

KIC 001577039

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})
001577039-01	OBS	No	1.181873	131.979066	236.5	3.530	9.1	9.3	1.90	6969	3.61	11553.33
001577039-02	OBS	No	1.181879	132.555210	166.6	8.063	9.8	10.9	1.90	6969	2.49	11553.26

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
001577039-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
001577039-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_SATURATED

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

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

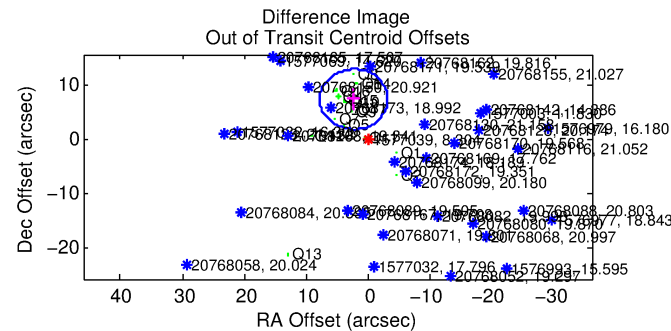
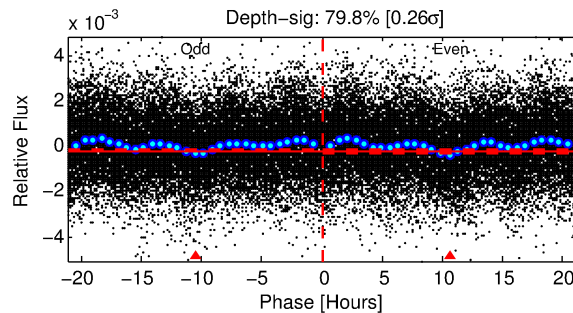
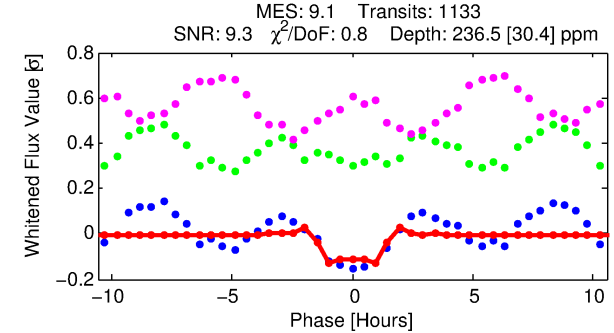
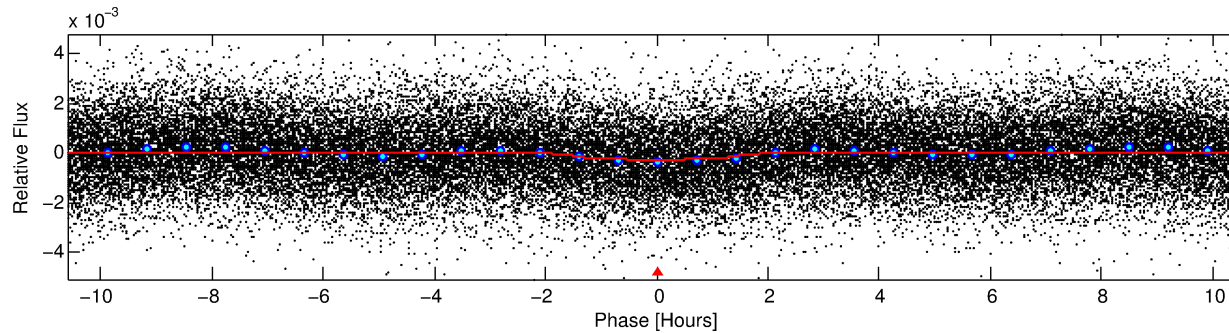
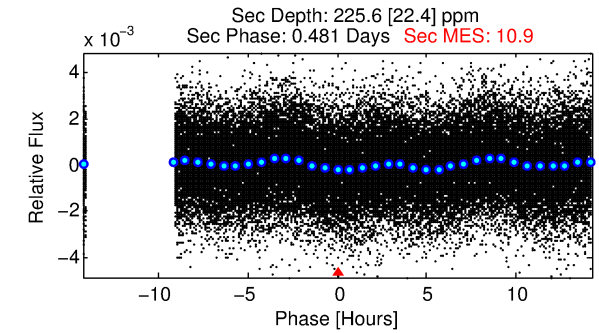
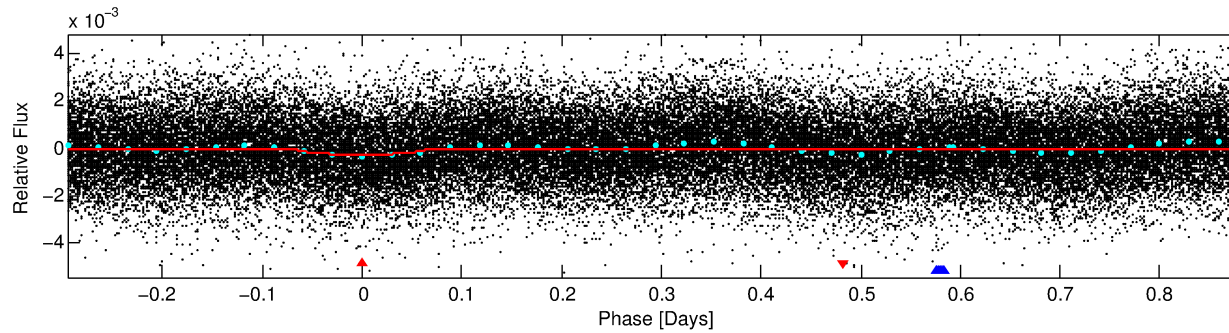
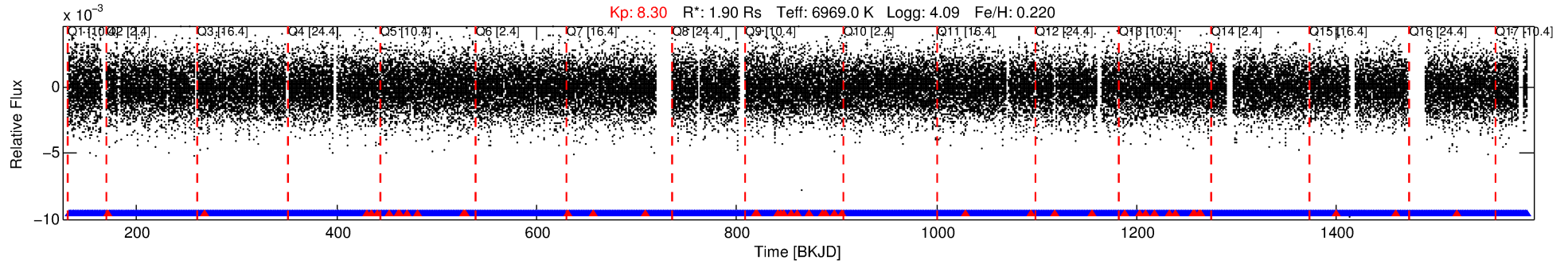
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 001577039-01

No Significant Match Found

DV One-Page Summary

KIC: 1577039 Candidate: 1 of 2 Period: 1.182 d



DV Fit Results:

Period = 1.18187 [0.00001] d
Epoch = 131.9791 [0.0027] BKJD
Rp/R* = 0.0175 [0.0014]
a/R* = 1.32 [0.14]
b = 0.96 [0.02]
Seff = 11553.33 [4560.65]
Teq = 2644 [261] K
Rp = 3.61 [1.19] Re
a = 0.0256 [0.0065] AU
Ag = 6.26 [2.50] [2.10σ]
Teffp = 6465 [421] K [7.71σ]

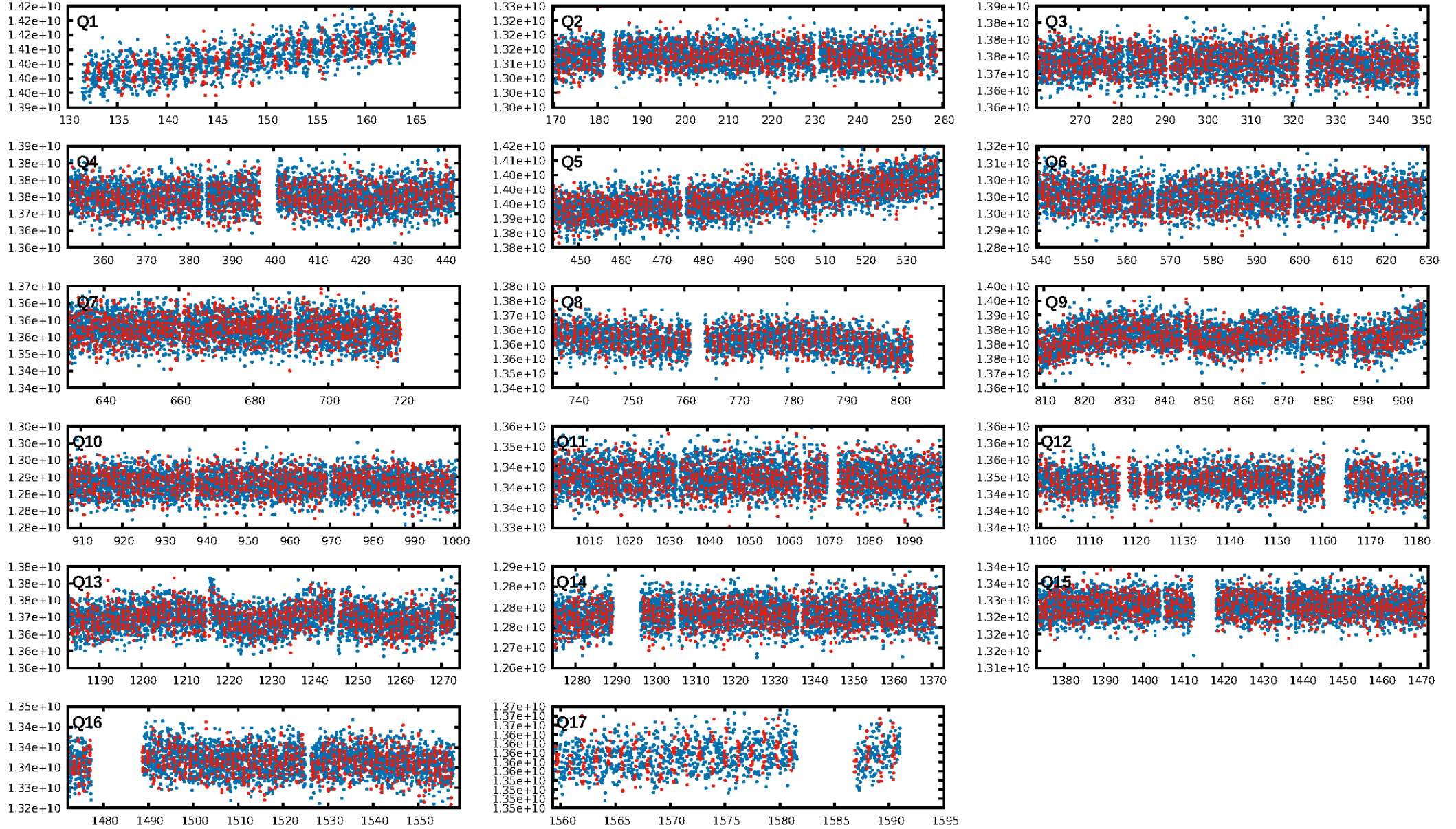
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.96 [1036/1082]
GhostDiagnostic-chr: N/A
Centroid-sig: 0.3%
Centroid-so: 0.857 arcsec [3.66σ]
OotOffset-rm: 7.687 arcsec [4.20σ]
KicOffset-rm: 4.521 arcsec [2.89σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.00 [0/17]
DiffImageOverlap-fno: 1.00 [17/17]

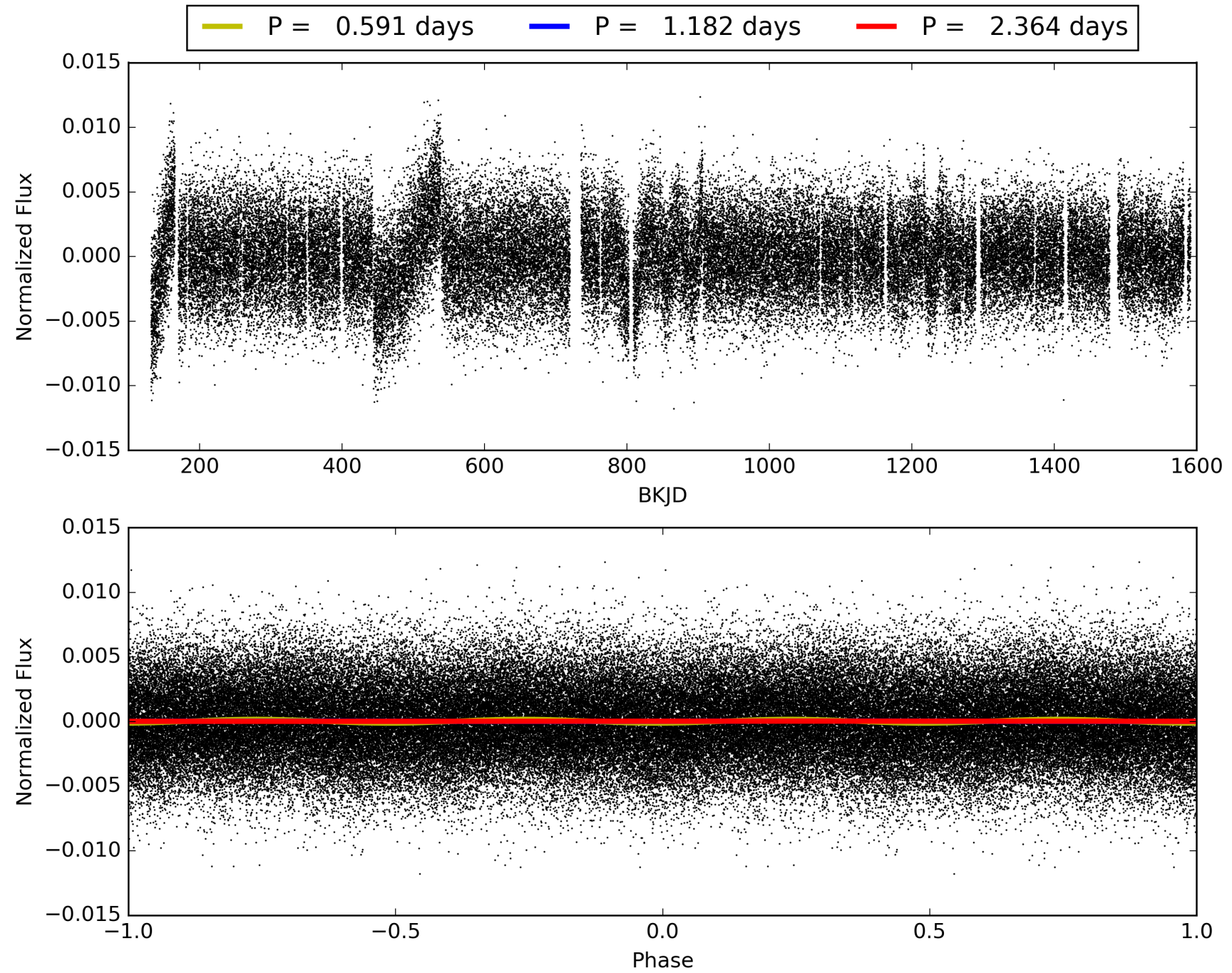
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 09:50:12 Z

