

KIC 004269337

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})
004269337-01	OBS	No	1.393575	132.281622	68.7	2.588	11.6	11.5	2.26	7677	2.18	18521.97
004269337-02	OBS	No	0.694730	132.145345	40.9	6.987	9.1	12.8	2.26	7677	1.47	46856.78

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004269337-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_SATURATED
004269337-02	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_SATURATED

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

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

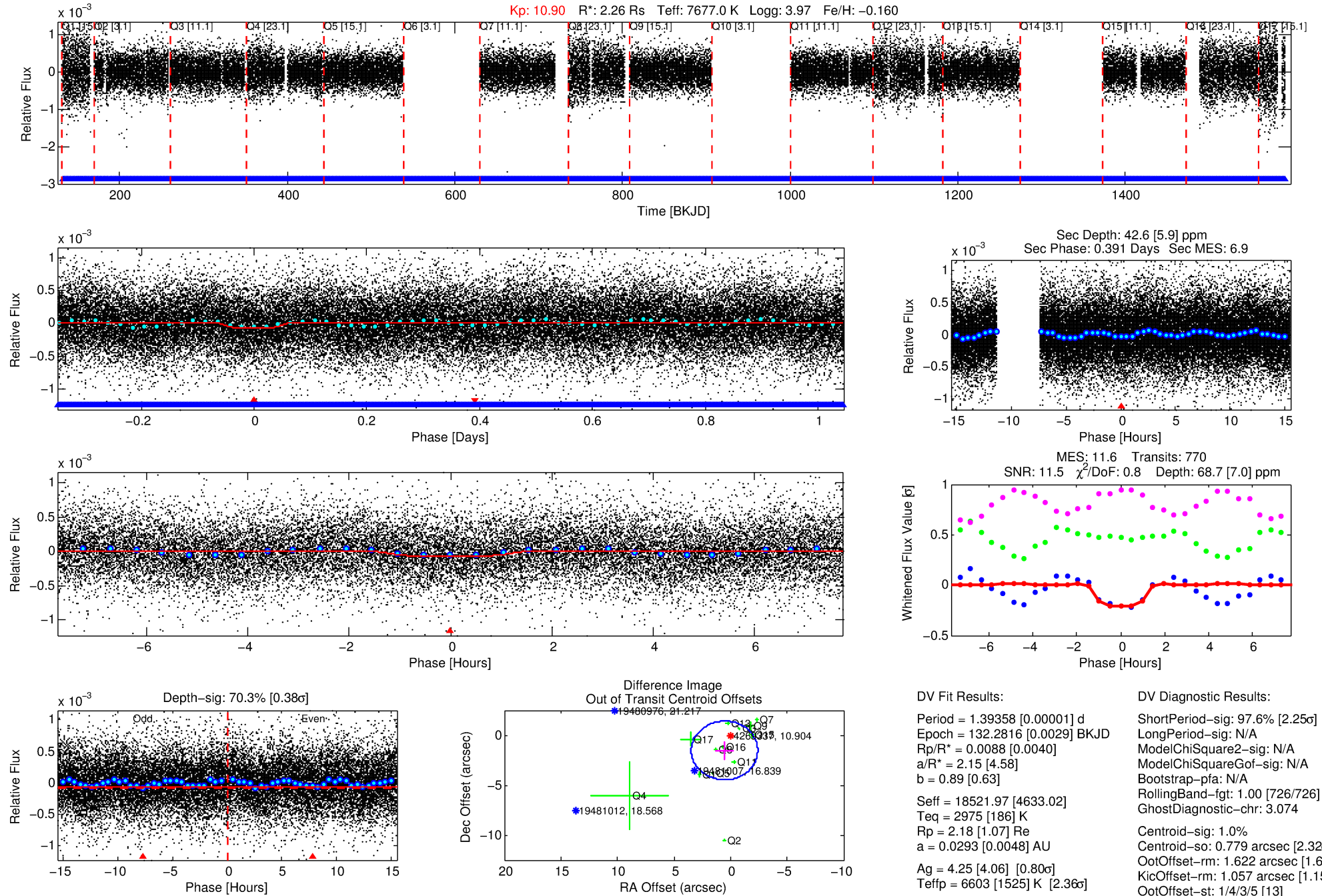
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004269337-01

No Significant Match Found

DV One-Page Summary

KIC: 4269337 Candidate: 1 of 2 Period: 1.394 d



DV Fit Results:

Period = 1.39358 [0.00001] d
Epoch = 132.2816 [0.0029] BKJD
Rp/R* = 0.0088 [0.0040]
a/R* = 2.15 [4.58]
b = 0.89 [0.63]
Seff = 18521.97 [4633.02]
T_{eq} = 2975 [186] K
Rp = 2.18 [1.07] Re
a = 0.0293 [0.0048] AU
Ag = 4.25 [4.06] [0.80σ]
T_{eff} = 6603 [1525] K [2.36σ]

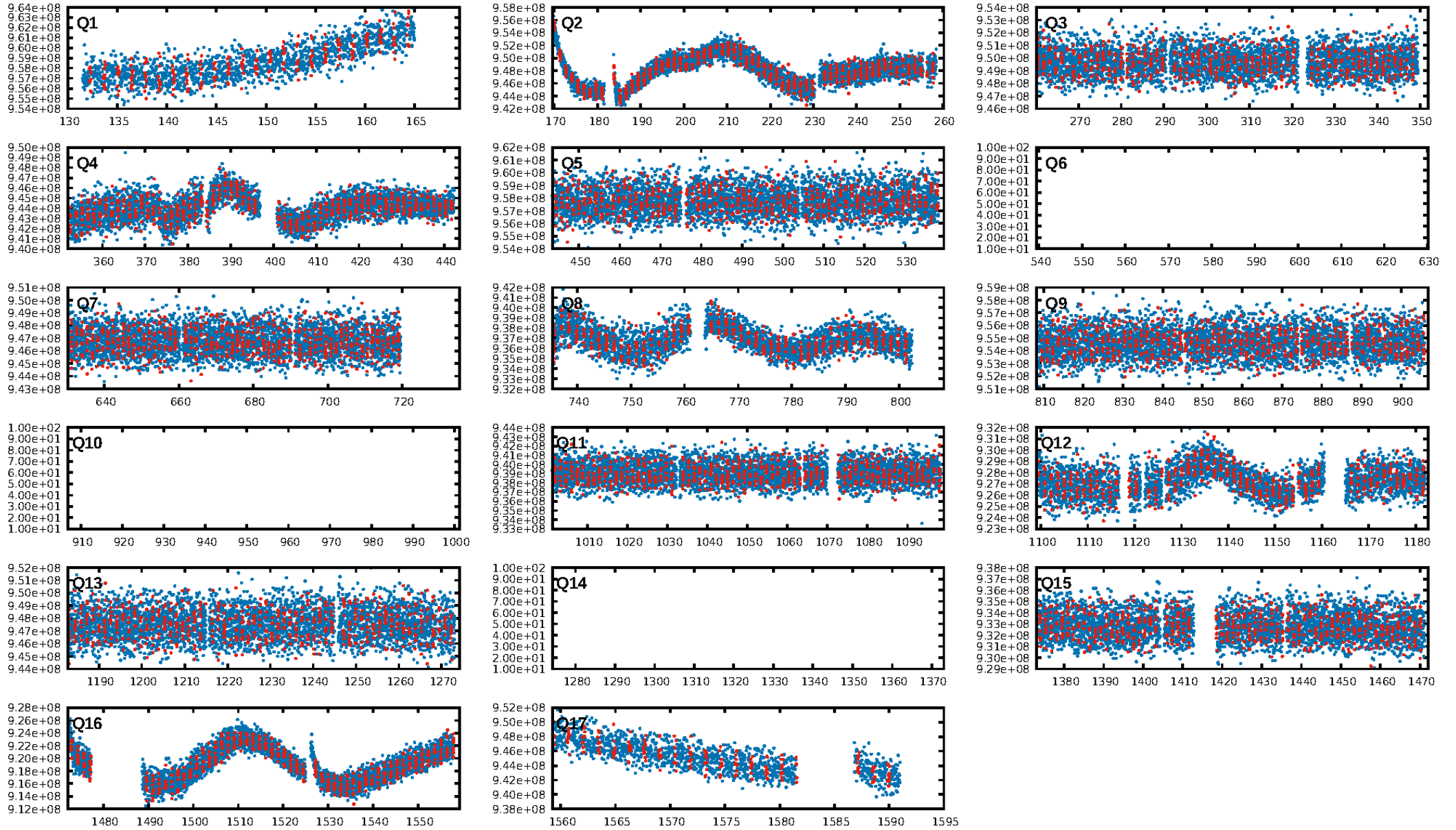
DV Diagnostic Results:

ShortPeriod-sig: 97.6% [2.25σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [726/726]
GhostDiagnostic-chr: 3.074
Centroid-sig: 1.0%
Centroid-so: 0.779 arcsec [2.32σ]
OotOffset-rm: 1.622 arcsec [1.66σ]
KicOffset-rm: 1.057 arcsec [1.15σ]
OotOffset-st: 1/4/3/5 [13]
KicOffset-st: 1/4/3/5 [13]
DiffImageQuality-fgm: 0.46 [6/13]
DiffImageOverlap-fno: 0.00 [0/14]

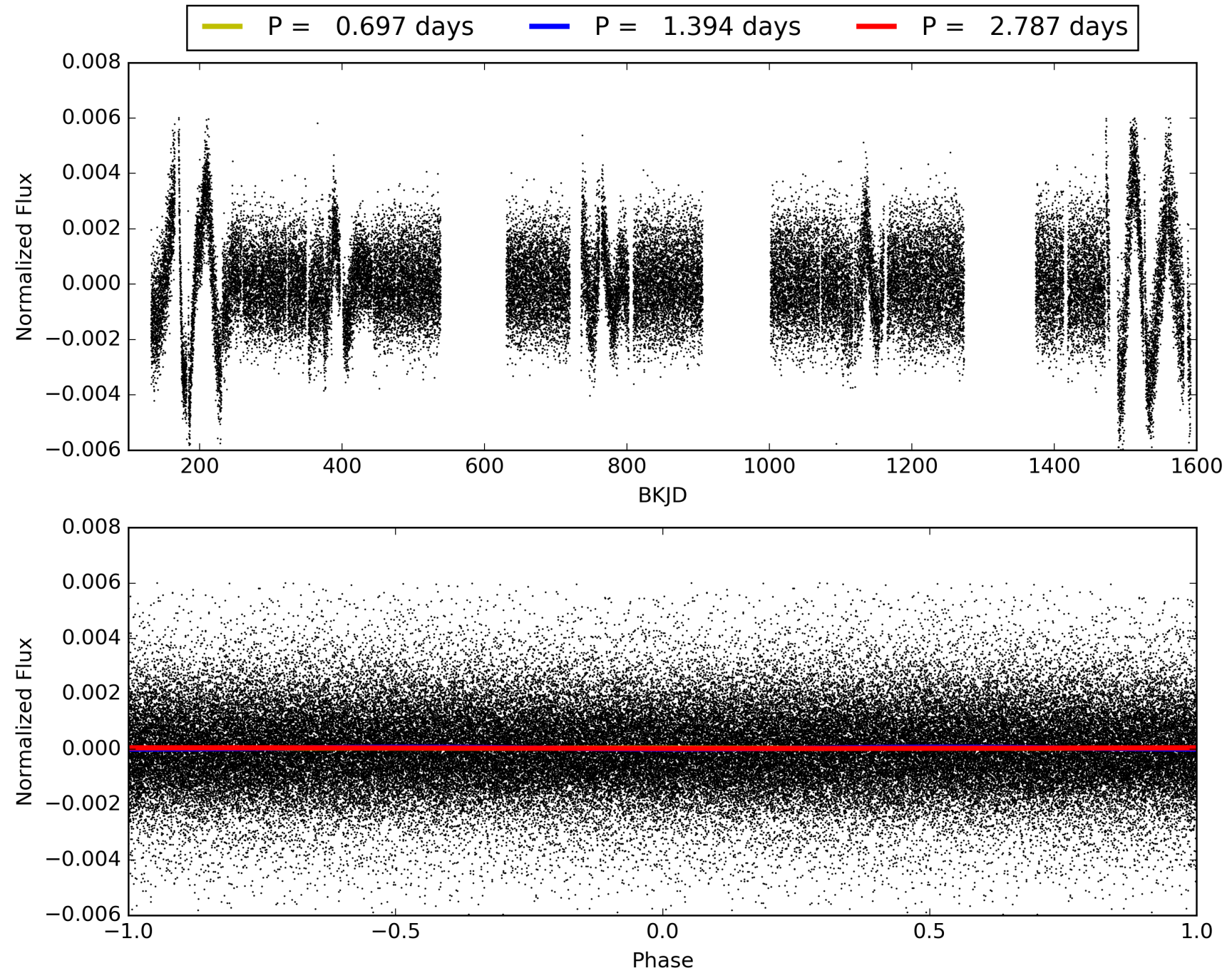
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 15:13:34 Z

