

KIC 005737687

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})
005737687-01	OBS	No	0.525834	131.821795	169.0	1.034	11.3	16.1	2.19	7259	3.29	53043.07
005737687-02	OBS	No	0.867915	132.230224	93.1	3.241	10.2	8.4	2.19	7259	2.46	27193.04

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005737687-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005737687-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

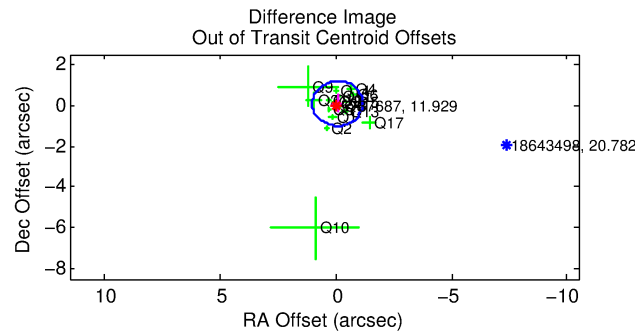
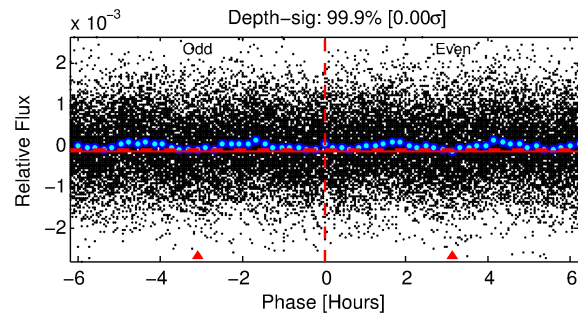
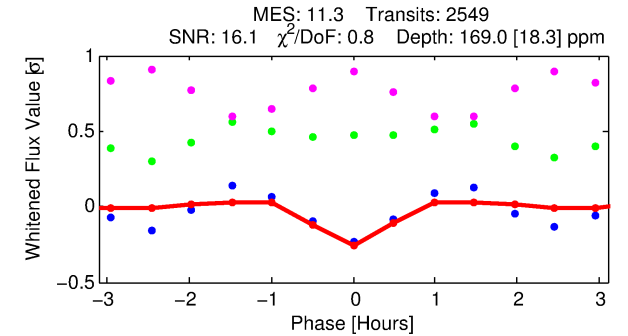
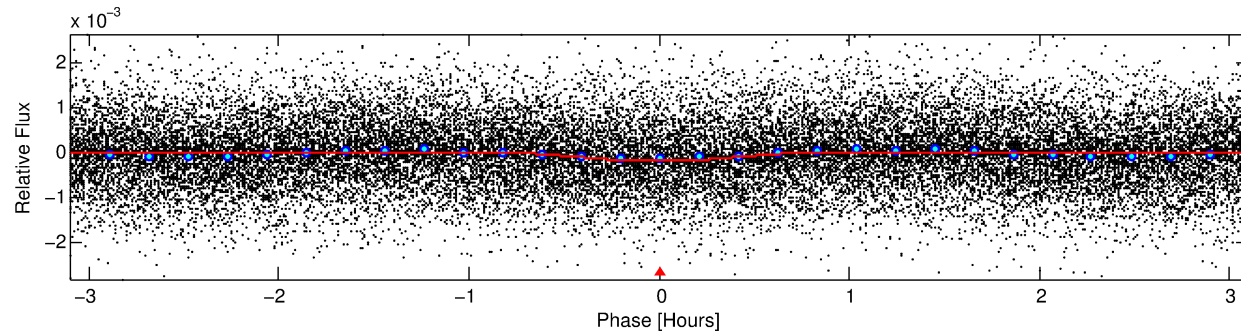
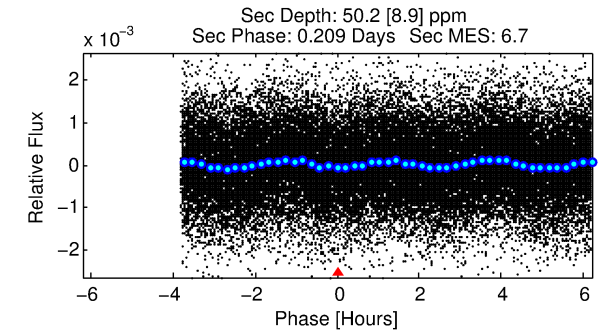
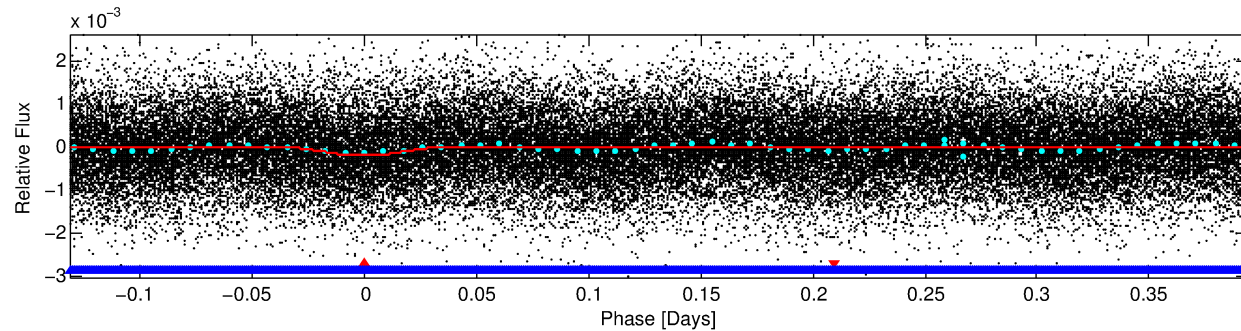
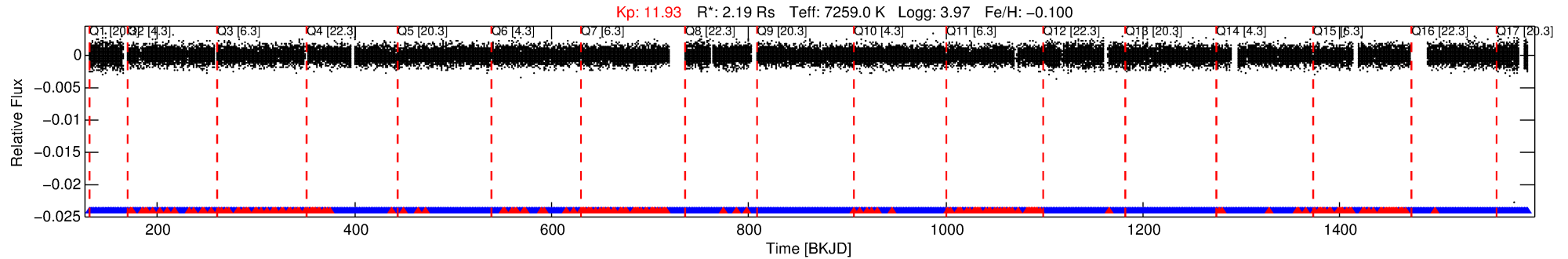
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005737687-01

No Significant Match Found

DV One-Page Summary

KIC: 5737687 Candidate: 1 of 2 Period: 0.526 d



DV Fit Results:

Period = 0.52583 [0.00001] d
Epoch = 131.8218 [0.0011] BKJD
Rp/R* = 0.0137 [0.0055]
a/R* = 2.15 [4.25]
b = 0.88 [0.64]
Seff = 53043.07 [24470.95]
Teq = 3870 [446] K
Rp = 3.29 [1.69] Re
a = 0.0150 [0.0042] AU
Ag = 0.58 [0.54] [-0.79σ]
Teffp = 5214 [1102] K [1.13σ]

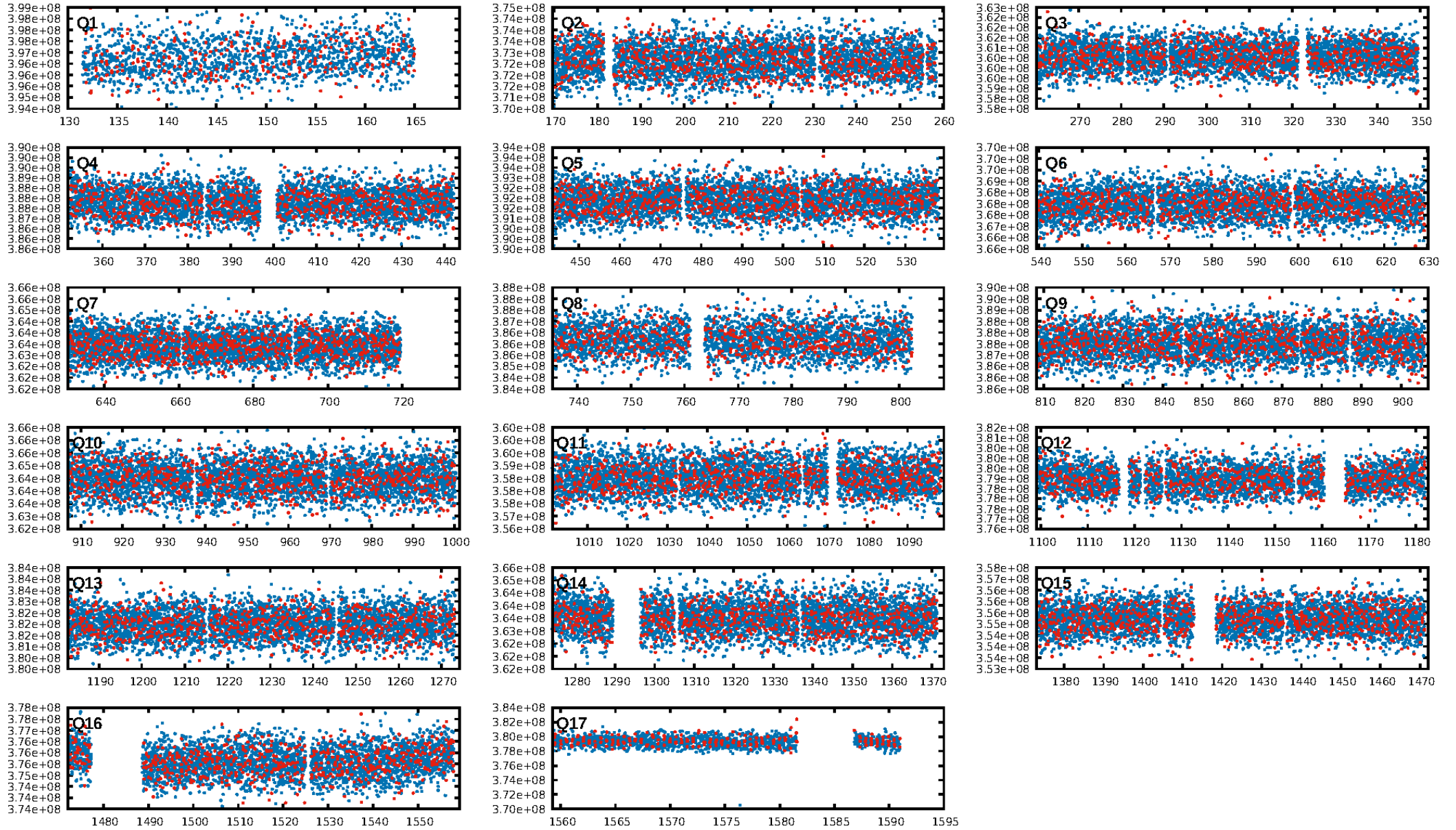
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 98.4% [2.41σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.66e-29
RollingBand-fgt: 0.91 [2220/2433]
GhostDiagnostic-chr: 3.74
Centroid-sig: 0.0%
Centroid-so: 0.383 arcsec [2.84σ]
OotOffset-rm: 0.119 arcsec [0.32σ]
KicOffset-rm: 0.176 arcsec [0.48σ]
OotOffset-st: 4/3/4/5 [16]
KicOffset-st: 4/3/4/5 [16]
DiffImageQuality-fgm: 0.75 [12/16]
DiffImageOverlap-fno: 1.00 [17/17]

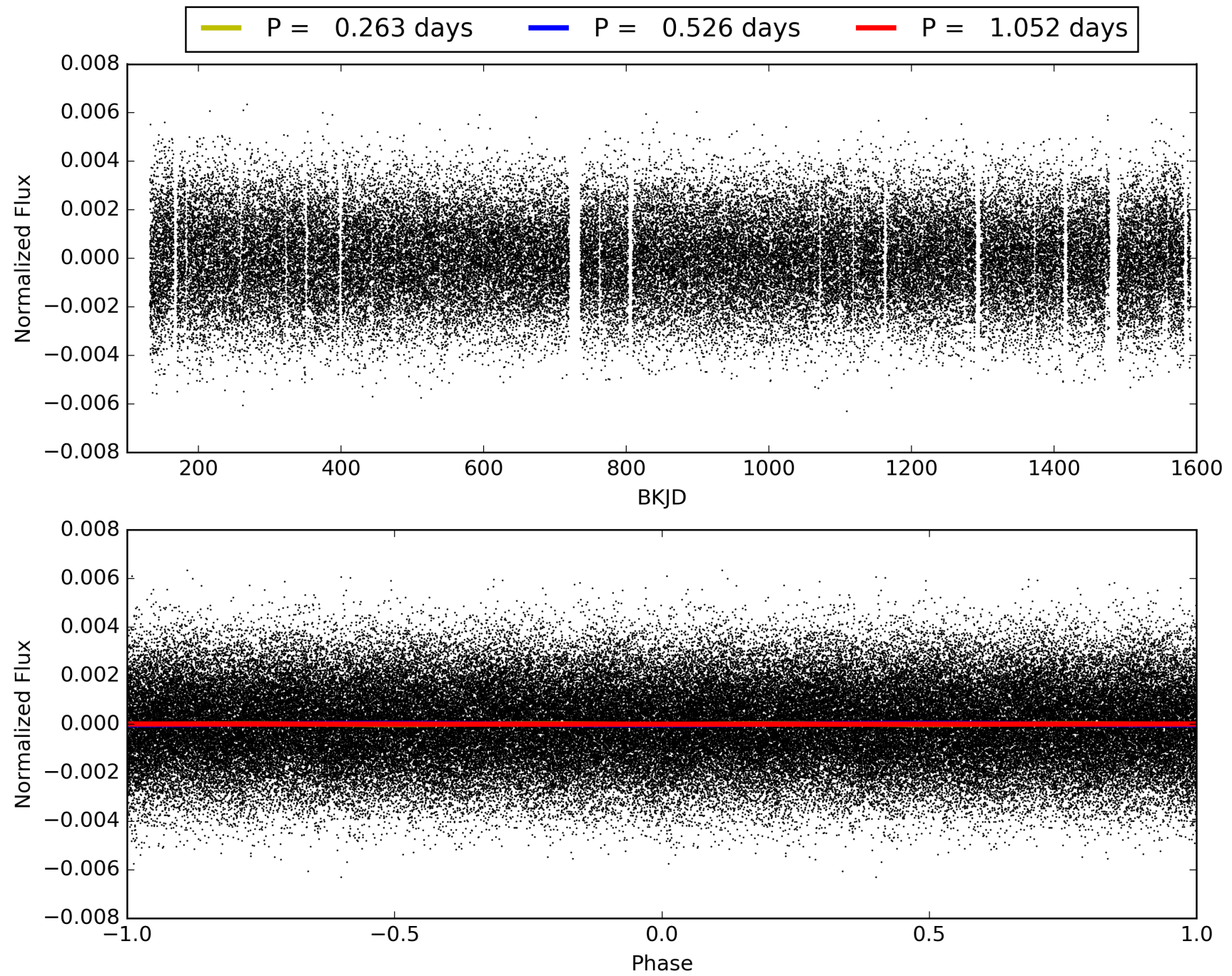
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:43:19 Z

