

KIC 005941928

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})
005941928-01	OBS	No	1.008346	132.295099	3.4	5.590	9.1	2.1	1.90	6677	0.37	14643.08
005941928-02	OBS	No	97.527490	208.974290	295.0	16.877	9.5	8.1	1.90	6677	6.32	32.98

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005941928-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
005941928-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS

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

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

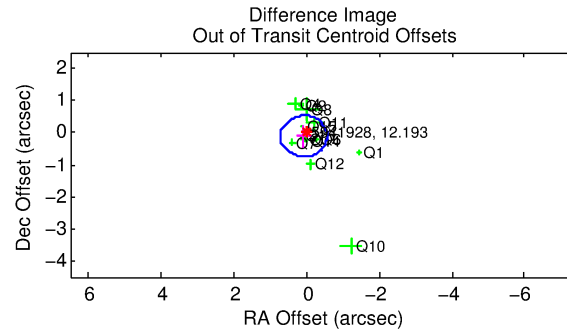
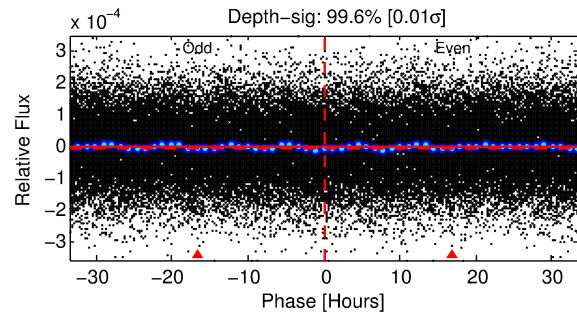
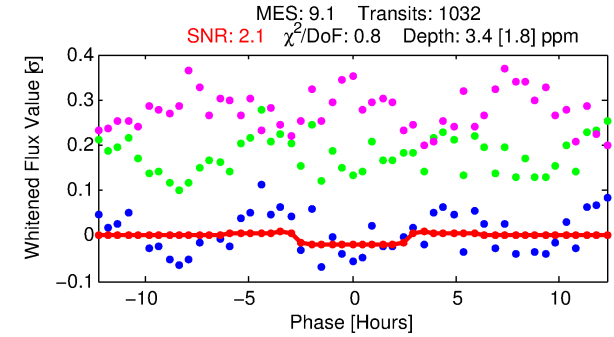
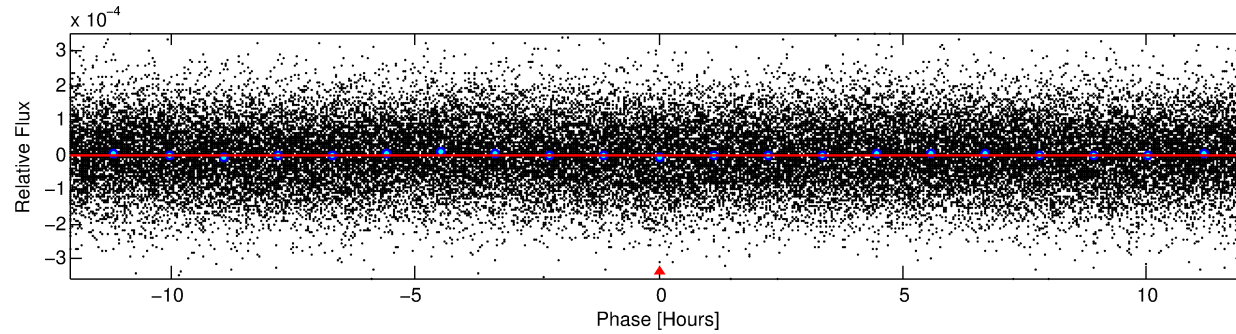
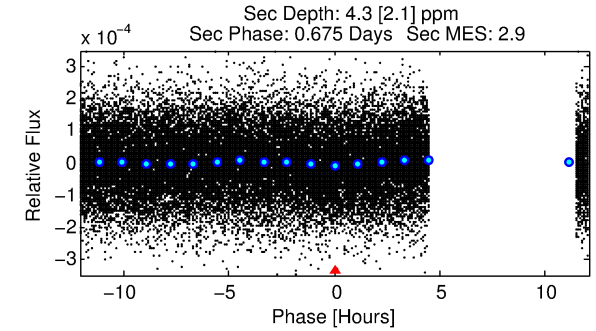
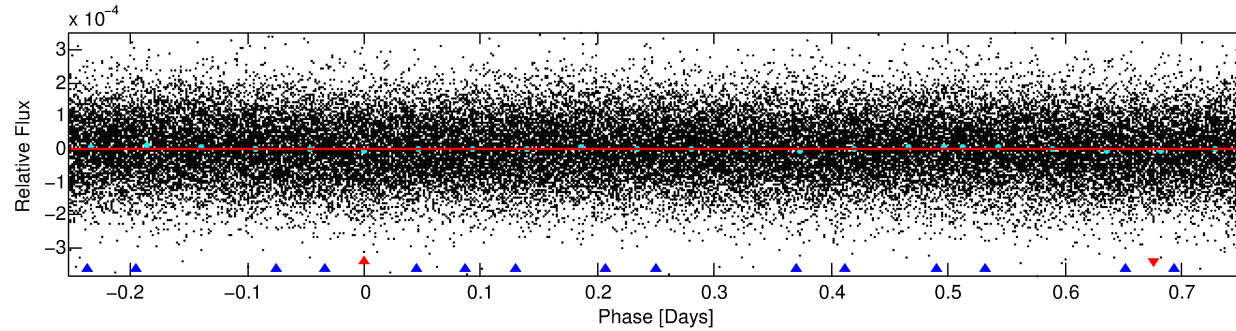
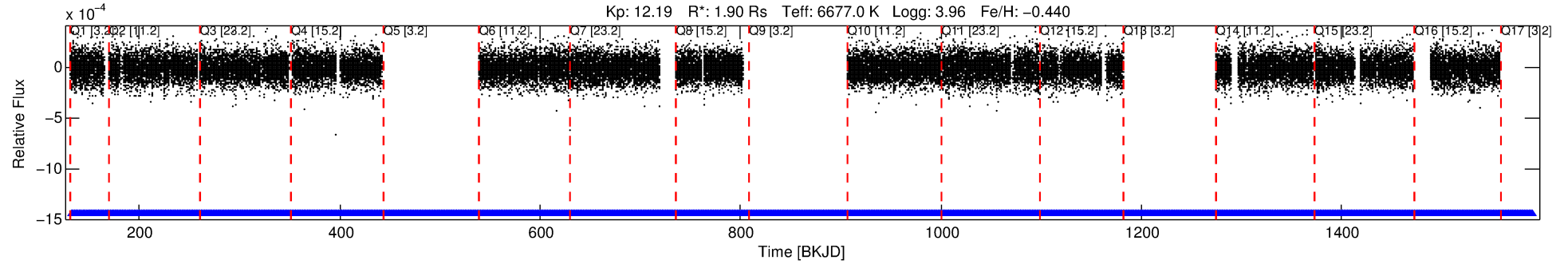
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005941928-01

No Significant Match Found

DV One-Page Summary

KIC: 5941928 Candidate: 1 of 2 Period: 1.008 d



DV Fit Results:

Period = 1.00835 [0.00006] d
Epoch = 132.2951 [0.0167] BKJD
Rp/R* = 0.0018 [0.0008]
a/R* = 1.30 [1.10]
b = 0.68 [1.65]
Seff = 14643.08 [6894.44]
Teq = 2805 [330] K
Rp = 0.37 [0.20] Re
a = 0.0209 [0.0060] AU
Ag = 7.41 [8.28] [0.77σ]
Teffp = 7155 [1838] K [2.33σ]

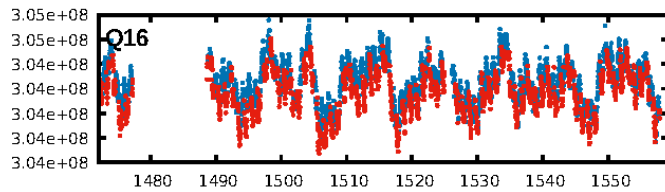
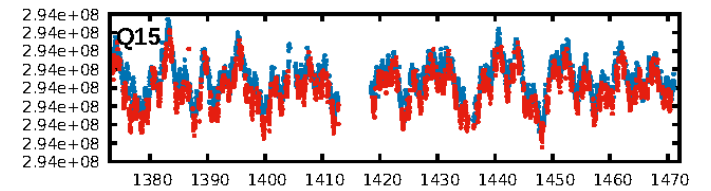
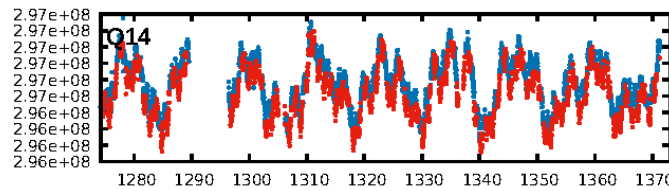
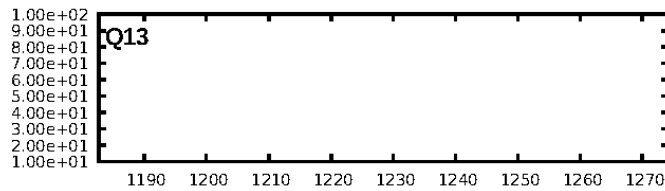
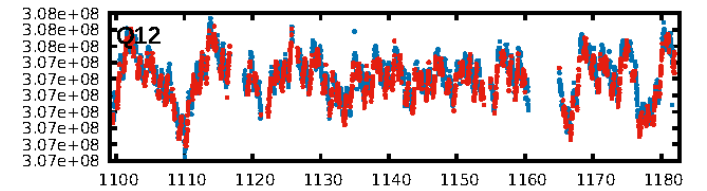
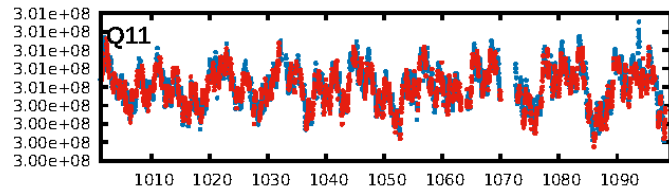
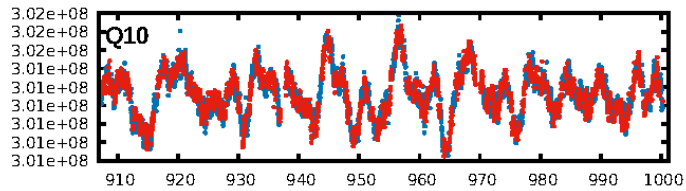
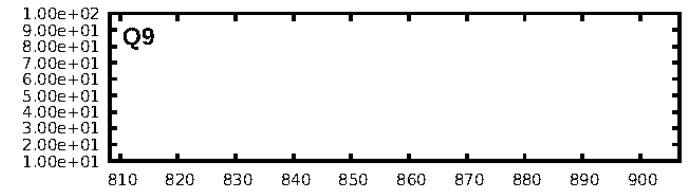
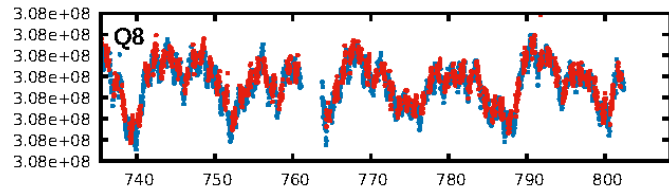
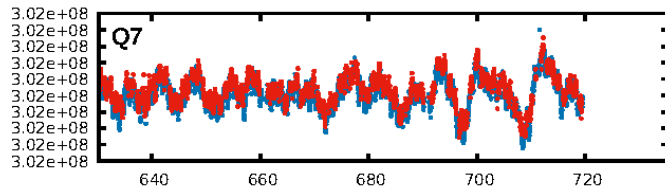
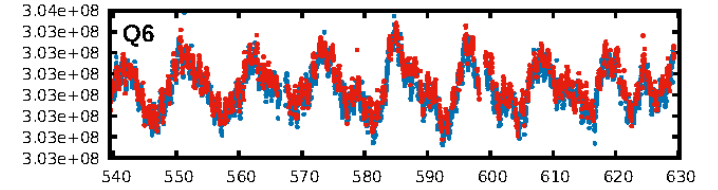
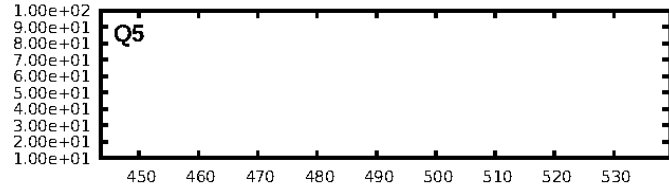
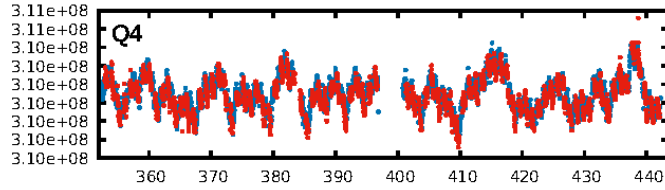
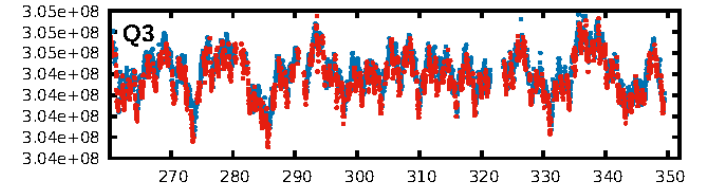
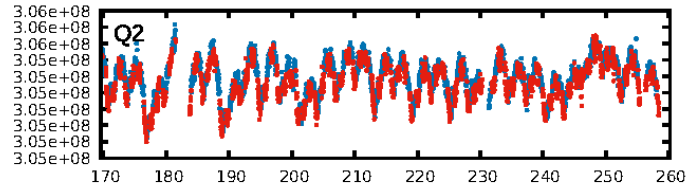
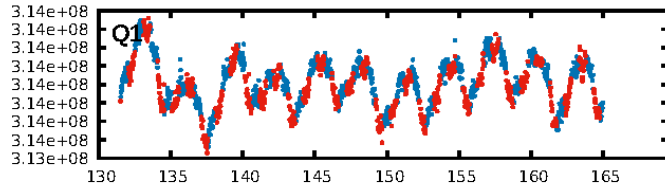
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [130.29σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.85e-15
RollingBand-fgt: 1.00 [999/999]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 0.134 arcsec [0.63σ]
KicOffset-rm: 0.146 arcsec [1.21σ]
OotOffset-st: 4/4/4/1 [13]
KicOffset-st: 4/4/4/1 [13]
DiffImageQuality-fgm: 0.69 [9/13]
DiffImageOverlap-fno: 1.00 [13/13]

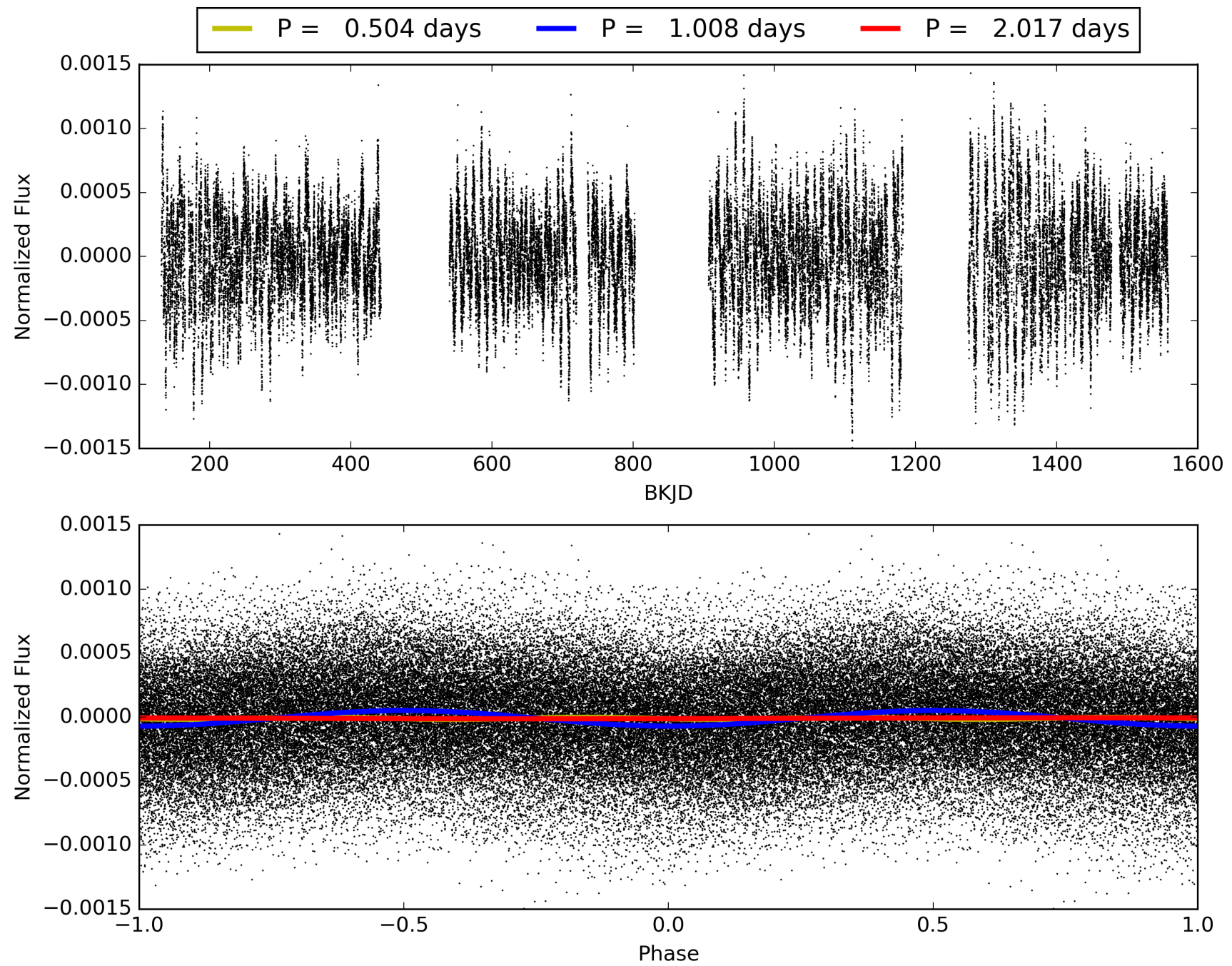
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 05:09:10 Z

