

KIC 006932987

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})
006932987-01	OBS	1366.01	19.253989	145.532126	984.2	4.802	38.6	41.8	0.94	5798	3.25	44.23
006932987-02	OBS	1366.02	54.156183	172.364210	1112.3	4.360	22.1	24.5	0.94	5798	3.80	11.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006932987-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
006932987-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT

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

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

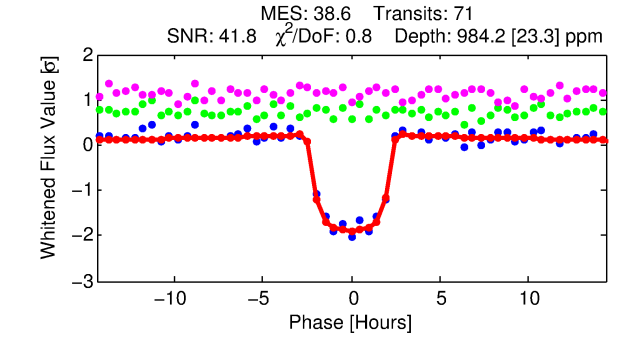
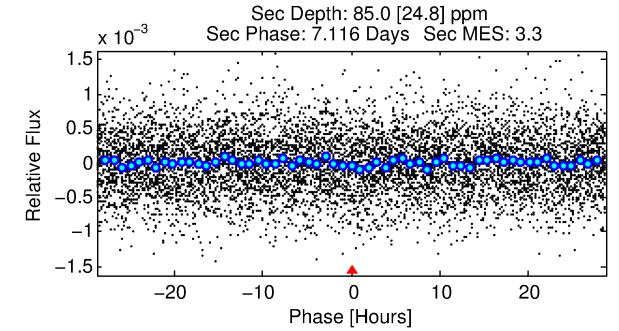
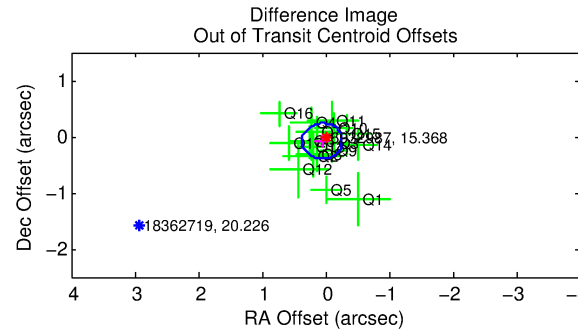
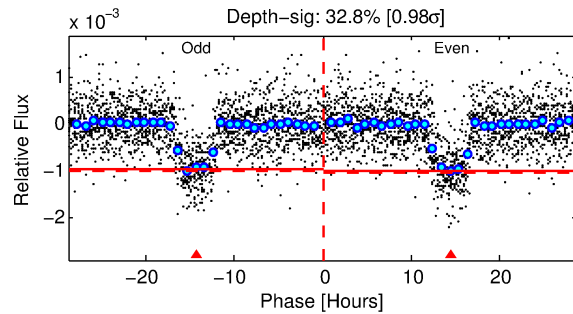
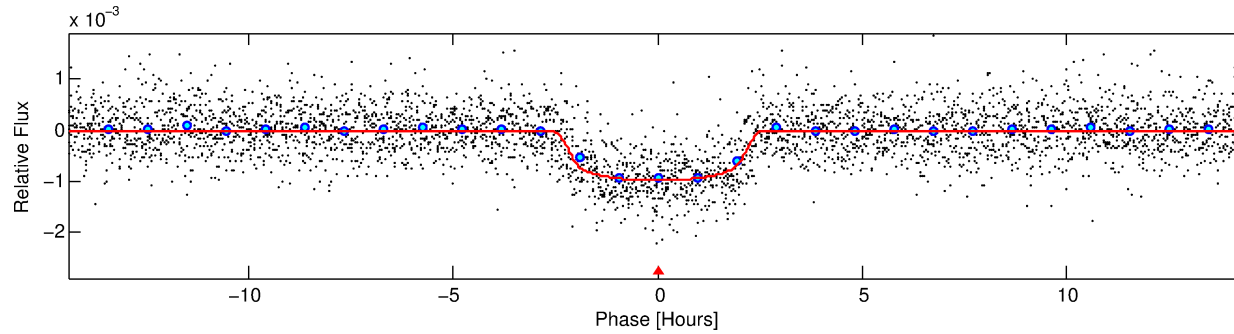
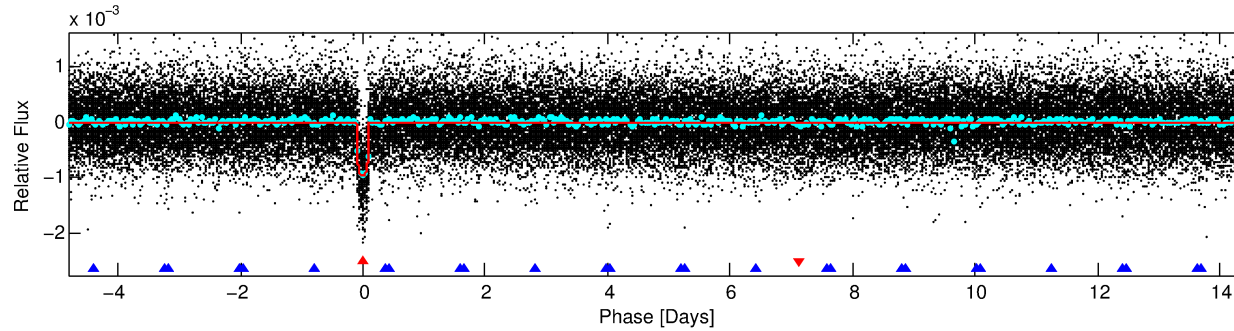
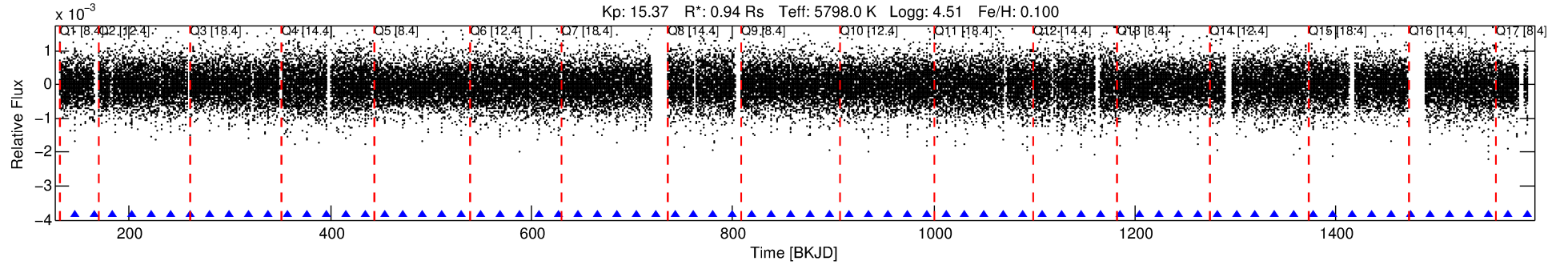
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006932987-01

No Significant Match Found

DV One-Page Summary

KIC: 6932987 Candidate: 1 of 2 Period: 19.254 d
KOI: K01366.01 Name: Kepler-293b Corr: 0.976



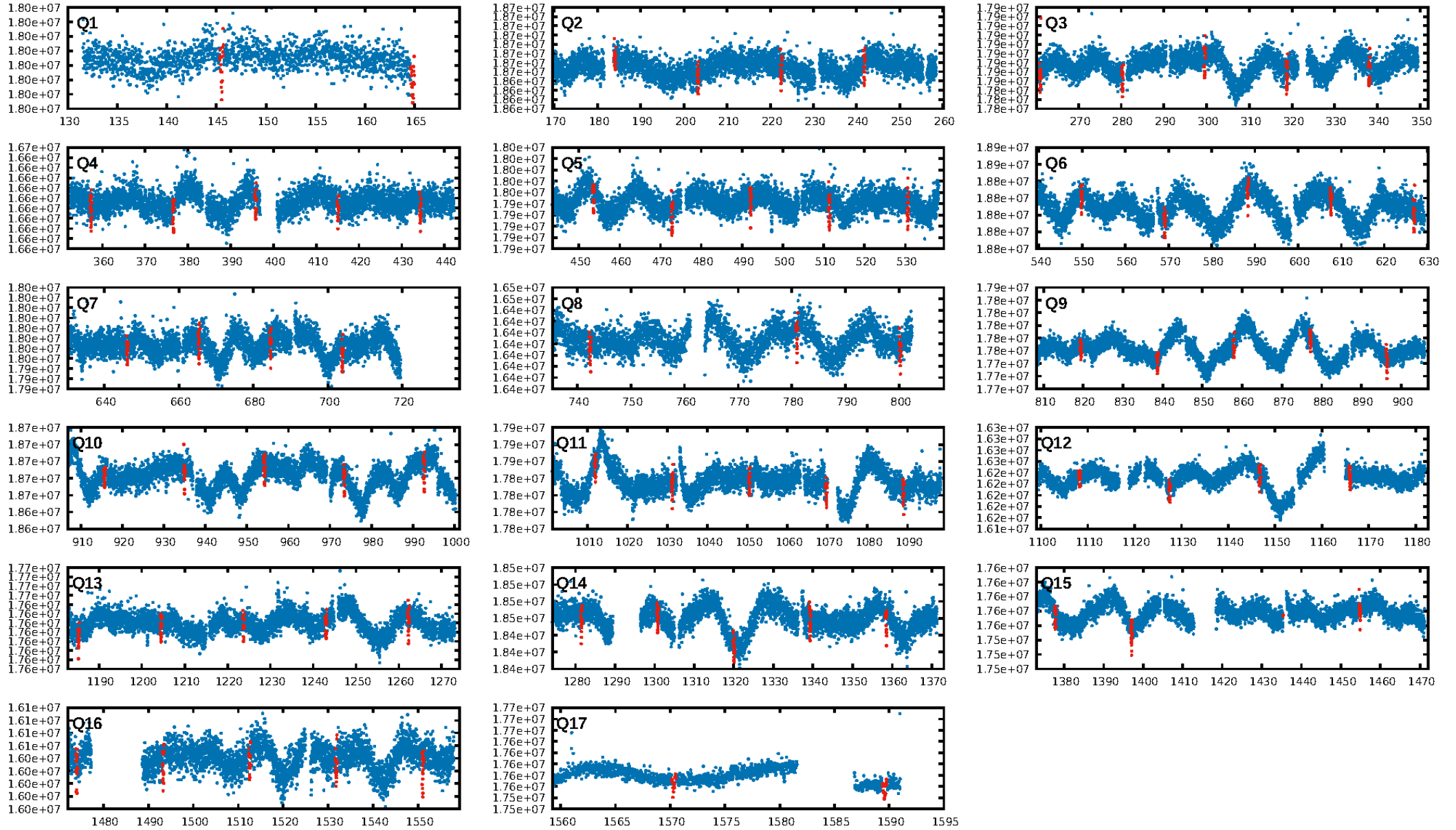
DV Fit Results:

Period = 19.25399 [0.00005] d
Epoch = 145.5321 [0.0021] BKJD
Rp/R* = 0.0316 [0.0031]
a/R* = 20.78 [8.81]
b = 0.78 [0.22]
Seff = 44.23 [17.29]
Teq = 658 [64] K
Rp = 3.24 [0.99] Re
a = 0.1424 [0.0354] AU
Ag = 90.01 [45.83] [1.94 σ]
Teffp = 3132 [294] K [8.22 σ]

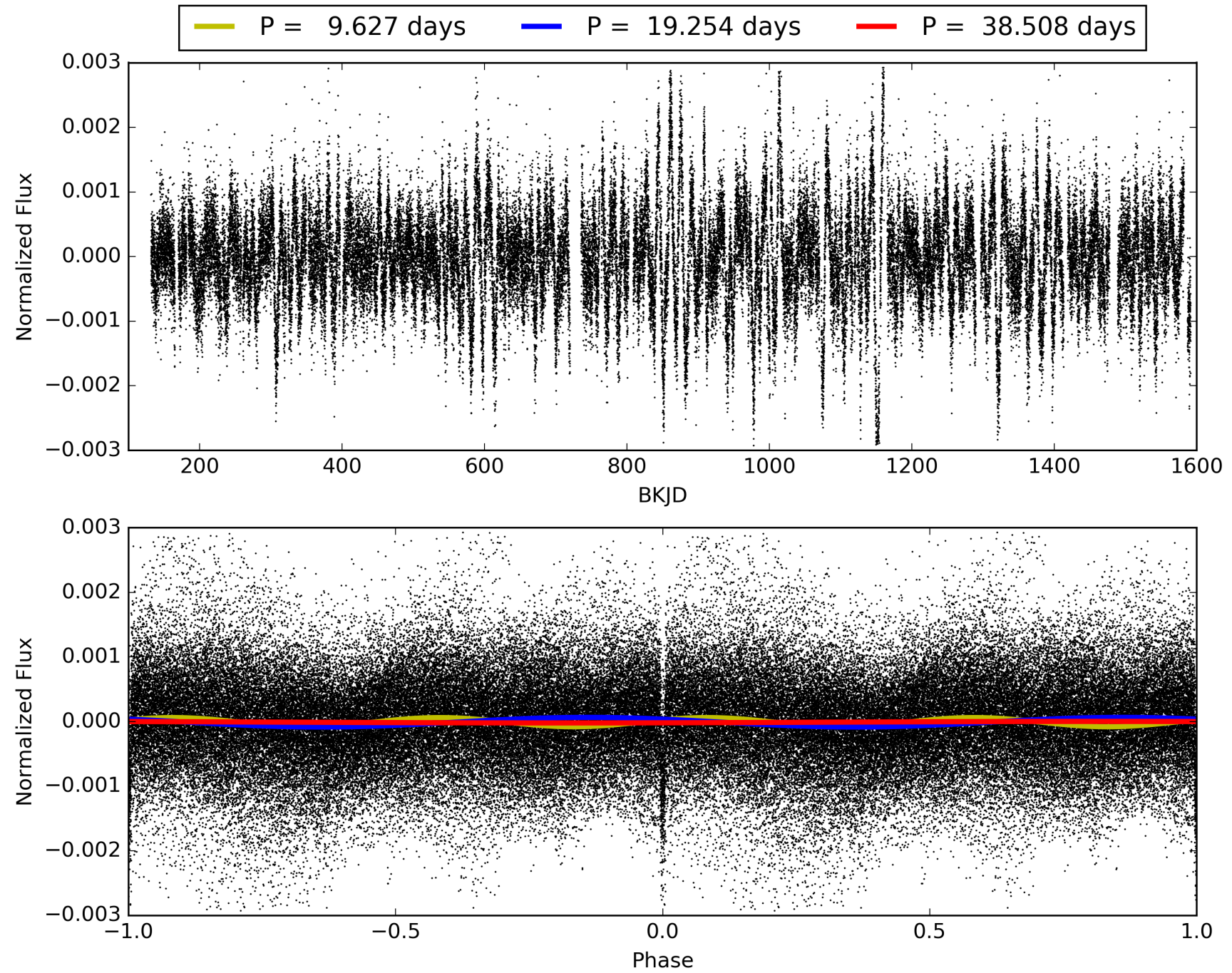
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [129.15 σ]
ModelChiSquare2-sig: 90.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.00e-300
RollingBand-fgt: 1.00 [67/67]
GhostDiagnostic-chr: 2.972
Centroid-sig: 1.8%
Centroid-so: 0.376 arcsec [1.34 σ]
OotOffset-rm: 0.095 arcsec [0.90 σ]
KicOffset-rm: 0.109 arcsec [1.04 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 006932987-01, PDC Light Curves