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

TCE 004269337-01, PDC Light Curves

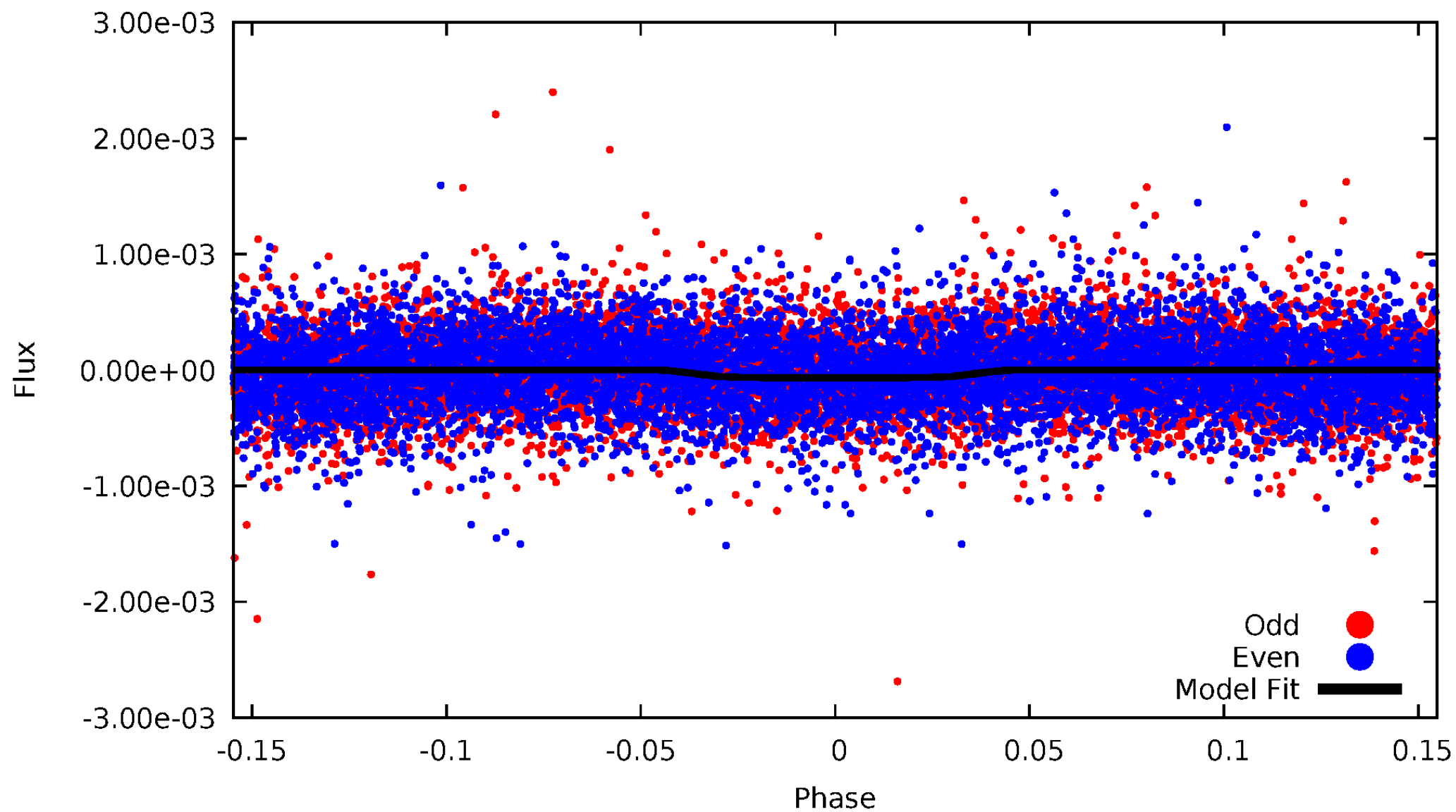


TCE 004269337-01



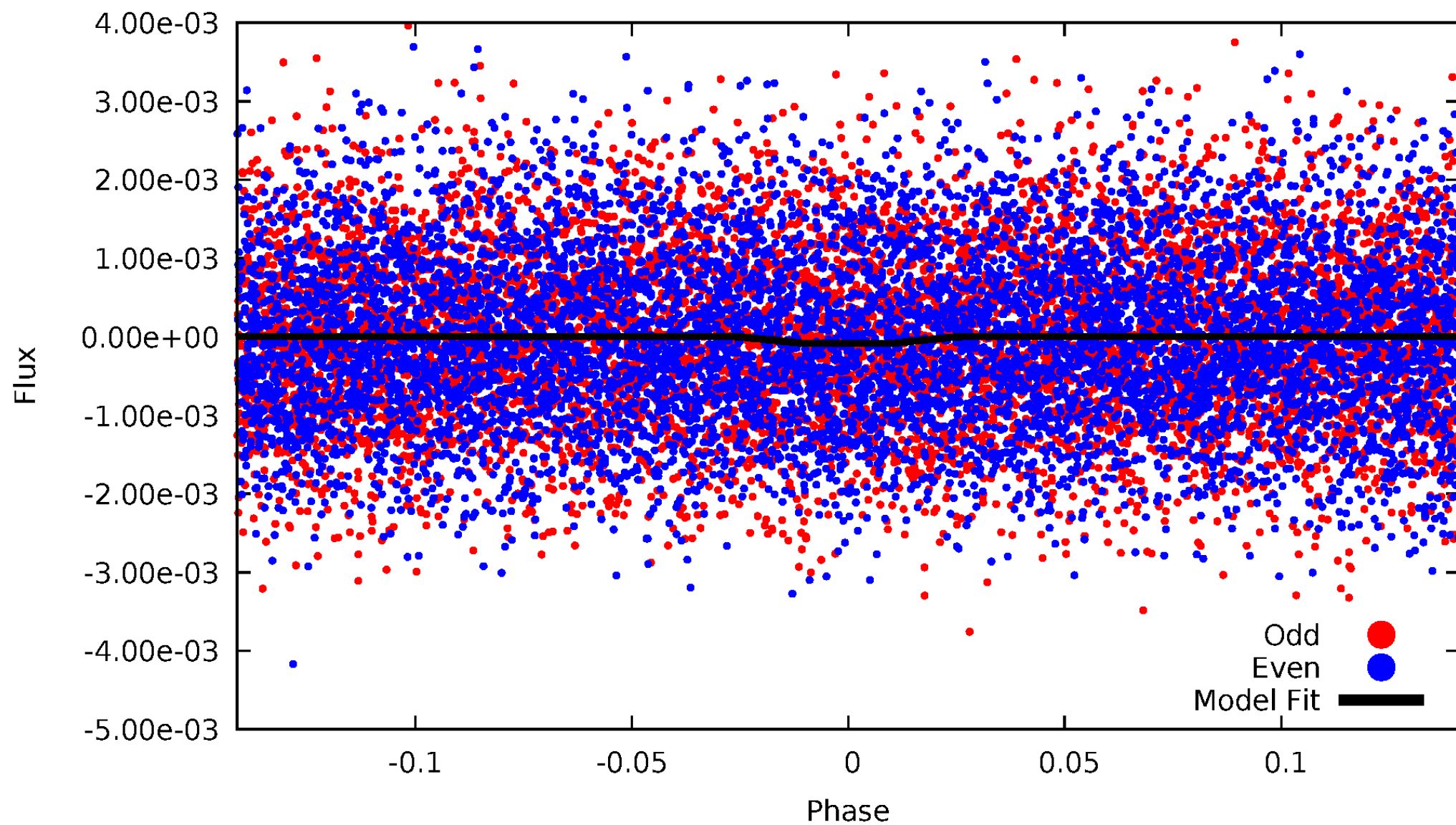
DV Odd/Even

TCE 004269337-01

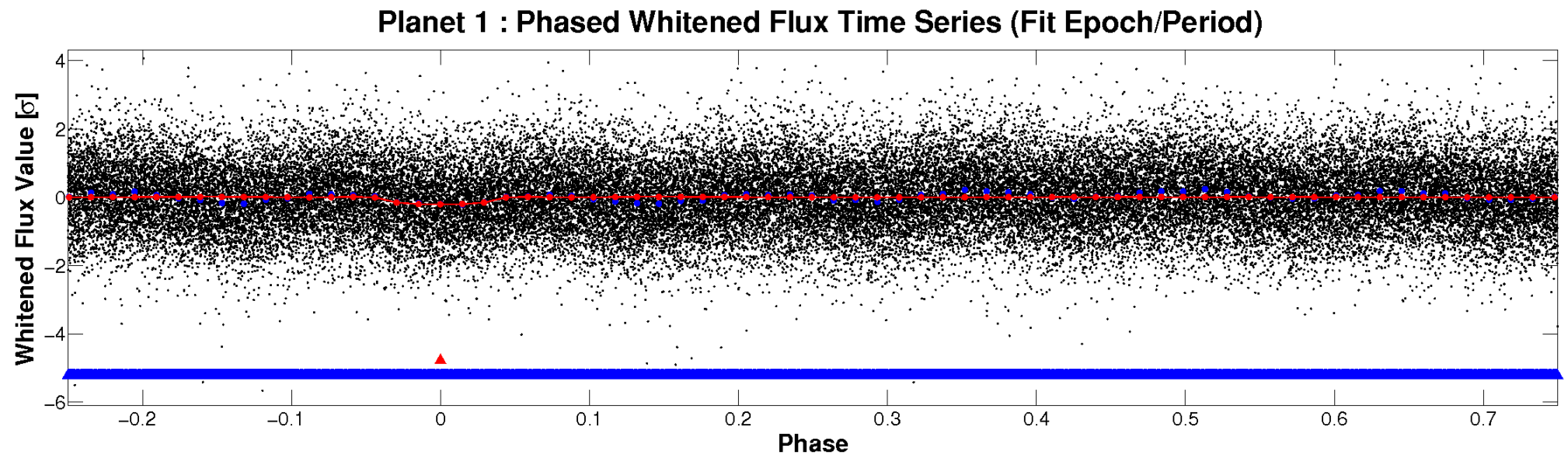
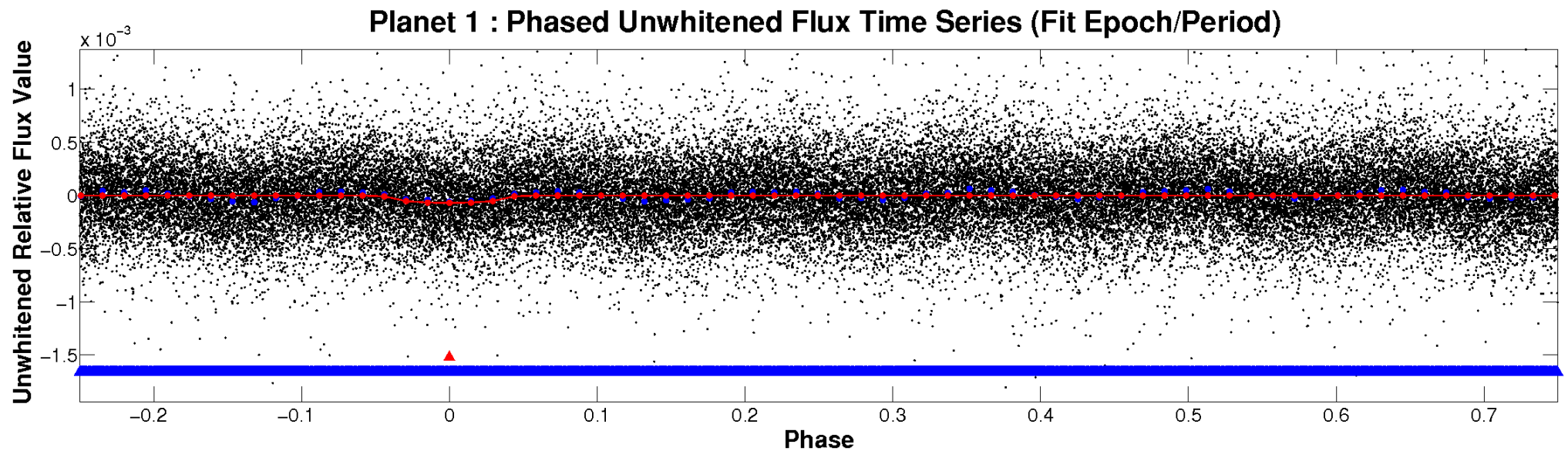


ALT Odd/Even

TCE 004269337-01

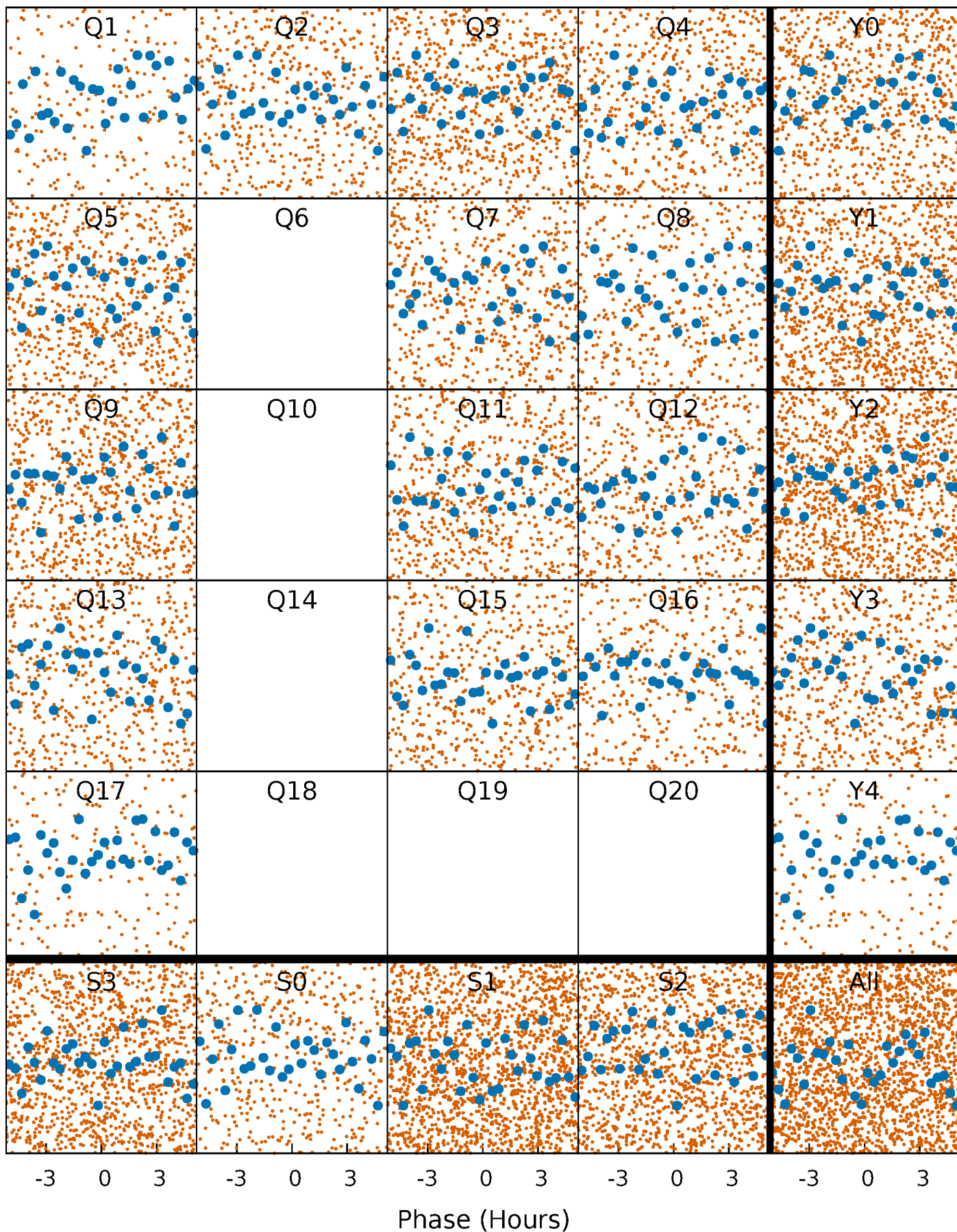


Non-Whitened Vs. Whitened Light Curve



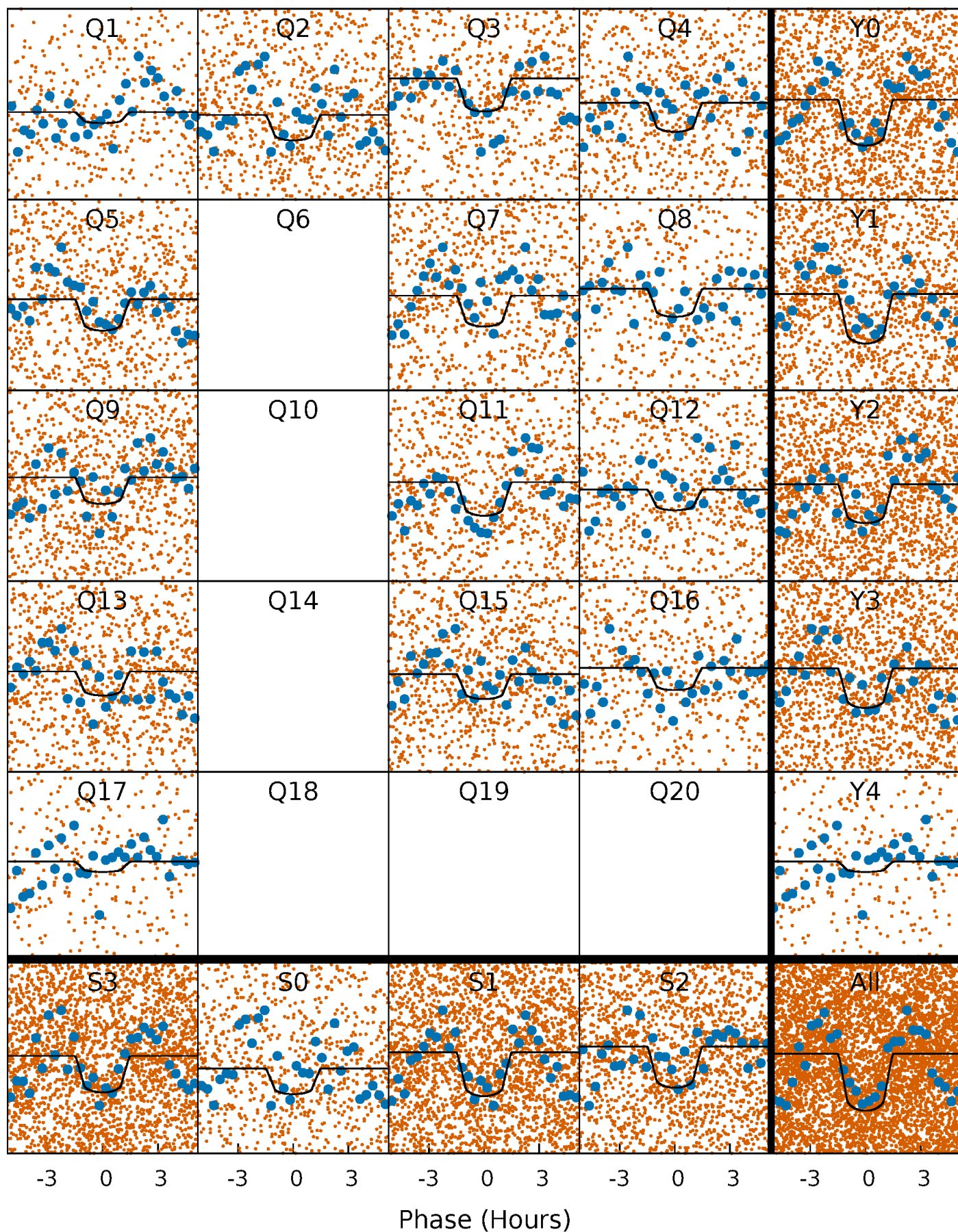
PDC Quarter-Phased Transit Curves

TCE 004269337-01 P= 1.393575 Days $T_0=132.281622$ (BKJD)



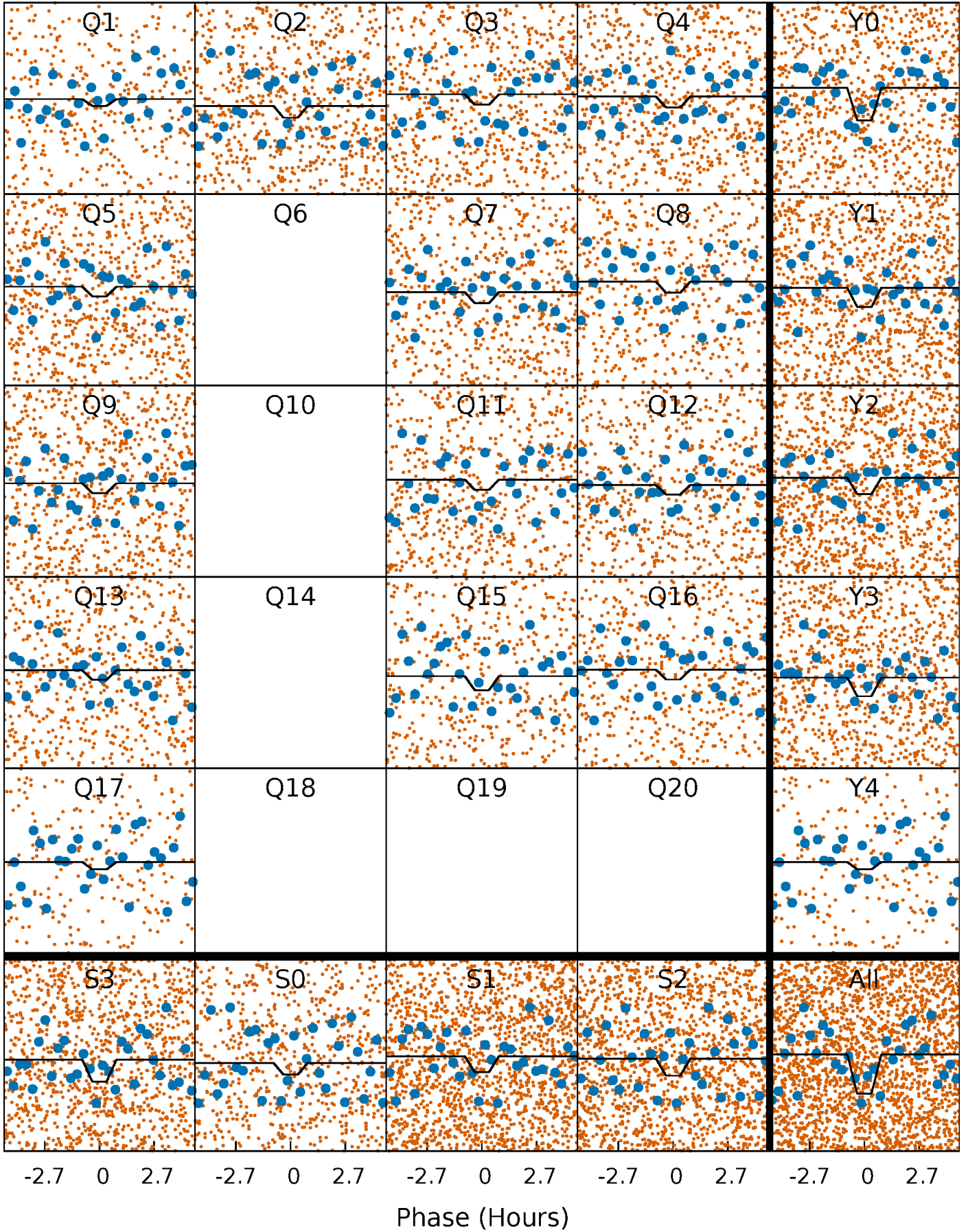
DV Quarter-Phased Transit Curves

TCE 004269337-01 P= 1.393575 Days $T_0=132.281622$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