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

TCE 005941928-01, PDC Light Curves

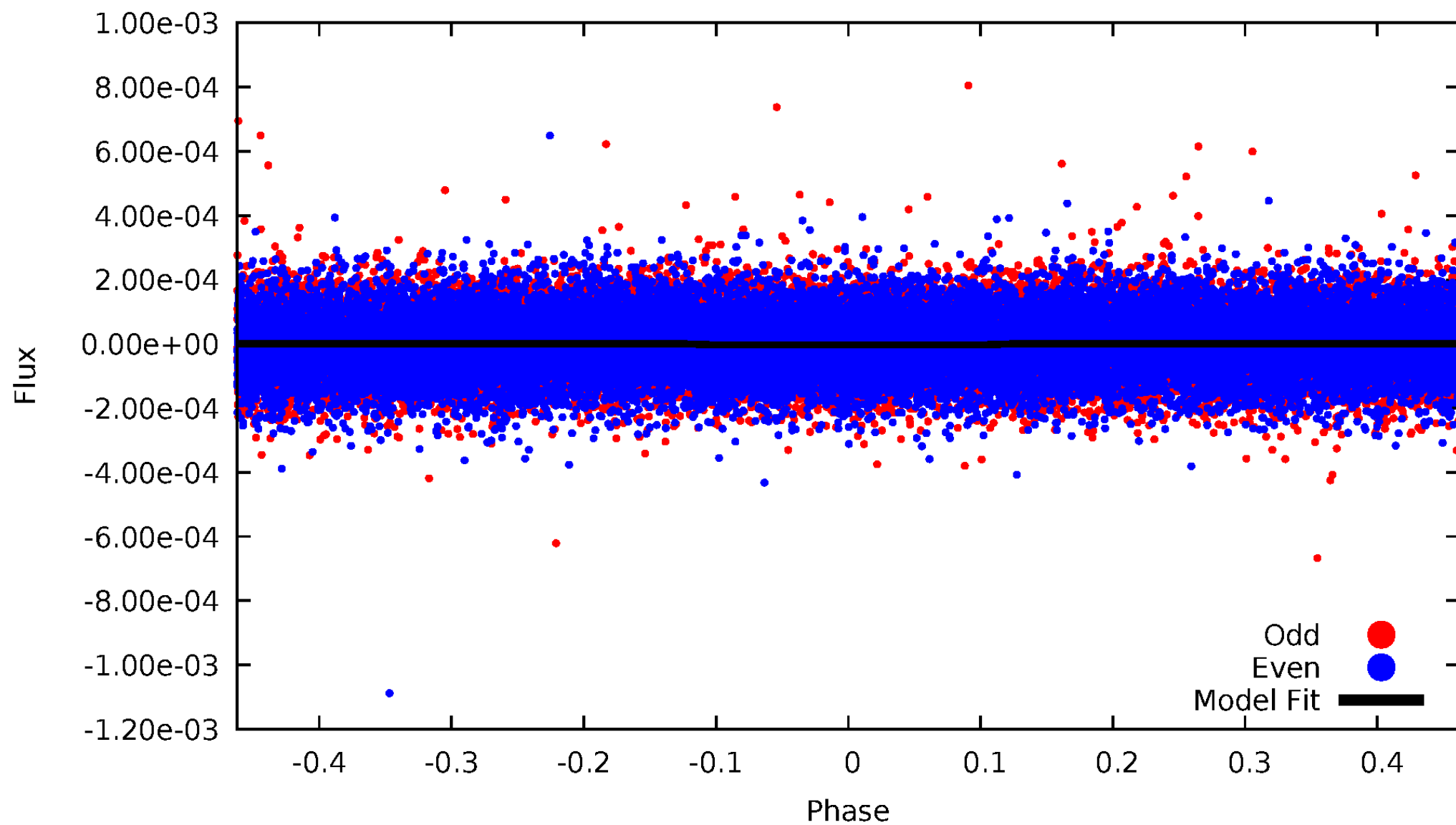


TCE 005941928-01



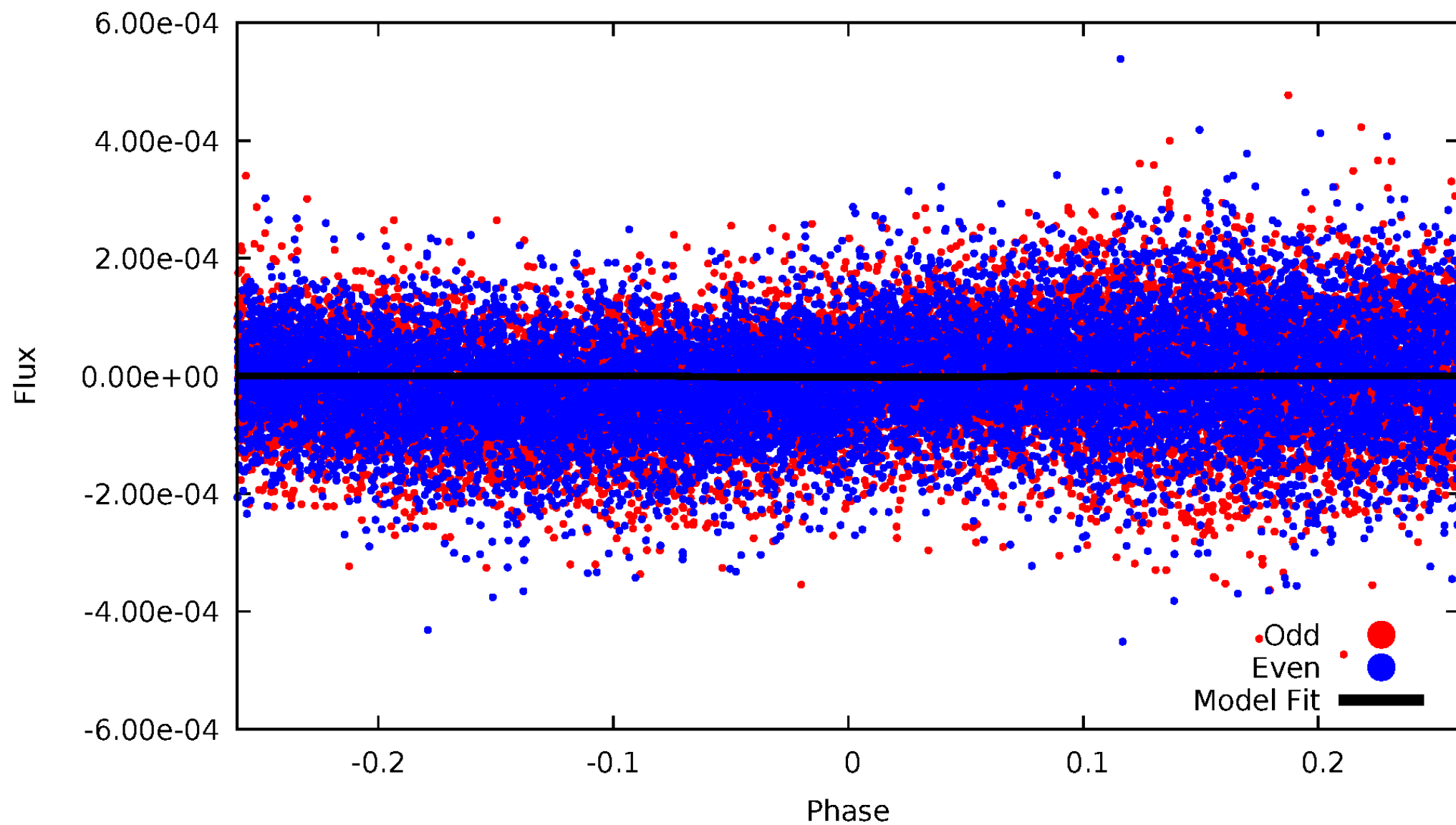
DV Odd/Even

TCE 005941928-01



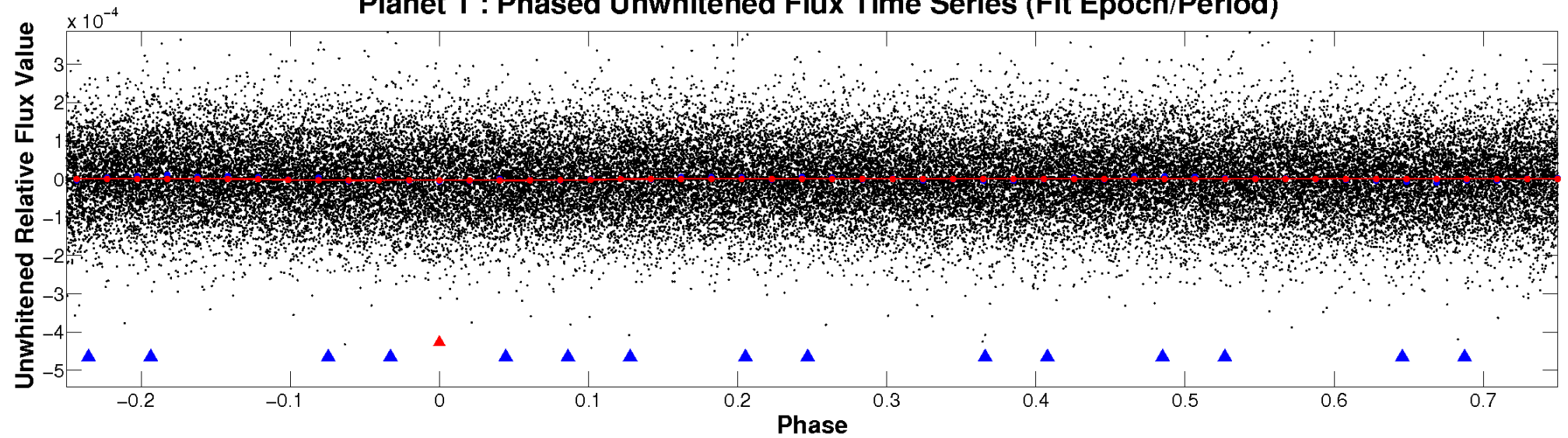
ALT Odd/Even

TCE 005941928-01

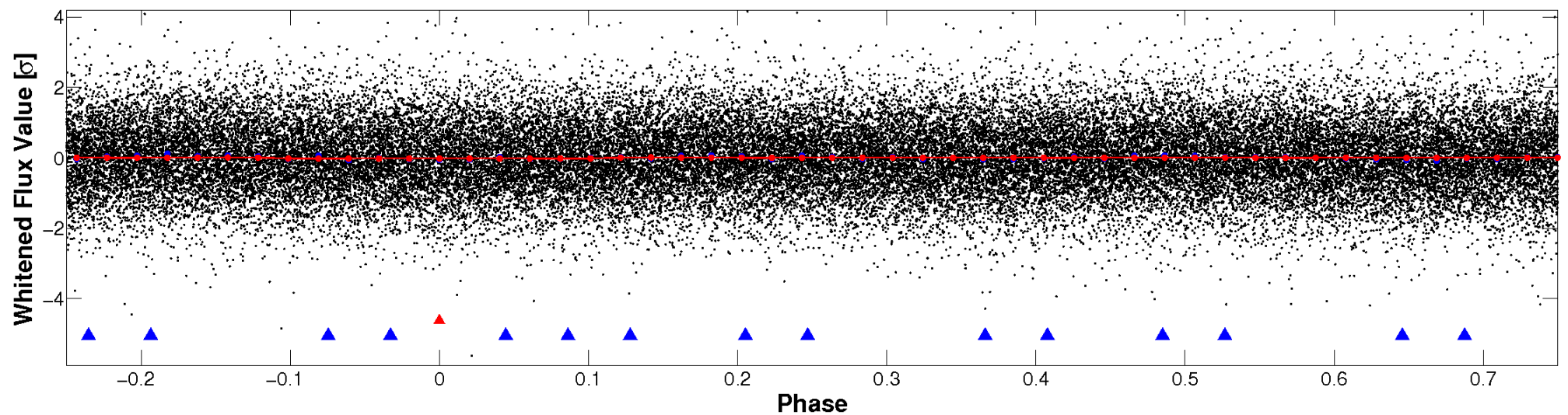


Non-Whitened Vs. Whitened Light Curve

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

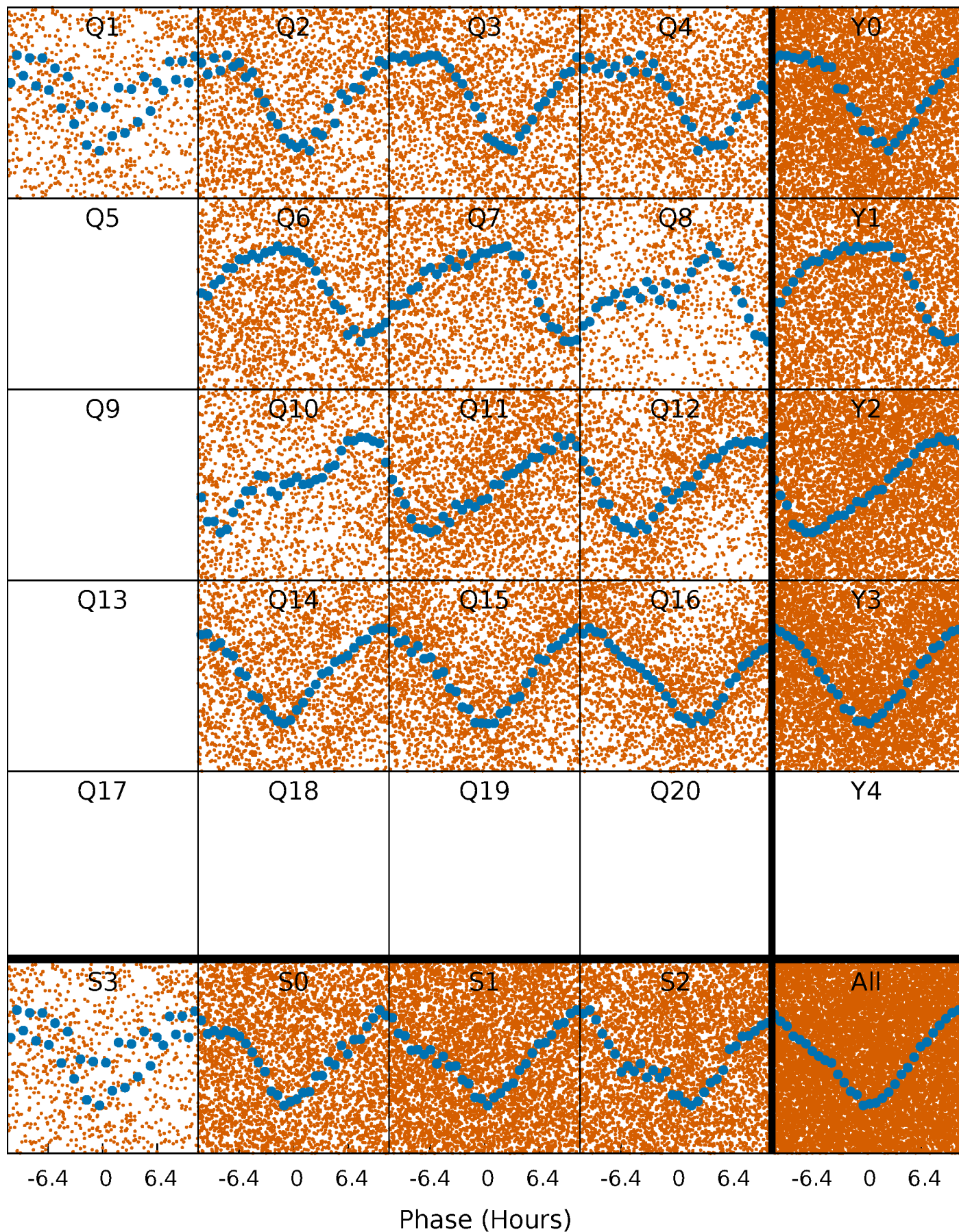


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



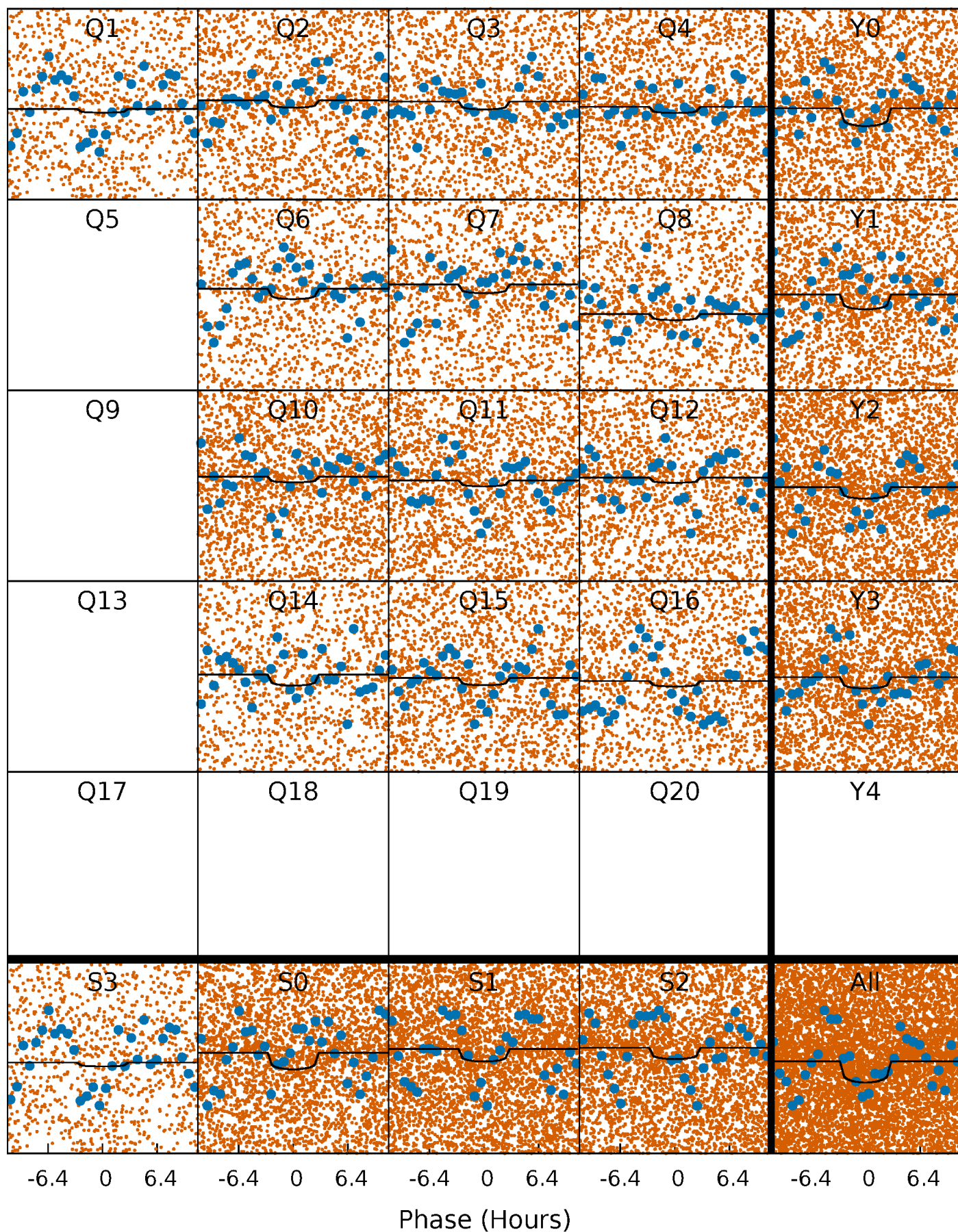
PDC Quarter-Phased Transit Curves

TCE 005941928-01 P= 1.008346 Days $T_0=132.295099$ (BKJD)



