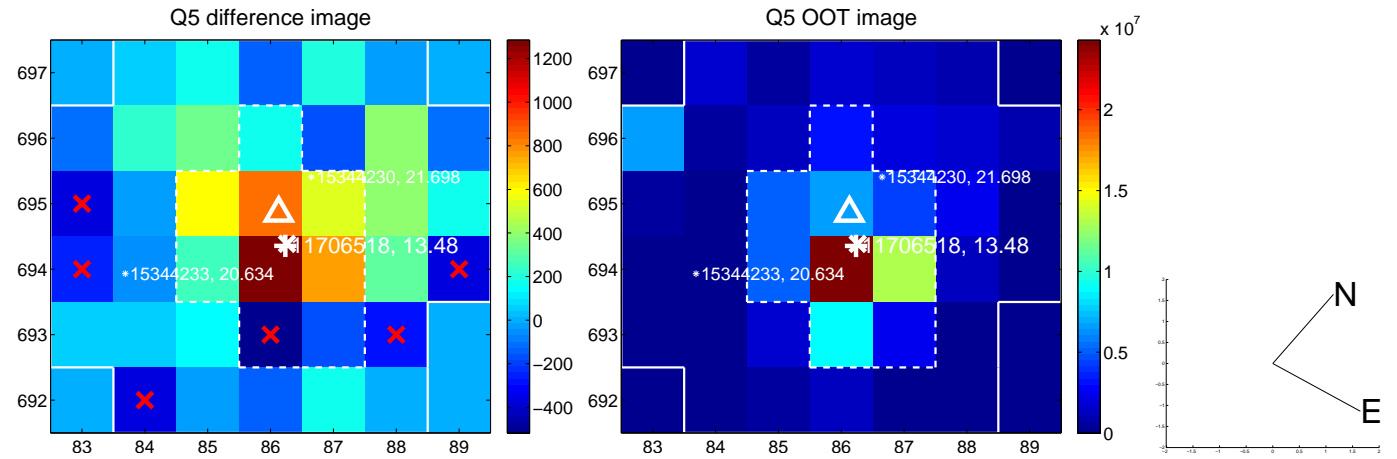


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

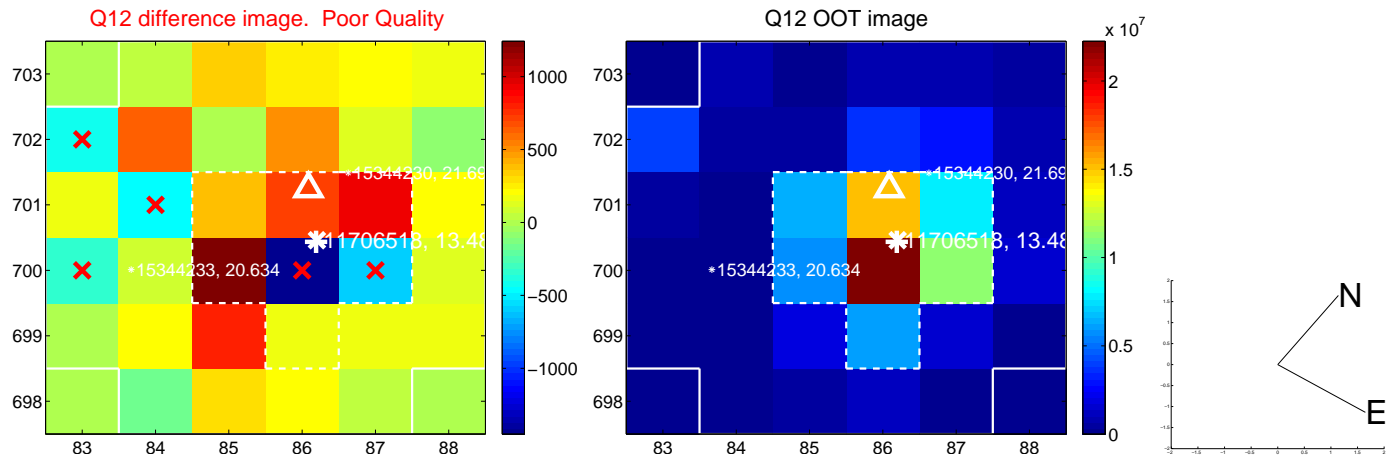