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

TCE 005737687-01, PDC Light Curves

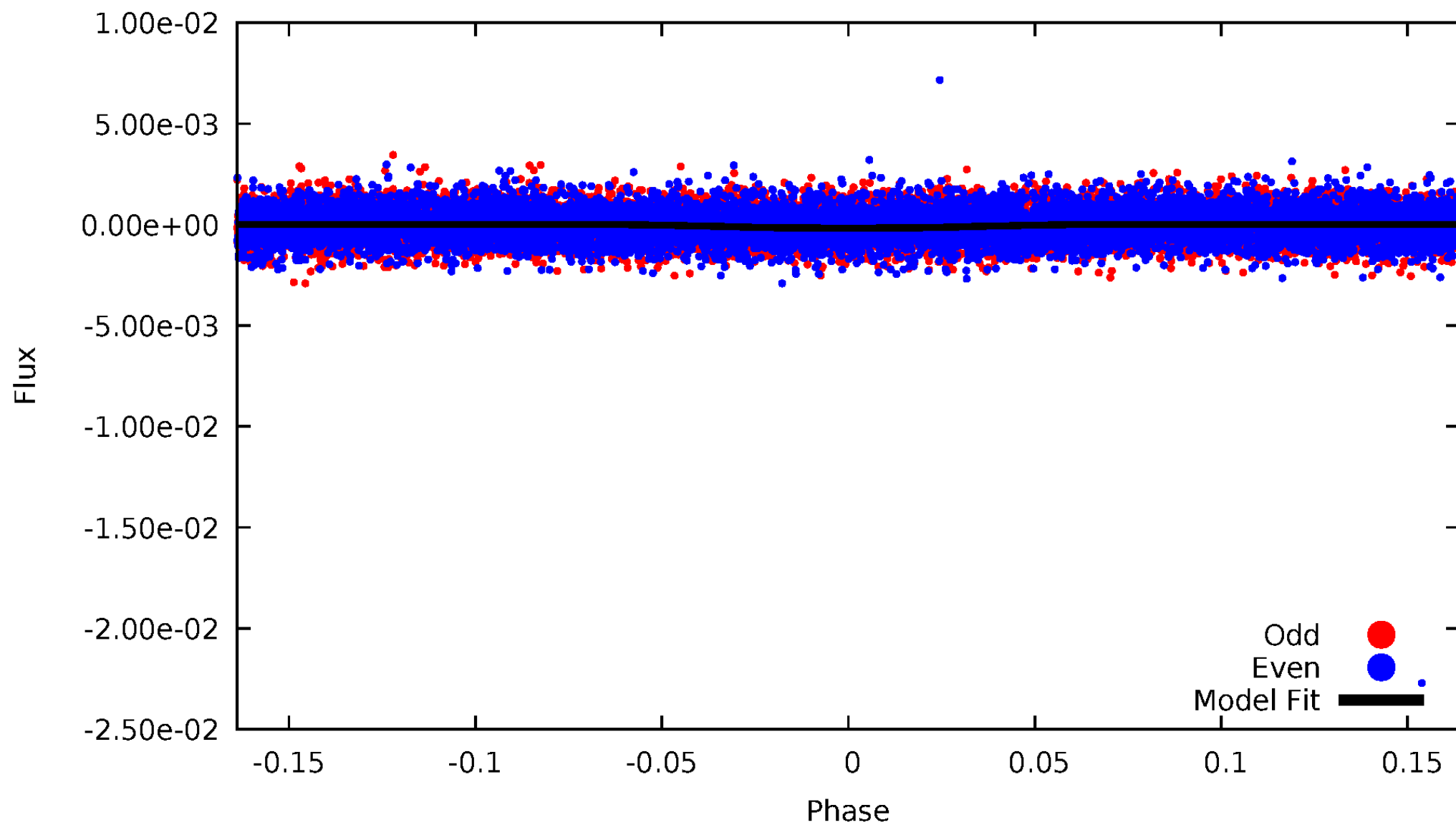


TCE 005737687-01



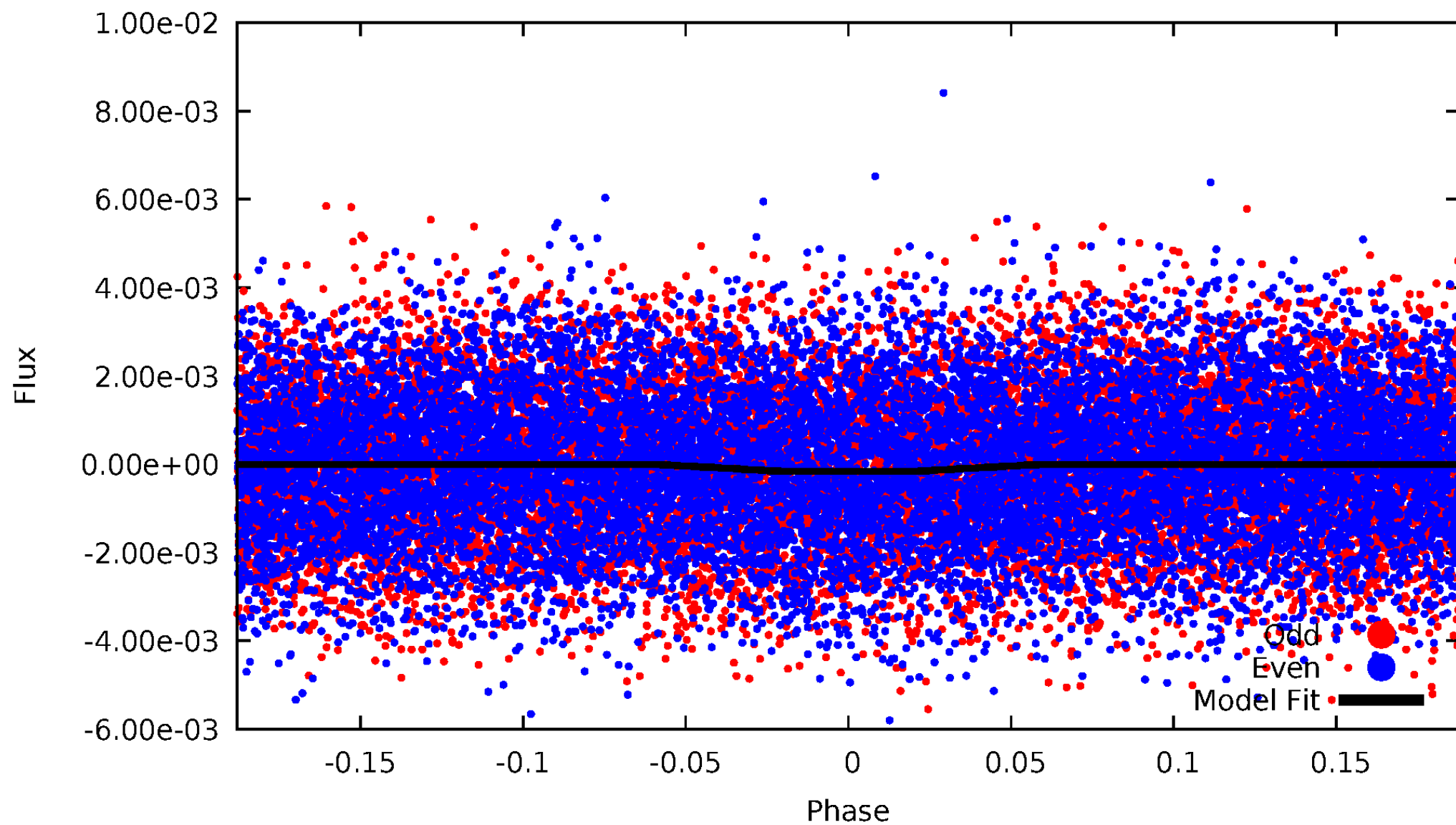
DV Odd/Even

TCE 005737687-01



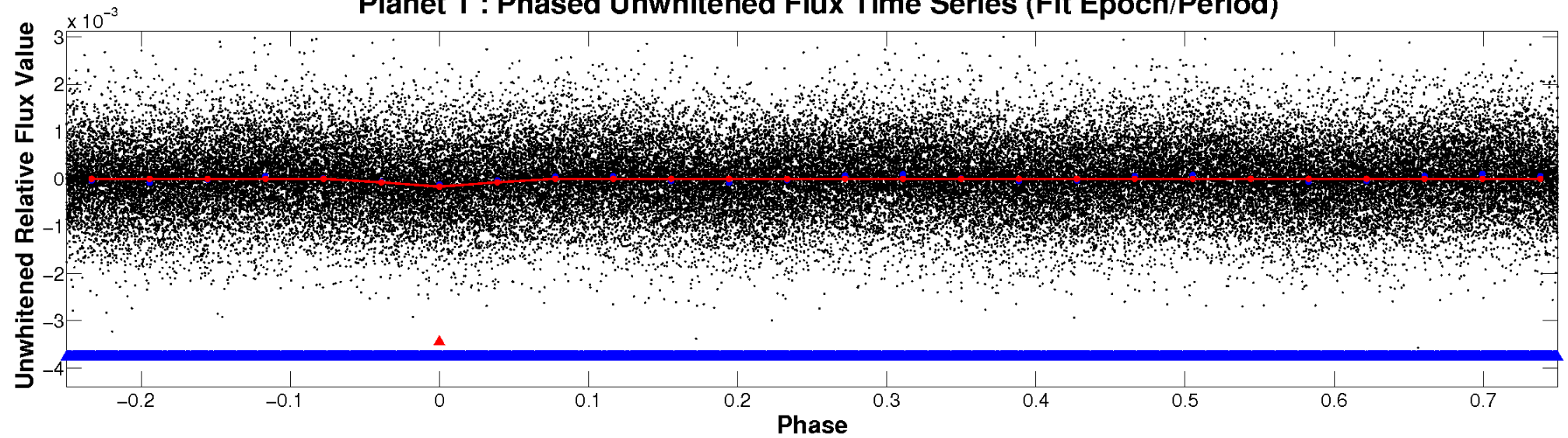
ALT Odd/Even

TCE 005737687-01

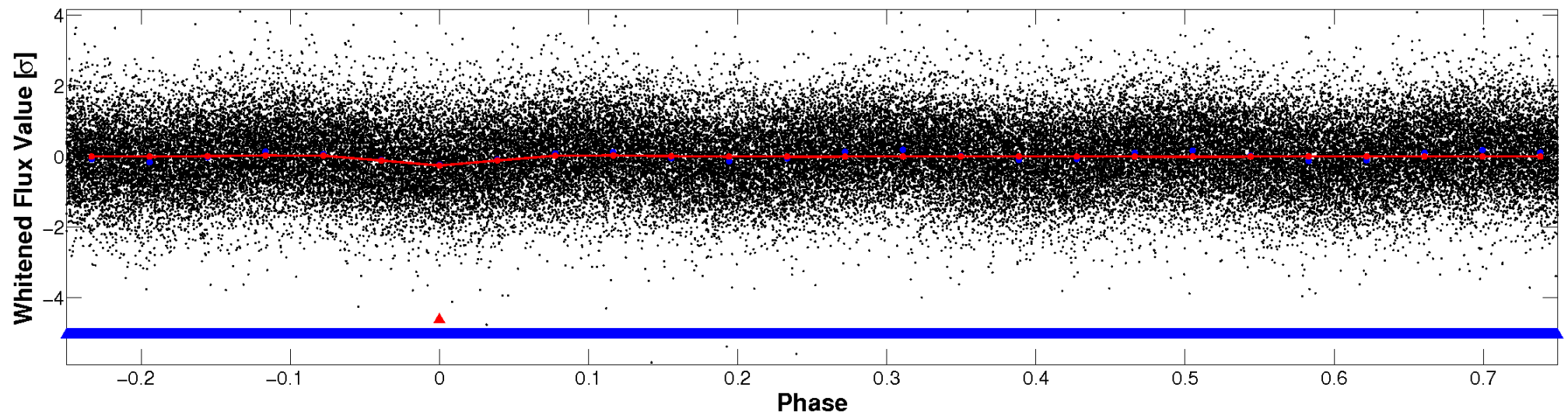


Non-Whitened Vs. Whitened Light Curve

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

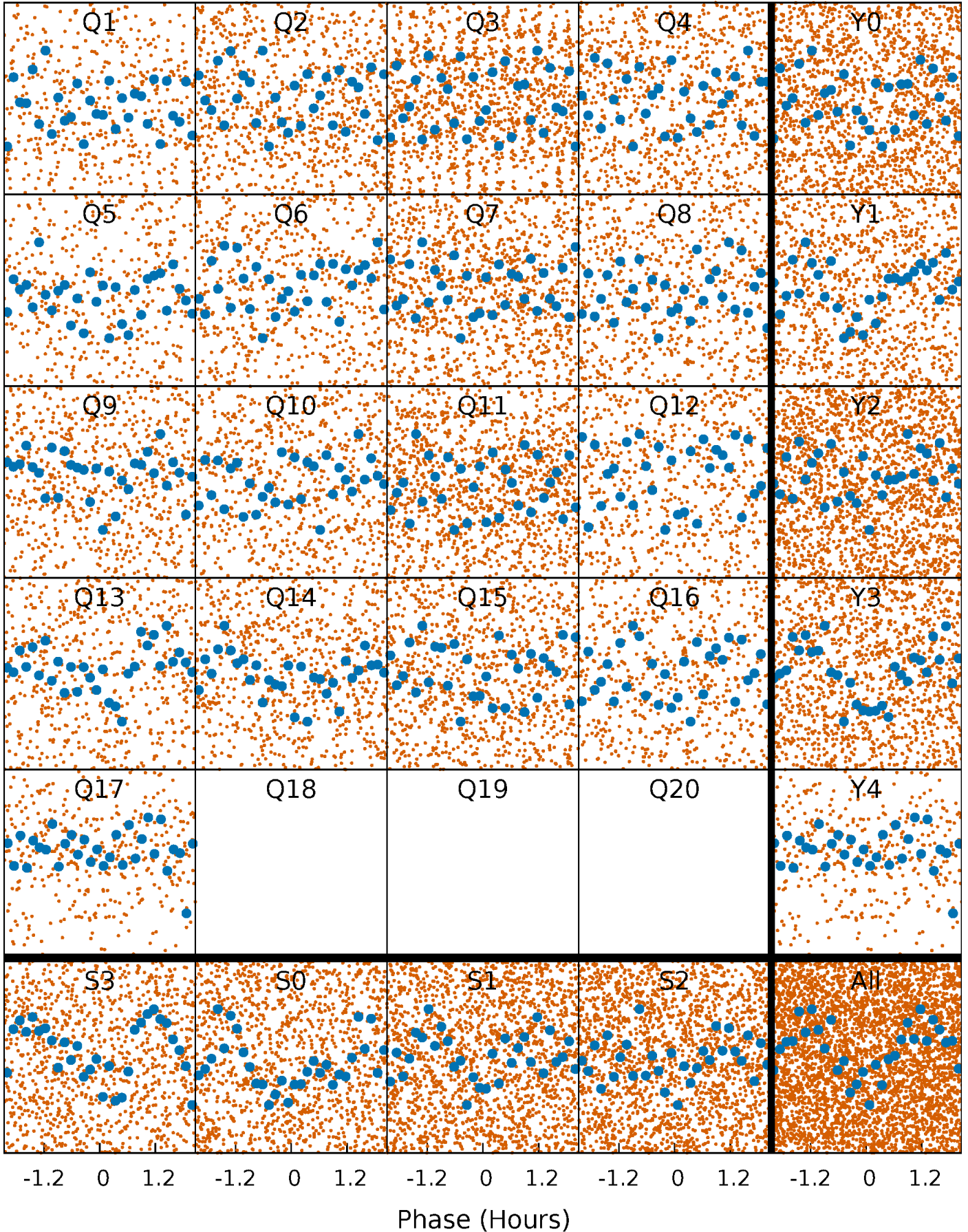


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



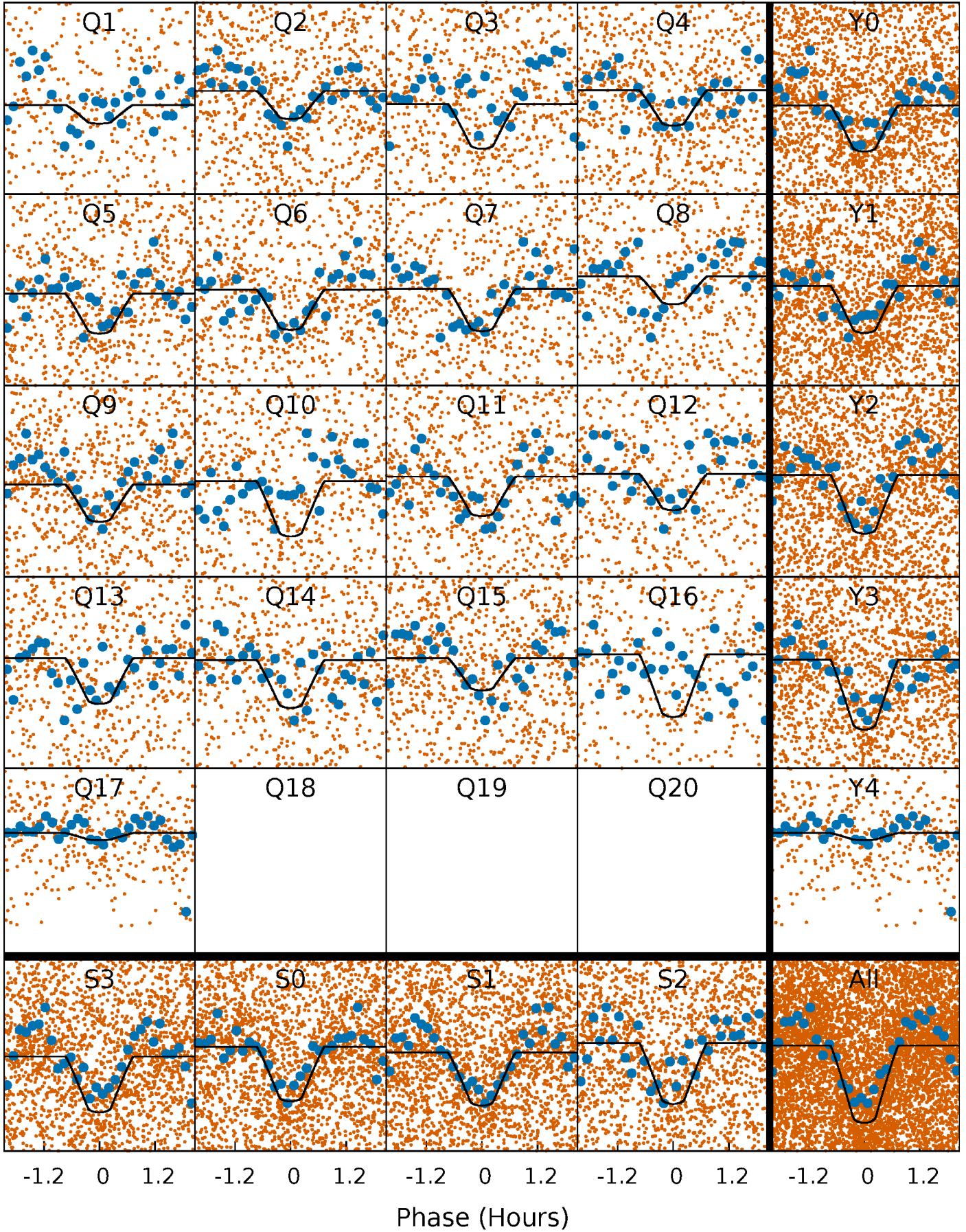
PDC Quarter-Phased Transit Curves

TCE 005737687-01 P= 0.525834 Days $T_0=131.821795$ (BKJD)



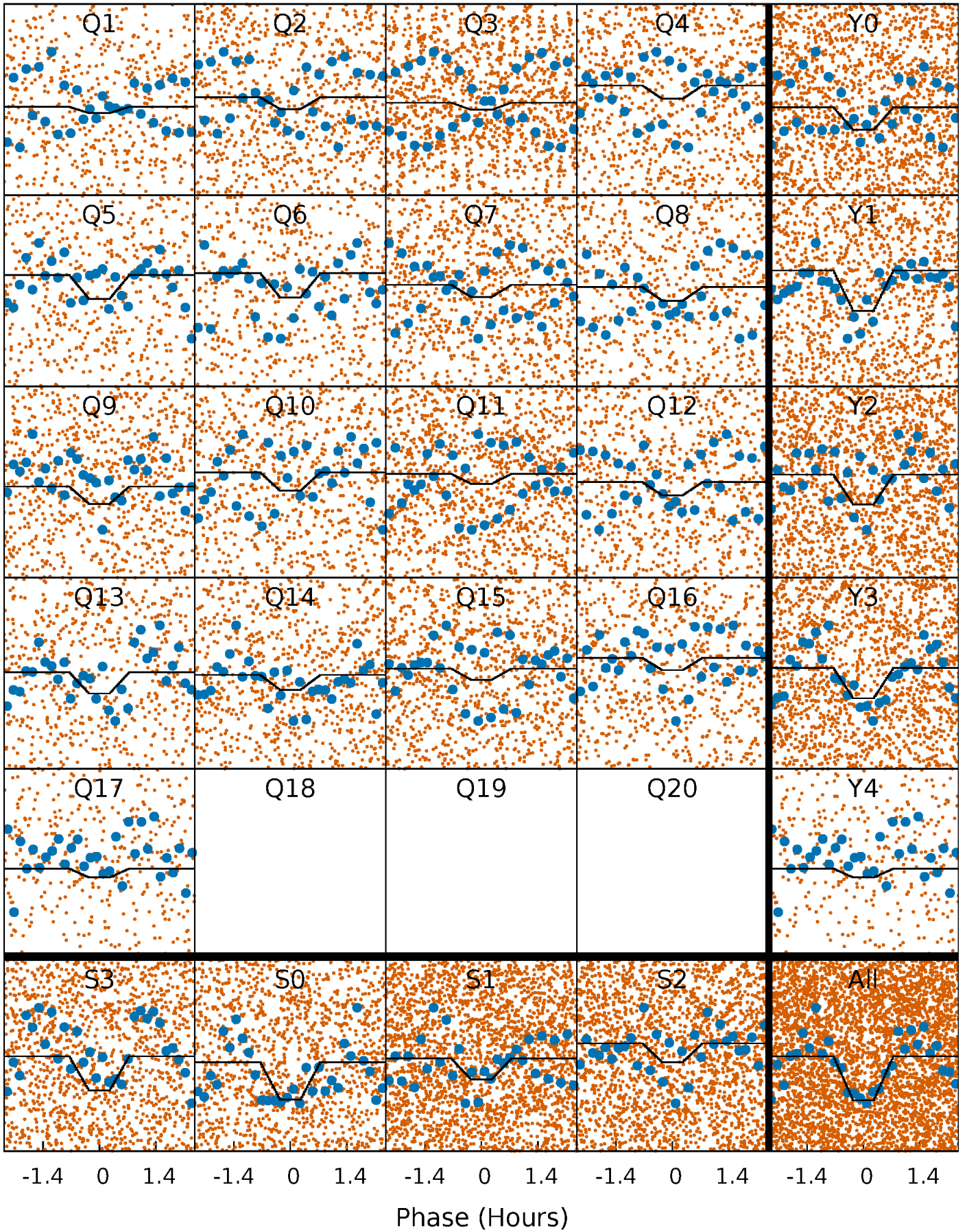
DV Quarter-Phased Transit Curves

TCE 005737687-01 P= 0.525834 Days $T_0=131.821795$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

