

KIC 008949925

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})
008949925-01	OBS	2972.01	13.250957	141.181873	267.4	5.589	13.3	14.3	1.22	5850	2.29	123.61
008949925-02	OBS	2972.02	42.028513	138.815017	326.6	8.653	11.3	10.6	1.22	5850	2.45	26.52

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008949925-01	OBS	PC	0.98	0	0	0	0	CENT_KIC_POS
008949925-02	OBS	FP	0.38	0	0	1	0	CENT_RESOLVED_OFFSET

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.

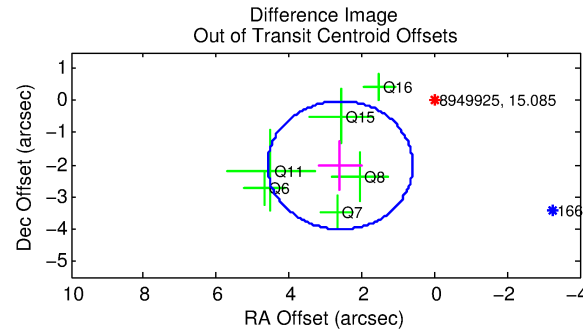
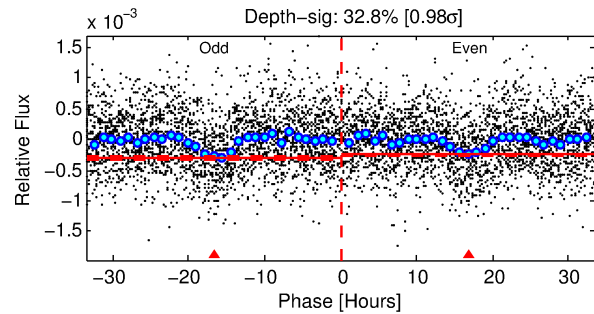
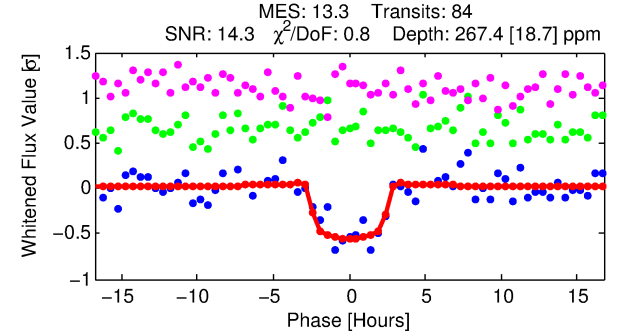
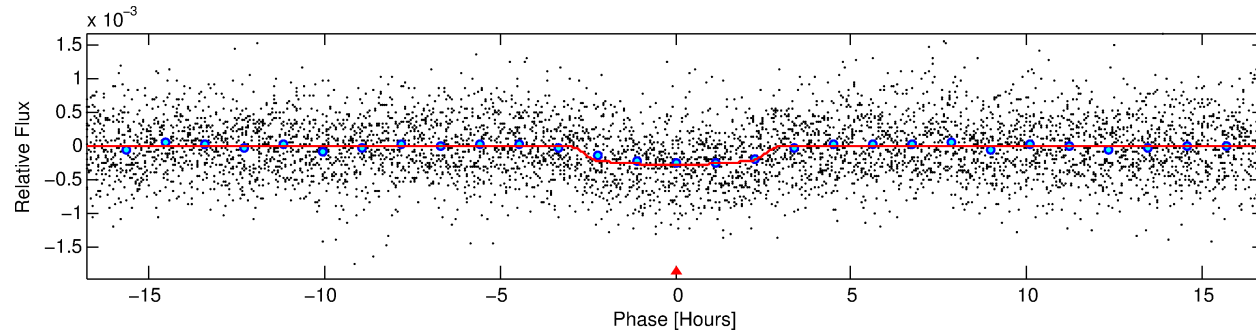
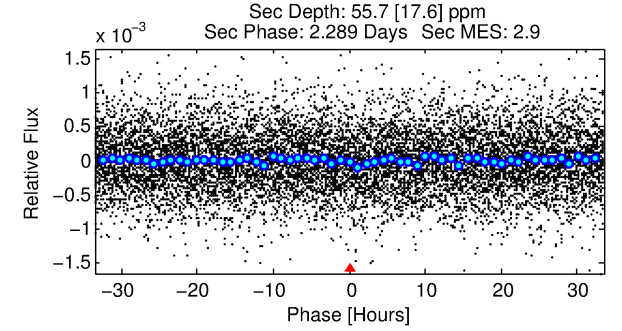
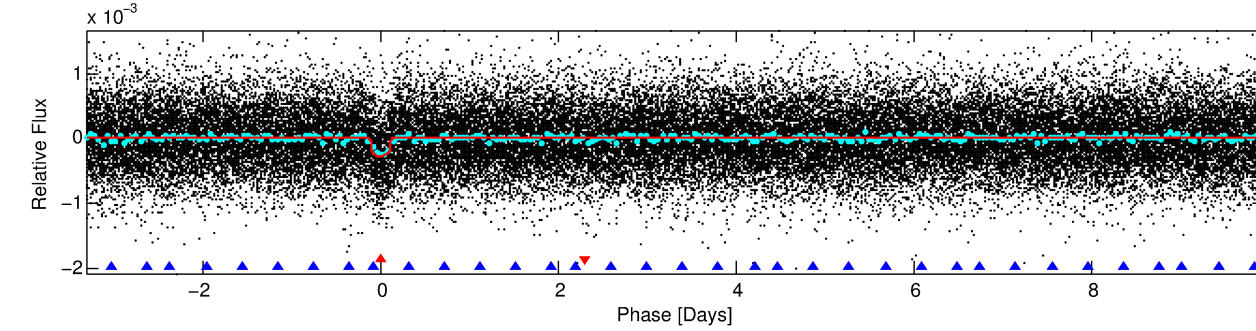
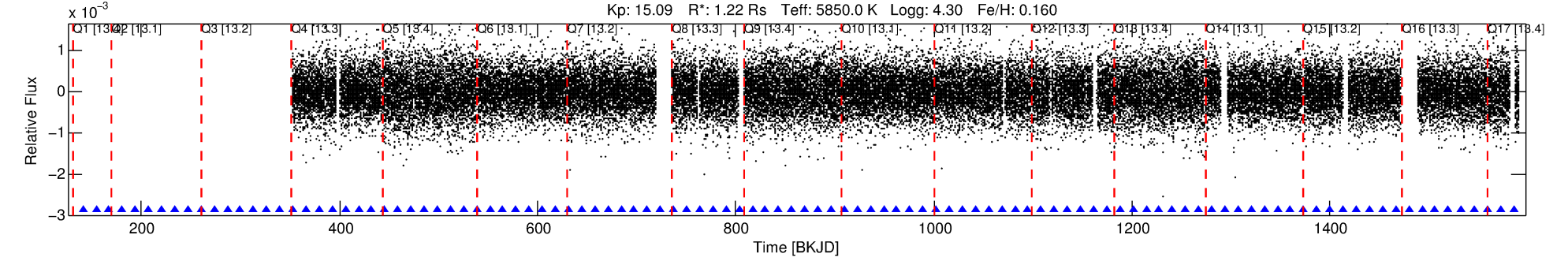
Ephemeris Match Information For 008949925-01

No Significant Match Found

DV One-Page Summary

KIC: 8949925 Candidate: 1 of 2 Period: 13.251 d

KOI: K02972.01 Corr: 0.932



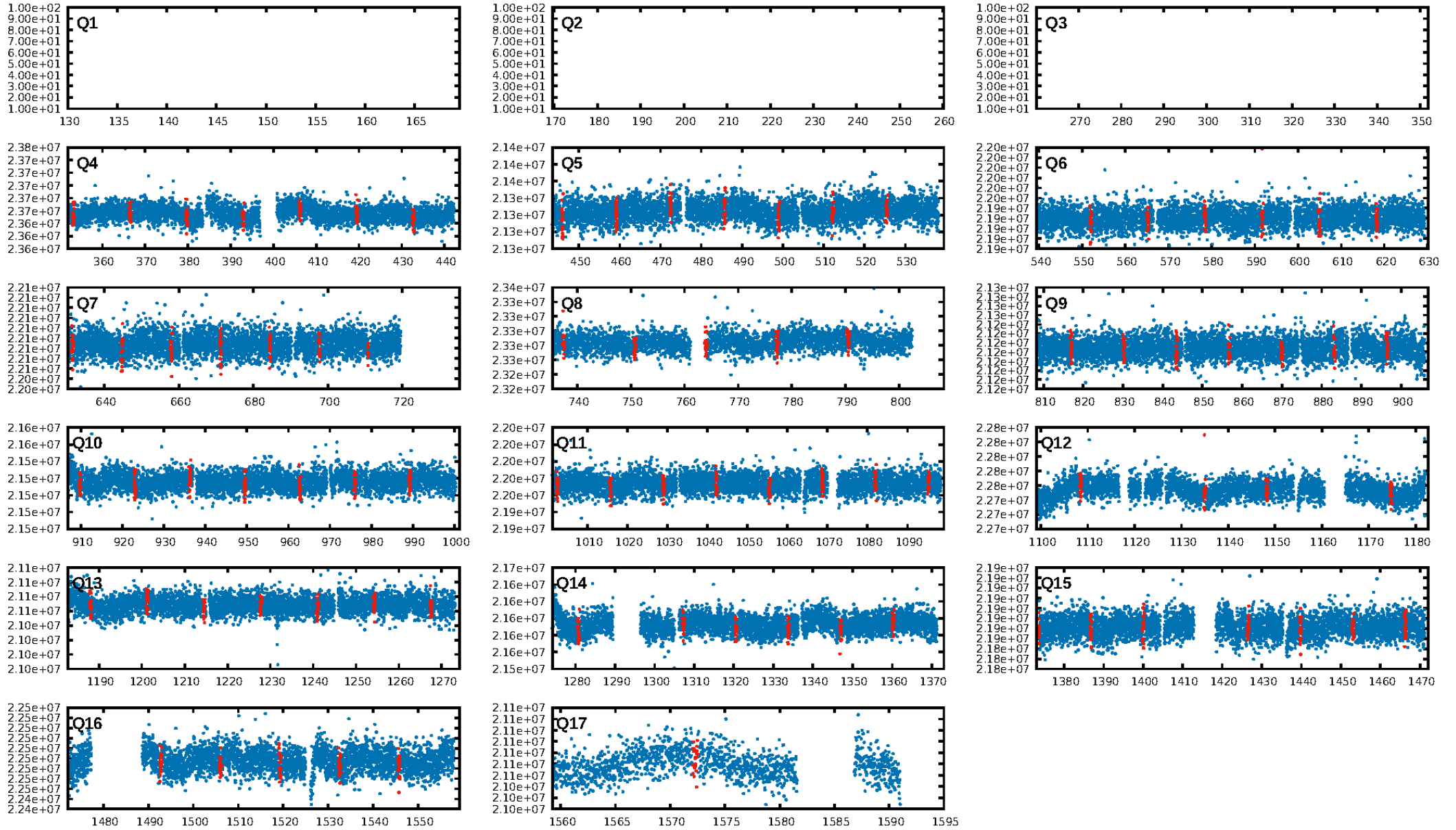
DV Fit Results:

Period = 13.25096 [0.00014] d
Epoch = 141.1819 [0.0090] BKJD
Rp/R* = 0.0173 [0.0047]
a/R* = 9.78 [12.21]
b = 0.86 [0.38]
Seff = 123.61 [27.48]
Teq = 850 [47] K
Rp = 2.29 [0.73] Re
a = 0.1121 [0.0160] AU
Ag = 73.20 [48.86] [1.48σ]
Teffp = 3845 [611] K [4.89σ]

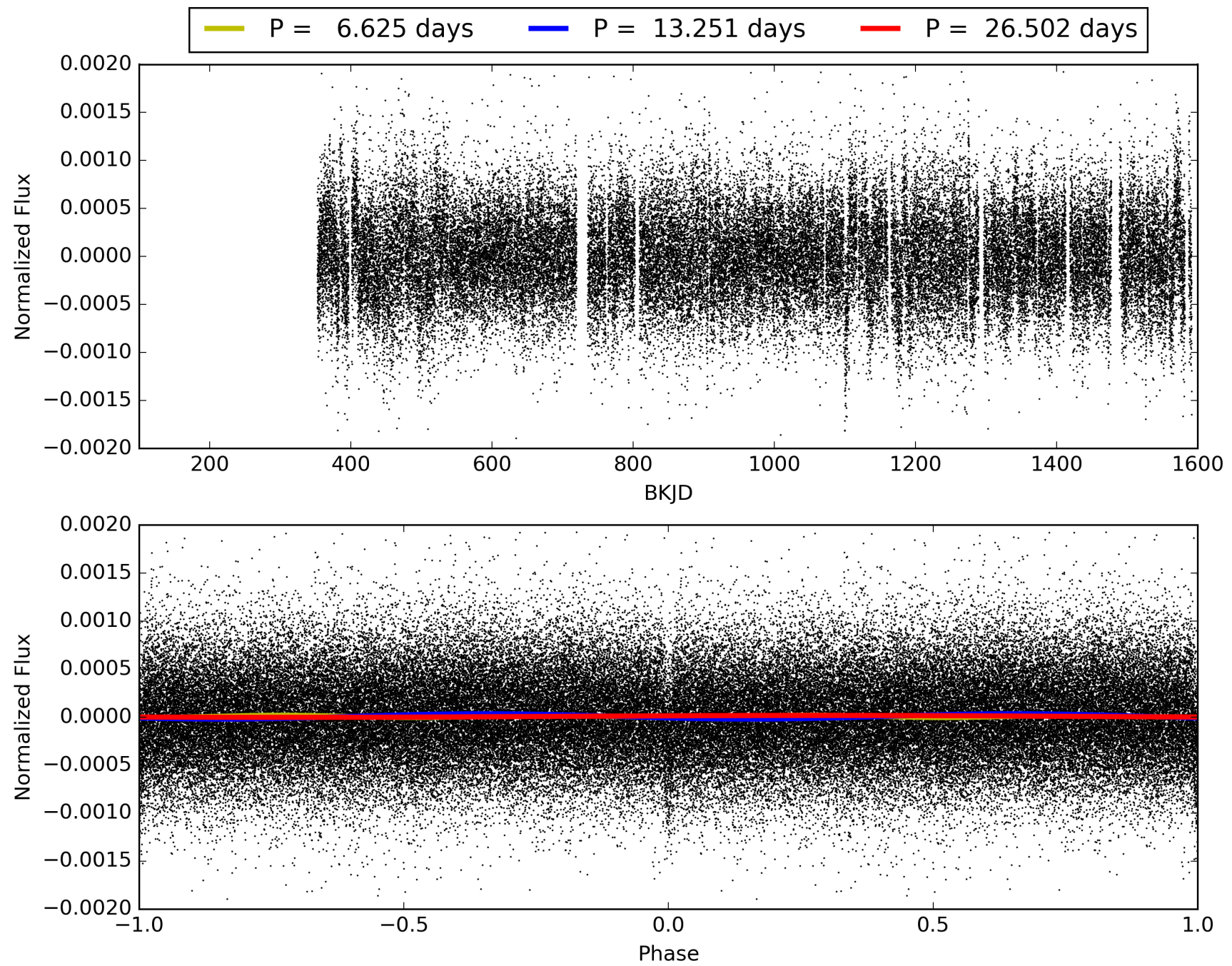
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [67.05σ]
ModelChiSquare2-sig: 98.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.01e-38
RollingBand-fgt: 1.00 [83/83]
GhostDiagnostic-chr: 6.289
Centroid-sig: 0.0%
Centroid-so: 3.060 arcsec [11.24σ]
OotOffset-rm: 3.287 arcsec [4.93σ]
KicOffset-rm: 1.928 arcsec [1.79σ]
OotOffset-st: 1/3/2/0 [6]
KicOffset-st: 1/3/2/2 [8]
DiffImageQuality-fgm: 0.62 [5/8]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 008949925-01, PDC Light Curves