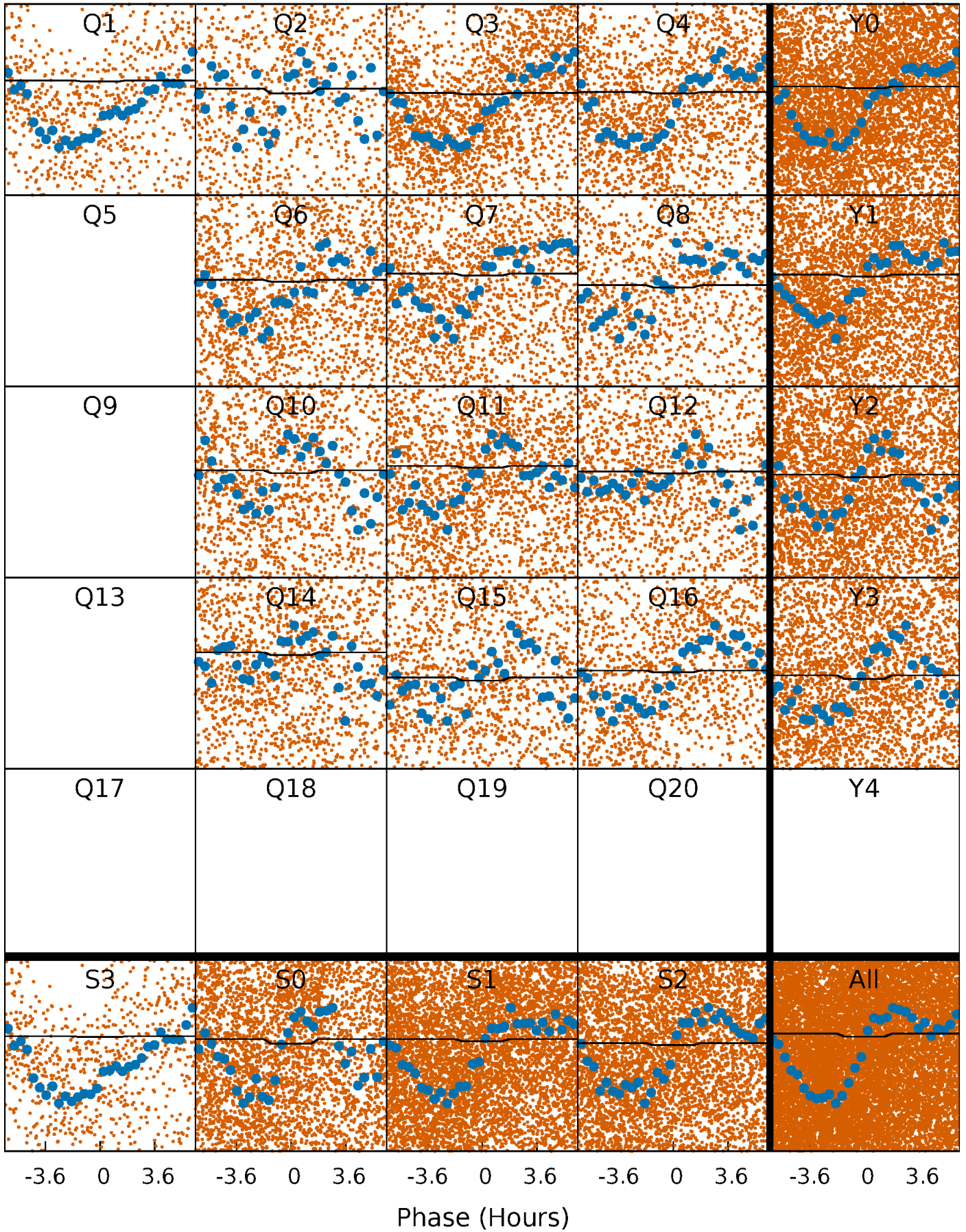
DV Quarter-Phased Transit Curves

TCE 005941928-01 P= 1.008346 Days $T_0=132.295099$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

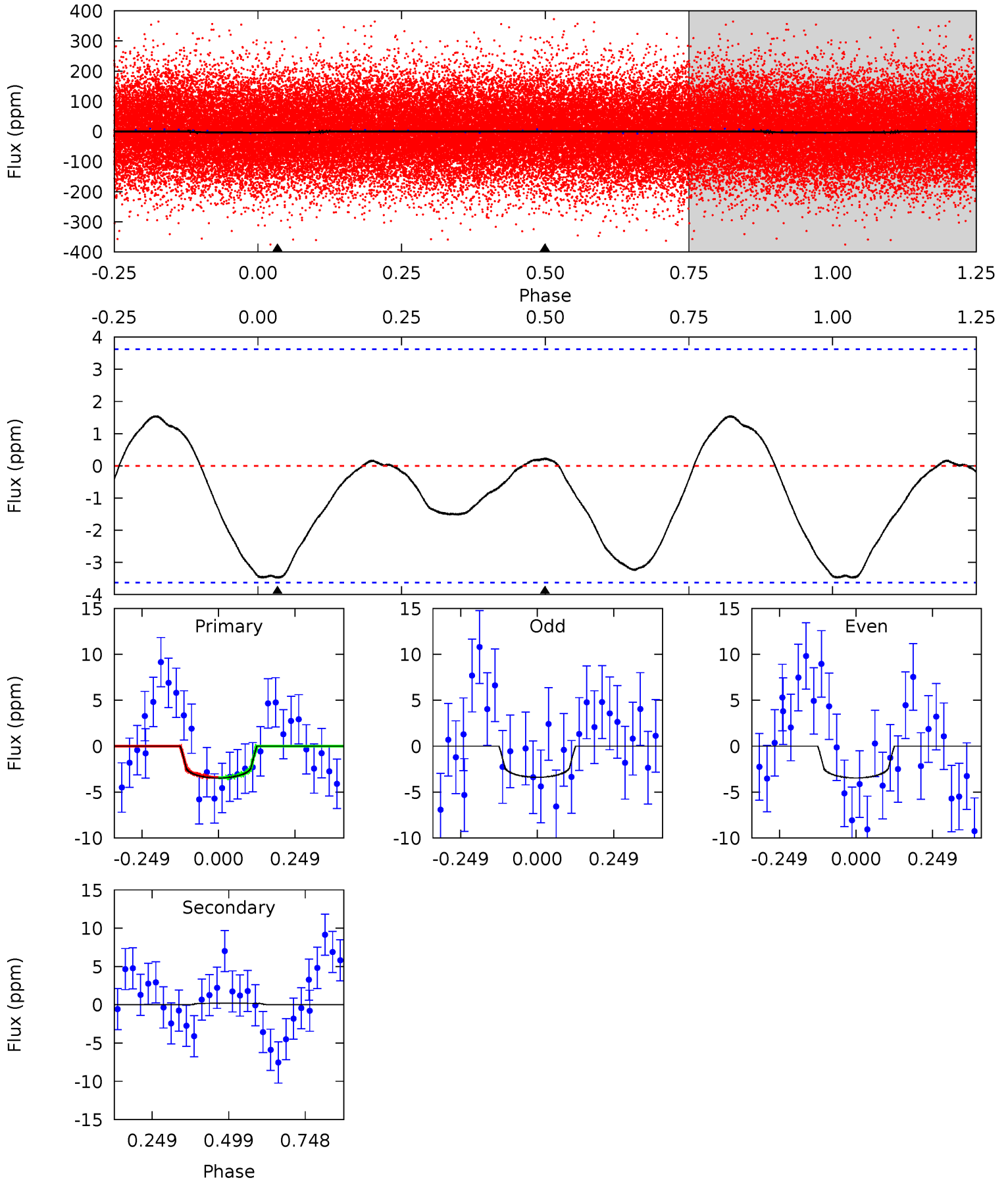
TCE 005941928-01 P= 1.009216 Days $T_0=132.334600$ (BKJD)



DV Model-Shift Uniqueness Test

005941928-01, P = 1.008346 Days, E = 131.286753 Days

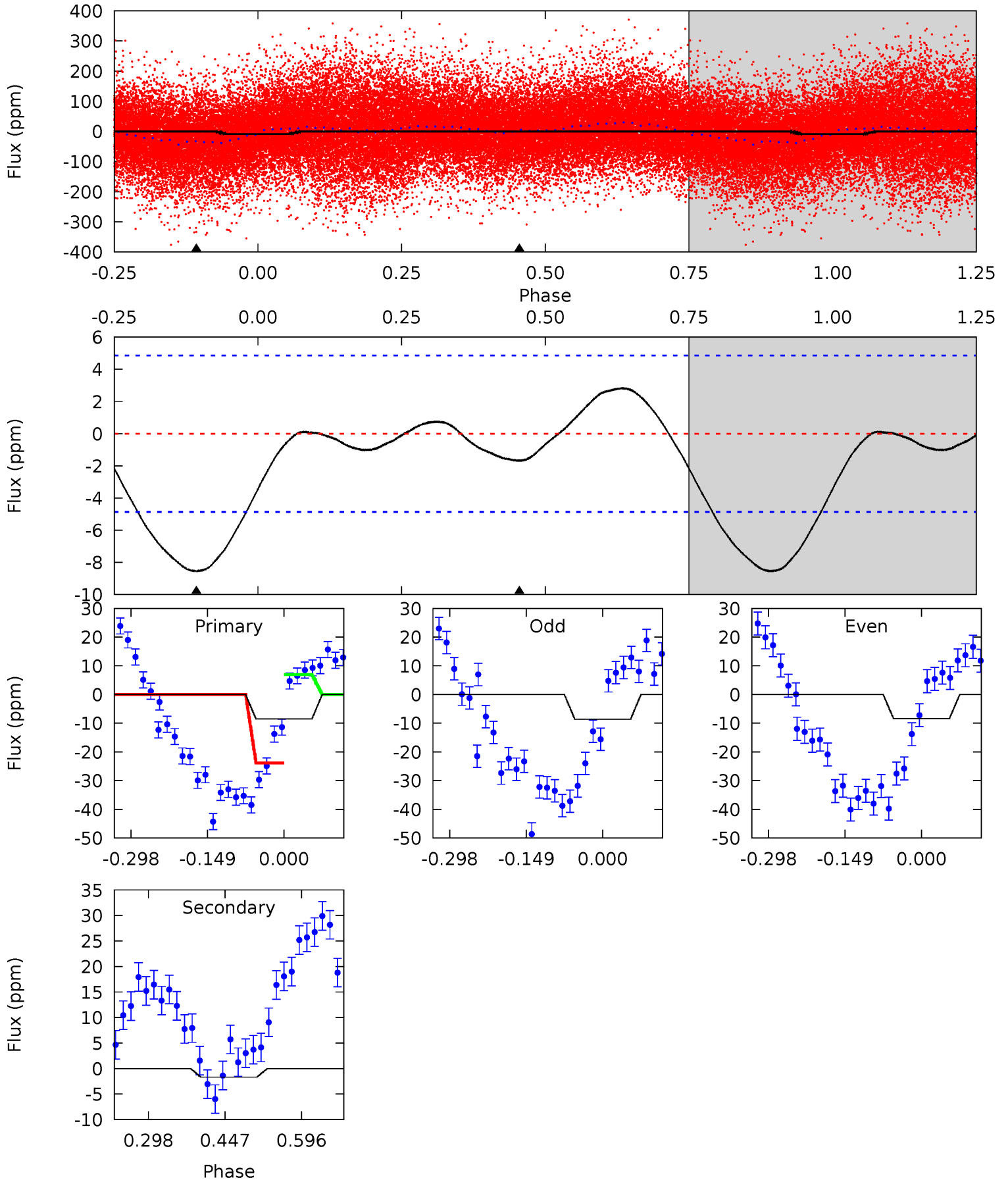
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.18	-0.26	0	0	4.37	1.15	1.03	4.18	4.18	-0.26	-0.26	0.04	1.23	0.31	0.02



Alt Model-Shift Uniqueness Test

005941928-01, P = 1.009216 Days, E = 131.325384 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.87	1.55	0	0	4.48	1.44	1.14	7.87	7.87	1.55	1.55	0.10	2.56	0.25	8.76



Stellar Parameters For KIC 005941928

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6677^{+151}_{-202}	$3.961^{+0.266}_{-0.114}$	$-0.440^{+0.300}_{-0.250}$	$1.896^{+0.428}_{-0.571}$	$1.200^{+0.211}_{-0.172}$	$0.248^{+0.411}_{-0.083}$
	+2%/-3%	+7%/-3%	+68%/-57%	+23%/-30%	+18%/-14%	+166%/-34%
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 005941928-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1	$0.36^{+0.19}_{-0.16}$	3859^{+246}_{-304}	-4042^{+8211}_{-1423}	$-0.328^{+1.391}_{-2.067}$
Alt.	-2 ± 1	$0.27^{+0.16}_{-0.14}$	3852^{+233}_{-306}	6080^{+3695}_{-1853}	$4.718^{+17.895}_{-3.718}$

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 $A_{obs} \gg 1.0$

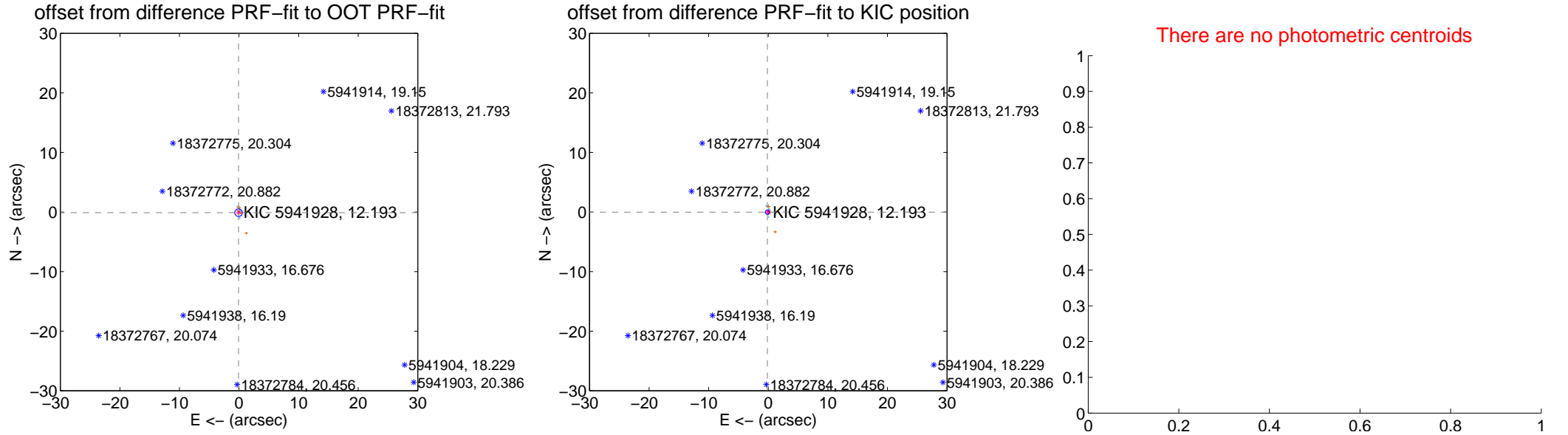
DV Centroid Data

Supplemental centroid analysis for 005941928-01. Kepler magnitude: 12.19. Transit SNR 2.08