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

TCE 001577039-01, PDC Light Curves

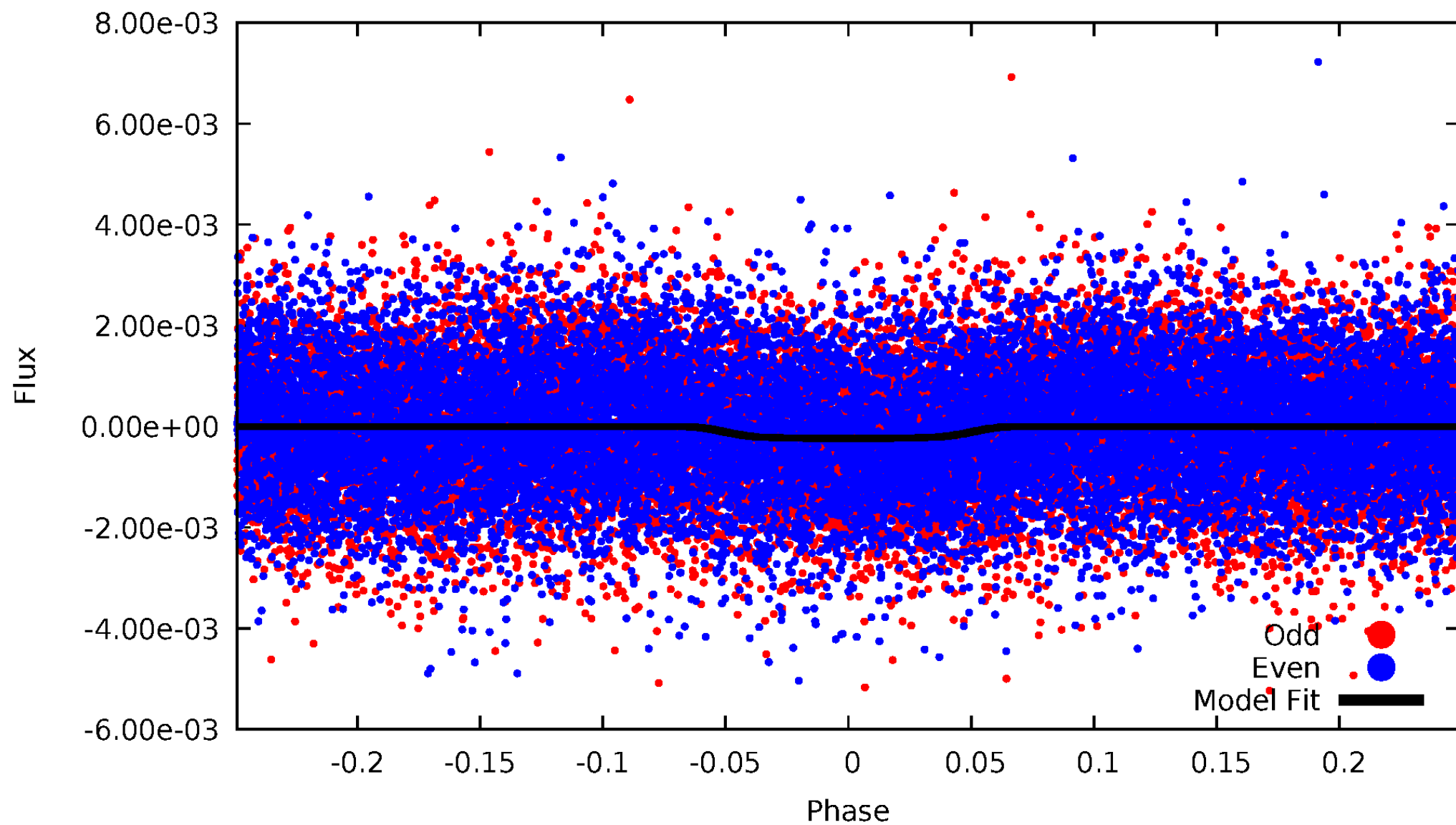


TCE 001577039-01



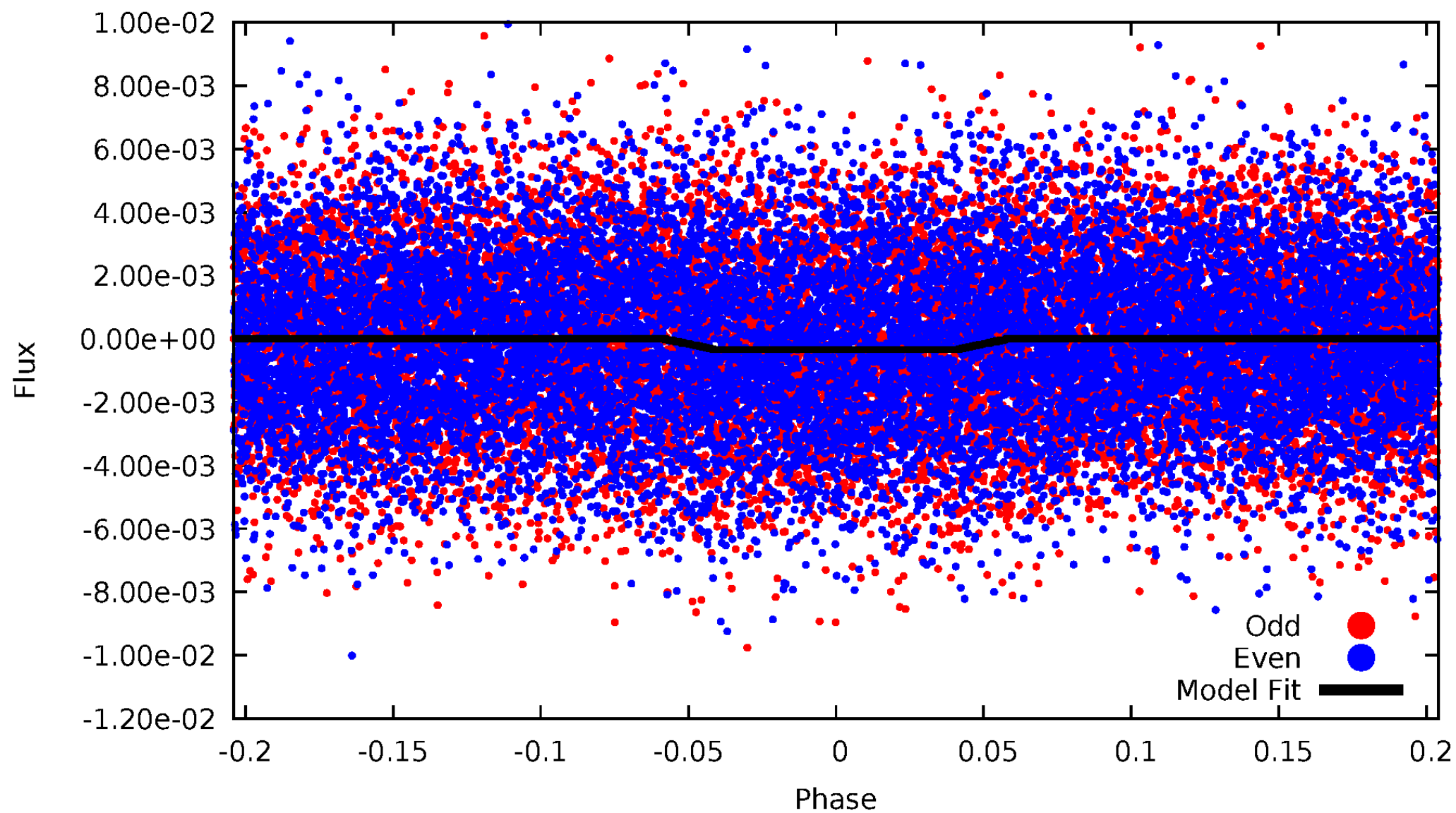
DV Odd/Even

TCE 001577039-01

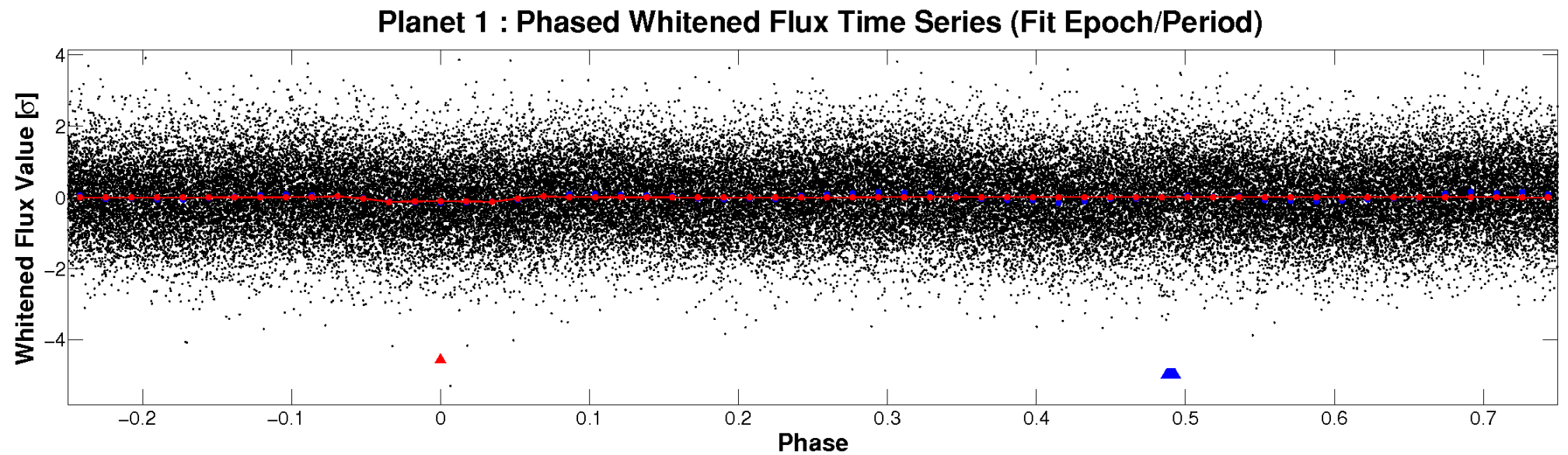
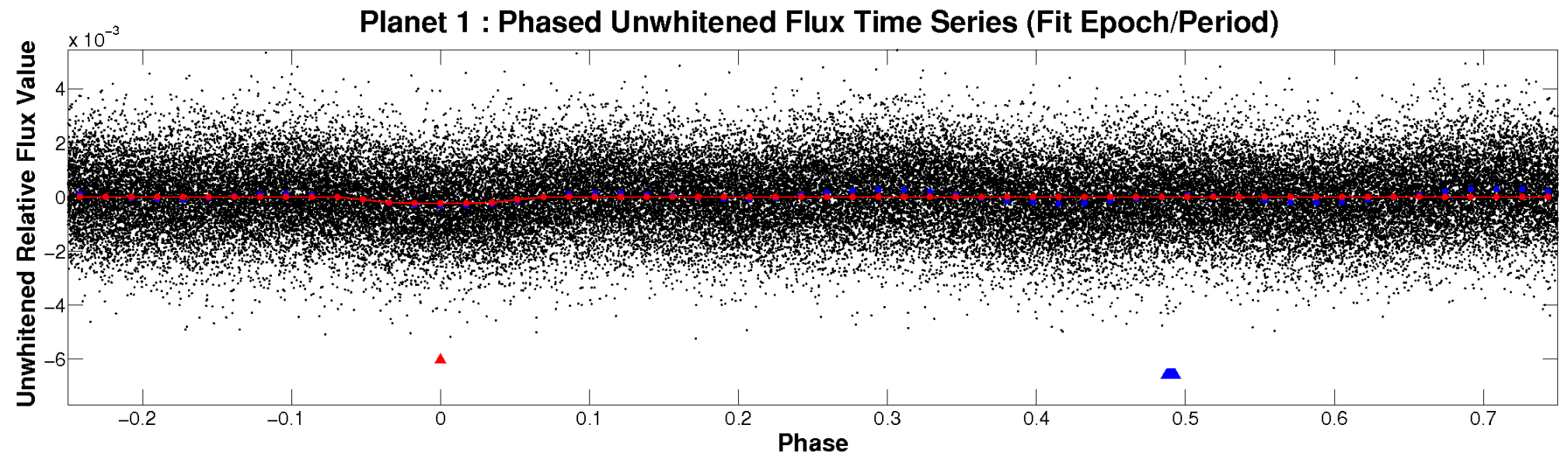


ALT Odd/Even

TCE 001577039-01

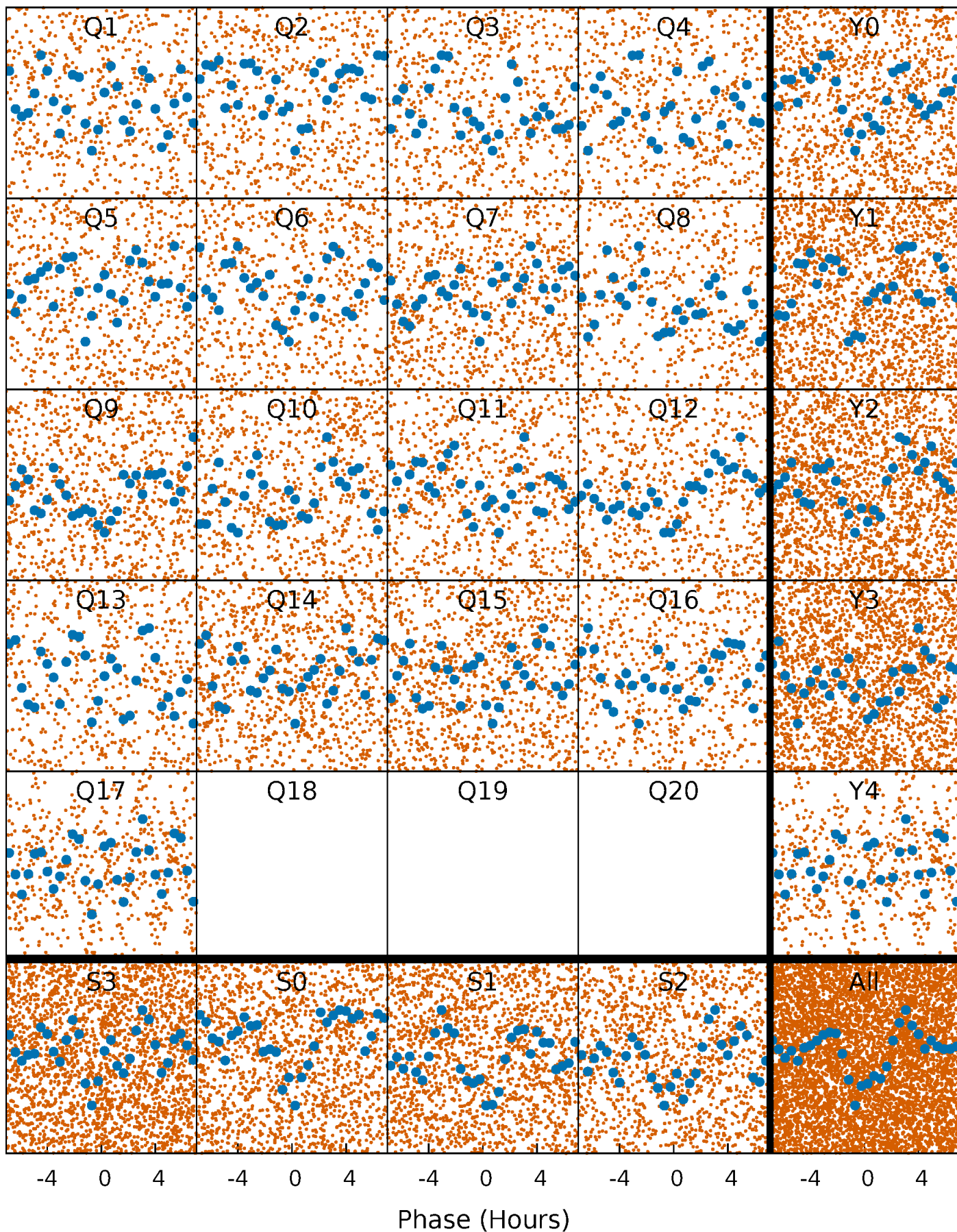


Non-Whitened Vs. Whitened Light Curve



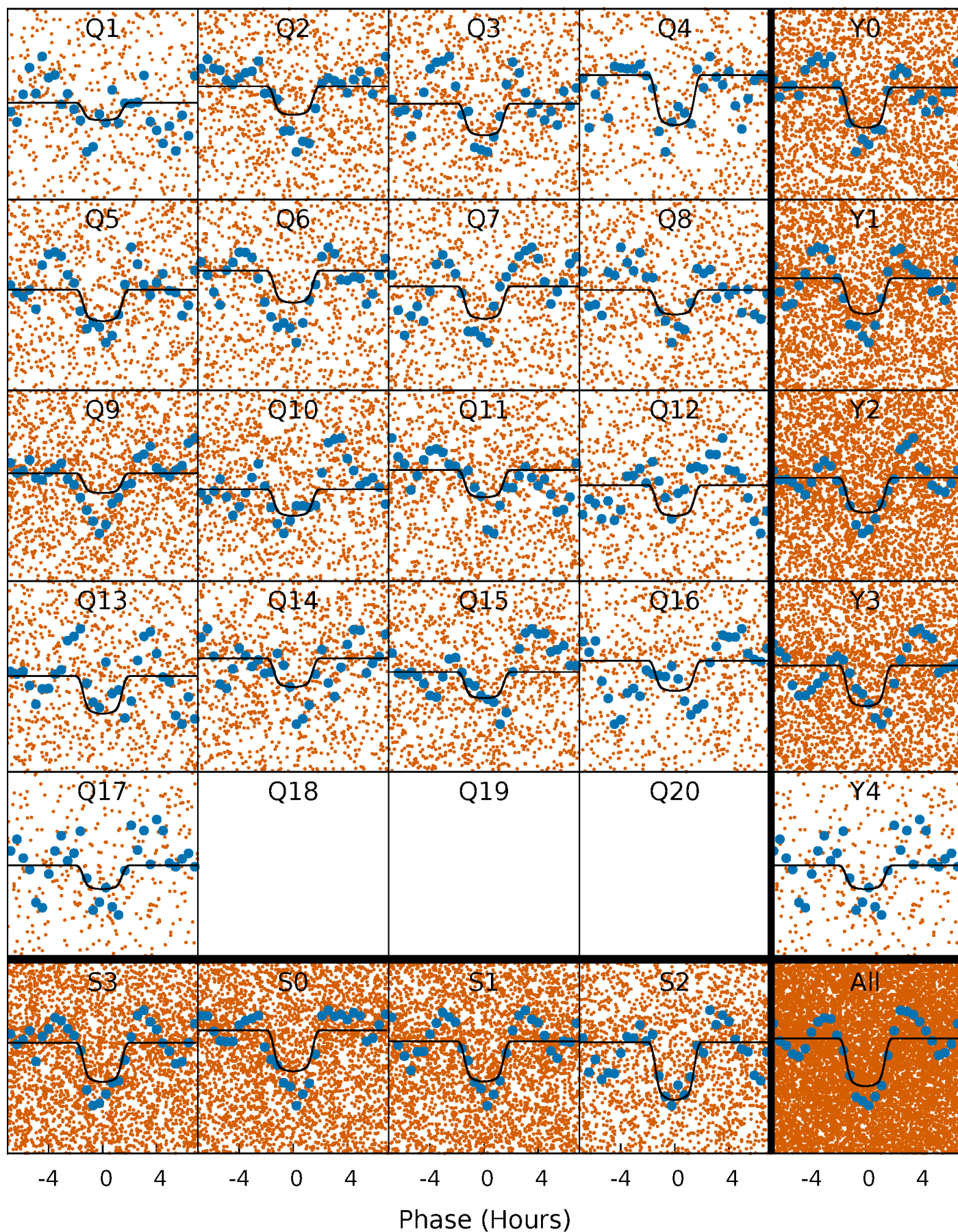
PDC Quarter-Phased Transit Curves

TCE 001577039-01 P= 1.181873 Days $T_0=131.979066$ (BKJD)



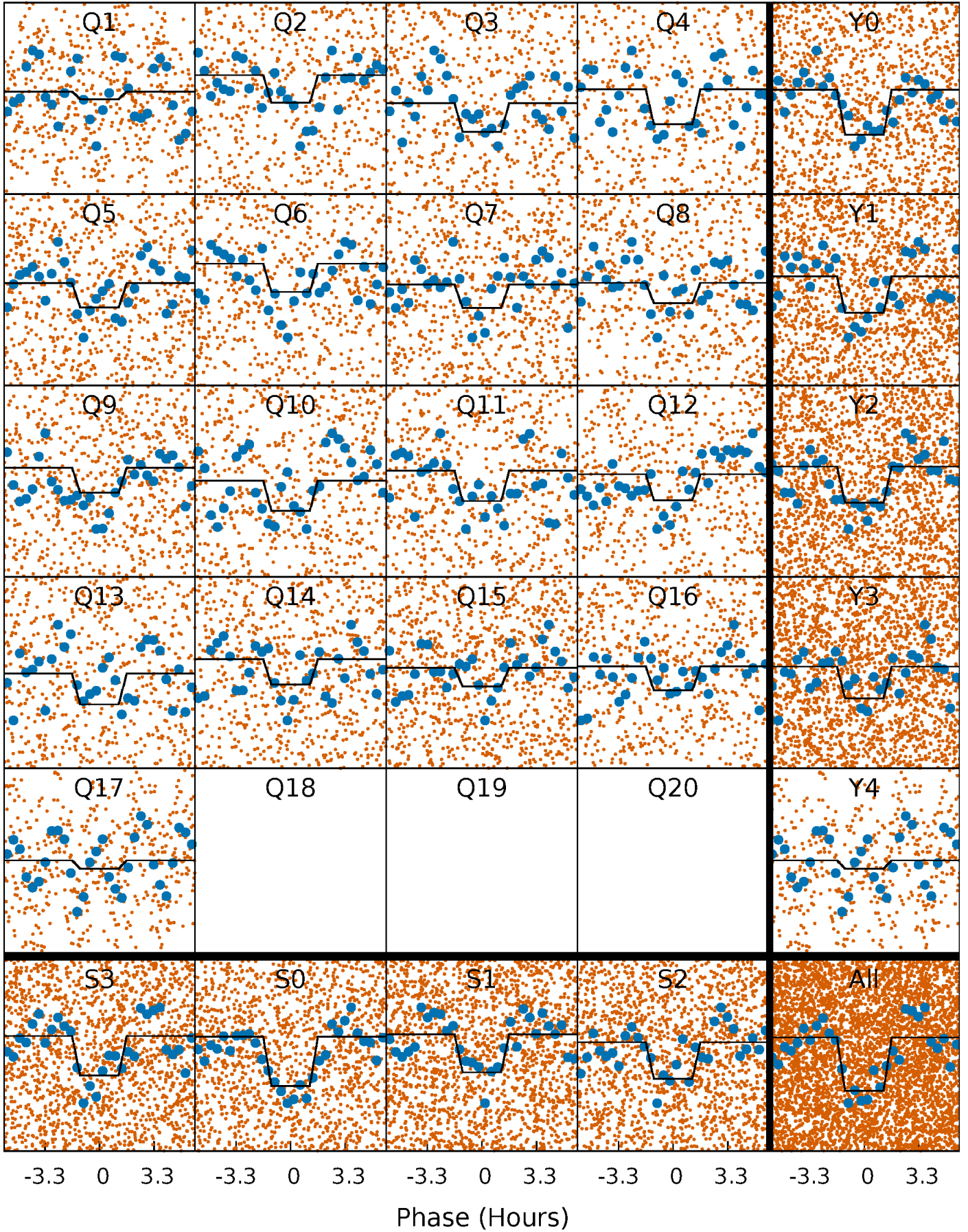
DV Quarter-Phased Transit Curves

TCE 001577039-01 P= 1.181873 Days $T_0=131.979066$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

