

KIC 006114387

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})
006114387-01	OBS	No	1.406319	132.219231	43.2	2.589	10.9	12.0	2.22	7483	1.78	15950.88
006114387-02	OBS	No	0.645776	131.601330	23.4	2.851	9.4	8.8	2.22	7483	1.24	45025.06
006114387-03	OBS	No	117.475643	179.644103	381.3	8.330	7.7	6.9	2.22	7483	5.06	43.68
006114387-04	OBS	No	130.533860	233.582294	394.8	3.768	7.5	7.4	2.22	7483	5.62	37.95
006114387-05	OBS	No	50.447208	171.795296	273.0	3.006	7.8	7.8	2.22	7483	4.22	134.83
006114387-06	OBS	No	96.582616	225.163820	430.2	6.402	7.8	8.1	2.22	7483	5.85	56.72

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006114387-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
006114387-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
006114387-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
006114387-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—HALO_GHOST
006114387-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
006114387-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

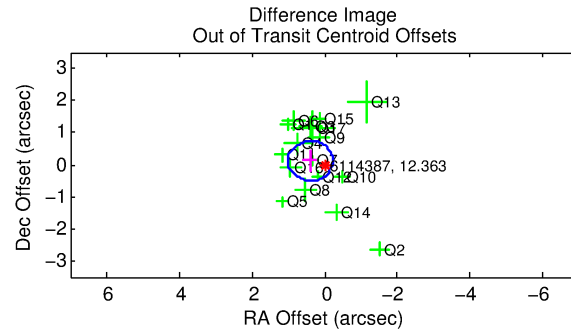
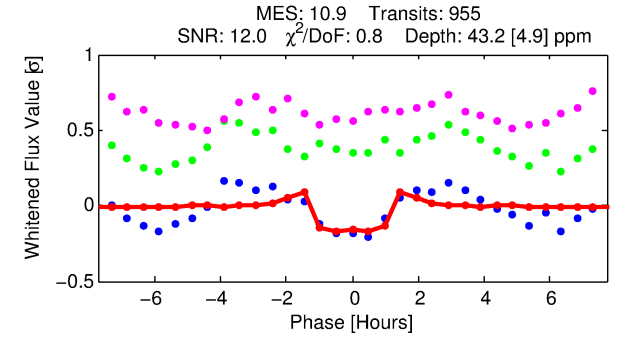
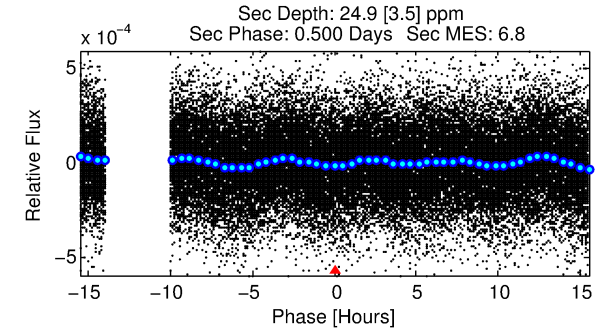
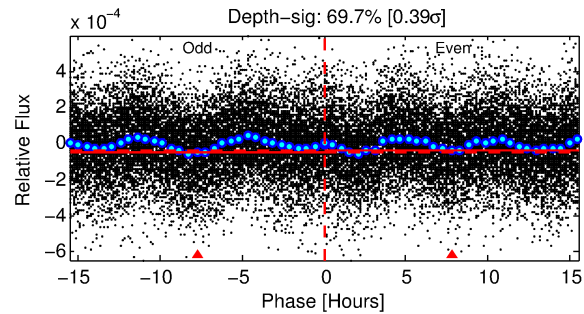
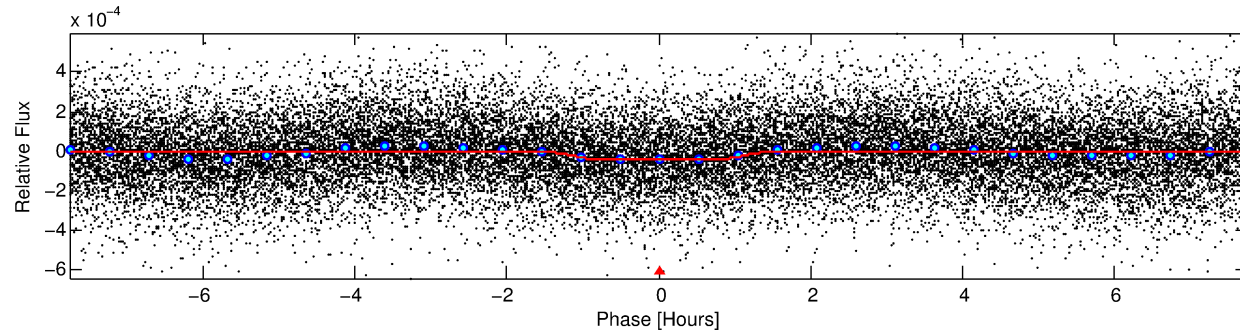
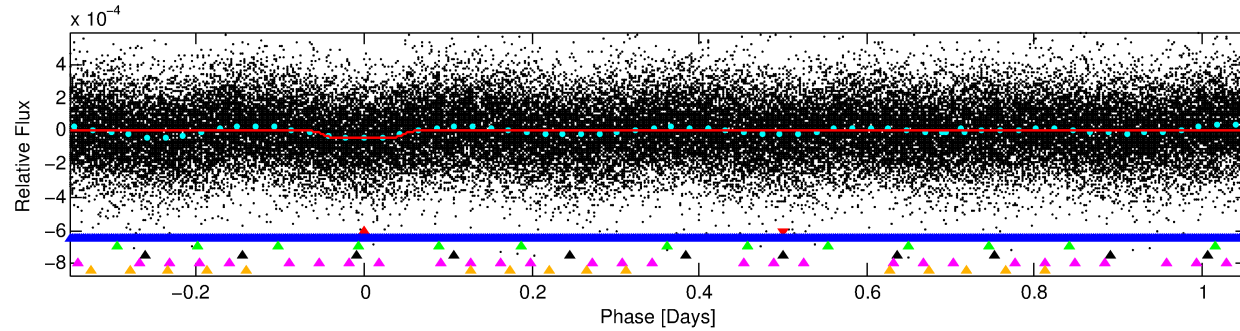
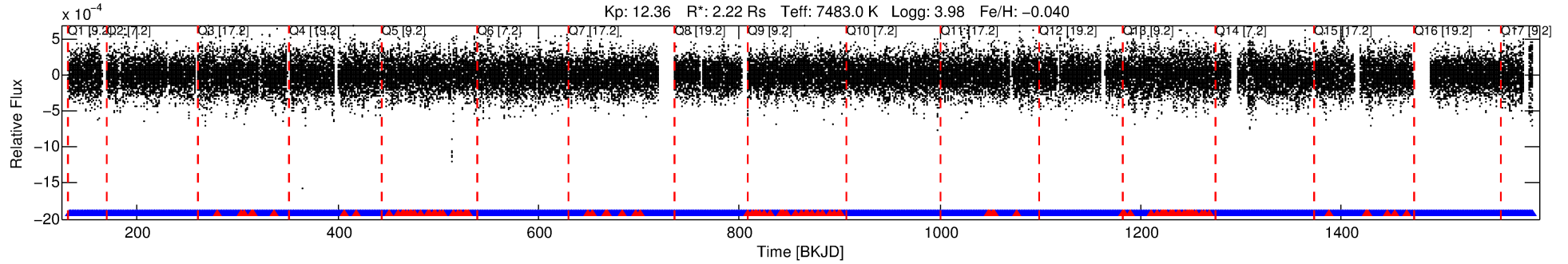
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006114387-01

No Significant Match Found

DV One-Page Summary

KIC: 6114387 Candidate: 1 of 6 Period: 1.406 d



DV Fit Results:

Period = 1.40632 [0.00001] d
Epoch = 132.2192 [0.0015] BKJD
Rp/R* = 0.0073 [0.0011]
a/R* = 1.68 [0.93]
b = 0.95 [0.09]
Seff = 15950.88 [6302.49]
Teq = 2866 [283] K
Rp = 1.78 [0.57] Re
a = 0.0295 [0.0072] AU
Ag = 3.76 [1.81] [1.52 σ]
Teffp = 6171 [560] K [5.27 σ]

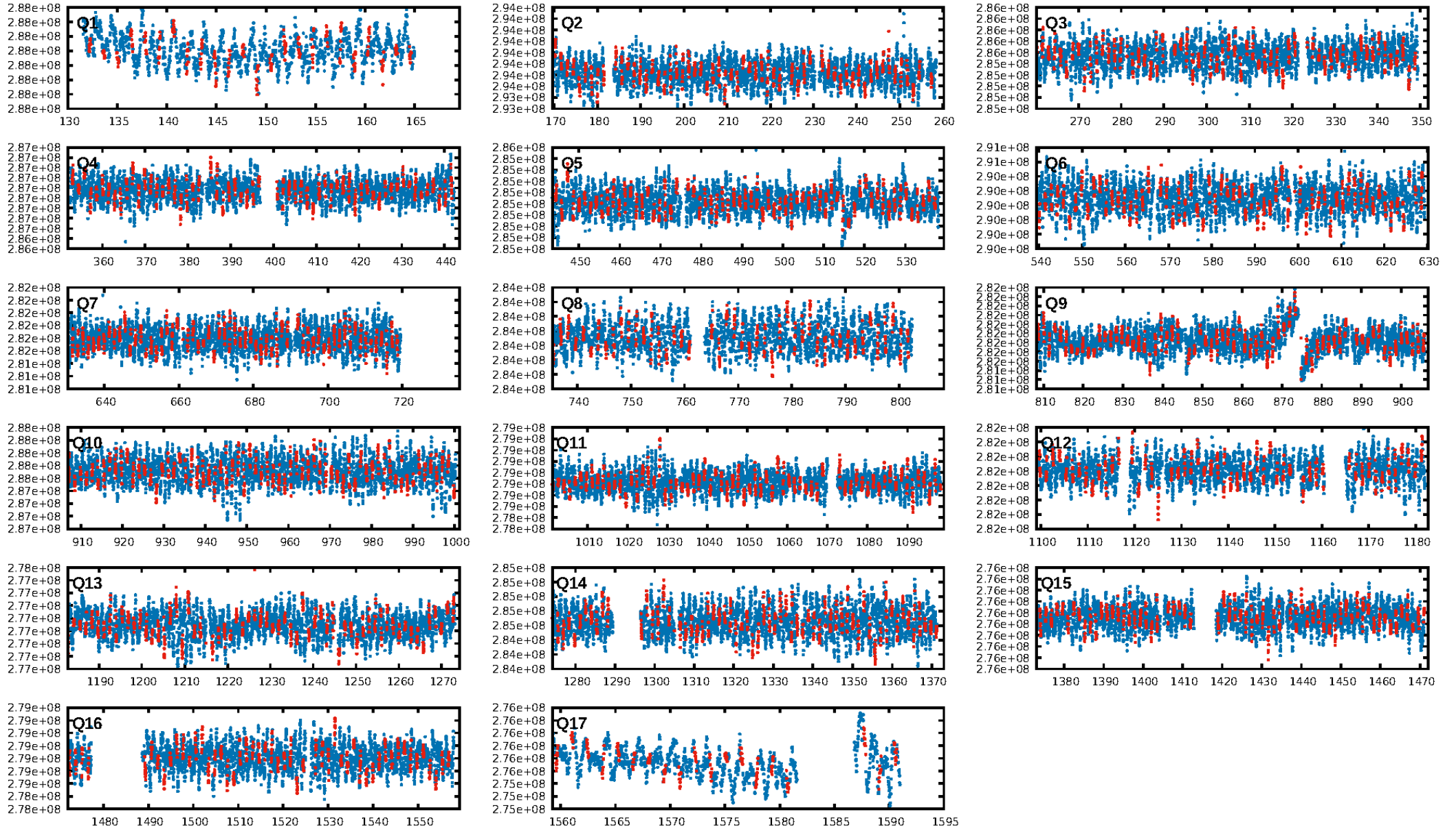
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [4.74 σ]
LongPeriod-sig: 100.0% [296.66 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.77e-16
RollingBand-fgt: 0.89 [816/912]
GhostDiagnostic-chr: 9.353
Centroid-sig: 0.0%
Centroid-so: 1.468 arcsec [3.16 σ]
OotOffset-rm: 0.409 arcsec [1.99 σ]
KicOffset-rm: 0.649 arcsec [2.74 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.00 [0/17]

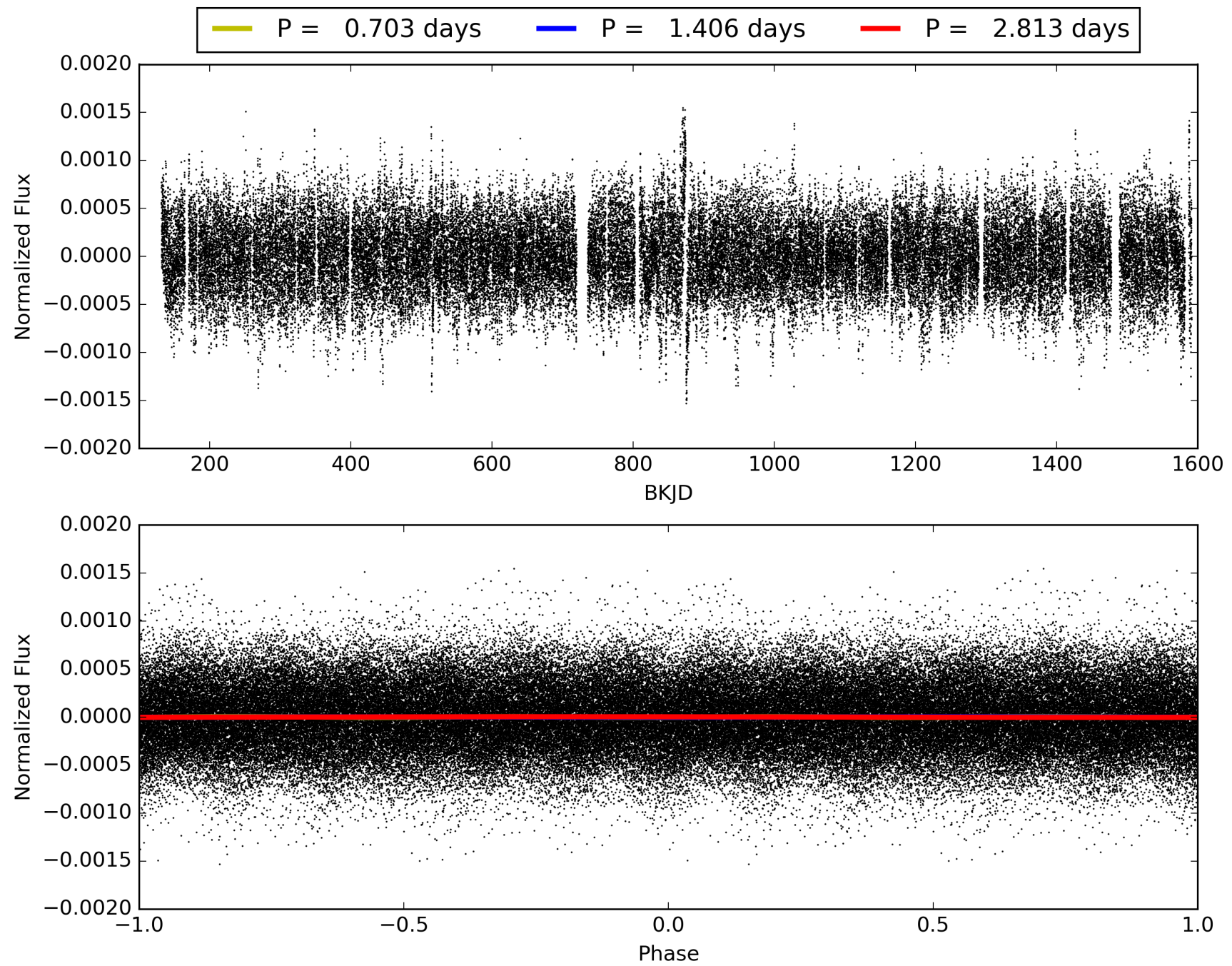
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 006114387-01, PDC Light Curves

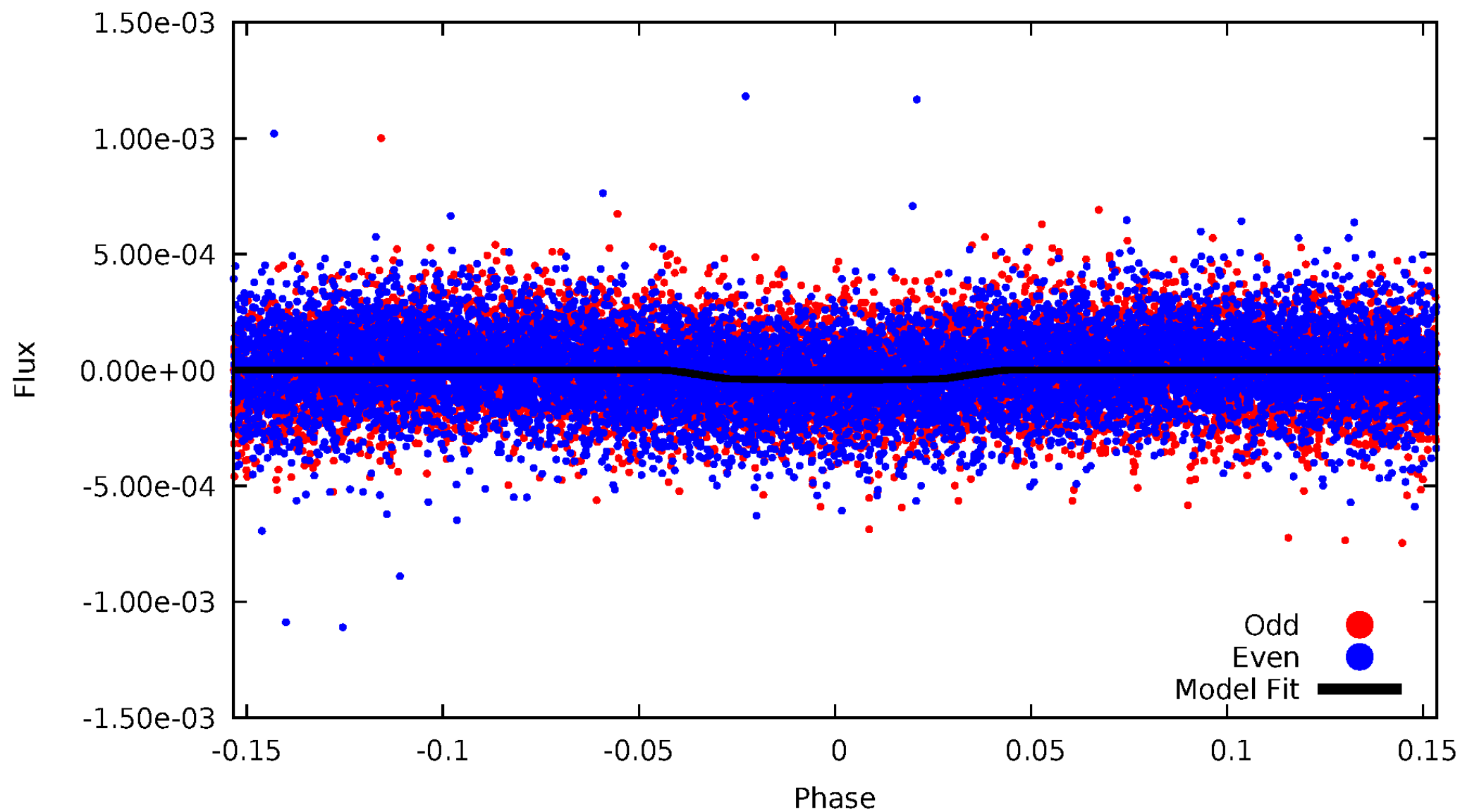


TCE 006114387-01



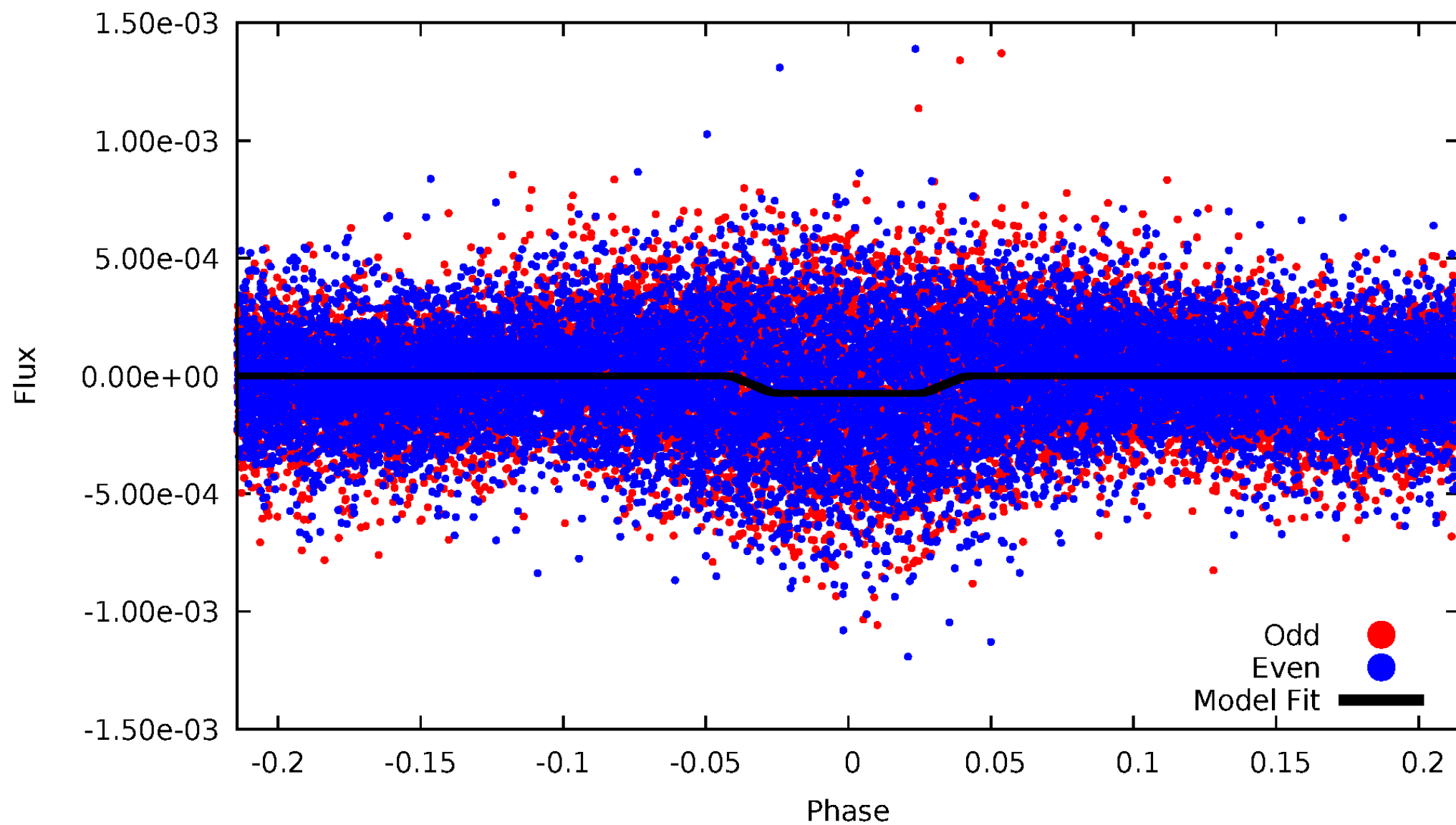
DV Odd/Even

TCE 006114387-01

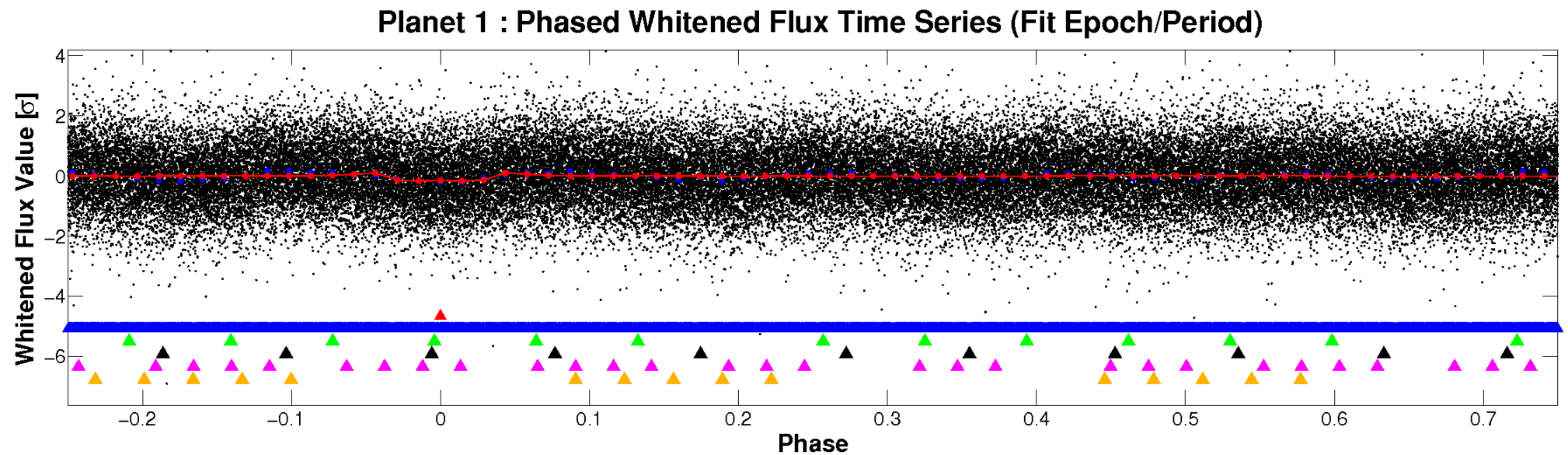
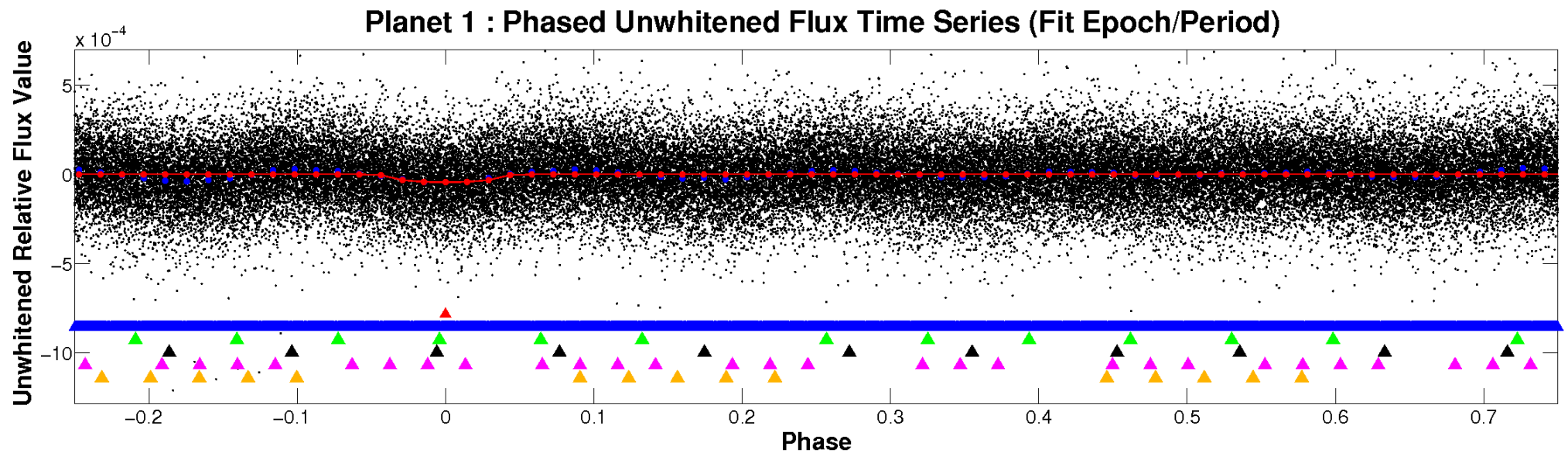


ALT Odd/Even

TCE 006114387-01

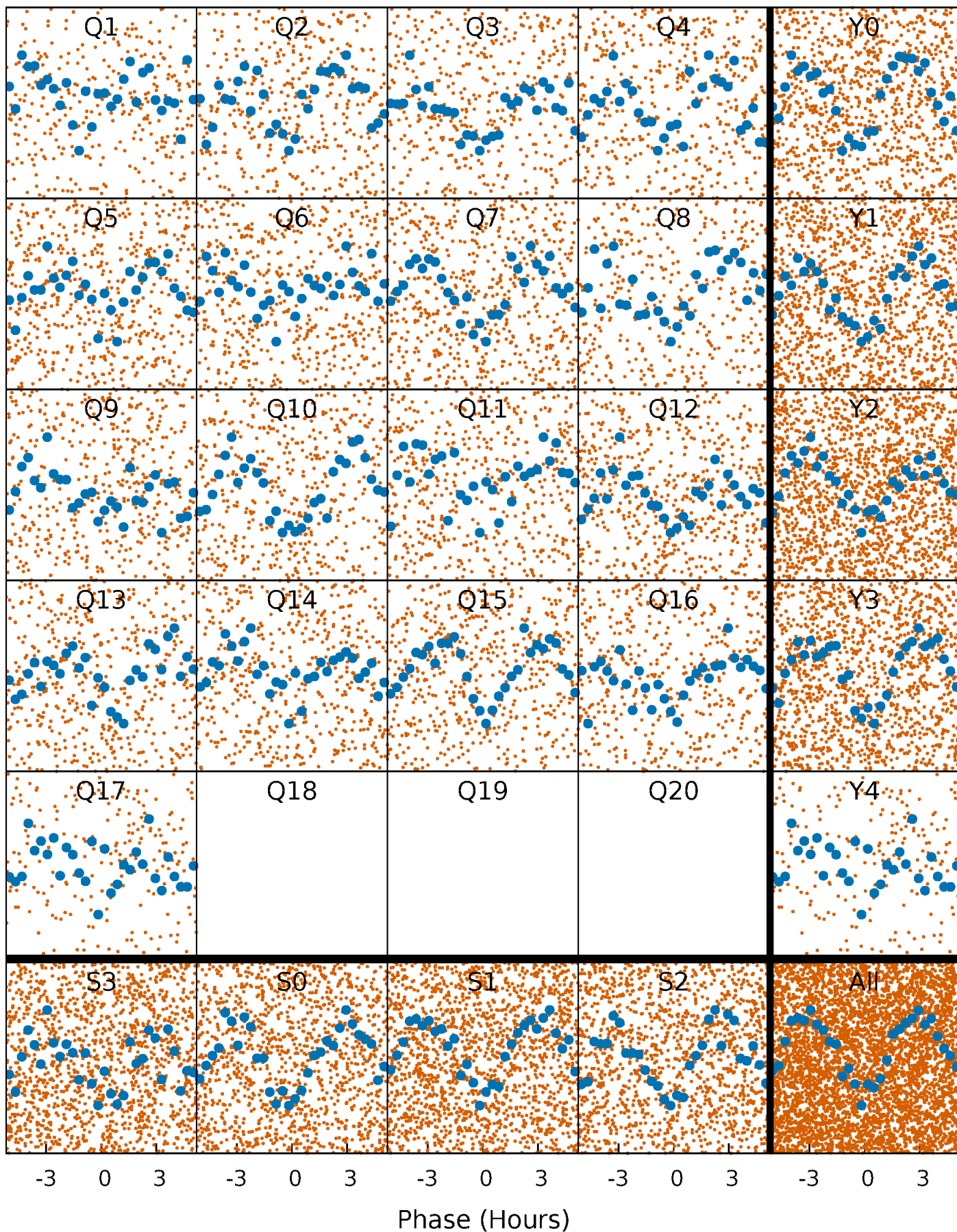


Non-Whitened Vs. Whitened Light Curve



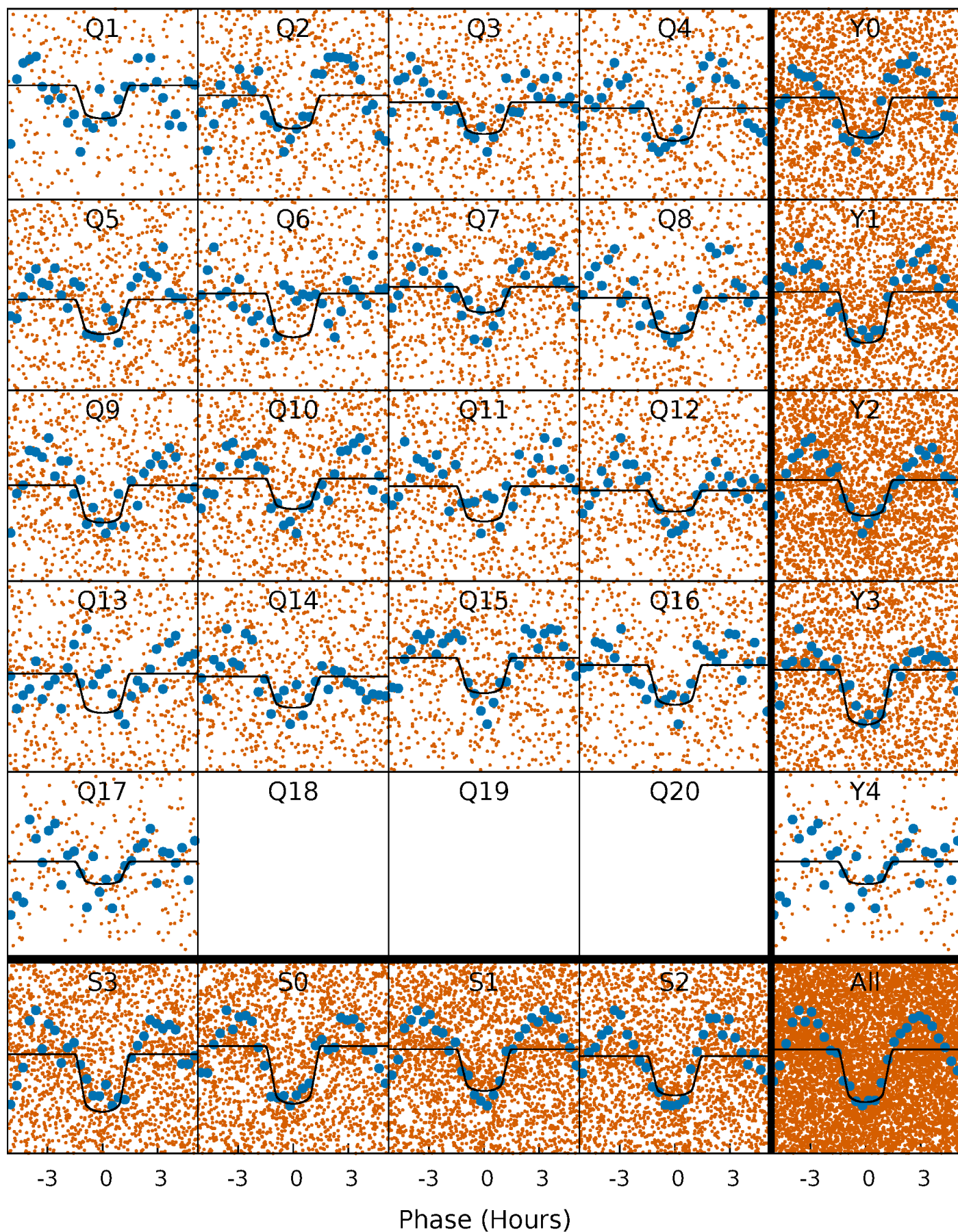
PDC Quarter-Phased Transit Curves

TCE 006114387-01 P= 1.406319 Days $T_0=132.219231$ (BKJD)



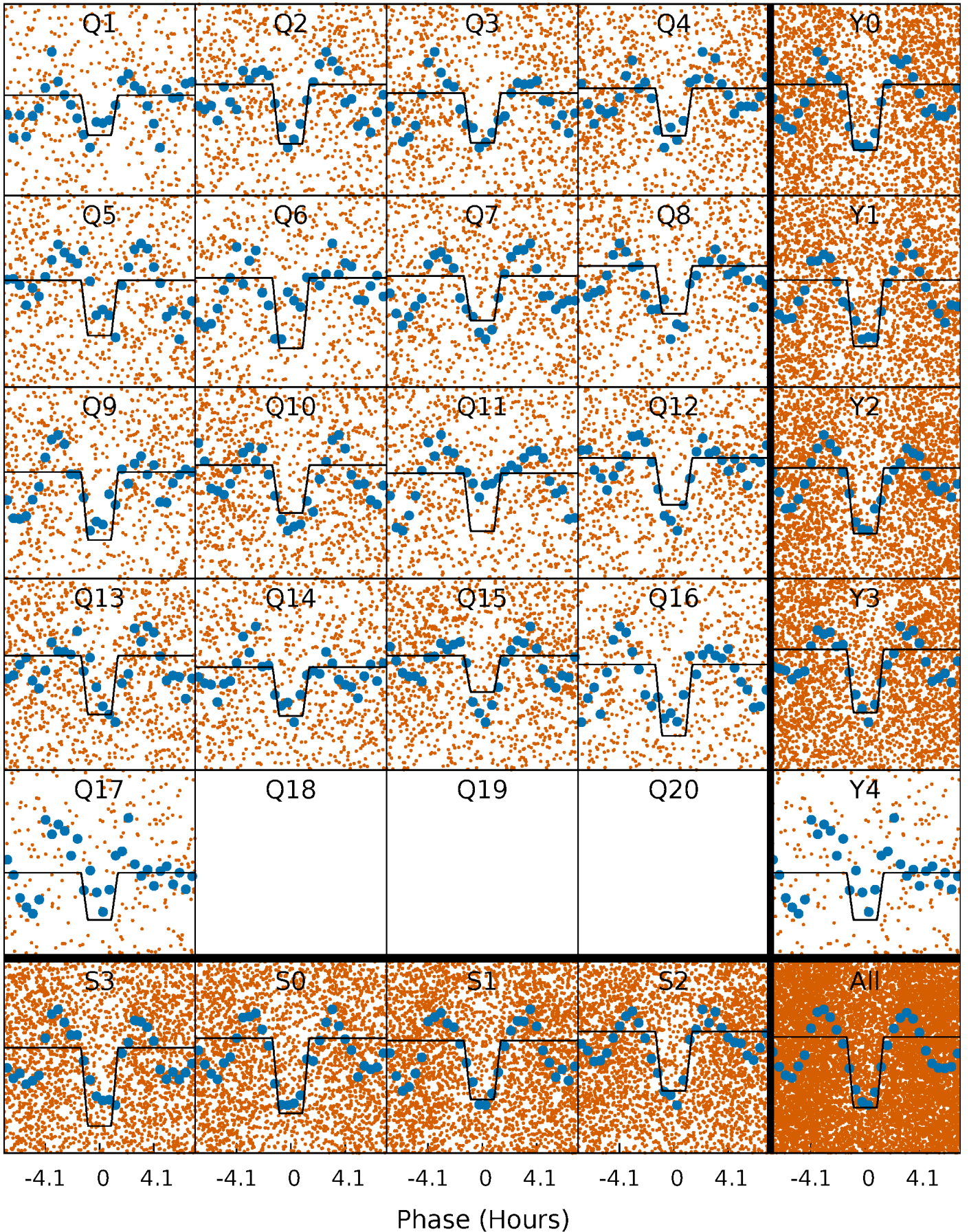
DV Quarter-Phased Transit Curves

TCE 006114387-01 P= 1.406319 Days $T_0=132.219231$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

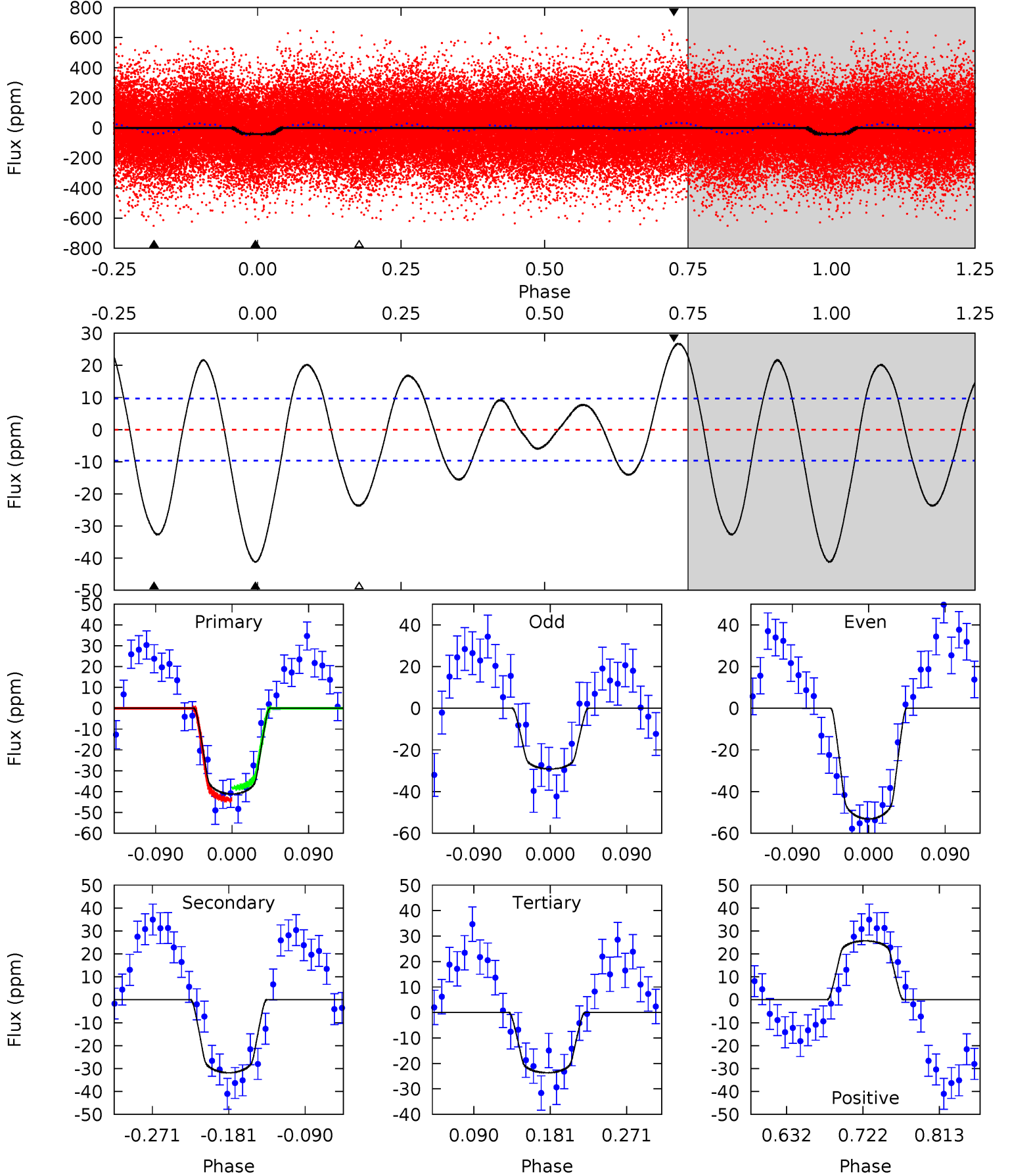
TCE 006114387-01 P= 1.406341 Days $T_0=132.203895$ (BKJD)



DV Model-Shift Uniqueness Test

006114387-01, P = 1.406319 Days, E = 130.812912 Days

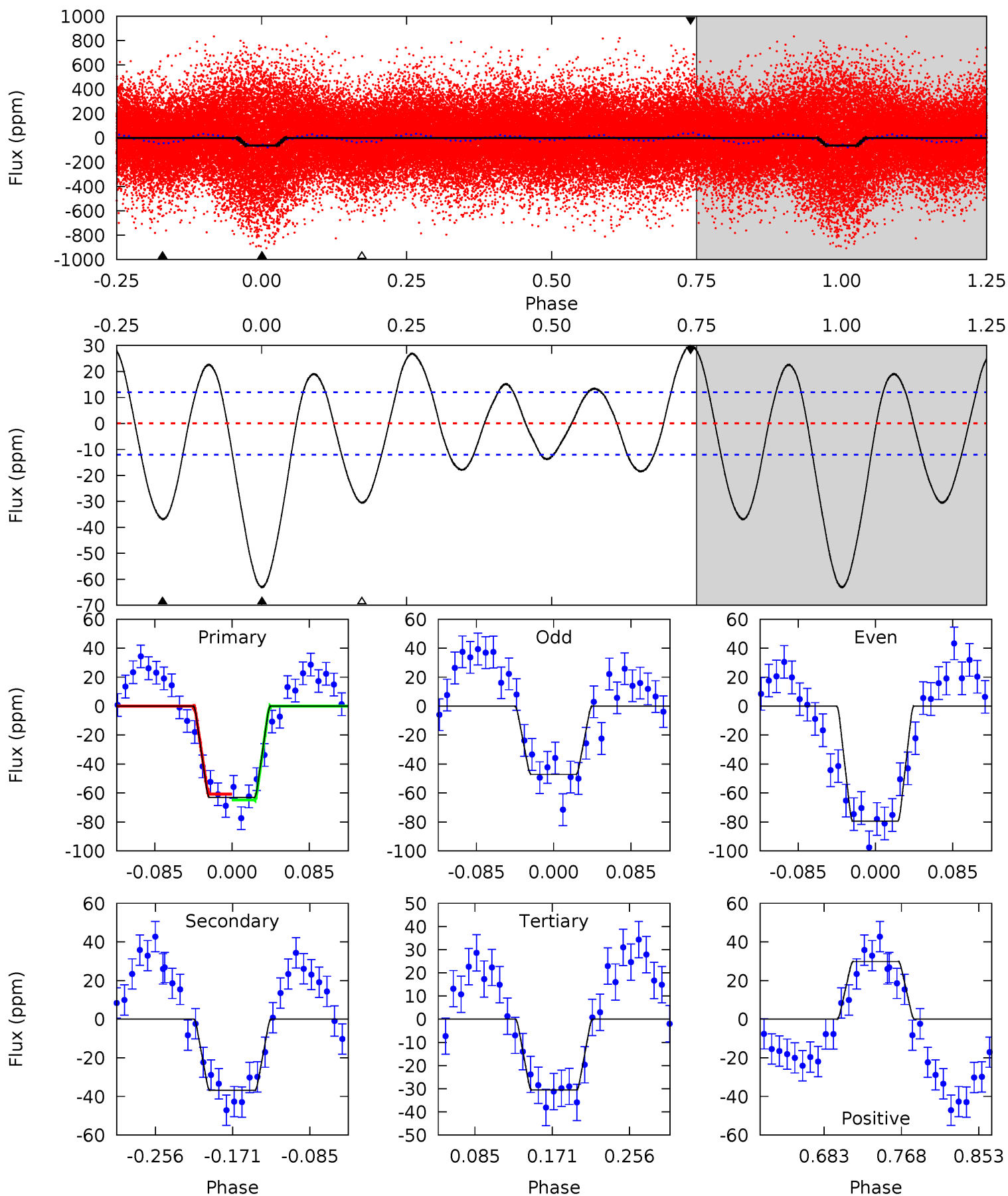
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.5	15.1	11.2	12.2	4.59	1.69	5.77	8.30	7.34	3.87	2.90	5.68	1.03	0.39	1.36



Alt Model-Shift Uniqueness Test

006114387-01, P = 1.406341 Days, E = 130.797554 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.1	14.1	11.7	11.4	4.60	1.72	5.89	12.4	12.7	2.42	2.67	6.19	0.85	0.32	0.77



Stellar Parameters For KIC 006114387

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7483^{+207}_{-311}	$3.982^{+0.198}_{-0.162}$	$-0.040^{+0.200}_{-0.300}$	$2.221^{+0.518}_{-0.633}$	$1.724^{+0.201}_{-0.277}$	$0.222^{+0.281}_{-0.094}$
	+3%/-4%	+5%/-4%	+500%/-750%	+23%/-29%	+12%/-16%	+127%/-42%
Source	KIC0	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 006114387-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-32 ± 2	$1.77^{+0.34}_{-0.34}$	3985^{+280}_{-291}	6322^{+620}_{-456}	$4.838^{+2.567}_{-1.471}$
Alt.	-37 ± 3	$2.07^{+0.40}_{-0.37}$	3991^{+292}_{-316}	6055^{+463}_{-409}	$4.073^{+2.026}_{-1.193}$

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 $A_{obs} \gg 1.0$

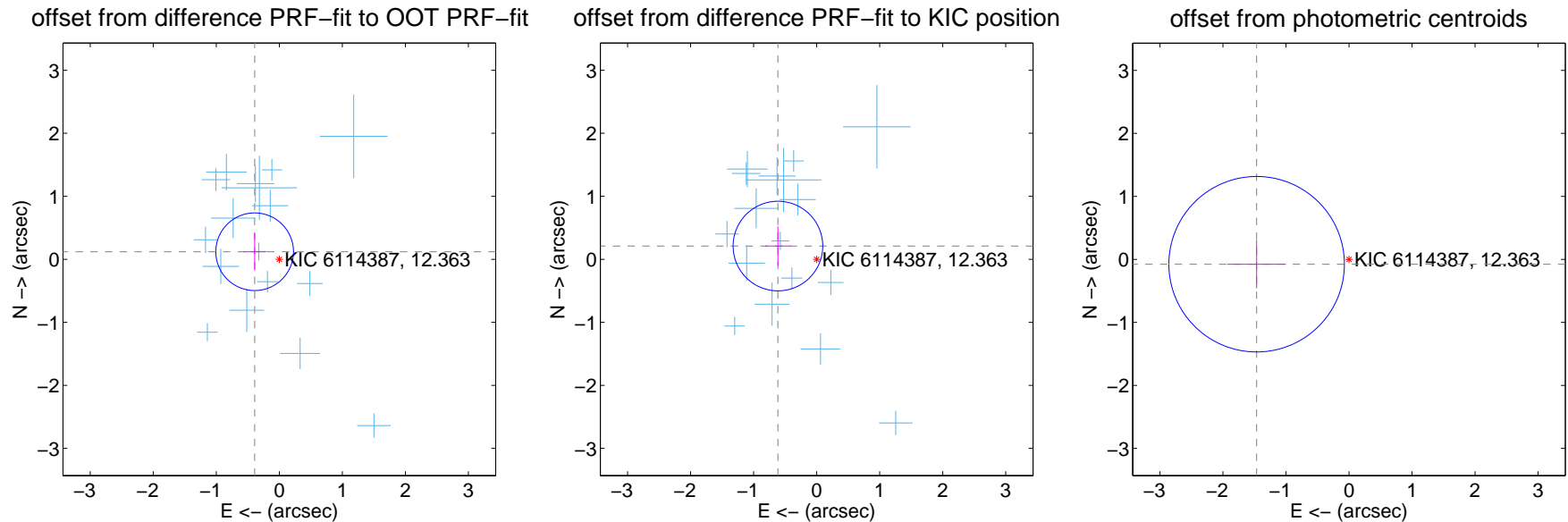
DV Centroid Data

Supplemental centroid analysis for 006114387-01. Kepler magnitude: 12.36. Transit SNR 11.99

There are 17 quarters with good PRF difference image offsets

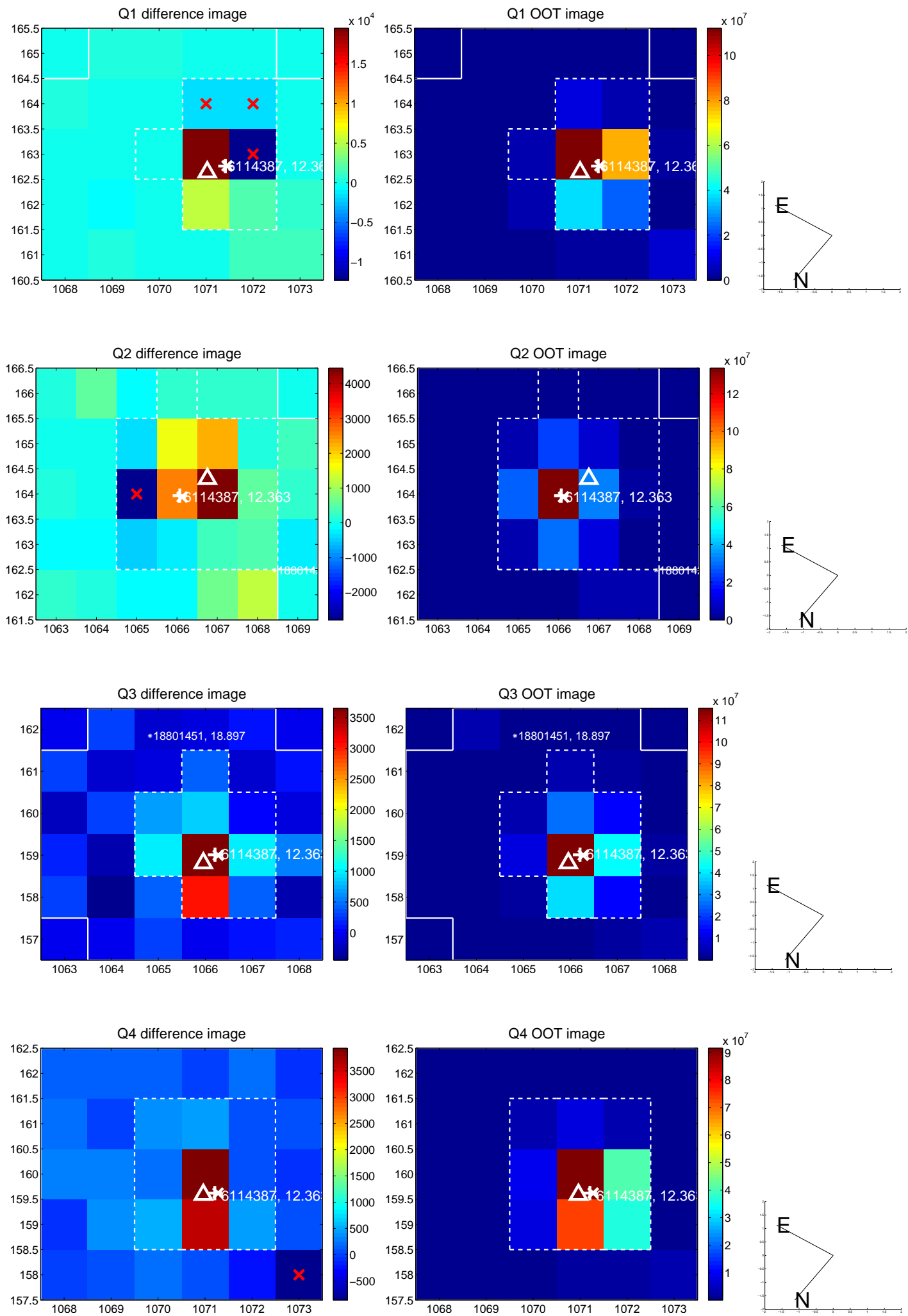
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.409 ± 0.205	1.99	0.391 ± 0.178	0.120 ± 0.297
PRF-fit source offset from KIC position	0.649 ± 0.237	2.74	0.614 ± 0.204	0.210 ± 0.312
photometric centroid source offset	1.47 ± 0.46	3.16	1.47 ± 0.46	-0.08 ± 0.38

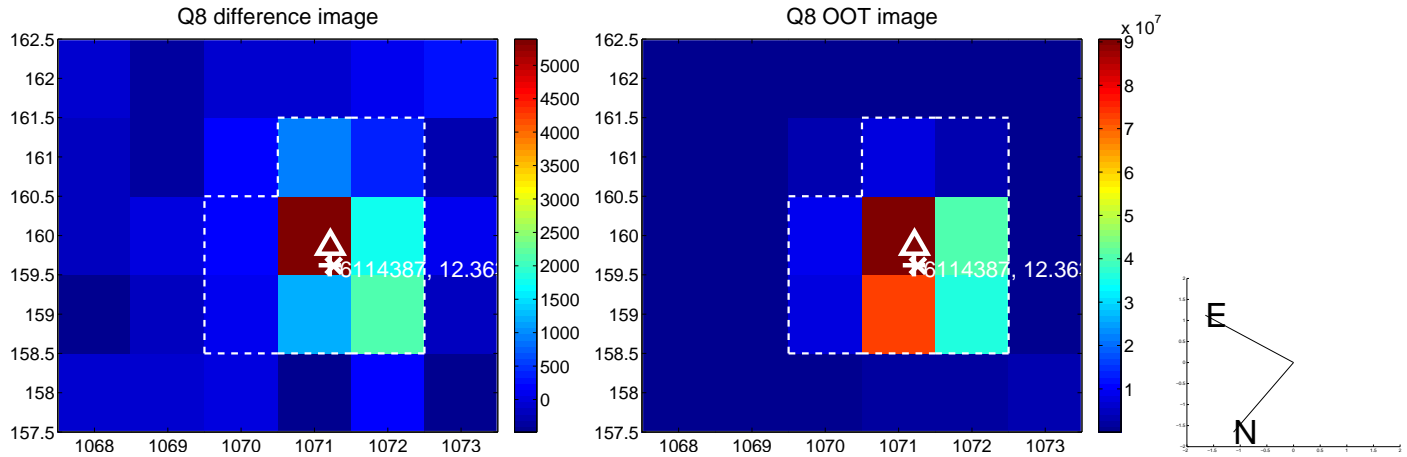
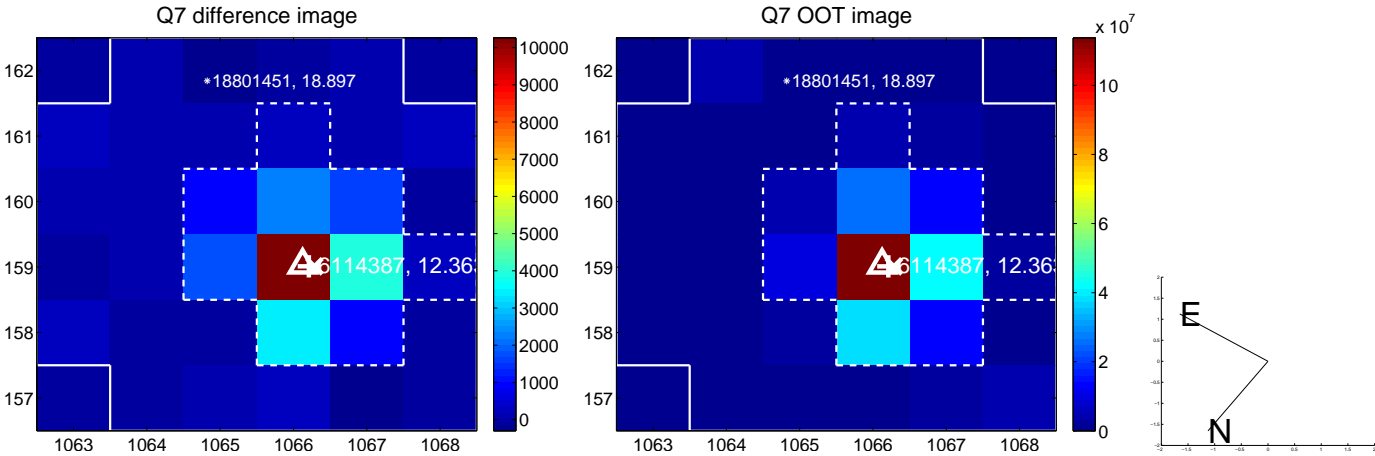
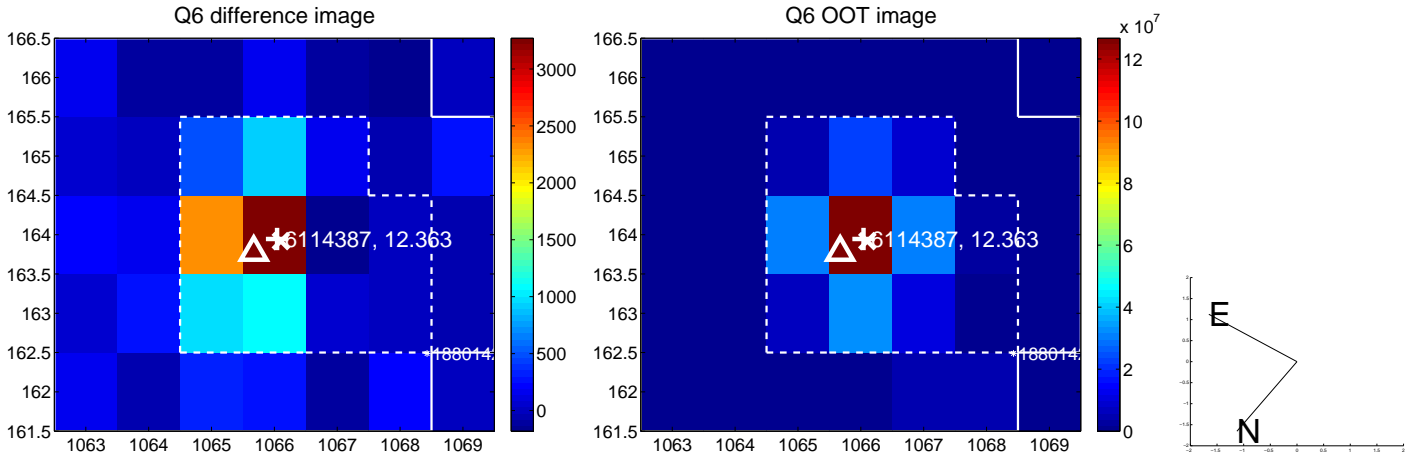
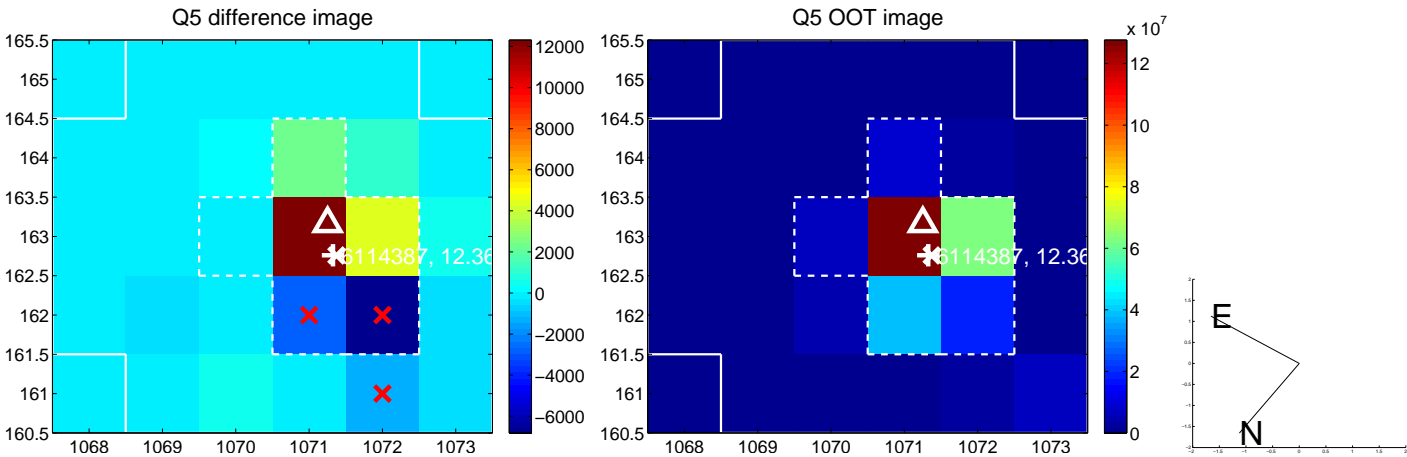