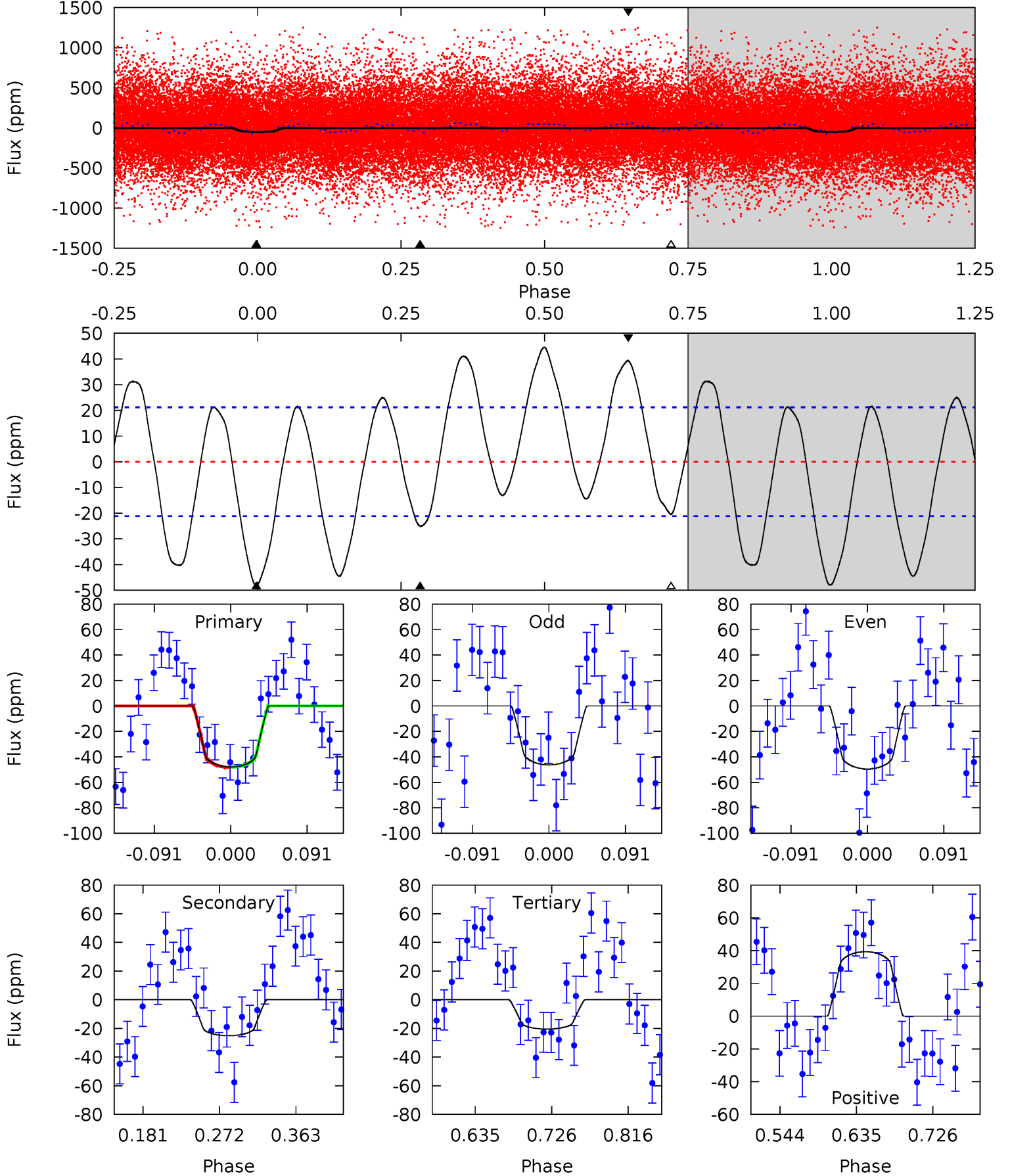
TCE 004269337-01 P= 1.393578 Days $T_0=132.278438$ (BKJD)



DV Model-Shift Uniqueness Test

004269337-01, P = 1.393575 Days, E = 130.888047 Days

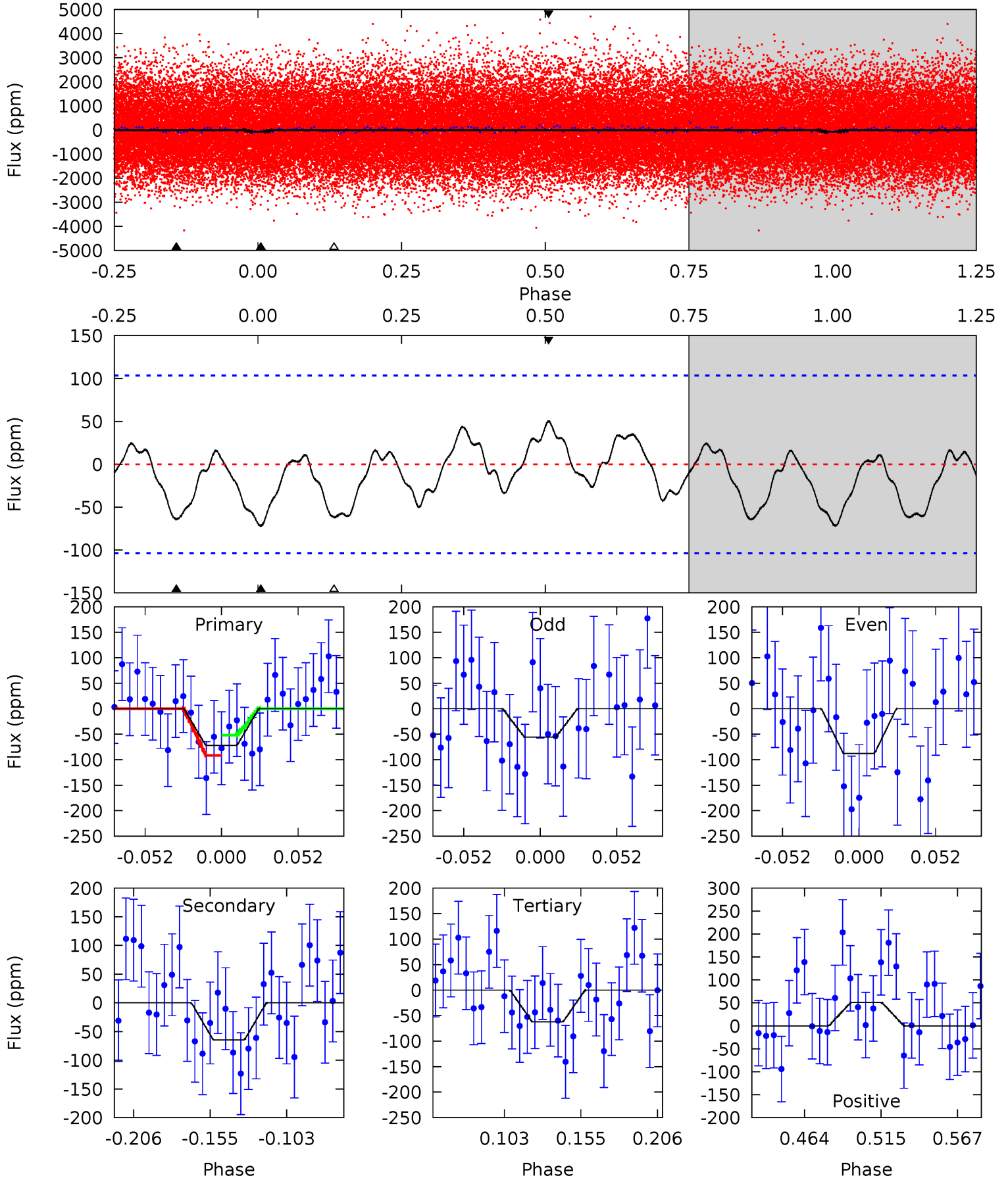
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.4	5.42	4.42	8.51	4.59	1.69	5.23	5.95	1.87	0.99	-3.09	0.35	1.04	0.48	0.02



Alt Model-Shift Uniqueness Test

004269337-01, P = 1.393578 Days, E = 130.884860 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.26	2.93	2.81	2.30	4.70	1.95	1.21	0.45	0.96	0.12	0.63	0.73	0.69	0.41	0.89



Stellar Parameters For KIC 004269337

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	7677^{+76}_{-84}	$3.967^{+0.138}_{-0.112}$	$-0.160^{+0.200}_{-0.150}$	$2.261^{+0.426}_{-0.426}$	$1.726^{+0.190}_{-0.155}$	$0.210^{+0.145}_{-0.073}$
	+1%/-1%	+3%/-3%	+125%/-94%	+19%/-19%	+11%/-9%	+69%/-35%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 004269337-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-25 ± 5	$2.26^{+0.98}_{-1.02}$	4149^{+206}_{-185}	5397^{+2019}_{-883}	$2.236^{+5.407}_{-1.105}$
Alt.	-65 ± 22	$2.28^{+0.99}_{-1.00}$	4153^{+189}_{-209}	6944^{+3118}_{-1411}	$5.938^{+12.619}_{-3.382}$

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

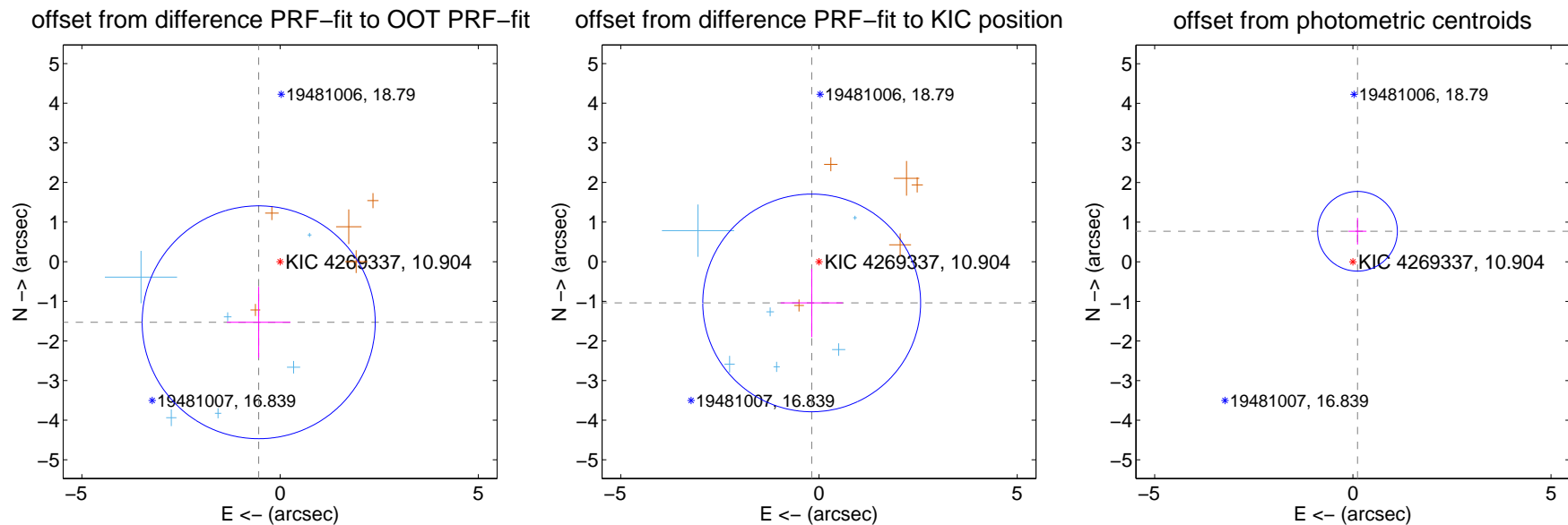
DV Centroid Data

Supplemental centroid analysis for 004269337-01. **Kepler magnitude: 10.90.** Transit SNR 11.53

There are 6 quarters with good PRF difference image offsets

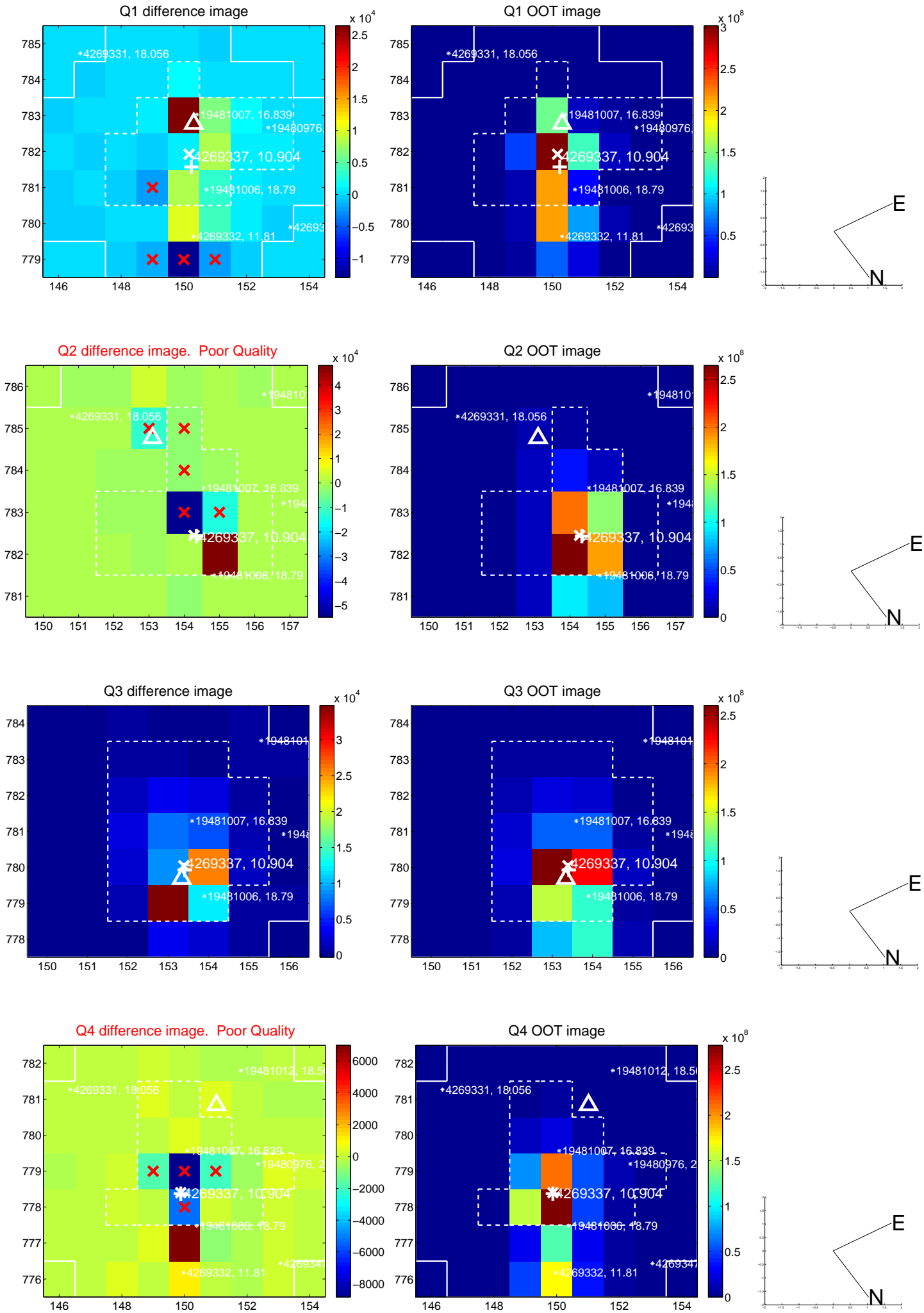
The direct PRF centroid is offset from the target star catalog position by about 1.26 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.622 ± 0.980	1.66	0.541 ± 0.802	-1.529 ± 0.896
PRF-fit source offset from KIC position	1.057 ± 0.916	1.15	0.184 ± 0.784	-1.041 ± 0.864
photometric centroid source offset	0.78 ± 0.34	2.32	-0.12 ± 0.23	0.77 ± 0.34