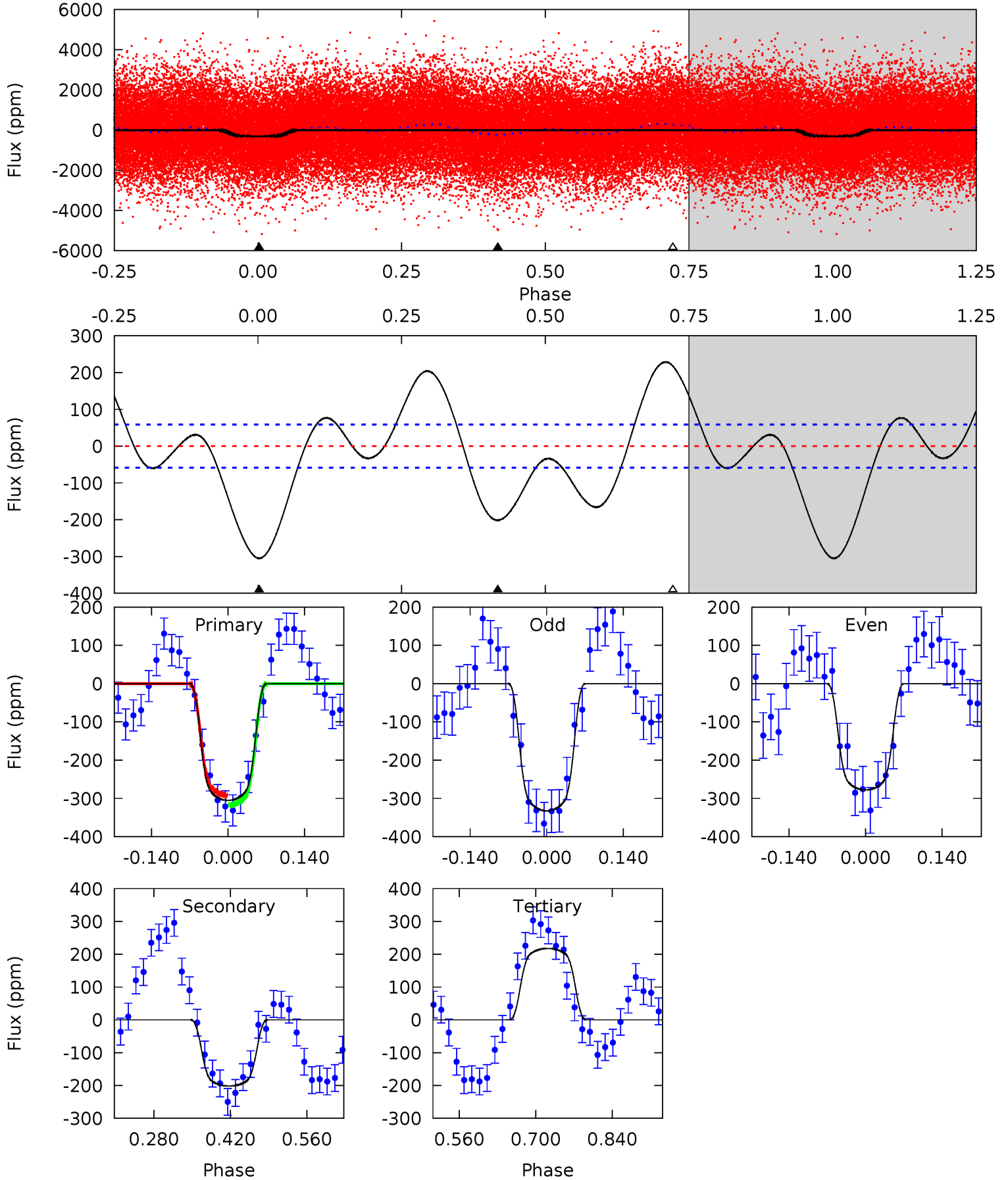
TCE 001577039-01 P= 1.181906 Days $T_0=131.961301$ (BKJD)



DV Model-Shift Uniqueness Test

001577039-01, P = 1.181873 Days, E = 130.797193 Days

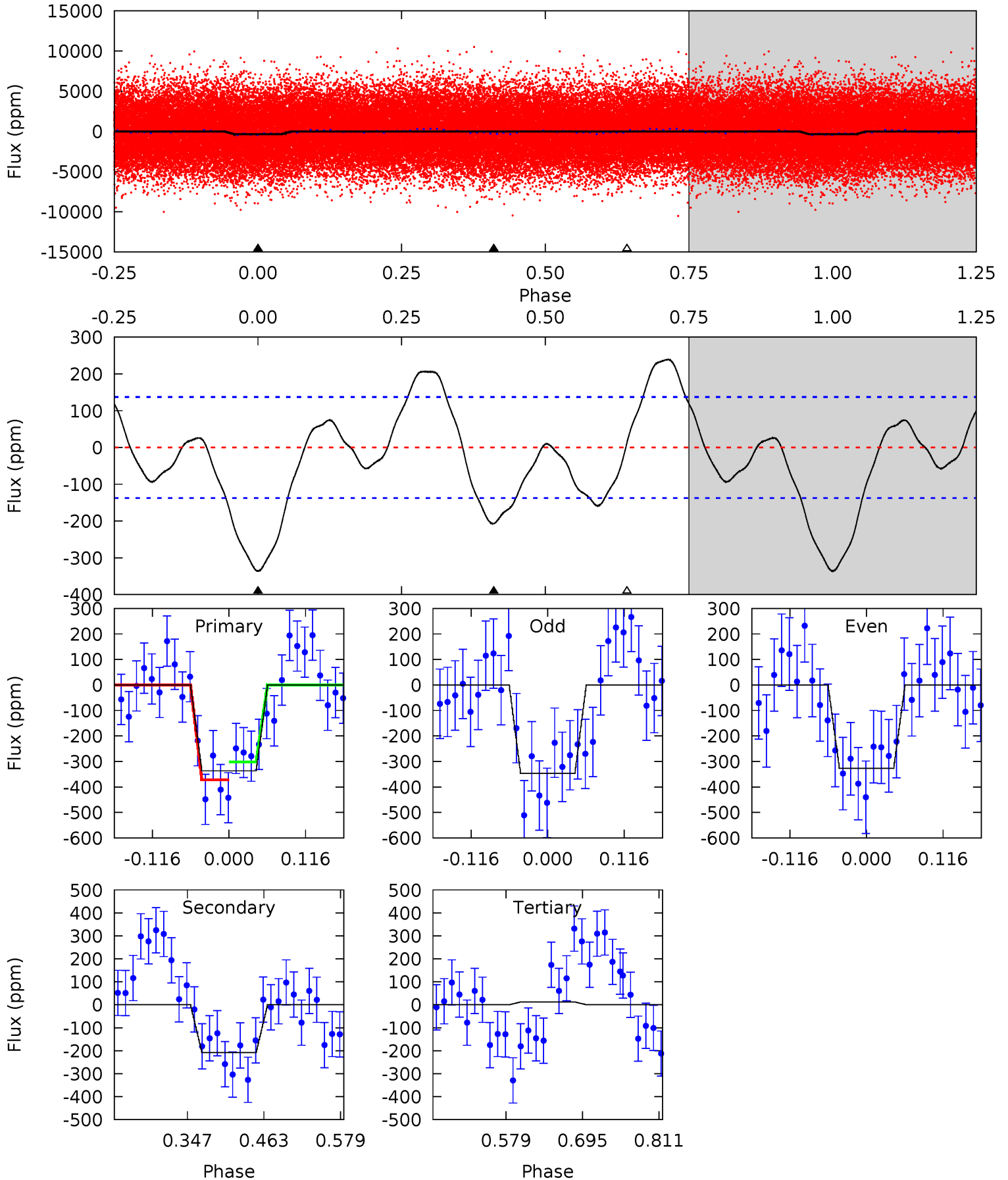
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.4	15.4	-16.7	0	4.49	1.48	8.60	40.0	23.4	32.1	15.4	2.07	0.98	0.43	0.97



Alt Model-Shift Uniqueness Test

001577039-01, P = 1.181906 Days, E = 130.779395 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.1	6.86	-0.41	0	4.53	1.57	3.71	11.5	11.1	7.26	6.86	0.33	1.05	0.42	1.14



Stellar Parameters For KIC 001577039

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6969^{+192}_{-312}	$4.089^{+0.149}_{-0.182}$	$0.220^{+0.150}_{-0.350}$	$1.896^{+0.608}_{-0.406}$	$1.608^{+0.208}_{-0.277}$	$0.332^{+0.260}_{-0.168}$
	+3%/-4%	+4%/-4%	+68%/-159%	+32%/-21%	+13%/-17%	+78%/-50%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 001577039-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-202 ± 13	$3.61^{+0.67}_{-0.54}$	3692^{+286}_{-250}	6138^{+344}_{-362}	$5.506^{+1.911}_{-1.548}$
Alt.	-208 ± 30	$3.79^{+0.72}_{-0.58}$	3695^{+278}_{-260}	6011^{+421}_{-405}	$5.145^{+2.032}_{-1.503}$

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

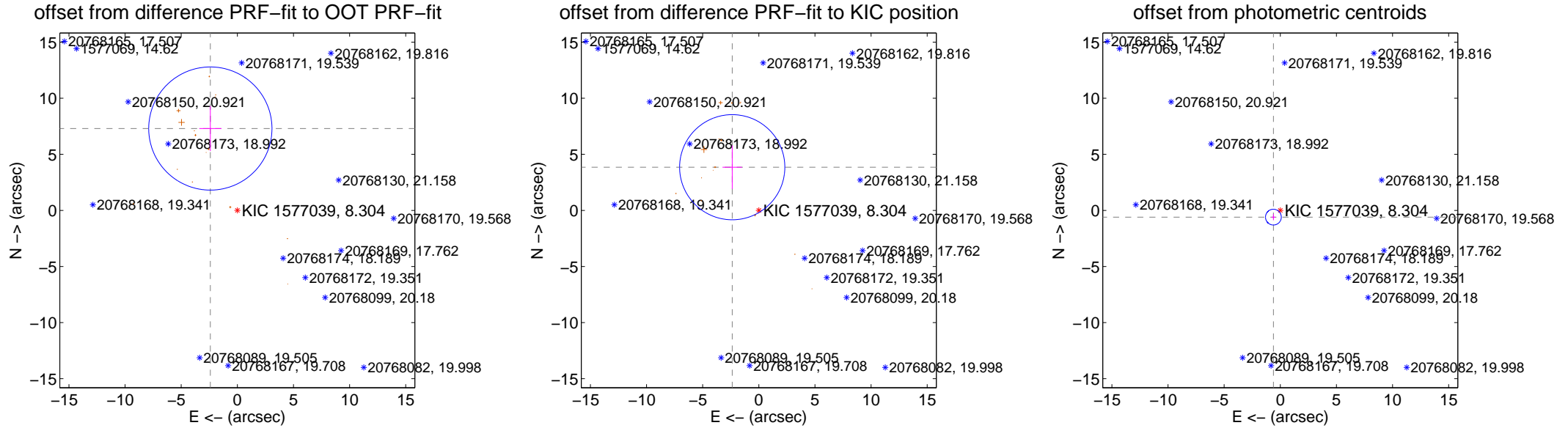
DV Centroid Data

Supplemental centroid analysis for 001577039-01. **Kepler magnitude: 8.30.** Transit SNR 9.29

There are 0 quarters with good PRF difference image offsets

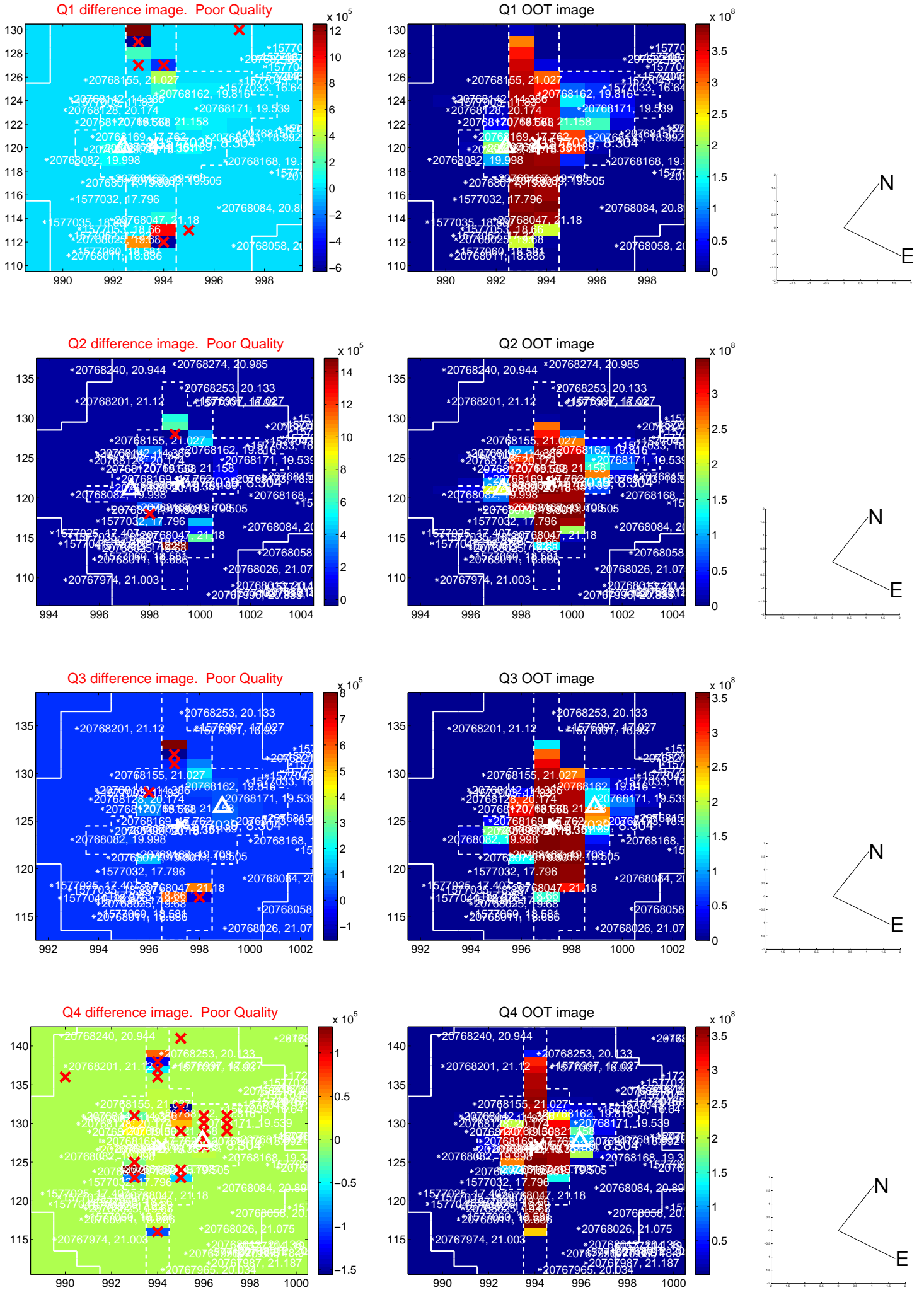
The OOT PRF centroid is offset from the target star catalog position by about 2.09 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	7.687 ± 1.830	4.20	2.405 ± 0.990	7.301 ± 2.005
PRF-fit source offset from KIC position	4.521 ± 1.562	2.89	2.369 ± 0.867	3.851 ± 1.933
photometric centroid source offset	0.86 ± 0.23	3.66	0.61 ± 0.17	-0.60 ± 0.28

