

KIC 012169181

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})
012169181-01	OBS	No	1.289775	131.555333	45.4	3.467	10.0	10.4	2.27	6832	1.78	13632.44
012169181-02	OBS	No	336.085569	252.407641	736.1	12.469	8.8	7.7	2.27	6832	6.97	8.19
012169181-03	OBS	No	0.678940	132.140034	15.5	5.923	8.6	3.7	2.27	6832	0.91	32073.81

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012169181-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT
012169181-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS
012169181-03	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_FEW_DIFFS

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

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

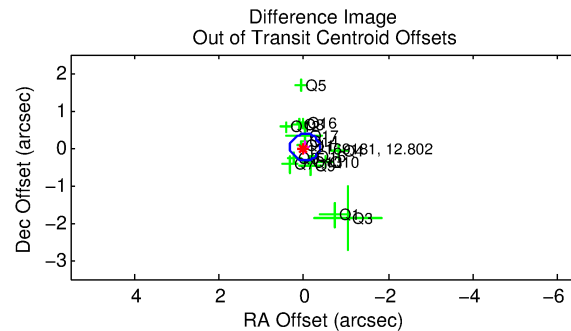
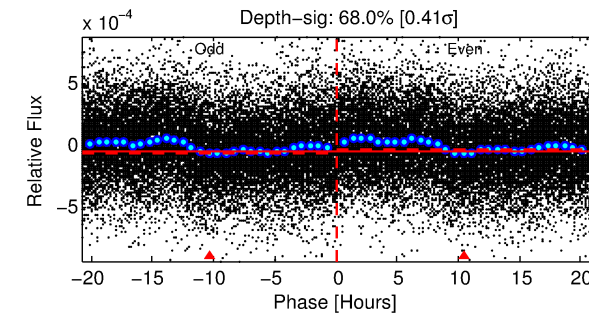
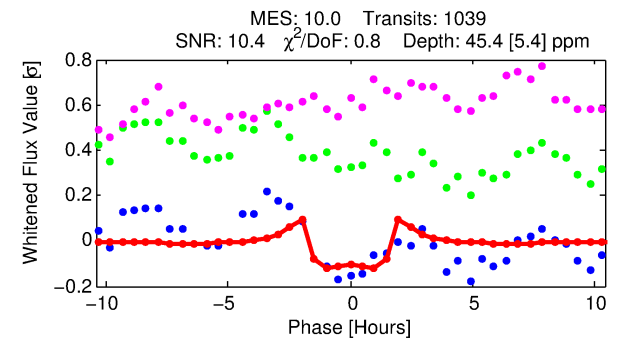
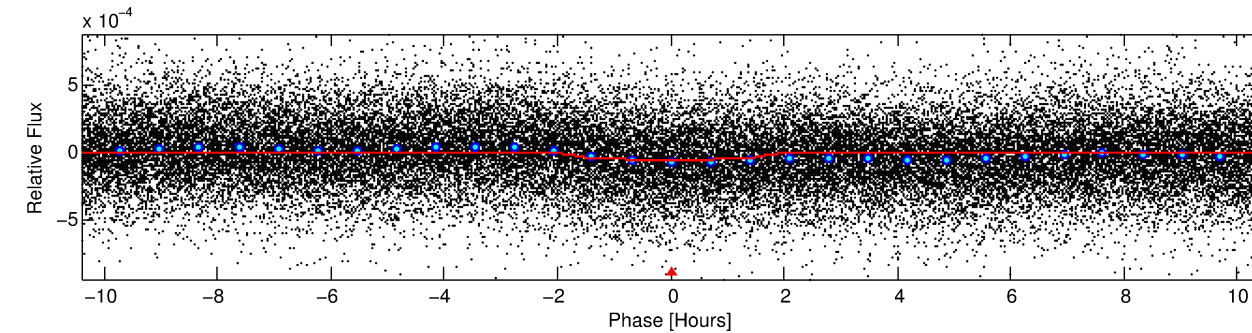
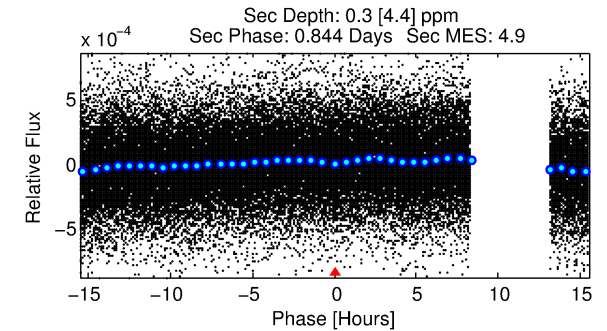
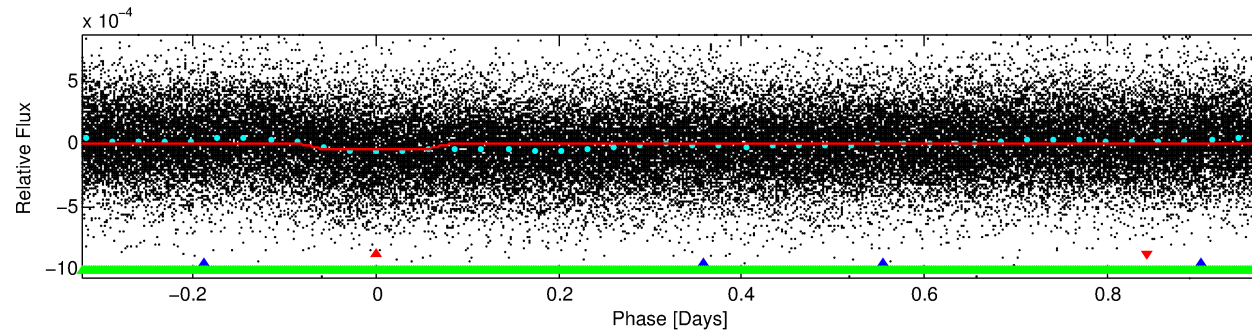
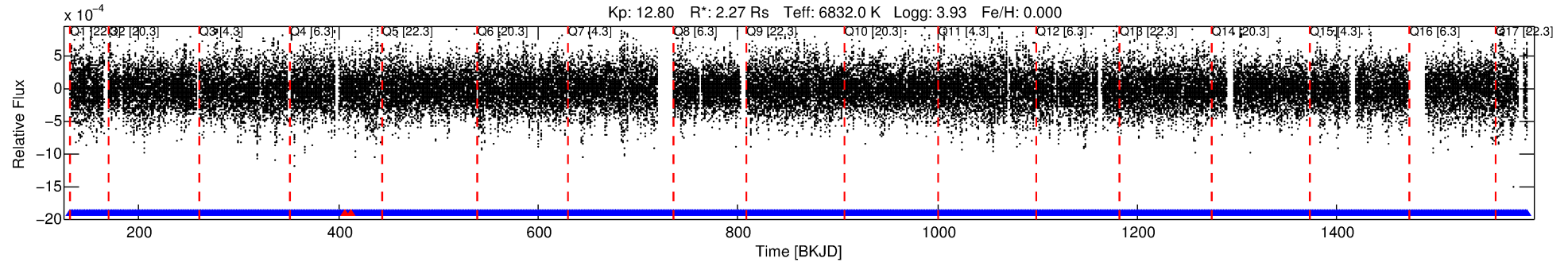
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012169181-01

No Significant Match Found

DV One-Page Summary

KIC: 12169181 Candidate: 1 of 3 Period: 1.290 d



DV Fit Results:

Period = 1.28978 [0.00001] d
Epoch = 131.5553 [0.0019] BKJD
Rp/R* = 0.0072 [0.0014]
a/R* = 1.59 [1.06]
b = 0.90 [0.23]
Seff = 13632.44 [4541.28]
Teff = 2755 [229] K
Rp = 1.78 [0.56] Re
a = 0.0271 [0.0059] AU
Ag = 0.04 [0.56] [-1.71σ]
Teffp = 1882 [6930] K [-0.13σ]

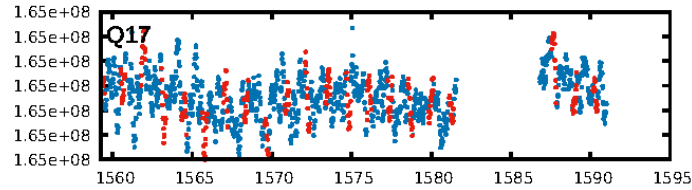
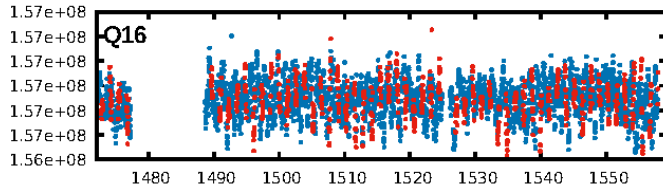
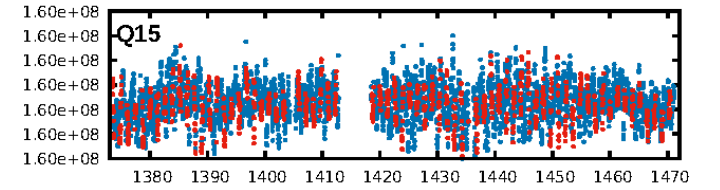
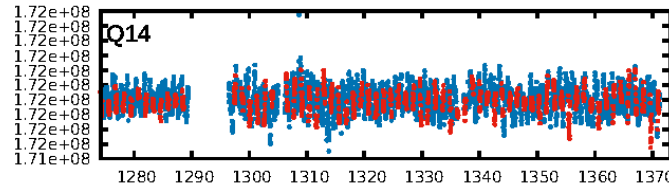
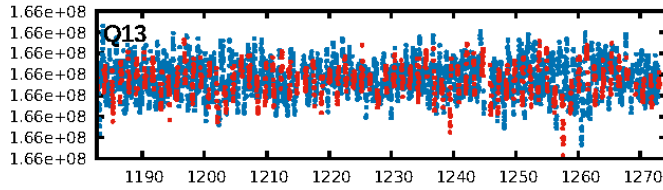
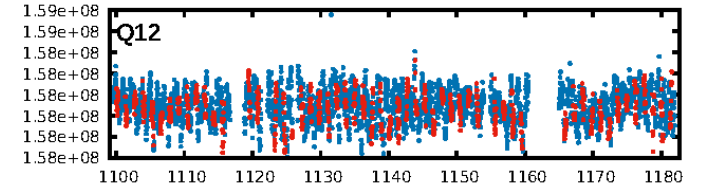
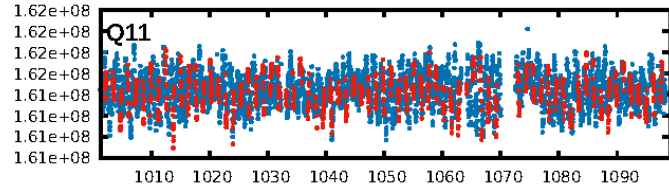
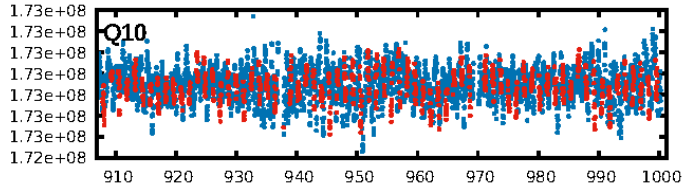
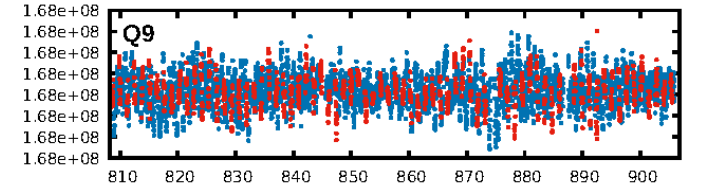
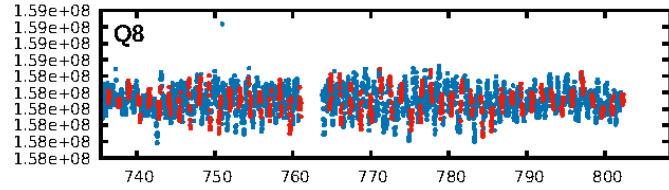
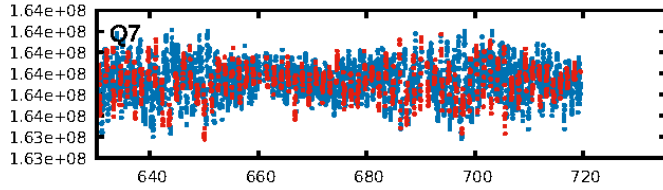
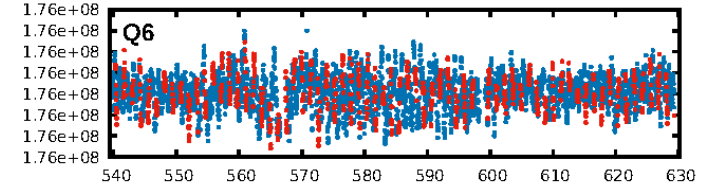
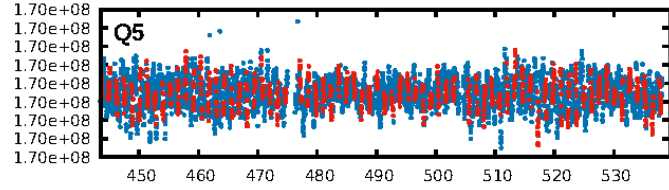
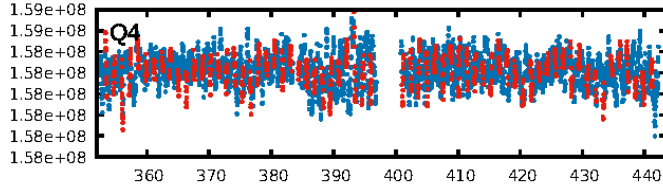
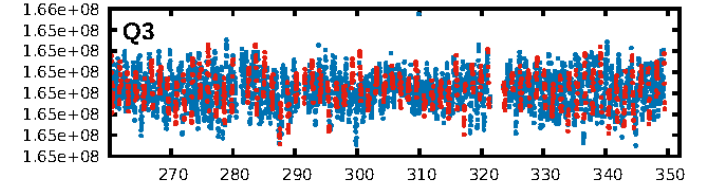
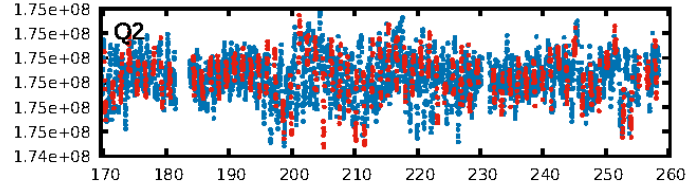
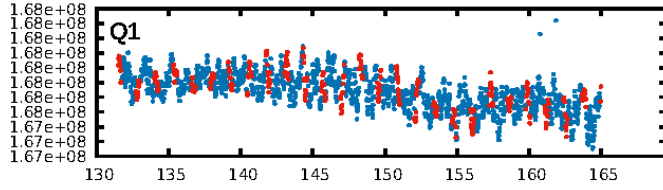
DV Diagnostic Results:

ShortPeriod-sig: 96.7% [2.14σ]
LongPeriod-sig: 100.0% [620.85σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [990/992]
GhostDiagnostic-chr: 0.6683
Centroid-sig: 2.9%
Centroid-so: 0.802 arcsec [1.33σ]
OotOffset-rm: 0.035 arcsec [0.30σ]
OotOffset-st: 3/4/4/5 [16]
KicOffset-rm: 0.067 arcsec [0.56σ]
KicOffset-st: 3/4/4/5 [16]
DiffImageQuality-fgm: 0.88 [14/16]
DiffImageOverlap-fno: 0.00 [0/17]

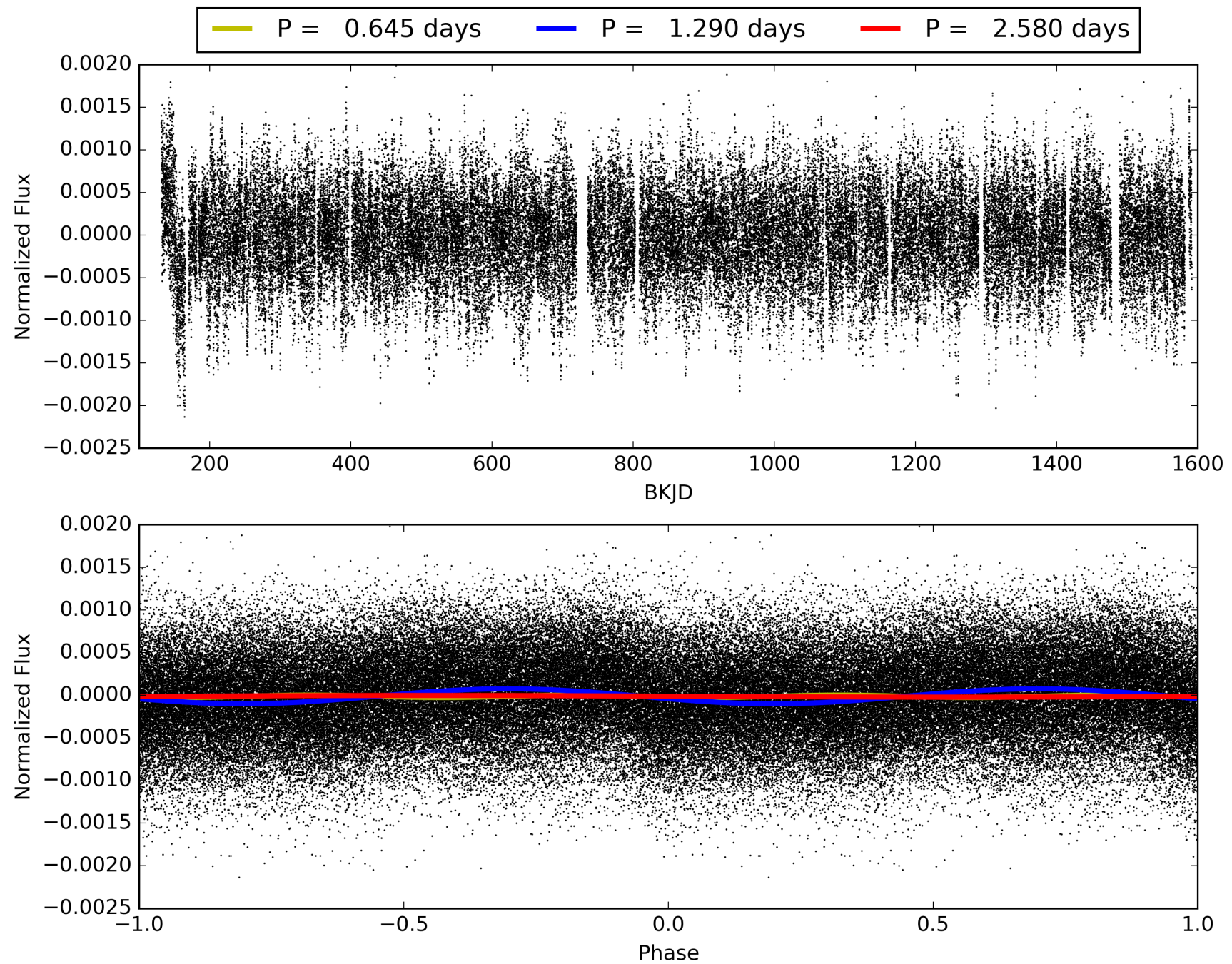
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 13:03:25 Z

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

TCE 012169181-01, PDC Light Curves

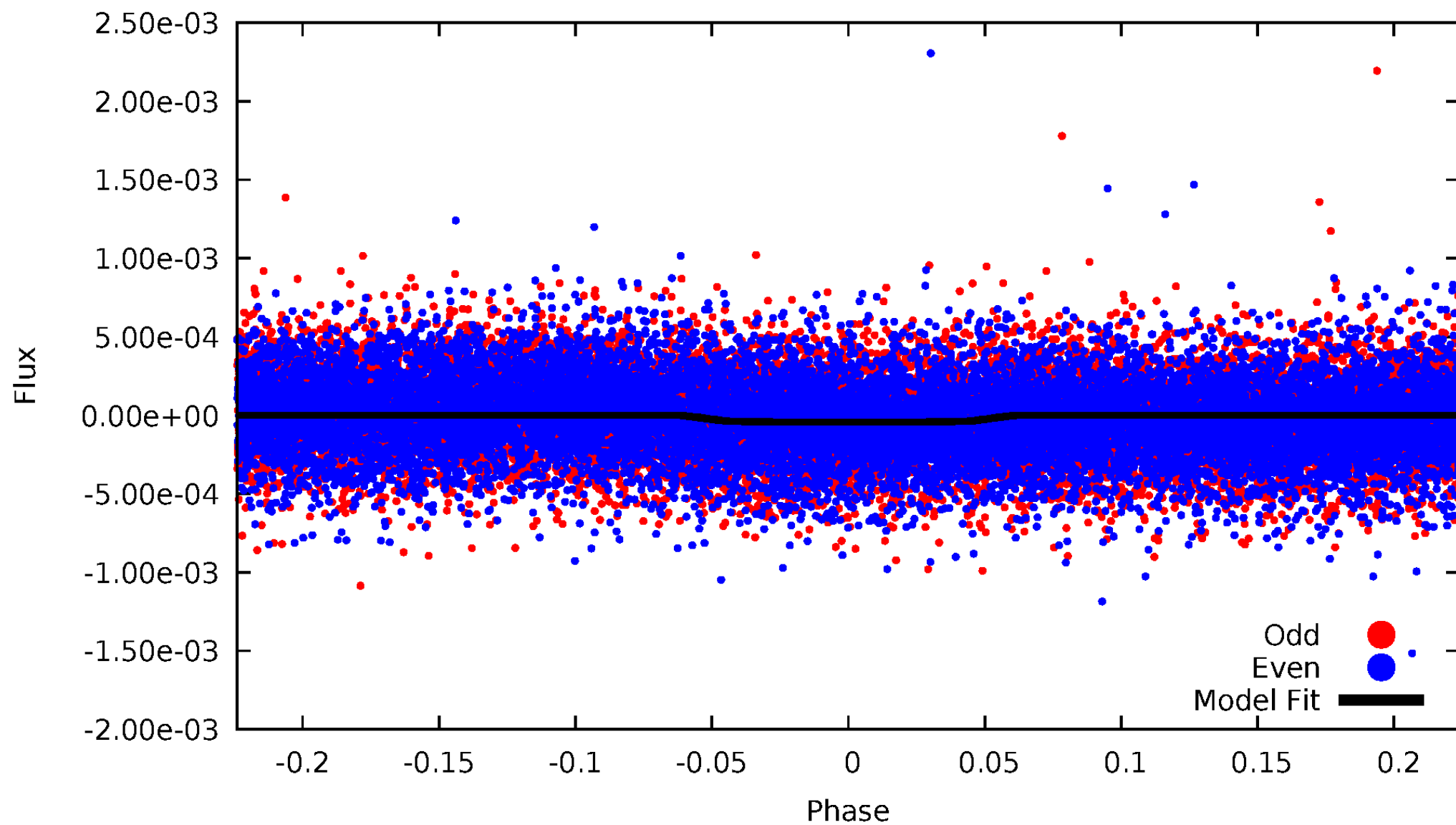


TCE 012169181-01



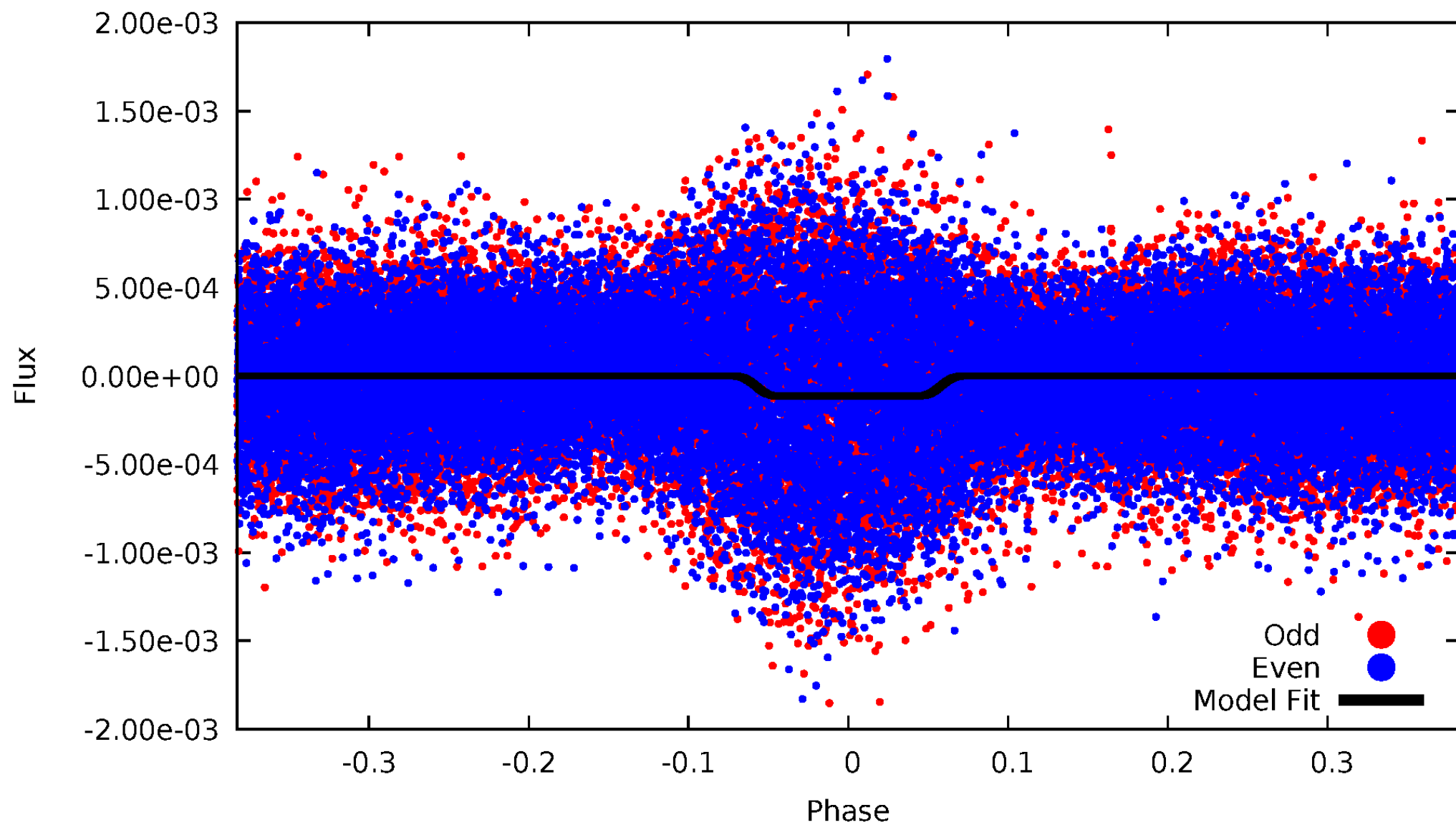
DV Odd/Even

TCE 012169181-01

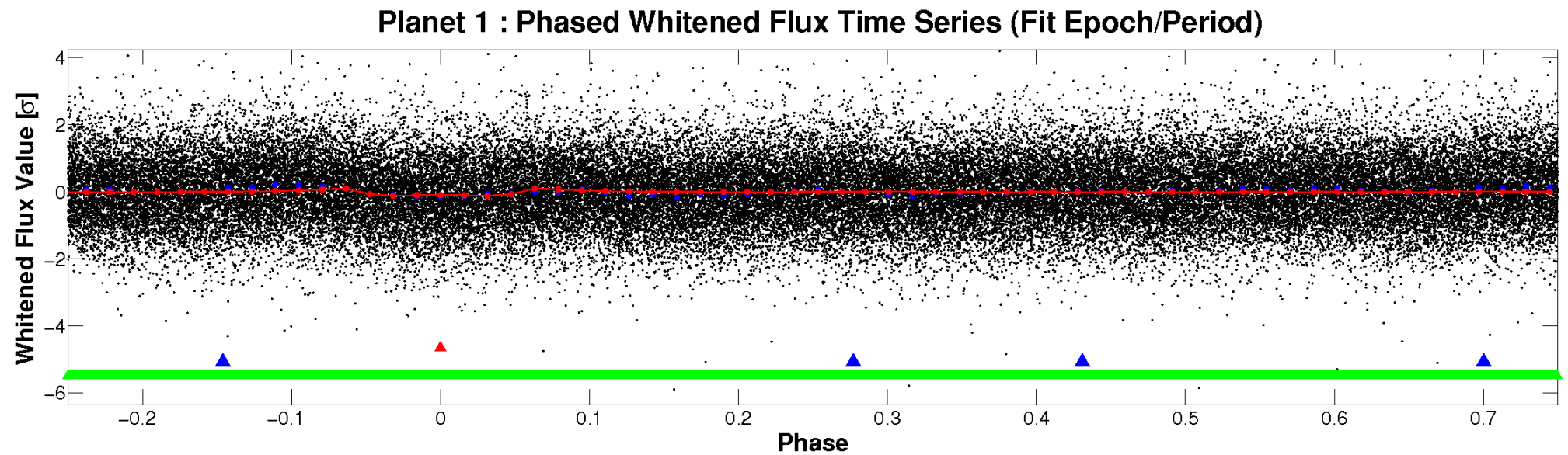
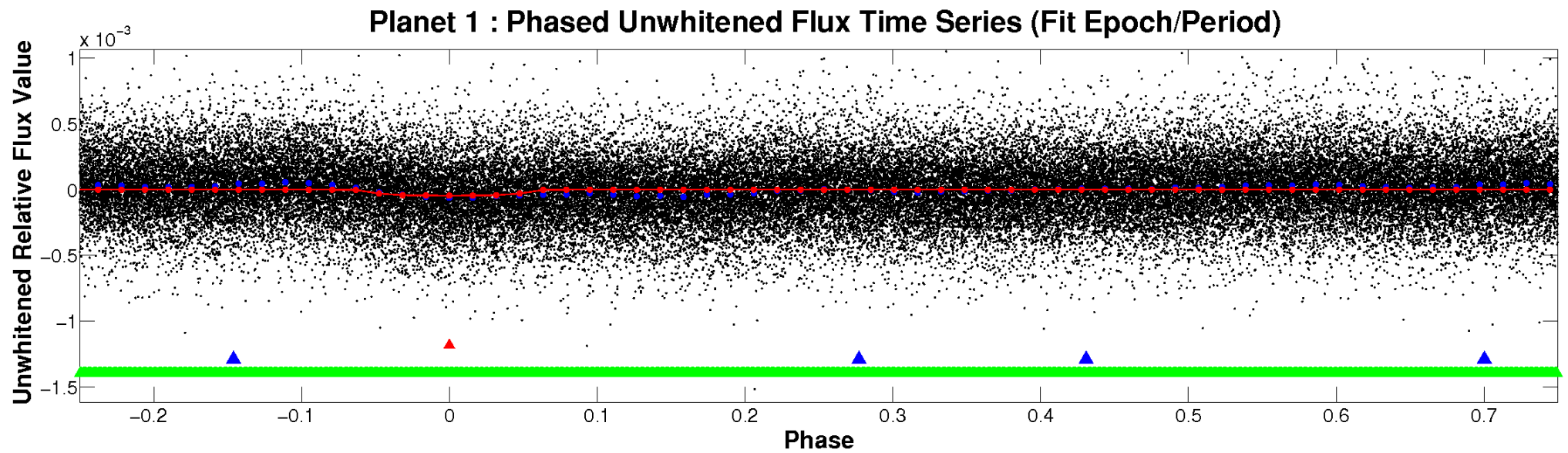


