

KIC 011809179

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})
011809179-01	OBS	No	0.972416	132.455994	54.9	3.820	12.5	12.7	2.25	8273	1.95	36619.52
011809179-02	OBS	No	0.594442	131.765124	58.6	6.249	8.9	13.8	2.25	8273	1.85	70583.46

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011809179-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
011809179-02	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—LPP_DV—LPP_ALT—CENT_UNRESOLVED_OFFSET

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

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

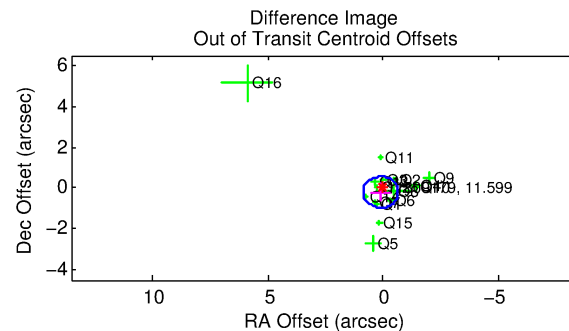
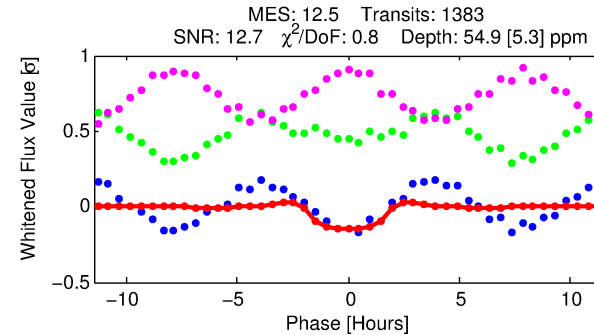
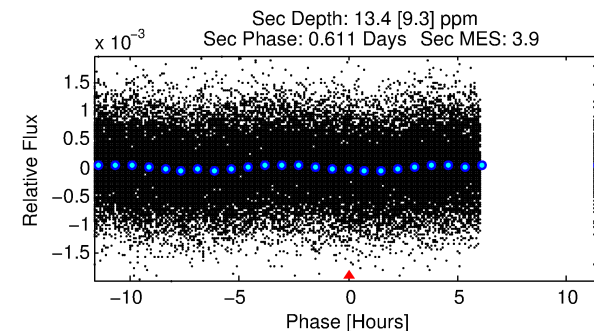
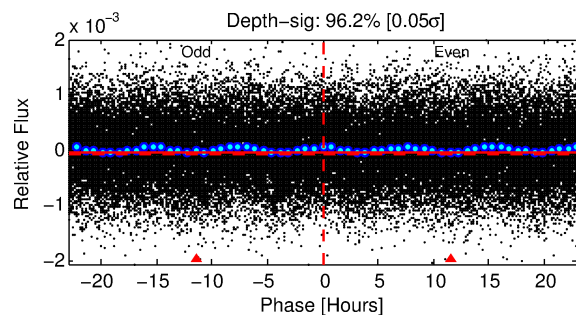
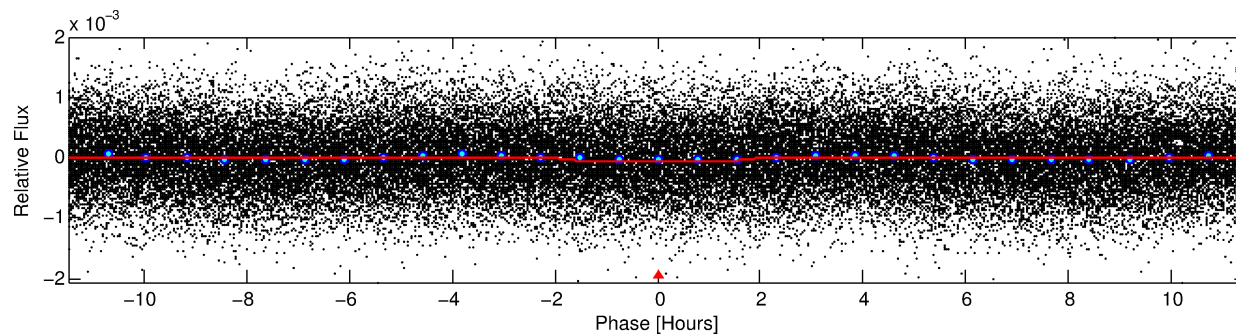
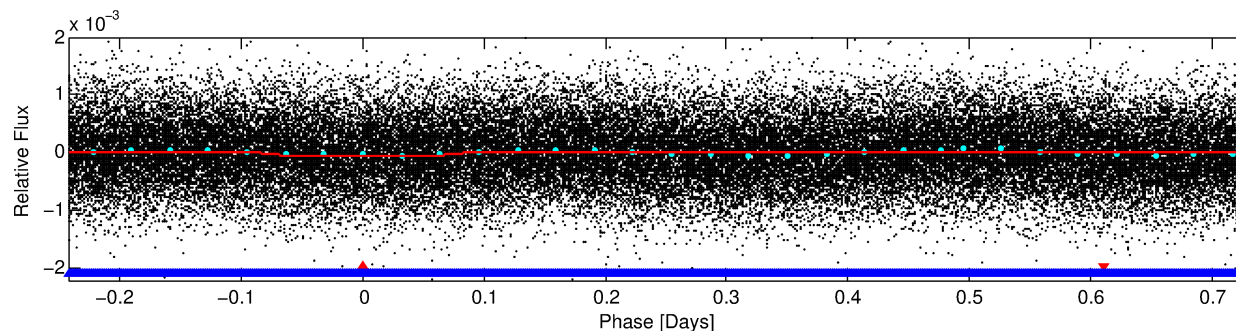
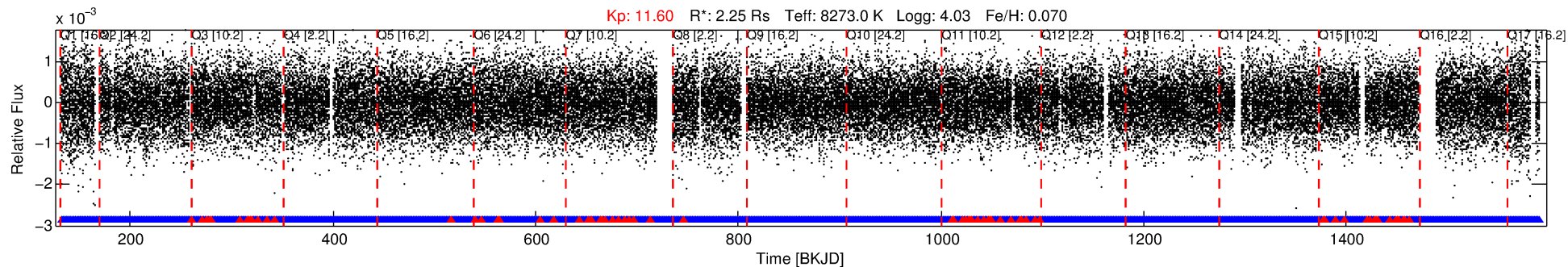
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011809179-01

No Significant Match Found

DV One-Page Summary

KIC: 11809179 Candidate: 1 of 2 Period: 0.972 d



DV Fit Results:

Period = 0.97242 [0.00001] d
Epoch = 132.4560 [0.0036] BKJD
 $R_p/R^* = 0.0079$ [0.0037]
 $a/R^* = 1.28$ [1.50]
 $b = 0.90$ [0.62]
 $\text{Seff} = 36619.52$ [13692.64]
 $T_{\text{eq}} = 3527$ [330] K
 $R_p = 1.95$ [1.07] R_e
 $a = 0.0241$ [0.0056] AU
 $A_g = 1.13$ [1.38] [0.10 σ]
 $T_{\text{eff}} = 5627$ [1665] K [1.24 σ]

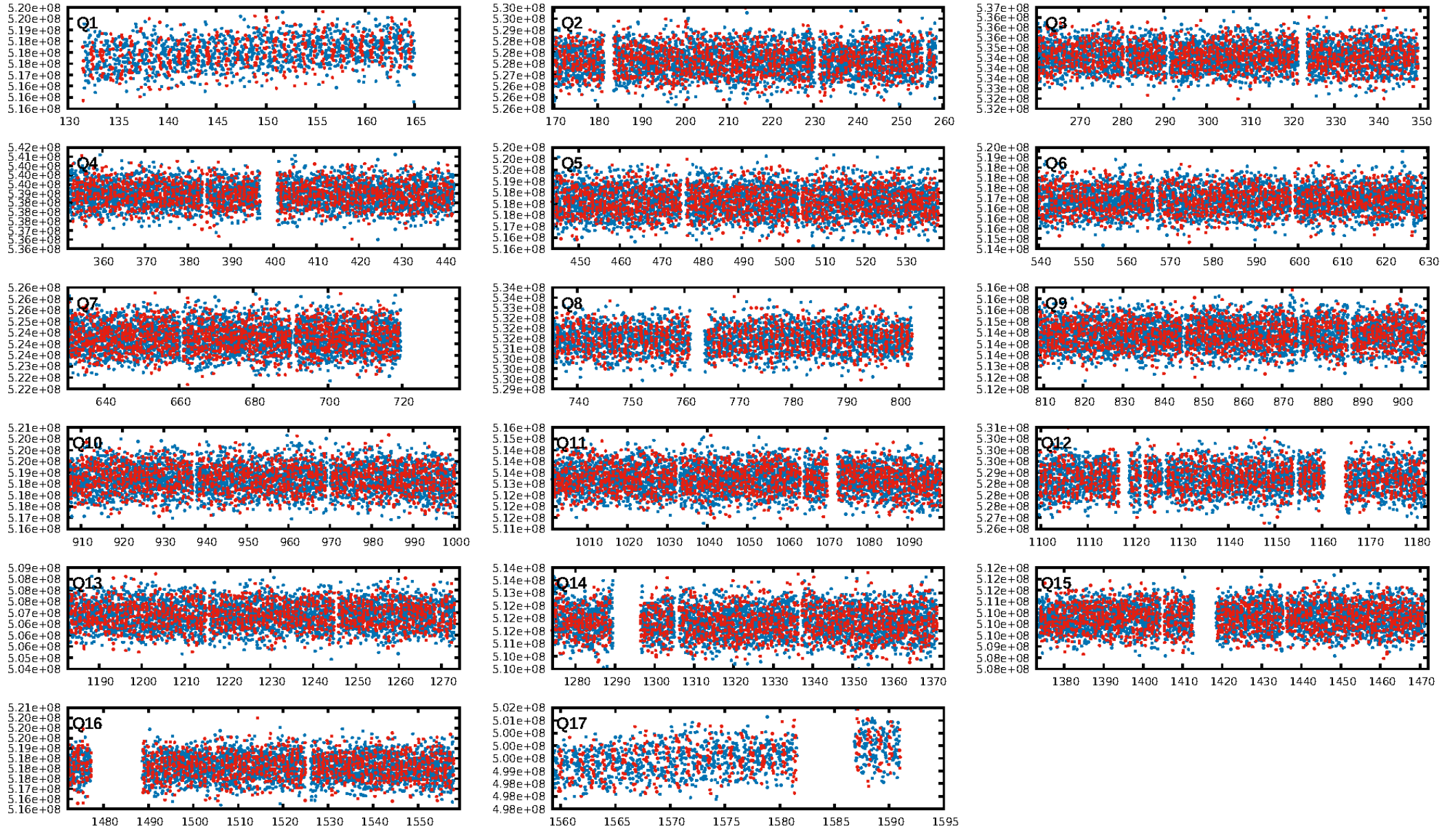
DV Diagnostic Results:

ShortPeriod-sig: 78.4% [1.24 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.94 [1245/1320]
GhostDiagnostic-chr: 2.091
Centroid-sig: 22.4%
Centroid-so: 0.248 arcsec [1.29 σ]
OotOffset-rm: 0.232 arcsec [0.91 σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-rm: 0.300 arcsec [0.98 σ]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.88 [14/16]
DiffImageOverlap-fno: 0.00 [0/17]

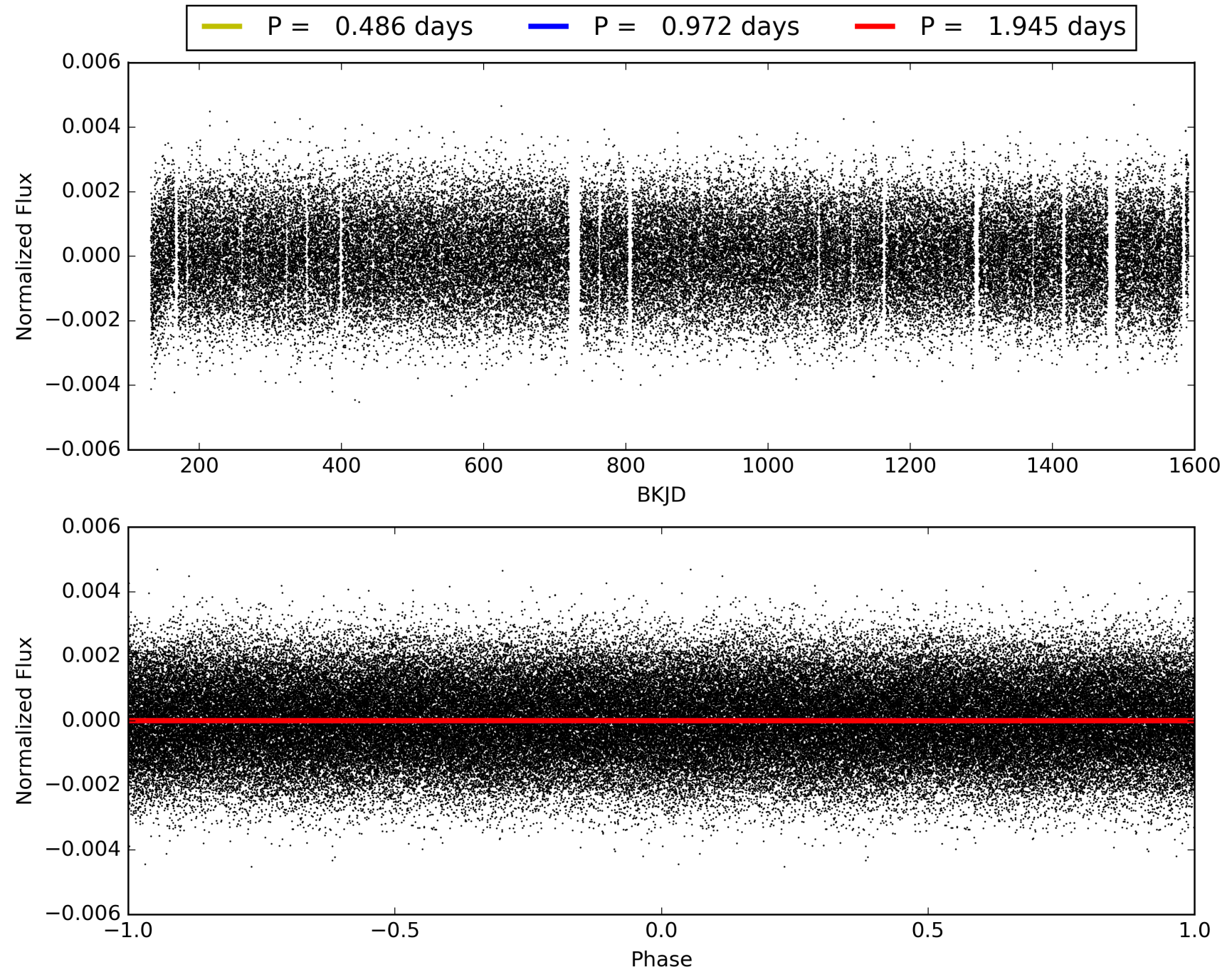
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 06:47:27 Z