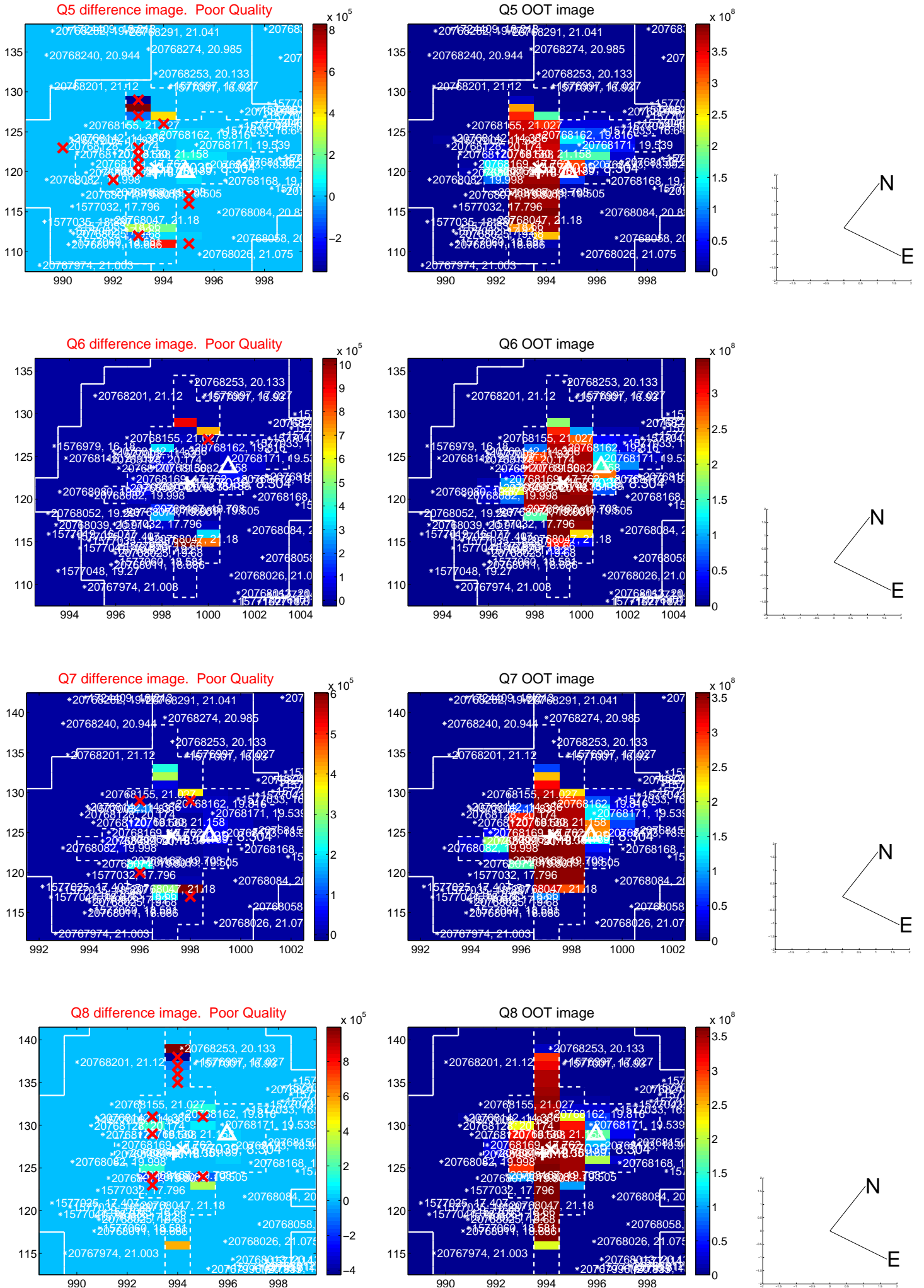


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

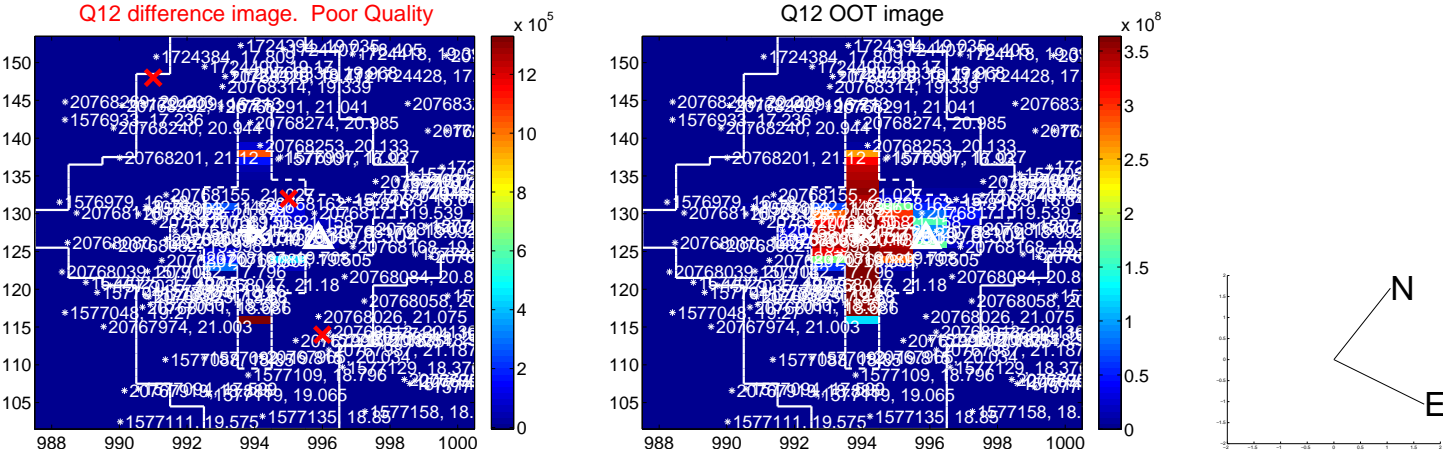
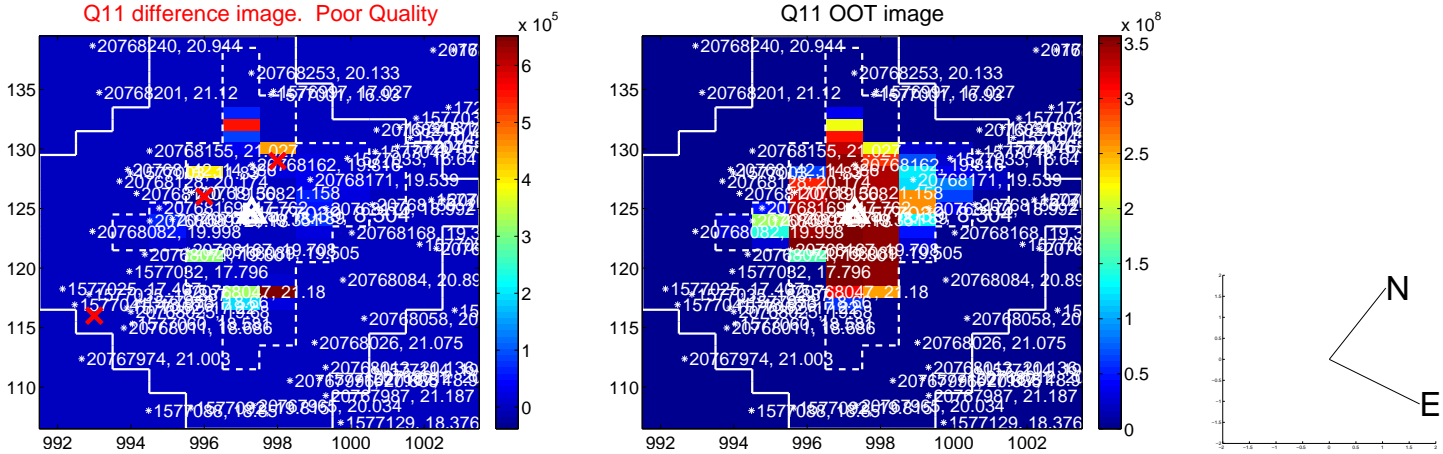
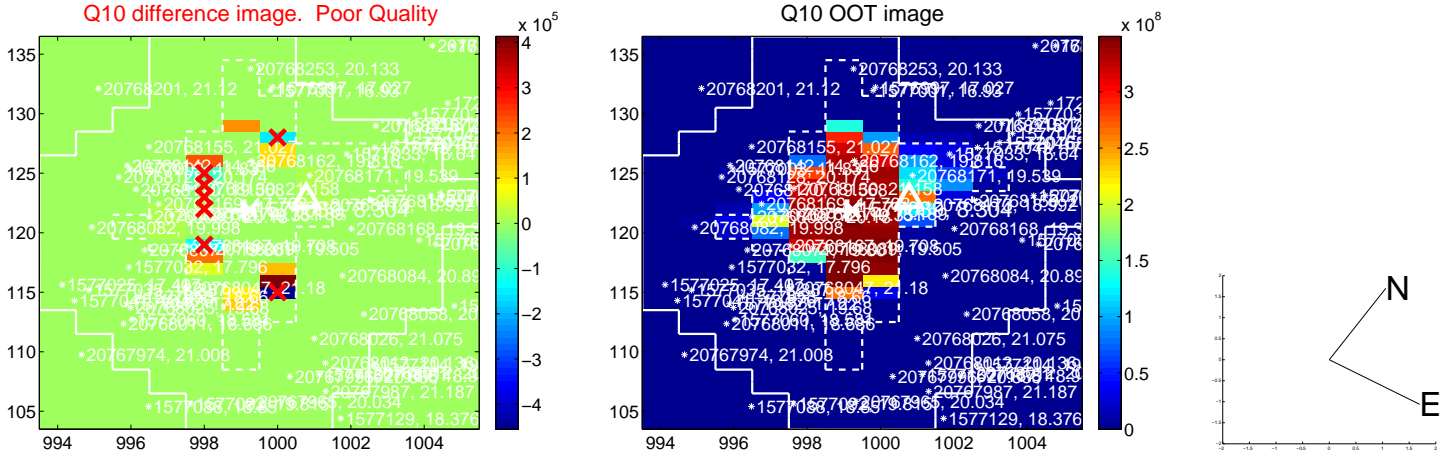
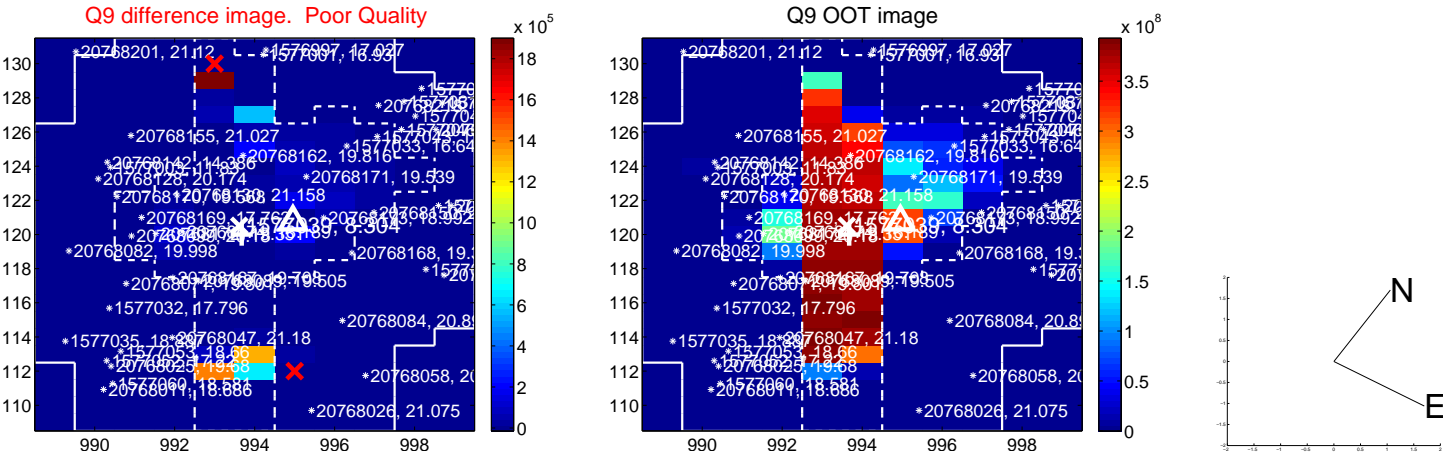
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



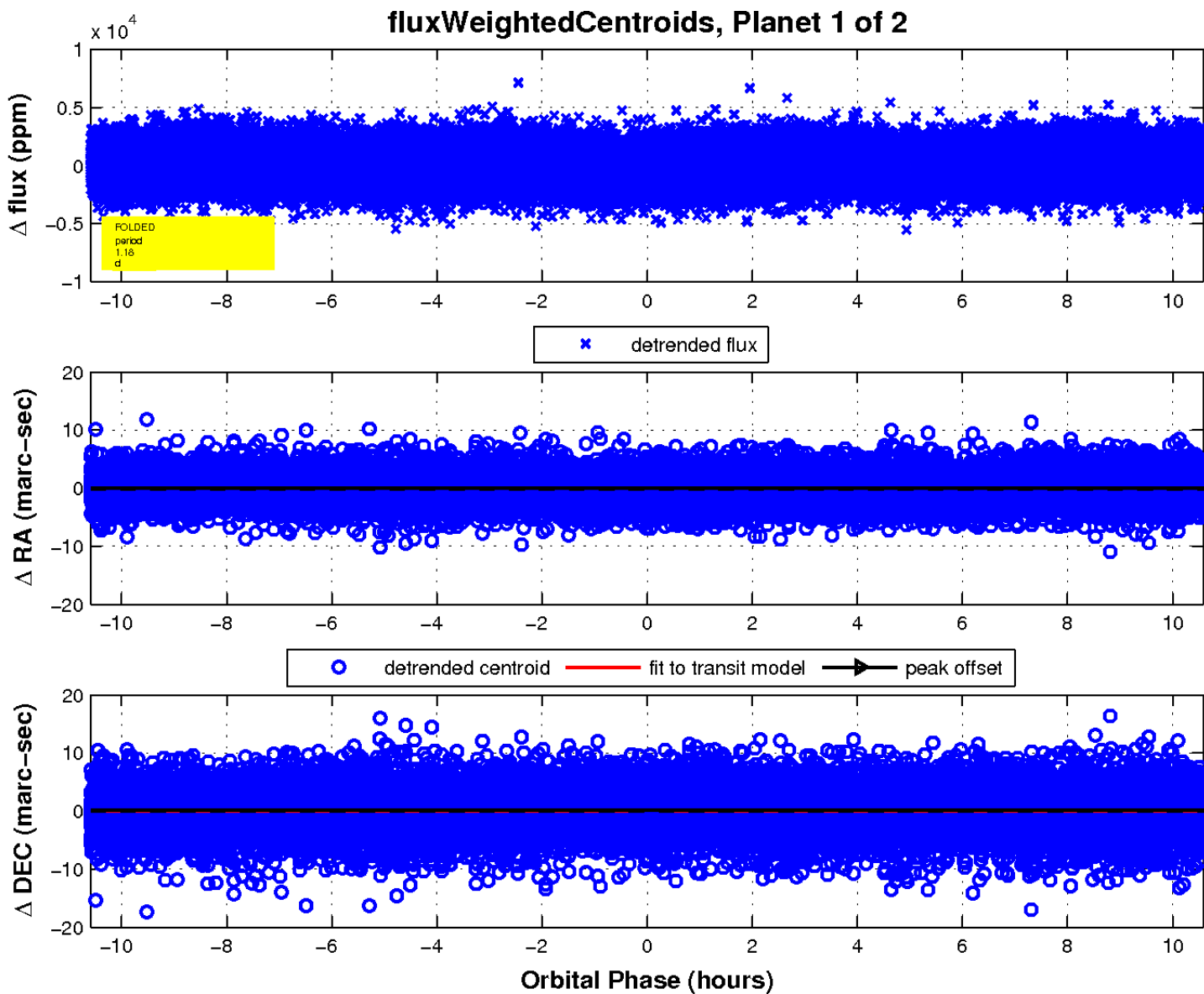
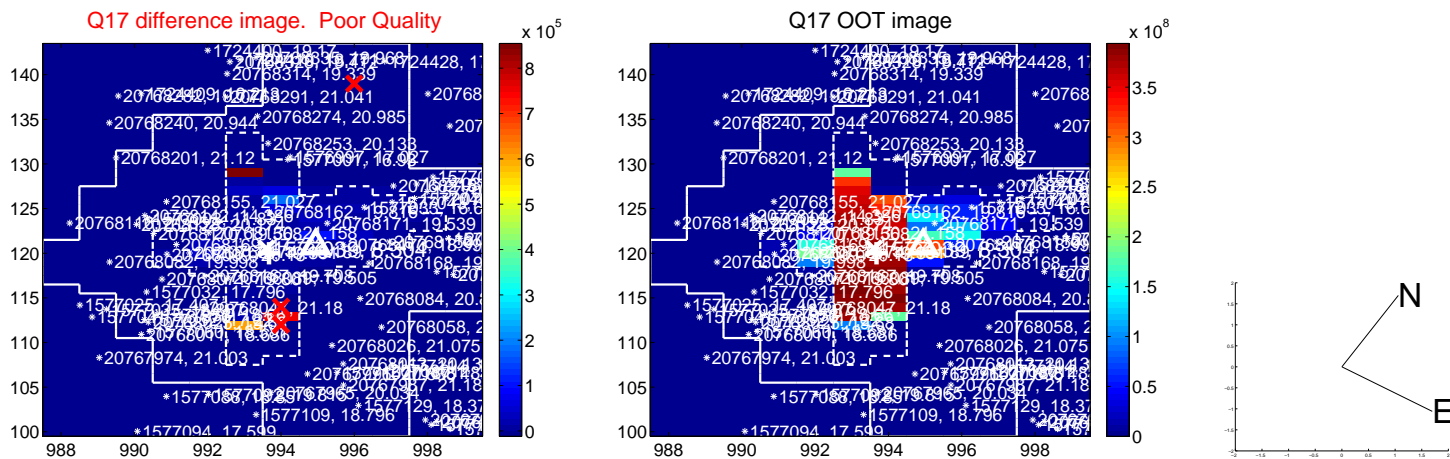
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



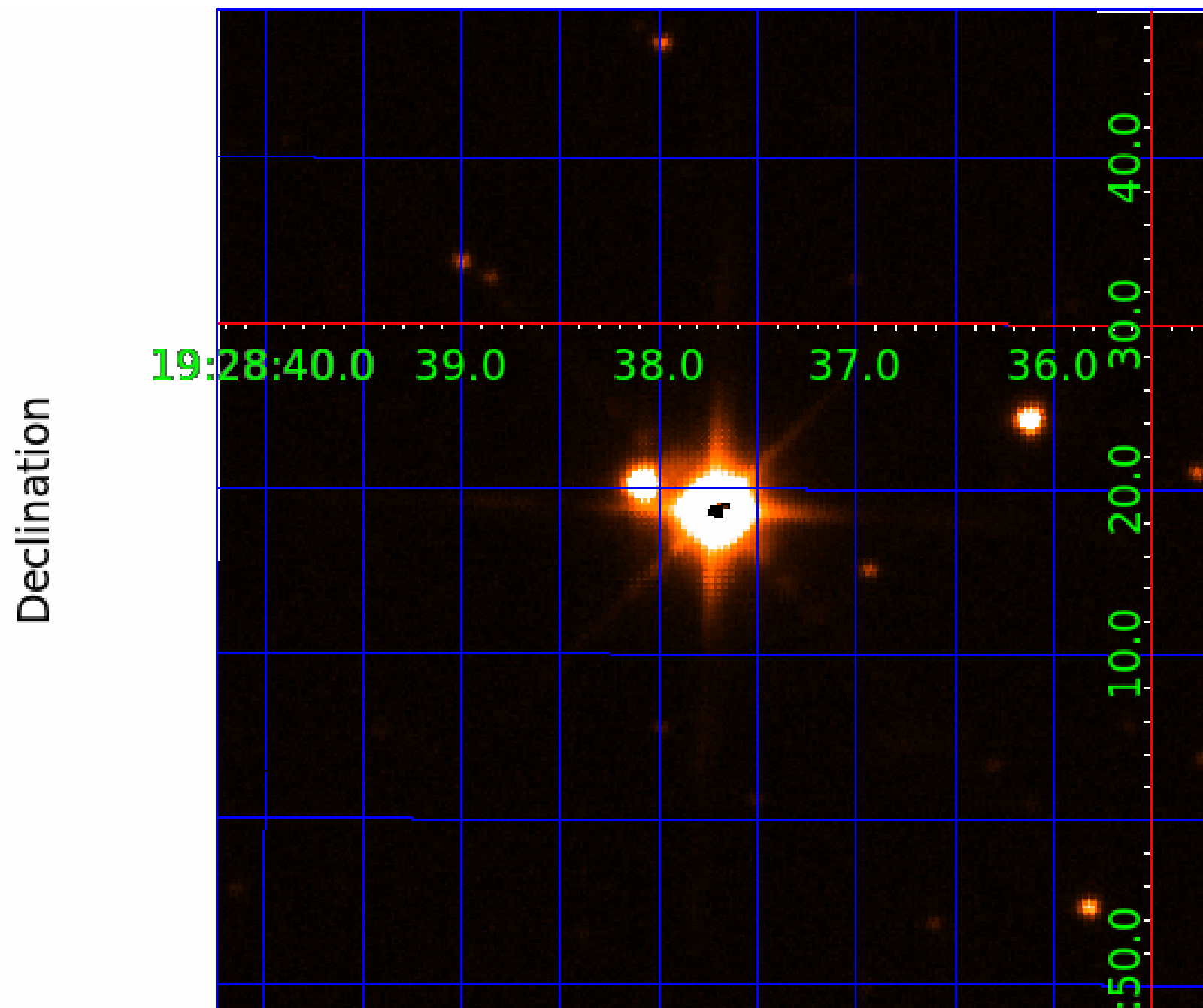
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 001577039