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

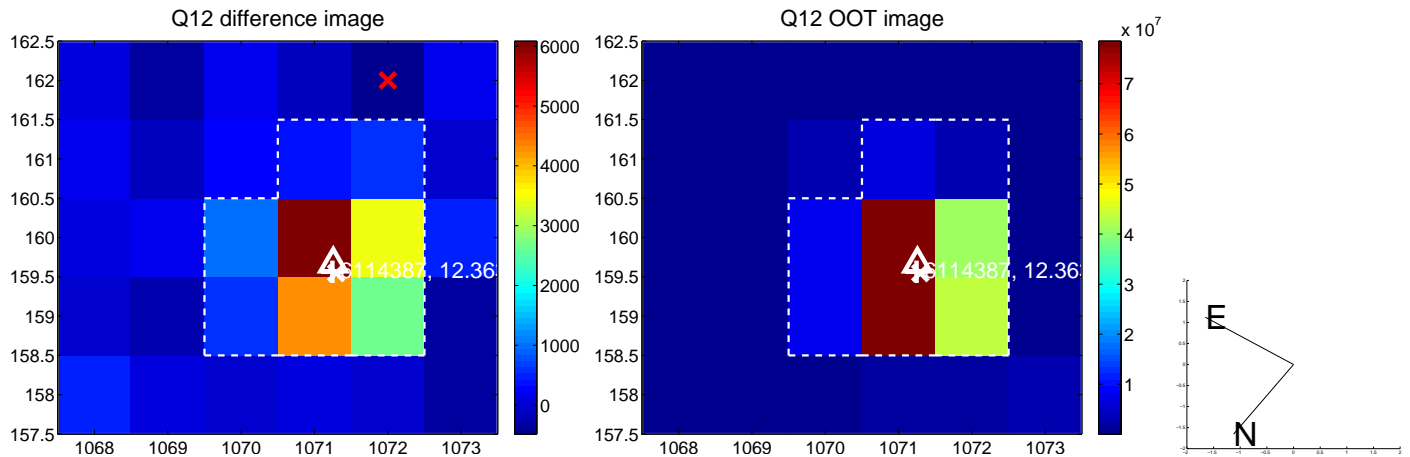
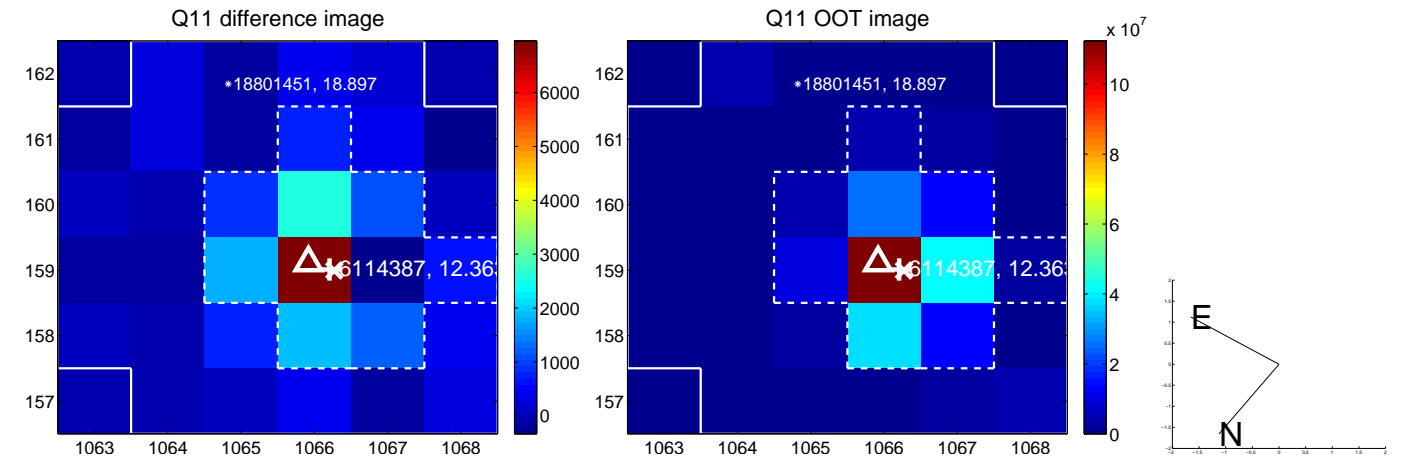
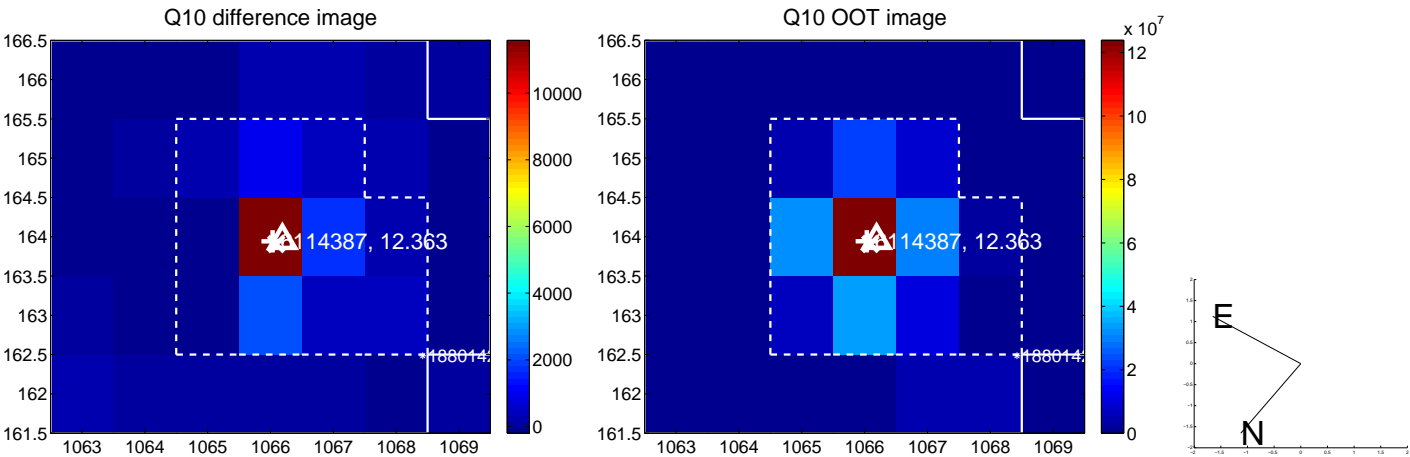
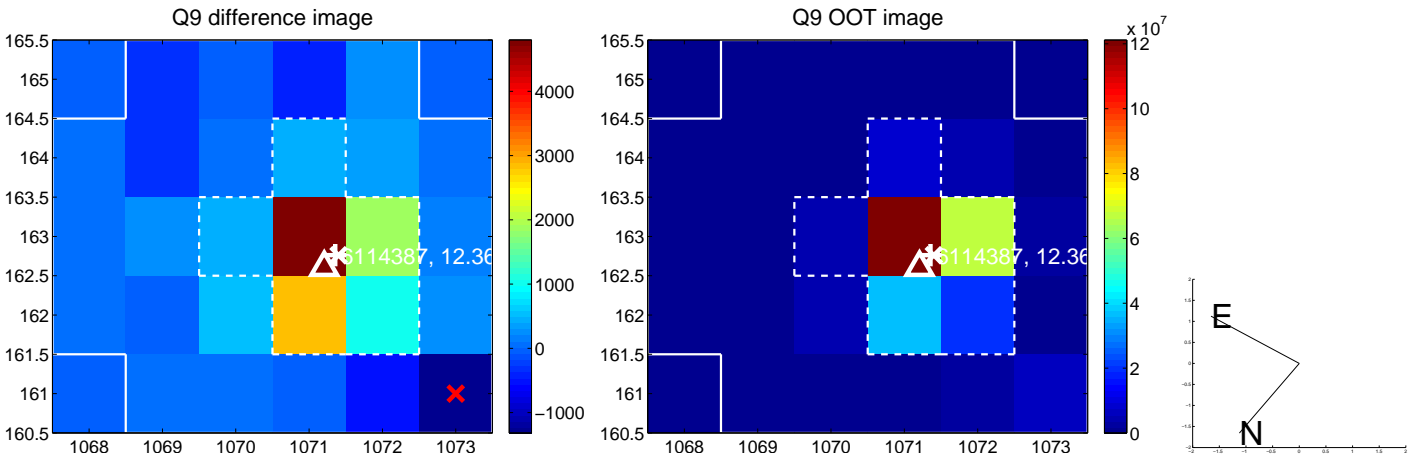
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



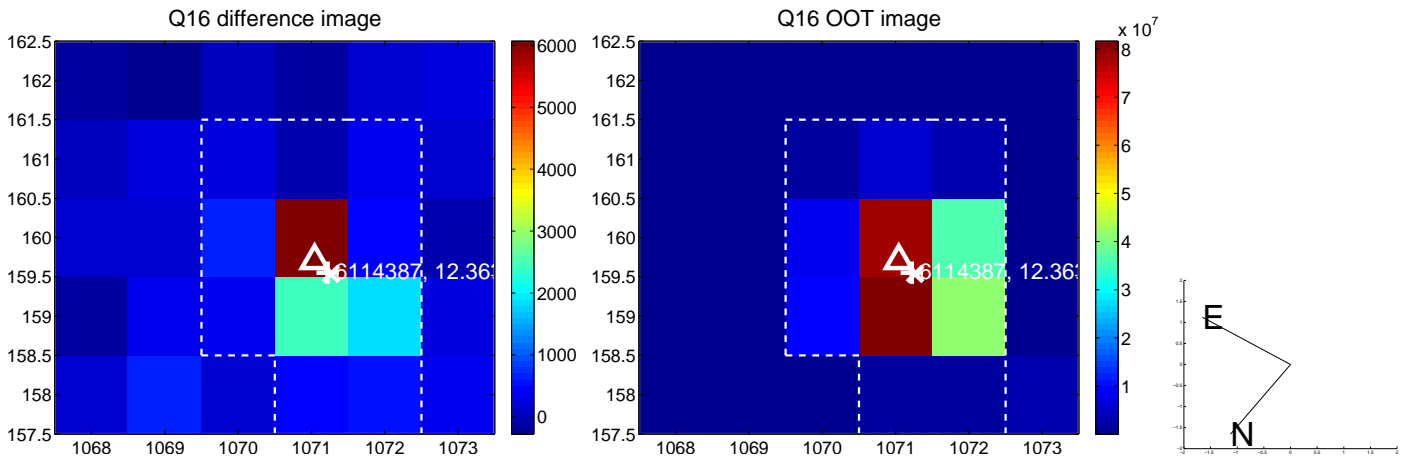
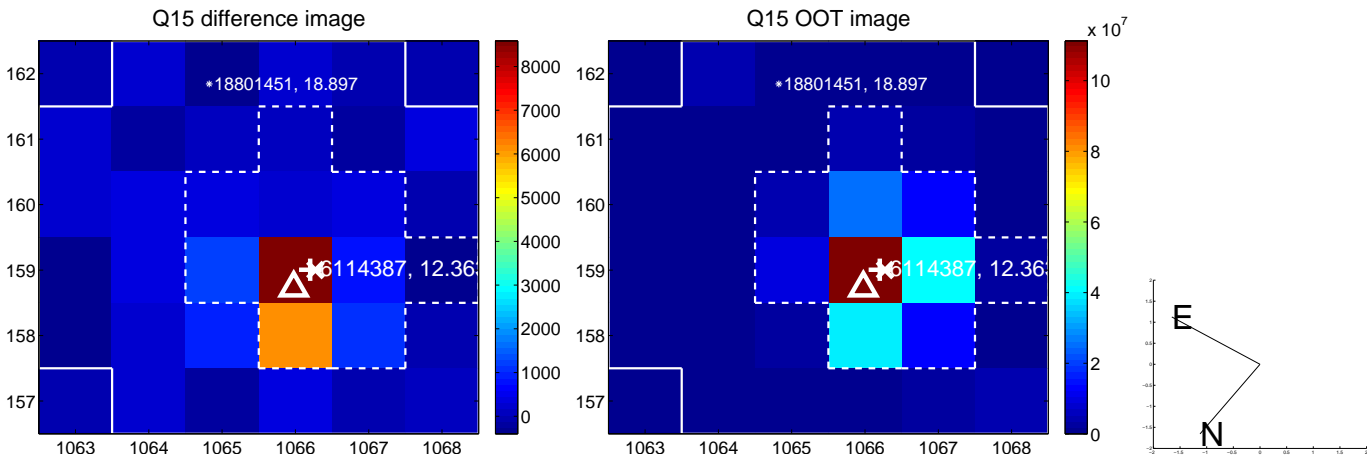
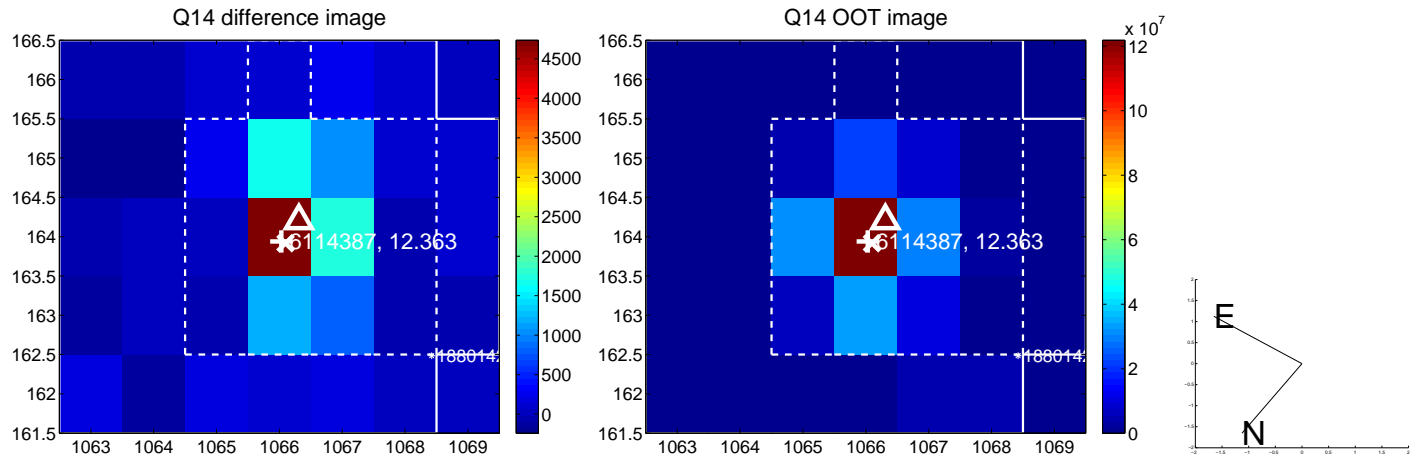
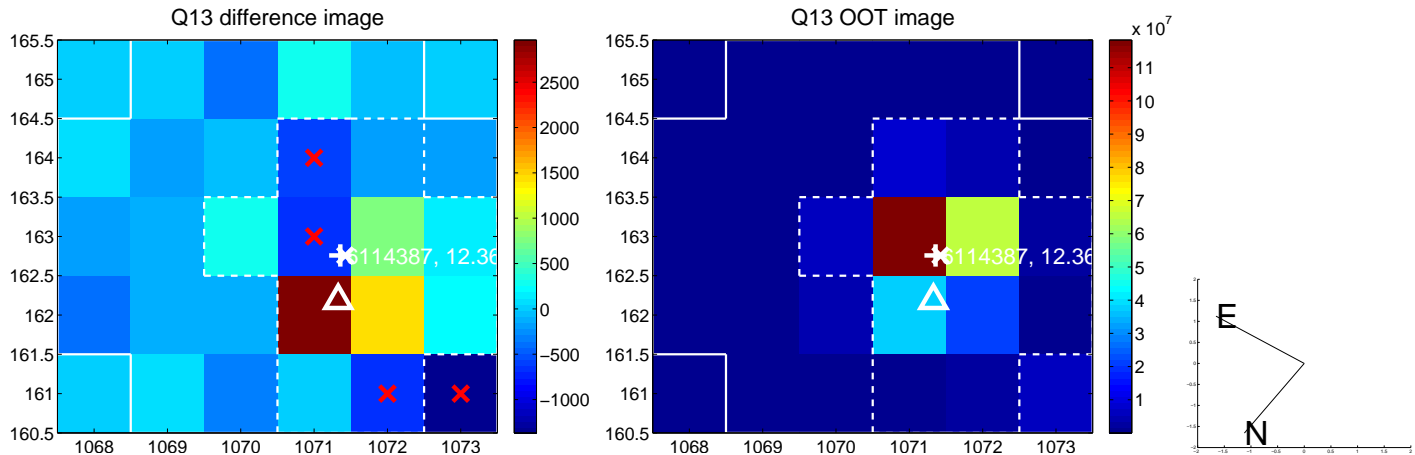
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



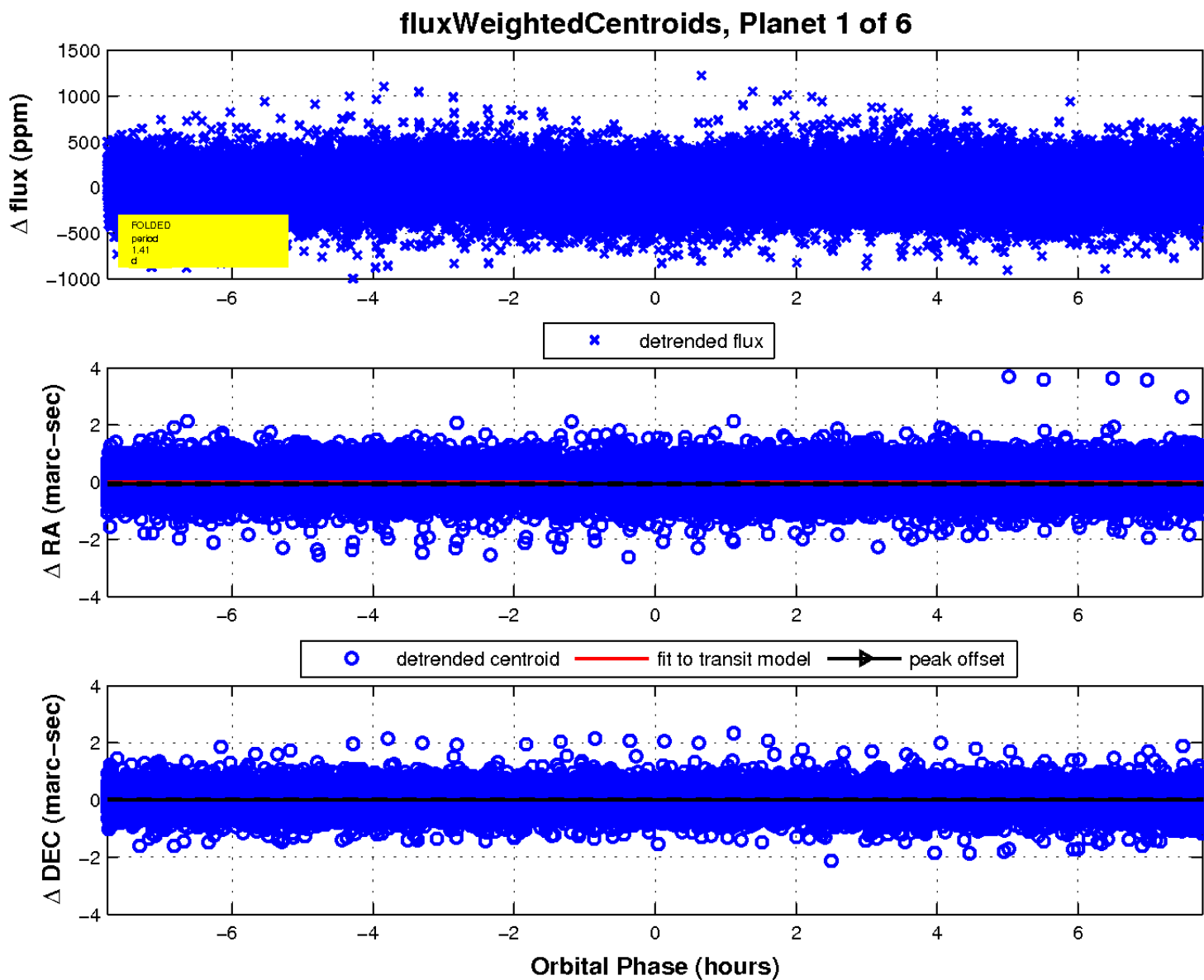
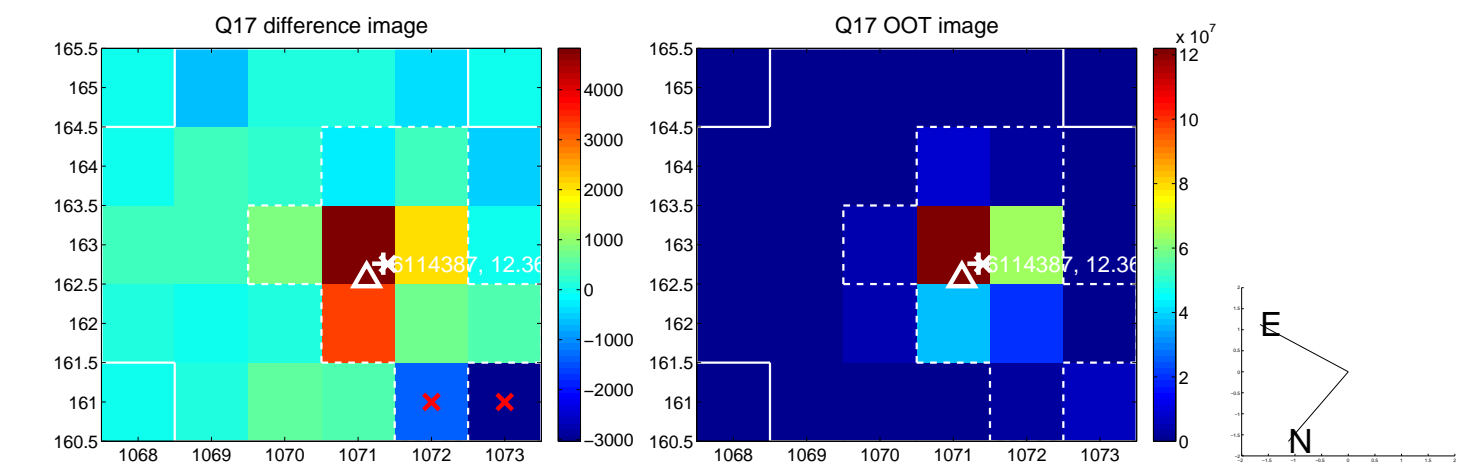
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

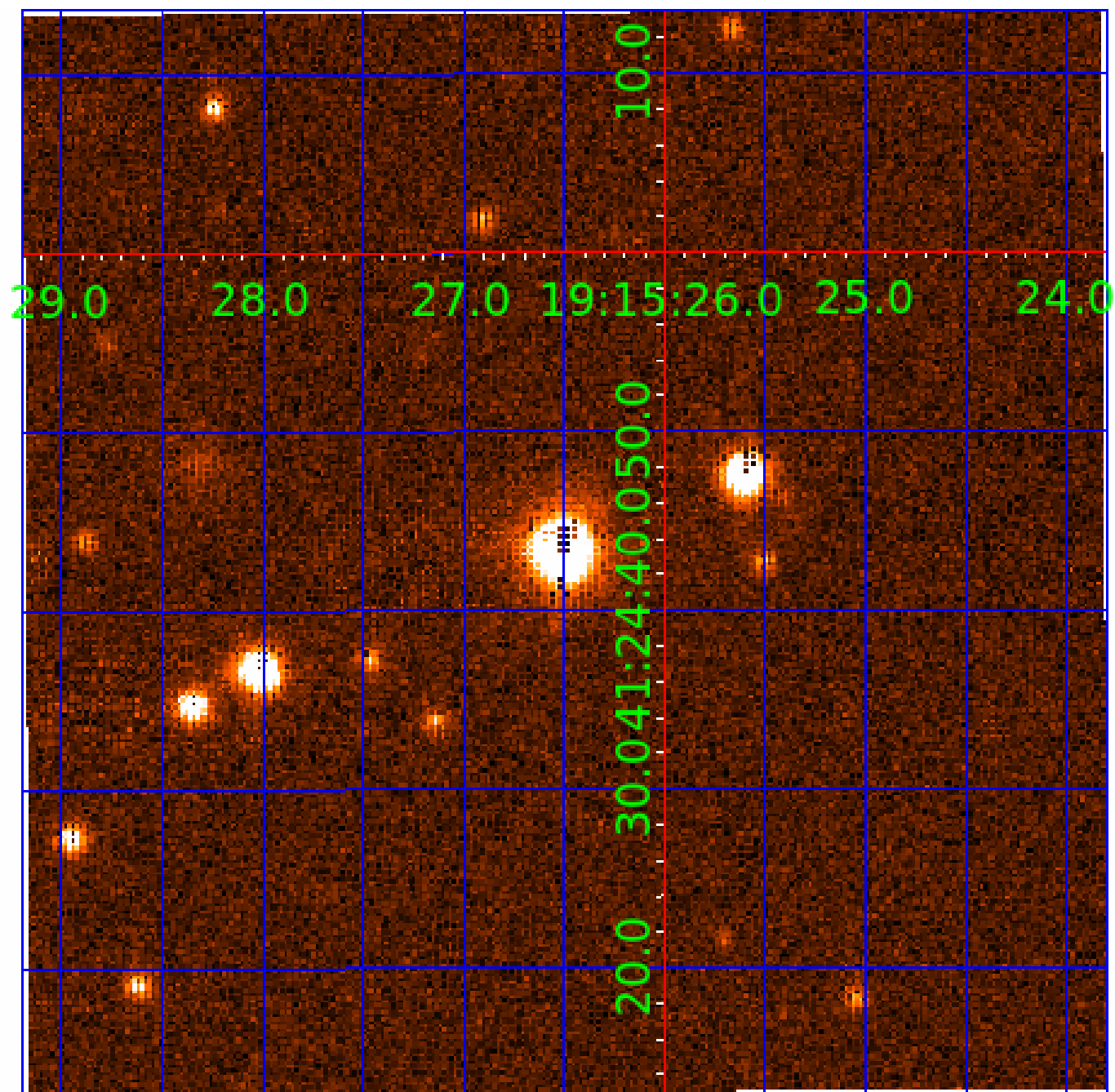


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006114387

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})
006114387-01	OBS	No	1.406319	132.219231	43.2	2.589	10.9	12.0	2.22	7483	1.78	15950.88
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Robovetter Results

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006114387-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
006114387-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
006114387-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—HALO_GHOST
006114387-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
006114387-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

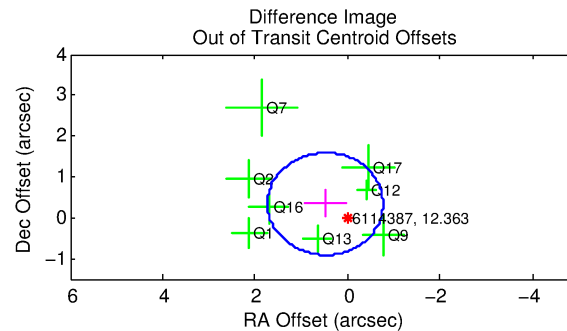
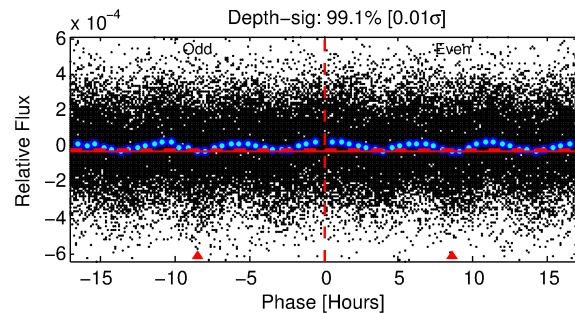
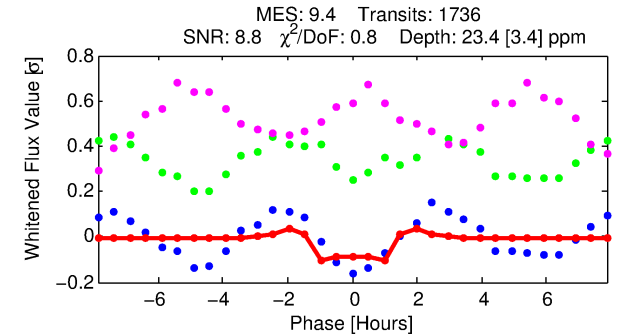
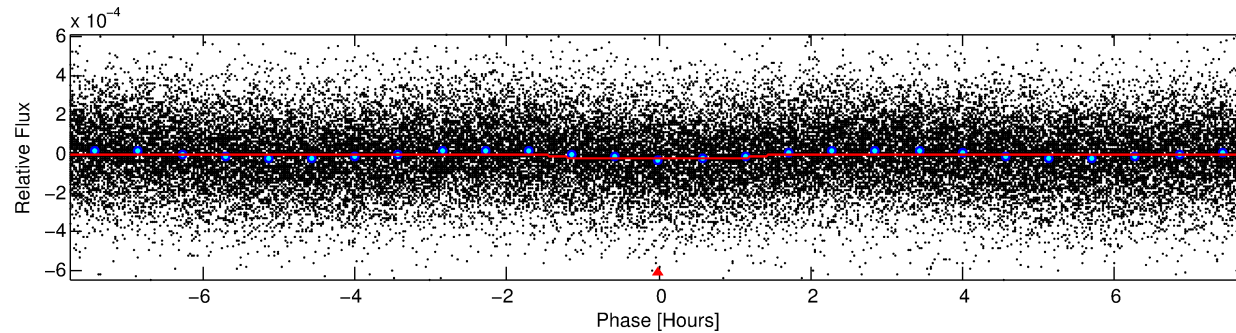
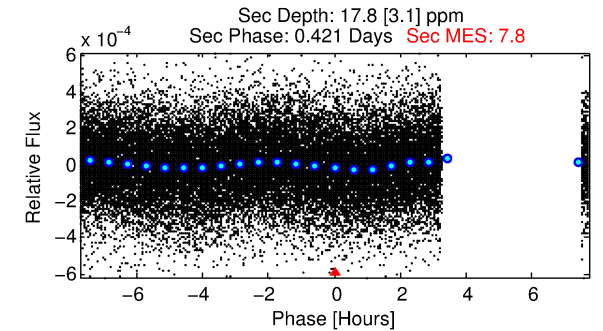
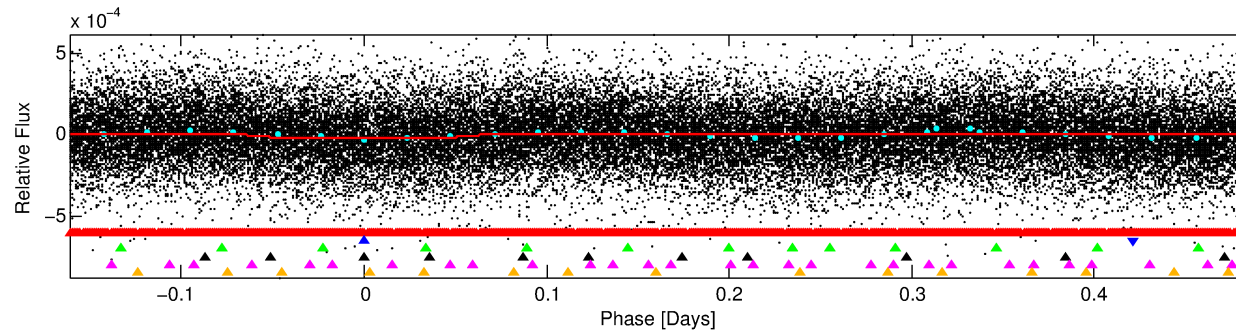
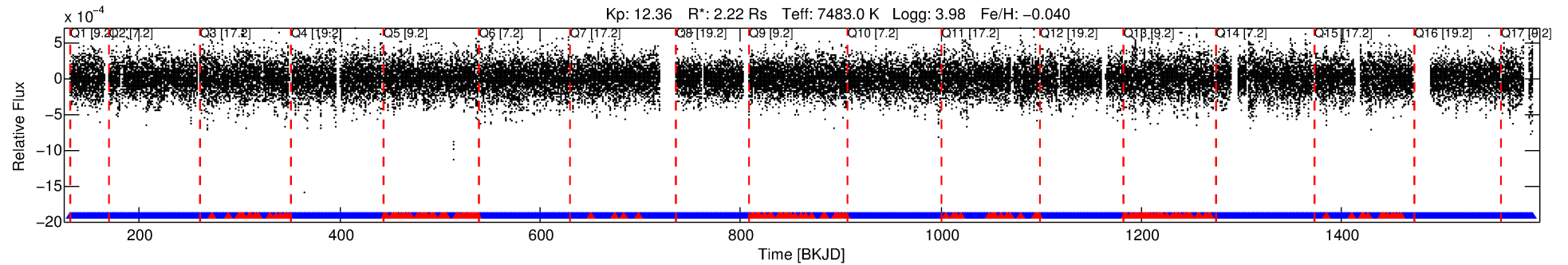
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006114387-02

No Significant Match Found

DV One-Page Summary

KIC: 6114387 Candidate: 2 of 6 Period: 0.646 d



DV Fit Results:

Period = 0.64578 [0.00001] d
Epoch = 131.6013 [0.0021] BKJD
Rp/R* = 0.0051 [0.0011]
a/R* = 1.22 [0.55]
b = 0.90 [0.30]
Seff = 45025.06 [17790.25]
Teq = 3714 [367] K
Rp = 1.24 [0.45] Re
a = 0.0175 [0.0043] AU
Ag = 1.95 [1.17] [0.82σ]
Teffp = 6788 [860] K [3.29σ]

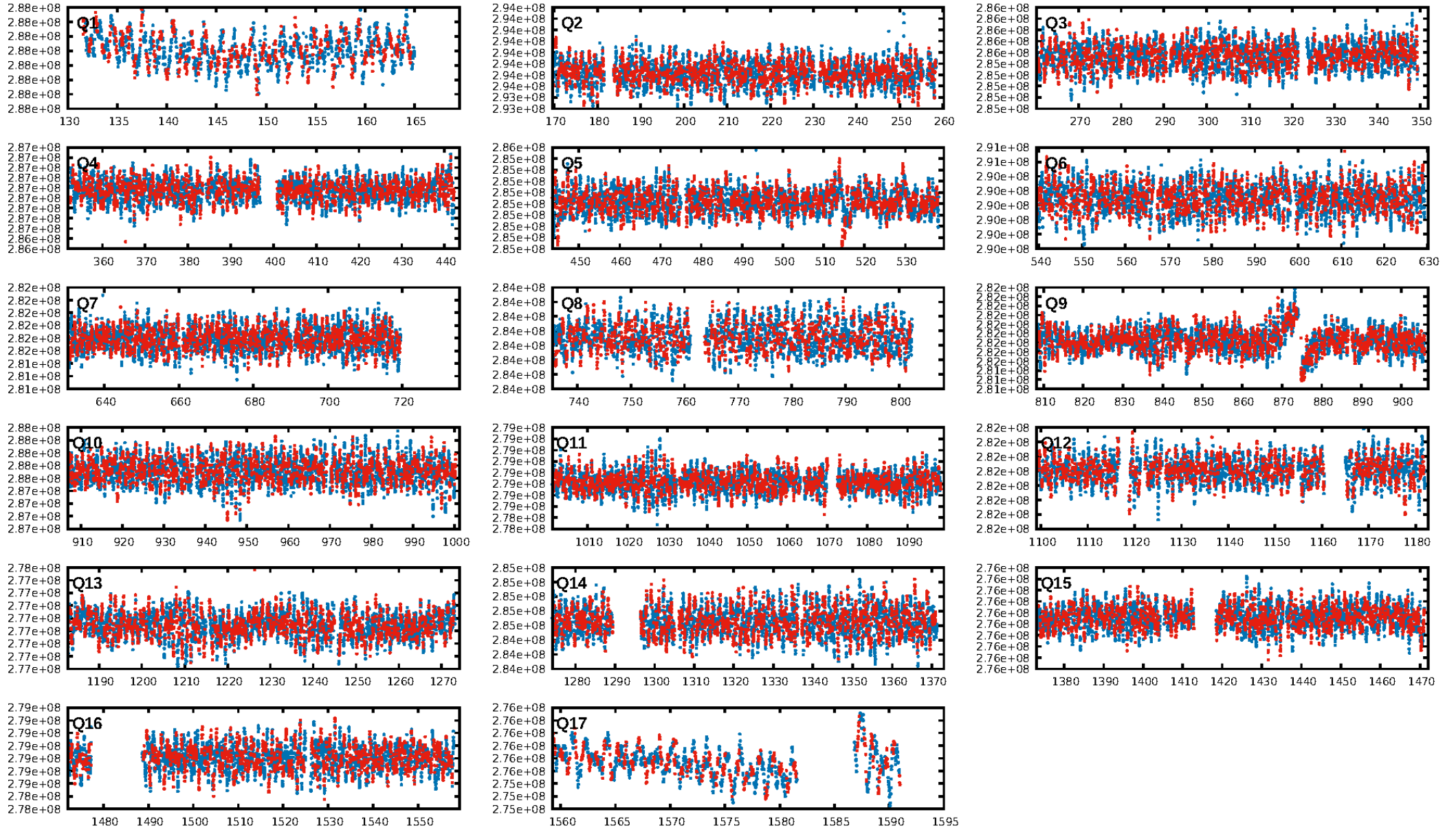
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [4.74σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.98e-12
RollingBand-fgt: 0.90 [1486/1659]
GhostDiagnostic-chr: -31.93
Centroid-sig: 37.2%
Centroid-so: 0.458 arcsec [0.85σ]
OotOffset-rm: 0.593 arcsec [1.42σ]
OotOffset-st: 1/1/2/4 [8]
KicOffset-rm: 0.804 arcsec [1.81σ]
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DiffImageOverlap-fno: 1.00 [17/17]

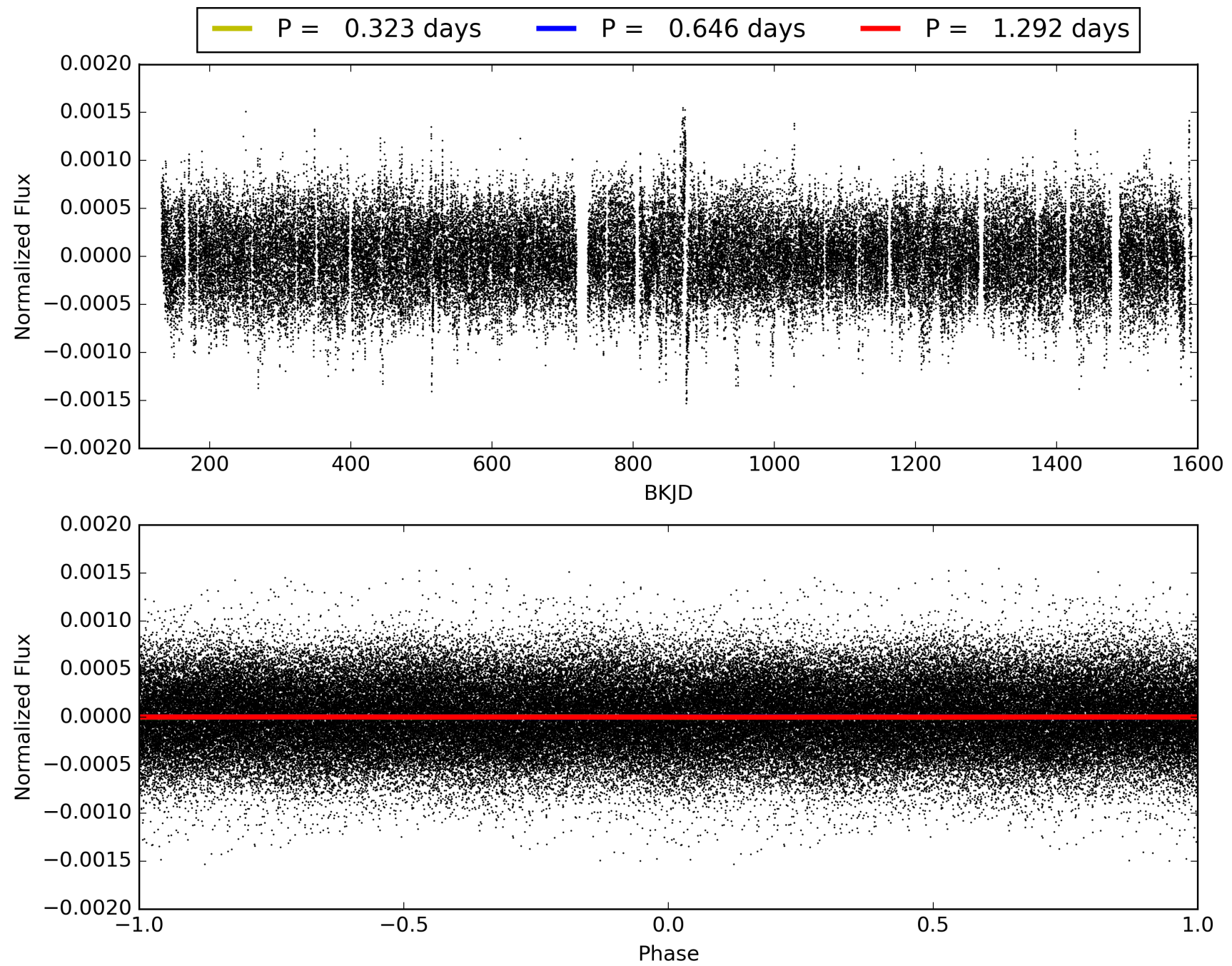
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:19:15 Z

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

TCE 006114387-02, PDC Light Curves

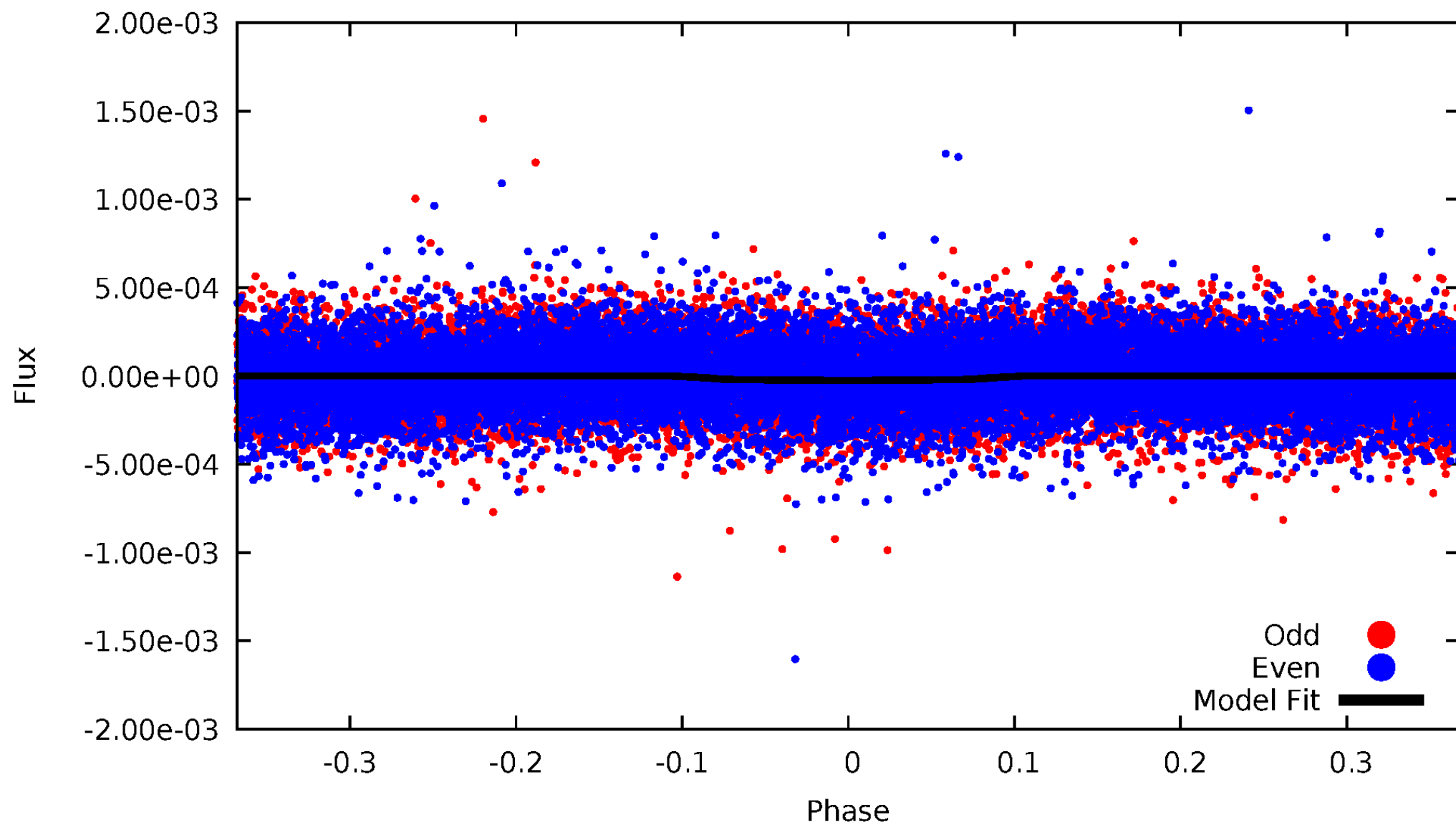


TCE 006114387-02



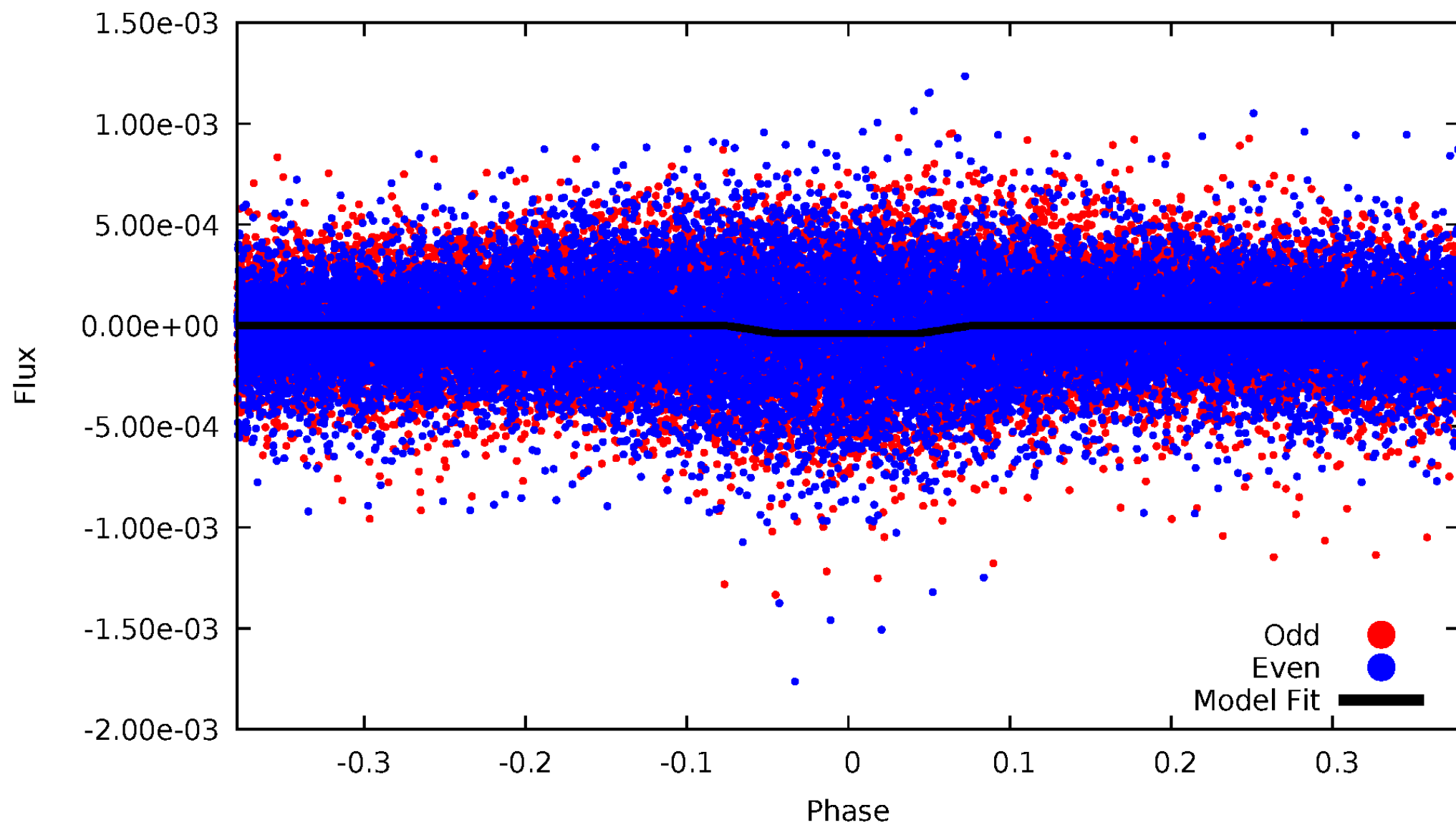
DV Odd/Even

TCE 006114387-02



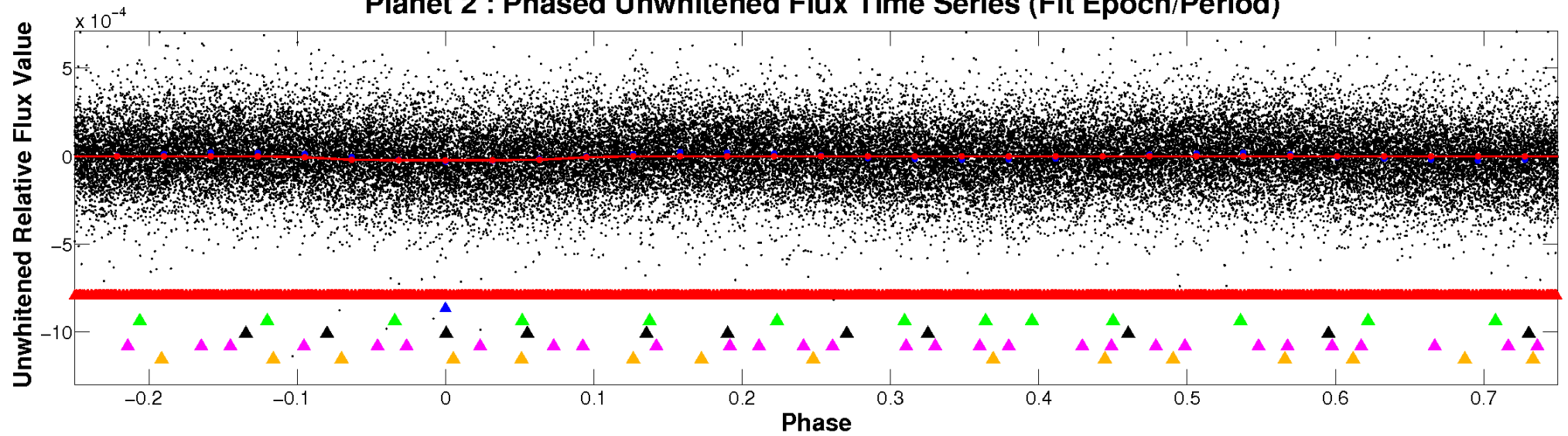
ALT Odd/Even

TCE 006114387-02

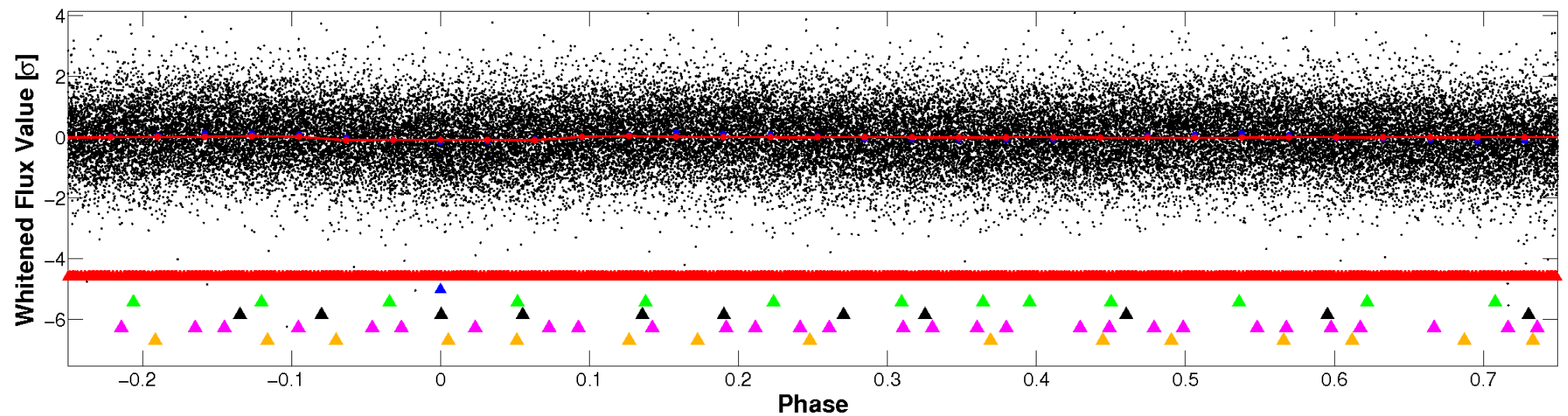


Non-Whitened Vs. Whitened Light Curve

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

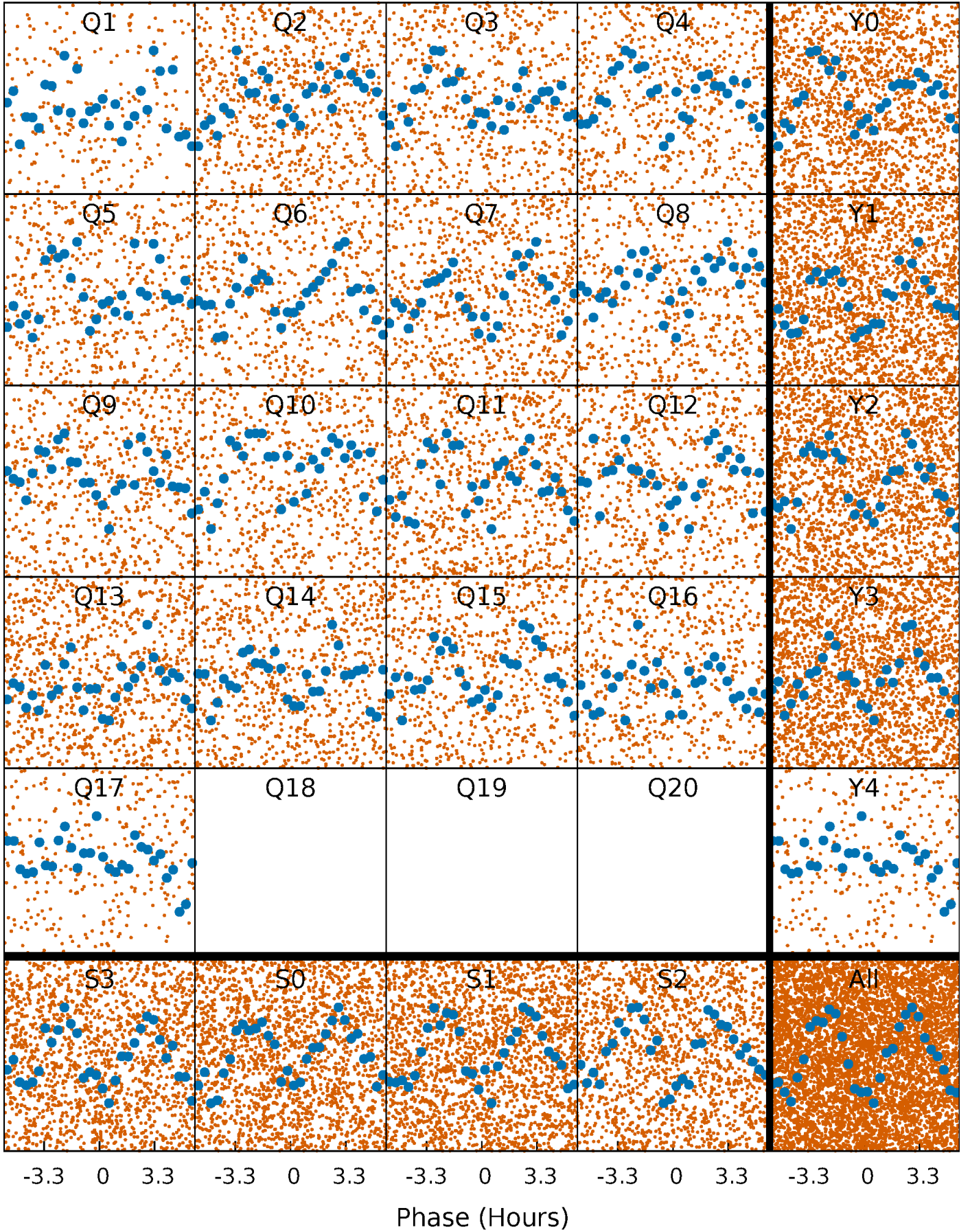


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



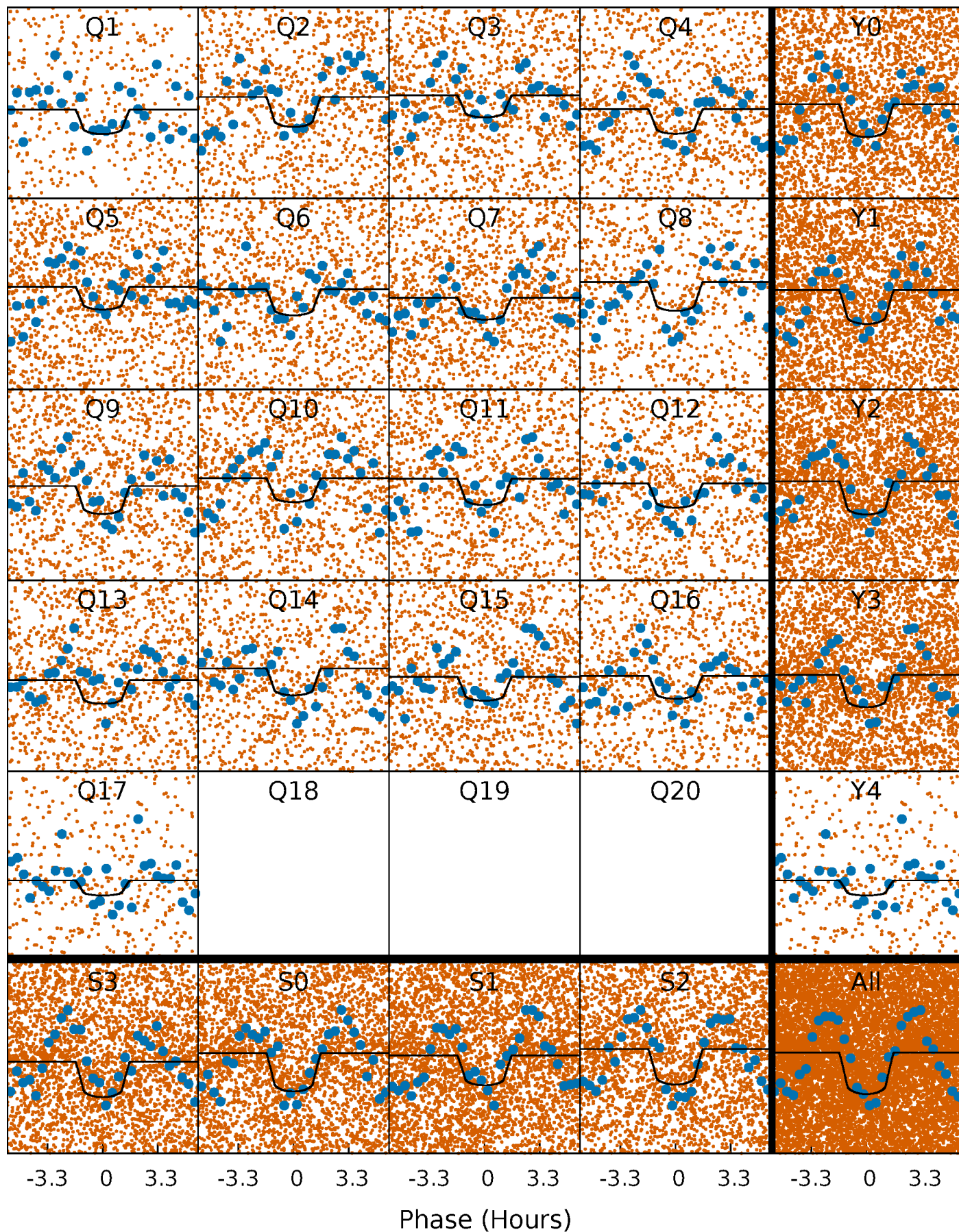
PDC Quarter-Phased Transit Curves

TCE 006114387-02 P= 0.645776 Days $T_0=131.601330$ (BKJD)



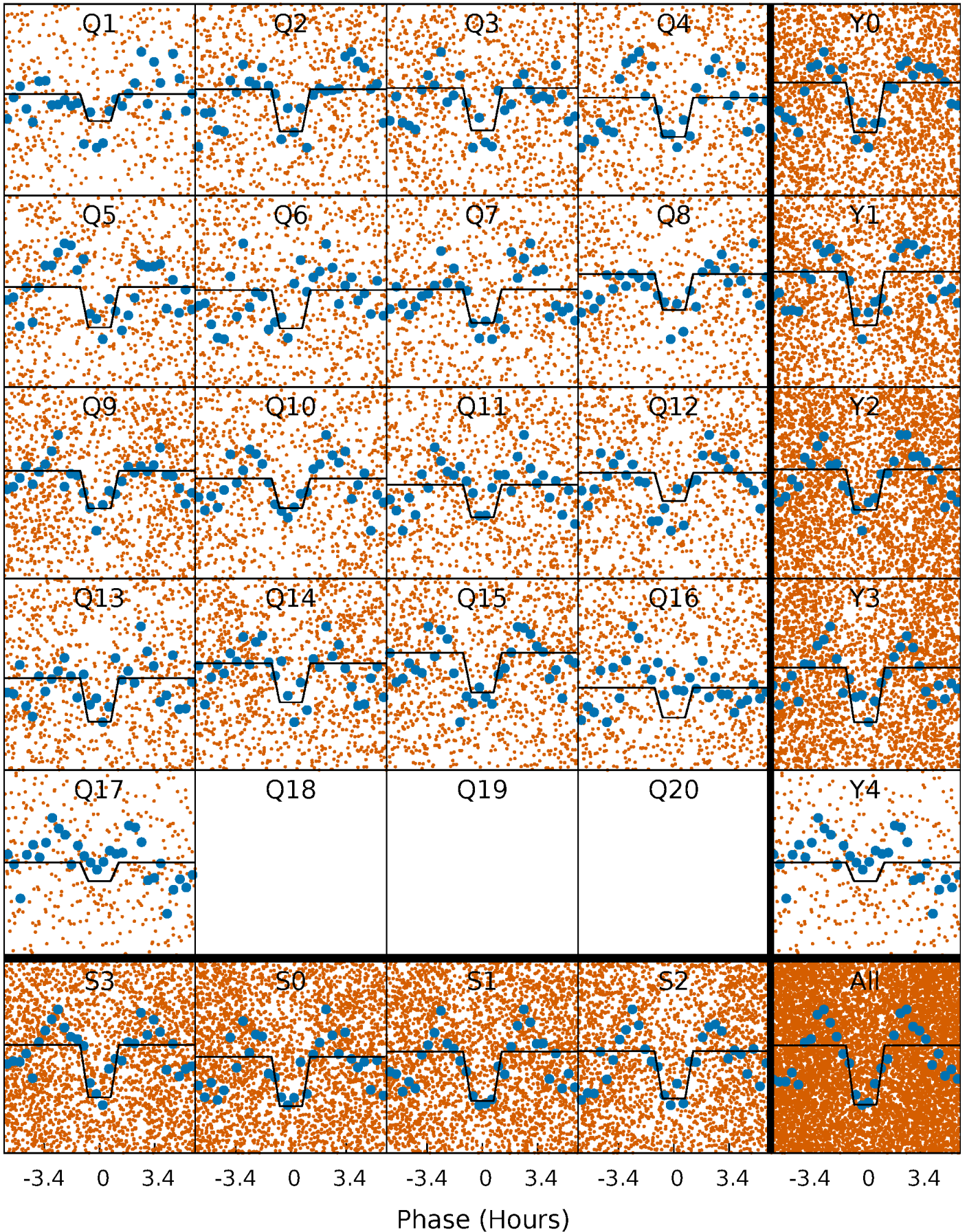
DV Quarter-Phased Transit Curves

TCE 006114387-02 P= 0.645776 Days $T_0=131.601330$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