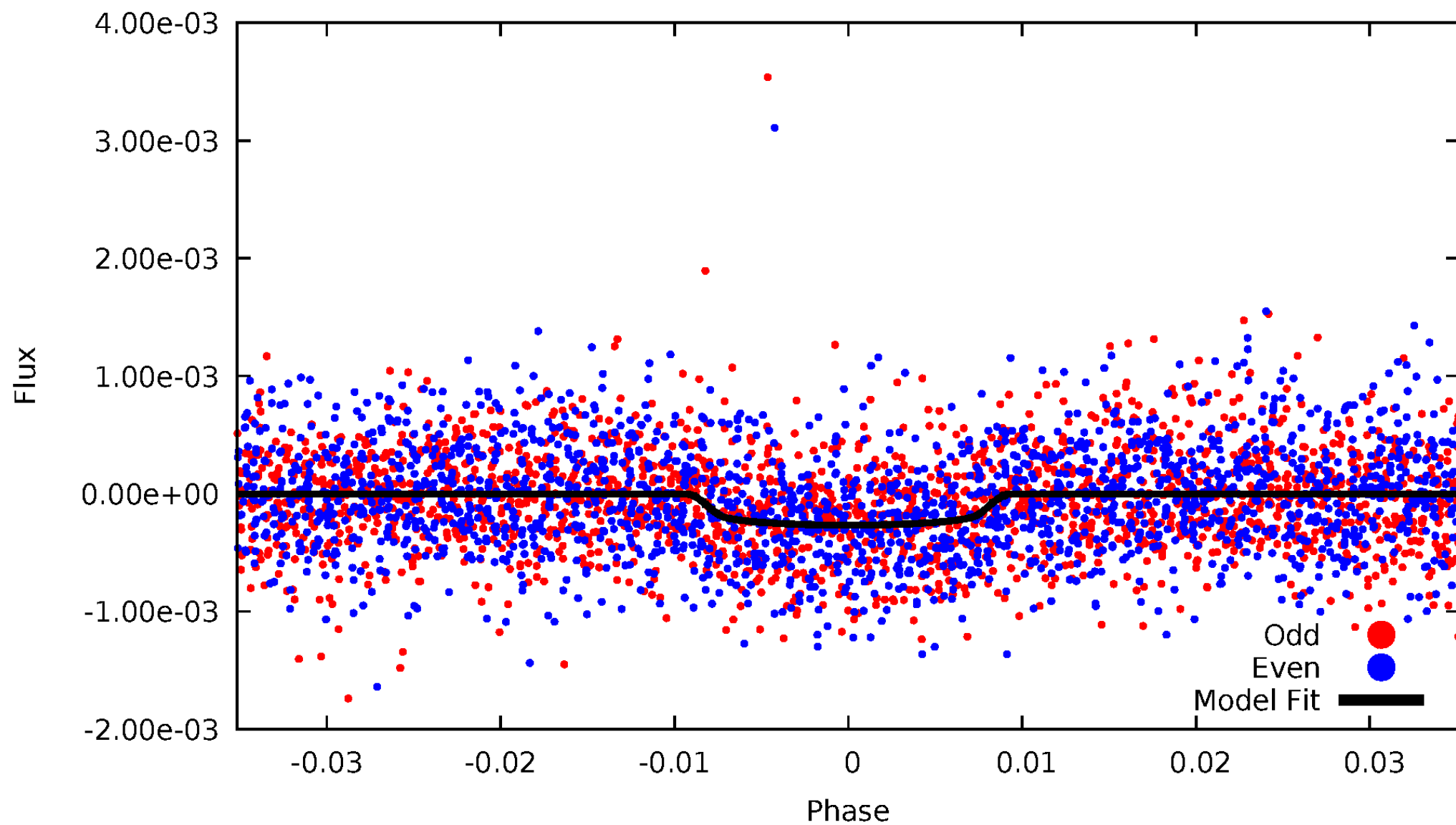


TCE 008949925-01



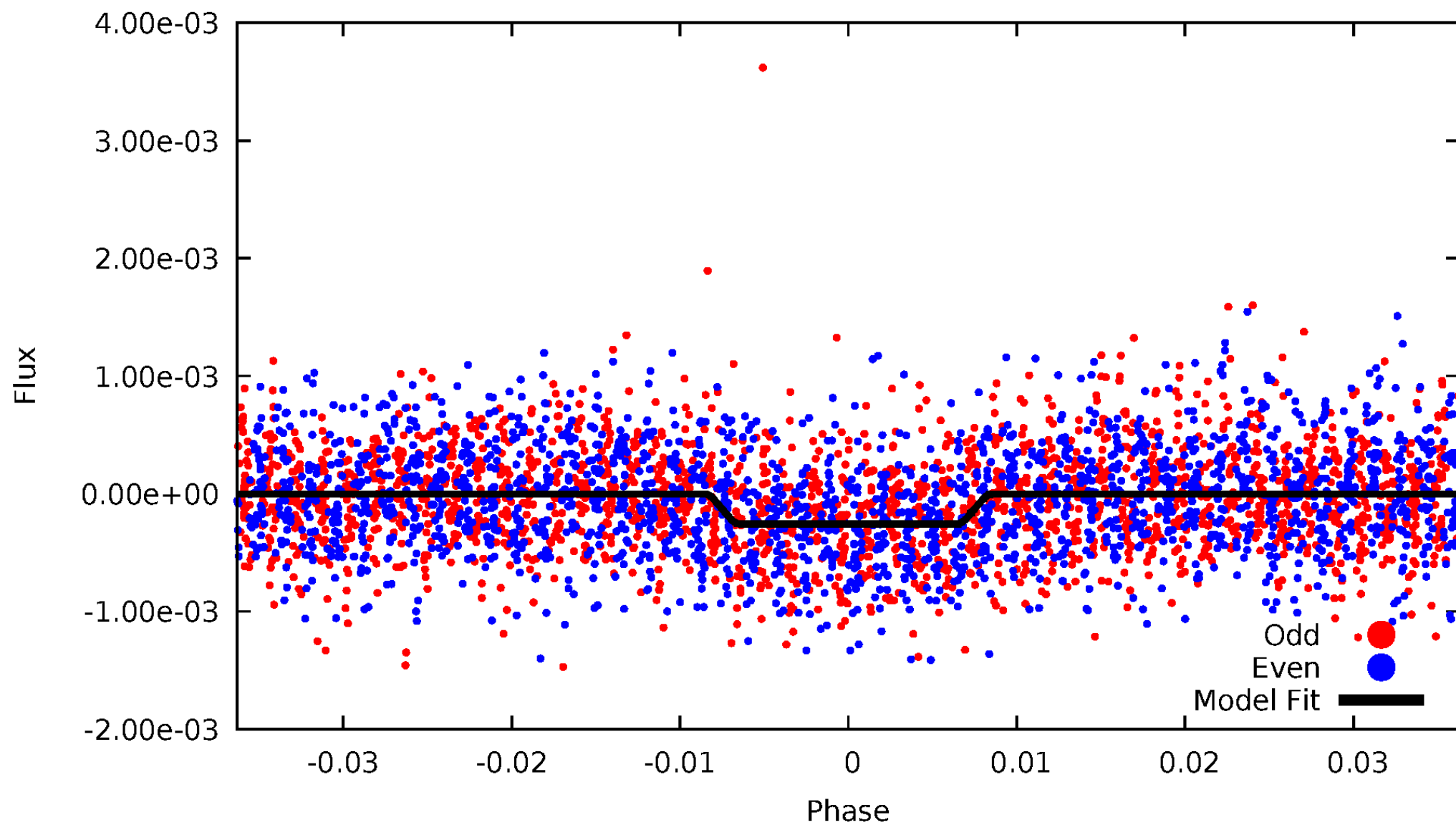
DV Odd/Even

TCE 008949925-01



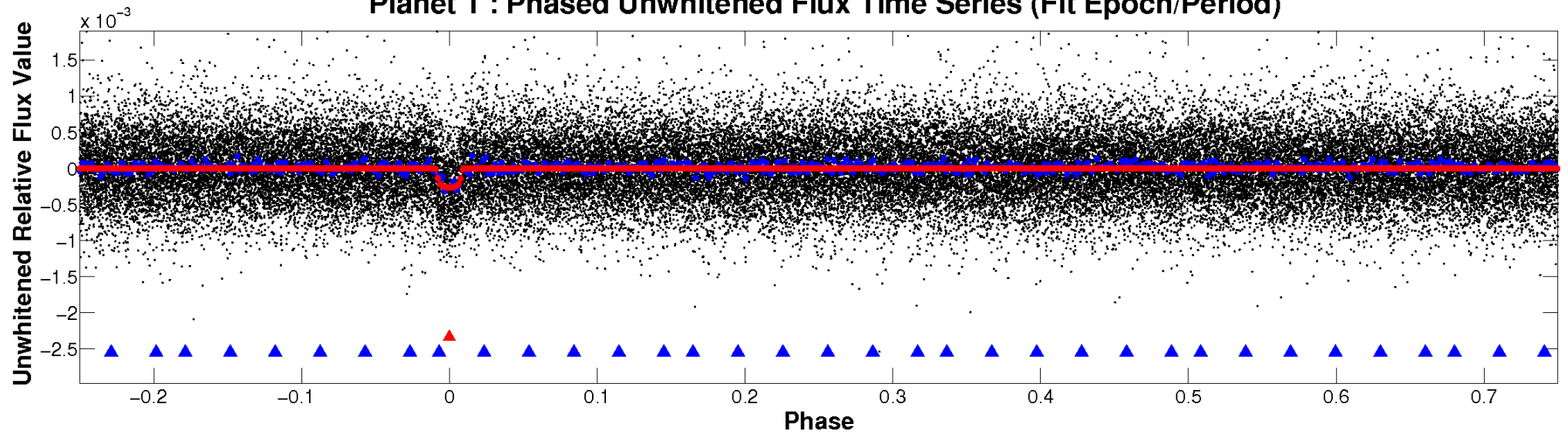
ALT Odd/Even

TCE 008949925-01

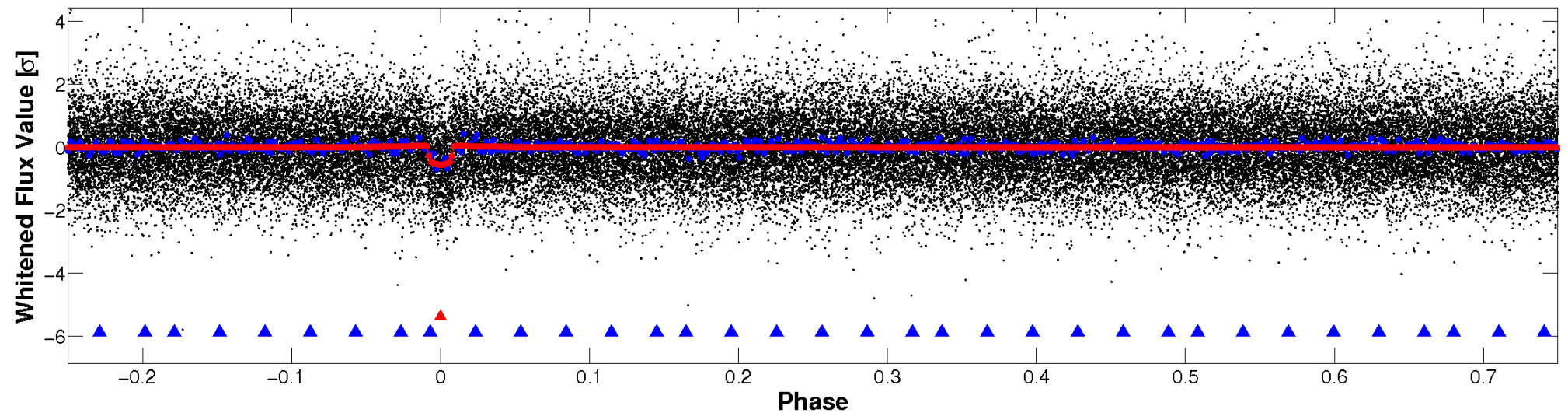


Non-Whitened Vs. Whitened Light Curve

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

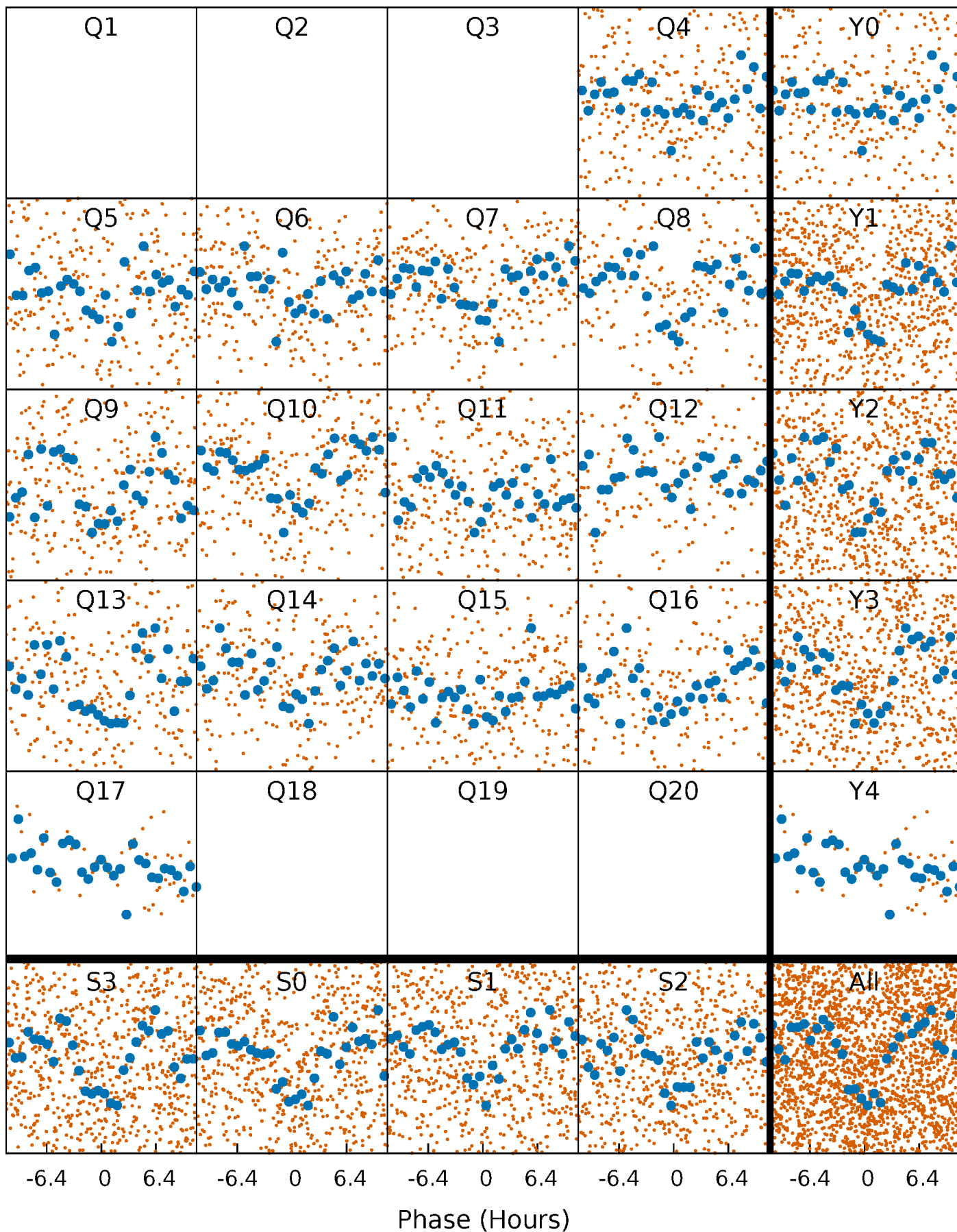


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



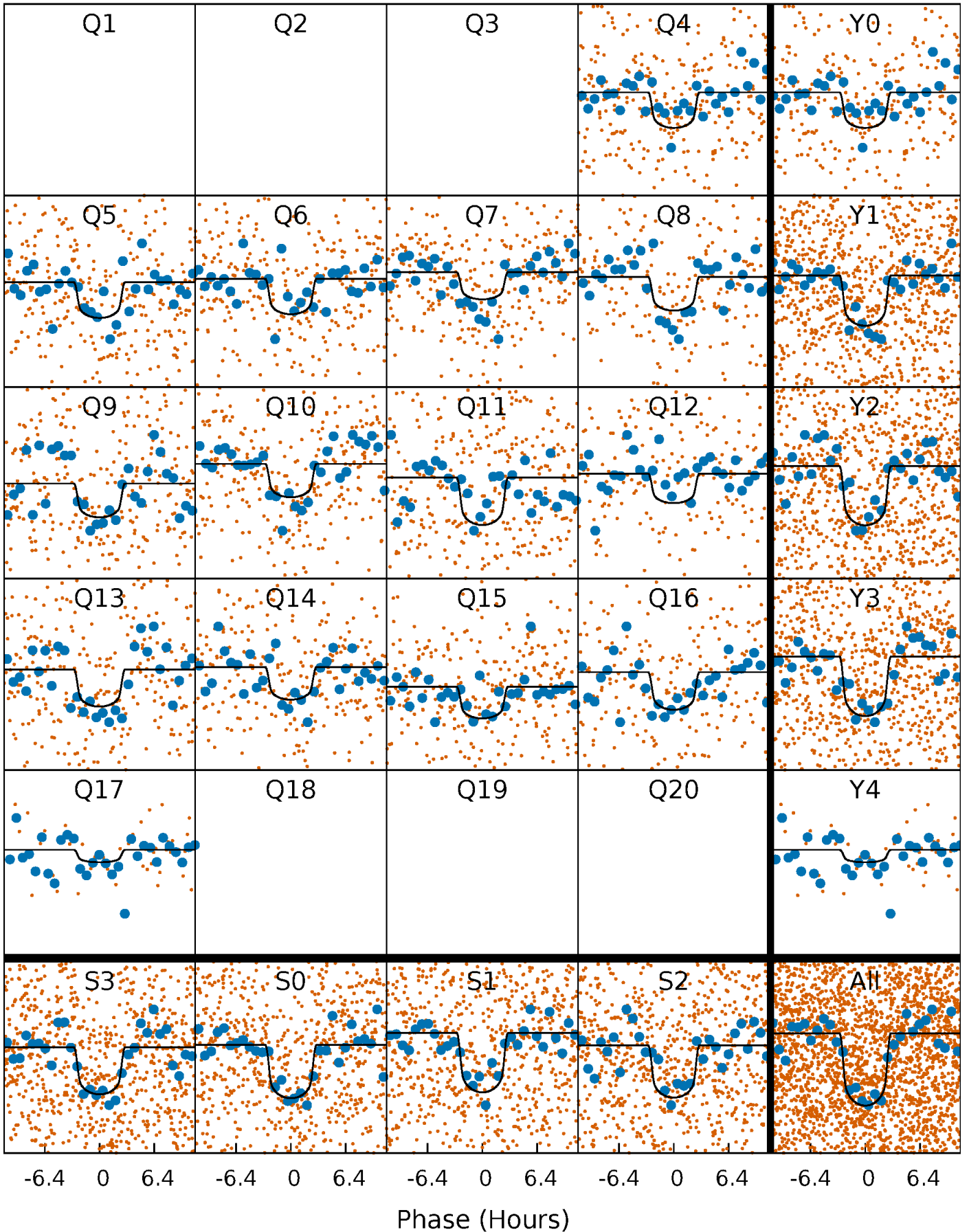
PDC Quarter-Phased Transit Curves

TCE 008949925-01 P= 13.250957 Days $T_0=141.181873$ (BKJD)



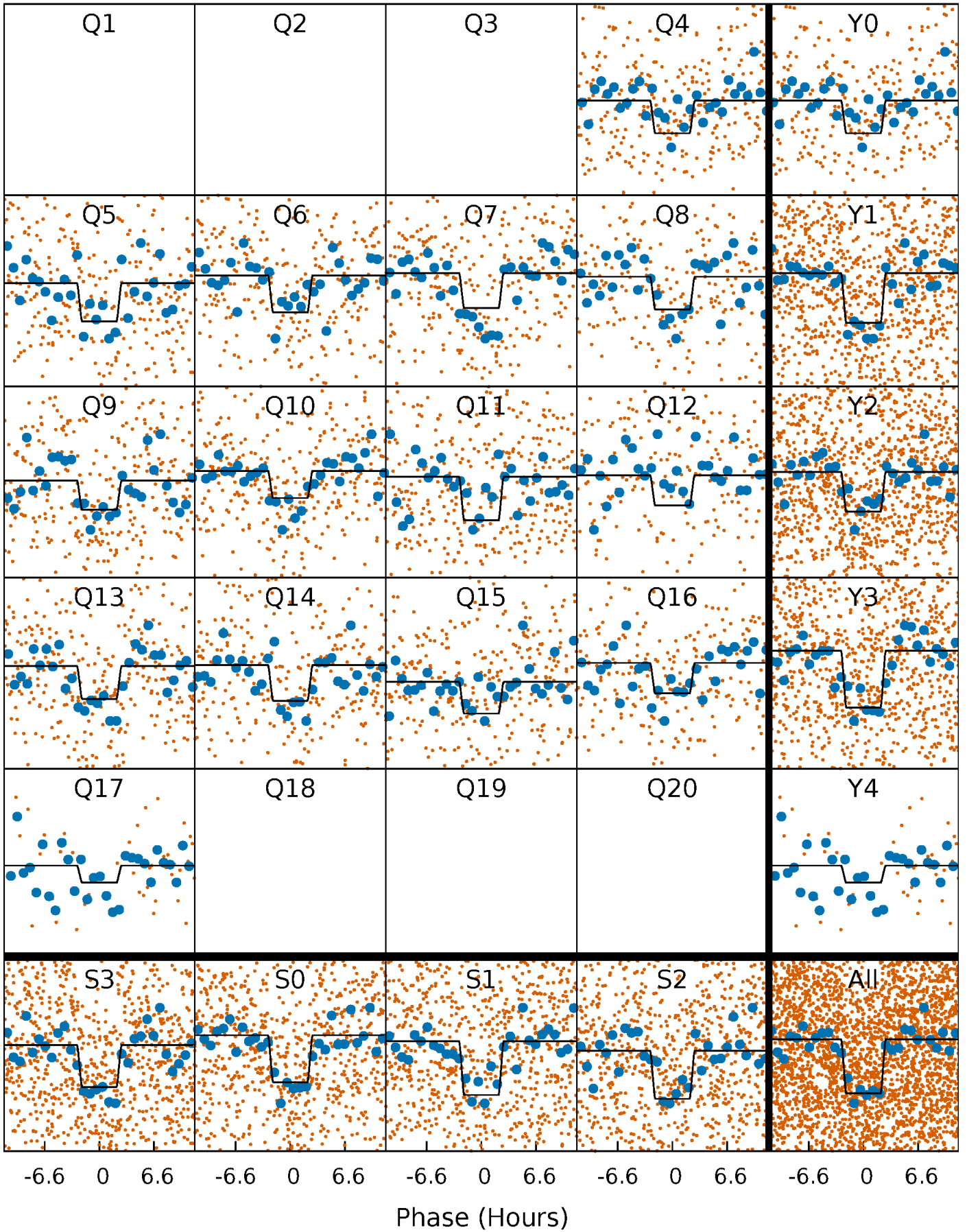
DV Quarter-Phased Transit Curves

TCE 008949925-01 P= 13.250957 Days $T_0=141.181873$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

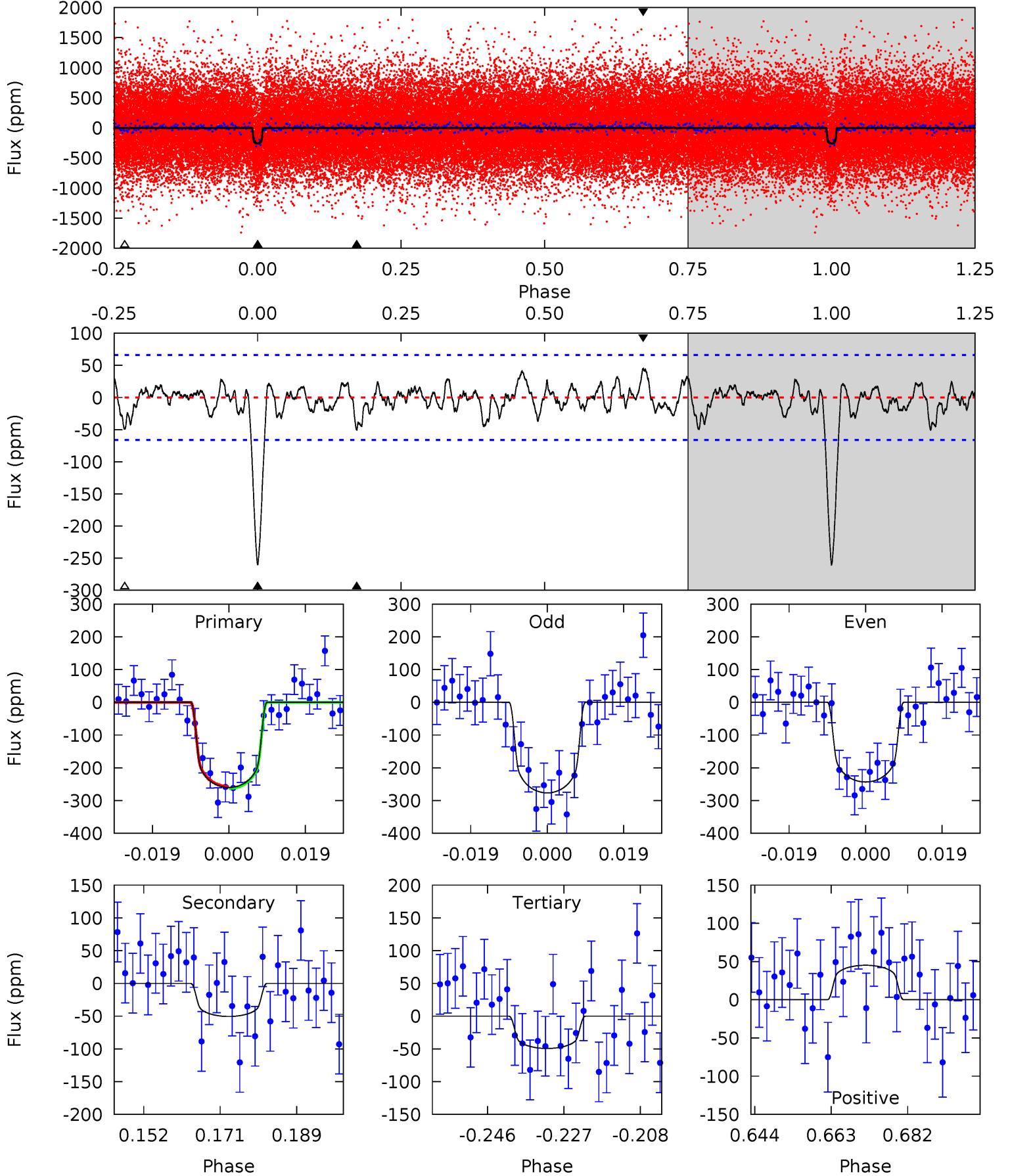
TCE 008949925-01 P= 13.251090 Days $T_0=141.177592$ (BKJD)



DV Model-Shift Uniqueness Test

008949925-01, $P = 13.250957$ Days, $E = 141.181873$ Days

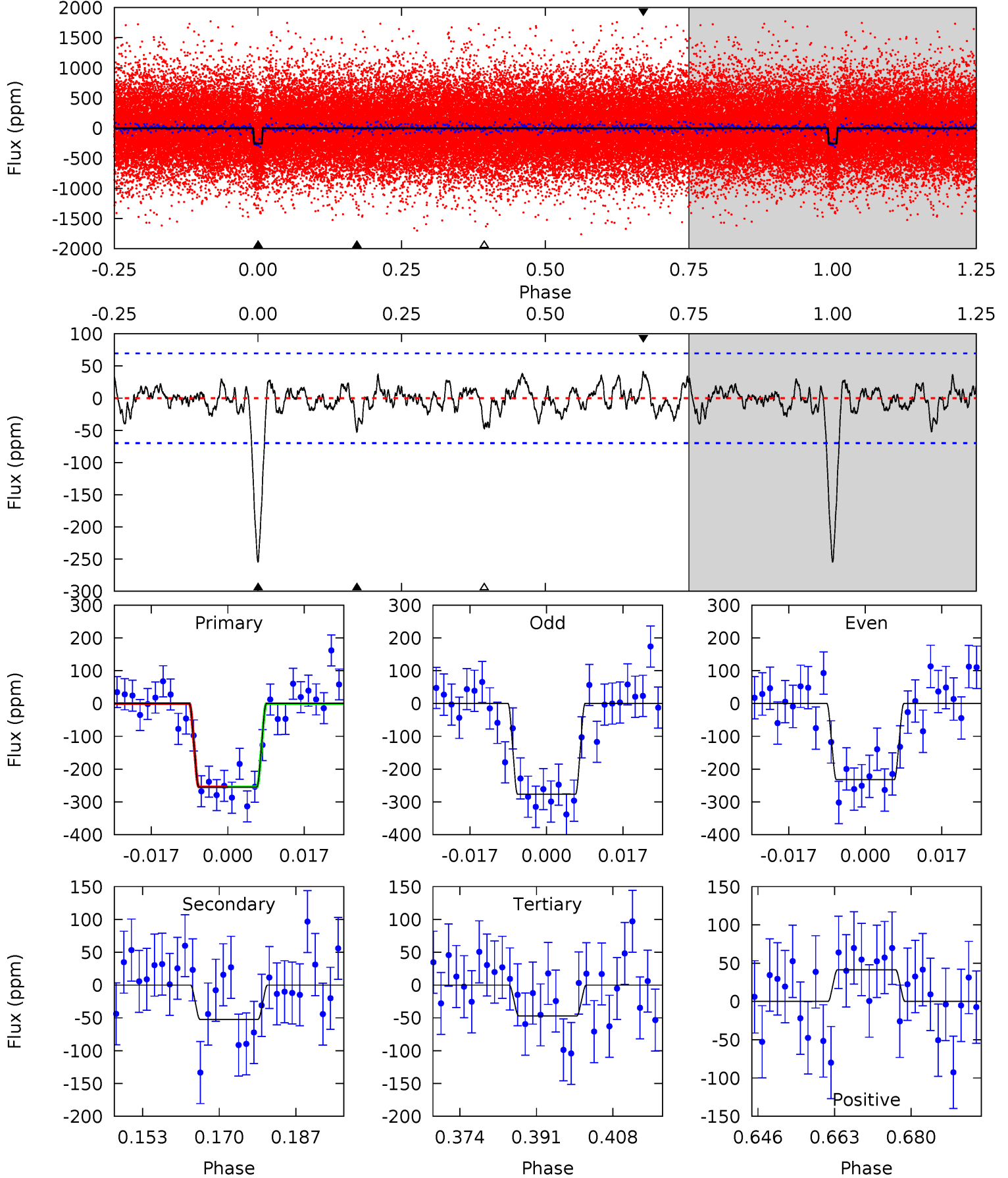
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.3	3.73	3.65	3.34	4.90	2.35	1.21	15.6	15.9	0.09	0.40	1.23	1.03	0.15	0.19