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})
001577039-01	OBS	No	1.181873	131.979066	236.5	3.530	9.1	9.3	1.90	6969	3.61	11553.33
001577039-02	OBS	No	1.181879	132.555210	166.6	8.063	9.8	10.9	1.90	6969	2.49	11553.26

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
001577039-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
001577039-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_SATURATED

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

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

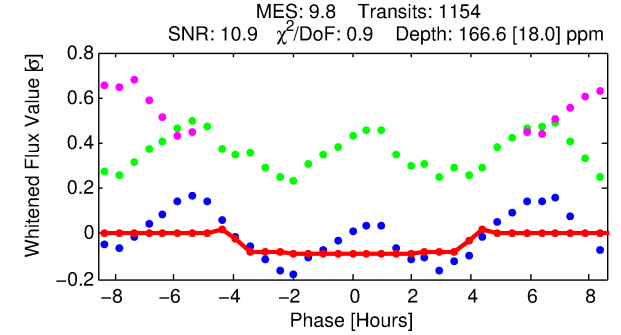
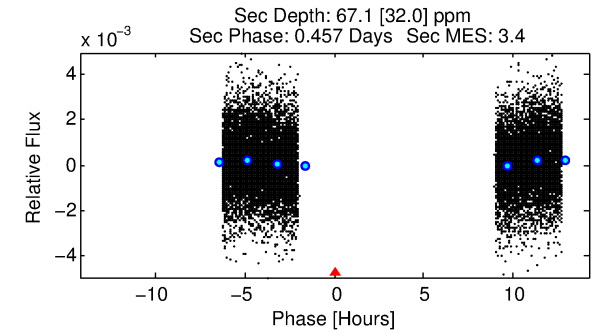
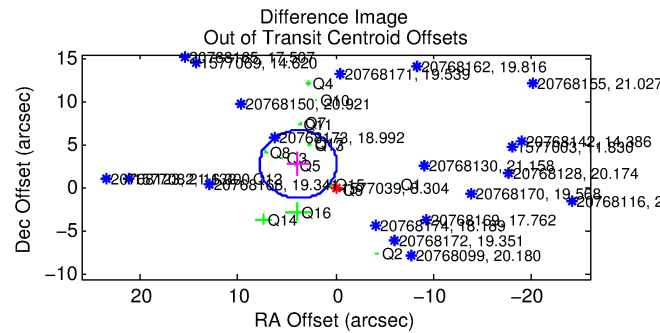
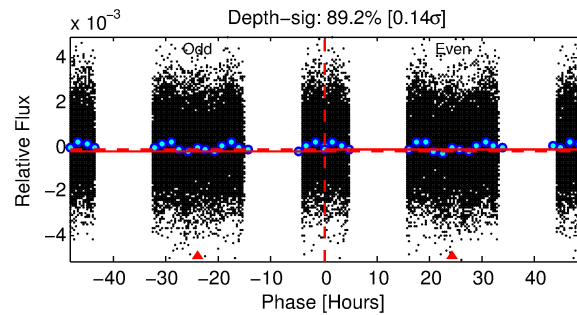
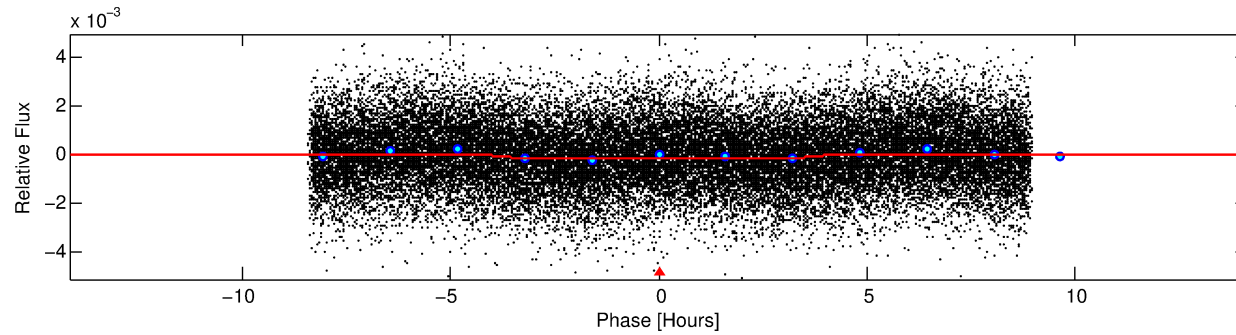
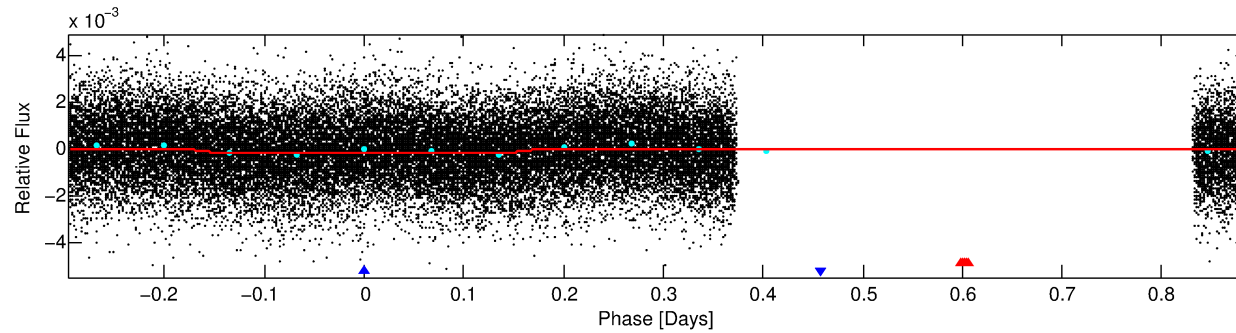
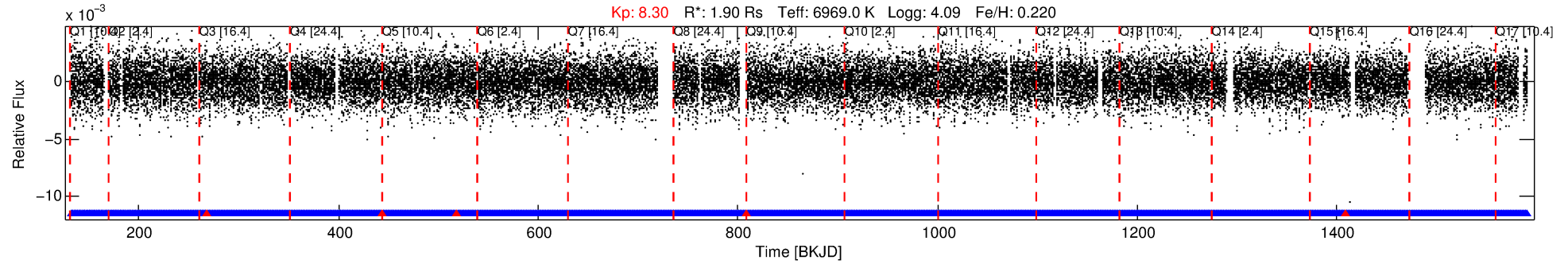
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 001577039-02

No Significant Match Found

DV One-Page Summary

KIC: 1577039 Candidate: 2 of 2 Period: 1.182 d



DV Fit Results:

Period = 1.18188 [0.00002] d
Epoch = 132.5552 [0.0040] BKJD
Rp/R* = 0.0120 [0.0097]
a/R* = 1.28 [2.28]
b = 0.28 [15.15]
Seff = 11553.26 [4560.63]
Teq = 2644 [261] K
Rp = 2.49 [2.16] Re
a = 0.0256 [0.0065] AU
Ag = 3.92 [6.75] [0.43 σ]
Teffp = 5751 [2437] K [1.27 σ]

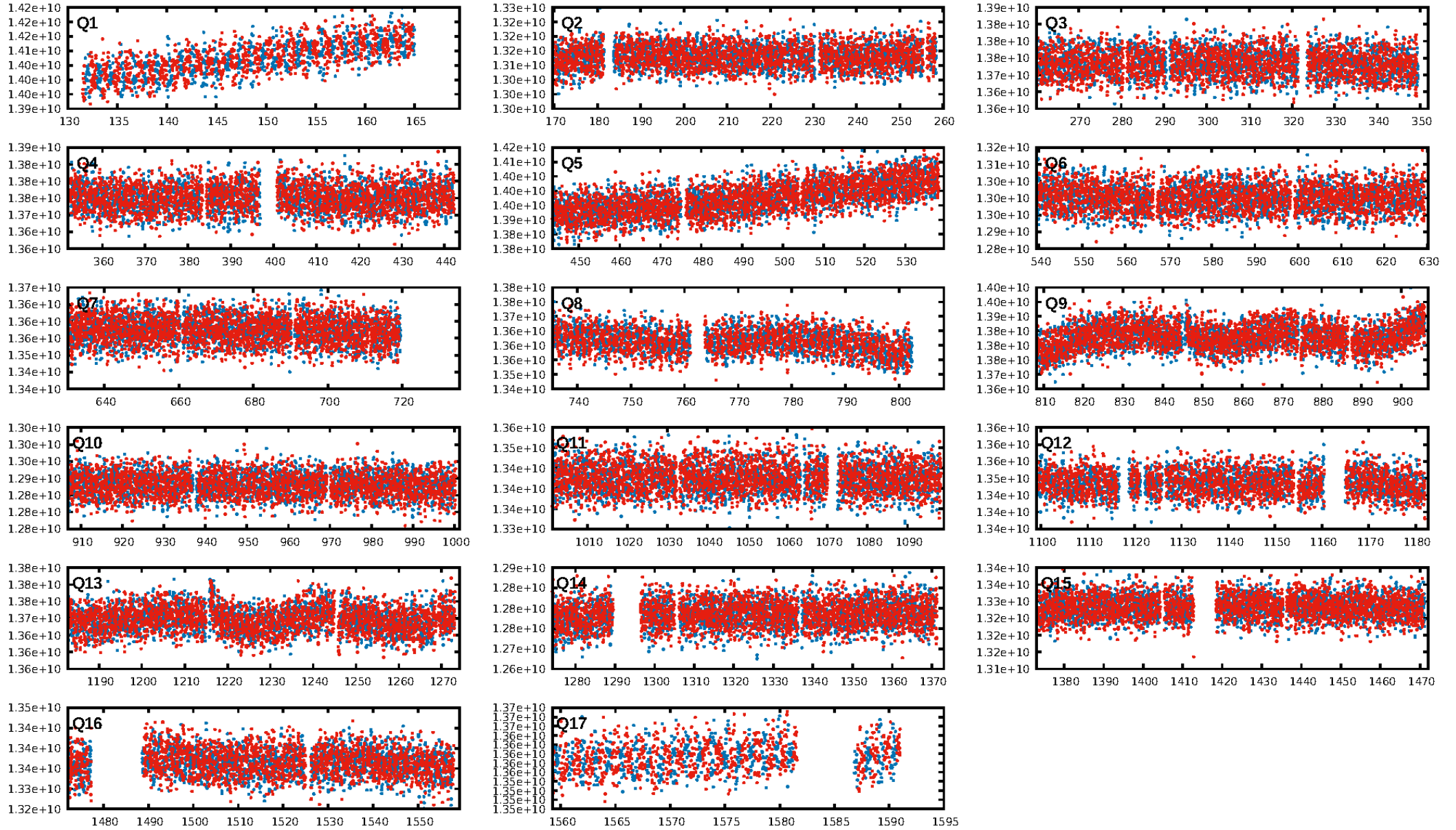
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1096/1101]
GhostDiagnostic-chr: N/A
Centroid-sig: 0.0%
Centroid-so: 1.074 arcsec [4.27 σ]
OotOffset-rm: 4.732 arcsec [3.61 σ]
KicOffset-rm: 4.350 arcsec [4.20 σ]
OotOffset-st: 3/4/4/5 [16]
KicOffset-st: 3/4/4/5 [16]
DiffImageQuality-fgm: 0.00 [0/16]
DiffImageOverlap-fno: 0.00 [0/17]

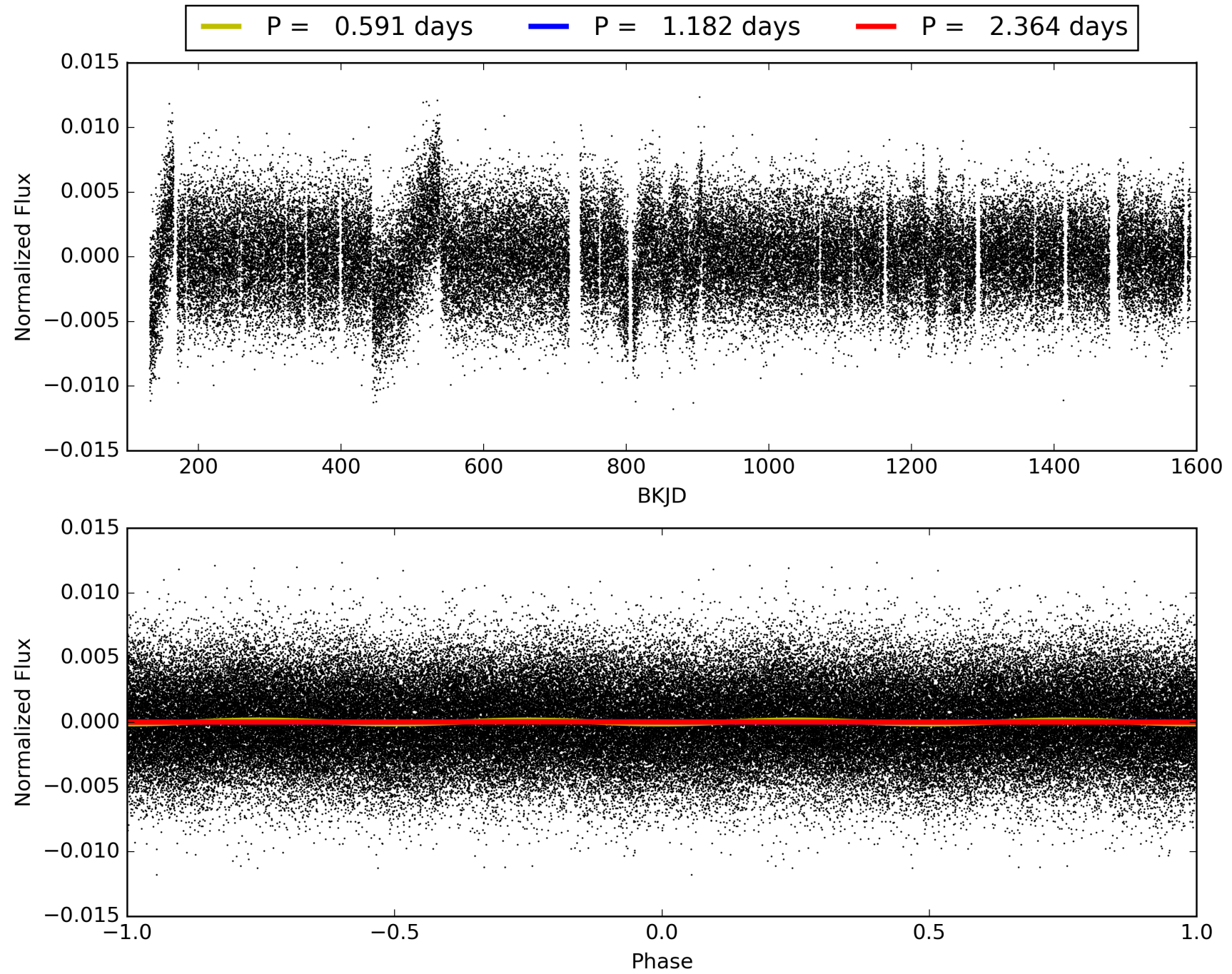
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 09:50:25 Z