ALT Odd/Even

TCE 012169181-01

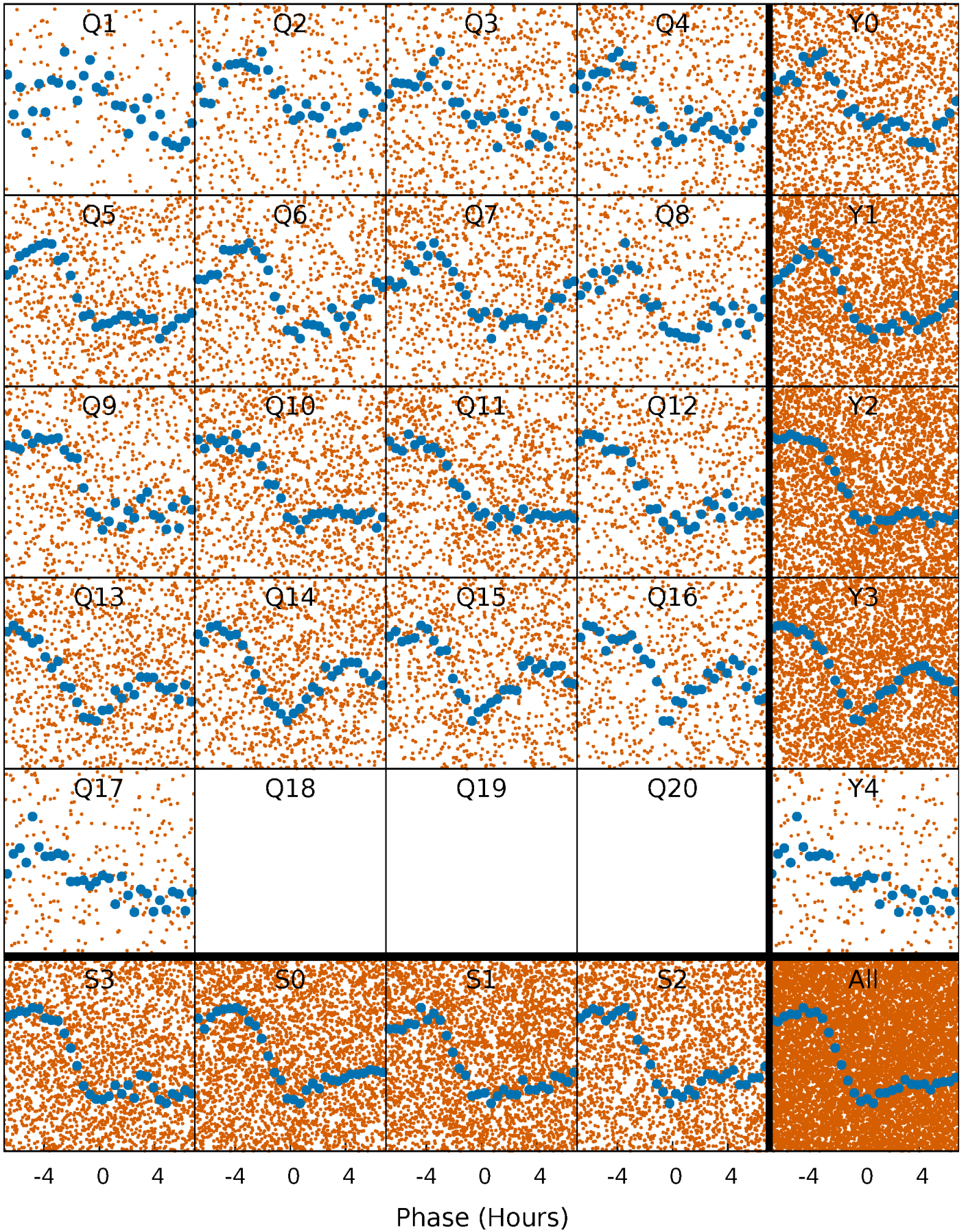


Non-Whitened Vs. Whitened Light Curve



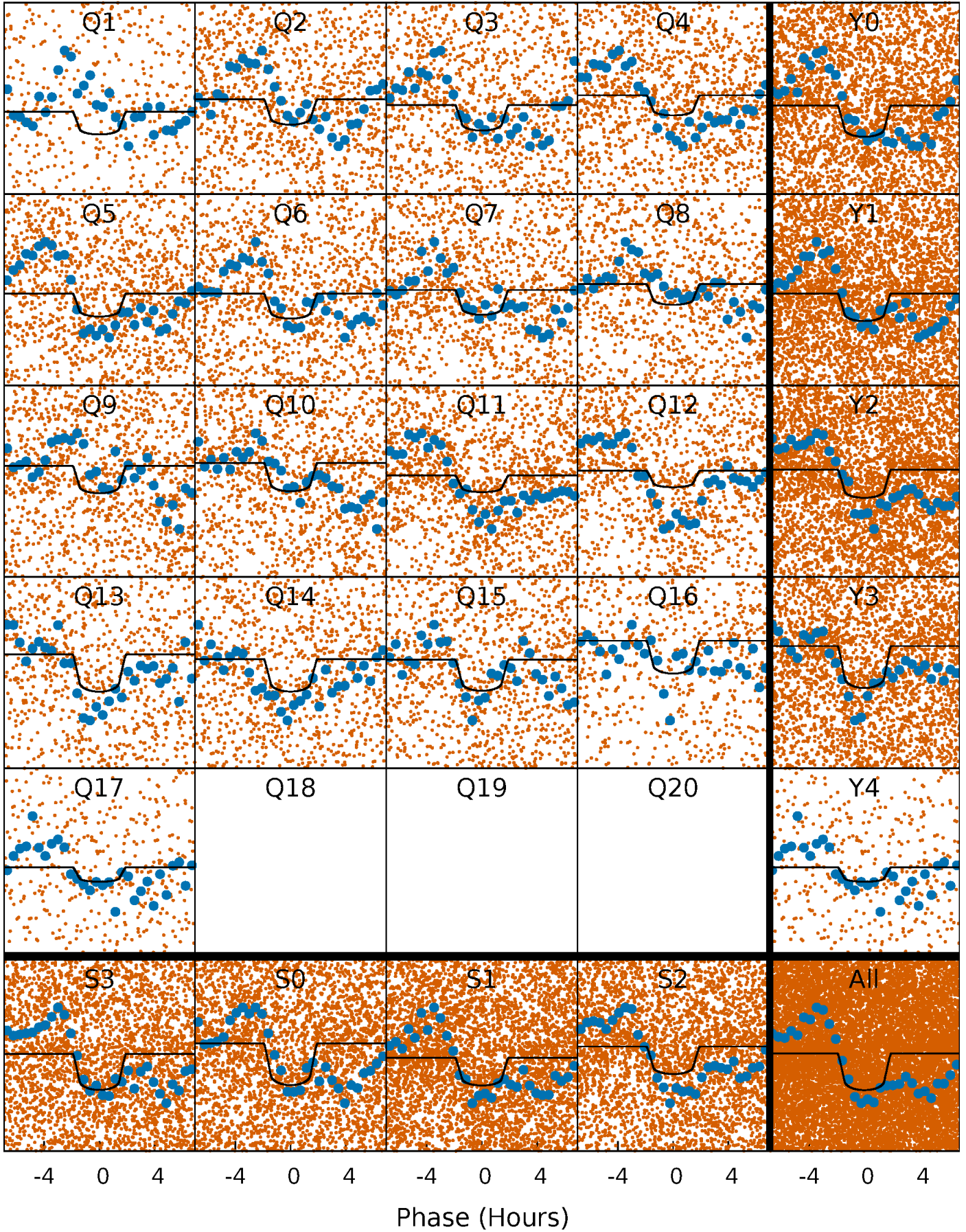
PDC Quarter-Phased Transit Curves

TCE 012169181-01 P= 1.289775 Days $T_0=131.555333$ (BKJD)



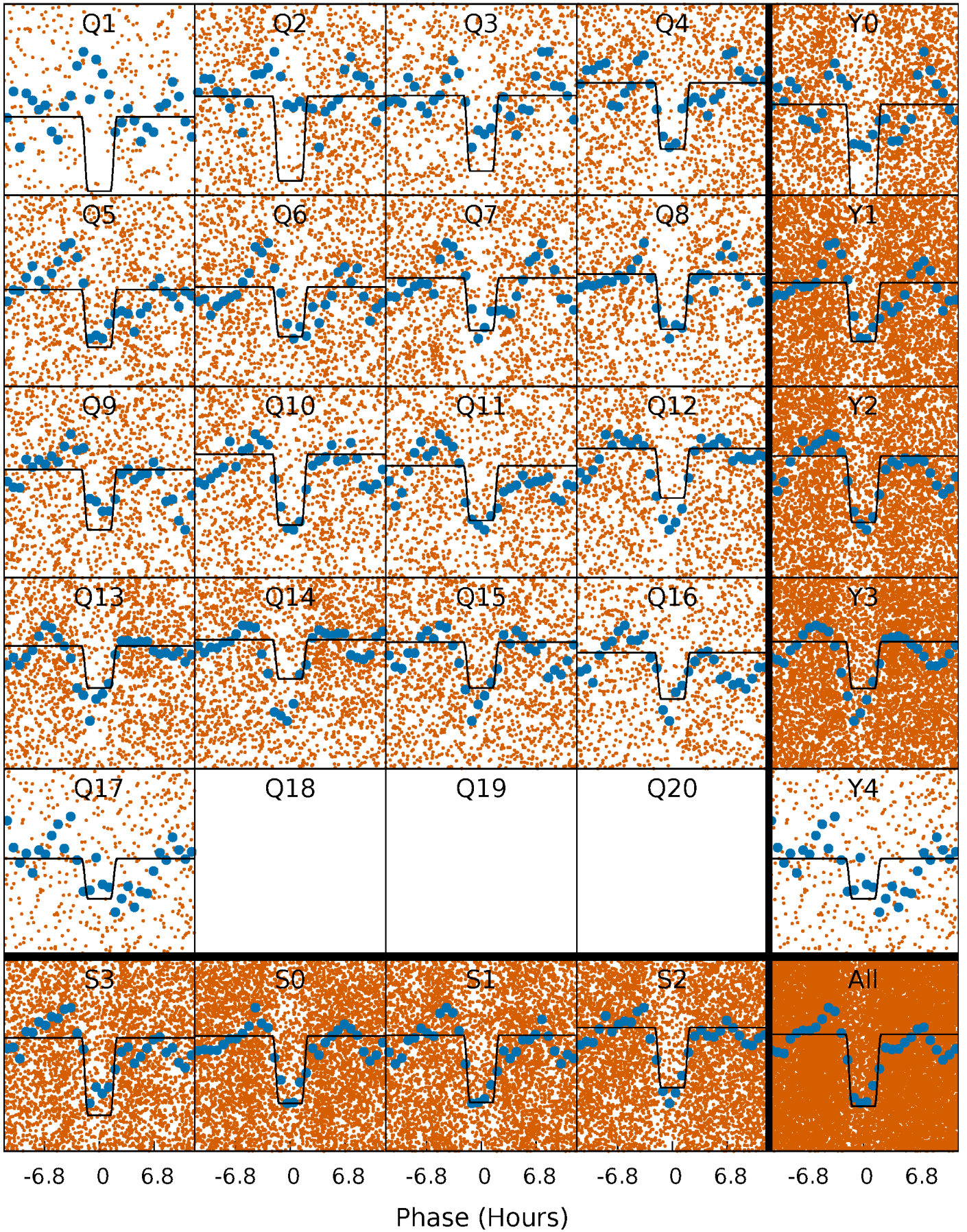
DV Quarter-Phased Transit Curves

TCE 012169181-01 P= 1.289775 Days $T_0=131.555333$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

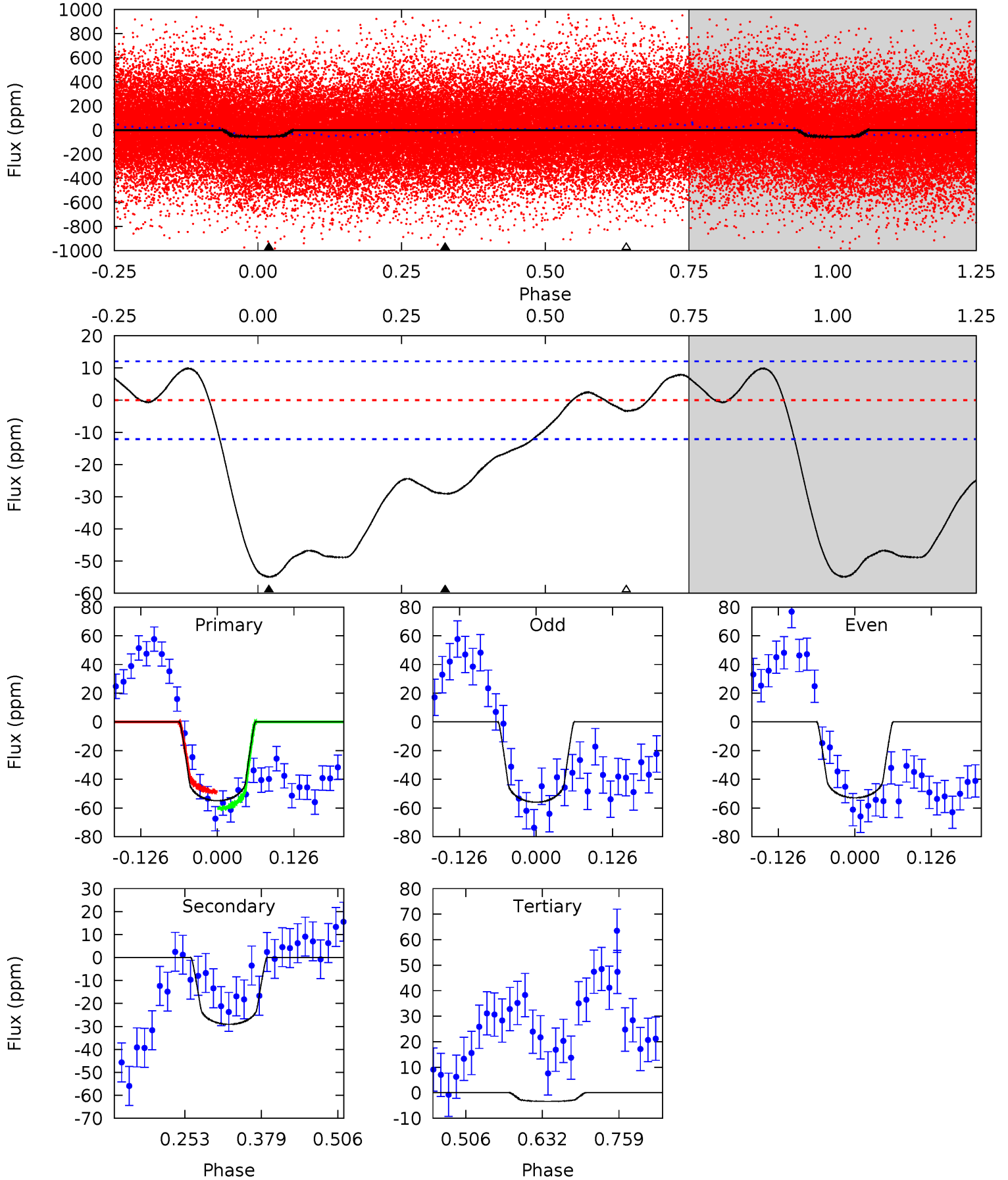
TCE 012169181-01 P= 1.289795 Days $T_0=131.551204$ (BKJD)



DV Model-Shift Uniqueness Test

012169181-01, P = 1.289775 Days, E = 130.265558 Days

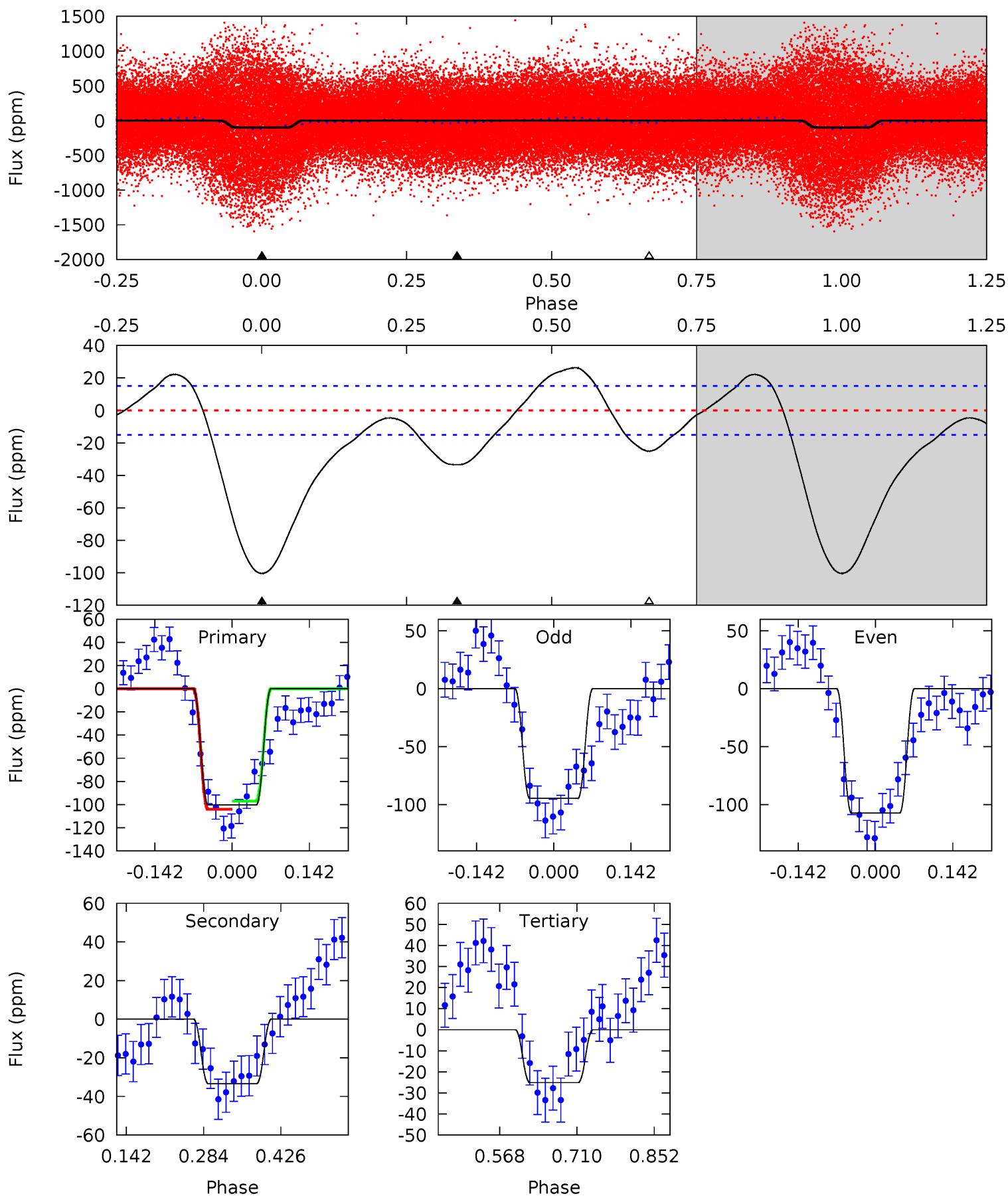
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.5	10.9	1.26	0	4.52	1.53	5.69	19.2	20.5	9.60	10.9	0.58	0.95	0.15	2.20



Alt Model-Shift Uniqueness Test

012169181-01, P = 1.289795 Days, E = 130.261409 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.8	9.95	7.47	0	4.49	1.47	5.14	22.4	29.8	2.48	9.95	1.87	0.88	0.21	1.04



Stellar Parameters For KIC 012169181

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6832^{+71}_{-82}	$3.931^{+0.186}_{-0.108}$	$0.000^{+0.150}_{-0.150}$	$2.266^{+0.420}_{-0.560}$	$1.596^{+0.130}_{-0.179}$	$0.193^{+0.191}_{-0.071}$
	+1%/-1%	+5%/-3%	+inf%/-inf%	+19%/-25%	+8%/-11%	+99%/-37%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 012169181-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-29 ± 3	$1.71^{+0.41}_{-0.40}$	3816^{+198}_{-233}	5806^{+729}_{-532}	$4.012^{+2.546}_{-1.424}$
Alt.	-33 ± 3	$2.57^{+0.47}_{-0.42}$	3837^{+175}_{-223}	4930^{+355}_{-320}	$2.023^{+0.905}_{-0.576}$

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

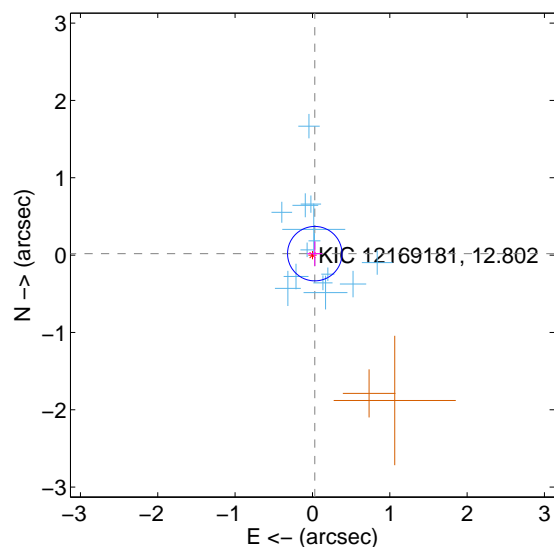
Supplemental centroid analysis for 012169181-01. Kepler magnitude: 12.80. Transit SNR 10.45

There are 14 quarters with good PRF difference image offsets

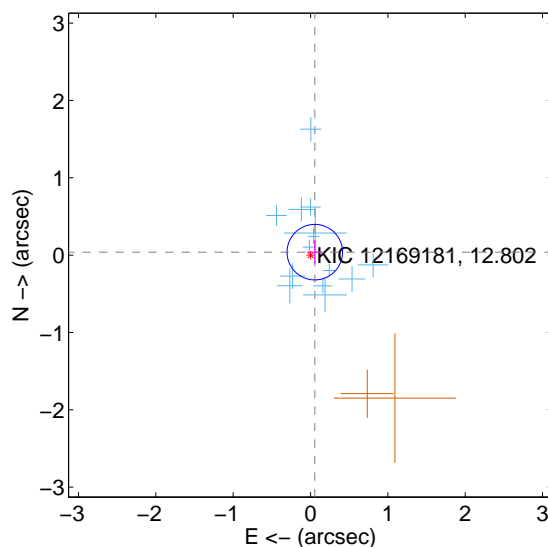
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.035 ± 0.117	0.30	-0.030 ± 0.096	0.019 ± 0.160
PRF-fit source offset from KIC position	0.067 ± 0.120	0.56	-0.055 ± 0.098	0.038 ± 0.157
photometric centroid source offset	0.80 ± 0.60	1.33	-0.17 ± 0.52	-0.78 ± 0.61

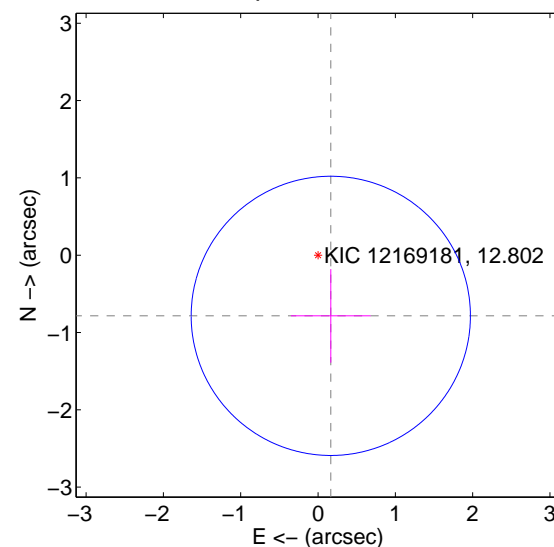
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