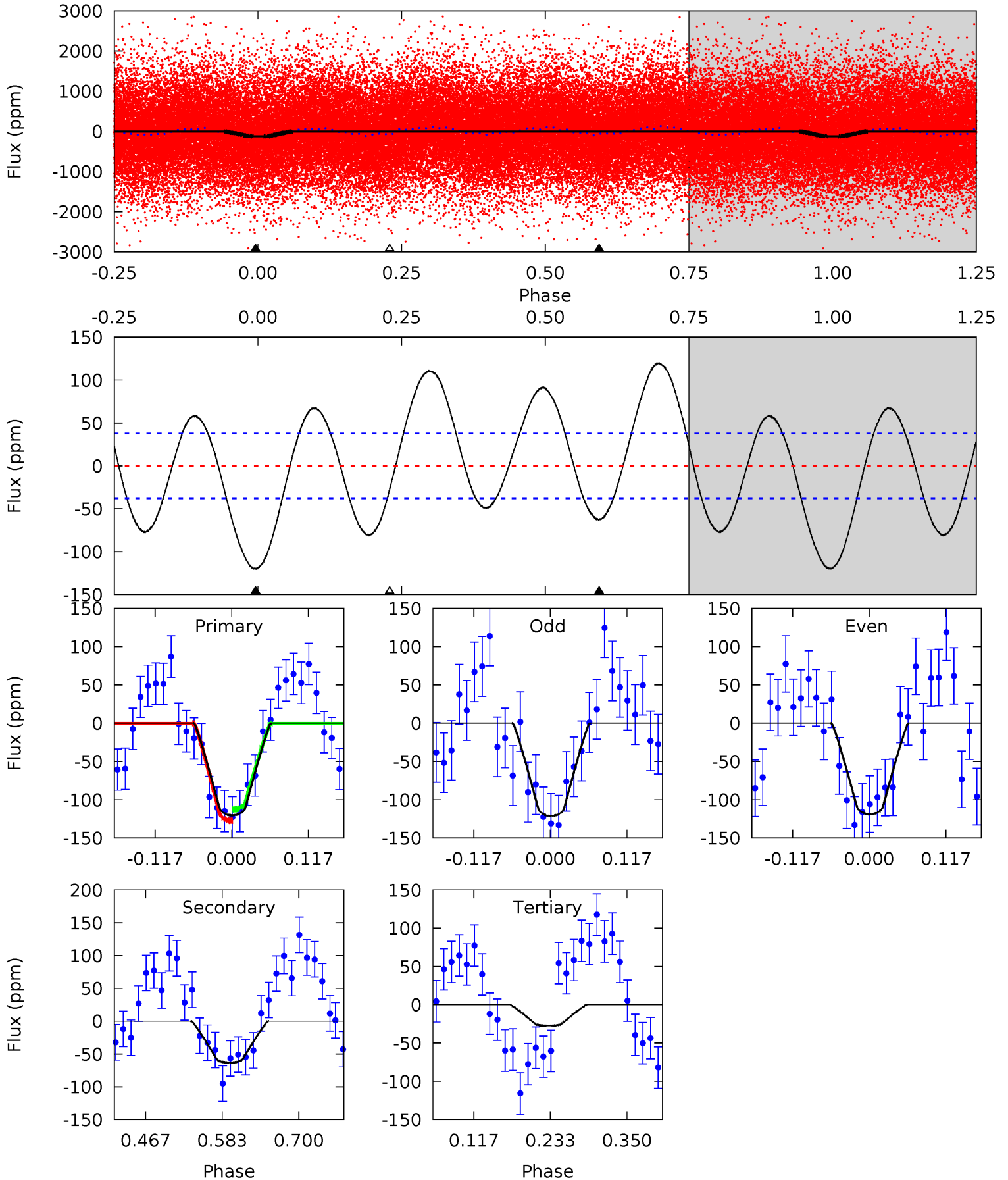
TCE 005737687-01 P= 0.525833 Days $T_0=131.822319$ (BKJD)



DV Model-Shift Uniqueness Test

005737687-01, P = 0.525834 Days, E = 131.295961 Days

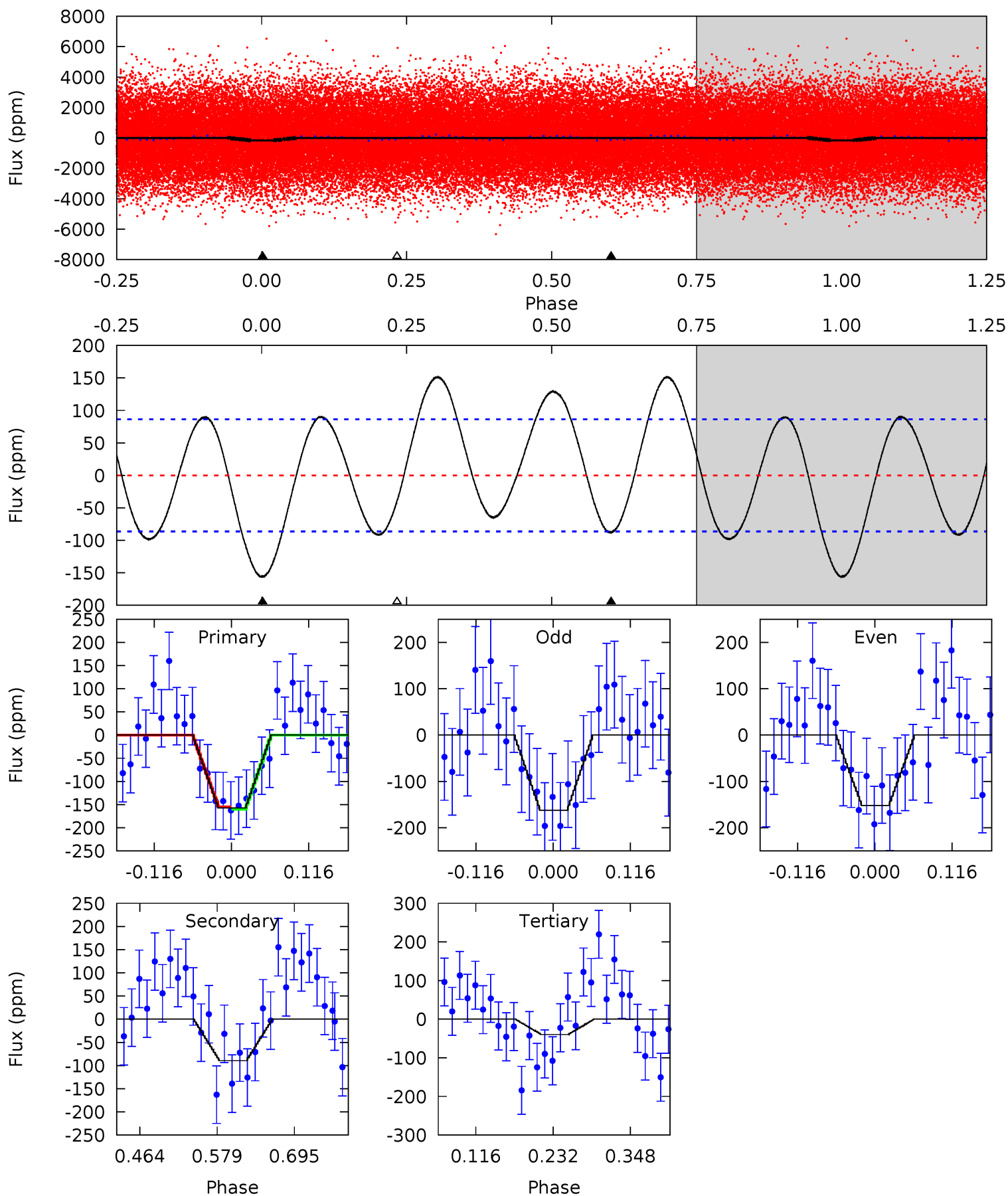
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.5	7.60	3.32	0	4.53	1.57	6.98	11.2	14.5	4.29	7.60	0.13	0.90	0.50	0.88



Alt Model-Shift Uniqueness Test

005737687-01, P = 0.525833 Days, E = 131.296486 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.27	4.70	2.08	0	4.53	1.57	3.87	6.18	8.27	2.62	4.70	0.27	1.04	0.49	0.12



Stellar Parameters For KIC 005737687

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7259^{+226}_{-327}	$3.969^{+0.240}_{-0.160}$	$-0.100^{+0.250}_{-0.350}$	$2.193^{+0.568}_{-0.695}$	$1.632^{+0.186}_{-0.345}$	$0.218^{+0.329}_{-0.101}$
	+3%/-5%	+6%/-4%	+250%/-350%	+26%/-32%	+11%/-21%	+151%/-46%
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 005737687-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-63 ± 8	$3.11^{+1.47}_{-1.29}$	5357^{+420}_{-453}	4947^{+1980}_{-1706}	$0.787^{+1.561}_{-0.447}$
Alt.	-89 ± 19	$2.92^{+1.38}_{-1.27}$	5325^{+434}_{-453}	5741^{+2465}_{-1347}	$1.249^{+2.625}_{-0.684}$

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

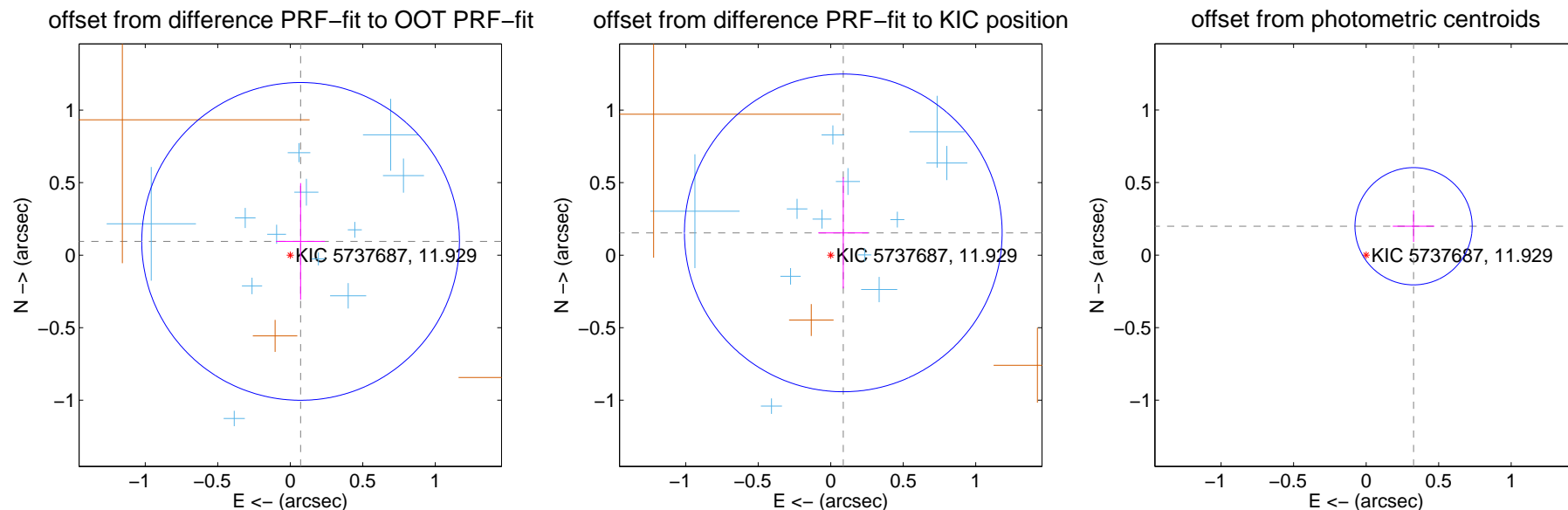
DV Centroid Data

Supplemental centroid analysis for 005737687-01. **Kepler magnitude: 11.93.** Transit SNR 16.09

There are 12 quarters with good PRF difference image offsets

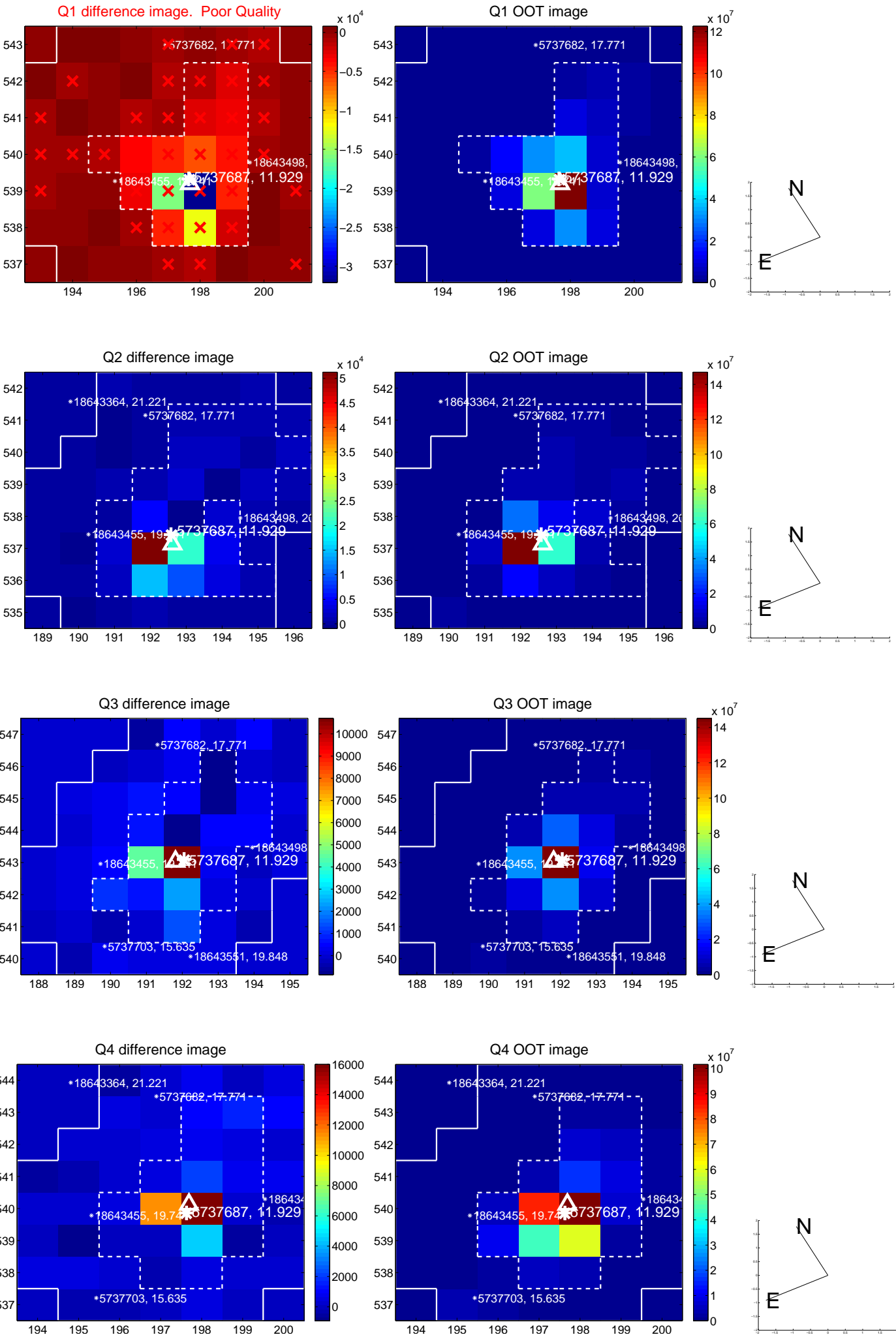
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.119 ± 0.365	0.32	-0.071 ± 0.169	0.095 ± 0.402
PRF-fit source offset from KIC position	0.176 ± 0.365	0.48	-0.087 ± 0.173	0.154 ± 0.384
photometric centroid source offset	0.38 ± 0.13	2.84	-0.33 ± 0.14	0.20 ± 0.11