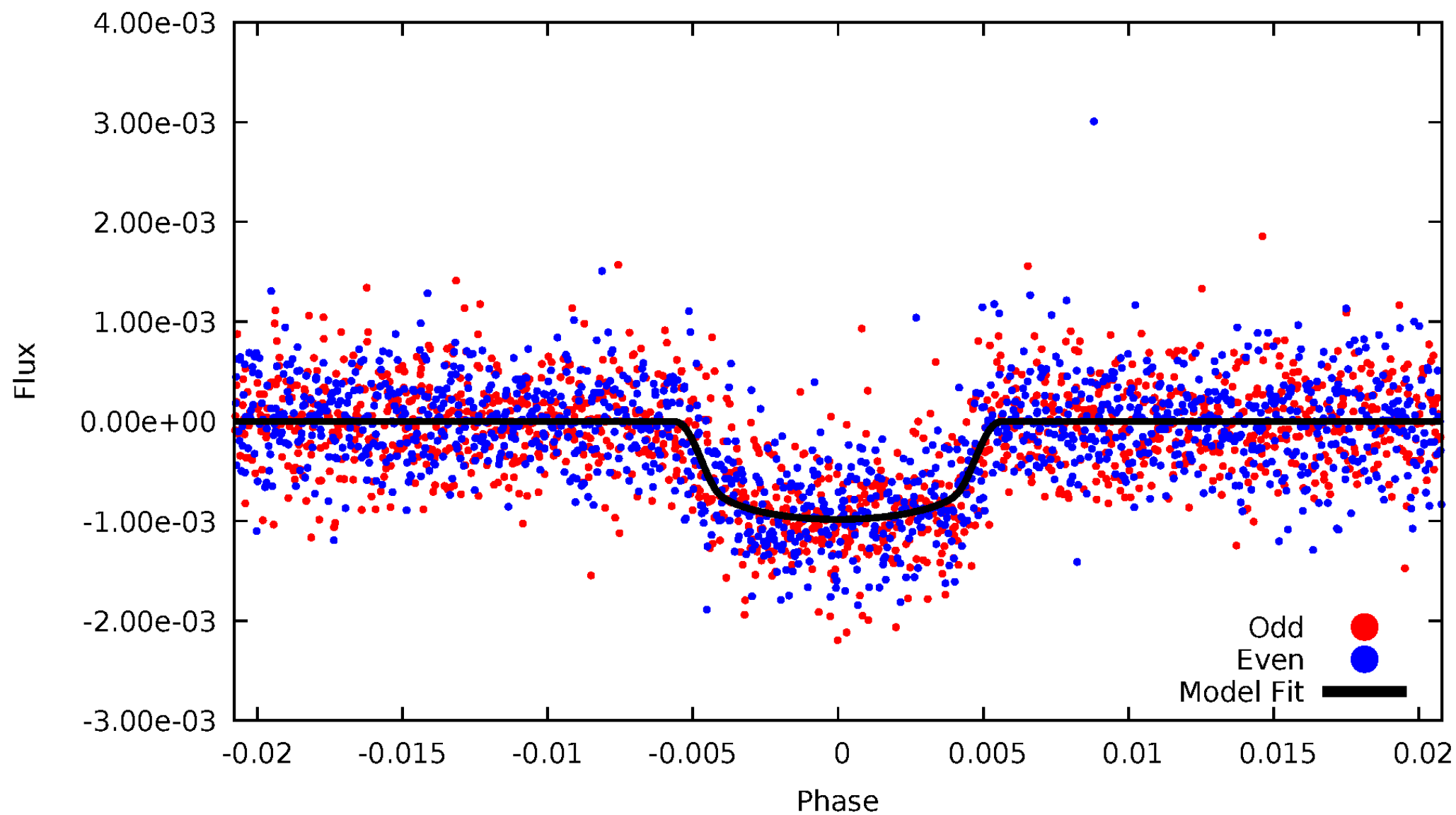


TCE 006932987-01



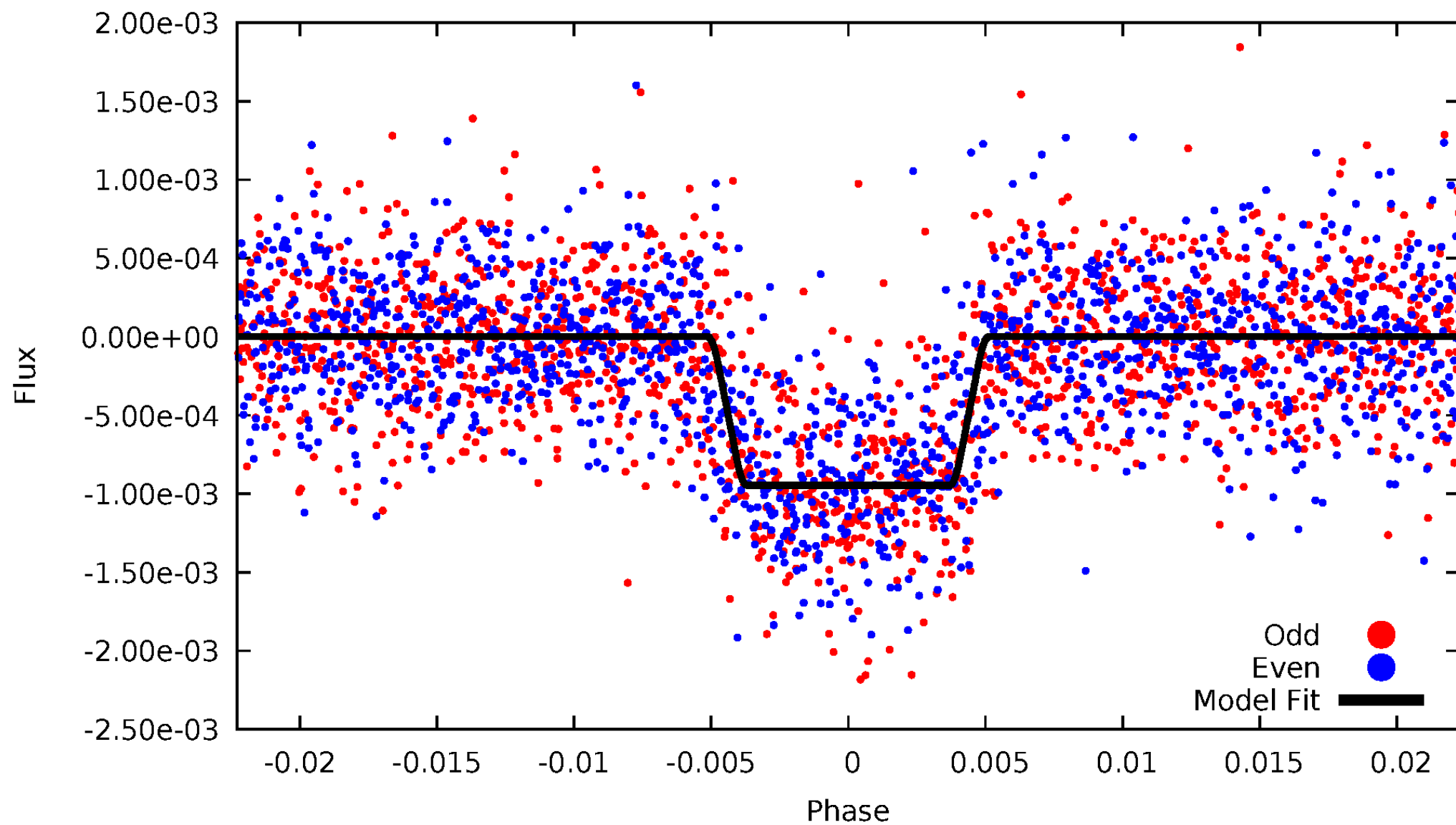
DV Odd/Even

TCE 006932987-01



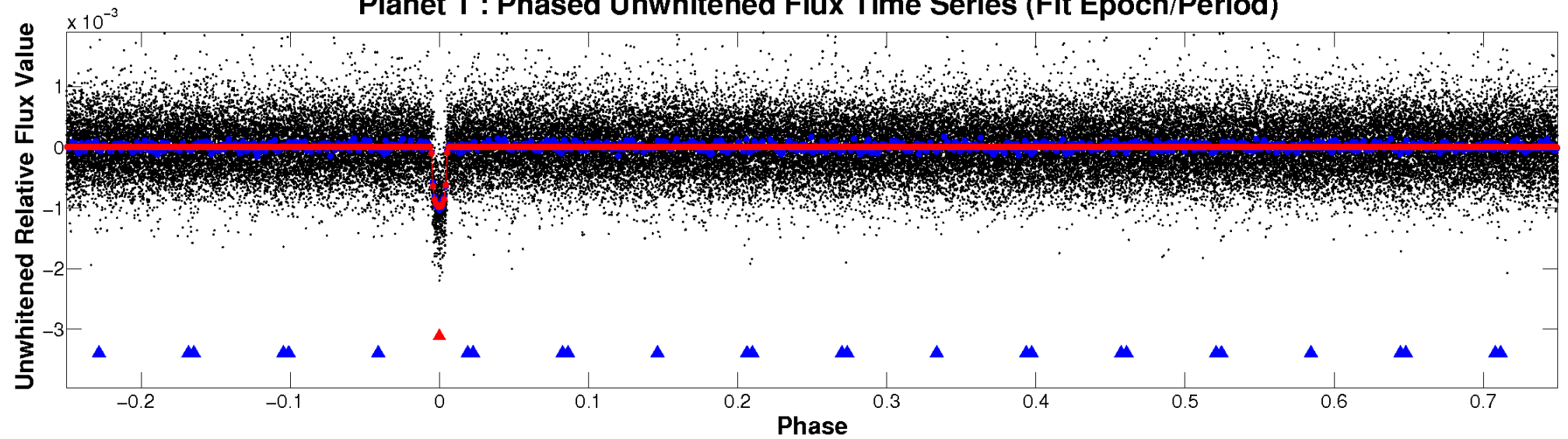
ALT Odd/Even

TCE 006932987-01

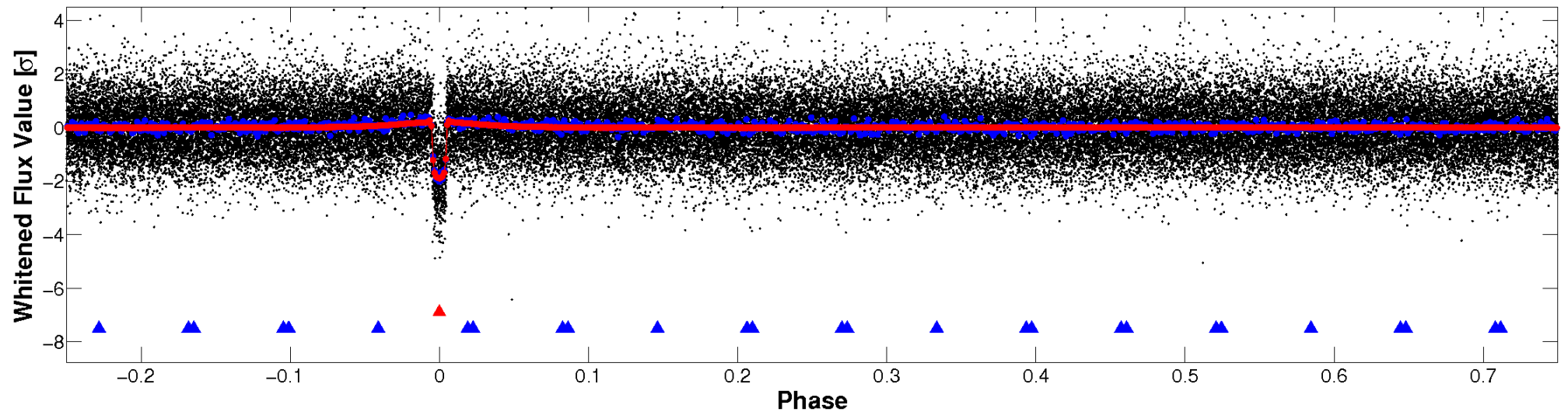


Non-Whitened Vs. Whitened Light Curve

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

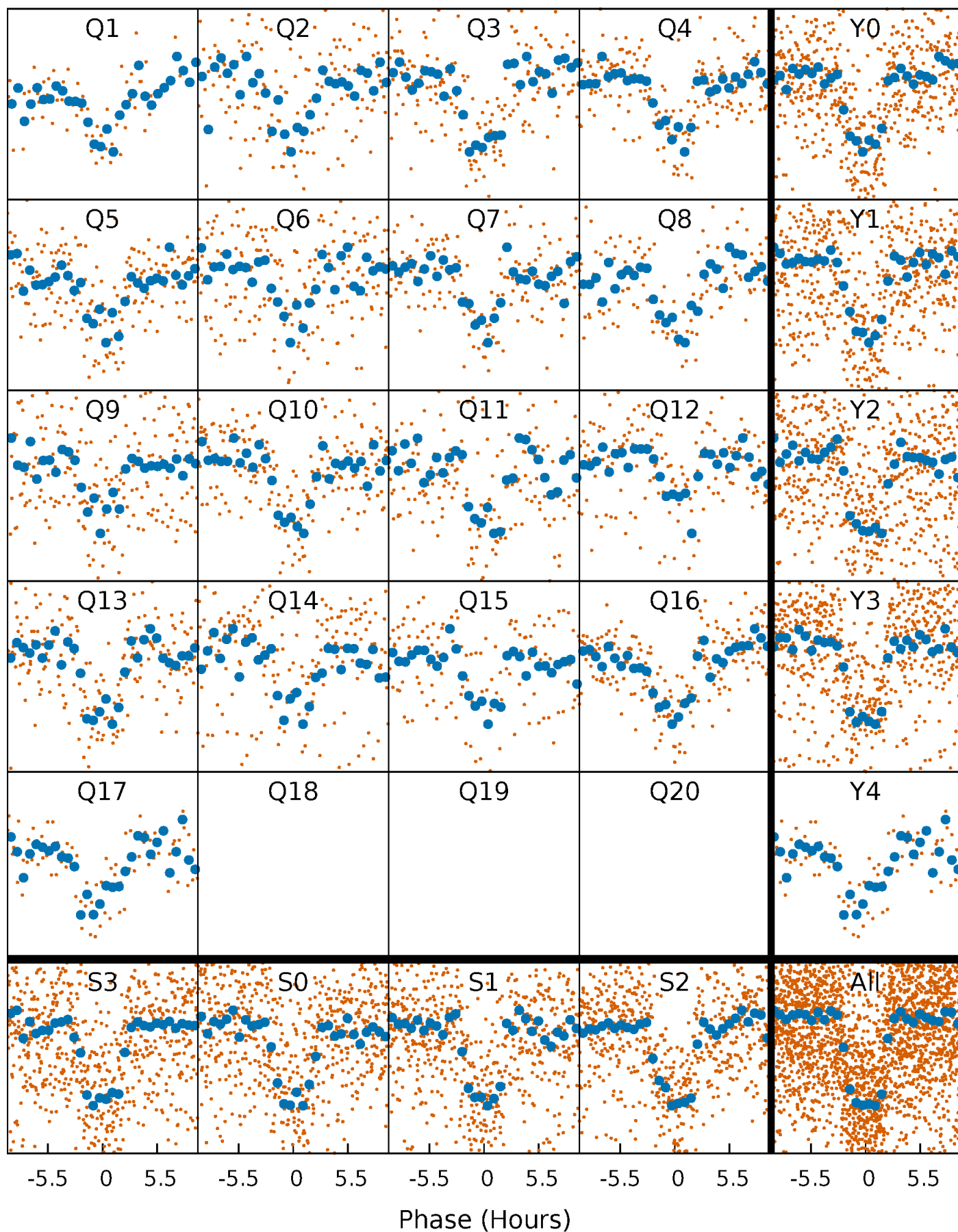


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



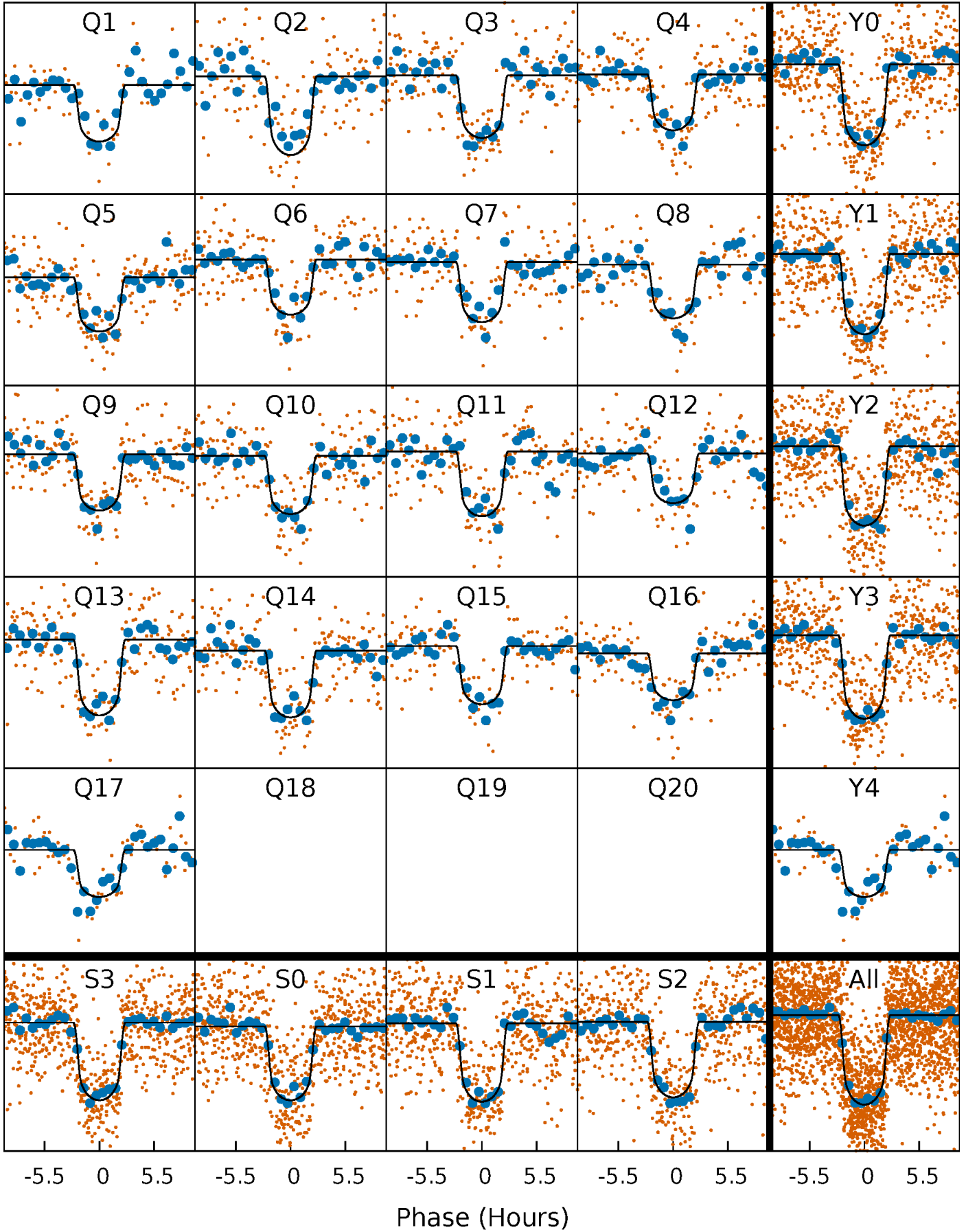
PDC Quarter-Phased Transit Curves

TCE 006932987-01 P= 19.253989 Days $T_0=145.532126$ (BKJD)



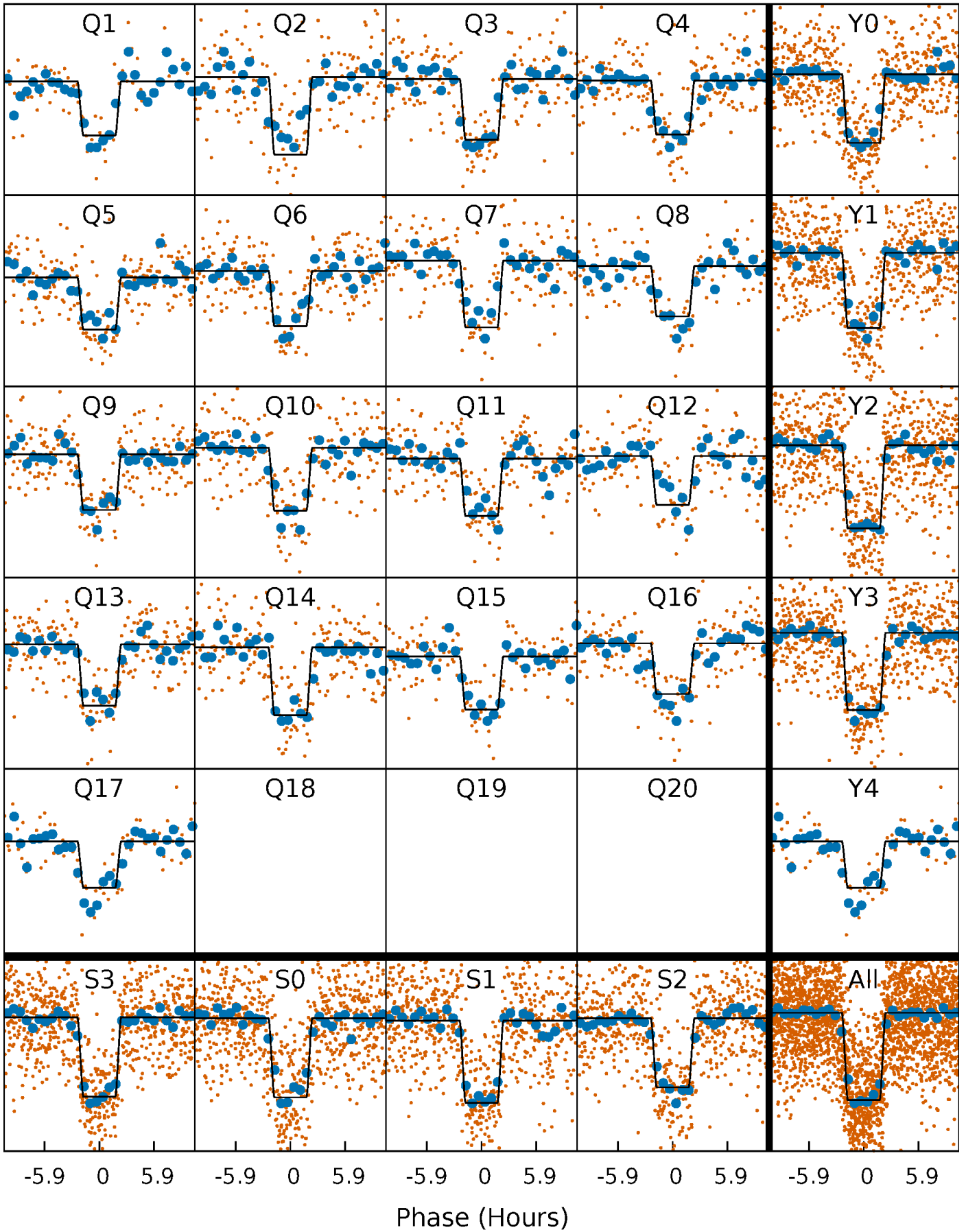
DV Quarter-Phased Transit Curves

TCE 006932987-01 P= 19.253989 Days $T_0=145.532126$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

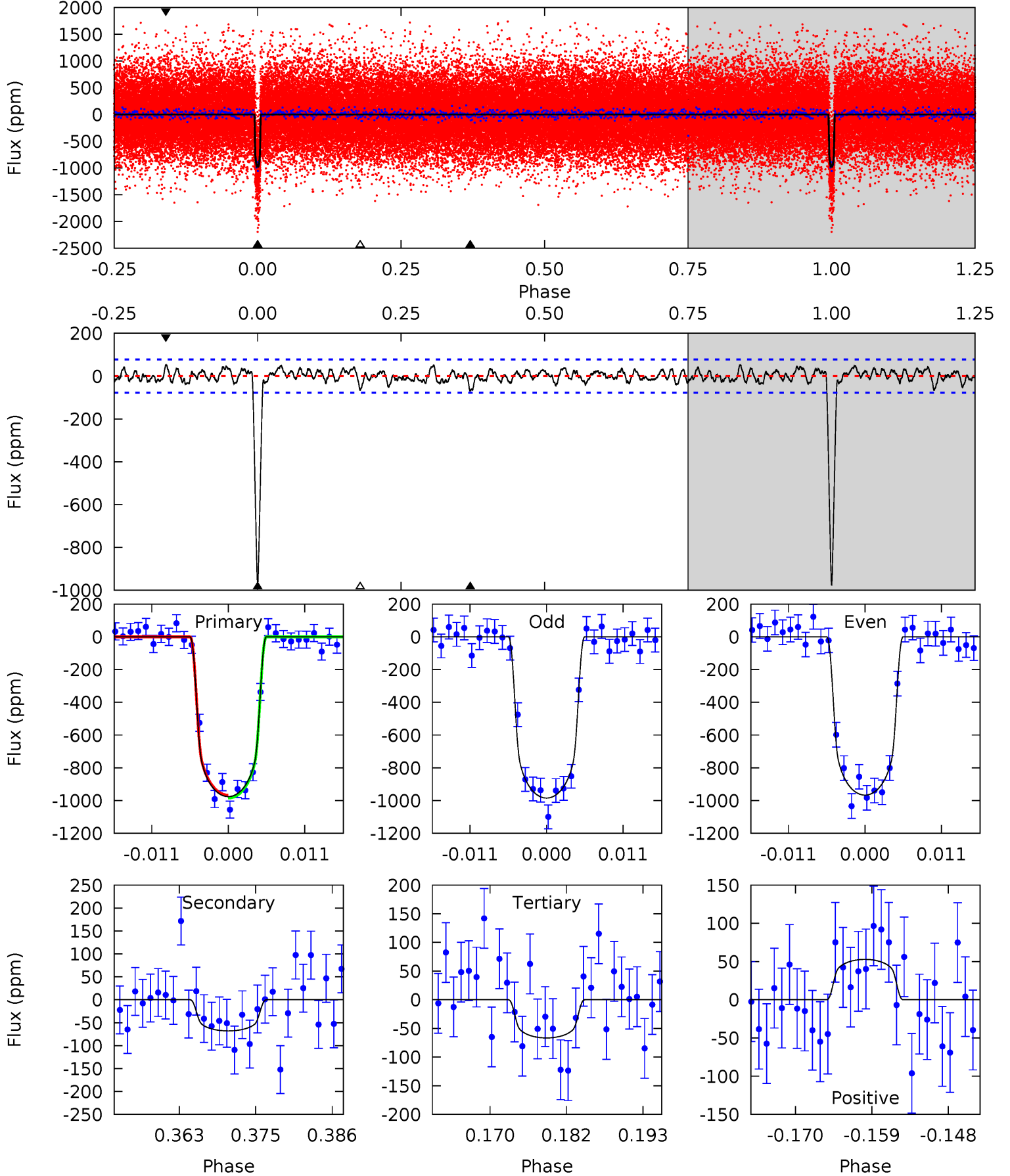
TCE 006932987-01 P= 19.253707 Days $T_0=145.543878$ (BKJD)



DV Model-Shift Uniqueness Test

006932987-01, $P = 19.253989$ Days, $E = 126.278137$ Days

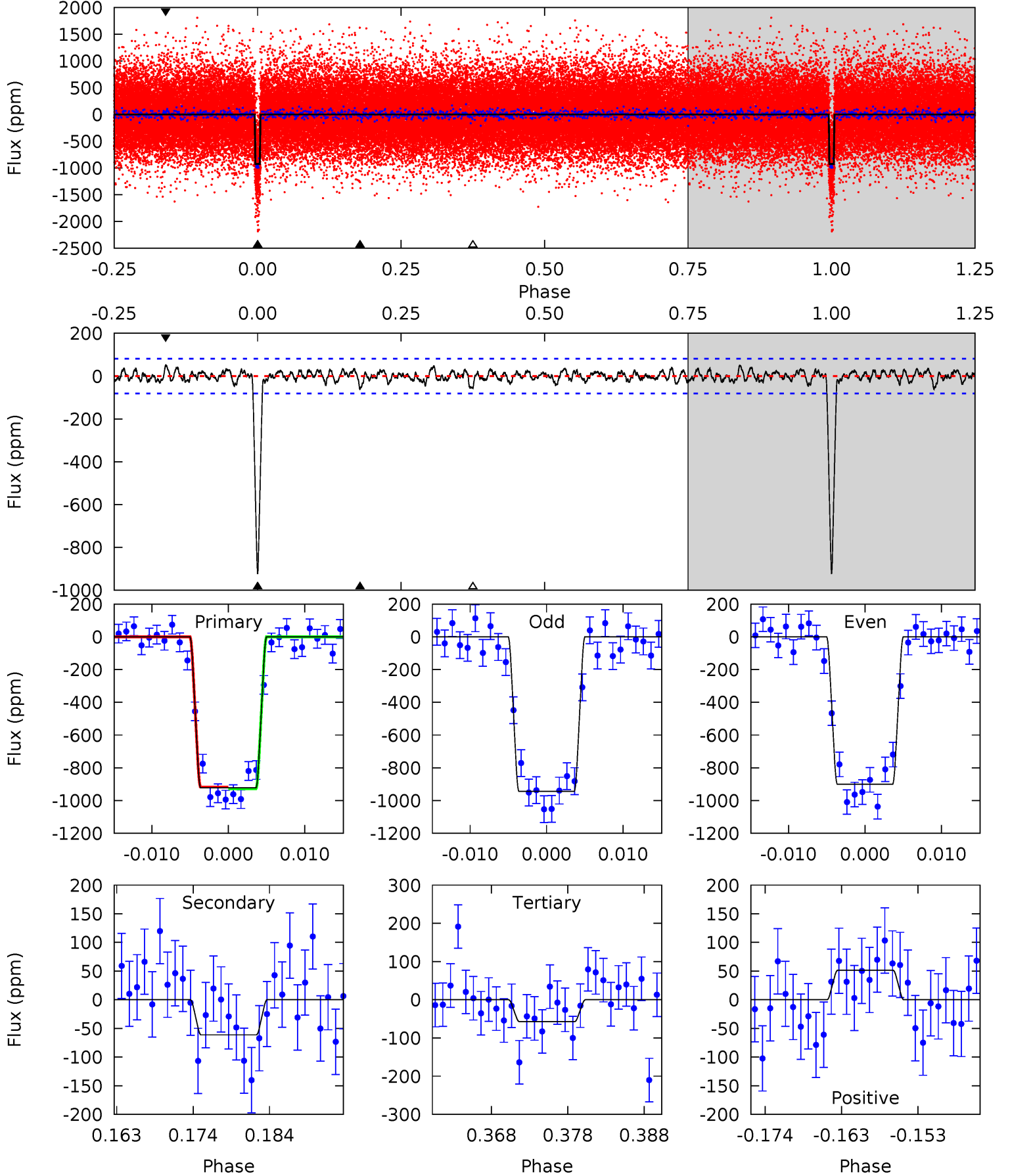
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
62.7	4.37	4.28	3.39	5.00	2.53	1.34	58.4	59.3	0.09	0.97	0.58	0.99	0.05	0.55