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

TCE 001577039-02, PDC Light Curves

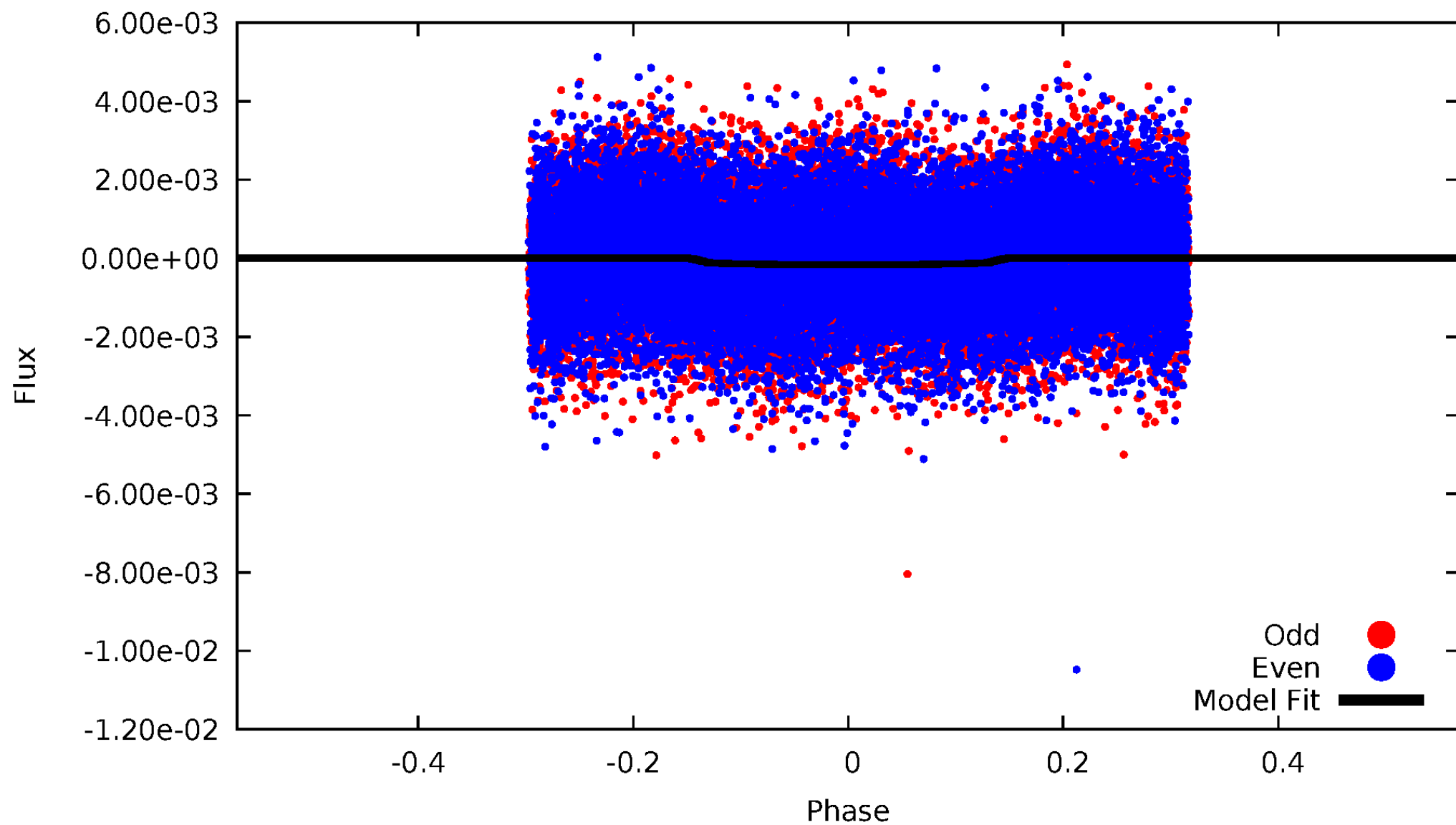


TCE 001577039-02



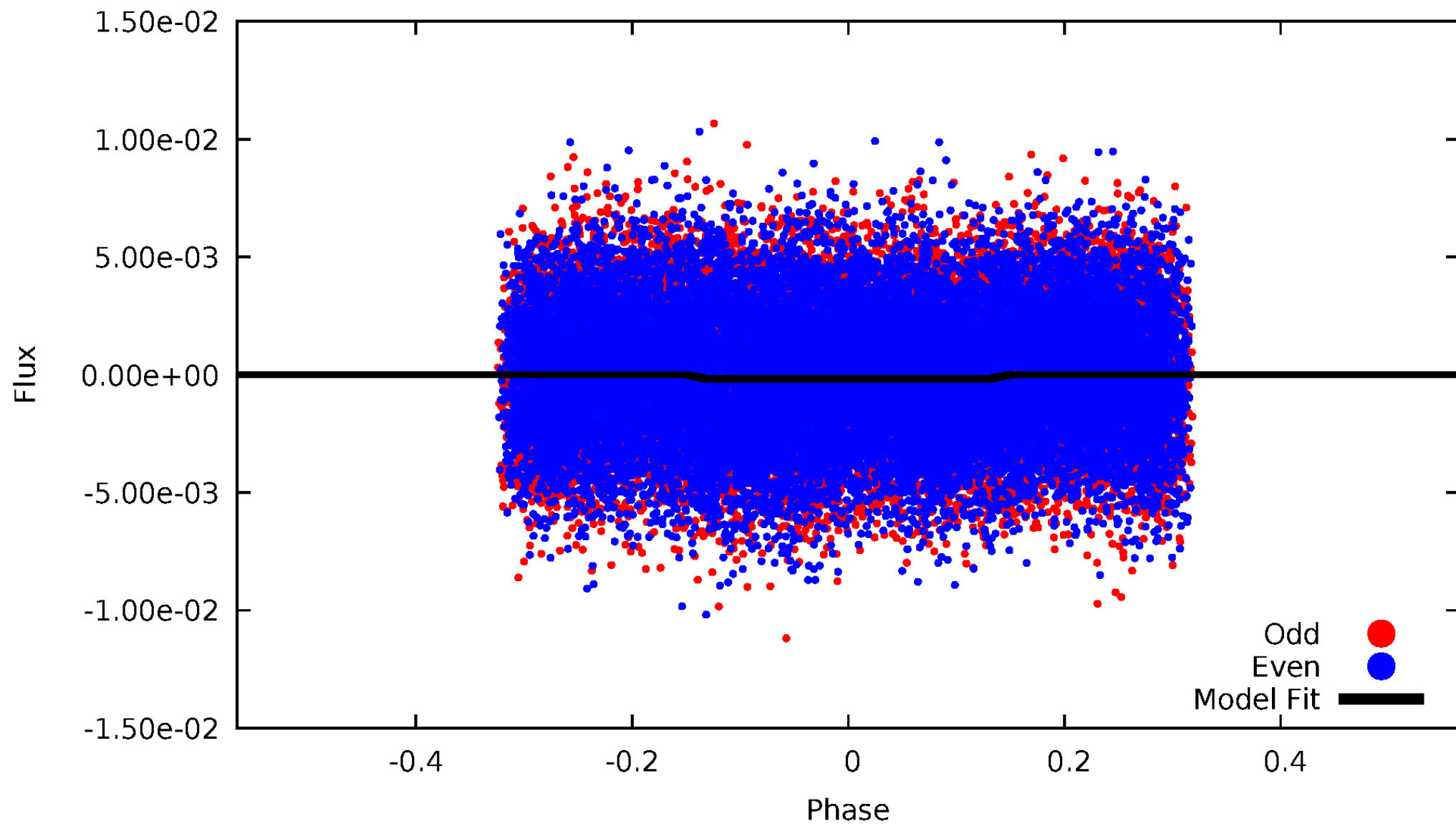
DV Odd/Even

TCE 001577039-02



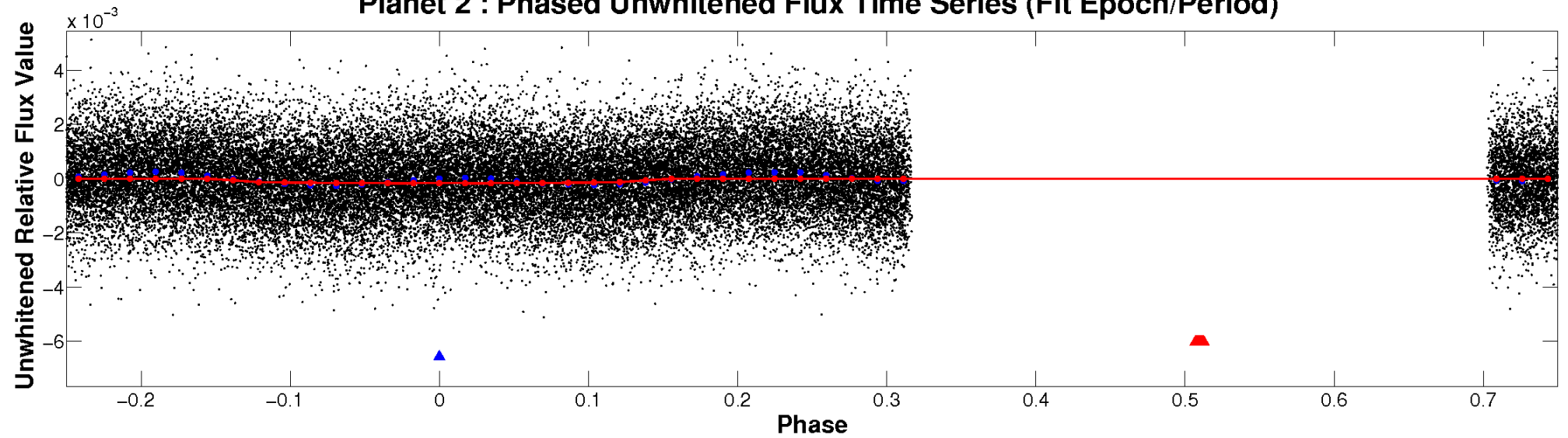
ALT Odd/Even

TCE 001577039-02

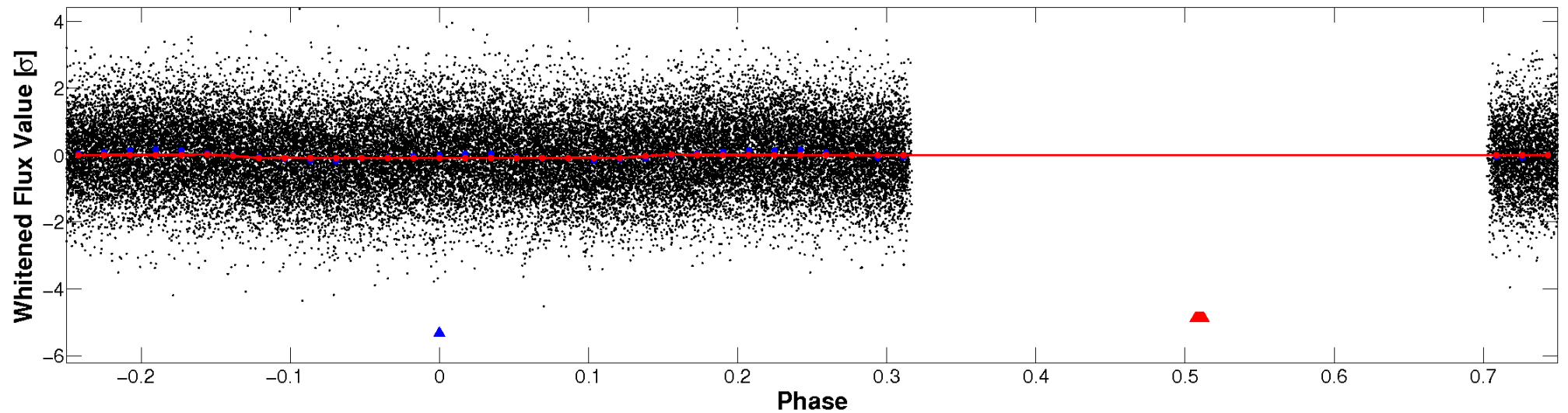


Non-Whitened Vs. Whitened Light Curve

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

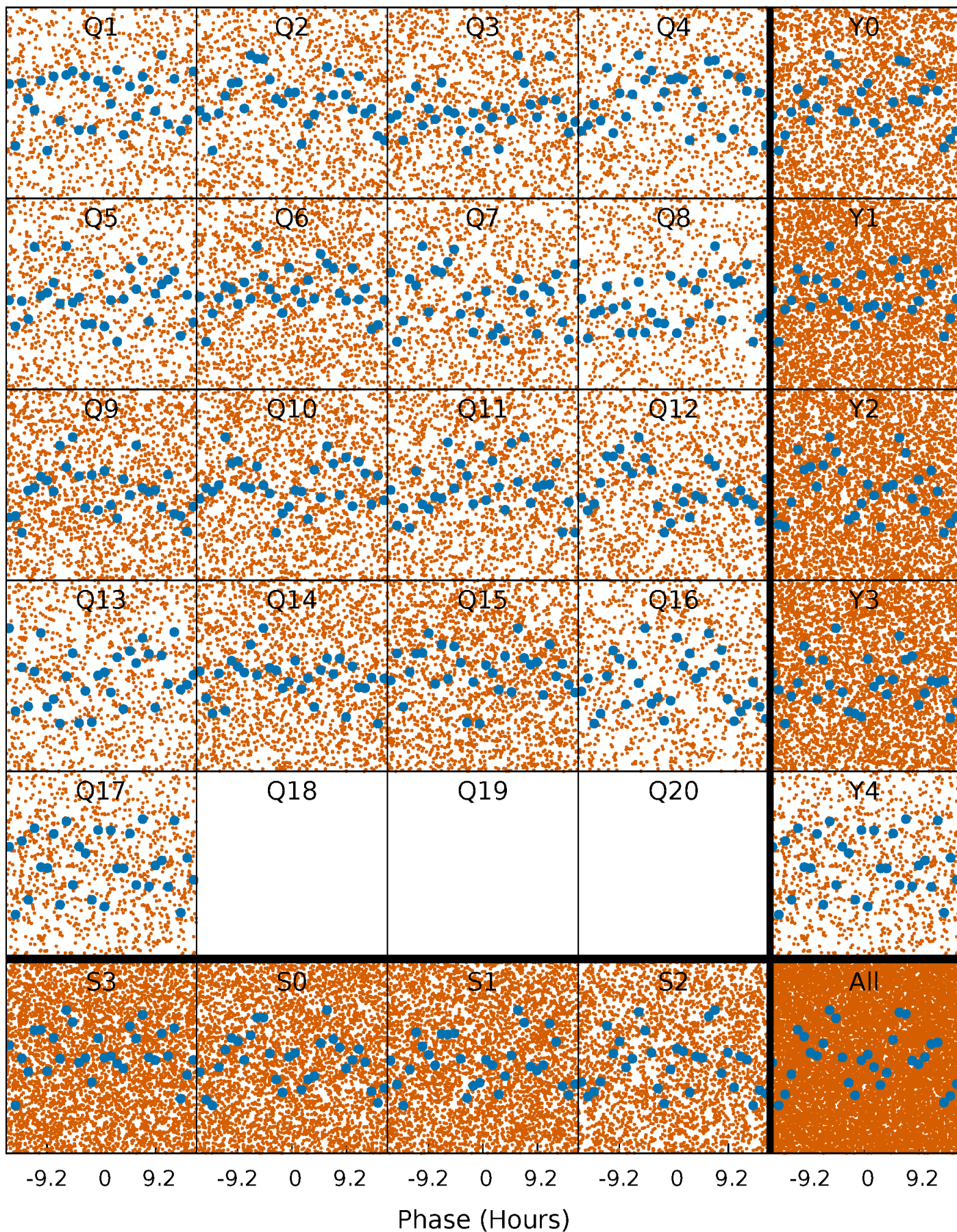


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



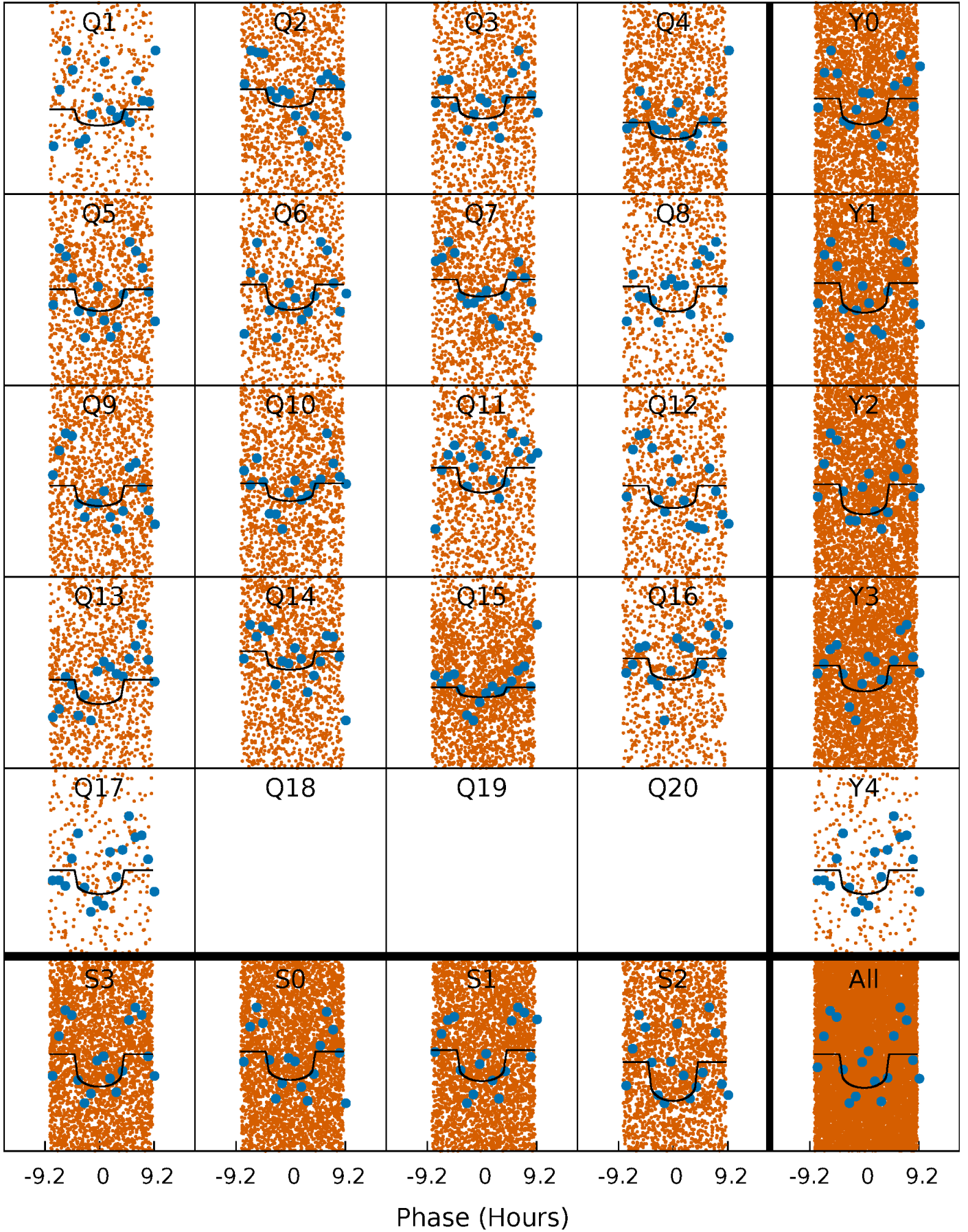
PDC Quarter-Phased Transit Curves

TCE 001577039-02 P= 1.181879 Days $T_0=132.555210$ (BKJD)



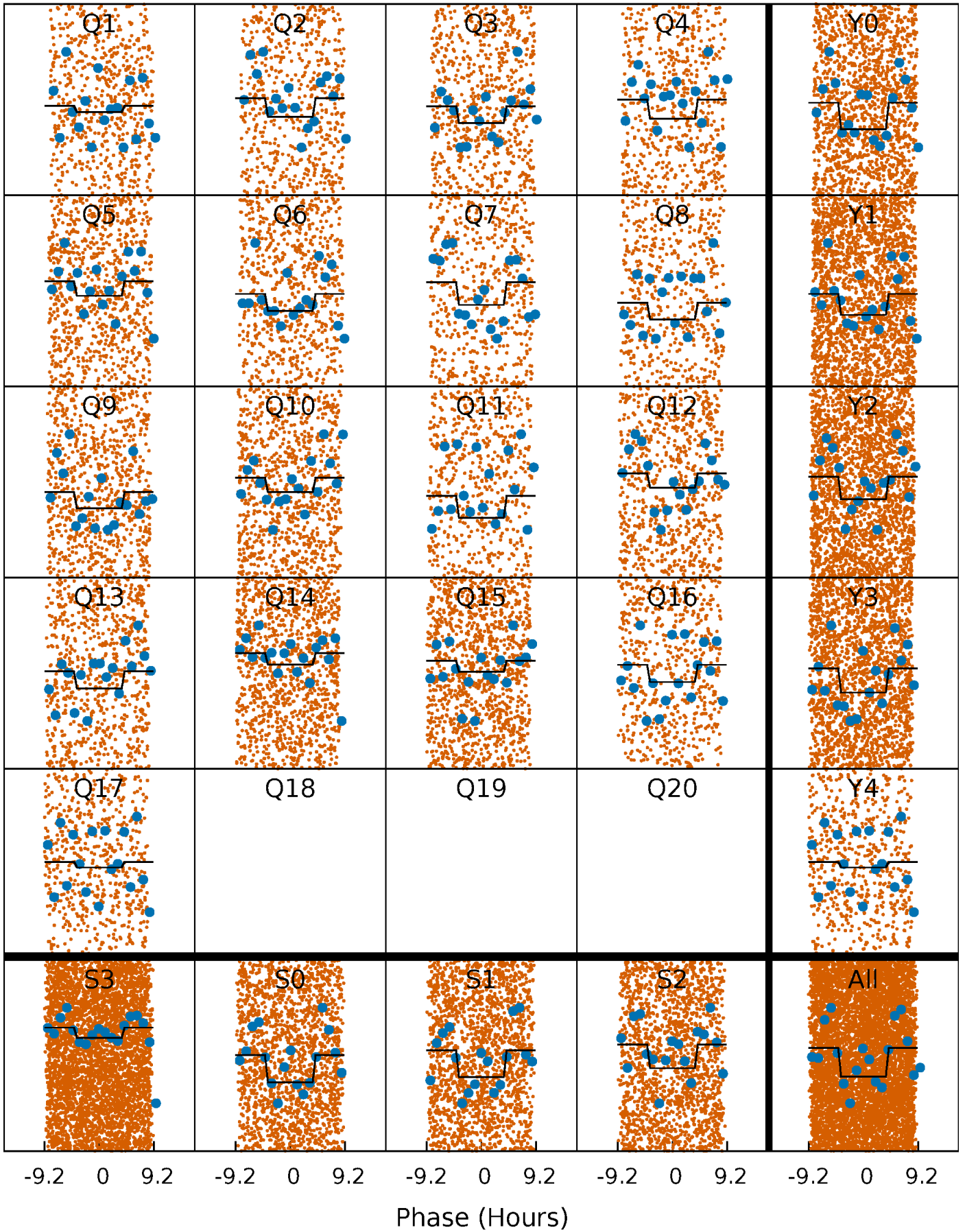
DV Quarter-Phased Transit Curves

TCE 001577039-02 P= 1.181879 Days $T_0=132.555210$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