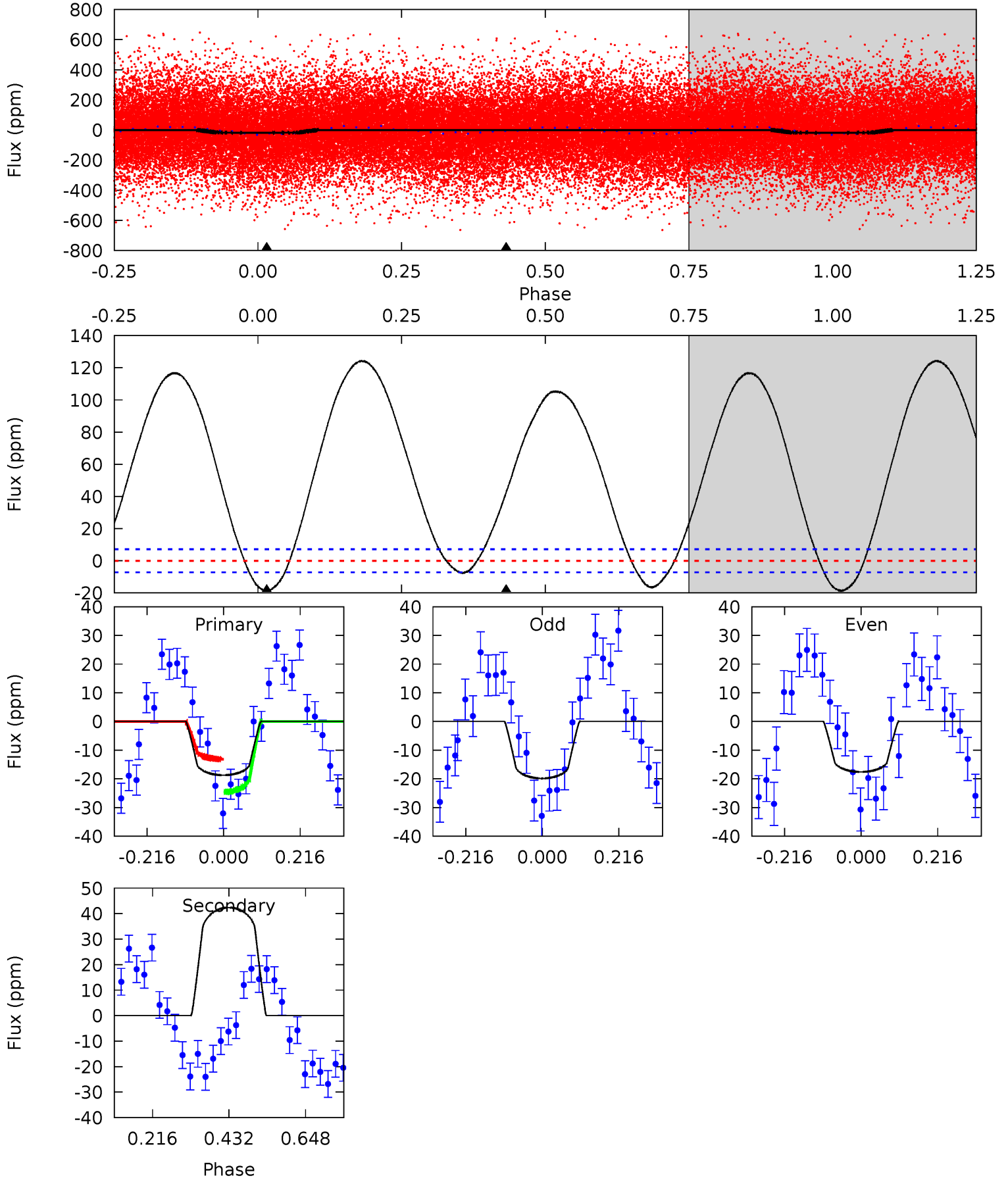
TCE 006114387-02 P= 0.645787 Days $T_0=131.597829$ (BKJD)



DV Model-Shift Uniqueness Test

006114387-02, P = 0.645776 Days, E = 130.955554 Days

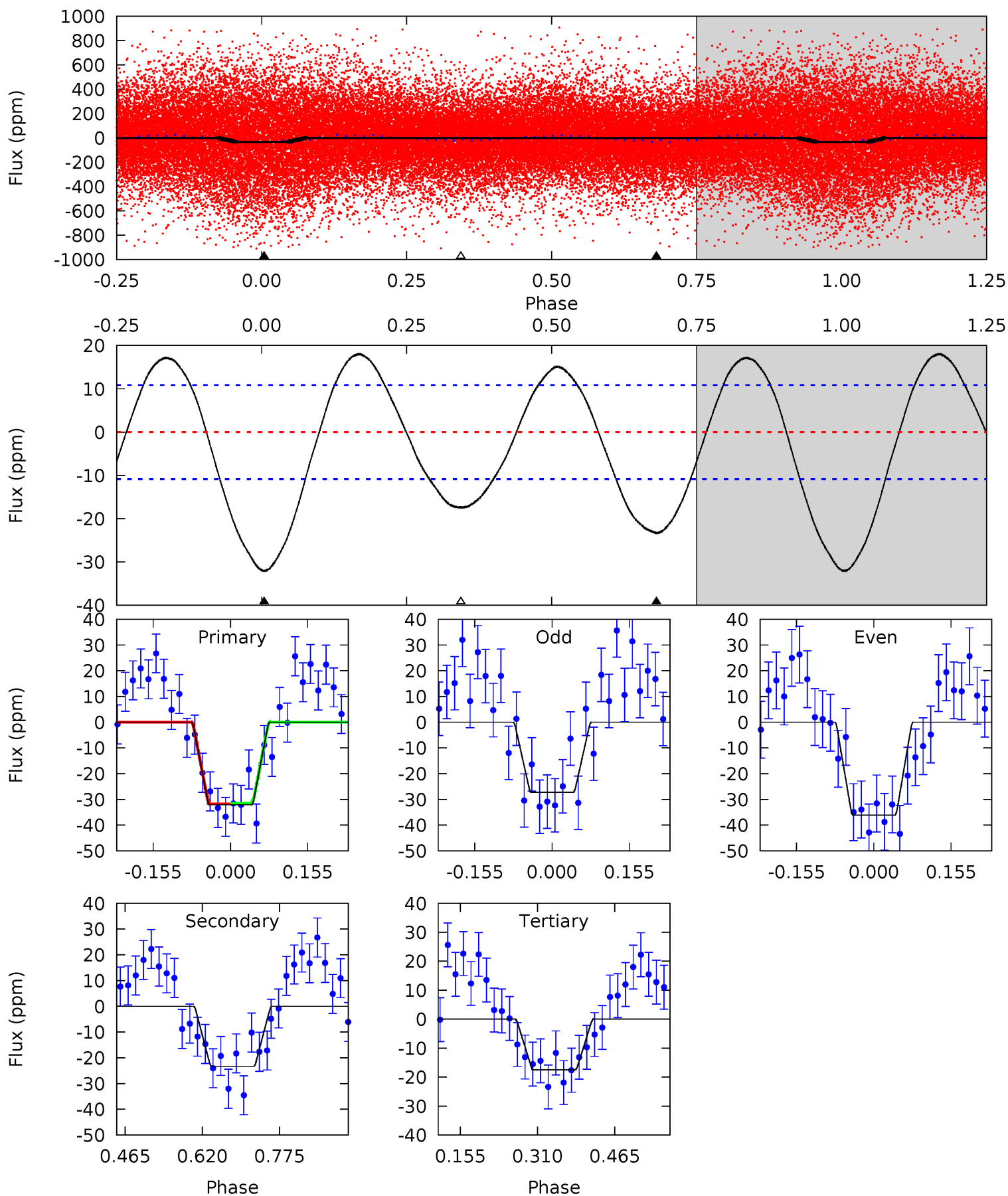
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.5	-26.1	0	0	4.40	1.24	18.5	11.5	11.5	-26.1	-26.1	0.70	1.04	0.87	3.49



Alt Model-Shift Uniqueness Test

006114387-02, P = 0.645787 Days, E = 130.952042 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.2	9.60	7.18	0	4.47	1.42	5.15	6.02	13.2	2.42	9.60	1.82	1.31	0.36	0.03



Stellar Parameters For KIC 006114387

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7483^{+207}_{-311}	$3.982^{+0.198}_{-0.162}$	$-0.040^{+0.200}_{-0.300}$	$2.221^{+0.518}_{-0.633}$	$1.724^{+0.201}_{-0.277}$	$0.222^{+0.281}_{-0.094}$
	+3%/-4%	+5%/-4%	+500%/-750%	+23%/-29%	+12%/-16%	+127%/-42%
Source	KIC0	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 006114387-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	42 ± 2	$1.21^{+0.36}_{-0.29}$	5169^{+368}_{-392}	-8874^{+1124}_{-1563}	$-4.875^{+1.955}_{-3.454}$
Alt.	-23 ± 2	$1.51^{+0.39}_{-0.34}$	5174^{+376}_{-380}	6134^{+854}_{-683}	$1.709^{+1.184}_{-0.604}$

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

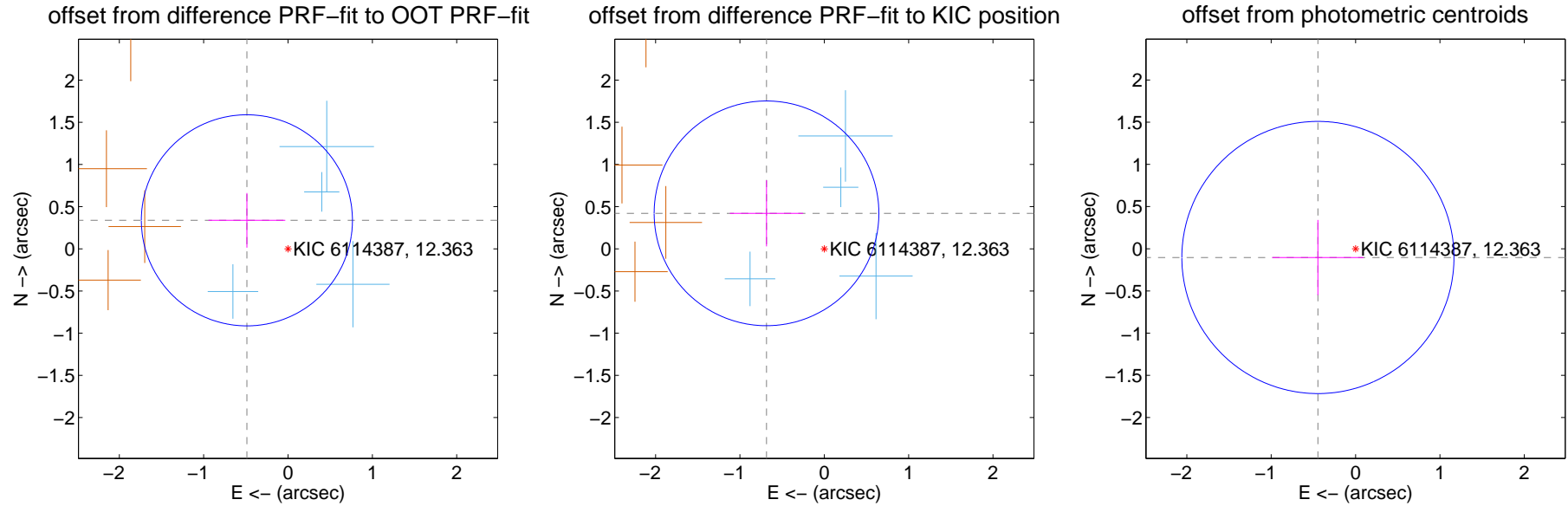
DV Centroid Data

Supplemental centroid analysis for 006114387-02. Kepler magnitude: 12.36. Transit SNR 8.76

There are 4 quarters with good PRF difference image offsets

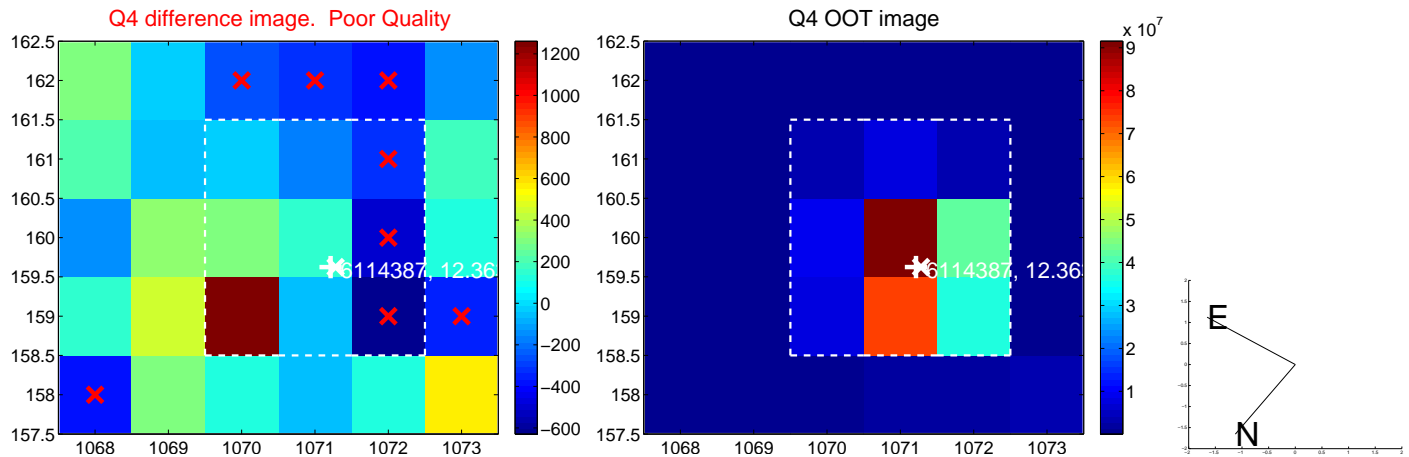
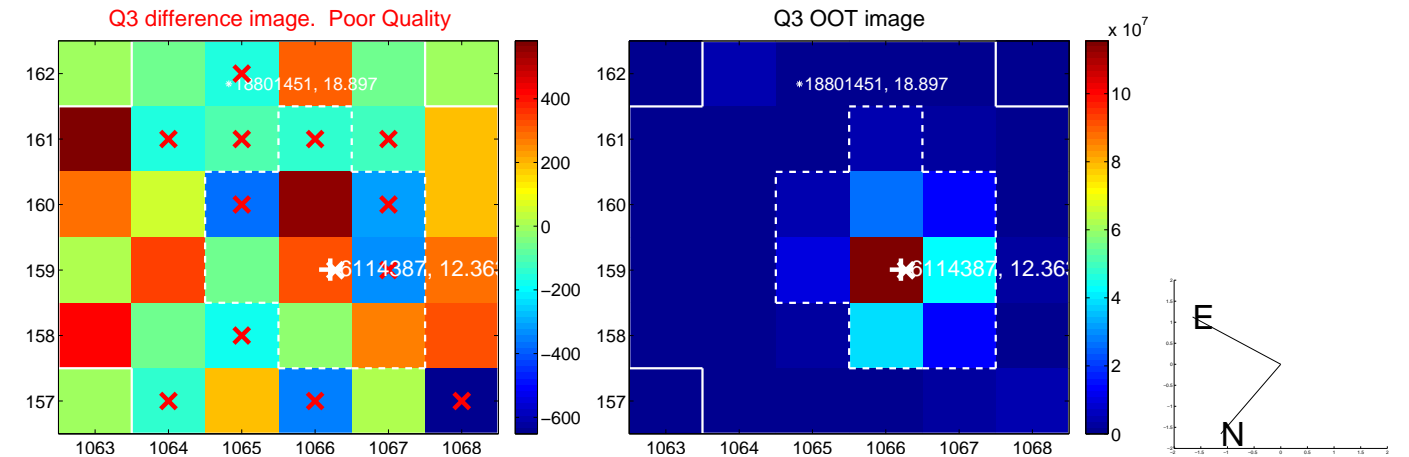
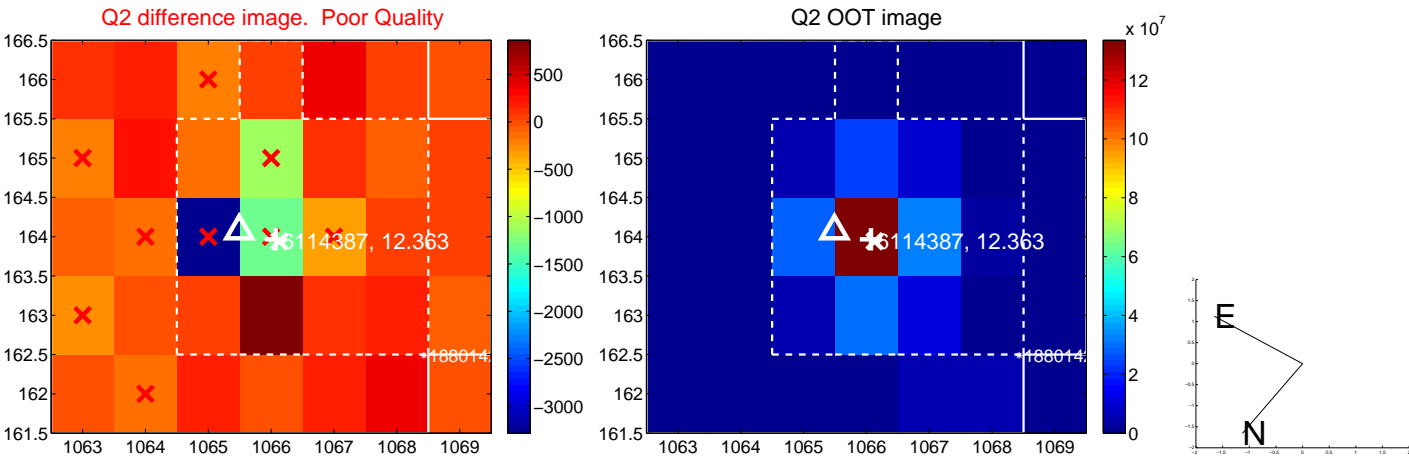
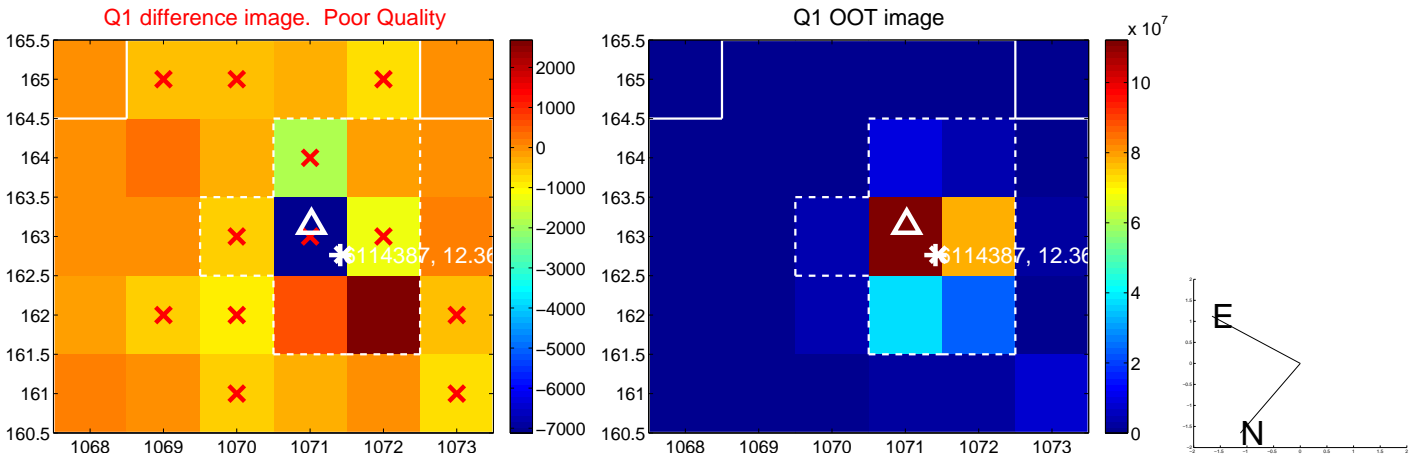
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.593 ± 0.417	1.42	0.488 ± 0.455	0.338 ± 0.324
PRF-fit source offset from KIC position	0.804 ± 0.444	1.81	0.685 ± 0.434	0.421 ± 0.391
photometric centroid source offset	0.46 ± 0.54	0.85	0.45 ± 0.54	-0.10 ± 0.44

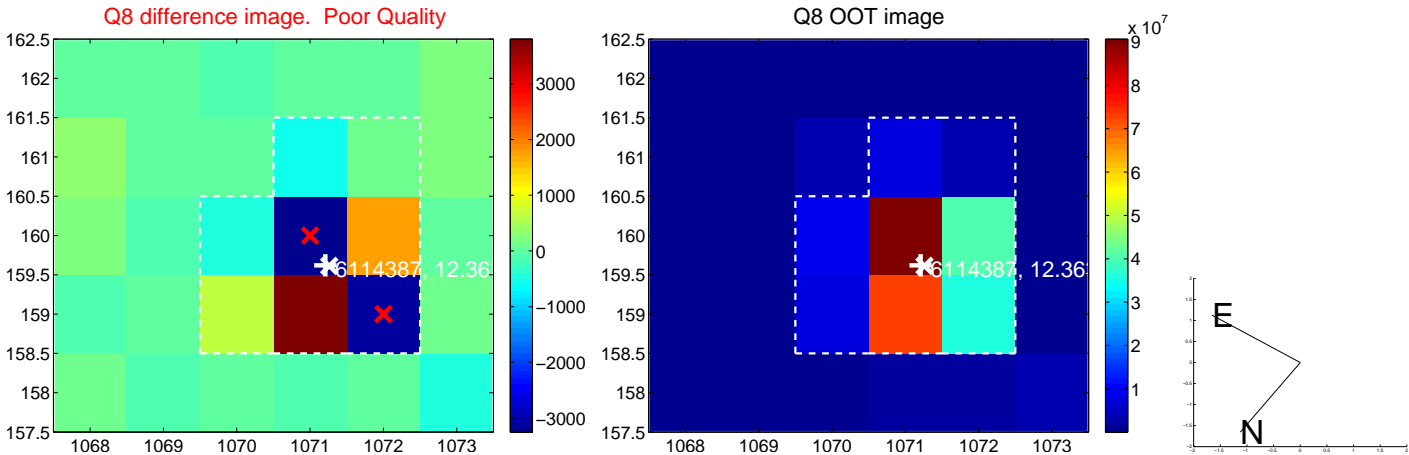
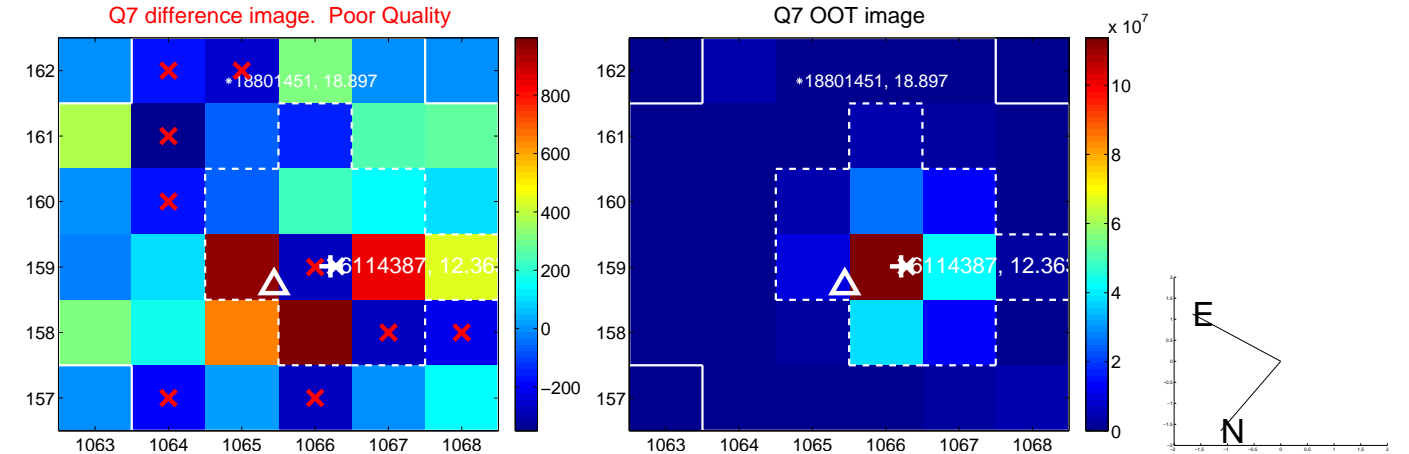
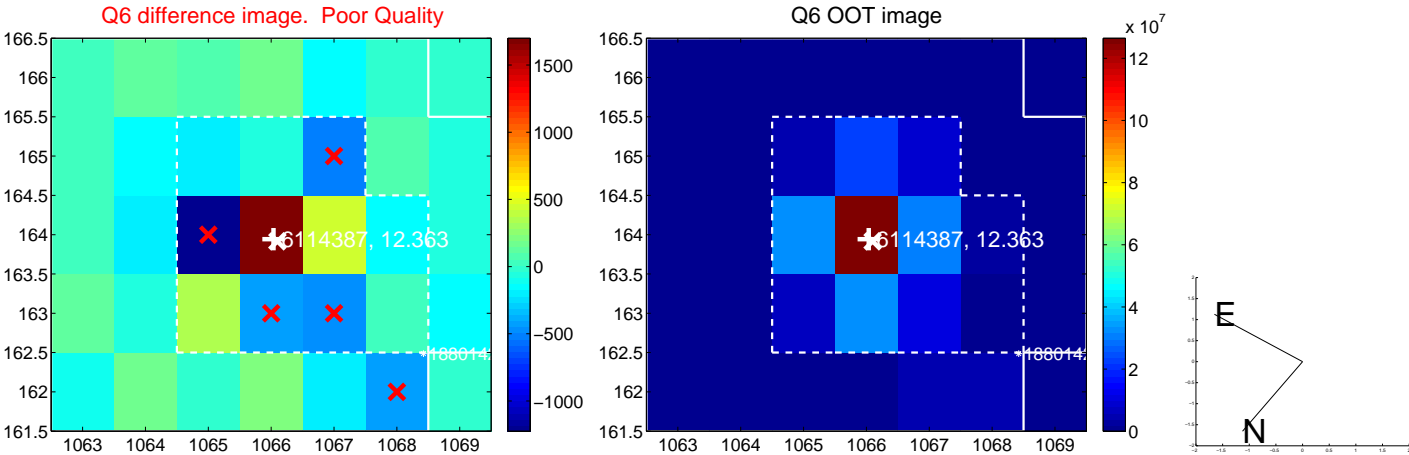
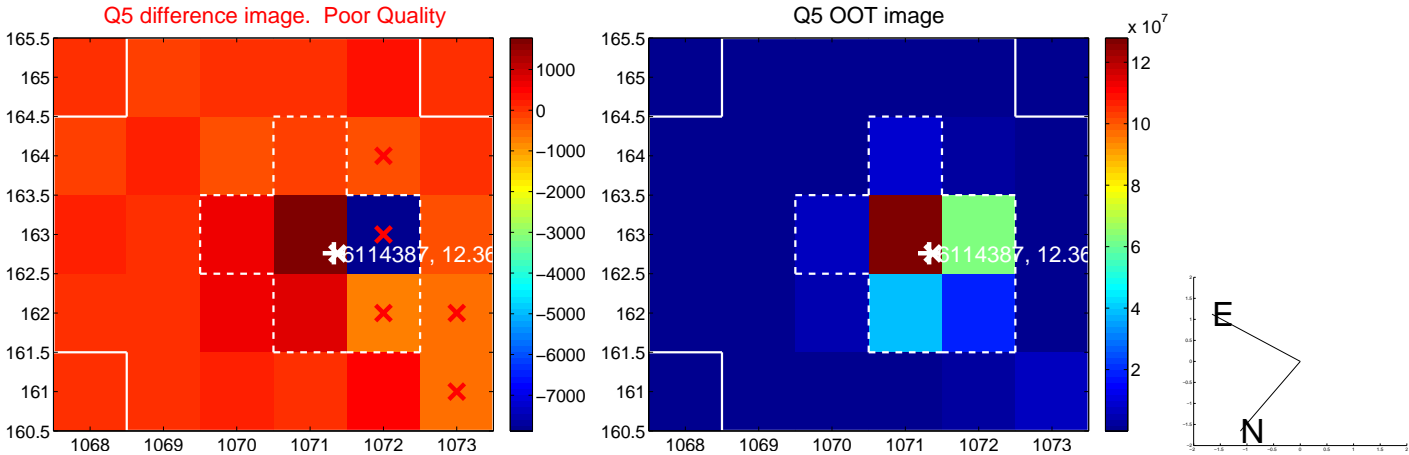


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

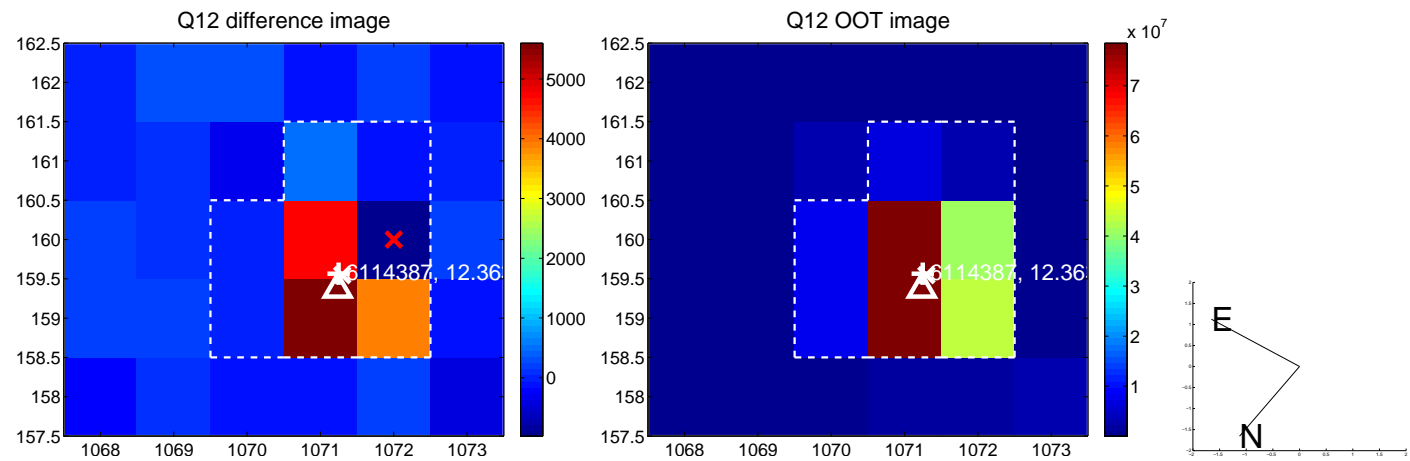
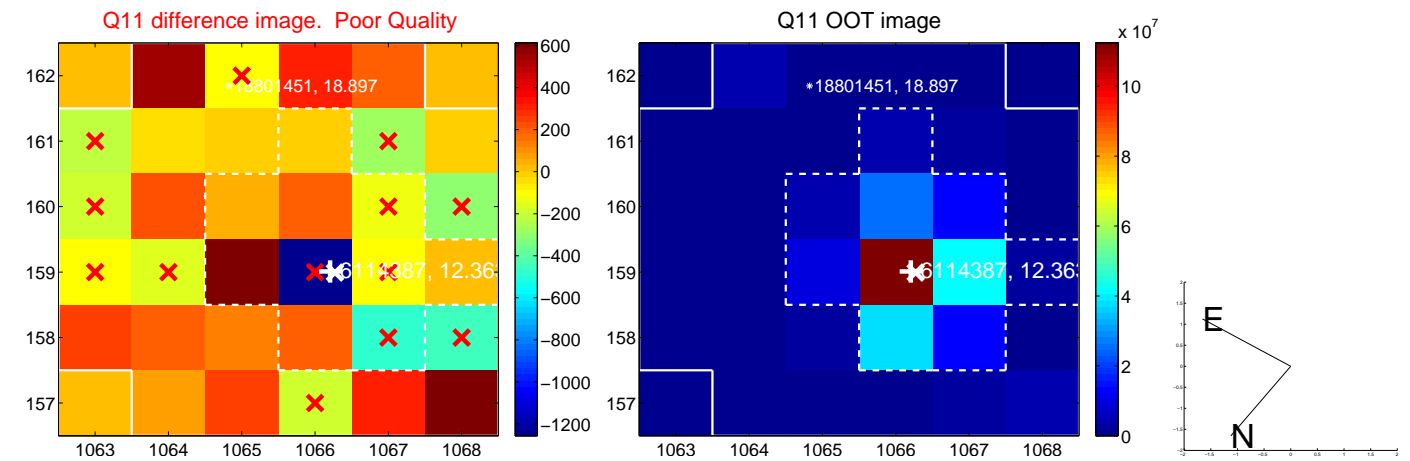
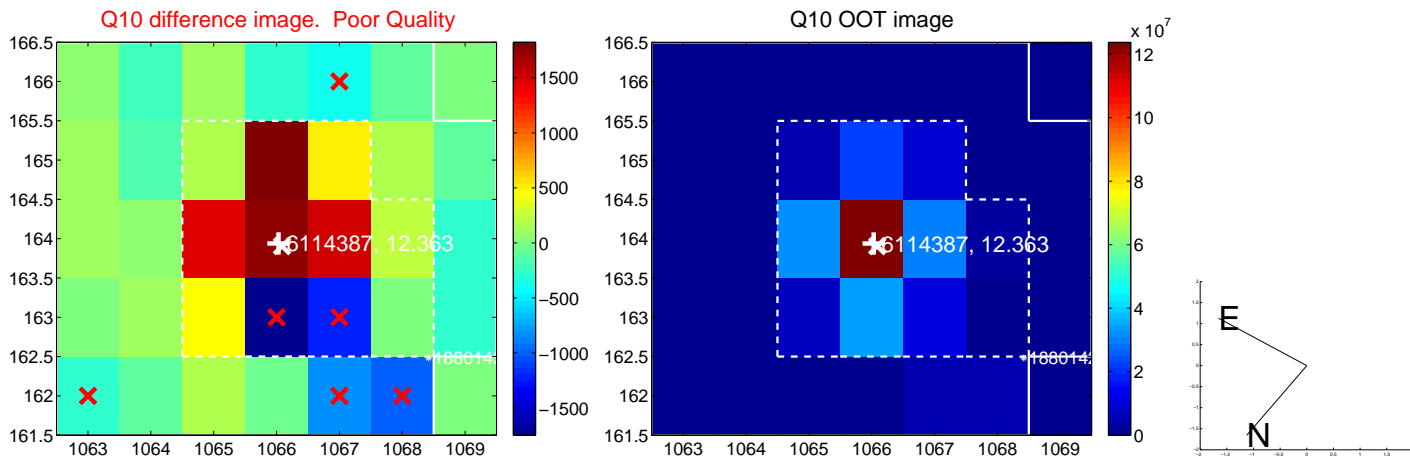
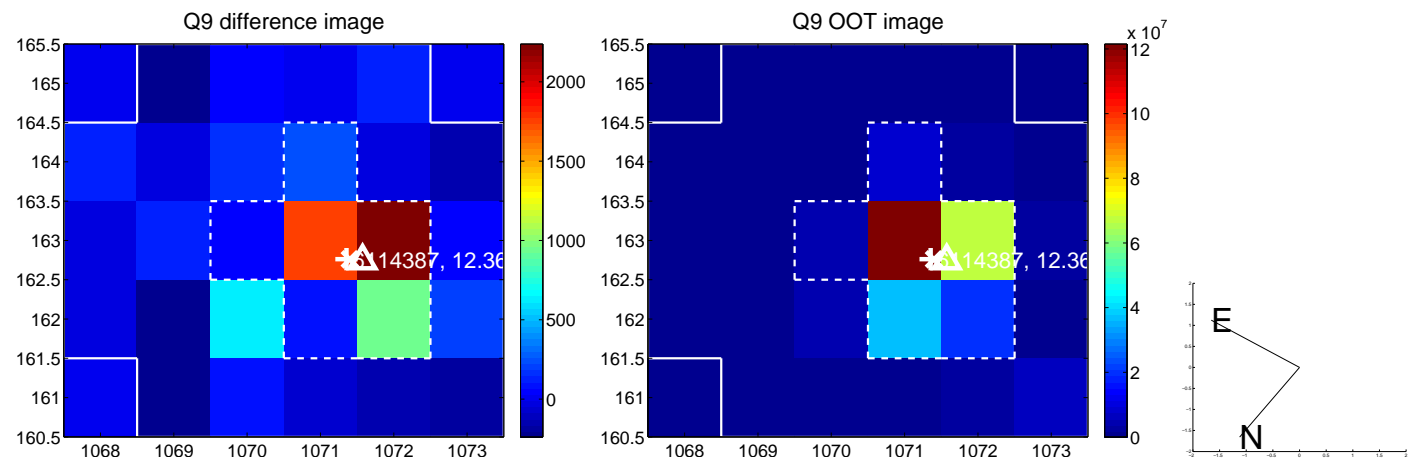
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



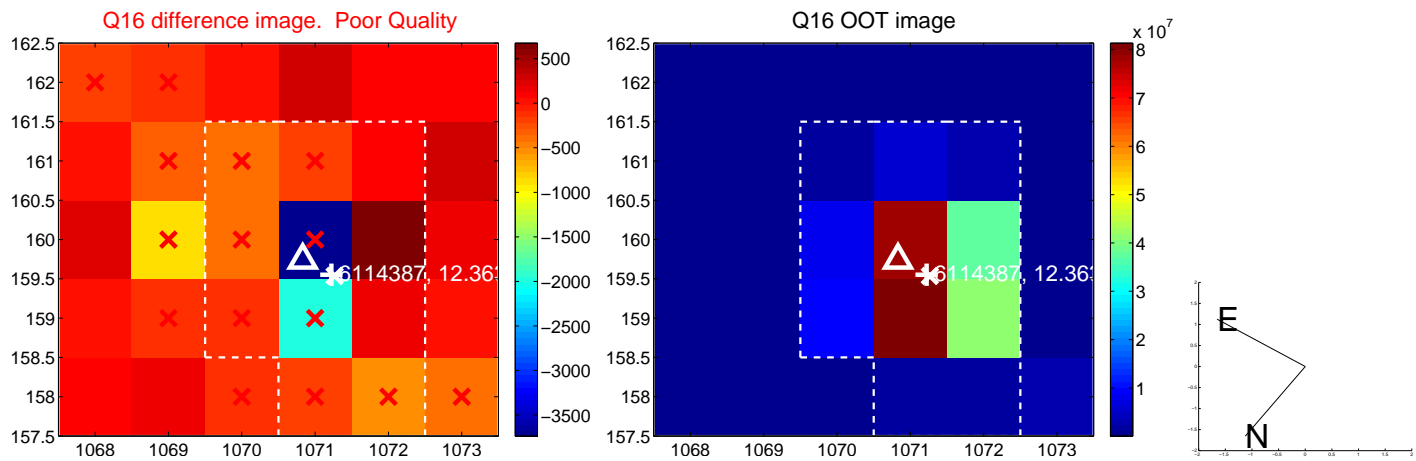
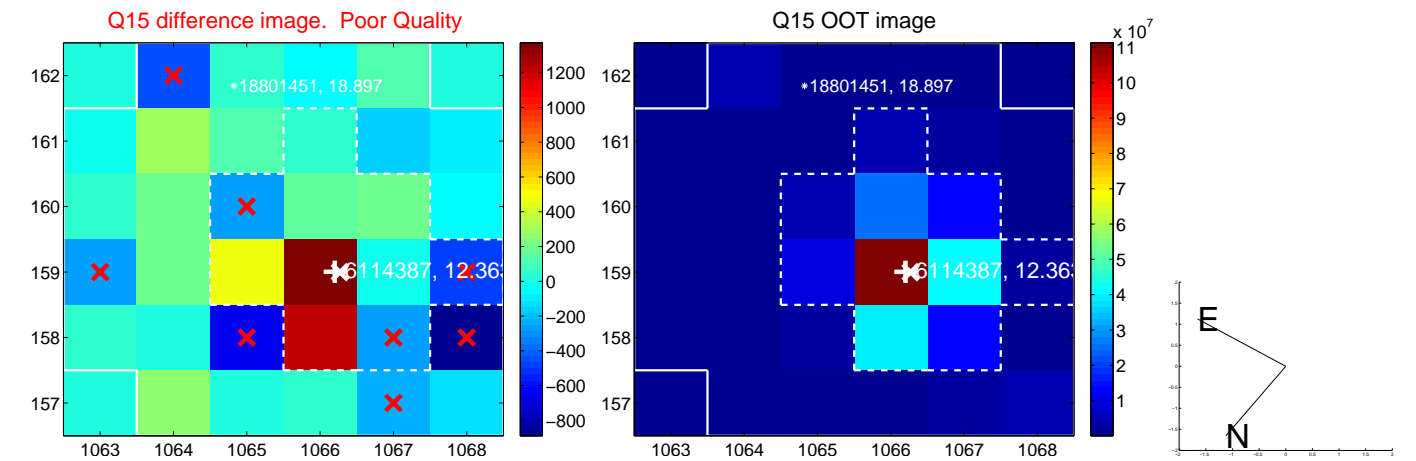
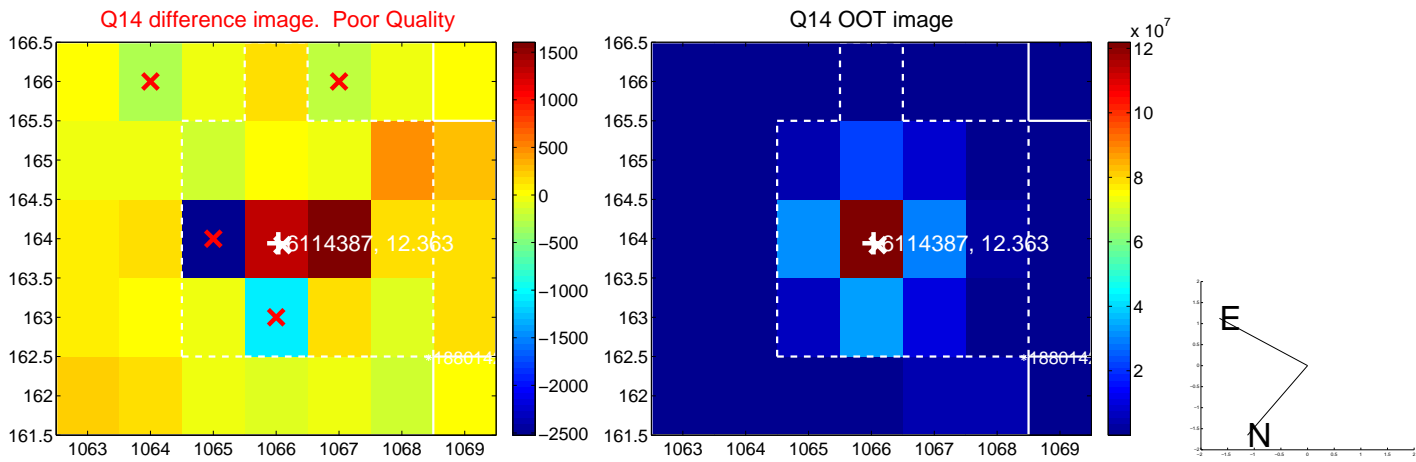
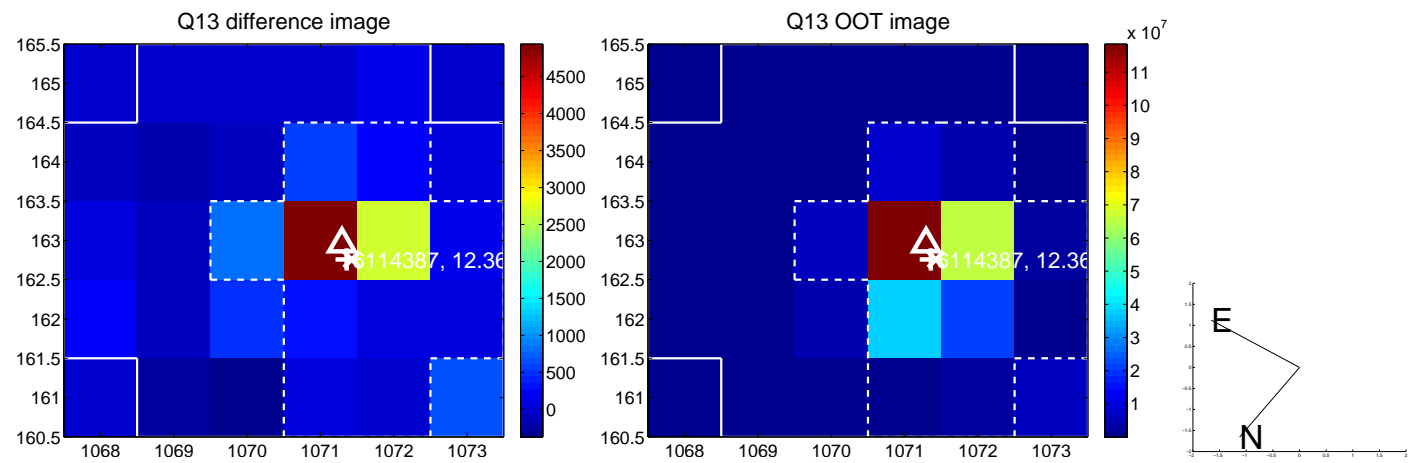
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



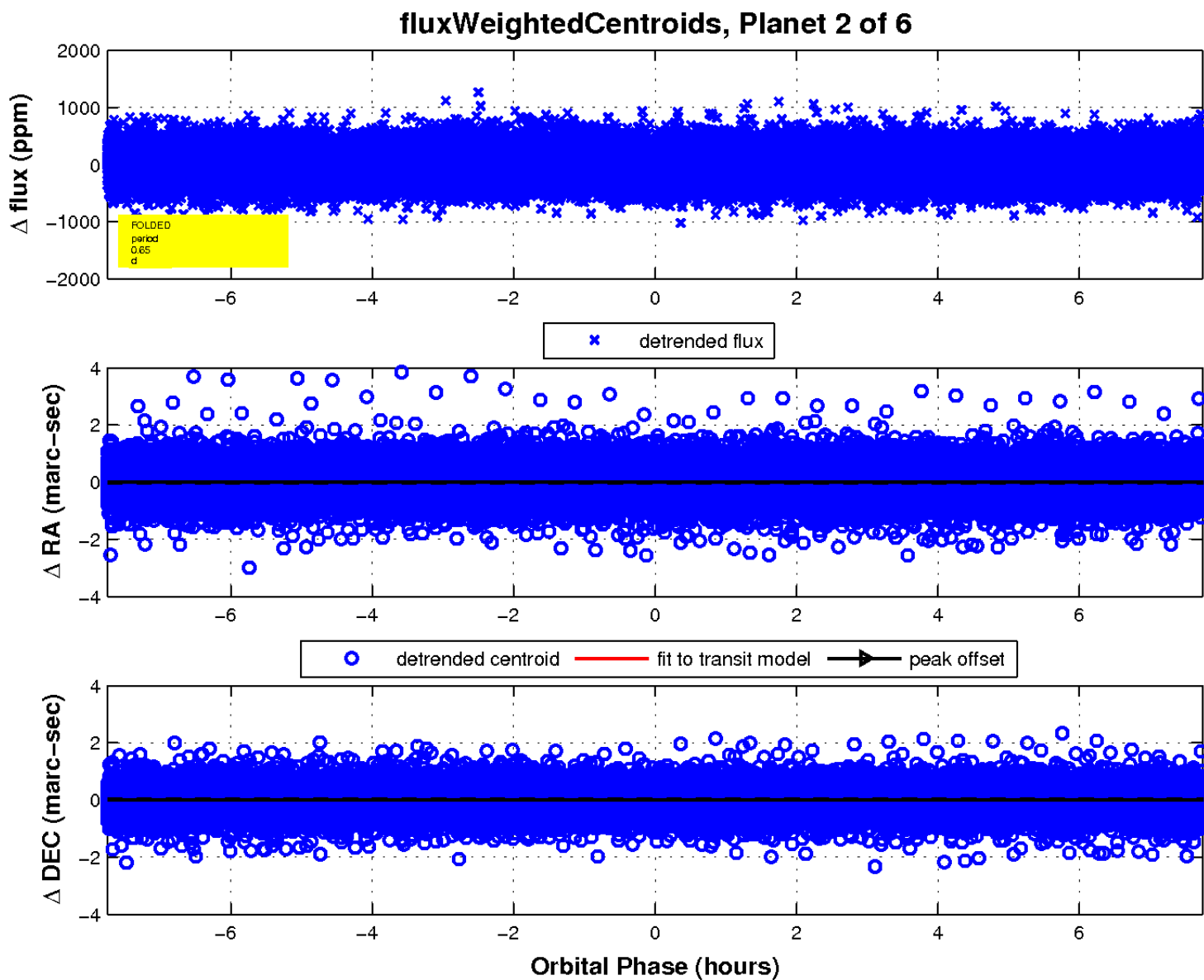
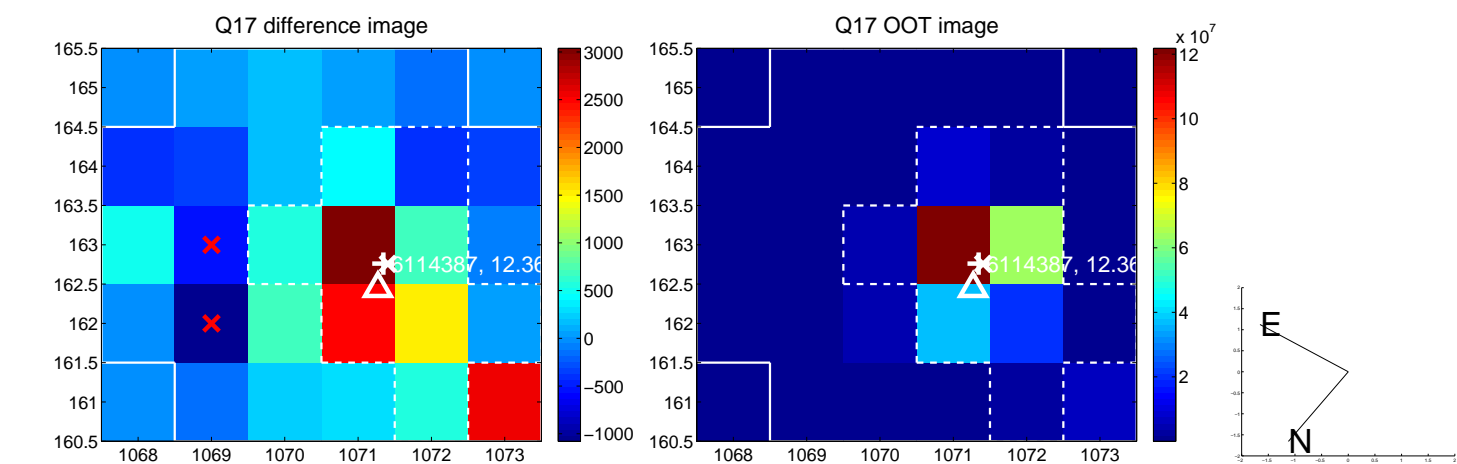
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

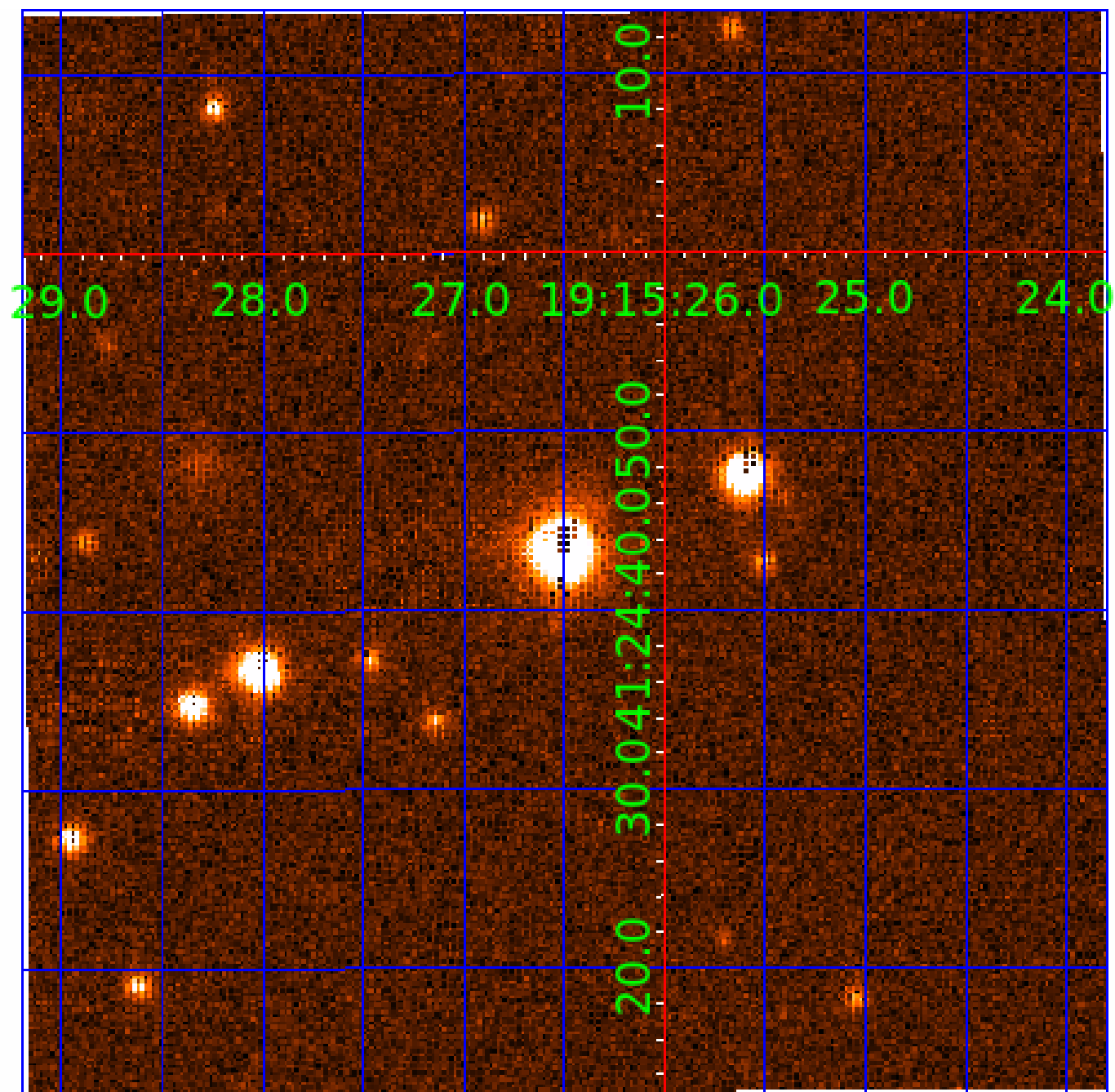


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006114387

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})
006114387-01	OBS	No	1.406319	132.219231	43.2	2.589	10.9	12.0	2.22	7483	1.78	15950.88
006114387-02	OBS	No	0.645776	131.601330	23.4	2.851	9.4	8.8	2.22	7483	1.24	45025.06
006114387-03	OBS	No	117.475643	179.644103	381.3	8.330	7.7	6.9	2.22	7483	5.06	43.68
006114387-04	OBS	No	130.533860	233.582294	394.8	3.768	7.5	7.4	2.22	7483	5.62	37.95
006114387-05	OBS	No	50.447208	171.795296	273.0	3.006	7.8	7.8	2.22	7483	4.22	134.83
006114387-06	OBS	No	96.582616	225.163820	430.2	6.402	7.8	8.1	2.22	7483	5.85	56.72

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006114387-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
006114387-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
006114387-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
006114387-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—HALO_GHOST
006114387-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
006114387-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

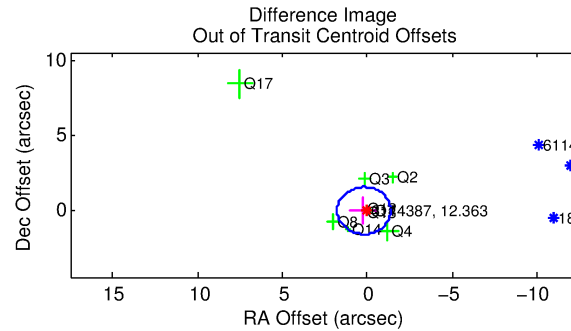
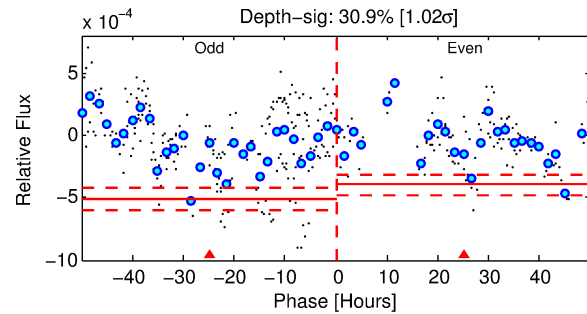
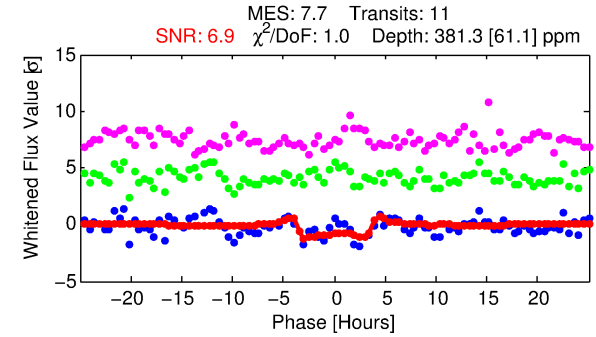
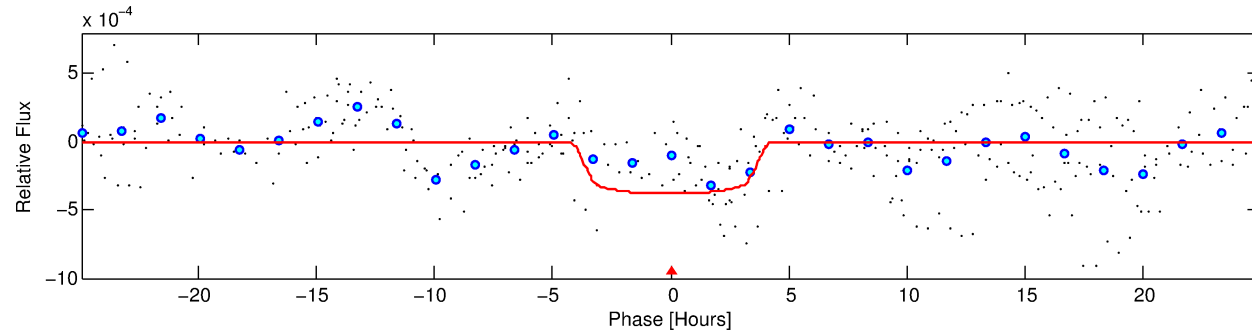
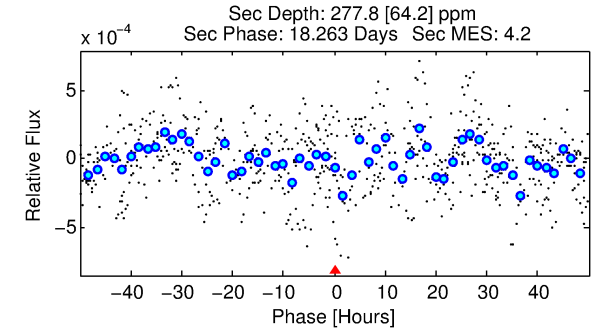
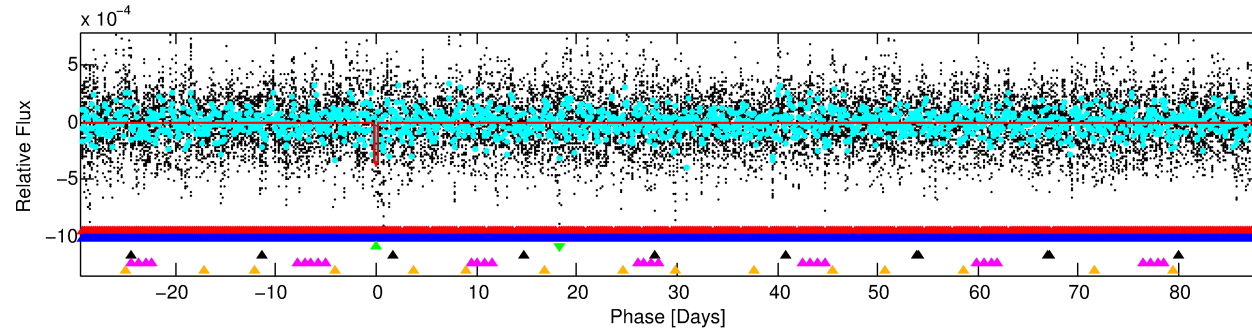
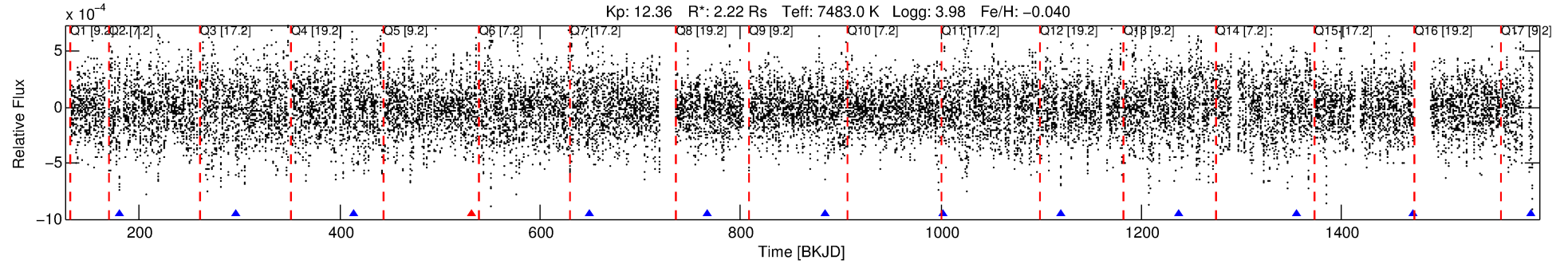
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006114387-03