Alt Model-Shift Uniqueness Test

006932987-01, $P = 19.253707$ Days, $E = 126.290171$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
57.1	3.79	3.54	3.18	5.02	2.57	1.12	53.6	53.9	0.25	0.61	1.34	1.00	0.05	0.29



Stellar Parameters For KIC 006932987

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5798^{+156}_{-191}	$4.507^{+0.048}_{-0.204}$	$0.100^{+0.250}_{-0.300}$	$0.941^{+0.273}_{-0.091}$	$1.038^{+0.112}_{-0.137}$	$1.753^{+0.343}_{-0.893}$
	+3%/-3%	+1%/-5%	+250%/-300%	+29%/-10%	+11%/-13%	+20%/-51%
Source	PHO1	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 006932987-01 / KOI 1366.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-68 ± 16	$3.42^{+0.59}_{-0.47}$	939^{+64}_{-48}	3445^{+185}_{-175}	64^{+25}_{-23}
Alt.	-61 ± 16	$3.29^{+0.55}_{-0.46}$	940^{+67}_{-46}	3422^{+177}_{-190}	61^{+26}_{-20}

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

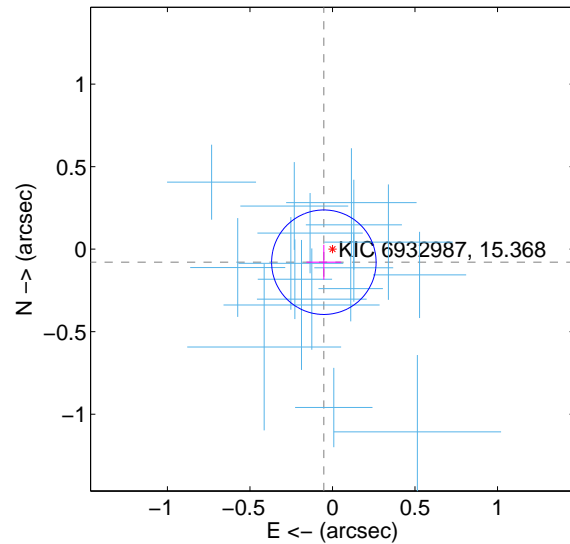
Supplemental centroid analysis for 006932987-01. Kepler magnitude: 15.37. Transit SNR 41.79

There are 17 quarters with good PRF difference image offsets

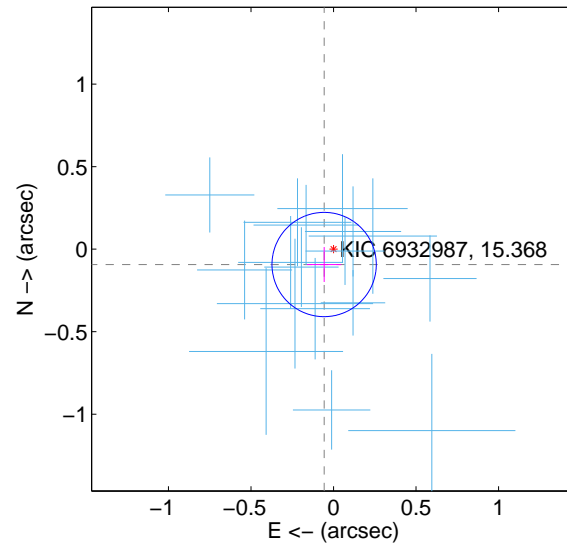
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.095 ± 0.106	0.90	0.052 ± 0.105	-0.079 ± 0.106
PRF-fit source offset from KIC position	0.109 ± 0.105	1.04	0.057 ± 0.103	-0.093 ± 0.106
photometric centroid source offset	0.38 ± 0.28	1.34	0.03 ± 0.26	-0.37 ± 0.28

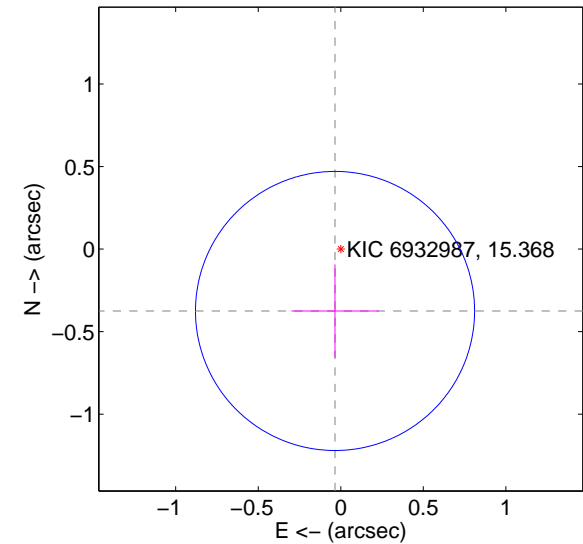
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

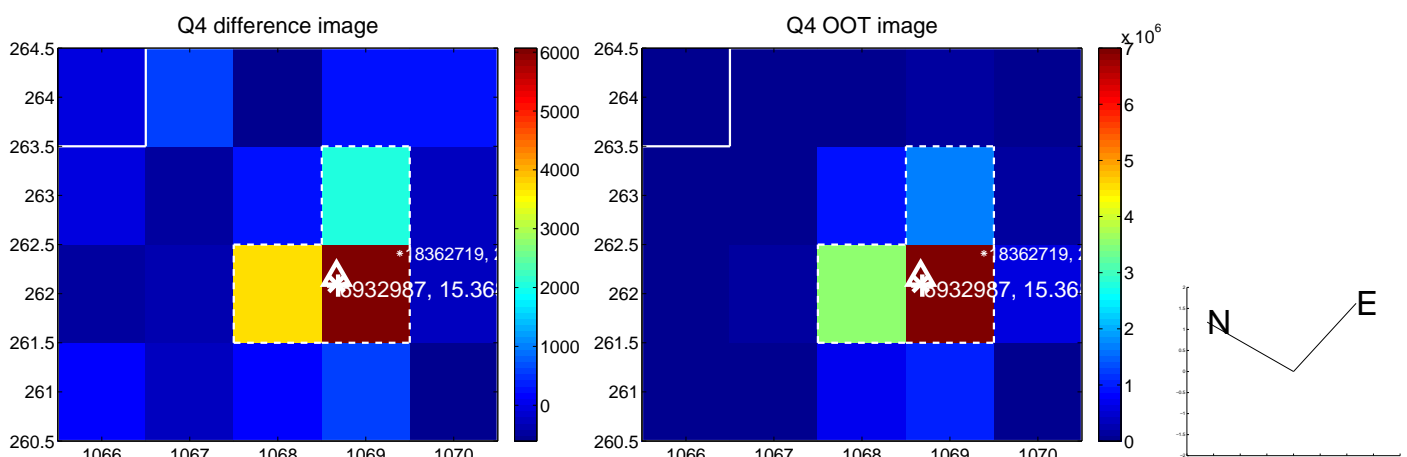
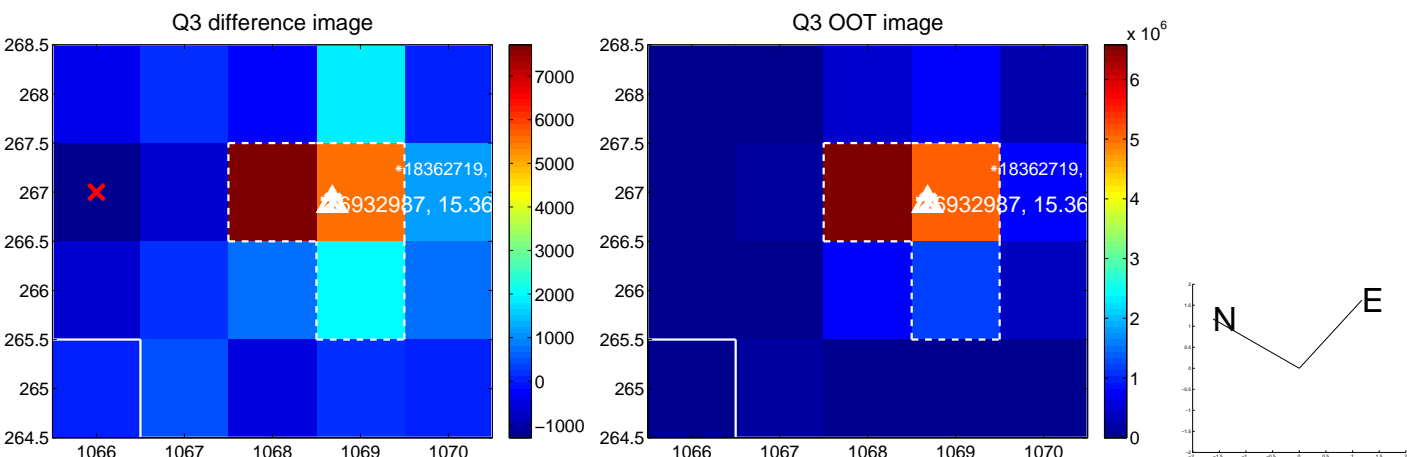
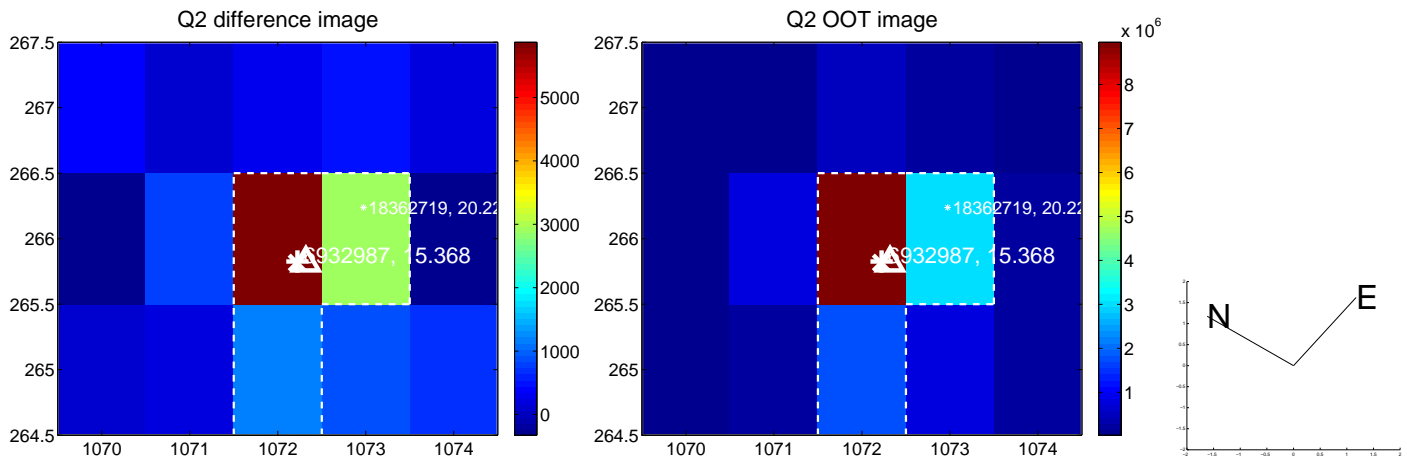
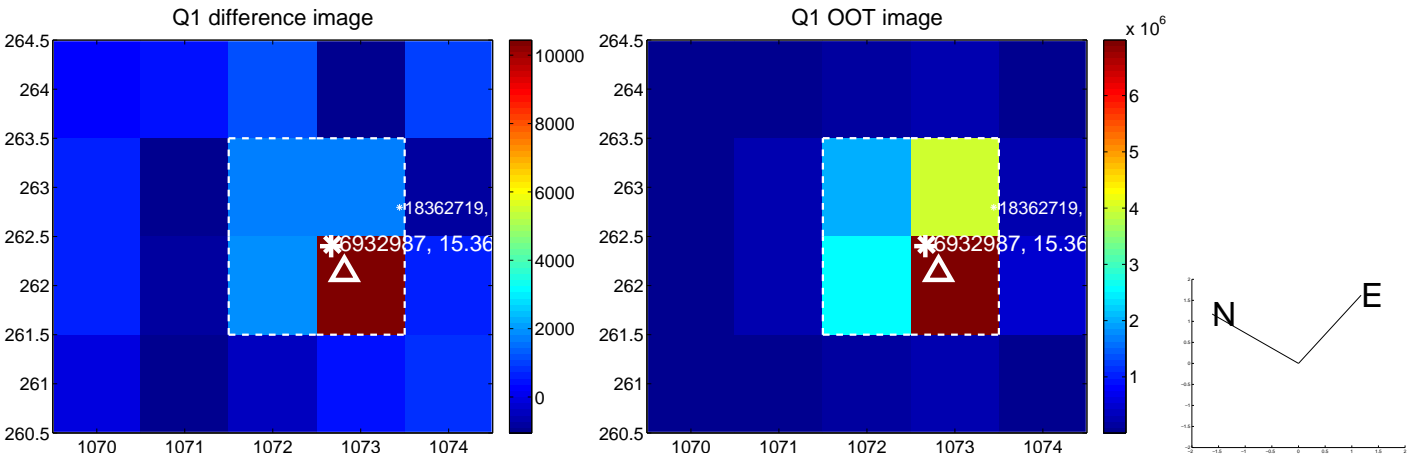


offset from photometric centroids

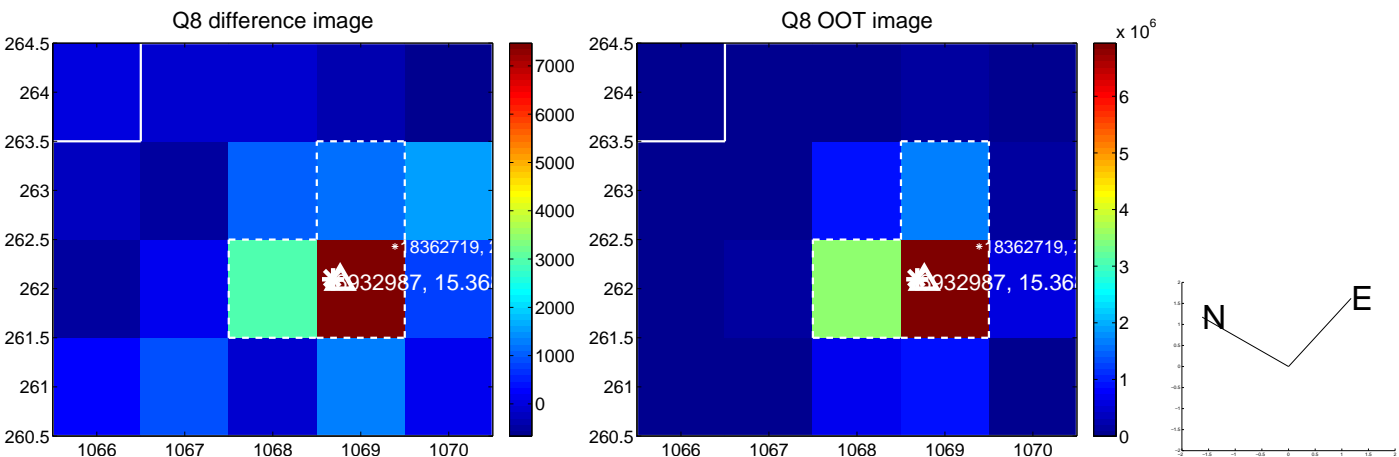
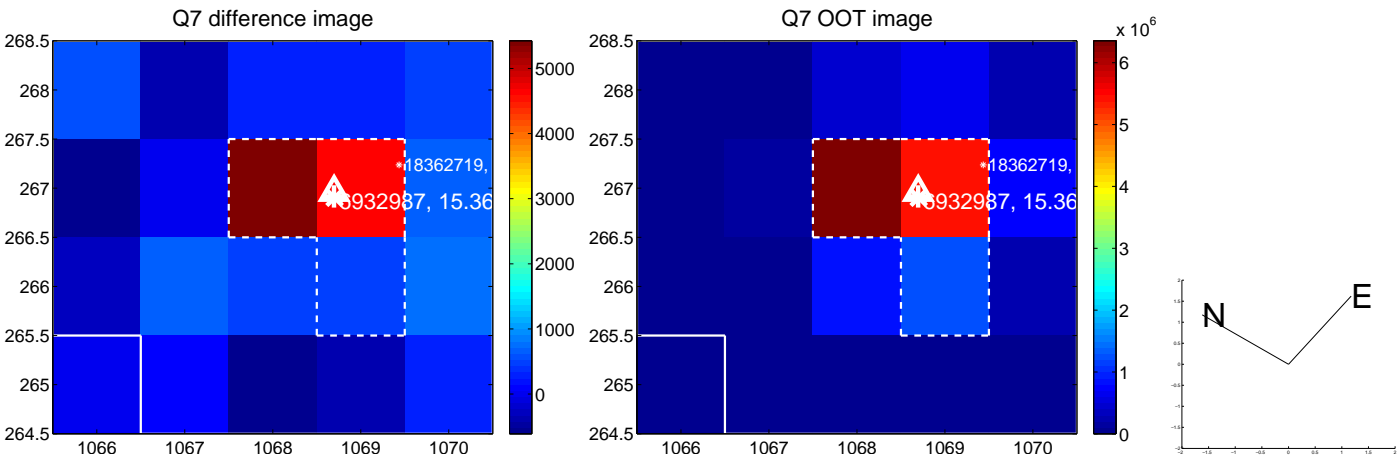
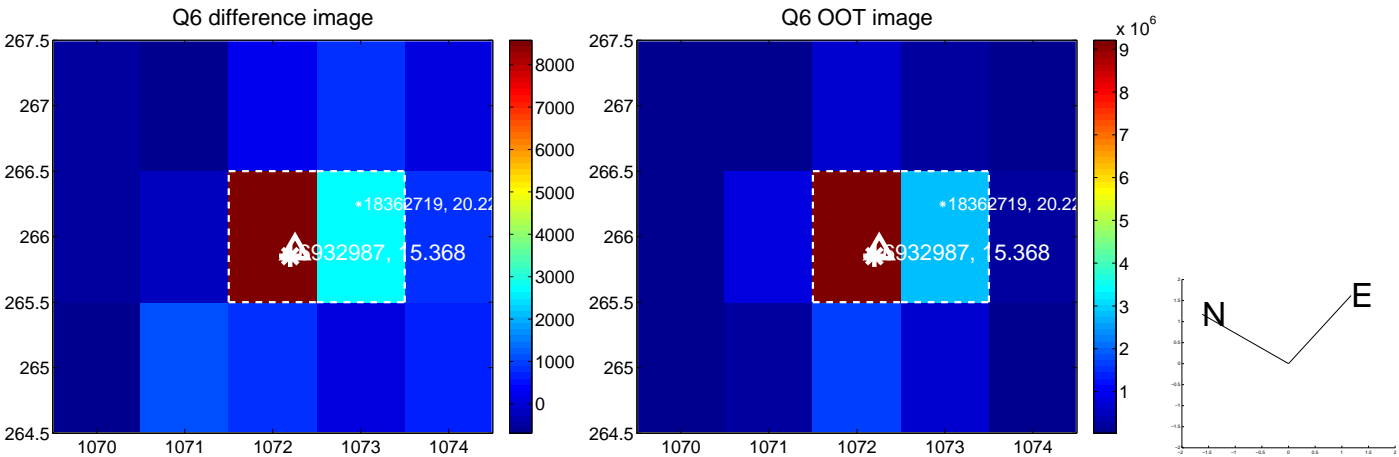
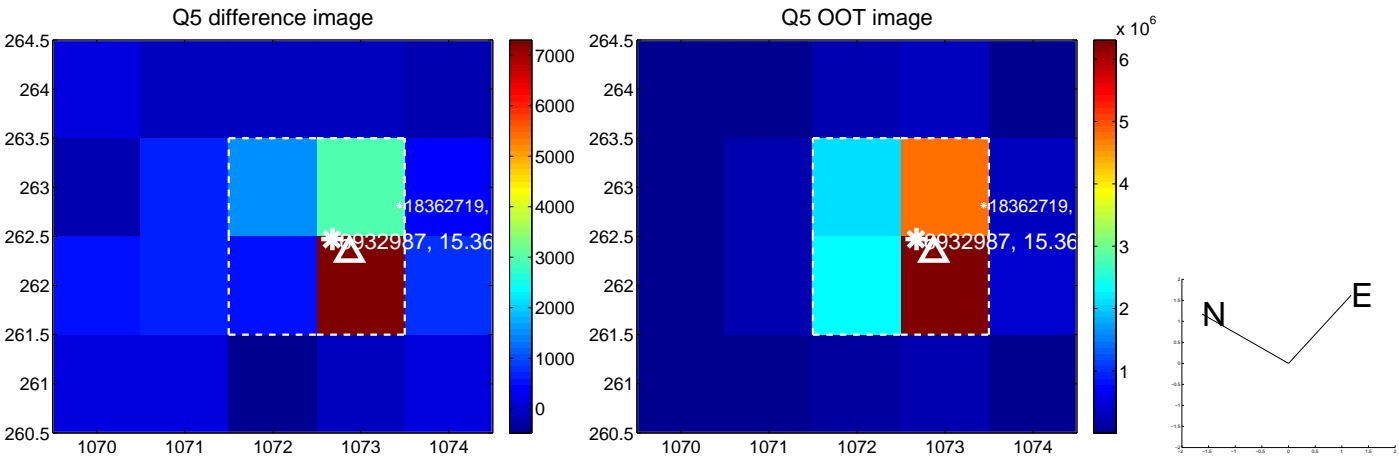