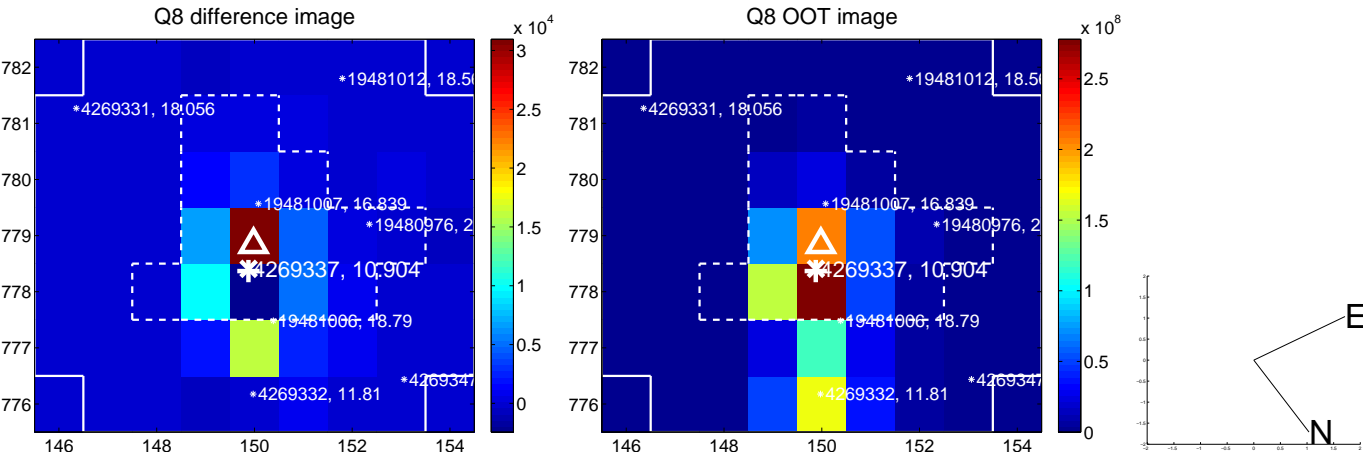
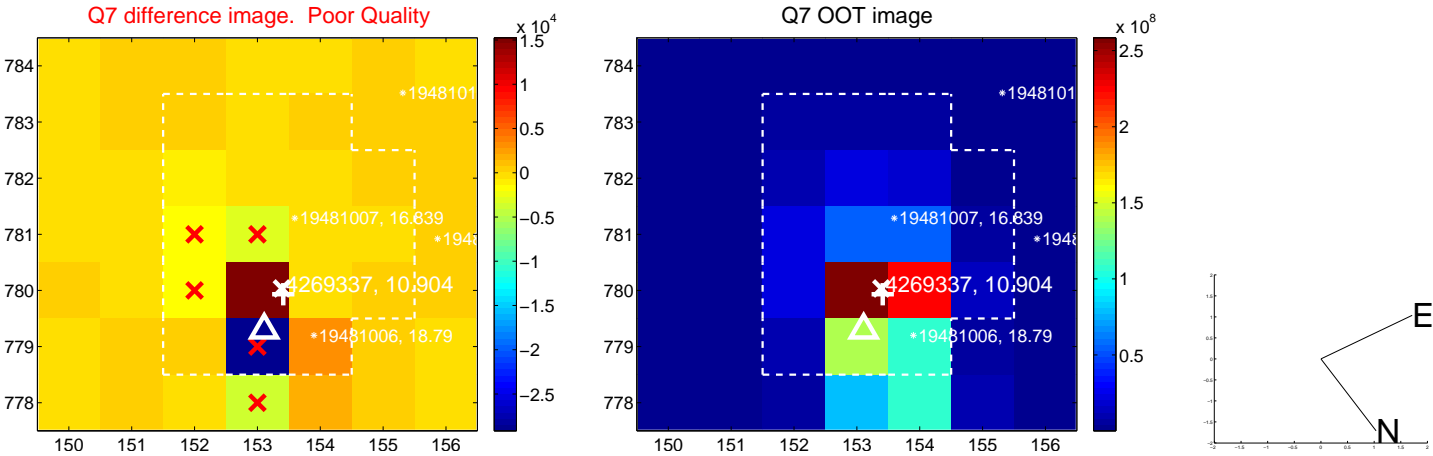
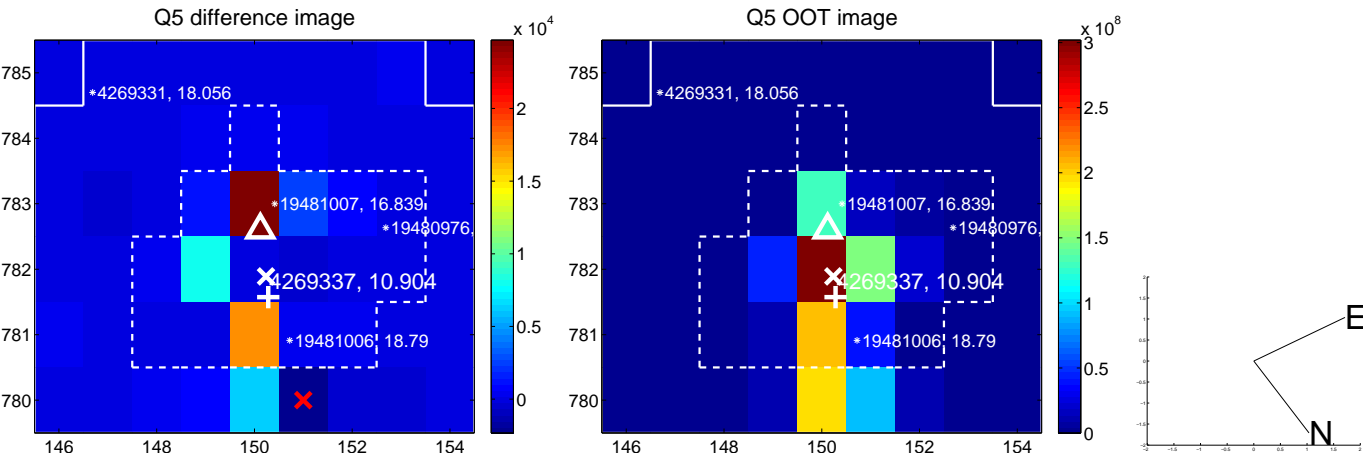


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

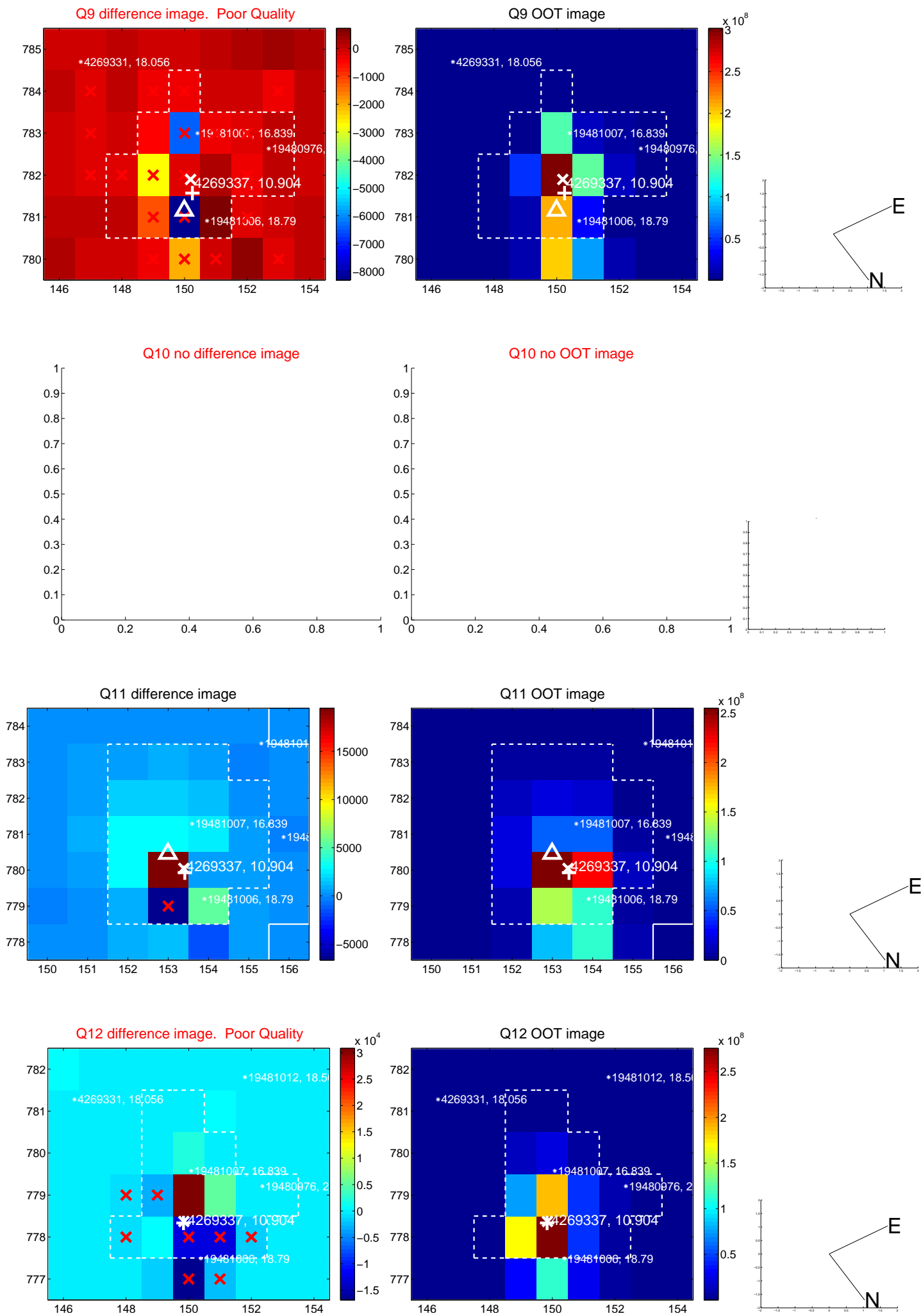
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



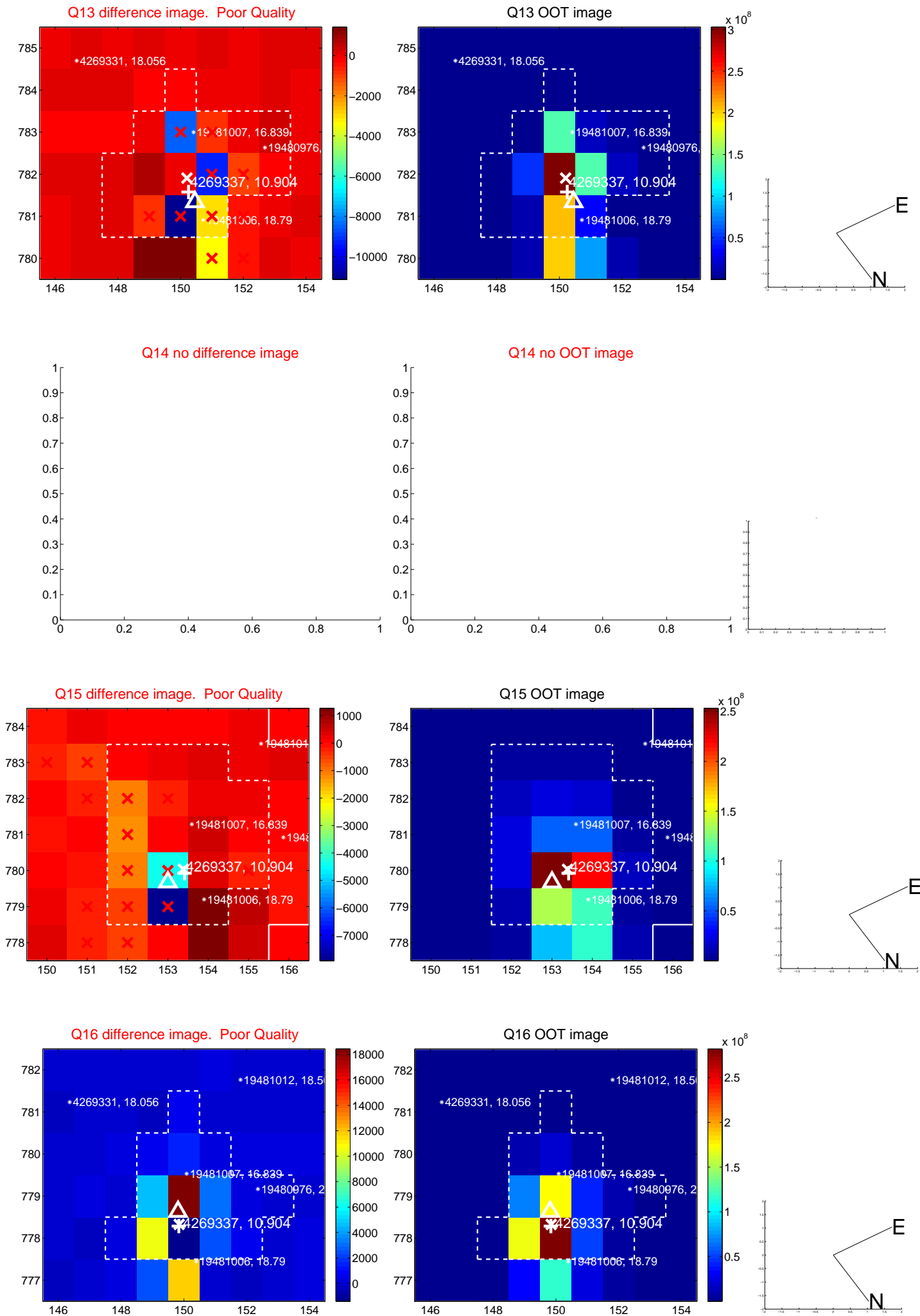
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



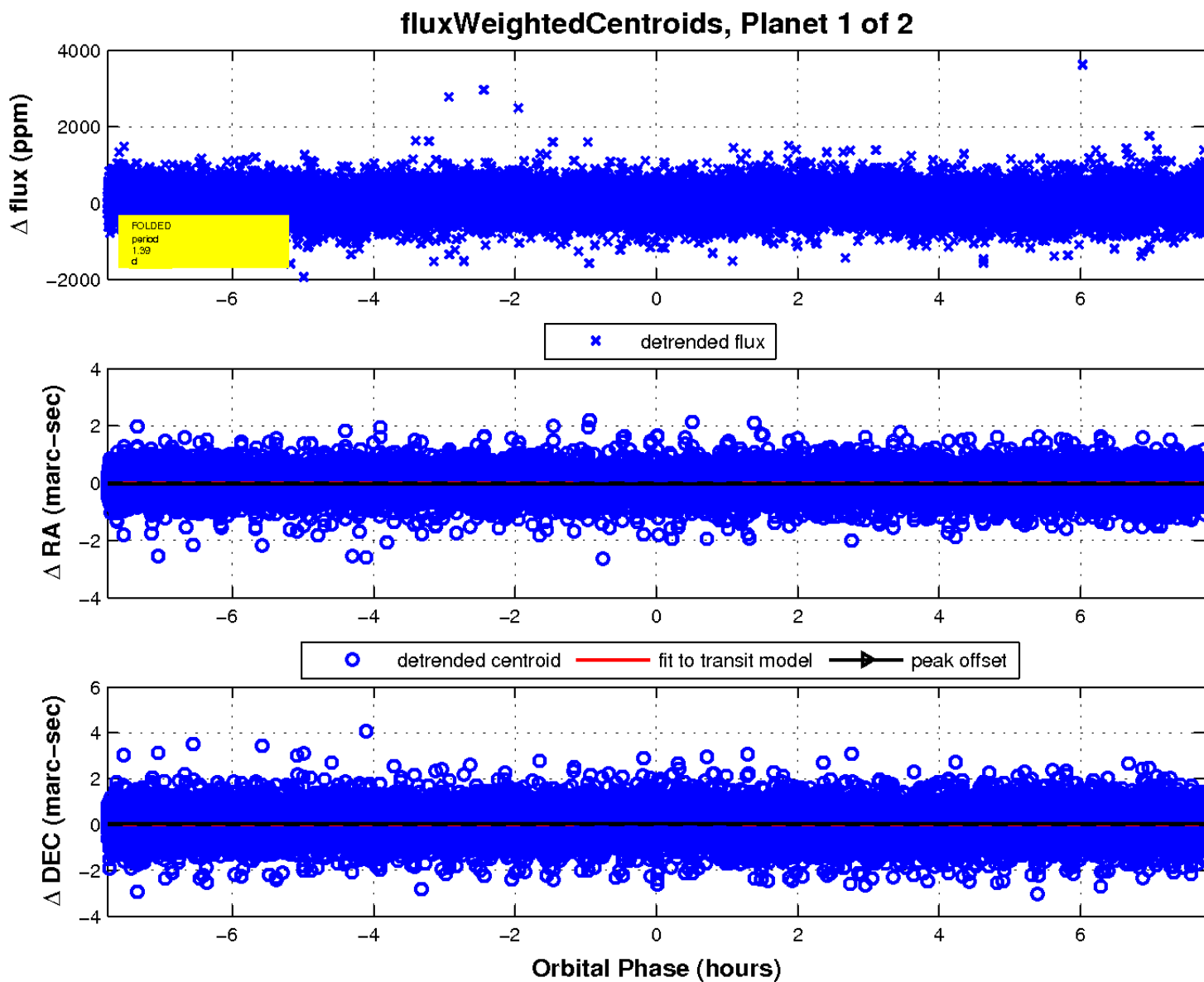
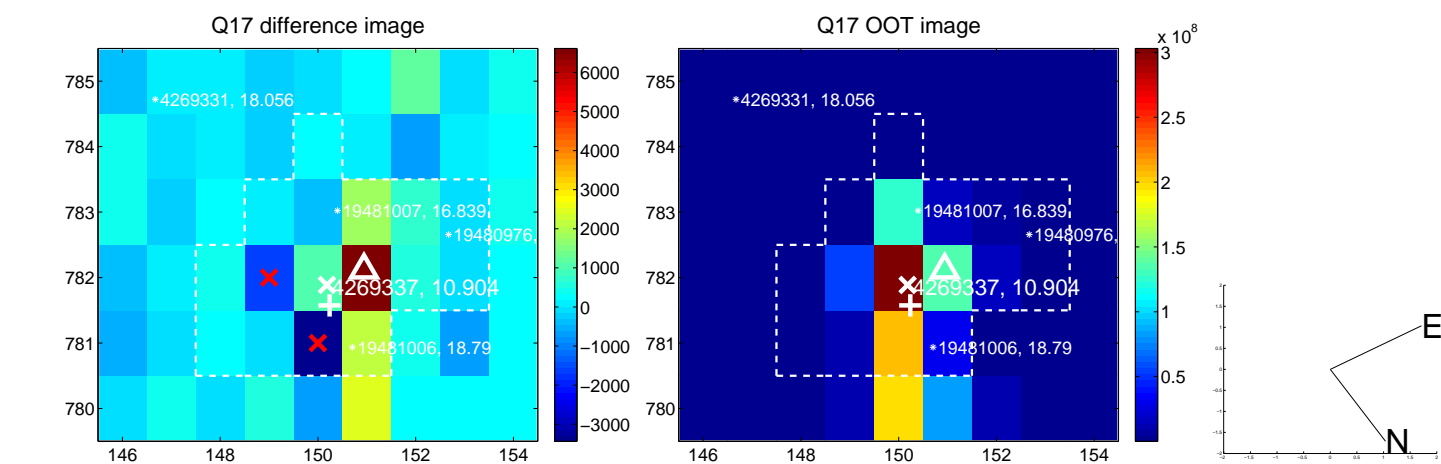
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



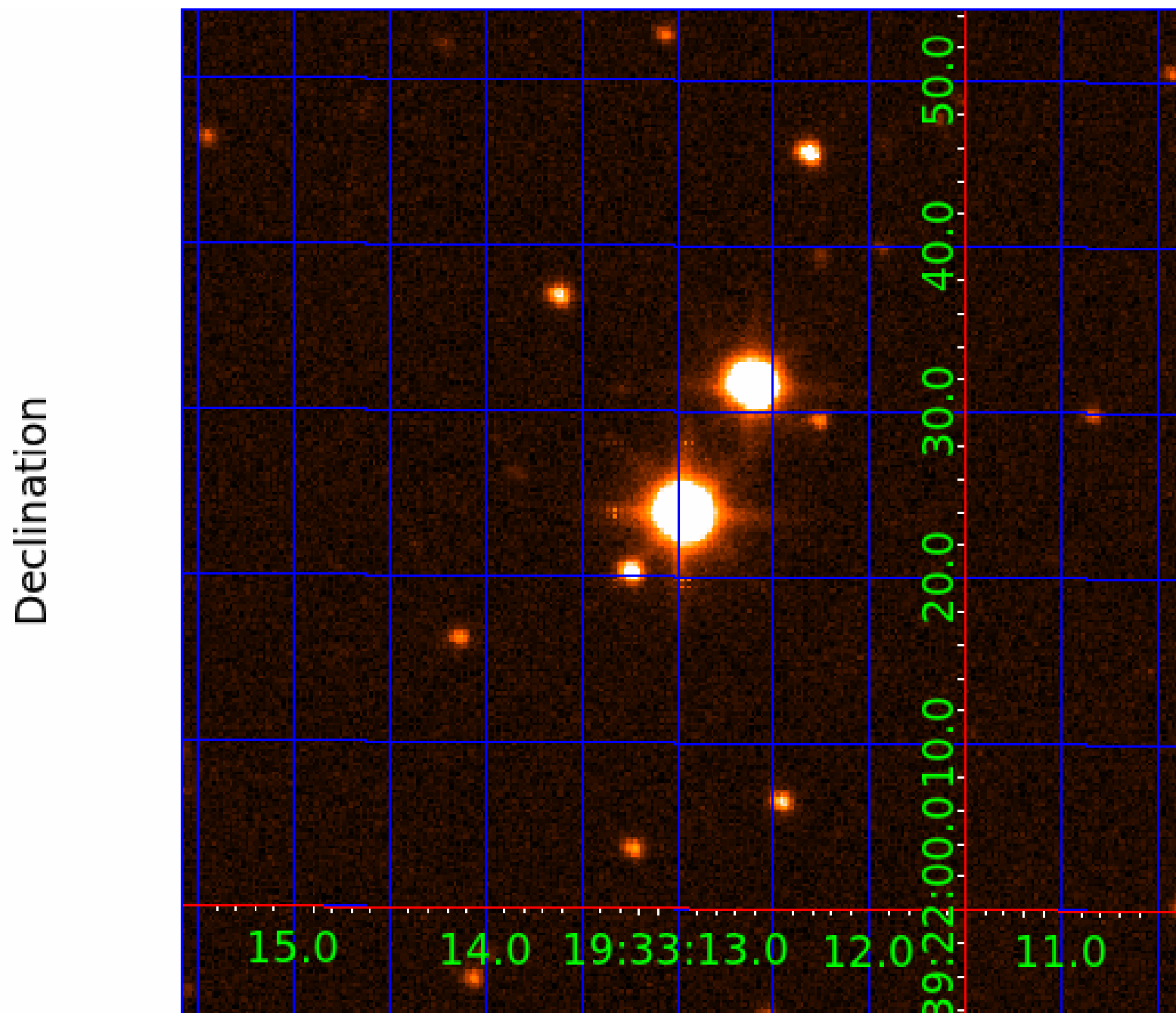
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 004269337