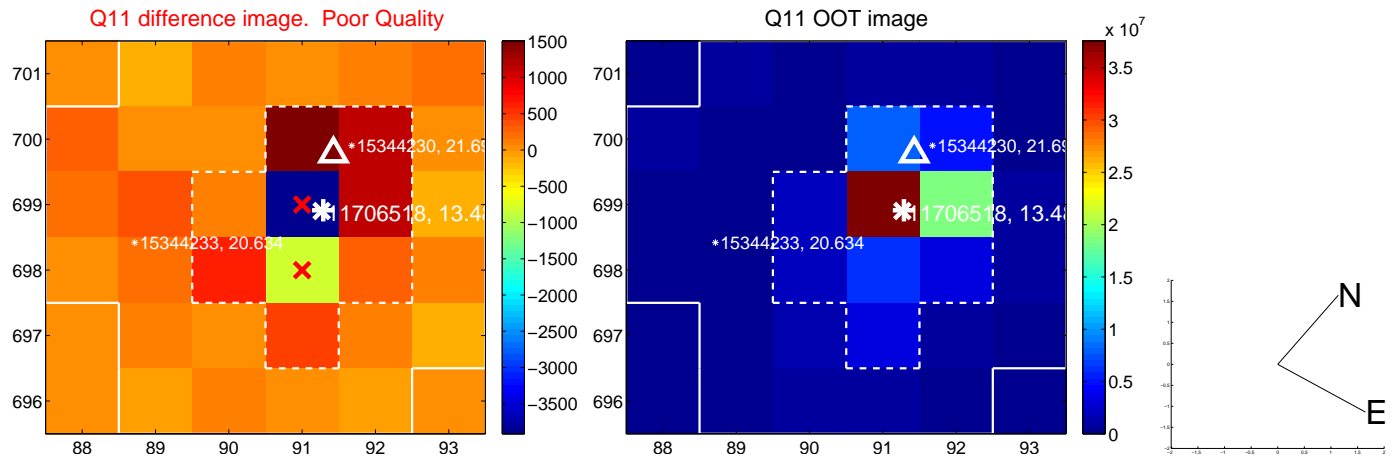
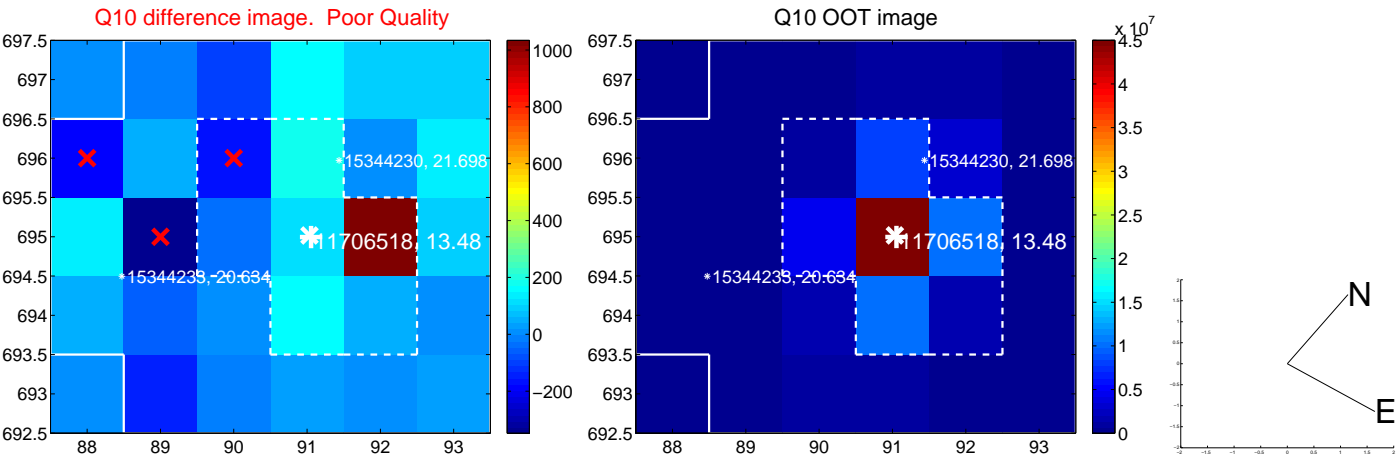
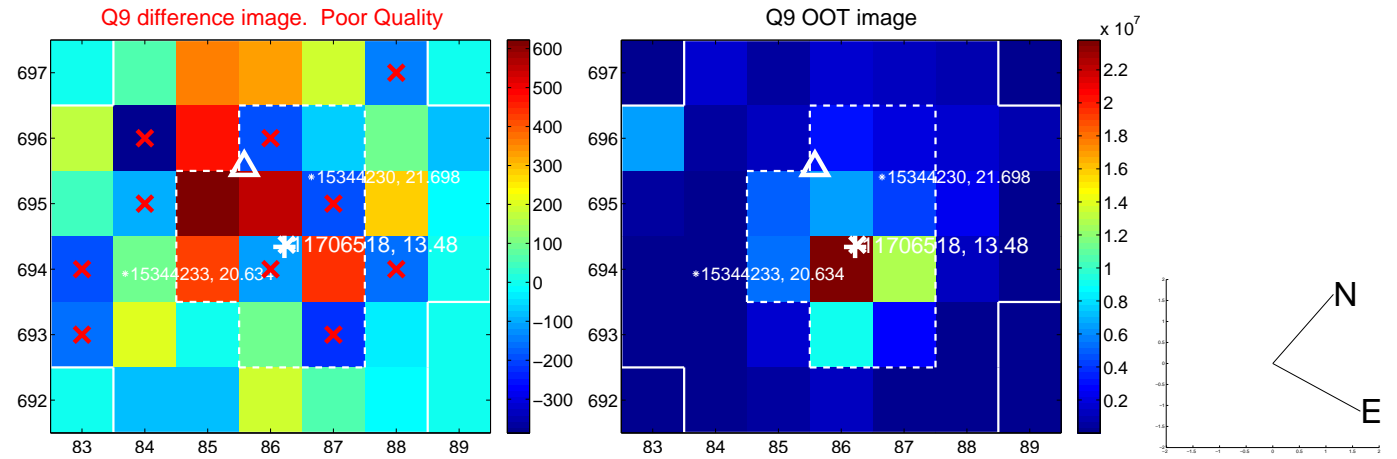