No Significant Match Found

DV One-Page Summary

KIC: 6114387 Candidate: 3 of 6 Period: 117.476 d



DV Fit Results:

Period = 117.47564 [0.00147] d
Epoch = 179.6441 [0.0104] BKJD
Rp/R* = 0.0209 [0.0022]
a/R* = 49.45 [15.87]
b = 0.91 [0.06]
Seff = 43.68 [17.26]
Teq = 656 [65] K
Rp = 5.06 [1.54] Re
a = 0.5632 [0.1370] AU
Ag = 1892.87 [897.93] [2.11σ]
Teffp = 6685 [589] K [10.18σ]

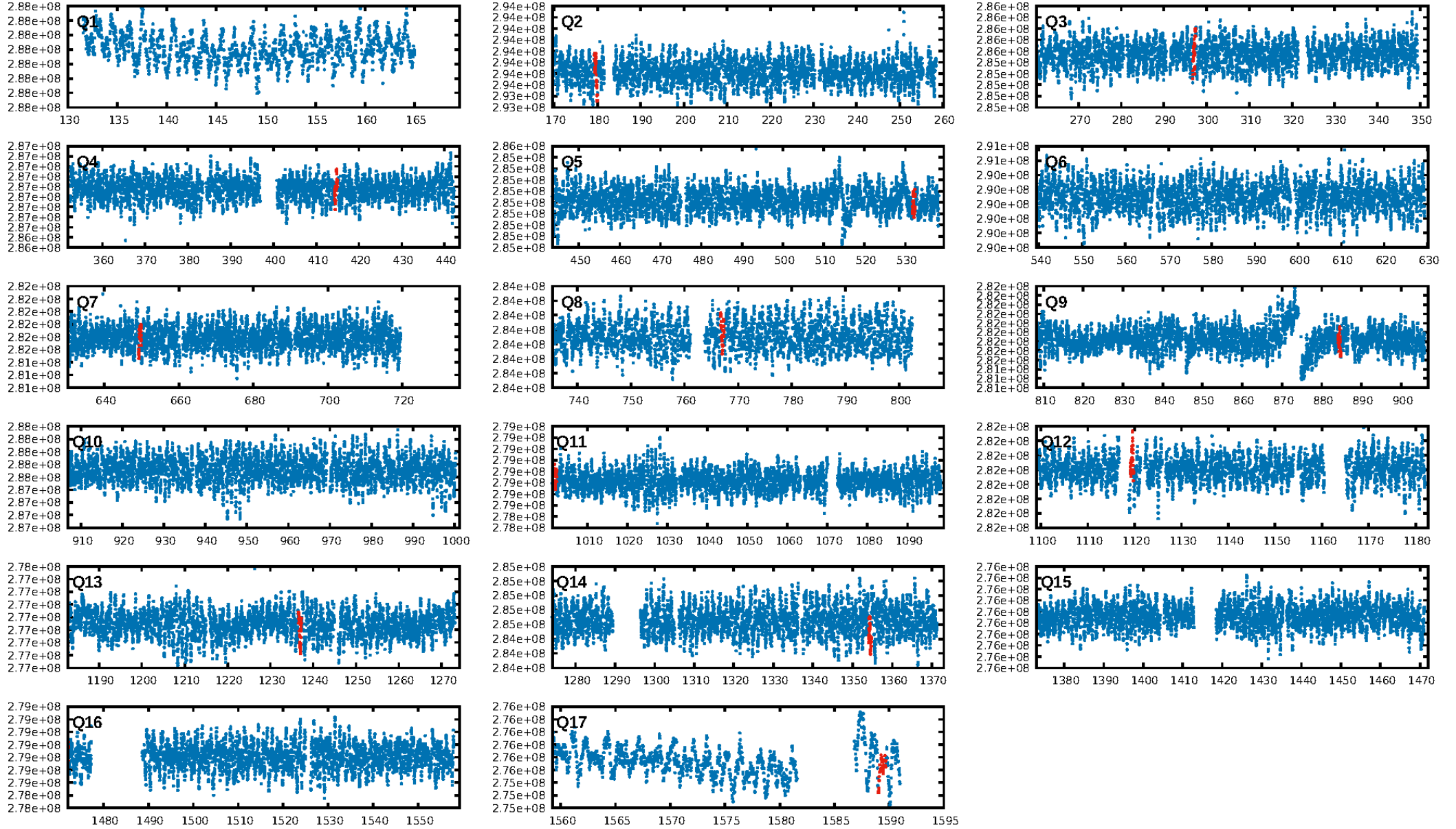
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [47.73σ]
LongPeriod-sig: 100.0% [34.28σ]
ModelChiSquare2-sig: 96.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 8.03e-09
RollingBand-fgt: 0.90 [9/10]
GhostDiagnostic-chr: 7.326
Centroid-sig: 59.7%
Centroid-so: 0.045 arcsec [0.12σ]
OotOffset-rm: 0.213 arcsec [0.41σ]
OotOffset-st: 2/2/3/2 [9]
KicOffset-rm: 0.415 arcsec [0.43σ]
KicOffset-st: 2/2/3/2 [9]
DiffImageQuality-fgm: 0.44 [4/9]
DiffImageOverlap-fno: 0.00 [0/11]

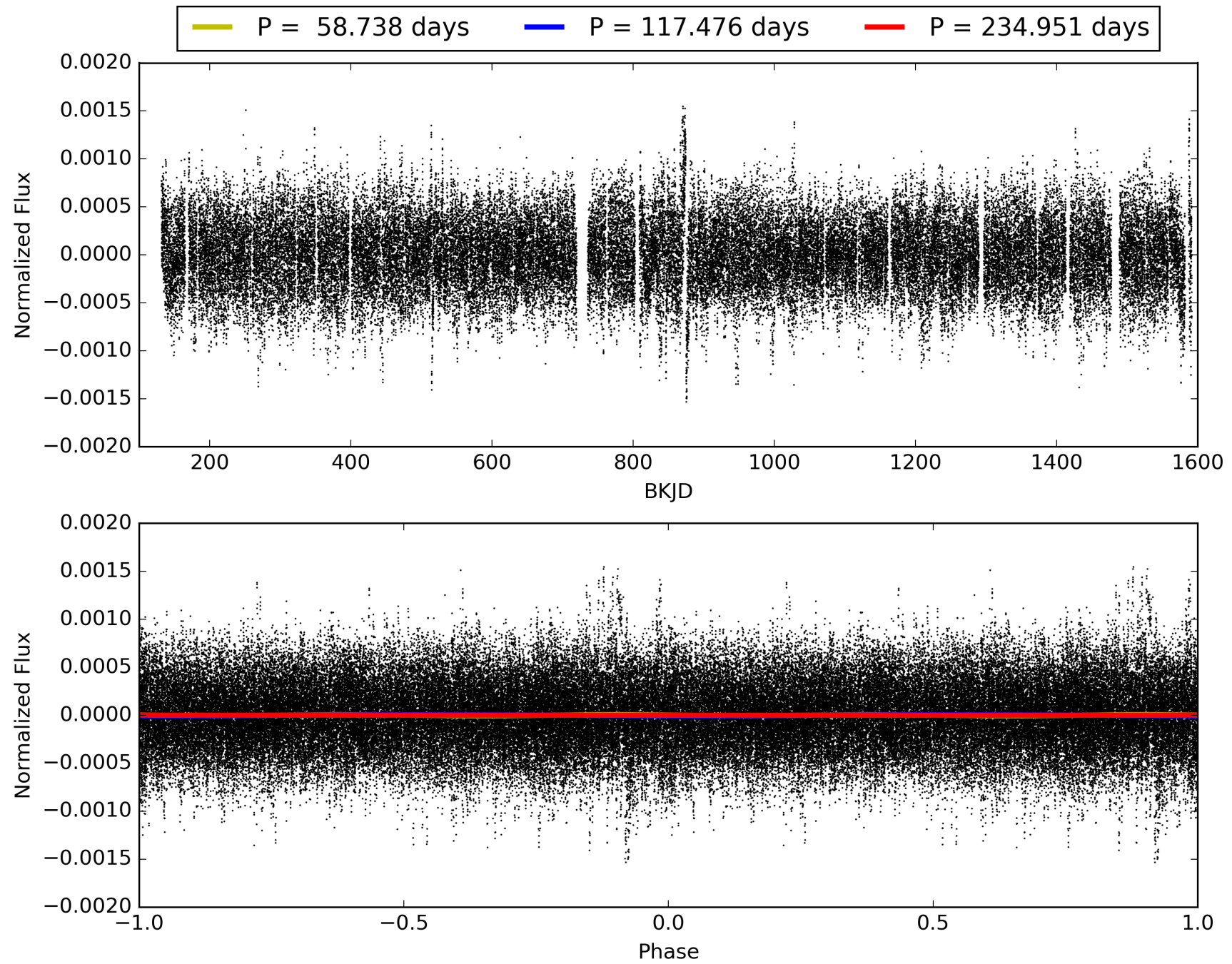
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:19:25 Z

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

TCE 006114387-03, PDC Light Curves

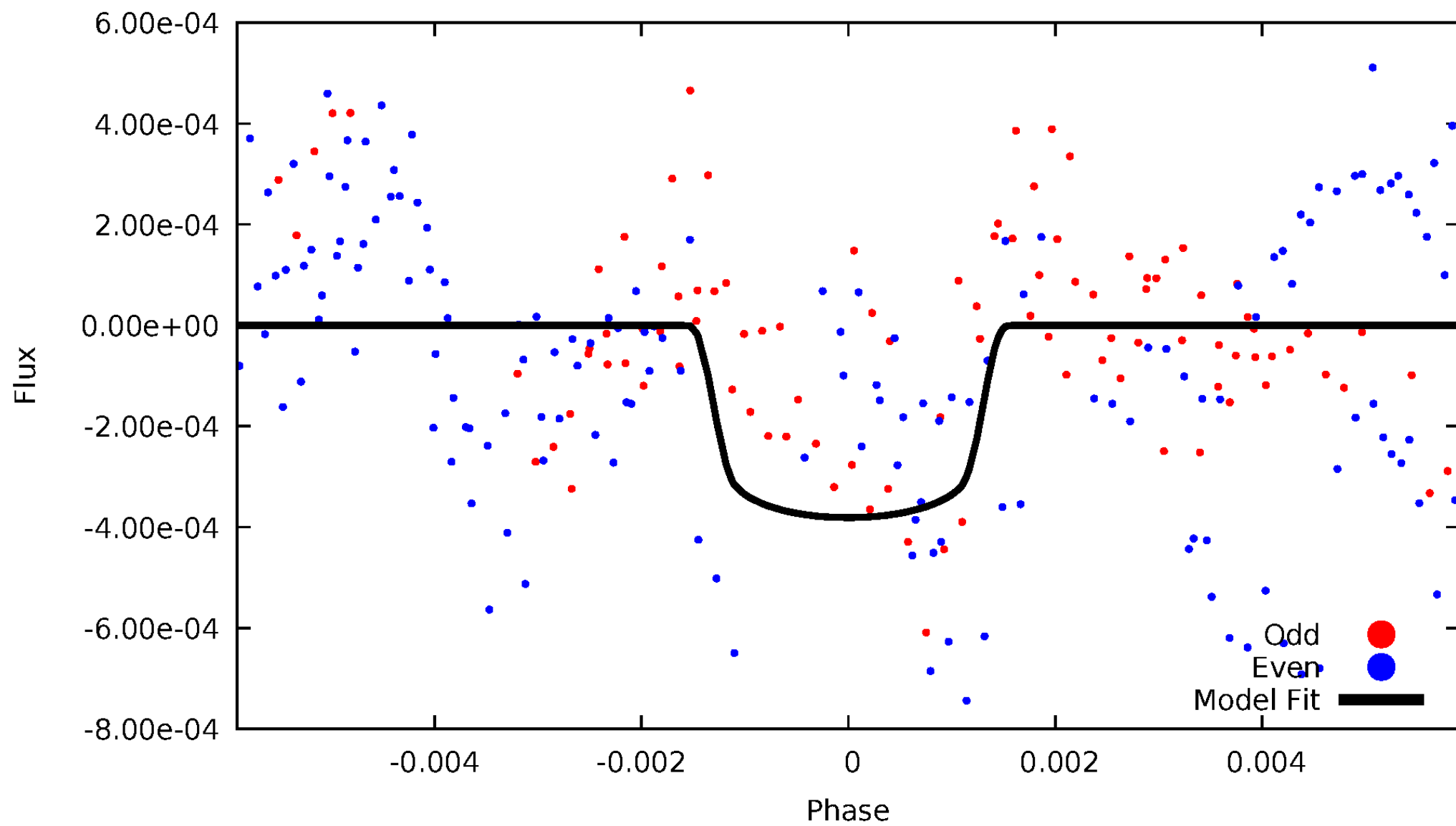


TCE 006114387-03



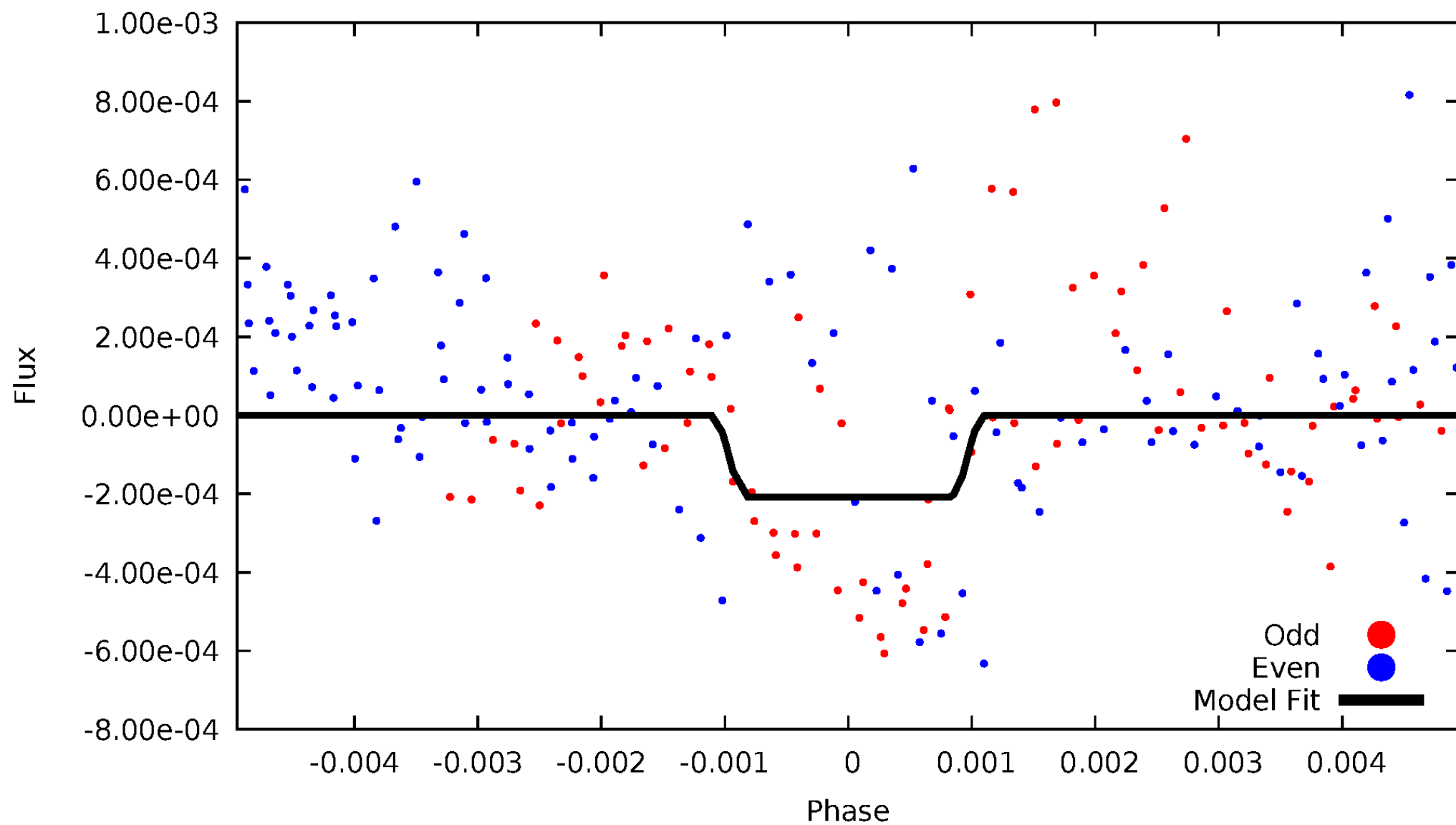
DV Odd/Even

TCE 006114387-03



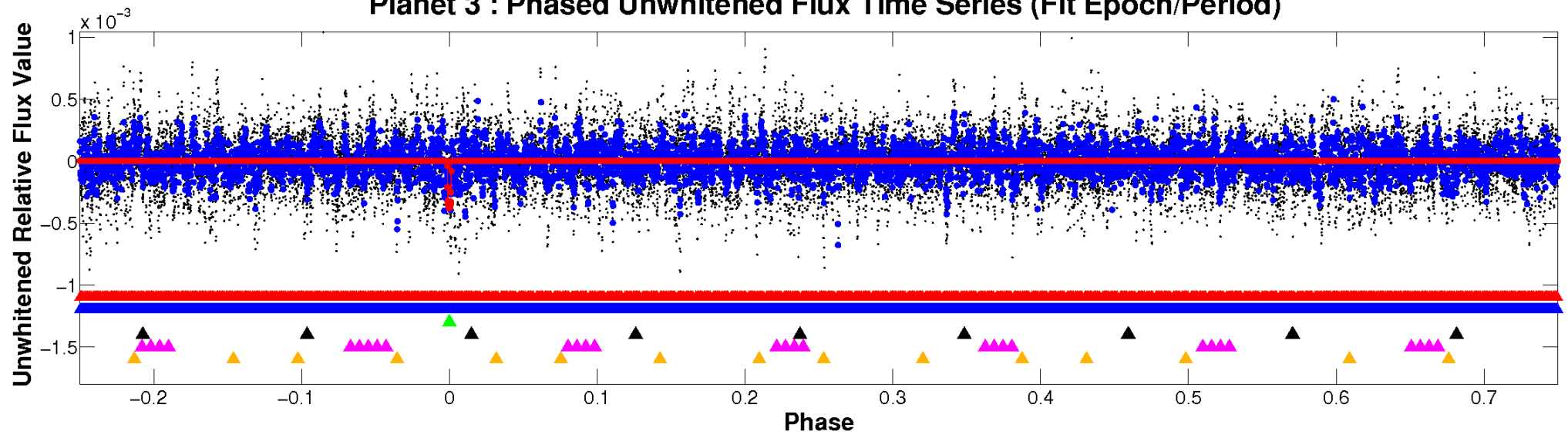
ALT Odd/Even

TCE 006114387-03

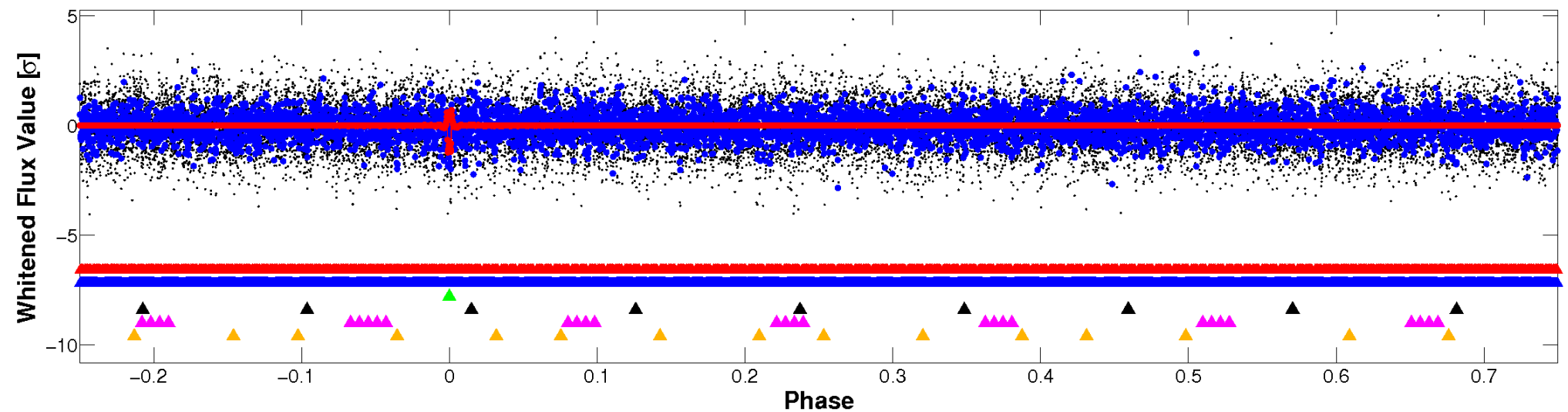


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

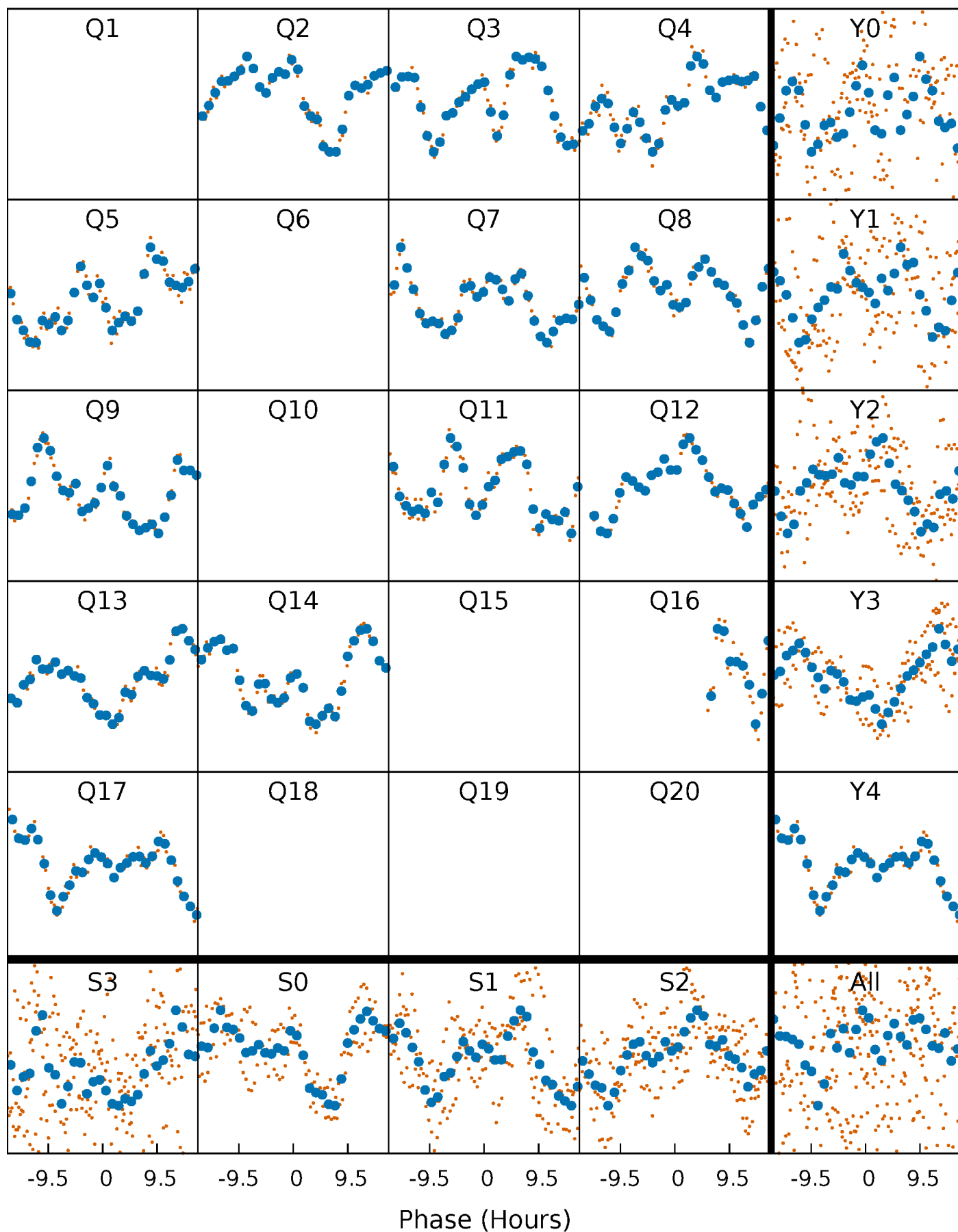


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



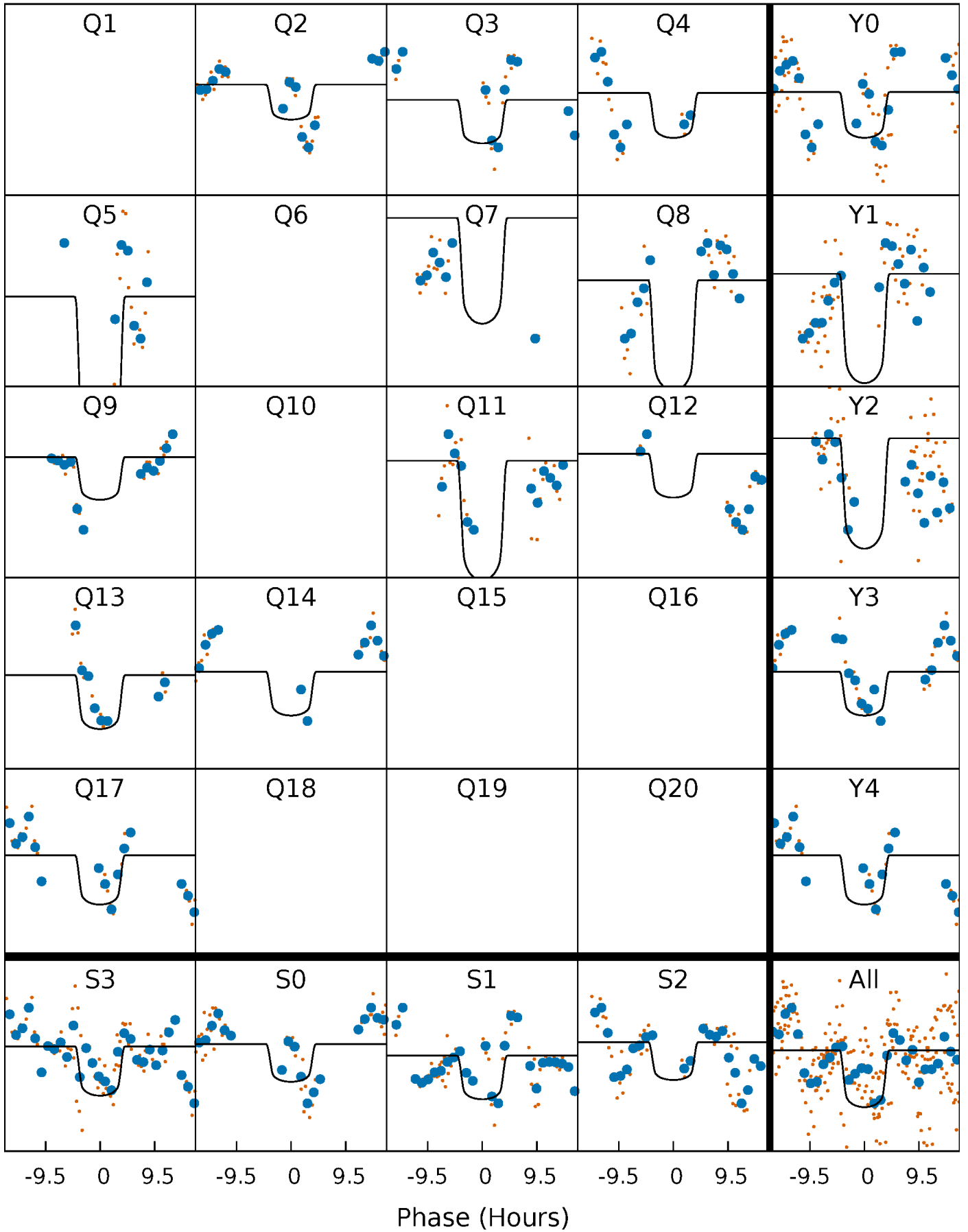
PDC Quarter-Phased Transit Curves

TCE 006114387-03 $P=117.475644$ Days $T_0=179.644103$ (BKJD)



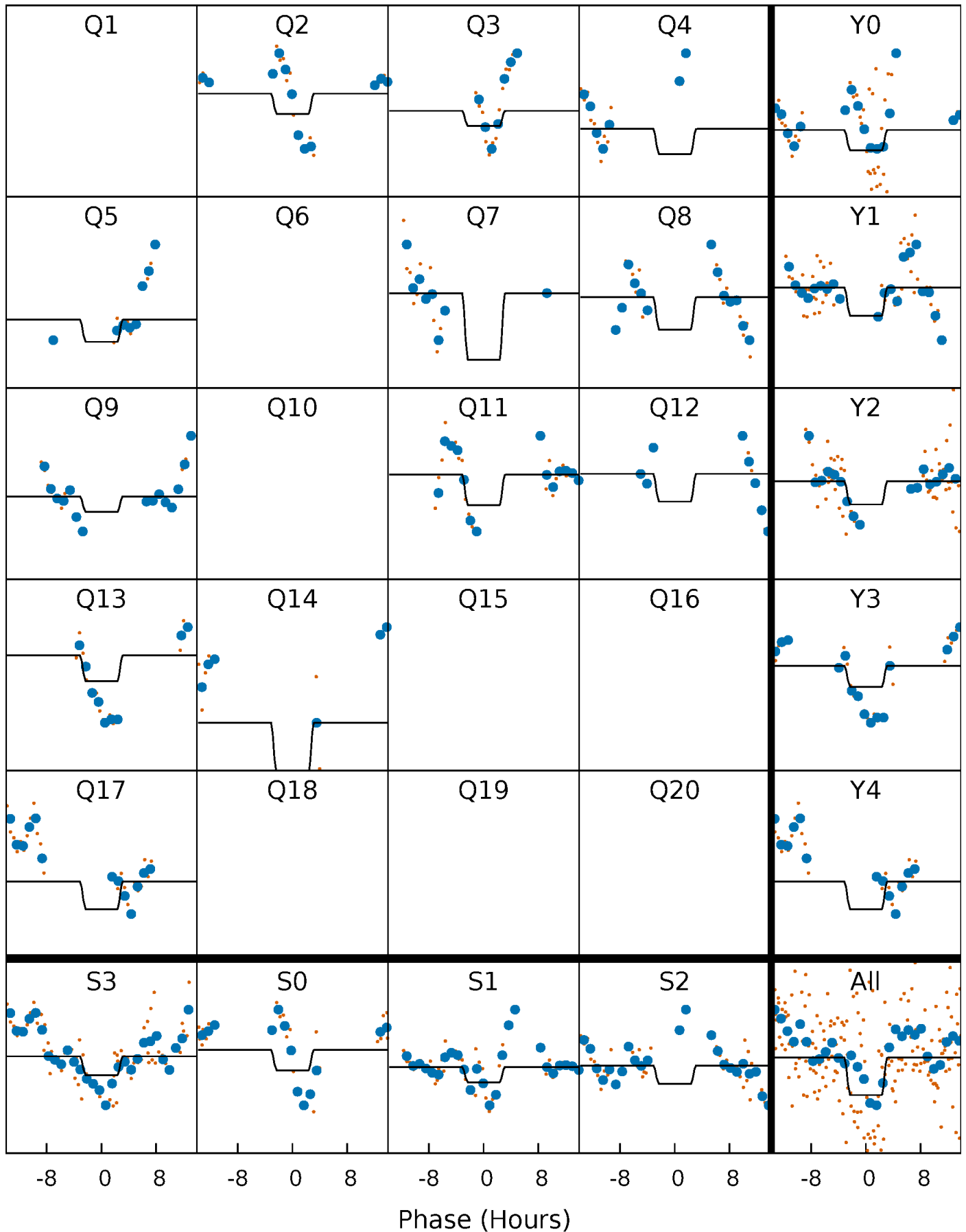
DV Quarter-Phased Transit Curves

TCE 006114387-03 P=117.475644 Days $T_0=179.644103$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

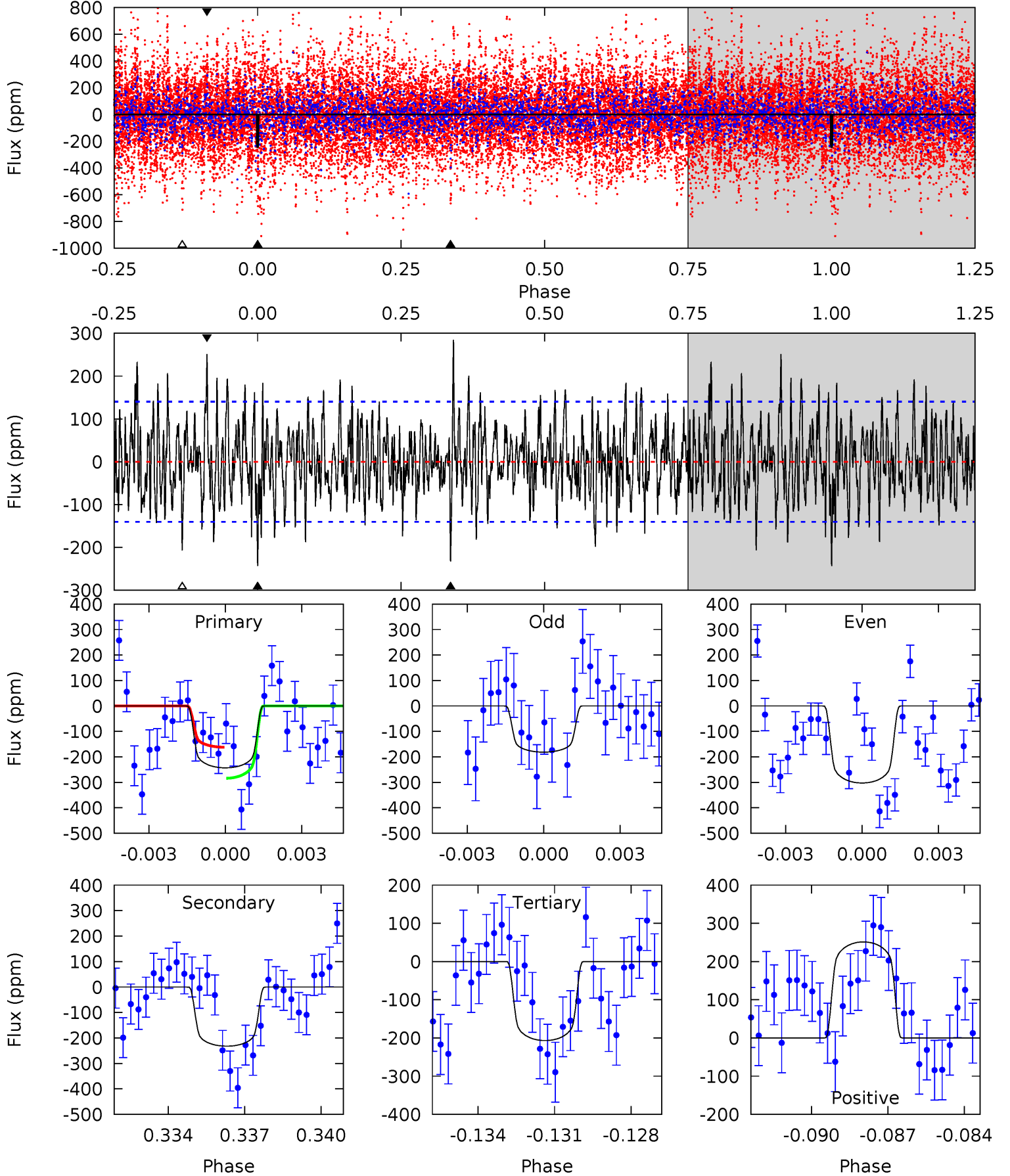
TCE 006114387-03 P=117.463012 Days $T_0=179.710614$ (BKJD)



DV Model-Shift Uniqueness Test

006114387-03, P = 117.475644 Days, E = 62.168459 Days

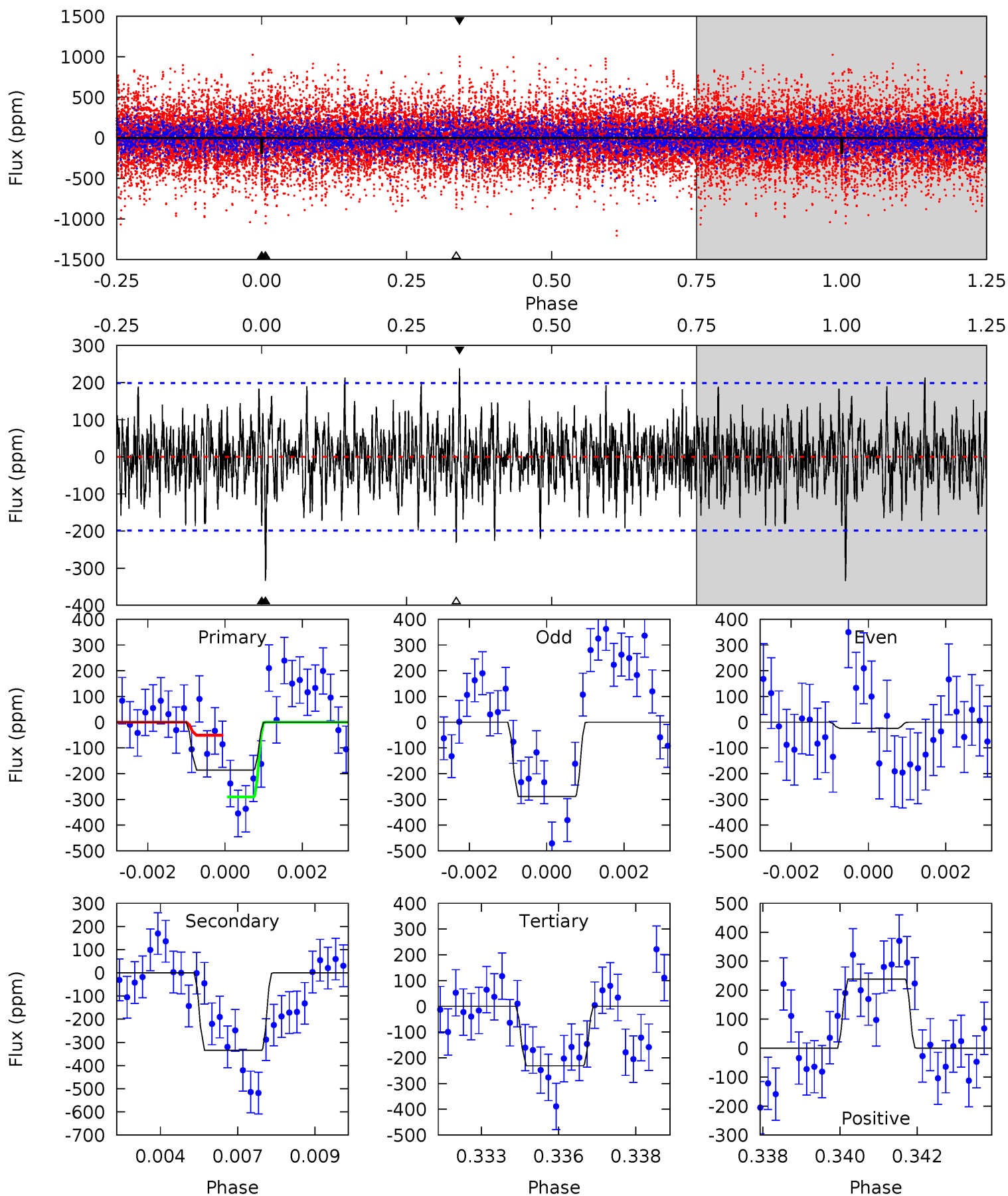
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.09	8.68	7.73	9.40	5.25	2.96	2.69	1.36	-0.31	0.95	-0.72	2.27	1.14	0.54	2.21



Alt Model-Shift Uniqueness Test

006114387-03, P = 117.463012 Days, E = 62.247602 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.96	8.94	6.17	6.37	5.31	3.06	1.77	-1.21	-1.41	2.76	2.56	3.49	0.81	0.42	3.21



Stellar Parameters For KIC 006114387

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7483^{+207}_{-311}	$3.982^{+0.198}_{-0.162}$	$-0.040^{+0.200}_{-0.300}$	$2.221^{+0.518}_{-0.633}$	$1.724^{+0.201}_{-0.277}$	$0.222^{+0.281}_{-0.094}$
	+3%/-4%	+5%/-4%	+500%/-750%	+23%/-29%	+12%/-16%	+127%/-42%
Source	KIC0	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 006114387-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-232 ± 27	$5.03^{+0.93}_{-0.84}$	909^{+70}_{-60}	6283^{+459}_{-422}	1588^{+700}_{-459}
Alt.	-334 ± 37	$3.53^{+0.70}_{-0.73}$	913^{+64}_{-70}	8572^{+1075}_{-851}	4714^{+2634}_{-1482}

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

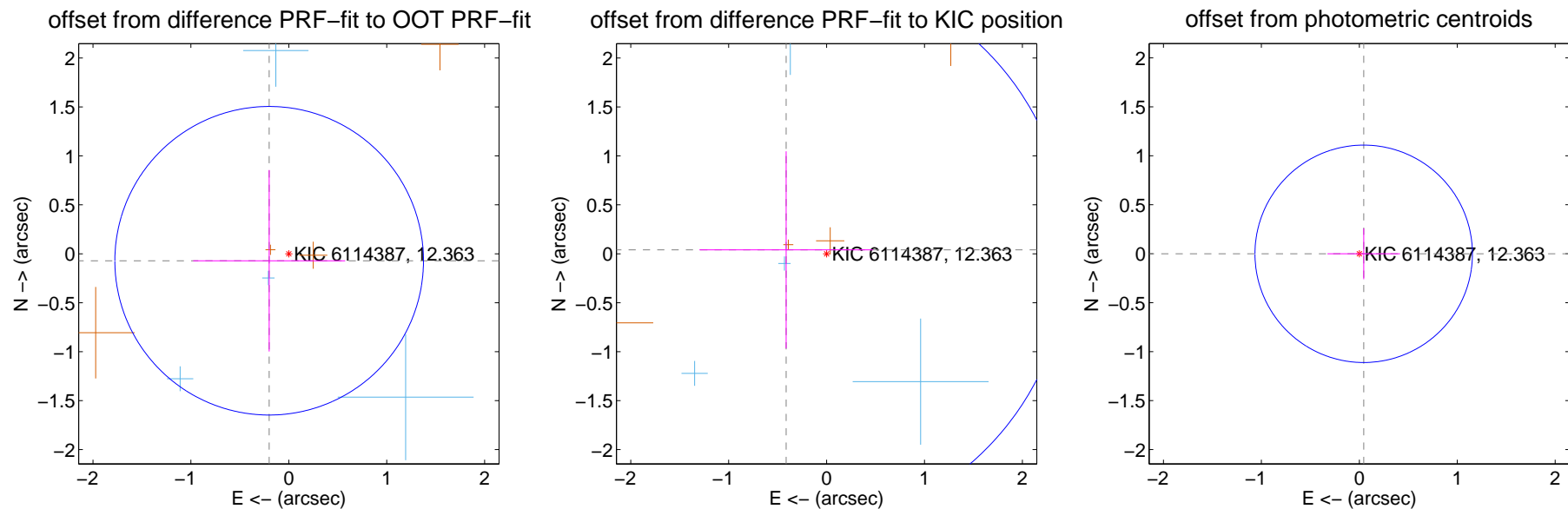
DV Centroid Data

Supplemental centroid analysis for 006114387-03. Kepler magnitude: 12.36. Transit SNR 6.93

There are 4 quarters with good PRF difference image offsets

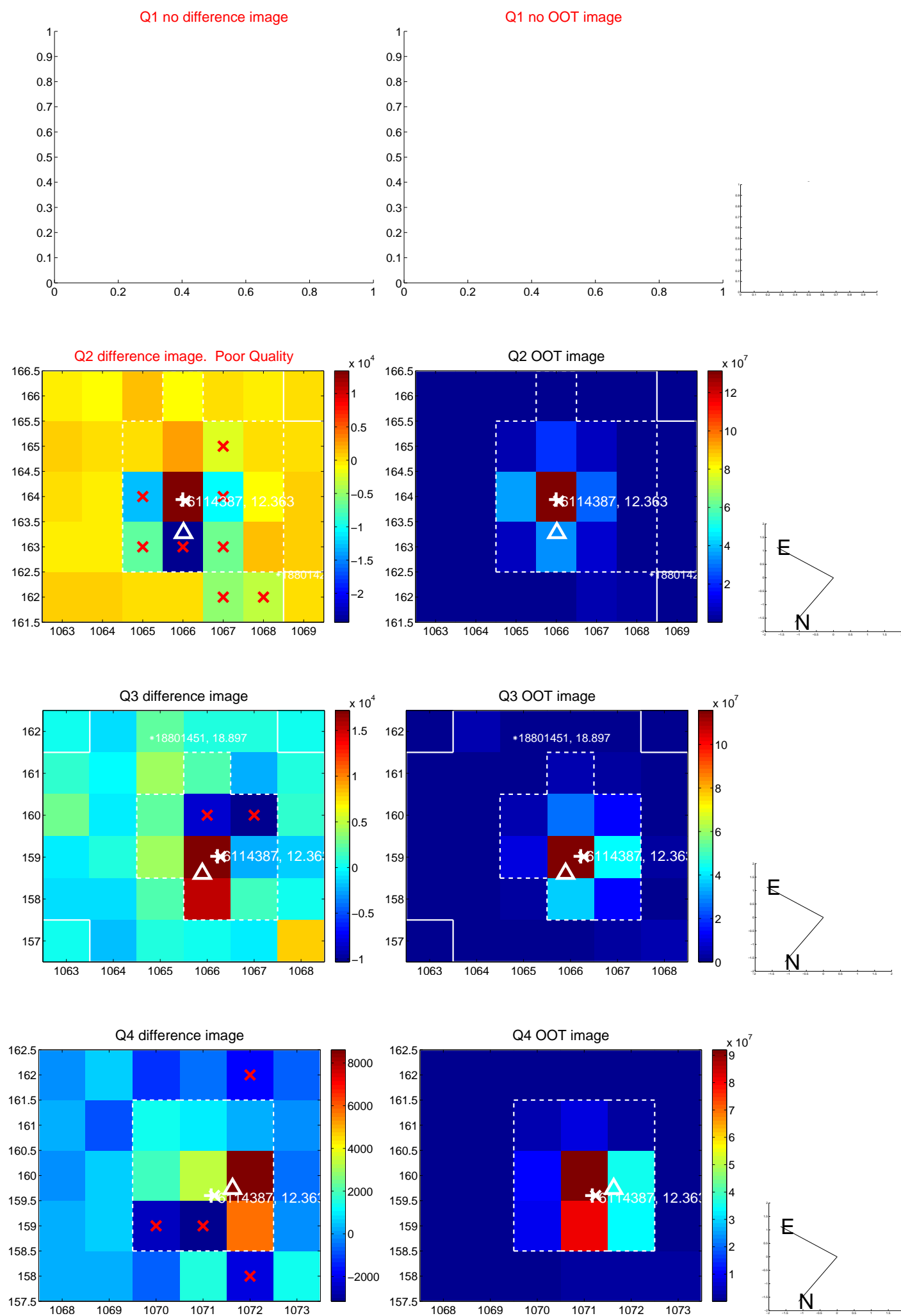
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.213 ± 0.525	0.41	0.201 ± 0.776	-0.071 ± 0.927
PRF-fit source offset from KIC position	0.415 ± 0.961	0.43	0.413 ± 0.885	0.040 ± 1.006
photometric centroid source offset	0.04 ± 0.37	0.12	-0.04 ± 0.37	-0.00 ± 0.26

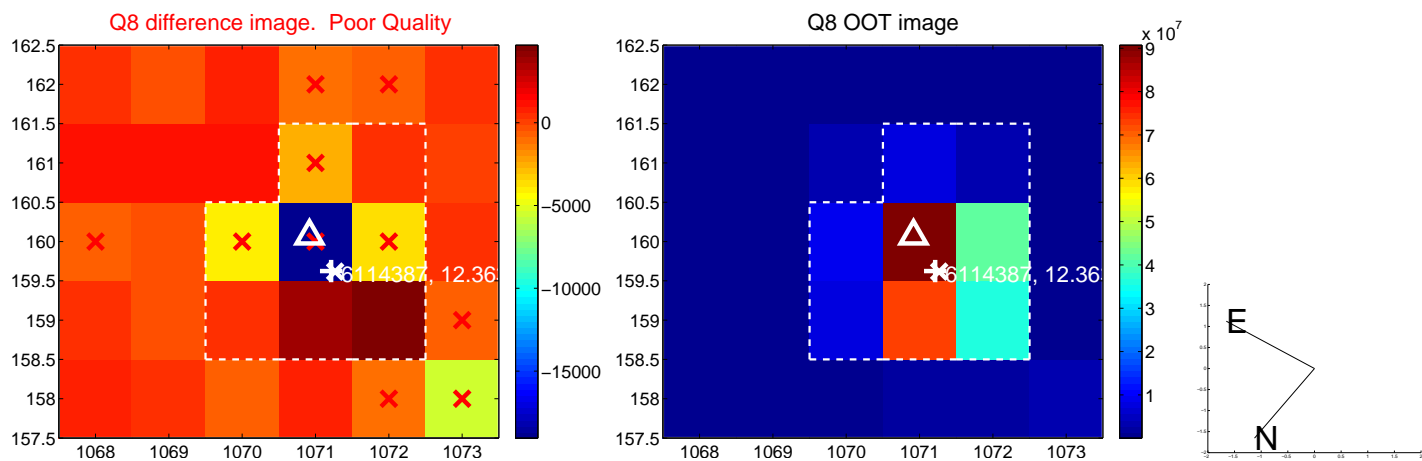
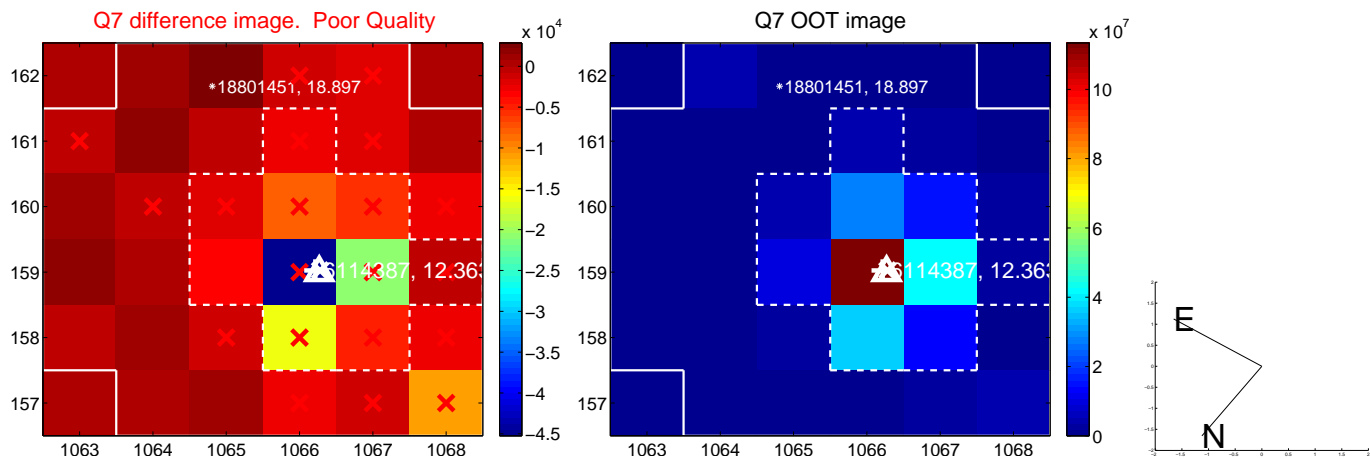
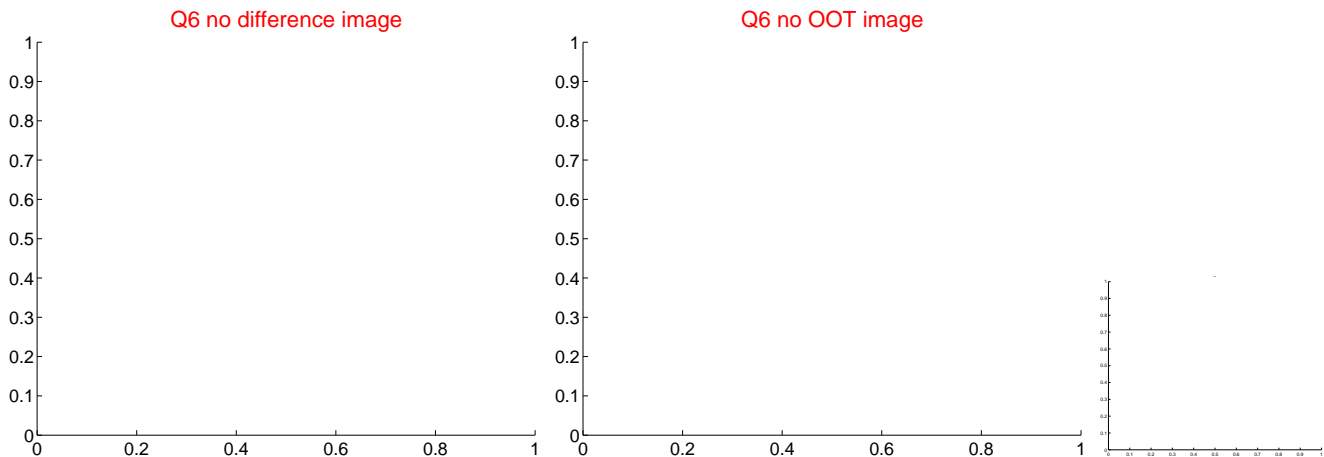
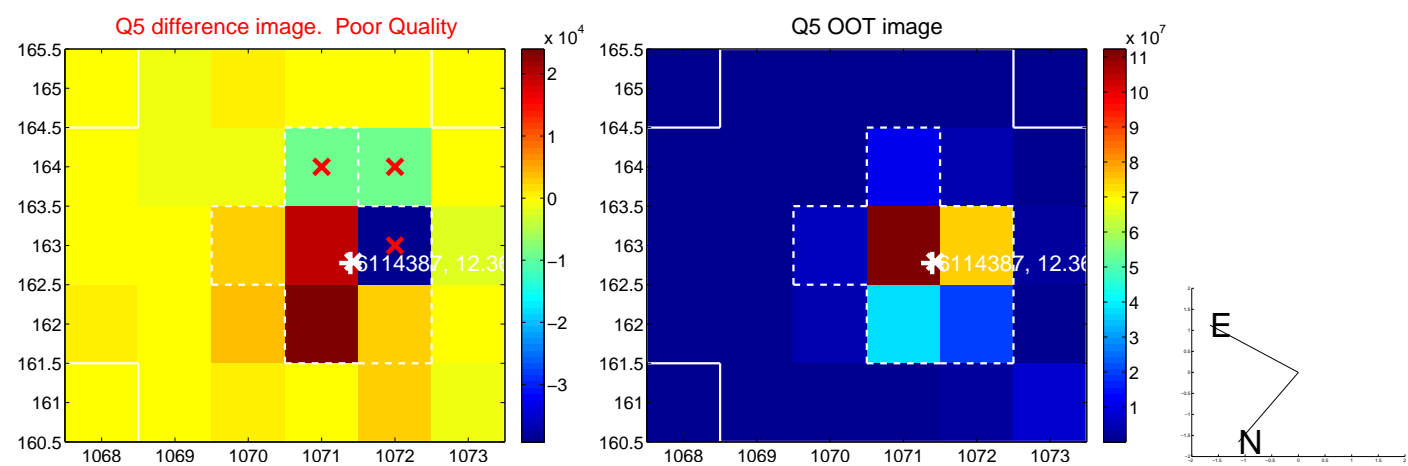


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

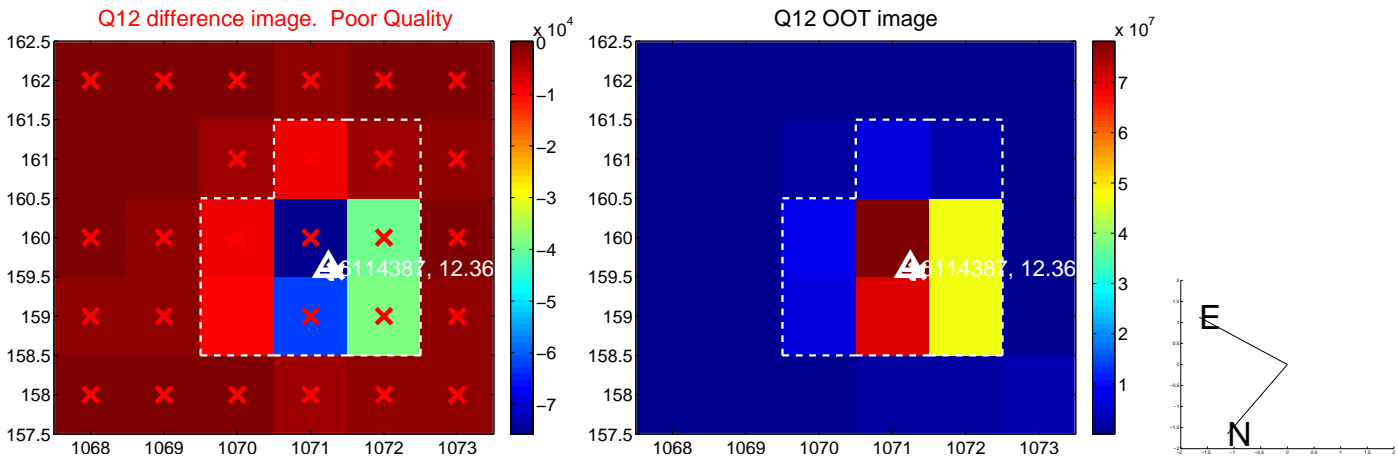
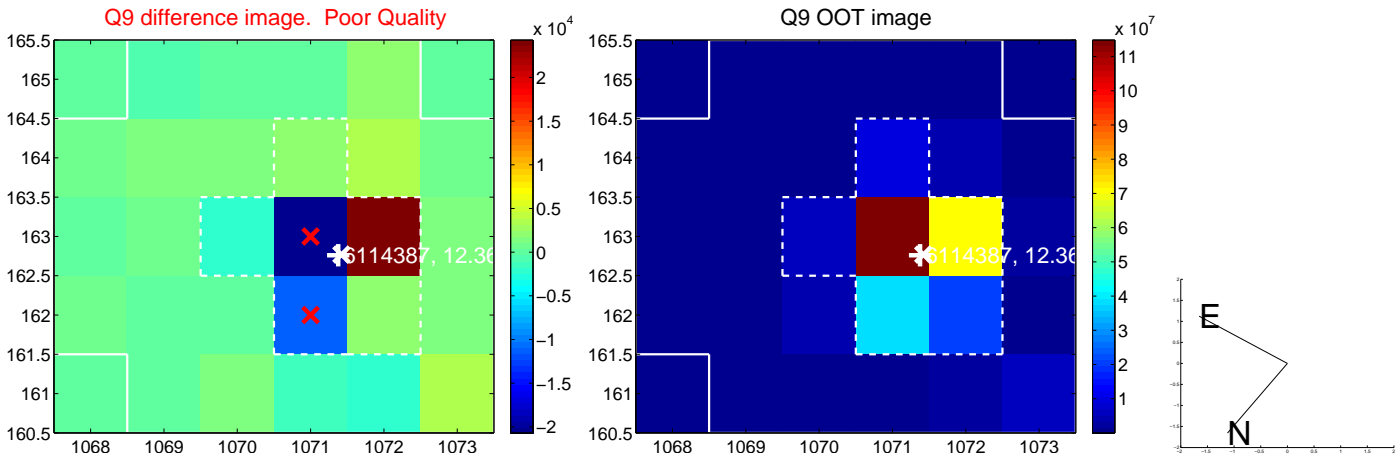
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