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})
004269337-01	OBS	No	1.393575	132.281622	68.7	2.588	11.6	11.5	2.26	7677	2.18	18521.97
004269337-02	OBS	No	0.694730	132.145345	40.9	6.987	9.1	12.8	2.26	7677	1.47	46856.78

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004269337-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_SATURATED
004269337-02	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_SATURATED

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

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

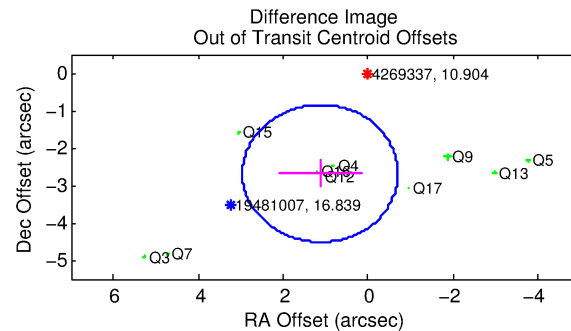
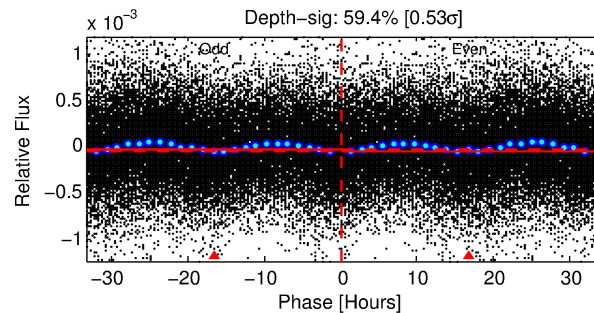
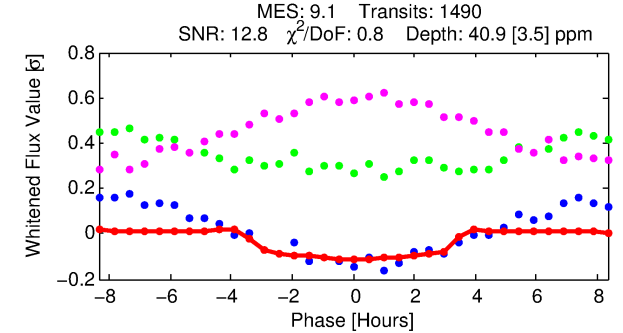
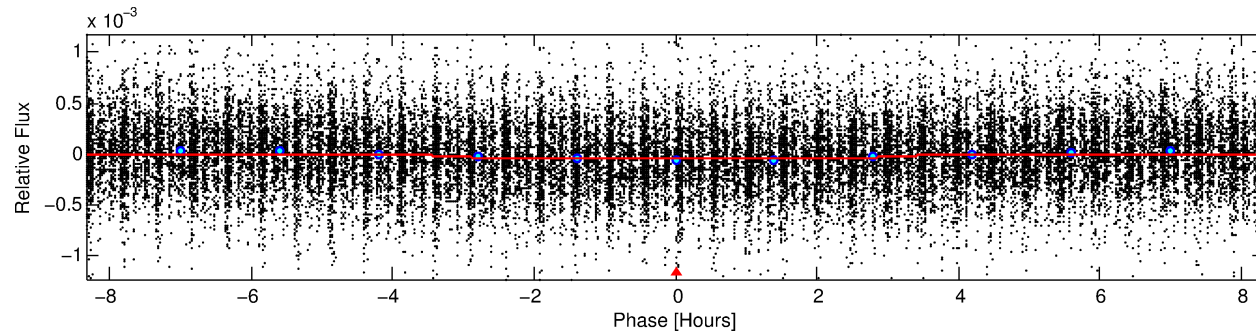
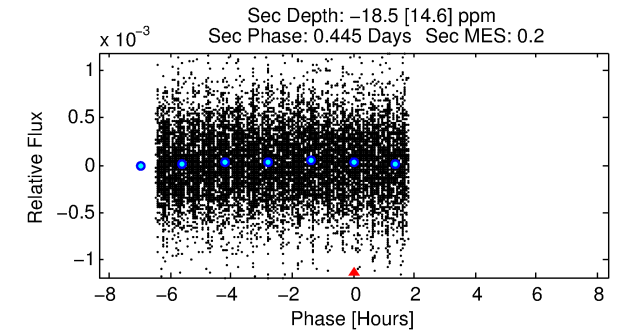
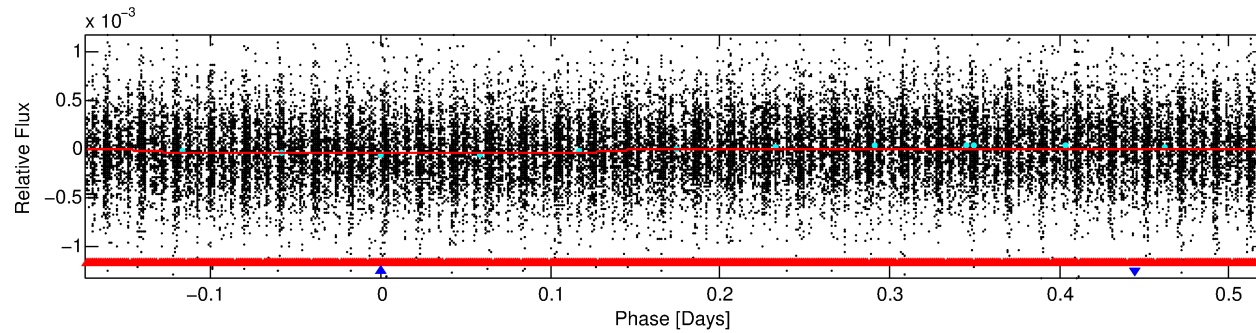
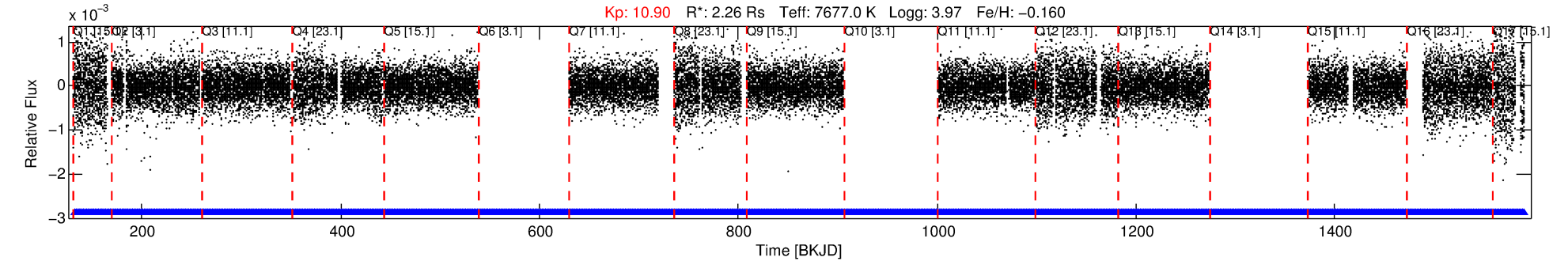
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004269337-02

No Significant Match Found

DV One-Page Summary

KIC: 4269337 Candidate: 2 of 2 Period: 0.695 d



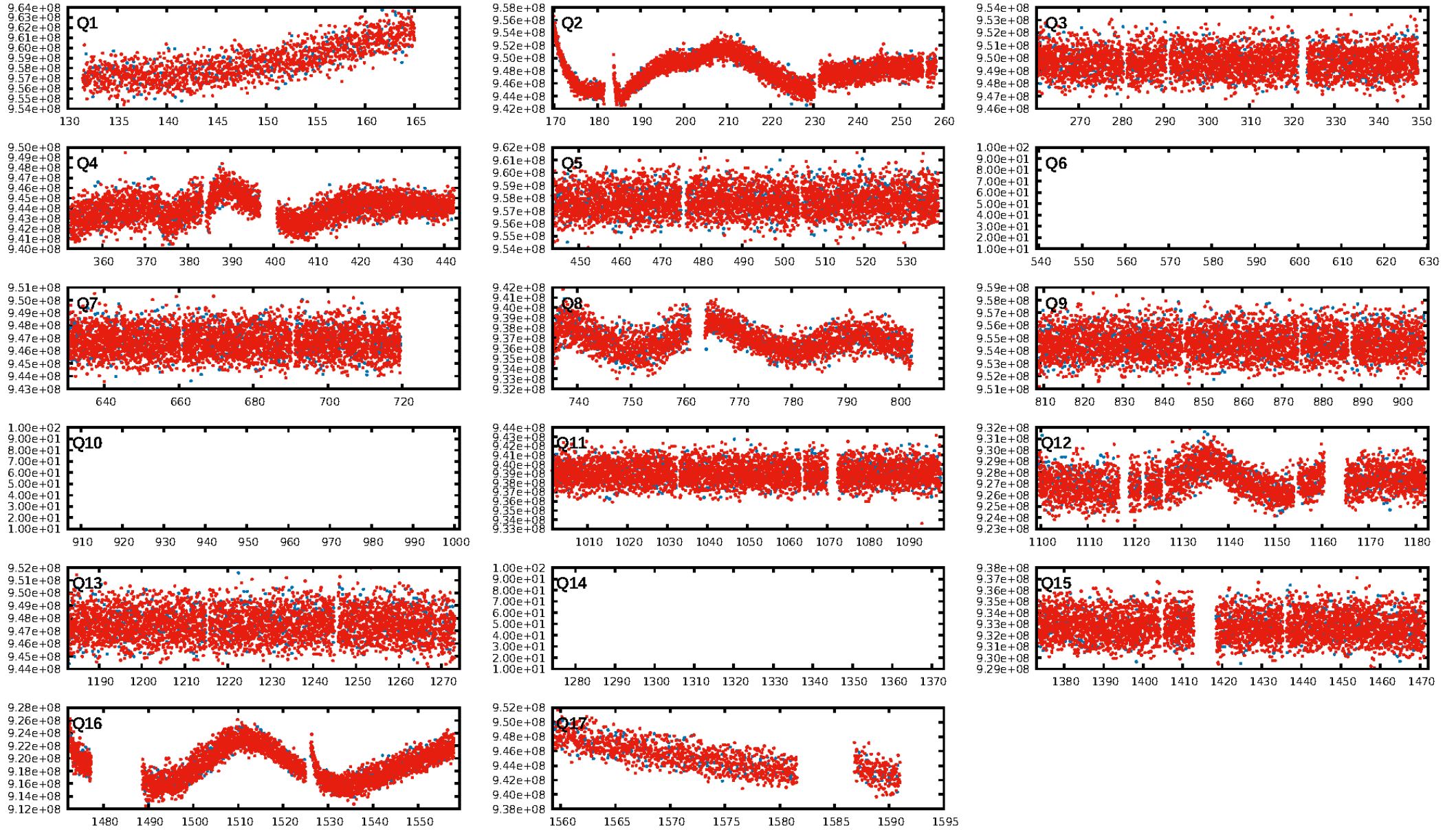
DV Fit Results:

Period = 0.69473 [0.00001] d
Epoch = 132.1453 [0.0051] BKJD
 $R_p/R^* = 0.0059 [0.0049]$
 $a/R^* = 1.04 [0.32]$
 $b = 0.27 [16.22]$
 $\text{Seff} = 46856.78 [11720.59]$
 $T_{\text{eq}} = 3752 [235] \text{ K}$
 $R_p = 1.47 [1.25] R_e$
 $a = 0.0184 [0.0030] \text{ AU}$
 $\text{Ag} = \text{N/A}$
 $\text{Teffp} = \text{N/A}$

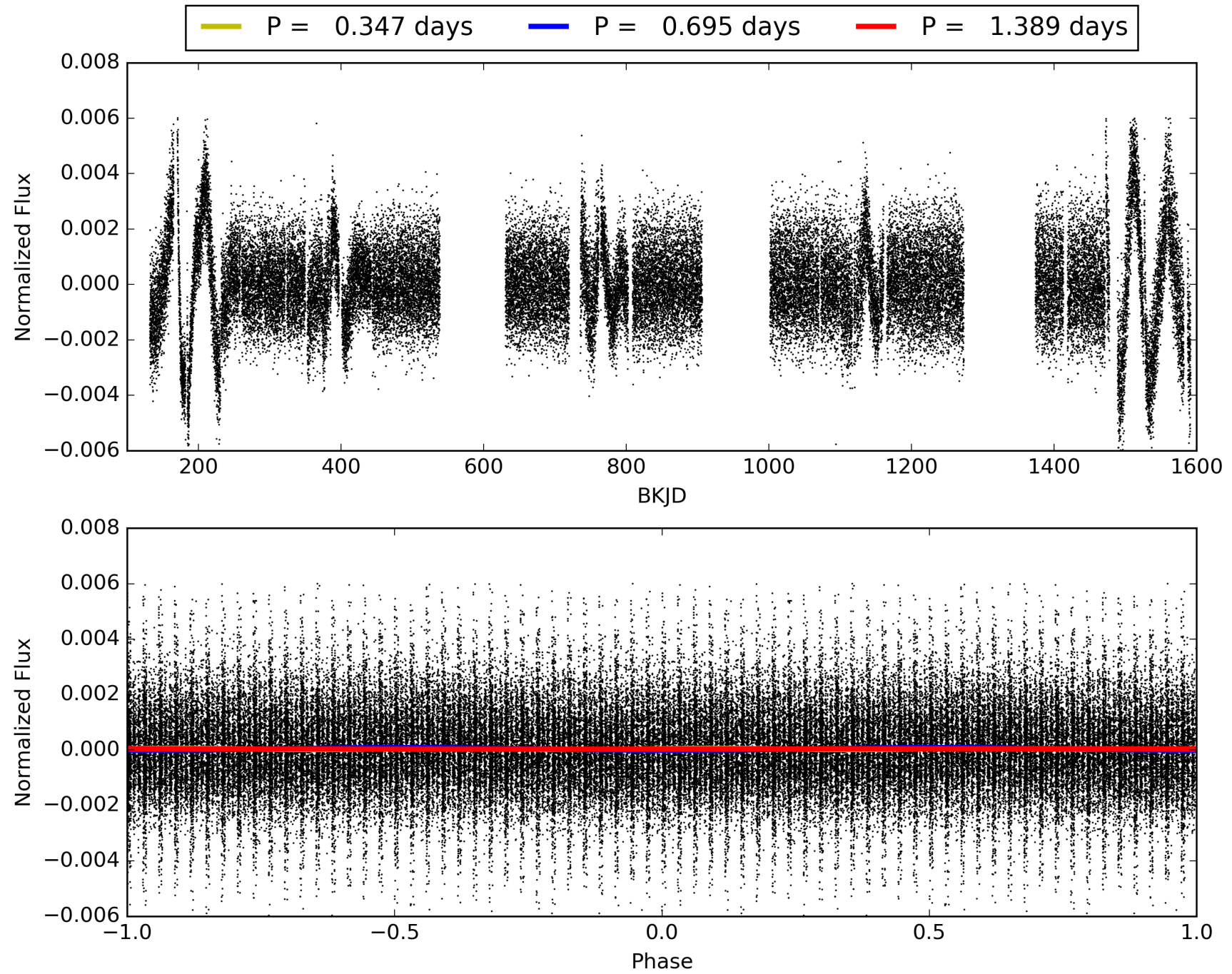
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 97.6% [2.25σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1402/1402]
GhostDiagnostic-chr: 1.971
Centroid-sig: 0.0%
Centroid-so: 0.895 arcsec [3.75σ]
OotOffset-rm: 2.909 arcsec [4.76σ]
KicOffset-rm: 2.655 arcsec [3.73σ]
OotOffset-st: 0/3/3/4 [10]
KicOffset-st: 0/3/3/4 [10]
DiffImageQuality-fgm: 0.30 [3/10]
DiffImageOverlap-fno: 0.86 [12/14]