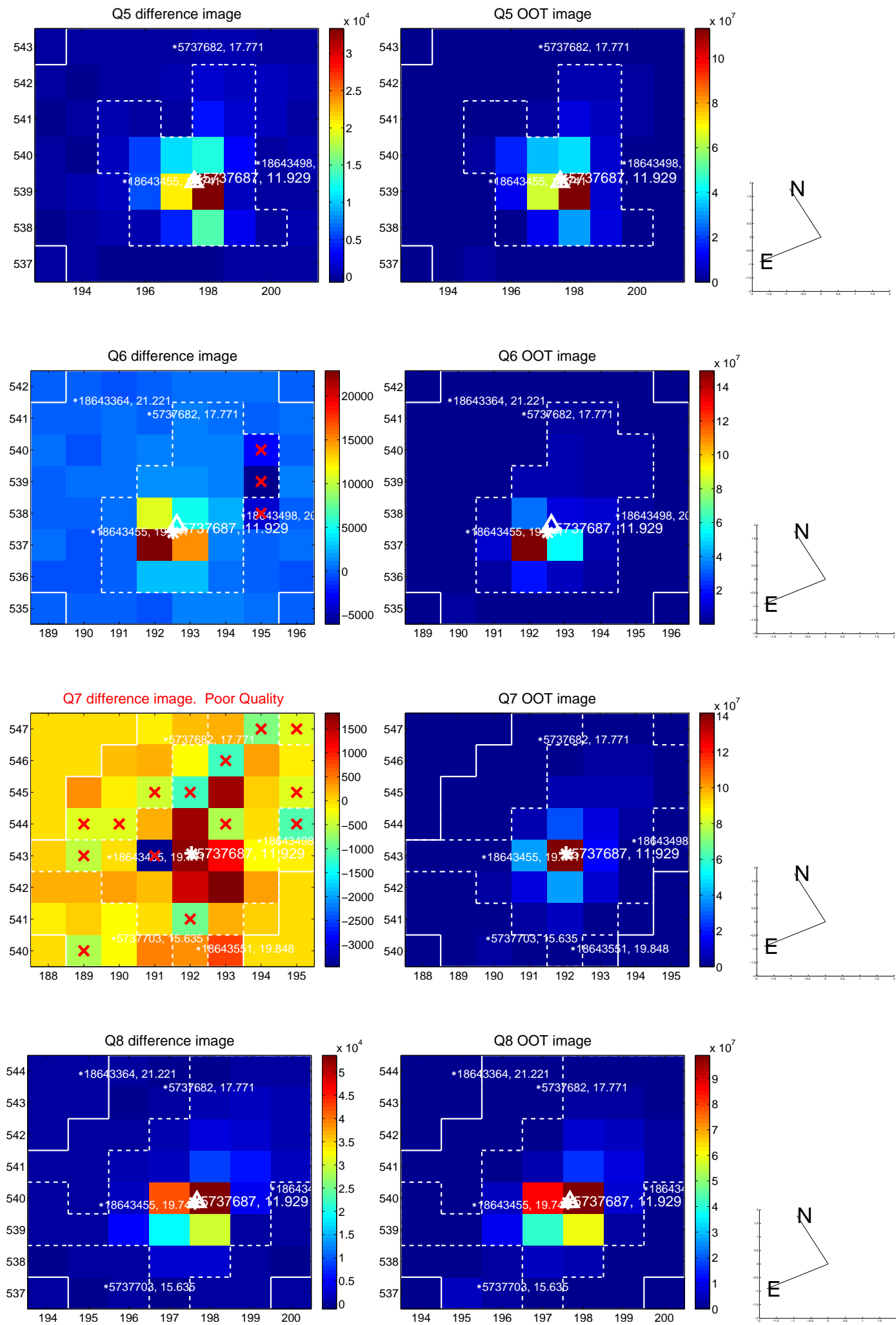


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

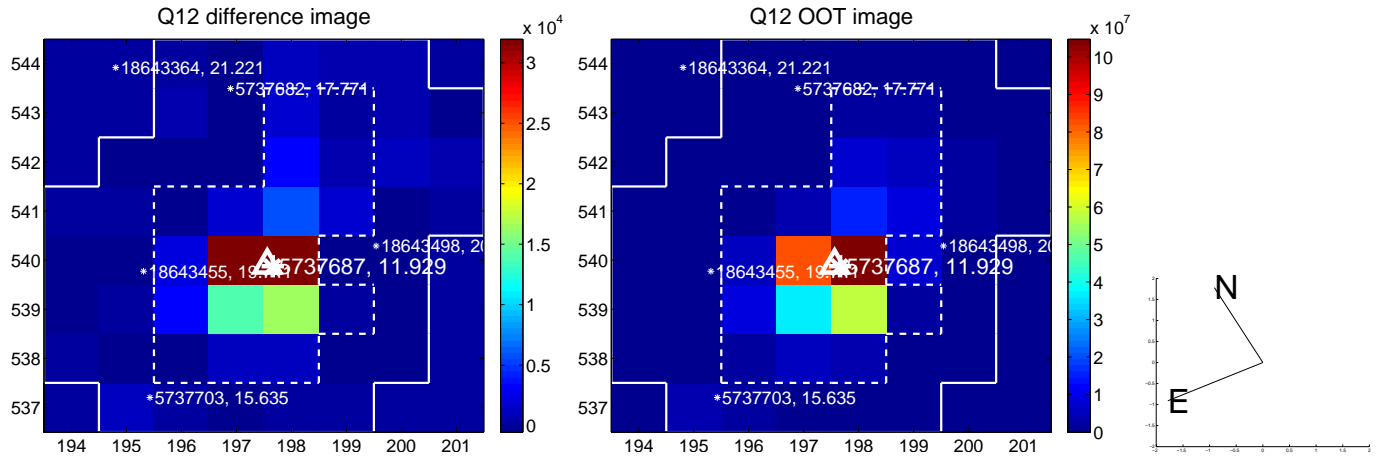
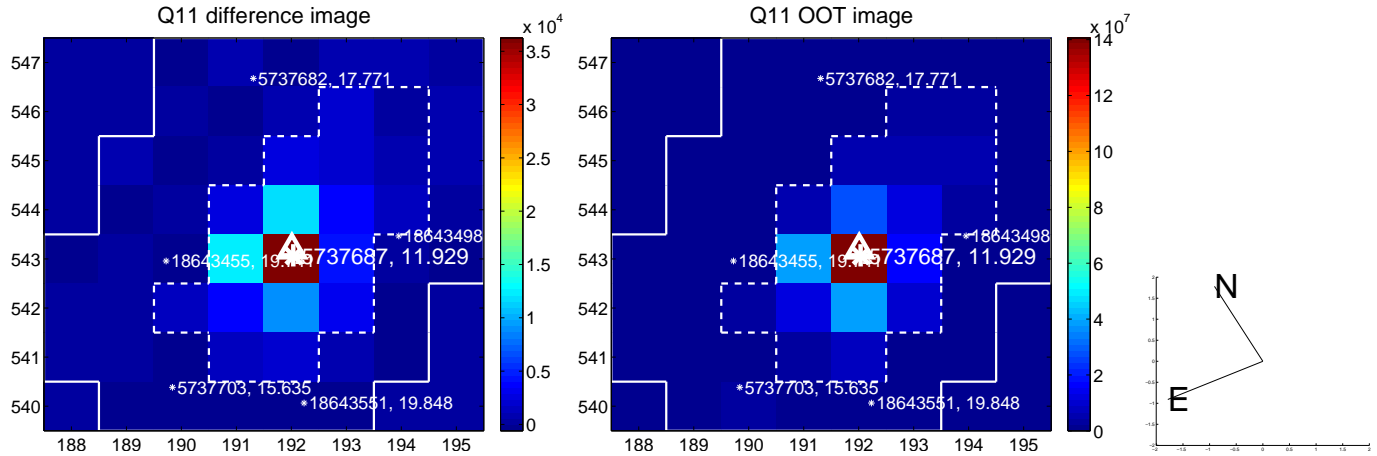
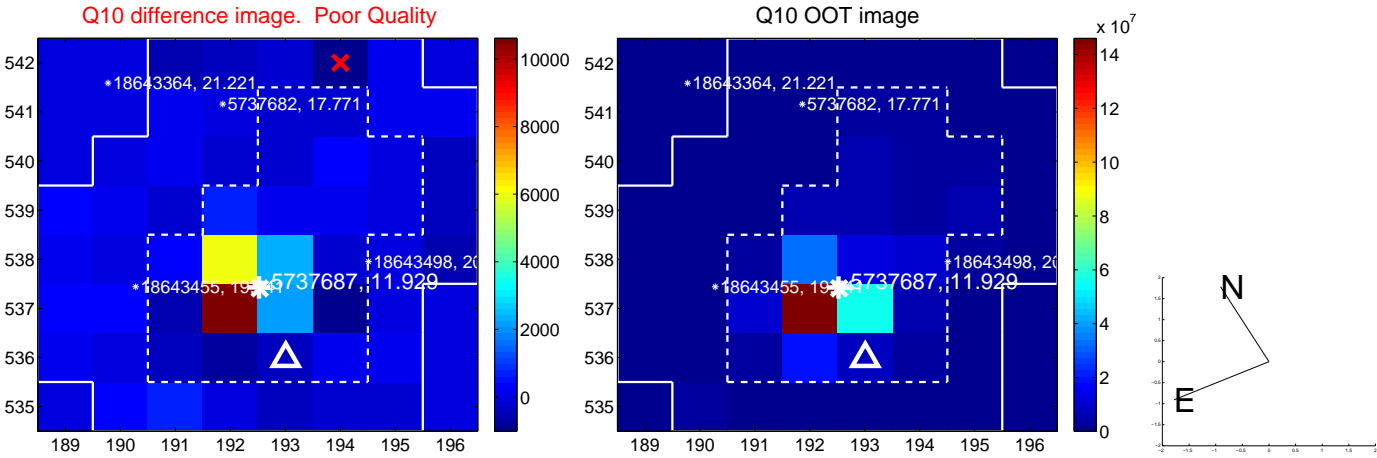
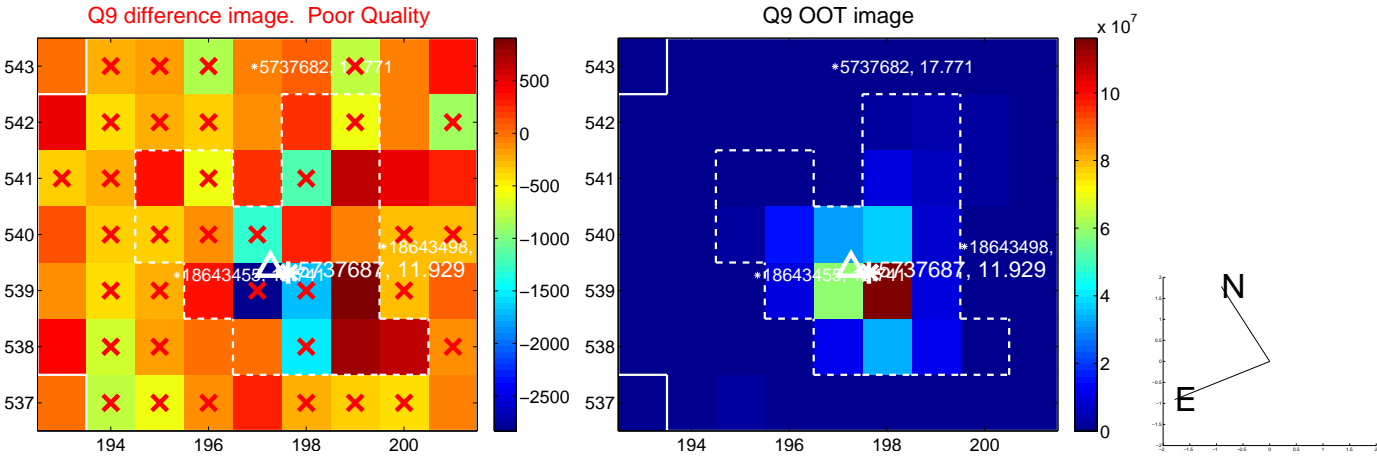
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



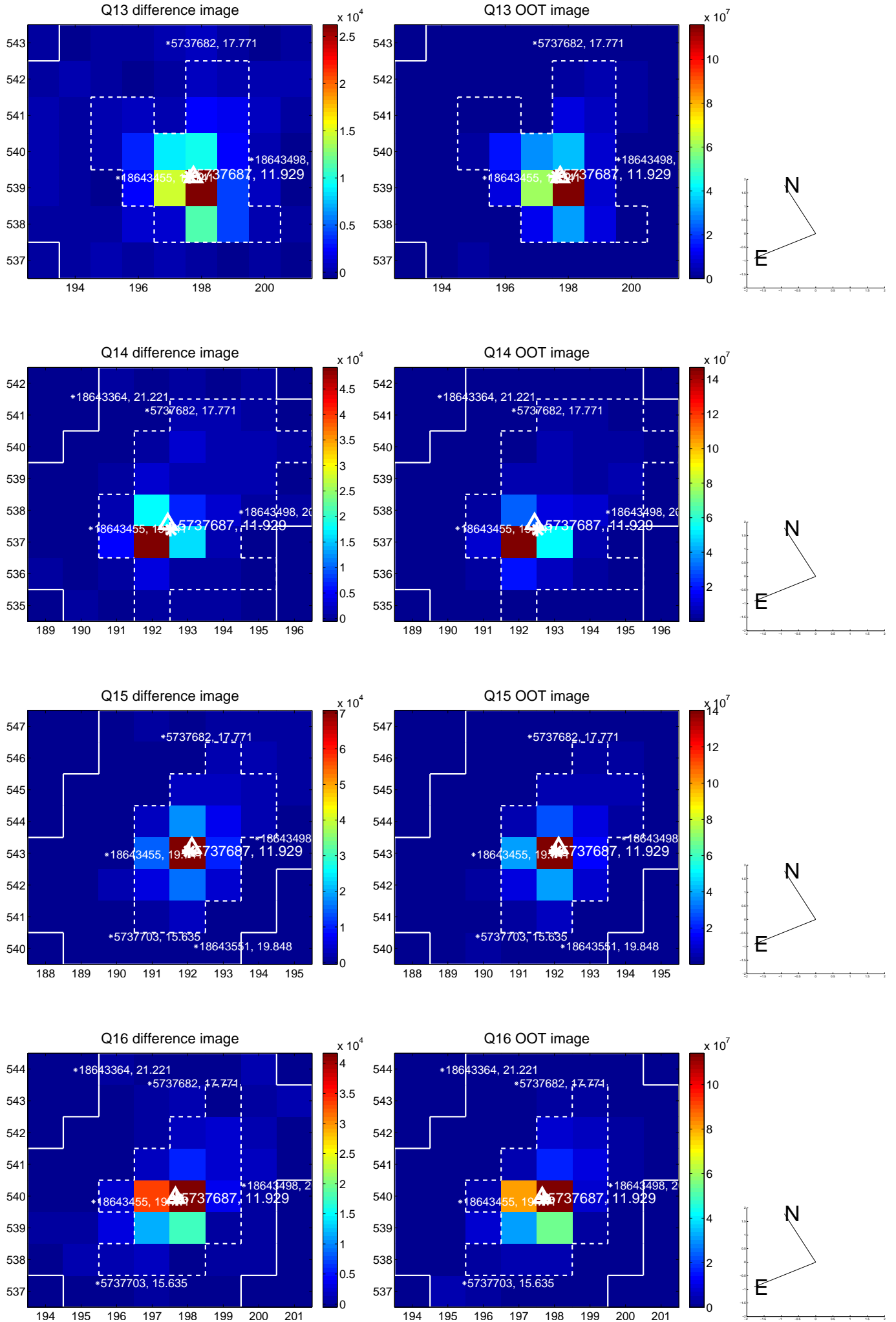
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



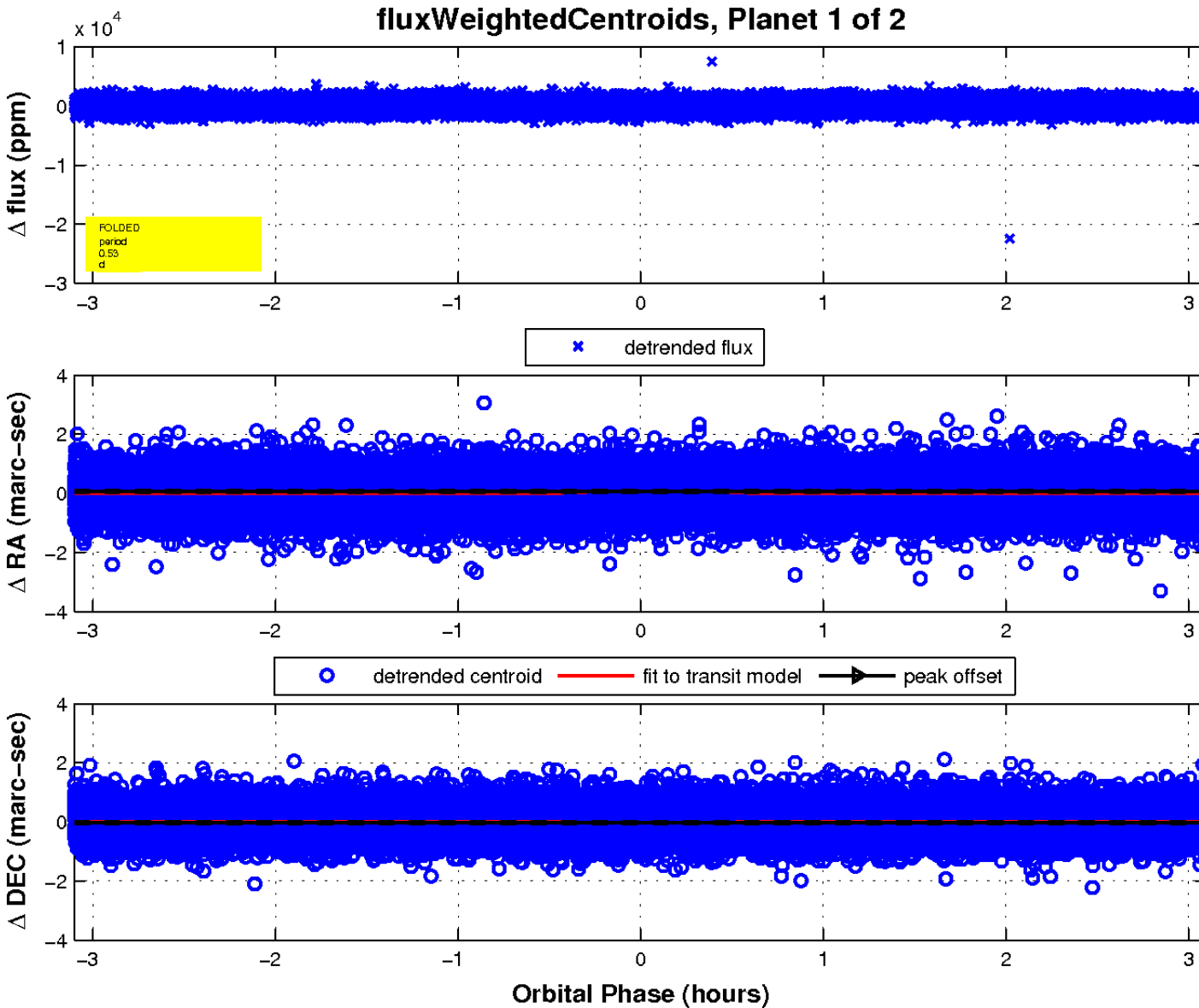
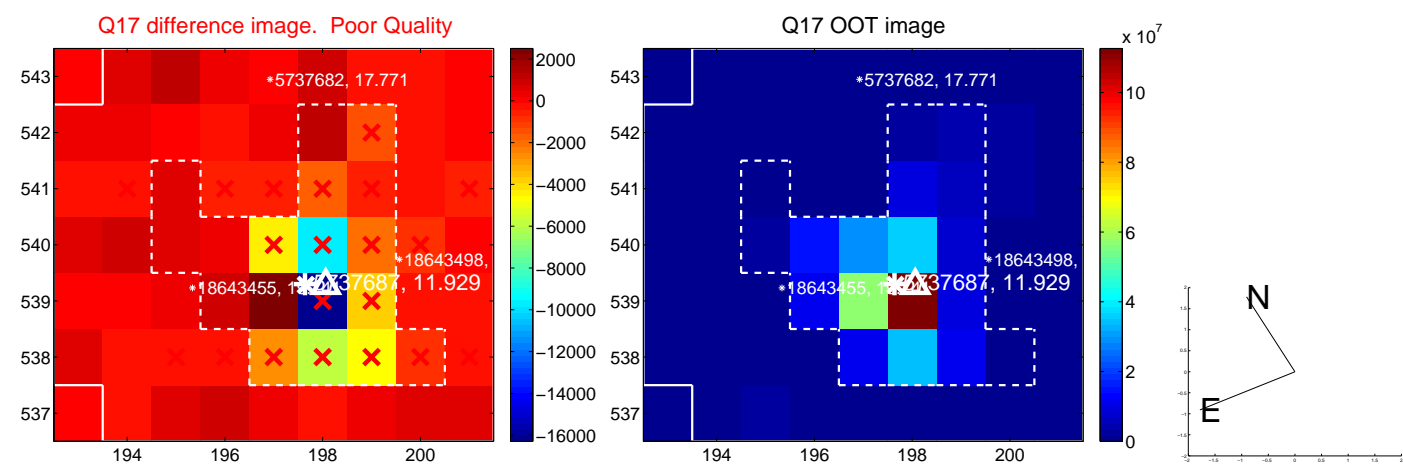
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

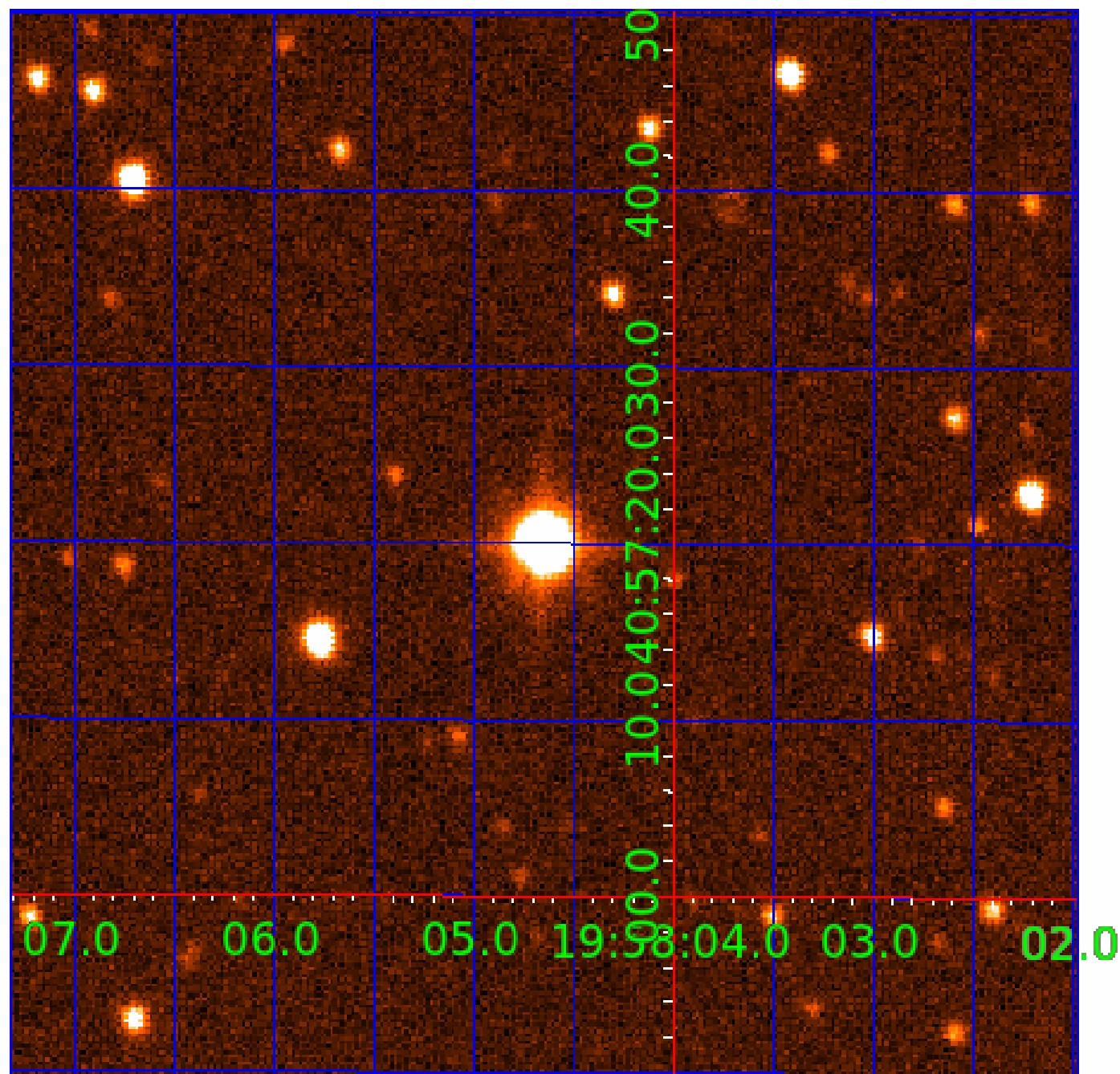


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005737687

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})
005737687-01	OBS	No	0.525834	131.821795	169.0	1.034	11.3	16.1	2.19	7259	3.29	53043.07
005737687-02	OBS	No	0.867915	132.230224	93.1	3.241	10.2	8.4	2.19	7259	2.46	27193.04