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



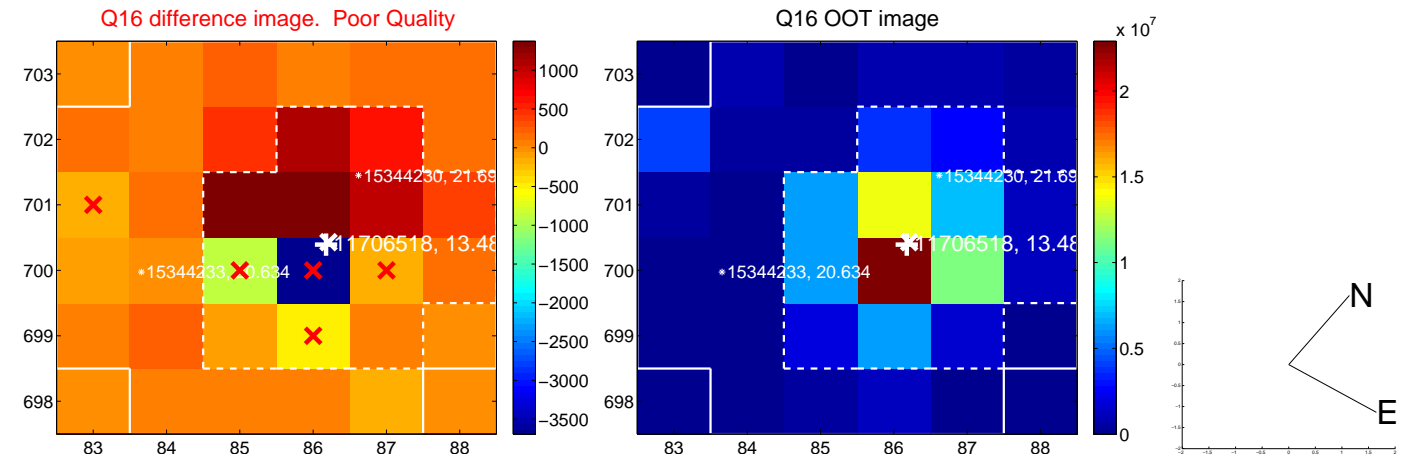