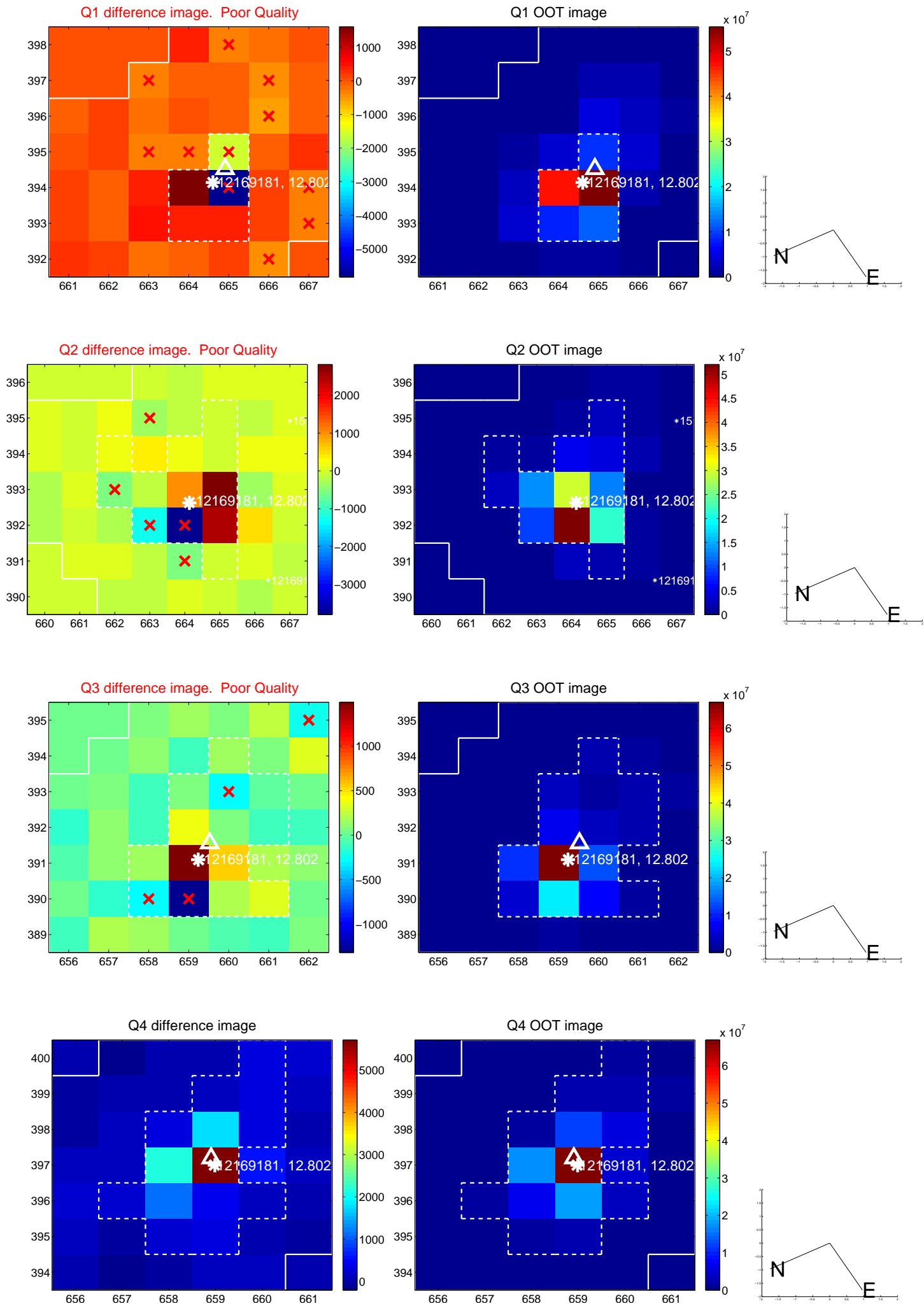


offset from photometric centroids

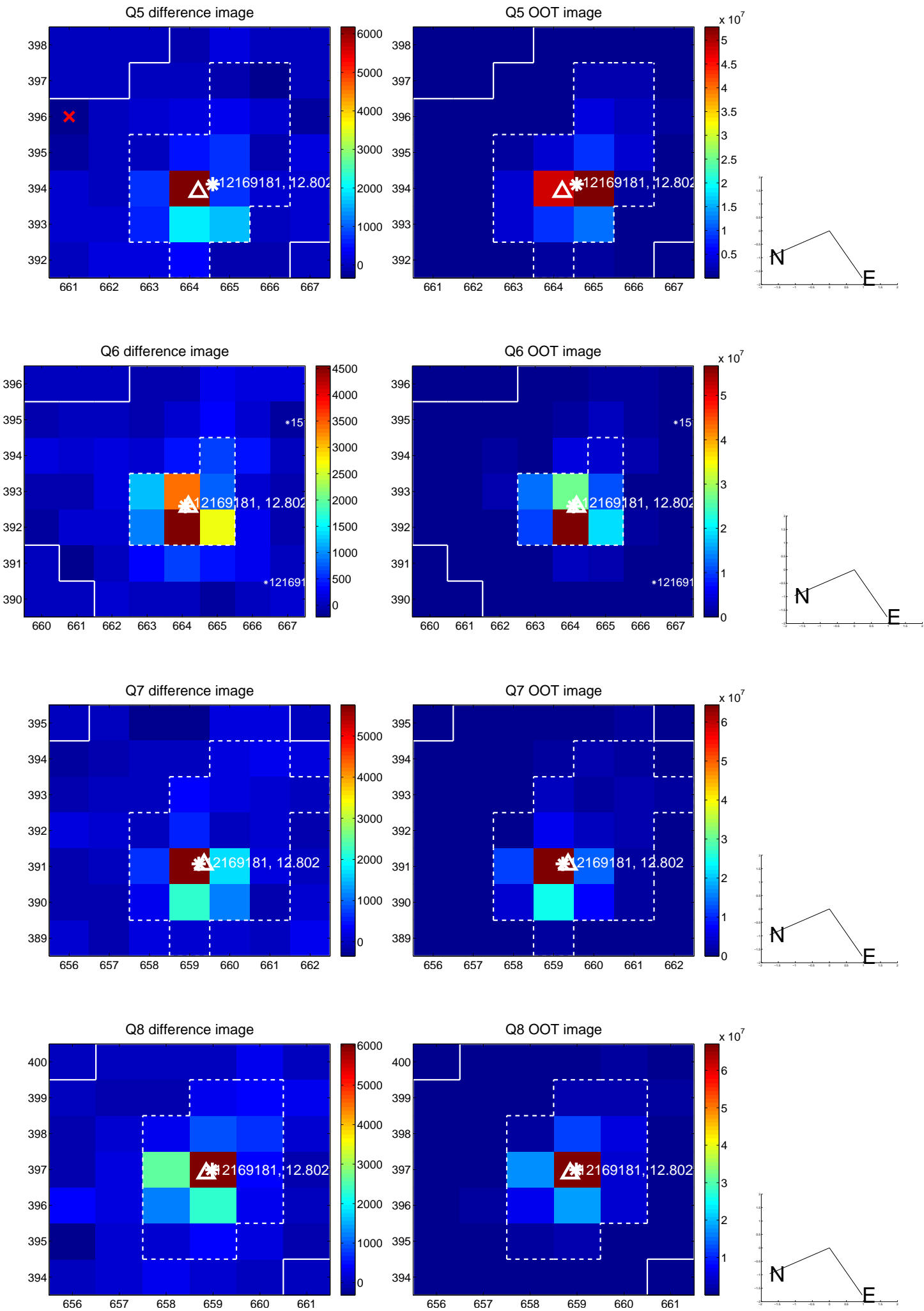


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

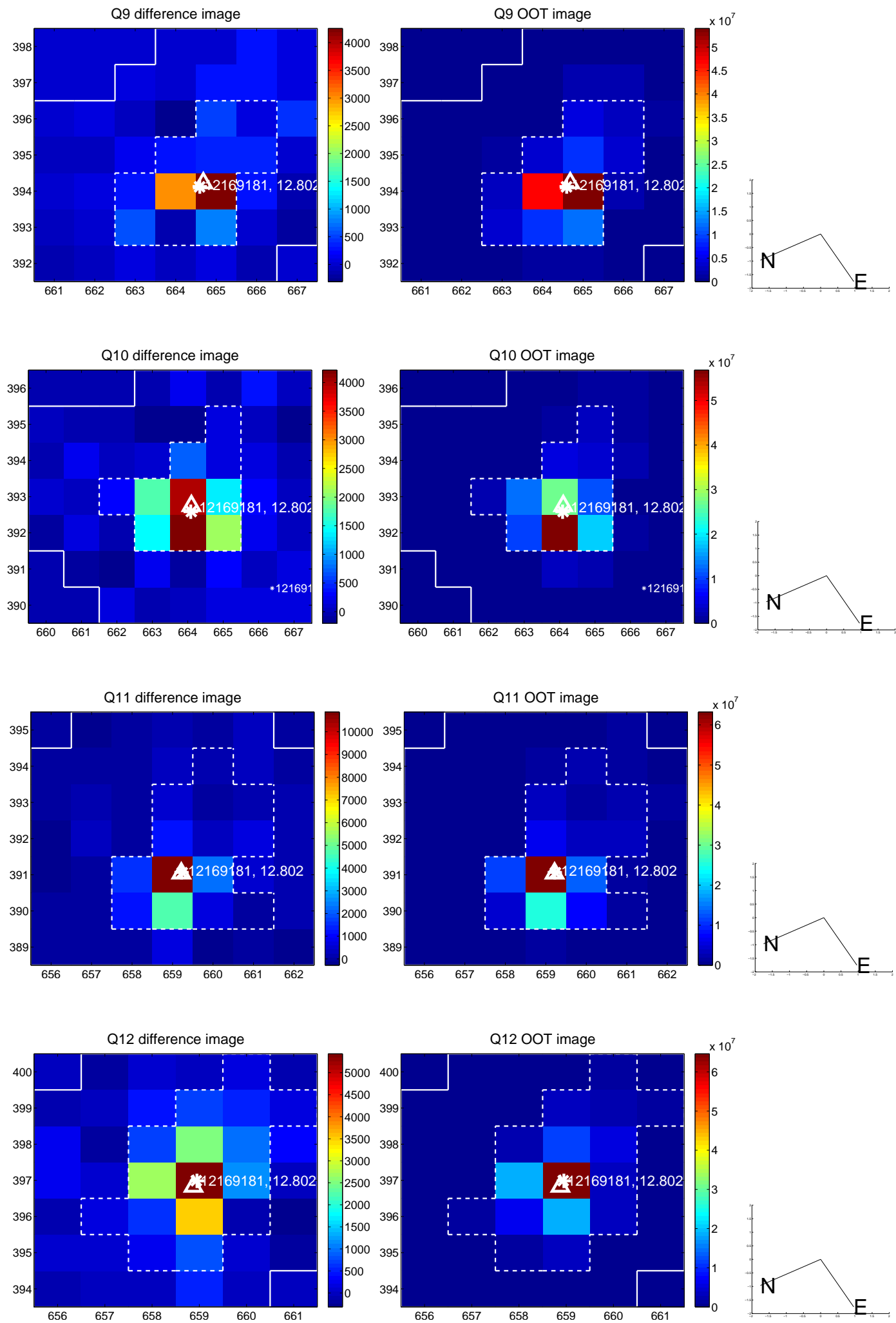
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



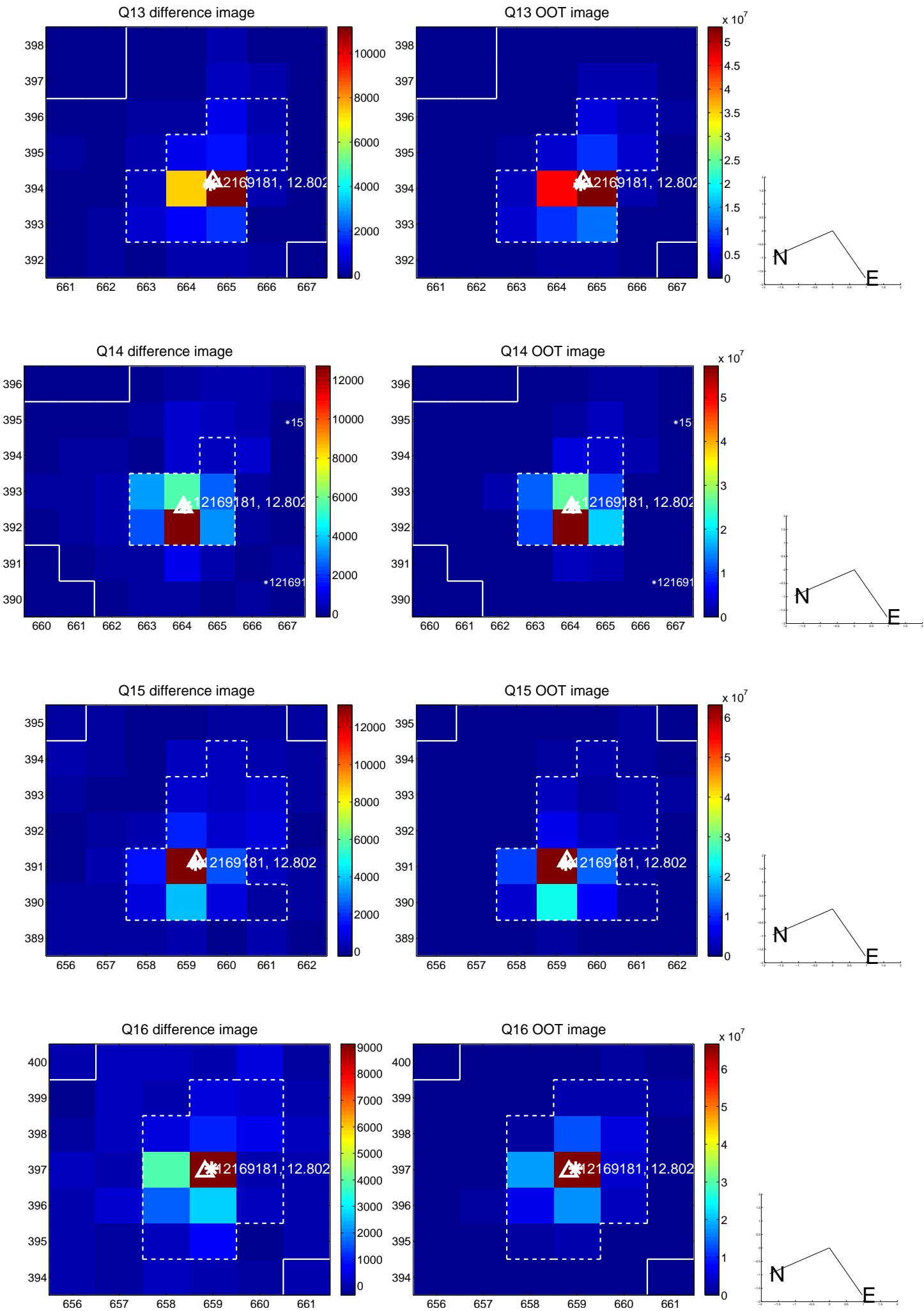
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



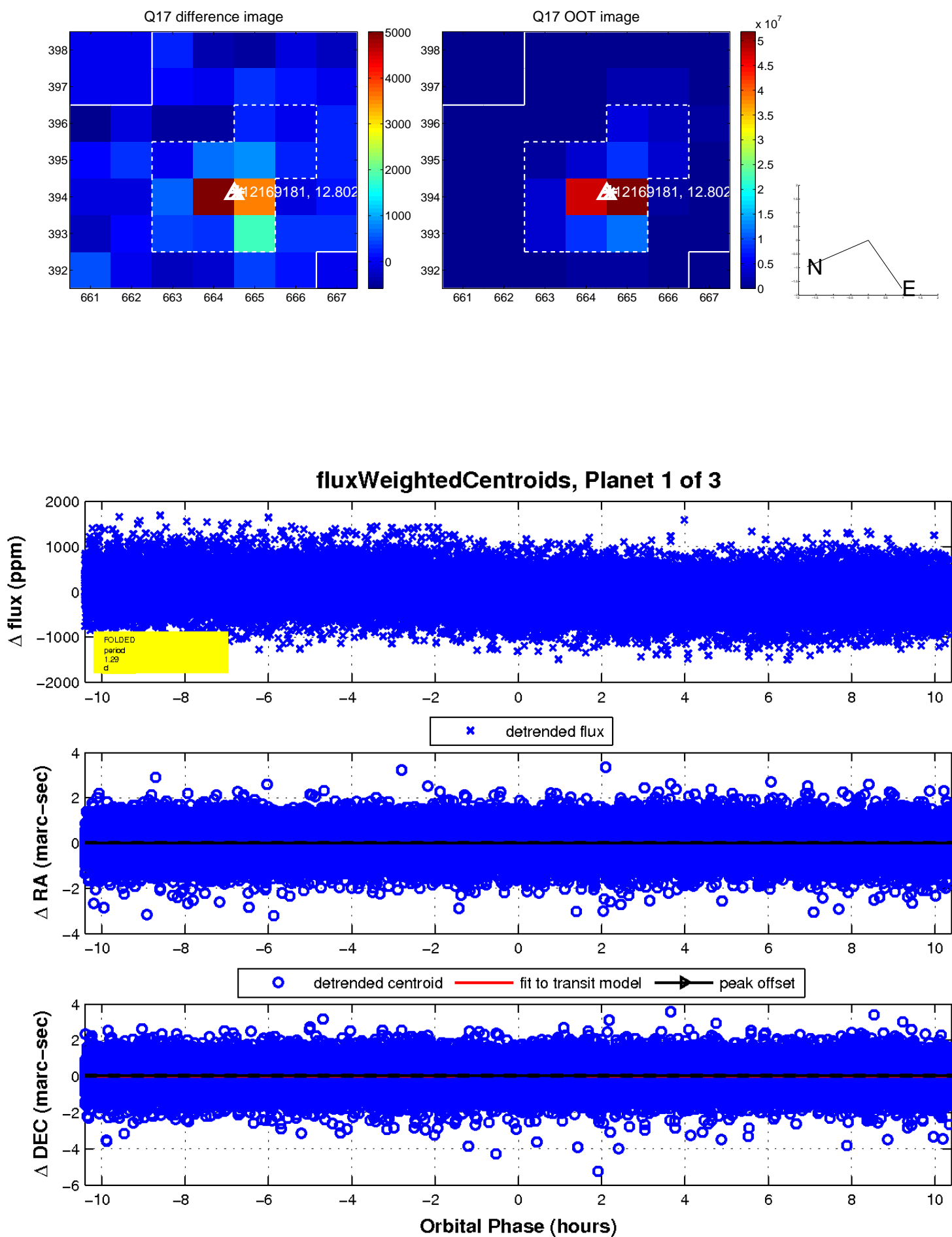
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

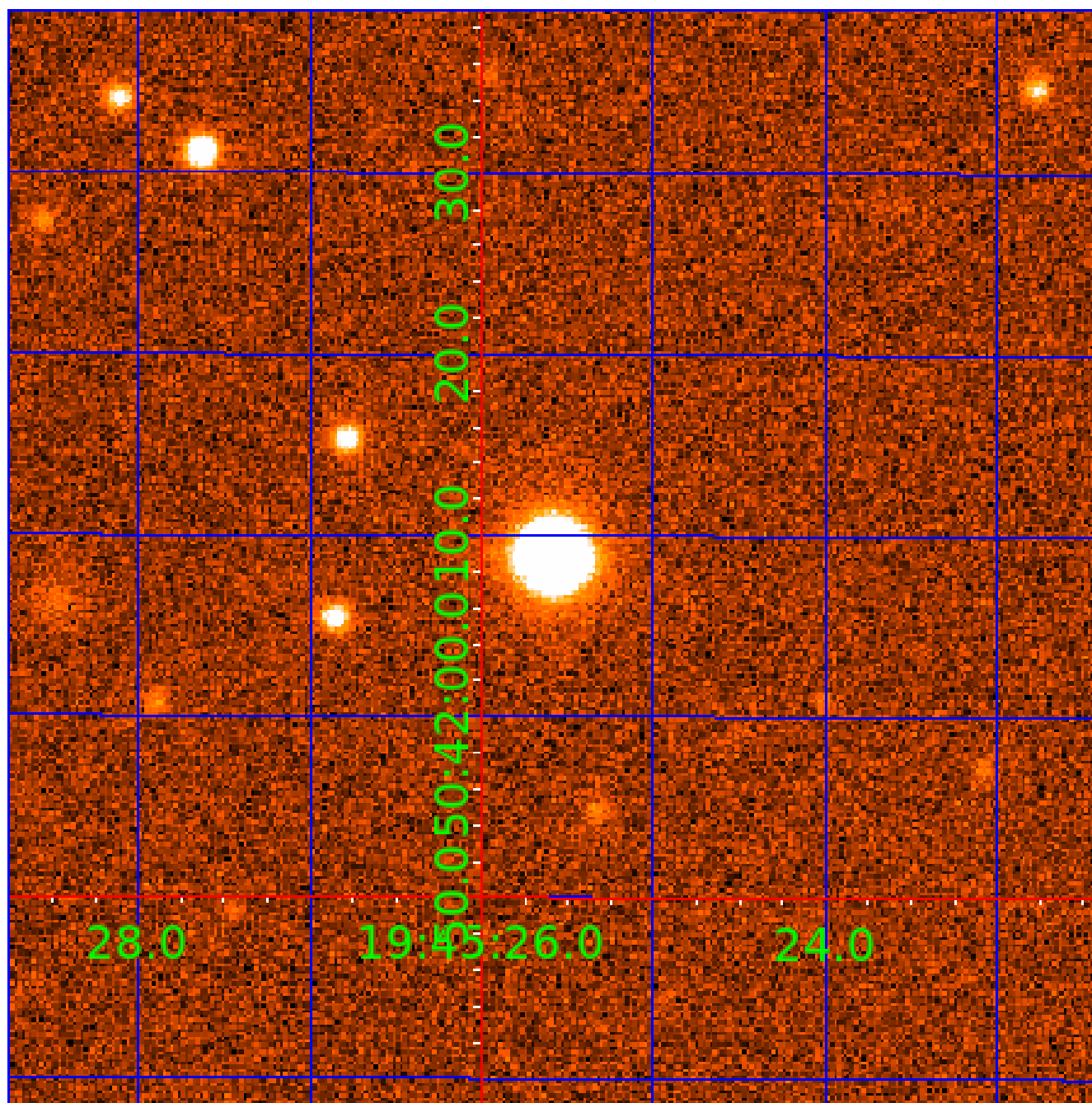


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 012169181

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})
012169181-01	OBS	No	1.289775	131.555333	45.4	3.467	10.0	10.4	2.27	6832	1.78	13632.44
012169181-02	OBS	No	336.085569	252.407641	736.1	12.469	8.8	7.7	2.27	6832	6.97	8.19
012169181-03	OBS	No	0.678940	132.140034	15.5	5.923	8.6	3.7	2.27	6832	0.91	32073.81

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012169181-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT
012169181-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS
012169181-03	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_FEW_DIFFS

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

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

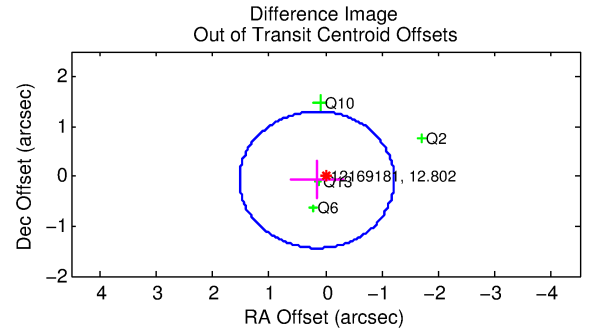
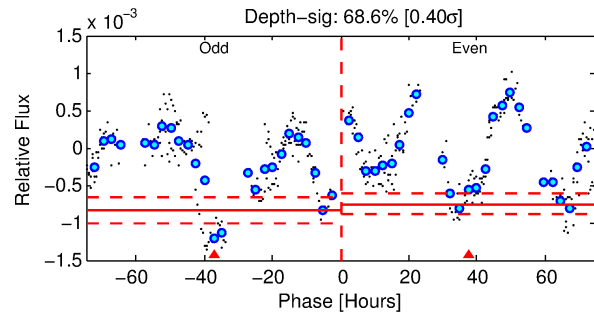
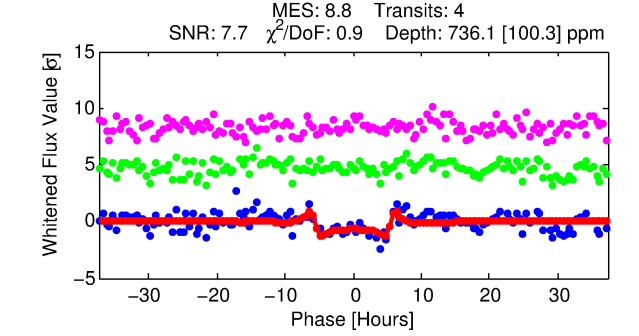
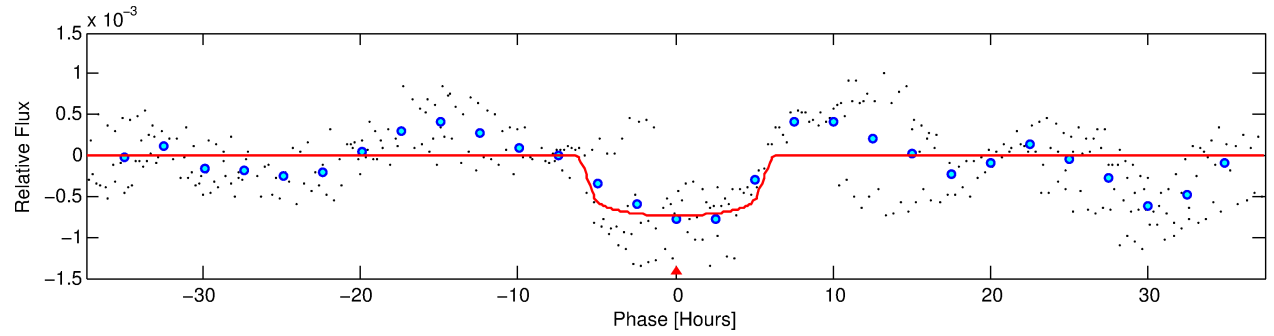
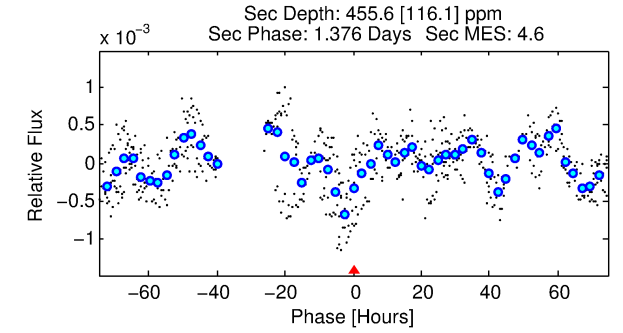
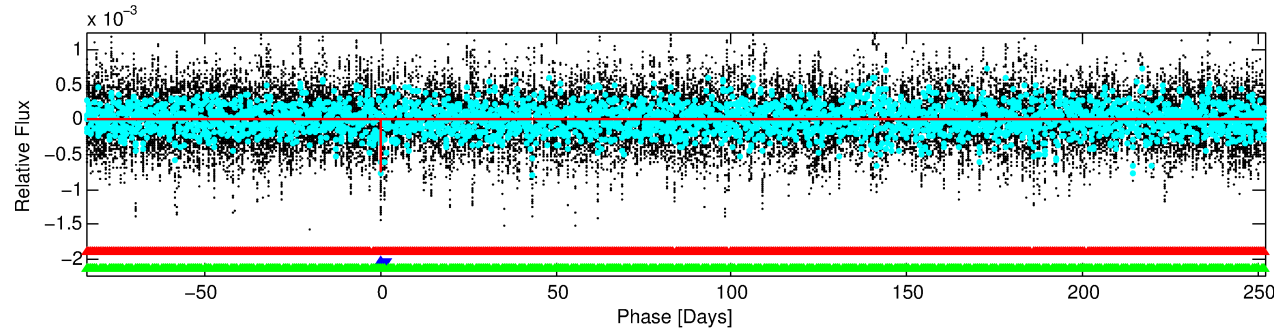
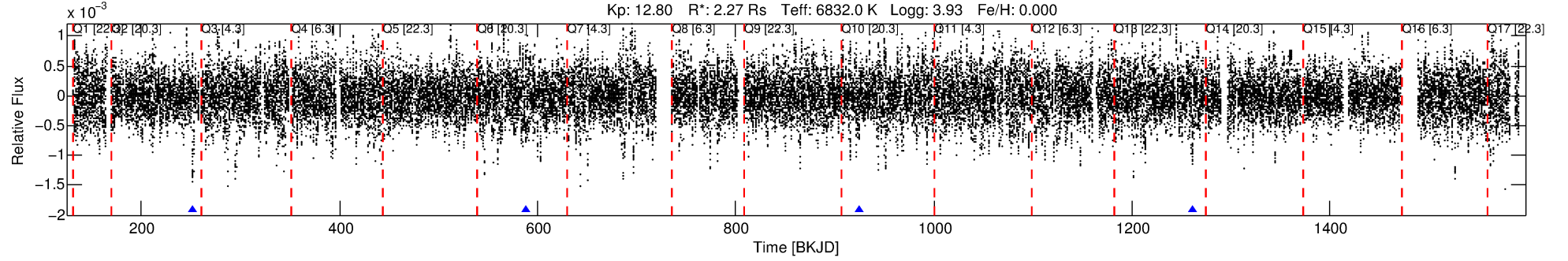
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012169181-02

No Significant Match Found

DV One-Page Summary

KIC: 12169181 Candidate: 2 of 3 Period: 336.086 d



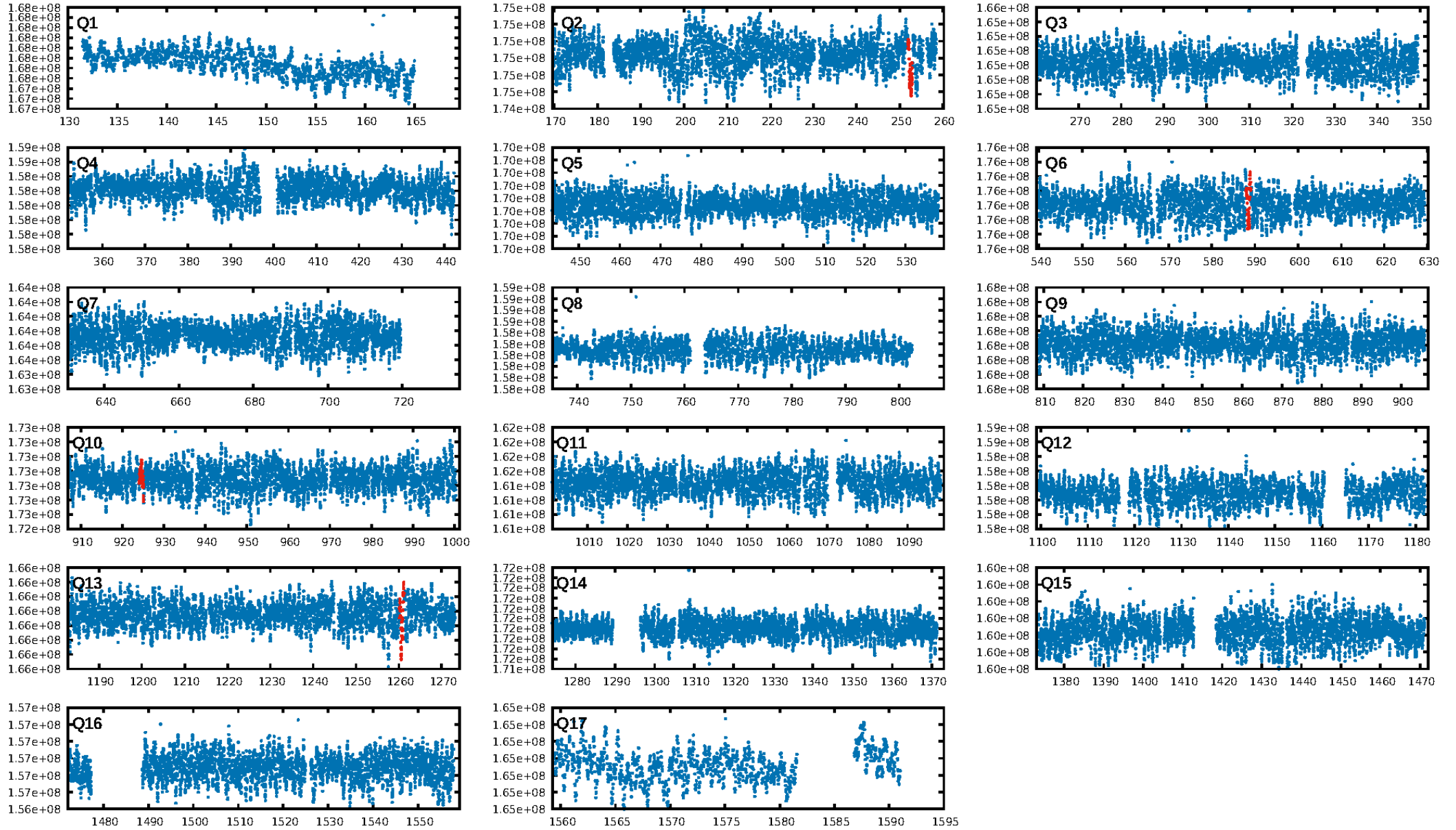
DV Fit Results:

Period = 336.08557 [0.00476] d
Epoch = 252.4076 [0.0099] BKJD
Rp/R* = 0.0282 [0.0023]
a/R* = 115.80 [22.66]
b = 0.86 [0.06]
Seff = 8.19 [2.73]
Teff = 431 [36] K
Rp = 6.98 [1.82] Re
a = 1.1062 [0.2412] AU
Ag = 6303.94 [2820.48] [2.23 σ]
Teffp = 5943 [455] K [12.07 σ]

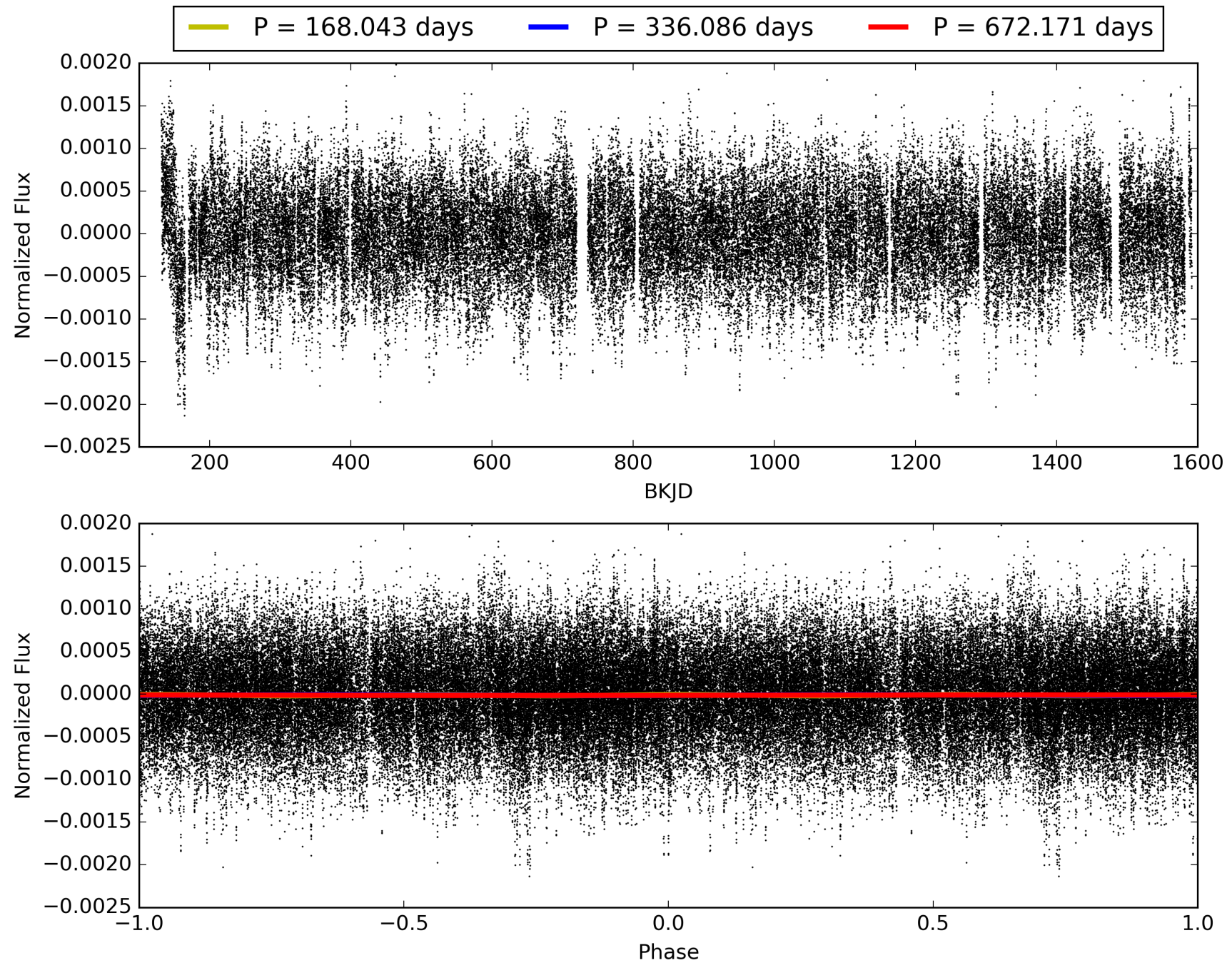
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [620.85 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 1.096
Centroid-sig: 37.3%
Centroid-so: 0.300 arcsec [0.73 σ]
OotOffset-rm: 0.169 arcsec [0.37 σ]
KicOffset-rm: 0.175 arcsec [0.41 σ]
OotOffset-st: 3/0/0/1 [4]
KicOffset-st: 3/0/0/1 [4]
DiffImageQuality-fgm: 0.75 [3/4]
DiffImageOverlap-fno: 0.00 [0/4]

TCE 012169181-02, PDC Light Curves

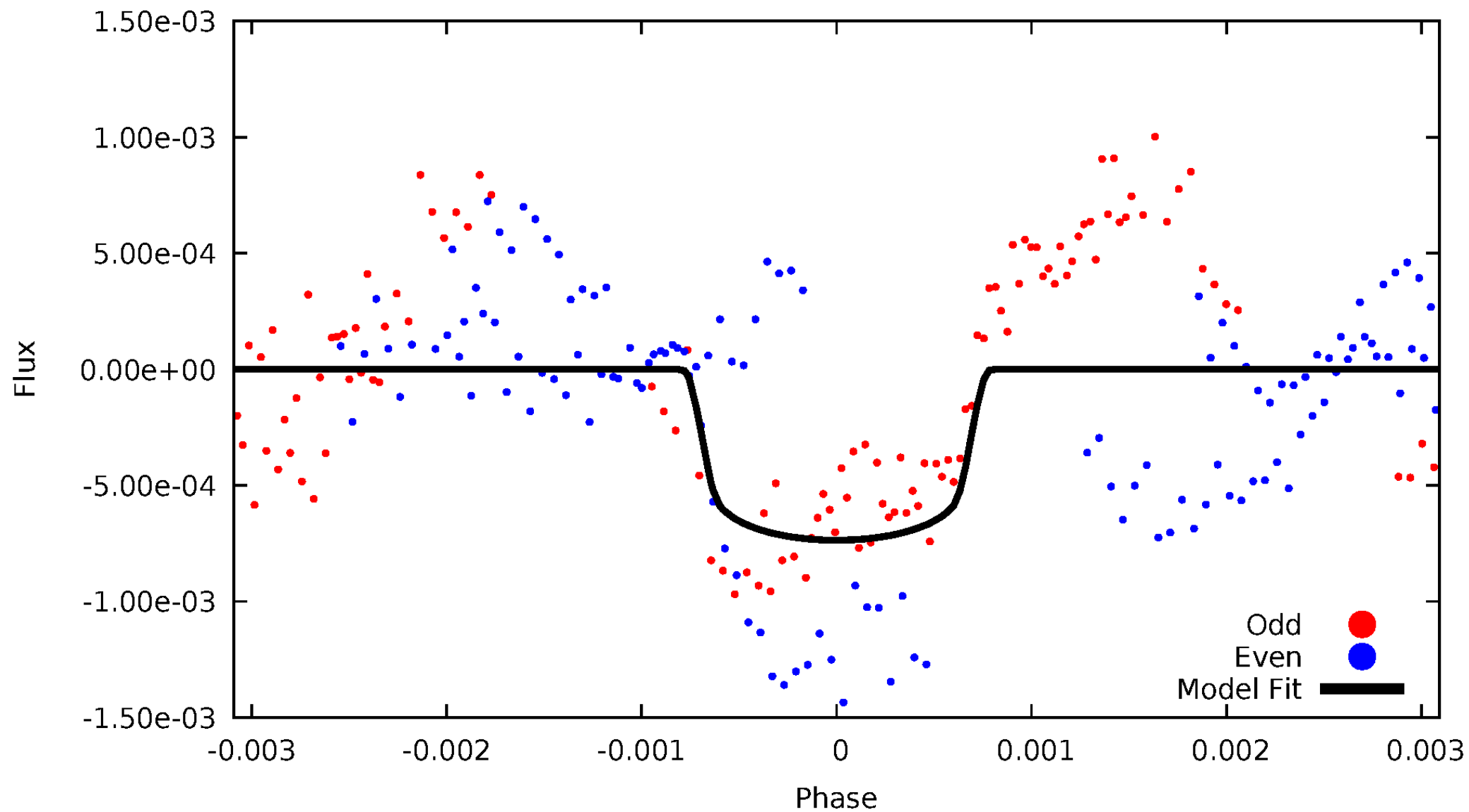


TCE 012169181-02



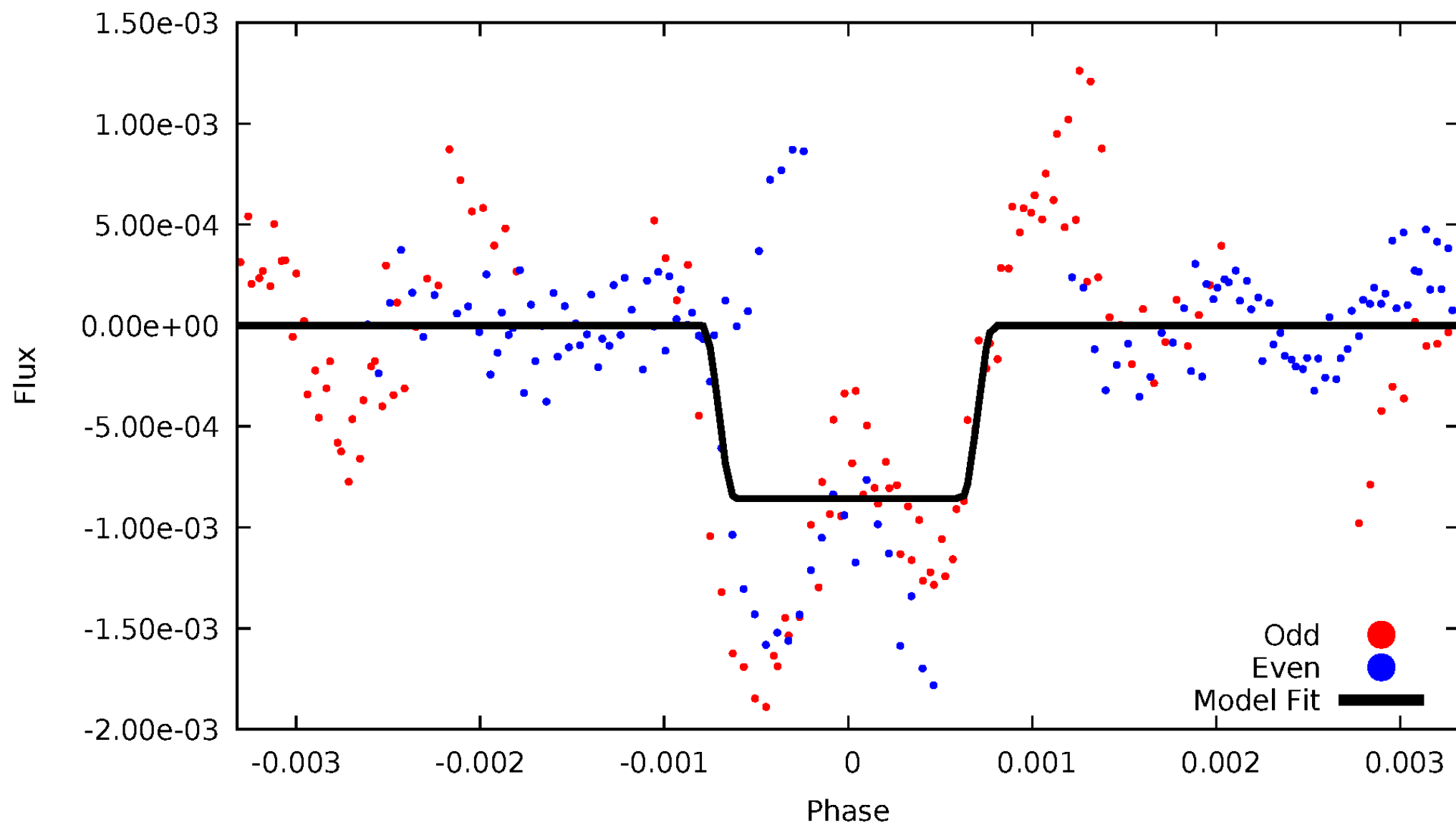
DV Odd/Even

TCE 012169181-02



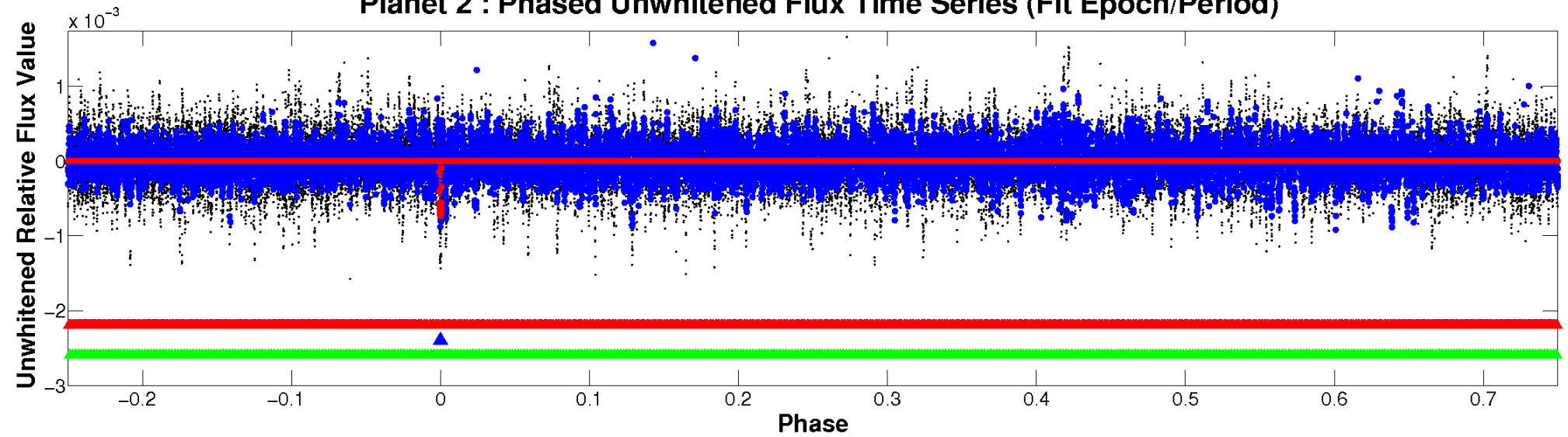
ALT Odd/Even

TCE 012169181-02

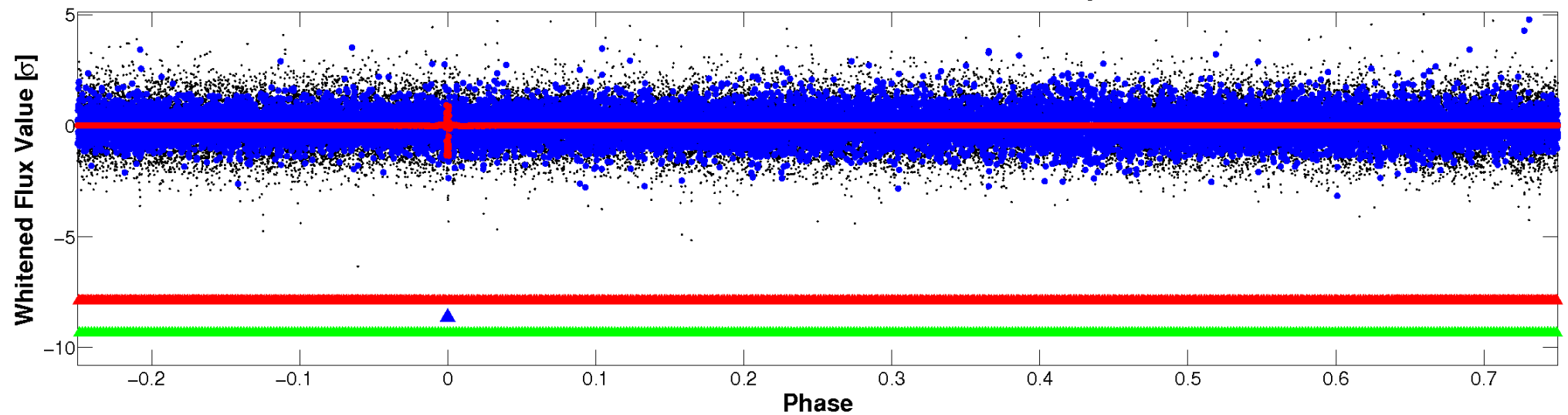


Non-Whitened Vs. Whitened Light Curve

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

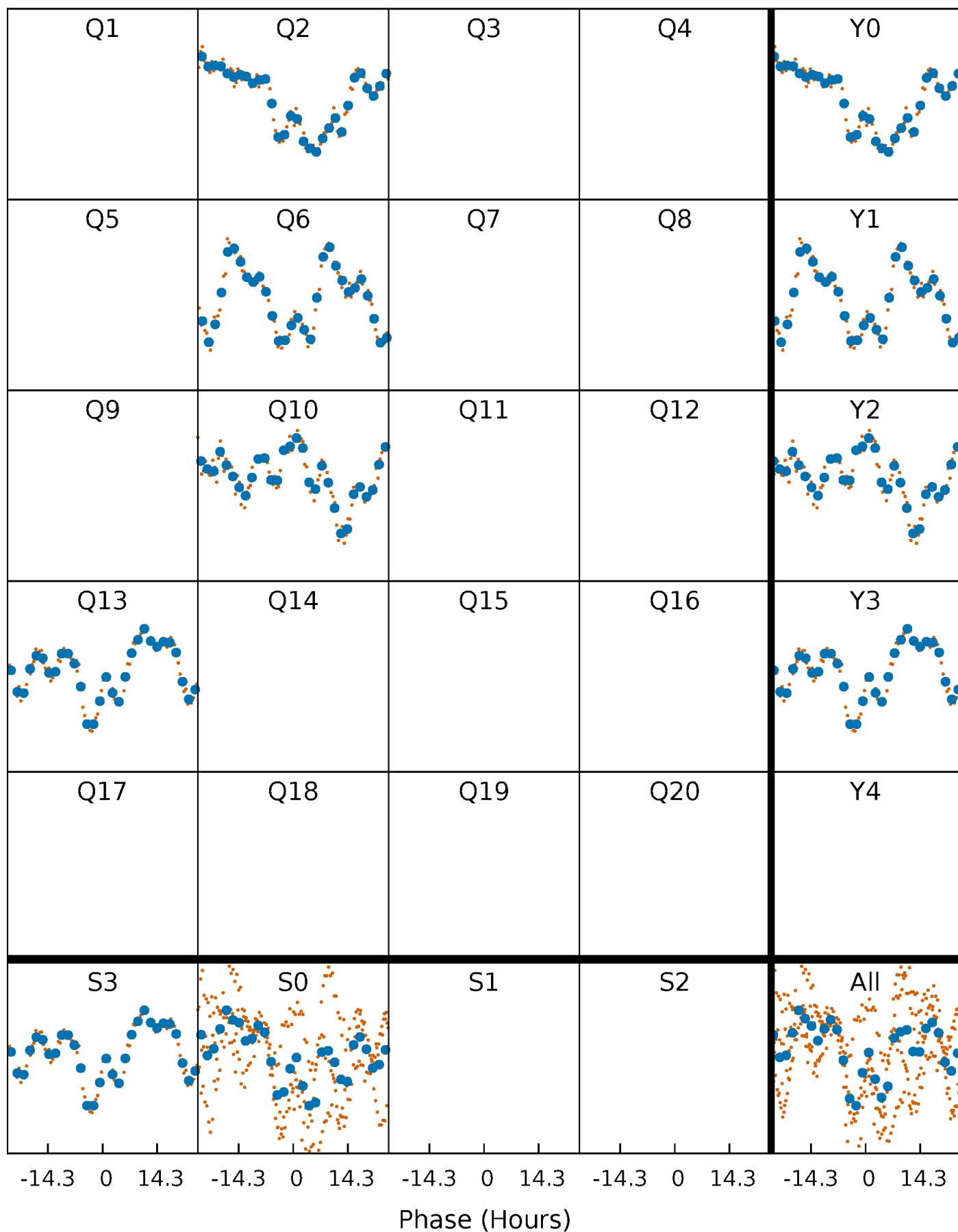


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



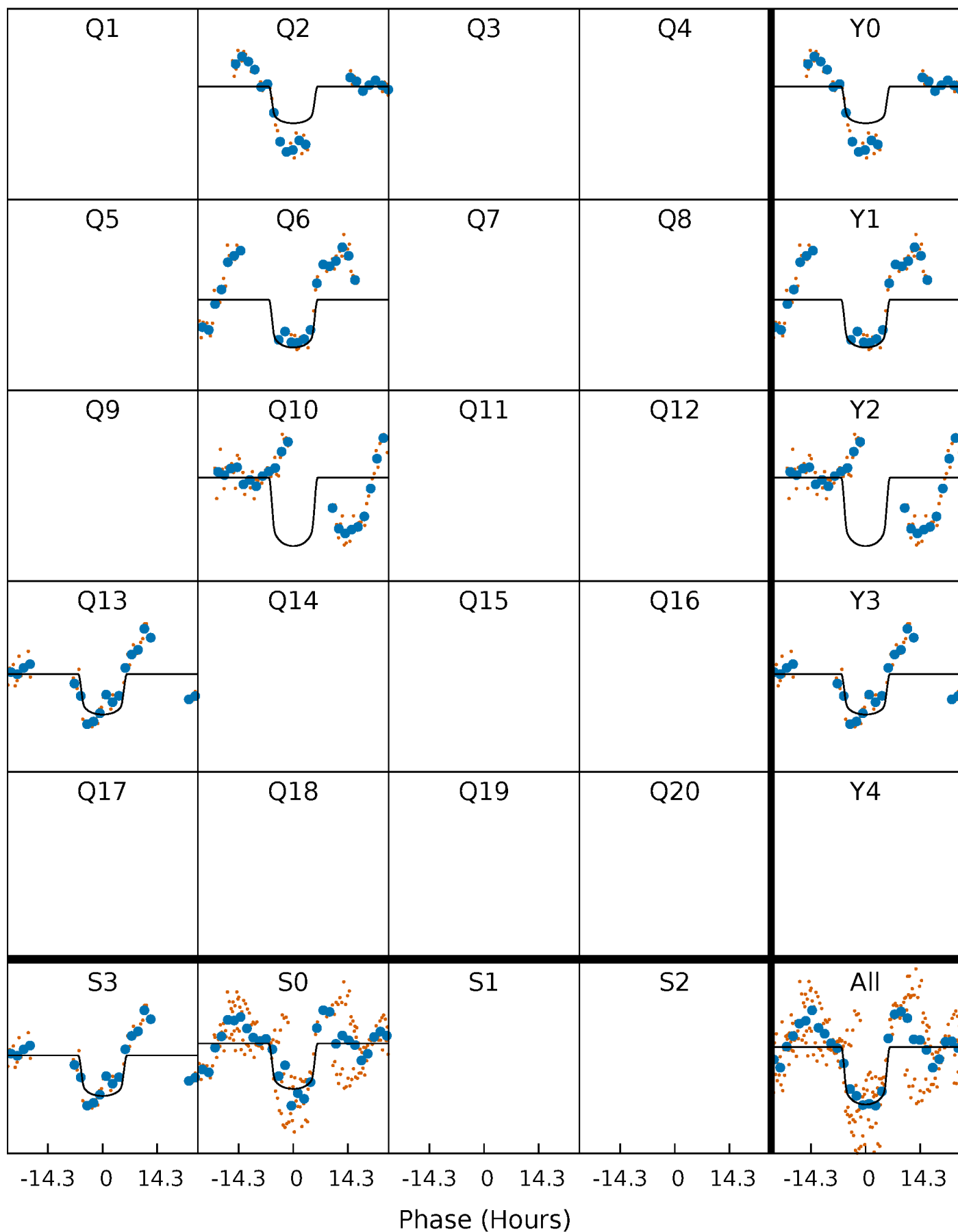
PDC Quarter-Phased Transit Curves

TCE 012169181-02 P=336.085569 Days $T_0=252.407641$ (BKJD)



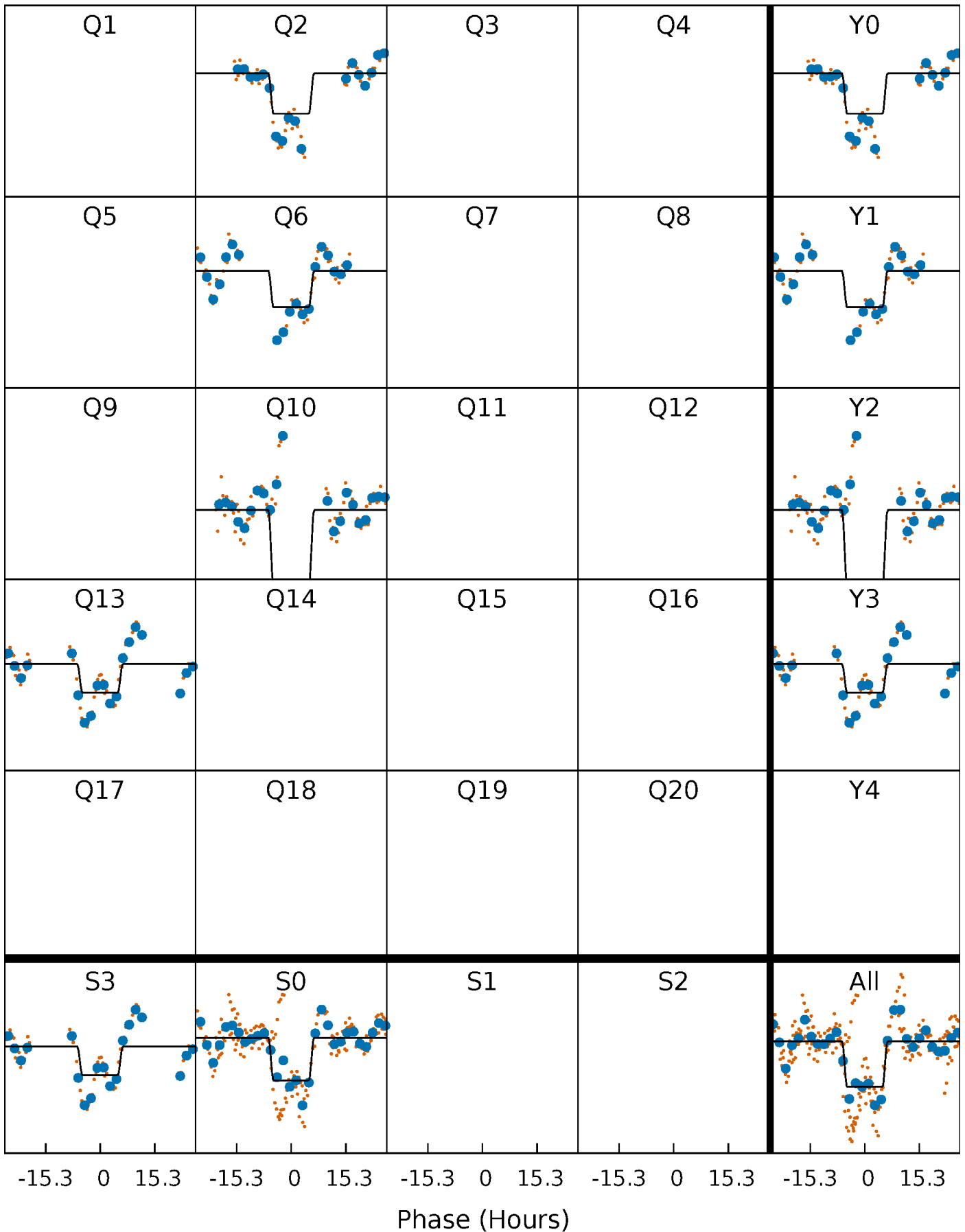
DV Quarter-Phased Transit Curves

TCE 012169181-02 P=336.085569 Days $T_0=252.407641$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