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005737687-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005737687-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

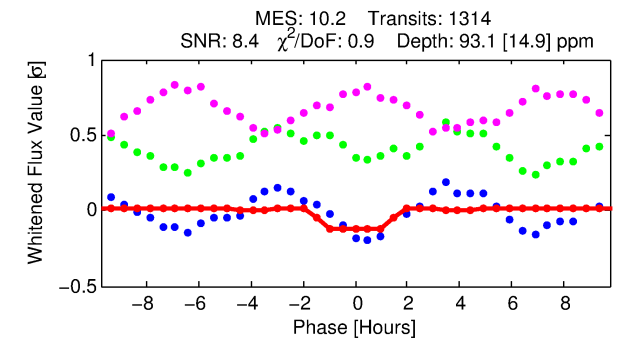
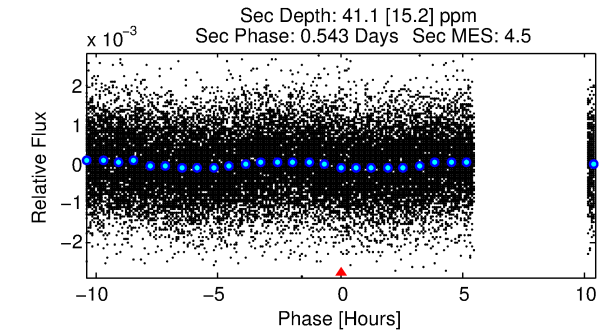
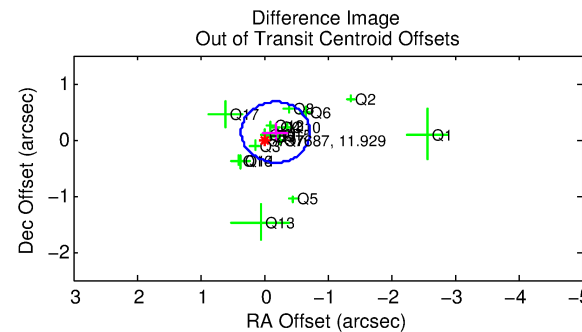
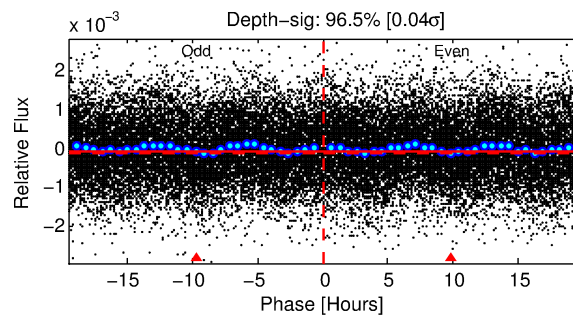
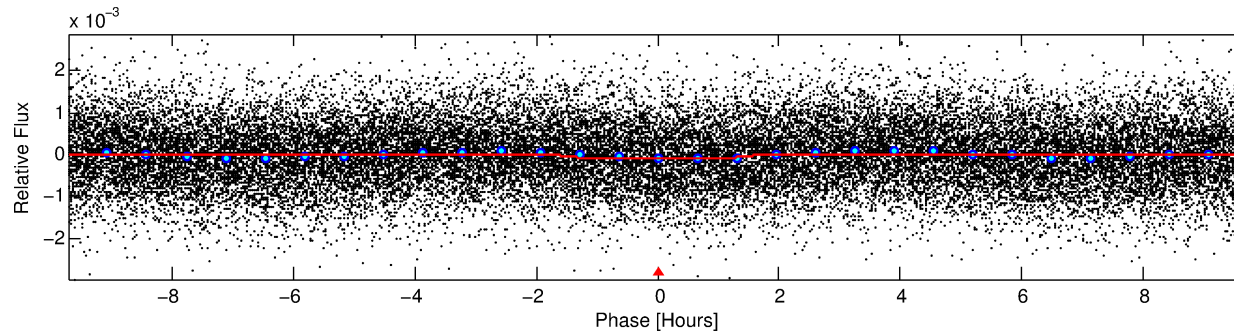
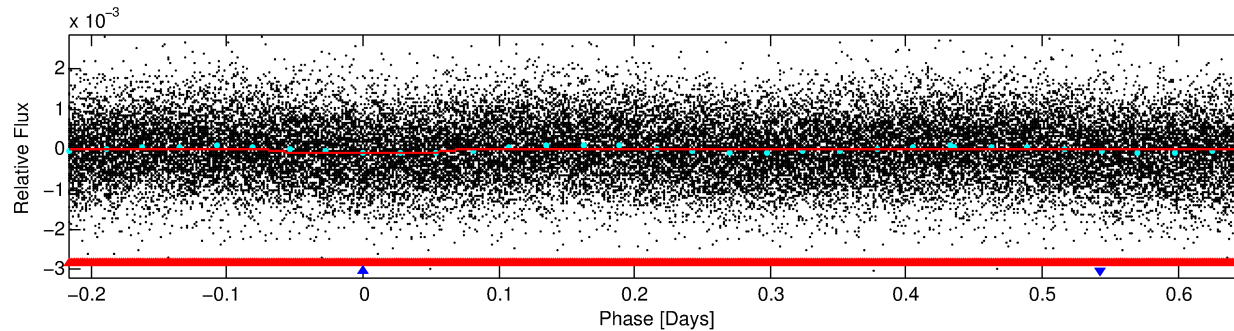
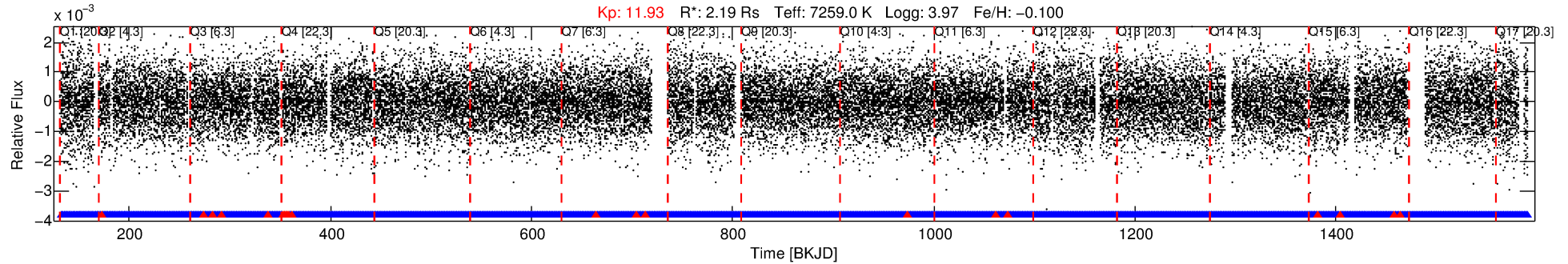
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005737687-02

No Significant Match Found

DV One-Page Summary

KIC: 5737687 Candidate: 2 of 2 Period: 0.868 d



DV Fit Results:

Period = 0.86791 [0.00001] d
Epoch = 132.2302 [0.0046] BKJD
 $R_p/R^* = 0.0103$ [0.0061]
 $a/R^* = 1.32$ [2.11]
 $b = 0.90$ [0.77]
 $S_{\text{eff}} = 27193.04$ [12545.27]
 $T_{\text{eq}} = 3274$ [378] K
 $R_p = 2.46$ [1.65] R_e
 $a = 0.0210$ [0.0059] AU
 $A_g = 1.64$ [2.15] [0.30 σ]
 $T_{\text{eff}} = 5733$ [1794] K [1.34 σ]

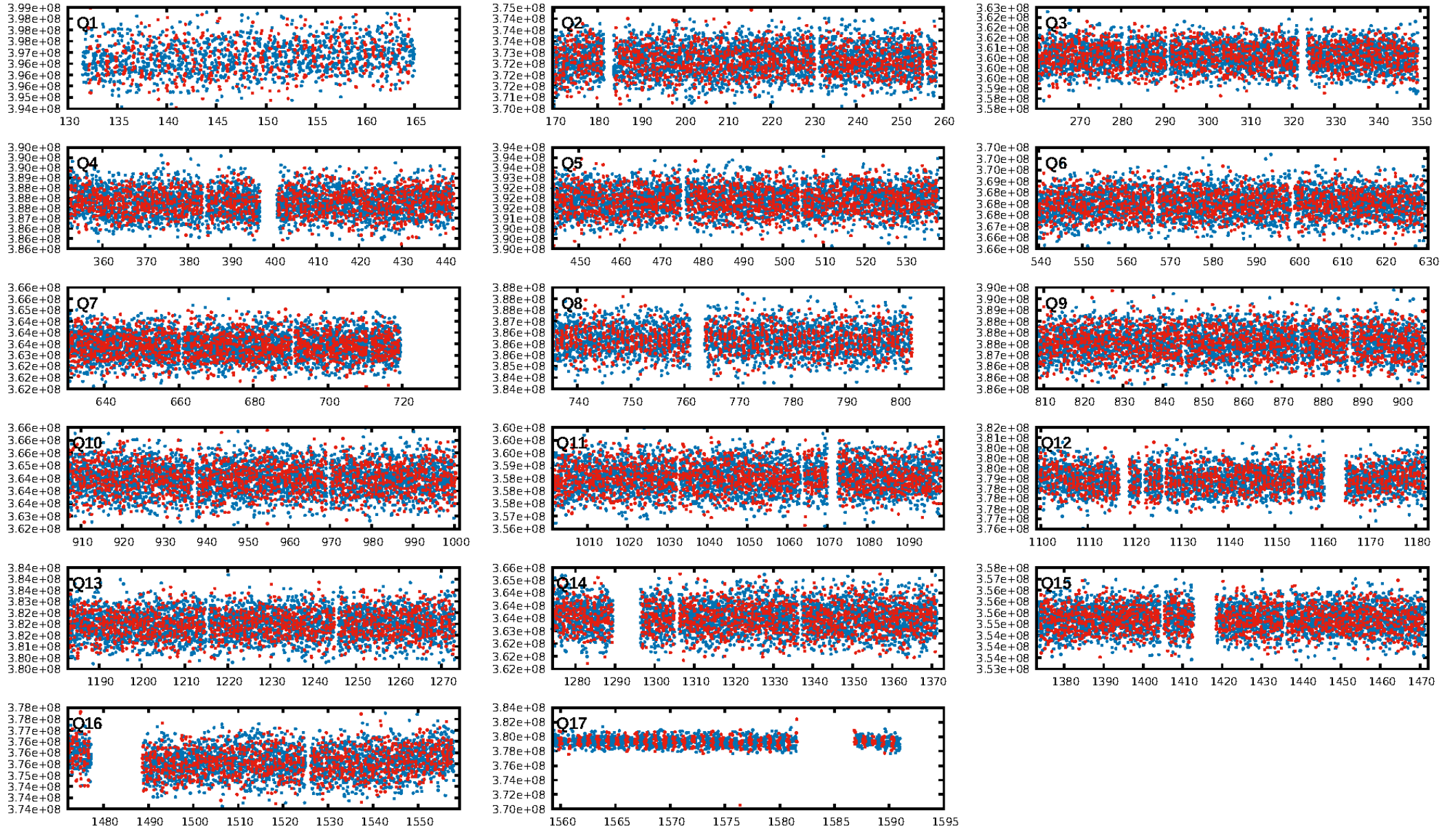
DV Diagnostic Results:

ShortPeriod-sig: 98.4% [2.41 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.30e-22
RollingBand-fgt: 0.98 [1236/1257]
GhostDiagnostic-chr: 2.591
Centroid-sig: 0.0%
Centroid-so: 0.541 arcsec [3.65 σ]
OotOffset-rm: 0.222 arcsec [1.23 σ]
KicOffset-rm: 0.274 arcsec [1.51 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.00 [0/17]

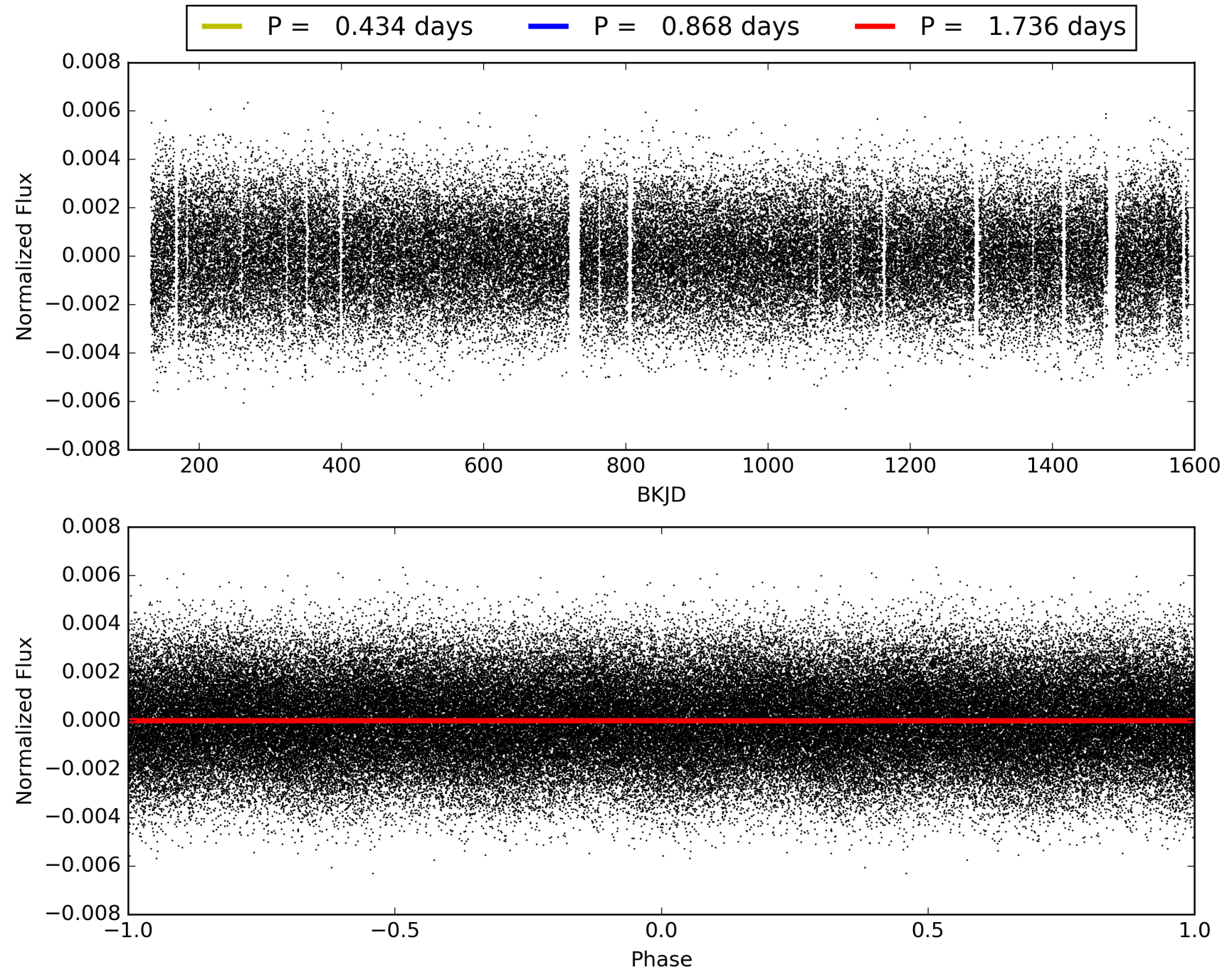
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:43:30 Z