Alt Model-Shift Uniqueness Test

008949925-01, P = 13.251090 Days, E = 141.177592 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	3.69	3.32	2.93	4.92	2.39	1.12	14.6	15.0	0.37	0.76	1.57	1.00	0.14	0.01



Stellar Parameters For KIC 008949925

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5850^{+70}_{-88}	$4.297^{+0.120}_{-0.120}$	$0.160^{+0.150}_{-0.150}$	$1.217^{+0.199}_{-0.163}$	$1.072^{+0.070}_{-0.078}$	$0.837^{+0.441}_{-0.288}$
	+1%/-2%	+3%/-3%	+94%/-94%	+16%/-13%	+7%/-7%	+53%/-34%
Source	SPE90	SPE90	SPE90	DSEP		

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

Secondary Eclipse Parameters for KIC 008949925-01 / KOI 2972.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-50 ± 14	$2.27^{+0.69}_{-0.60}$	1183^{+54}_{-51}	4047^{+530}_{-383}	66^{+66}_{-29}
Alt.	-52 ± 14	$2.13^{+0.62}_{-0.67}$	1186^{+53}_{-50}	4171^{+718}_{-427}	80^{+97}_{-38}

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

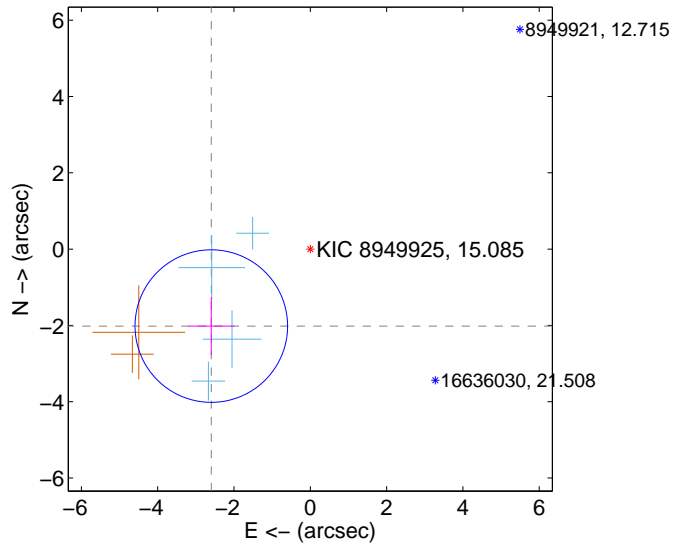
Supplemental centroid analysis for 008949925-01. Kepler magnitude: 15.09. Transit SNR 14.31

There are 5 quarters with good PRF difference image offsets

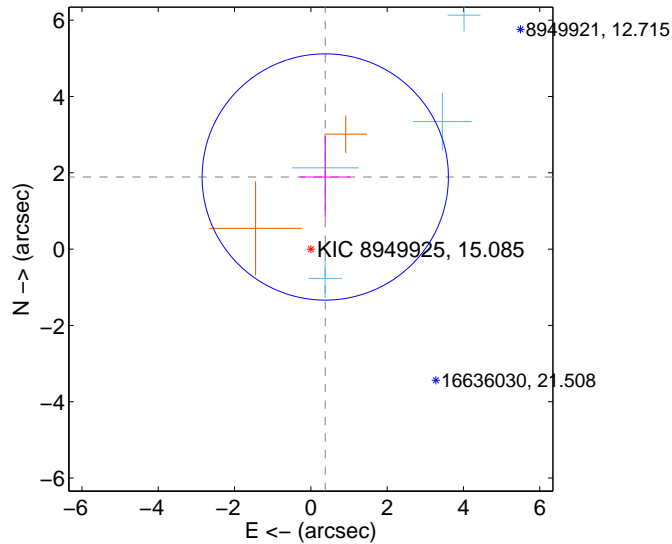
The OOT PRF centroid is offset from the target star catalog position by about 7.95 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.287 ± 0.666	4.93	2.595 ± 0.602	-2.018 ± 0.761
PRF-fit source offset from KIC position	1.928 ± 1.076	1.79	-0.378 ± 0.665	1.891 ± 1.089
photometric centroid source offset	3.06 ± 0.27	11.24	-2.58 ± 0.29	1.64 ± 0.24

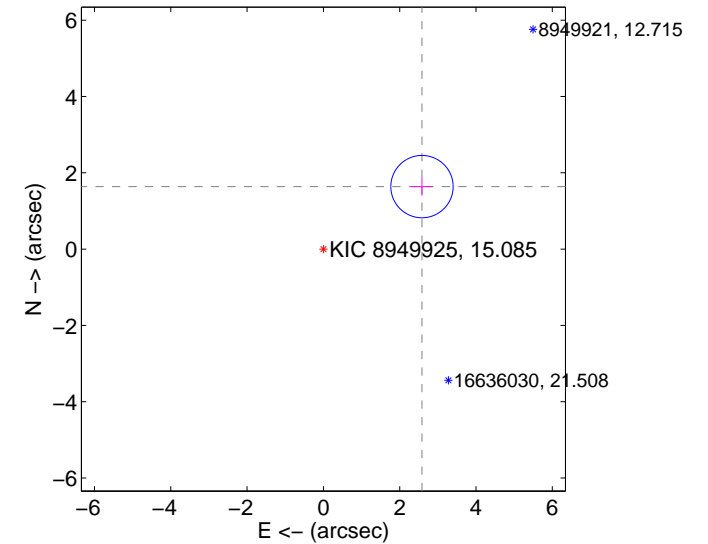
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

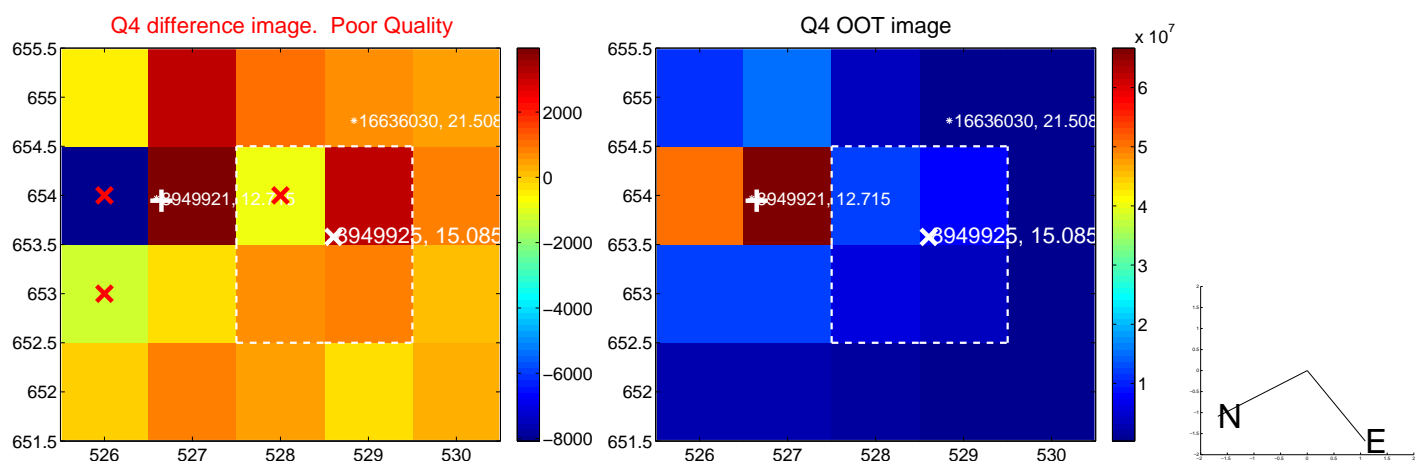
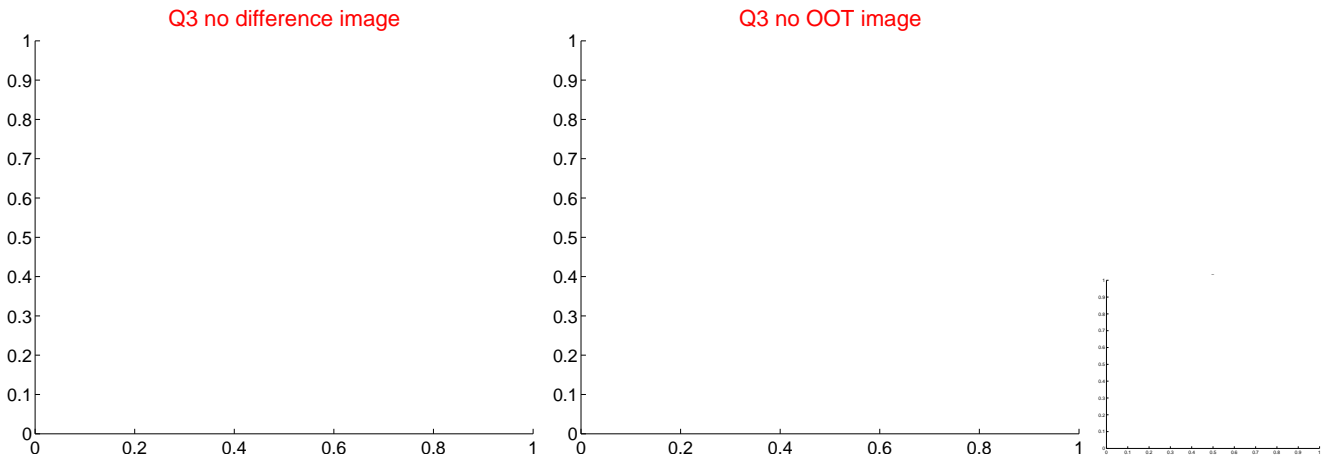
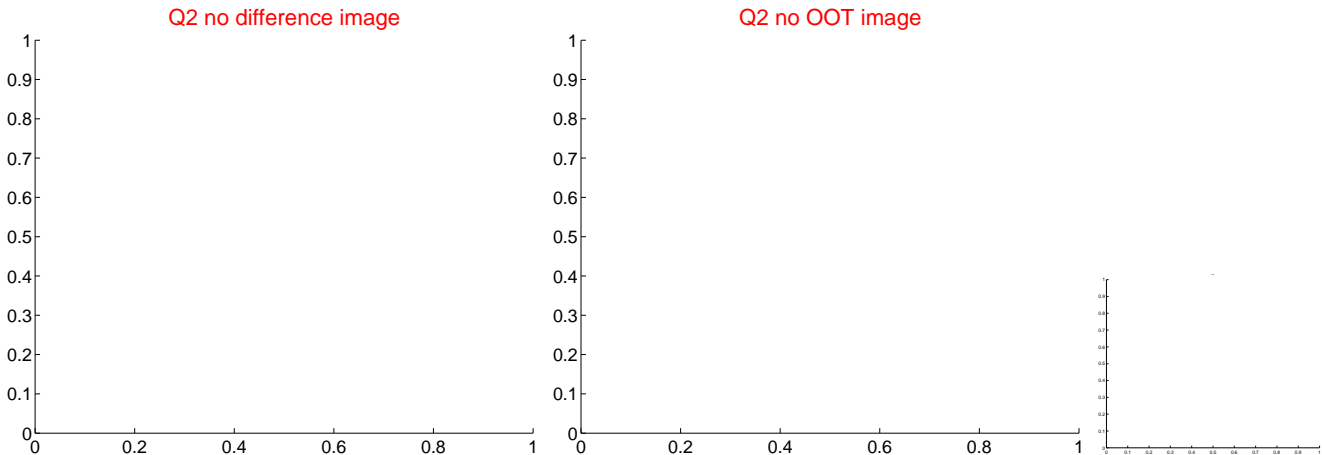
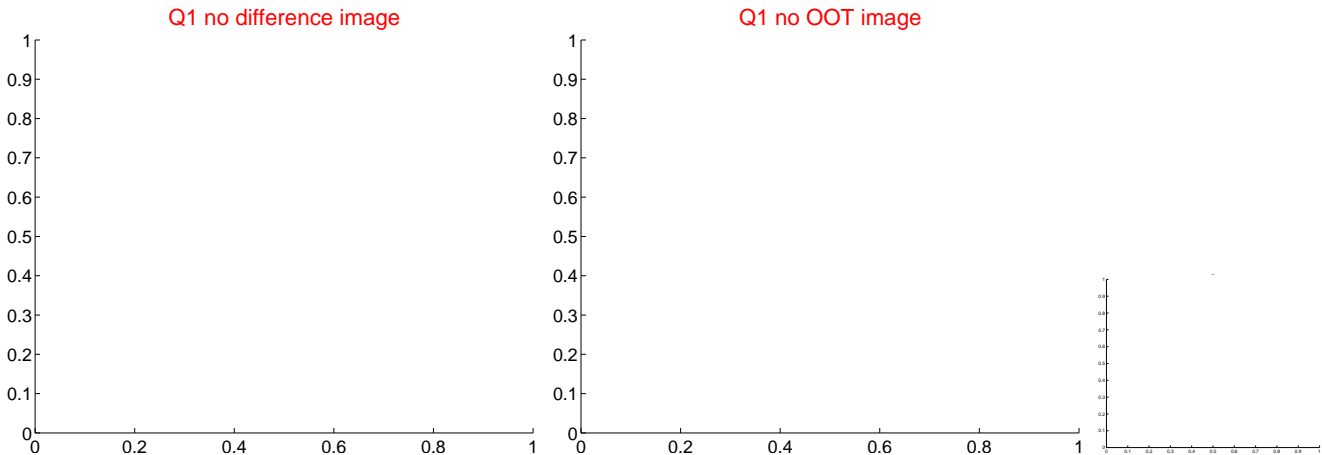


offset from photometric centroids

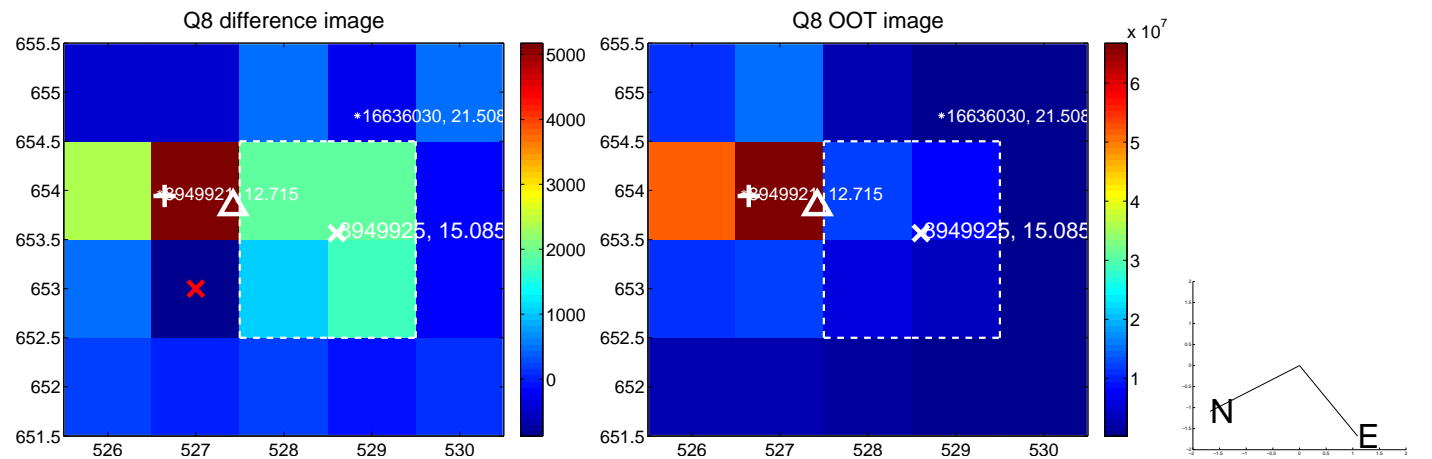
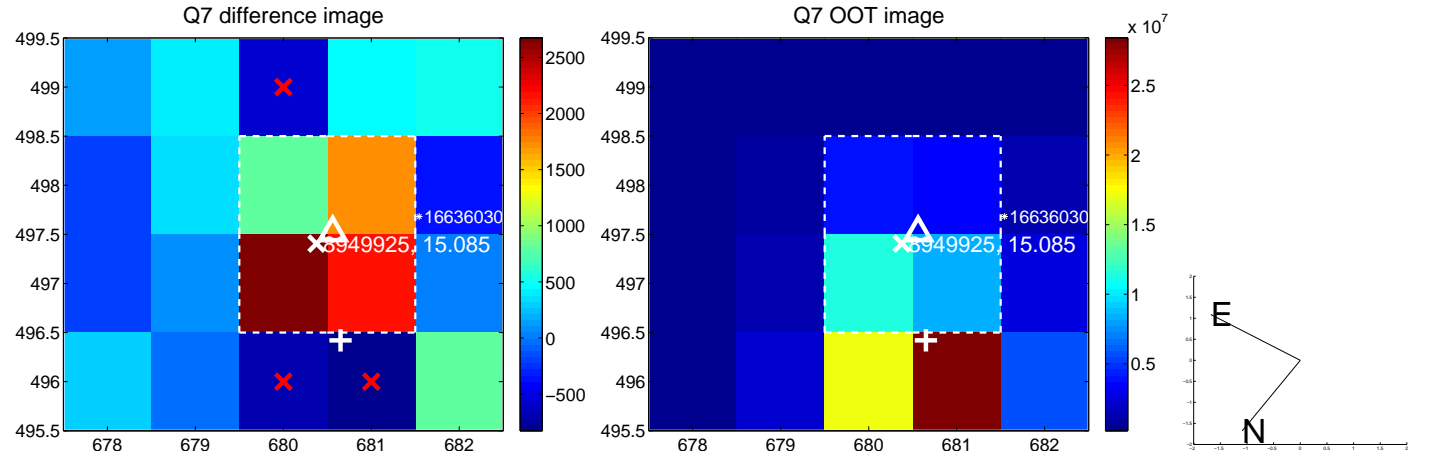
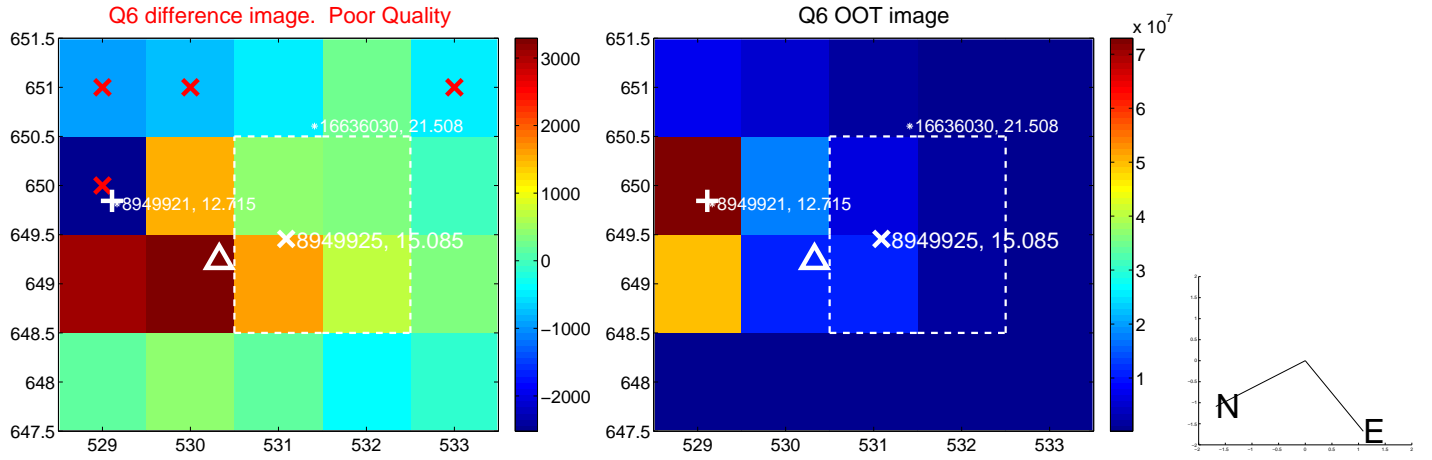
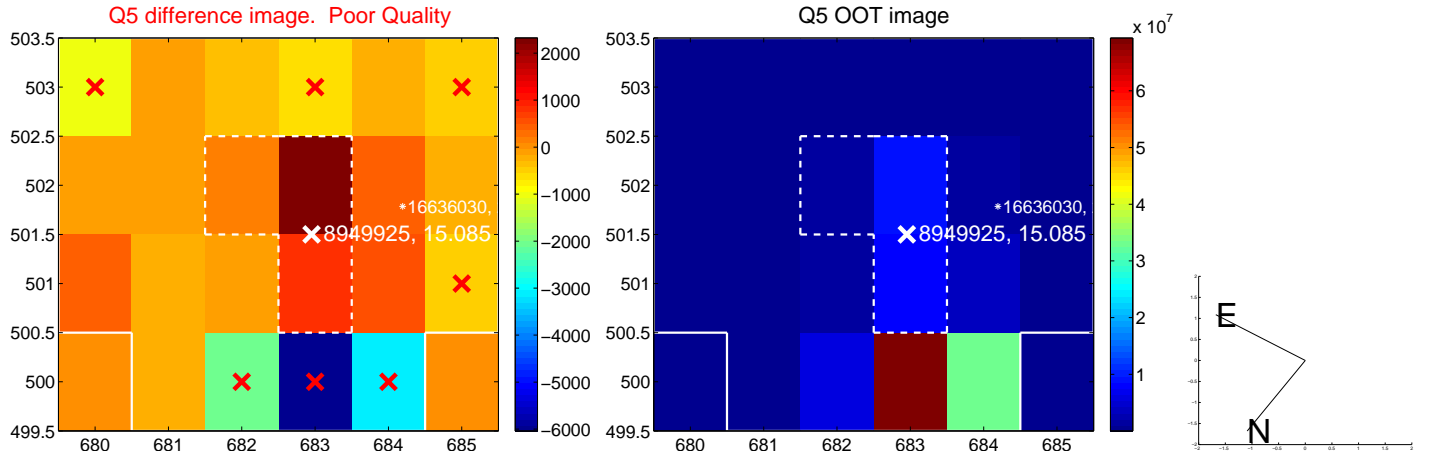