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

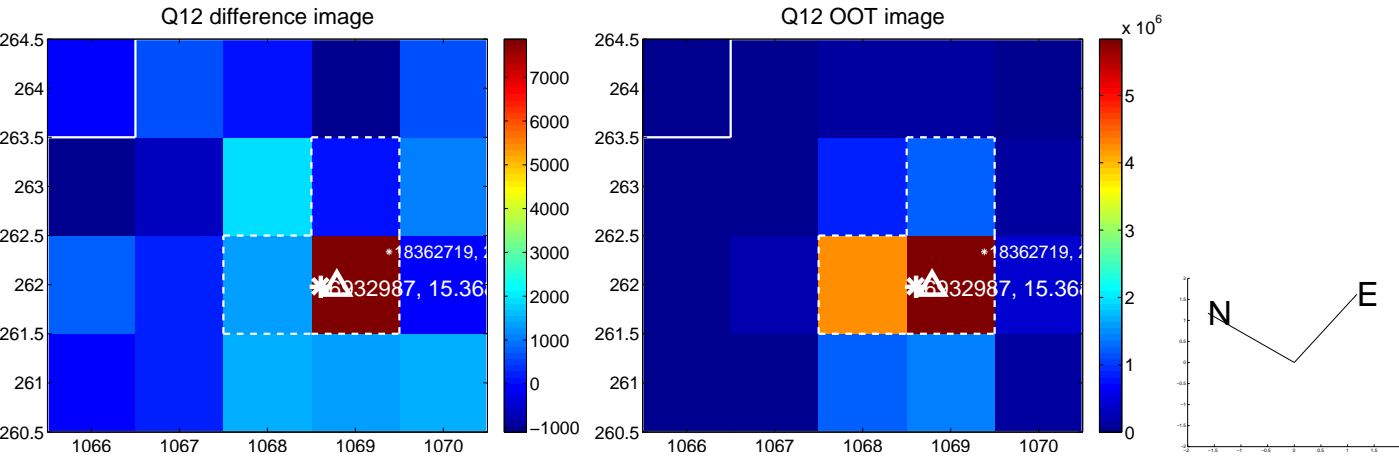
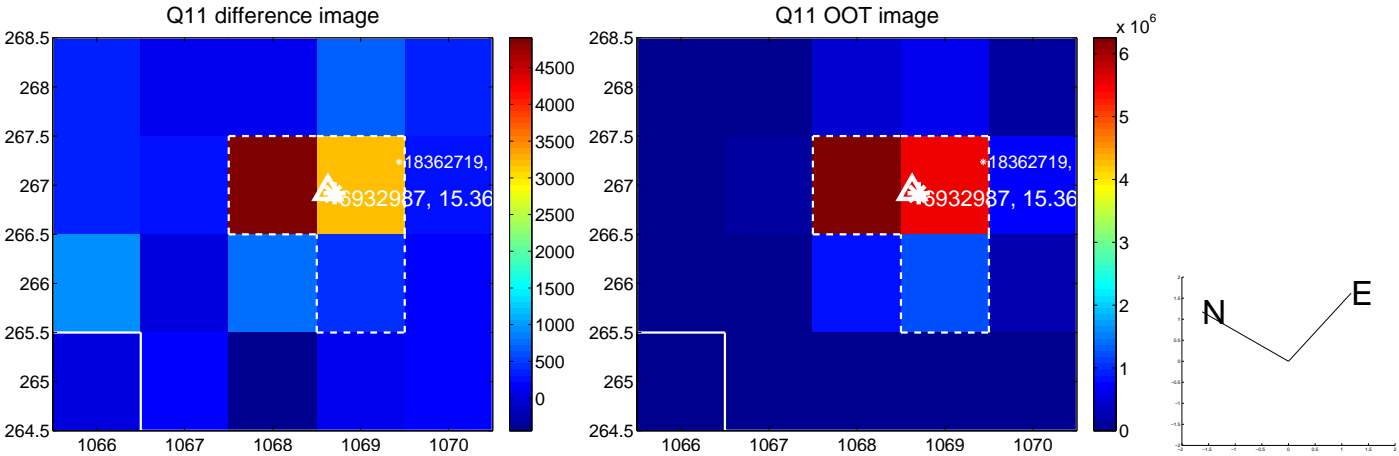
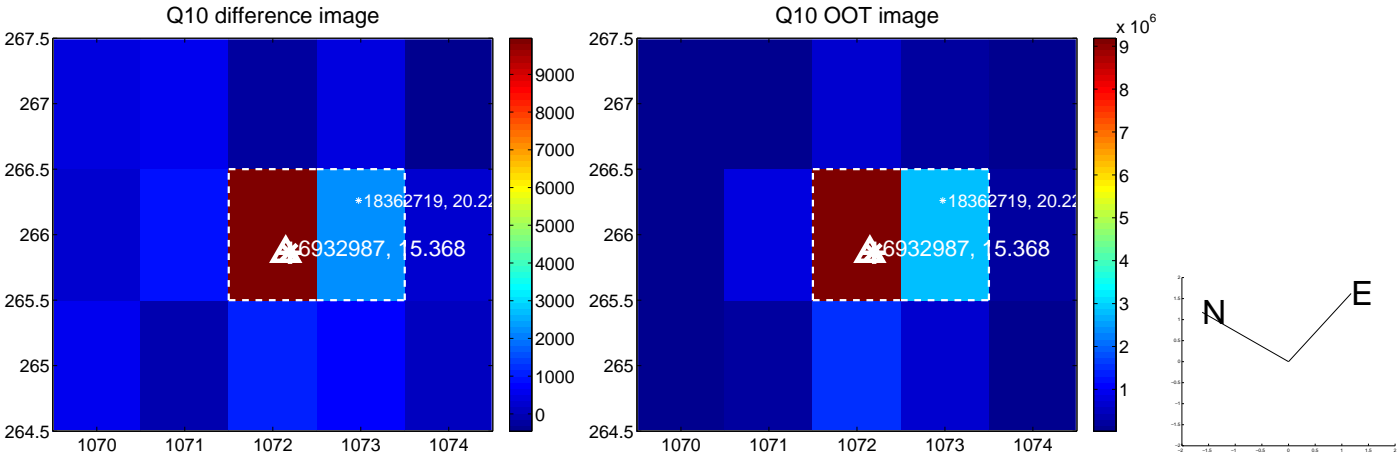
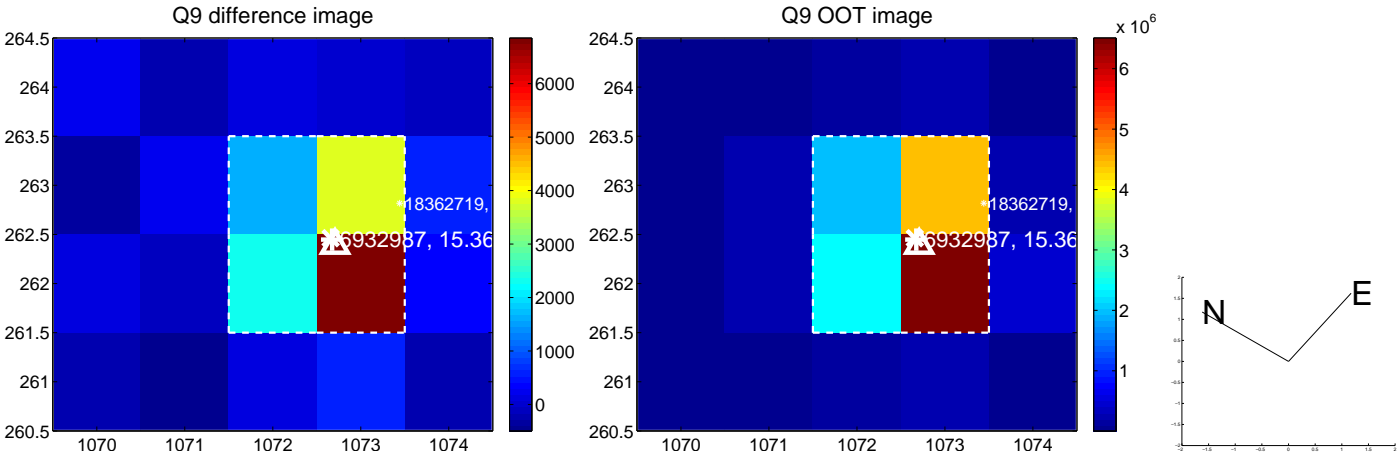
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



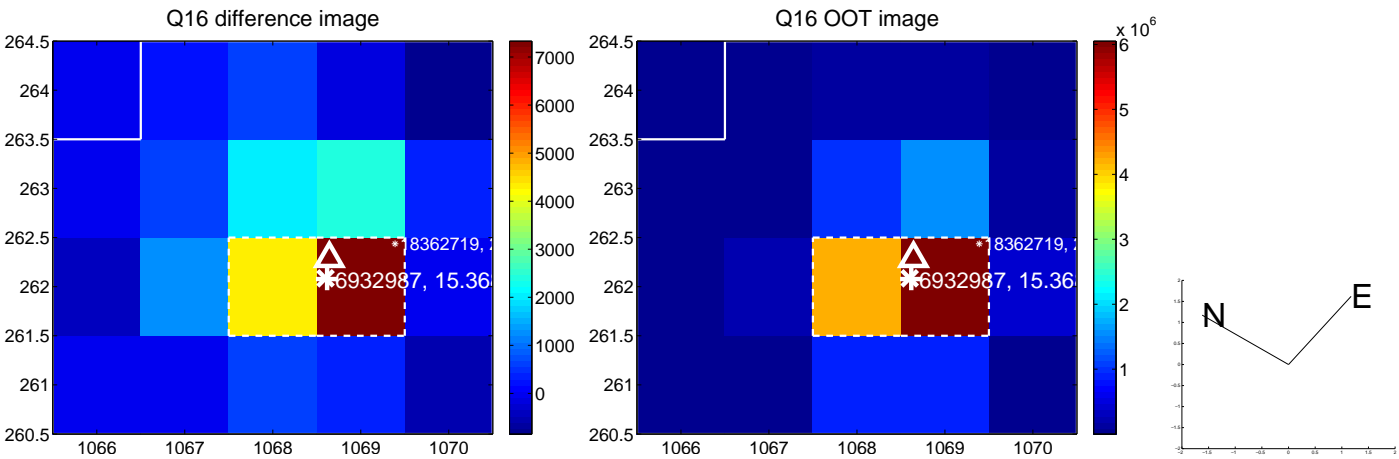
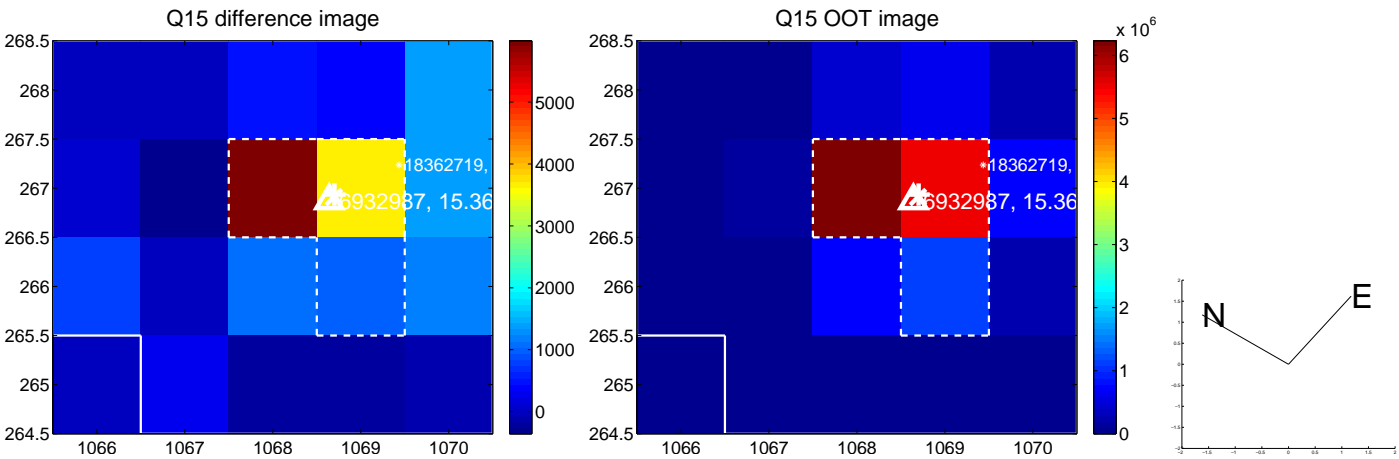
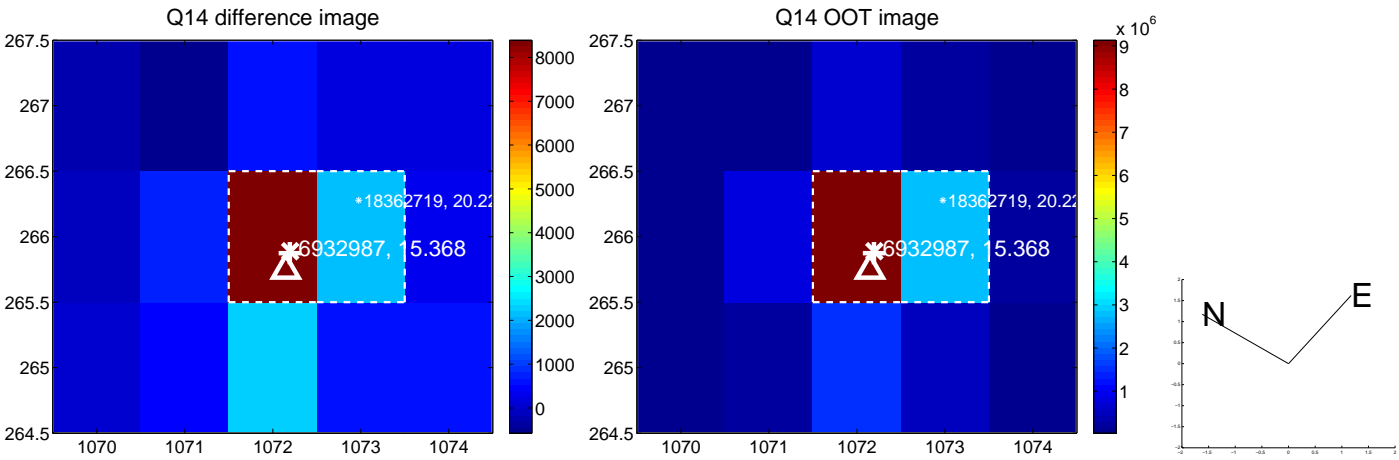
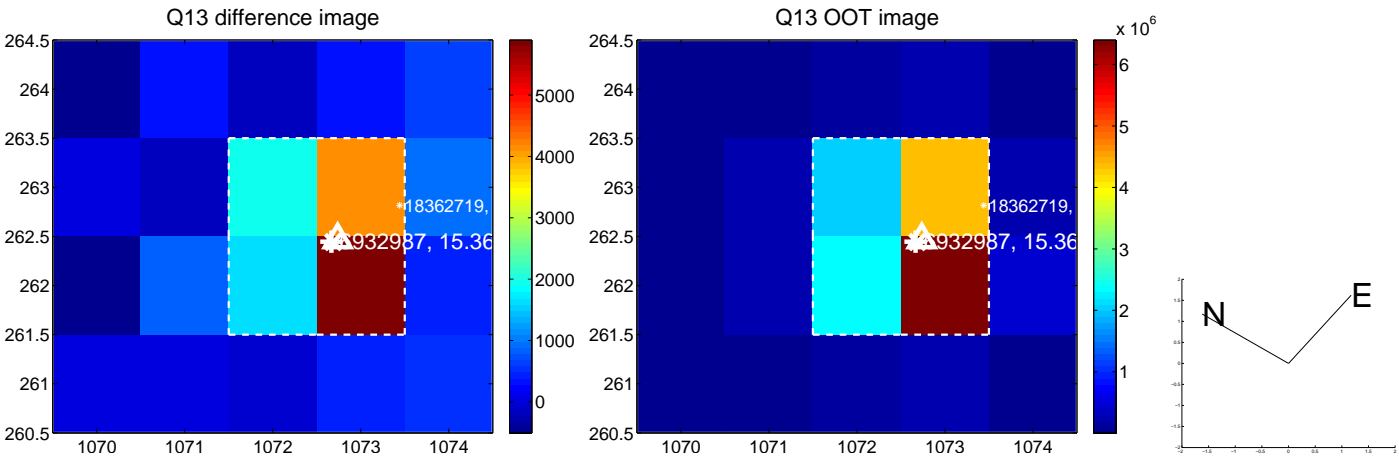
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



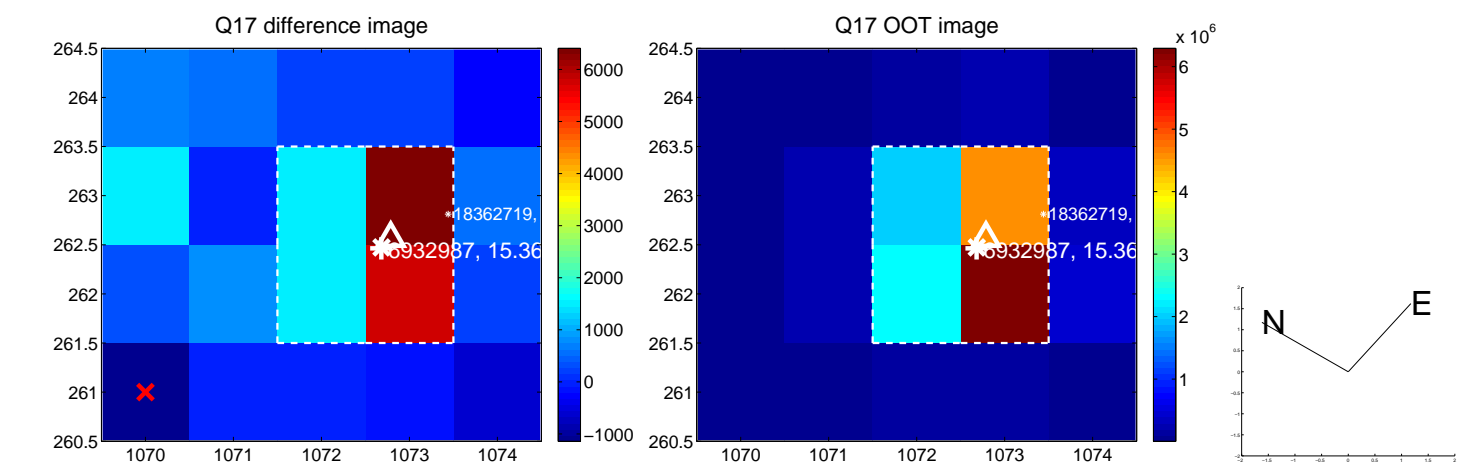
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



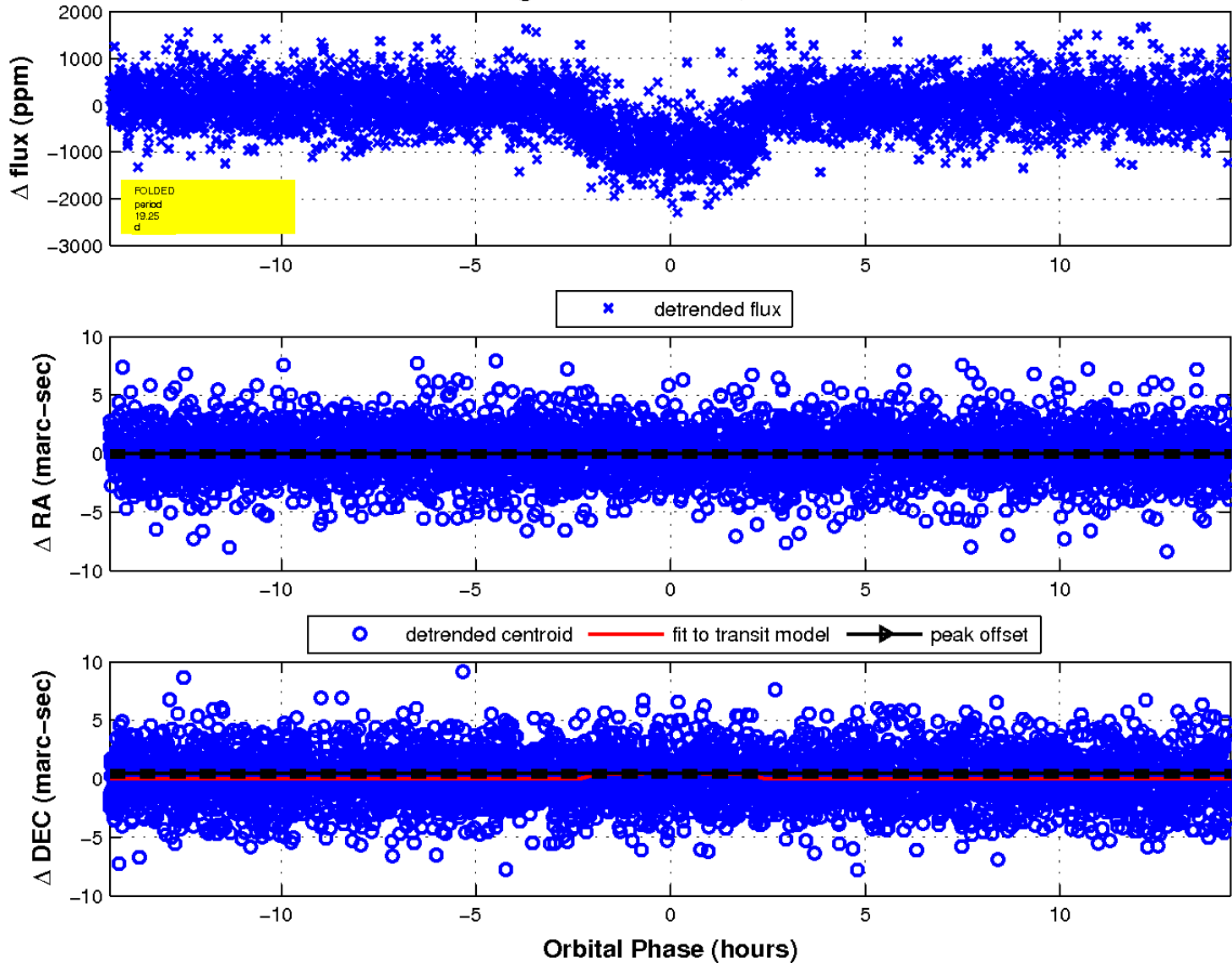
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