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

TCE 005737687-02, PDC Light Curves

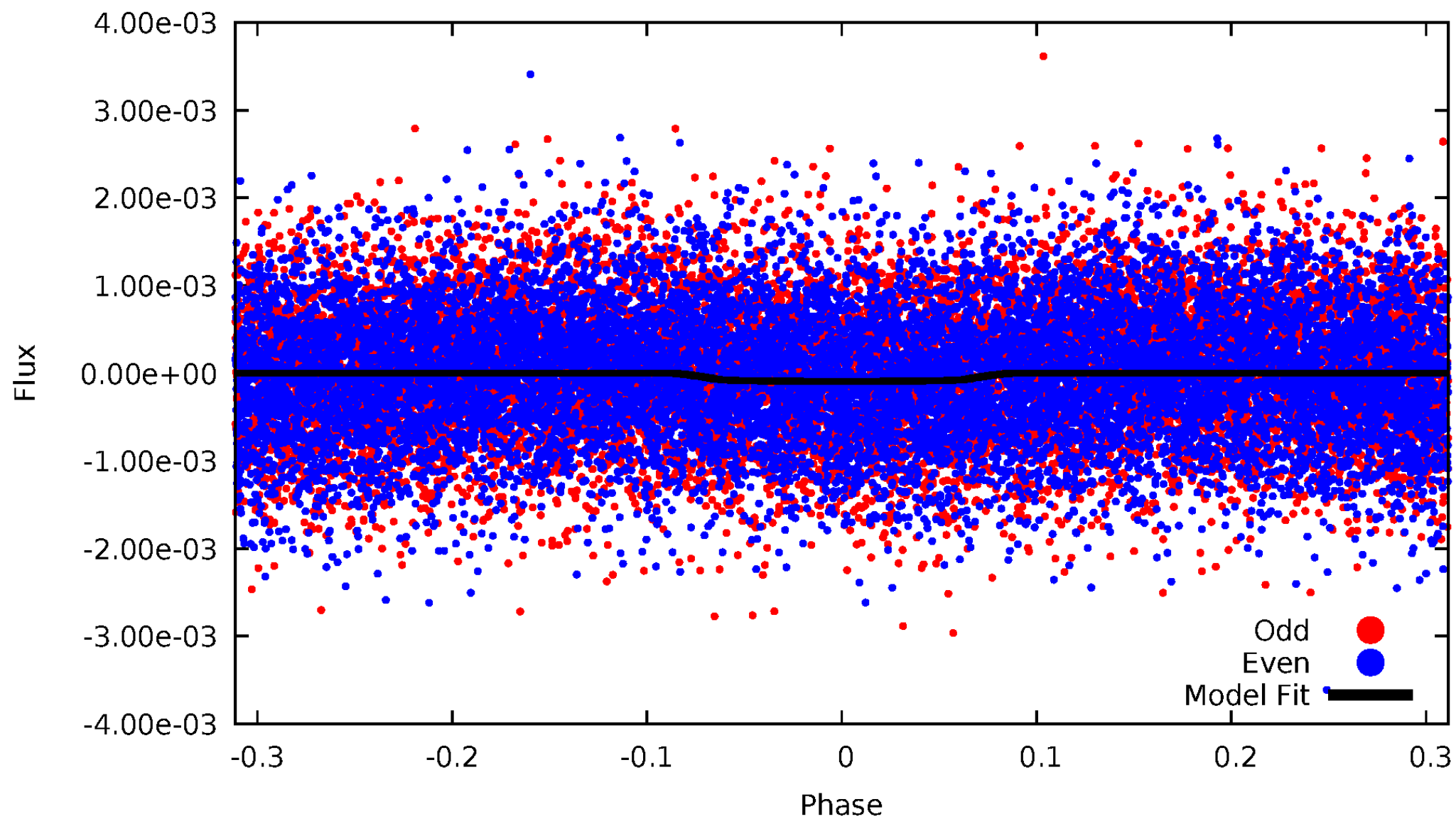


TCE 005737687-02



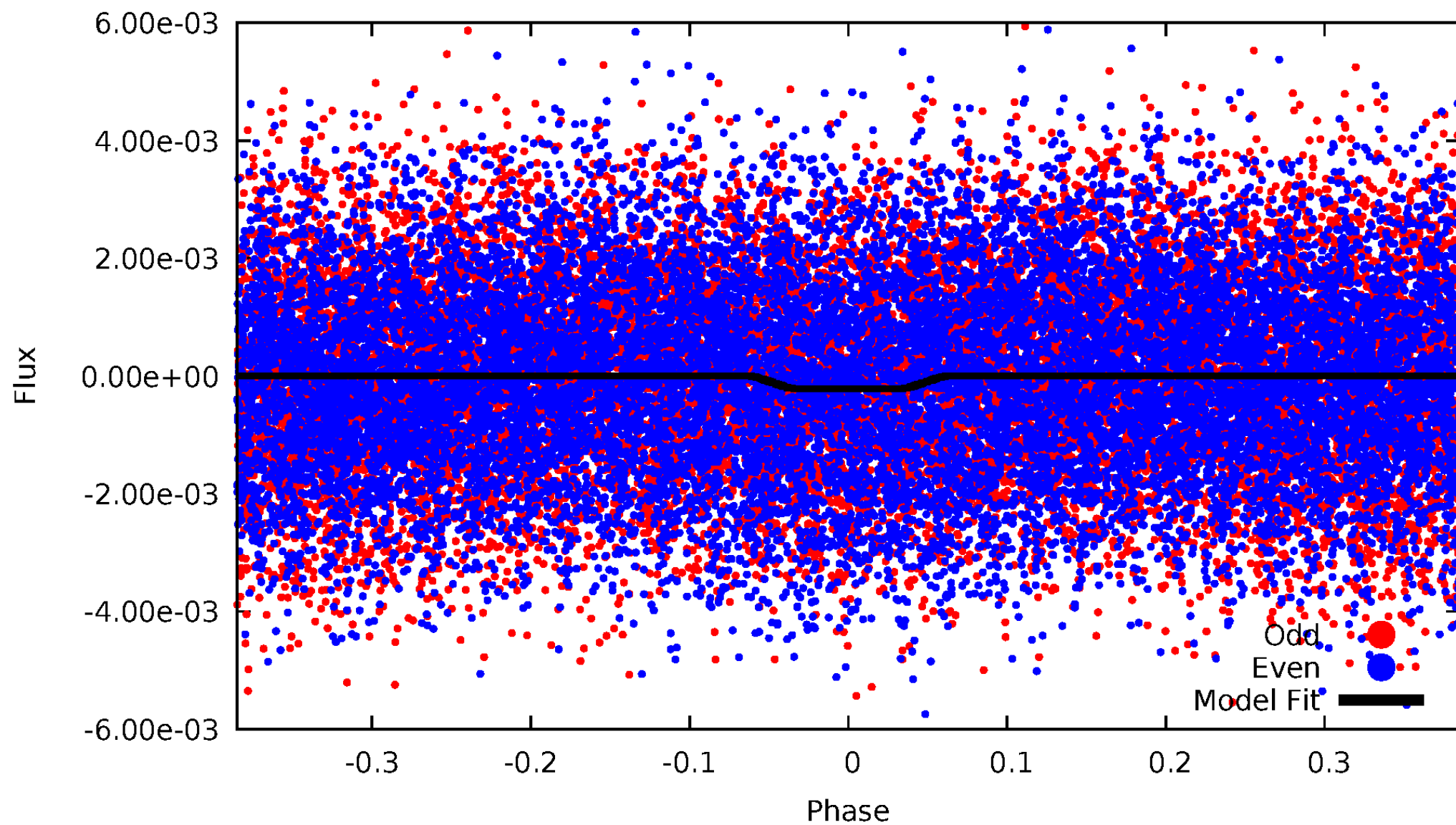
DV Odd/Even

TCE 005737687-02



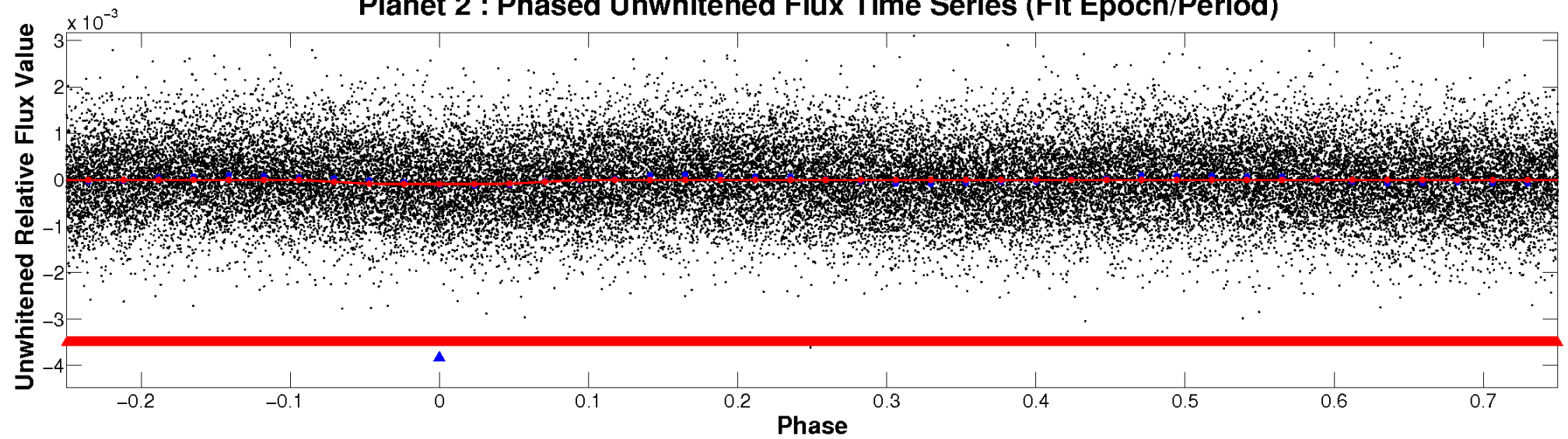
ALT Odd/Even

TCE 005737687-02

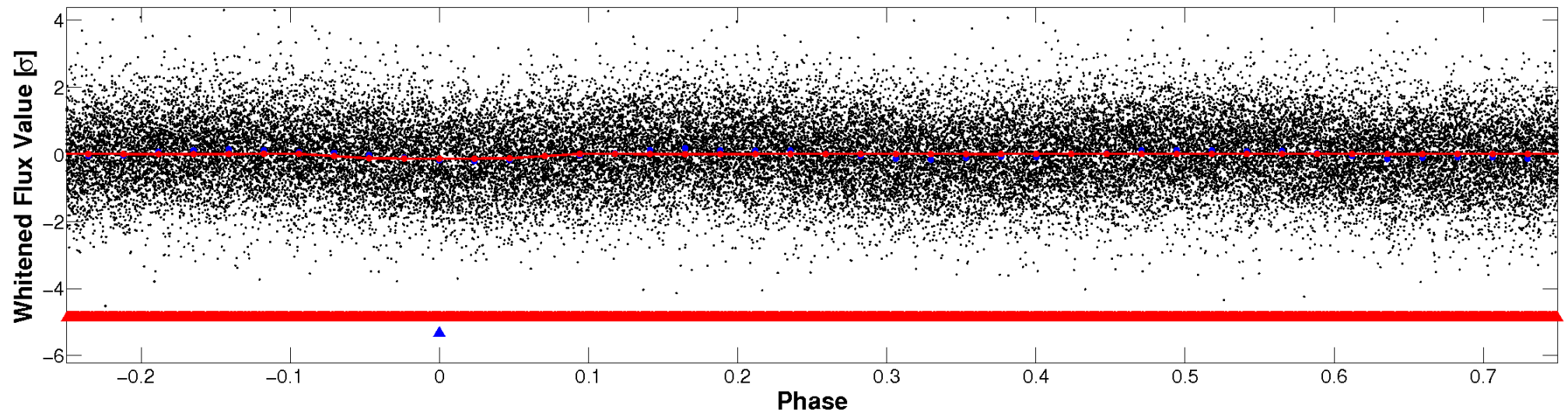


Non-Whitened Vs. Whitened Light Curve

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

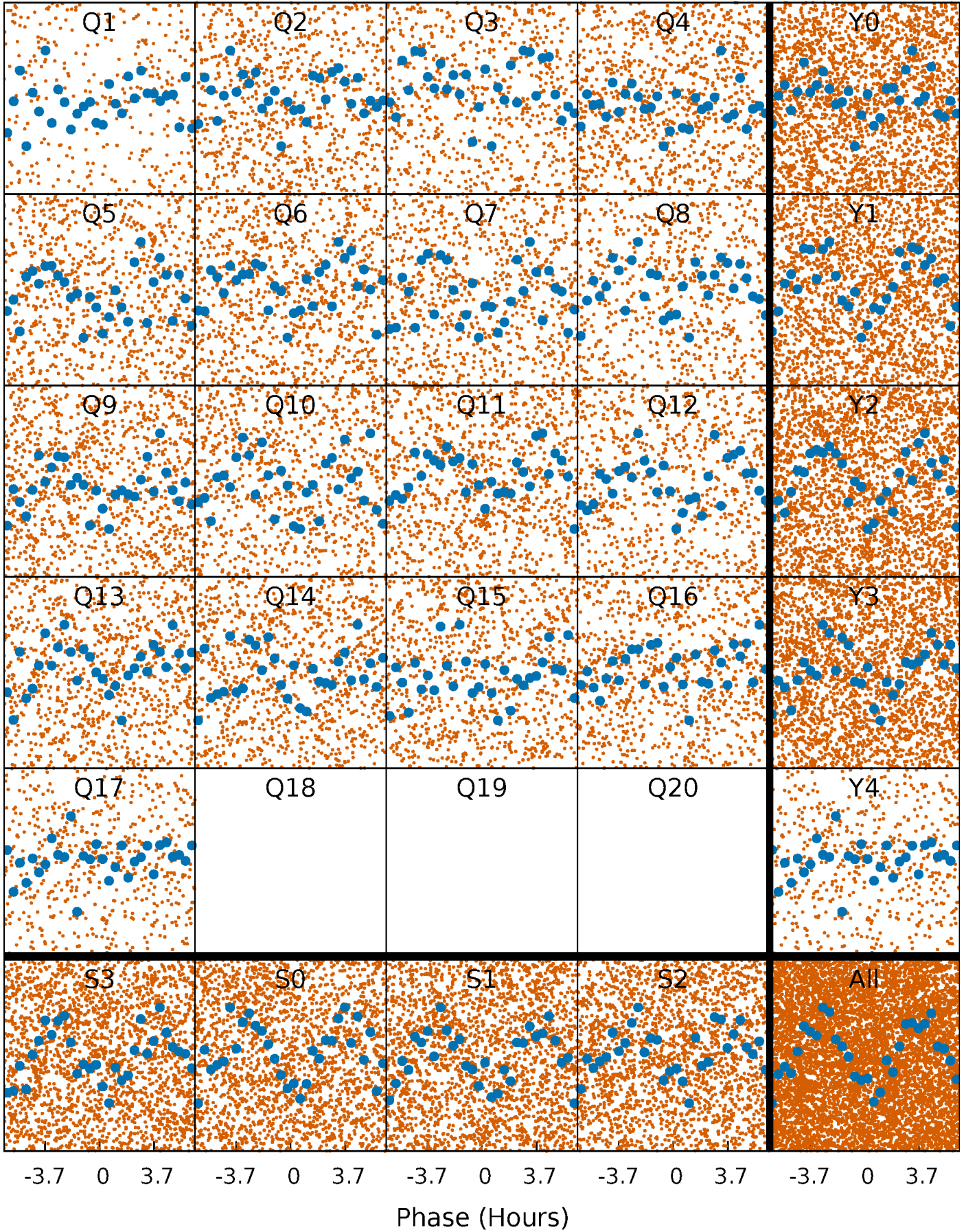


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



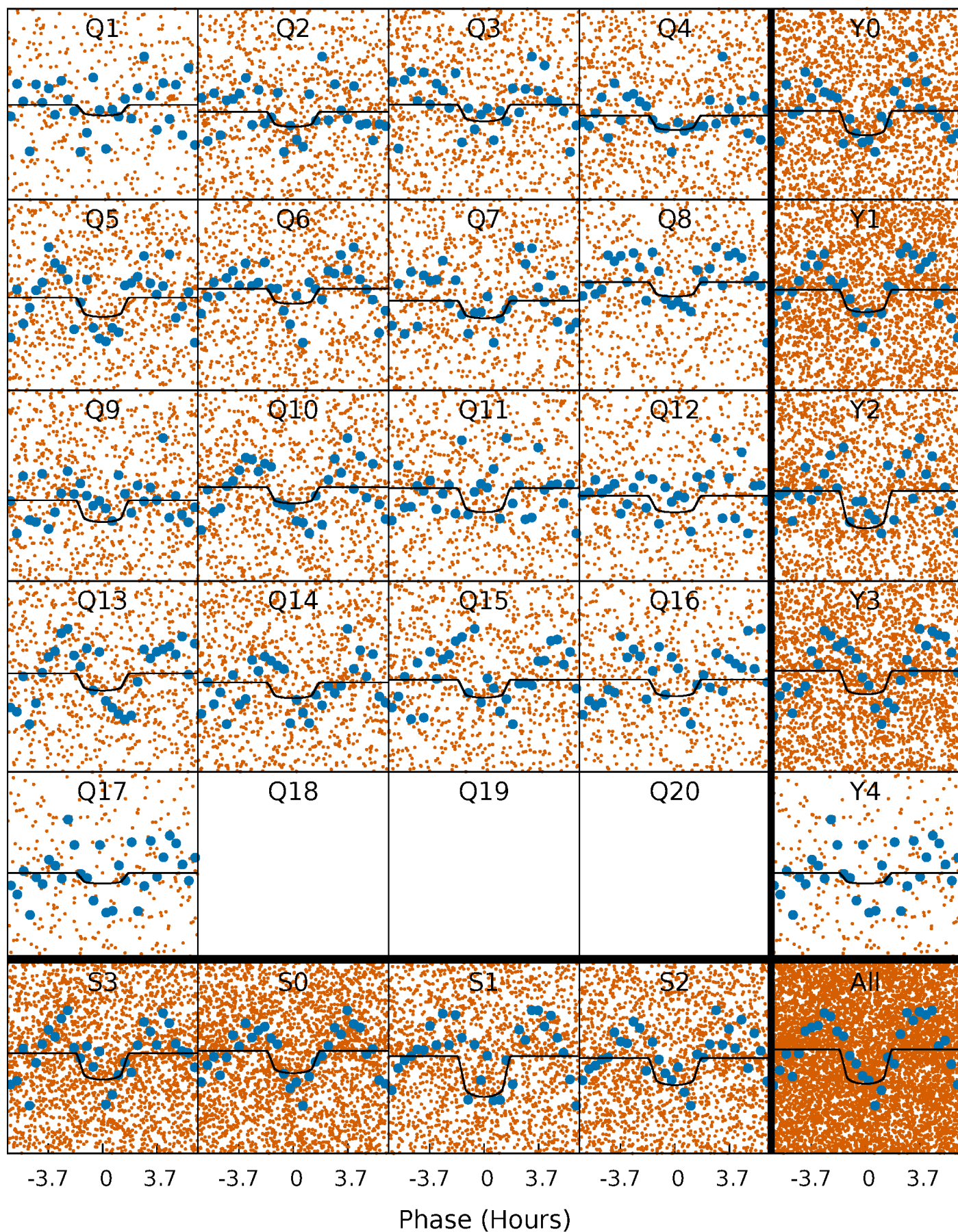
PDC Quarter-Phased Transit Curves

TCE 005737687-02 P= 0.867915 Days $T_0=132.230224$ (BKJD)



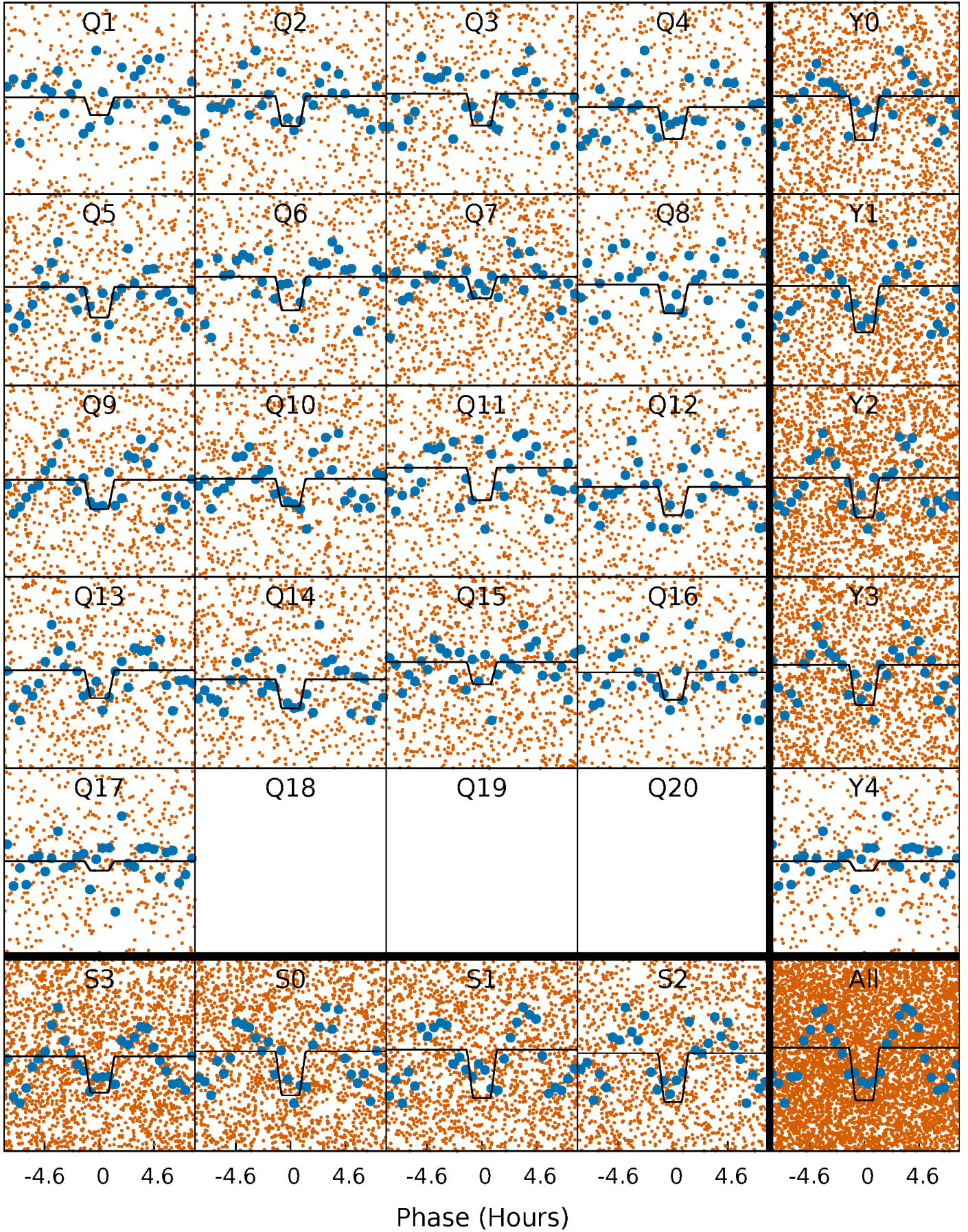
DV Quarter-Phased Transit Curves

TCE 005737687-02 P= 0.867915 Days $T_0=132.230224$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