TCE 004269337-02, PDC Light Curves

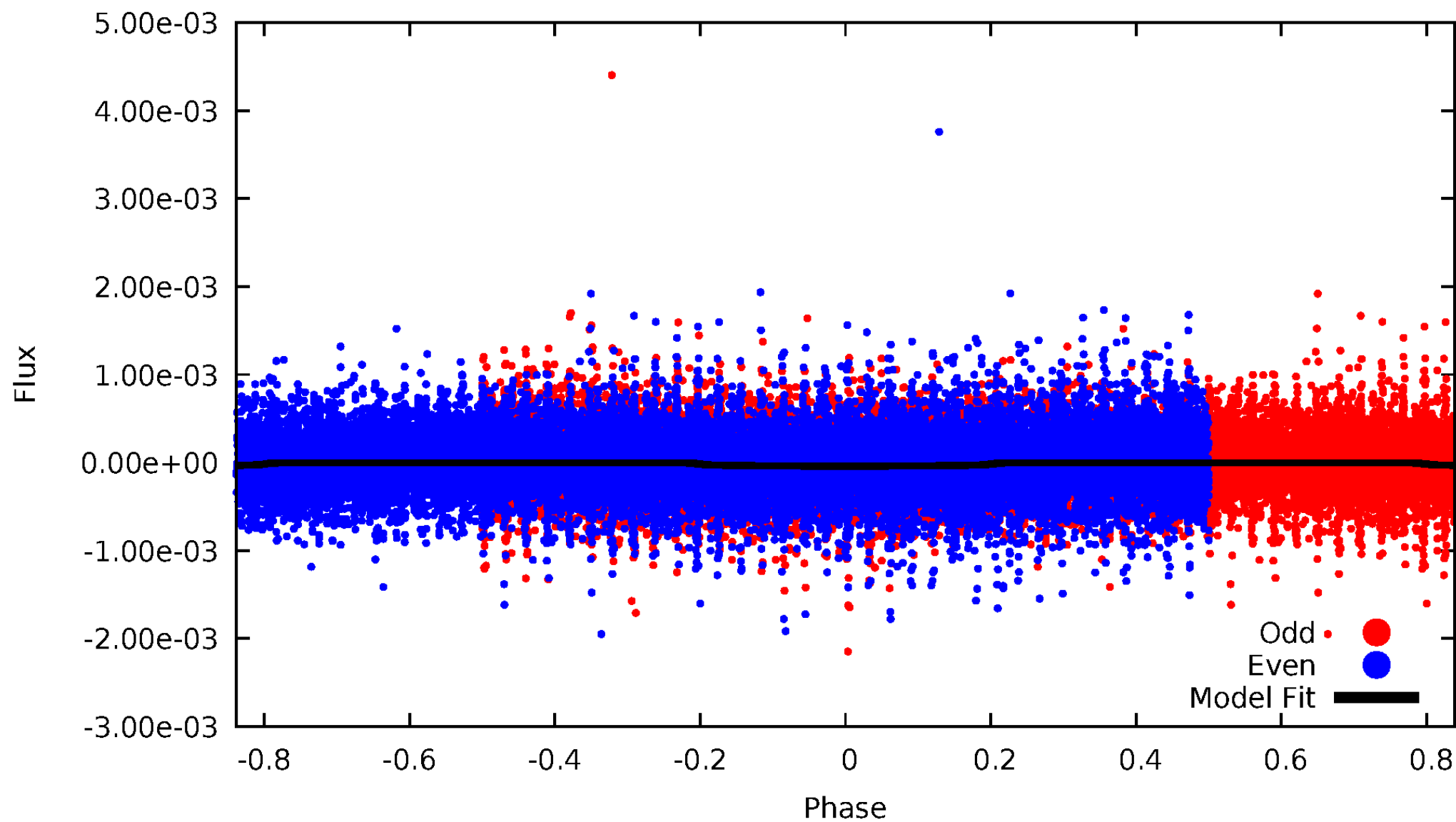


TCE 004269337-02



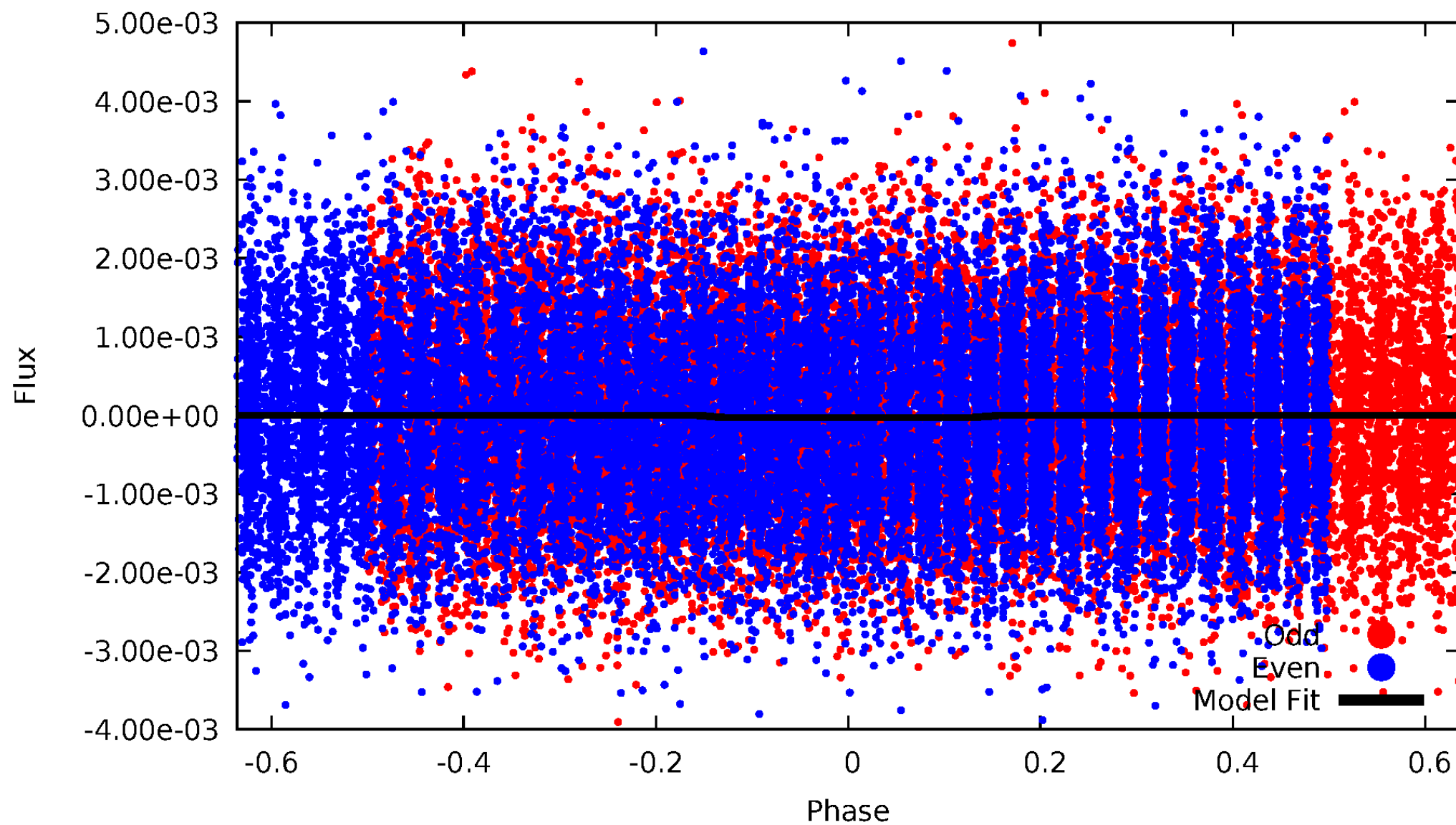
DV Odd/Even

TCE 004269337-02



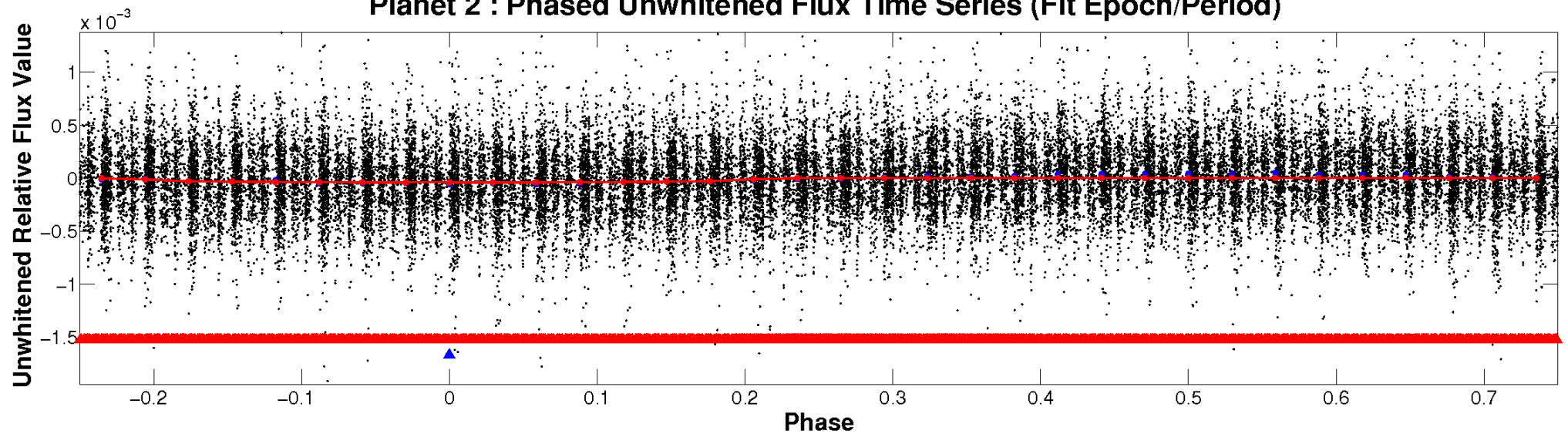
ALT Odd/Even

TCE 004269337-02

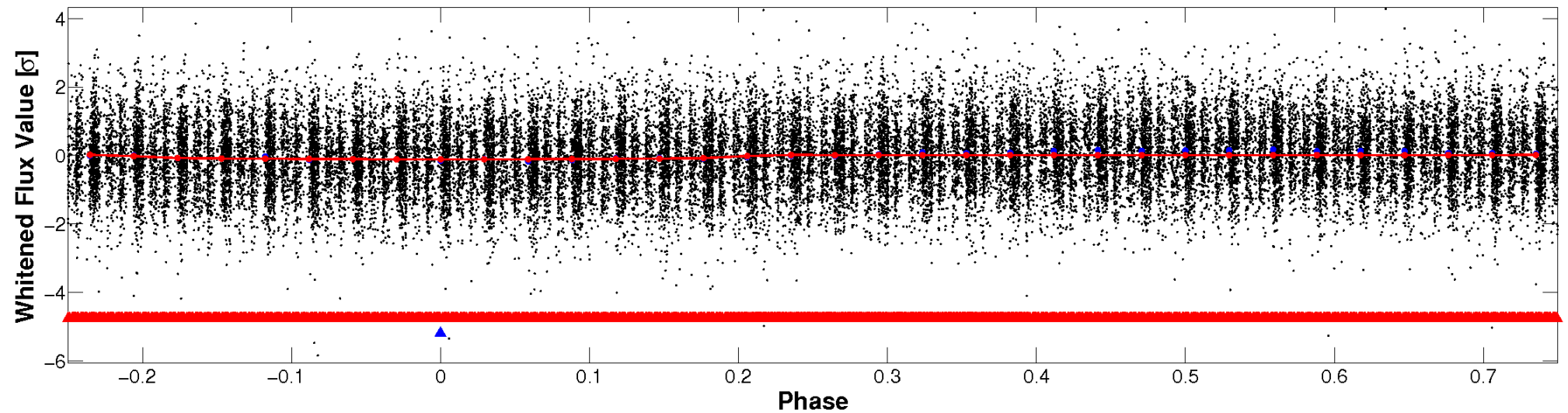


Non-Whitened Vs. Whitened Light Curve

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

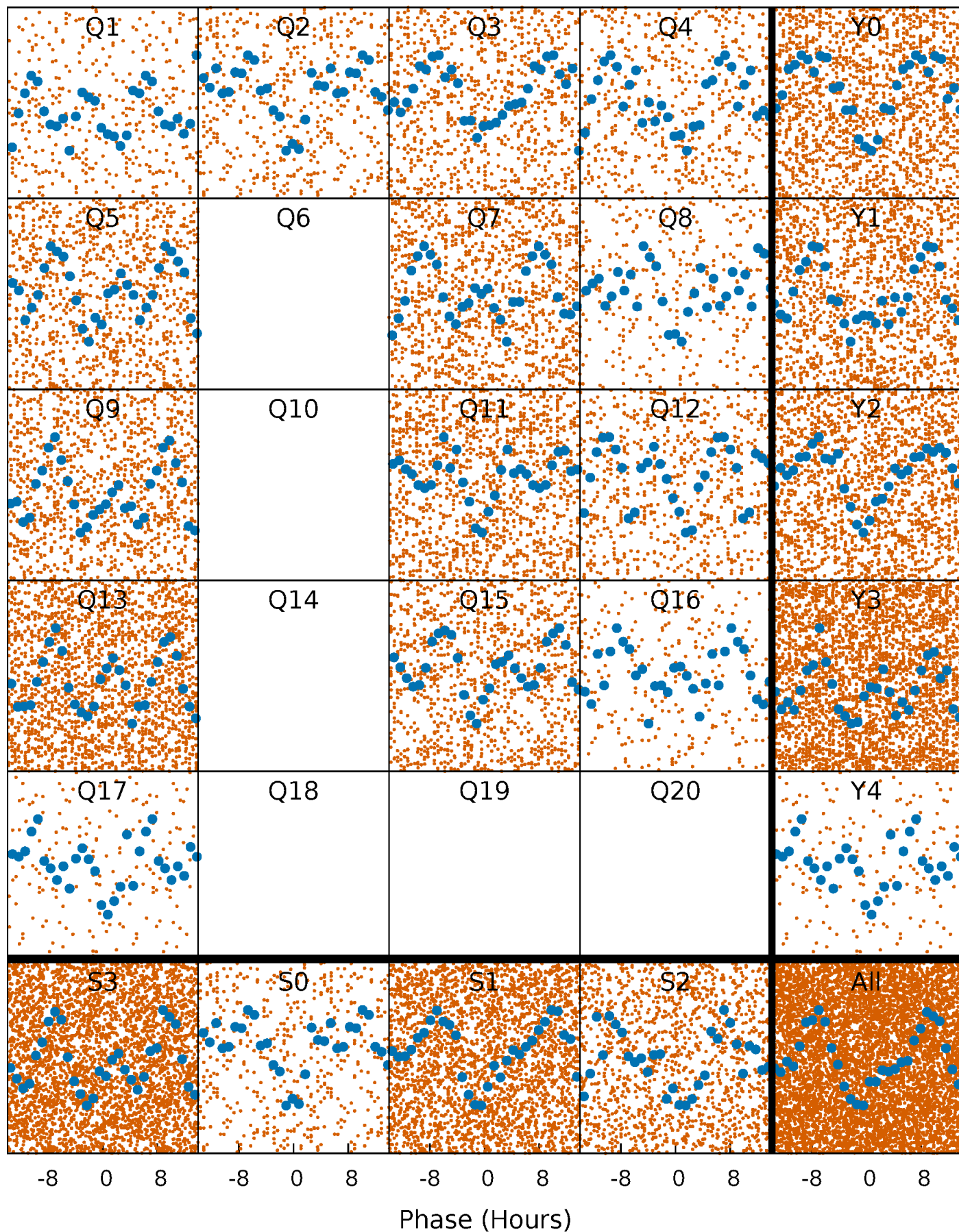


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



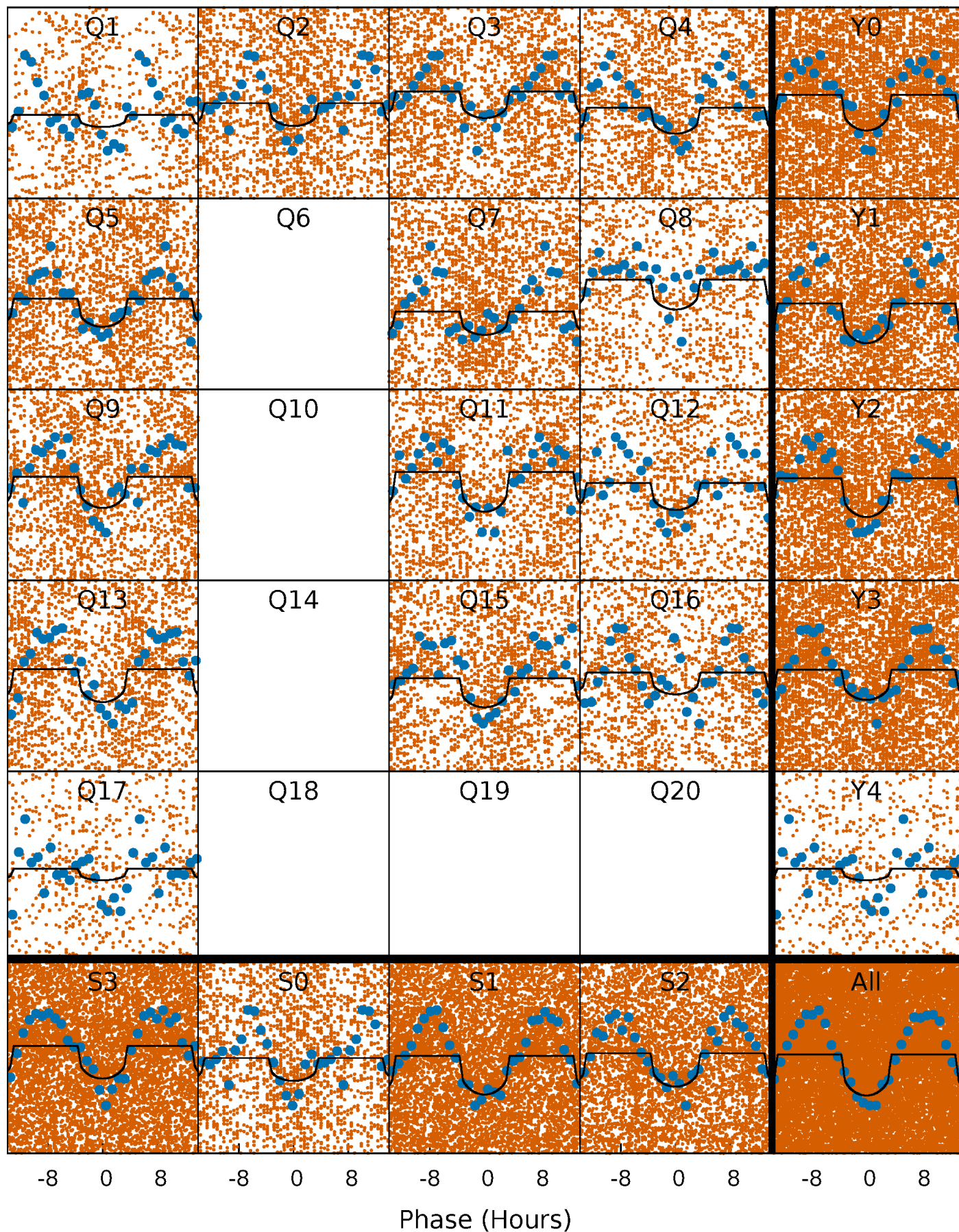
PDC Quarter-Phased Transit Curves

TCE 004269337-02 P= 0.694730 Days $T_0=132.145345$ (BKJD)