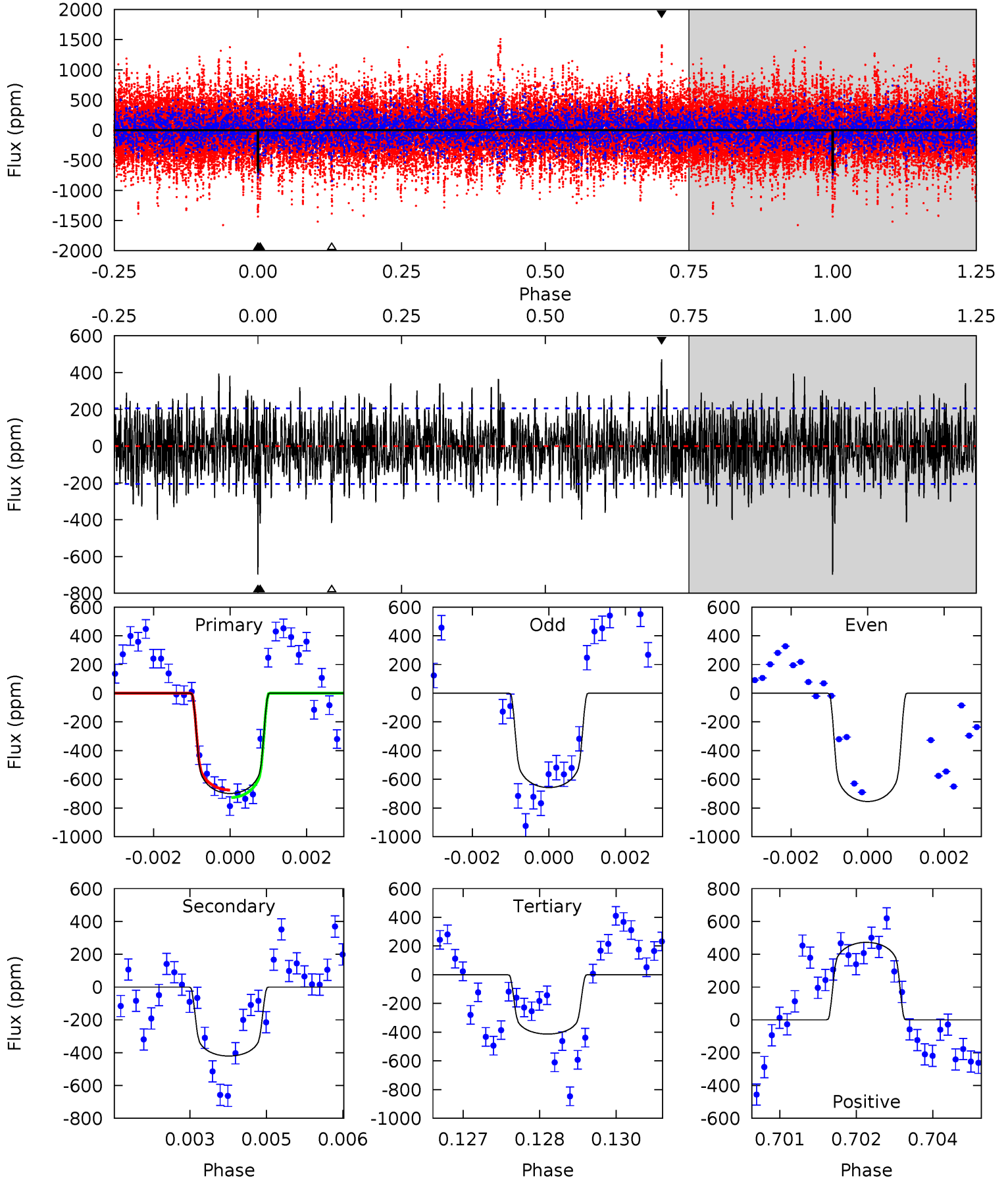
TCE 012169181-02 P=336.098006 Days $T_0=252.406251$ (BKJD)



DV Model-Shift Uniqueness Test

012169181-02, P = 336.085569 Days, E = 252.407641 Days

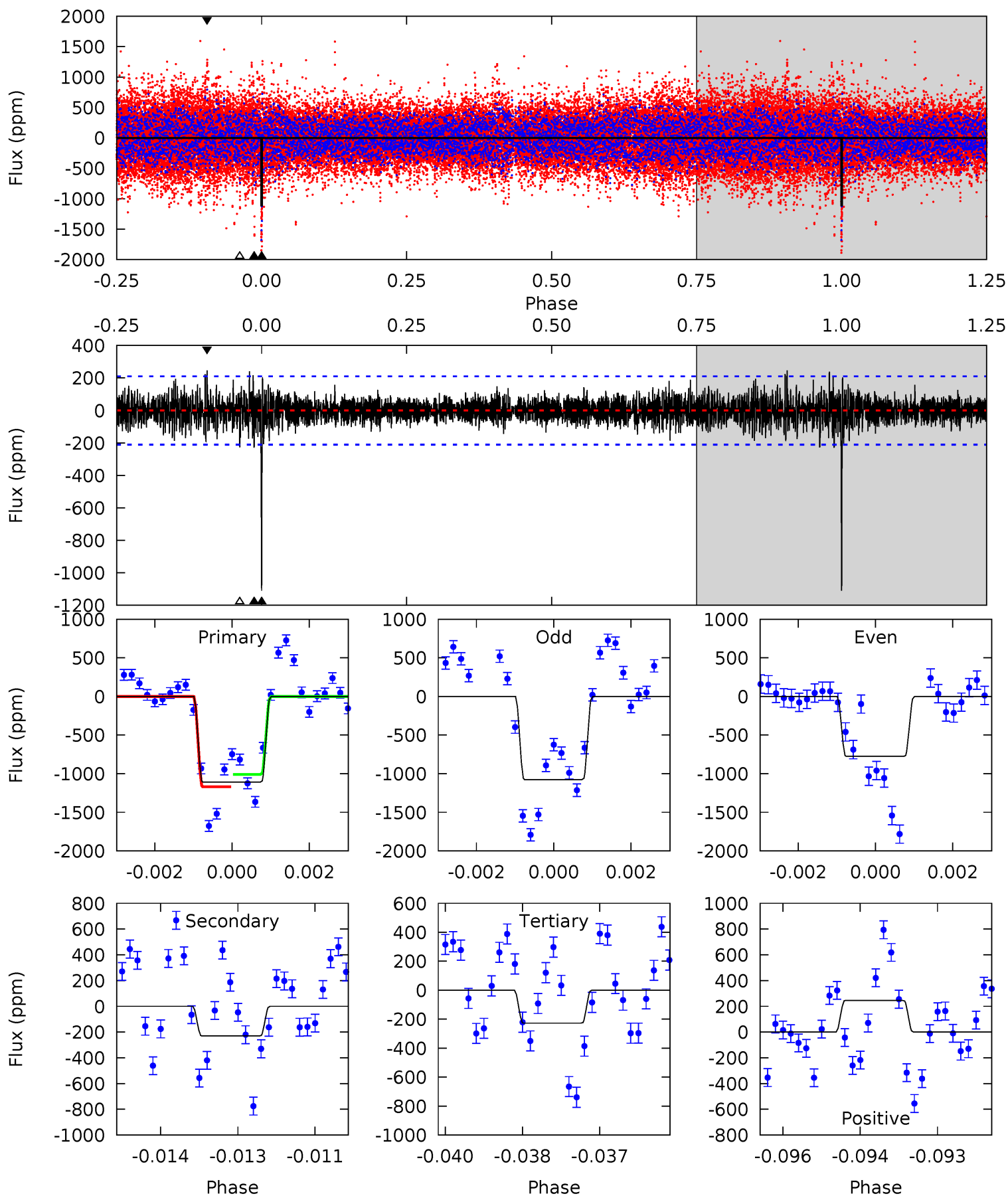
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.3	11.0	10.8	12.3	5.37	3.16	3.24	7.46	5.91	0.19	-1.36	1.24	0.85	0.40	0.68



Alt Model-Shift Uniqueness Test

012169181-02, P = 336.098006 Days, E = 252.406251 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.3	5.87	5.80	6.26	5.37	3.16	1.45	22.5	22.1	0.07	-0.39	3.95	0.69	0.18	2.08



Stellar Parameters For KIC 012169181

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6832^{+71}_{-82}	$3.931^{+0.186}_{-0.108}$	$0.000^{+0.150}_{-0.150}$	$2.266^{+0.420}_{-0.560}$	$1.596^{+0.130}_{-0.179}$	$0.193^{+0.191}_{-0.071}$
	+1%/-1%	+5%/-3%	+inf%/-inf%	+19%/-25%	+8%/-11%	+99%/-37%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 012169181-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-420 ± 38	$6.89^{+0.89}_{-1.05}$	601^{+27}_{-38}	5811^{+301}_{-268}	5989^{+2356}_{-1397}
Alt.	-230 ± 39	$7.03^{+1.04}_{-0.95}$	598^{+29}_{-38}	4977^{+256}_{-259}	3053^{+1180}_{-840}

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

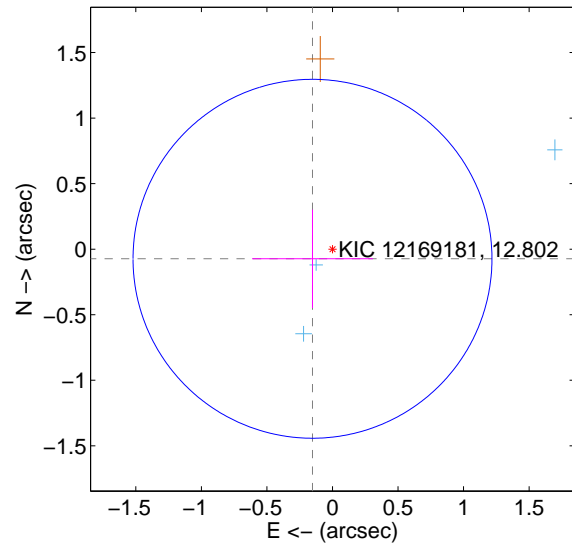
Supplemental centroid analysis for 012169181-02. Kepler magnitude: 12.80. Transit SNR 7.75

There are 3 quarters with good PRF difference image offsets

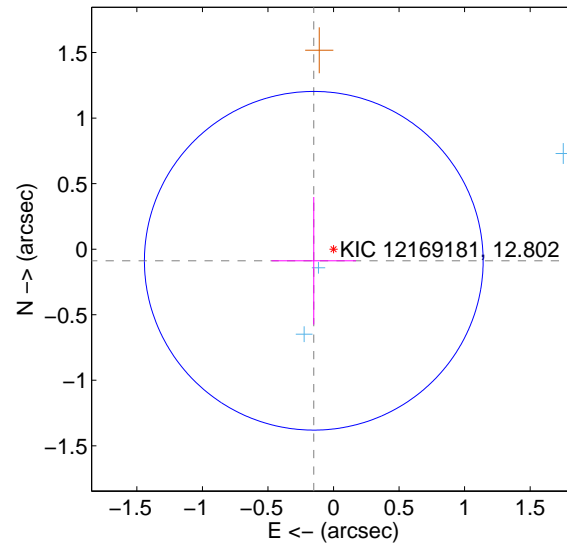
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.169 ± 0.456	0.37	0.152 ± 0.461	-0.073 ± 0.375
PRF-fit source offset from KIC position	0.175 ± 0.431	0.41	0.150 ± 0.322	-0.088 ± 0.486
photometric centroid source offset	0.30 ± 0.41	0.73	0.05 ± 0.33	0.30 ± 0.41

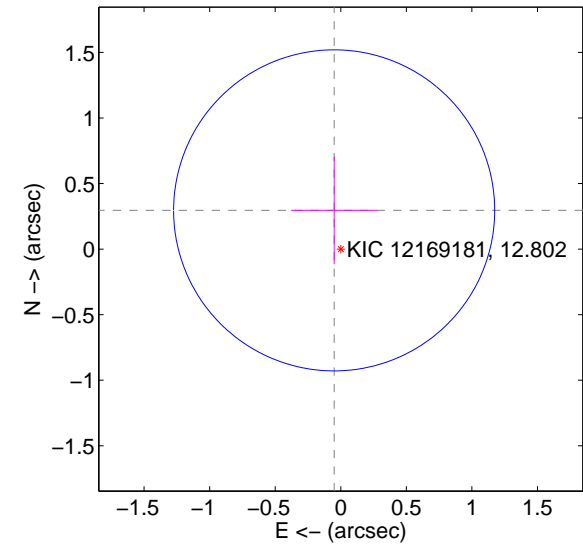
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



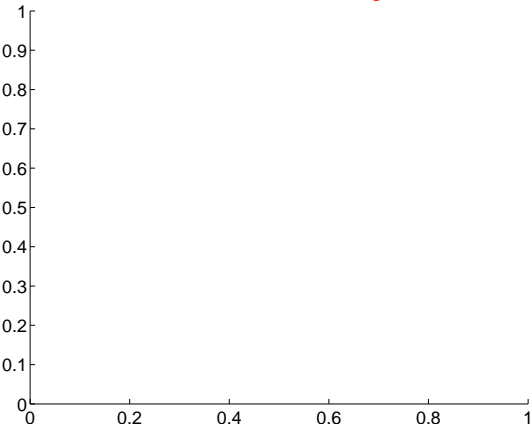
offset from photometric centroids



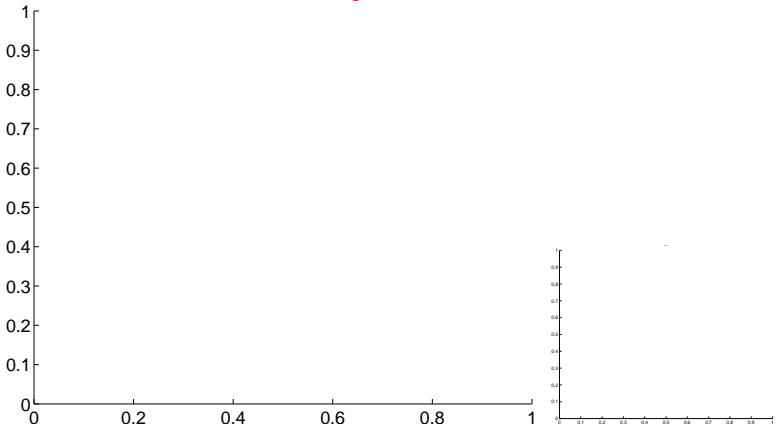
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

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

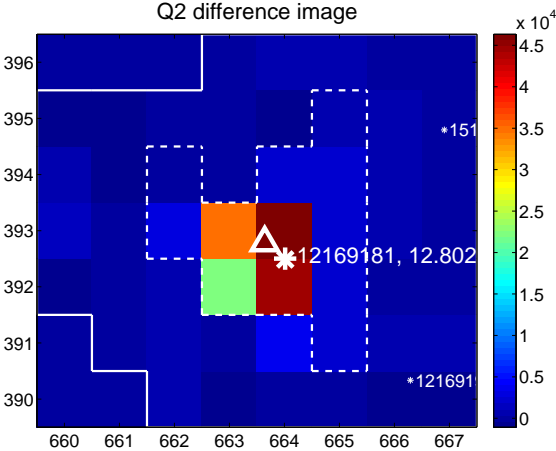
Q1 no difference image



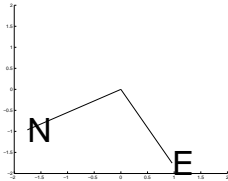
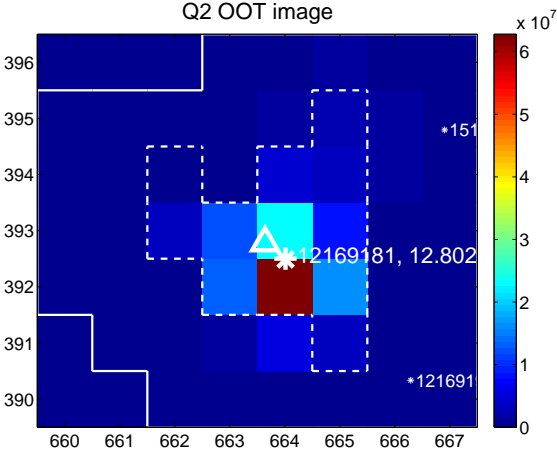
Q1 no OOT image



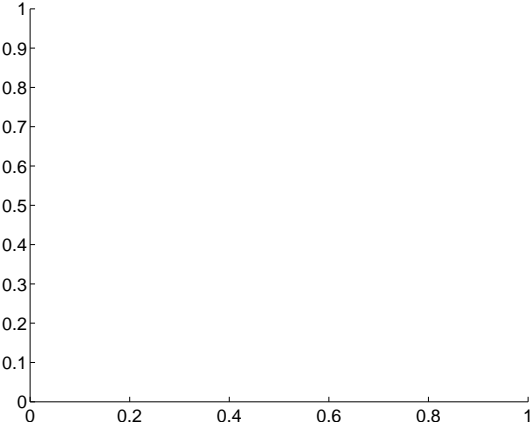
Q2 difference image



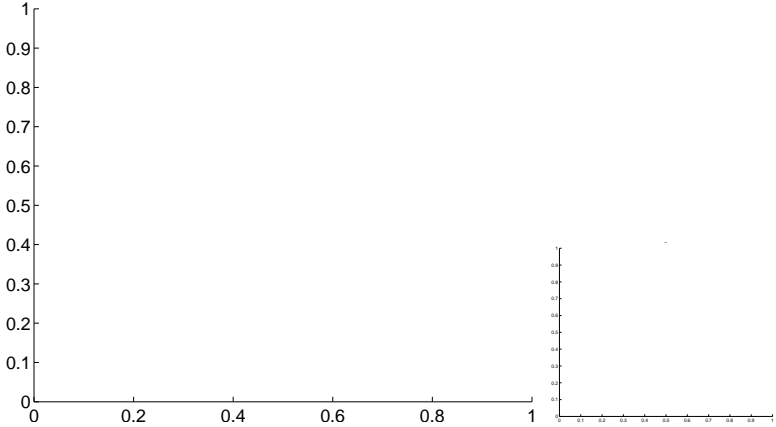
Q2 OOT image



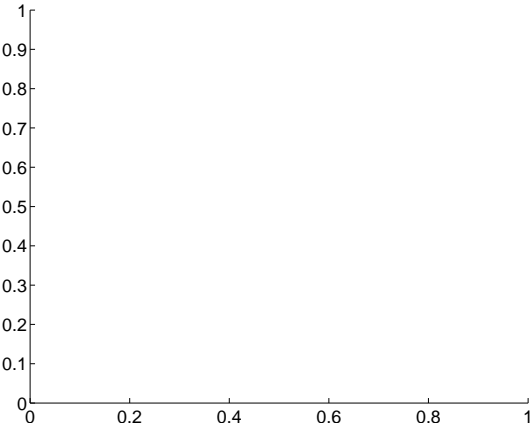
Q3 no difference image



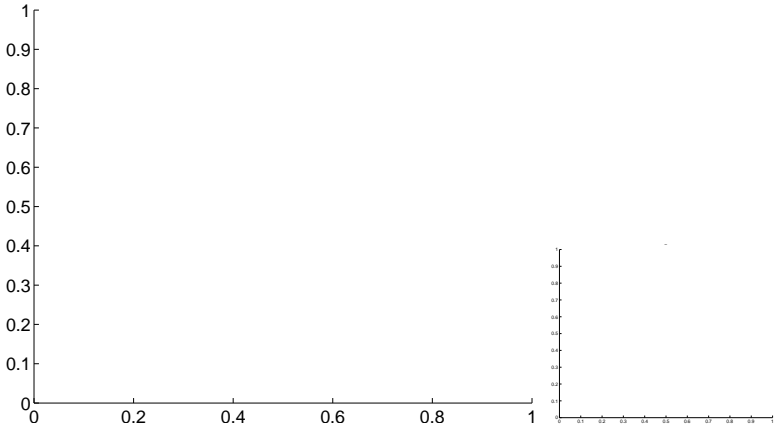
Q3 no OOT image



Q4 no difference image

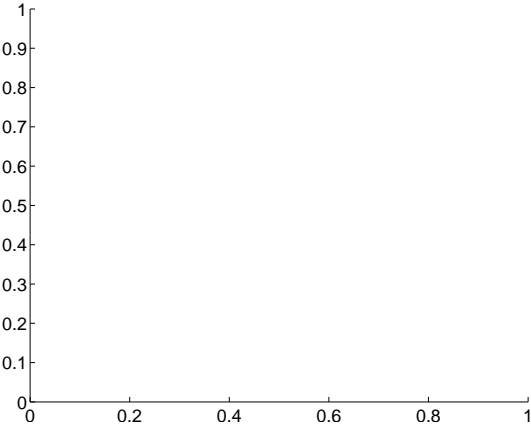


Q4 no OOT image

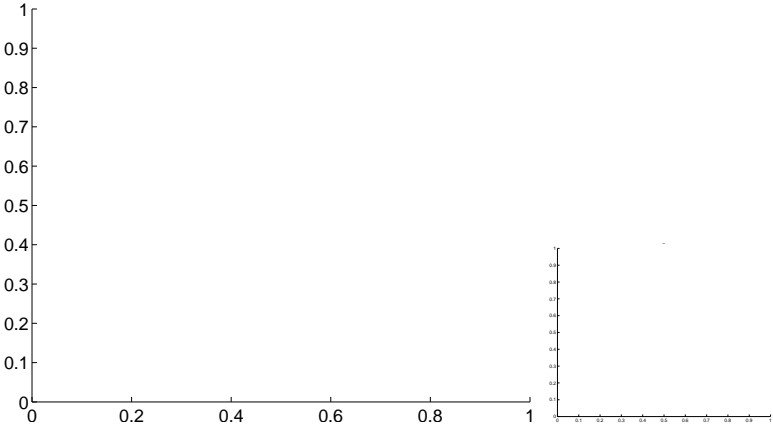


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

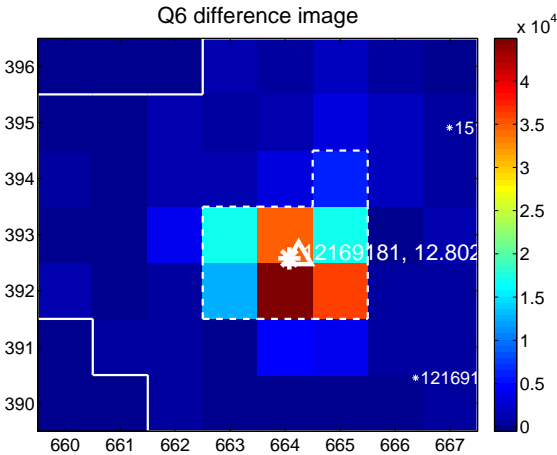
Q5 no difference image



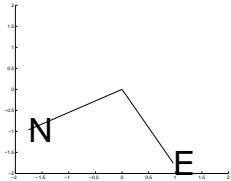
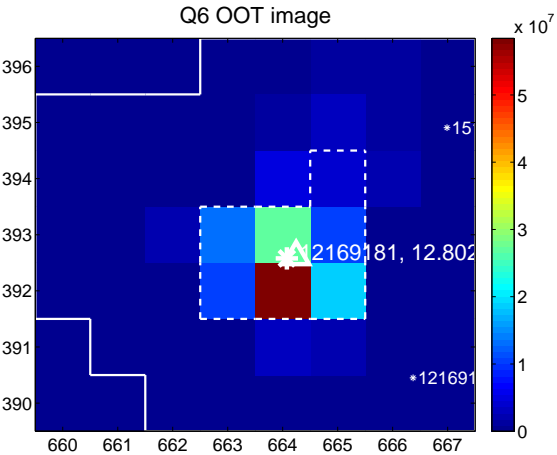
Q5 no OOT image