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

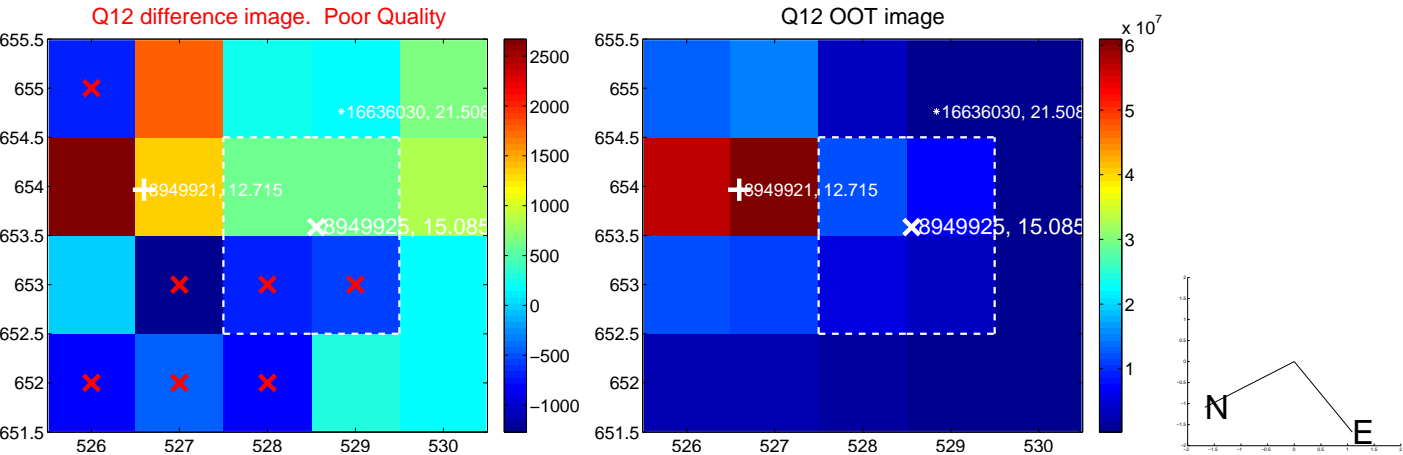
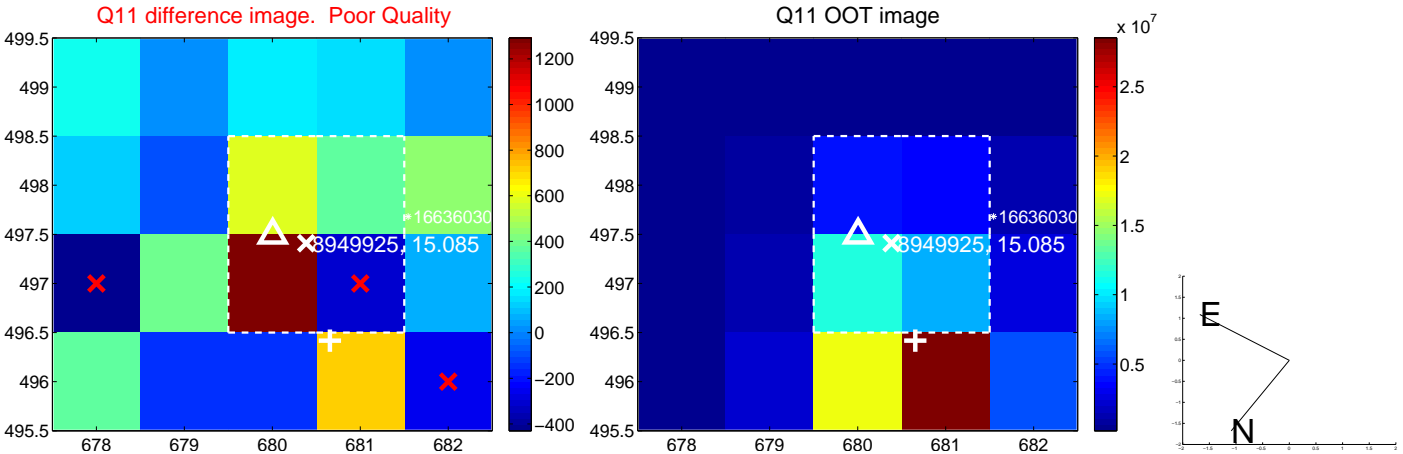
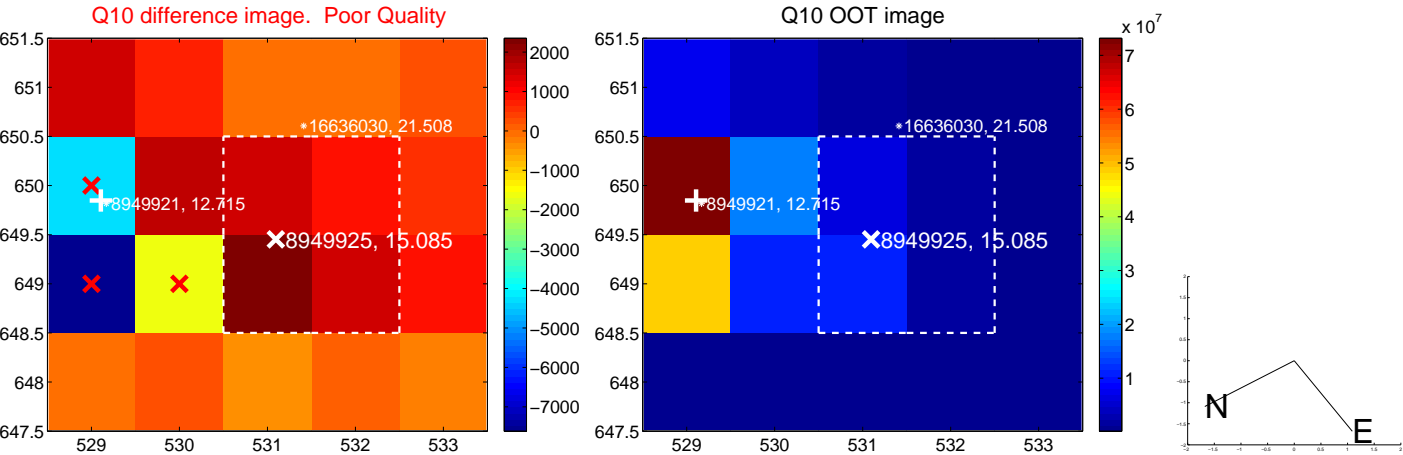
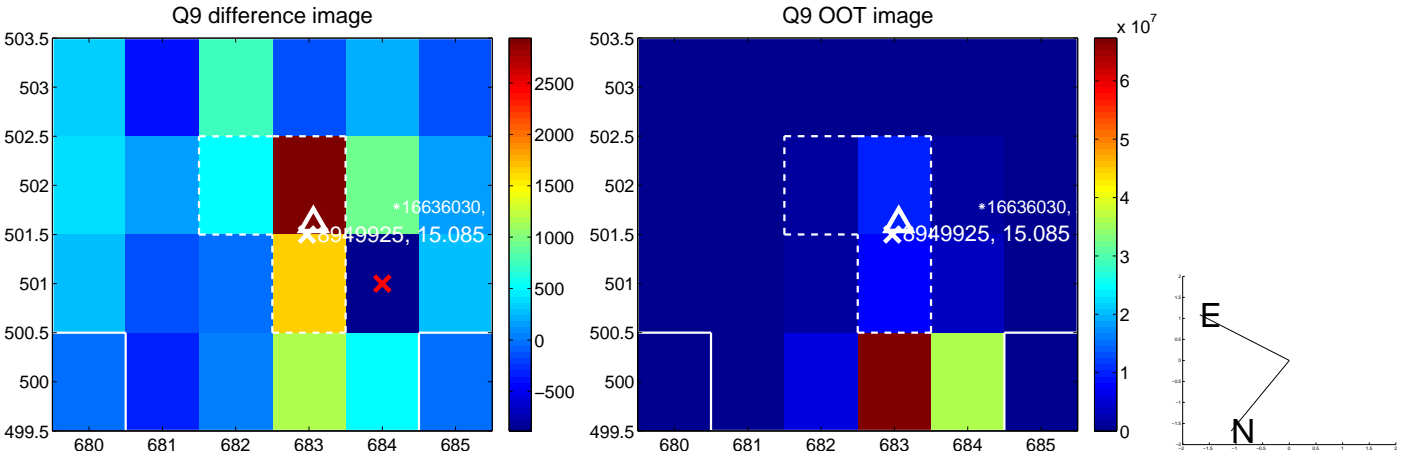
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



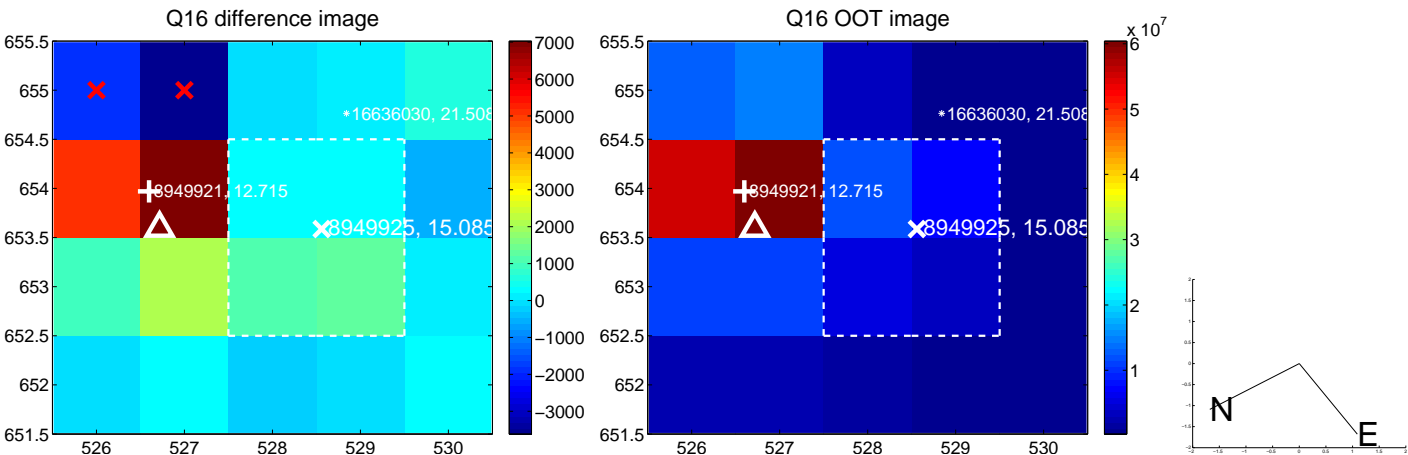
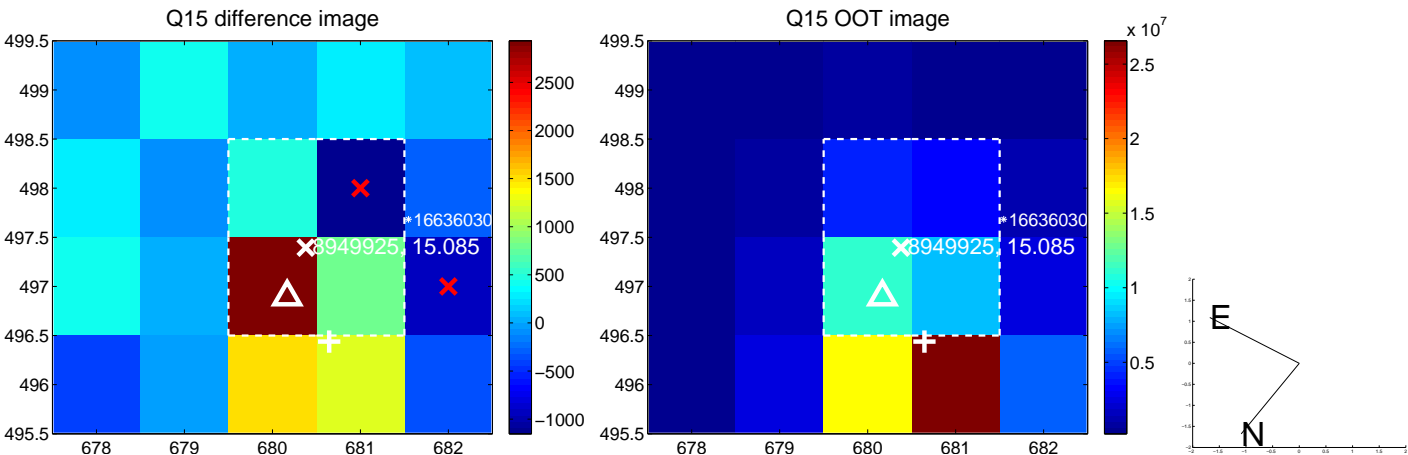
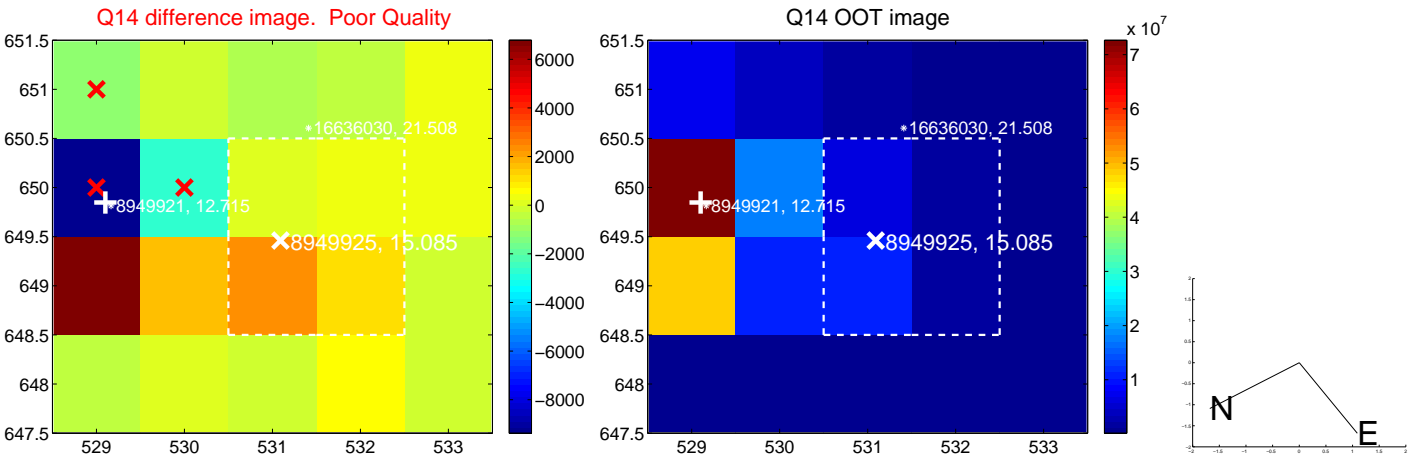
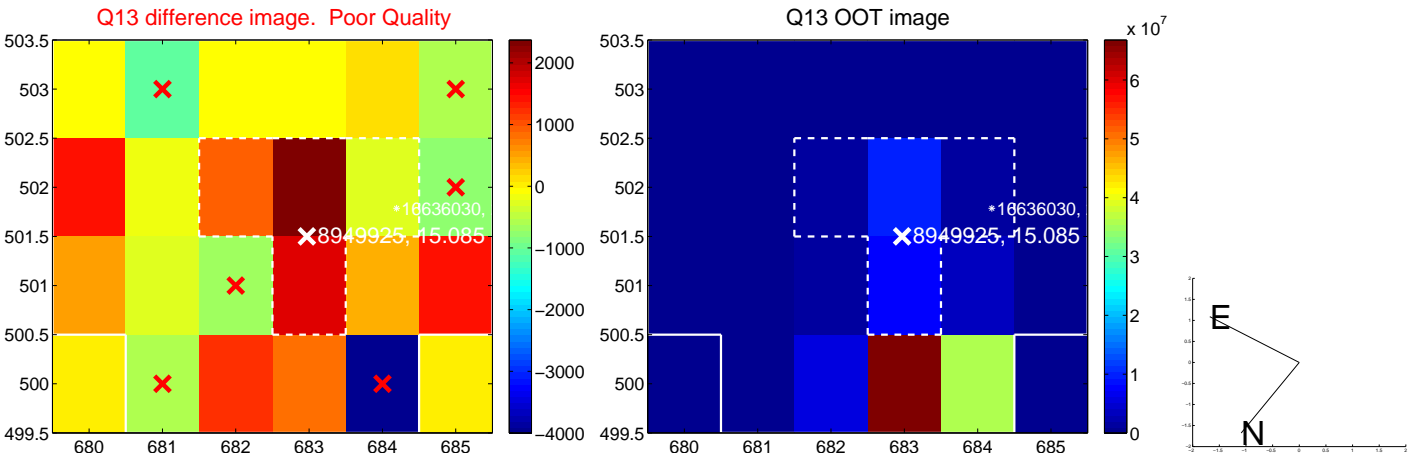
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



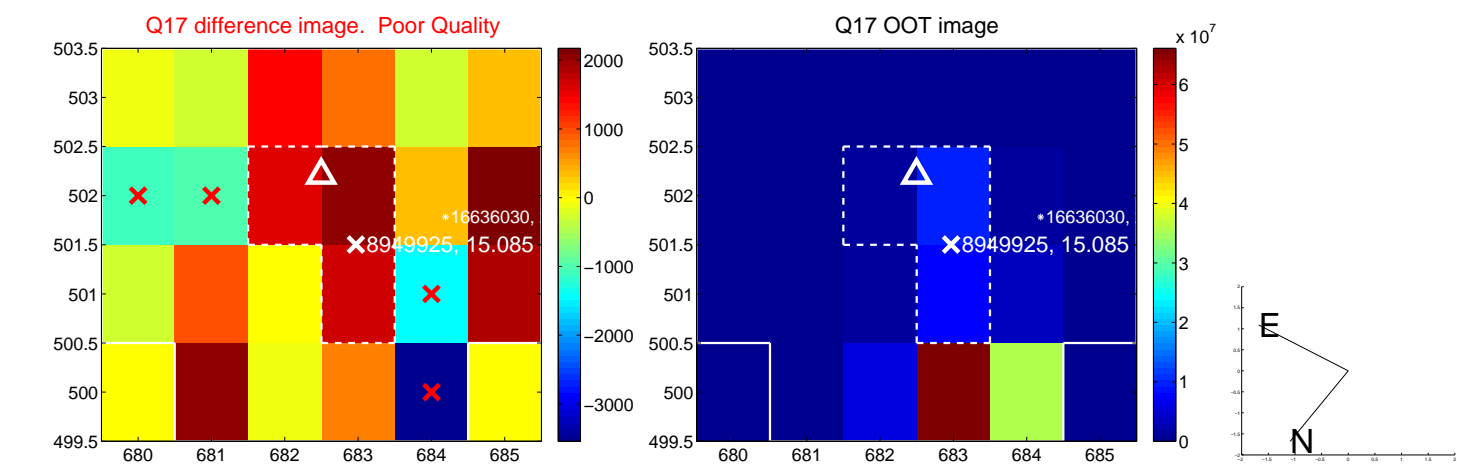
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



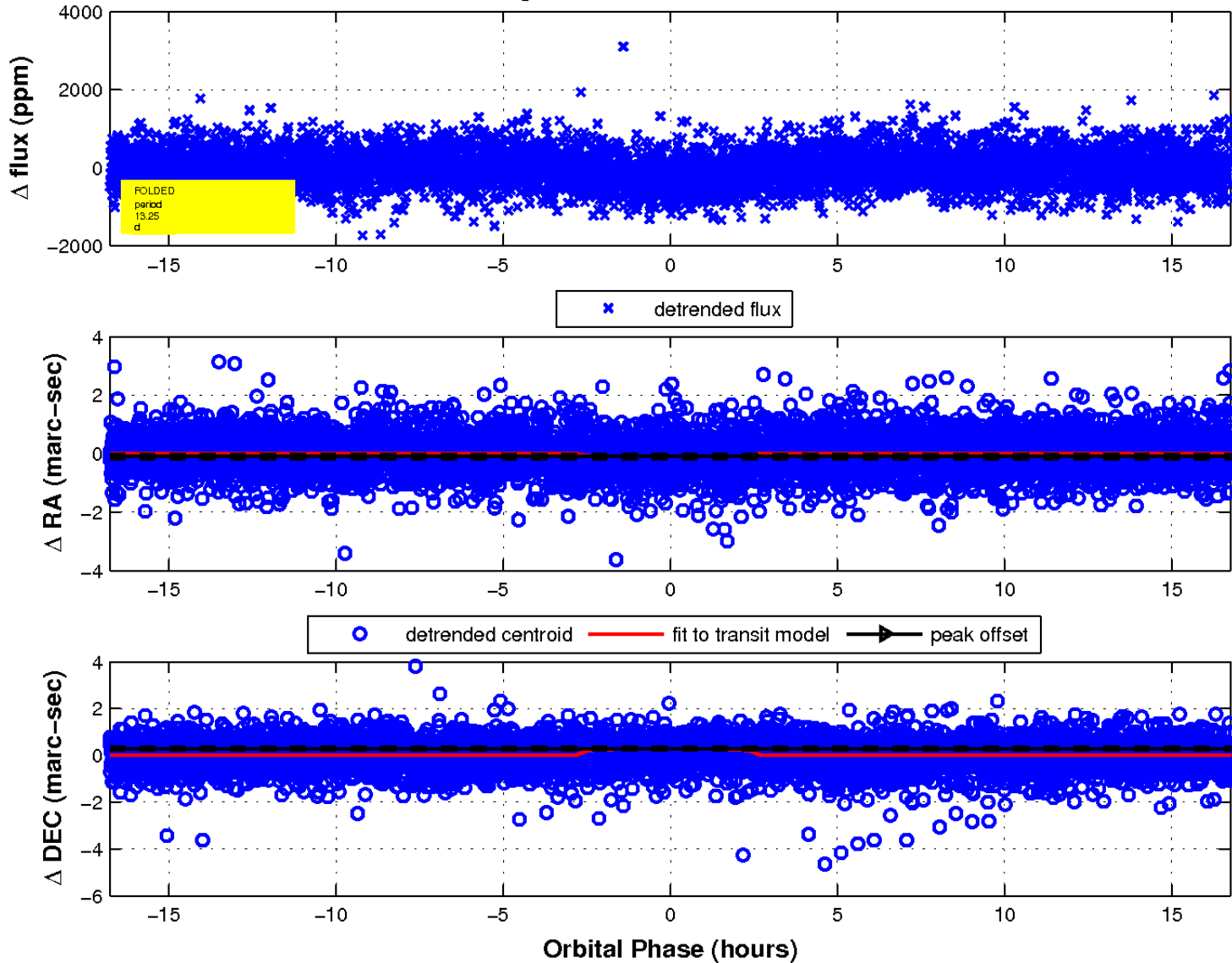
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