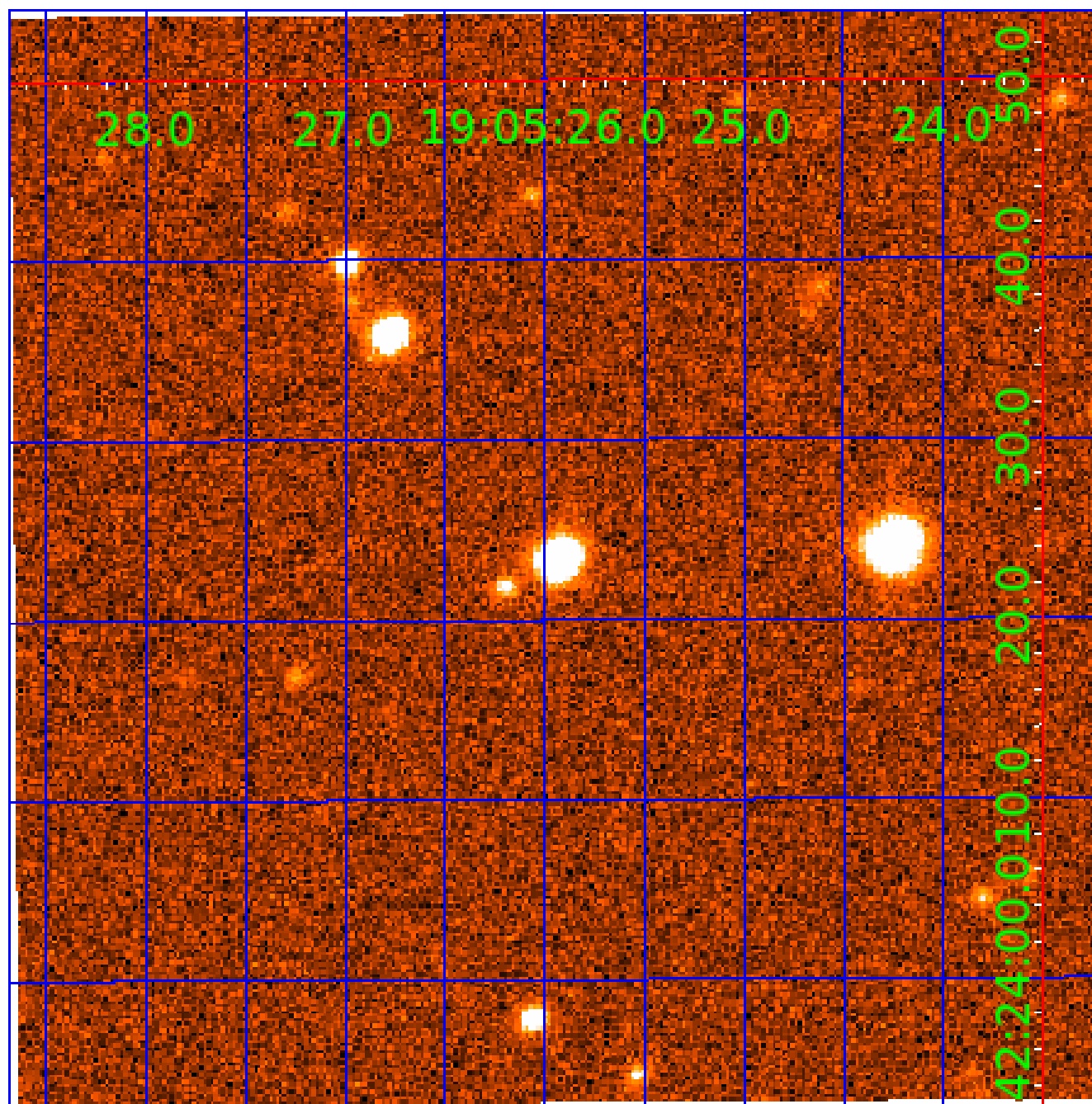


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 006932987

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})
006932987-01	OBS	1366.01	19.253989	145.532126	984.2	4.802	38.6	41.8	0.94	5798	3.25	44.23
006932987-02	OBS	1366.02	54.156183	172.364210	1112.3	4.360	22.1	24.5	0.94	5798	3.80	11.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006932987-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
006932987-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT

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.

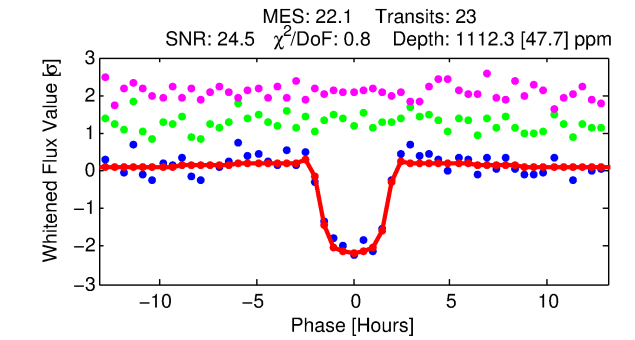
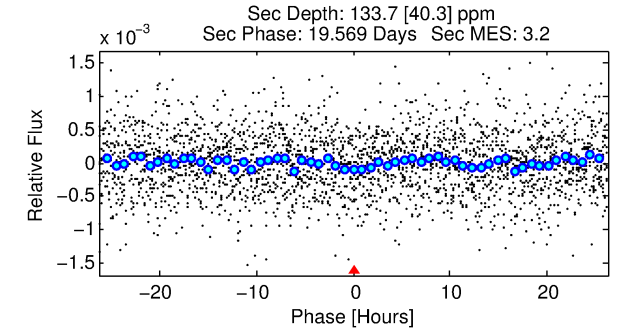
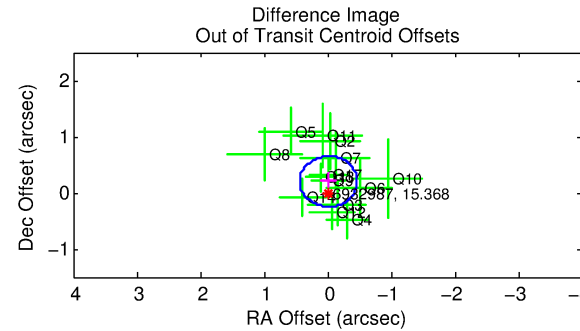
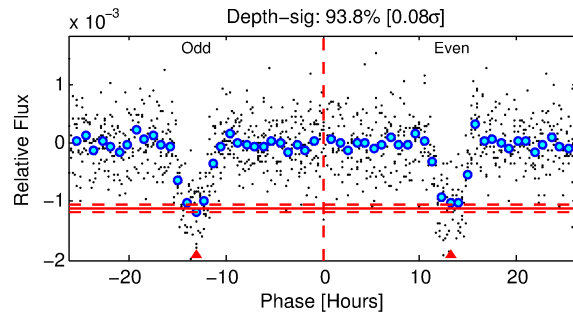
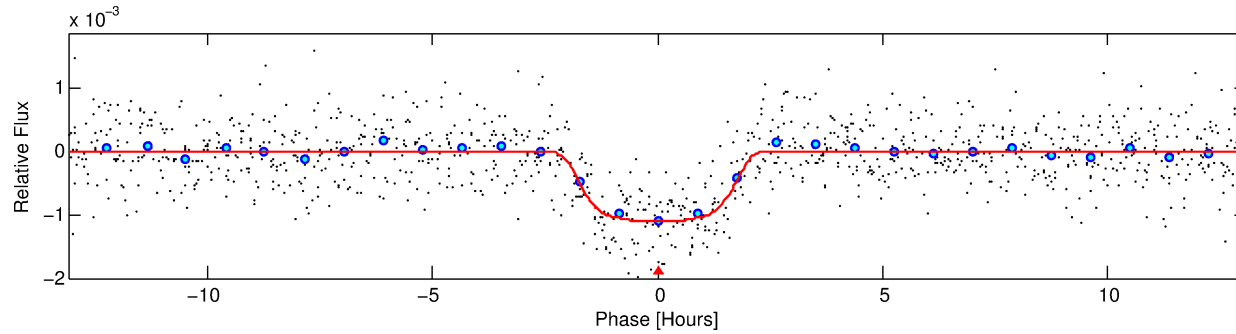
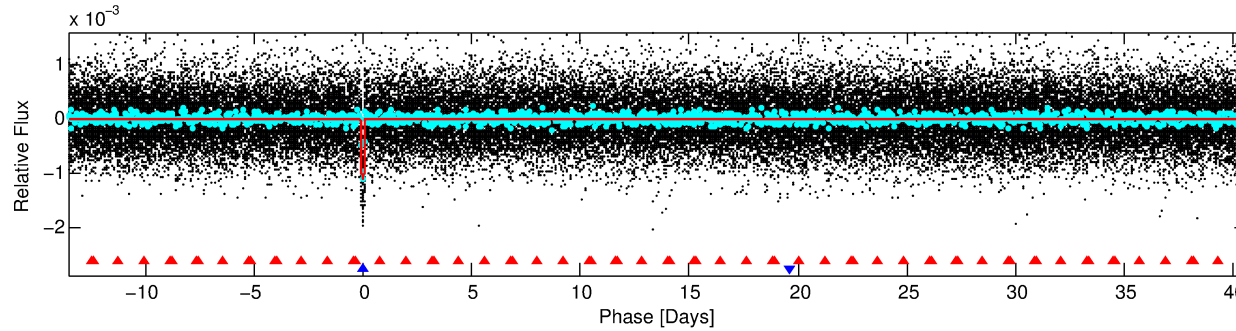
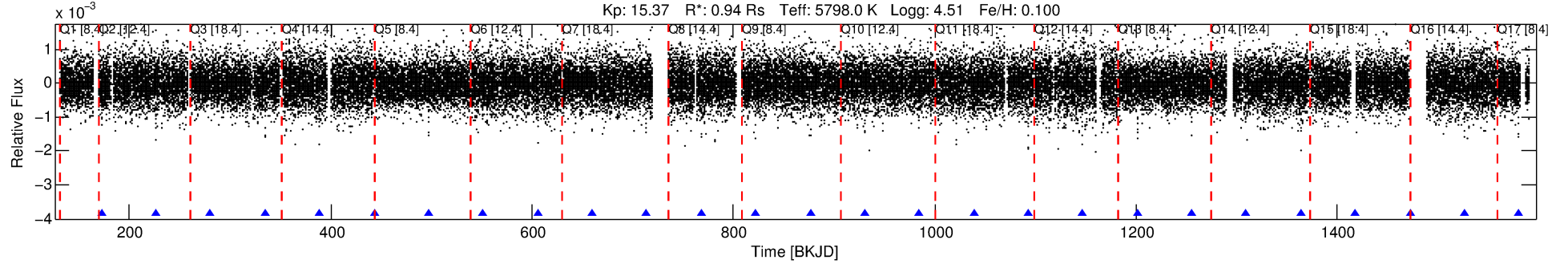
Ephemeris Match Information For 006932987-02

No Significant Match Found

DV One-Page Summary

KIC: 6932987 Candidate: 2 of 2 Period: 54.156 d
KOI: K01366.02 Name: Kepler-293c Corr: 0.989

Kp: 15.37 R*: 0.94 Rs Teff: 5798.0 K Logg: 4.51 Fe/H: 0.100



DV Fit Results:

Period = 54.15618 [0.00024] d
Epoch = 172.3642 [0.0036] BKJD
Rp/R* = 0.0370 [0.0017]
a/R* = 46.26 [7.68]
b = 0.92 [0.03]
Seff = 11.14 [4.35]
Teq = 466 [46] K
Rp = 3.80 [1.12] Re
a = 0.2837 [0.0706] AU
Ag = 409.69 [198.57] [2.06σ]
Teffp = 3240 [277] K [9.89σ]

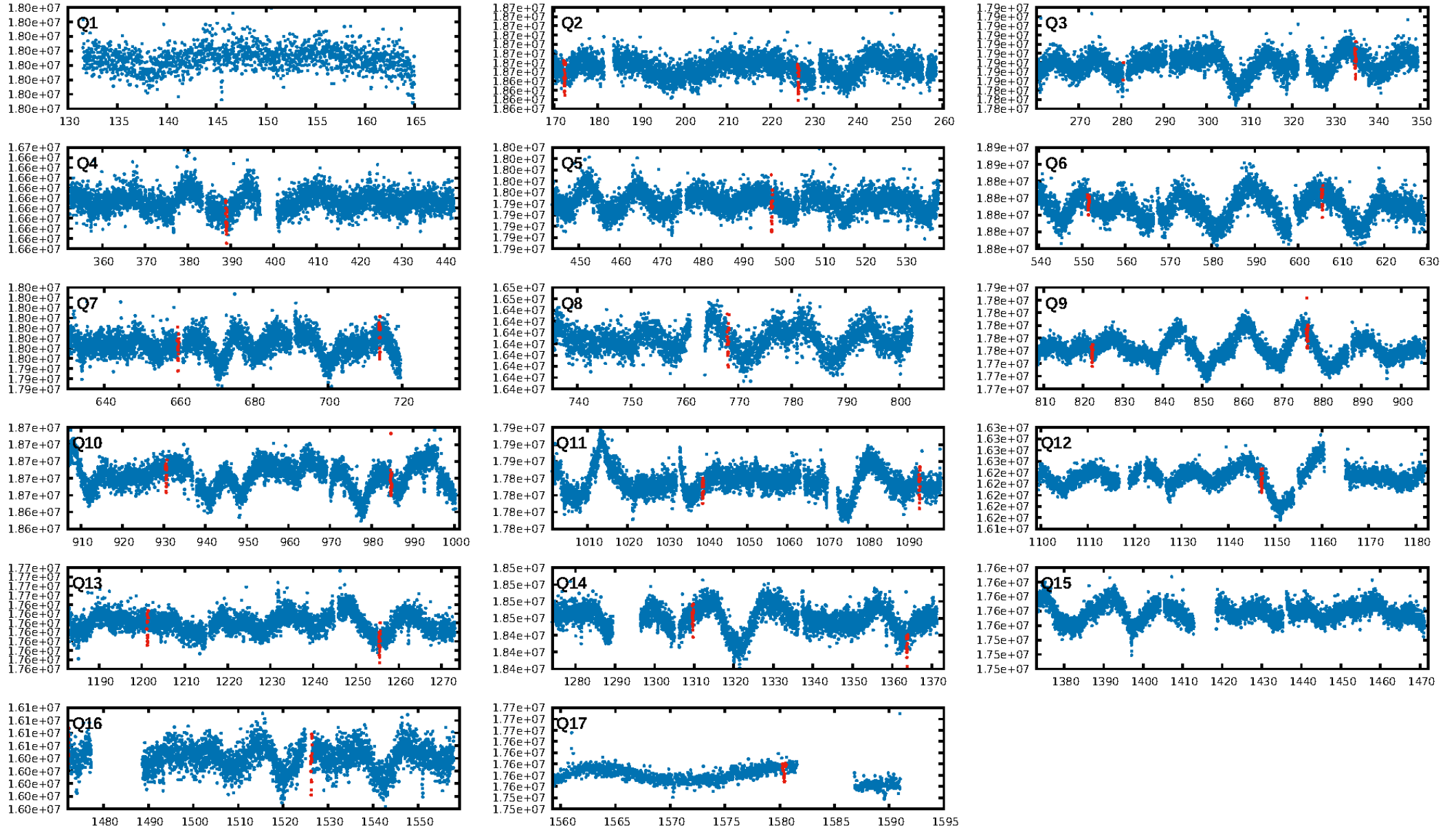
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [129.15σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 96.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 6.24e-92
RollingBand-fgt: 1.00 [22/22]
GhostDiagnostic-chr: 3.733
Centroid-sig: 11.9%
Centroid-so: 0.611 arcsec [1.27σ]
OotOffset-rm: 0.201 arcsec [1.34σ]
KicOffset-rm: 0.199 arcsec [1.30σ]
OotOffset-st: 4/3/3/4 [14]
KicOffset-st: 4/3/3/4 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 0.93 [13/14]

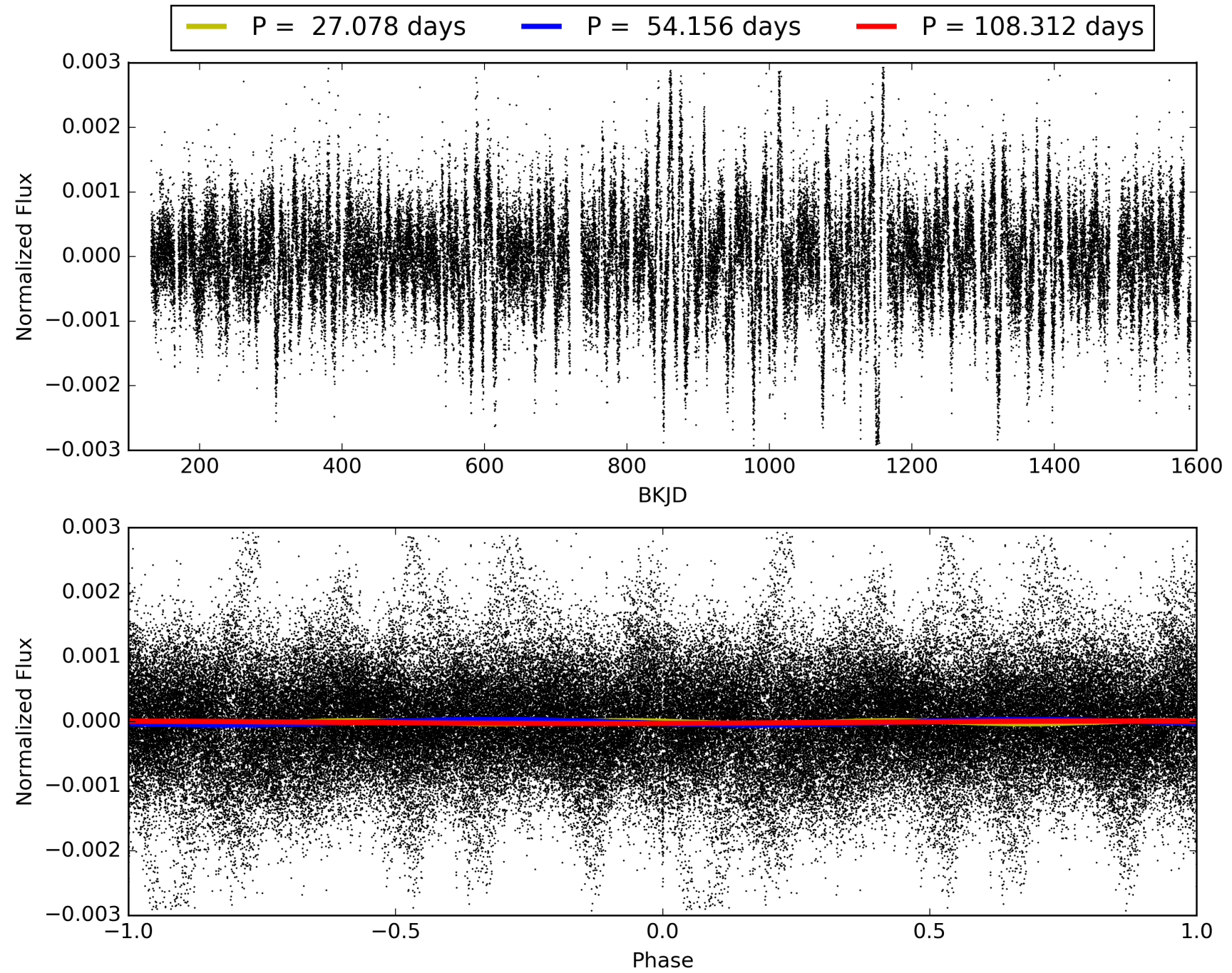
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 03:14:40 Z