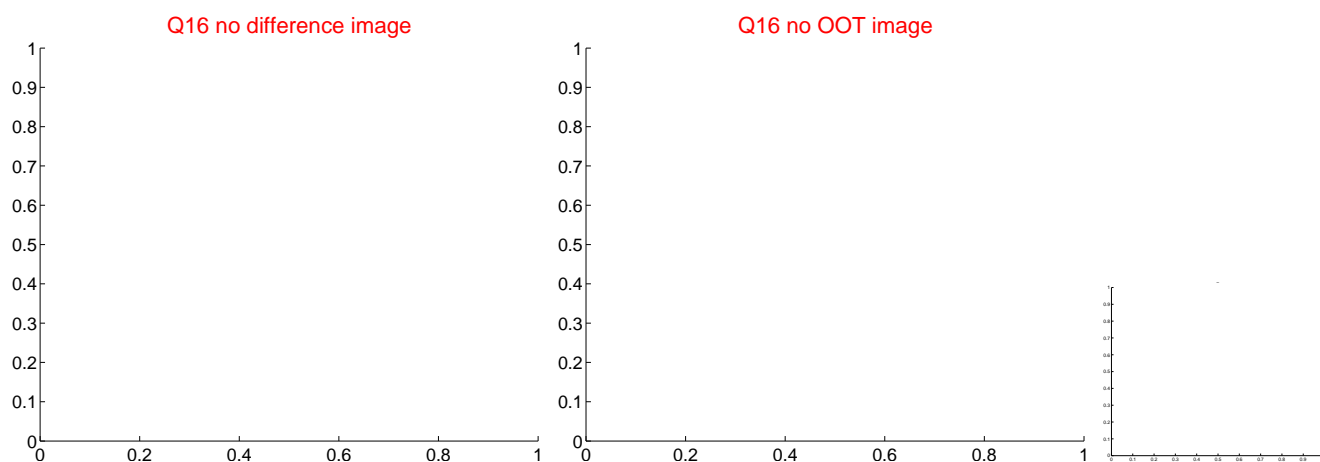
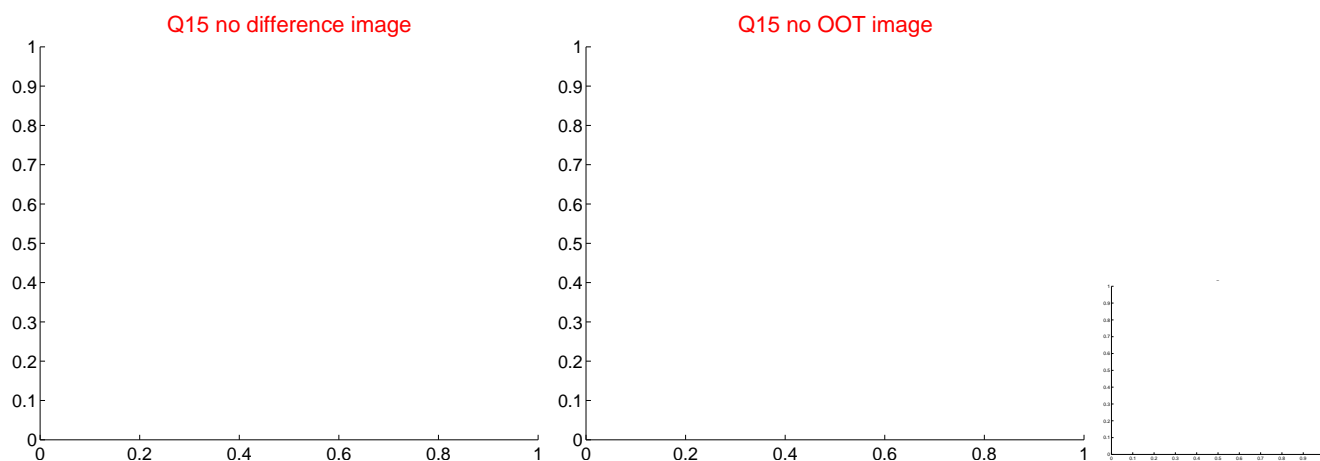
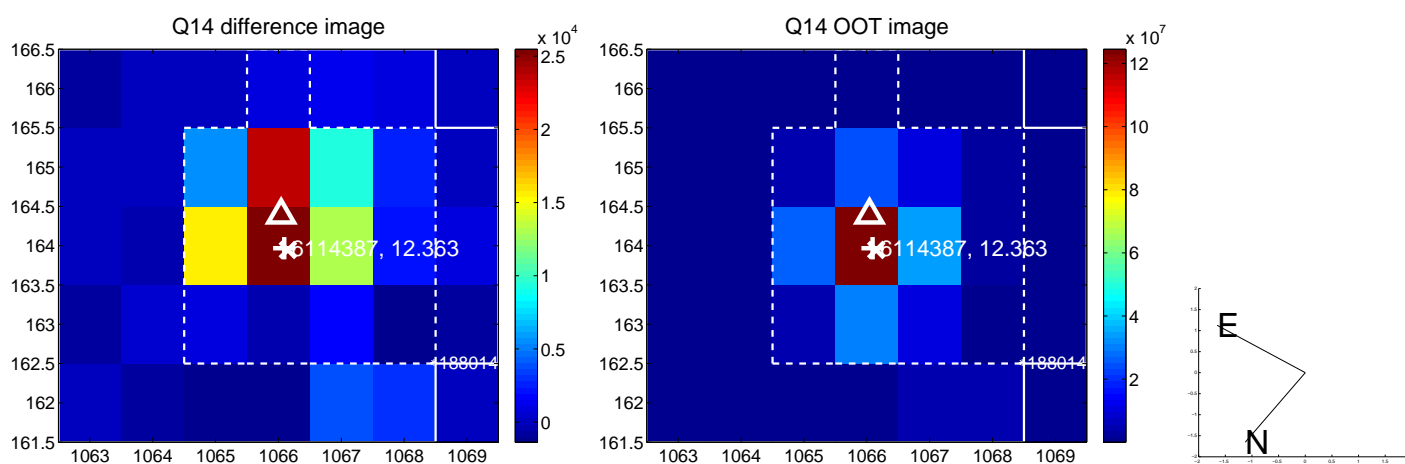
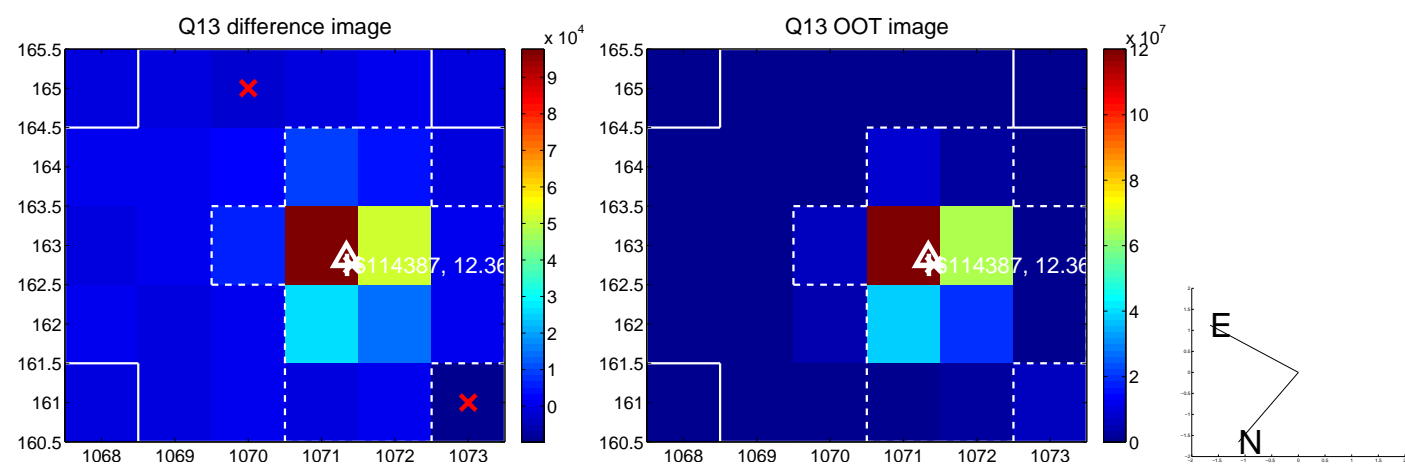
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



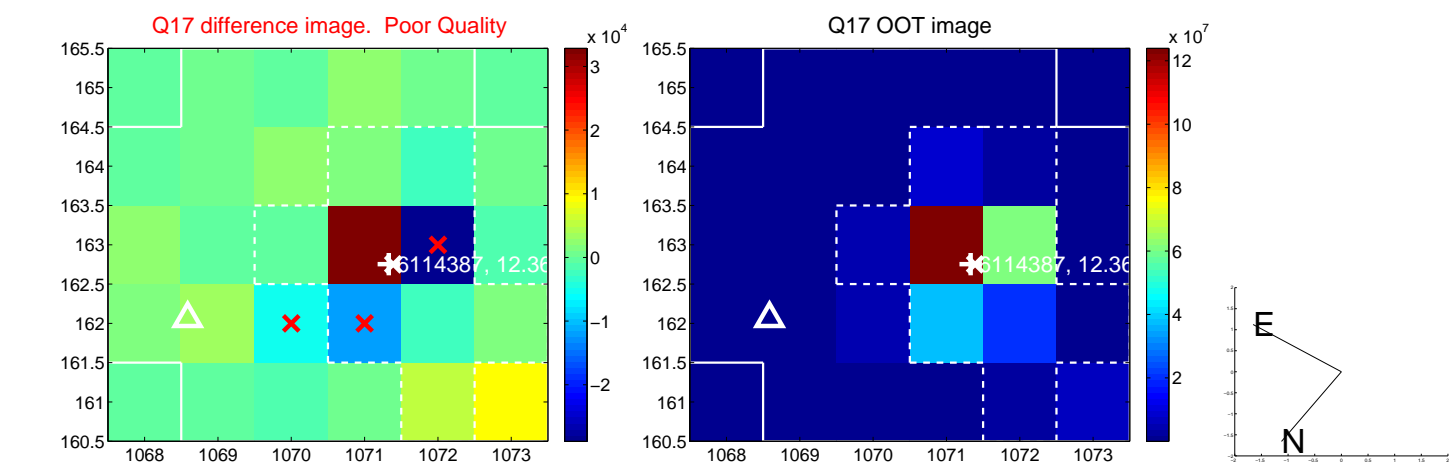
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



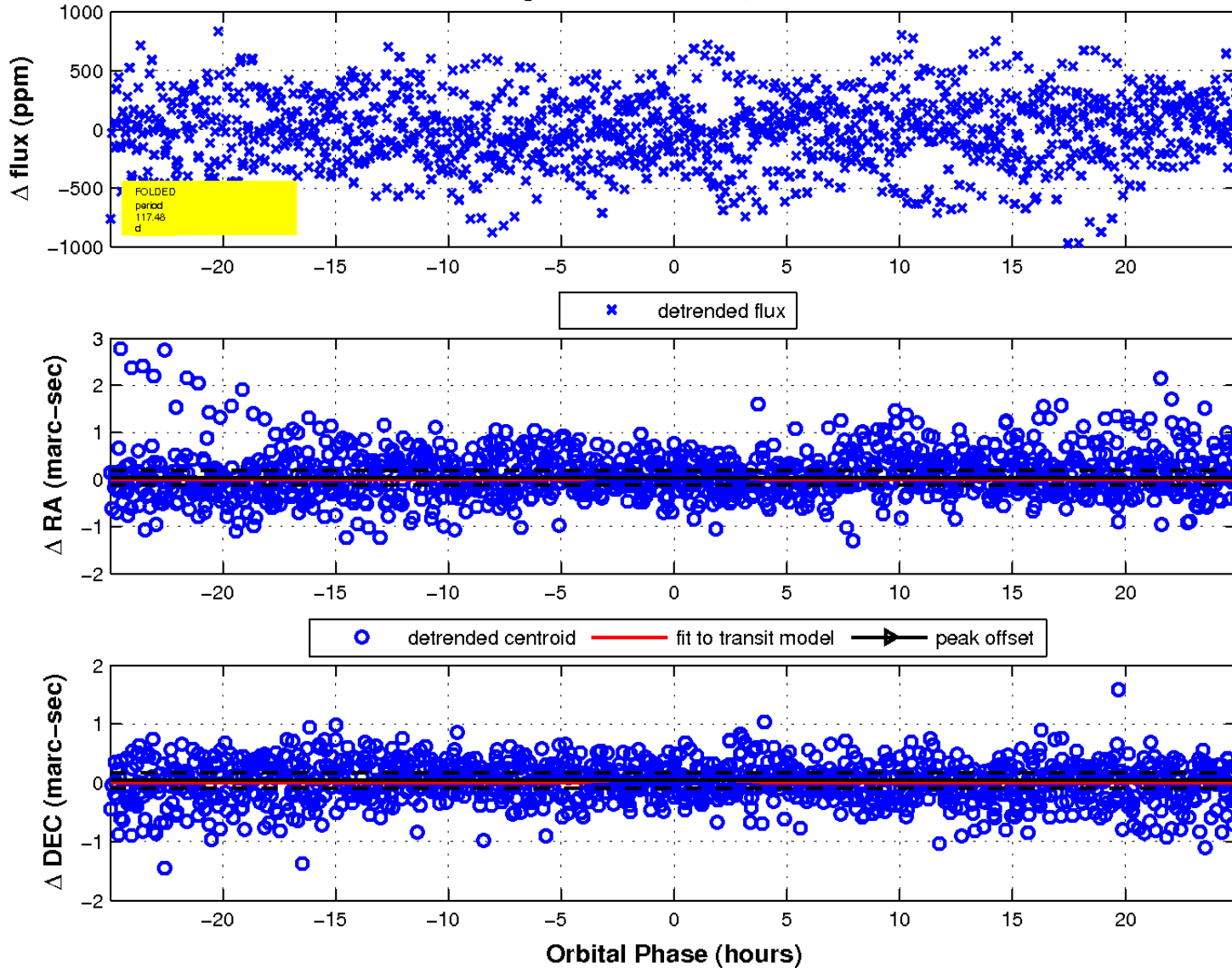
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

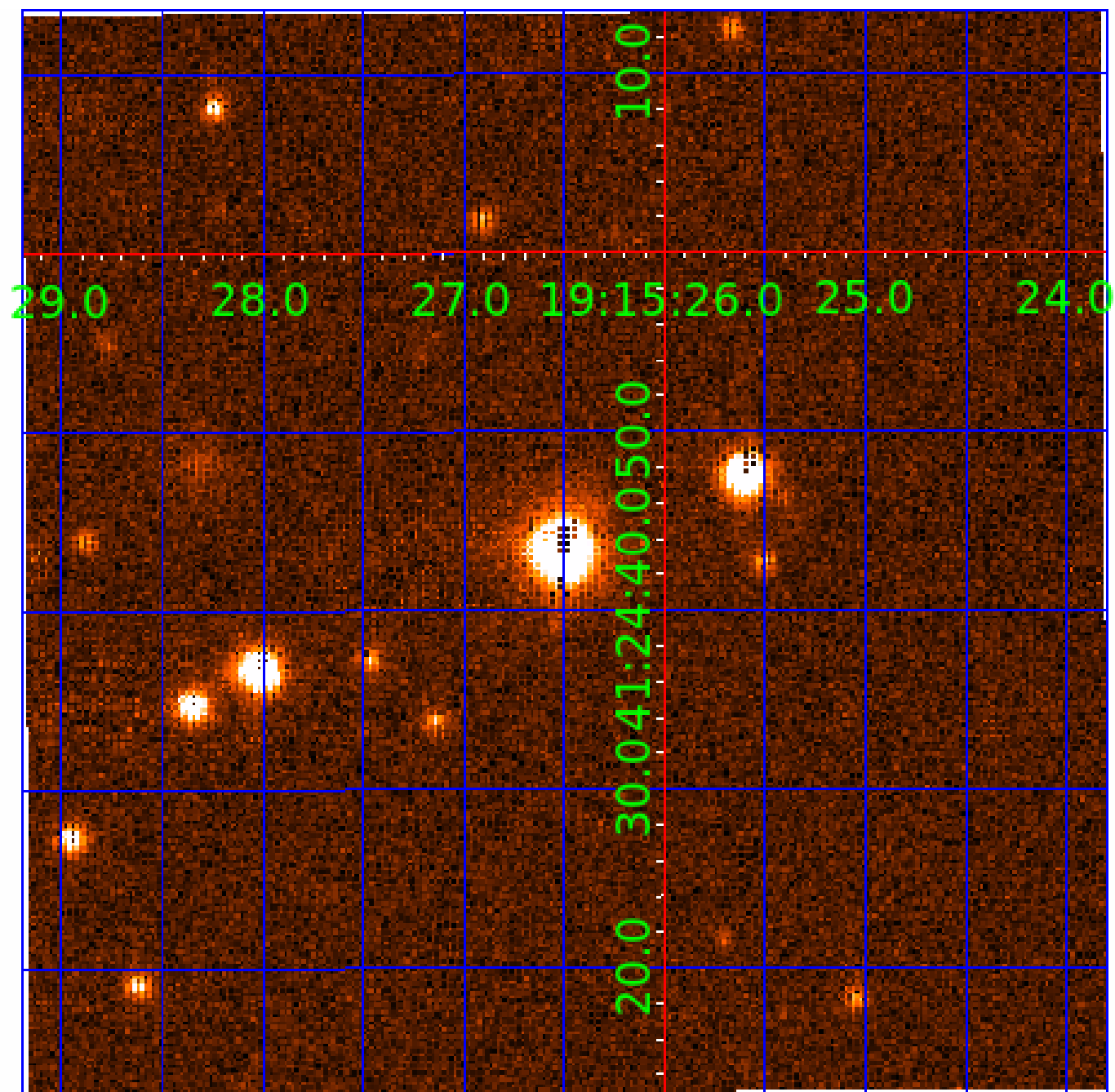


fluxWeightedCentroids, Planet 3 of 6



UKIRT Image

Declination



KIC 006114387

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})
006114387-01	OBS	No	1.406319	132.219231	43.2	2.589	10.9	12.0	2.22	7483	1.78	15950.88
006114387-02	OBS	No	0.645776	131.601330	23.4	2.851	9.4	8.8	2.22	7483	1.24	45025.06
006114387-03	OBS	No	117.475643	179.644103	381.3	8.330	7.7	6.9	2.22	7483	5.06	43.68
006114387-04	OBS	No	130.533860	233.582294	394.8	3.768	7.5	7.4	2.22	7483	5.62	37.95
006114387-05	OBS	No	50.447208	171.795296	273.0	3.006	7.8	7.8	2.22	7483	4.22	134.83
006114387-06	OBS	No	96.582616	225.163820	430.2	6.402	7.8	8.1	2.22	7483	5.85	56.72

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006114387-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
006114387-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
006114387-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
006114387-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—HALO_GHOST
006114387-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
006114387-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

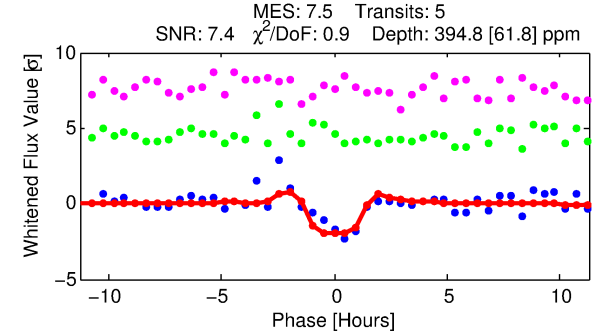
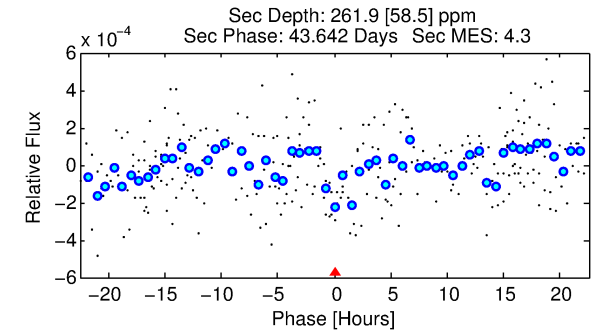
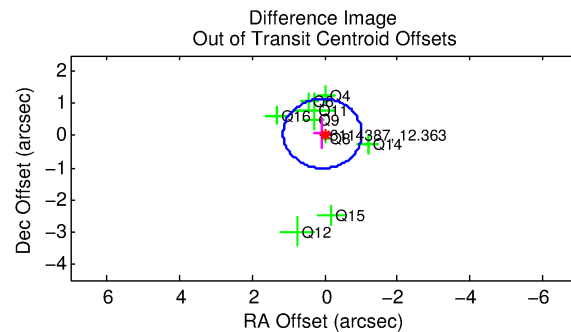
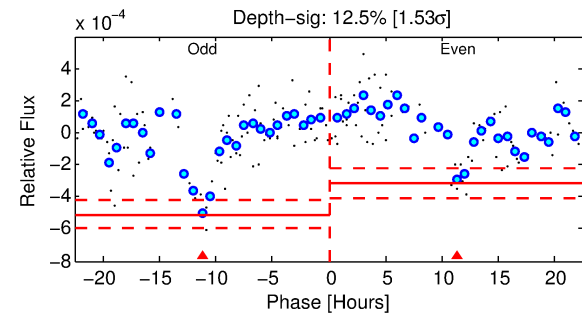
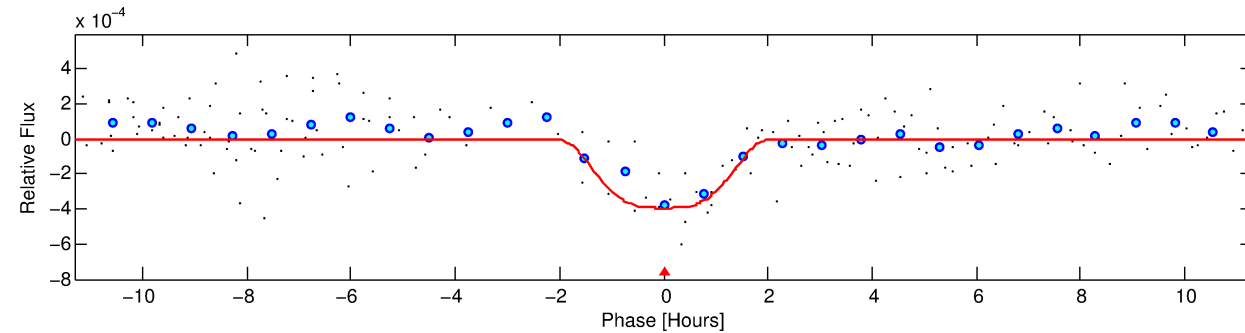
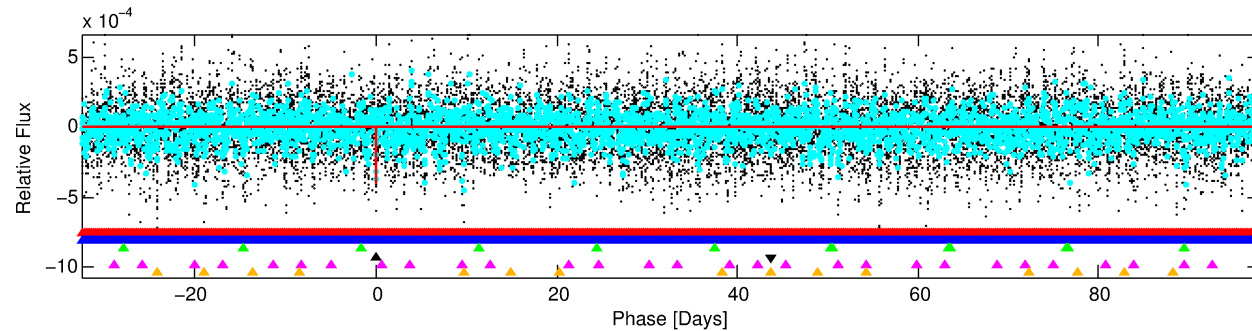
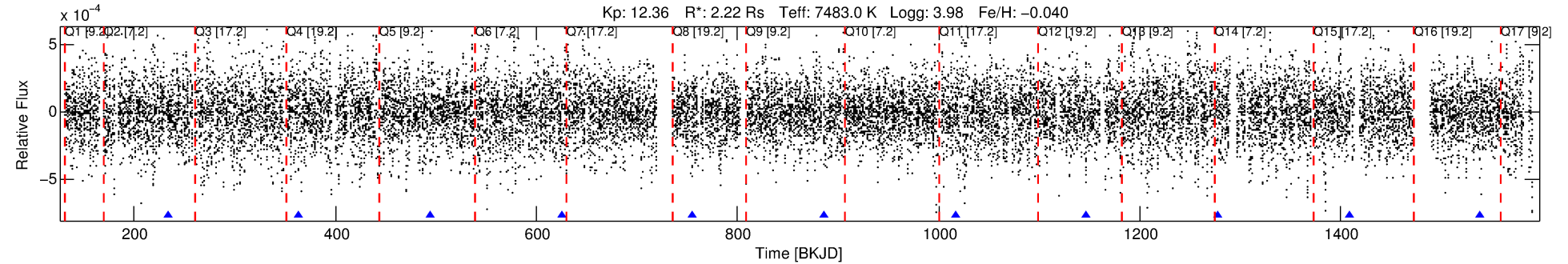
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006114387-04

No Significant Match Found

DV One-Page Summary

KIC: 6114387 Candidate: 4 of 6 Period: 130.534 d



DV Fit Results:

Period = 130.53386 [0.00228] d
Epoch = 233.5823 [0.0116] BKJD
Rp/R* = 0.0232 [0.0021]
a/R* = 84.05 [14.74]
b = 0.97 [0.01]
Seff = 37.95 [15.00]
Teq = 633 [63] K
Rp = 5.62 [1.68] Re
a = 0.6042 [0.1470] AU
Ag = 1667.68 [768.75] [2.17 σ]
Teffp = 6253 [522] K [10.68 σ]

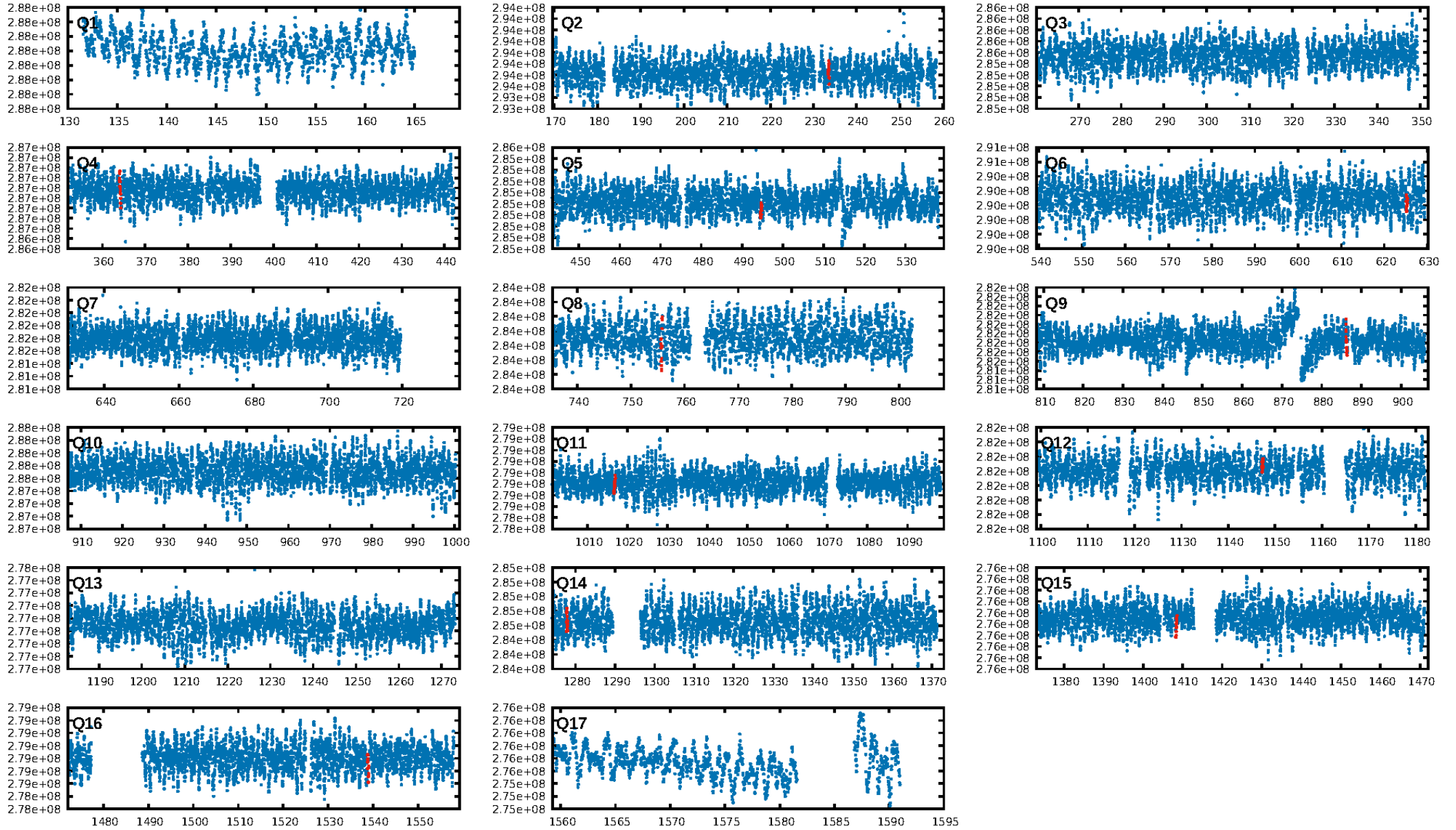
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [34.28 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 18.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.01e-08
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: -0.1258
Centroid-sig: 19.5%
Centroid-so: 0.437 arcsec [1.14 σ]
OotOffset-rm: 0.088 arcsec [0.24 σ]
OotOffset-st: 2/2/4/1 [9]
KicOffset-rm: 0.302 arcsec [0.99 σ]
KicOffset-st: 2/2/4/1 [9]
DiffImageQuality-fgm: 0.56 [5/9]
DiffImageOverlap-fno: 0.00 [0/11]

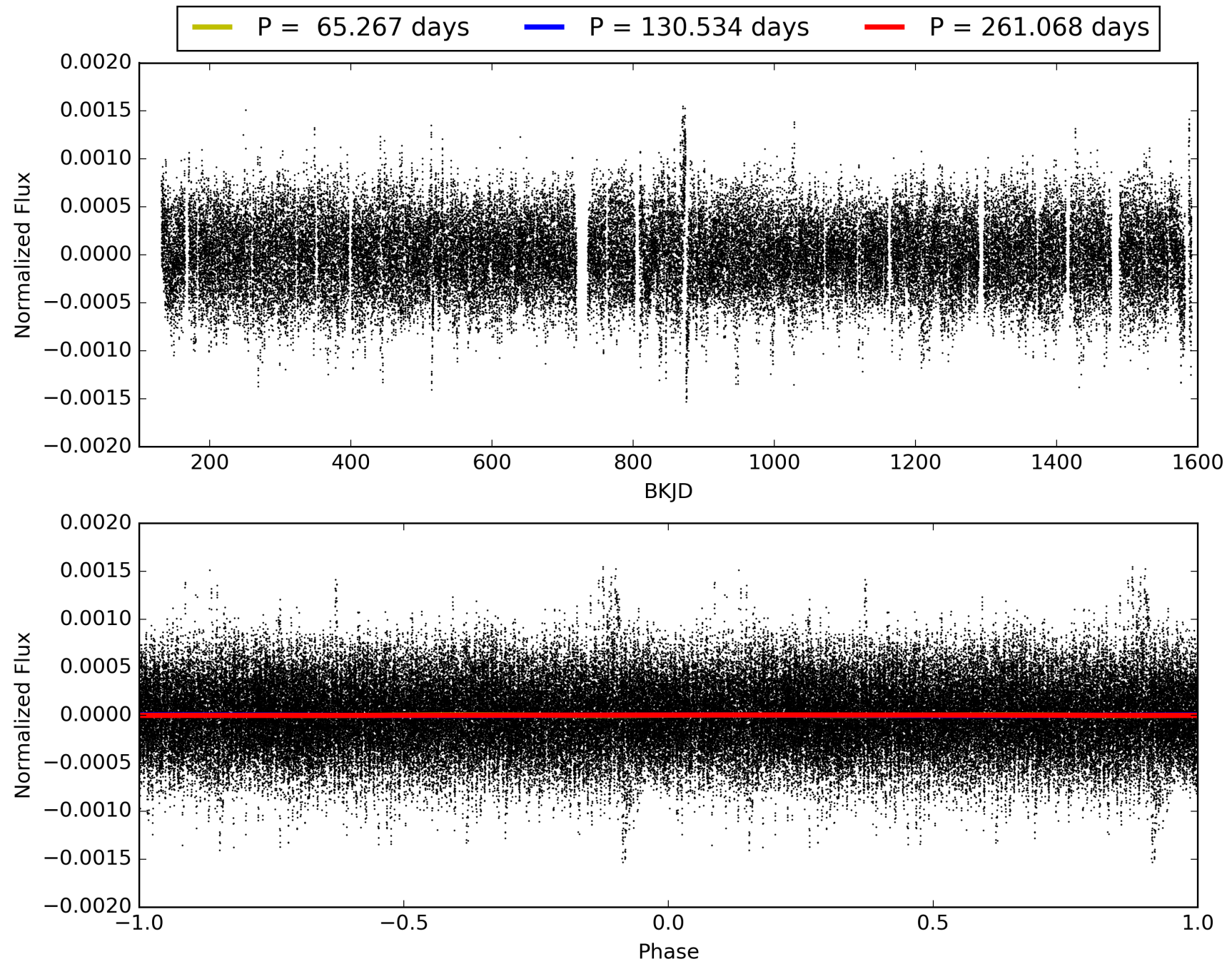
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:19:30 Z

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

TCE 006114387-04, PDC Light Curves

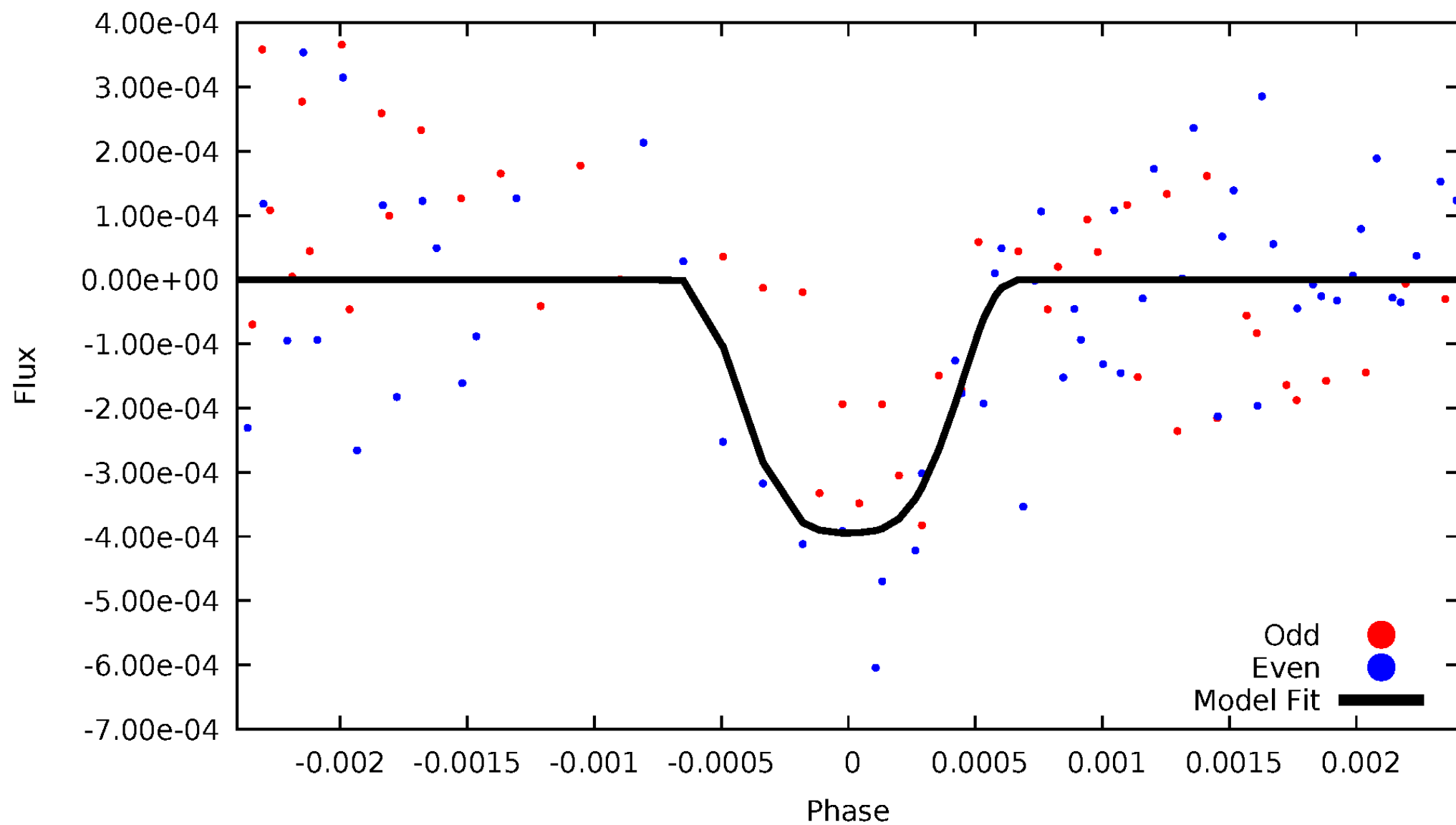


TCE 006114387-04



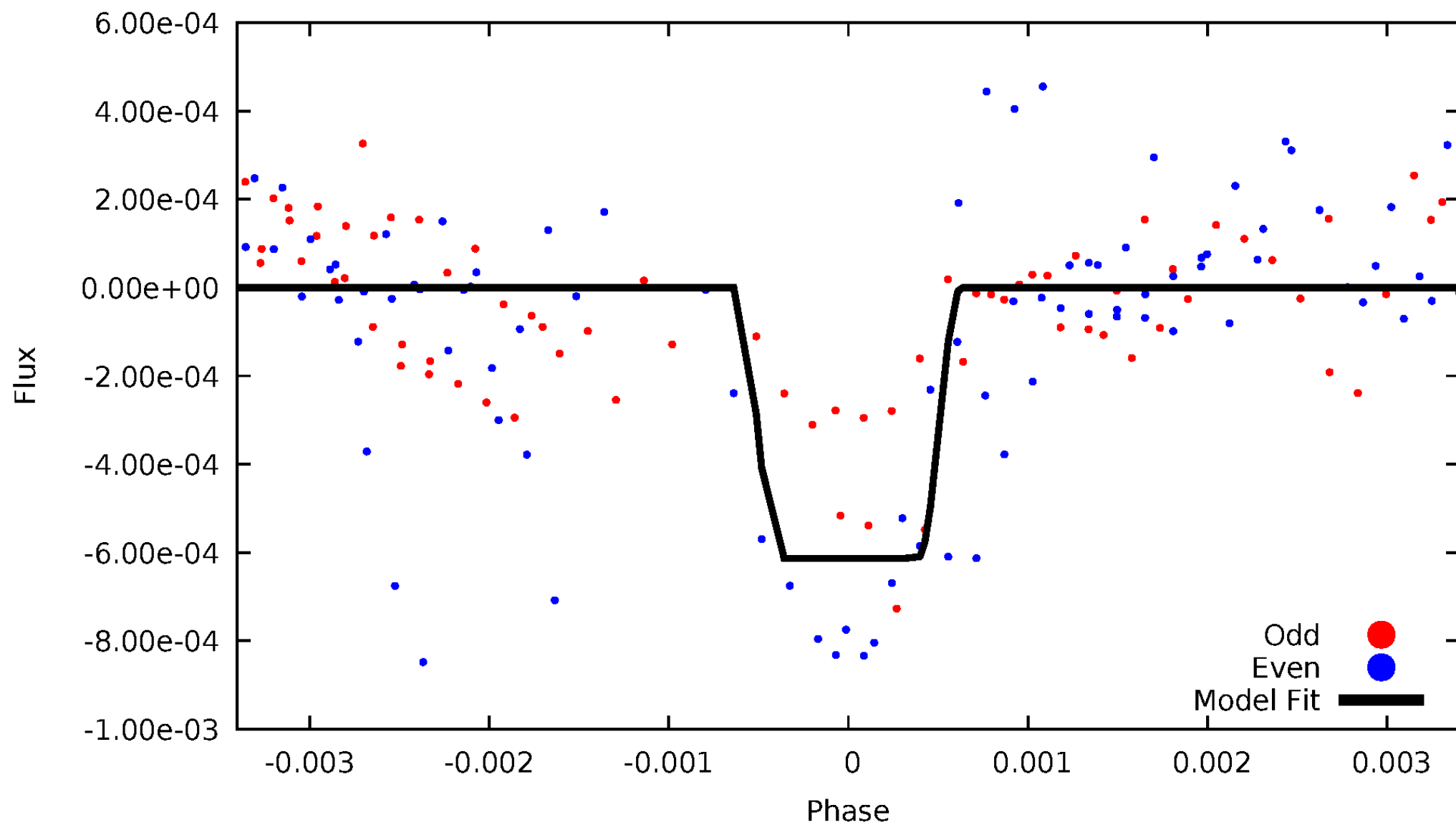
DV Odd/Even

TCE 006114387-04



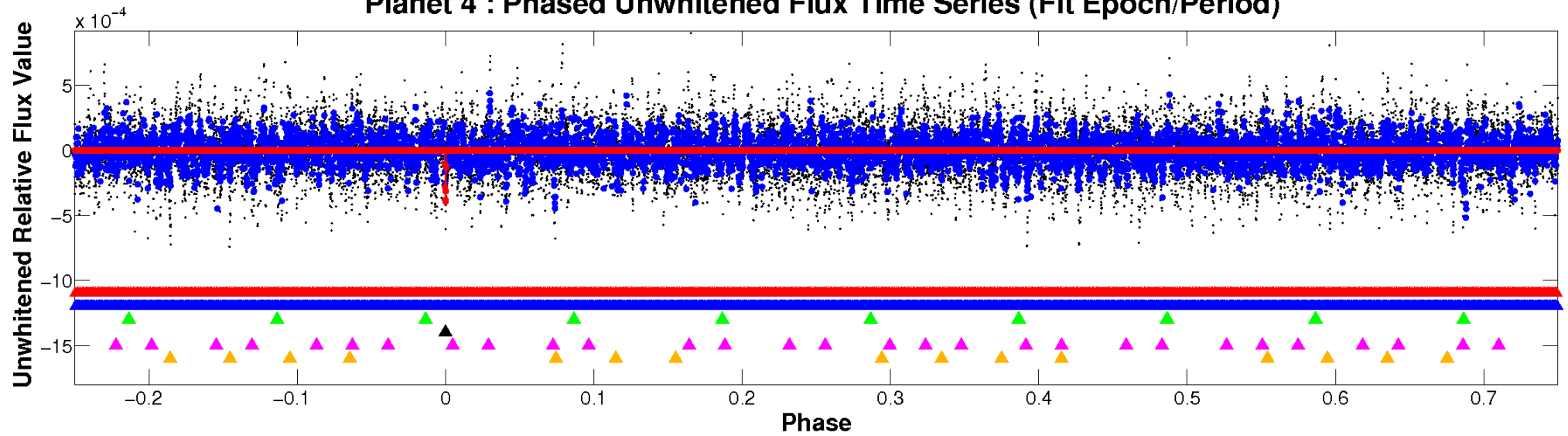
ALT Odd/Even

TCE 006114387-04

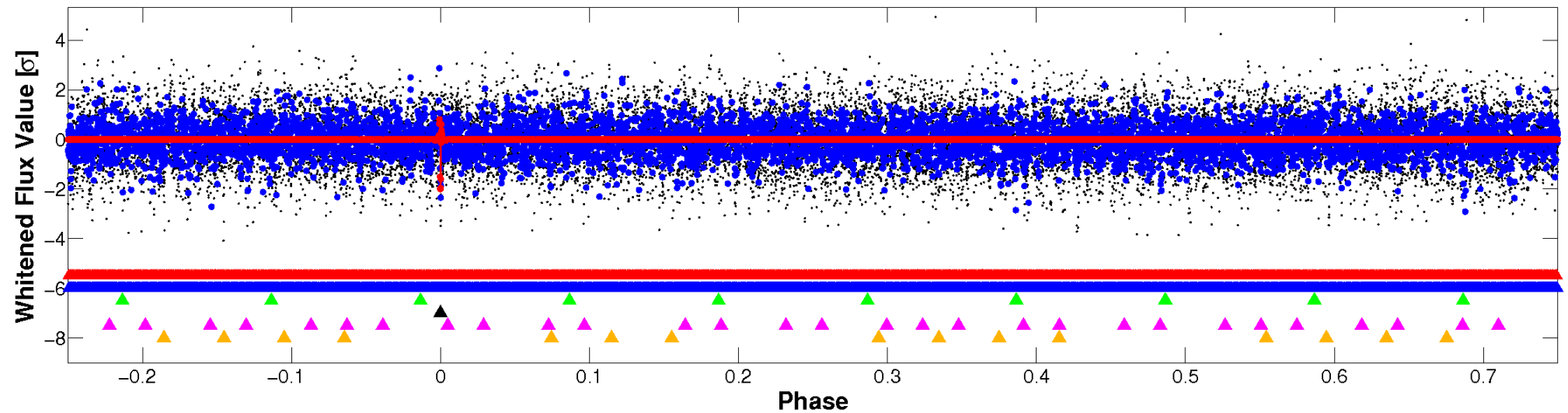


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

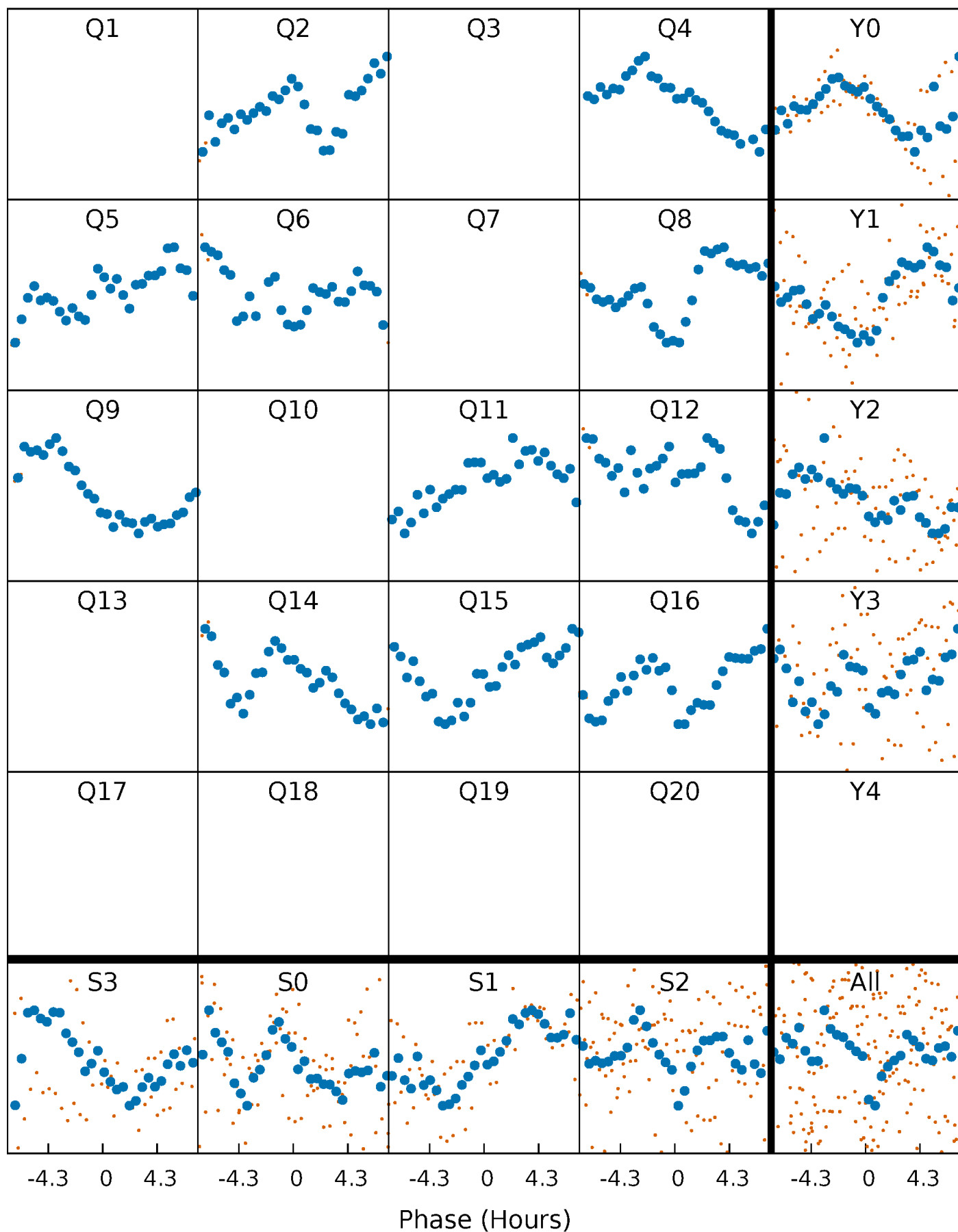


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



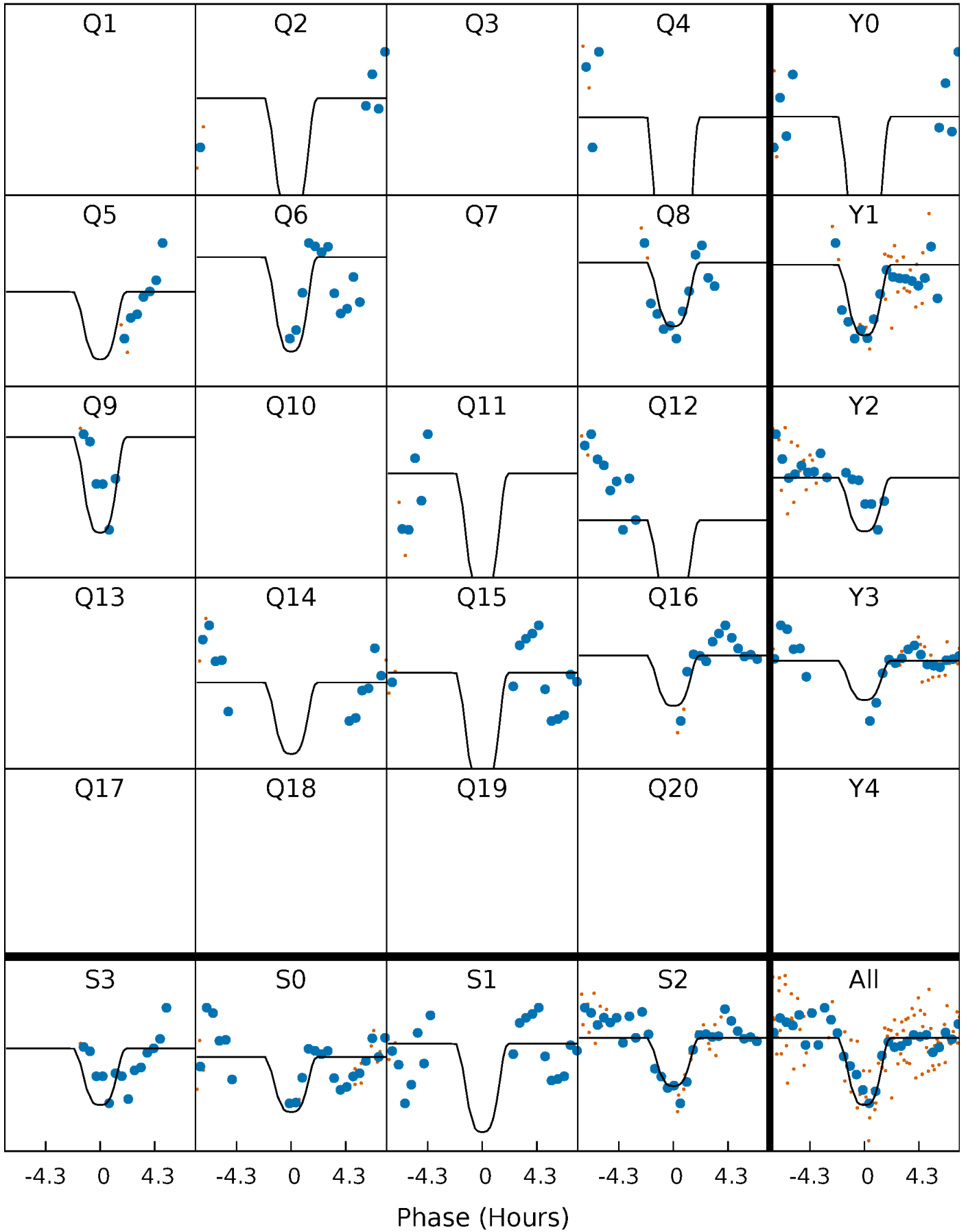
PDC Quarter-Phased Transit Curves

TCE 006114387-04 P=130.533860 Days $T_0=233.582294$ (BKJD)



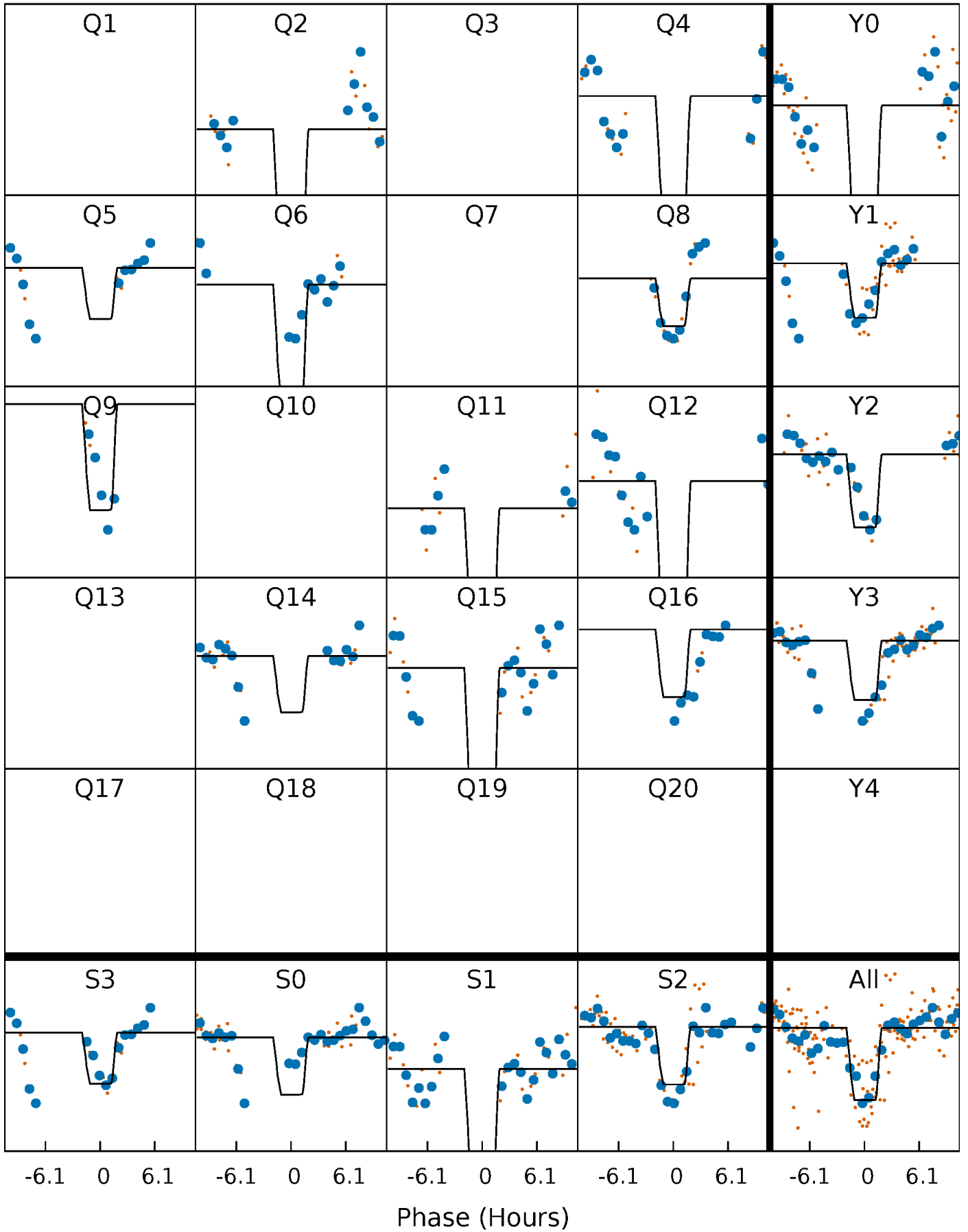
DV Quarter-Phased Transit Curves

TCE 006114387-04 P=130.533860 Days $T_0=233.582294$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

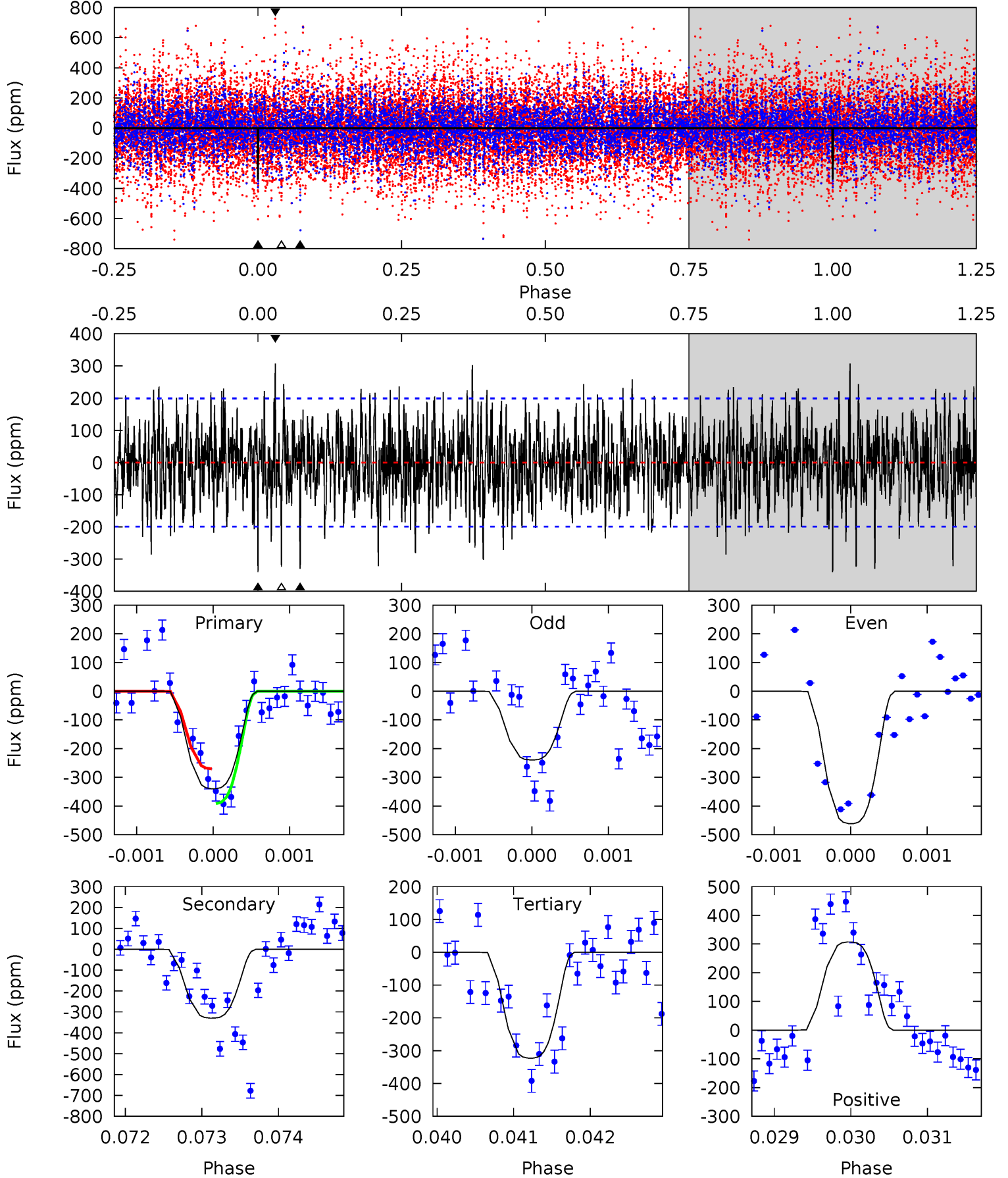
TCE 006114387-04 P=130.537950 Days $T_0=233.564499$ (BKJD)



DV Model-Shift Uniqueness Test

006114387-04, $P = 130.533860$ Days, $E = 103.048434$ Days

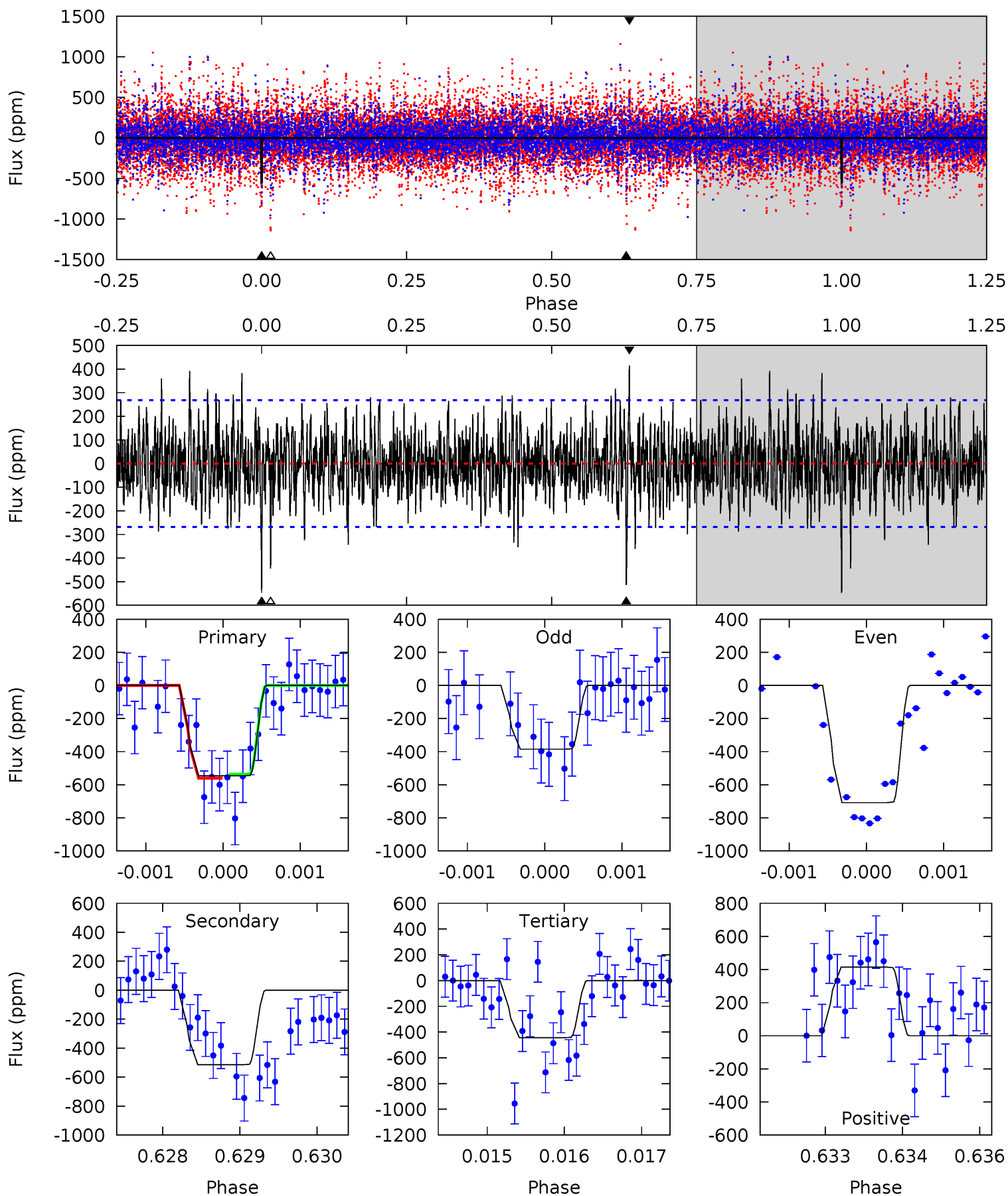
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.26	8.99	8.80	8.37	5.42	3.25	2.47	0.46	0.89	0.19	0.62	3.03	0.97	0.47	1.56



Alt Model-Shift Uniqueness Test

006114387-04, P = 130.537950 Days, E = 103.026549 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	10.4	8.98	8.38	5.43	3.26	2.09	2.09	2.68	1.42	2.02	3.24	0.94	0.43	0.23



Stellar Parameters For KIC 006114387

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7483^{+207}_{-311}	$3.982^{+0.198}_{-0.162}$	$-0.040^{+0.200}_{-0.300}$	$2.221^{+0.518}_{-0.633}$	$1.724^{+0.201}_{-0.277}$	$0.222^{+0.281}_{-0.094}$
	+3%/-4%	+5%/-4%	+500%/-750%	+23%/-29%	+12%/-16%	+127%/-42%
Source	KIC0	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 006114387-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-330 ± 37	$5.47^{+1.00}_{-0.86}$	879^{+62}_{-73}	6526^{+472}_{-430}	2162^{+853}_{-597}
Alt.	-514 ± 49	$6.03^{+1.03}_{-1.08}$	880^{+64}_{-71}	7046^{+515}_{-421}	2820^{+1354}_{-781}