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

TCE 011809179-01, PDC Light Curves

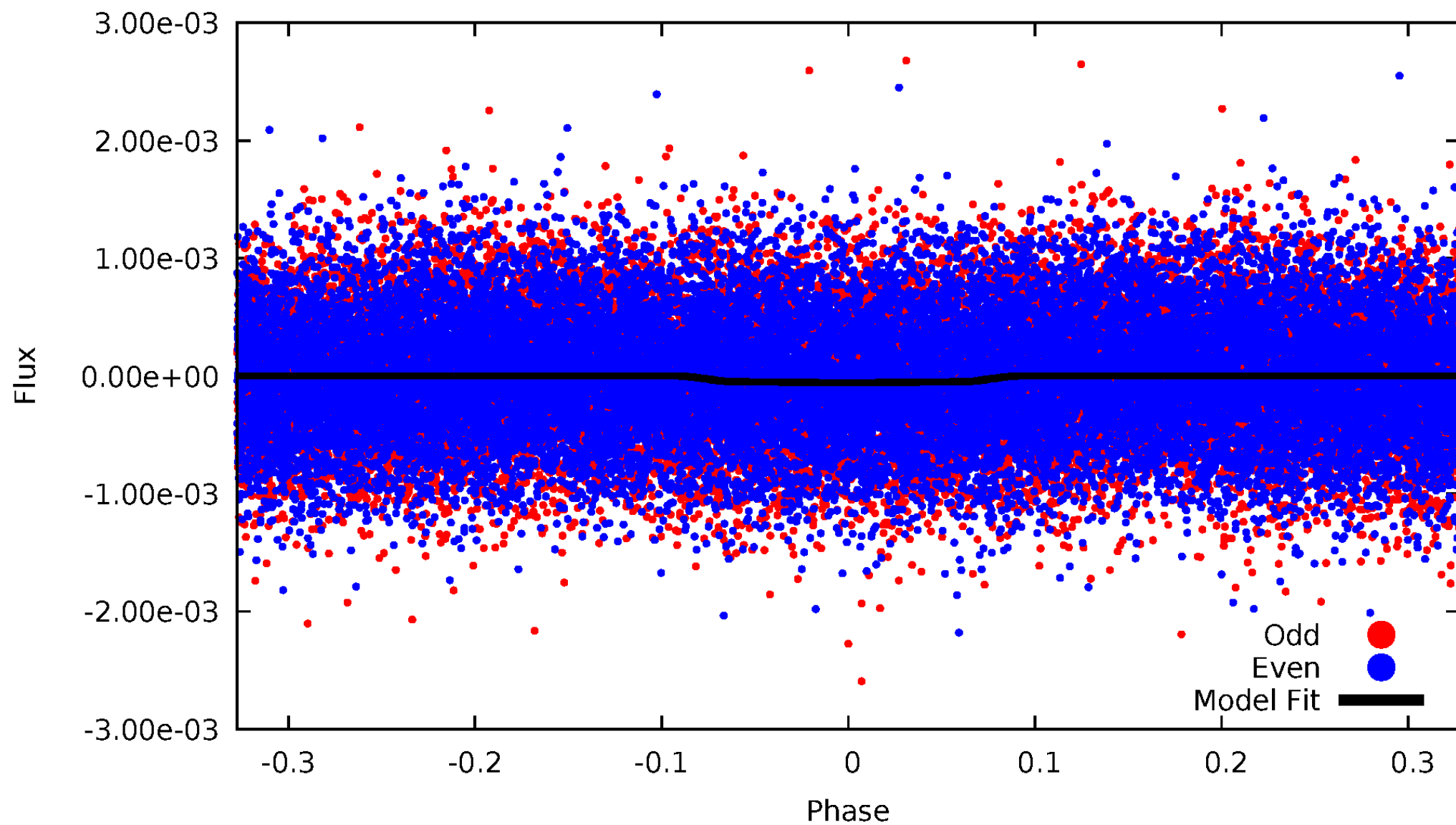


TCE 011809179-01



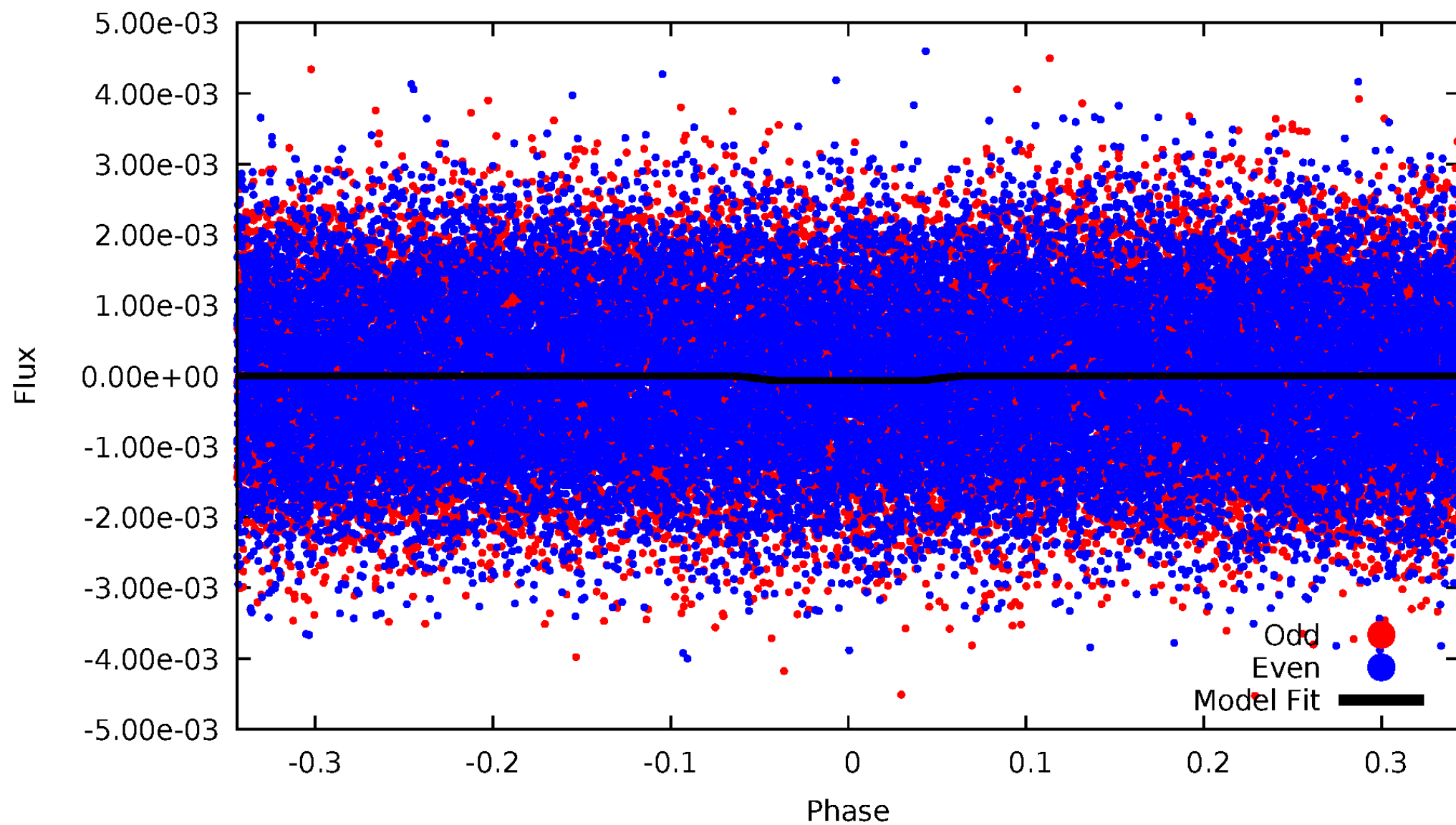
DV Odd/Even

TCE 011809179-01



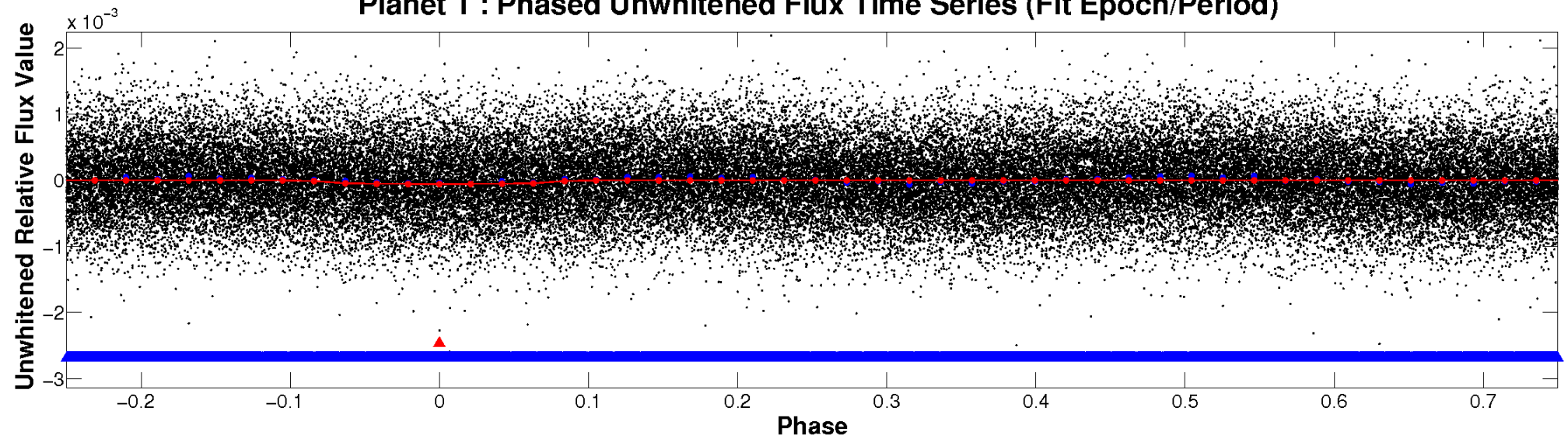
ALT Odd/Even

TCE 011809179-01

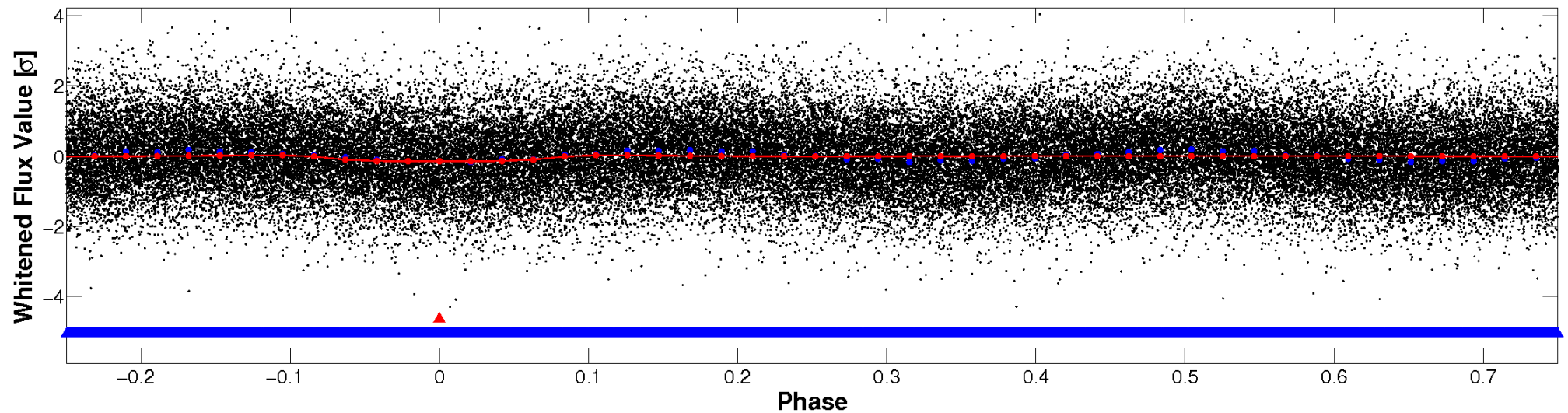


Non-Whitened Vs. Whitened Light Curve

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