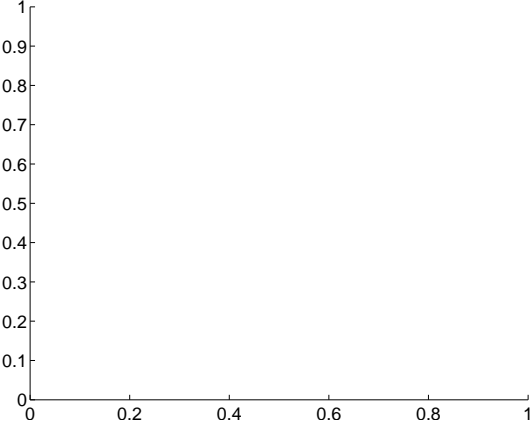
Q6 difference image



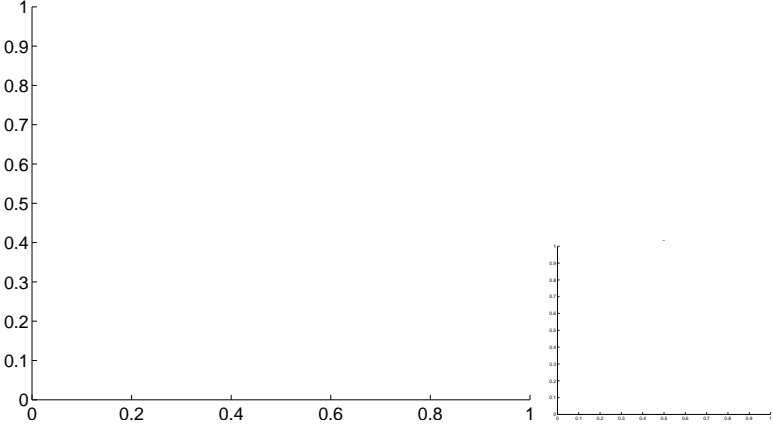
Q6 OOT image



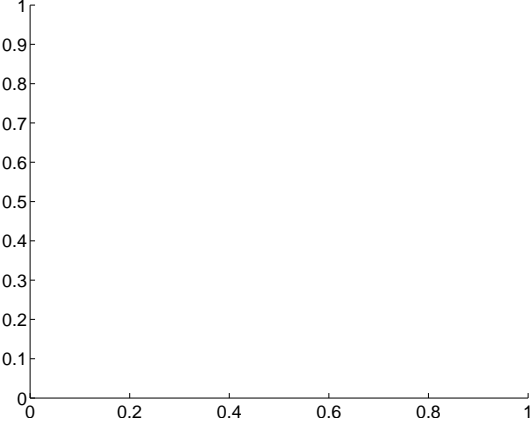
Q7 no difference image



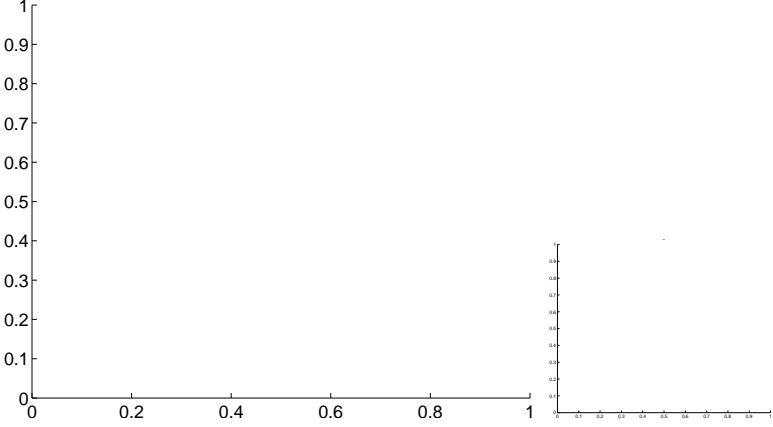
Q7 no OOT image



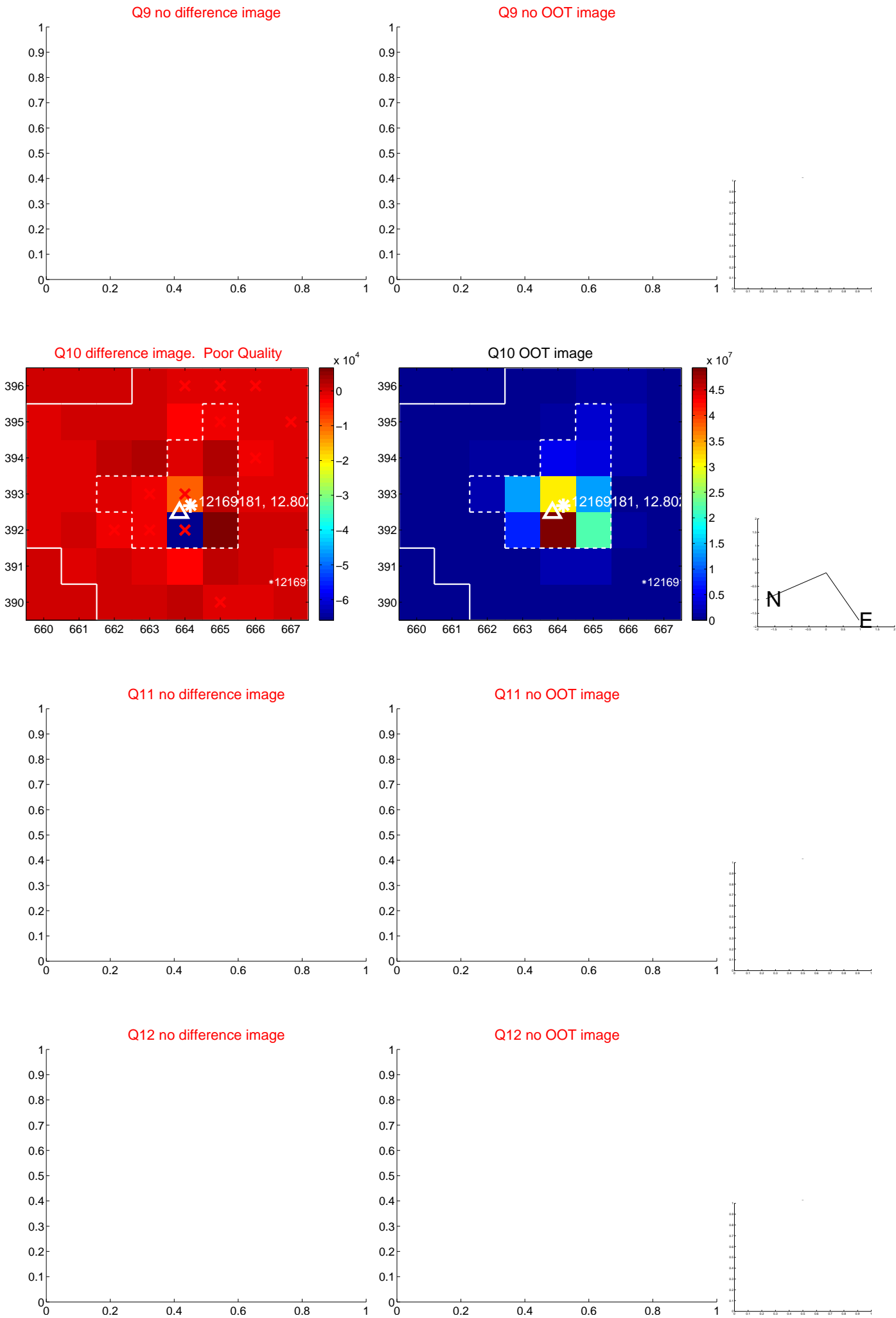
Q8 no difference image



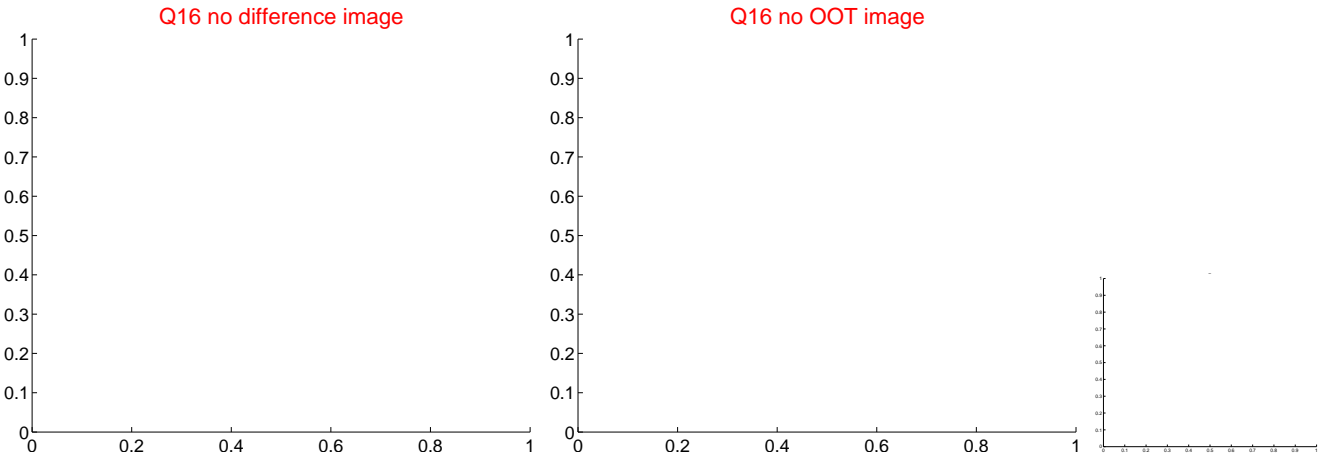
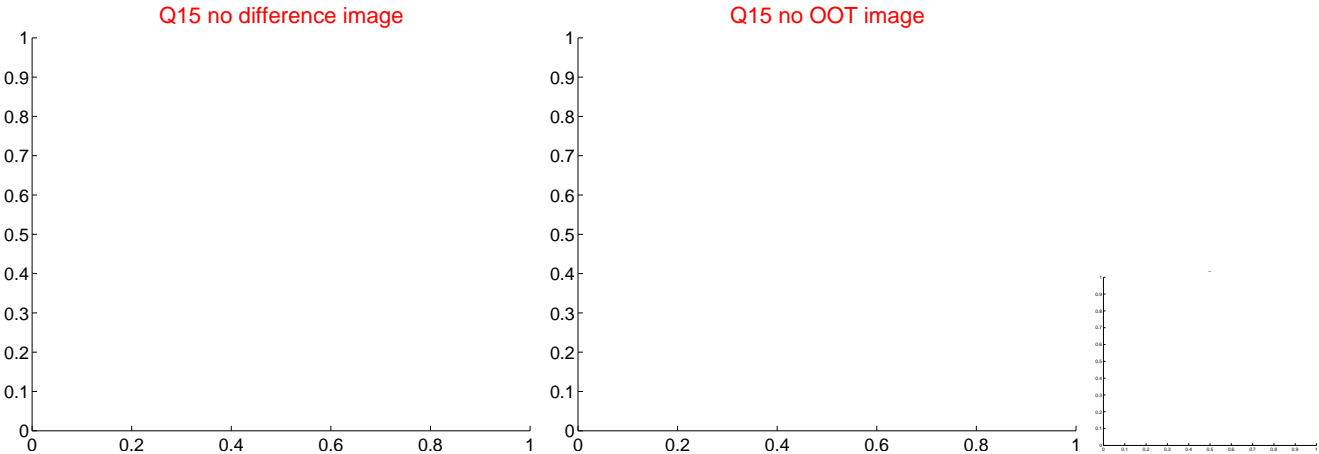
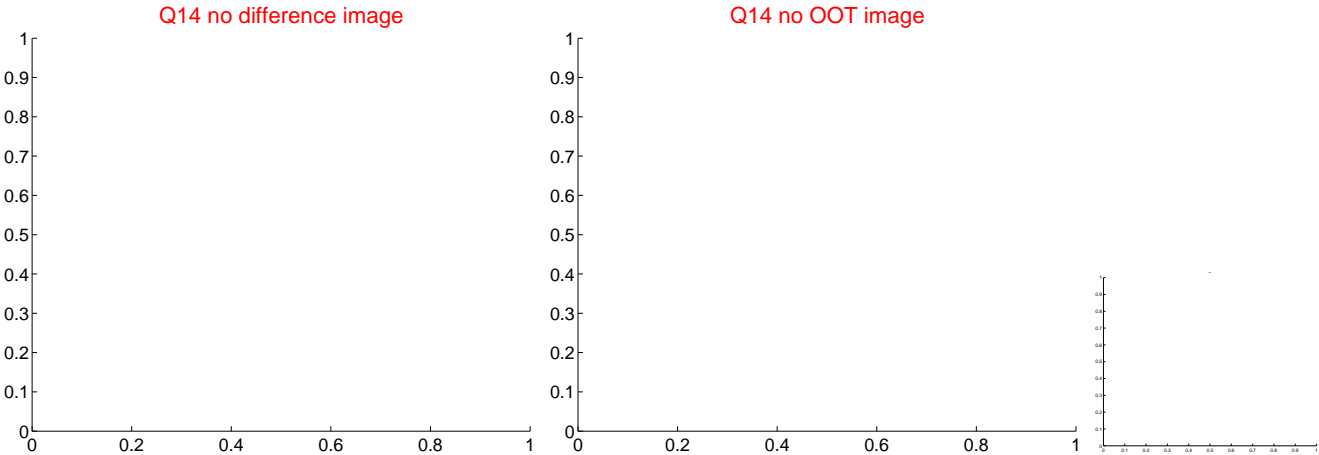
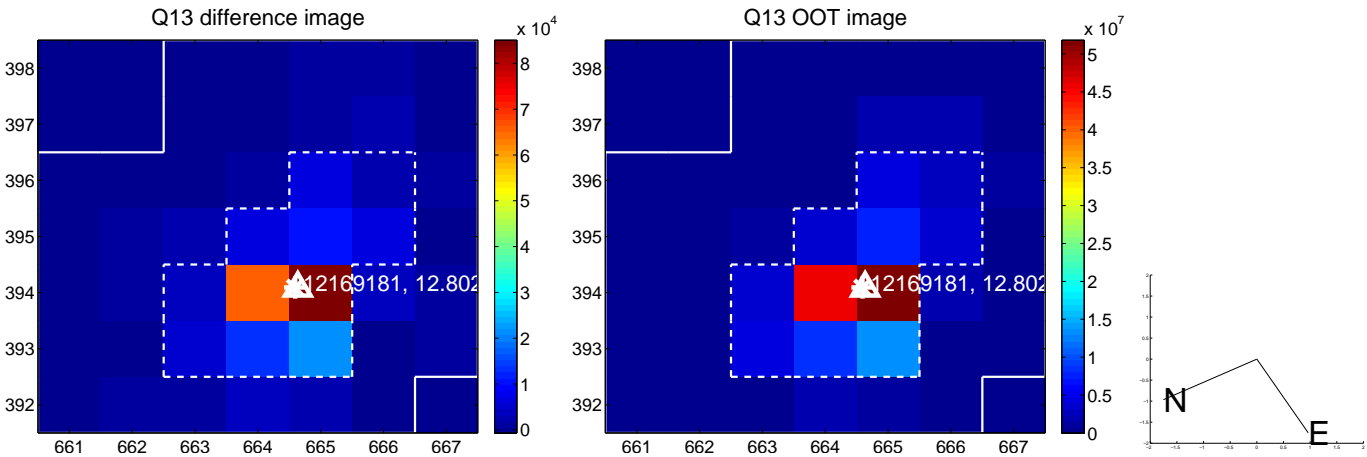
Q8 no OOT image



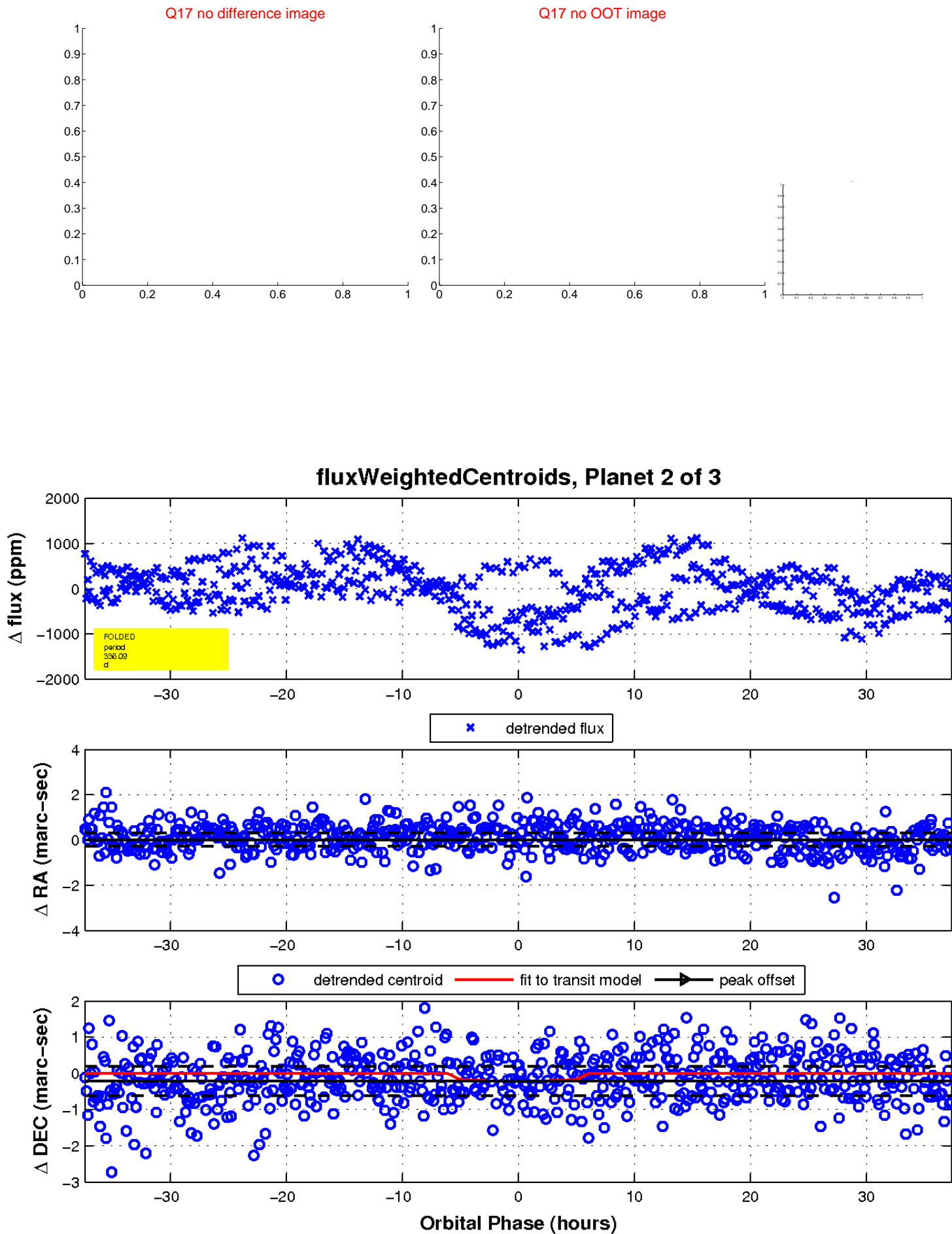
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

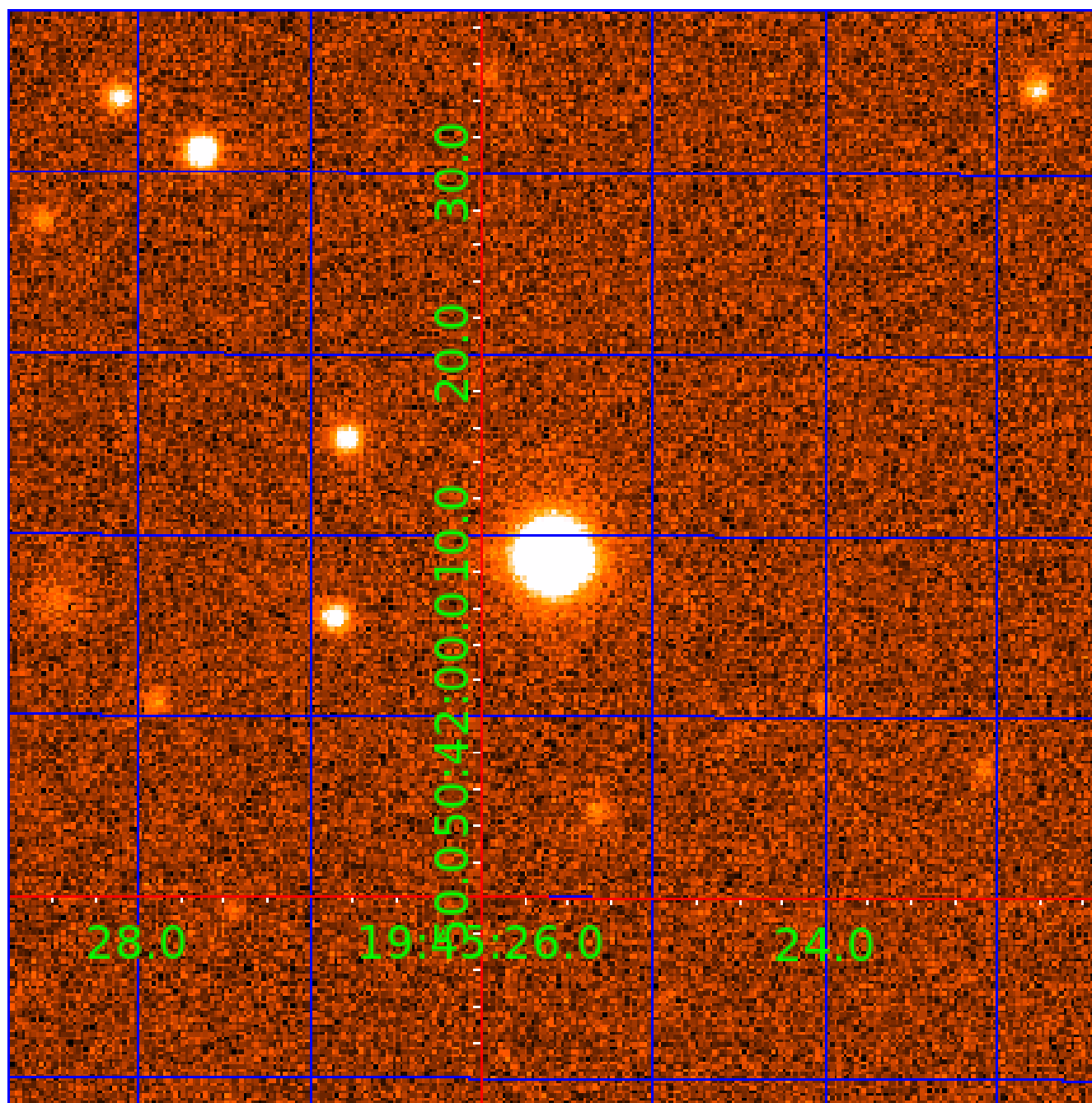


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 012169181

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})
012169181-01	OBS	No	1.289775	131.555333	45.4	3.467	10.0	10.4	2.27	6832	1.78	13632.44
012169181-02	OBS	No	336.085569	252.407641	736.1	12.469	8.8	7.7	2.27	6832	6.97	8.19
012169181-03	OBS	No	0.678940	132.140034	15.5	5.923	8.6	3.7	2.27	6832	0.91	32073.81

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012169181-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT
012169181-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS
012169181-03	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_FEW_DIFFS

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

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

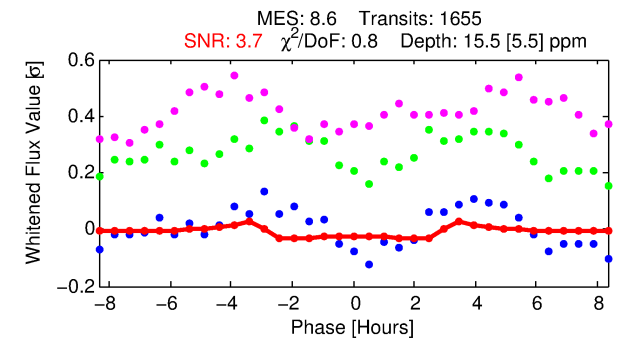
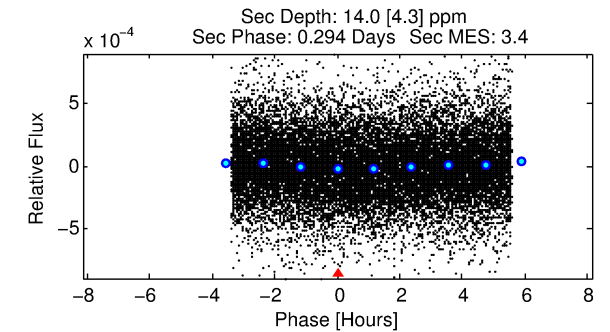
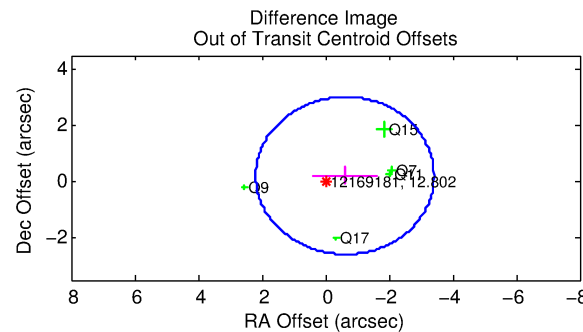
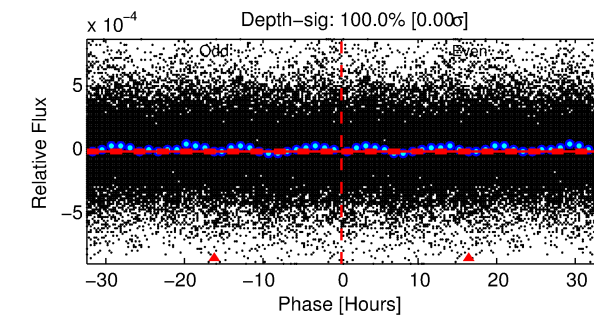
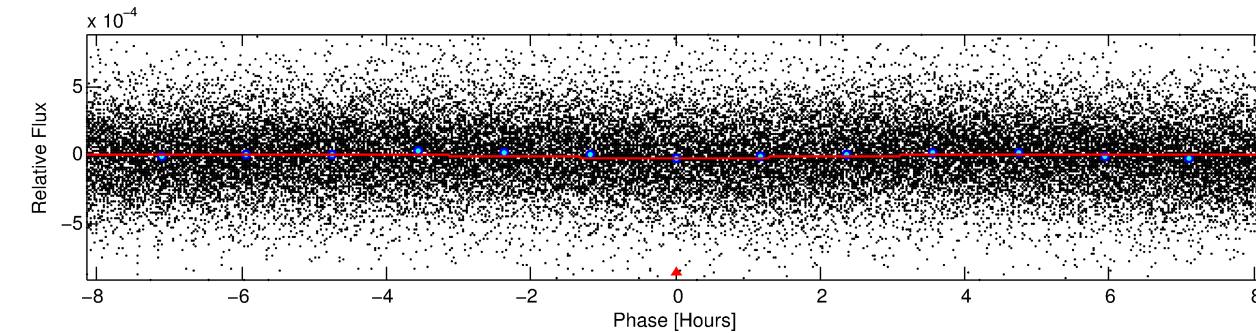
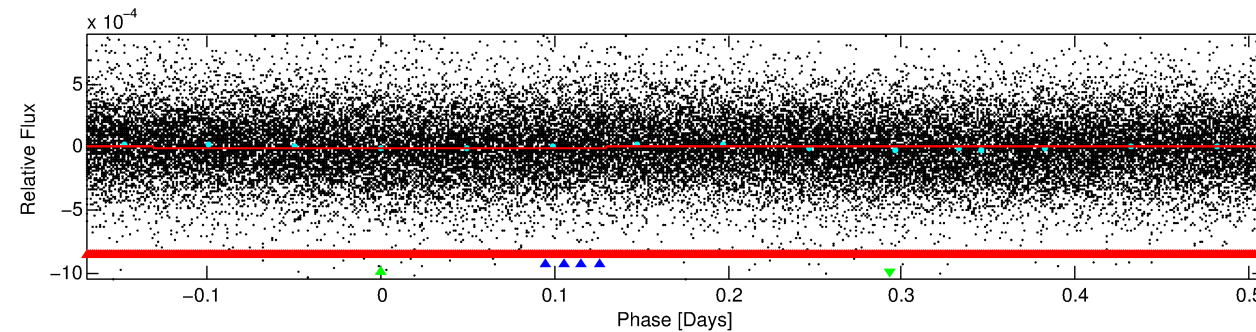
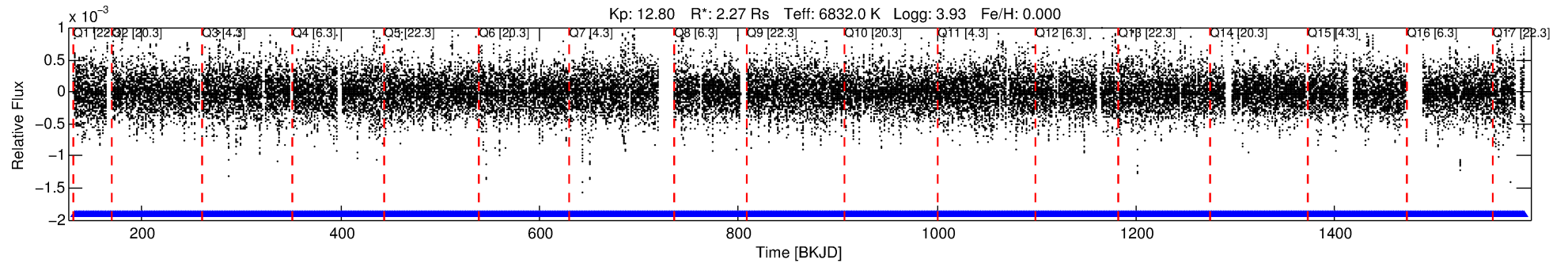
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012169181-03

No Significant Match Found

DV One-Page Summary

KIC: 12169181 Candidate: 3 of 3 Period: 0.679 d



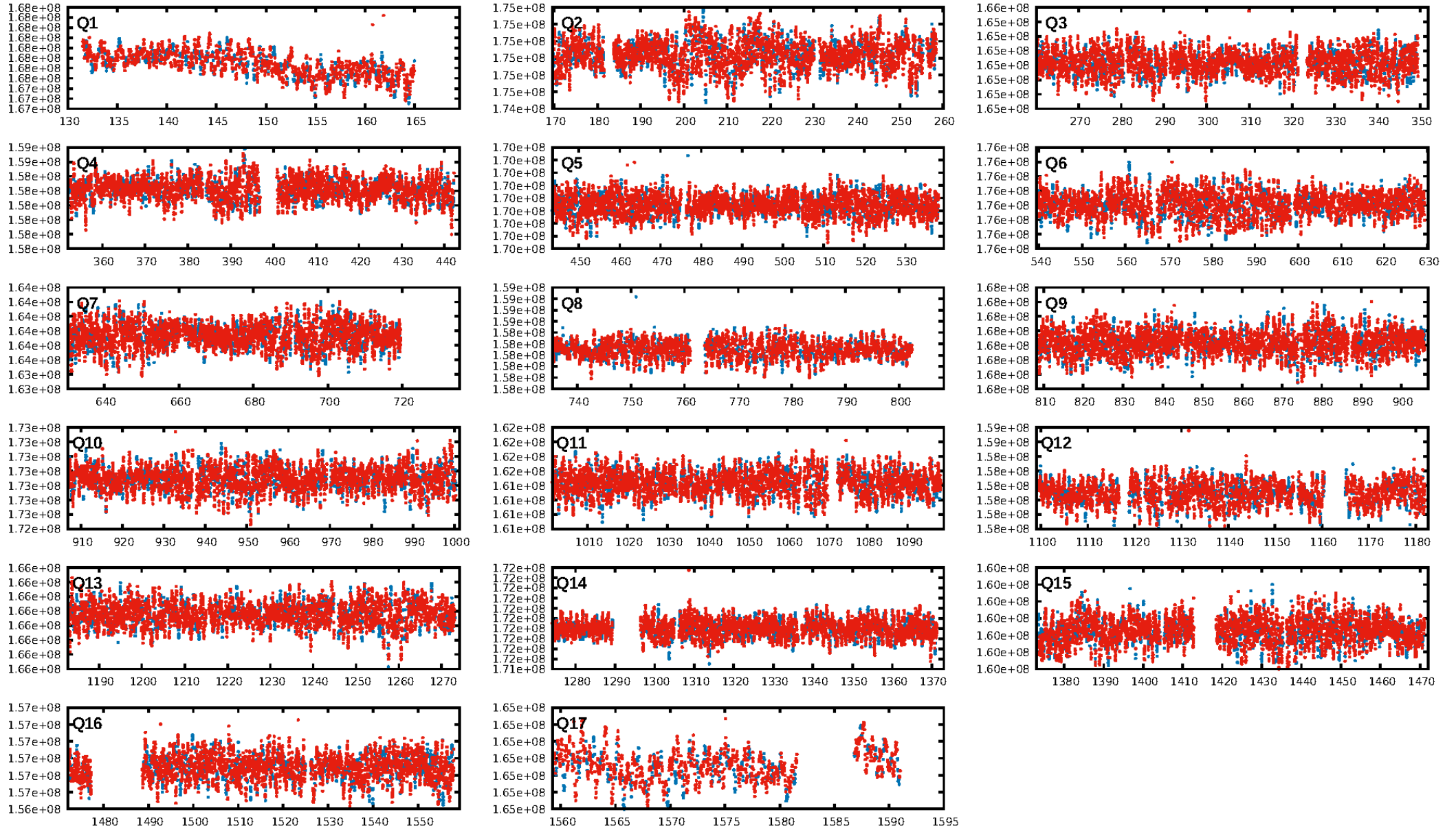
DV Fit Results:

Period = 0.67894 [0.00003] d
Epoch = 132.1400 [0.0061] BKJD
Rp/R* = 0.0037 [0.0038]
a/R* = 1.09 [1.07]
b = 0.30 [18.10]
Seff = 32073.81 [10684.52]
Teq = 3412 [284] K
Rp = 0.91 [0.96] Re
a = 0.0177 [0.0039] AU
Ag = 2.93 [6.22] [0.31 σ]
Teffp = 6906 [3613] K [0.96 σ]

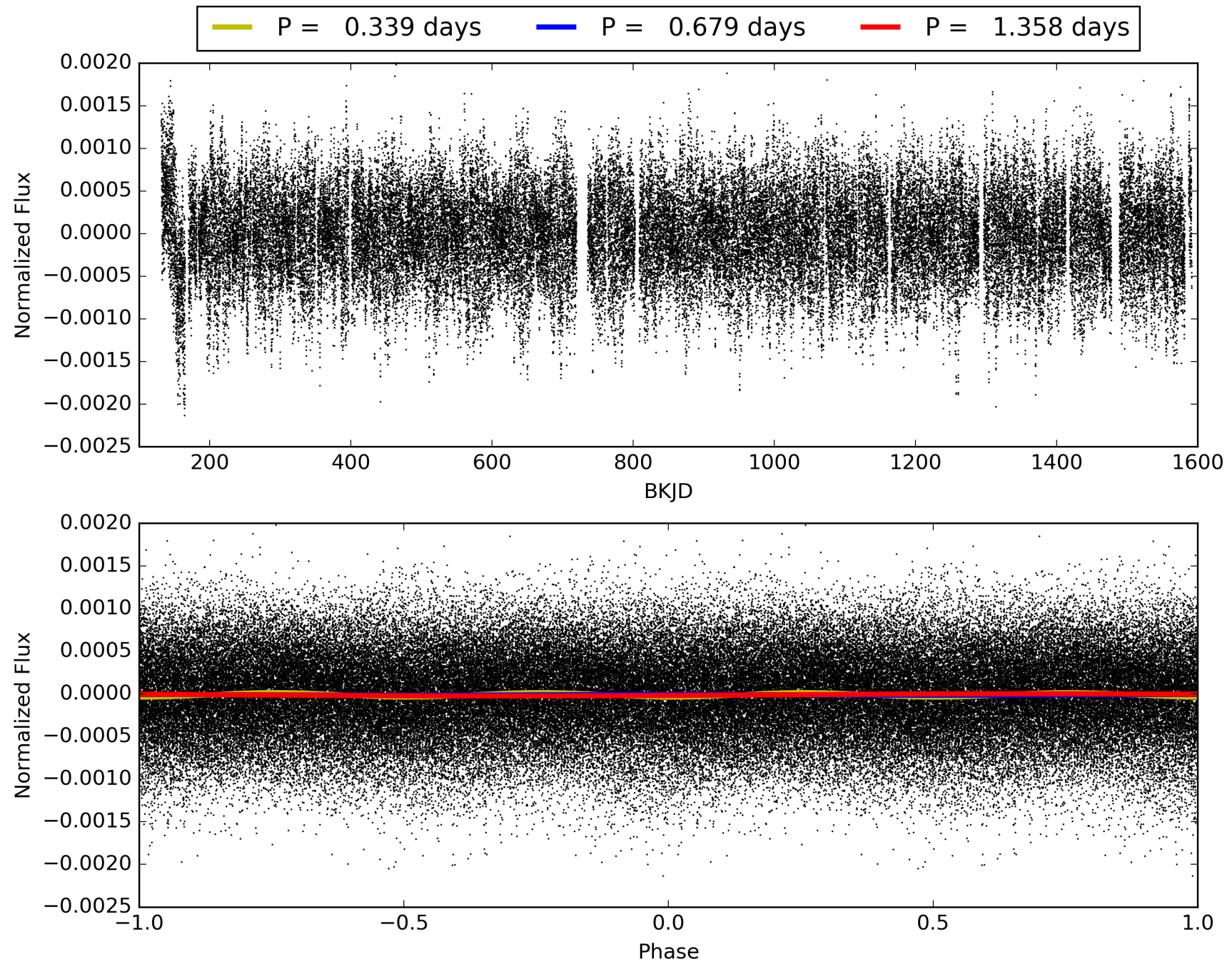
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 96.7% [2.14 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1581/1581]
GhostDiagnostic-chr: 3.094
Centroid-sig: 2.7%
Centroid-so: 1.461 arcsec [1.51 σ]
OotOffset-rm: 0.651 arcsec [0.70 σ]
KicOffset-rm: 0.833 arcsec [0.95 σ]
OotOffset-st: 0/3/0/2 [5]
KicOffset-st: 0/3/0/2 [5]
DiffImageQuality-fgm: 0.00 [0/5]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 012169181-03, PDC Light Curves