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 $A_{obs} \gg 1.0$

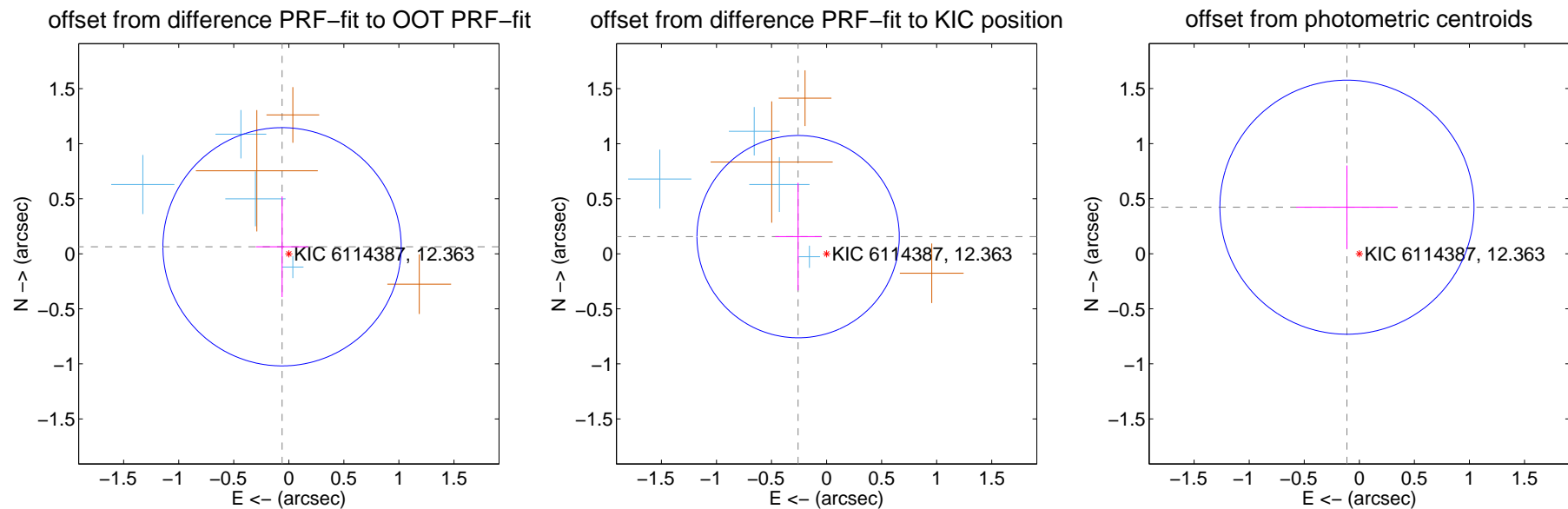
DV Centroid Data

Supplemental centroid analysis for 006114387-04. Kepler magnitude: 12.36. Transit SNR 7.38

There are 5 quarters with good PRF difference image offsets

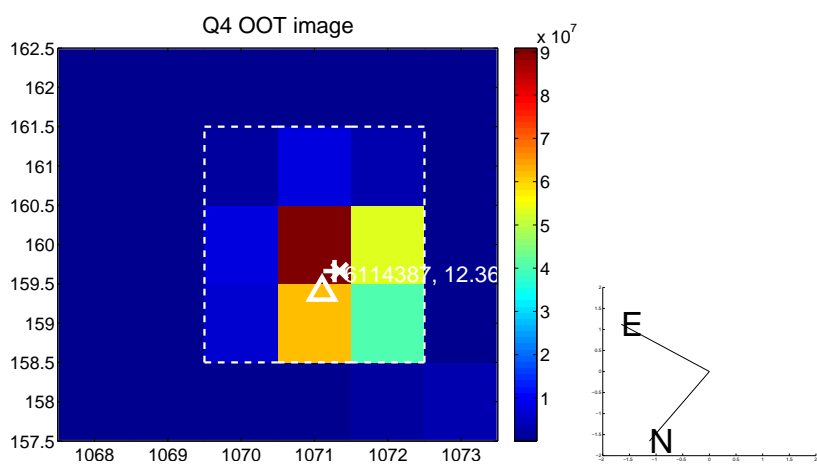
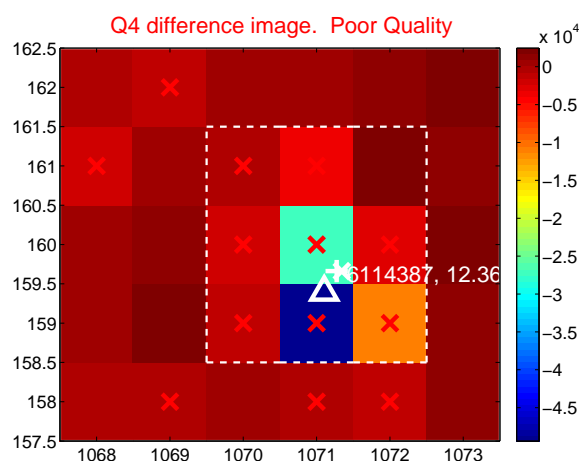
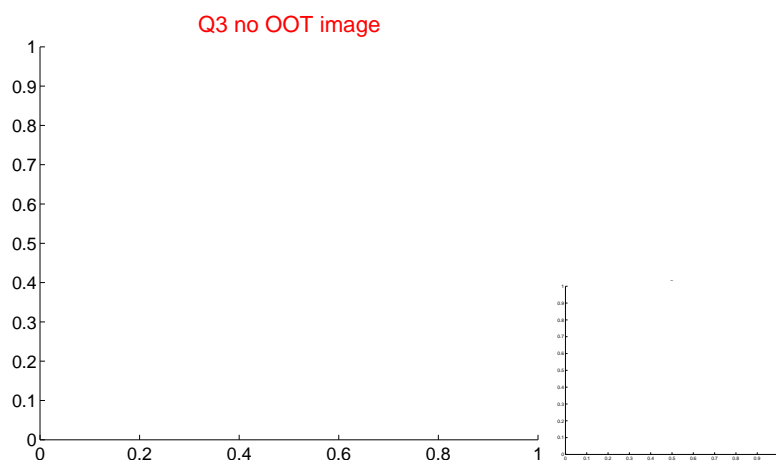
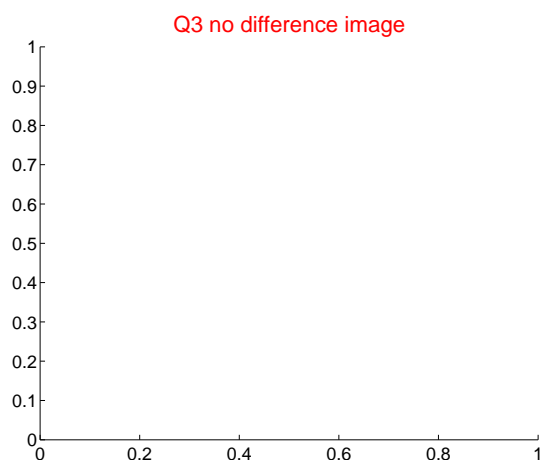
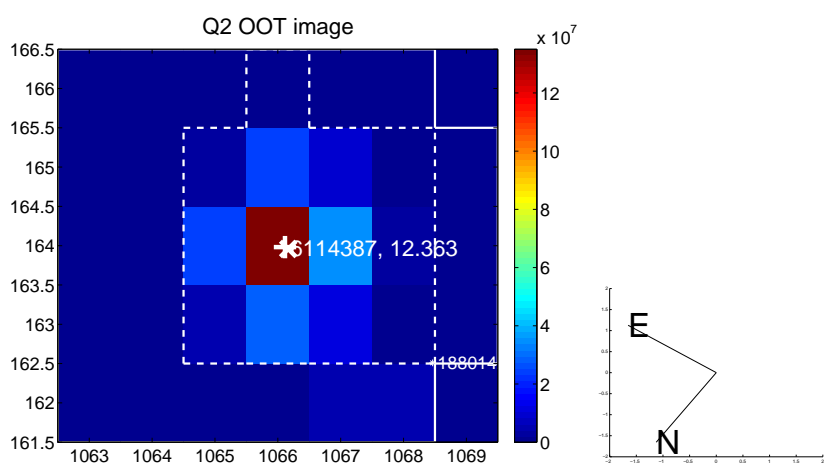
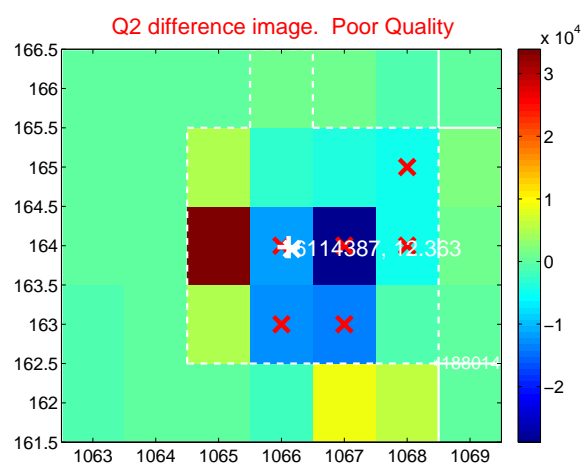
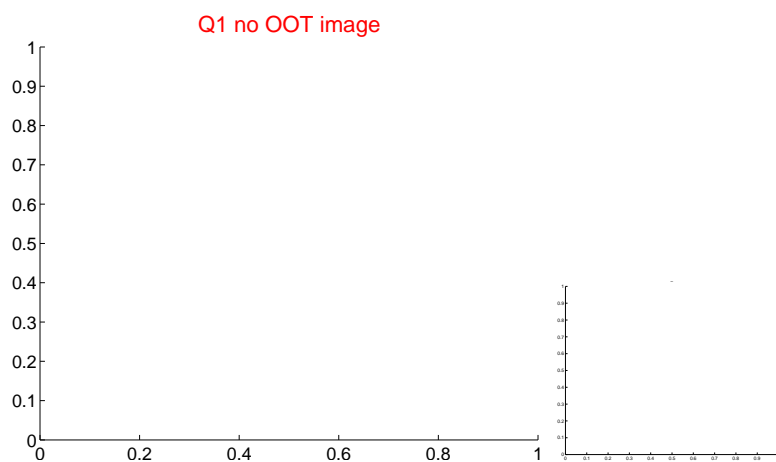
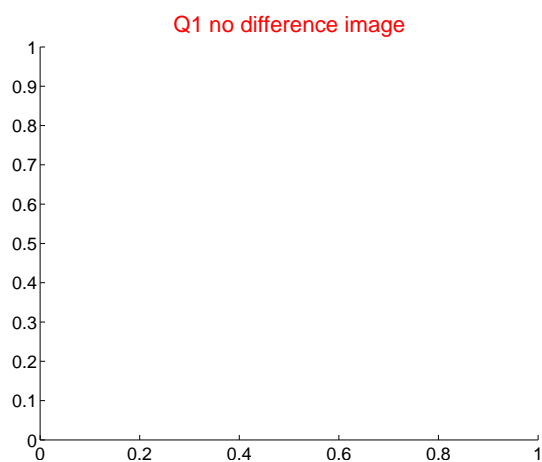
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.088 ± 0.361	0.24	0.061 ± 0.238	0.064 ± 0.457
PRF-fit source offset from KIC position	0.302 ± 0.306	0.99	0.259 ± 0.208	0.156 ± 0.489
photometric centroid source offset	0.44 ± 0.38	1.14	0.11 ± 0.46	0.42 ± 0.38

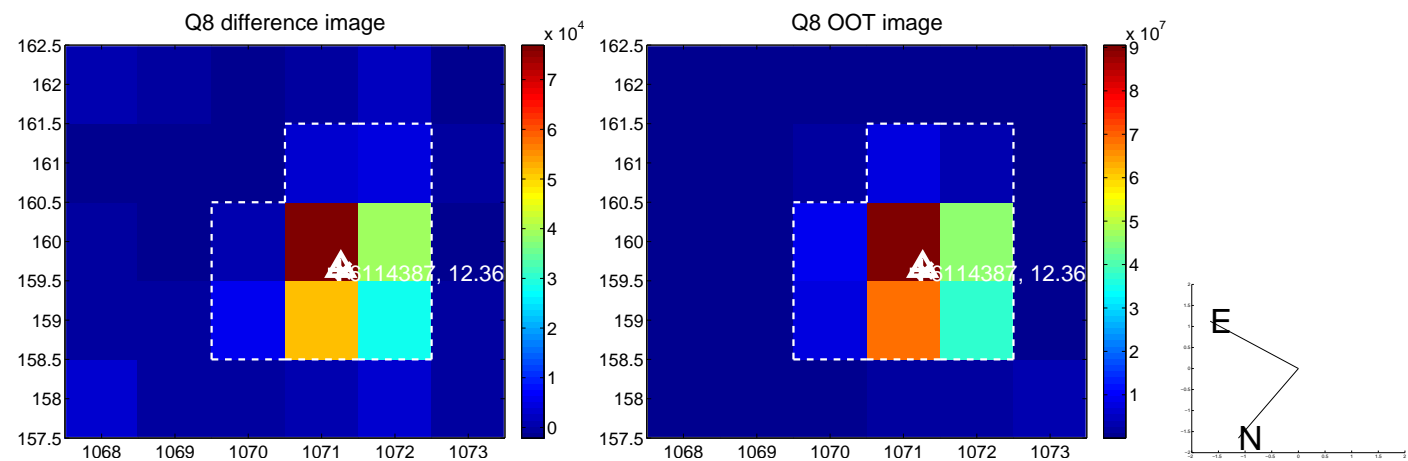
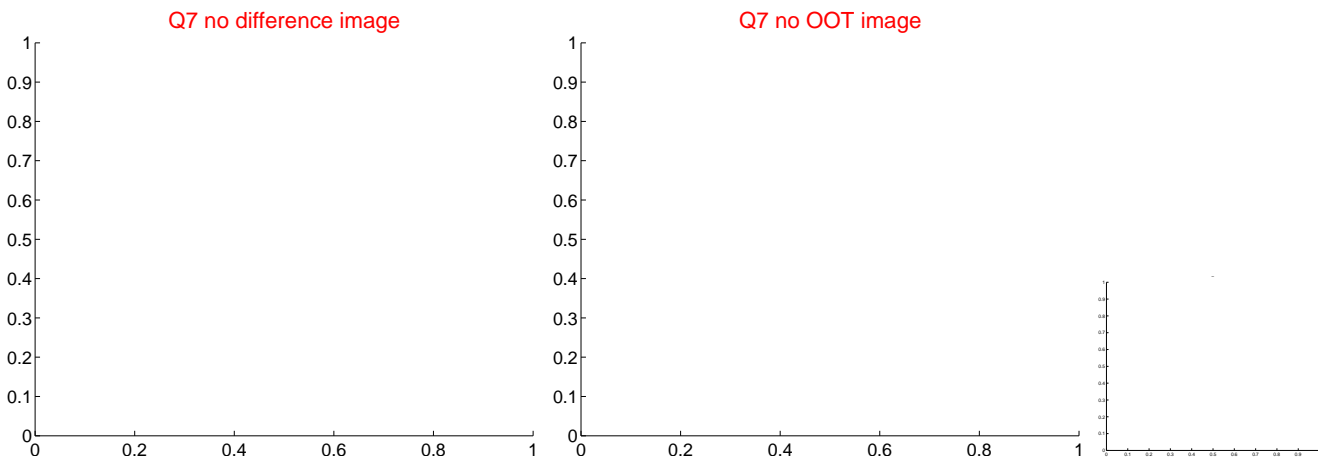
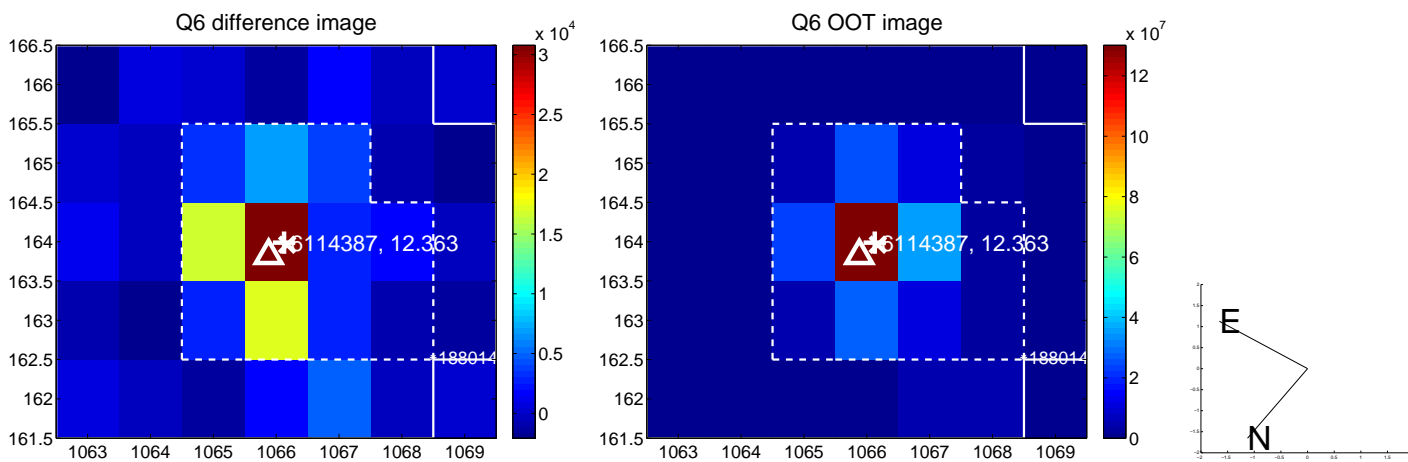
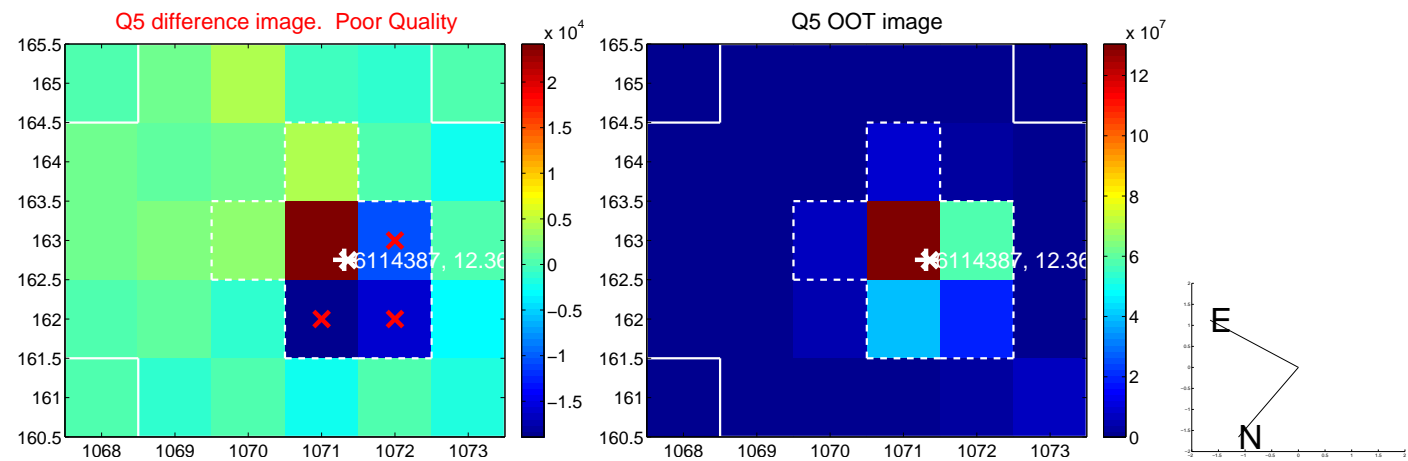


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

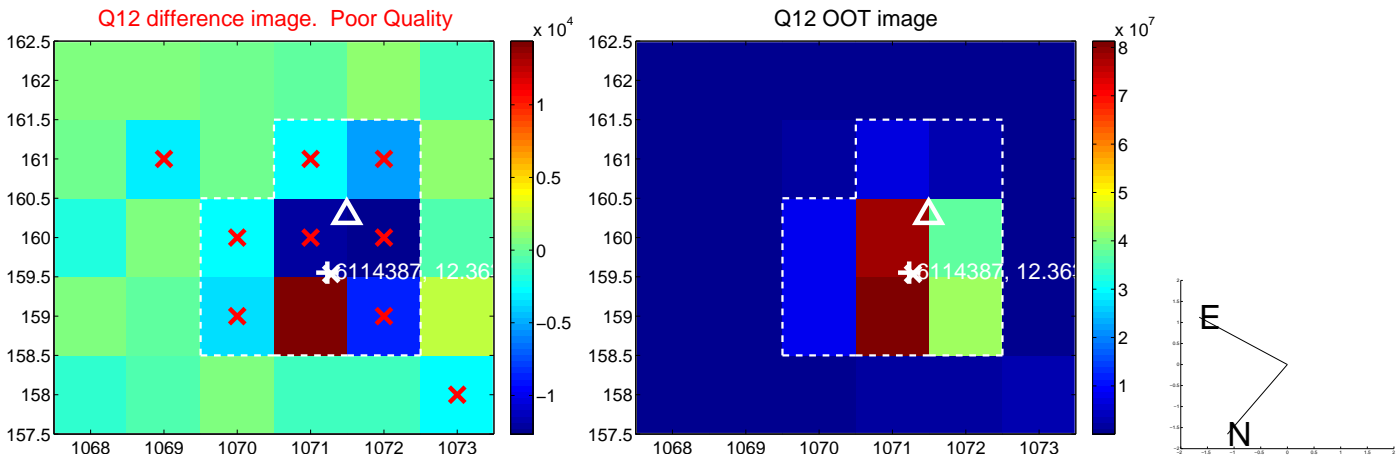
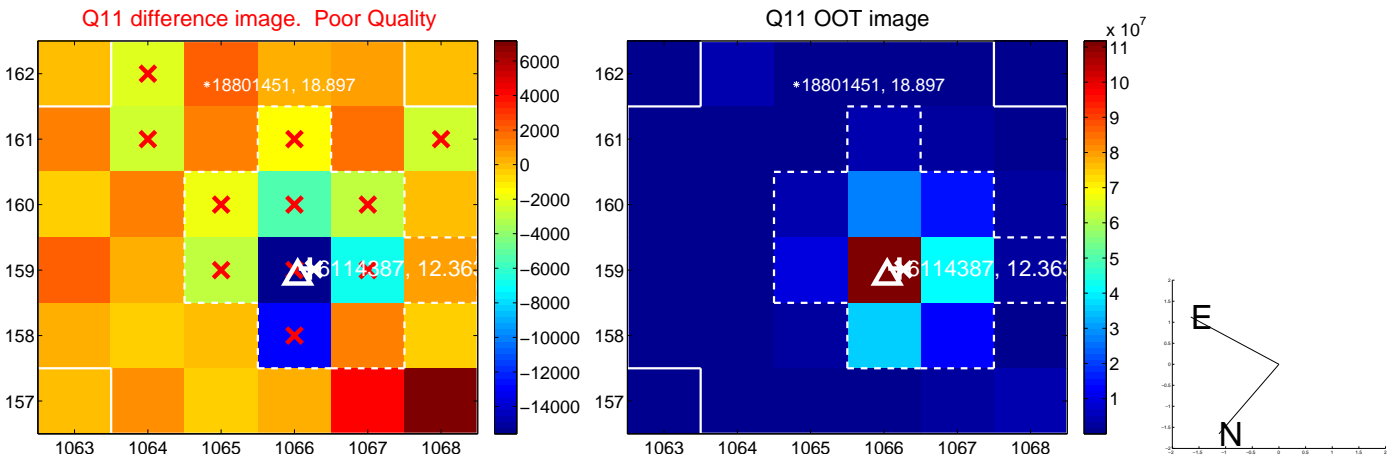
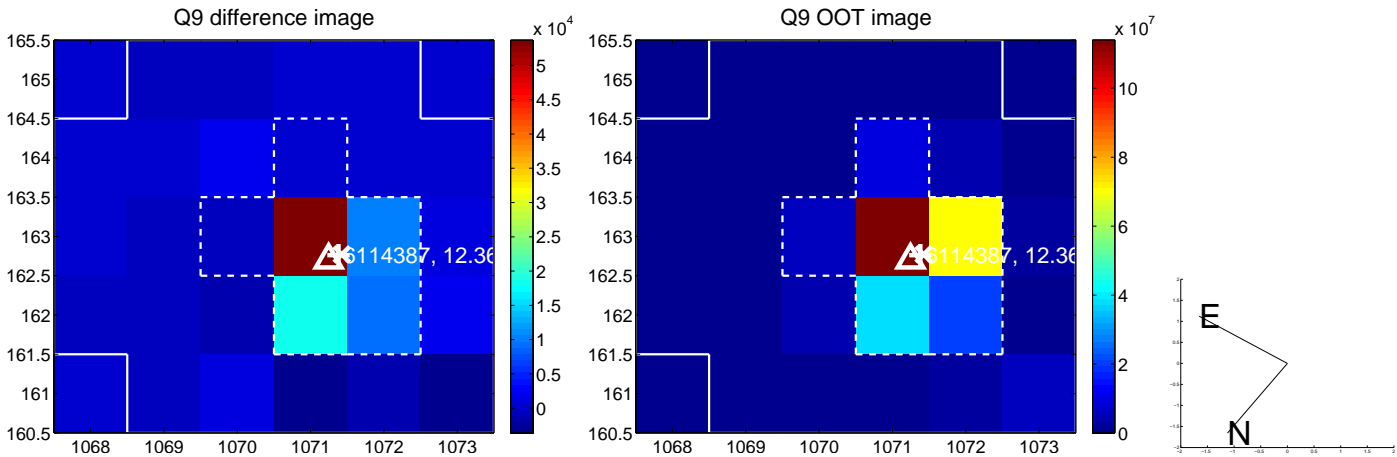
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



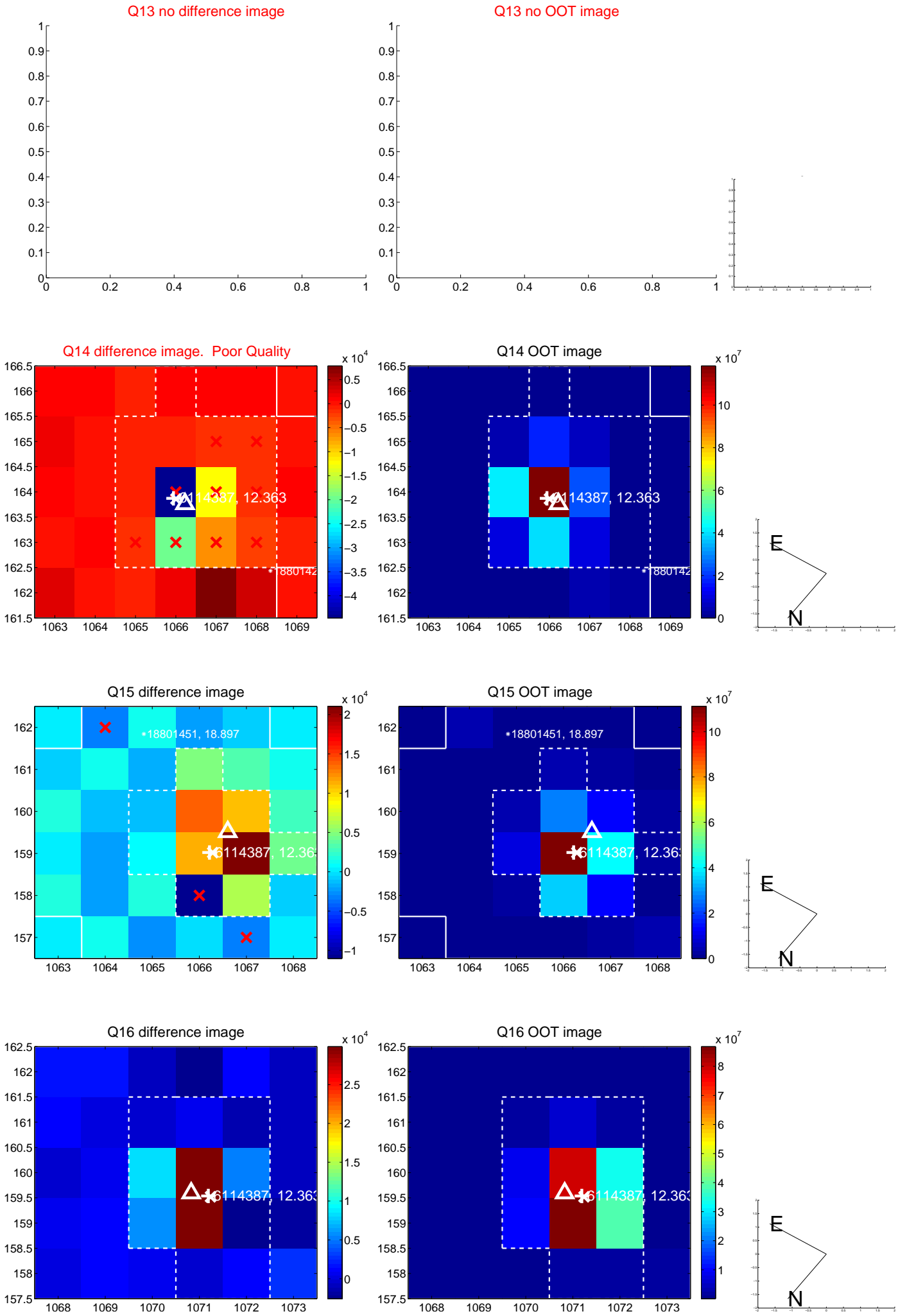
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



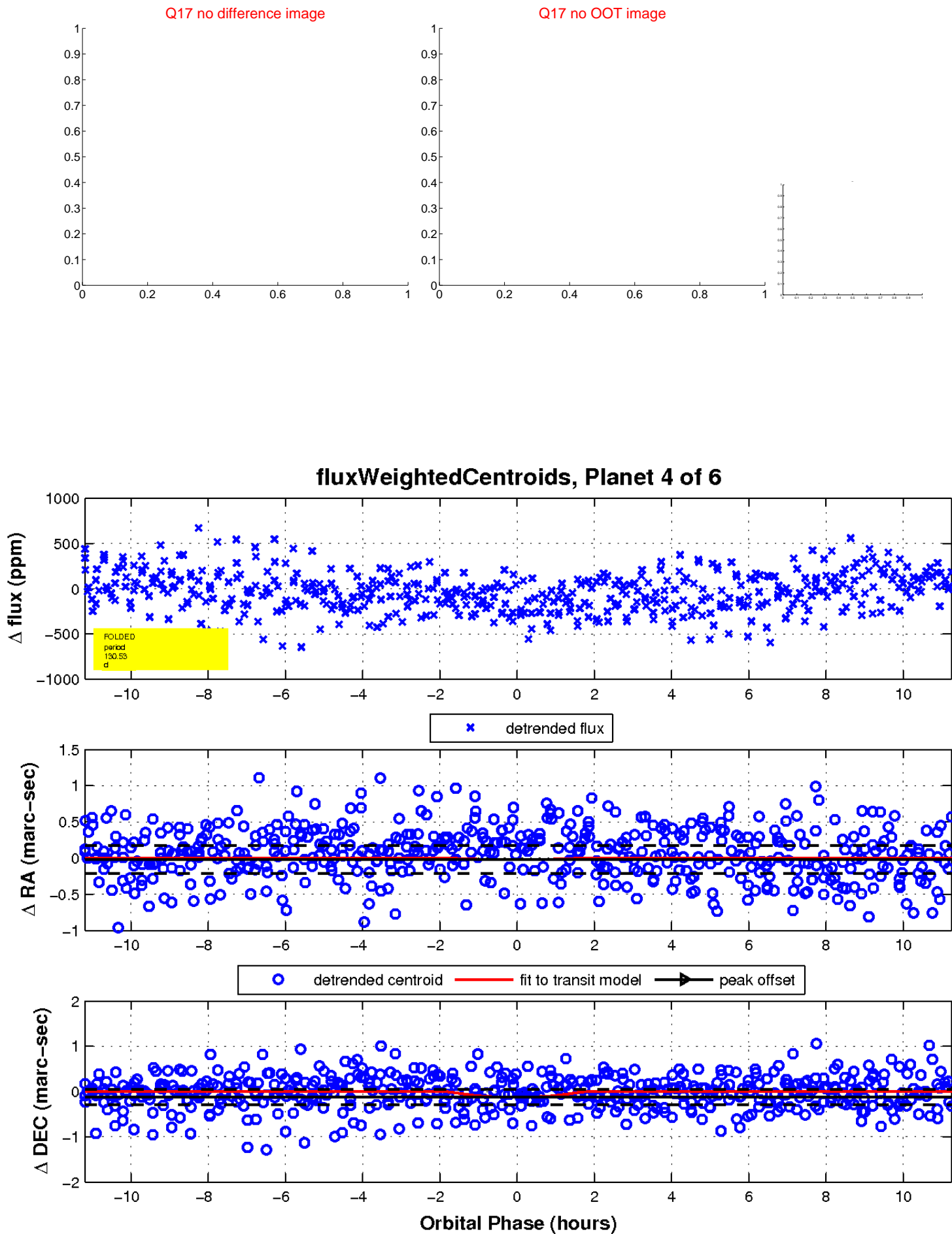
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

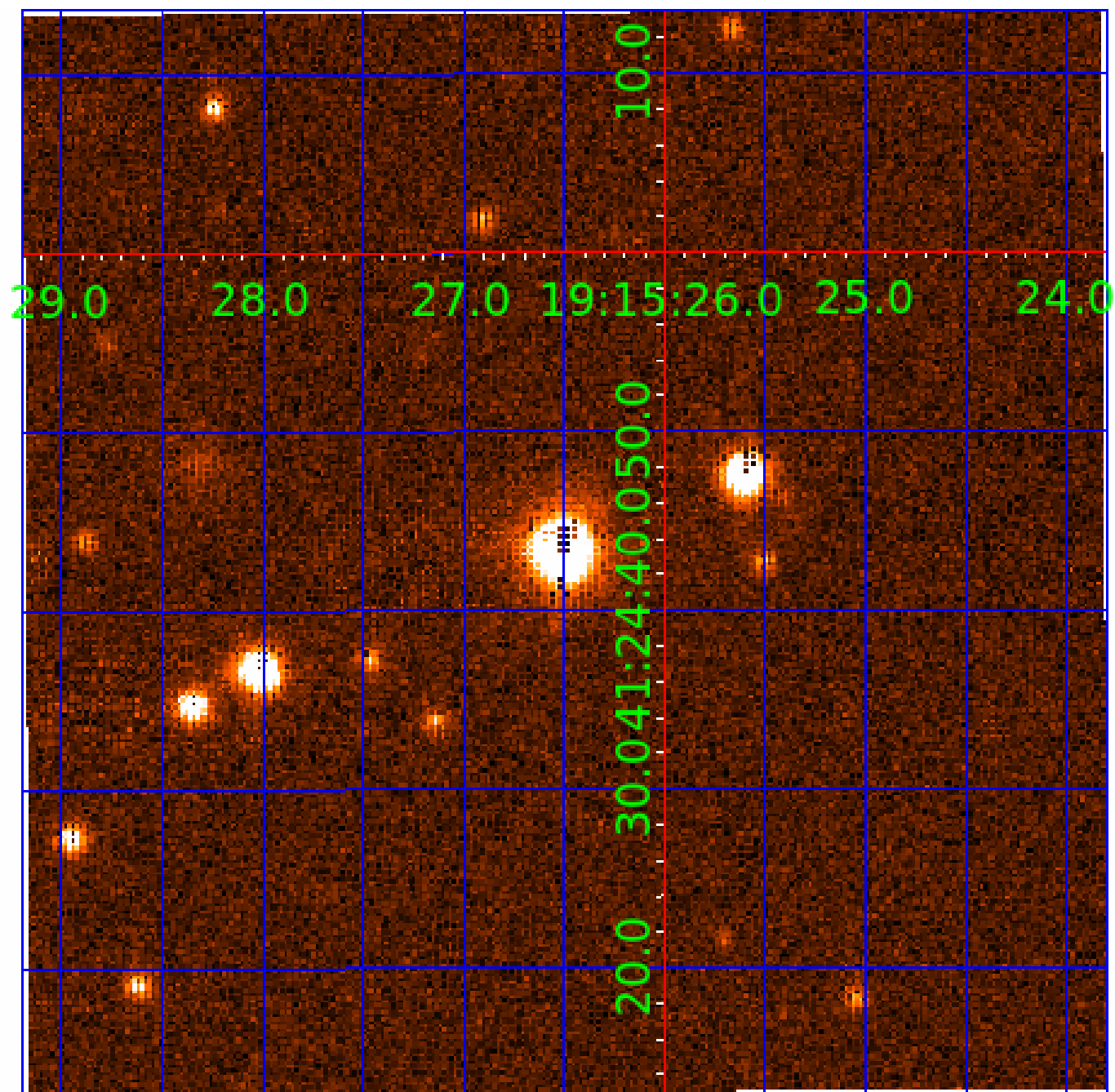


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006114387

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})
006114387-01	OBS	No	1.406319	132.219231	43.2	2.589	10.9	12.0	2.22	7483	1.78	15950.88
006114387-02	OBS	No	0.645776	131.601330	23.4	2.851	9.4	8.8	2.22	7483	1.24	45025.06
006114387-03	OBS	No	117.475643	179.644103	381.3	8.330	7.7	6.9	2.22	7483	5.06	43.68
006114387-04	OBS	No	130.533860	233.582294	394.8	3.768	7.5	7.4	2.22	7483	5.62	37.95
006114387-05	OBS	No	50.447208	171.795296	273.0	3.006	7.8	7.8	2.22	7483	4.22	134.83
006114387-06	OBS	No	96.582616	225.163820	430.2	6.402	7.8	8.1	2.22	7483	5.85	56.72

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006114387-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
006114387-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
006114387-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
006114387-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—HALO_GHOST
006114387-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
006114387-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

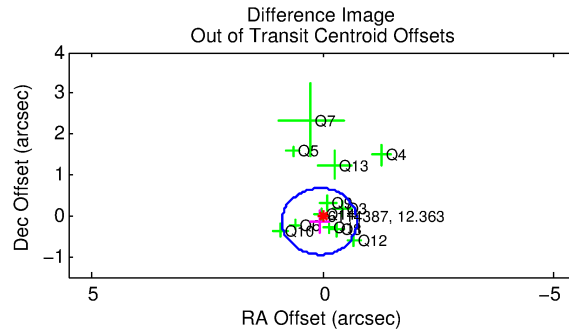
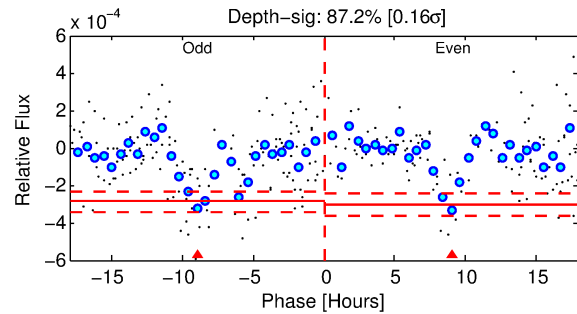
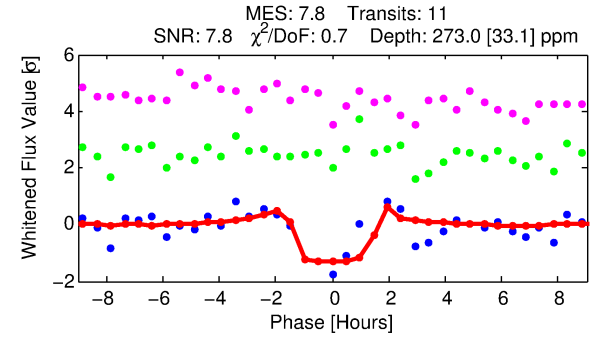
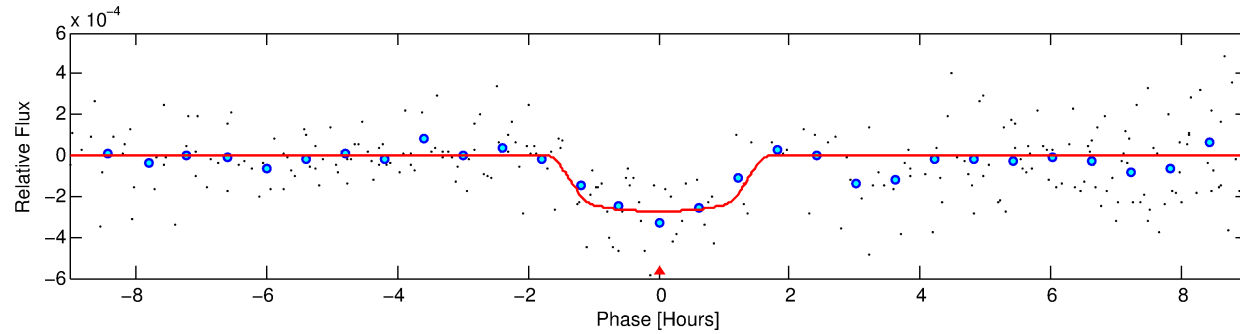
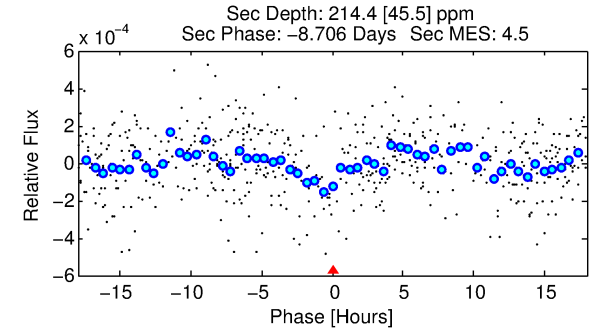
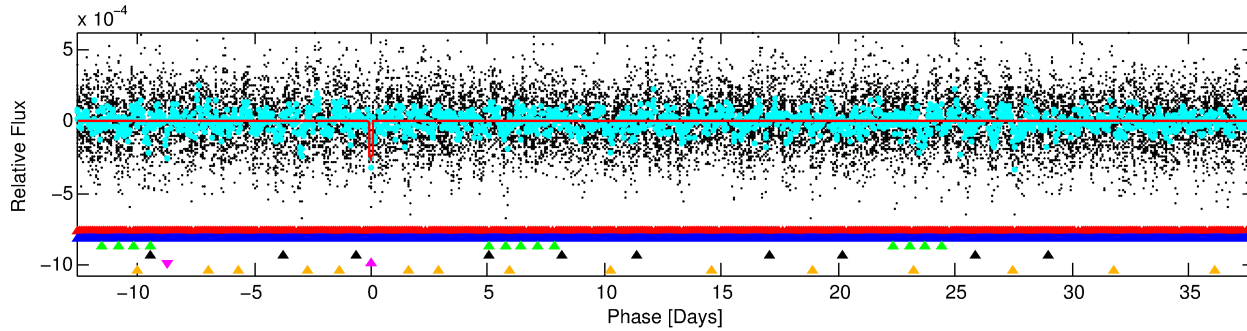
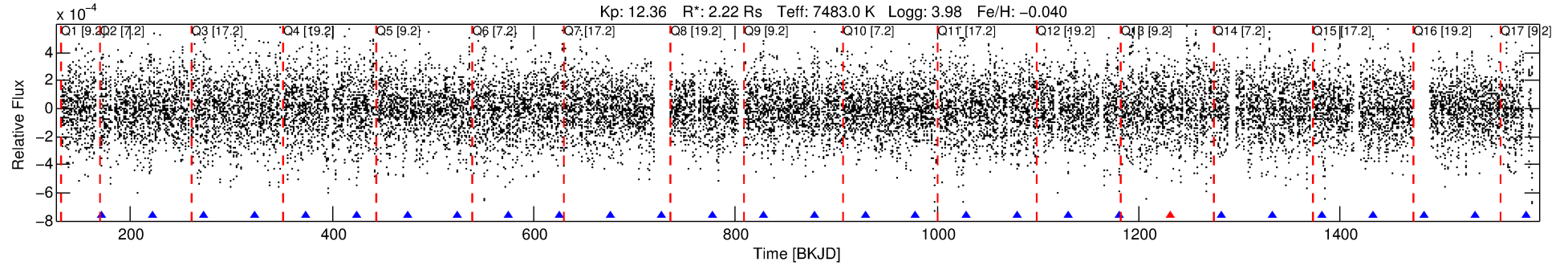
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006114387-05

No Significant Match Found

DV One-Page Summary

KIC: 6114387 Candidate: 5 of 6 Period: 50.447 d



DV Fit Results:

Period = 50.44721 [0.00032] d
Epoch = 171.7953 [0.0057] BKJD
Rp/R* = 0.0174 [0.0056]
a/R* = 62.74 [126.36]
b = 0.89 [0.47]
Seff = 134.83 [53.27]
Teq = 869 [86] K
Rp = 4.22 [1.81] Re
a = 0.3206 [0.0780] AU
Ag = 679.85 [520.57] [1.30σ]
Teffp = 6860 [1195] K [5.00σ]

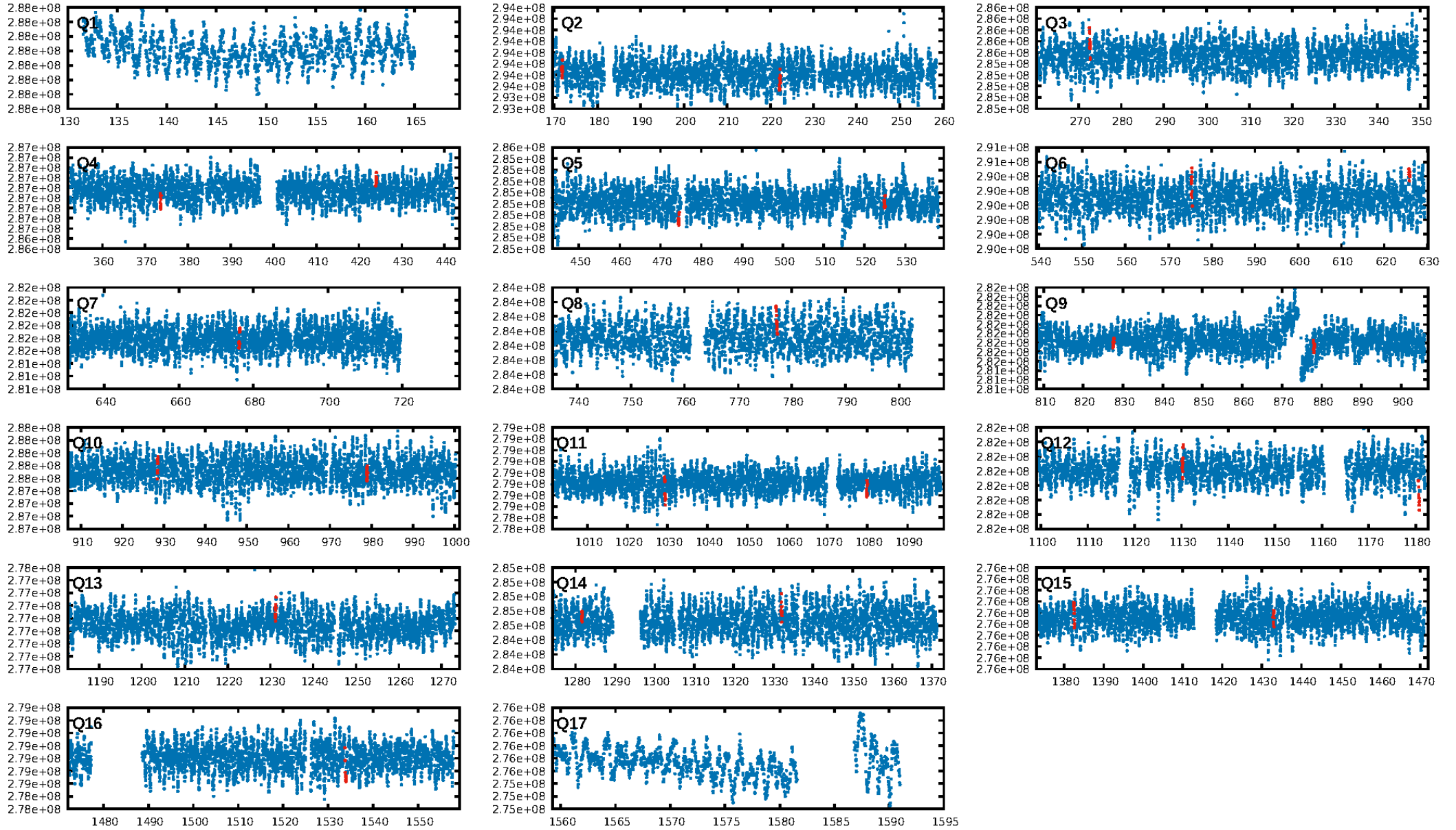
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [296.66σ]
LongPeriod-sig: 100.0% [156.55σ]
ModelChiSquare2-sig: 97.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.09e-09
RollingBand-fgt: 0.91 [10/11]
GhostDiagnostic-chr: -6.274
Centroid-sig: 75.4%
Centroid-so: 0.035 arcsec [0.08σ]
OotOffset-rm: 0.158 arcsec [0.58σ]
OotOffset-st: 3/3/3/3 [12]
KicOffset-rm: 0.300 arcsec [1.42σ]
KicOffset-st: 3/3/3/3 [12]
DiffImageQuality-fgm: 0.50 [6/12]
DiffImageOverlap-fno: 0.00 [0/14]

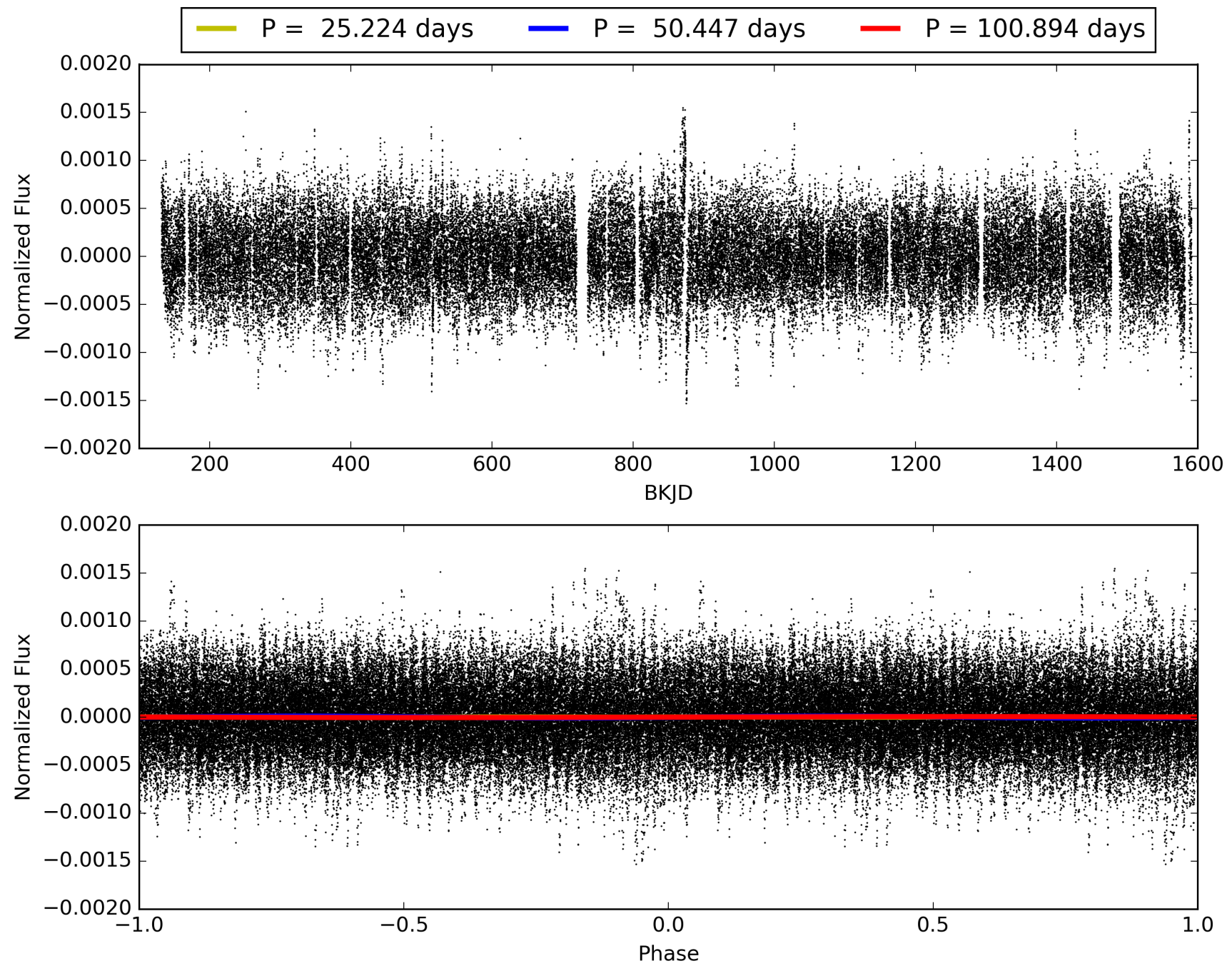
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:19:35 Z

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

TCE 006114387-05, PDC Light Curves

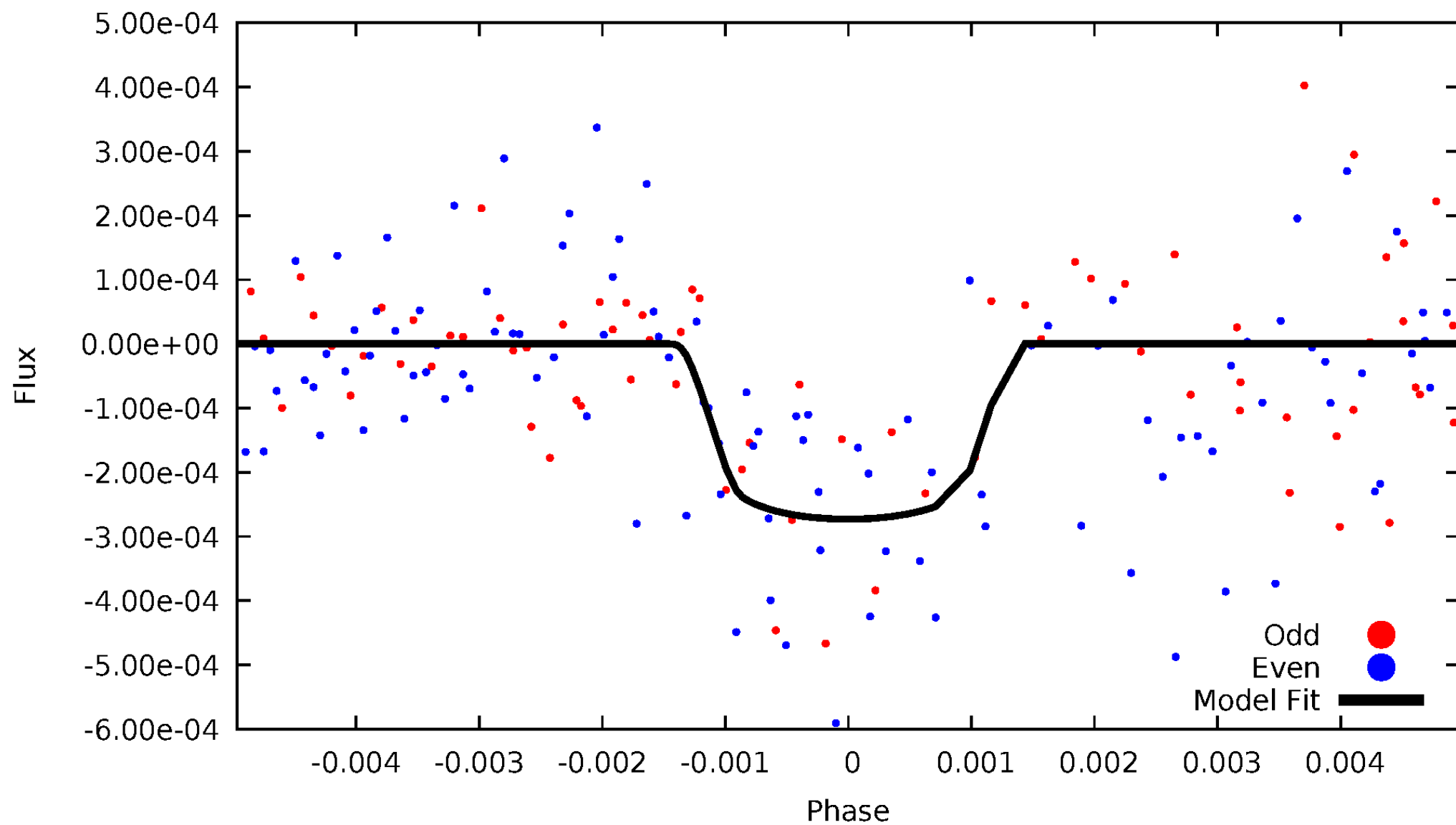


TCE 006114387-05



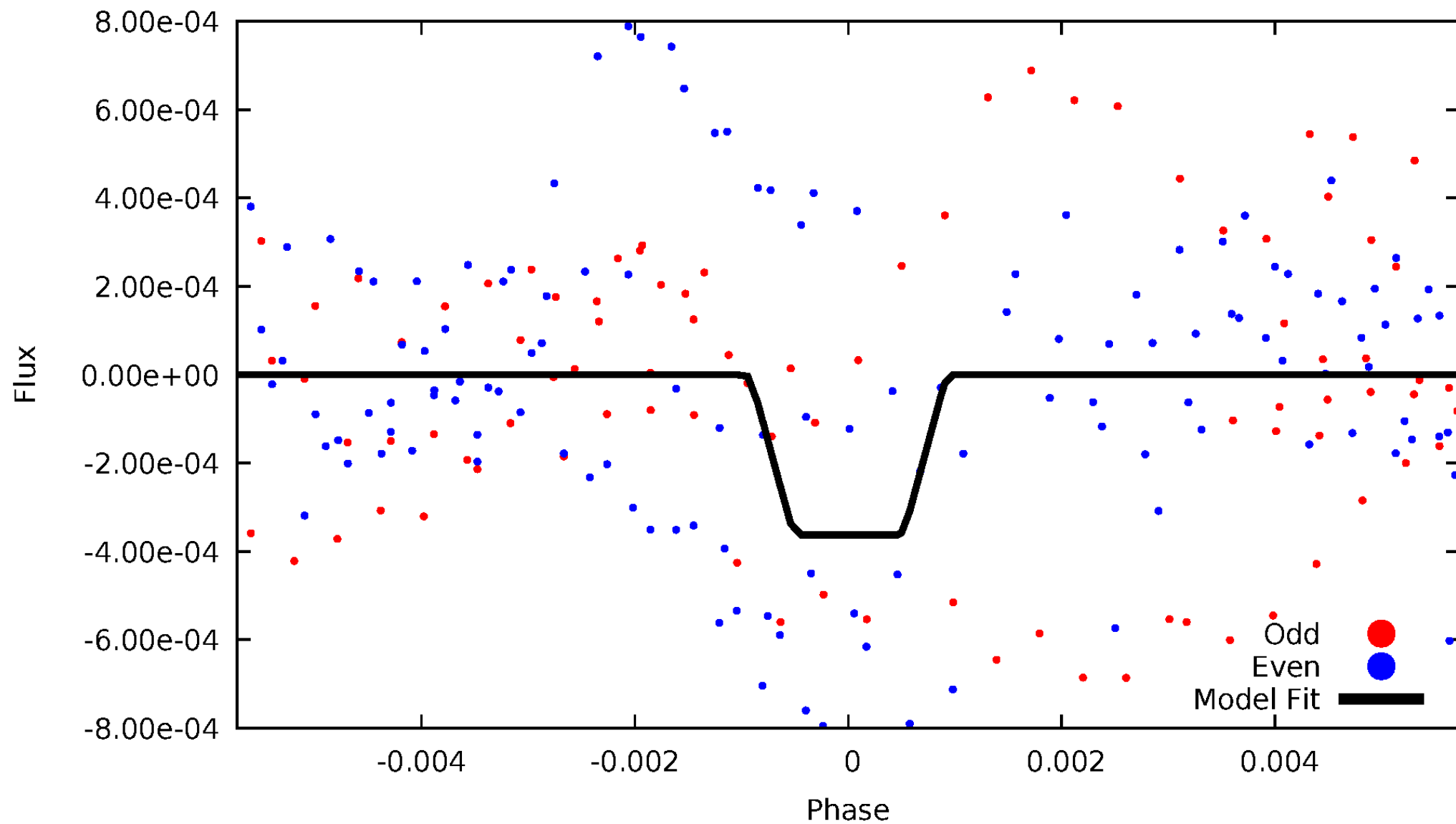
DV Odd/Even

TCE 006114387-05



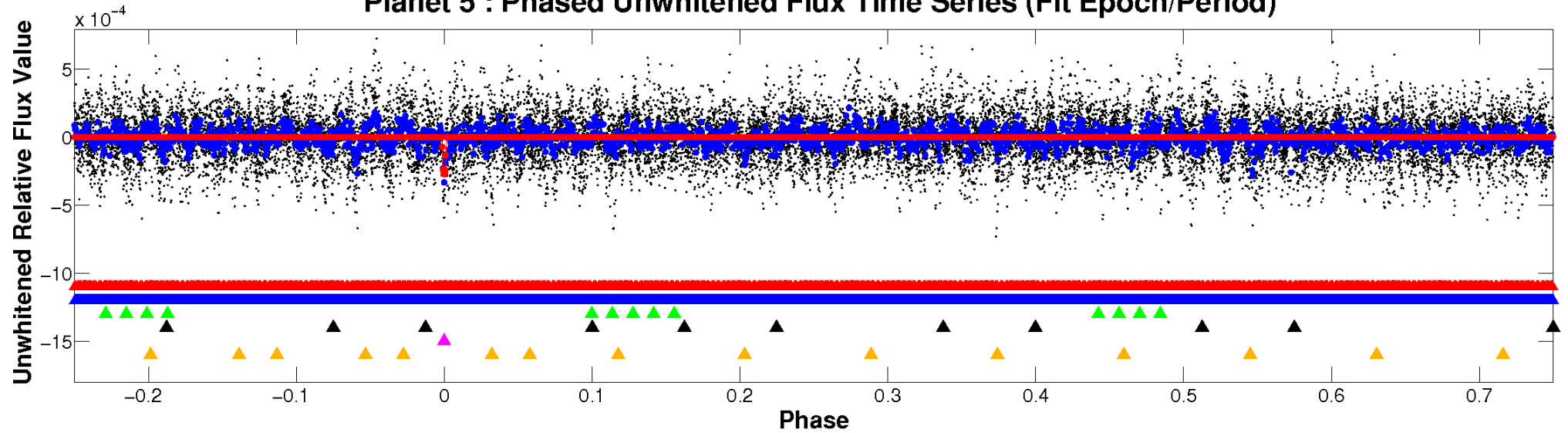
ALT Odd/Even

TCE 006114387-05

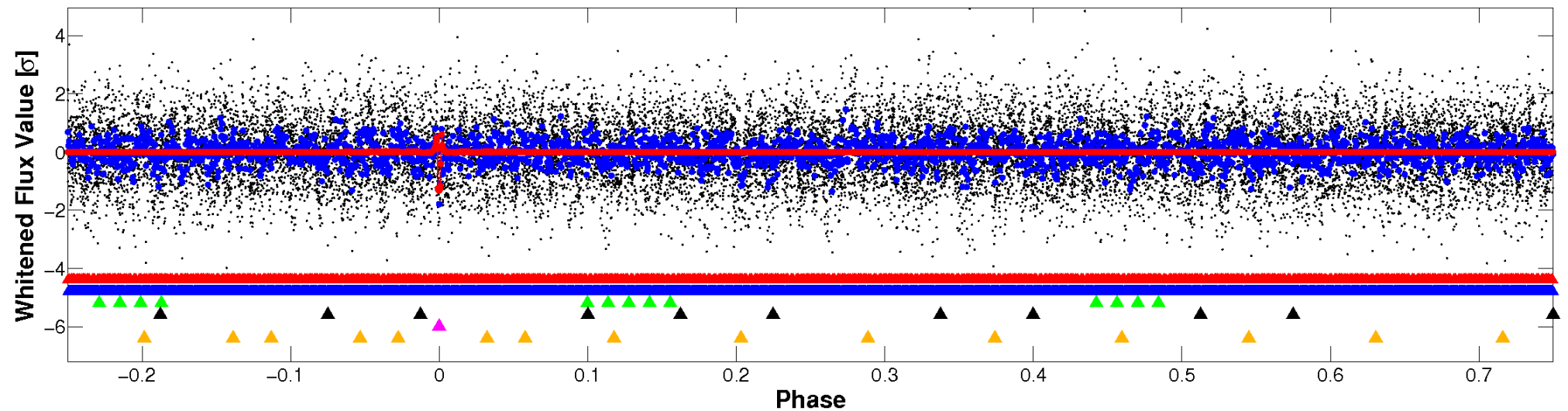


Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

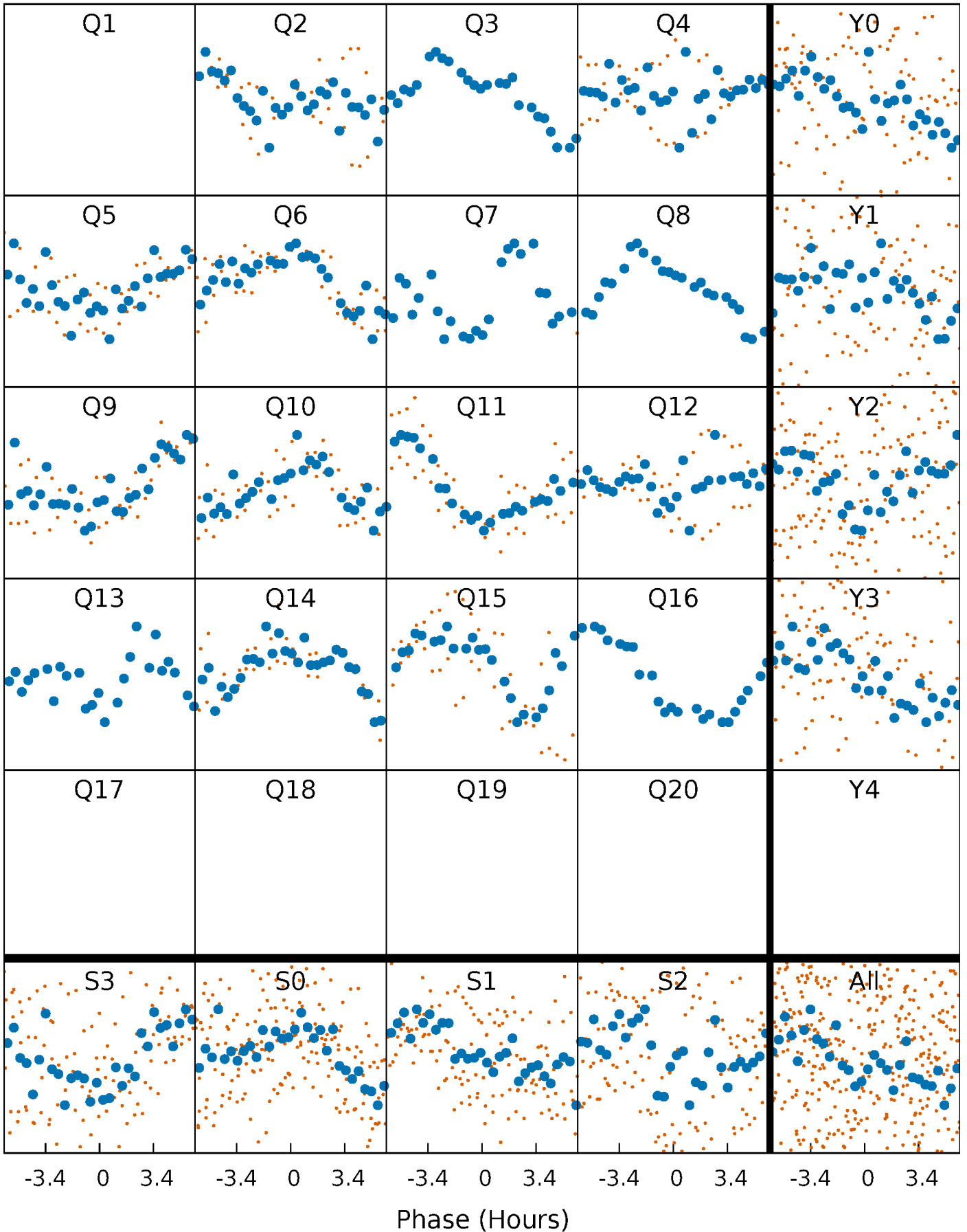


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



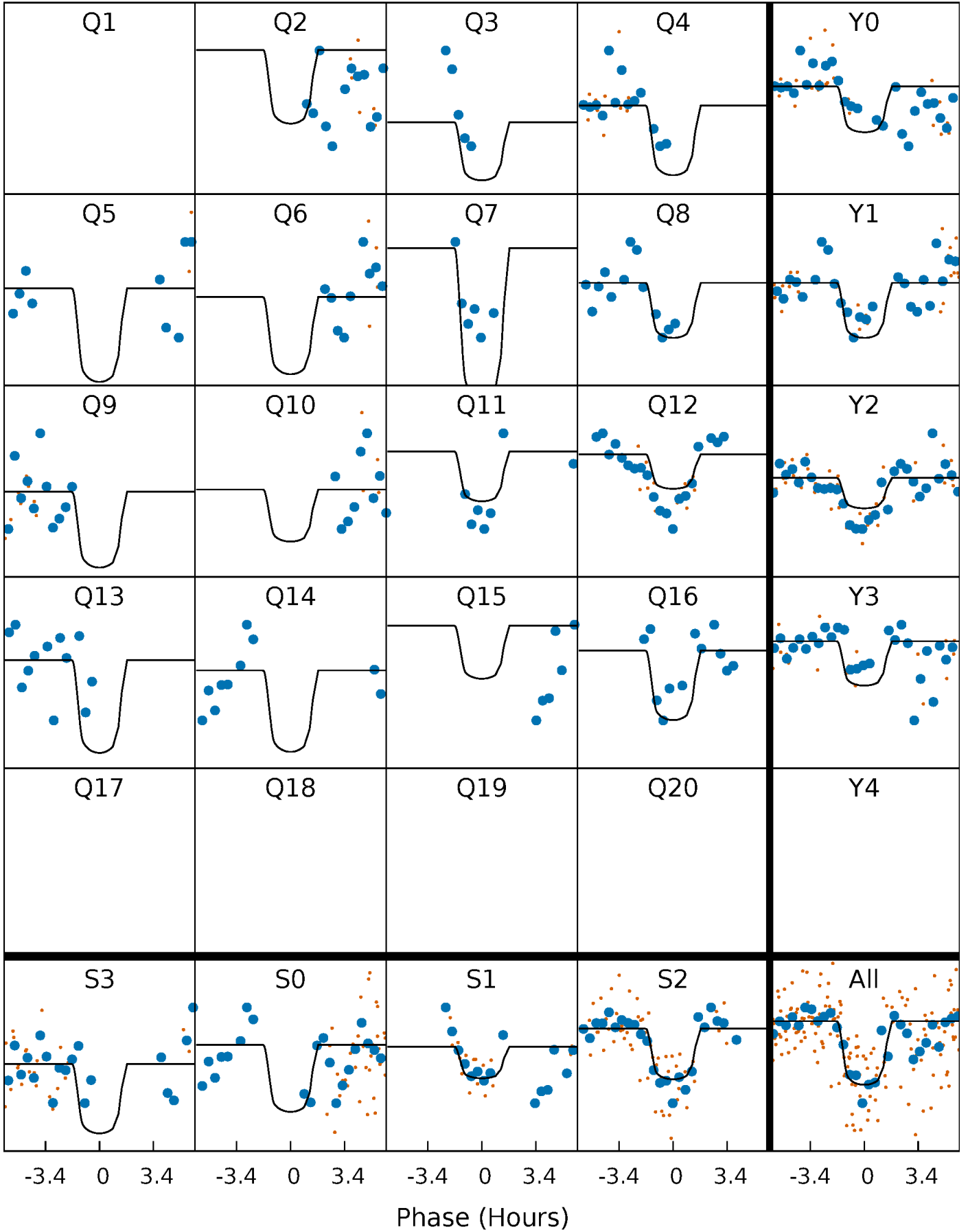
PDC Quarter-Phased Transit Curves

TCE 006114387-05 $P = 50.447208$ Days $T_0 = 171.795296$ (BKJD)