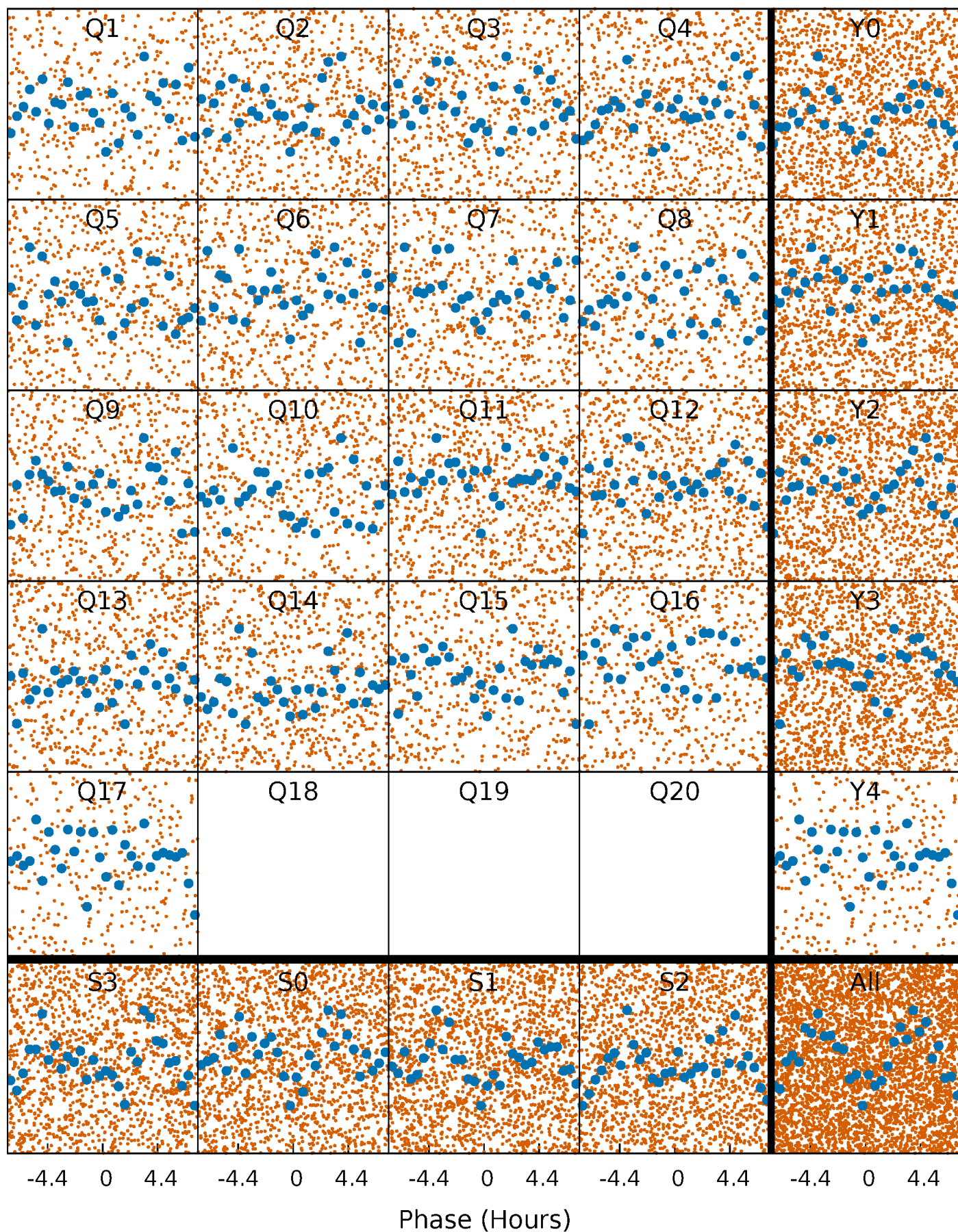


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



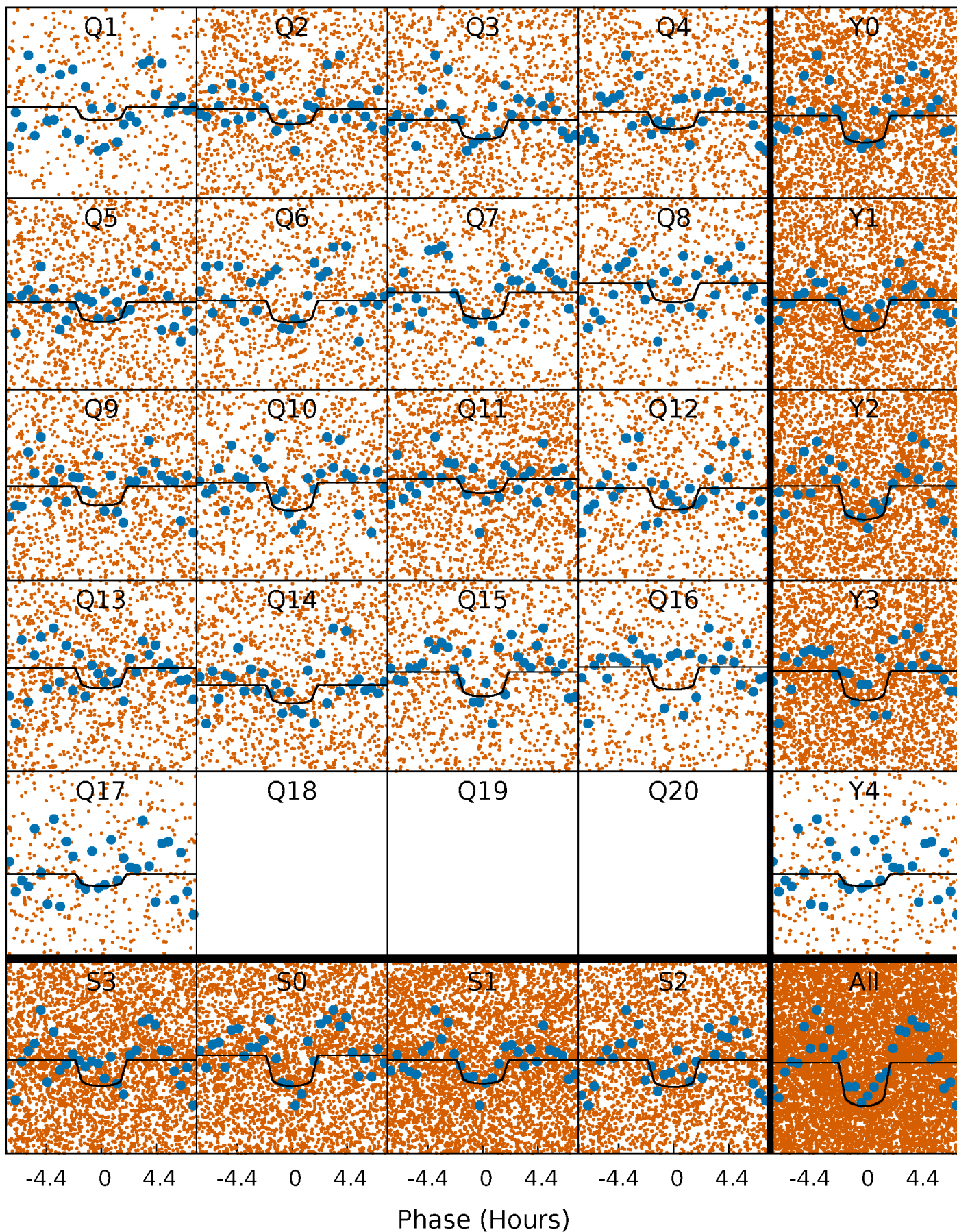
PDC Quarter-Phased Transit Curves

TCE 011809179-01 P= 0.972416 Days $T_0=132.455994$ (BKJD)



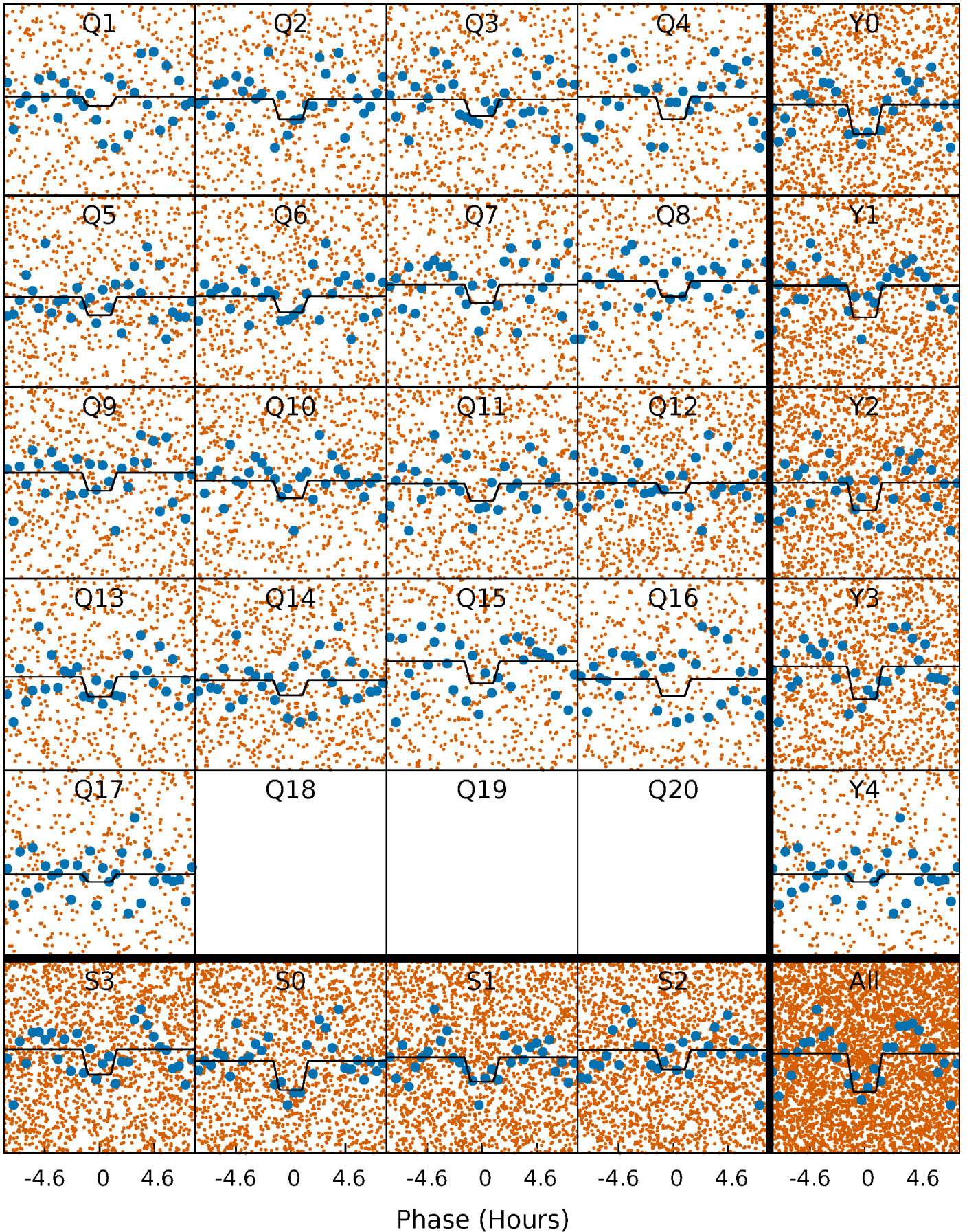
DV Quarter-Phased Transit Curves

TCE 011809179-01 P= 0.972416 Days $T_0=132.455994$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