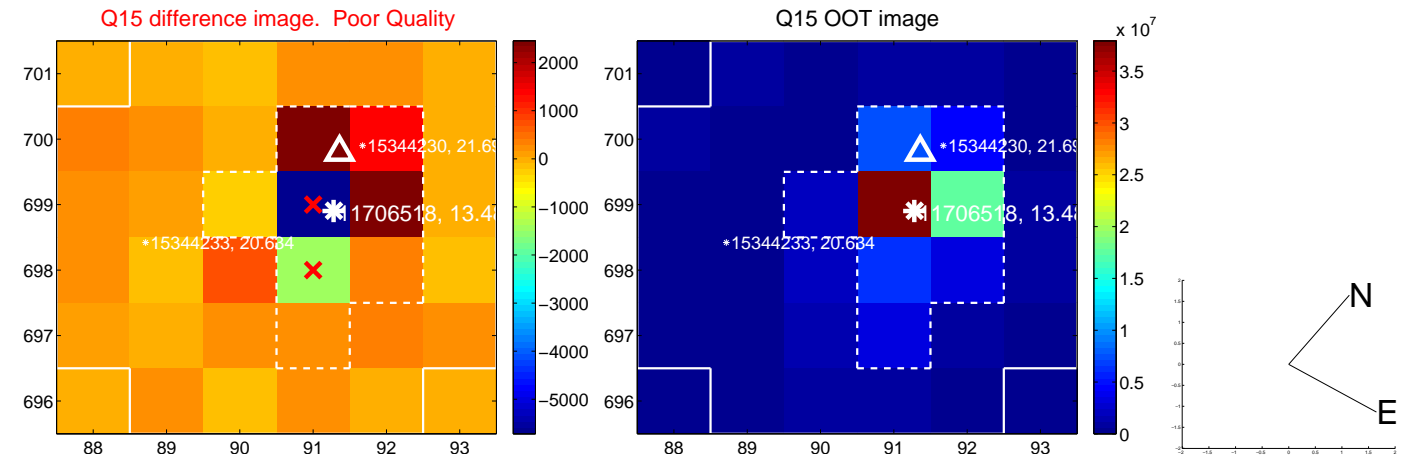
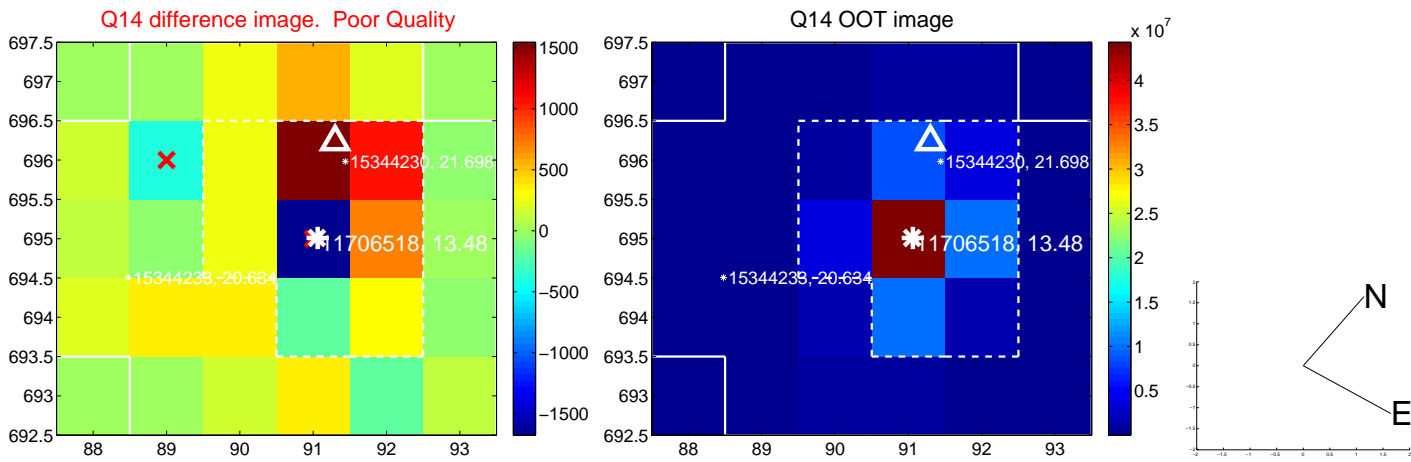
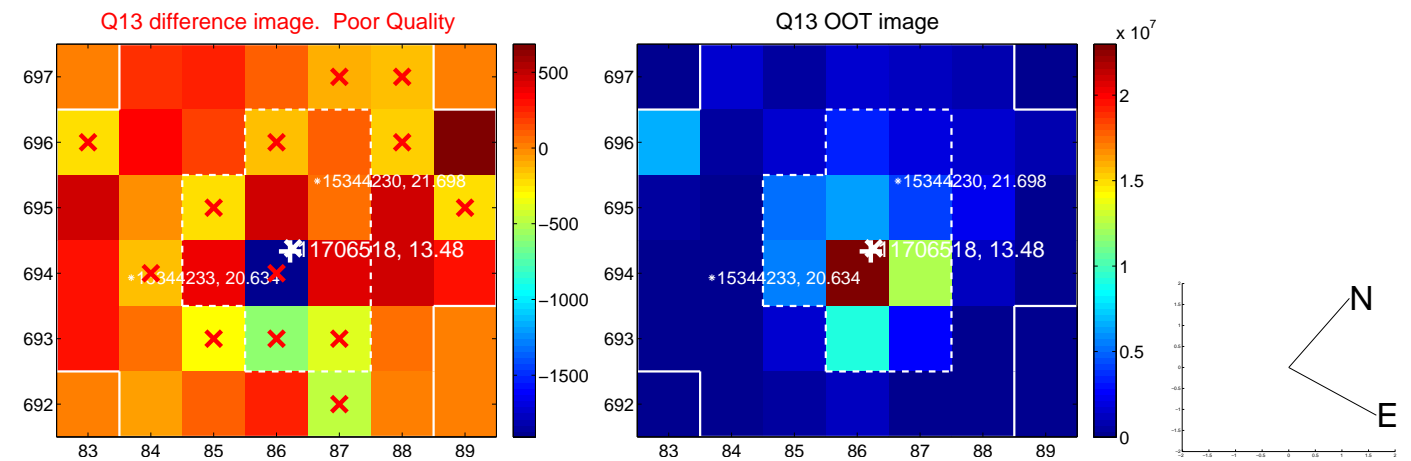