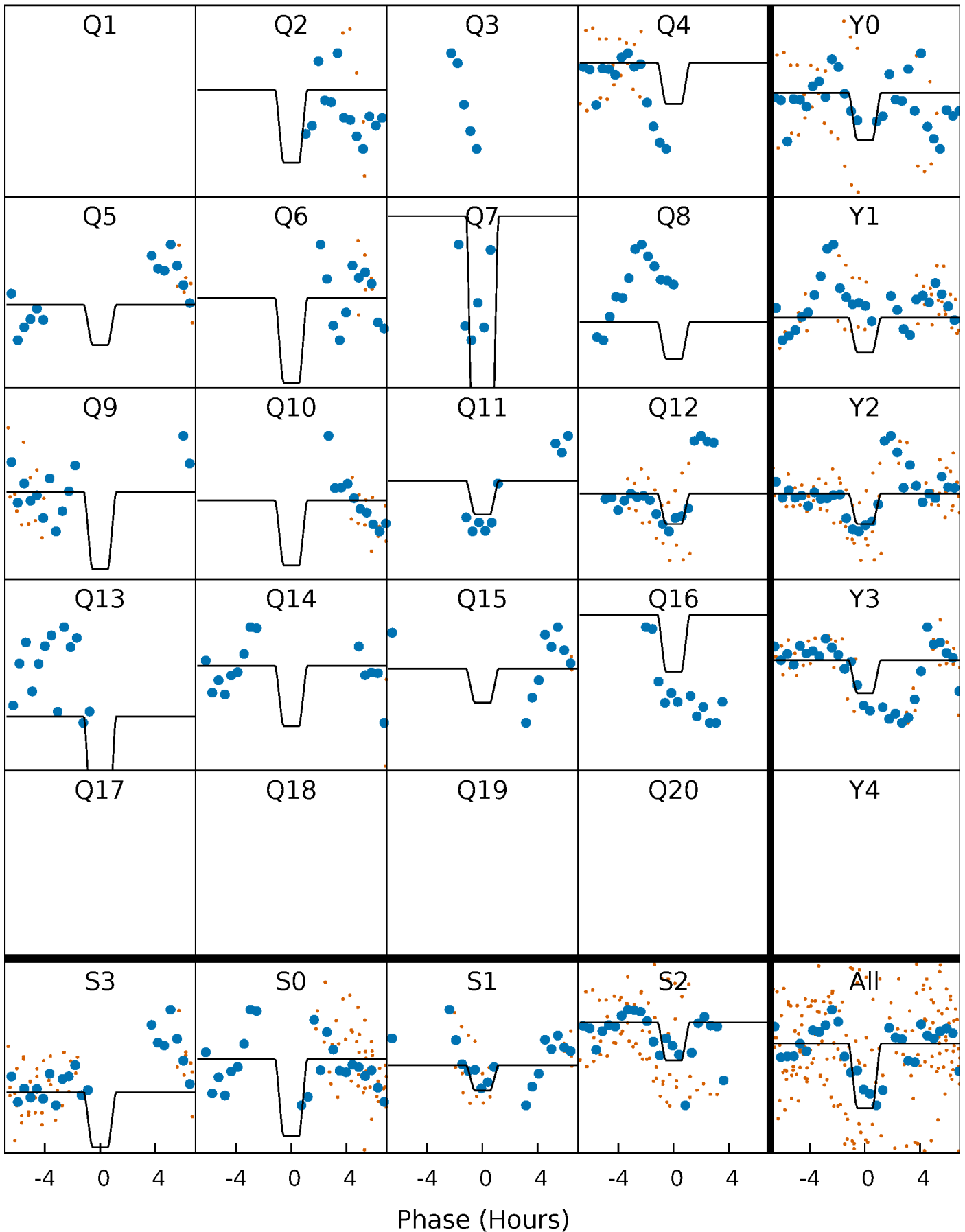
DV Quarter-Phased Transit Curves

TCE 006114387-05 P= 50.447208 Days $T_0=171.795296$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

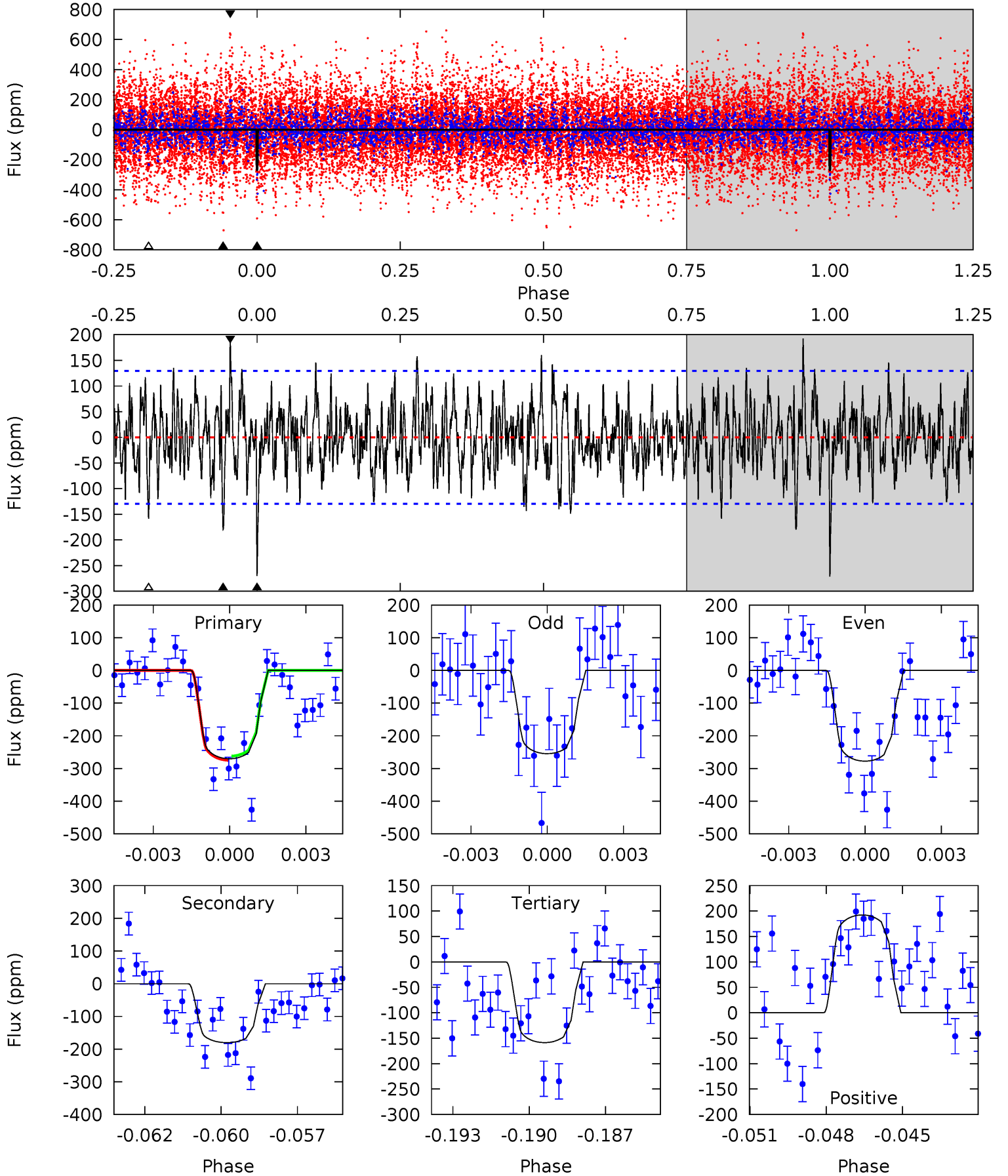
TCE 006114387-05 $P = 50.447533$ Days $T_0 = 171.795557$ (BKJD)



DV Model-Shift Uniqueness Test

006114387-05, $P = 50.447208$ Days, $E = 121.348088$ Days

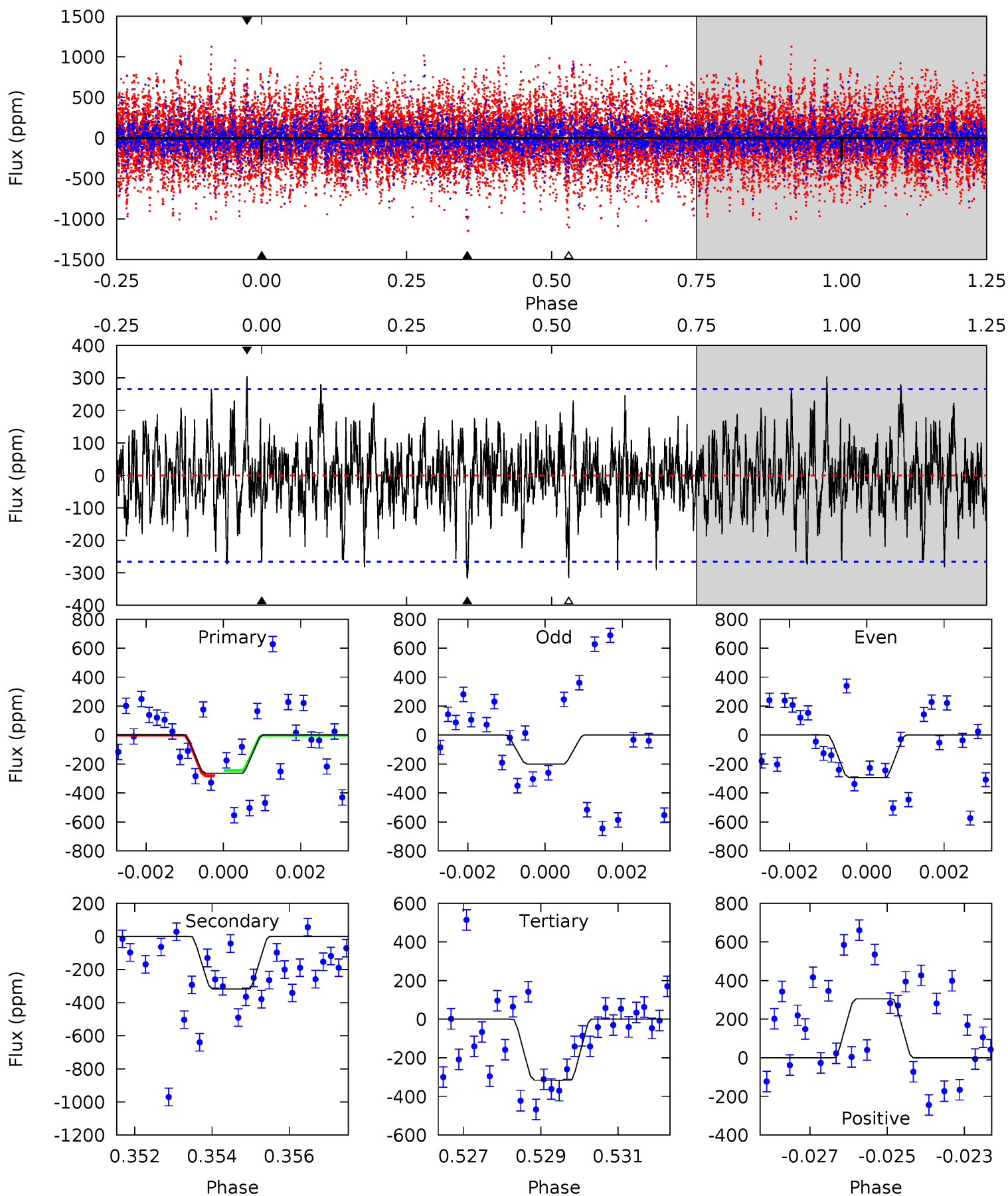
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.0	7.32	6.44	7.81	5.26	2.99	2.16	4.53	3.17	0.87	-0.49	0.44	1.13	0.42	0.24



Alt Model-Shift Uniqueness Test

006114387-05, P = 50.447533 Days, E = 121.348024 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.28	6.37	6.33	6.12	5.33	3.10	1.64	-1.05	-0.84	0.05	0.26	0.85	2.29	0.49	0.37



Stellar Parameters For KIC 006114387

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7483^{+207}_{-311}	$3.982^{+0.198}_{-0.162}$	$-0.040^{+0.200}_{-0.300}$	$2.221^{+0.518}_{-0.633}$	$1.724^{+0.201}_{-0.277}$	$0.222^{+0.281}_{-0.094}$
	+3%/-4%	+5%/-4%	+500%/-750%	+23%/-29%	+12%/-16%	+127%/-42%
Source	KIC0	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 006114387-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-180 ± 25	$4.16^{+1.59}_{-1.47}$	1214^{+88}_{-91}	6472^{+1707}_{-956}	583^{+798}_{-297}
Alt.	-318 ± 50	$4.60^{+1.51}_{-1.43}$	1214^{+83}_{-95}	7131^{+1756}_{-992}	815^{+984}_{-348}

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

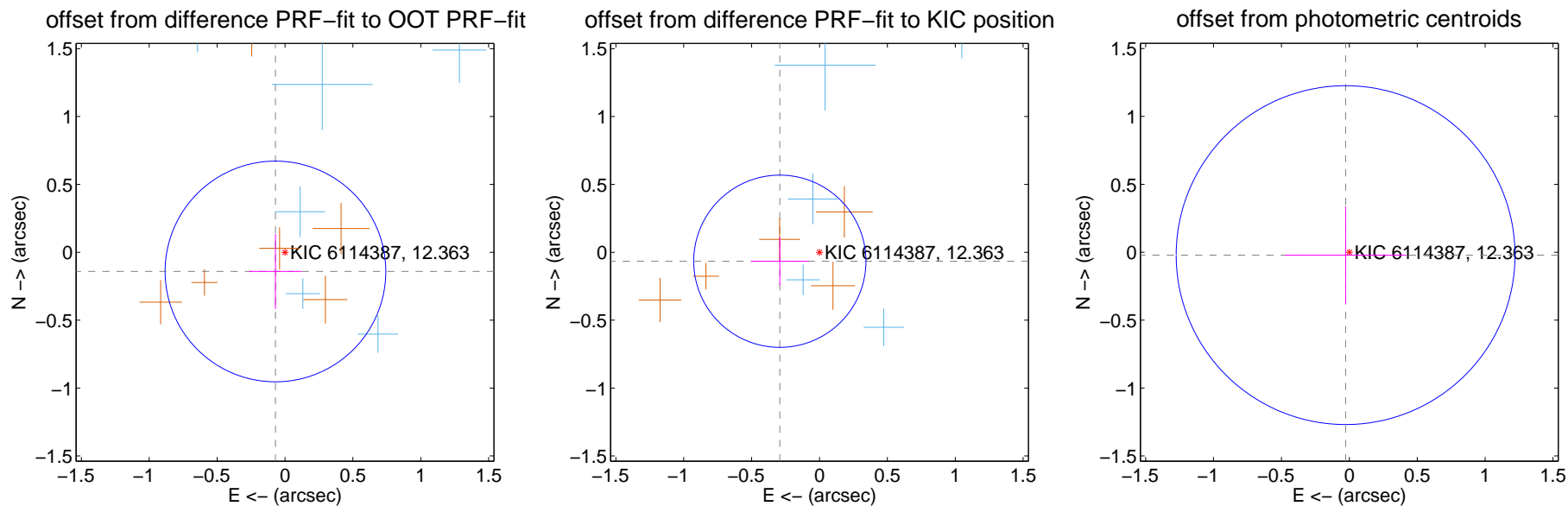
DV Centroid Data

Supplemental centroid analysis for 006114387-05. Kepler magnitude: 12.36. Transit SNR 7.84

There are 6 quarters with good PRF difference image offsets

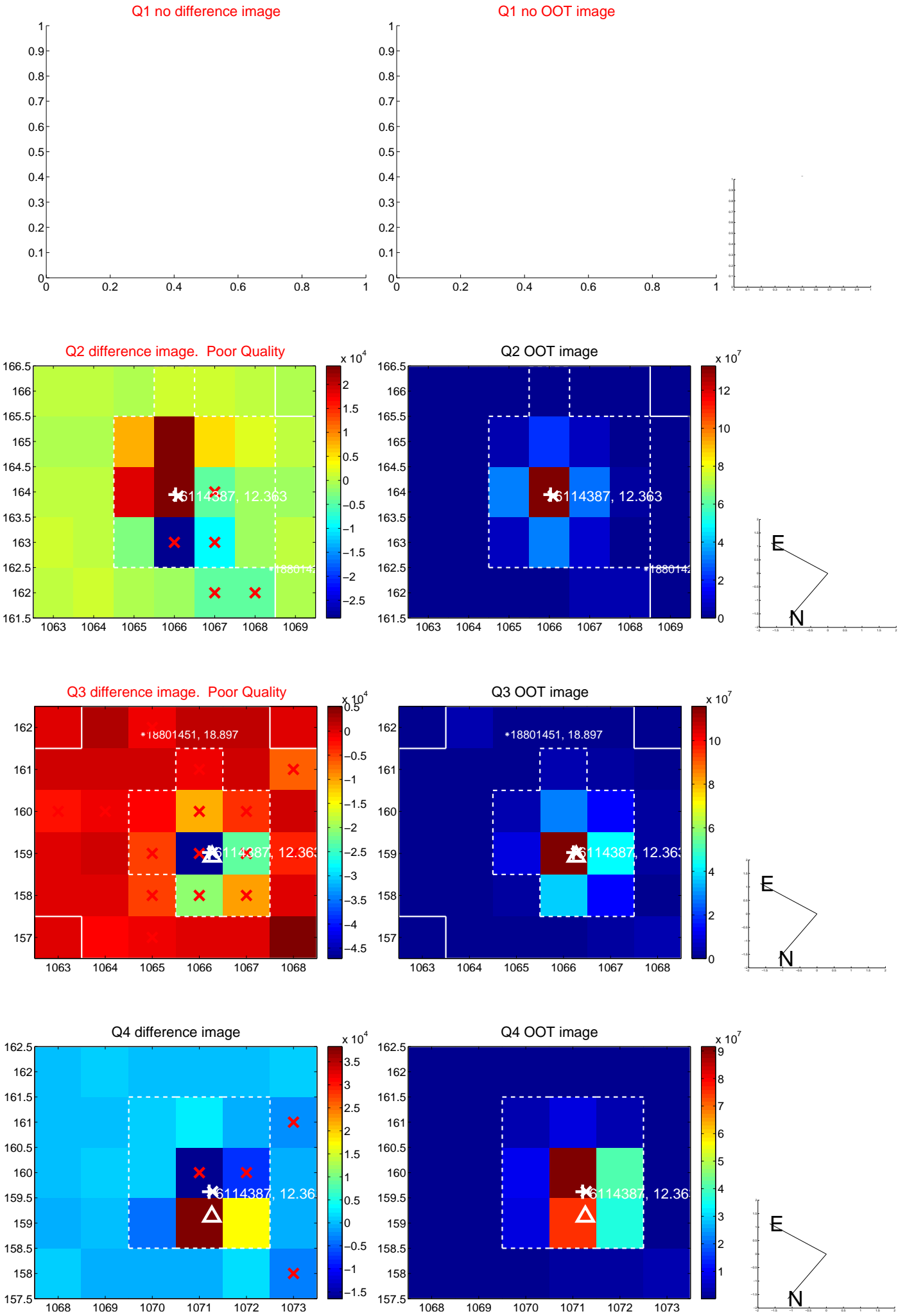
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.158 ± 0.271	0.58	0.070 ± 0.194	-0.141 ± 0.276
PRF-fit source offset from KIC position	0.300 ± 0.211	1.42	0.292 ± 0.213	-0.066 ± 0.178
photometric centroid source offset	0.03 ± 0.42	0.08	0.03 ± 0.45	-0.02 ± 0.36

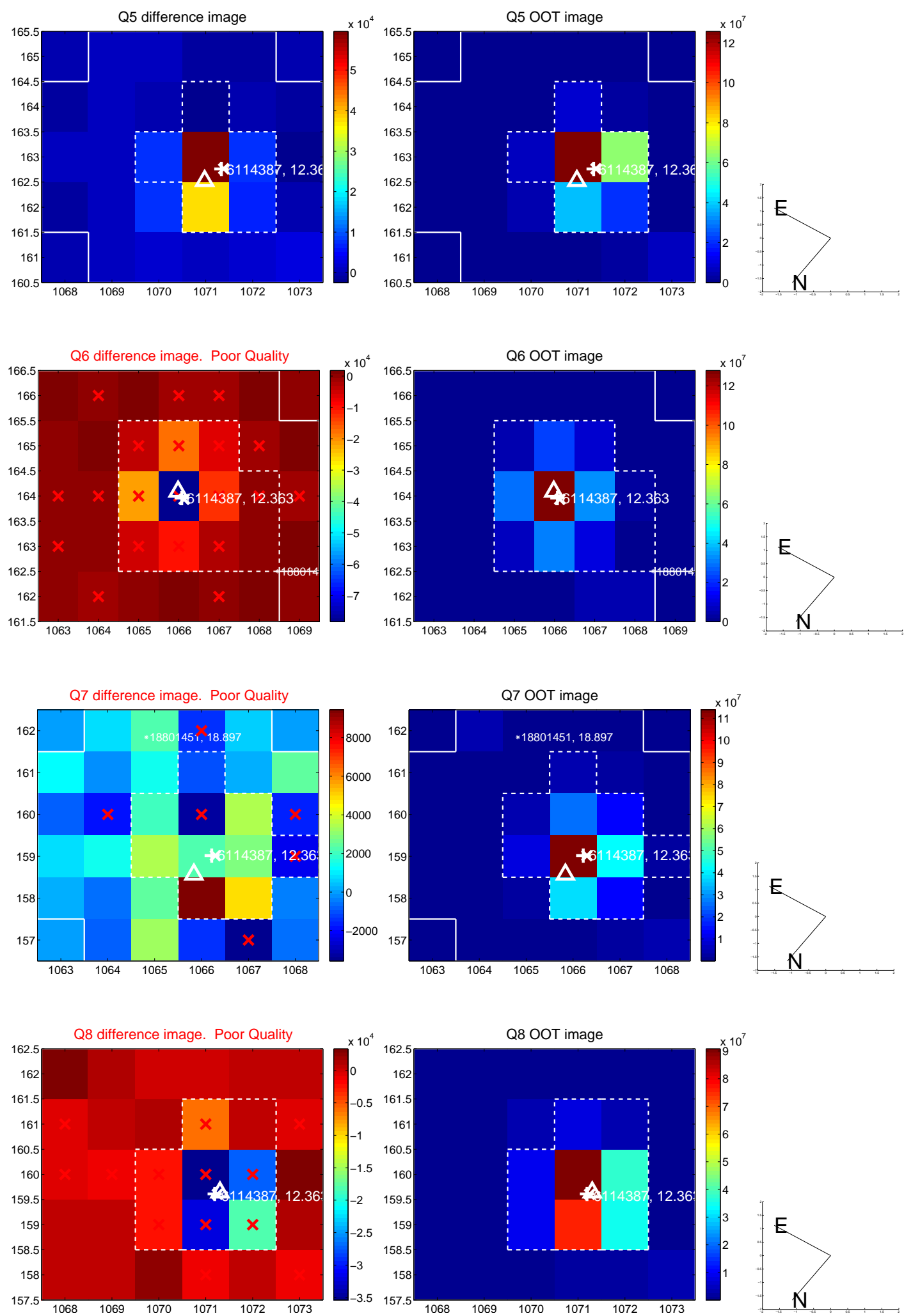


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

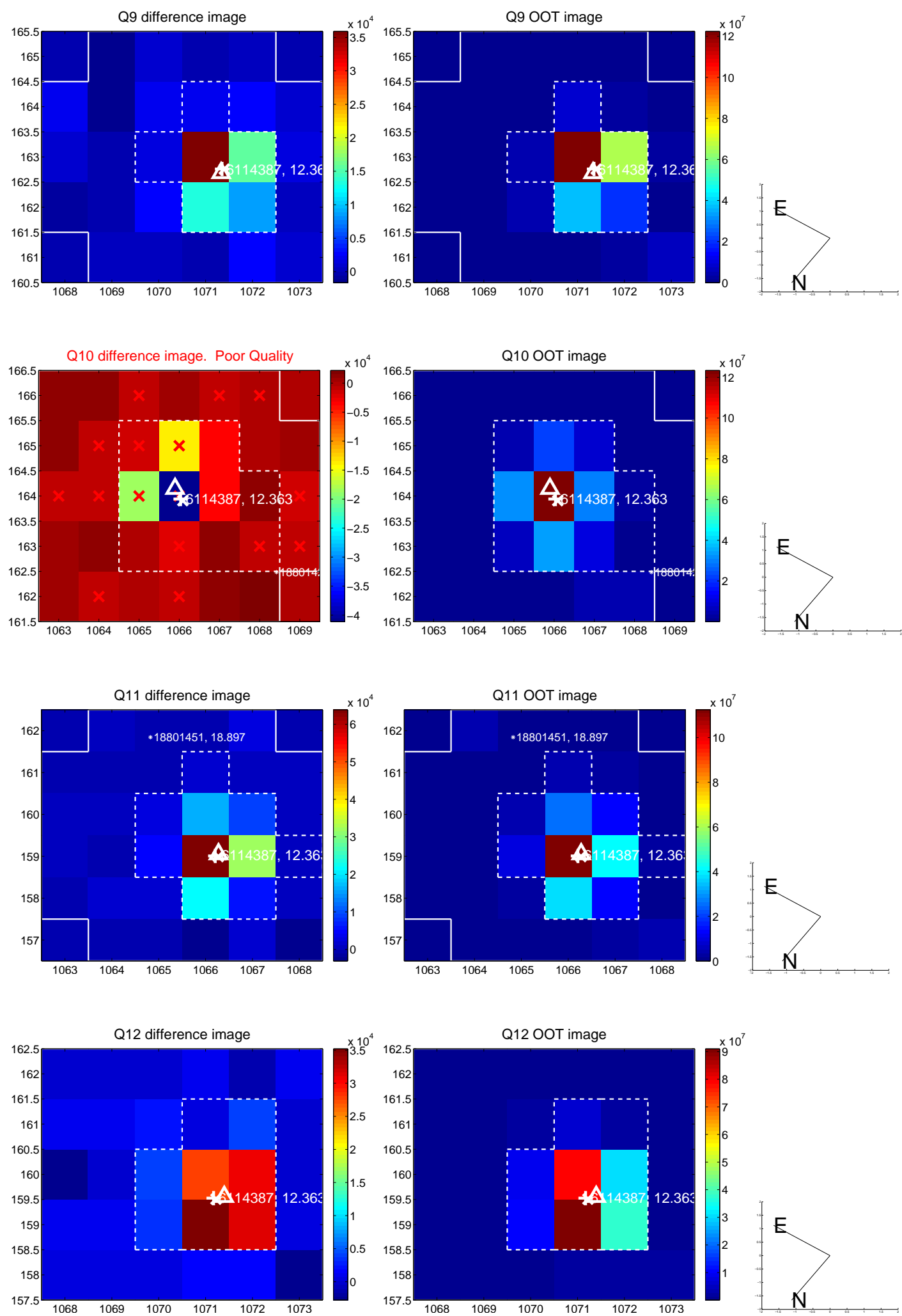
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



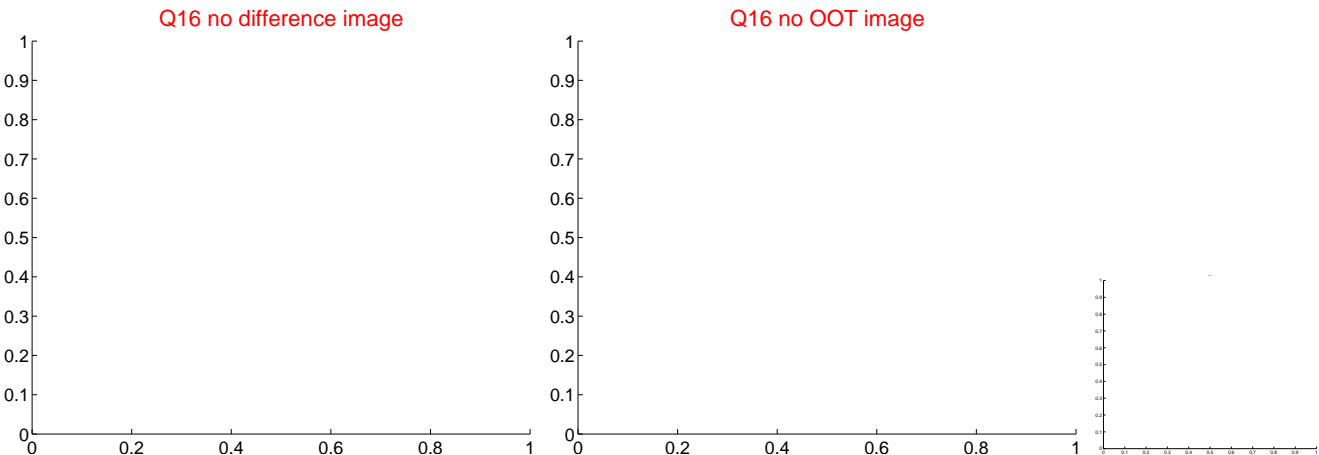
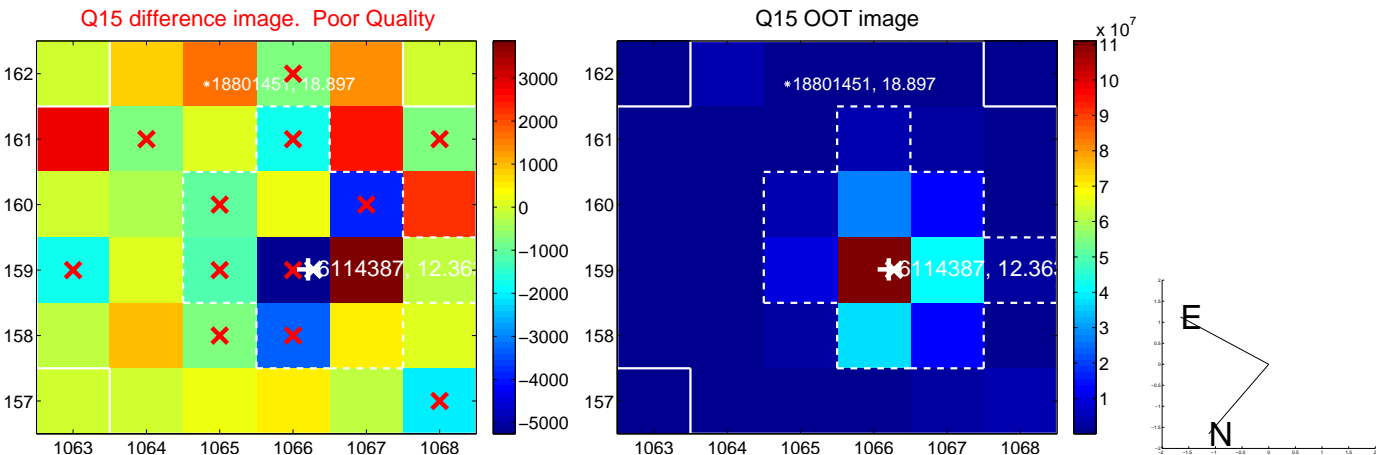
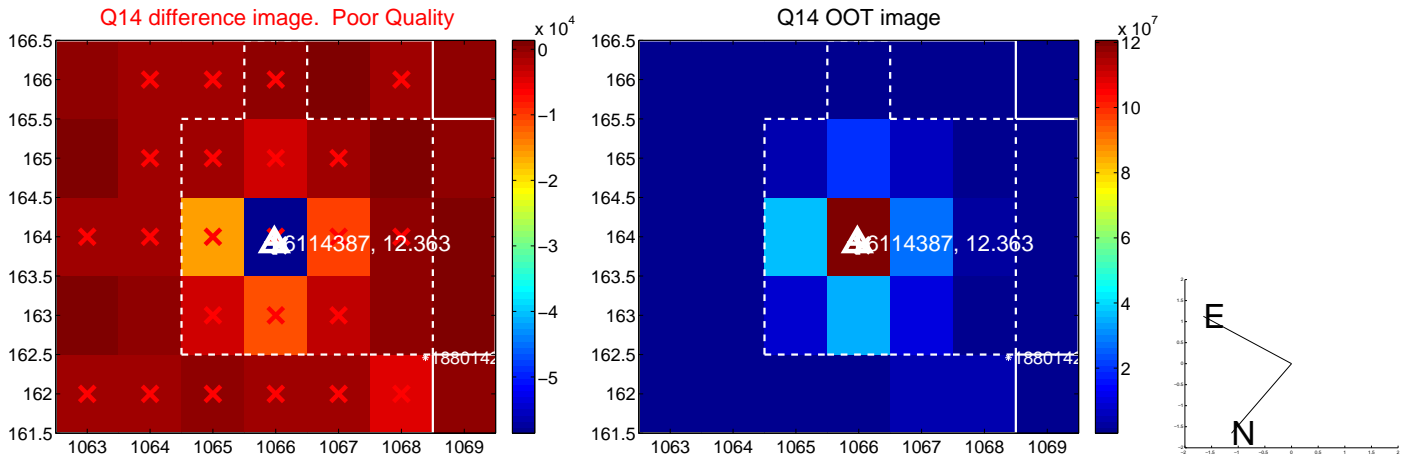
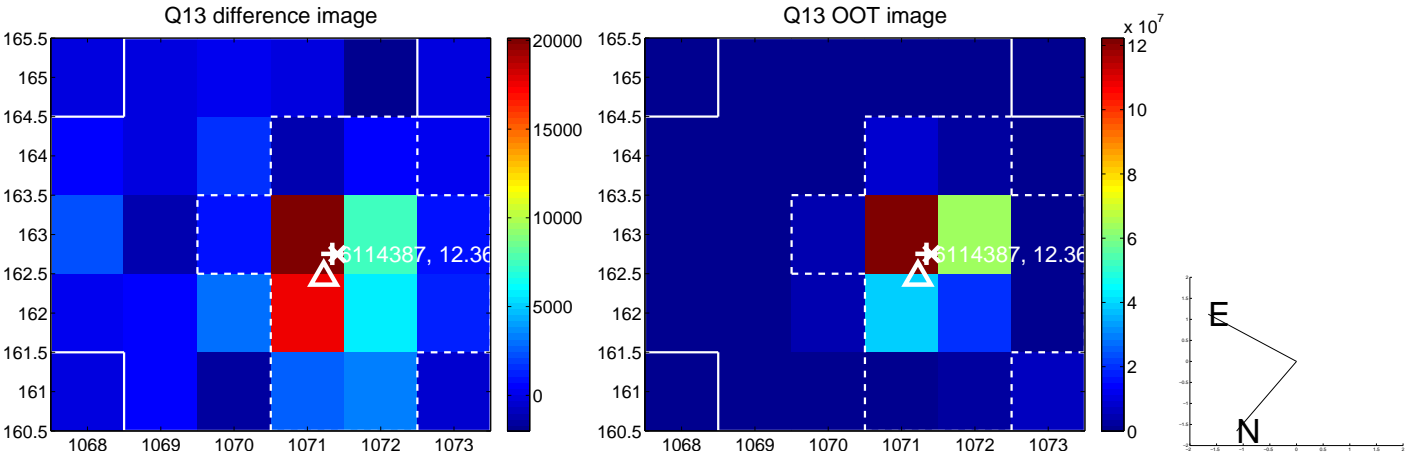
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



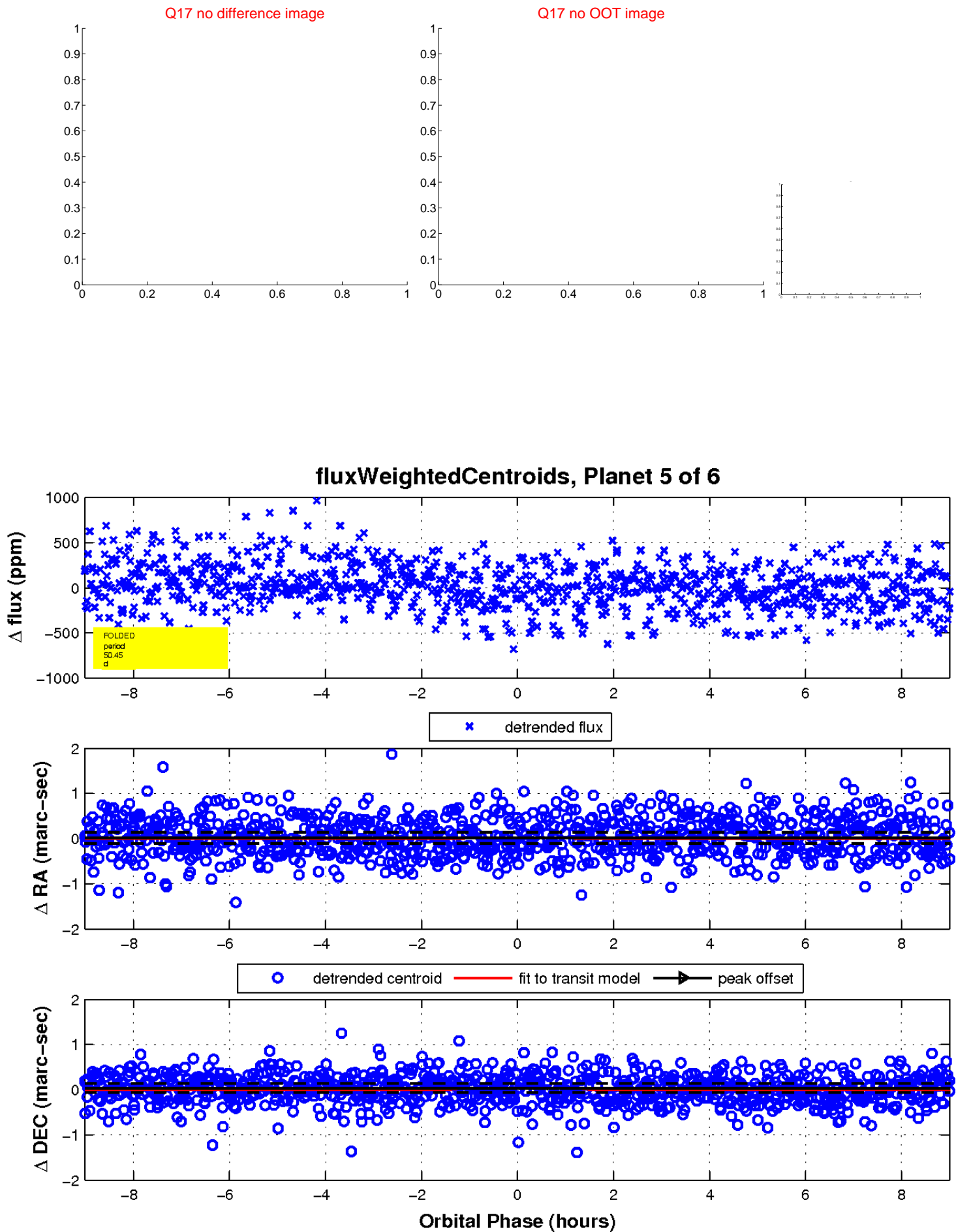
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

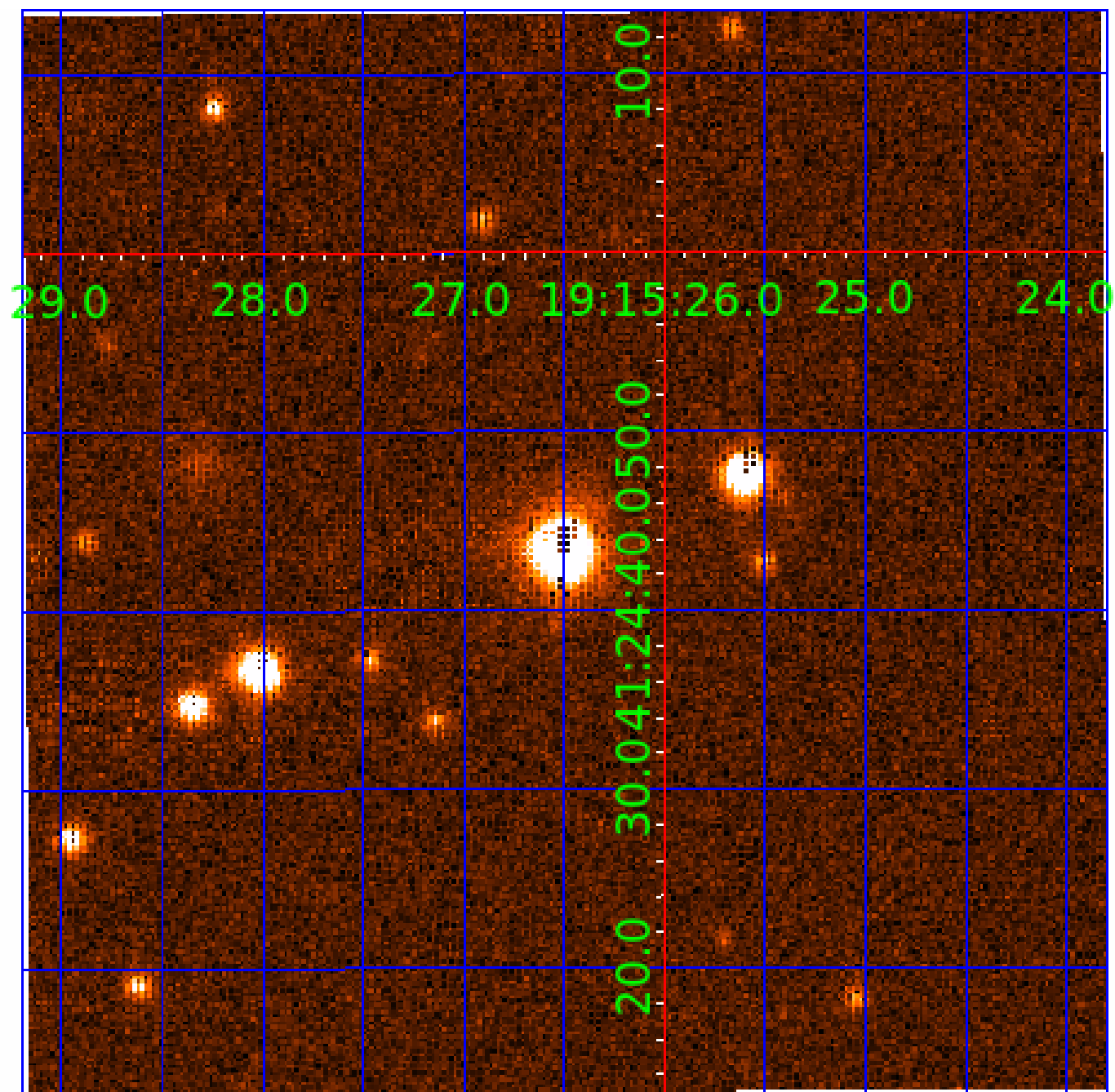


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006114387

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})
006114387-01	OBS	No	1.406319	132.219231	43.2	2.589	10.9	12.0	2.22	7483	1.78	15950.88
006114387-02	OBS	No	0.645776	131.601330	23.4	2.851	9.4	8.8	2.22	7483	1.24	45025.06
006114387-03	OBS	No	117.475643	179.644103	381.3	8.330	7.7	6.9	2.22	7483	5.06	43.68
006114387-04	OBS	No	130.533860	233.582294	394.8	3.768	7.5	7.4	2.22	7483	5.62	37.95
006114387-05	OBS	No	50.447208	171.795296	273.0	3.006	7.8	7.8	2.22	7483	4.22	134.83
006114387-06	OBS	No	96.582616	225.163820	430.2	6.402	7.8	8.1	2.22	7483	5.85	56.72

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006114387-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
006114387-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
006114387-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
006114387-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—HALO_GHOST
006114387-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
006114387-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

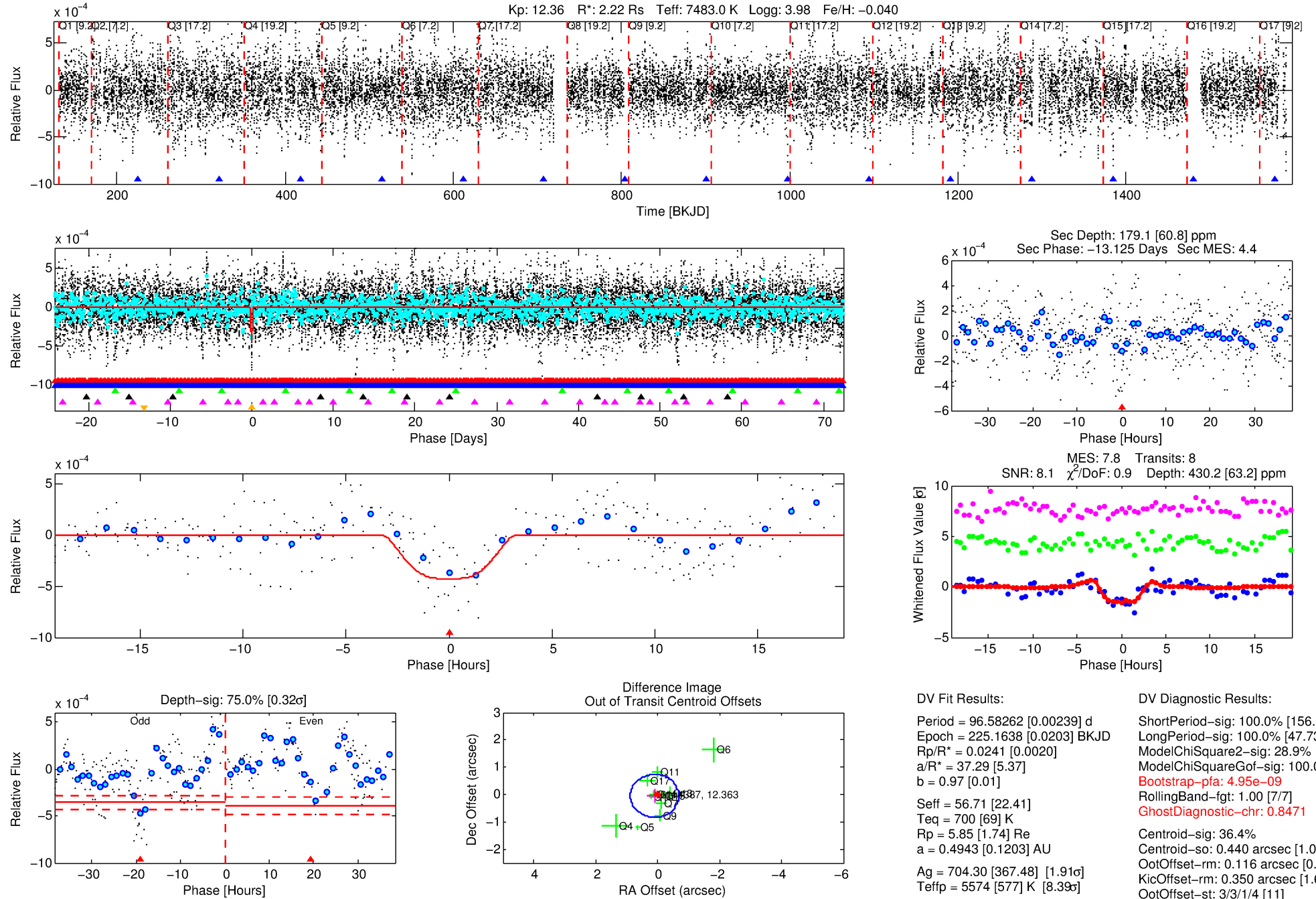
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006114387-06

No Significant Match Found

DV One-Page Summary

KIC: 6114387 Candidate: 6 of 6 Period: 96.583 d



DV Fit Results:

Period = 96.58262 [0.00239] d
Epoch = 225.1638 [0.0203] BKJD
Rp/R* = 0.0241 [0.0020]
a/R* = 37.29 [5.37]
b = 0.97 [0.01]
Seff = 56.71 [22.41]
Teq = 700 [69] K
Rp = 5.85 [1.74] Re
a = 0.4943 [0.1203] AU
Ag = 704.30 [367.48] [1.91 σ]
Teffp = 5574 [577] K [8.39 σ]

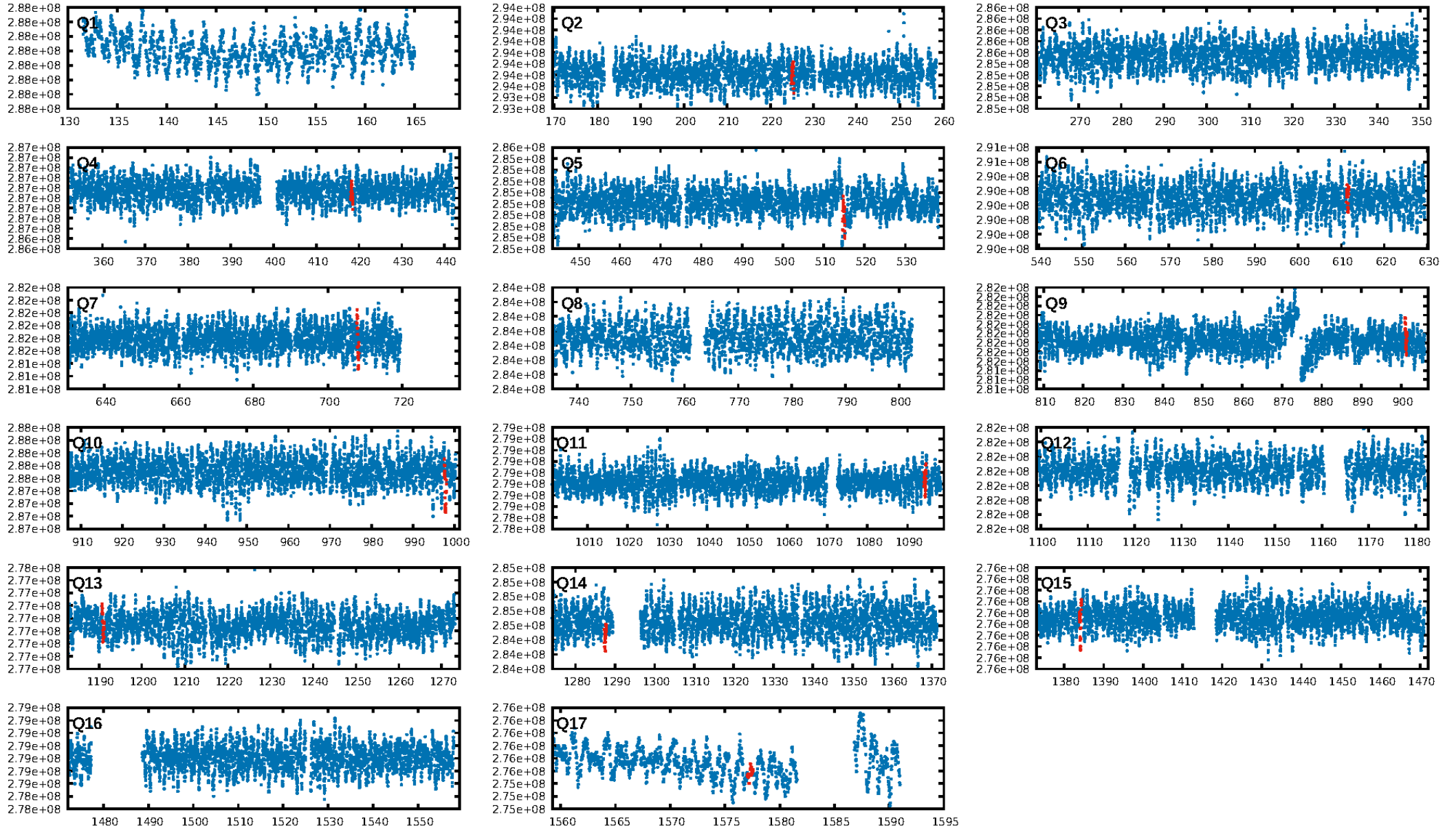
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [156.55 σ]
LongPeriod-sig: 100.0% [47.73 σ]
ModelChiSquare2-sig: 28.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.95e-09
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: 0.8471
Centroid-sig: 36.4%
Centroid-so: 0.440 arcsec [1.02 σ]
OotOffset-rm: 0.116 arcsec [0.44 σ]
OotOffset-st: 3/3/1/4 [11]
KicOffset-rm: 0.350 arcsec [1.60 σ]
KicOffset-st: 3/3/1/4 [11]
DiffImageQuality-fgm: 0.73 [8/11]
DiffImageOverlap-fno: 0.00 [0/12]