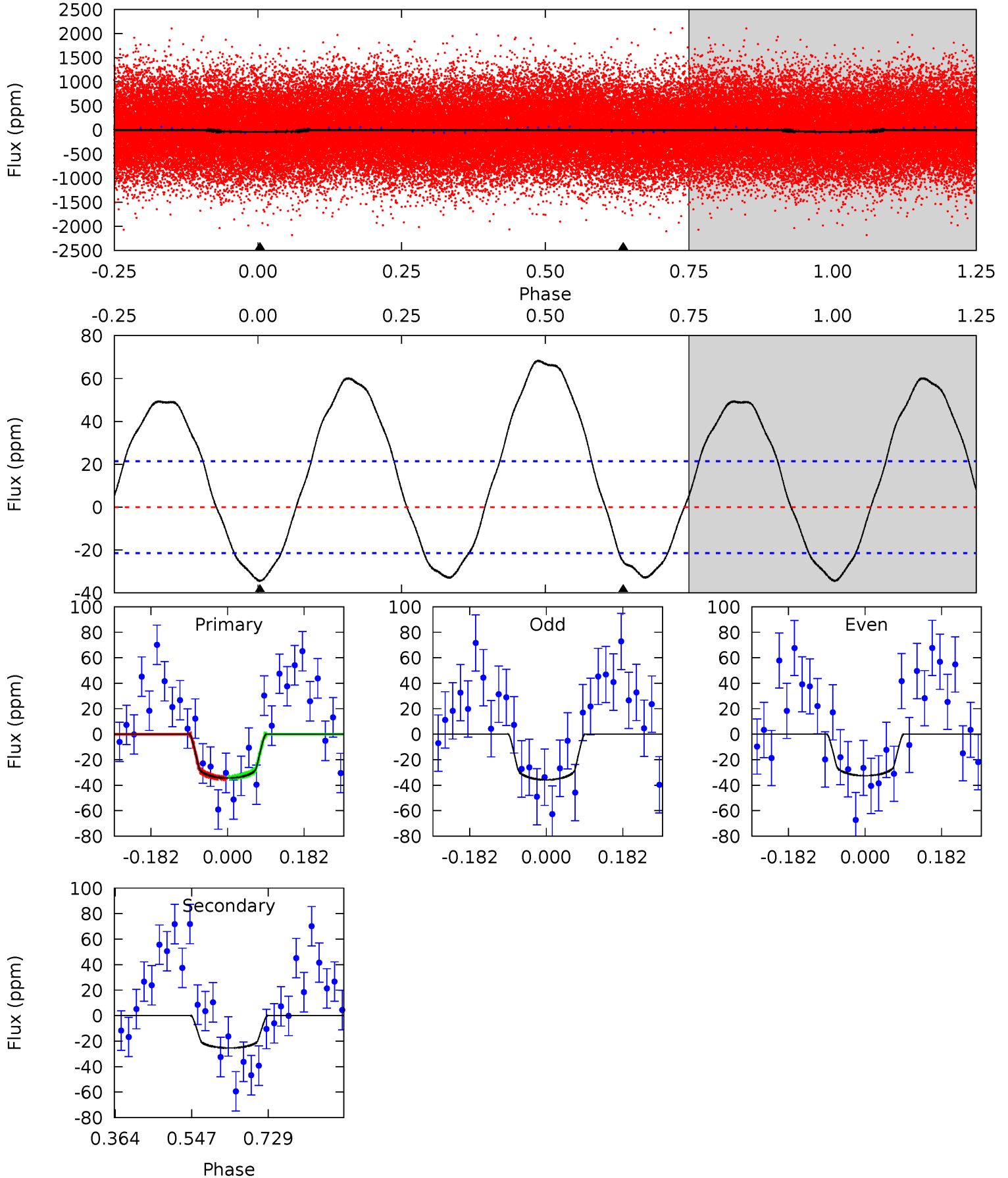
TCE 011809179-01 P= 0.972424 Days $T_0=132.455479$ (BKJD)



DV Model-Shift Uniqueness Test

011809179-01, P = 0.972416 Days, E = 131.483578 Days

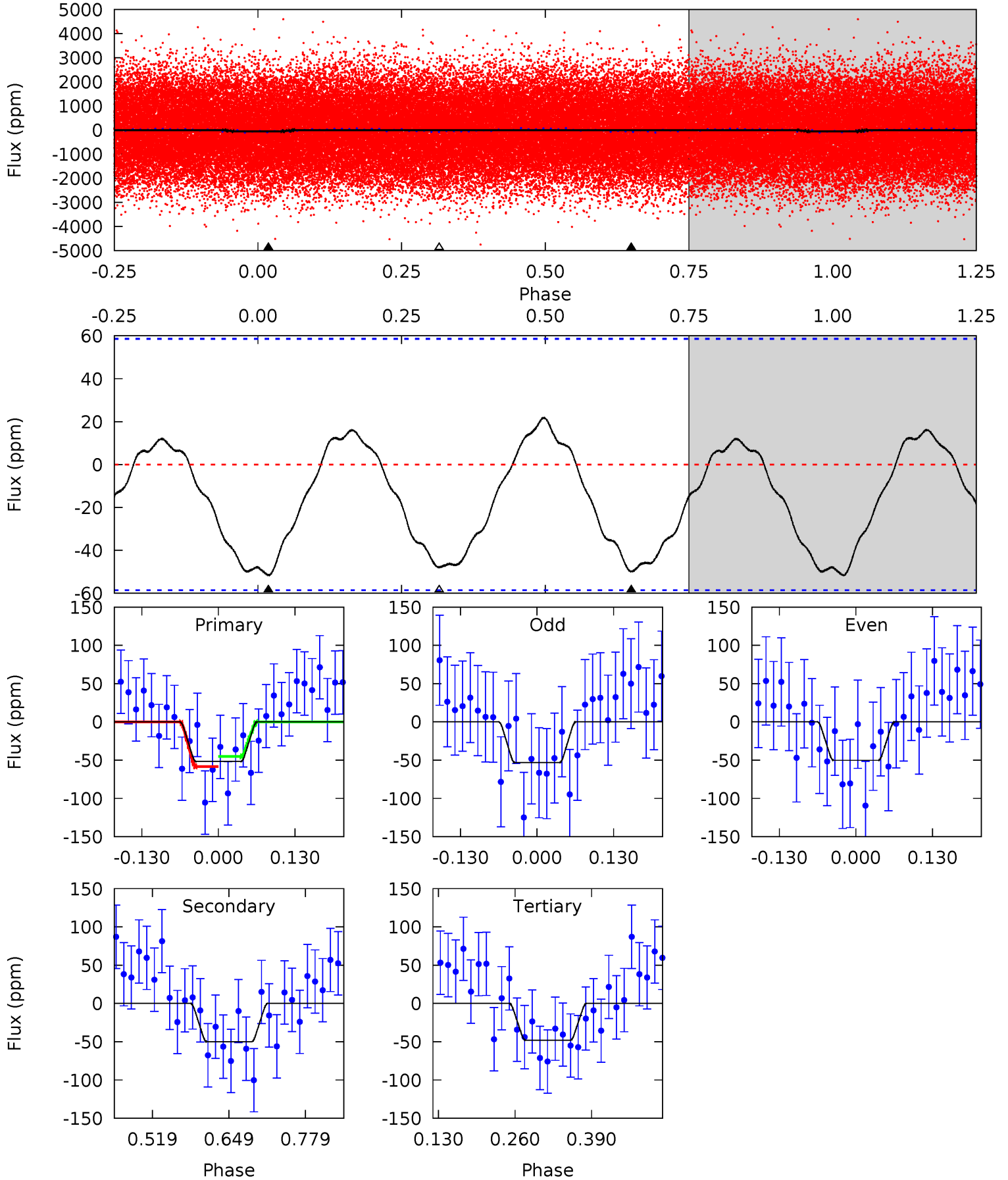
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.13	5.26	0	0	4.44	1.33	5.94	7.13	7.13	5.26	5.26	0.34	1.06	0.66	0.07



Alt Model-Shift Uniqueness Test

011809179-01, P = 0.972424 Days, E = 131.483055 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.98	3.85	3.70	0	4.51	1.51	1.72	0.28	3.98	0.15	3.85	0.11	0.98	0.30	0.51



Stellar Parameters For KIC 011809179

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8273^{+198}_{-368}	$4.029^{+0.176}_{-0.128}$	$0.070^{+0.150}_{-0.500}$	$2.254^{+0.423}_{-0.634}$	$1.982^{+0.295}_{-0.442}$	$0.244^{+0.279}_{-0.098}$
	+2%/-4%	+4%/-3%	+214%/-714%	+19%/-28%	+15%/-22%	+114%/-40%
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 011809179-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-25 ± 5	$1.93^{+0.91}_{-0.85}$	4890^{+292}_{-357}	6031^{+2640}_{-1205}	$2.096^{+4.876}_{-1.139}$
Alt.	-50 ± 13	$1.94^{+1.04}_{-0.86}$	4878^{+299}_{-362}	7229^{+3902}_{-1536}	$4.022^{+9.258}_{-2.378}$

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

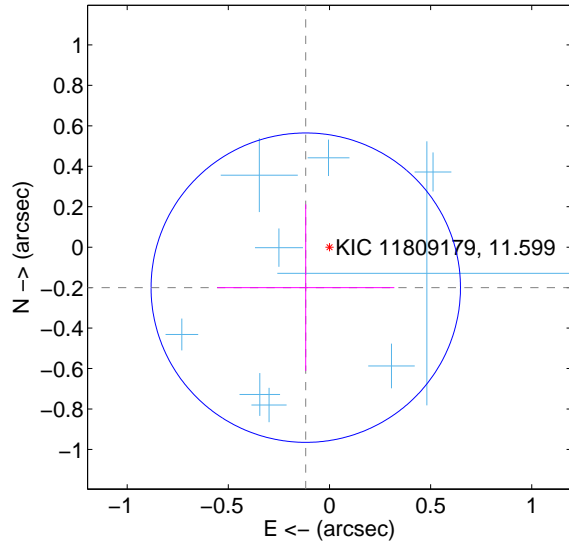
Supplemental centroid analysis for 011809179-01. **Kepler magnitude: 11.60.** Transit SNR 12.67

There are 14 quarters with good PRF difference image offsets

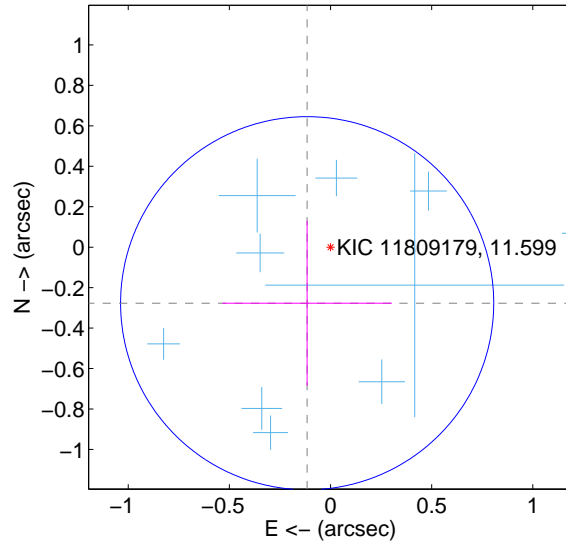
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.232 ± 0.255	0.91	0.117 ± 0.438	-0.200 ± 0.411
PRF-fit source offset from KIC position	0.300 ± 0.307	0.98	0.115 ± 0.419	-0.277 ± 0.408
photometric centroid source offset	0.25 ± 0.19	1.29	0.02 ± 0.16	-0.25 ± 0.19