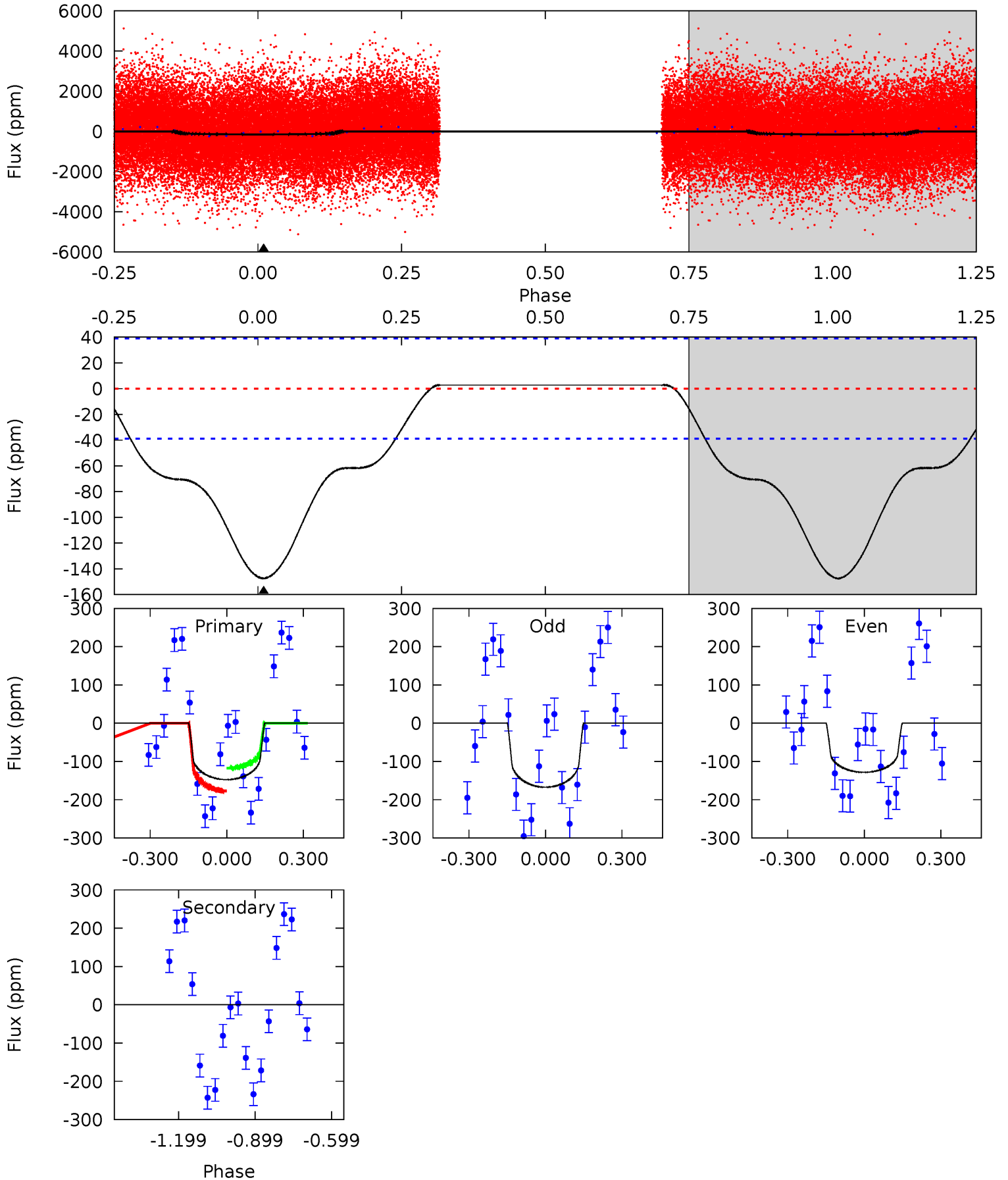
TCE 001577039-02 P= 1.181906 Days $T_0=132.552949$ (BKJD)



DV Model-Shift Uniqueness Test

001577039-02, P = 1.181879 Days, E = 131.373331 Days

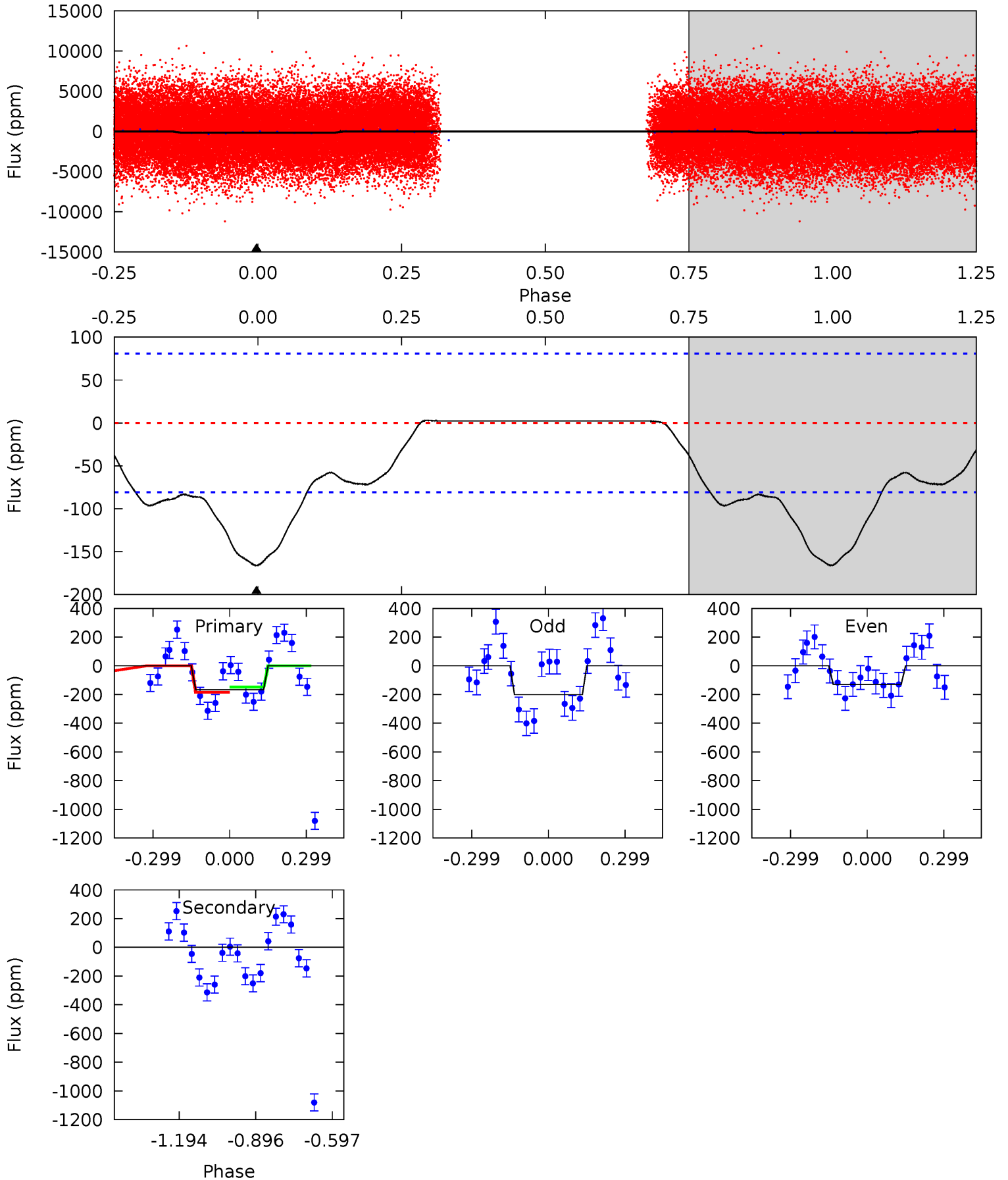
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.4	0	0	0	4.33	1.04	0.37	16.4	16.4	0	0	2.16	0.97	0.02	3.27



Alt Model-Shift Uniqueness Test

001577039-02, P = 1.181906 Days, E = 131.371043 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.89	0	0	0	4.33	1.04	0.26	8.89	8.89	0	0	1.90	1.13	0.02	1.00



Stellar Parameters For KIC 001577039

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6969^{+192}_{-312}	$4.089^{+0.149}_{-0.182}$	$0.220^{+0.150}_{-0.350}$	$1.896^{+0.608}_{-0.406}$	$1.608^{+0.208}_{-0.277}$	$0.332^{+0.260}_{-0.168}$
	+3%/-4%	+4%/-4%	+68%/-159%	+32%/-21%	+13%/-17%	+78%/-50%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 001577039-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 9	$2.78^{+2.07}_{-1.60}$	3687^{+268}_{-236}	-3505^{+6842}_{-776}	$-0.005^{+0.519}_{-0.646}$
Alt.	0 ± 19	$2.92^{+2.03}_{-1.75}$	3664^{+317}_{-238}	-3484^{+7410}_{-1164}	$-0.006^{+0.903}_{-1.236}$

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 $A_{obs} \gg 1.0$

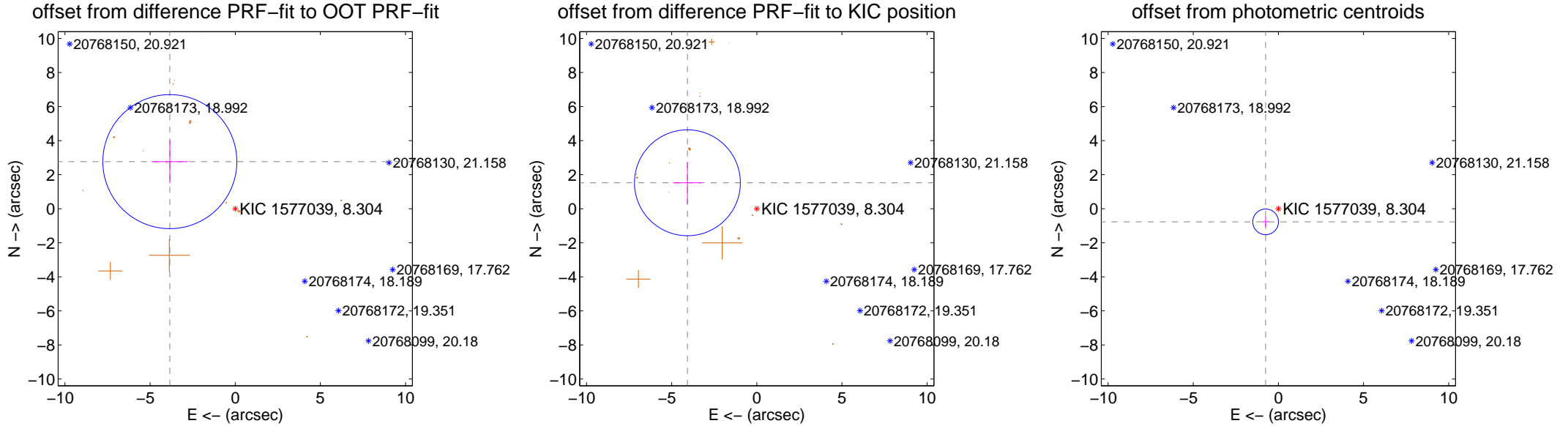
DV Centroid Data

Supplemental centroid analysis for 001577039-02. **Kepler magnitude: 8.30.** Transit SNR 10.90

There are 0 quarters with good PRF difference image offsets

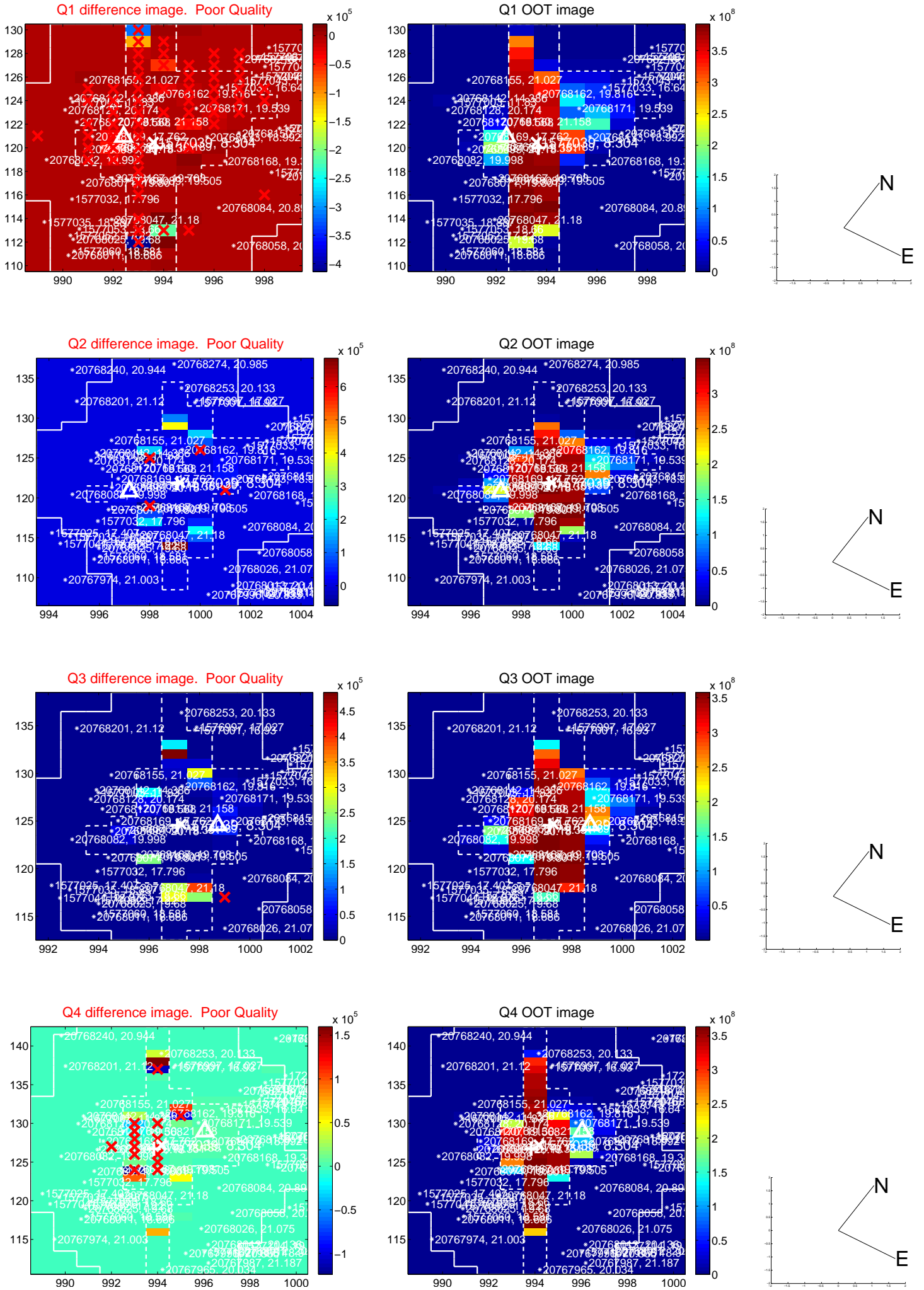
The OOT PRF centroid is offset from the target star catalog position by about 2.09 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.732 ± 1.312	3.61	3.840 ± 1.067	2.765 ± 1.269
PRF-fit source offset from KIC position	4.350 ± 1.036	4.20	4.074 ± 0.843	1.524 ± 1.232
photometric centroid source offset	1.07 ± 0.25	4.27	0.75 ± 0.19	-0.77 ± 0.30