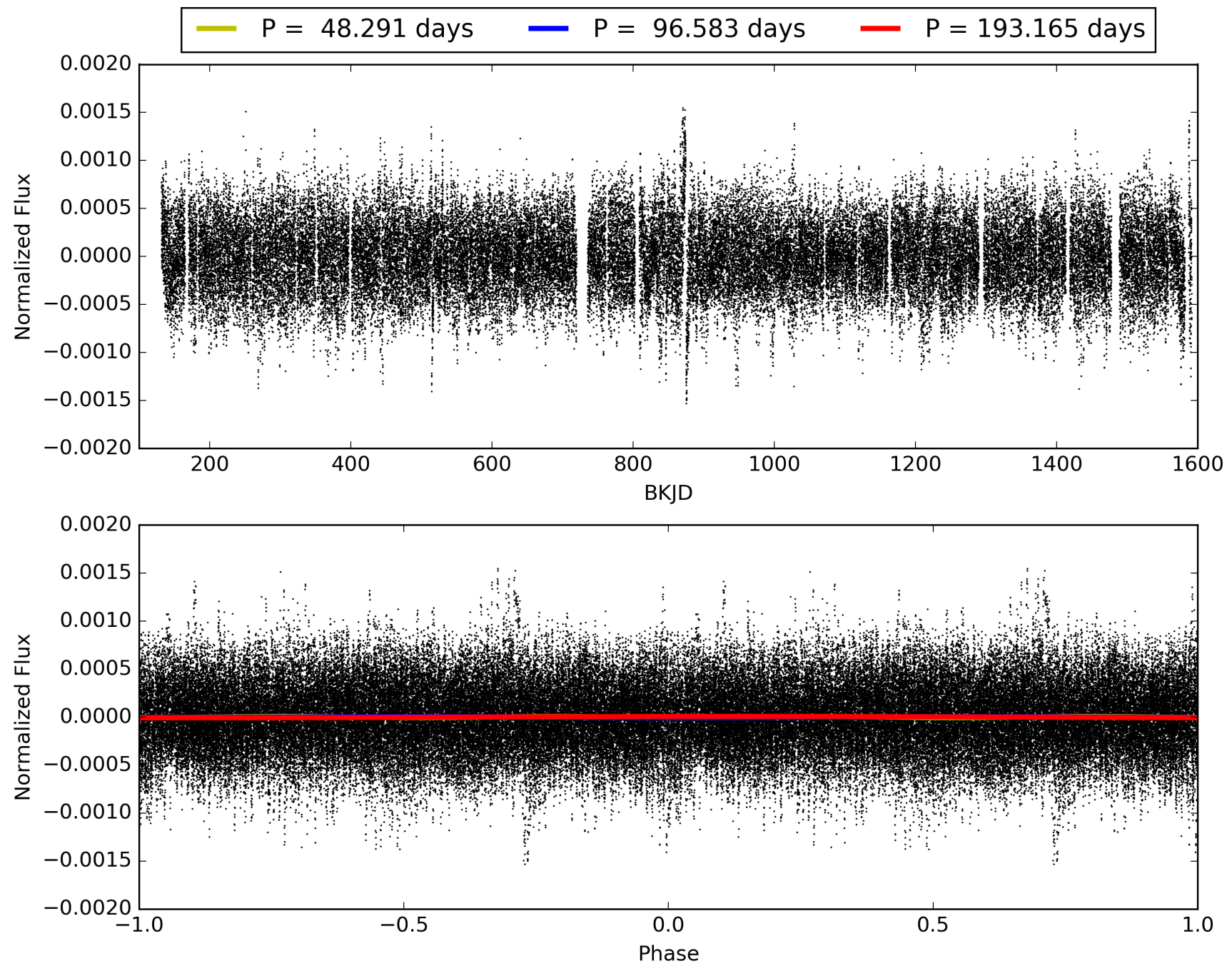
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:19:39 Z

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

TCE 006114387-06, PDC Light Curves

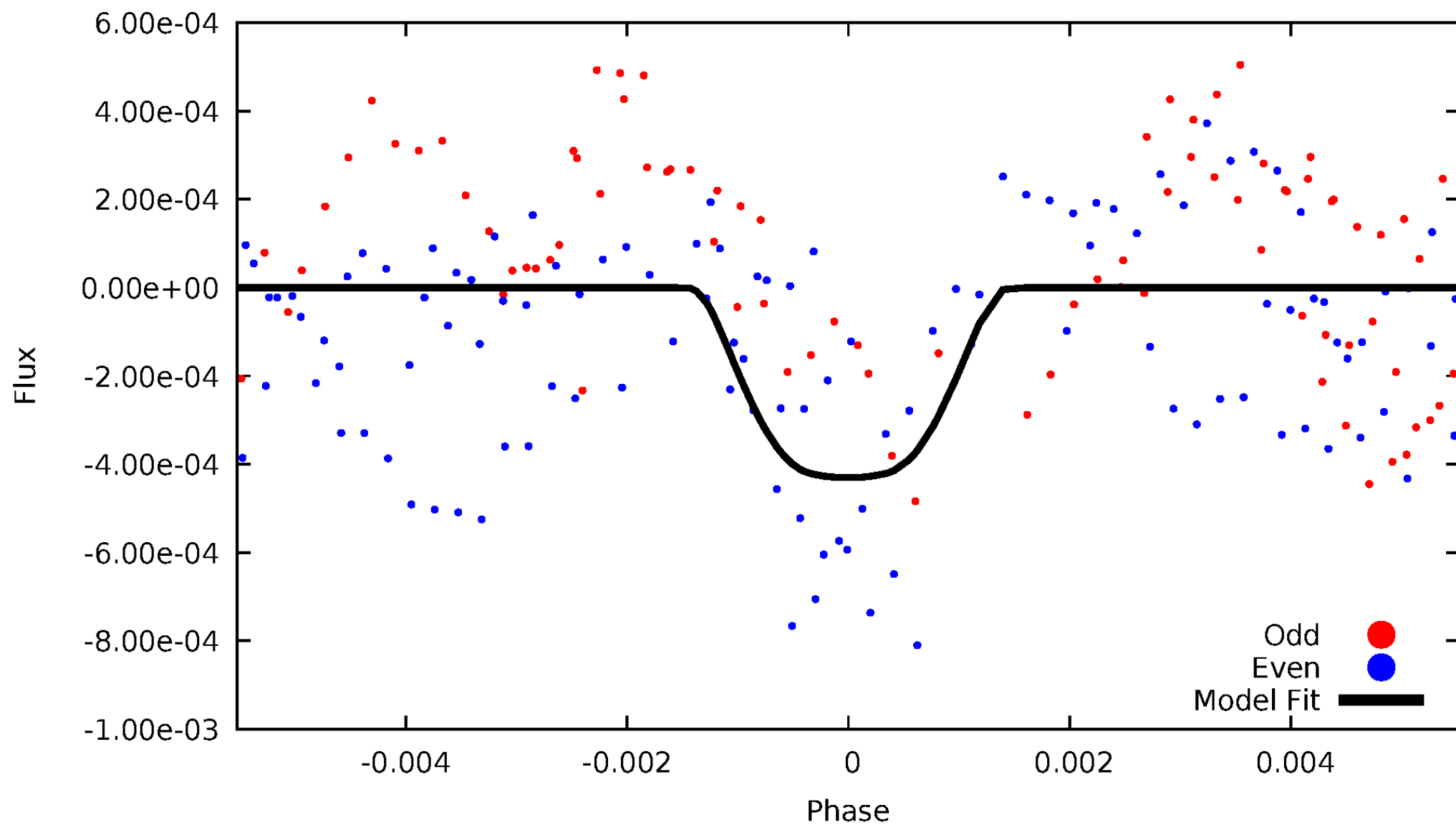


TCE 006114387-06



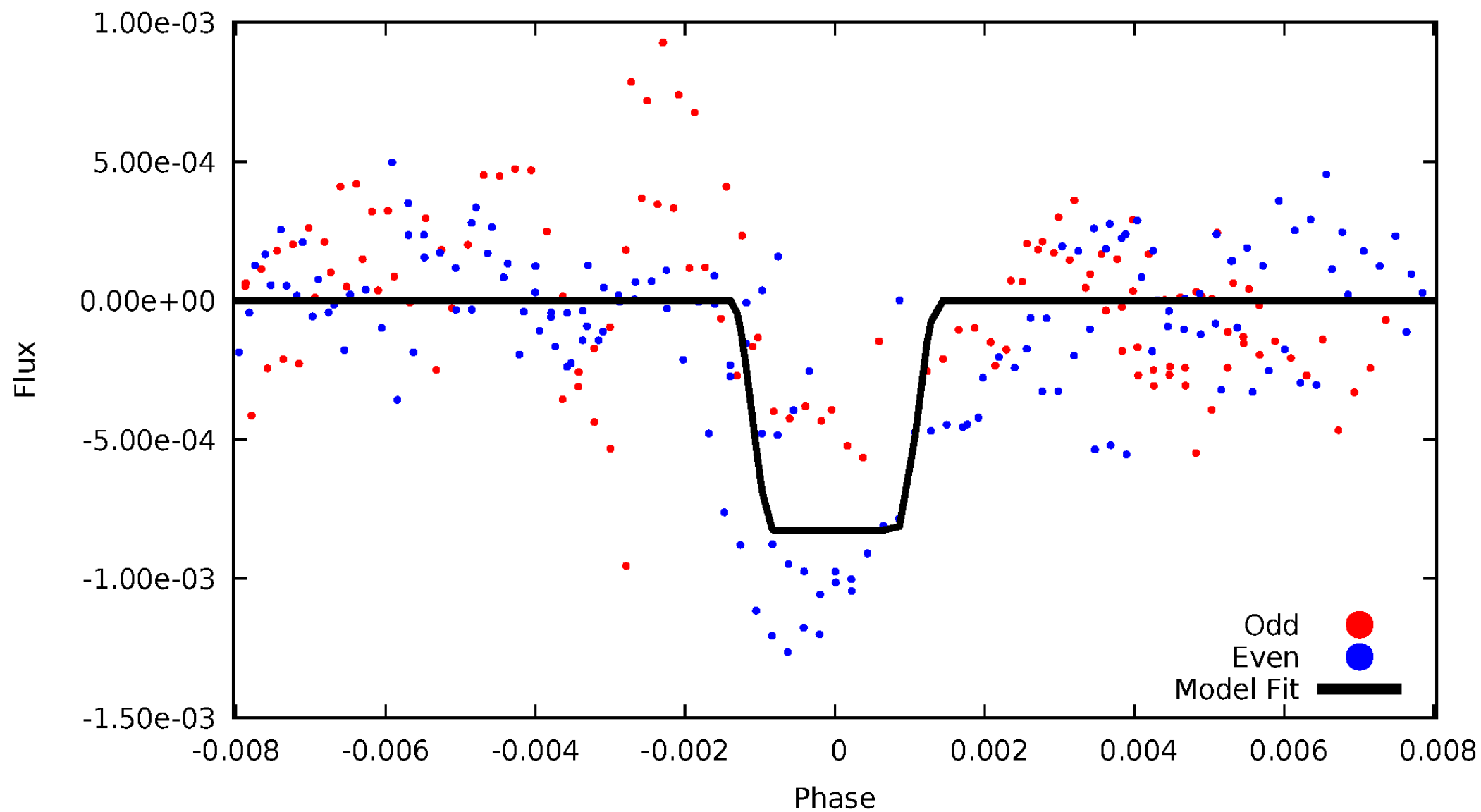
DV Odd/Even

TCE 006114387-06



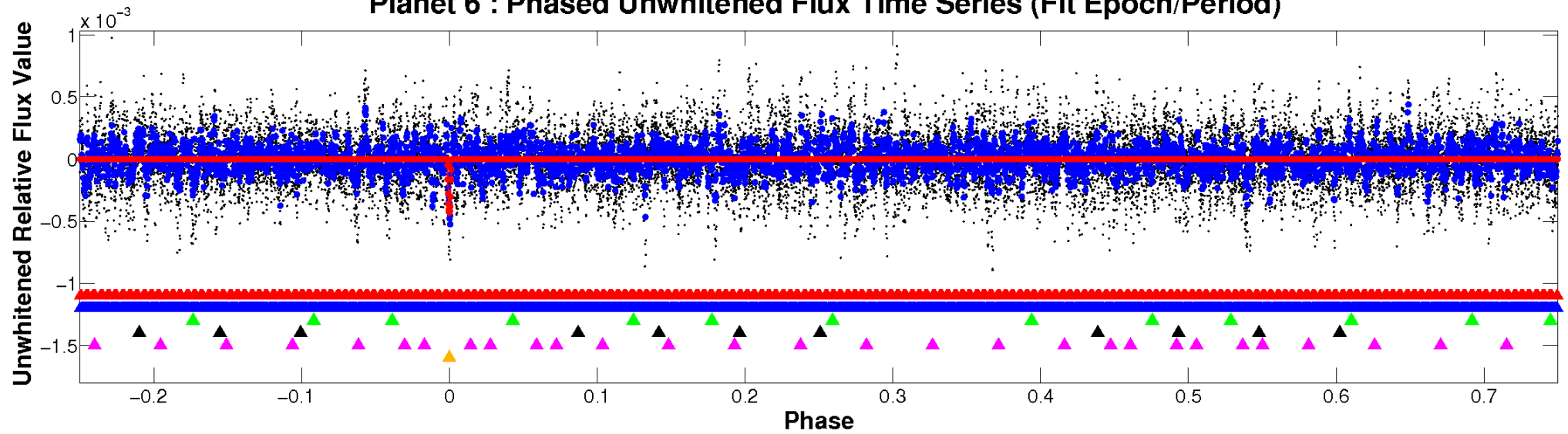
ALT Odd/Even

TCE 006114387-06

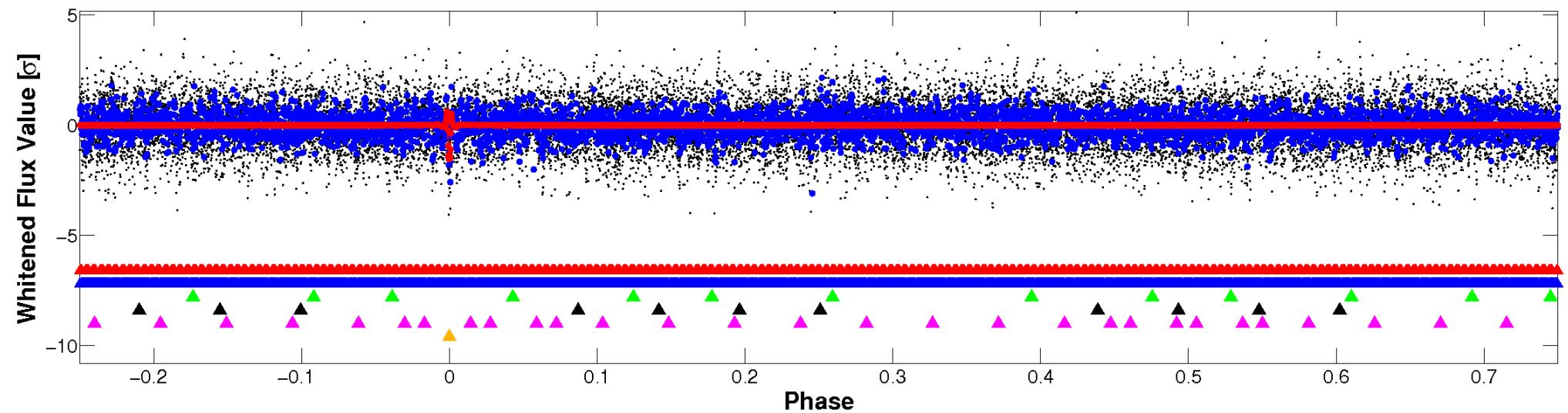


Non-Whitened Vs. Whitened Light Curve

Planet 6 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

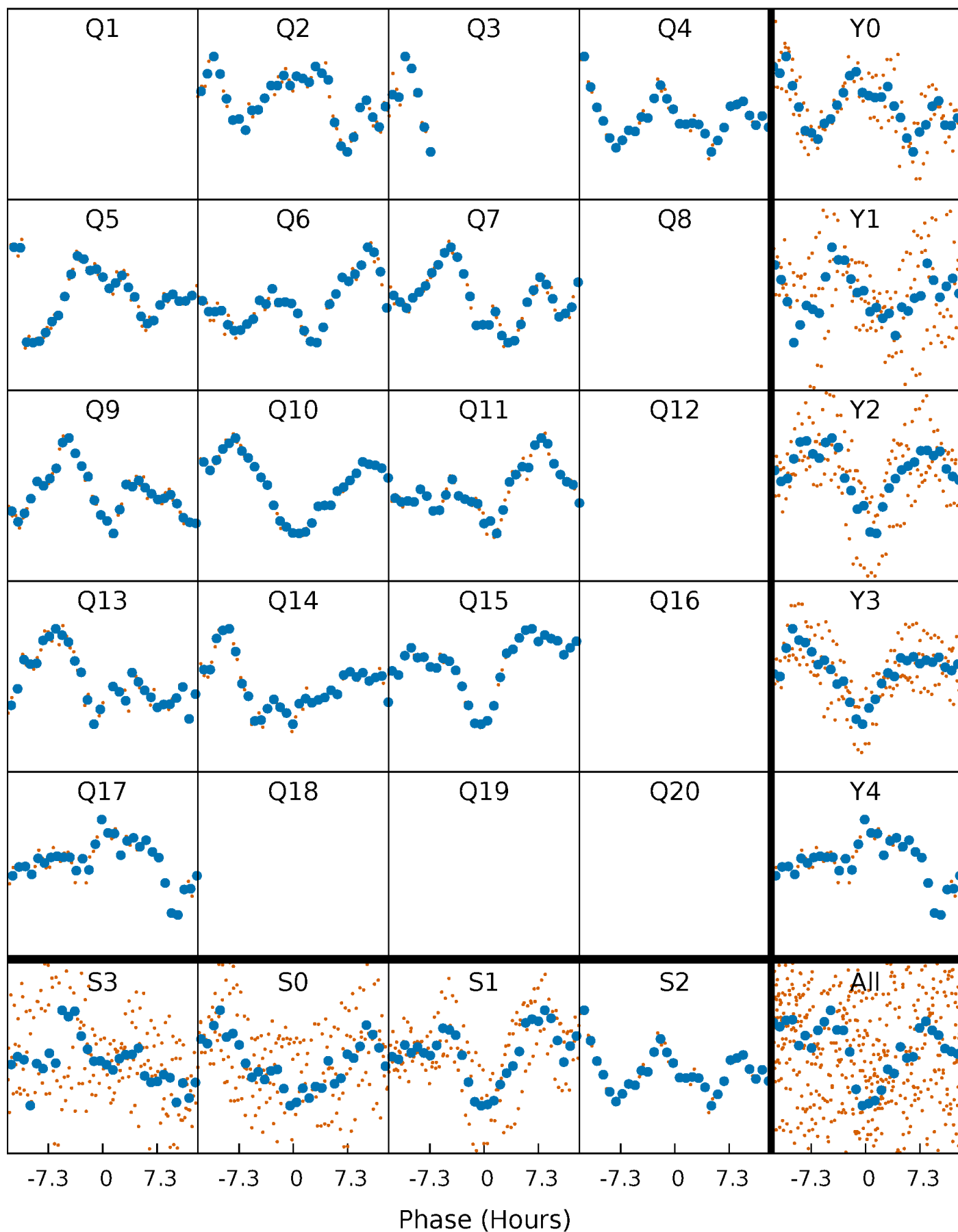


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



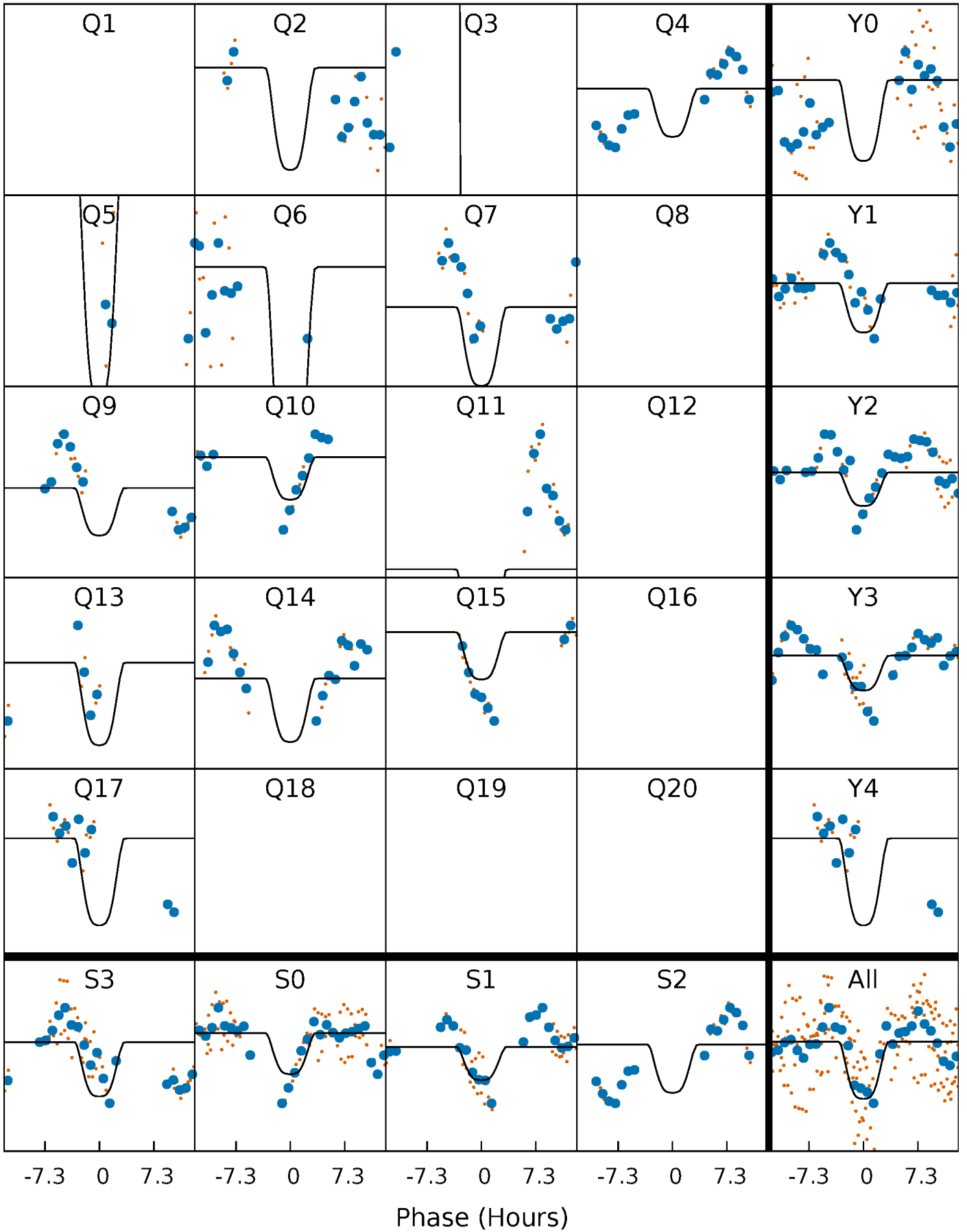
PDC Quarter-Phased Transit Curves

TCE 006114387-06 P= 96.582616 Days $T_0=225.163820$ (BKJD)



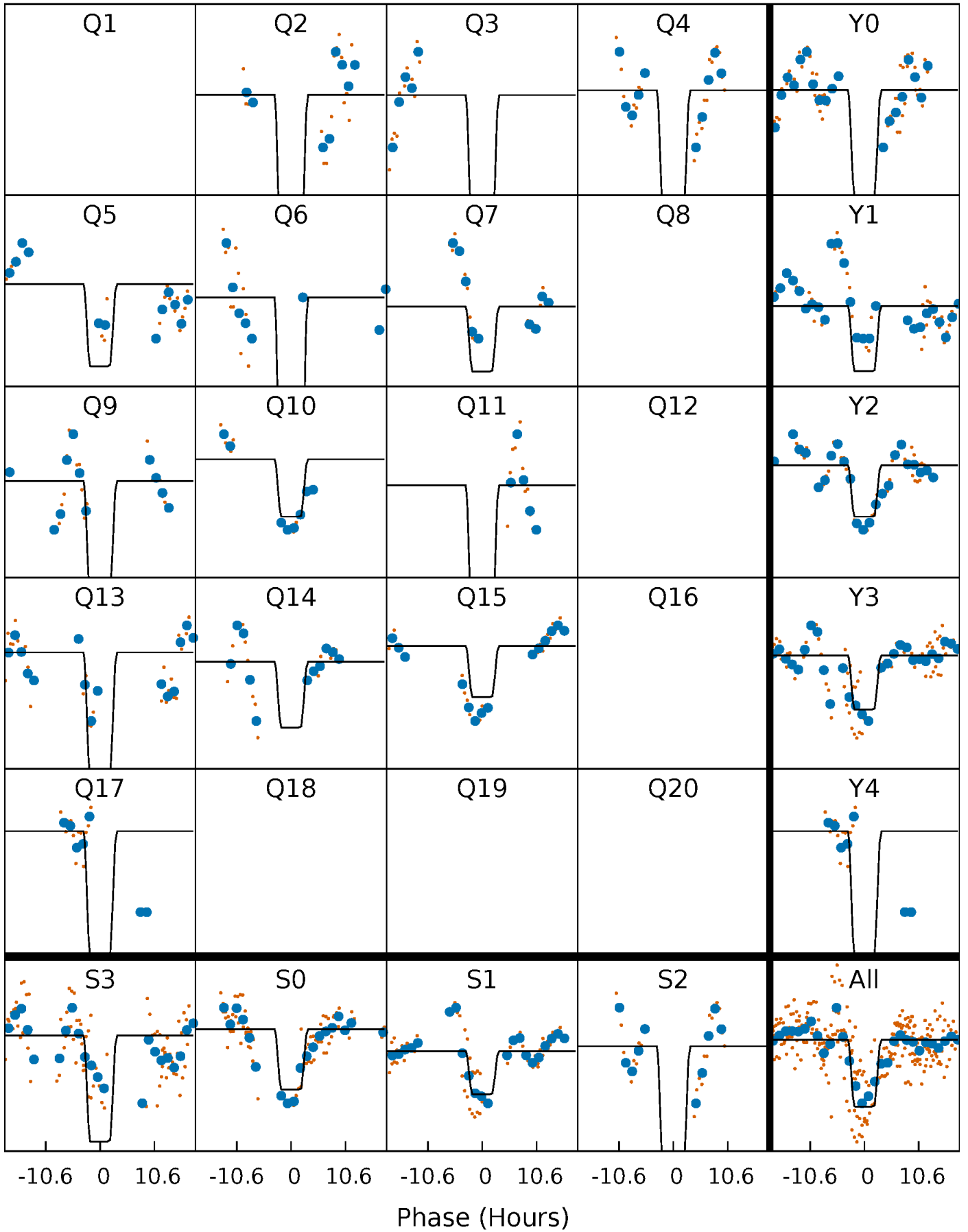
DV Quarter-Phased Transit Curves

TCE 006114387-06 P= 96.582616 Days $T_0=225.163820$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

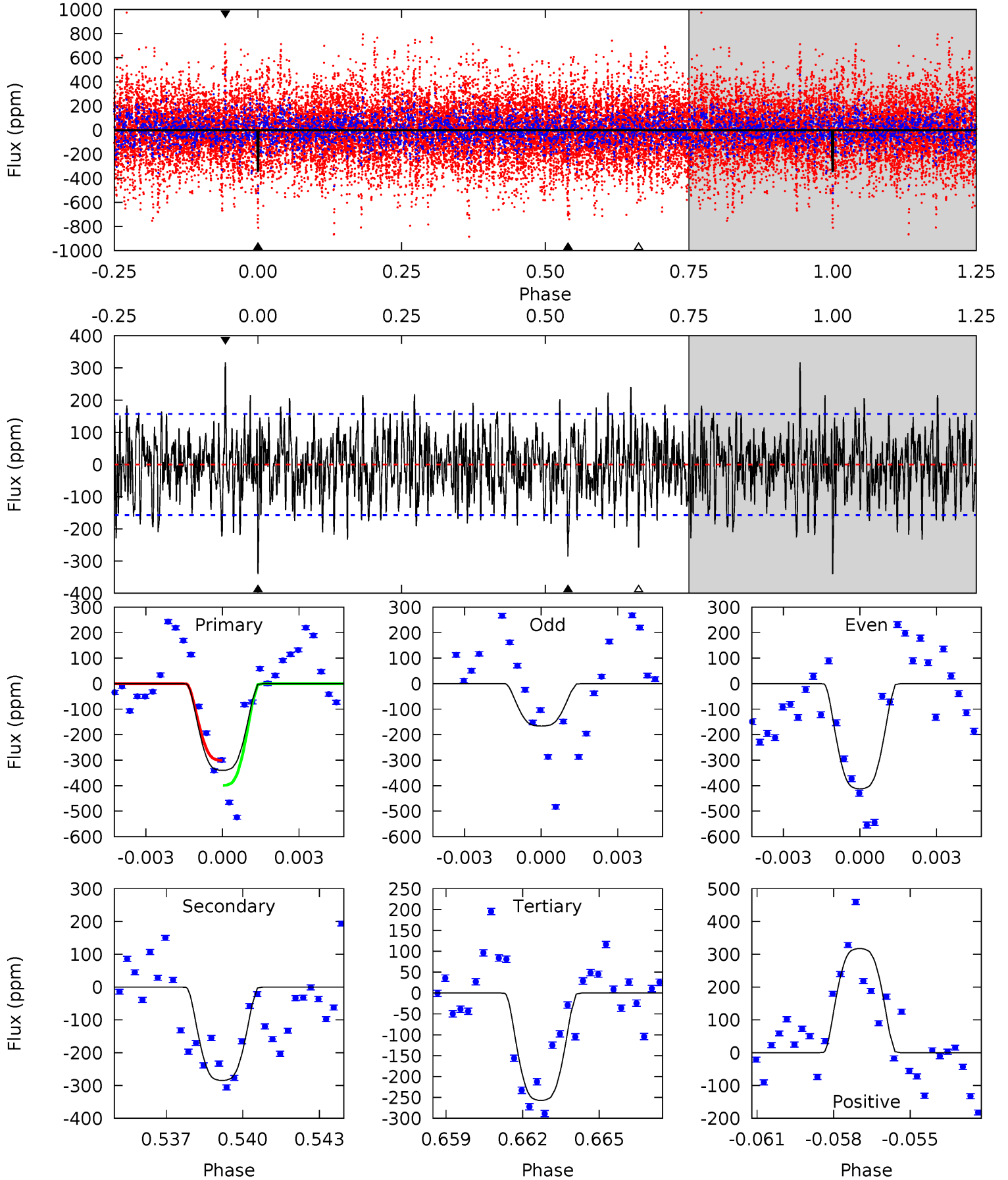
TCE 006114387-06 P= 96.584527 Days $T_0=225.180106$ (BKJD)



DV Model-Shift Uniqueness Test

006114387-06, P = 96.582616 Days, E = 128.581204 Days

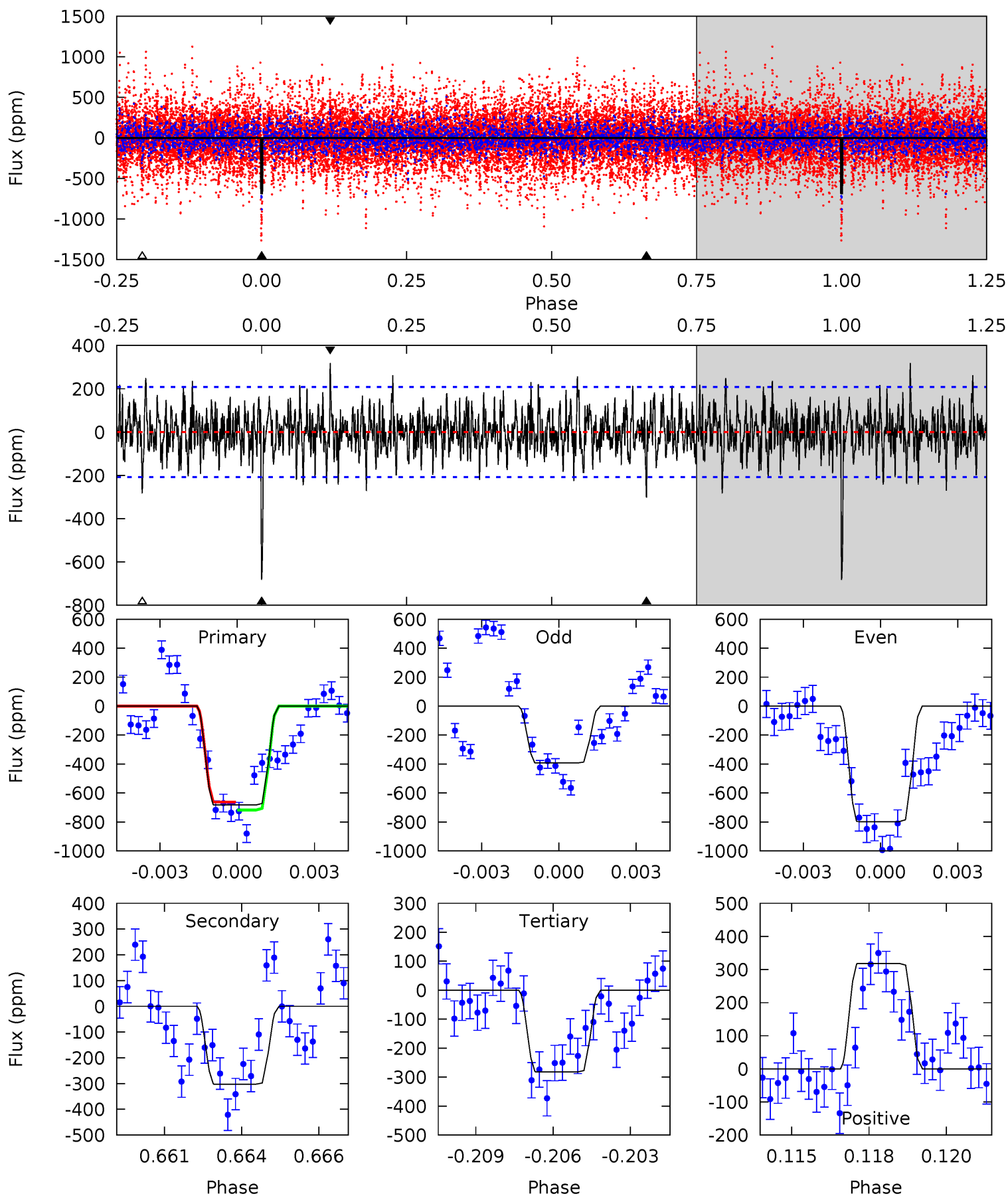
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.4	9.53	8.61	10.6	5.25	2.96	2.72	2.78	0.77	0.92	-1.09	3.76	1.17	0.48	1.57



Alt Model-Shift Uniqueness Test

006114387-06, P = 96.584527 Days, E = 128.595579 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.3	7.67	7.15	8.07	5.27	3.00	2.02	10.2	9.24	0.52	-0.40	4.81	1.26	0.32	0.65



Stellar Parameters For KIC 006114387

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7483^{+207}_{-311}	$3.982^{+0.198}_{-0.162}$	$-0.040^{+0.200}_{-0.300}$	$2.221^{+0.518}_{-0.633}$	$1.724^{+0.201}_{-0.277}$	$0.222^{+0.281}_{-0.094}$
	+3%/-4%	+5%/-4%	+500%/-750%	+23%/-29%	+12%/-16%	+127%/-42%
Source	KIC0	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 006114387-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-285 ± 30	$5.77^{+1.02}_{-0.88}$	972^{+68}_{-73}	6142^{+376}_{-359}	1127^{+453}_{-314}
Alt.	-303 ± 39	$6.97^{+1.12}_{-1.07}$	976^{+69}_{-72}	5729^{+302}_{-314}	839^{+332}_{-233}

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

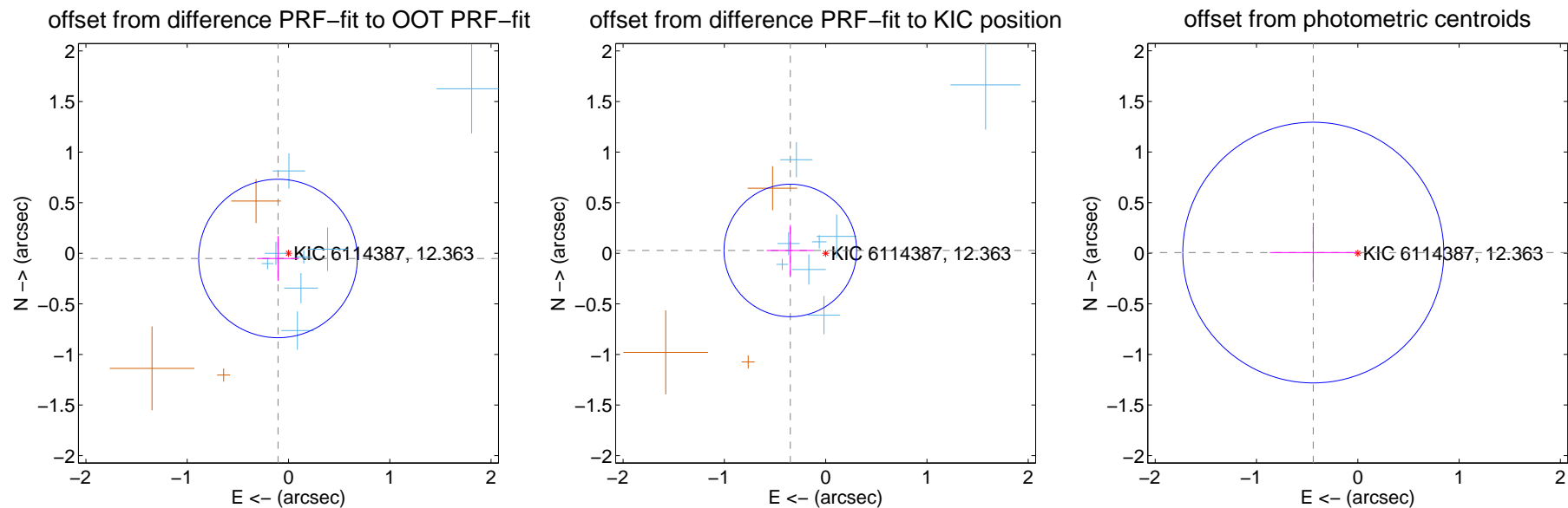
DV Centroid Data

Supplemental centroid analysis for 006114387-06. Kepler magnitude: 12.36. Transit SNR 8.11

There are 8 quarters with good PRF difference image offsets

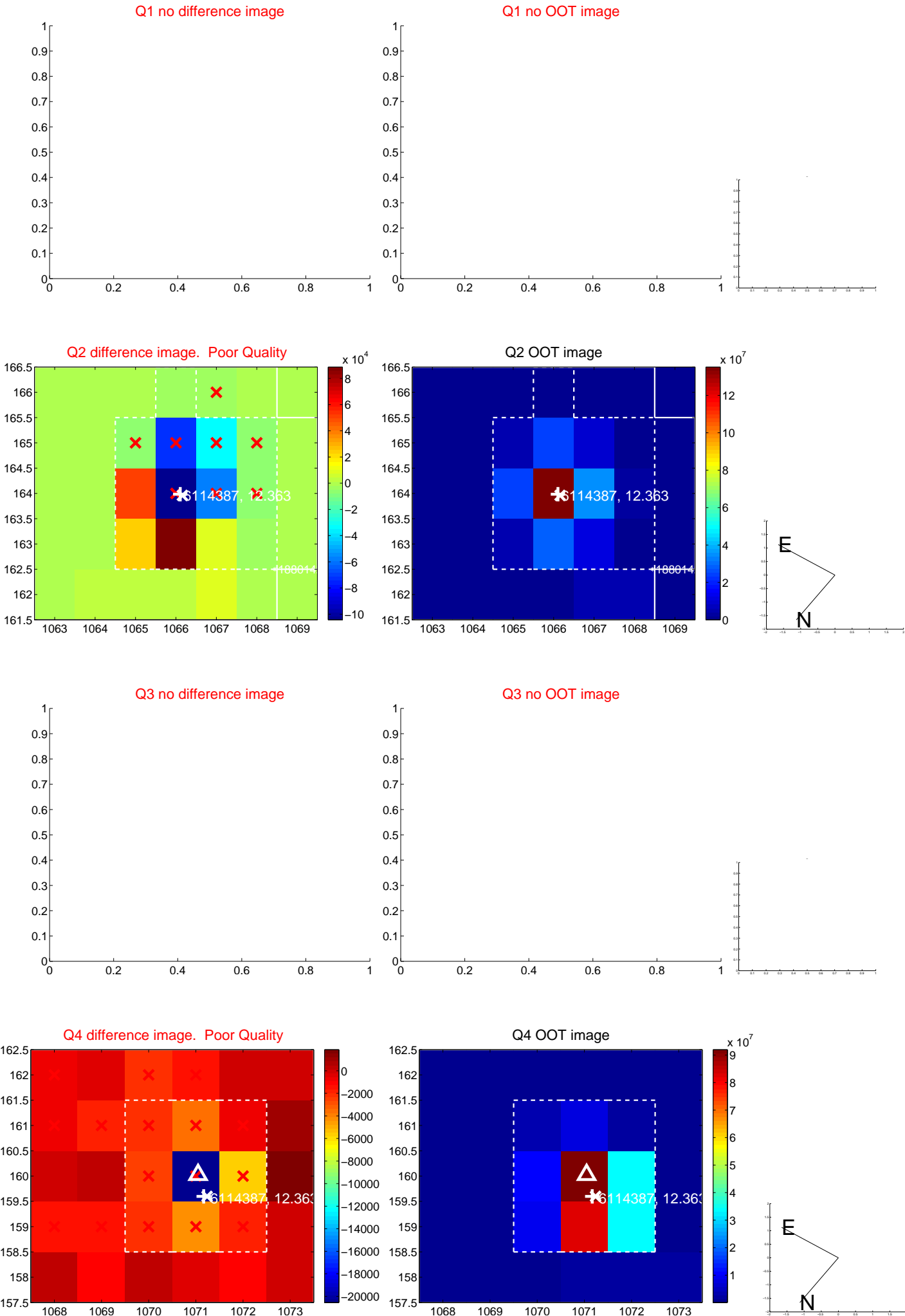
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.116 ± 0.261	0.44	0.104 ± 0.206	-0.051 ± 0.221
PRF-fit source offset from KIC position	0.350 ± 0.218	1.60	0.349 ± 0.233	0.028 ± 0.251
photometric centroid source offset	0.44 ± 0.43	1.02	0.44 ± 0.43	0.01 ± 0.29

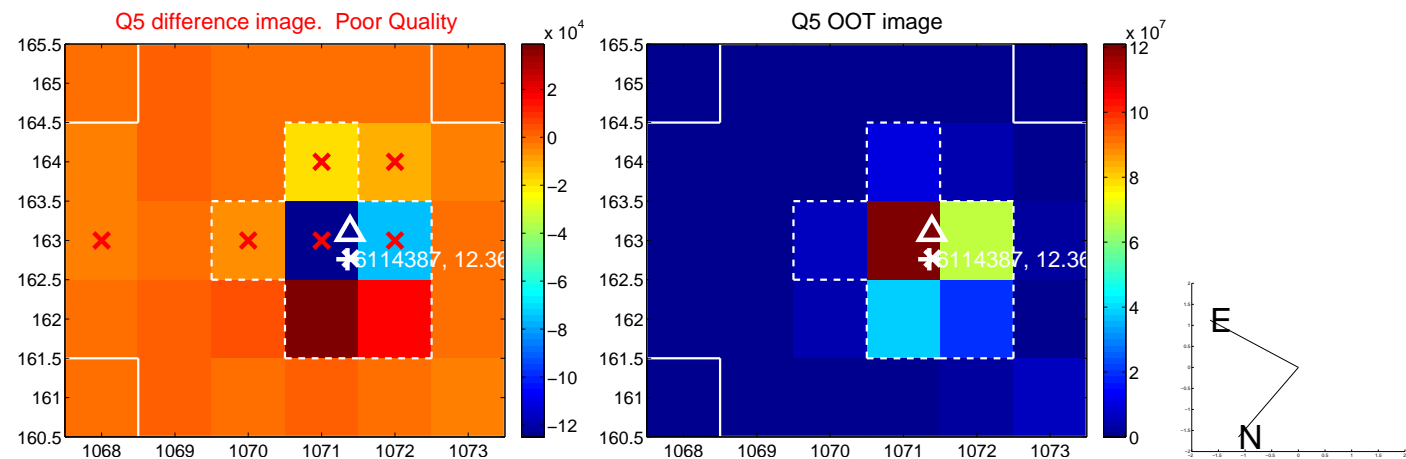


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

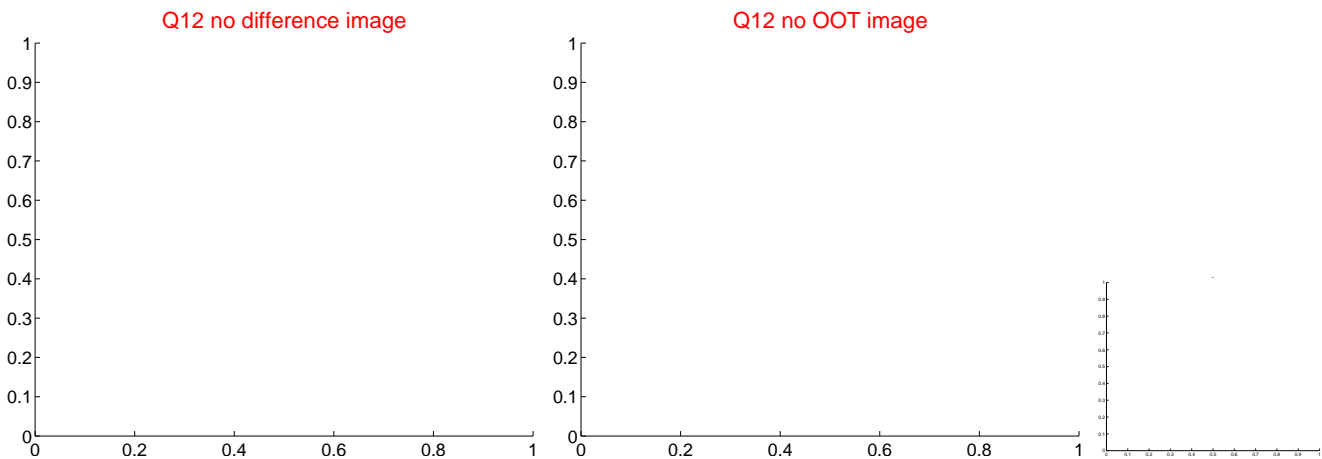
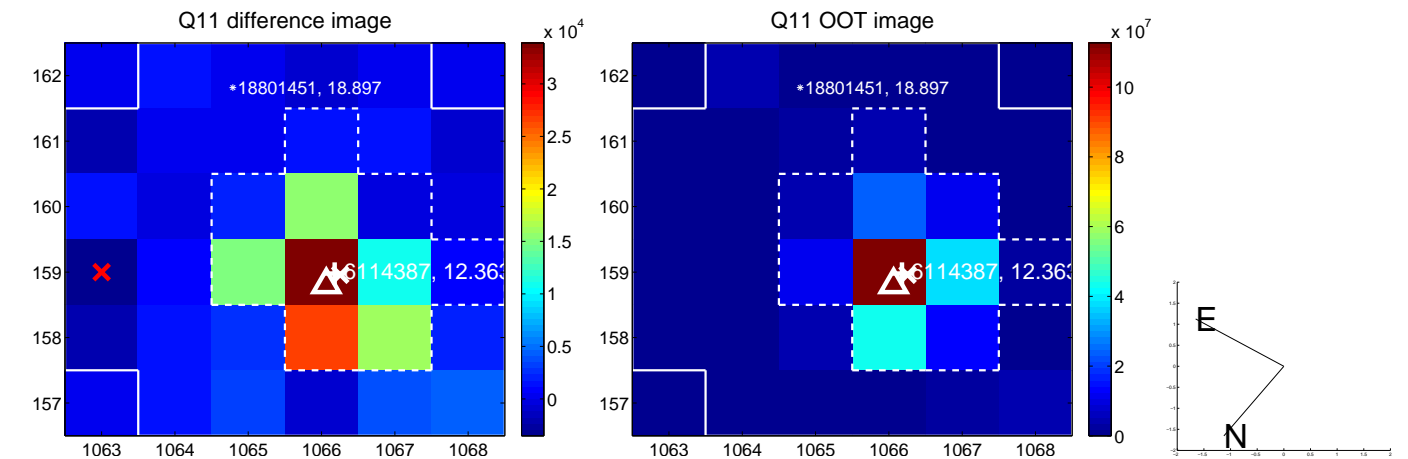
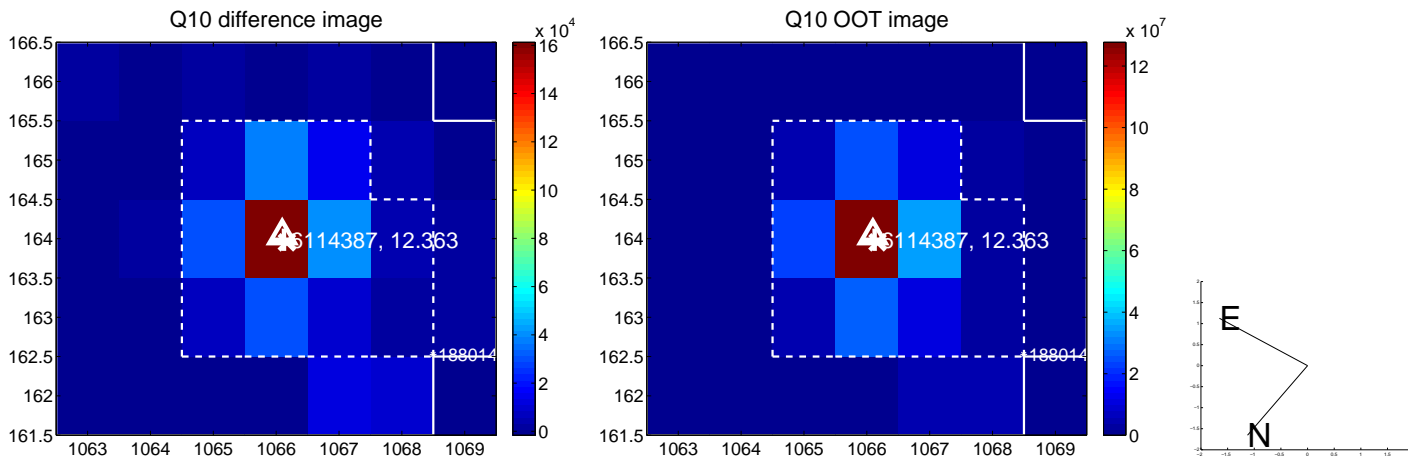
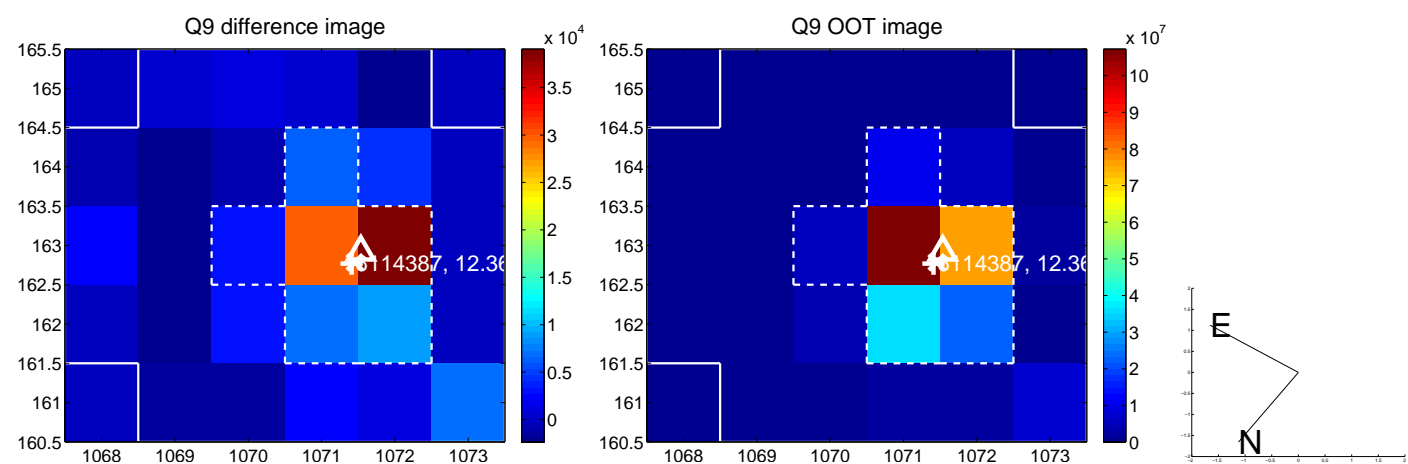
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



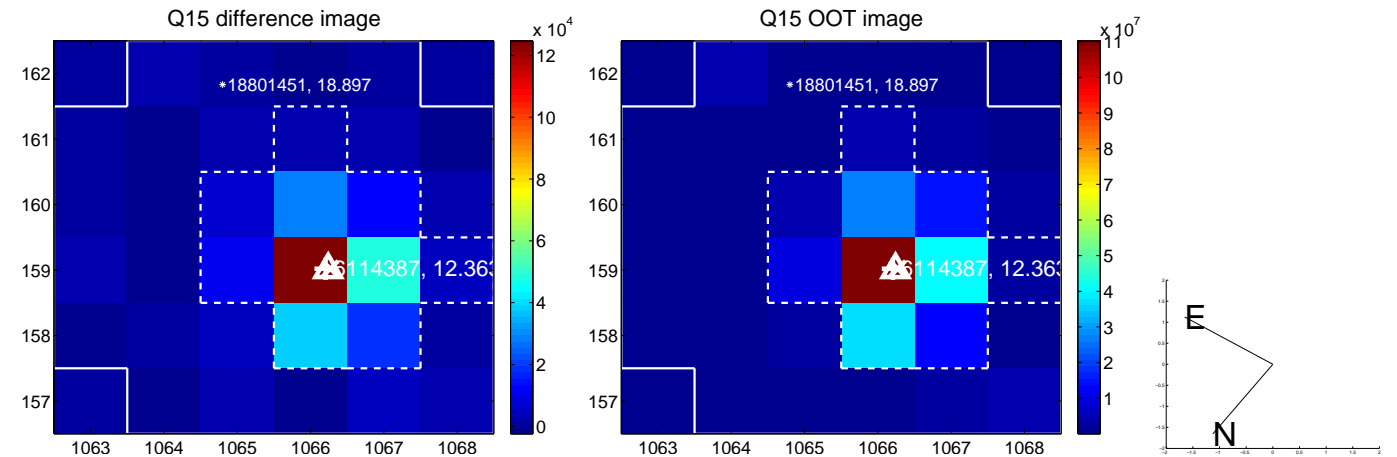
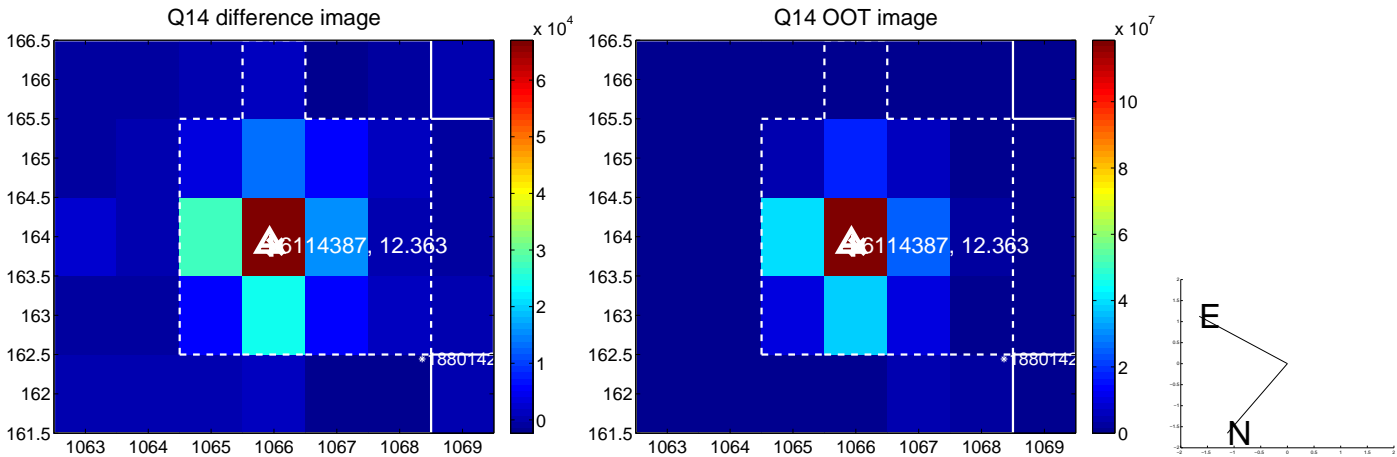
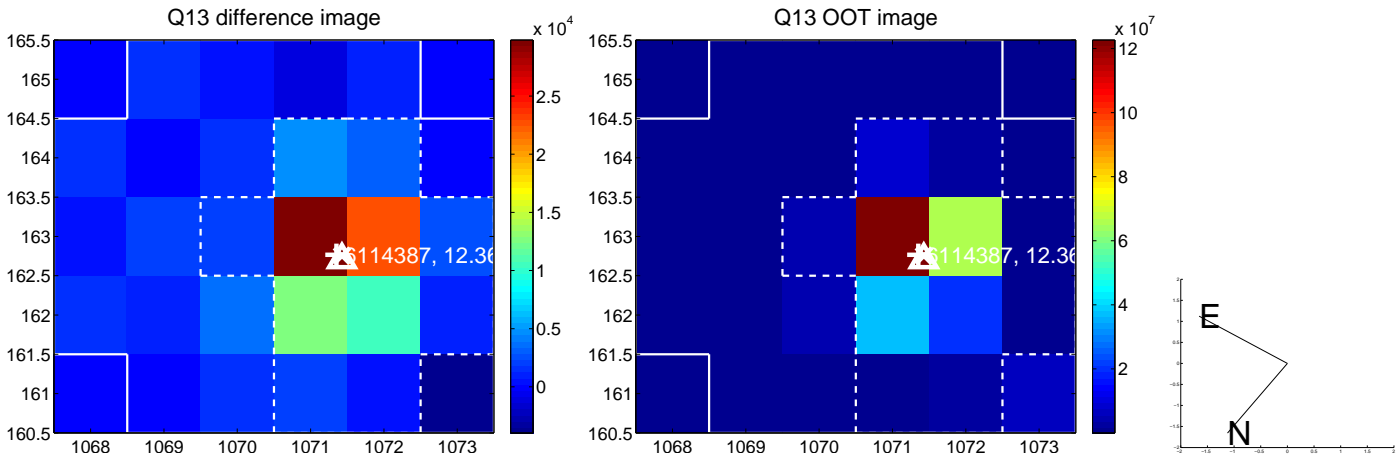
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



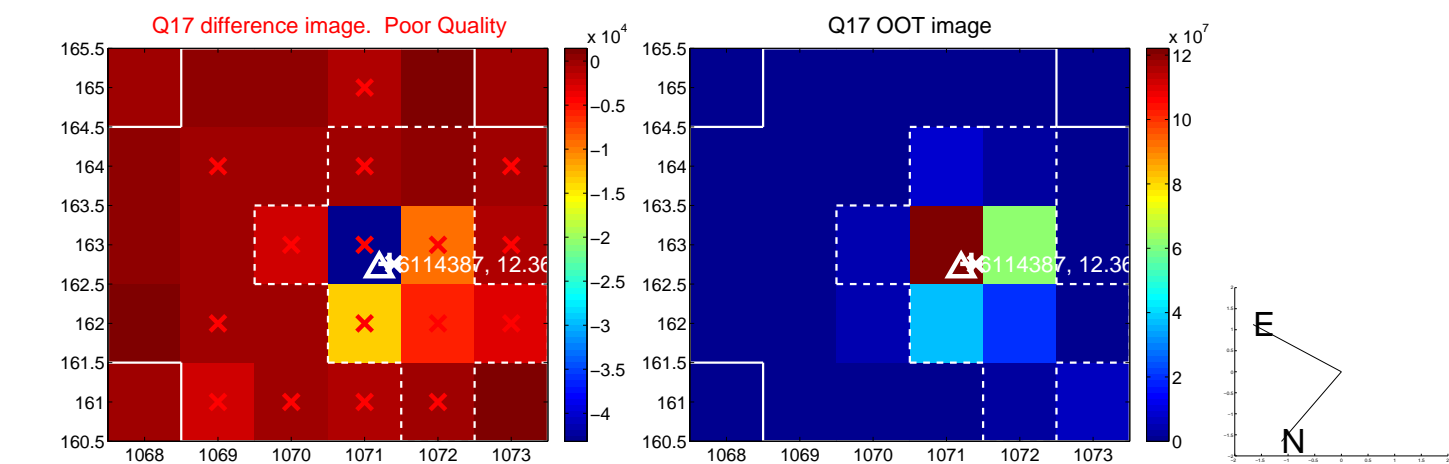
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



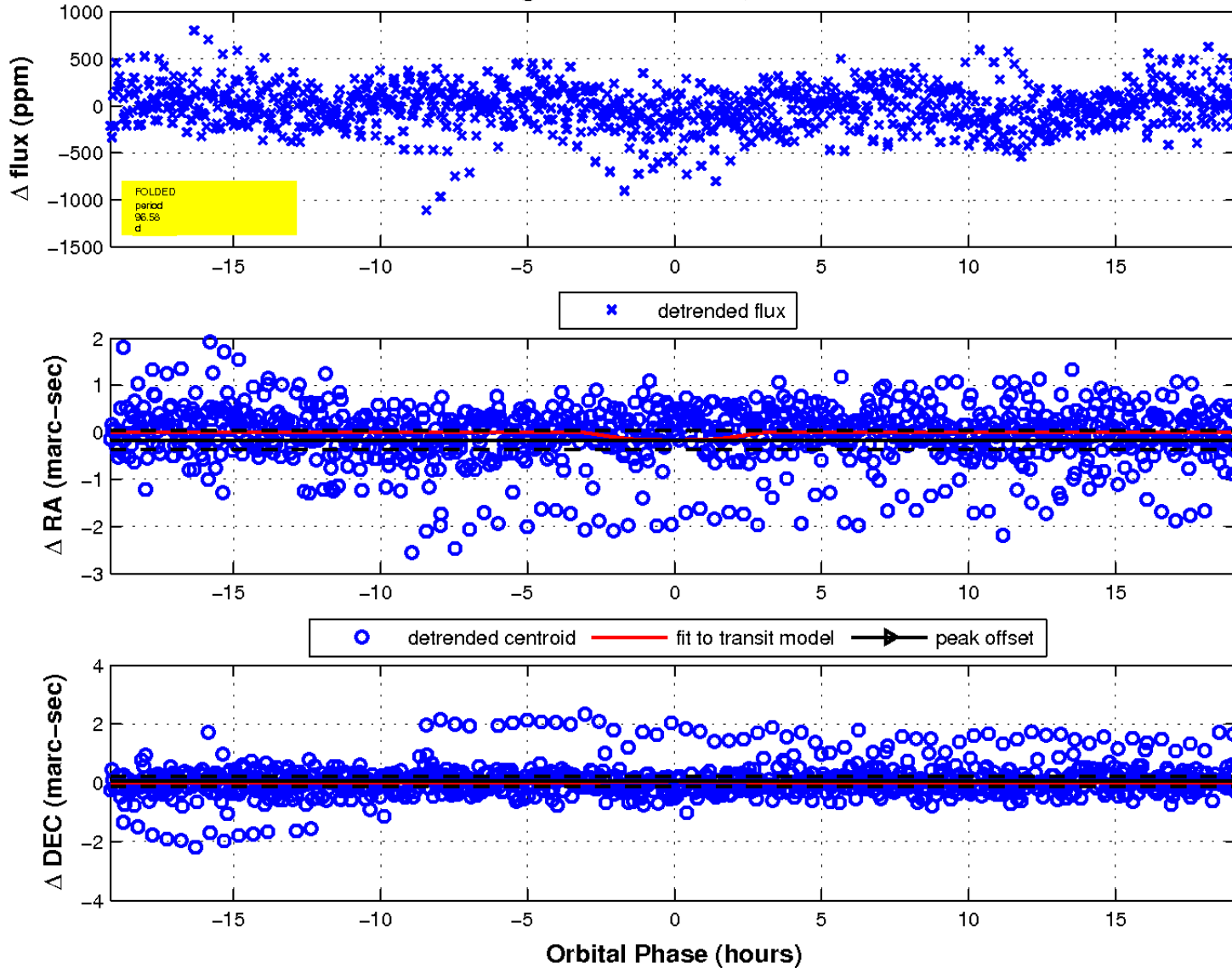
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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UKIRT Image

Declination