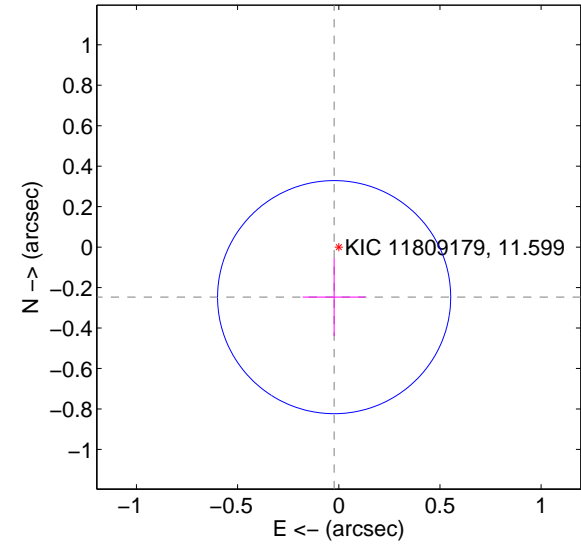
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

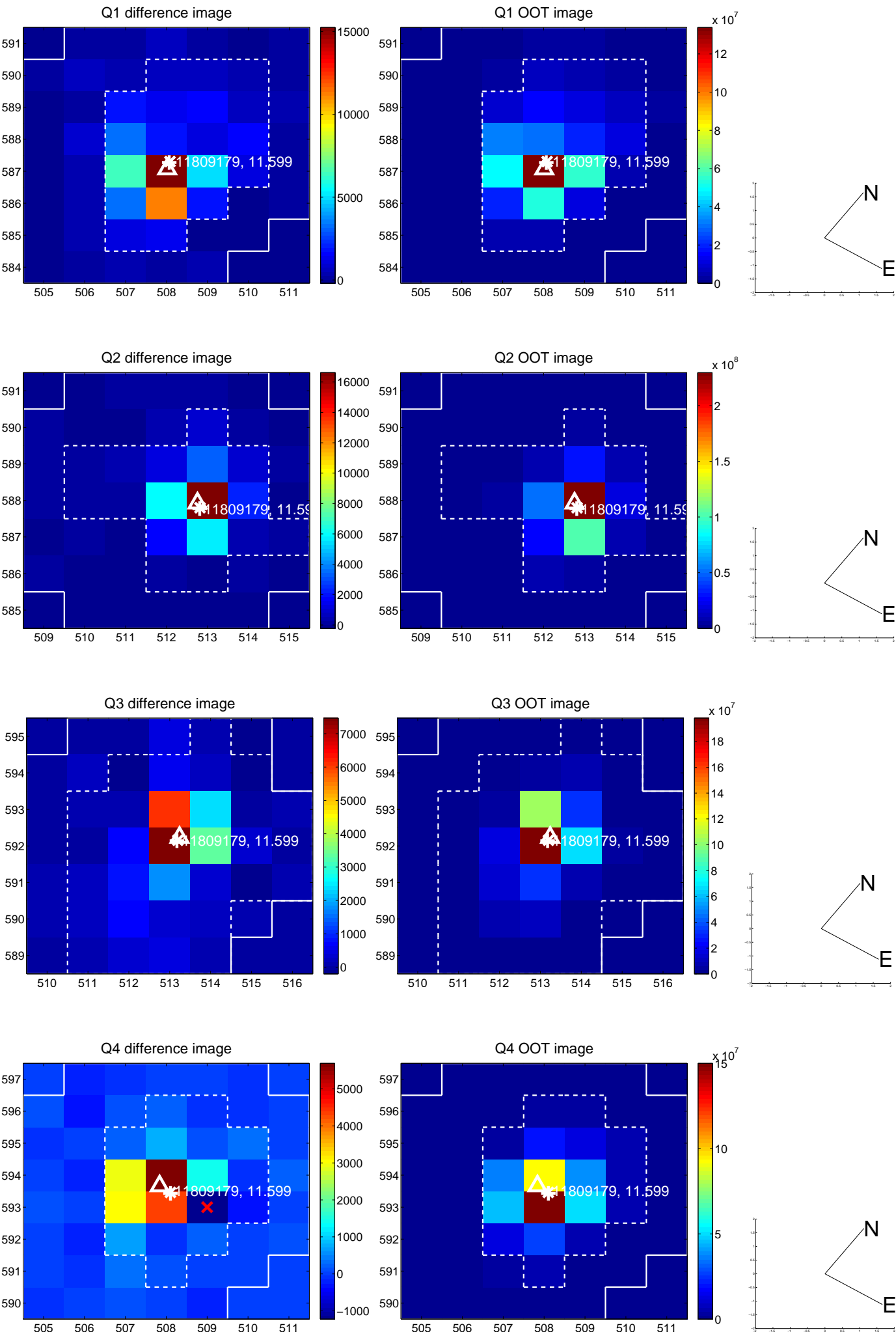


offset from photometric centroids

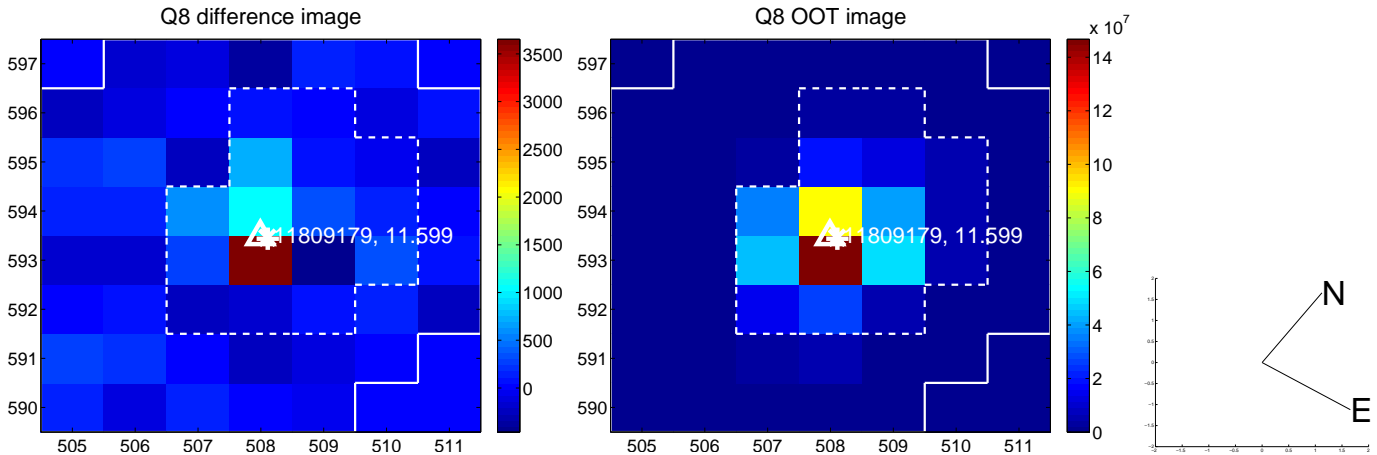
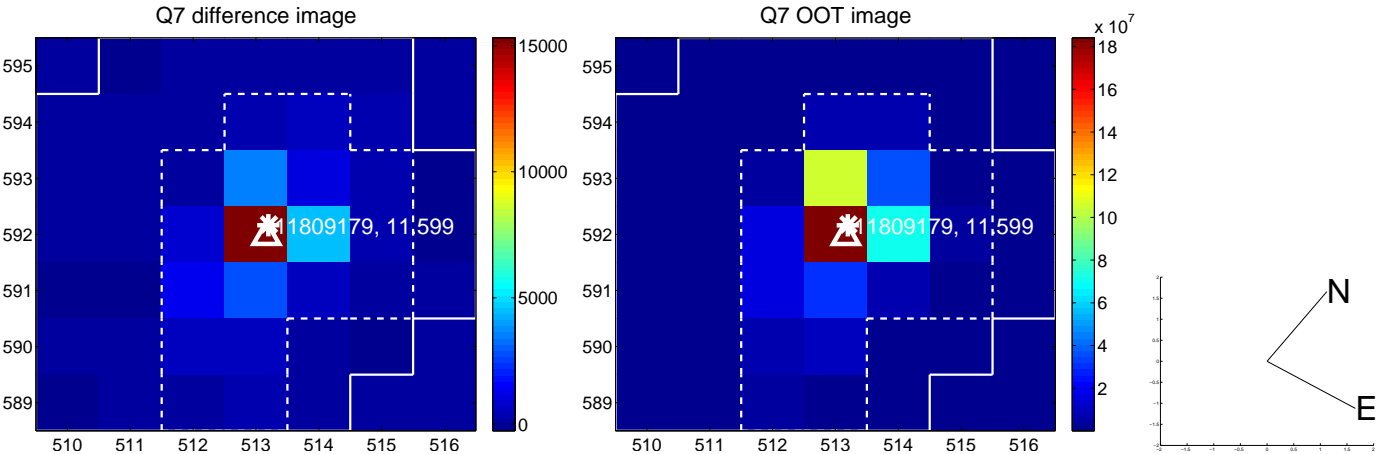
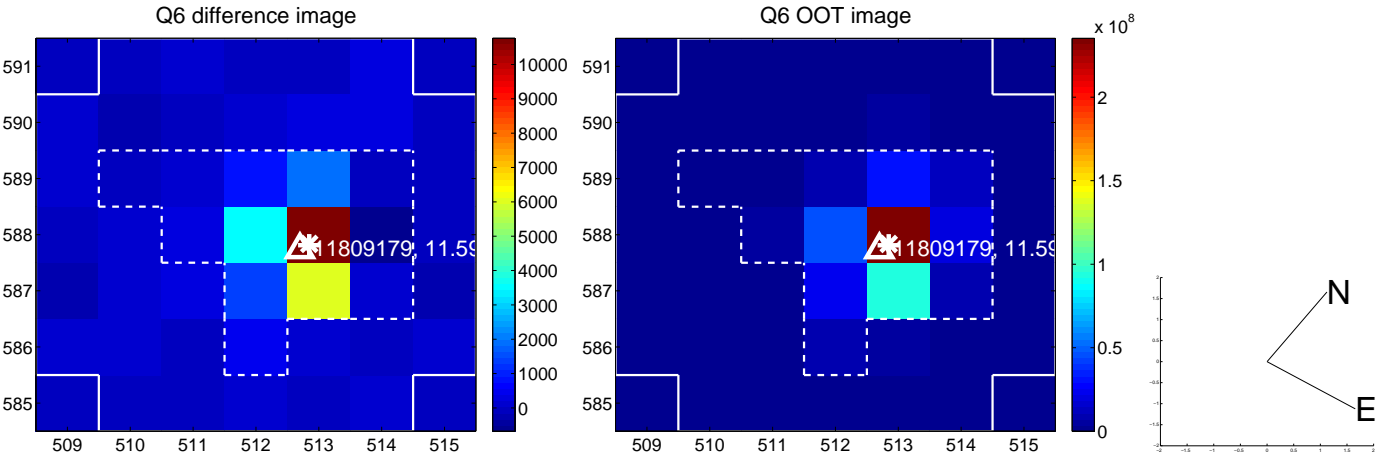
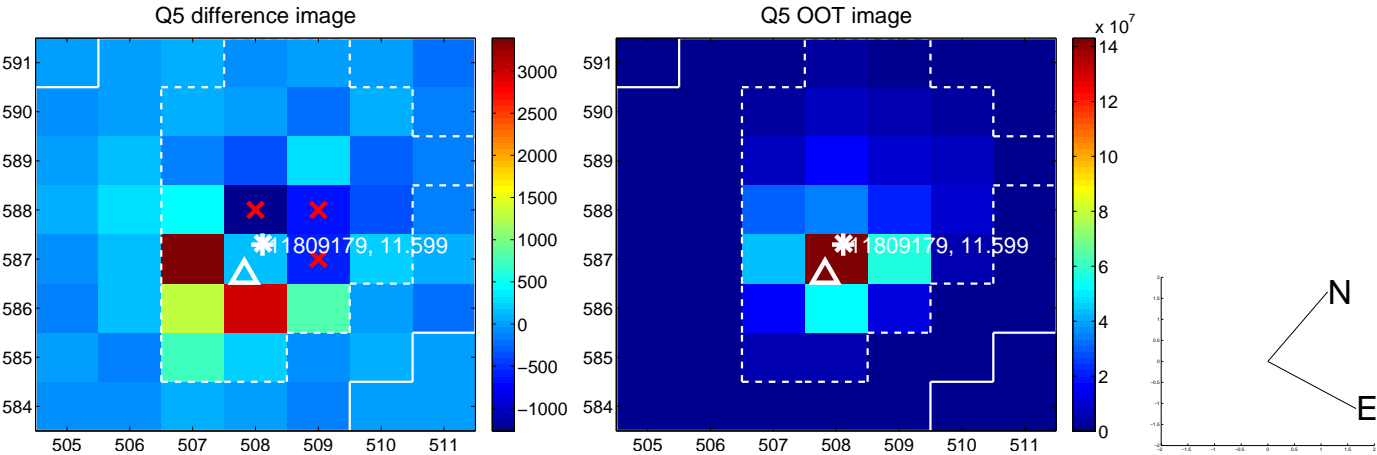