There are 9 quarters with good PRF difference image offsets

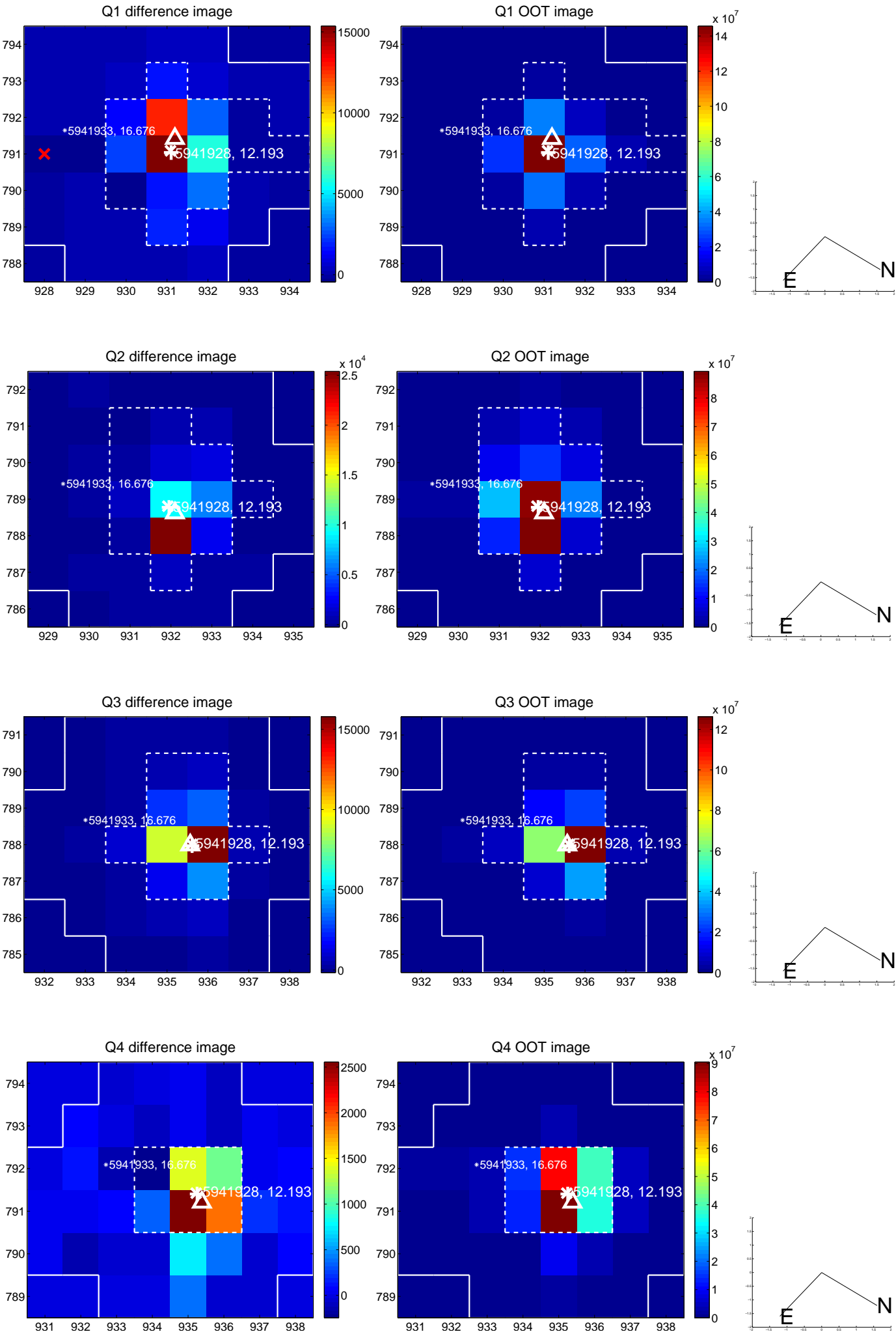
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.134 ± 0.213	0.63	0.076 ± 0.165	-0.110 ± 0.312
PRF-fit source offset from KIC position	0.146 ± 0.121	1.21	0.144 ± 0.148	-0.026 ± 0.300
photometric centroid source offset	—	—	—	—

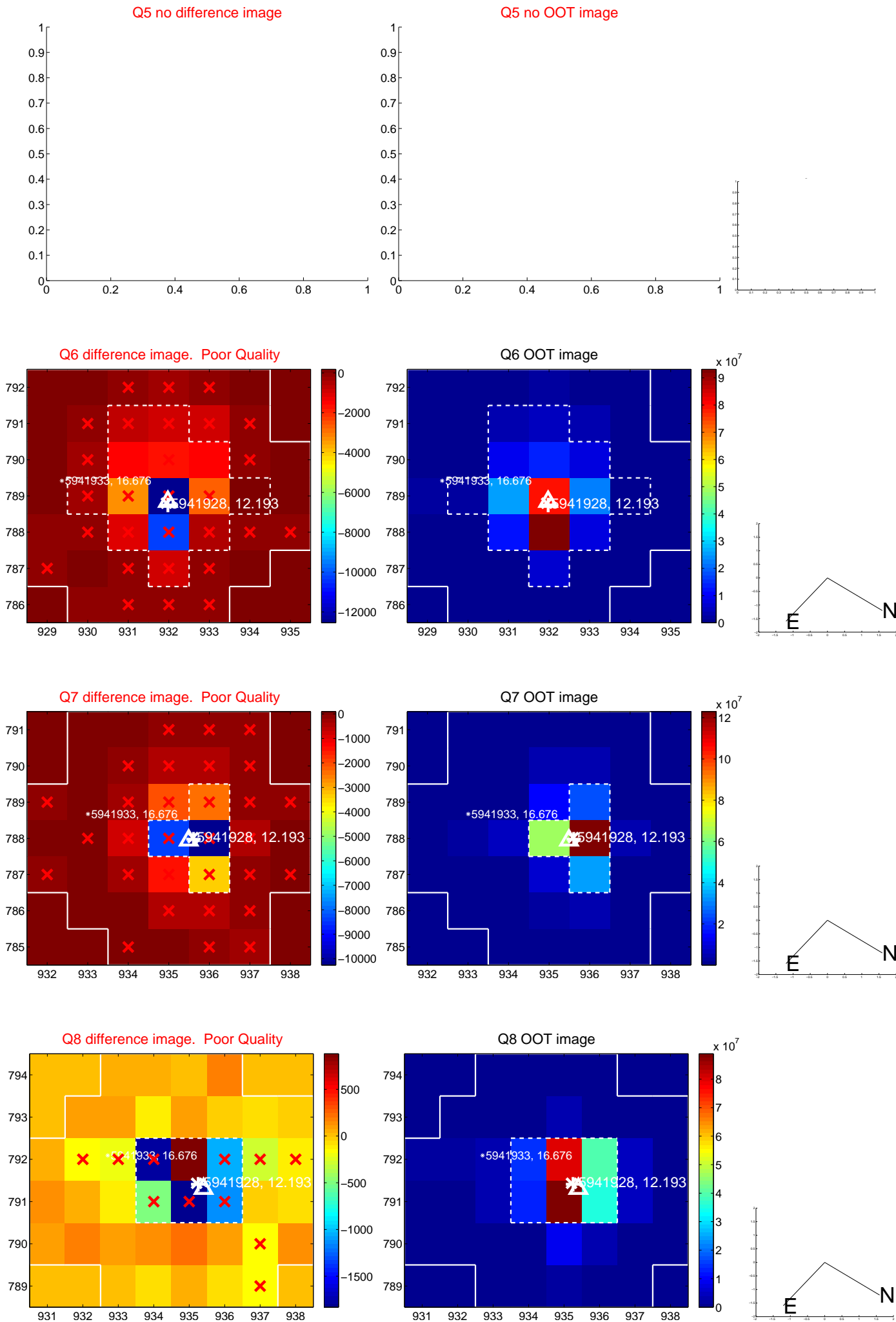


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

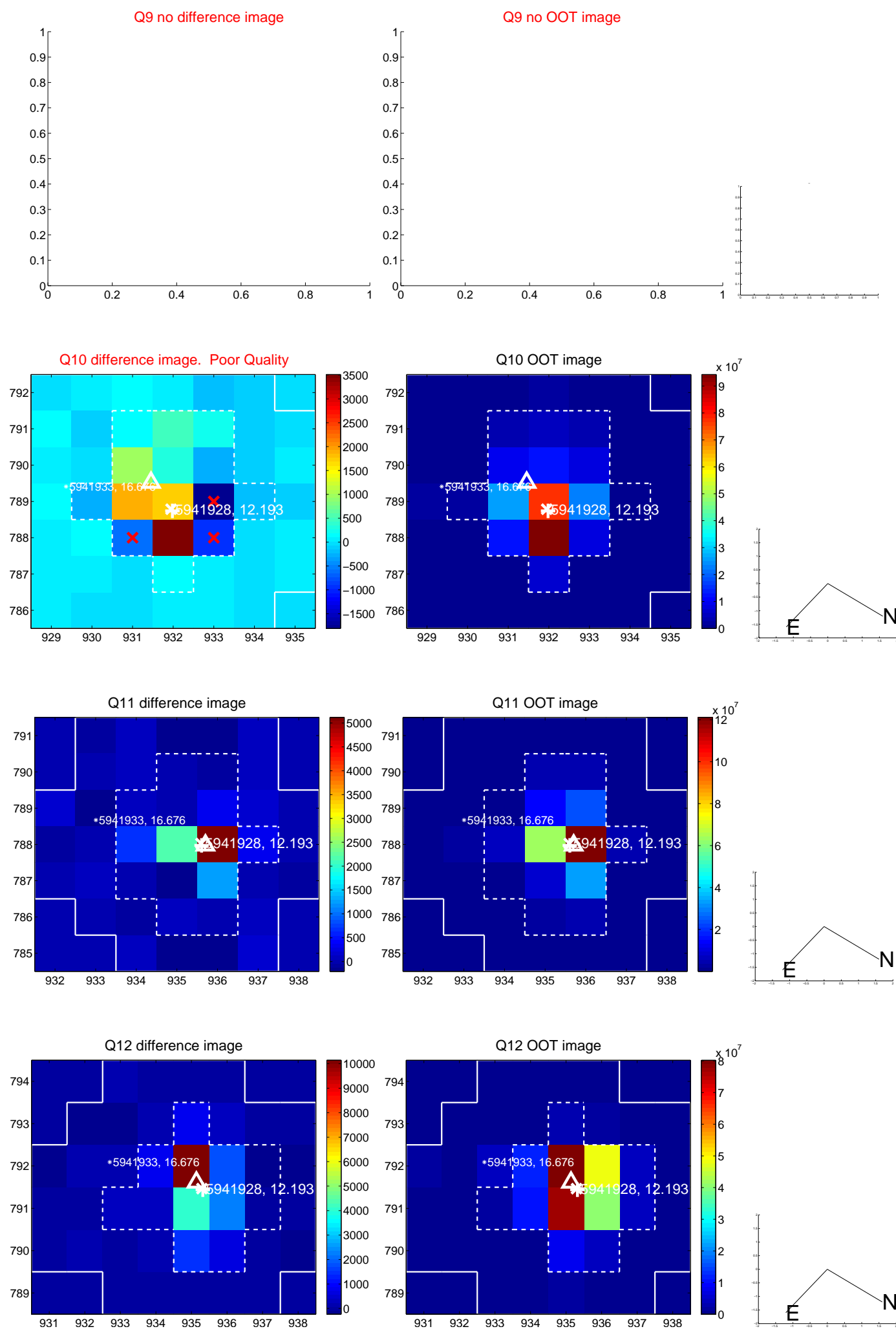
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



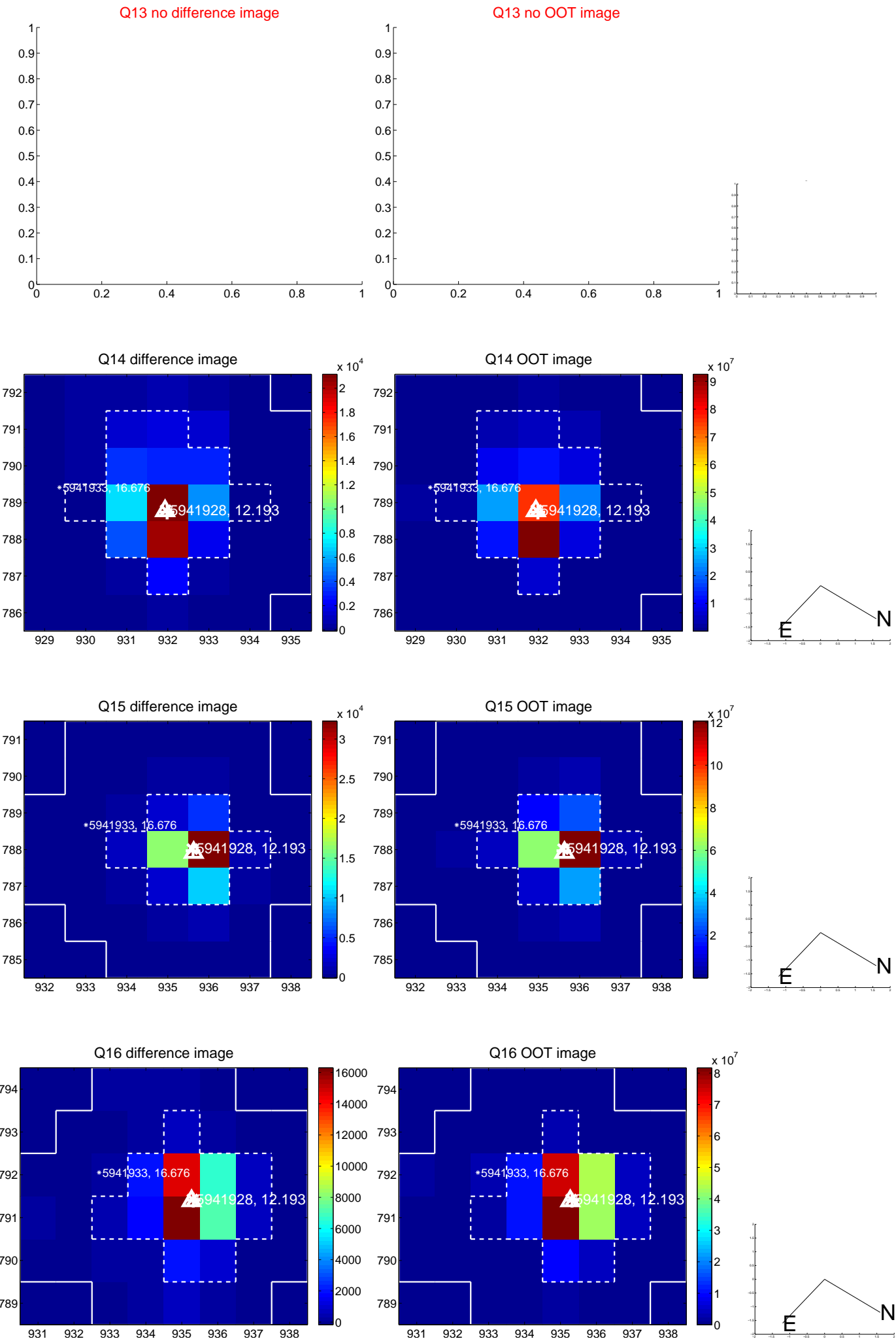
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



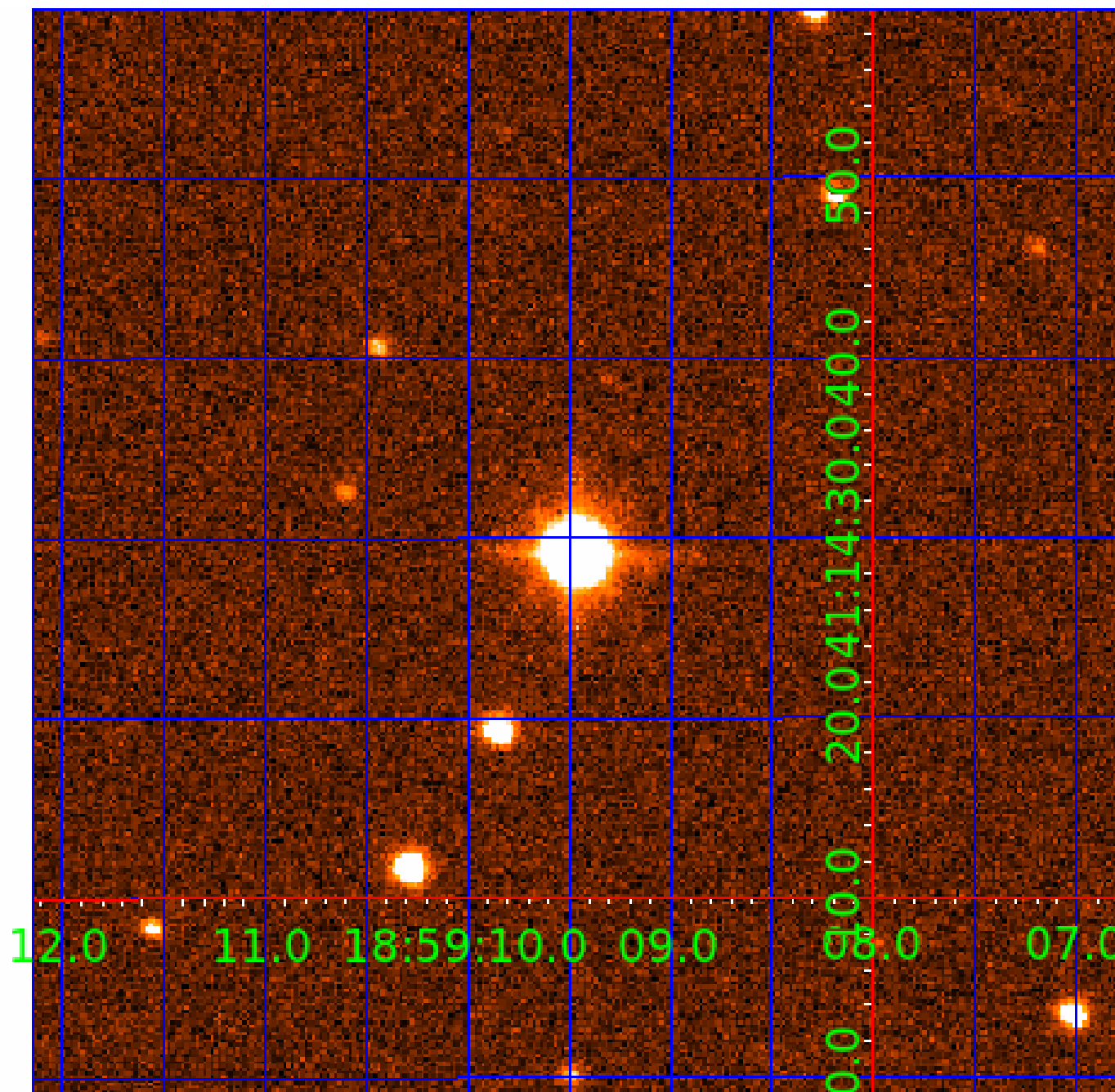
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination



KIC 005941928

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})
005941928-01	OBS	No	1.008346	132.295099	3.4	5.590	9.1	2.1	1.90	6677	0.37	14643.08
005941928-02	OBS	No	97.527490	208.974290	295.0	16.877	9.5	8.1	1.90	6677	6.32	32.98

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005941928-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
005941928-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS

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

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

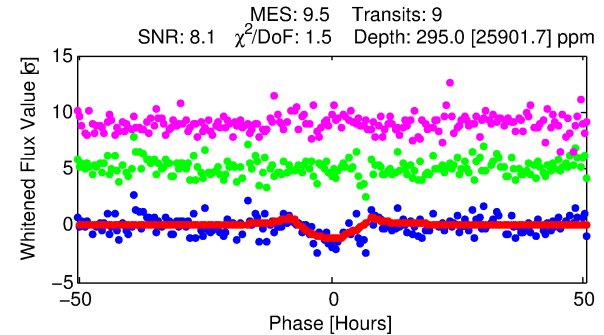
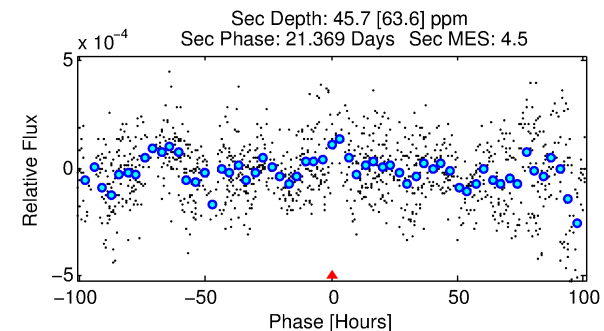
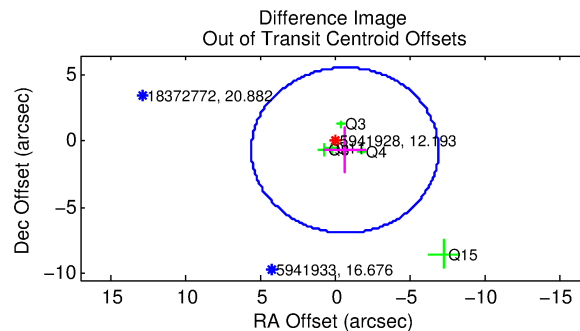
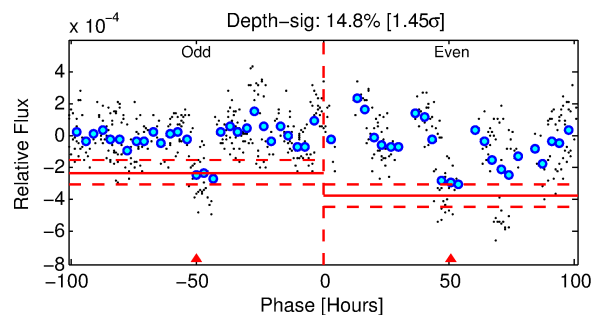
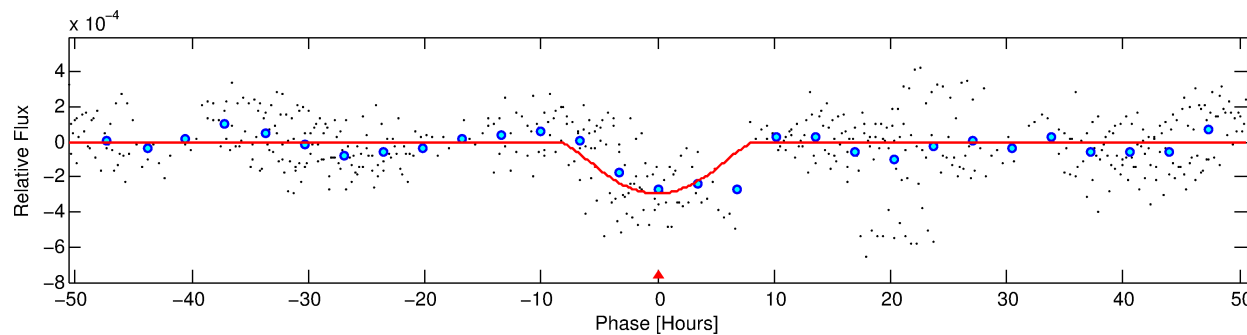
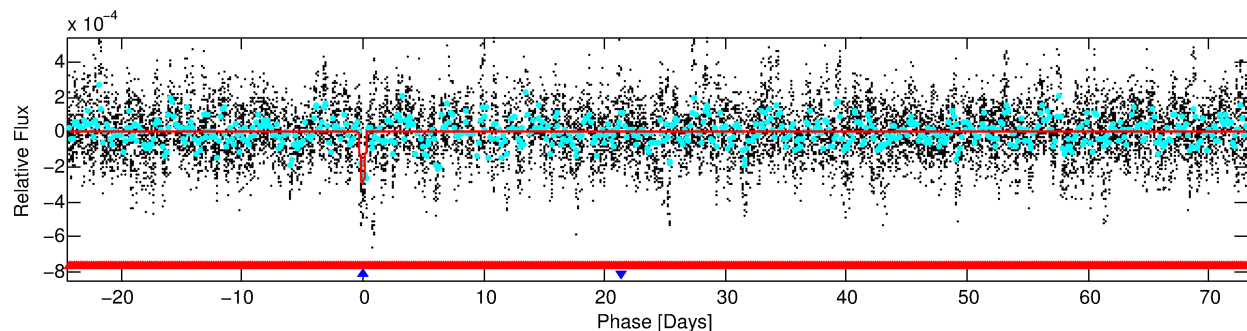
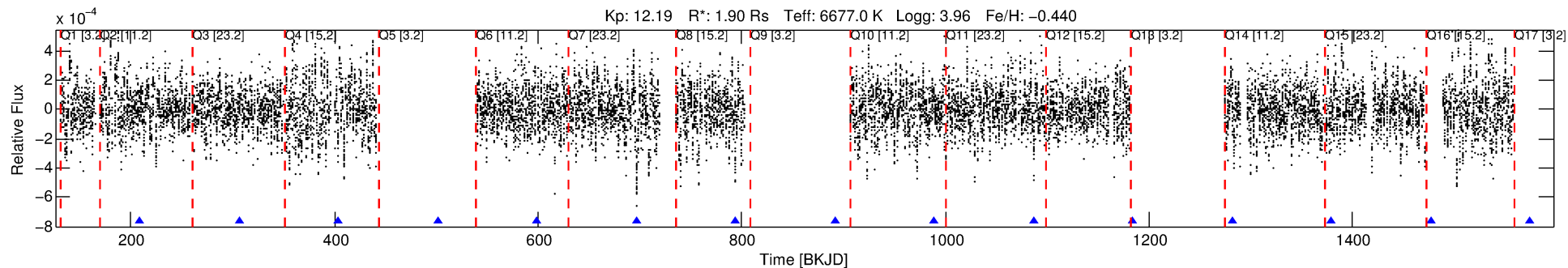
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005941928-02

No Significant Match Found

DV One-Page Summary

KIC: 5941928 Candidate: 2 of 2 Period: 97.527 d



DV Fit Results:

Period = 97.52749 [0.00609] d
Epoch = 208.9743 [0.0462] BKJD
Rp/R* = 0.0305 [0.0818]
a/R* = 11.04 [7.84]
b = 1.00 [1.98]
Seff = 32.98 [15.53]
Teq = 611 [72] K
Rp = 6.32 [17.03] Re
a = 0.4406 [0.1262] AU
Ag = 122.32 [679.40] [0.18 σ]
Teffp = 3142 [4349] K [0.58 σ]

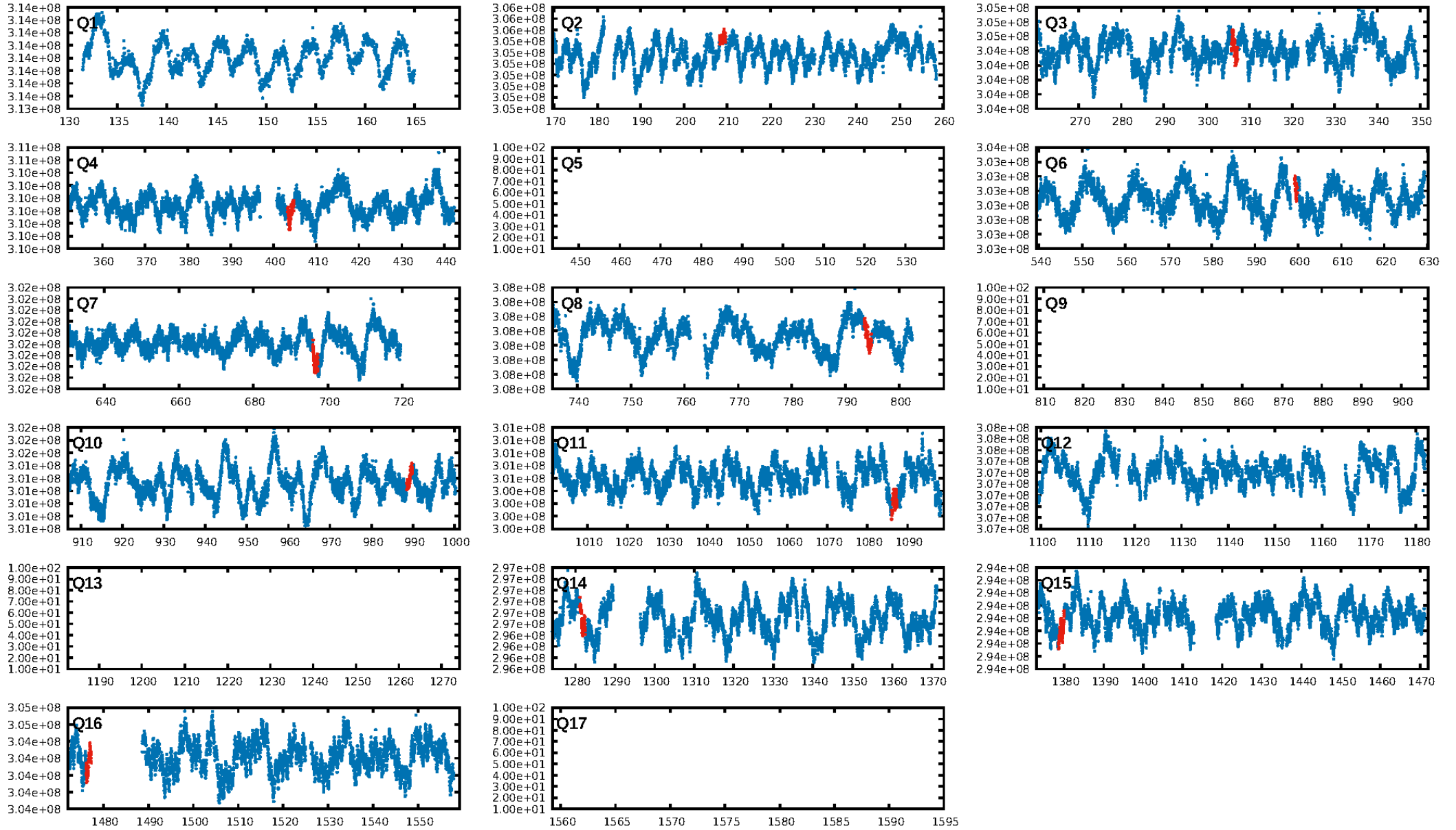
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [130.29 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.48e-11
RollingBand-fgt: 1.00 [9/9]
GhostDiagnostic-chr: -0.5465
Centroid-sig: 94.3%
Centroid-so: 0.060 arcsec [0.18 σ]
OotOffset-rm: 0.972 arcsec [0.47 σ]
OotOffset-st: 0/3/2/0 [5]
KicOffset-rm: 0.667 arcsec [0.47 σ]
KicOffset-st: 0/3/2/0 [5]
DiffImageQuality-fgm: 0.60 [3/5]
DiffImageOverlap-fno: 0.00 [0/8]

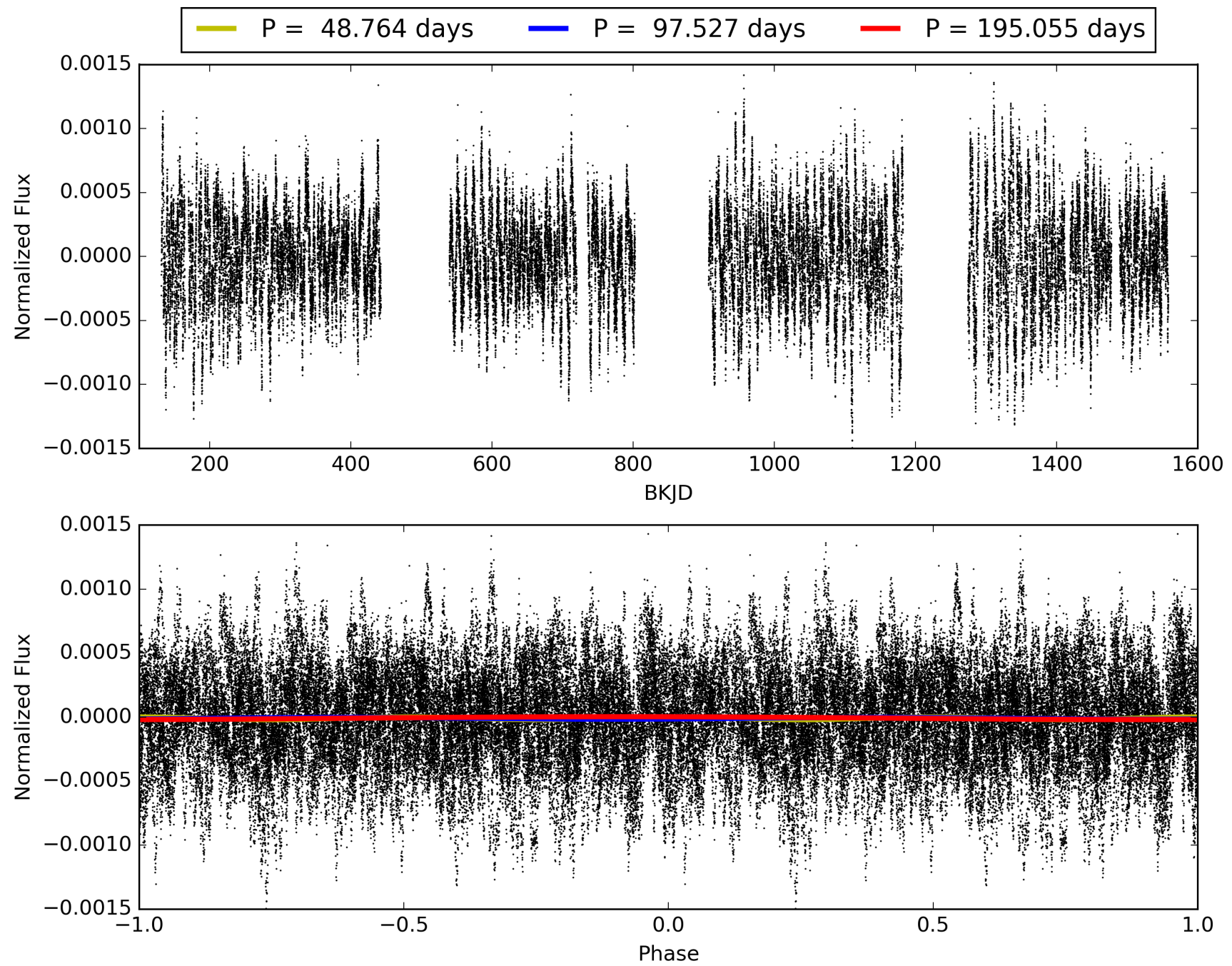
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 05:09:20 Z