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

TCE 006932987-02, PDC Light Curves

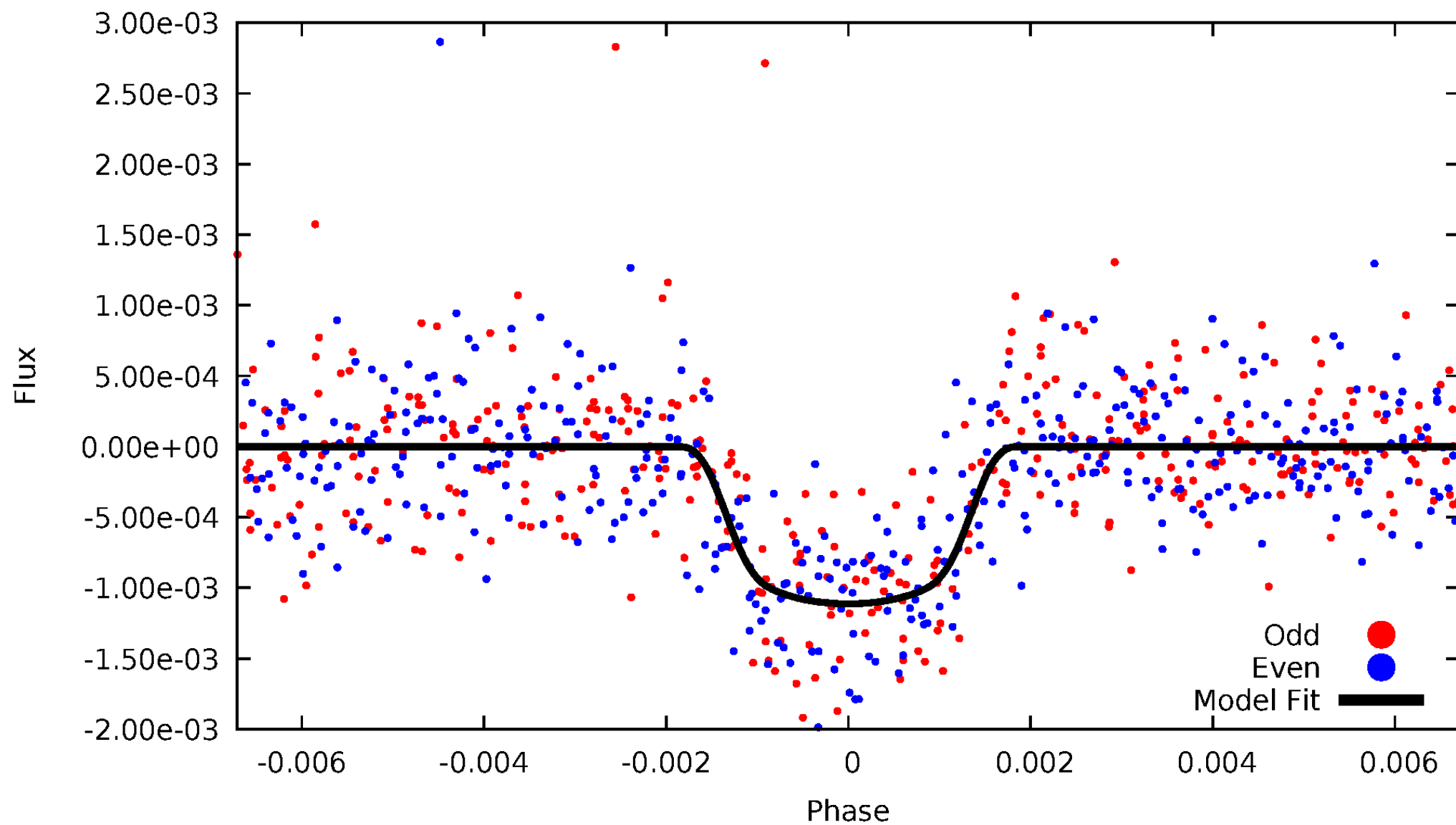


TCE 006932987-02



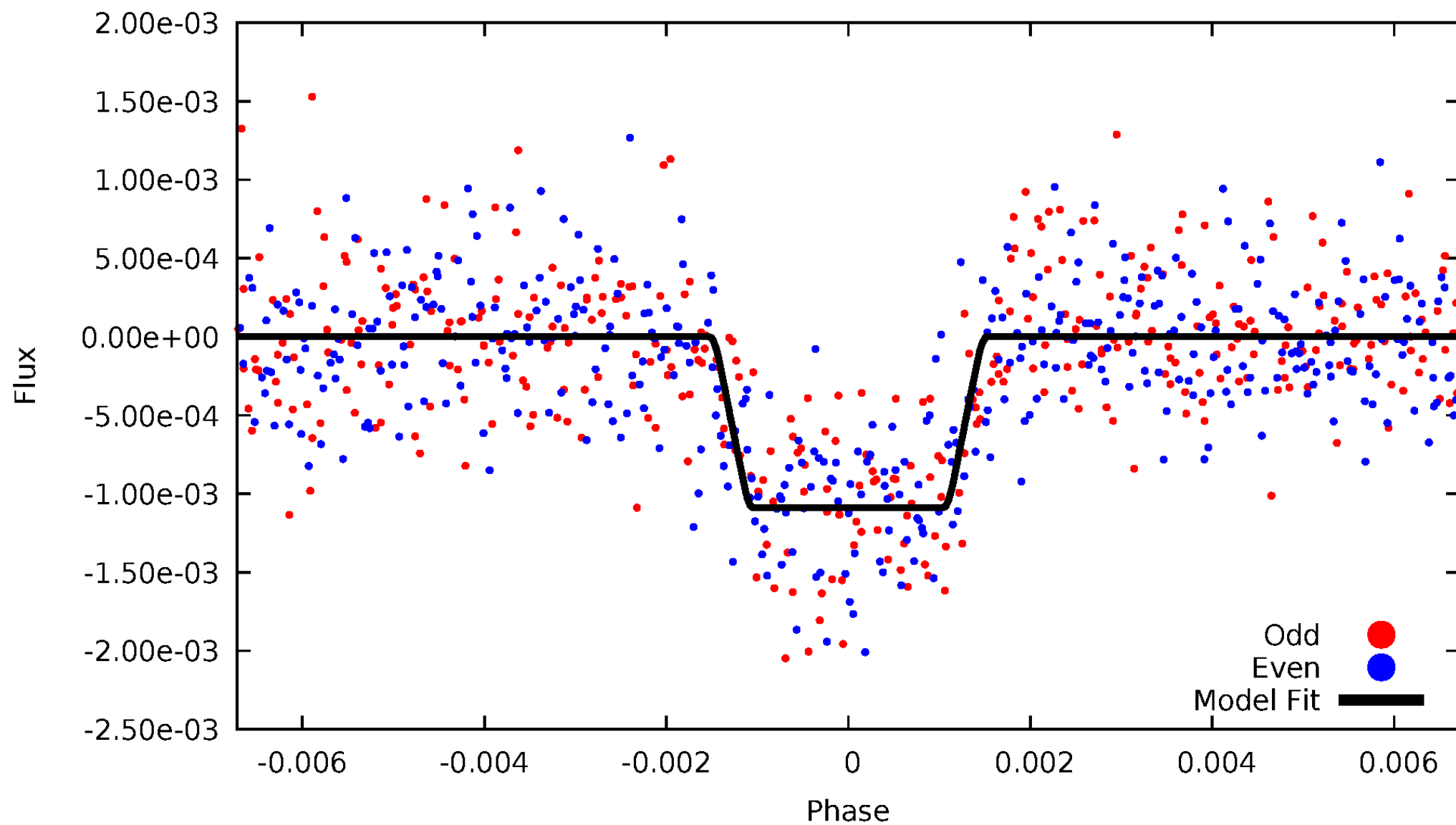
DV Odd/Even

TCE 006932987-02



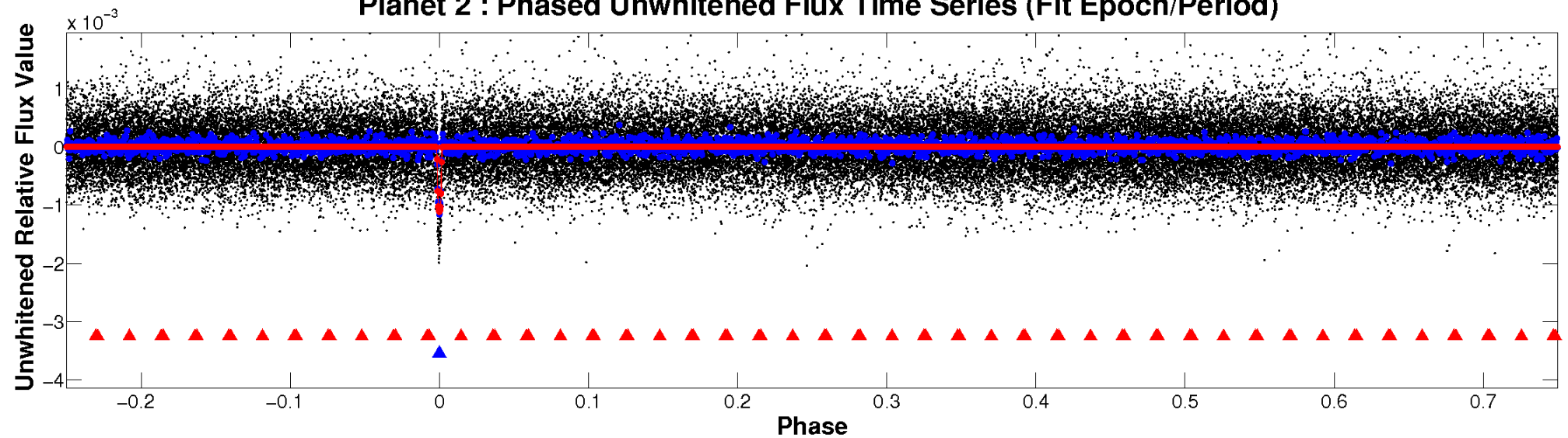
ALT Odd/Even

TCE 006932987-02

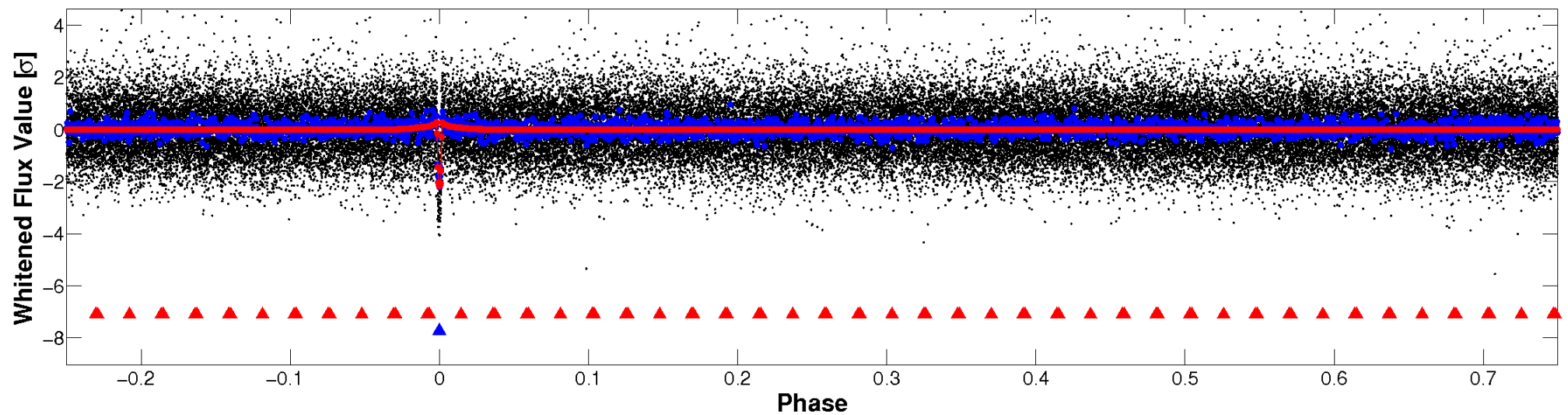


Non-Whitened Vs. Whitened Light Curve

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

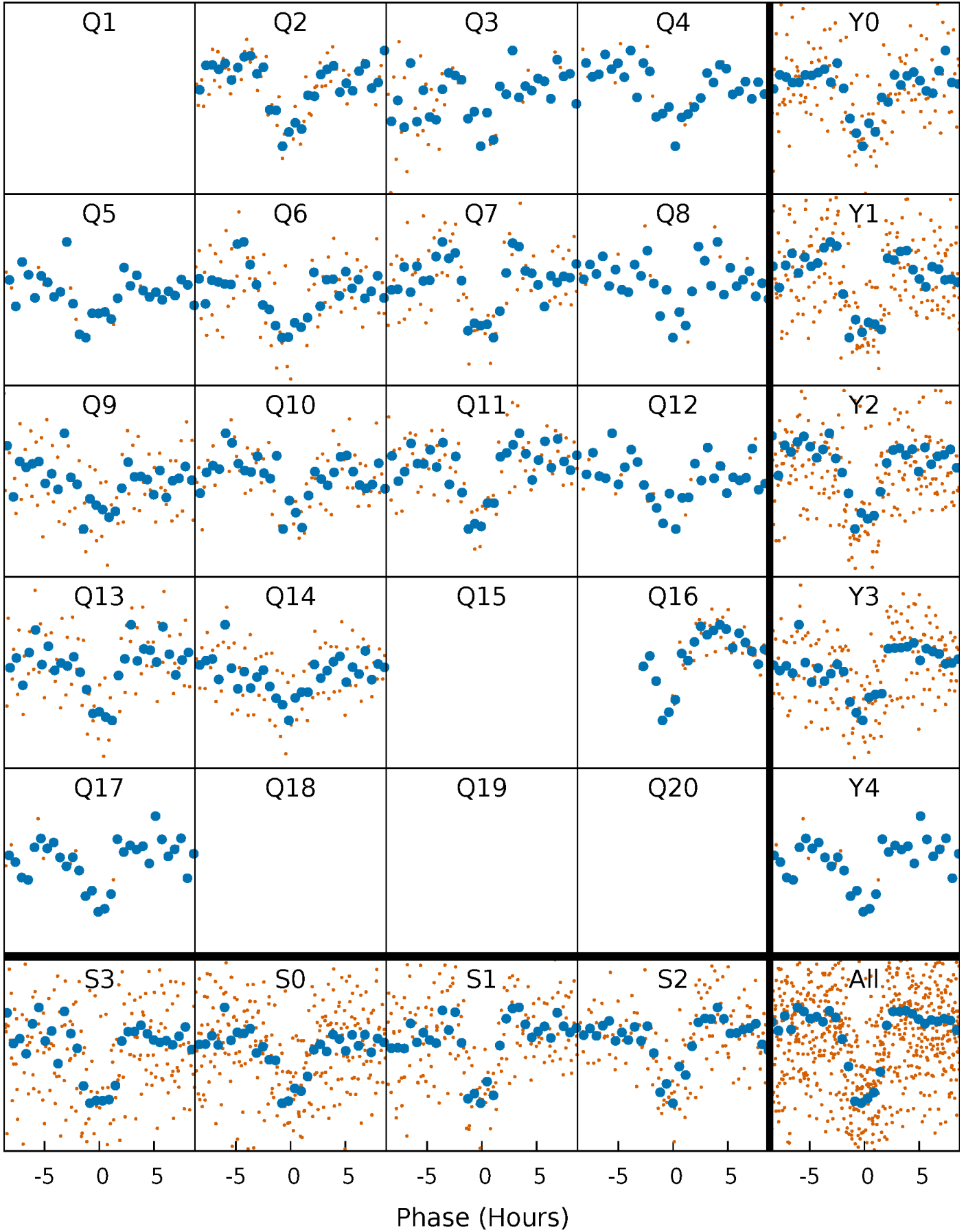


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



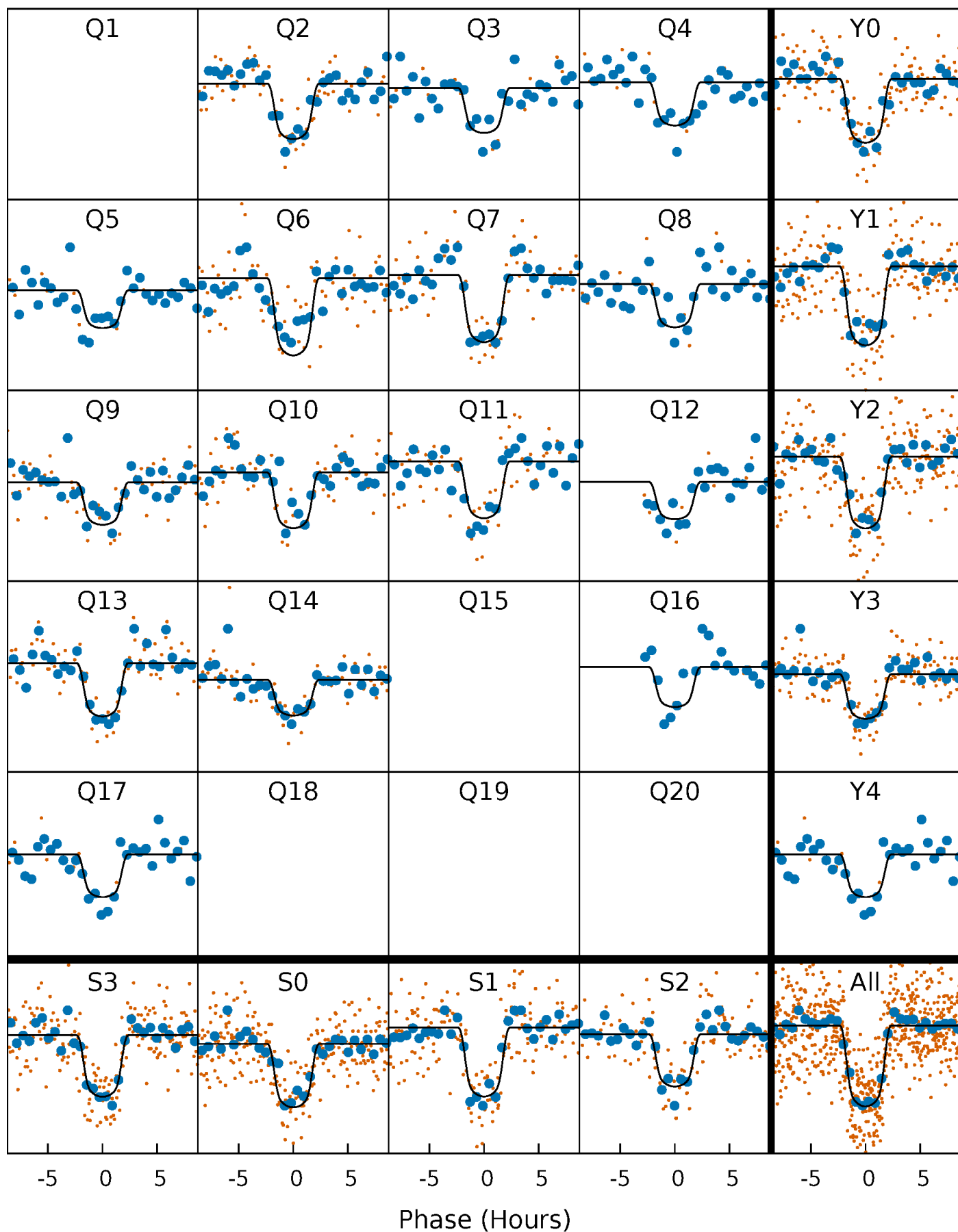
PDC Quarter-Phased Transit Curves

TCE 006932987-02 P= 54.156183 Days $T_0=172.364210$ (BKJD)



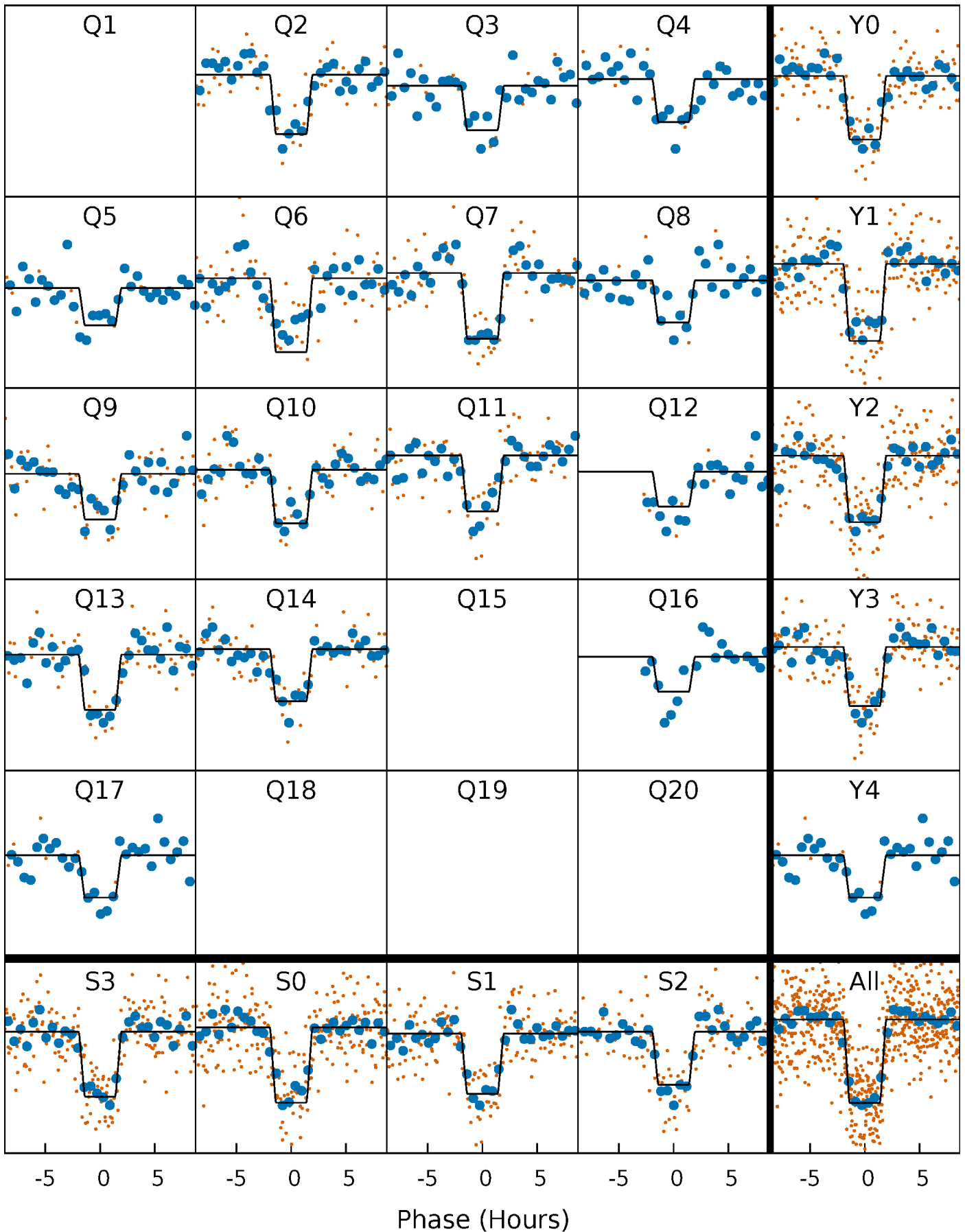
DV Quarter-Phased Transit Curves

TCE 006932987-02 P= 54.156183 Days $T_0=172.364210$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