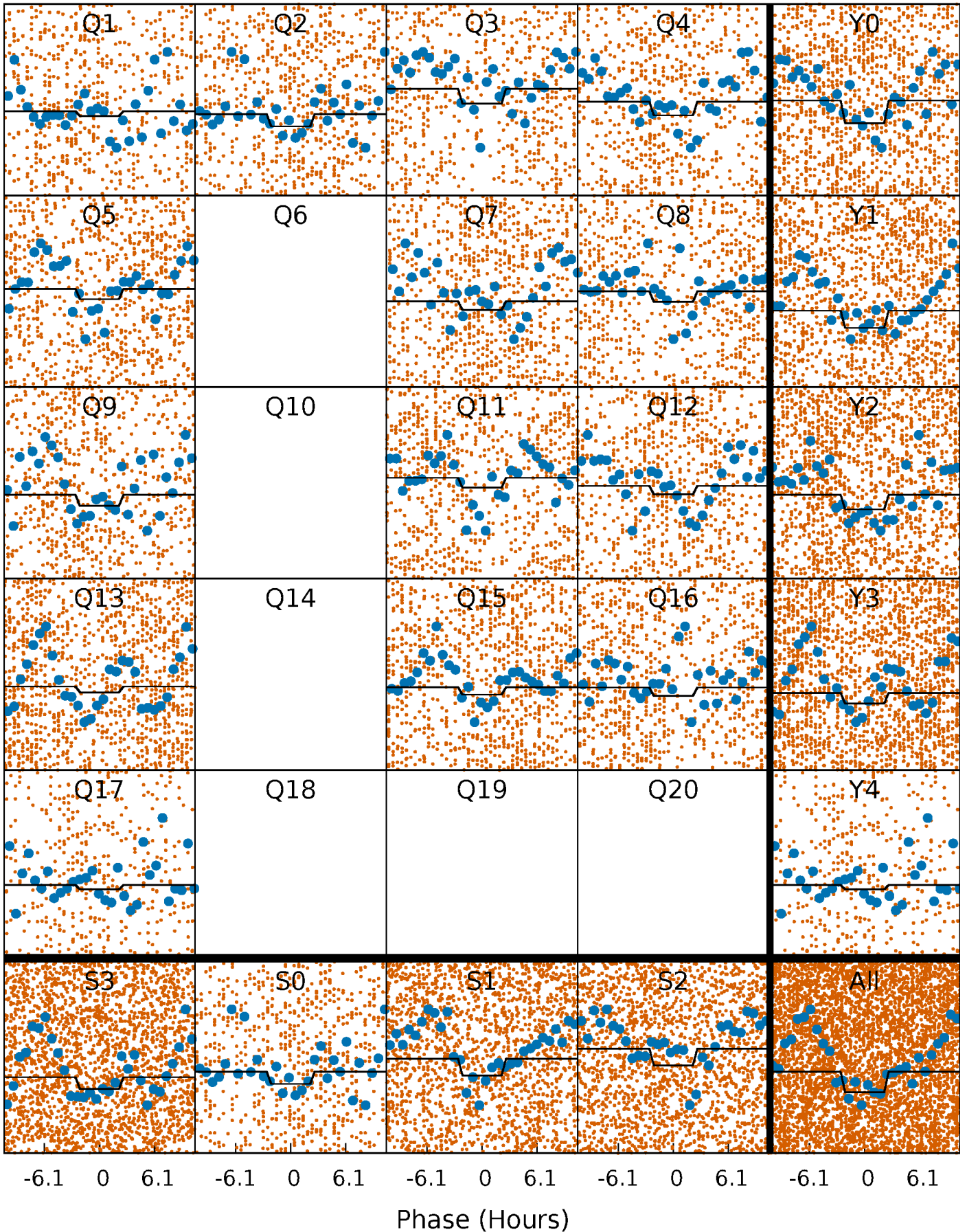
DV Quarter-Phased Transit Curves

TCE 004269337-02 P= 0.694730 Days $T_0=132.145345$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

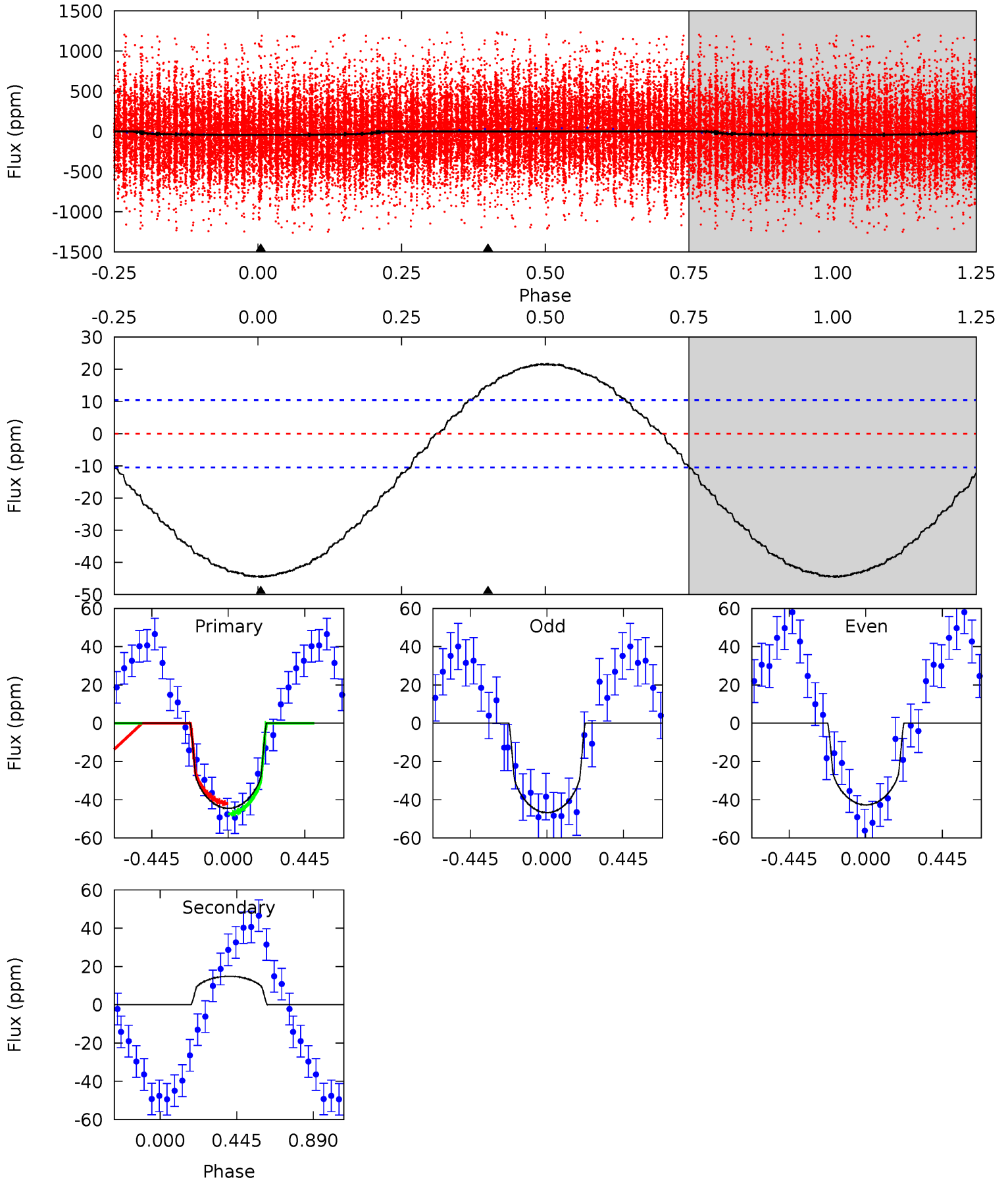
TCE 004269337-02 $P = 0.694728$ Days $T_0 = 132.112453$ (BKJD)



DV Model-Shift Uniqueness Test

004269337-02, P = 0.694730 Days, E = 131.450615 Days

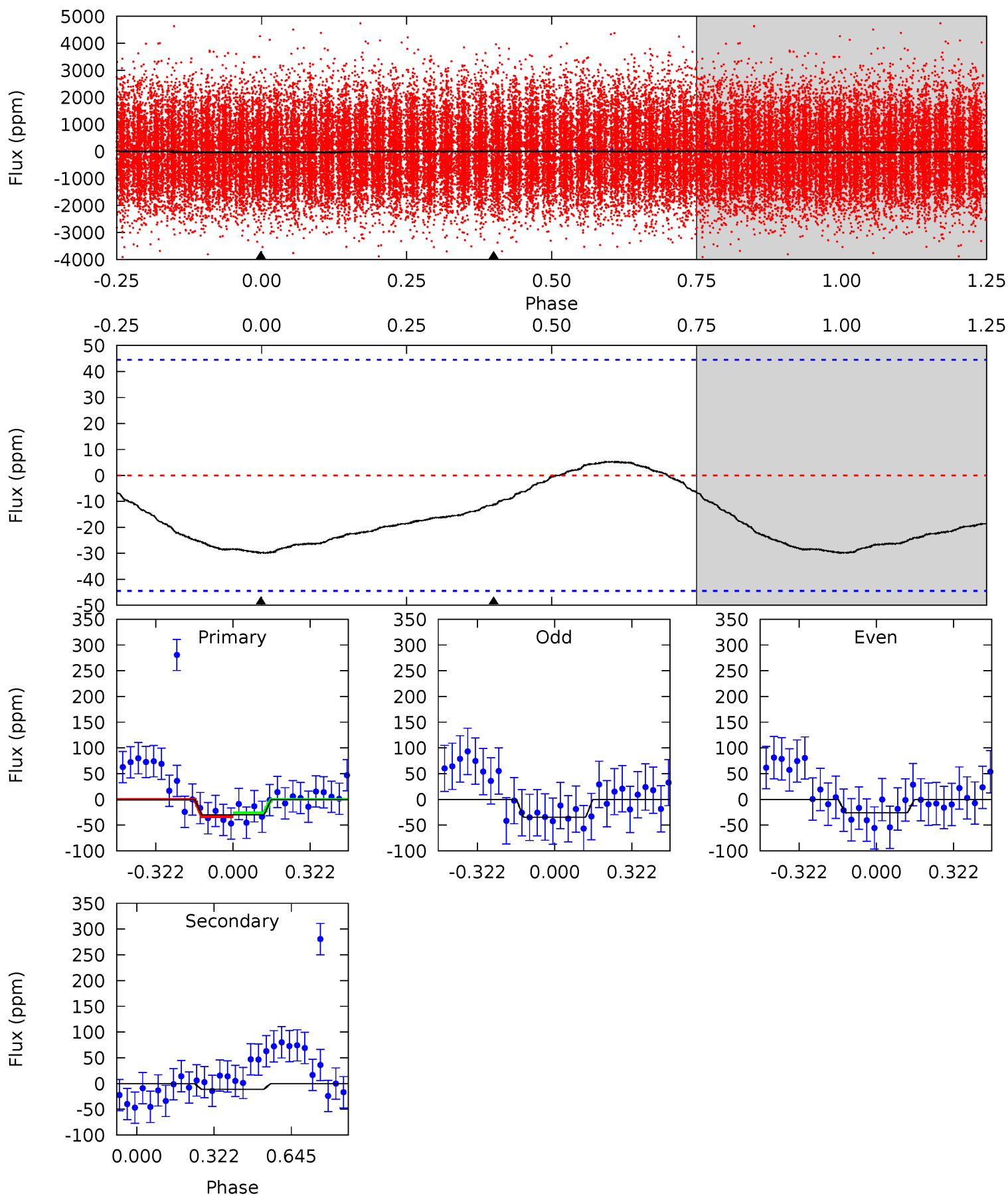
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.0	-6.03	0	0	4.24	0.76	2.33	18.0	18.0	-6.03	-6.03	0.81	1.12	0.33	1.11



Alt Model-Shift Uniqueness Test

004269337-02, P = 0.694728 Days, E = 131.417725 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.90	1.09	0	0	4.31	0.99	0.30	2.90	2.90	1.09	1.09	0.43	0.97	0.15	0.39



Stellar Parameters For KIC 004269337

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	7677^{+76}_{-84}	$3.967^{+0.138}_{-0.112}$	$-0.160^{+0.200}_{-0.150}$	$2.261^{+0.426}_{-0.426}$	$1.726^{+0.190}_{-0.155}$	$0.210^{+0.145}_{-0.073}$
	+1%/-1%	+3%/-3%	+125%/-94%	+19%/-19%	+11%/-9%	+69%/-35%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 004269337-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	15 ± 2	$1.63^{+1.24}_{-1.00}$	5233^{+237}_{-260}	-6088^{+930}_{-4043}	$-1.047^{+0.717}_{-6.138}$
Alt.	-11 ± 10	$1.57^{+1.08}_{-1.00}$	5232^{+225}_{-277}	4822^{+4420}_{-9066}	$0.779^{+5.307}_{-0.706}$

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 $A_{obs} \gg 1.0$

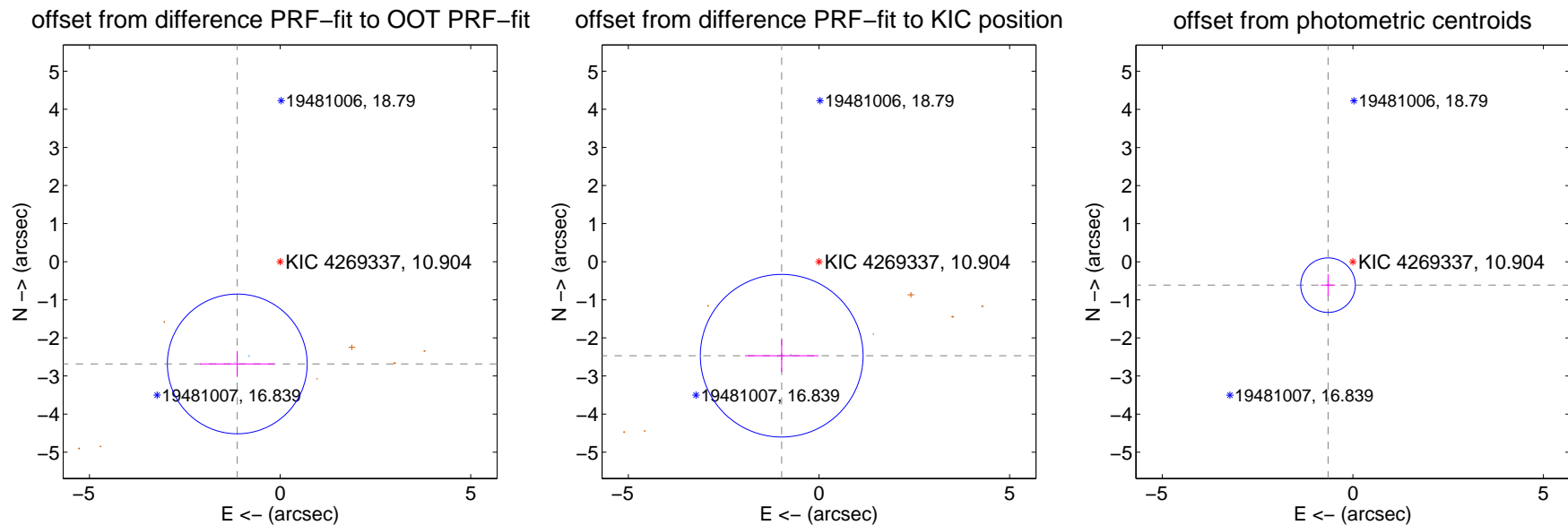
DV Centroid Data

Supplemental centroid analysis for 004269337-02. **Kepler magnitude: 10.90.** Transit SNR 12.82

There are 3 quarters with good PRF difference image offsets

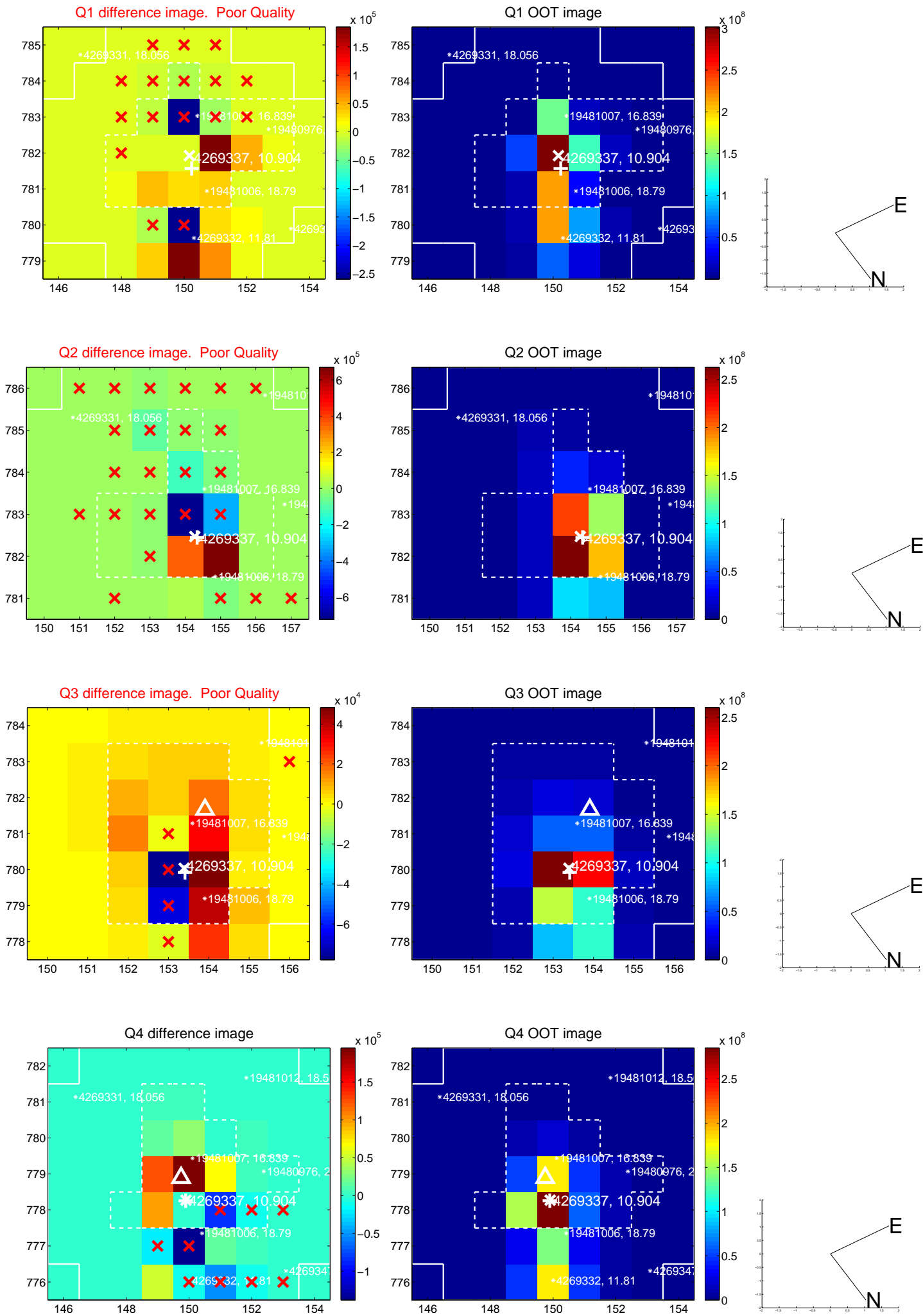
The direct PRF centroid is offset from the target star catalog position by about 1.26 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.909 ± 0.611	4.76	1.123 ± 0.979	-2.684 ± 0.343
PRF-fit source offset from KIC position	2.655 ± 0.711	3.73	0.978 ± 0.966	-2.468 ± 0.426
photometric centroid source offset	0.89 ± 0.24	3.75	0.65 ± 0.19	-0.61 ± 0.29