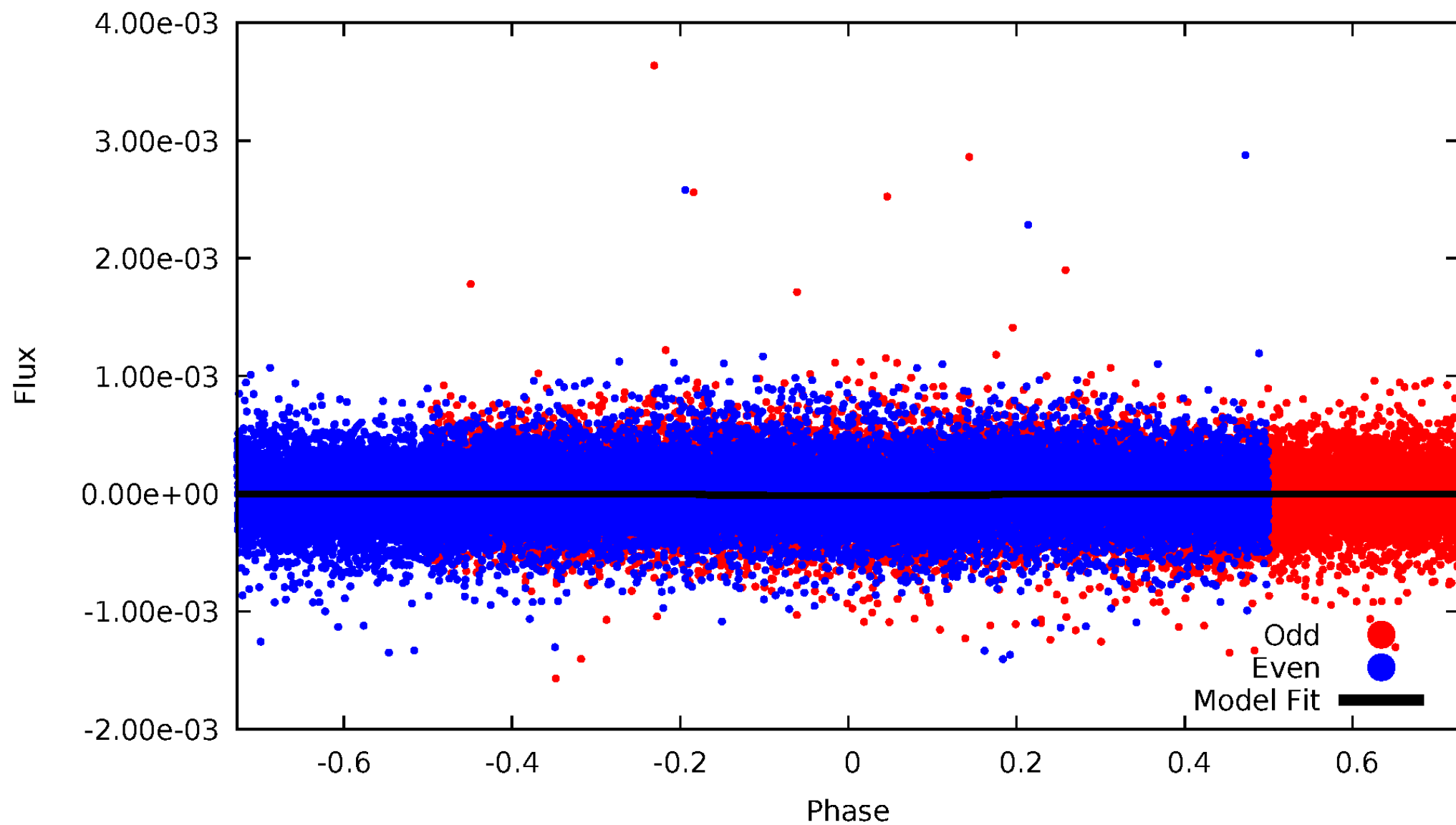


TCE 012169181-03



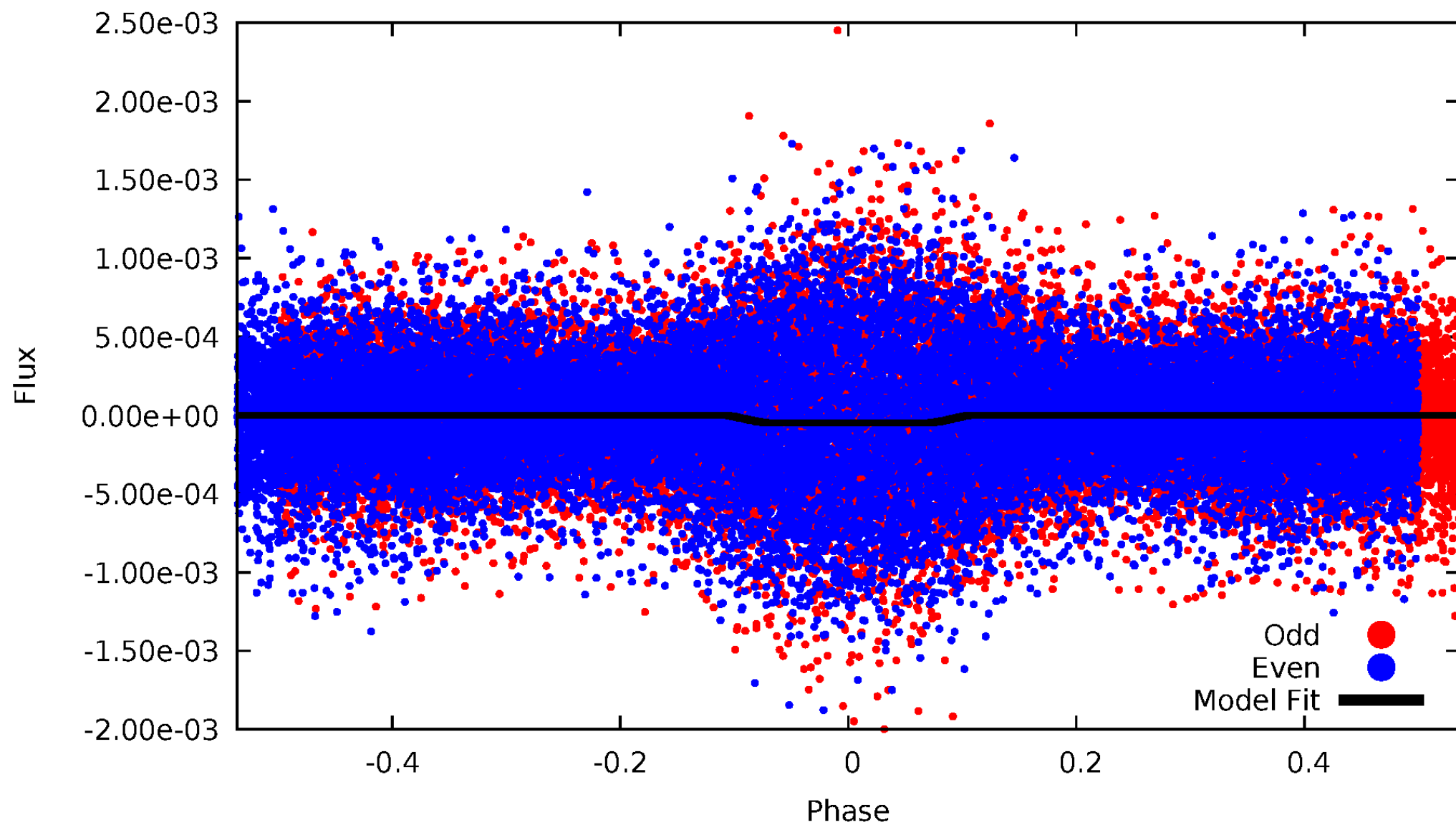
DV Odd/Even

TCE 012169181-03

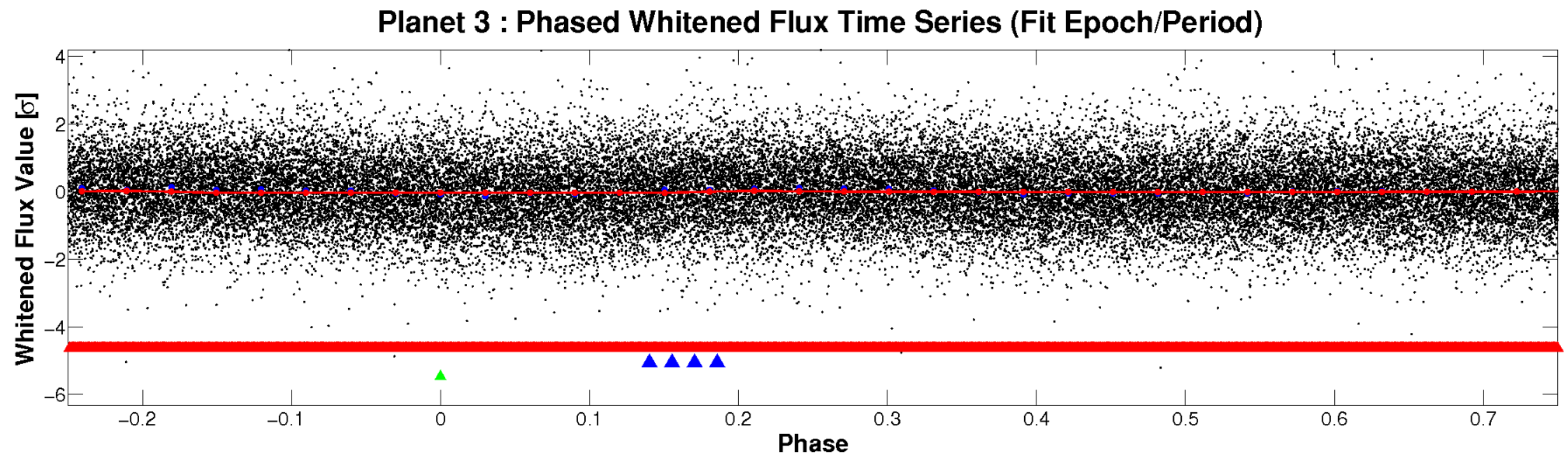
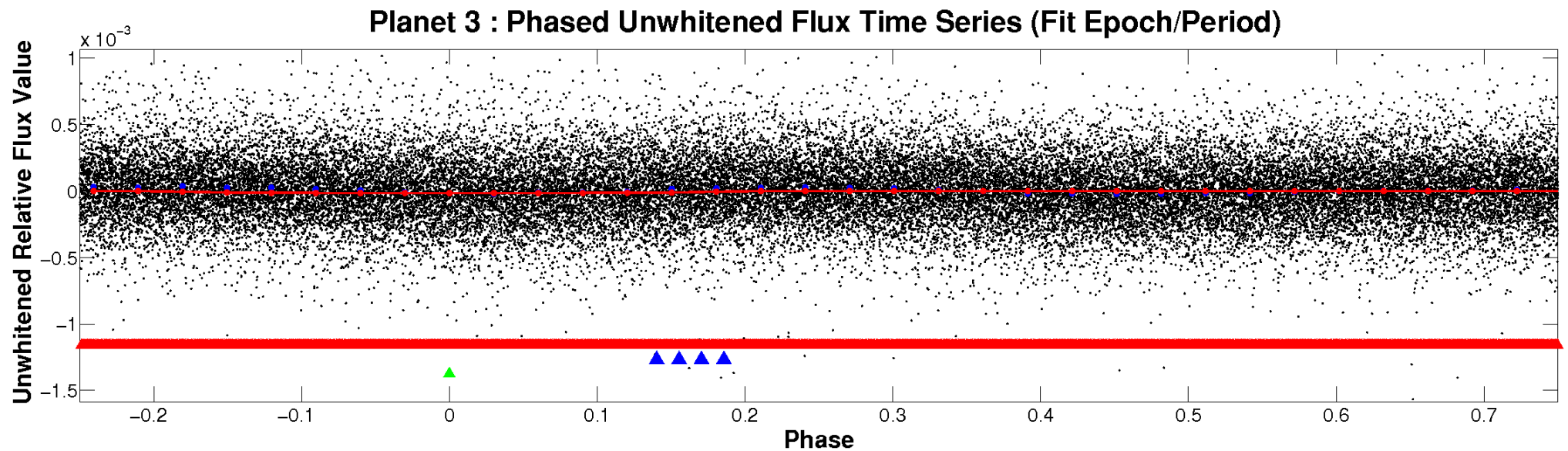


ALT Odd/Even

TCE 012169181-03

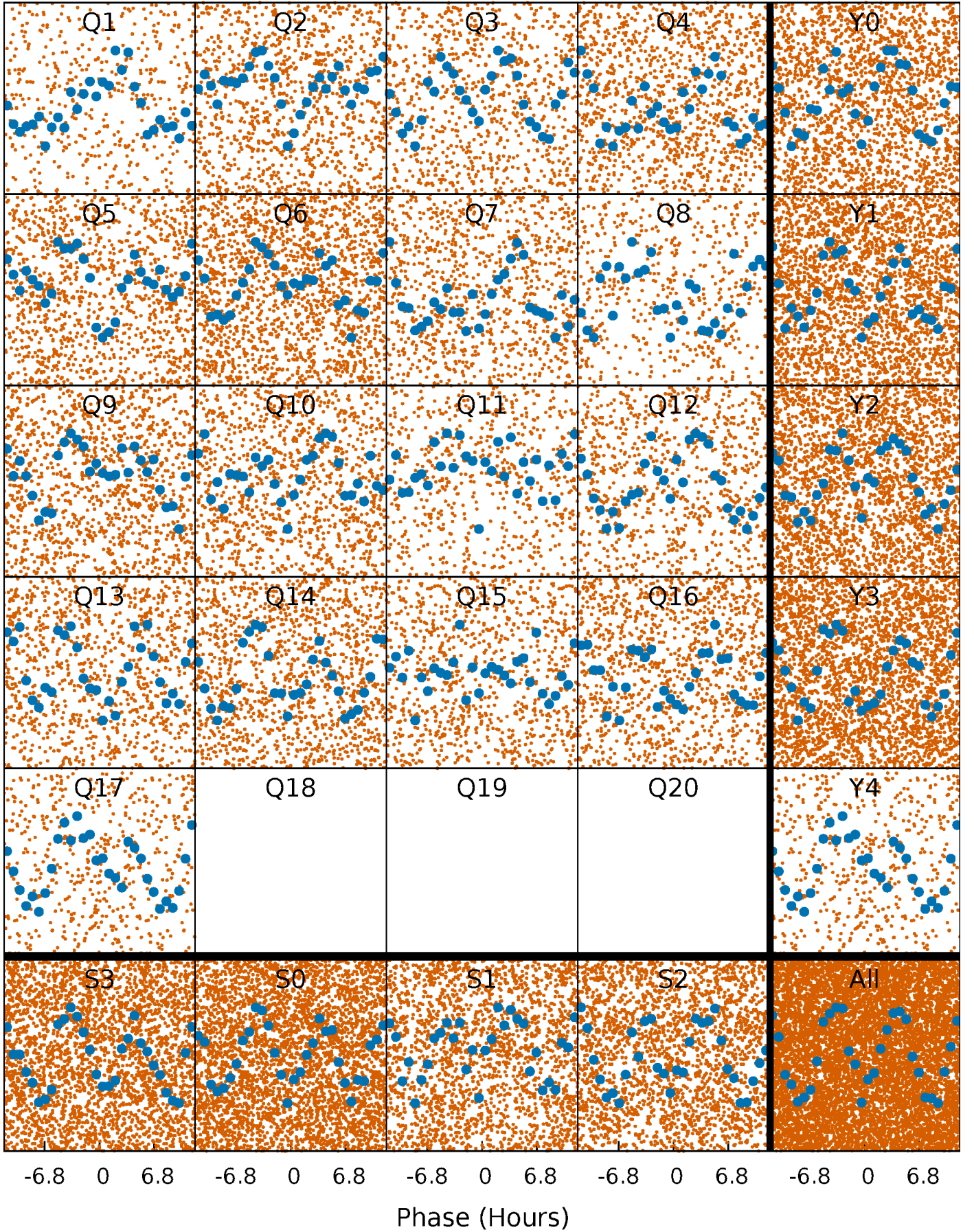


Non-Whitened Vs. Whitened Light Curve



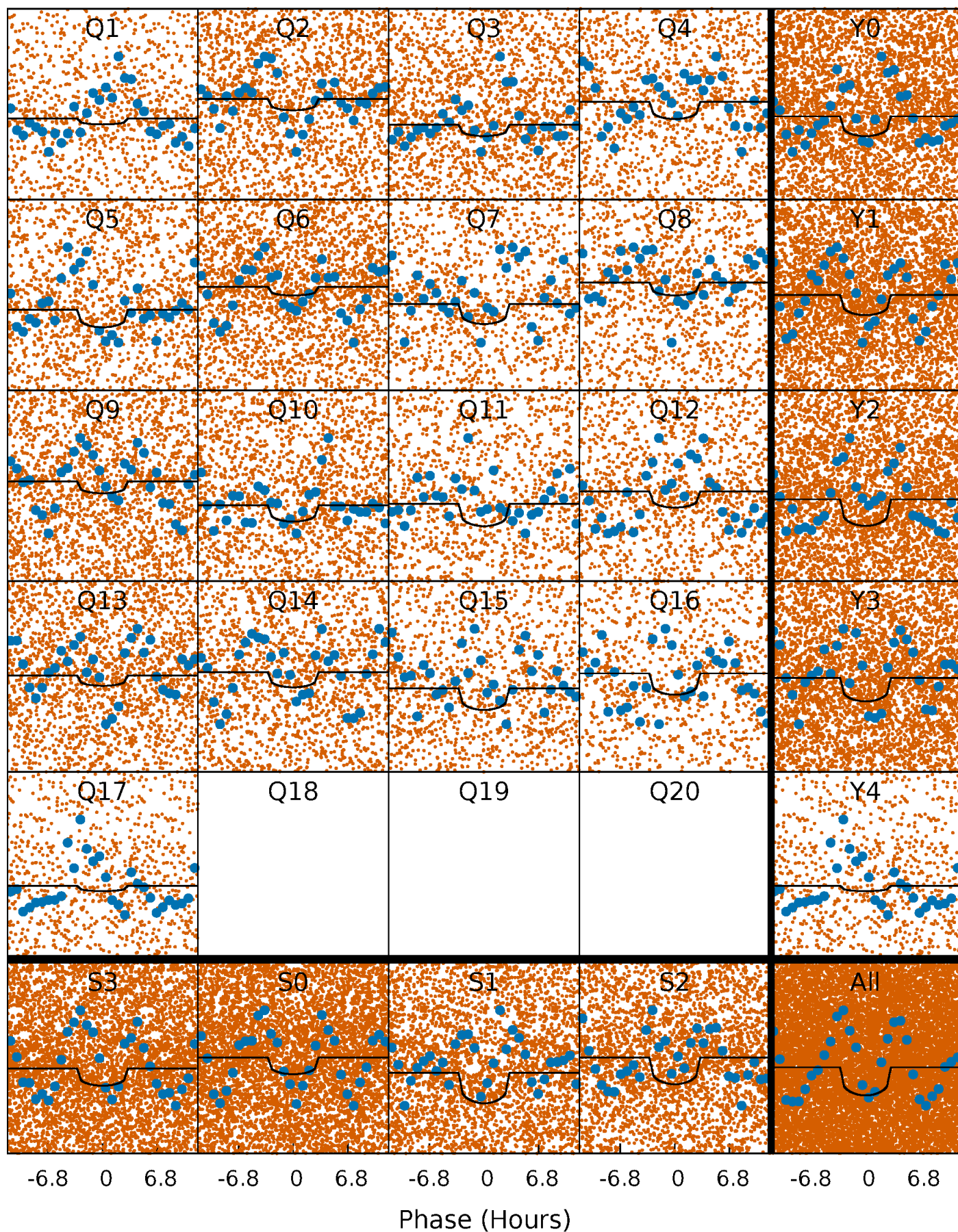
PDC Quarter-Phased Transit Curves

TCE 012169181-03 P= 0.678940 Days $T_0=132.140034$ (BKJD)



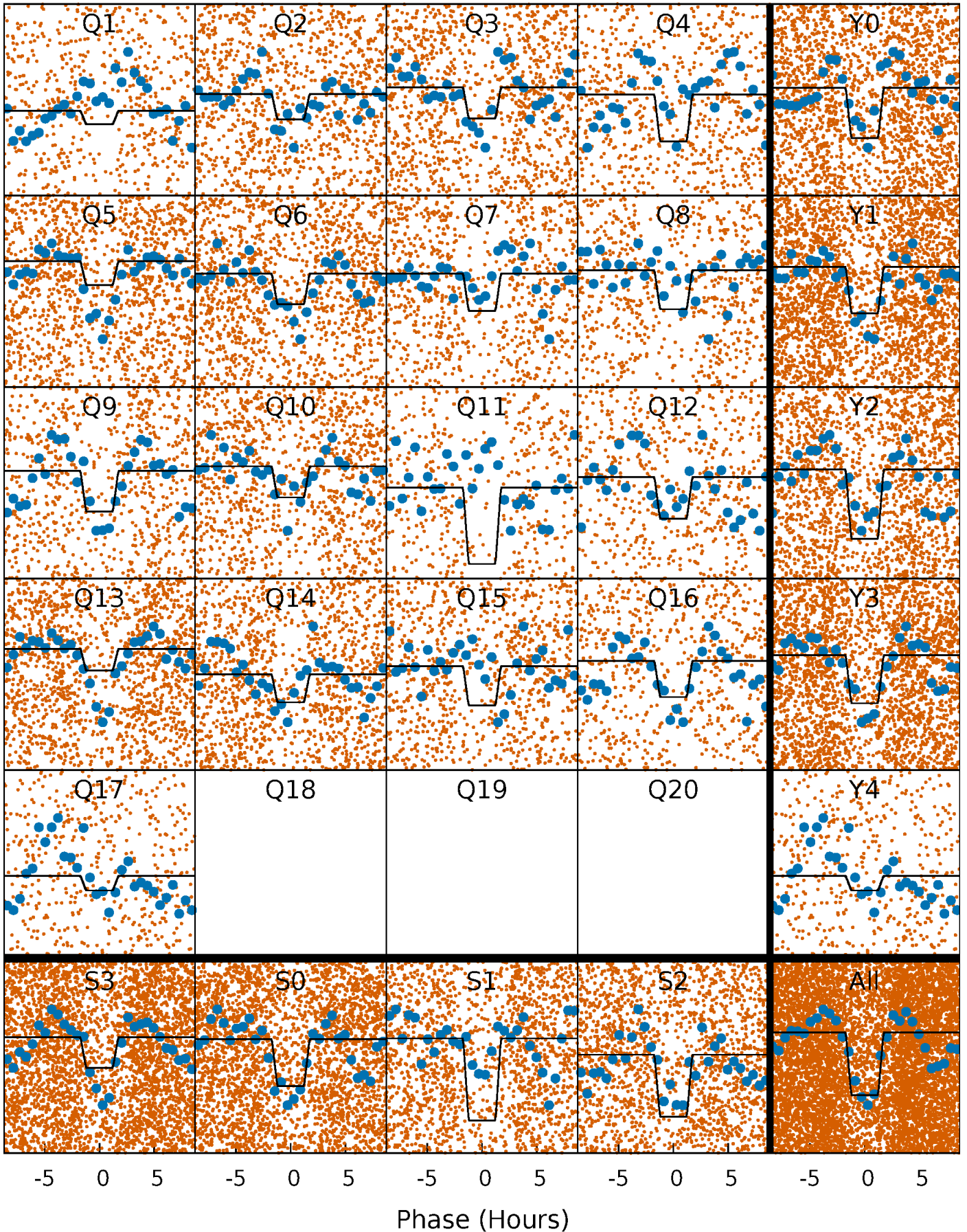
DV Quarter-Phased Transit Curves

TCE 012169181-03 P= 0.678940 Days $T_0=132.140034$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

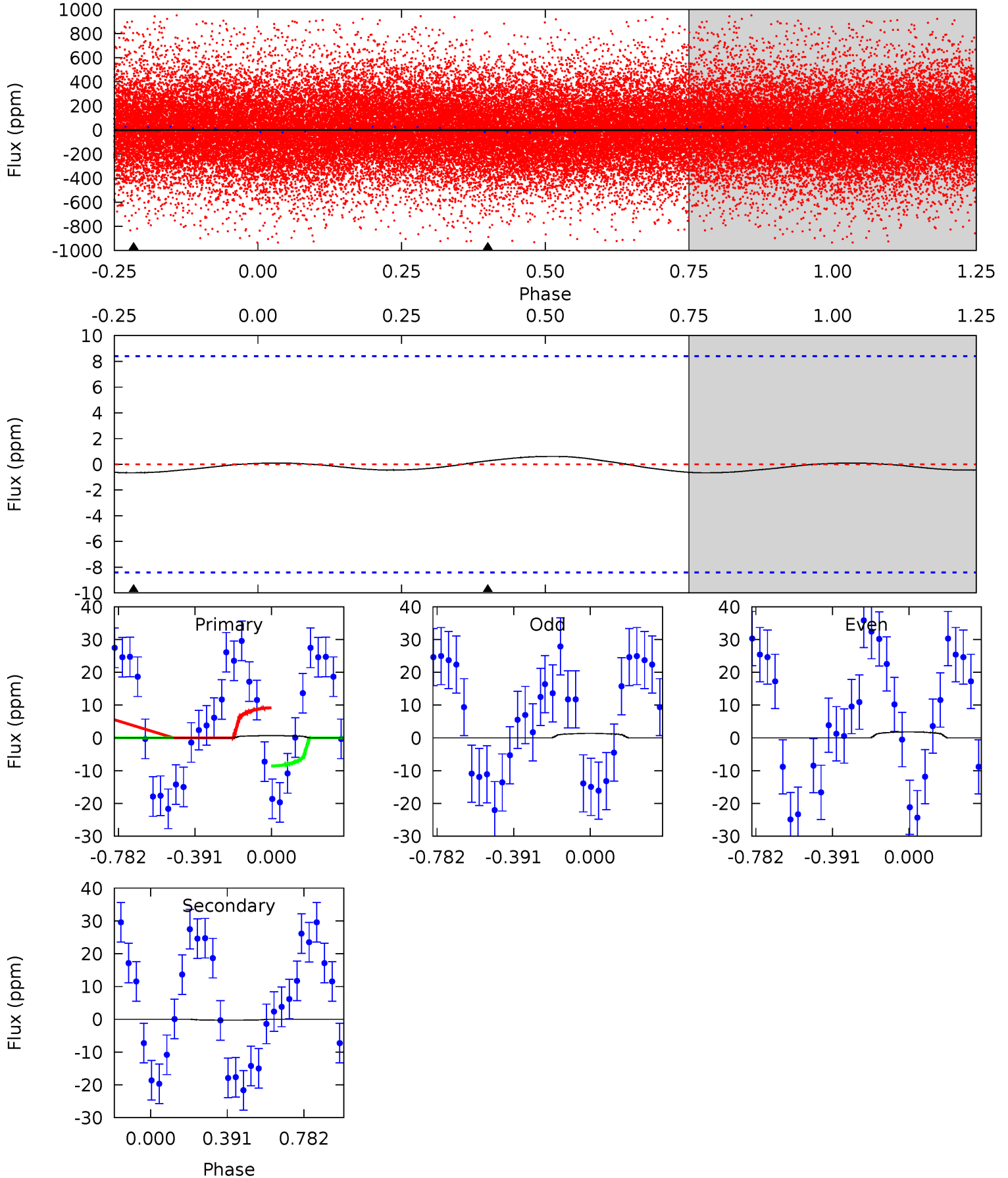
TCE 012169181-03 P= 0.678967 Days $T_0=132.137686$ (BKJD)