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

TCE 005941928-02, PDC Light Curves

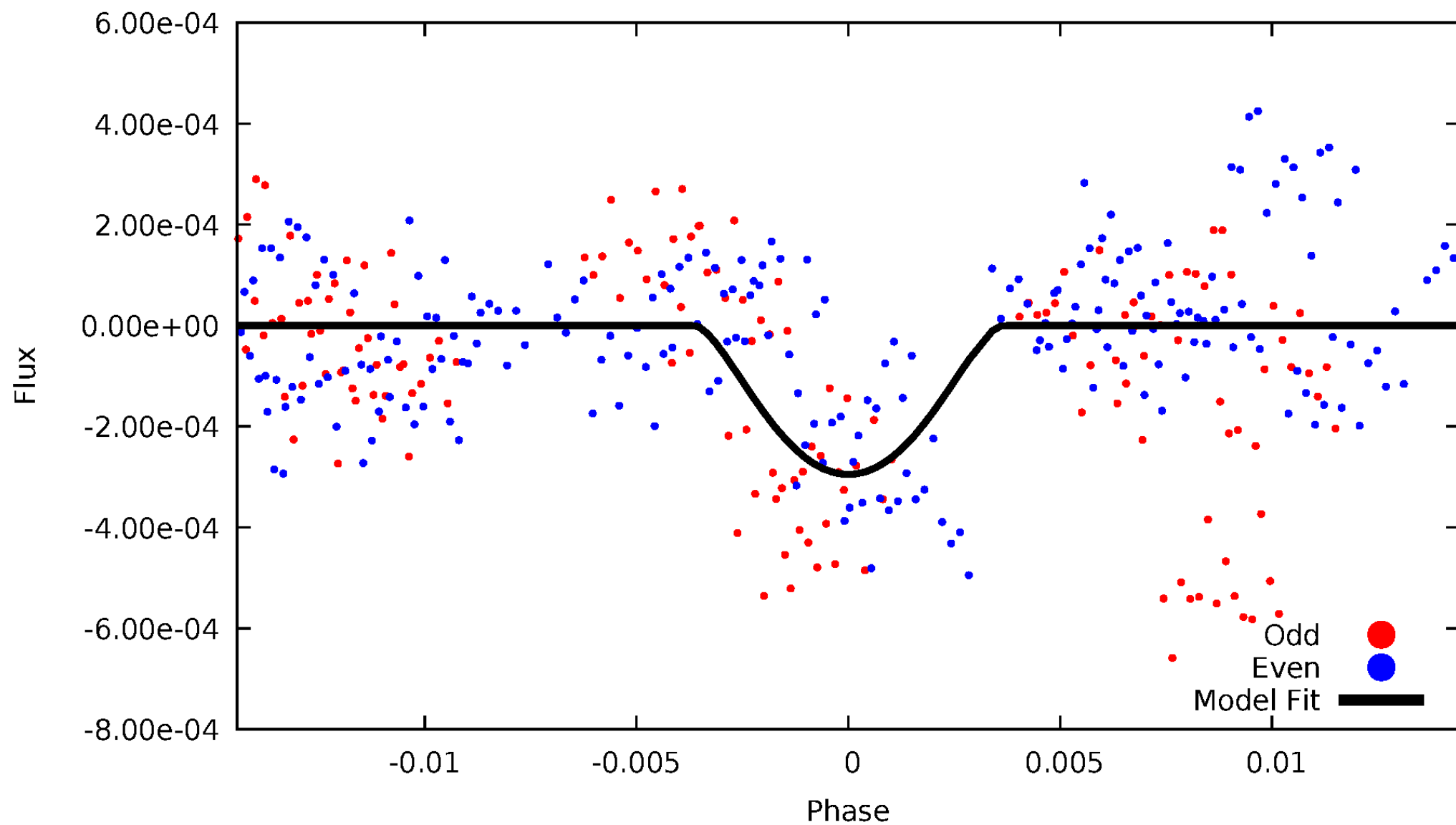


TCE 005941928-02



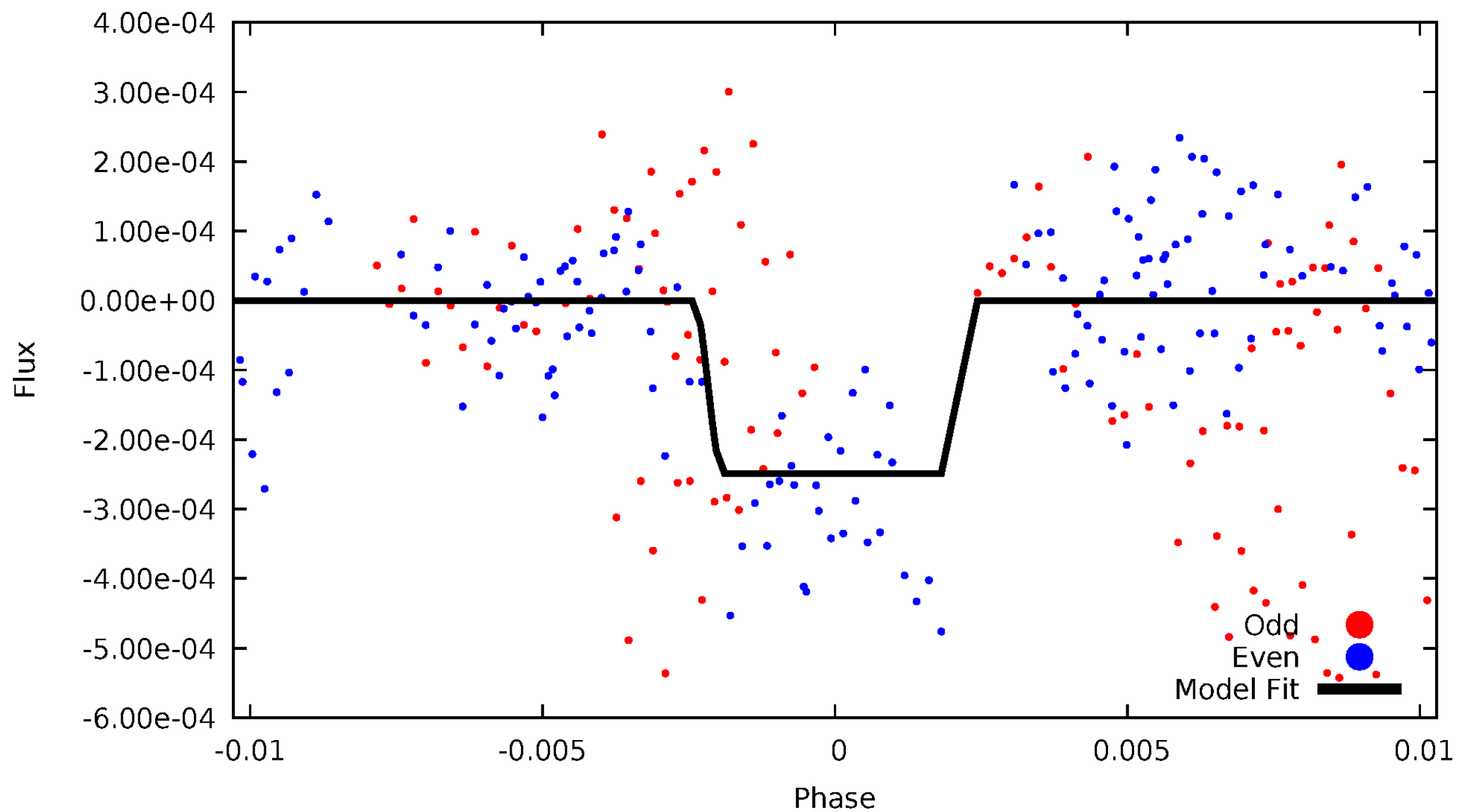
DV Odd/Even

TCE 005941928-02



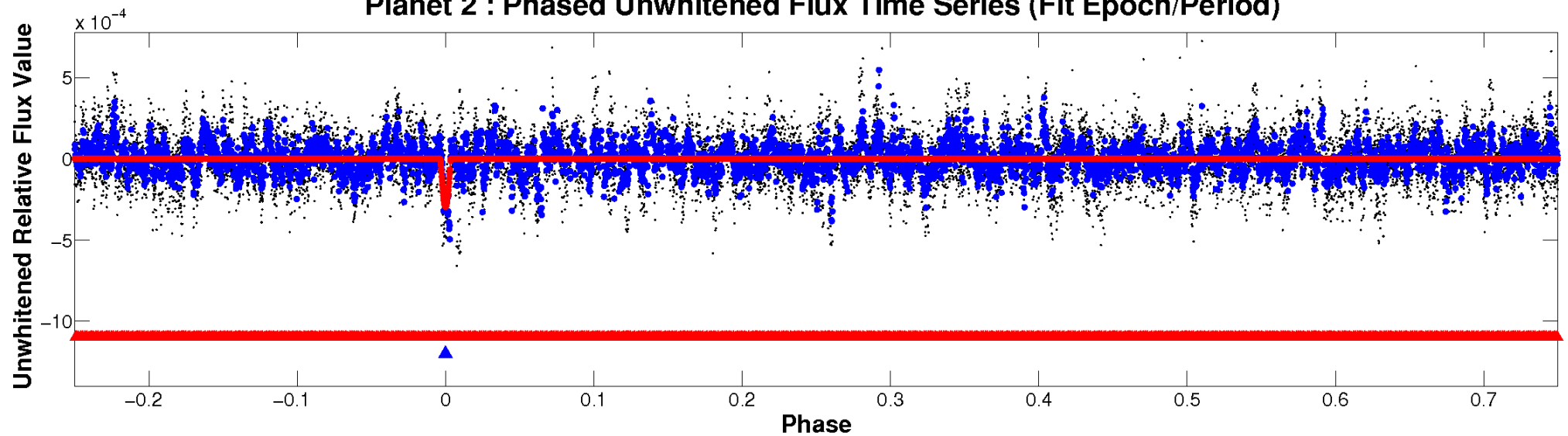
ALT Odd/Even

TCE 005941928-02

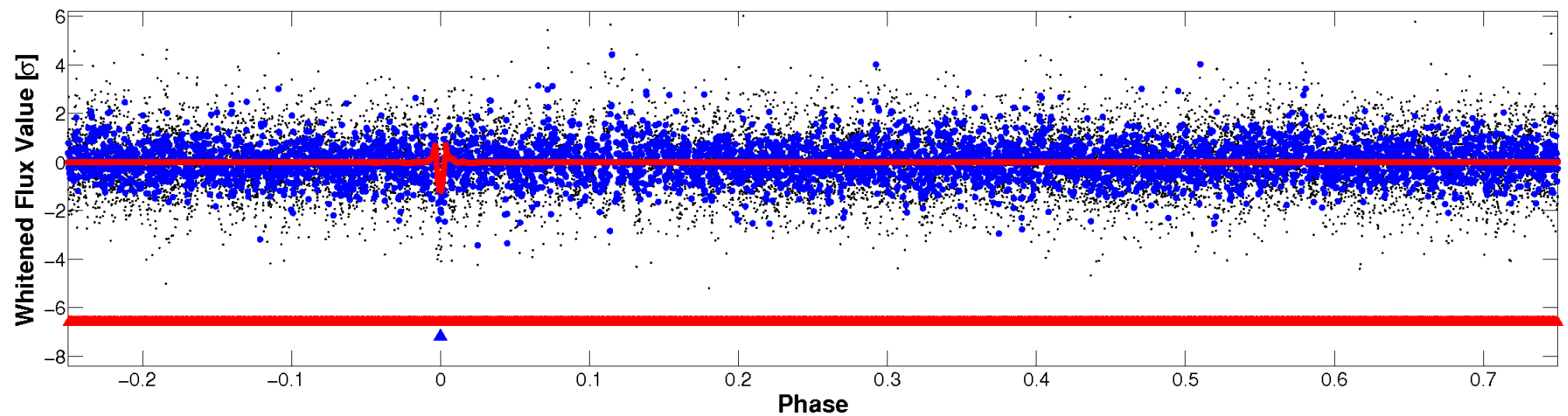


Non-Whitened Vs. Whitened Light Curve

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

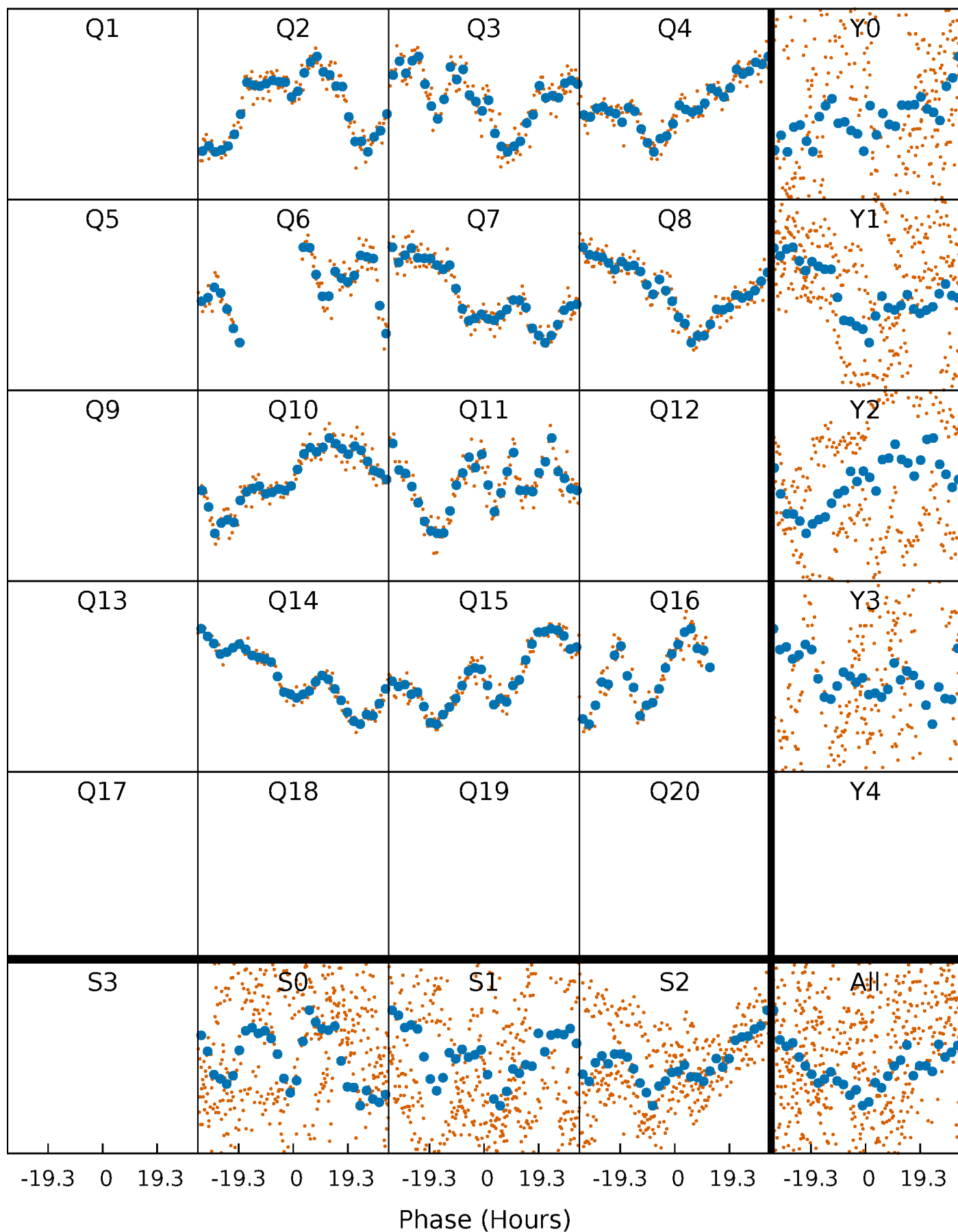


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



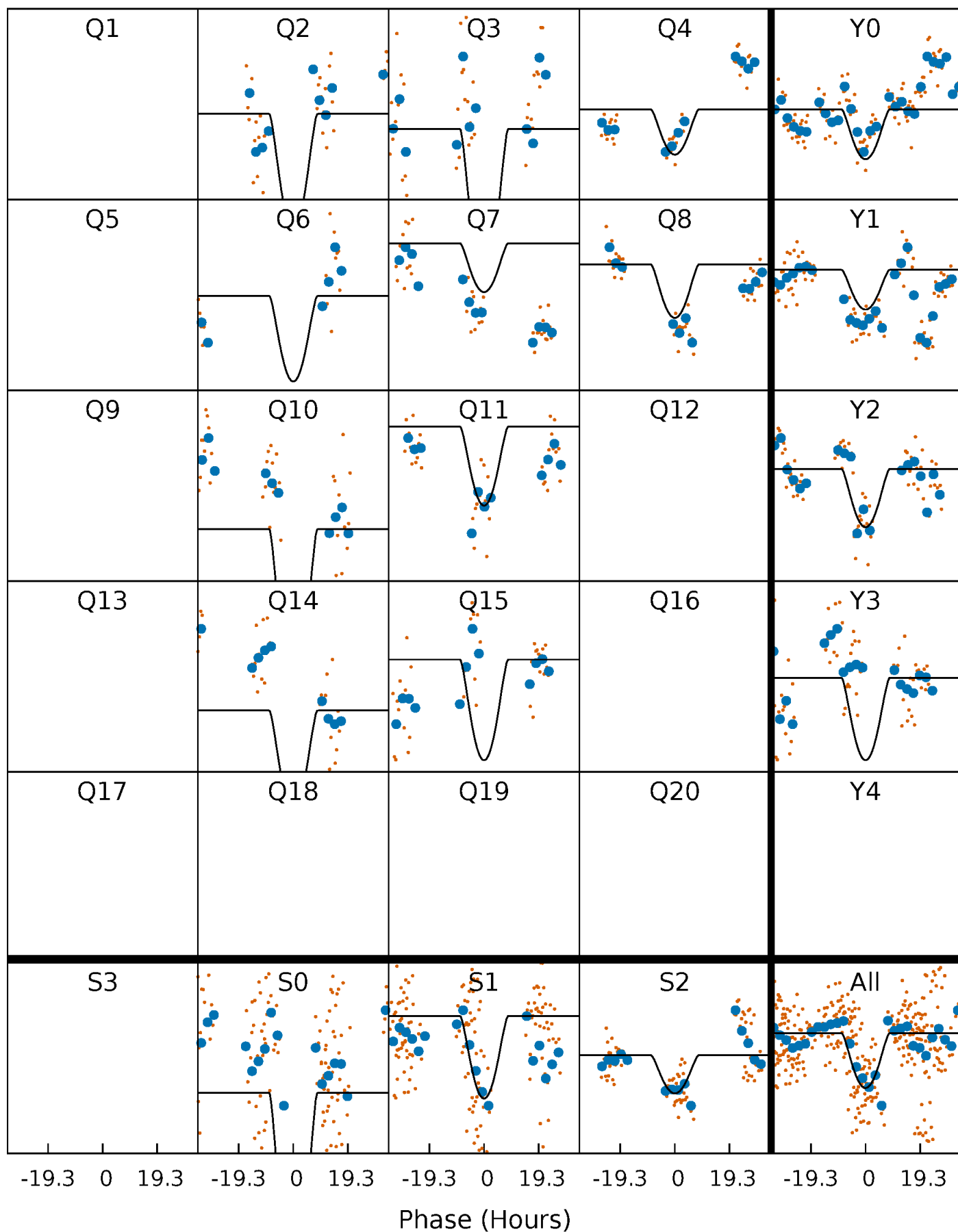
PDC Quarter-Phased Transit Curves

TCE 005941928-02 P= 97.527490 Days $T_0=208.974290$ (BKJD)