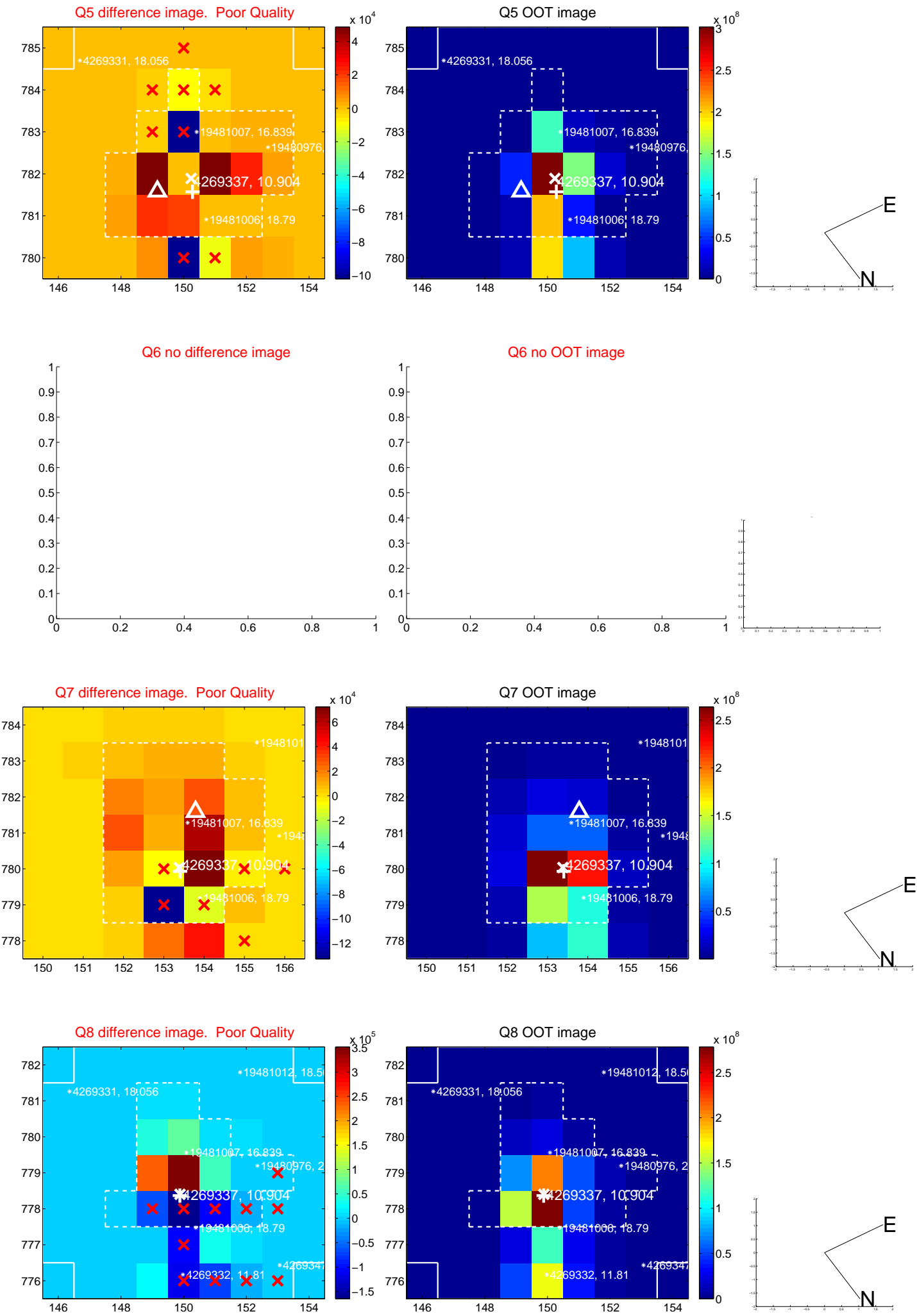


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

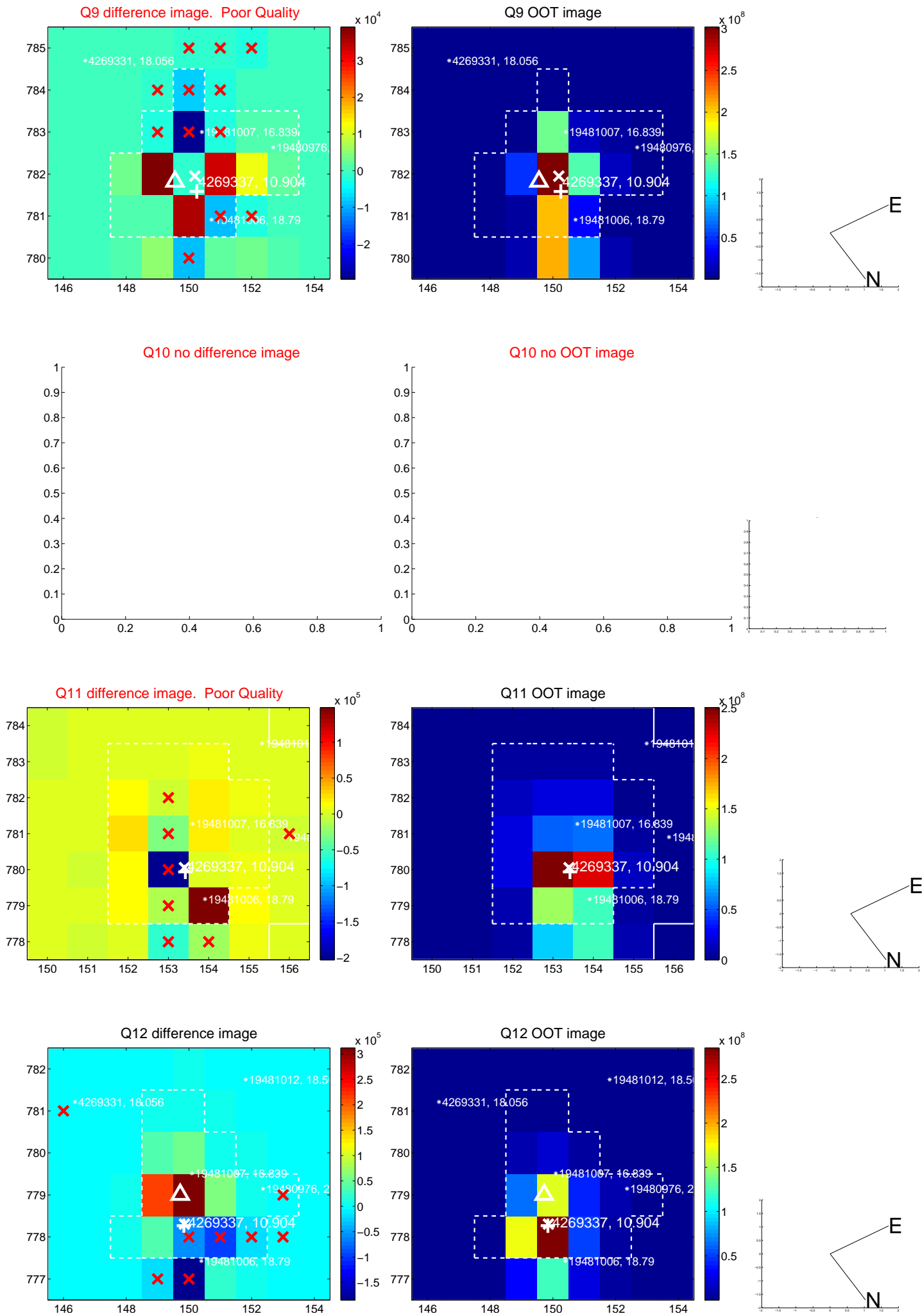
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



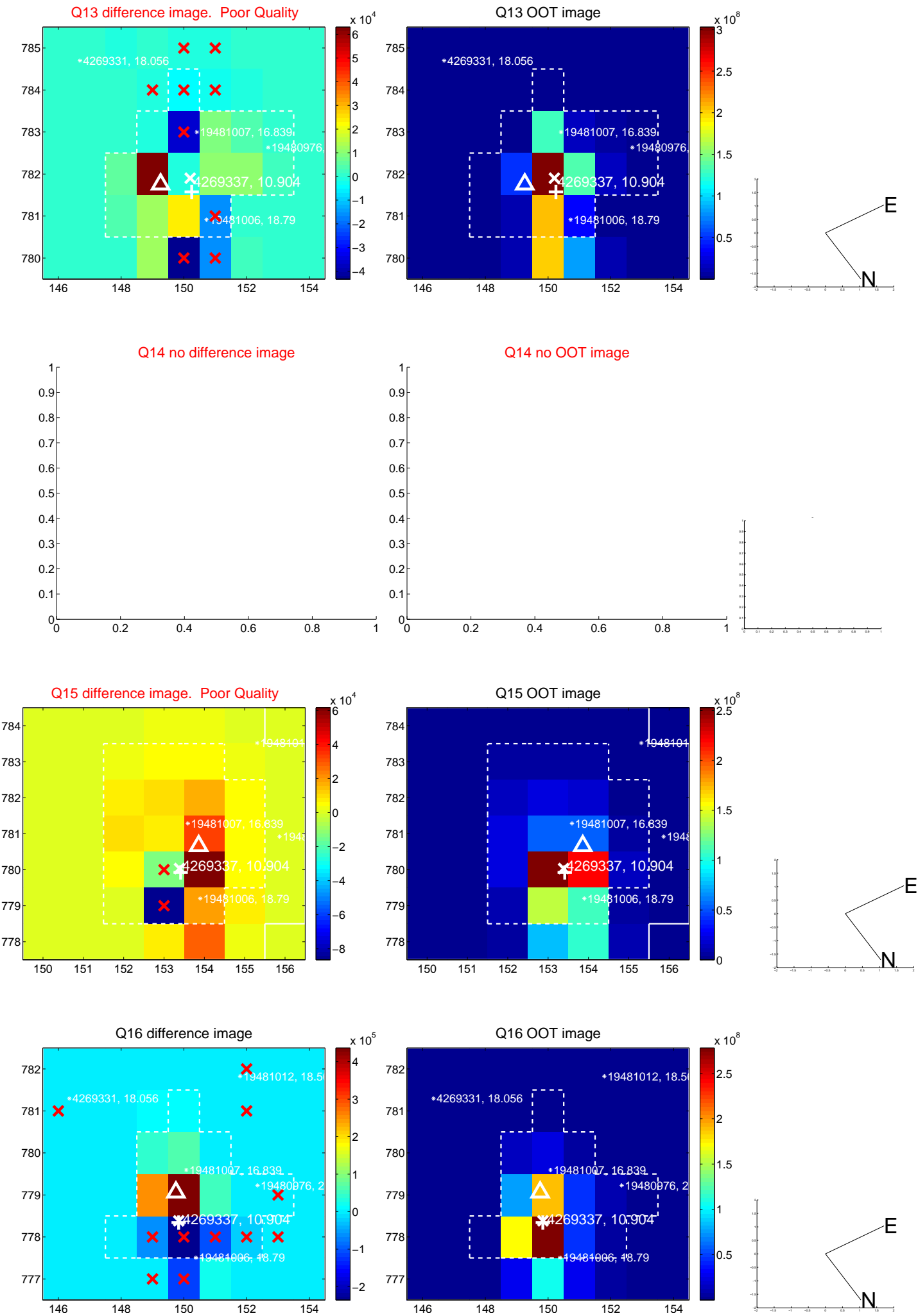
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



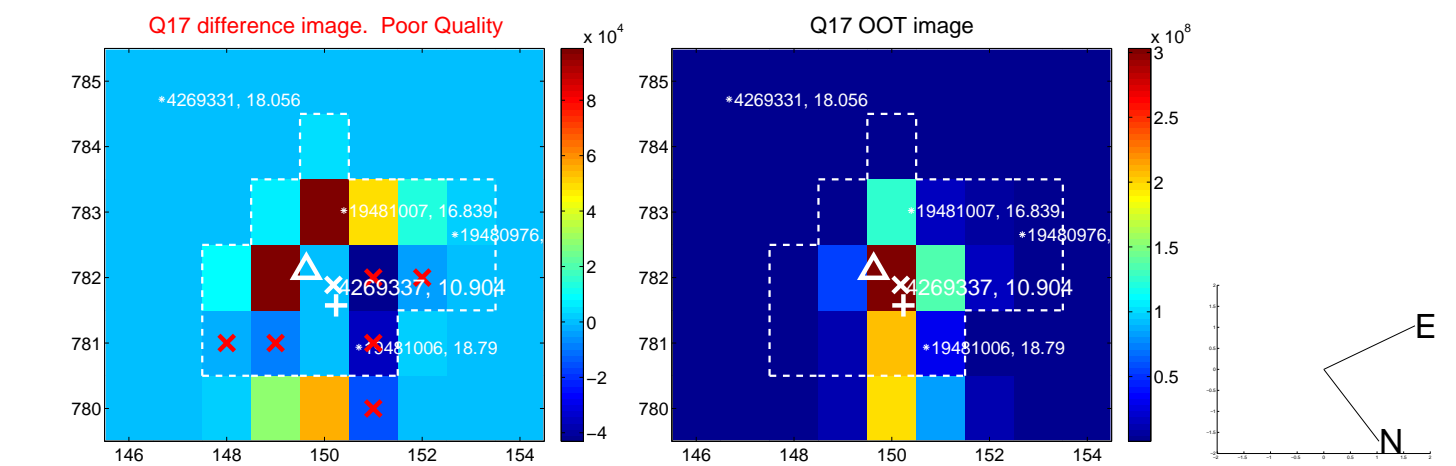
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



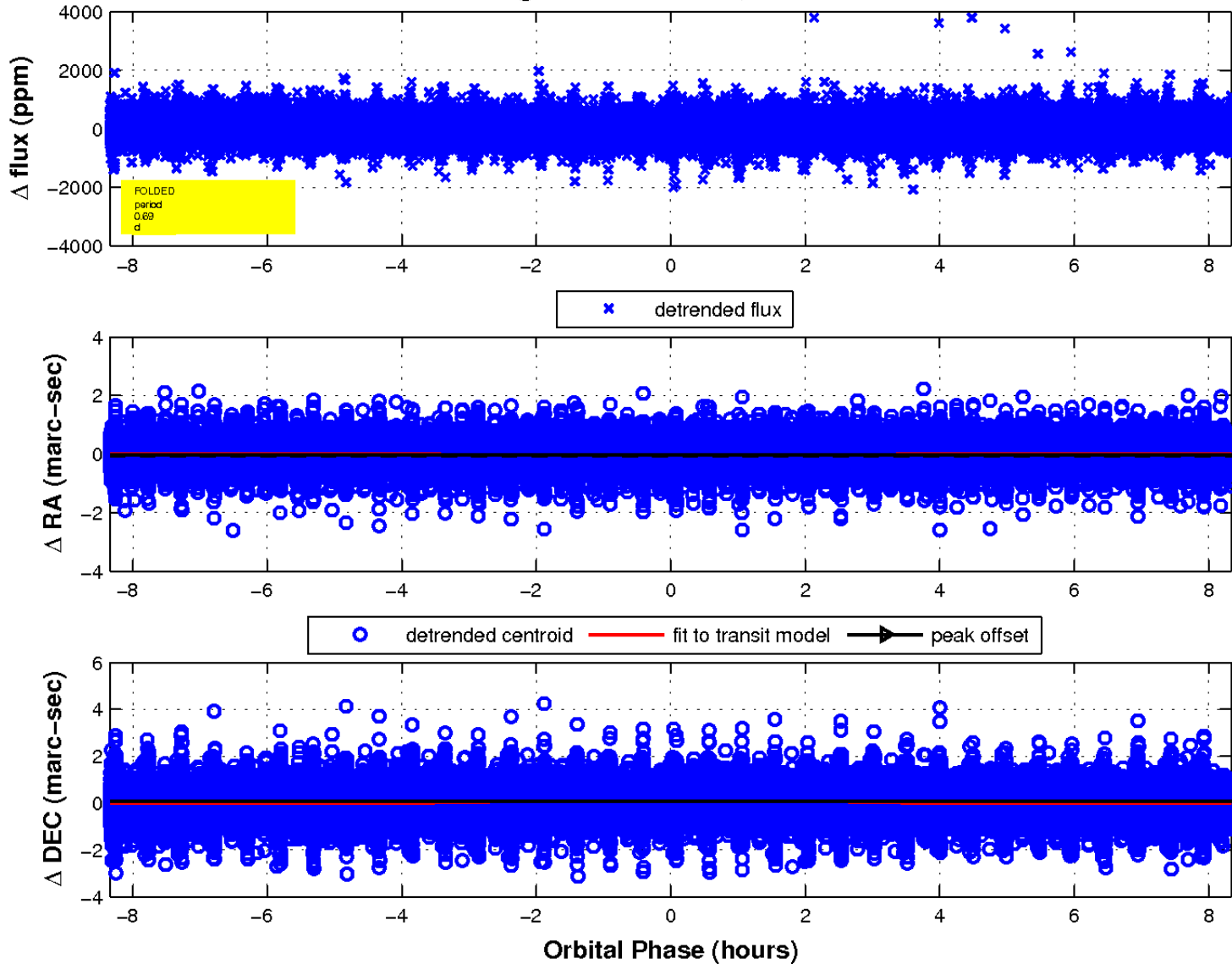
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