DV Model-Shift Uniqueness Test

012169181-03, P = 0.678940 Days, E = 131.461094 Days

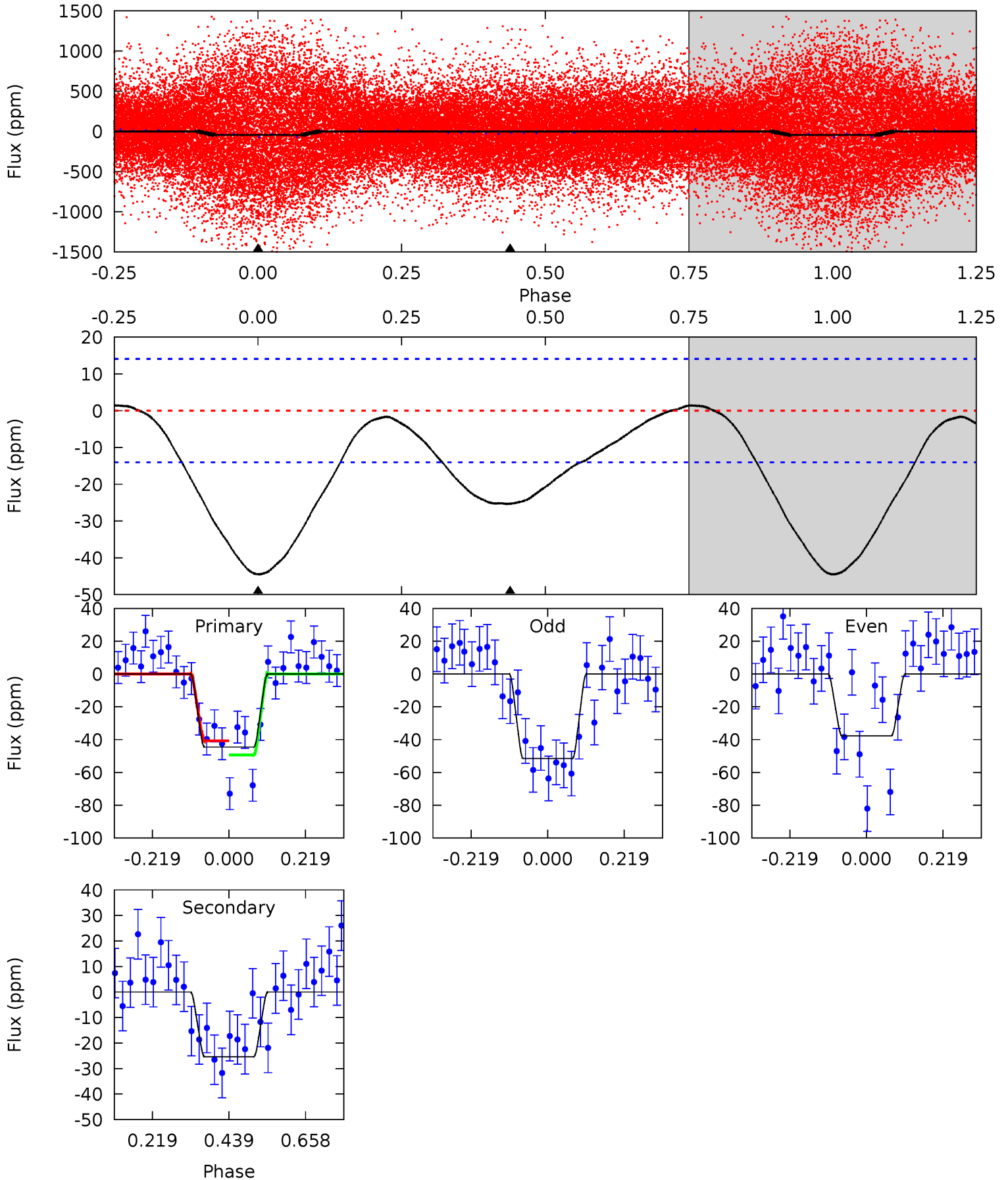
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.34	-0.14	0	0	4.27	0.86	0.04	0.34	0.34	-0.14	-0.14	0.12	0.21	0.48	0.15



Alt Model-Shift Uniqueness Test

012169181-03, P = 0.678967 Days, E = 131.458719 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.9	7.92	0	0	4.40	1.23	0.58	13.9	13.9	7.92	7.92	2.17	0.75	0.03	1.41



Stellar Parameters For KIC 012169181

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6832^{+71}_{-82}	$3.931^{+0.186}_{-0.108}$	$0.000^{+0.150}_{-0.150}$	$2.266^{+0.420}_{-0.560}$	$1.596^{+0.130}_{-0.179}$	$0.193^{+0.191}_{-0.071}$
	+1%/-1%	+5%/-3%	+inf%/-inf%	+19%/-25%	+8%/-11%	+99%/-37%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 012169181-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 2	$1.10^{+0.75}_{-0.70}$	4744^{+222}_{-265}	-4237^{+6836}_{-904}	$-0.033^{+0.344}_{-0.570}$
Alt.	-25 ± 3	$1.66^{+0.92}_{-0.87}$	4746^{+215}_{-287}	5587^{+3064}_{-1301}	$1.571^{+5.552}_{-0.916}$

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

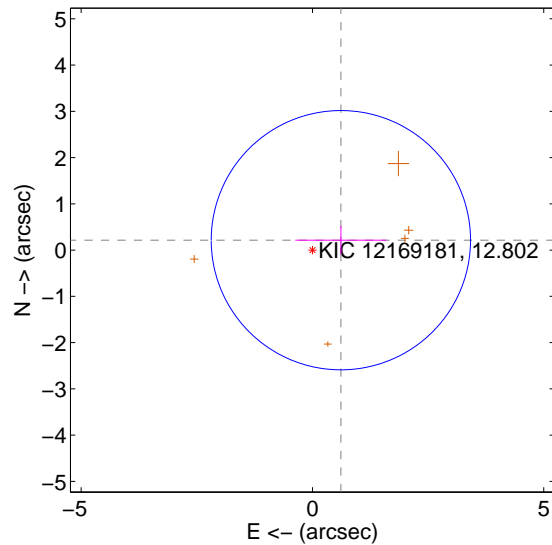
Supplemental centroid analysis for 012169181-03. Kepler magnitude: 12.80. Transit SNR 3.75

There are 0 quarters with good PRF difference image offsets

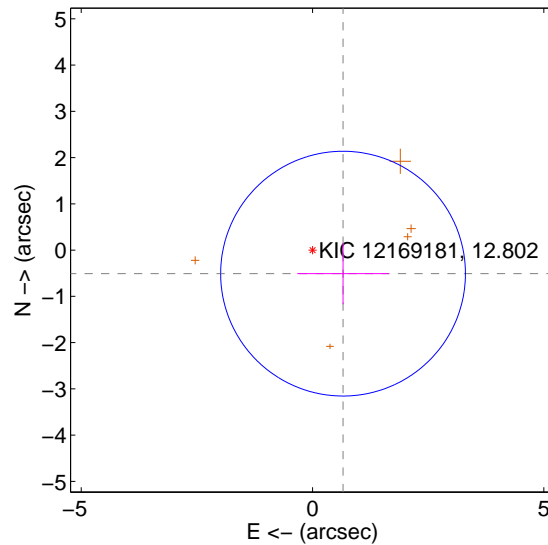
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.651 ± 0.934	0.70	-0.615 ± 0.984	0.214 ± 0.307
PRF-fit source offset from KIC position	0.833 ± 0.882	0.95	-0.660 ± 0.991	-0.509 ± 0.660
photometric centroid source offset	1.46 ± 0.97	1.51	-0.83 ± 0.87	1.21 ± 1.01

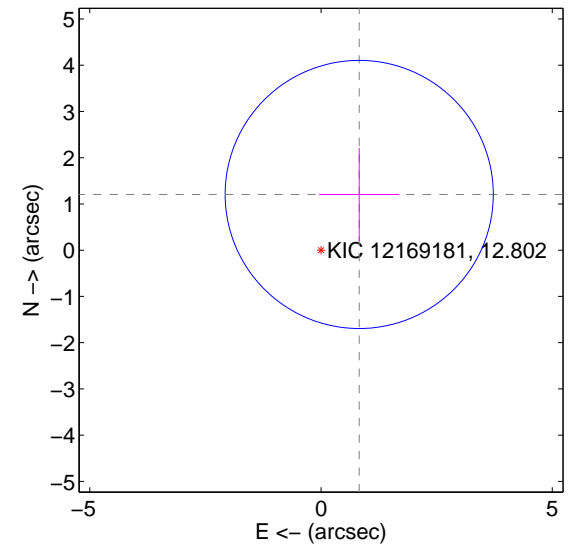
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

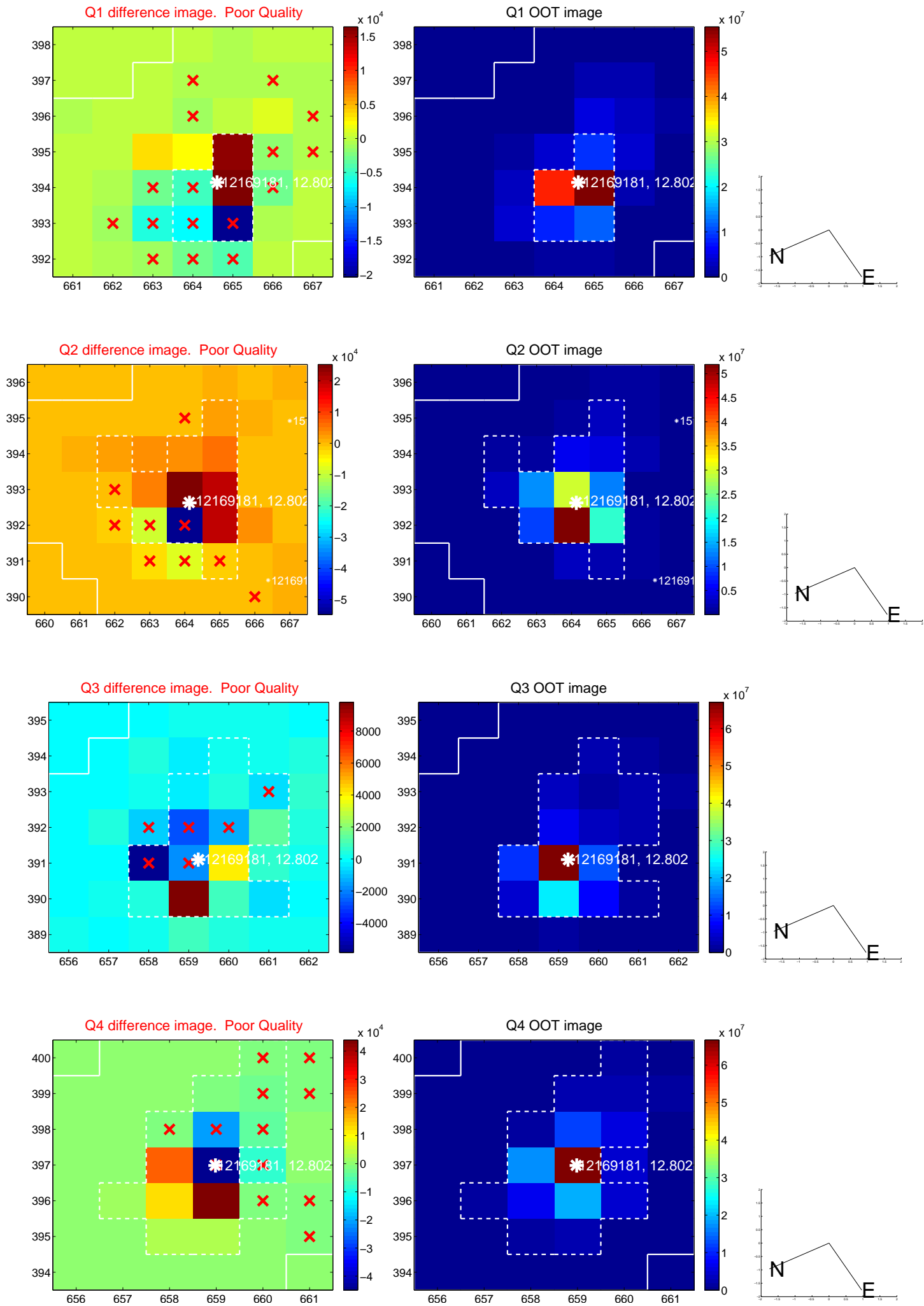


offset from photometric centroids

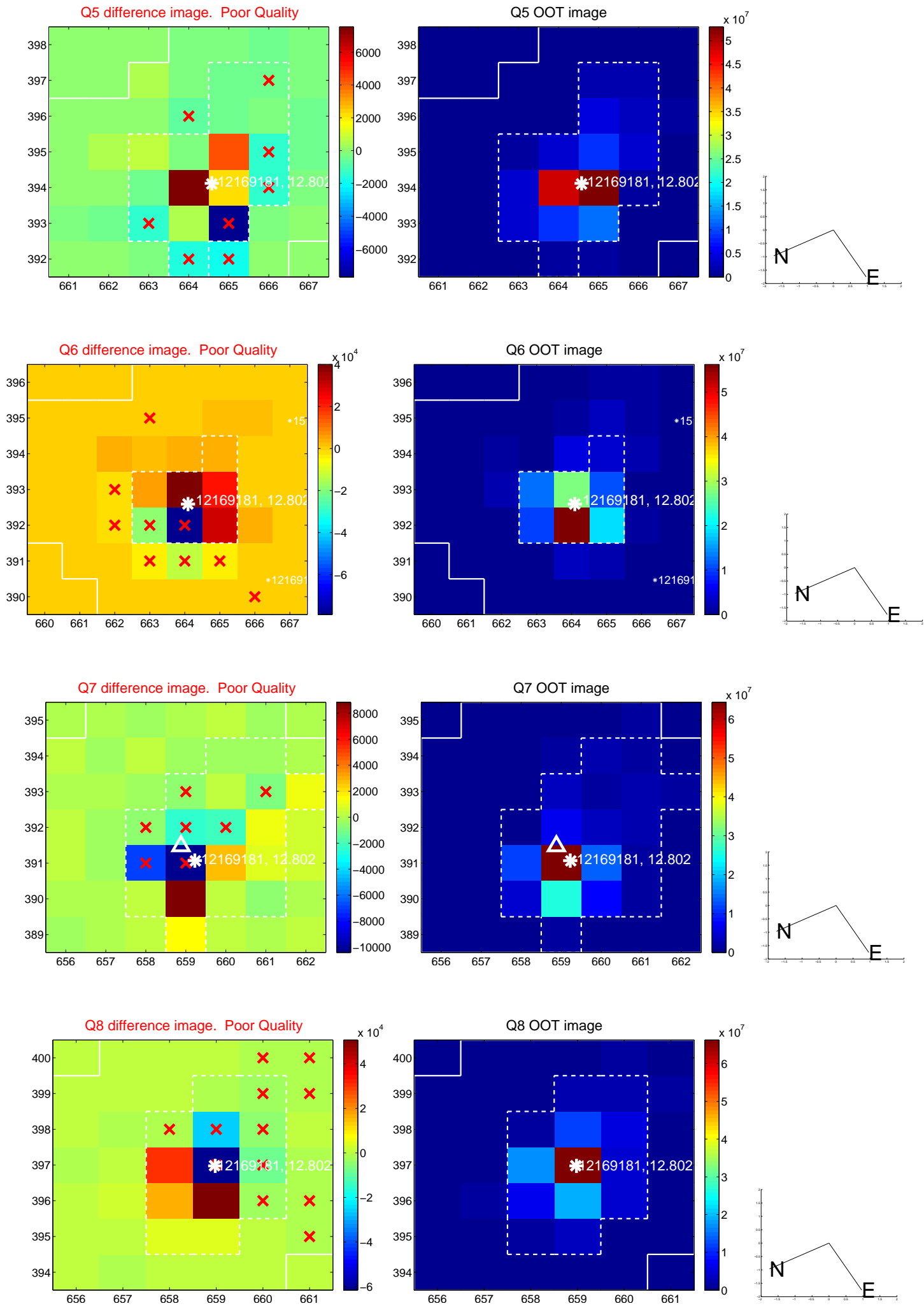


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

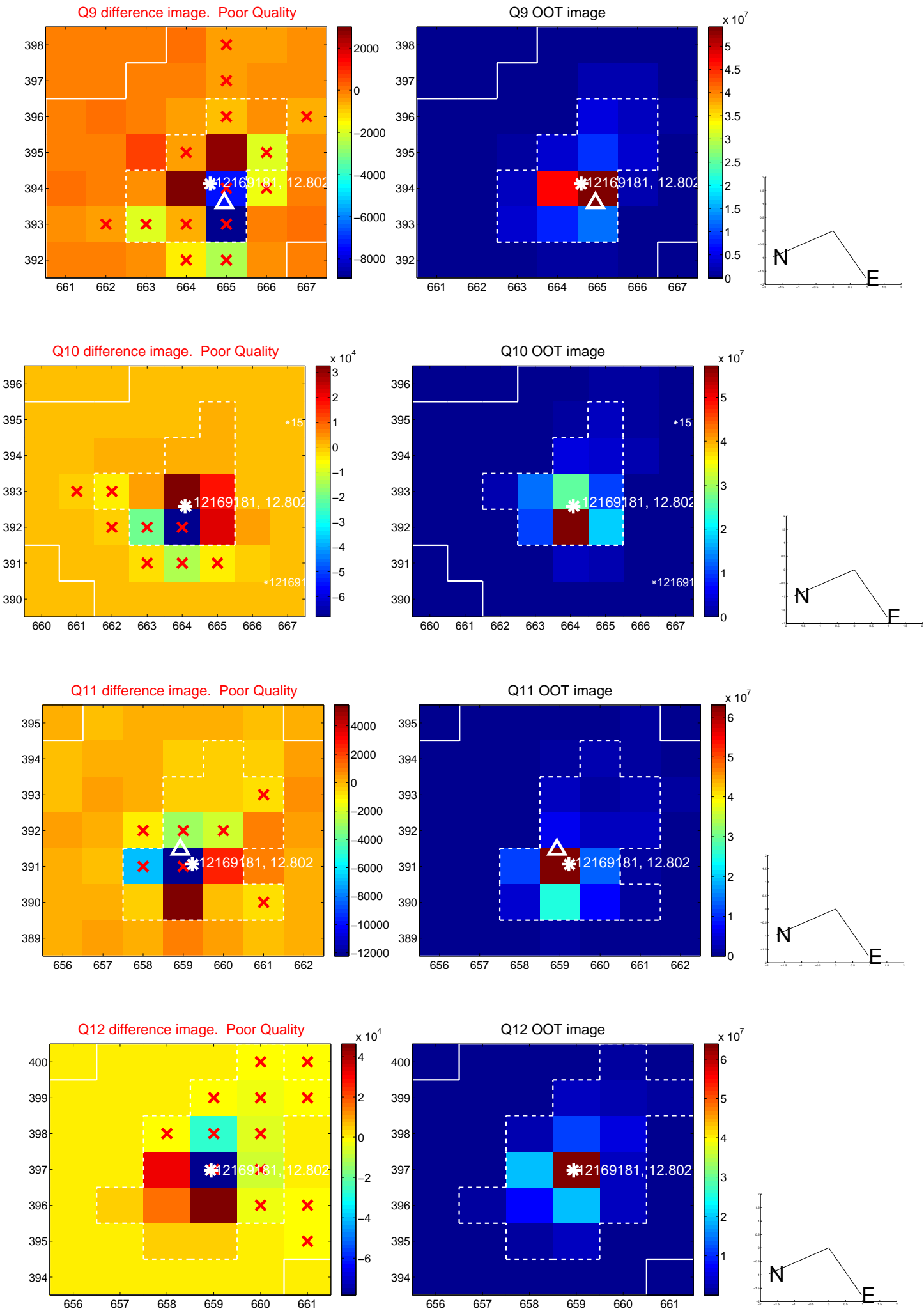
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



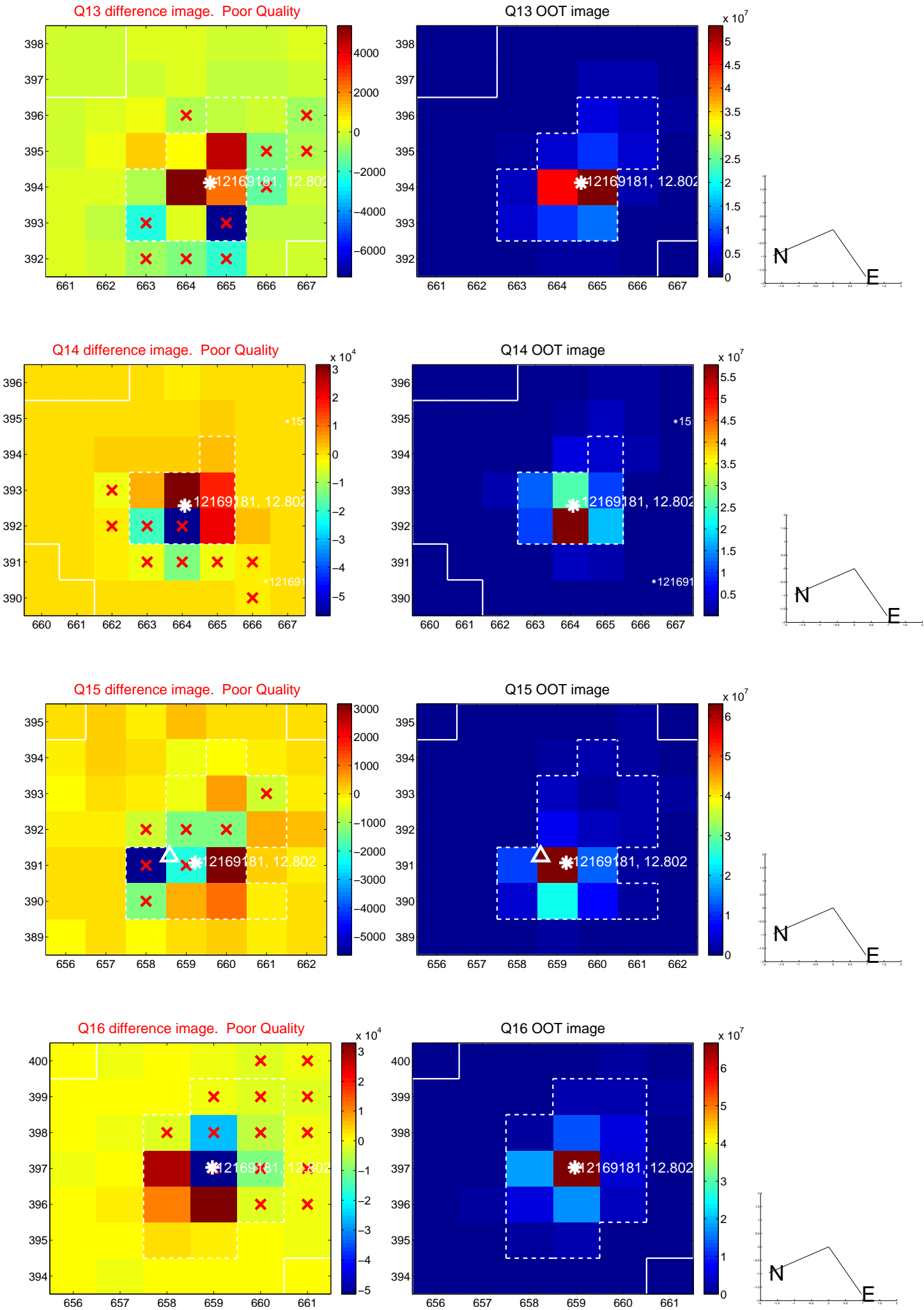
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



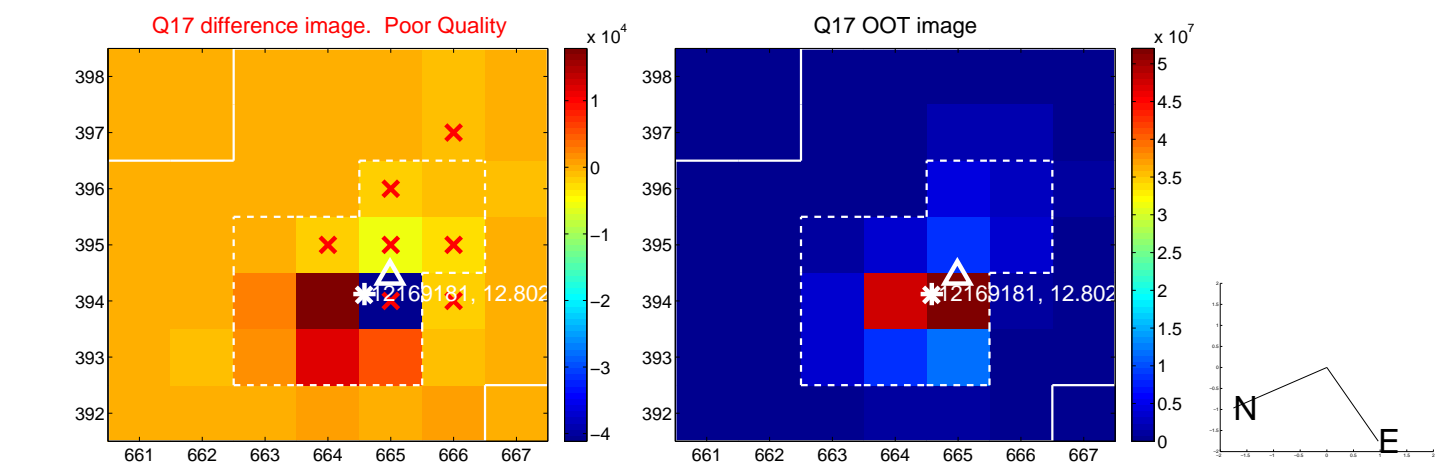
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



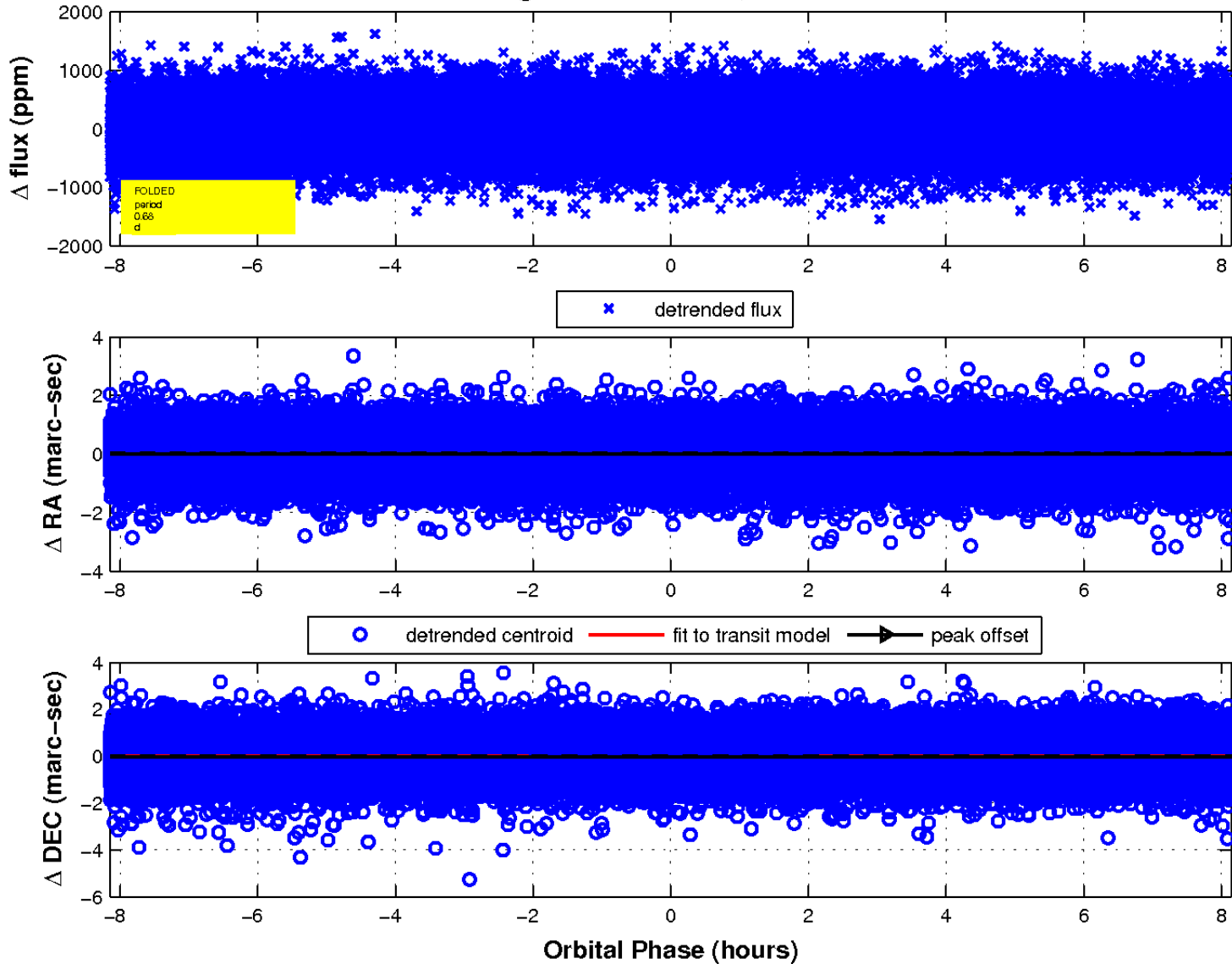
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 3 of 3



UKIRT Image

Declination