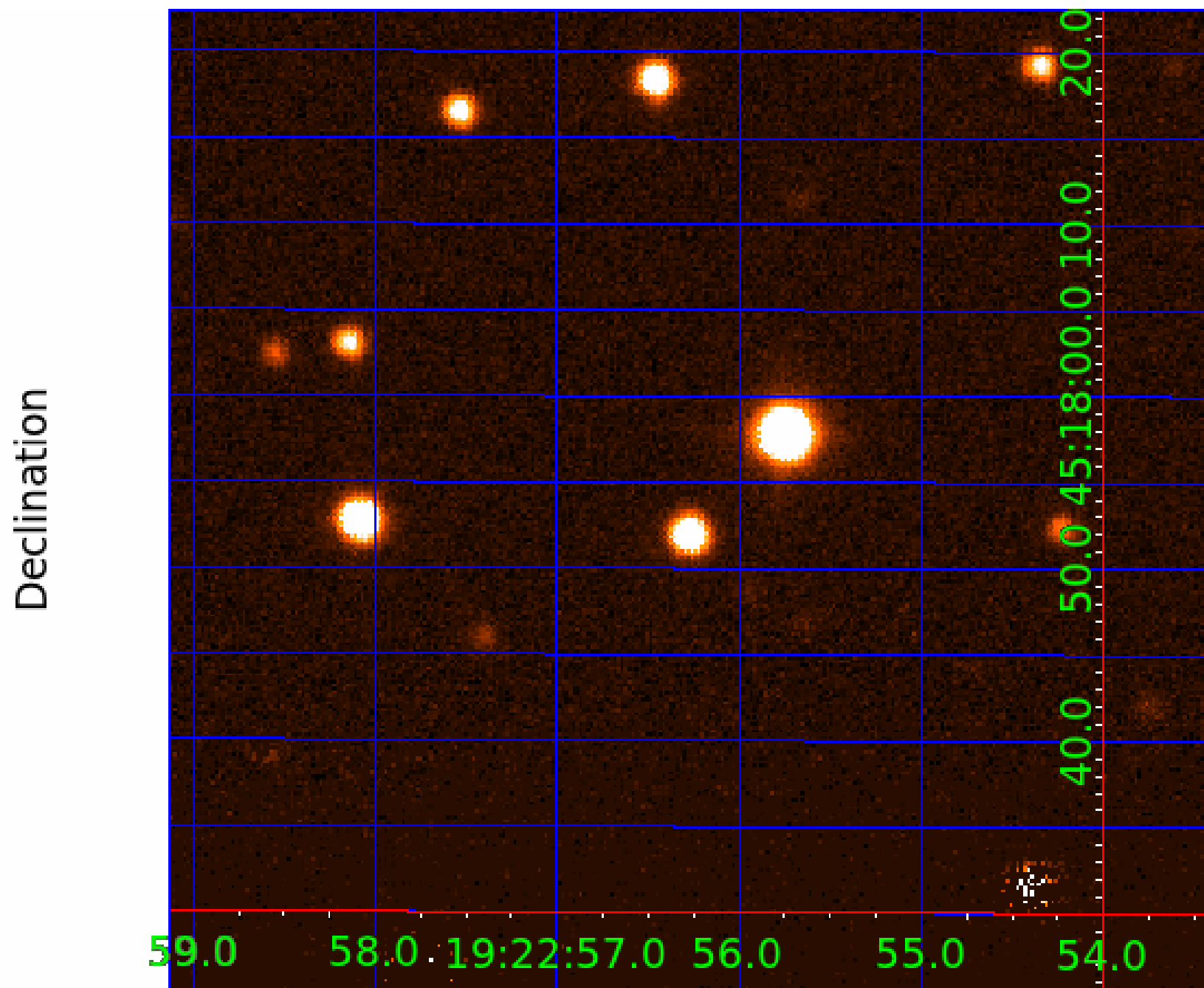
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 2



UKIRT Image



KIC 008949925

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})
008949925-01	OBS	2972.01	13.250957	141.181873	267.4	5.589	13.3	14.3	1.22	5850	2.29	123.61
008949925-02	OBS	2972.02	42.028513	138.815017	326.6	8.653	11.3	10.6	1.22	5850	2.45	26.52

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008949925-01	OBS	PC	0.98	0	0	0	0	CENT_KIC_POS
008949925-02	OBS	FP	0.38	0	0	1	0	CENT_RESOLVED_OFFSET

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

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

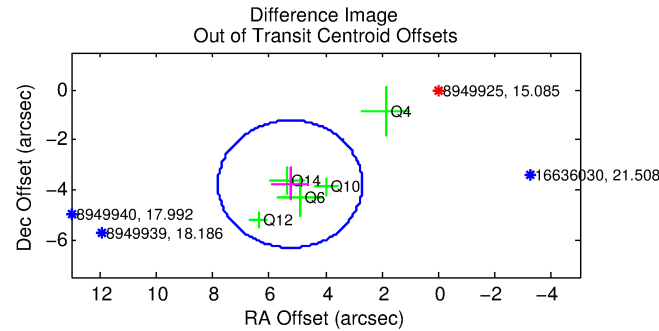
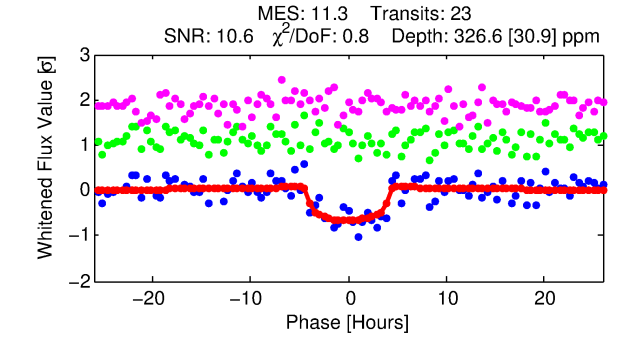
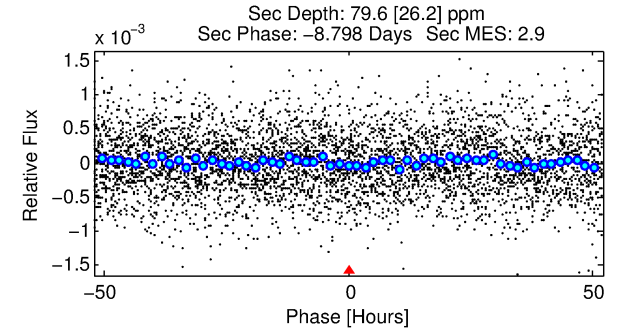
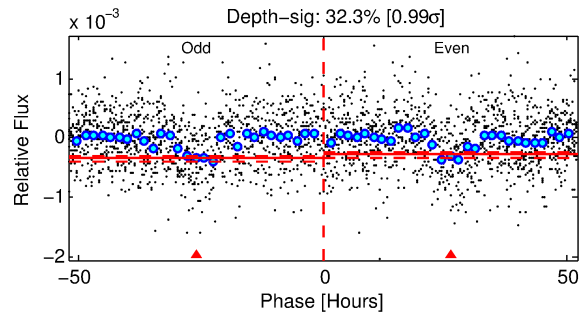
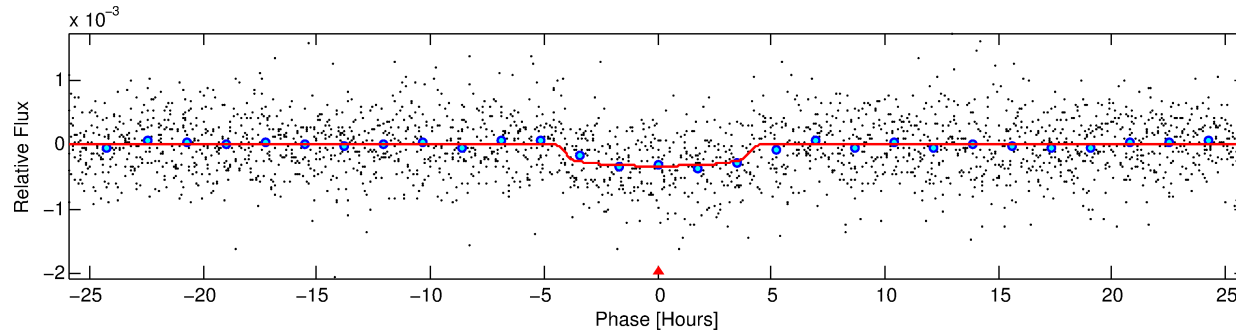
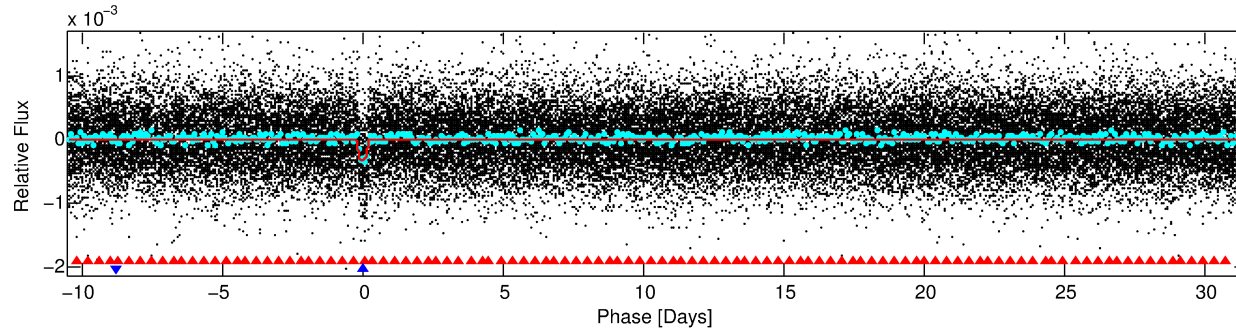
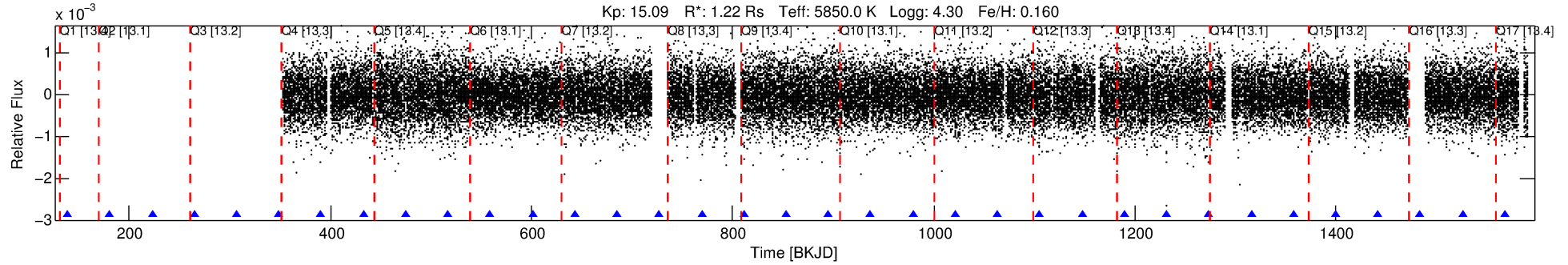
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008949925-02

No Significant Match Found

DV One-Page Summary

KIC: 8949925 Candidate: 2 of 2 Period: 42.029 d
KOI: K02972.02 Corr: 0.973



DV Fit Results:

Period = 42.02851 [0.00084] d
Epoch = 138.8150 [0.0178] BKJD
Rp/R* = 0.0184 [0.0073]
a/R* = 23.22 [41.28]
b = 0.80 [0.79]
Seff = 26.52 [5.90]
Teq = 579 [32] K
Rp = 2.45 [1.05] Re
a = 0.2421 [0.0345] AU
Ag = 429.02 [379.64] [1.13 σ]
Teff = 4072 [876] K [3.98 σ]

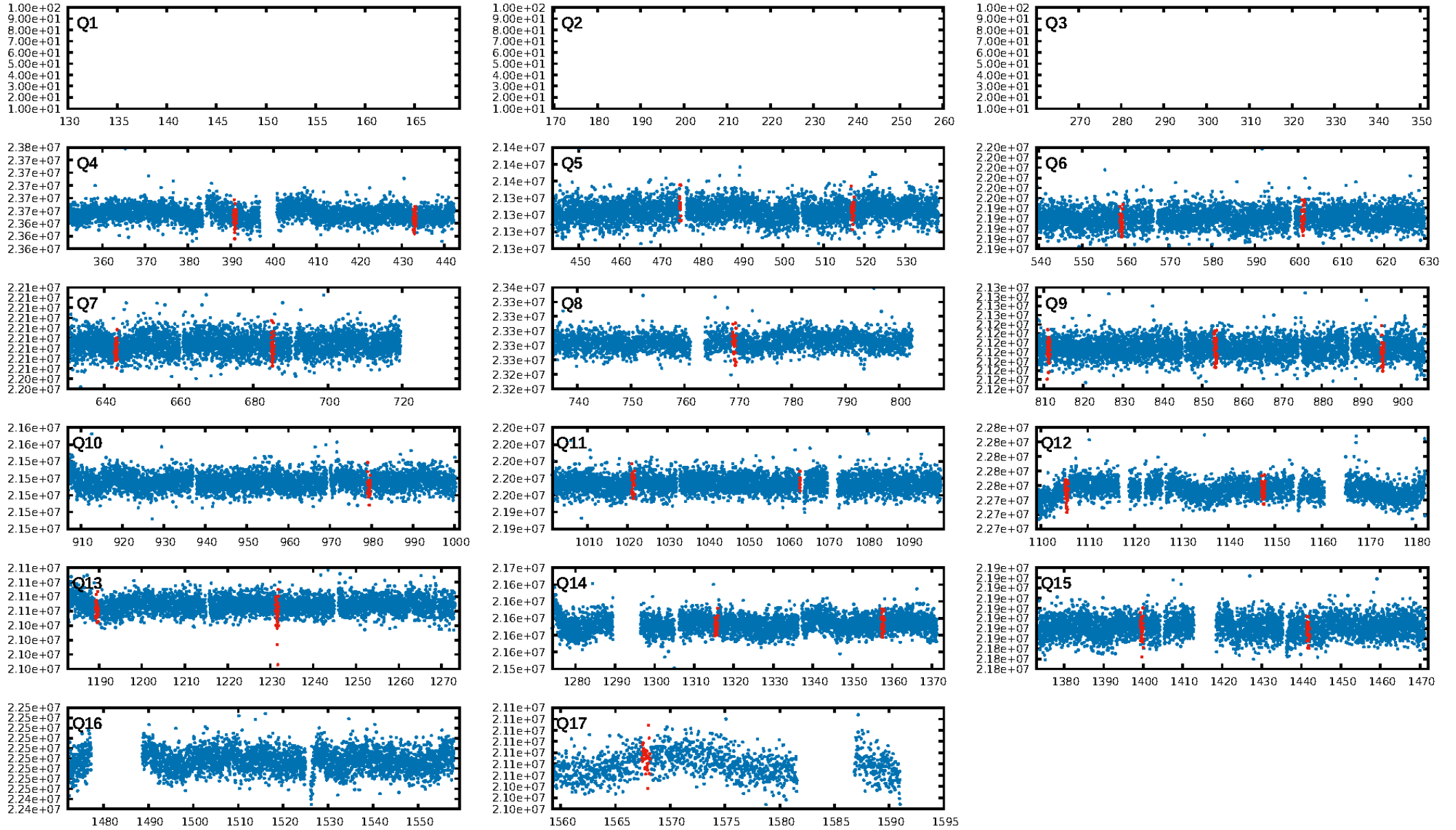
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [67.05 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 83.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.90e-28
RollingBand-fgt: 1.00 [22/22]
GhostDiagnostic-chr: 2.259
Centroid-sig: 0.0%
Centroid-so: 3.122 arcsec [8.82 σ]
OotOffset-rm: 6.471 arcsec [7.61 σ]
KicOffset-rm: 1.260 arcsec [1.40 σ]
OotOffset-st: 3/0/2/0 [5]
KicOffset-st: 3/0/2/2 [7]
DiffImageQuality-fgm: 0.14 [1/7]
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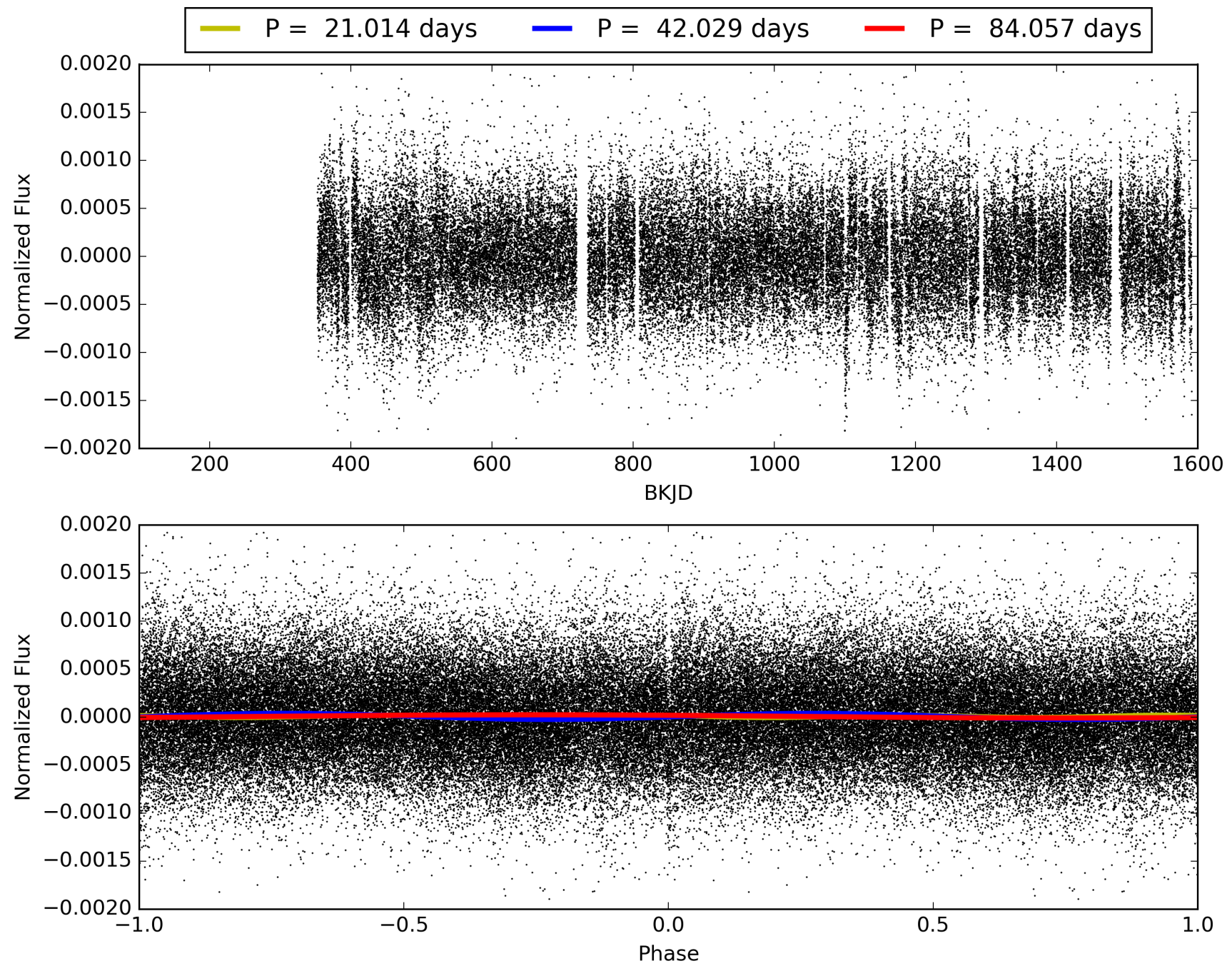
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 17:18:45 Z