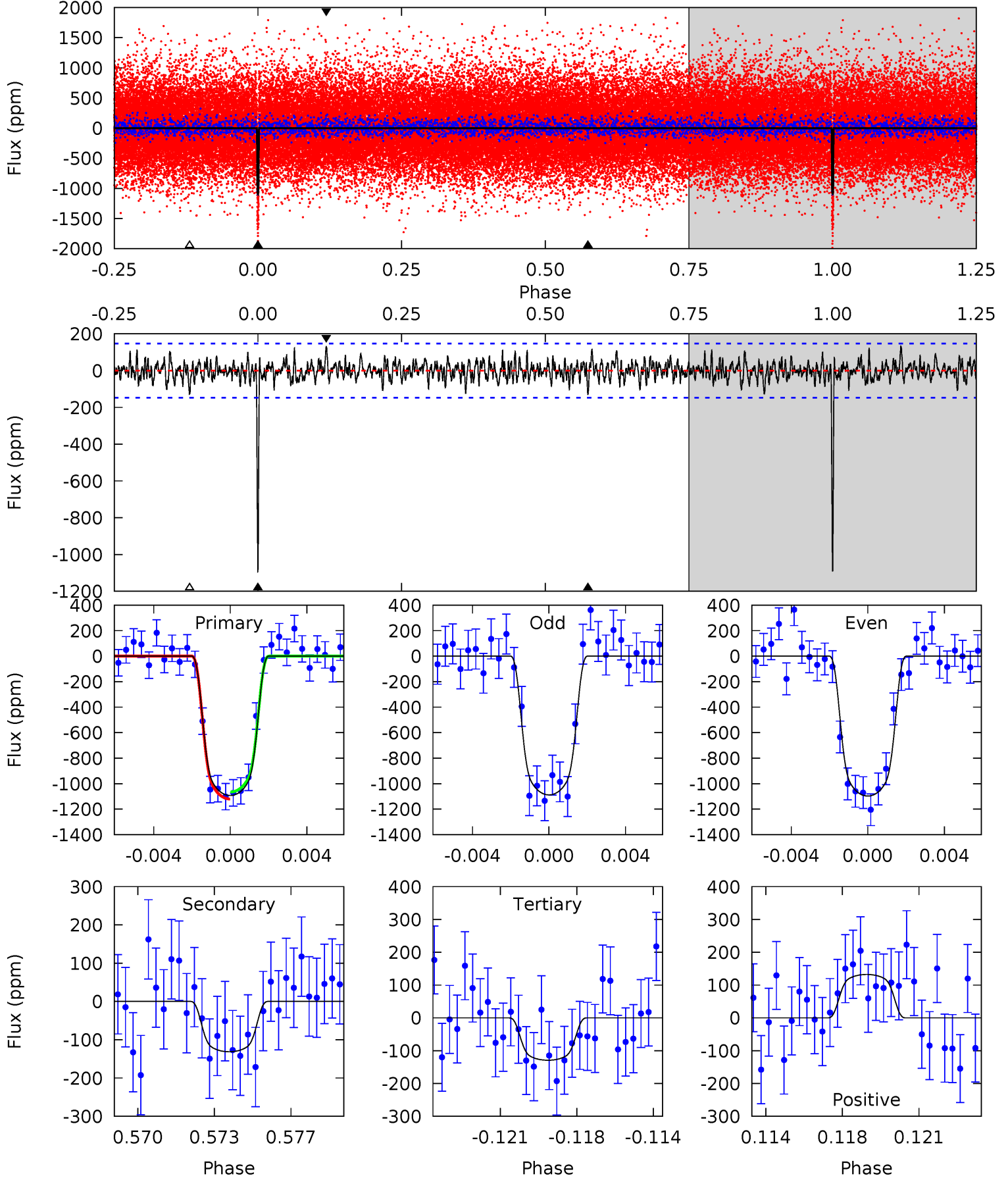
TCE 006932987-02 P= 54.155833 Days $T_0=172.366791$ (BKJD)



DV Model-Shift Uniqueness Test

006932987-02, P = 54.156183 Days, E = 118.208027 Days

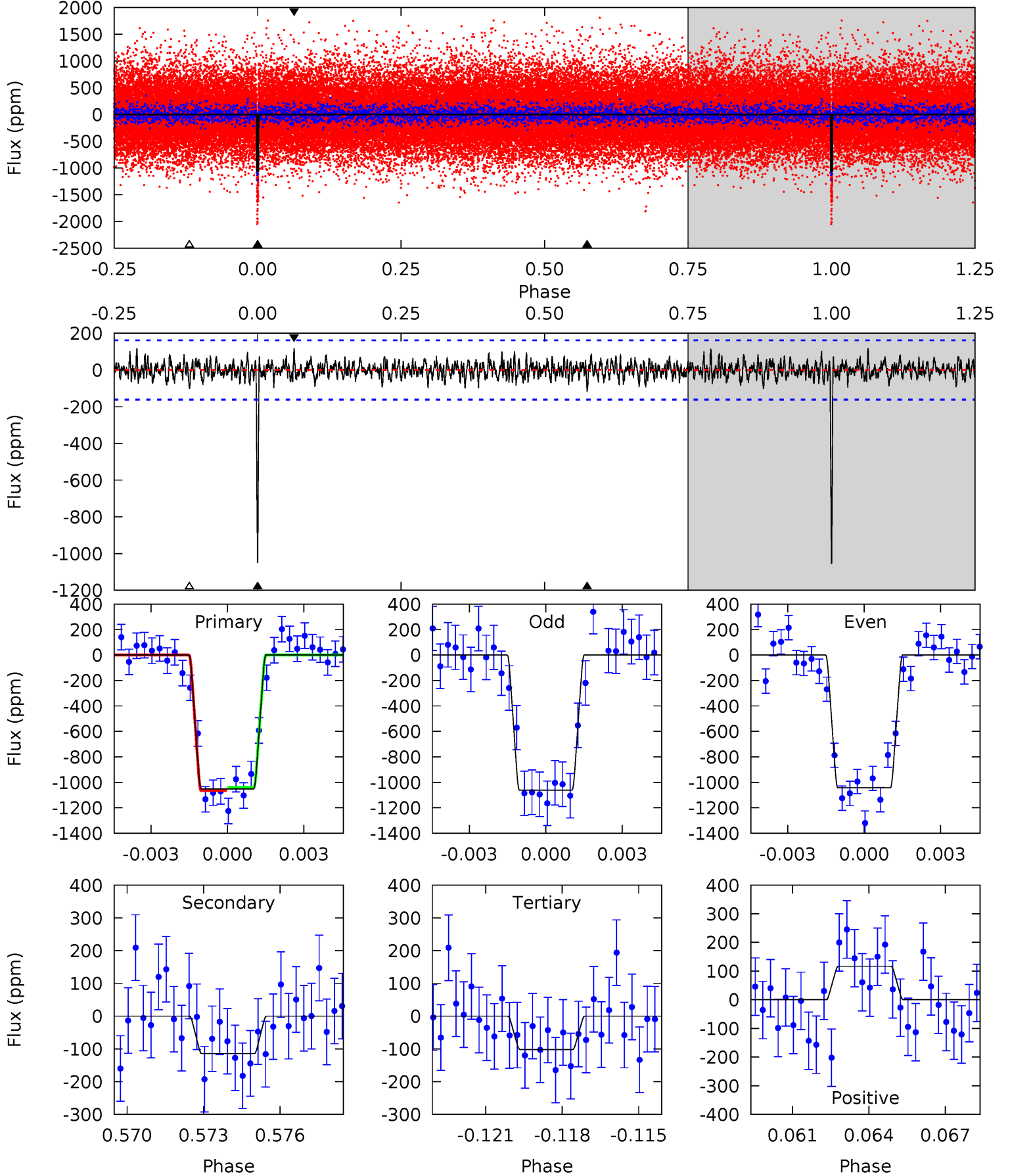
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
38.7	4.66	4.58	4.69	5.22	2.90	1.39	34.1	34.0	0.08	-0.03	0.16	0.97	0.11	0.98



Alt Model-Shift Uniqueness Test

006932987-02, P = 54.155833 Days, E = 118.210958 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34.2	3.72	3.32	3.81	5.25	2.96	1.11	30.9	30.4	0.41	-0.09	0.29	0.99	0.10	0.41



Stellar Parameters For KIC 006932987

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5798^{+156}_{-191}	$4.507^{+0.048}_{-0.204}$	$0.100^{+0.250}_{-0.300}$	$0.941^{+0.273}_{-0.091}$	$1.038^{+0.112}_{-0.137}$	$1.753^{+0.343}_{-0.893}$
	+3%/-3%	+1%/-5%	+250%/-300%	+29%/-10%	+11%/-13%	+20%/-51%
Source	PHO1	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 006932987-02 / KOI 1366.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-131 ± 28	$3.90^{+0.63}_{-0.36}$	665^{+47}_{-33}	3655^{+166}_{-159}	366^{+113}_{-109}
Alt.	-114 ± 31	$3.52^{+0.57}_{-0.34}$	665^{+47}_{-32}	3702^{+198}_{-209}	388^{+149}_{-136}

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 $A_{obs} \gg 1.0$

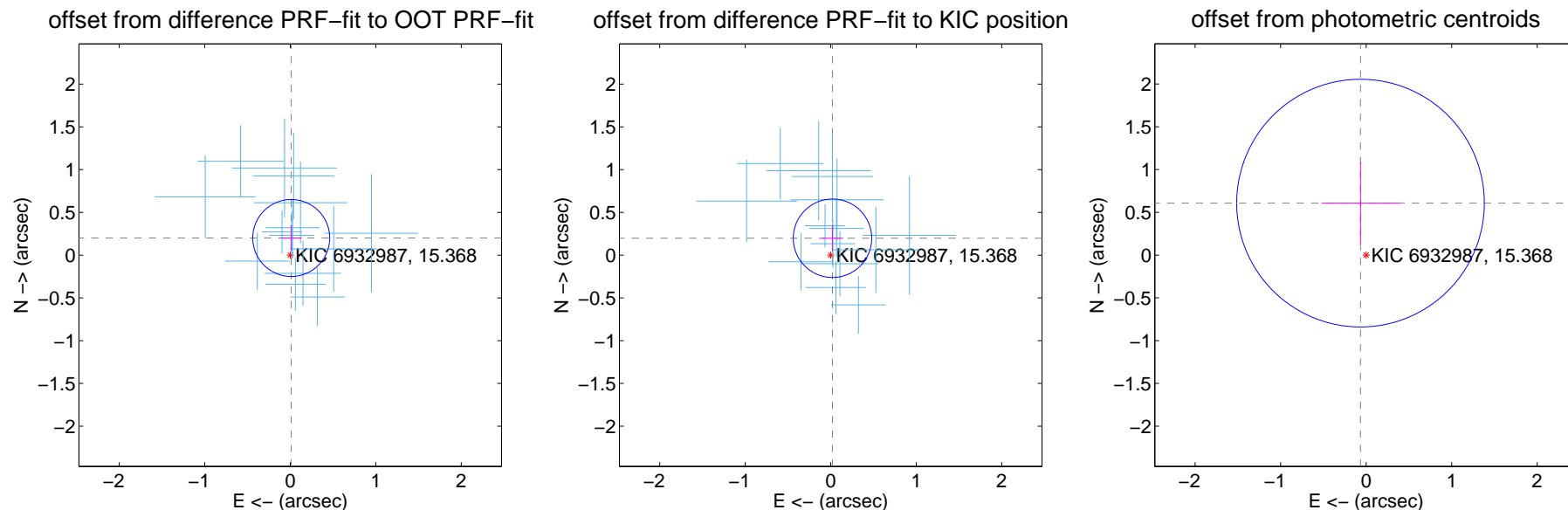
DV Centroid Data

Supplemental centroid analysis for 006932987-02. Kepler magnitude: 15.37. Transit SNR 24.50

There are 14 quarters with good PRF difference image offsets

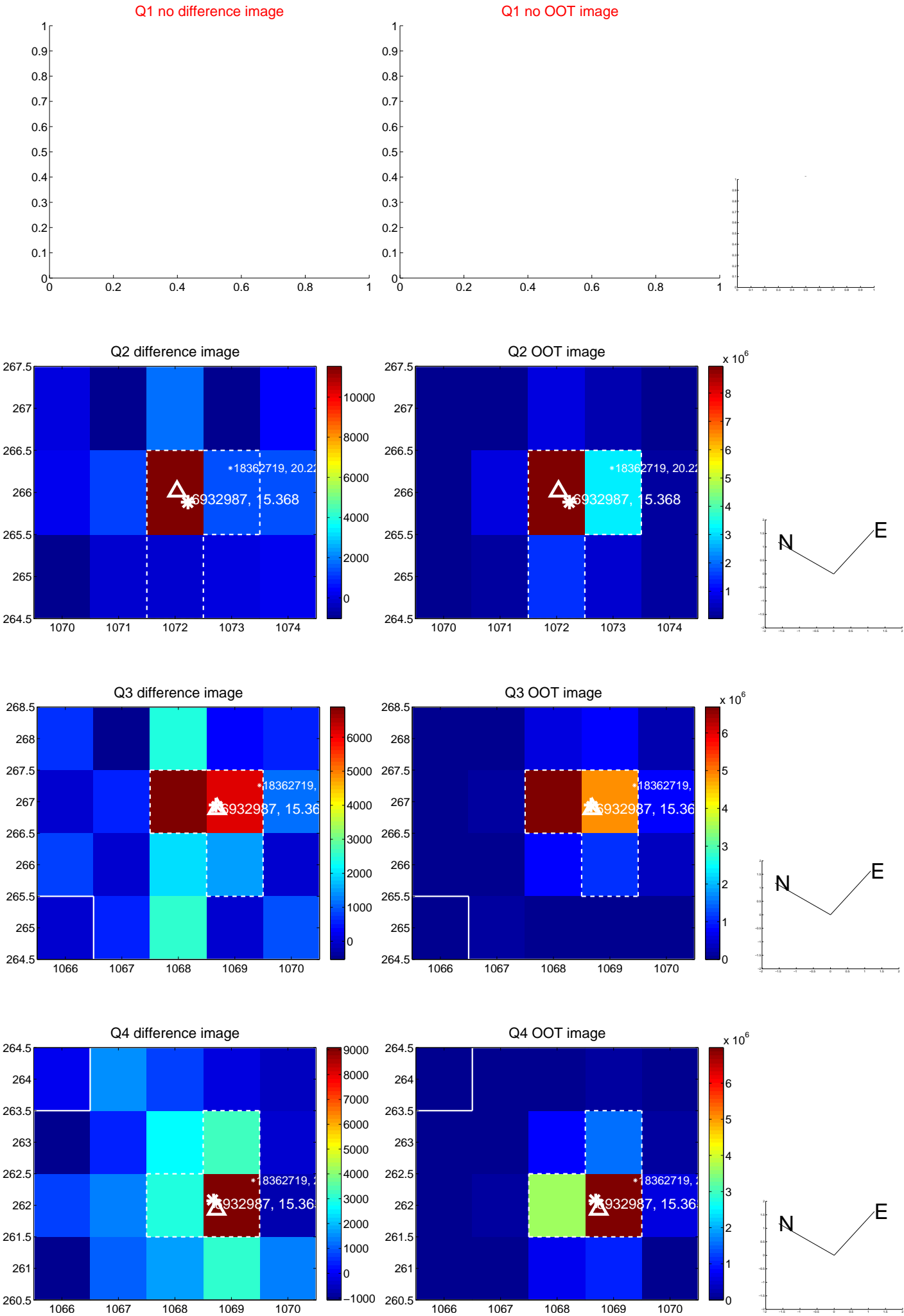
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.201 ± 0.150	1.34	-0.011 ± 0.124	0.201 ± 0.150
PRF-fit source offset from KIC position	0.199 ± 0.153	1.30	-0.021 ± 0.126	0.198 ± 0.153
photometric centroid source offset	0.61 ± 0.48	1.27	0.07 ± 0.46	0.61 ± 0.48

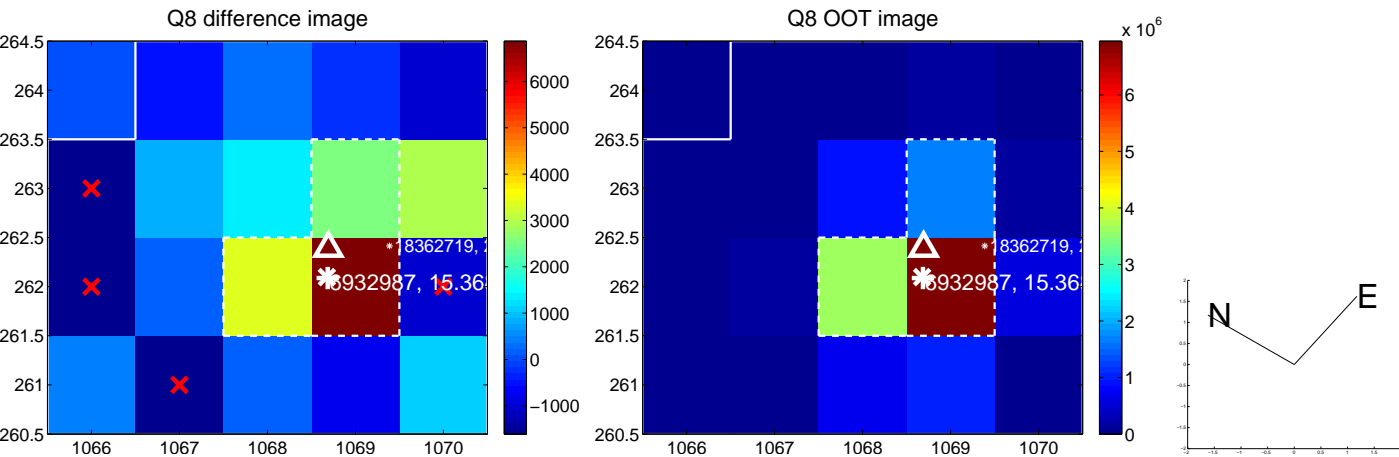
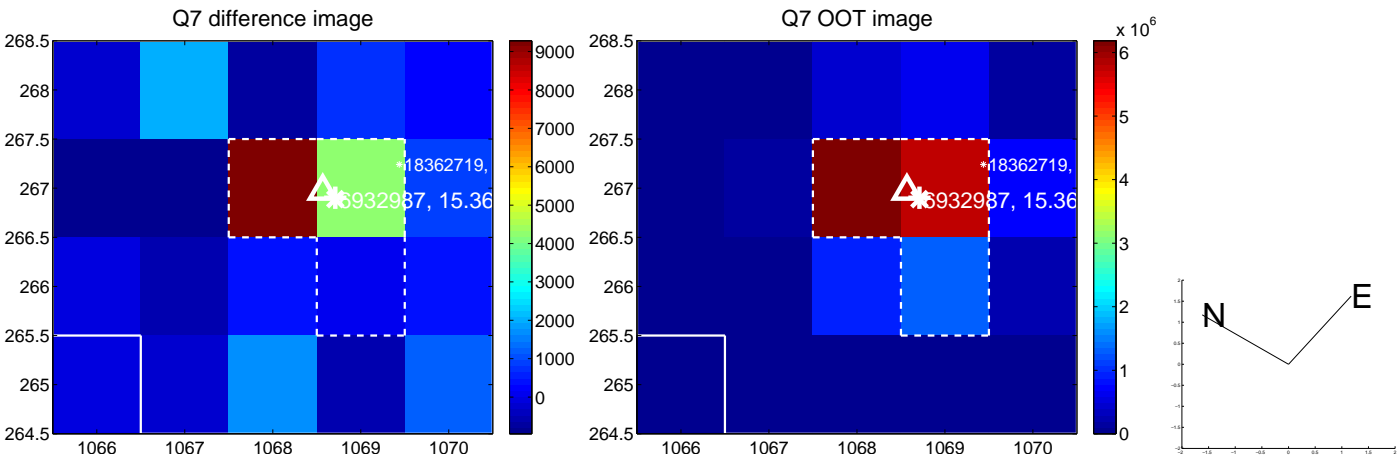
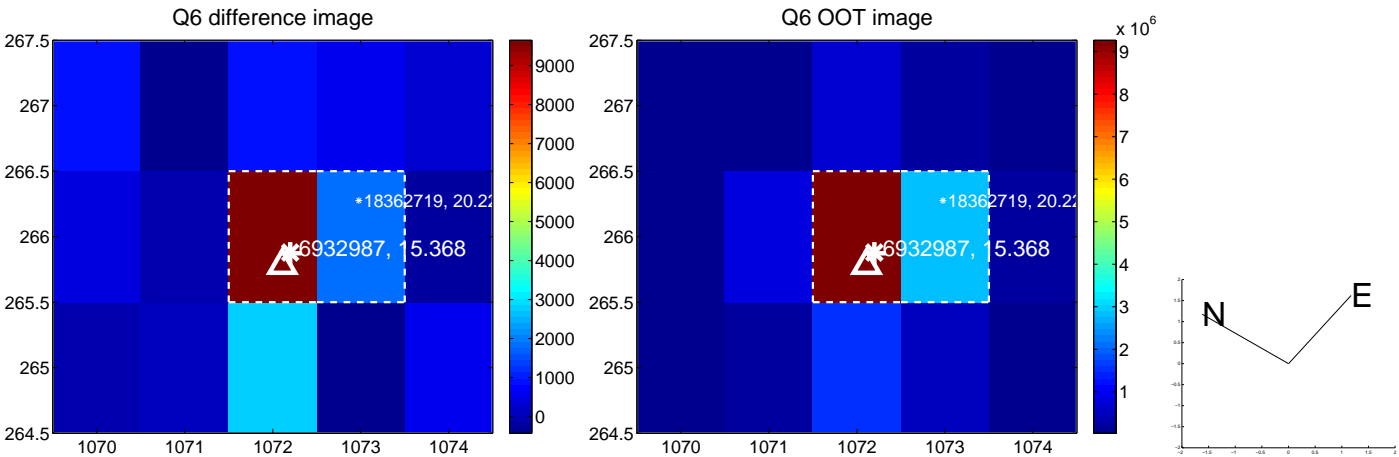
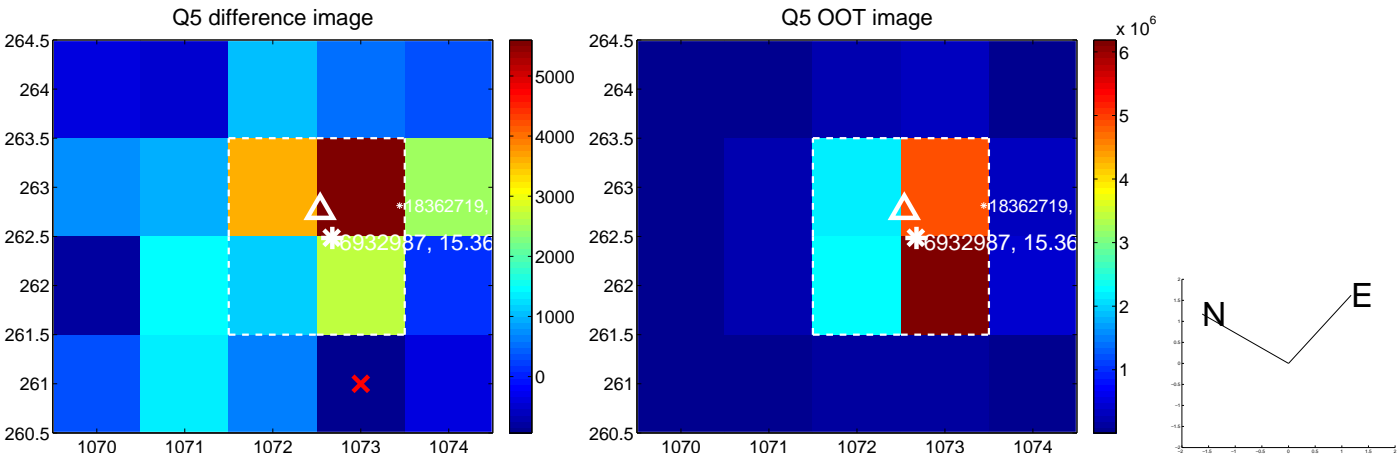