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

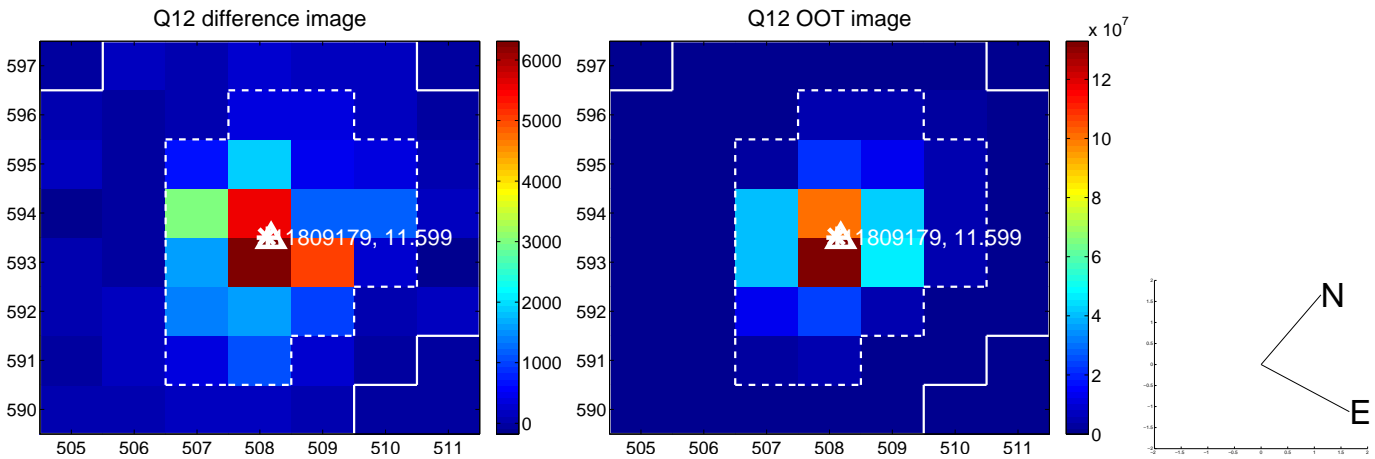
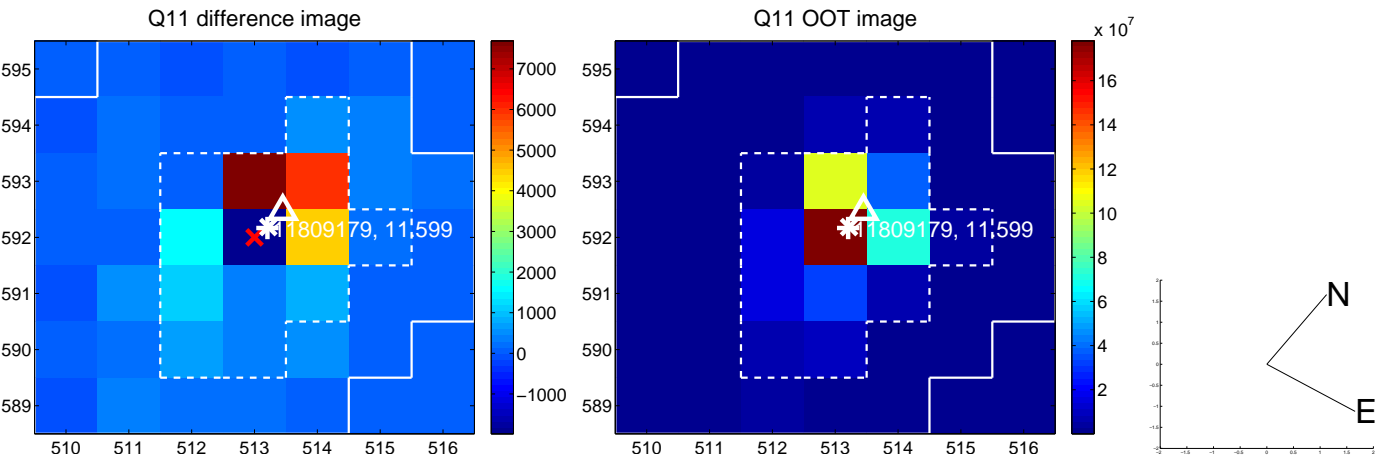
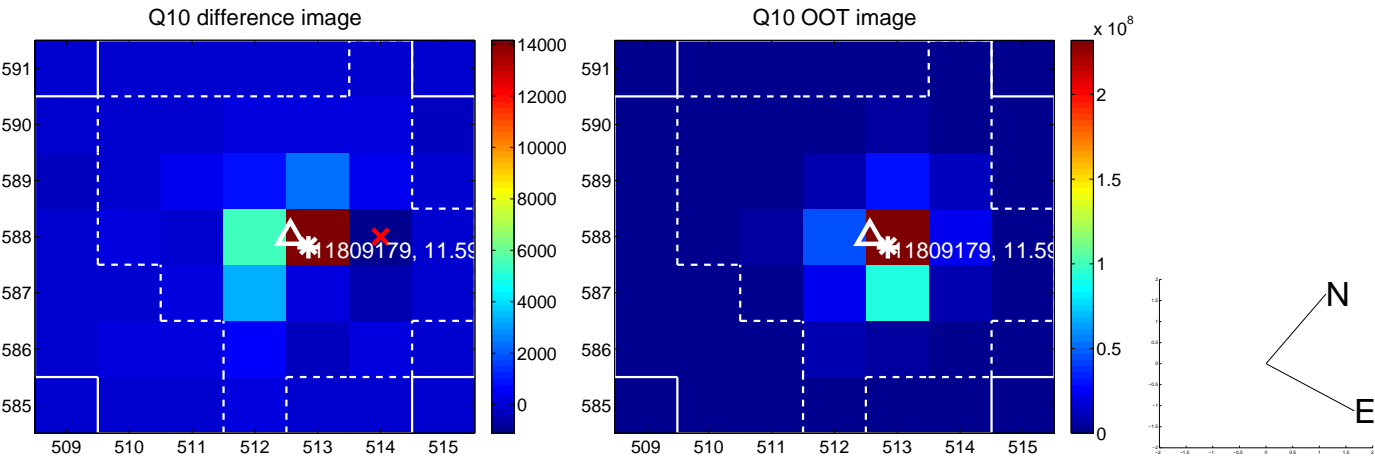
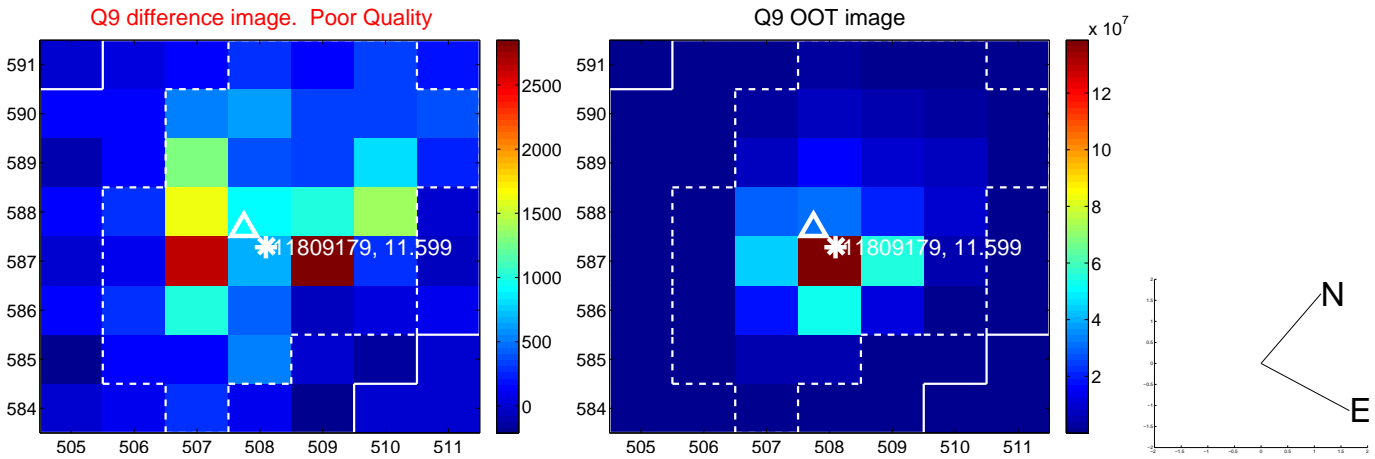
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