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

TCE 008949925-02, PDC Light Curves

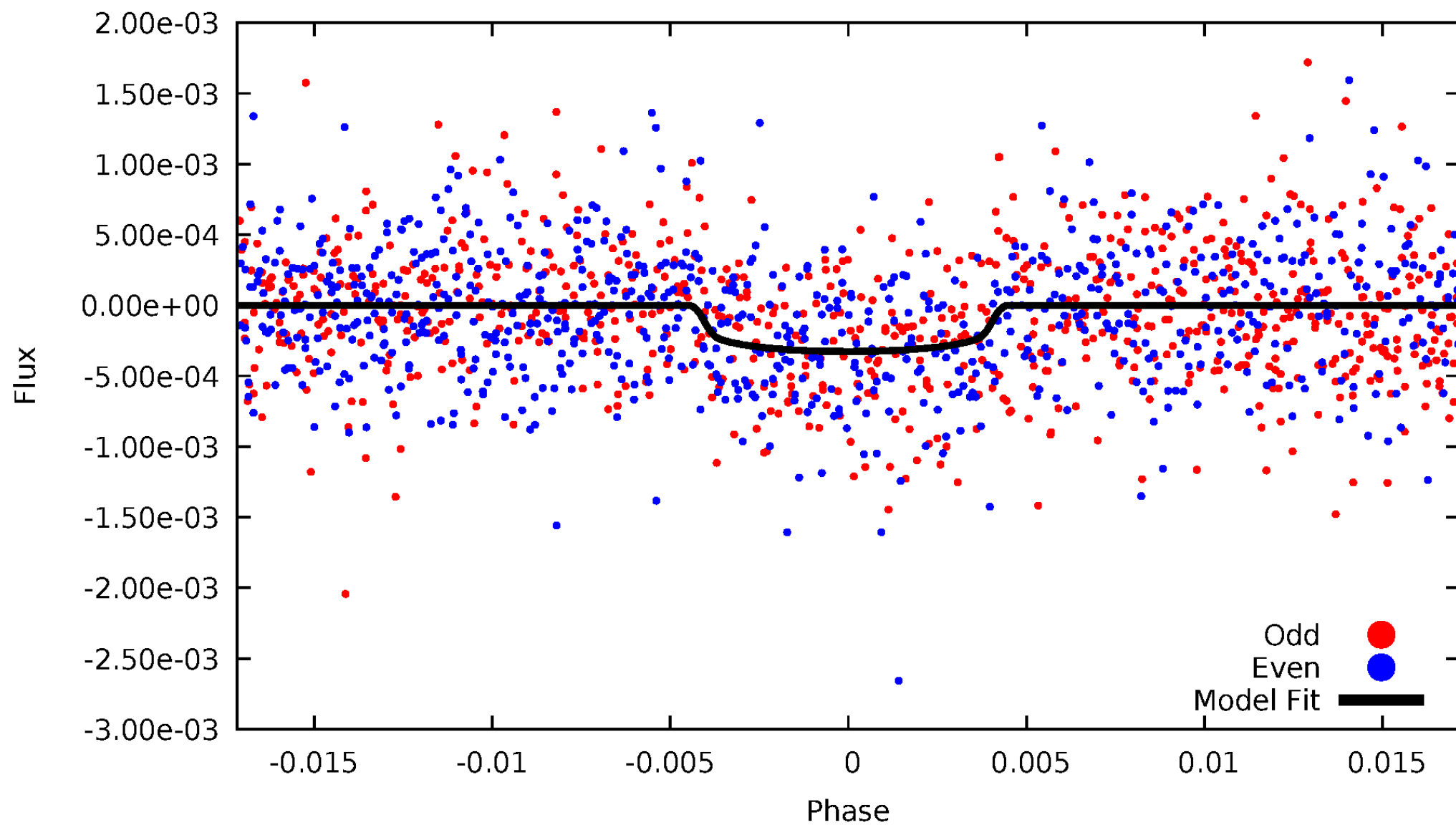


TCE 008949925-02



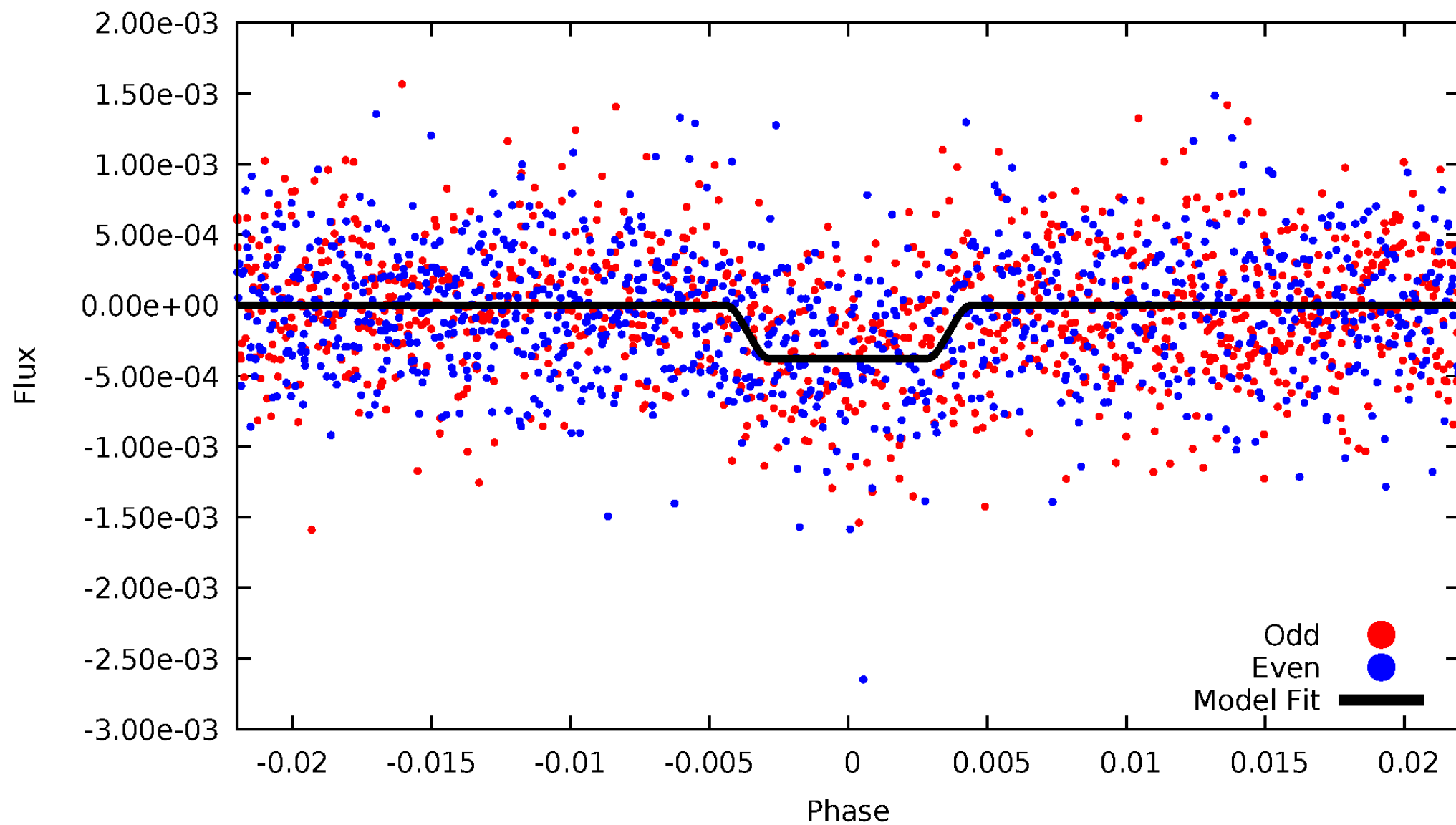
DV Odd/Even

TCE 008949925-02



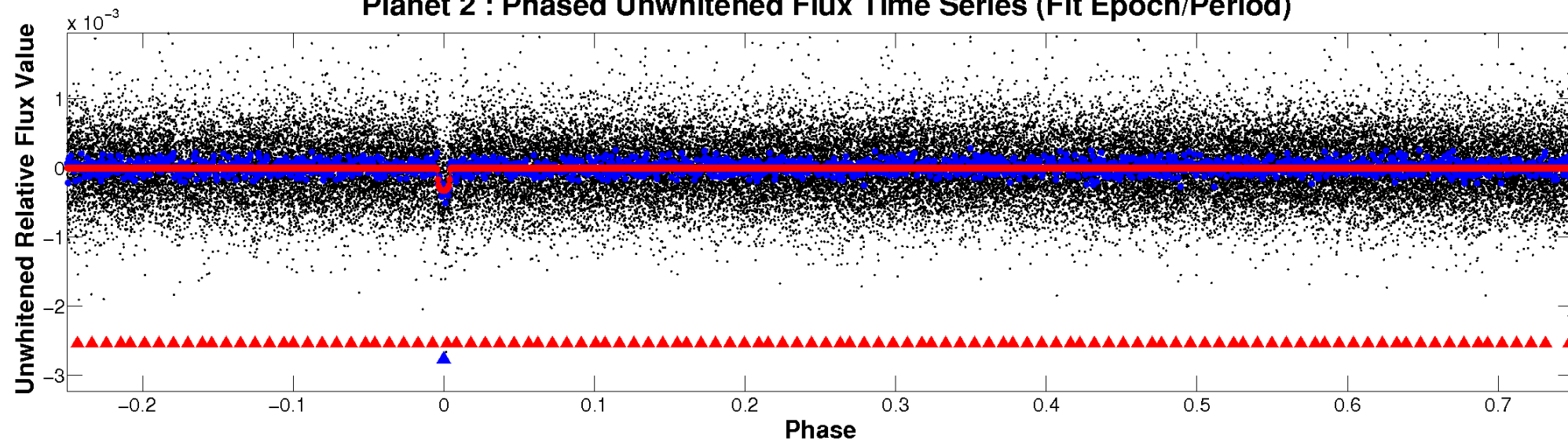
ALT Odd/Even

TCE 008949925-02

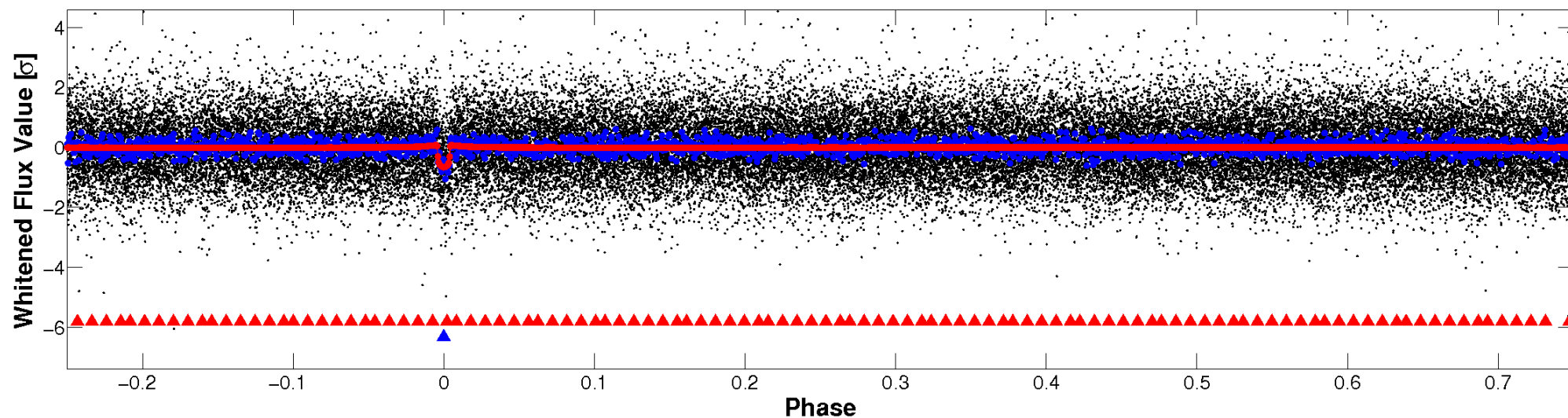


Non-Whitened Vs. Whitened Light Curve

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

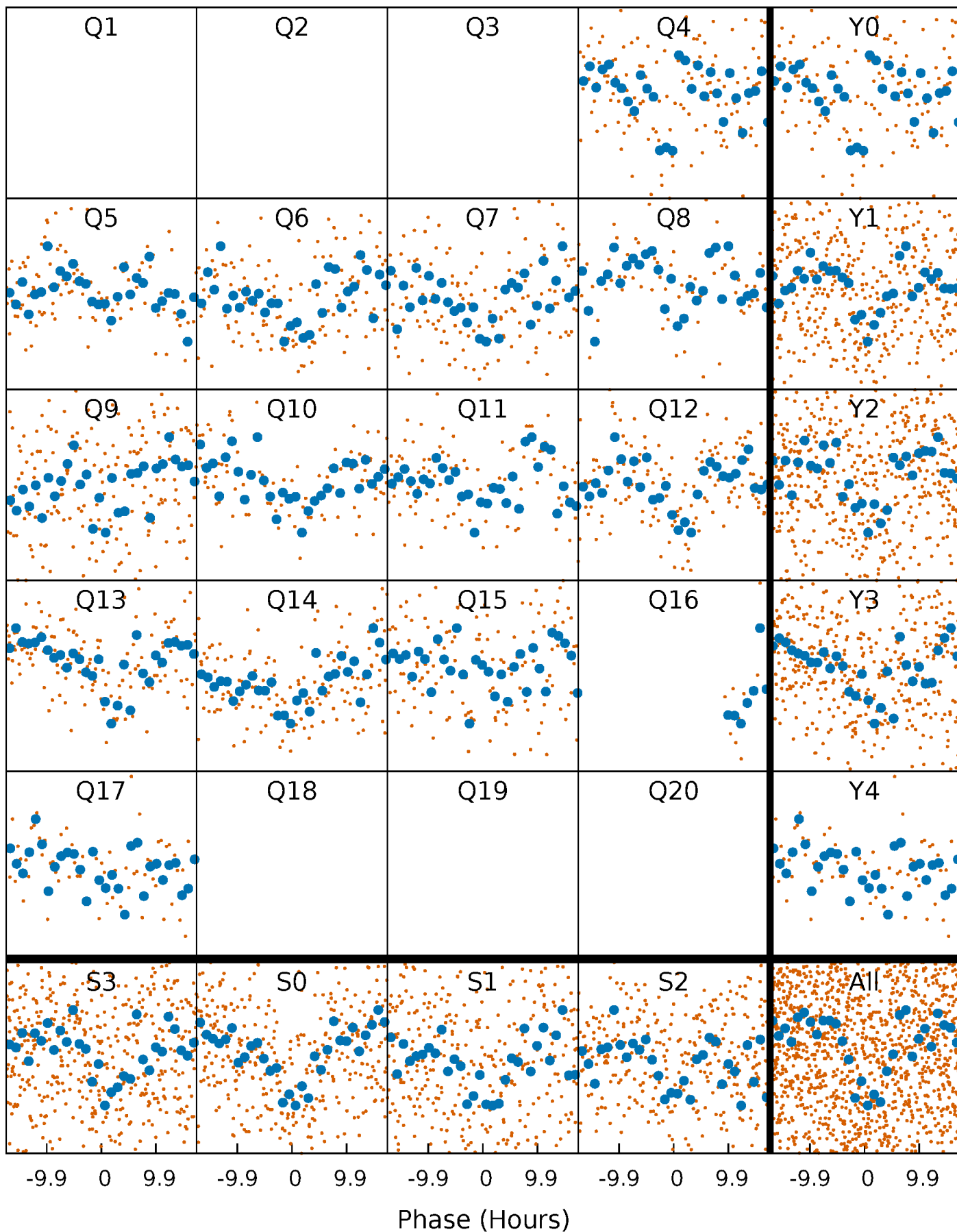


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



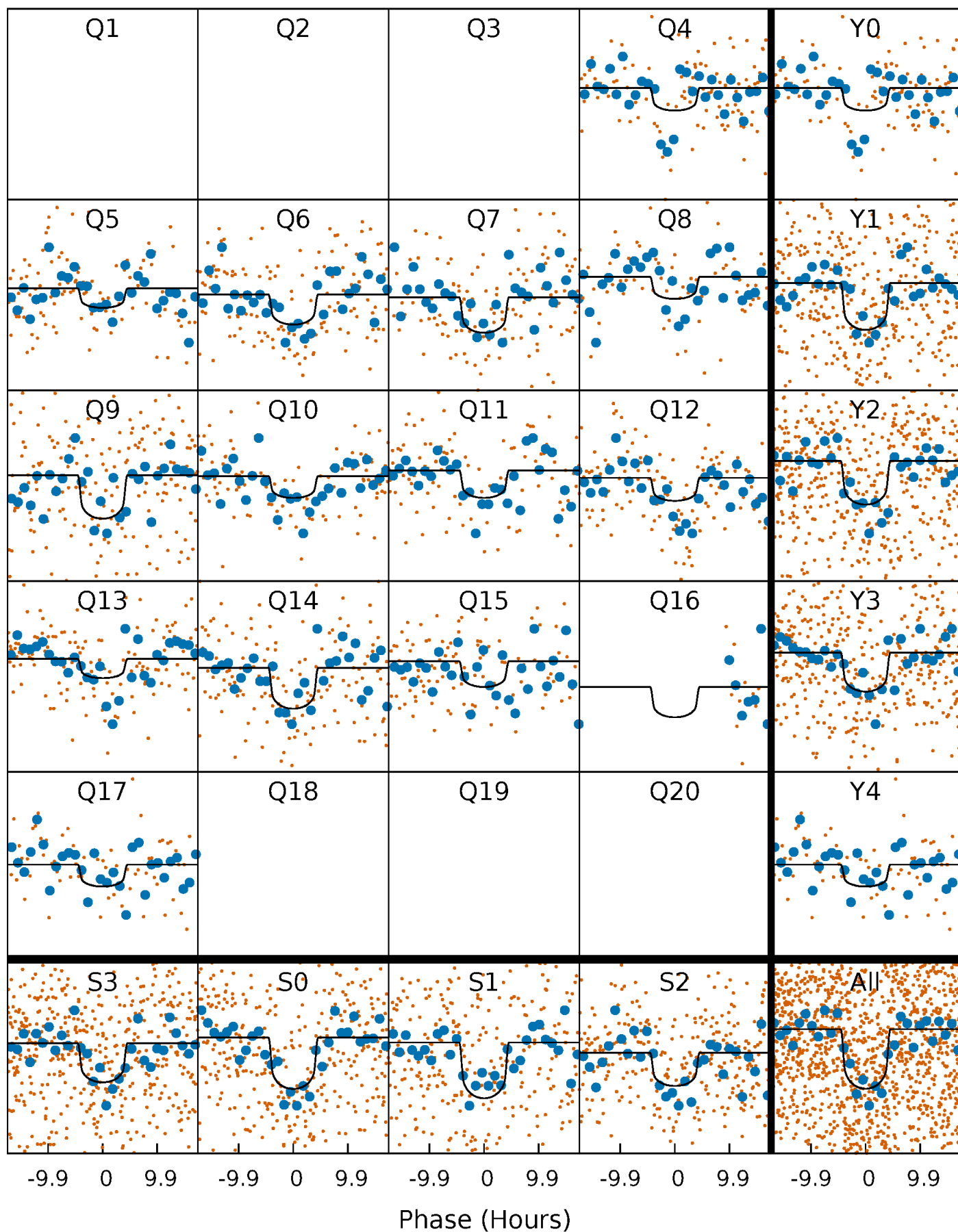
PDC Quarter-Phased Transit Curves

TCE 008949925-02 P= 42.028513 Days $T_0=138.815017$ (BKJD)



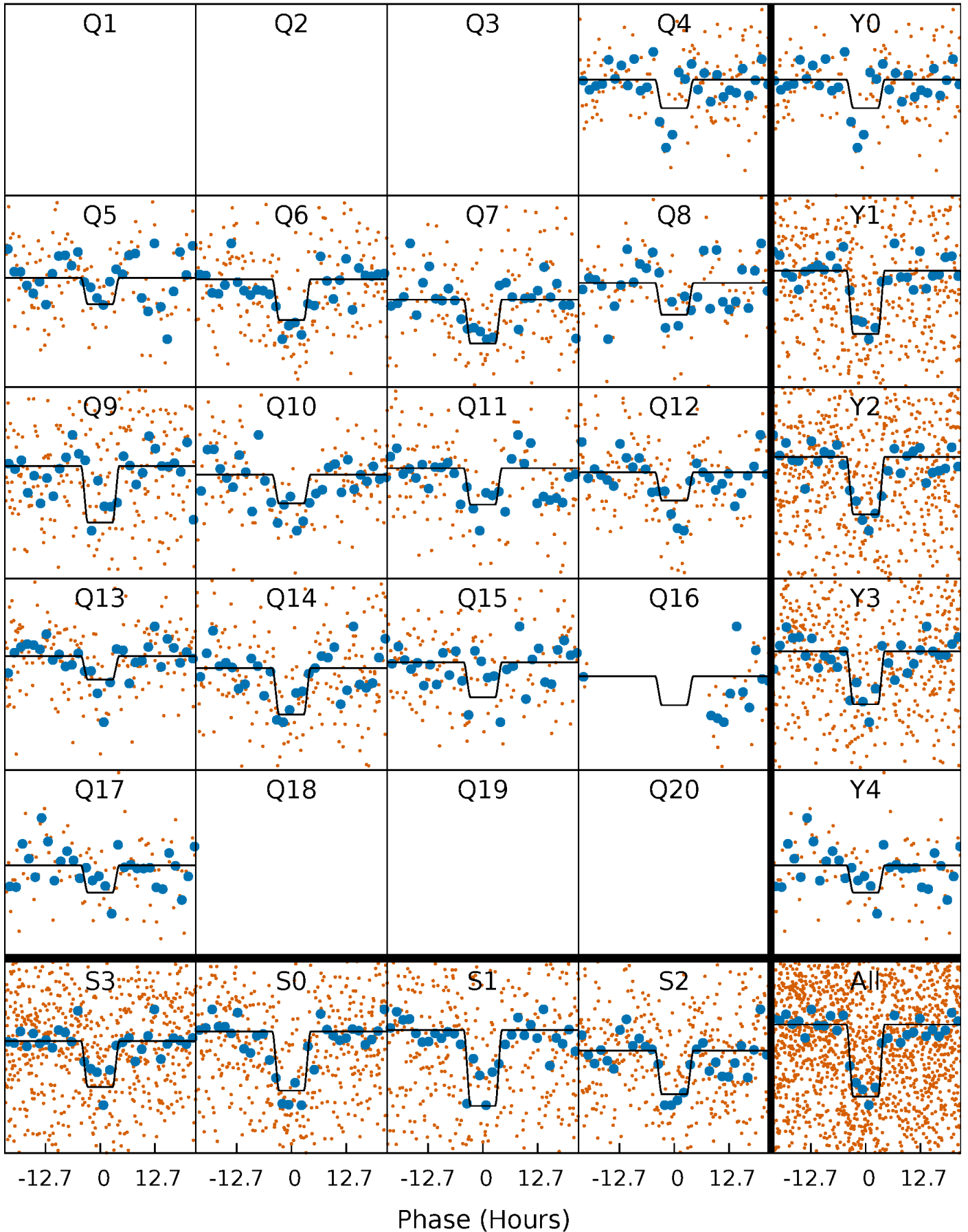
DV Quarter-Phased Transit Curves

TCE 008949925-02 P= 42.028513 Days $T_0=138.815017$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