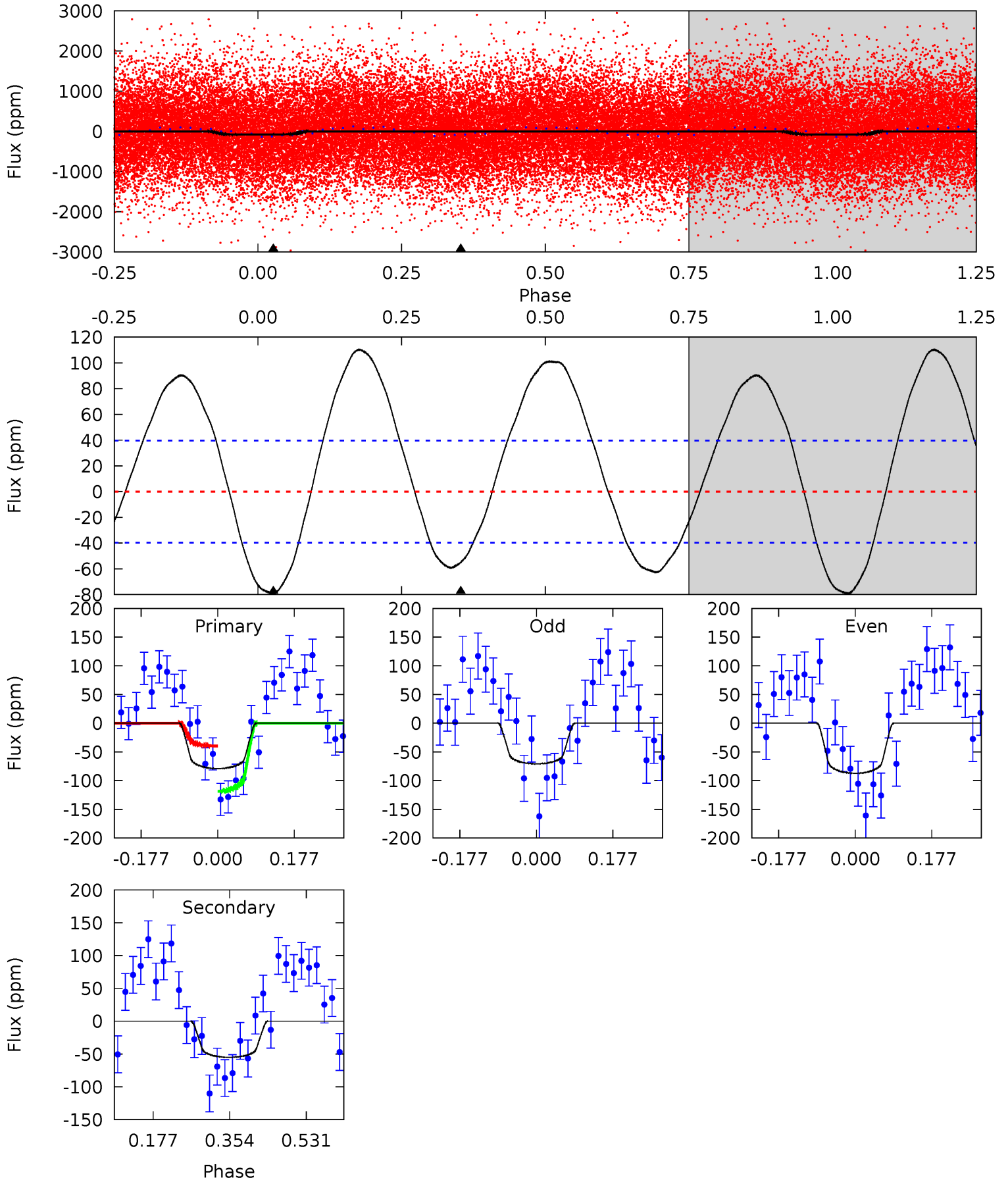
TCE 005737687-02 P= 0.867955 Days $T_0=132.219508$ (BKJD)



DV Model-Shift Uniqueness Test

005737687-02, P = 0.867915 Days, E = 131.362309 Days

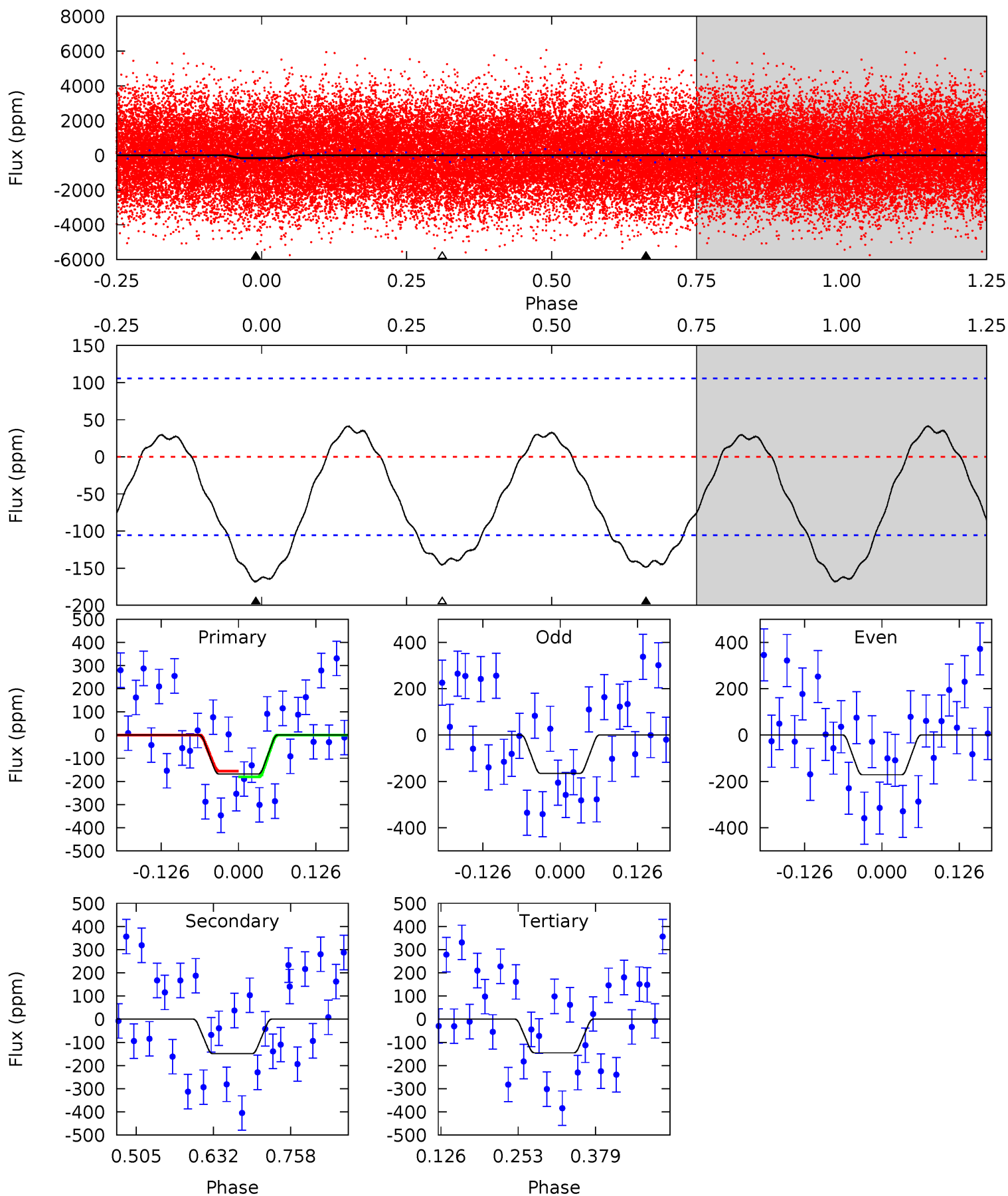
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.86	6.17	0	0	4.44	1.35	5.80	8.86	8.86	6.17	6.17	0.93	0.95	0.58	4.42



Alt Model-Shift Uniqueness Test

005737687-02, P = 0.867955 Days, E = 131.351553 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.19	6.35	6.21	0	4.52	1.53	2.76	0.97	7.19	0.14	6.35	0.13	1.06	0.20	0.53



Stellar Parameters For KIC 005737687

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7259^{+226}_{-327}	$3.969^{+0.240}_{-0.160}$	$-0.100^{+0.250}_{-0.350}$	$2.193^{+0.568}_{-0.695}$	$1.632^{+0.186}_{-0.345}$	$0.218^{+0.329}_{-0.101}$
	+3%/-5%	+6%/-4%	+250%/-350%	+26%/-32%	+11%/-21%	+151%/-46%
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 005737687-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-55 ± 9	$2.46^{+1.48}_{-1.20}$	4541^{+332}_{-406}	5730^{+2674}_{-1265}	$2.187^{+5.797}_{-1.331}$
Alt.	-149 ± 23	$3.44^{+1.55}_{-1.45}$	4529^{+344}_{-384}	6248^{+2322}_{-1029}	$2.843^{+5.860}_{-1.427}$

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

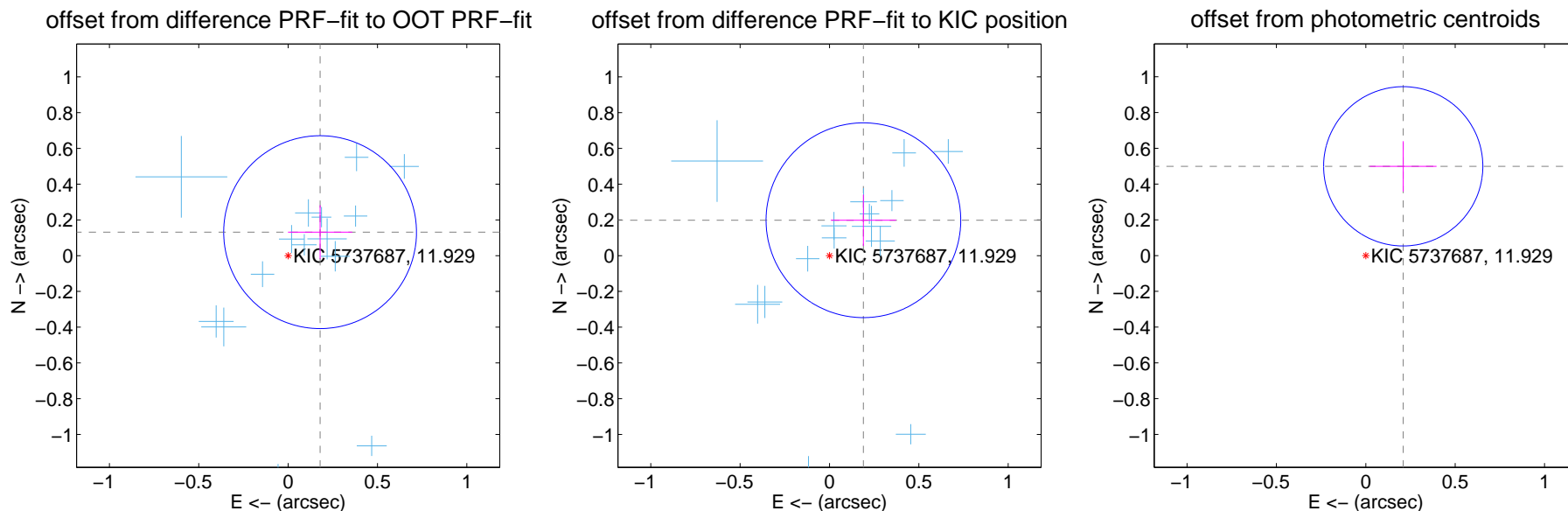
DV Centroid Data

Supplemental centroid analysis for 005737687-02. **Kepler magnitude: 11.93.** Transit SNR 8.42

There are 17 quarters with good PRF difference image offsets

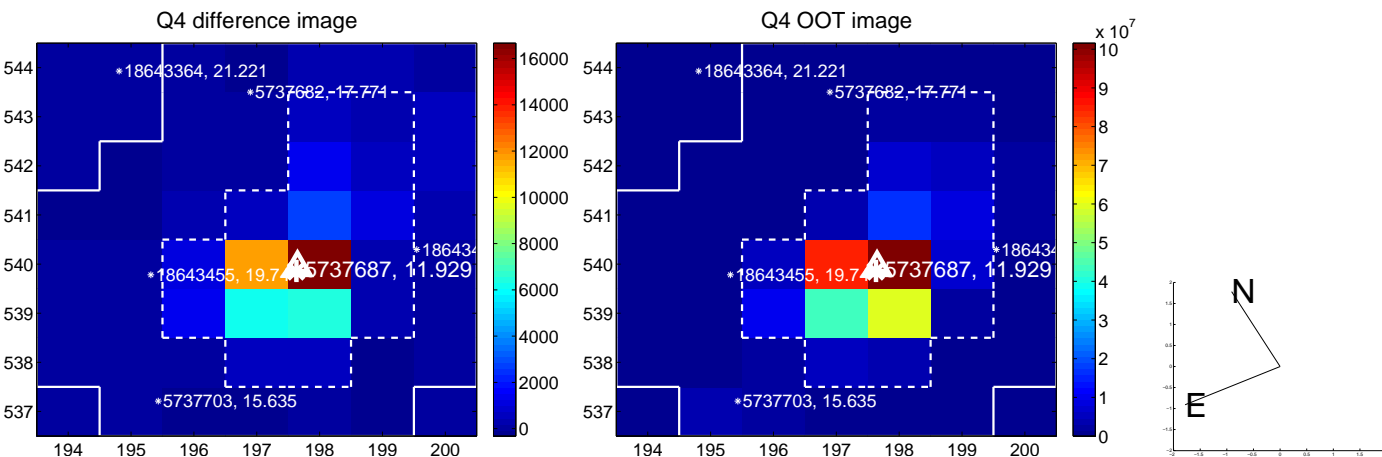
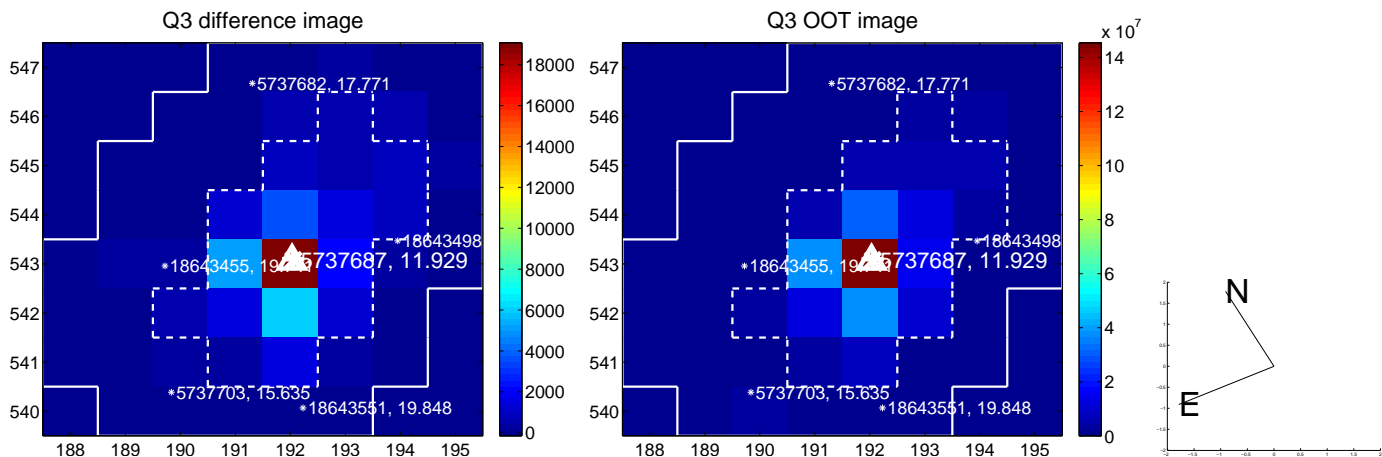
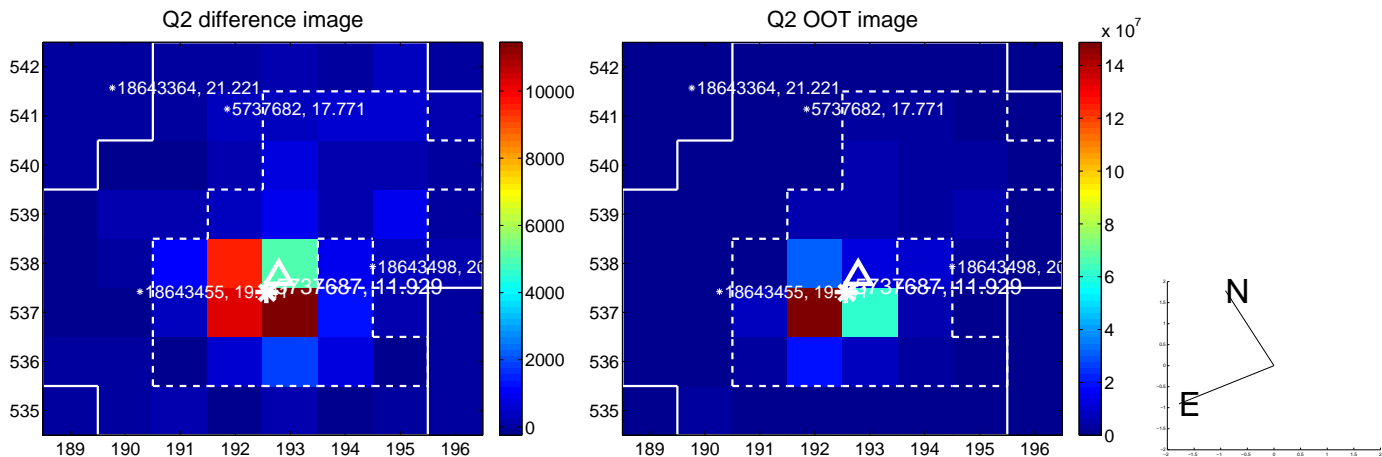
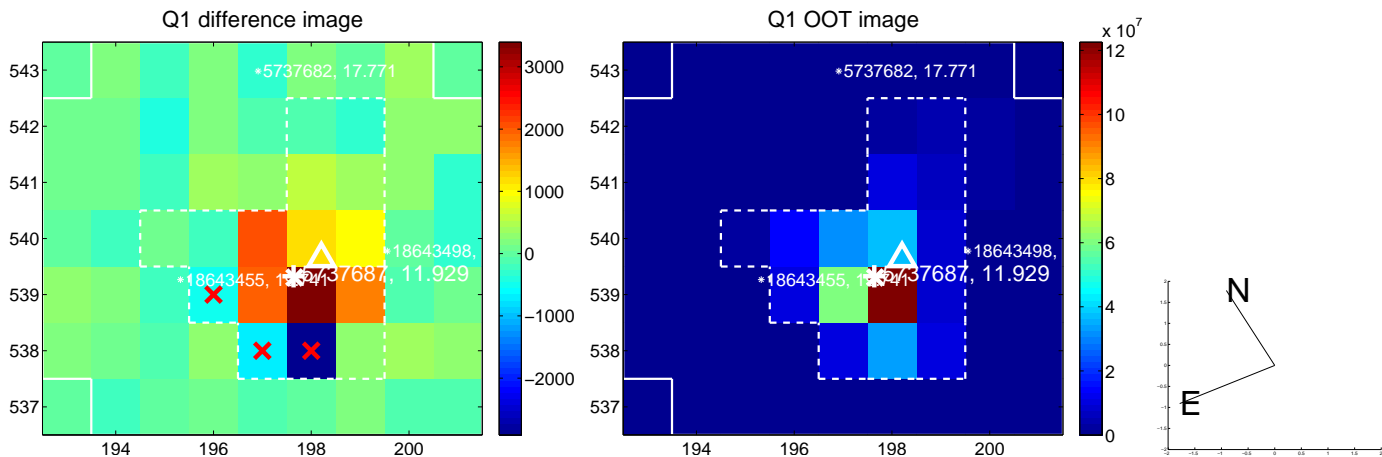
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.222 ± 0.180	1.23	-0.179 ± 0.180	0.131 ± 0.151
PRF-fit source offset from KIC position	0.274 ± 0.182	1.51	-0.190 ± 0.183	0.198 ± 0.143
photometric centroid source offset	0.54 ± 0.15	3.65	-0.21 ± 0.19	0.50 ± 0.14