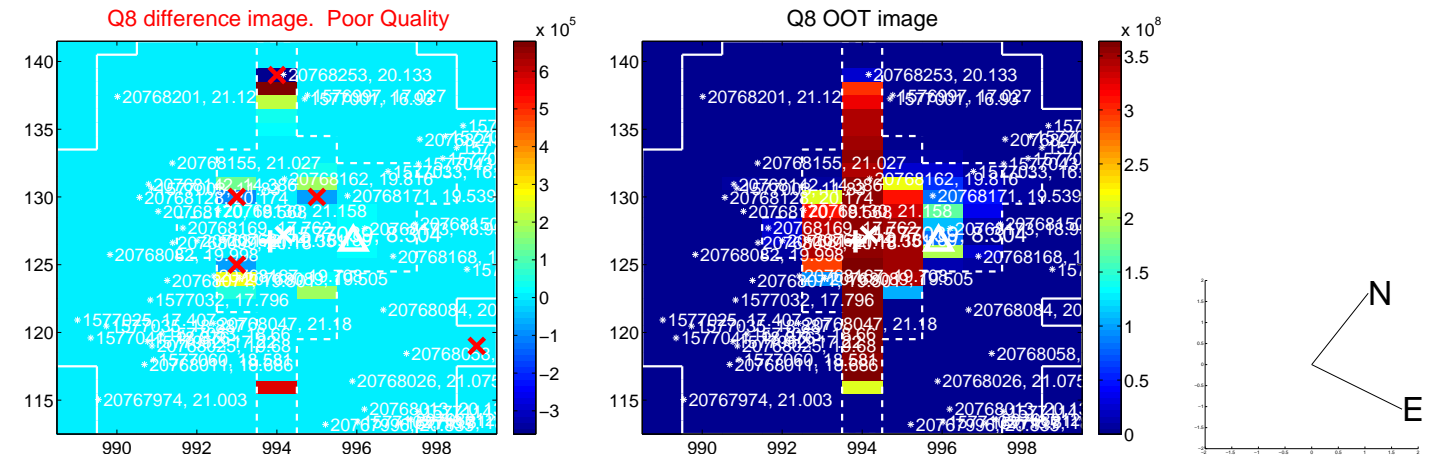
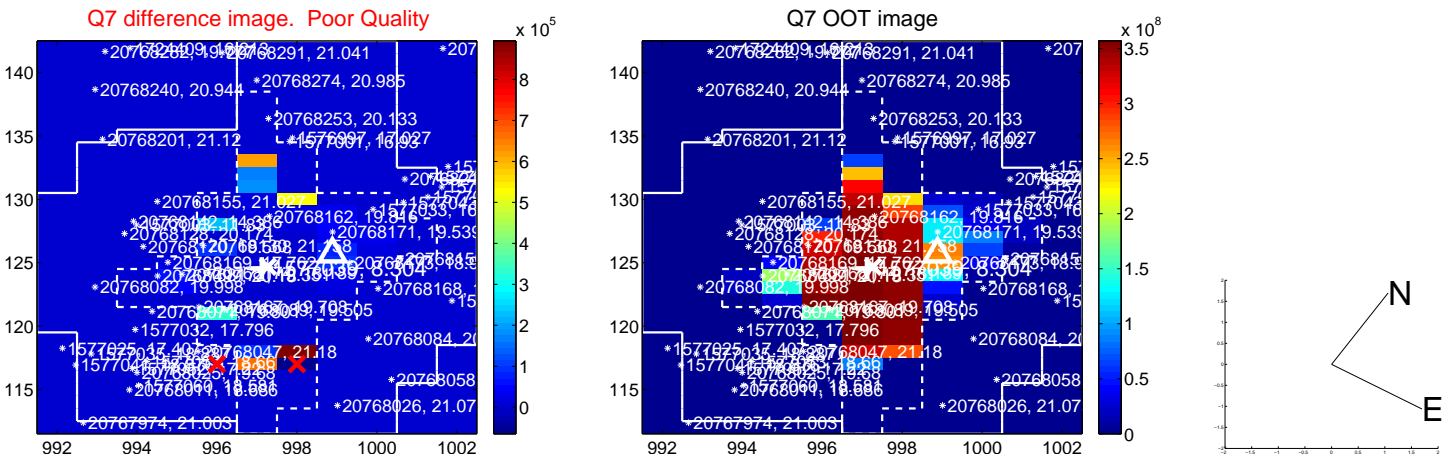
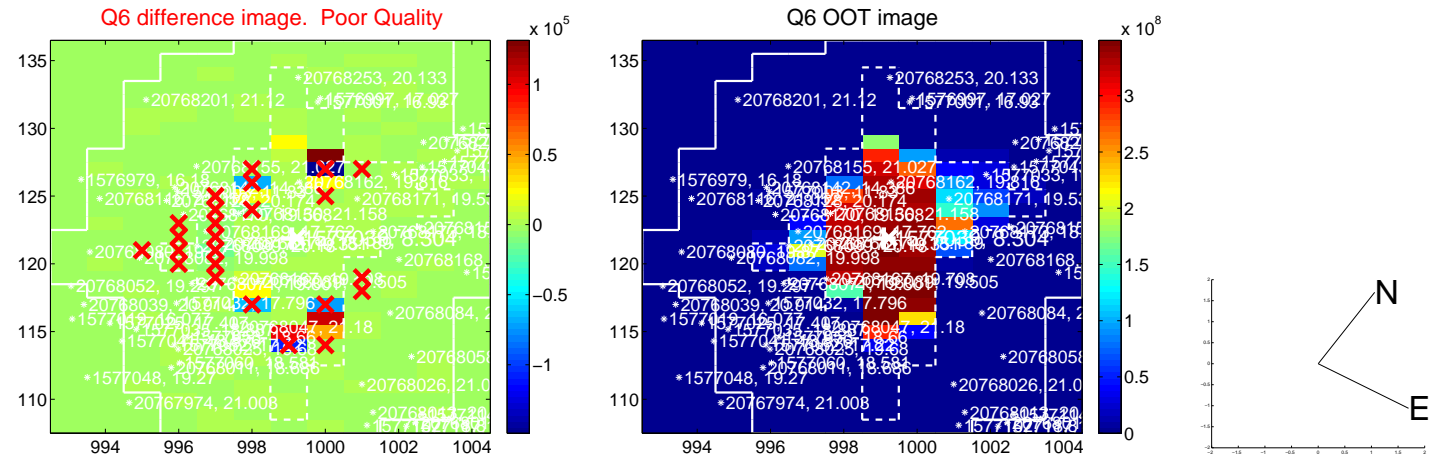
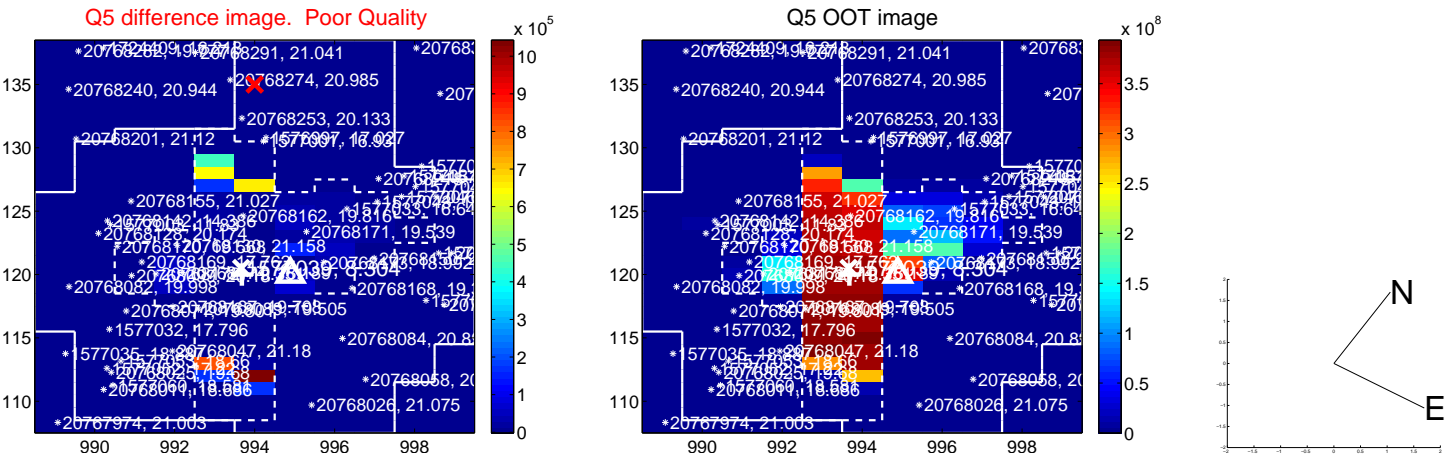


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

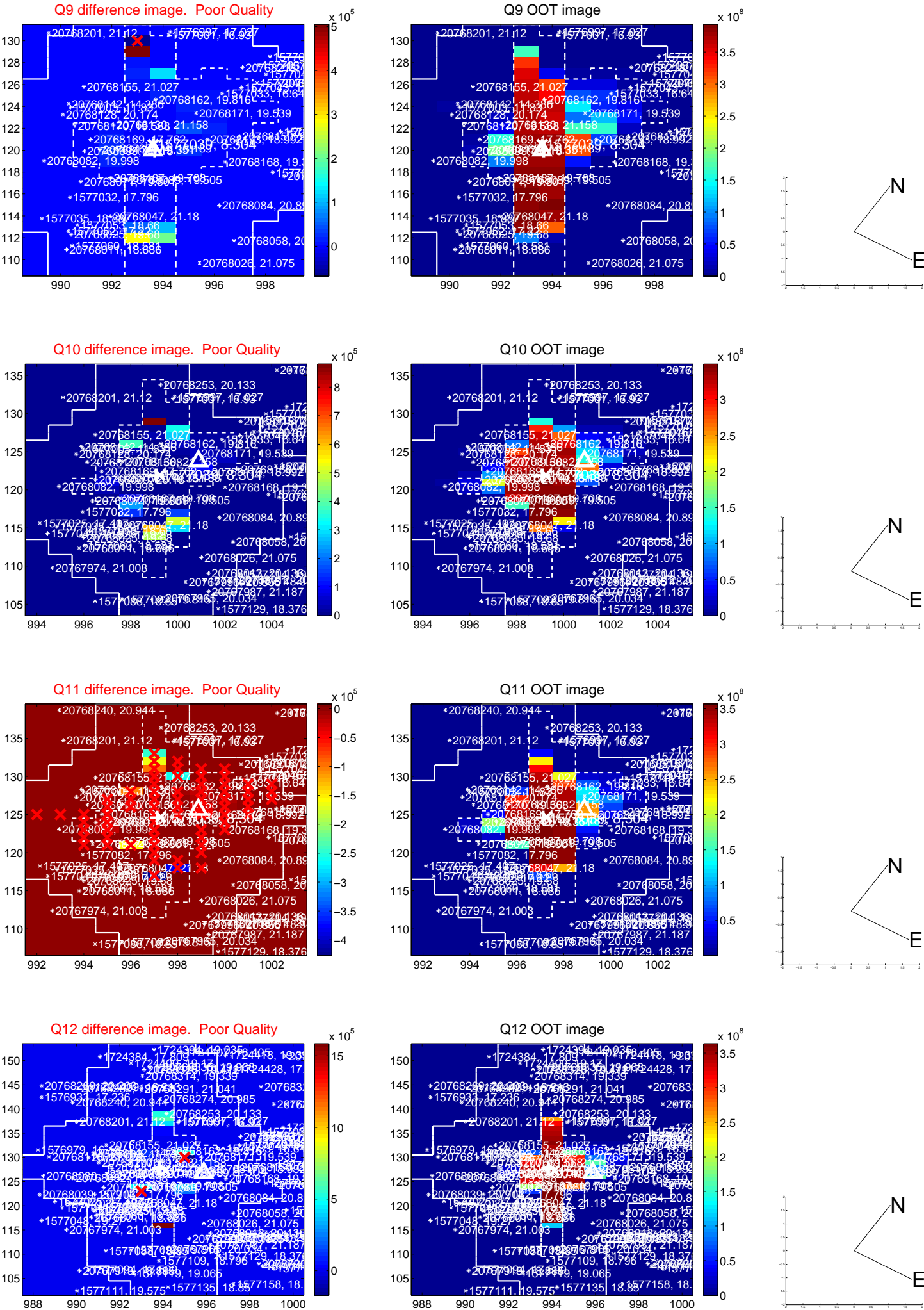
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



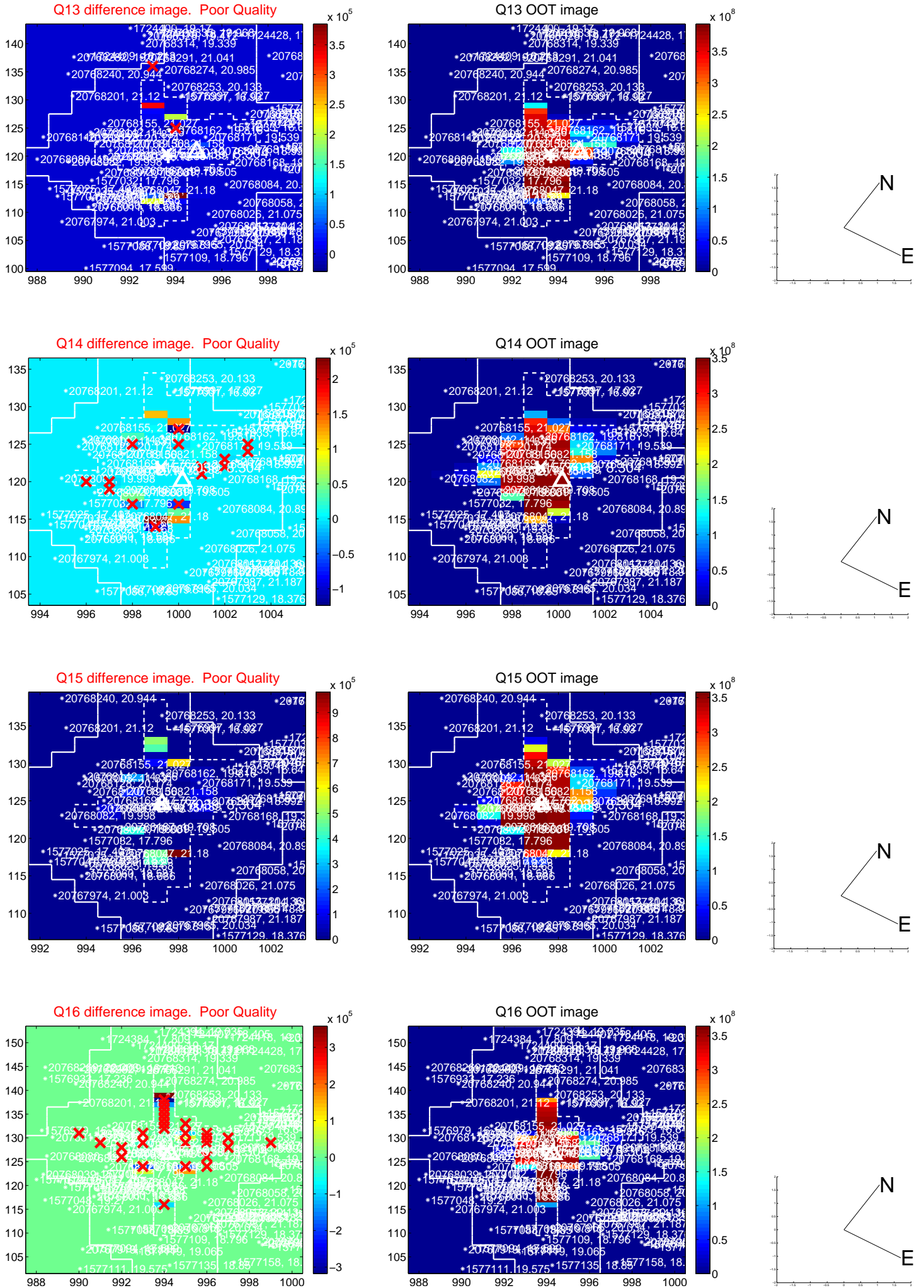
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



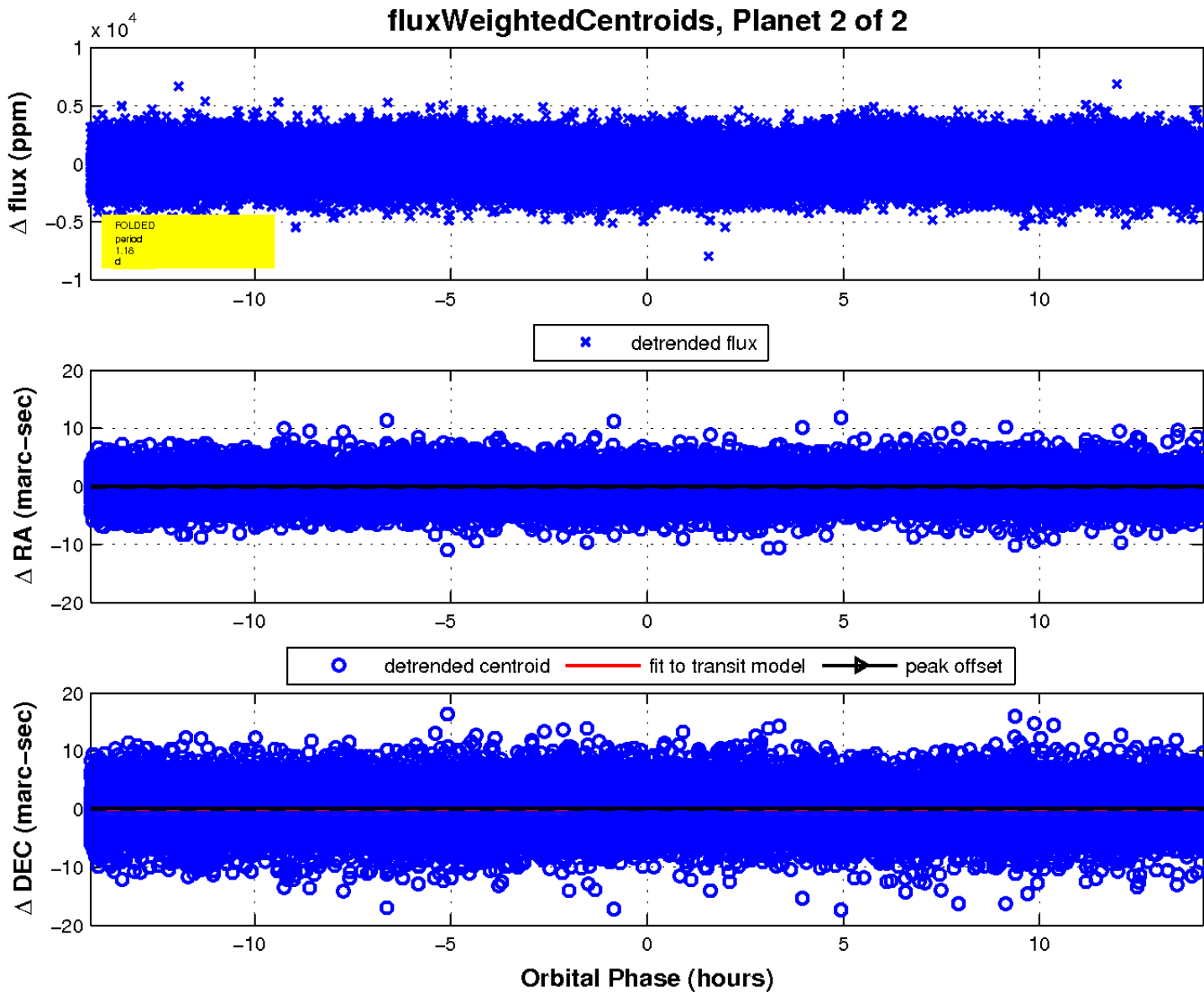
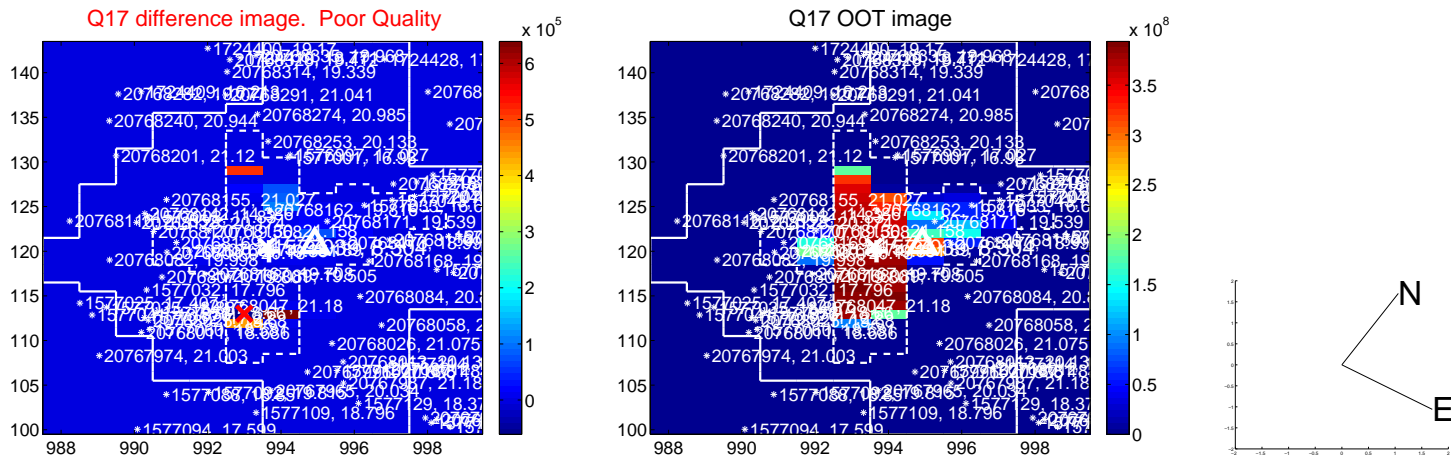
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