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



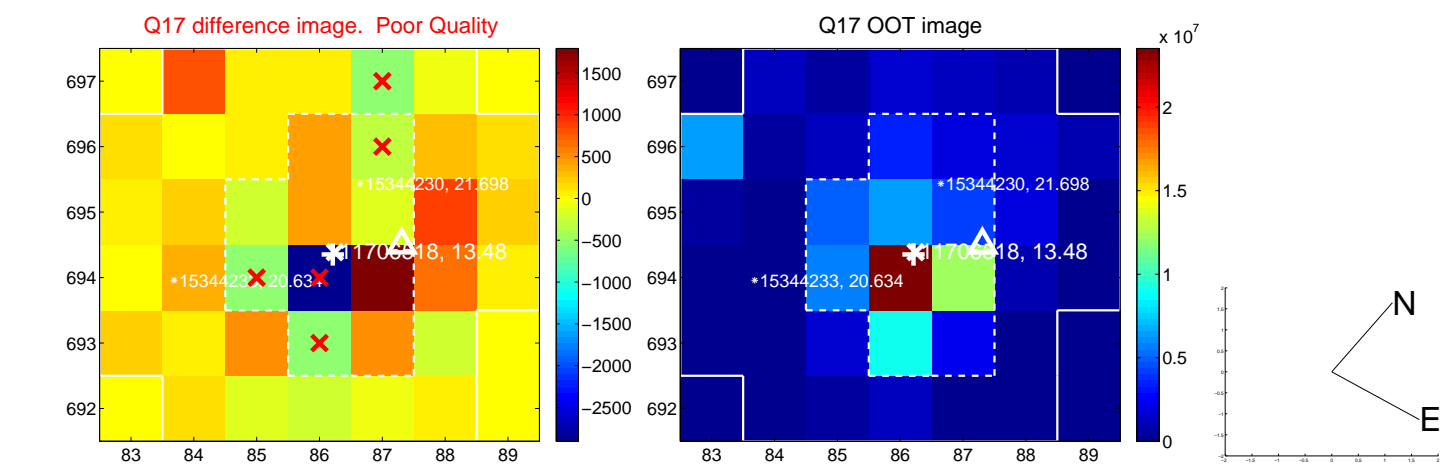
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