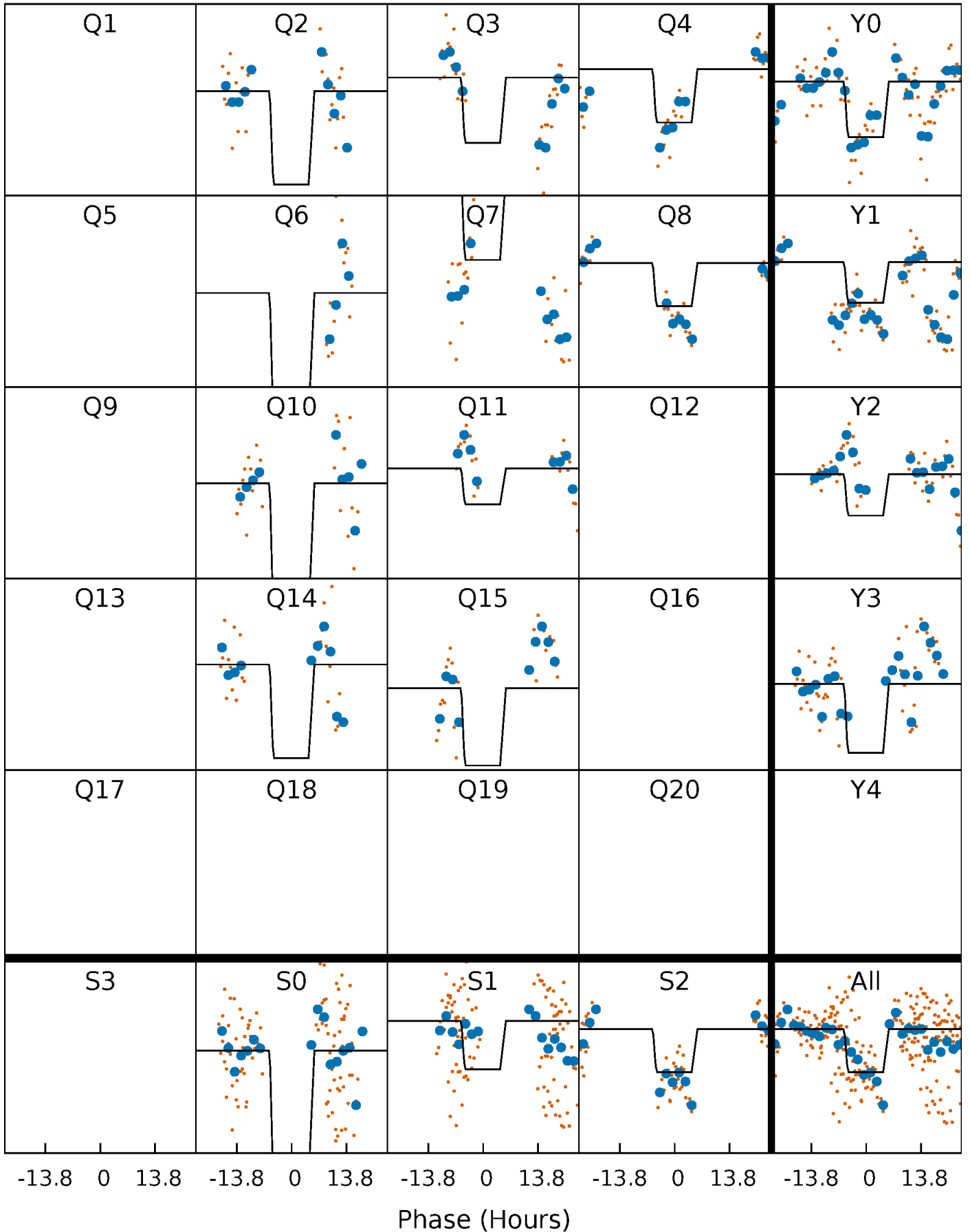
DV Quarter-Phased Transit Curves

TCE 005941928-02 P= 97.527490 Days $T_0=208.974290$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

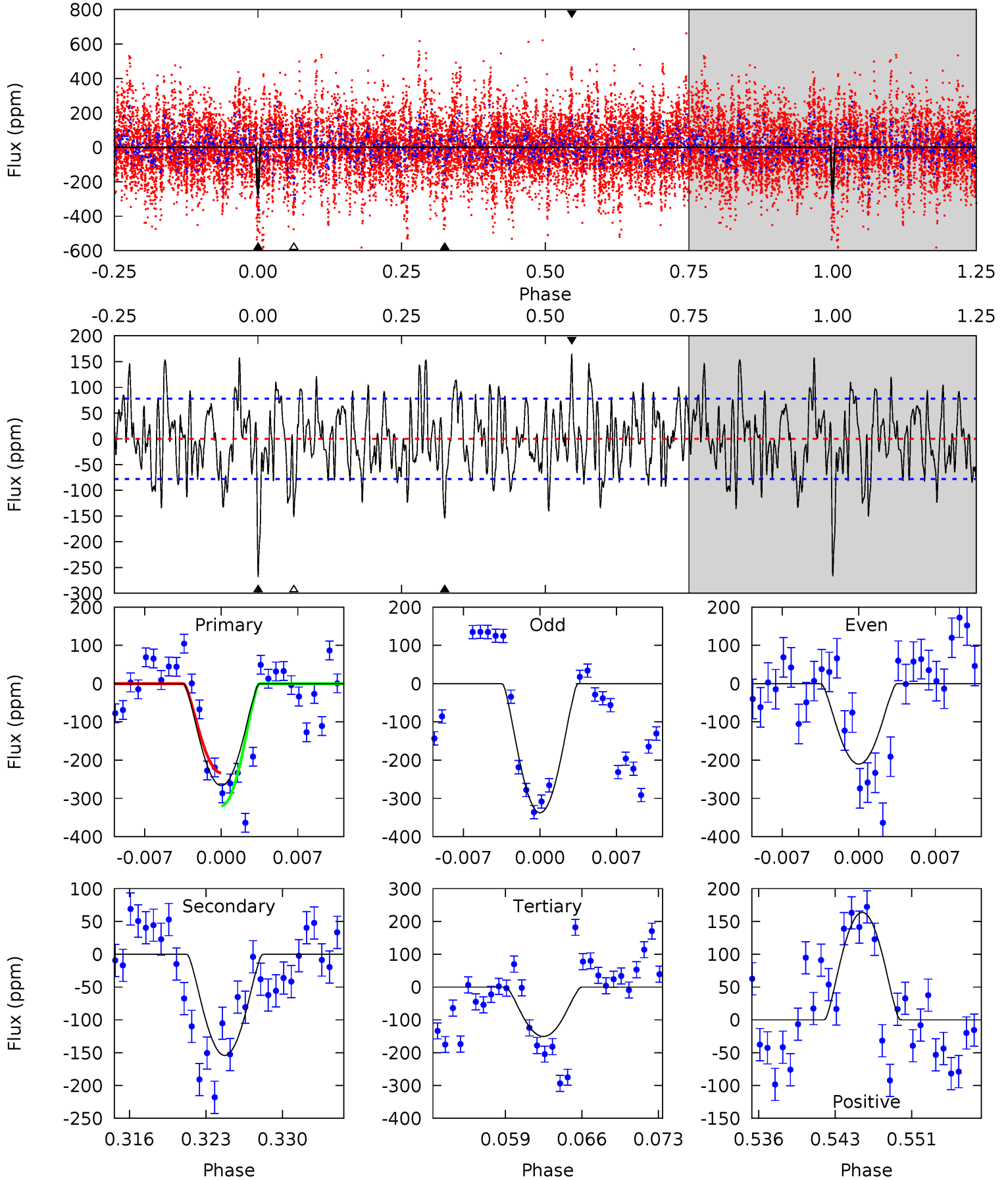
TCE 005941928-02 $P = 97.538776$ Days $T_0 = 209.006610$ (BKJD)



DV Model-Shift Uniqueness Test

005941928-02, P = 97.527490 Days, E = 111.446800 Days

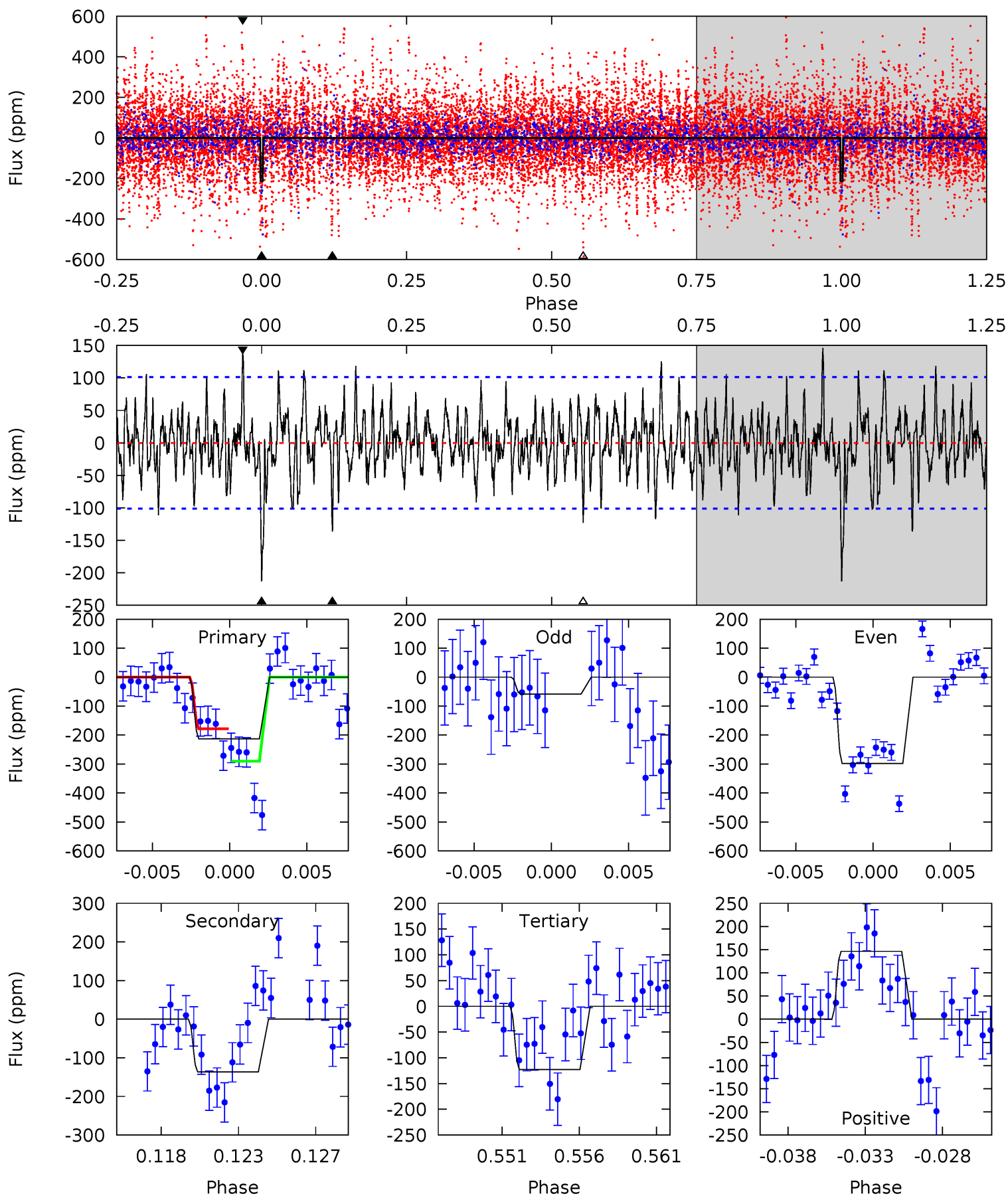
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.4	10.0	9.81	10.7	5.09	2.68	3.73	7.56	6.70	0.23	-0.62	4.13	-3.07	0.38	2.62



Alt Model-Shift Uniqueness Test

005941928-02, P = 97.538776 Days, E = 111.467834 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.9	6.97	6.26	7.47	5.17	2.83	1.98	4.61	3.40	0.70	-0.51	5.81	0.68	0.41	2.63



Stellar Parameters For KIC 005941928

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	ρ_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6677^{+151}_{-202}	$3.961^{+0.266}_{-0.114}$	$-0.440^{+0.300}_{-0.250}$	$1.896^{+0.428}_{-0.571}$	$1.200^{+0.211}_{-0.172}$	$0.248^{+0.411}_{-0.083}$
	+2%/-3%	+7%/-3%	+68%/-57%	+23%/-30%	+18%/-14%	+166%/-34%
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 005941928-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-154 ± 15	$13.49^{+13.32}_{-9.22}$	836^{+53}_{-62}	3384^{+1766}_{-611}	94^{+812}_{-71}
Alt.	-136 ± 20	$12.17^{+12.40}_{-8.46}$	838^{+53}_{-71}	3422^{+1908}_{-632}	101^{+1007}_{-76}

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

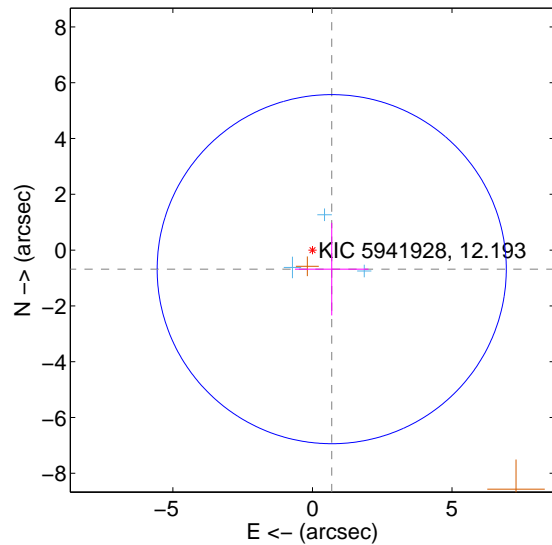
Supplemental centroid analysis for 005941928-02. Kepler magnitude: 12.19. Transit SNR 8.15

There are 3 quarters with good PRF difference image offsets

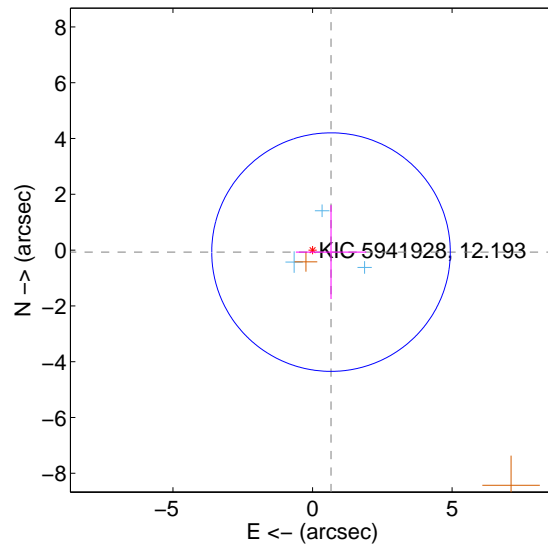
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.972 ± 2.085	0.47	-0.691 ± 1.318	-0.683 ± 1.659
PRF-fit source offset from KIC position	0.667 ± 1.425	0.47	-0.663 ± 1.259	-0.072 ± 1.681
photometric centroid source offset	0.06 ± 0.34	0.18	0.01 ± 0.37	0.06 ± 0.34

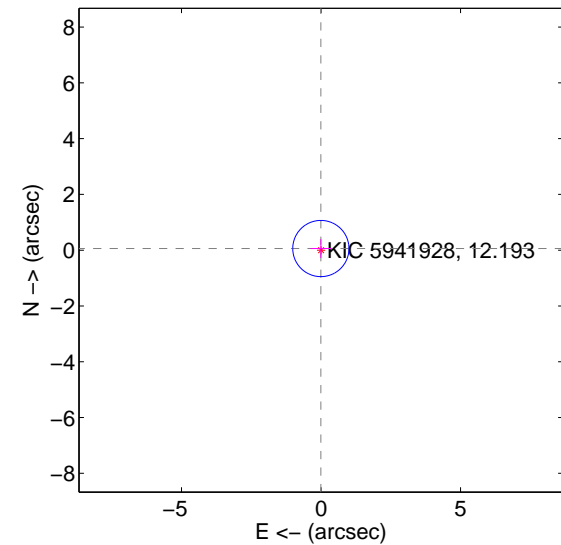
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