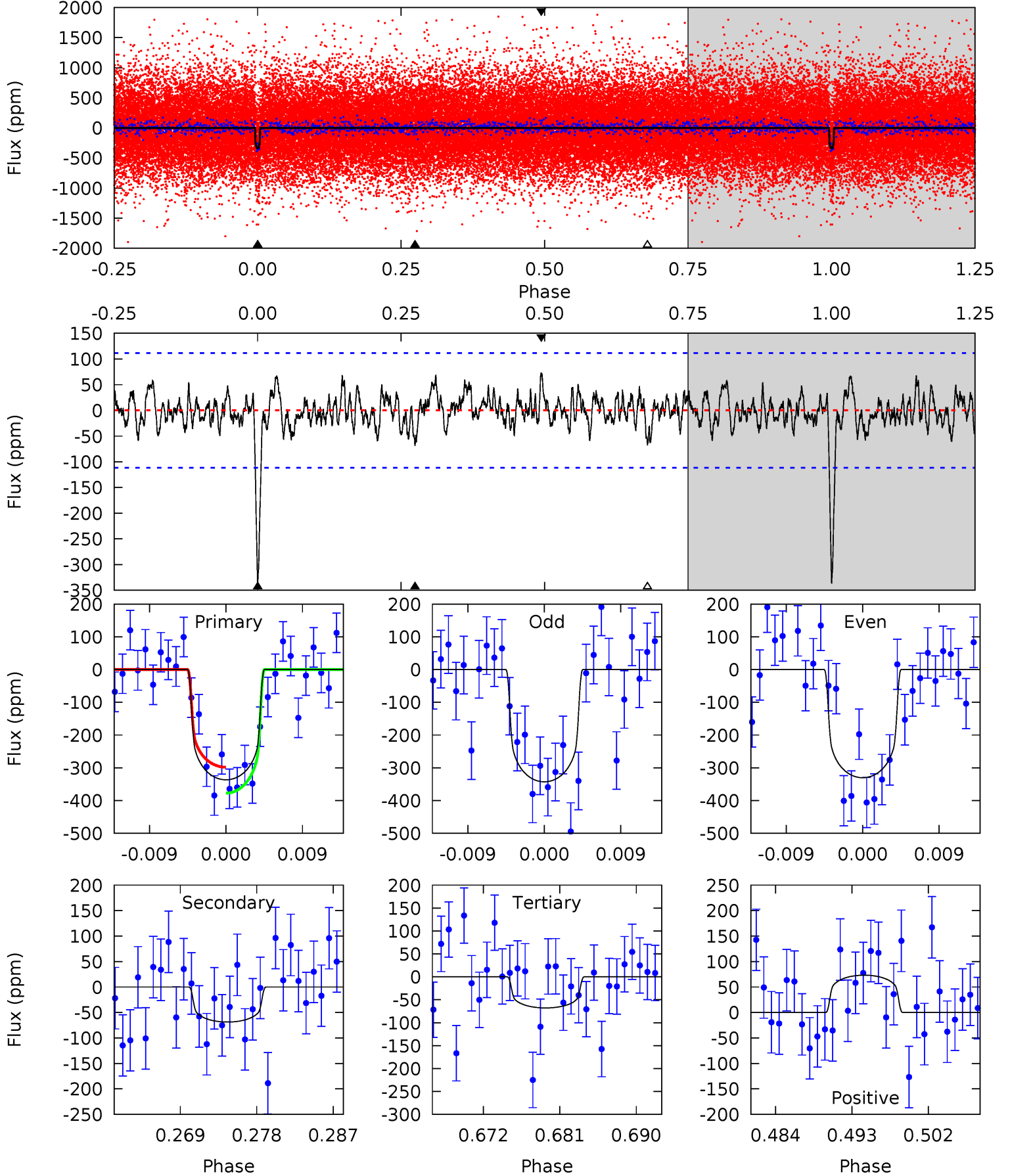
TCE 008949925-02 $P = 42.030262$ Days $T_0 = 138.806026$ (BKJD)



DV Model-Shift Uniqueness Test

008949925-02, P = 42.028513 Days, E = 138.815017 Days

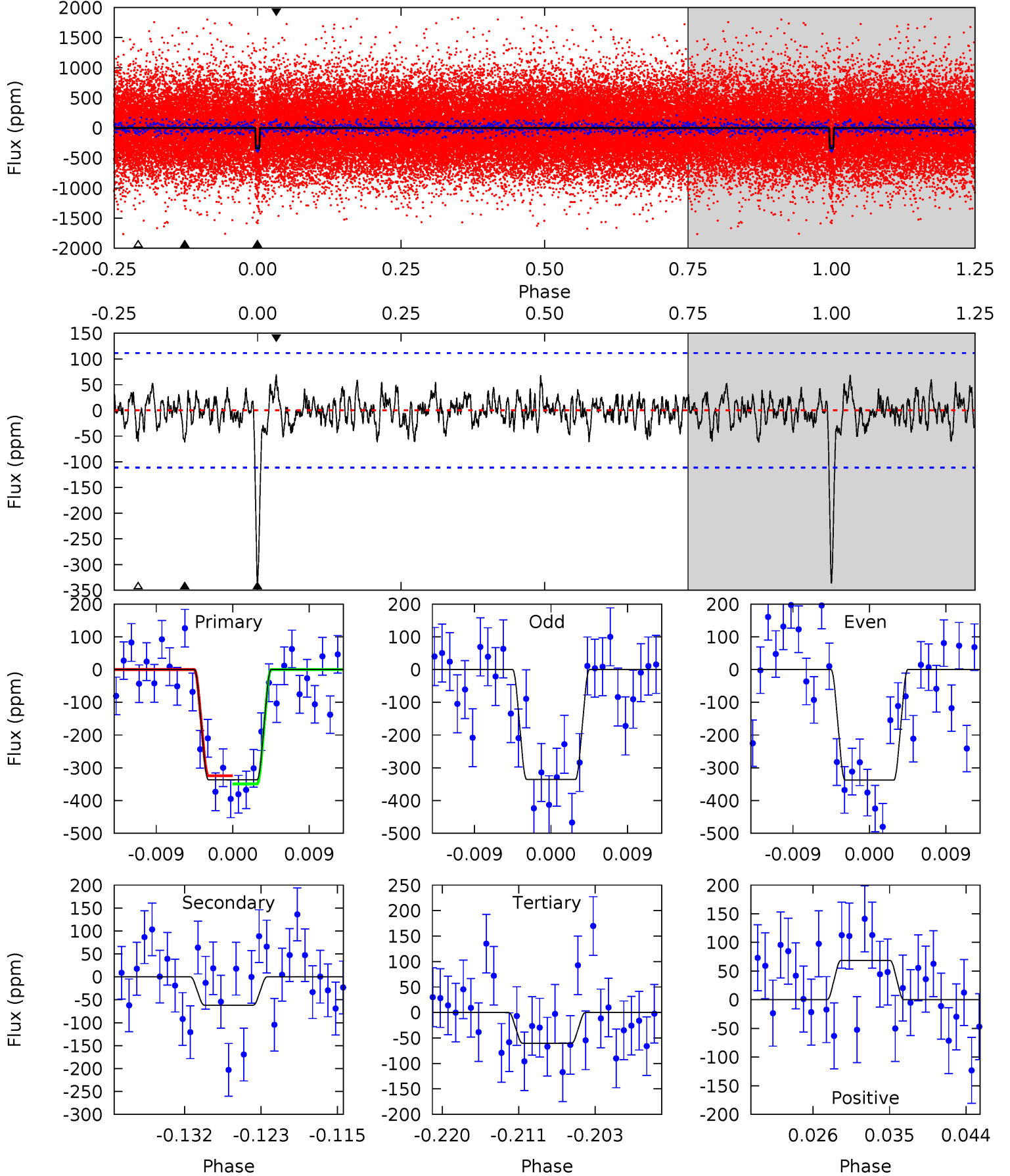
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.2	3.11	3.07	3.32	5.05	2.61	1.11	12.2	11.9	0.04	-0.20	0.29	1.13	0.18	1.80



Alt Model-Shift Uniqueness Test

008949925-02, P = 42.030262 Days, E = 138.806026 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.2	2.80	2.74	3.11	5.05	2.62	1.00	12.5	12.1	0.06	-0.31	0.05	1.11	0.17	0.56



Stellar Parameters For KIC 008949925

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5850^{+70}_{-88}	$4.297^{+0.120}_{-0.120}$	$0.160^{+0.150}_{-0.150}$	$1.217^{+0.199}_{-0.163}$	$1.072^{+0.070}_{-0.078}$	$0.837^{+0.441}_{-0.288}$
	+1%/-2%	+3%/-3%	+94%/-94%	+16%/-13%	+7%/-7%	+53%/-34%
Source	SPE90	SPE90	SPE90	DSEP		

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

Secondary Eclipse Parameters for KIC 008949925-02 / KOI 2972.02

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-69 ± 22	$2.46^{+1.02}_{-0.96}$	807^{+38}_{-32}	4136^{+894}_{-529}	362^{+603}_{-209}
Alt.	-62 ± 22	$2.62^{+0.92}_{-0.95}$	808^{+34}_{-35}	4007^{+777}_{-469}	291^{+471}_{-150}

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 $A_{obs} \gg 1.0$

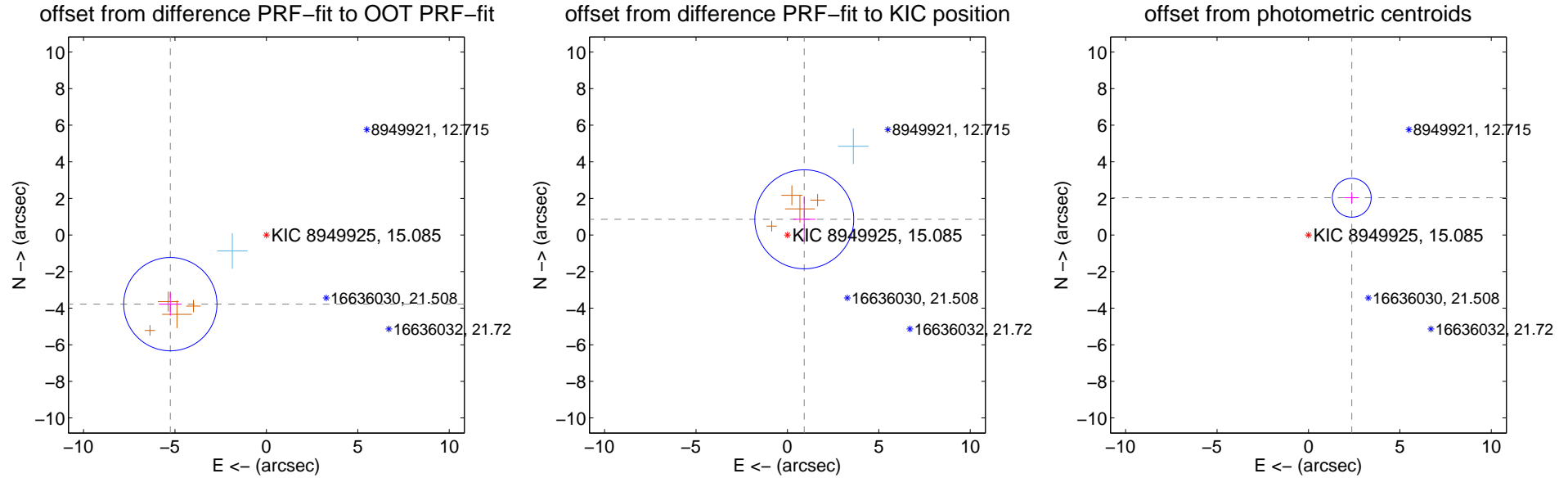
DV Centroid Data

Supplemental centroid analysis for 008949925-02. Kepler magnitude: 15.09. Transit SNR 10.60

There are 1 quarters with good PRF difference image offsets

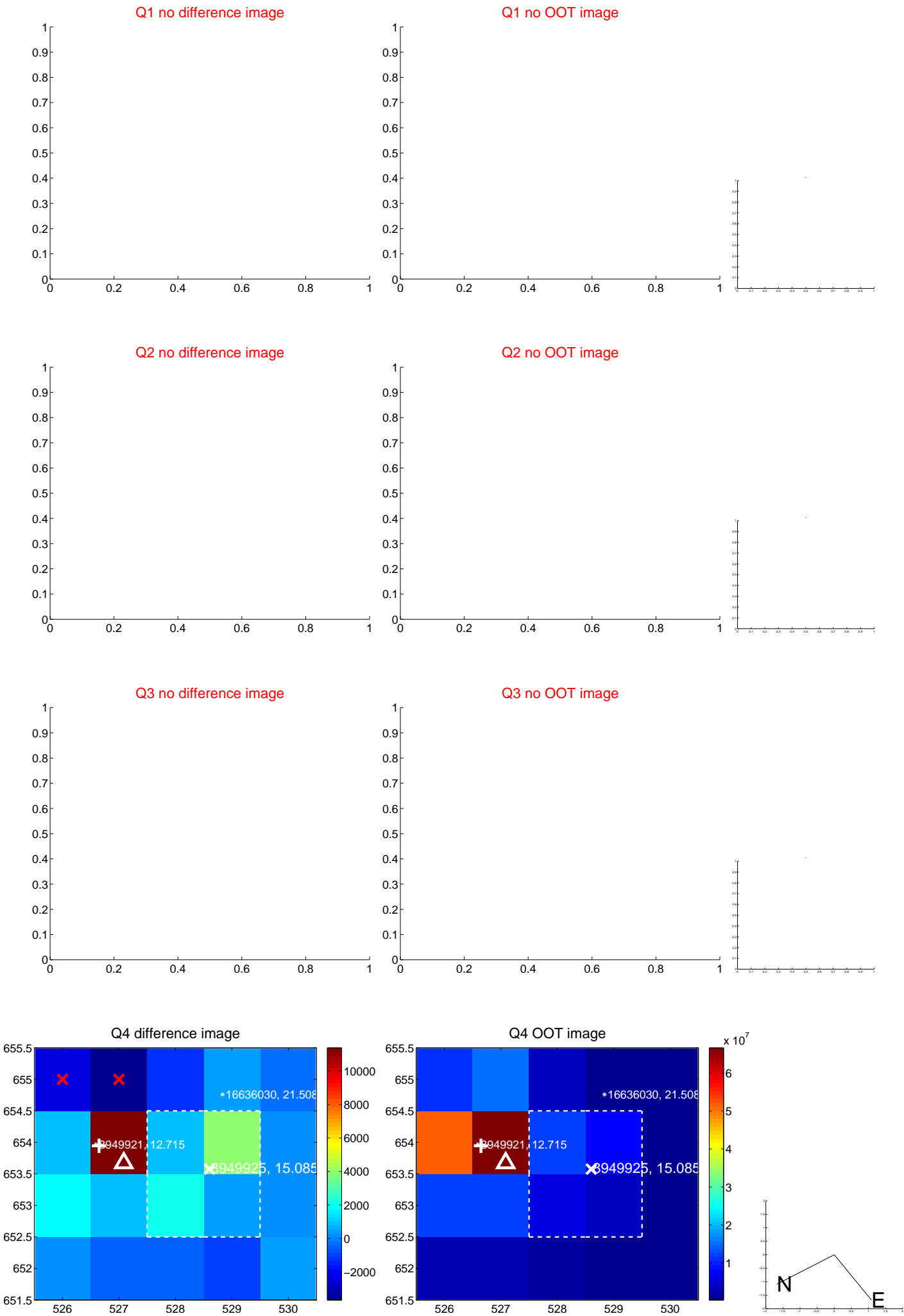
The OOT PRF centroid is offset from the target star catalog position by about 8.07 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.471 ± 0.850	7.61	5.253 ± 0.619	-3.780 ± 0.633
PRF-fit source offset from KIC position	1.260 ± 0.902	1.40	-0.922 ± 0.611	0.858 ± 1.247
photometric centroid source offset	3.12 ± 0.35	8.82	-2.37 ± 0.38	2.03 ± 0.31

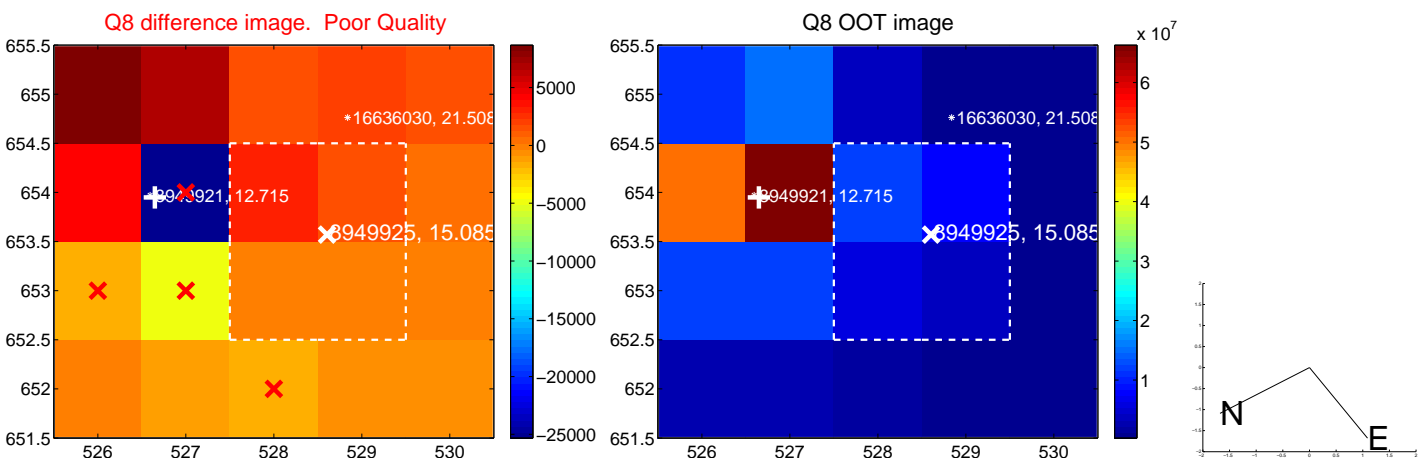
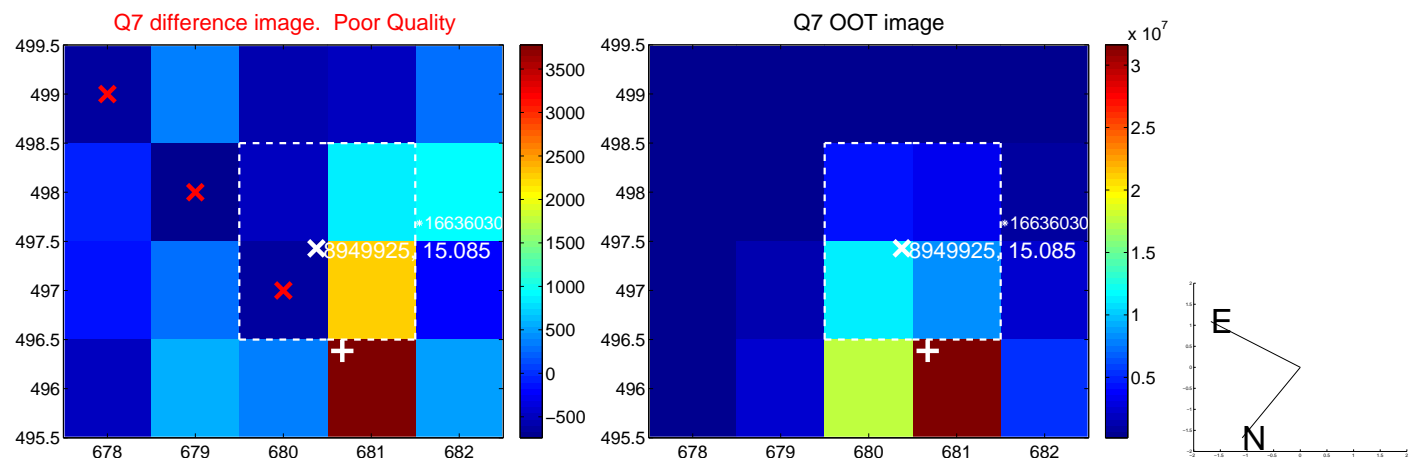
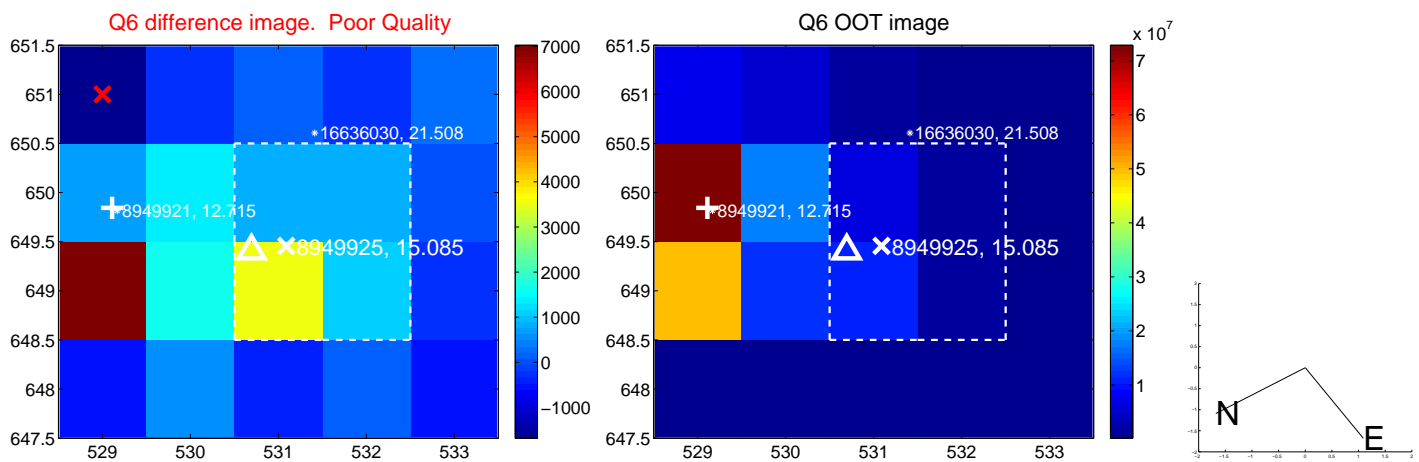
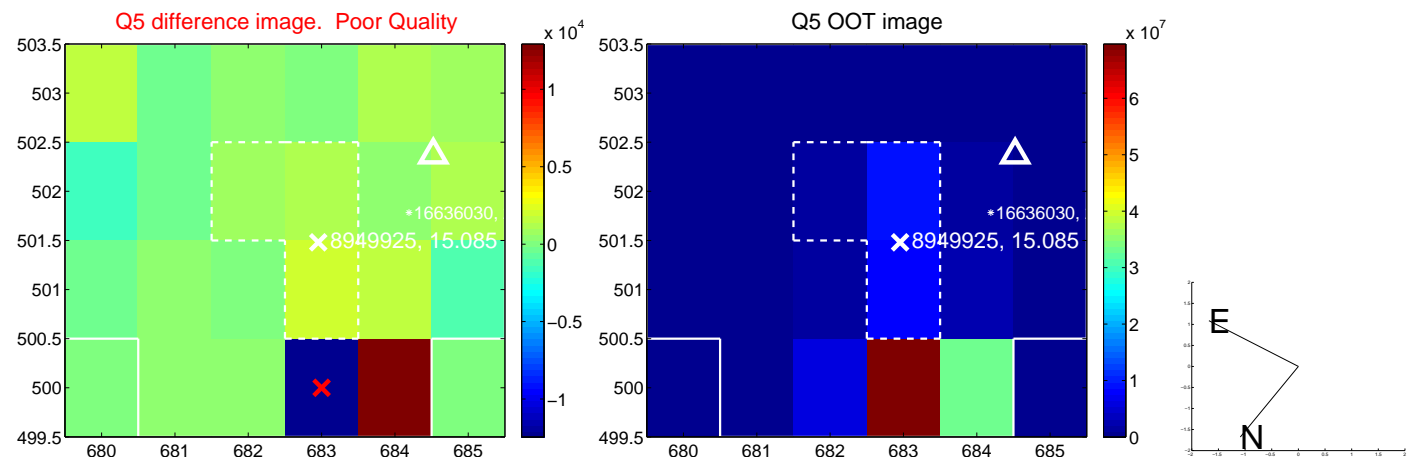