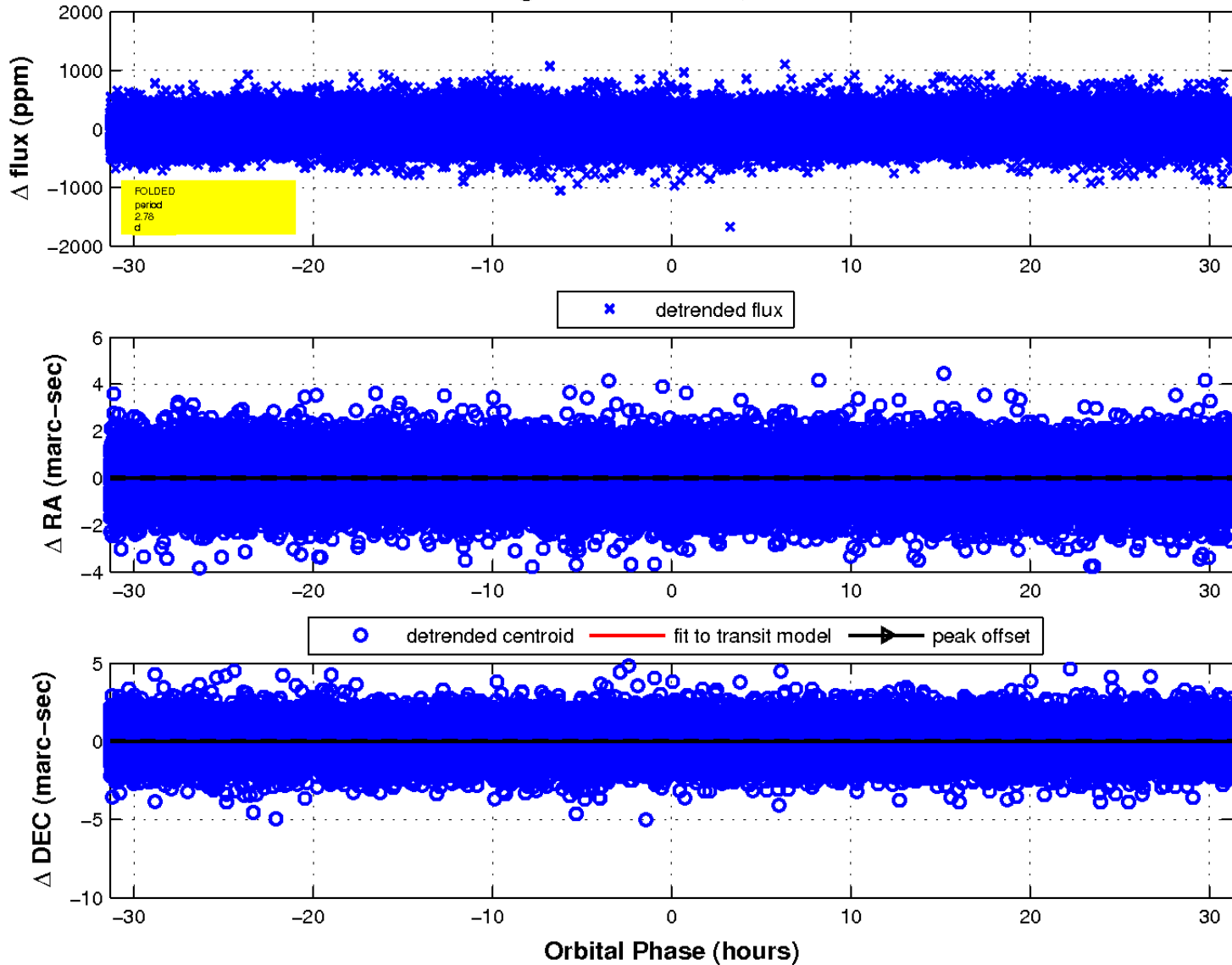
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