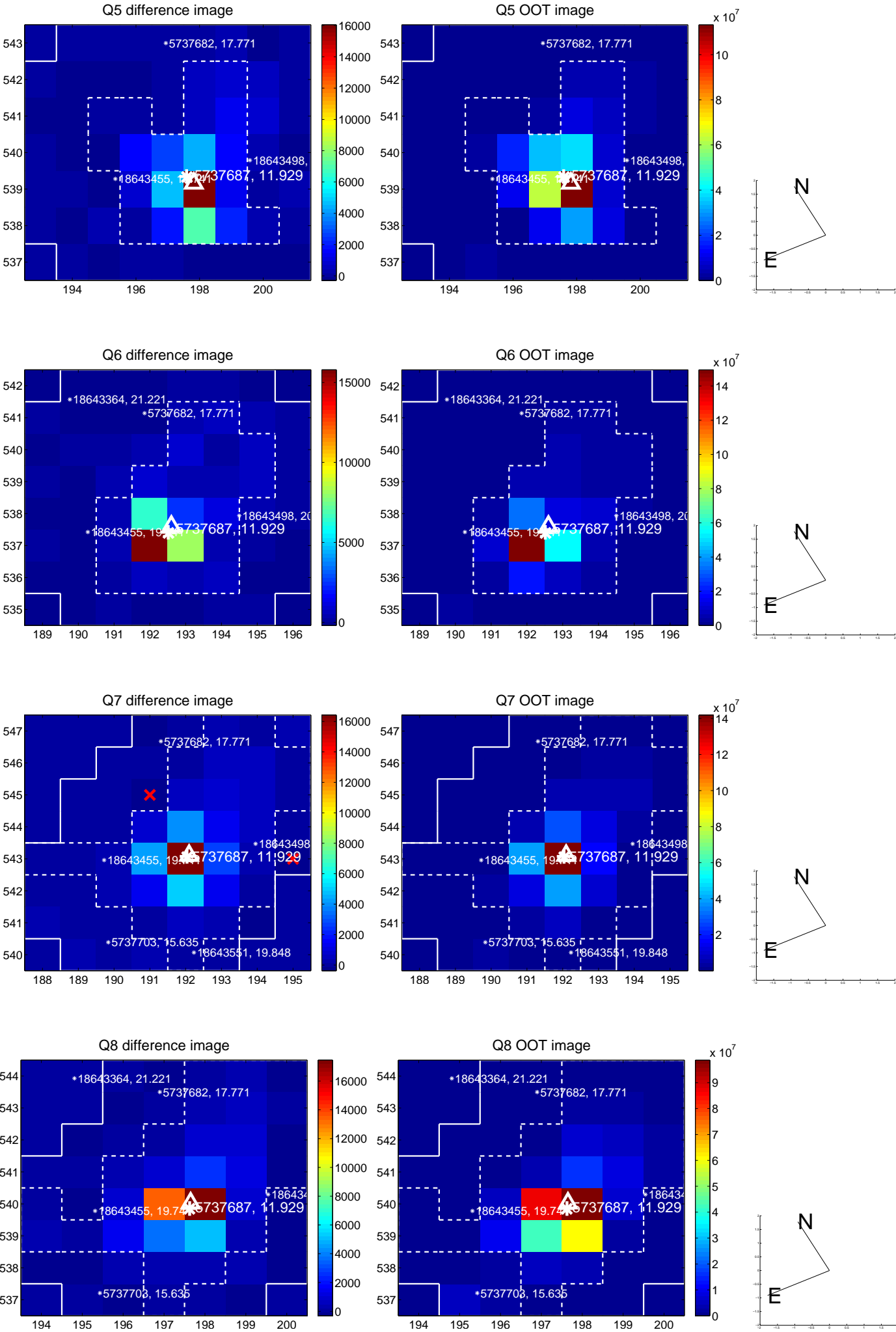


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

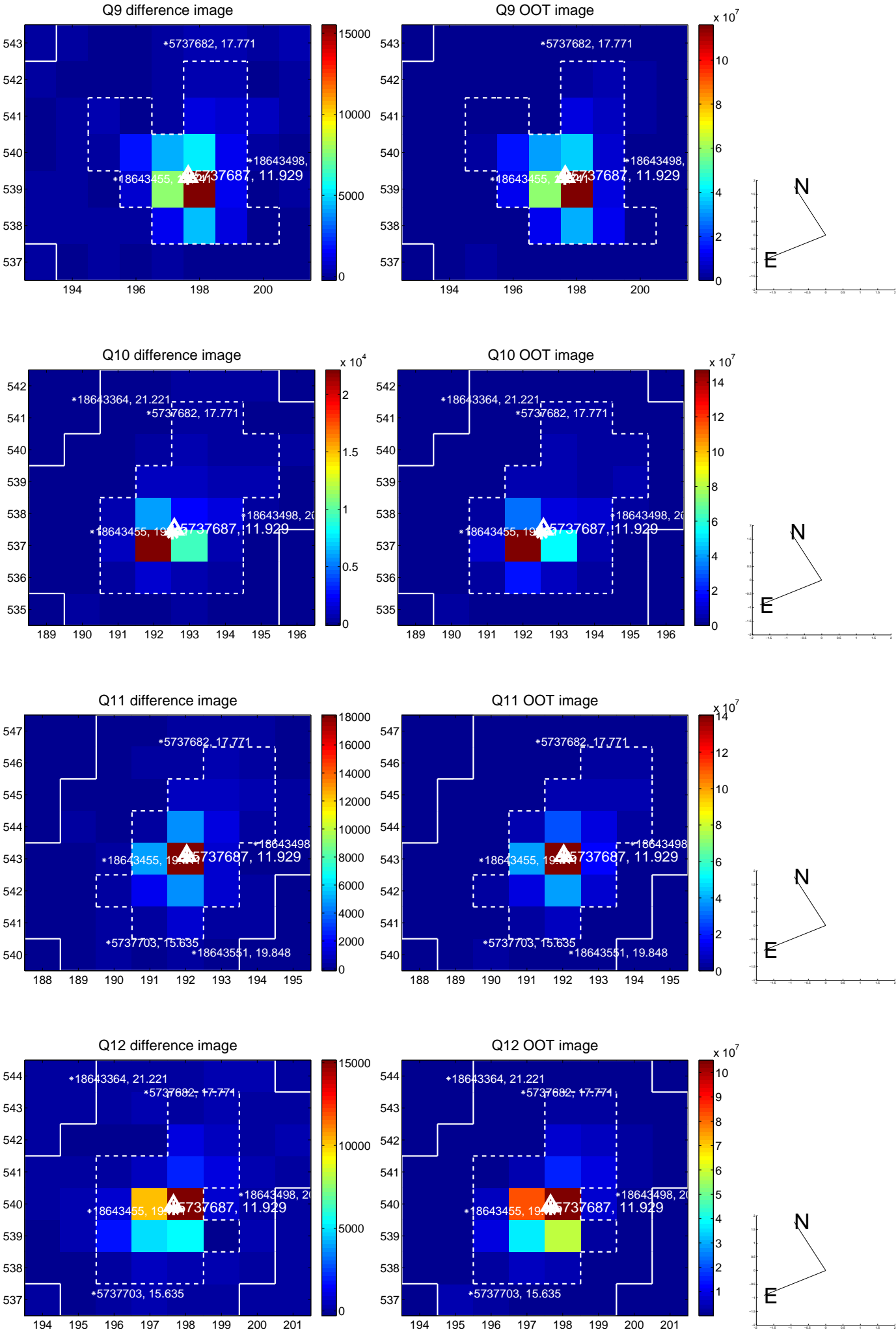
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



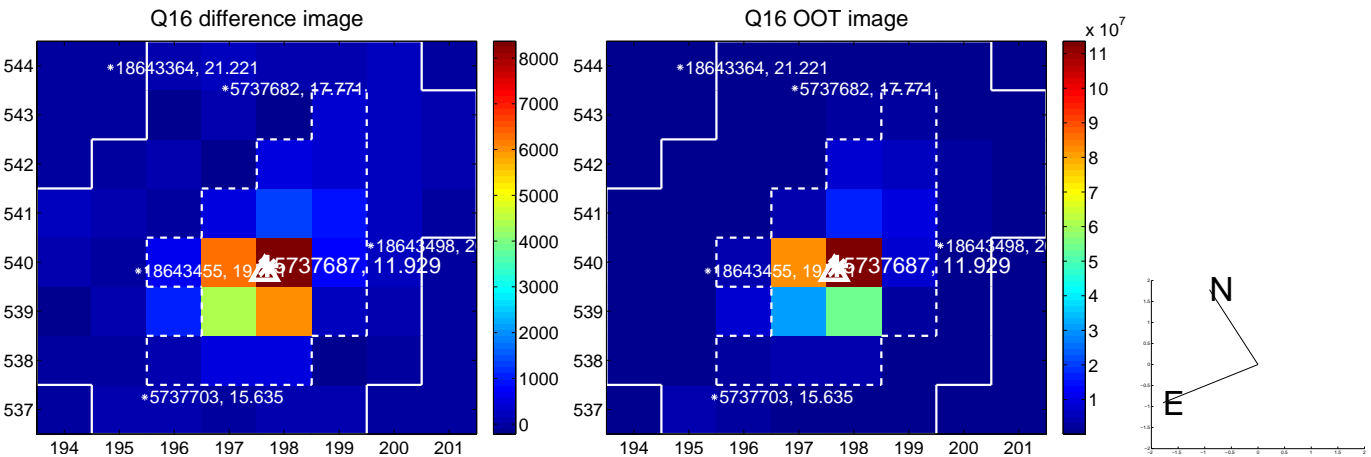
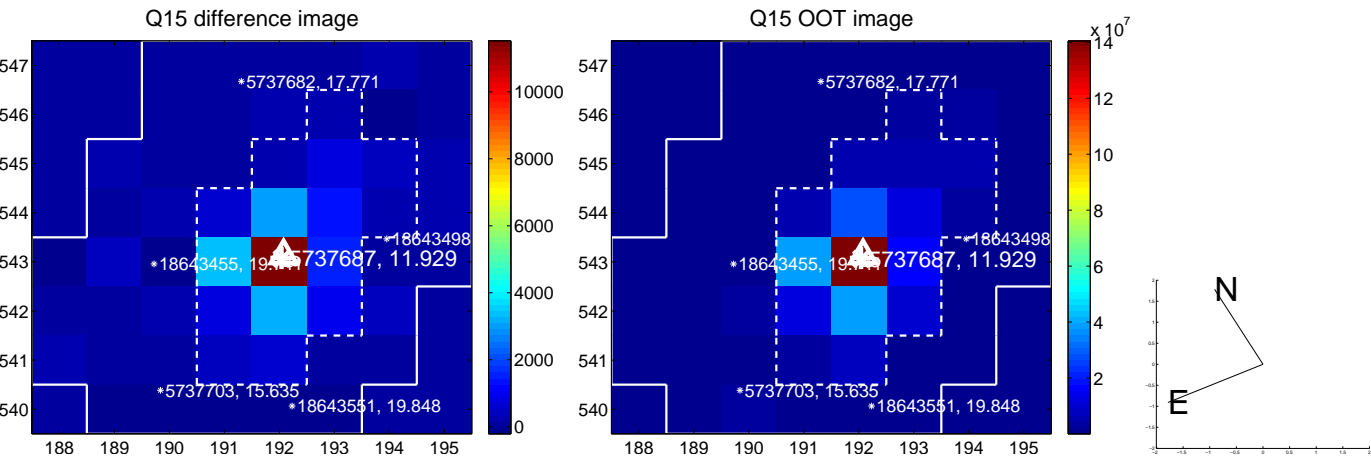
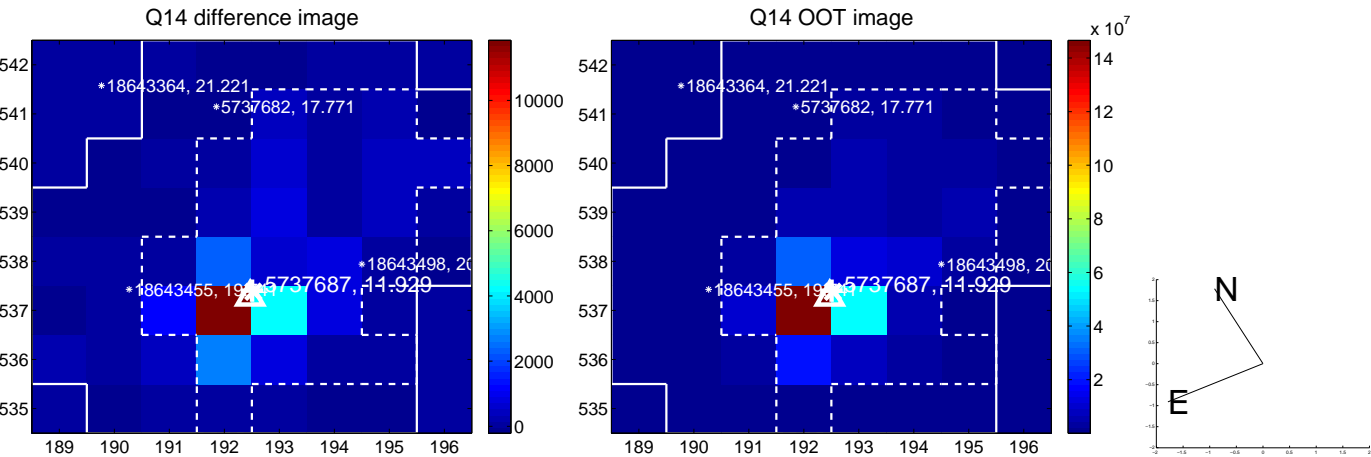
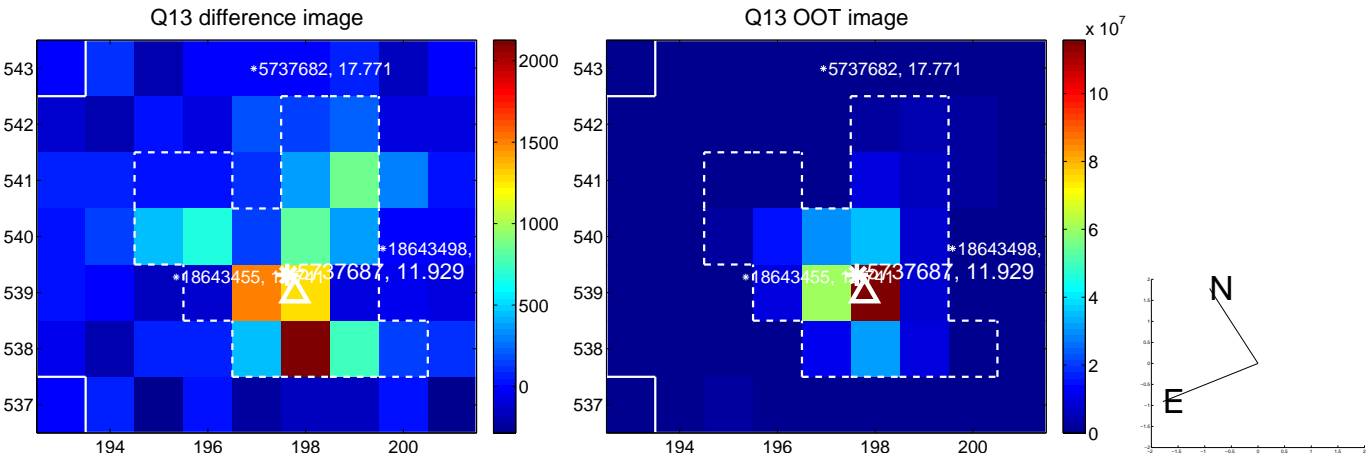
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



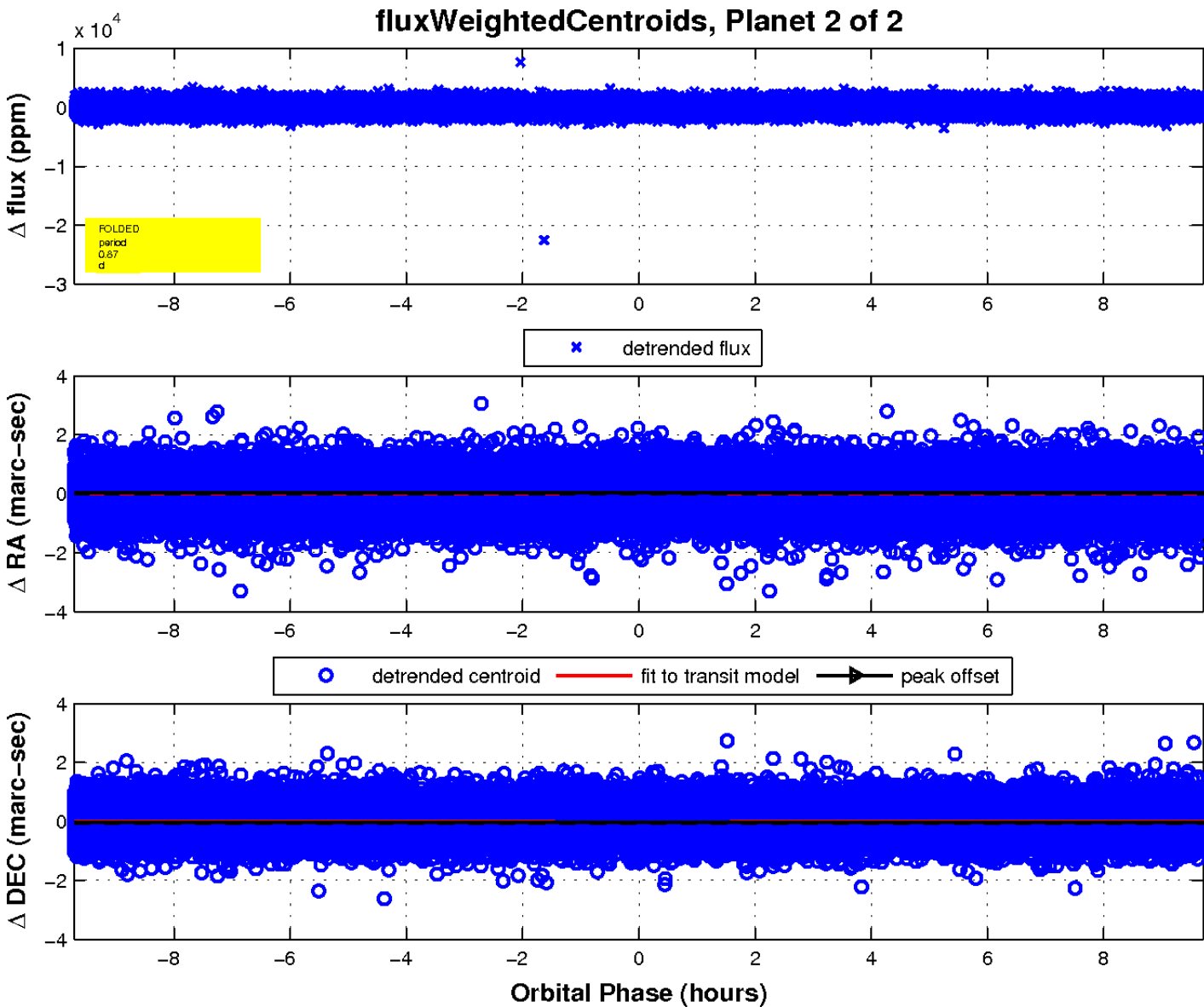
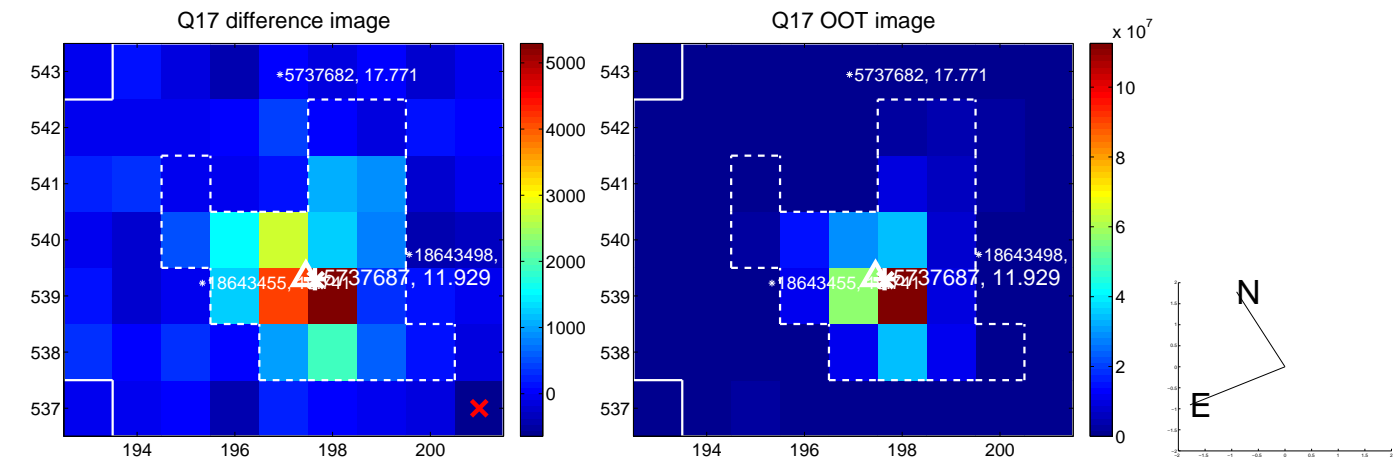
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

Declination