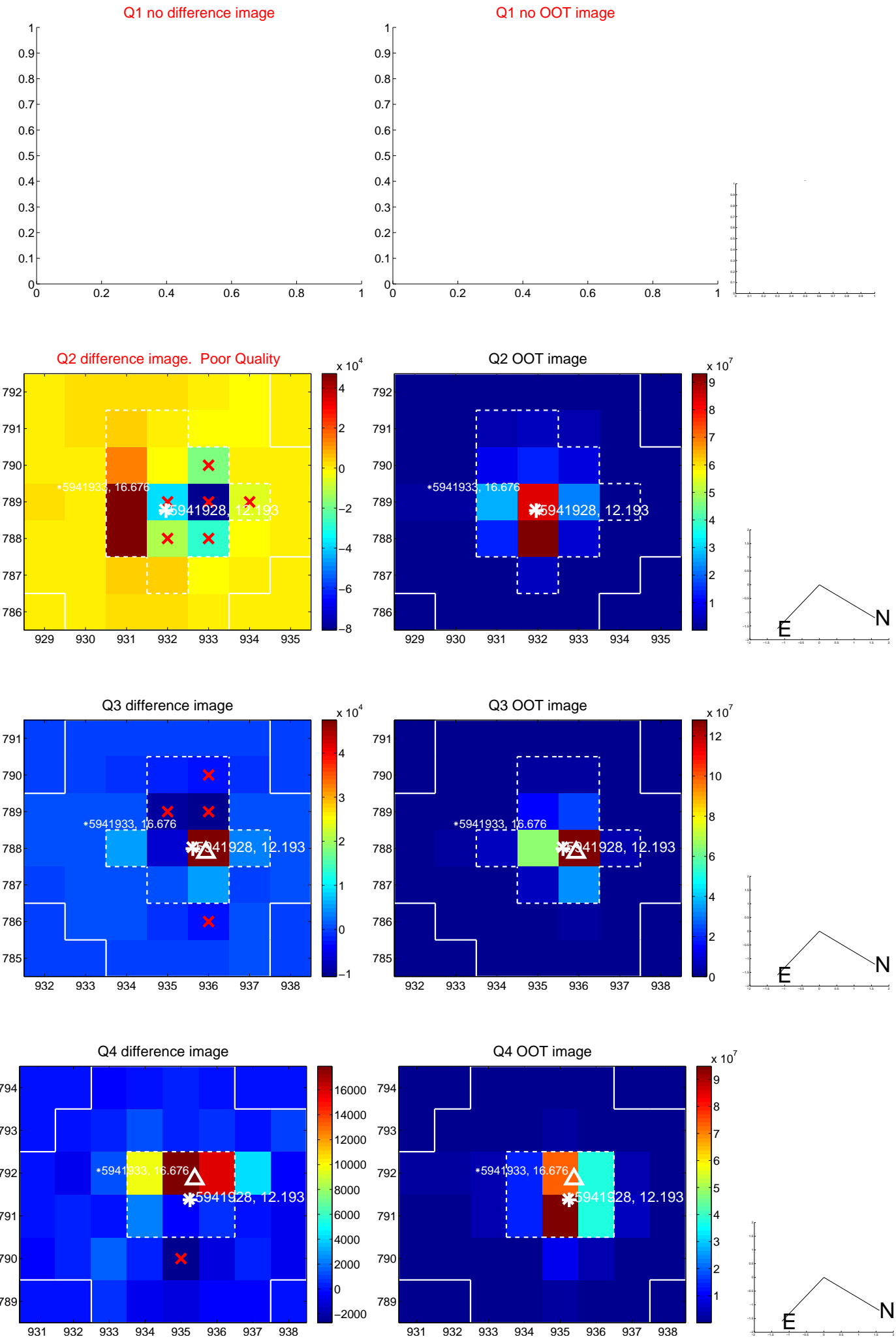


offset from photometric centroids

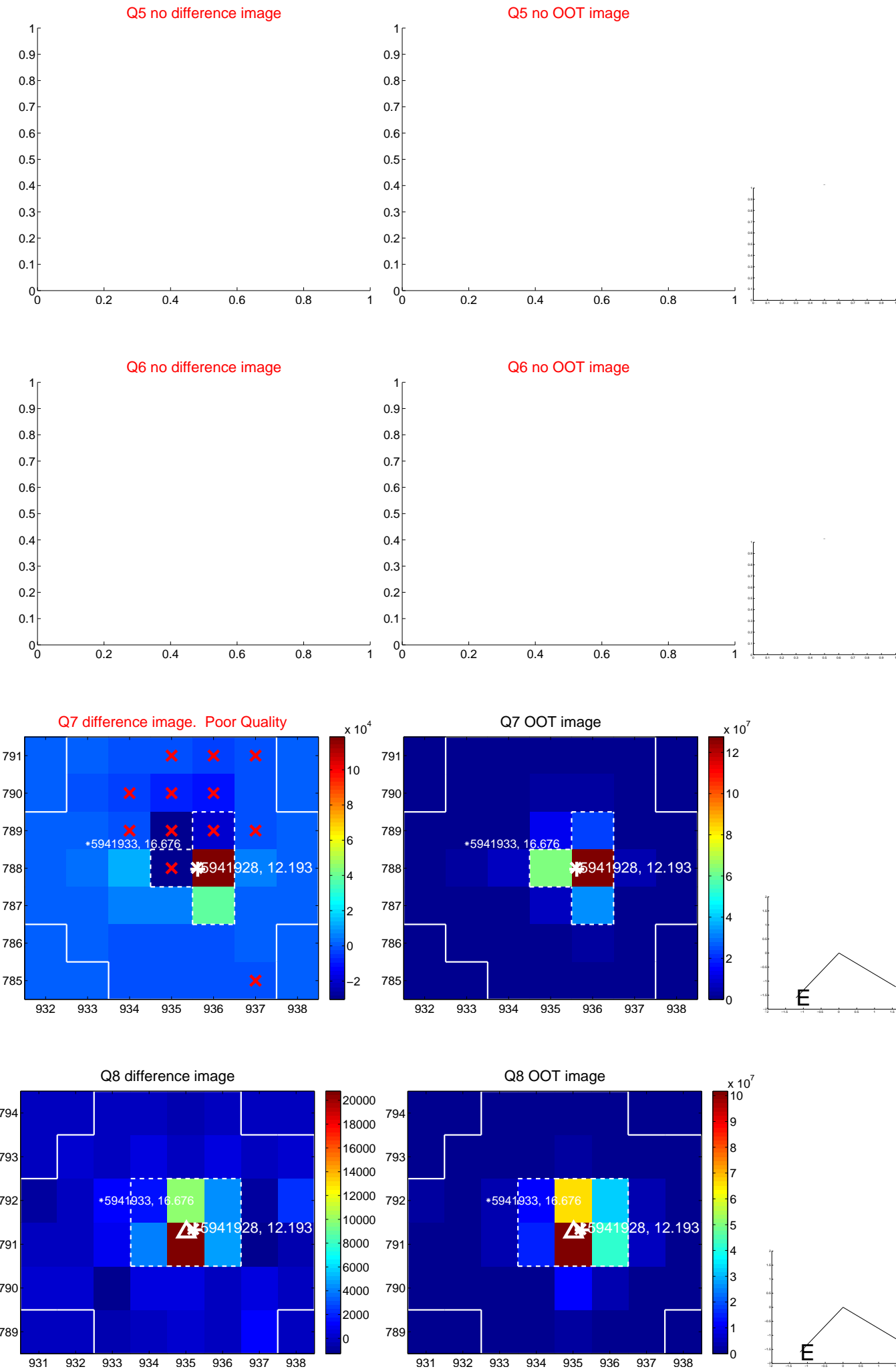


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

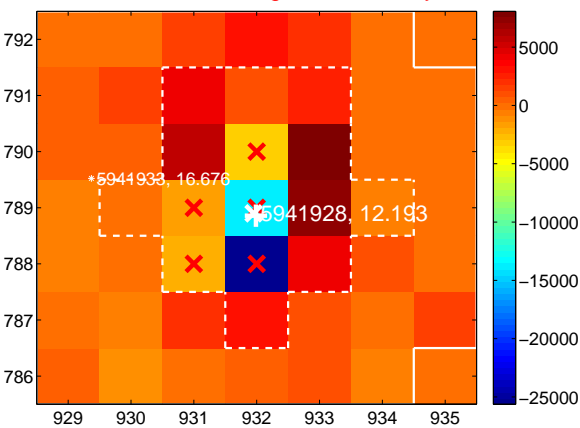
Q9 no difference image



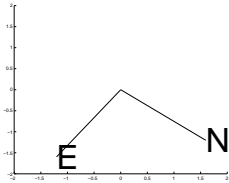
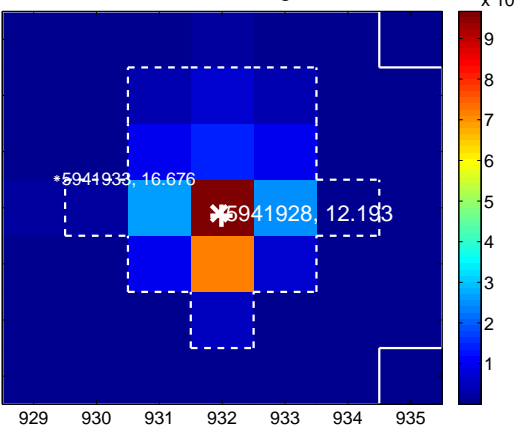
Q9 no OOT image



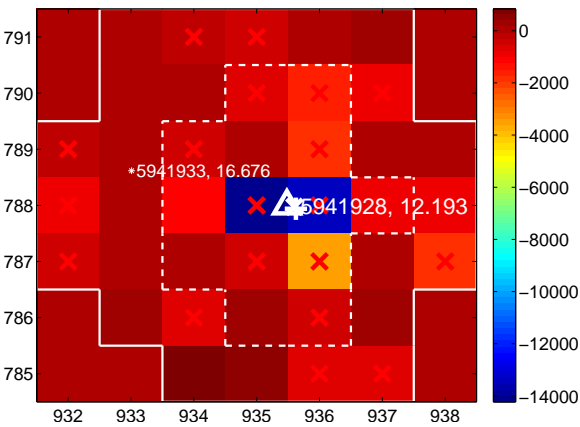
Q10 difference image. Poor Quality



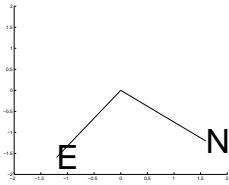
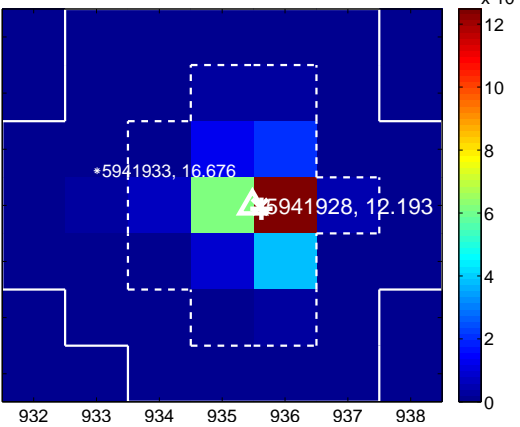
Q10 OOT image



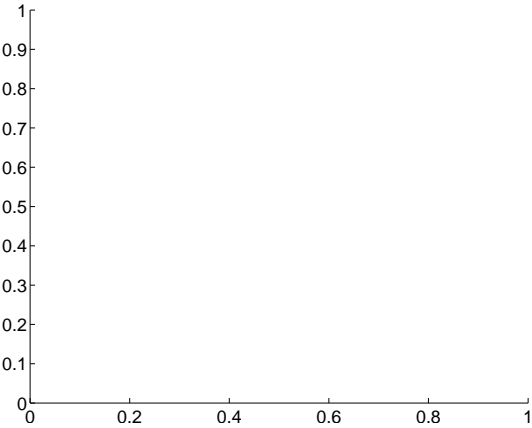
Q11 difference image. Poor Quality



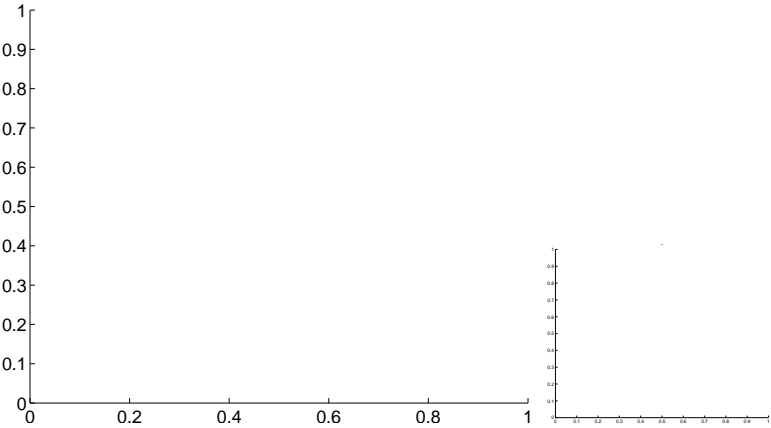
Q11 OOT image



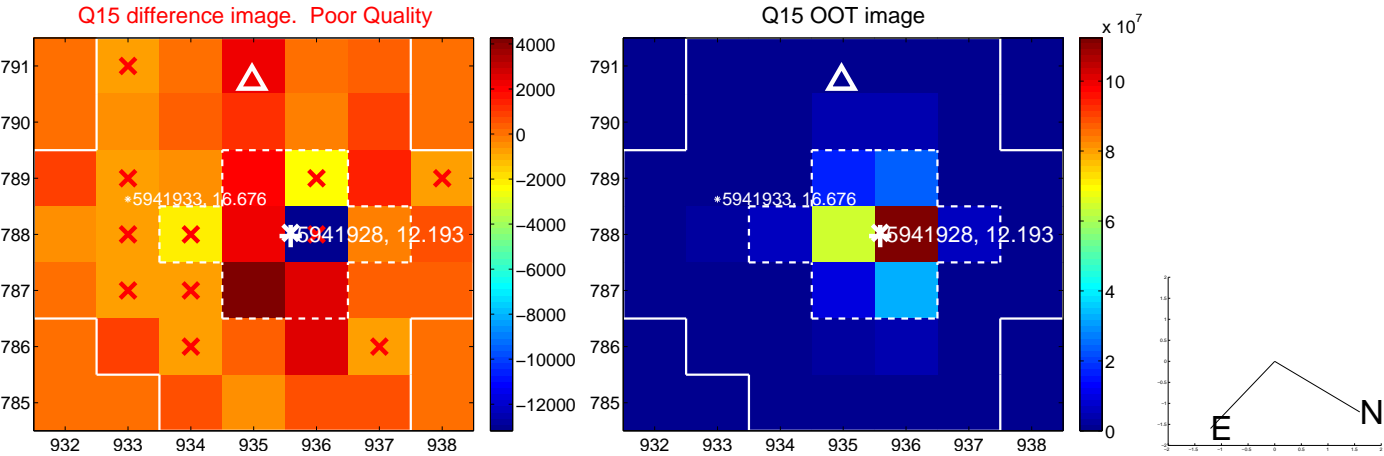
Q12 no difference image



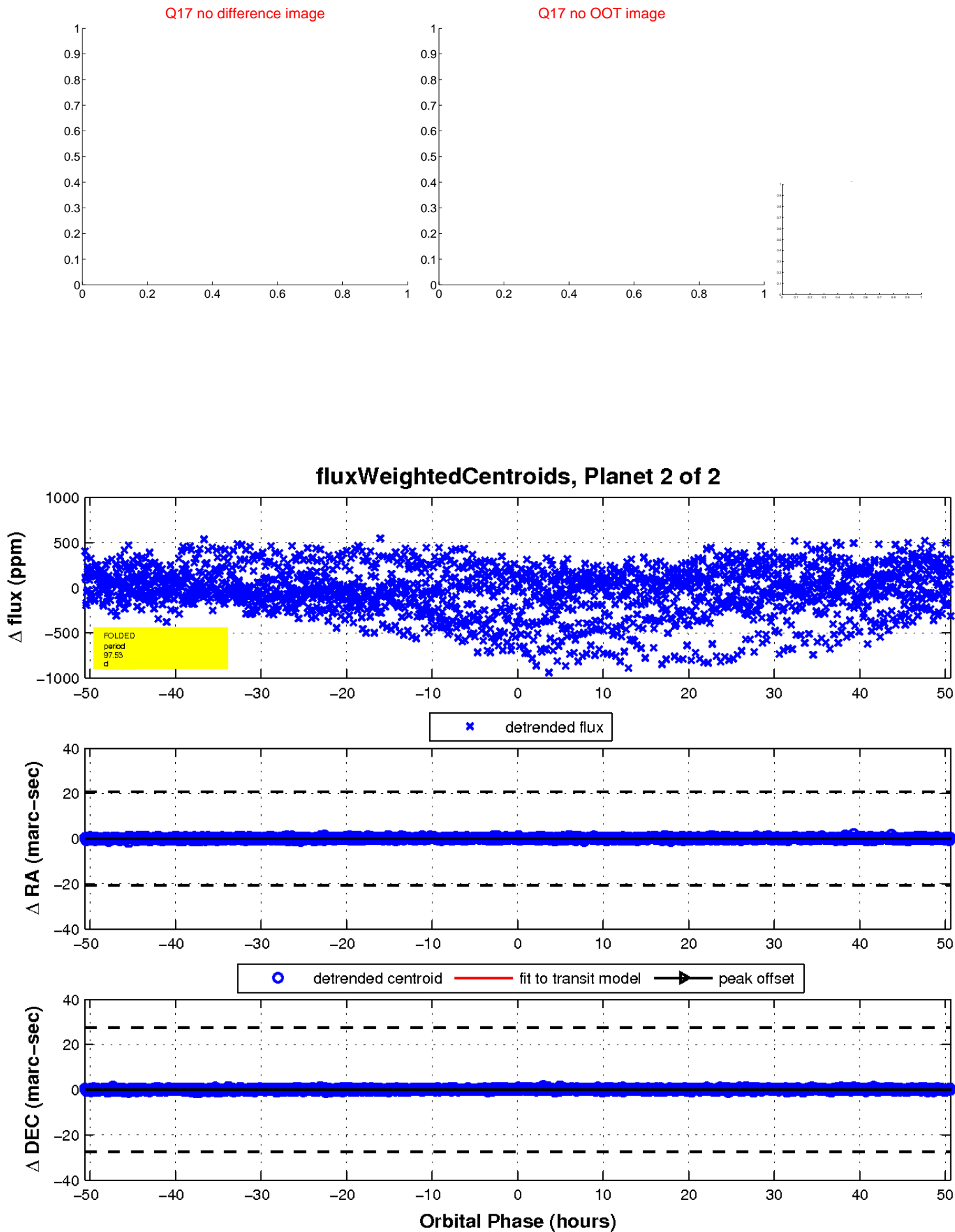
Q12 no OOT image



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