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

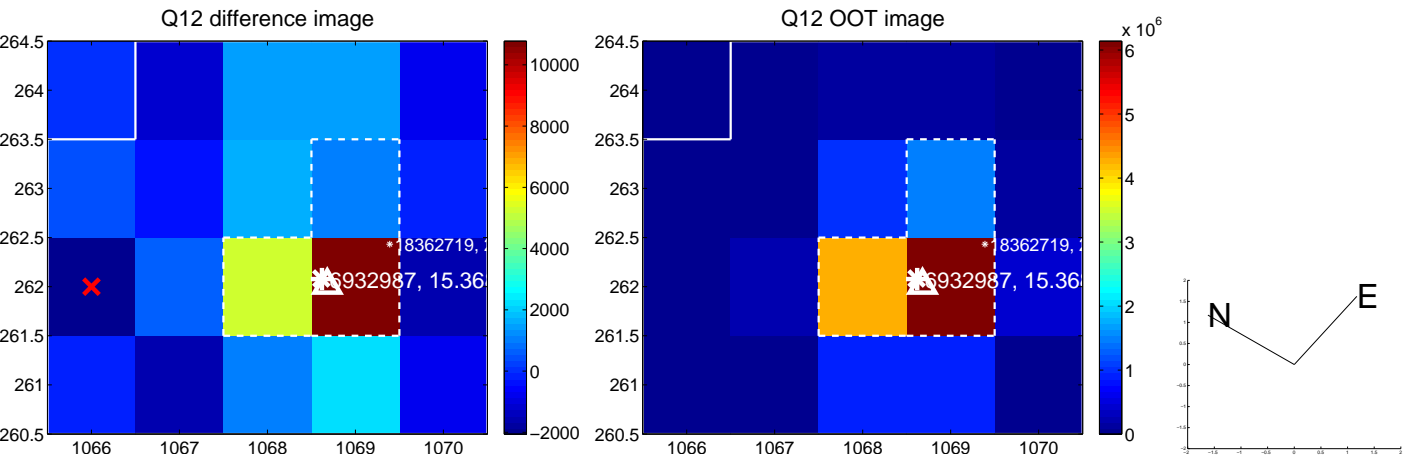
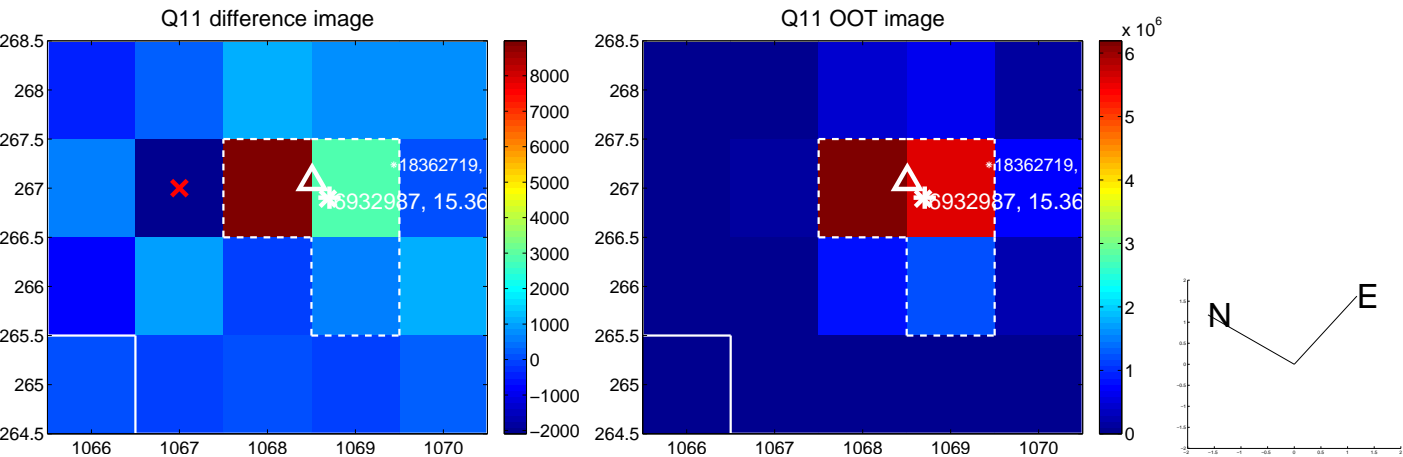
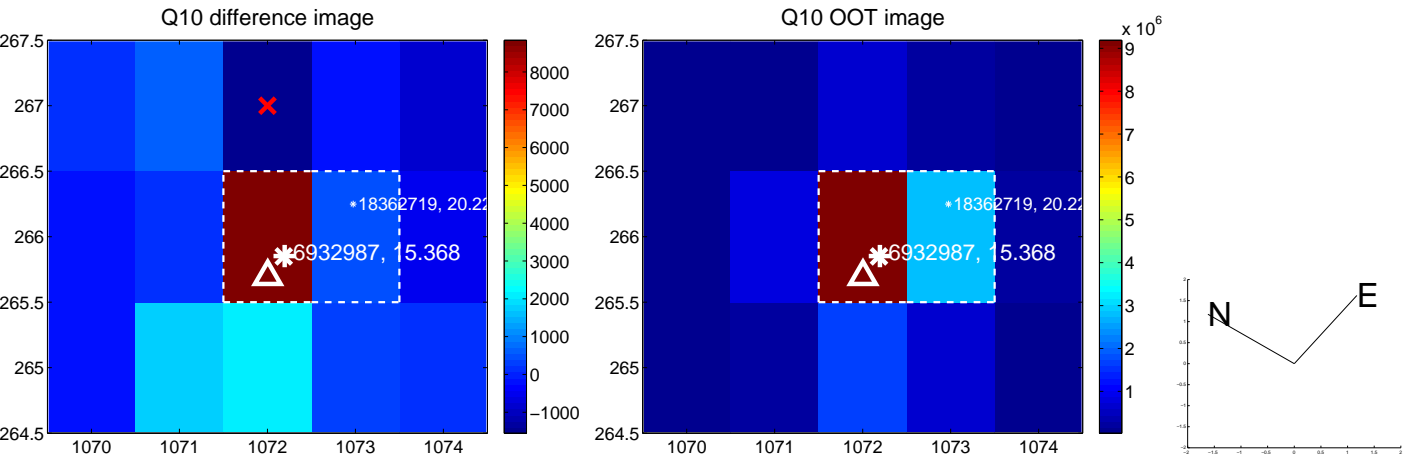
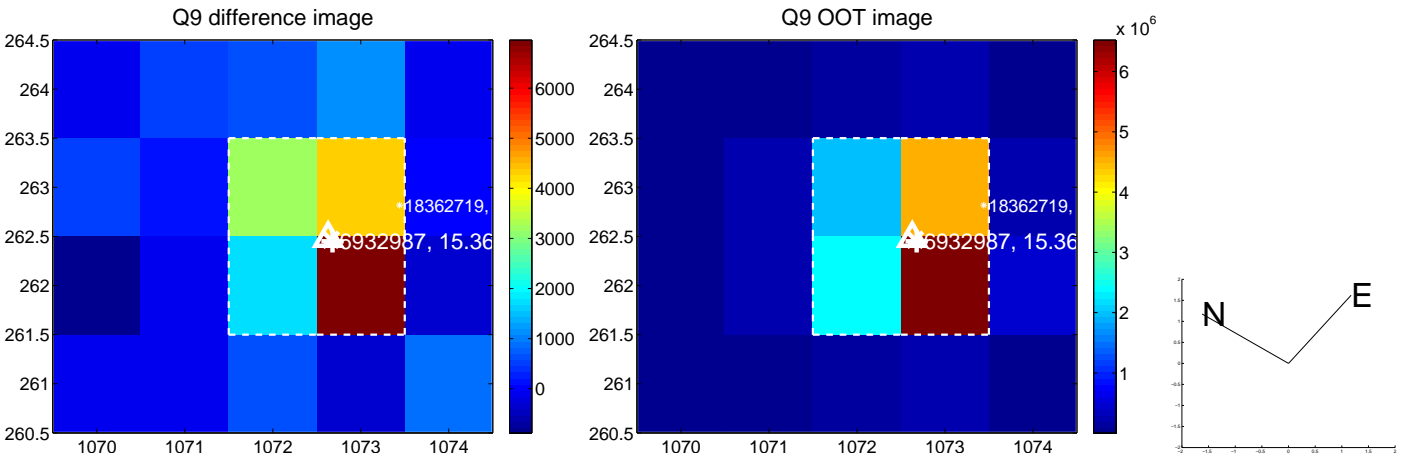
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



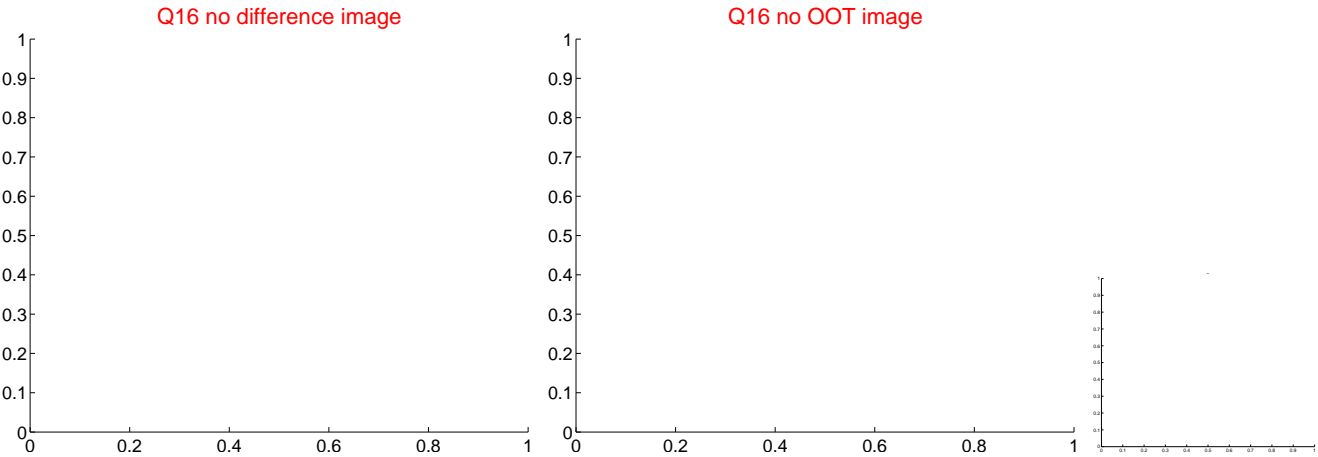
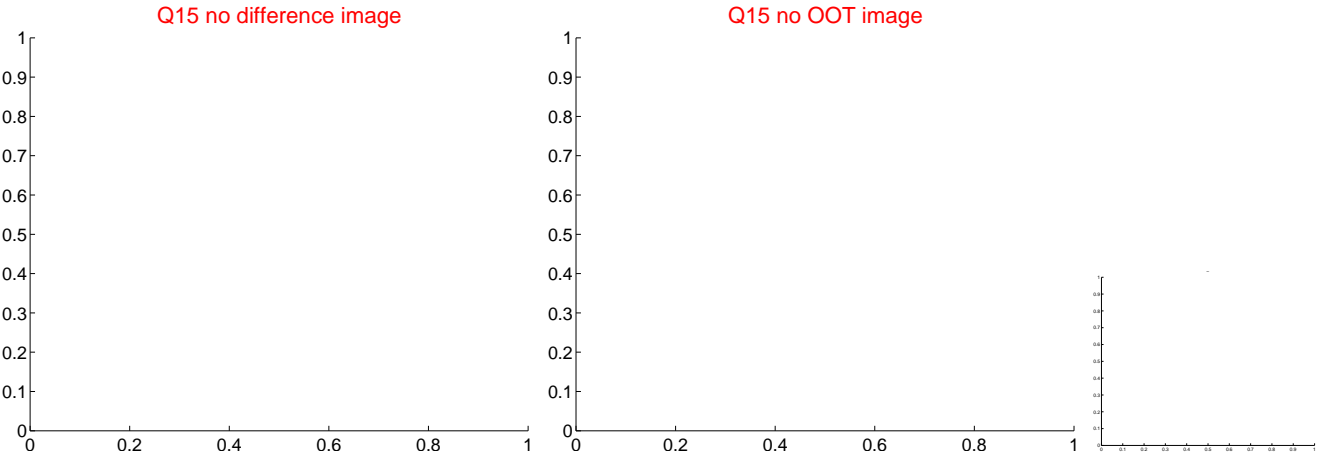
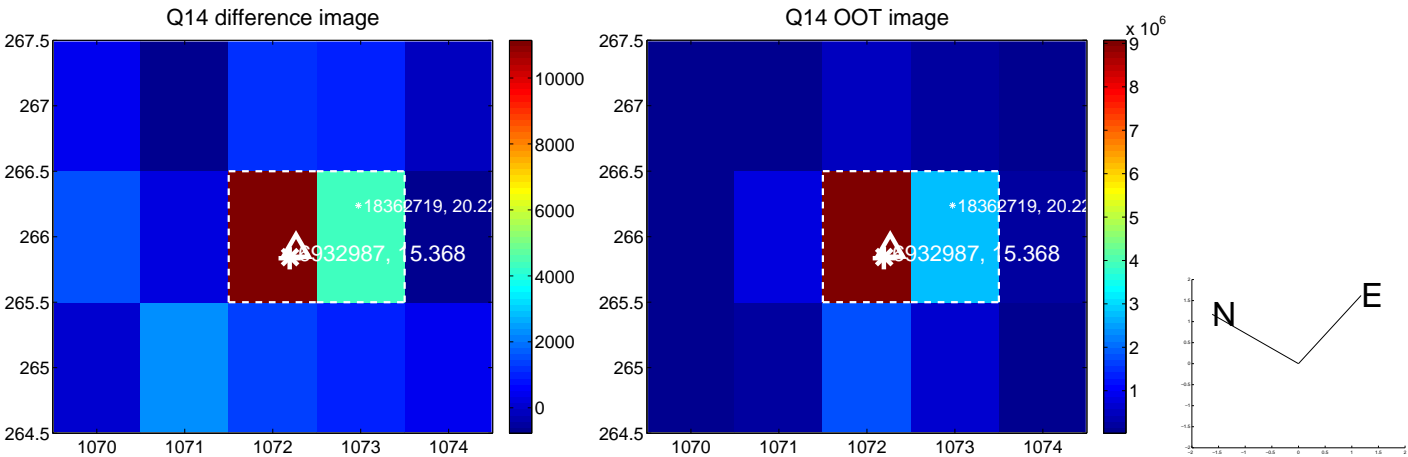
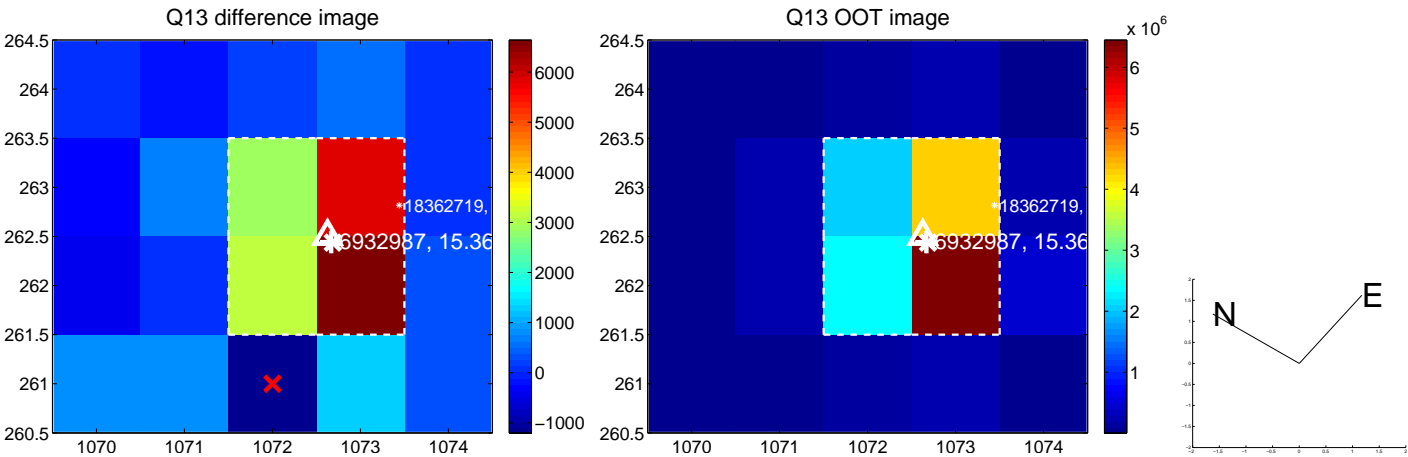
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



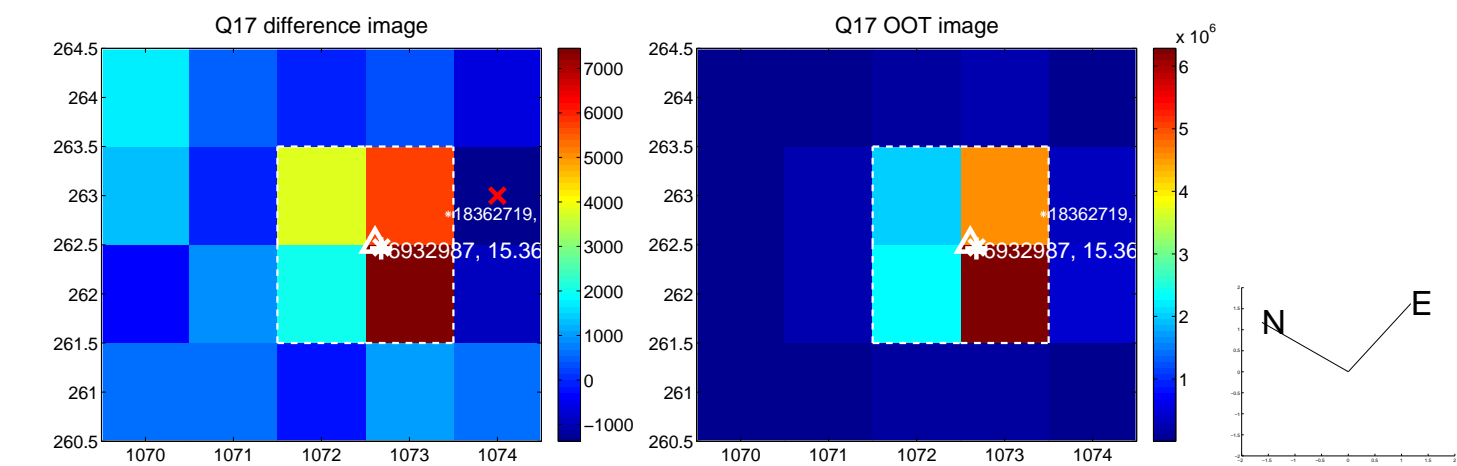
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



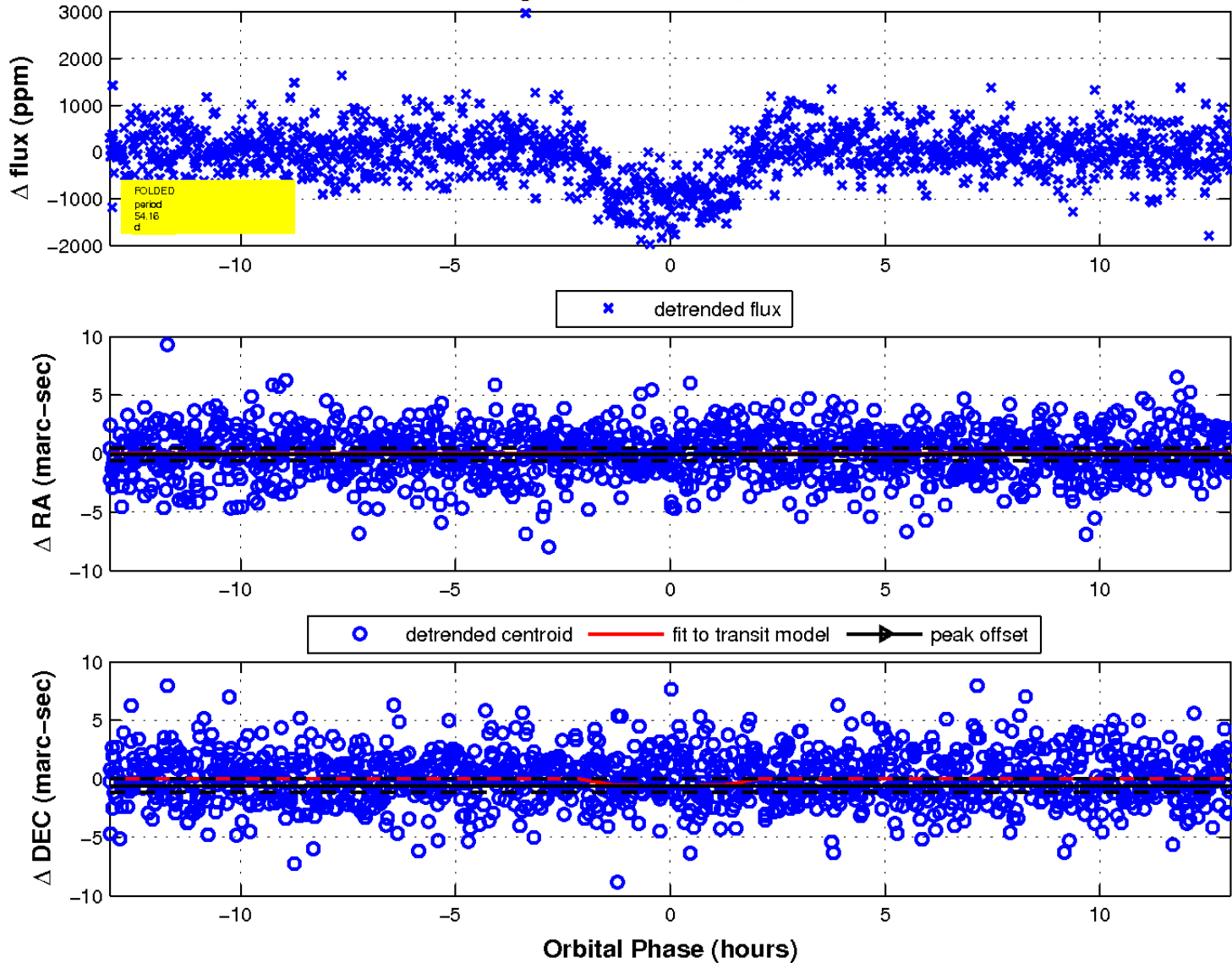
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