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

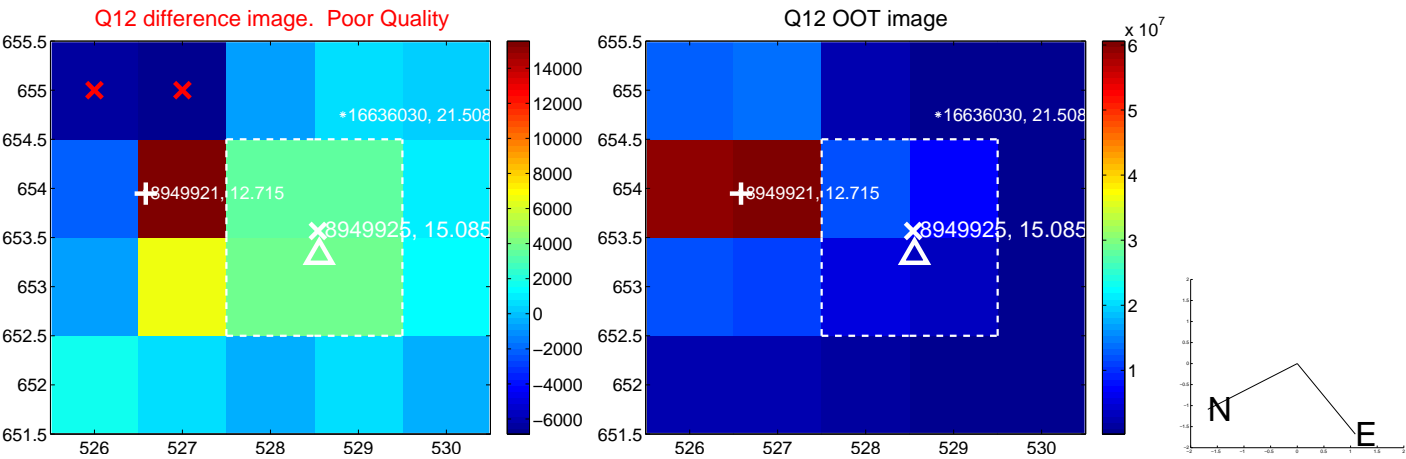
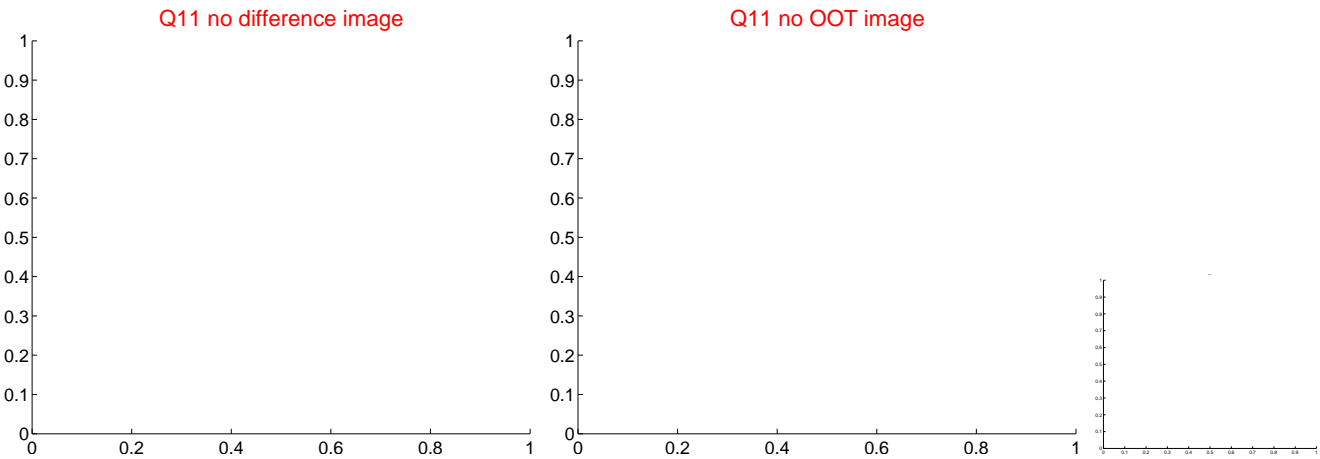
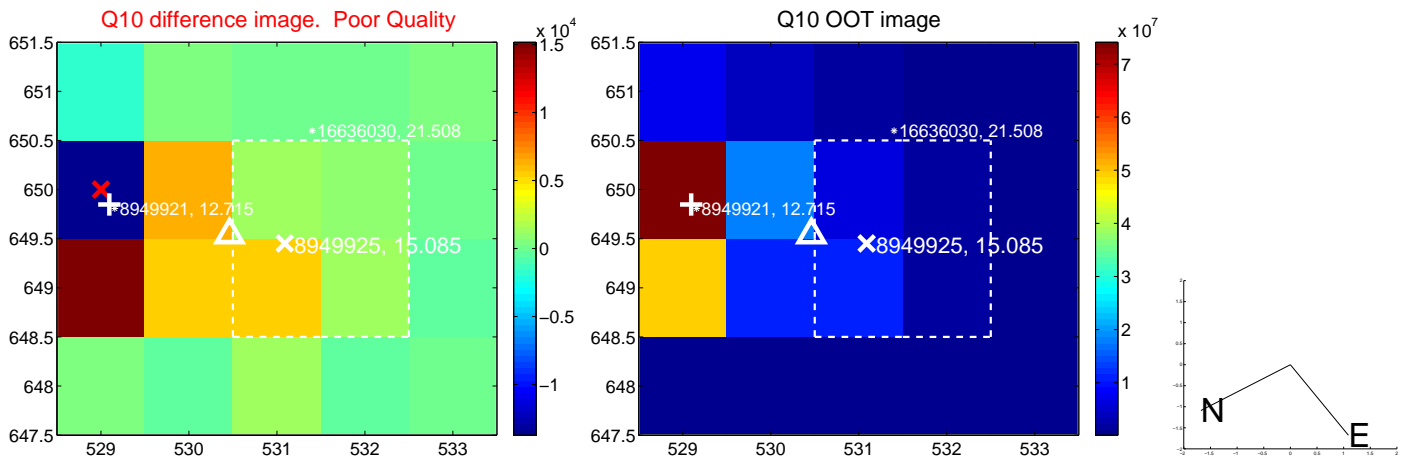
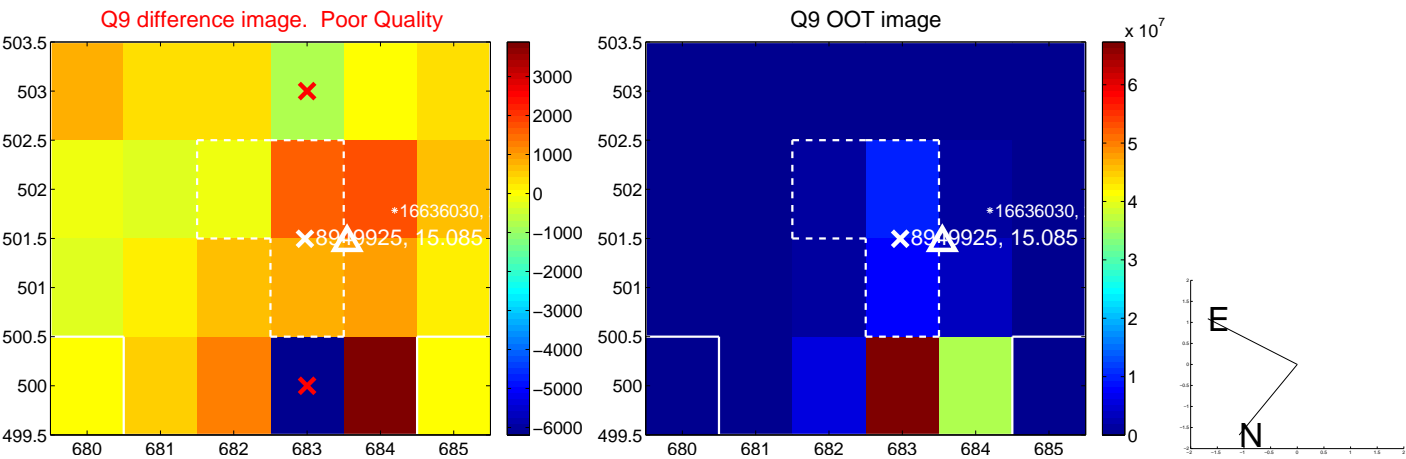
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



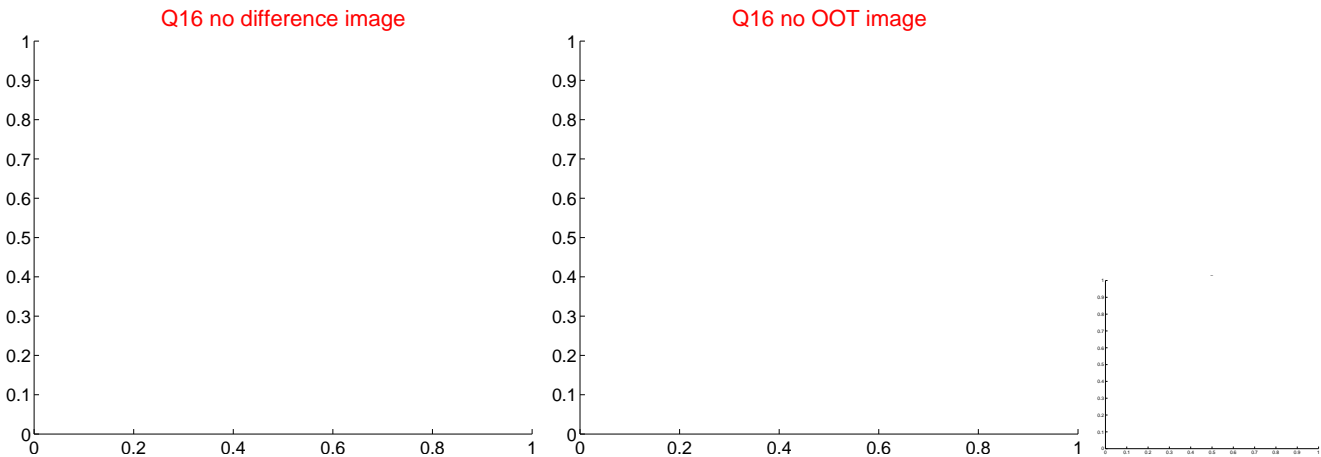
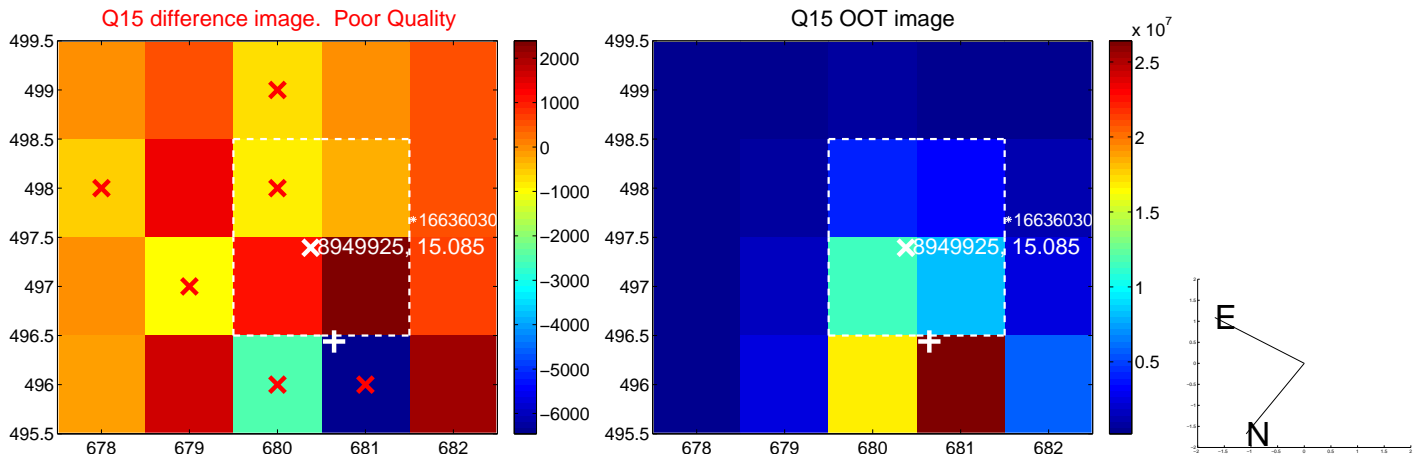
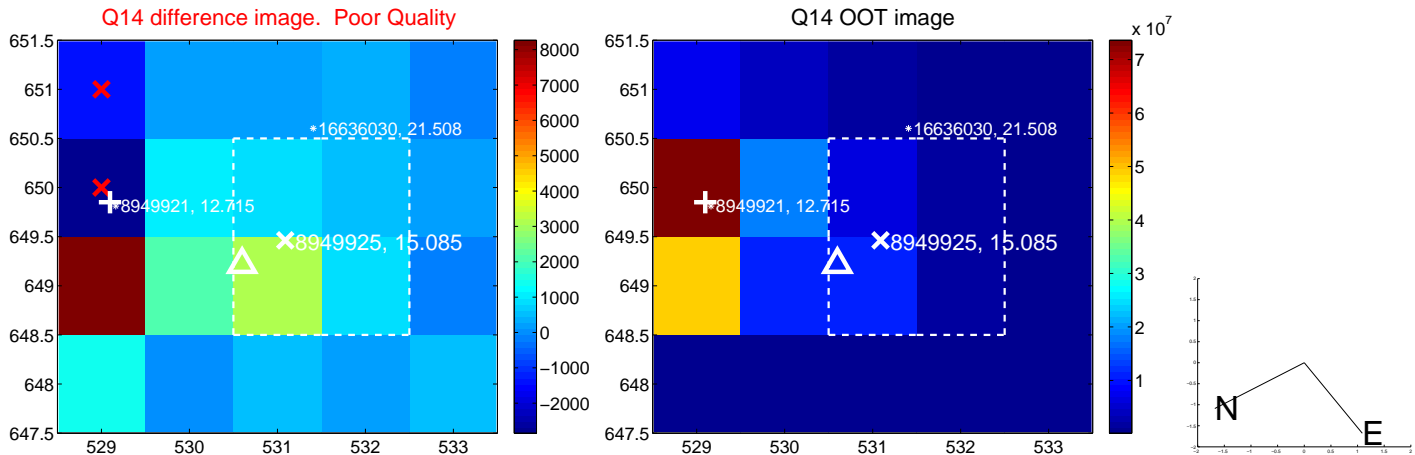
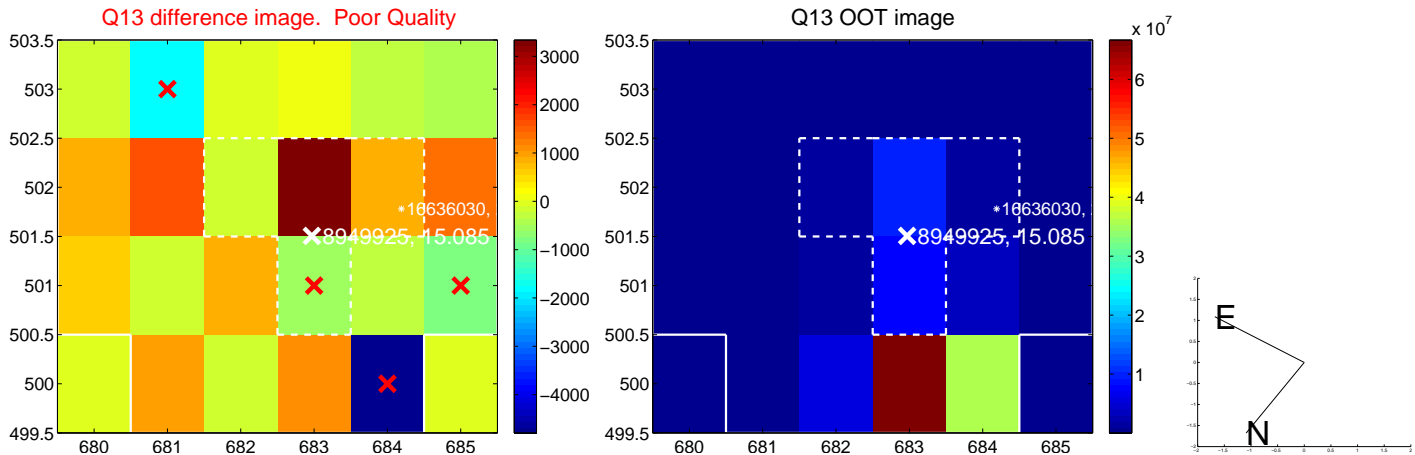
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



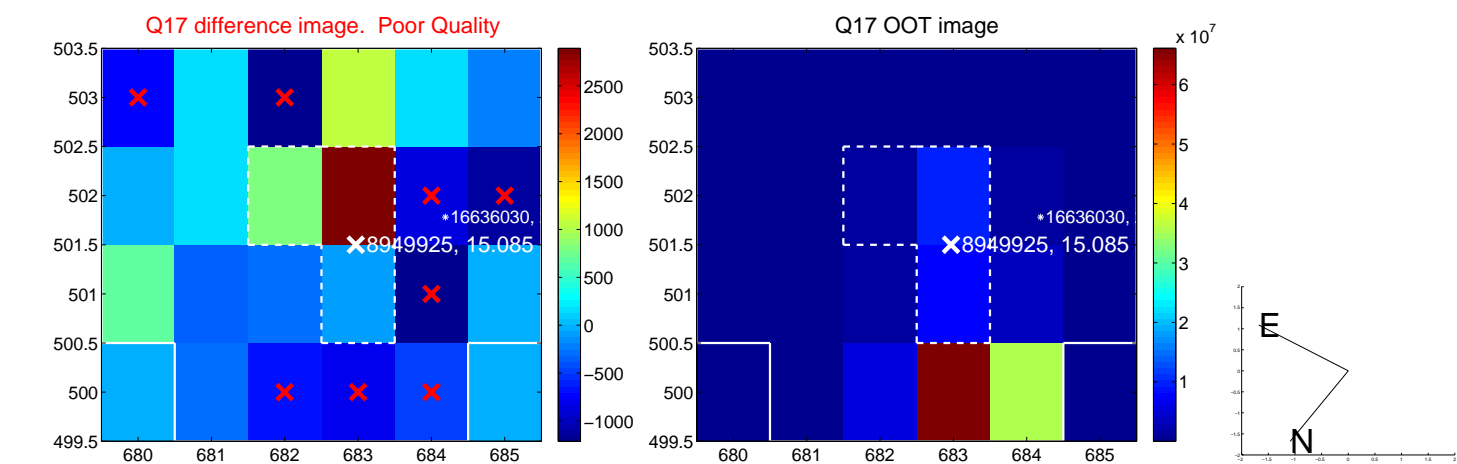
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



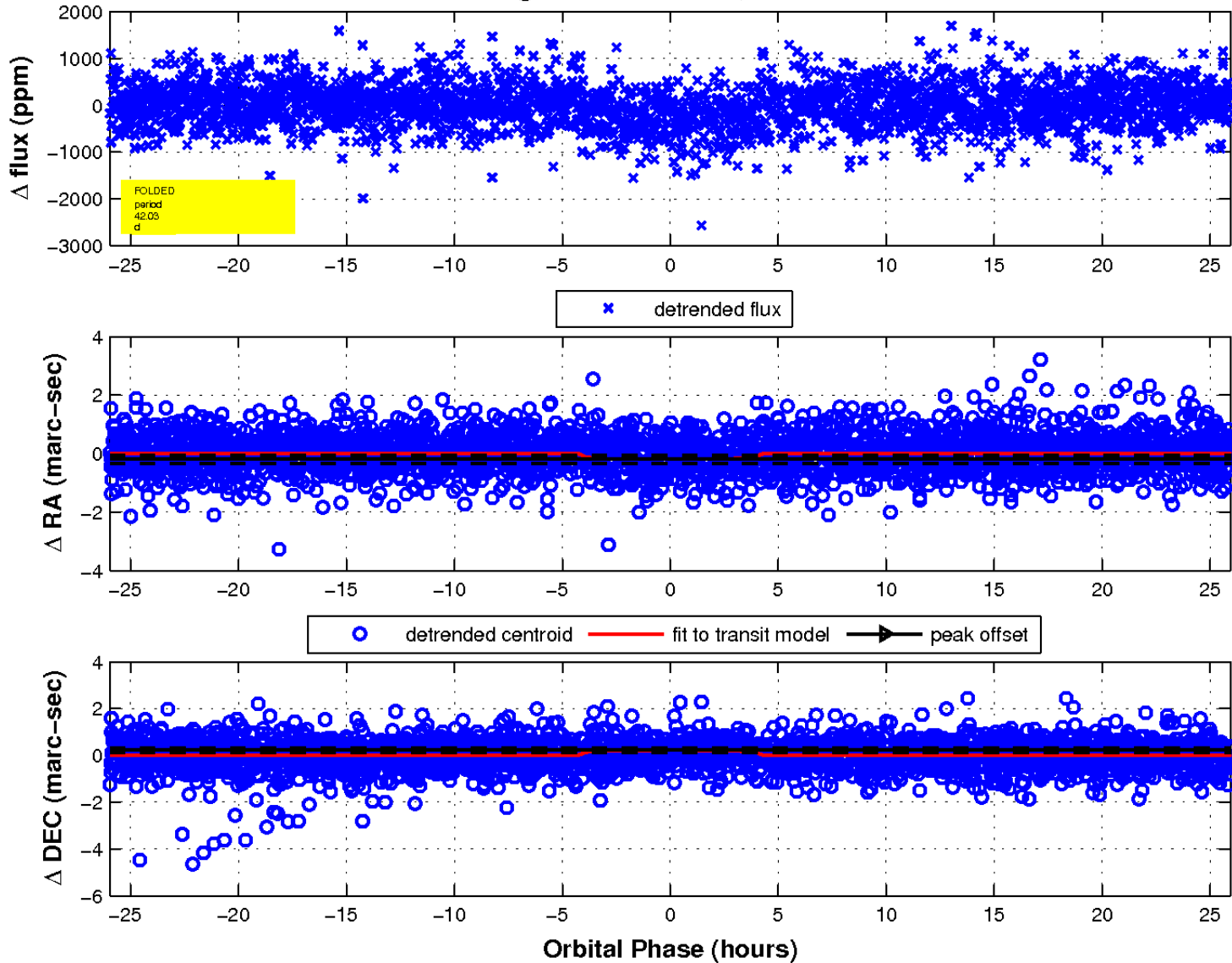
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