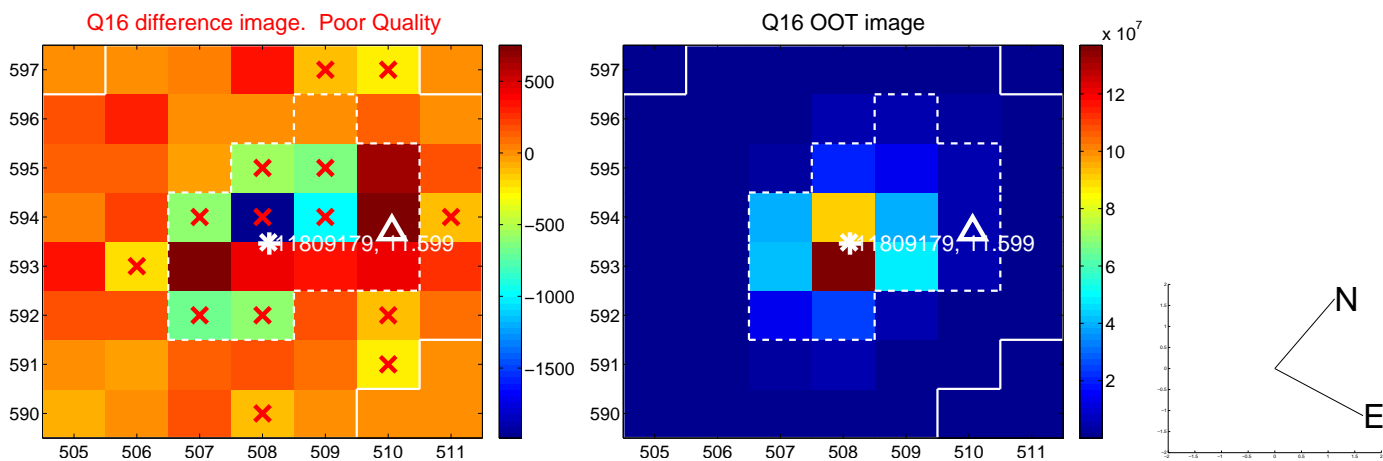
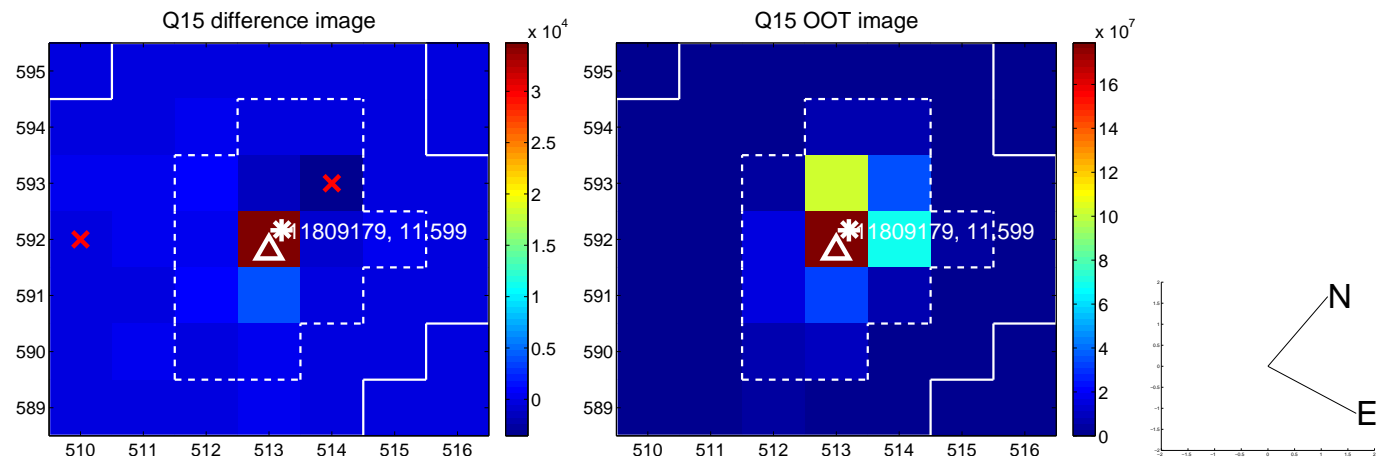
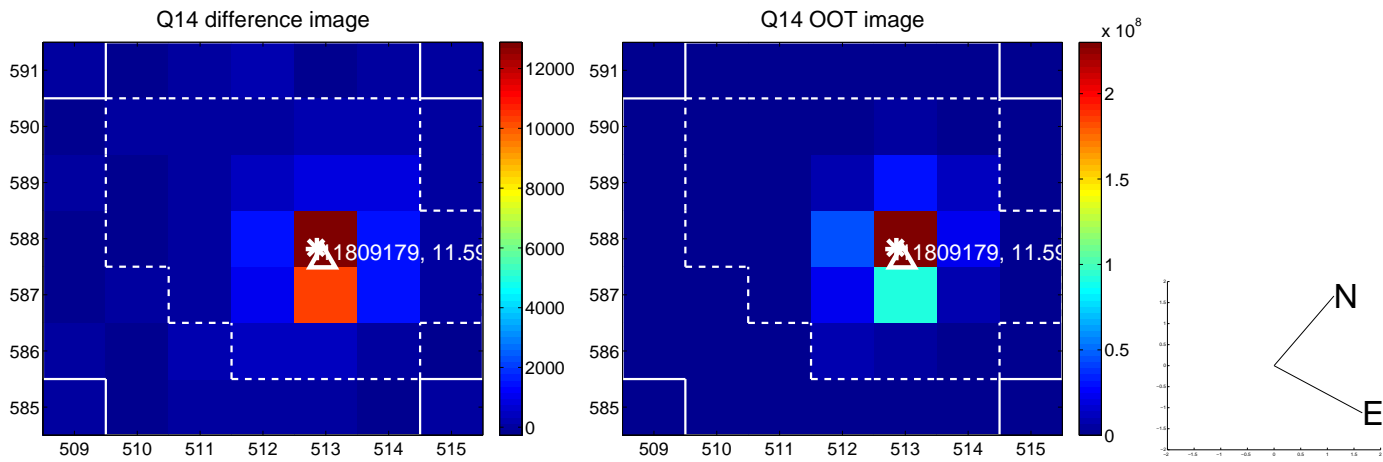
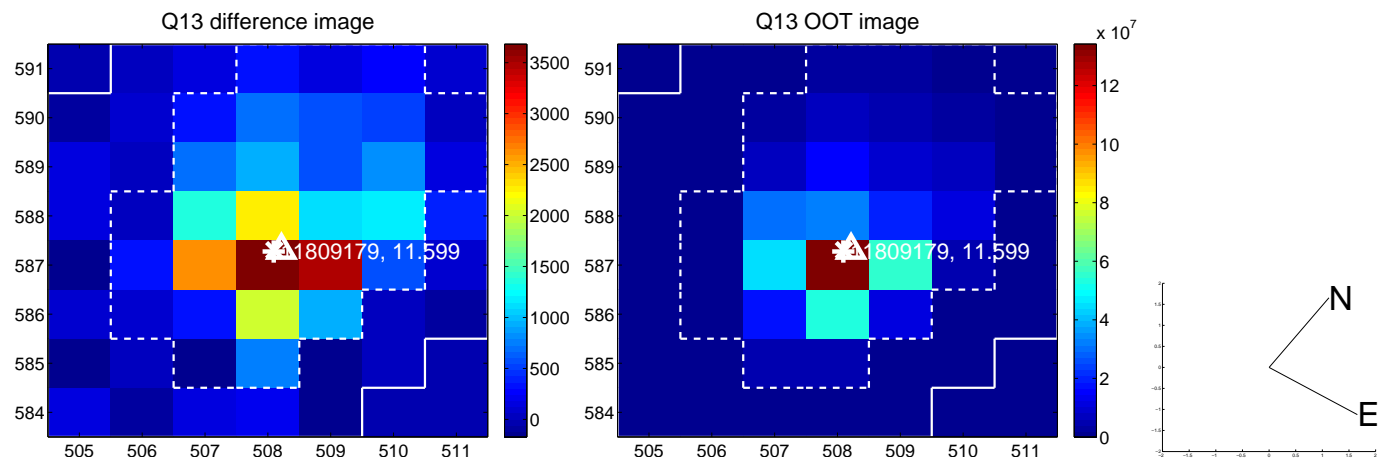
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



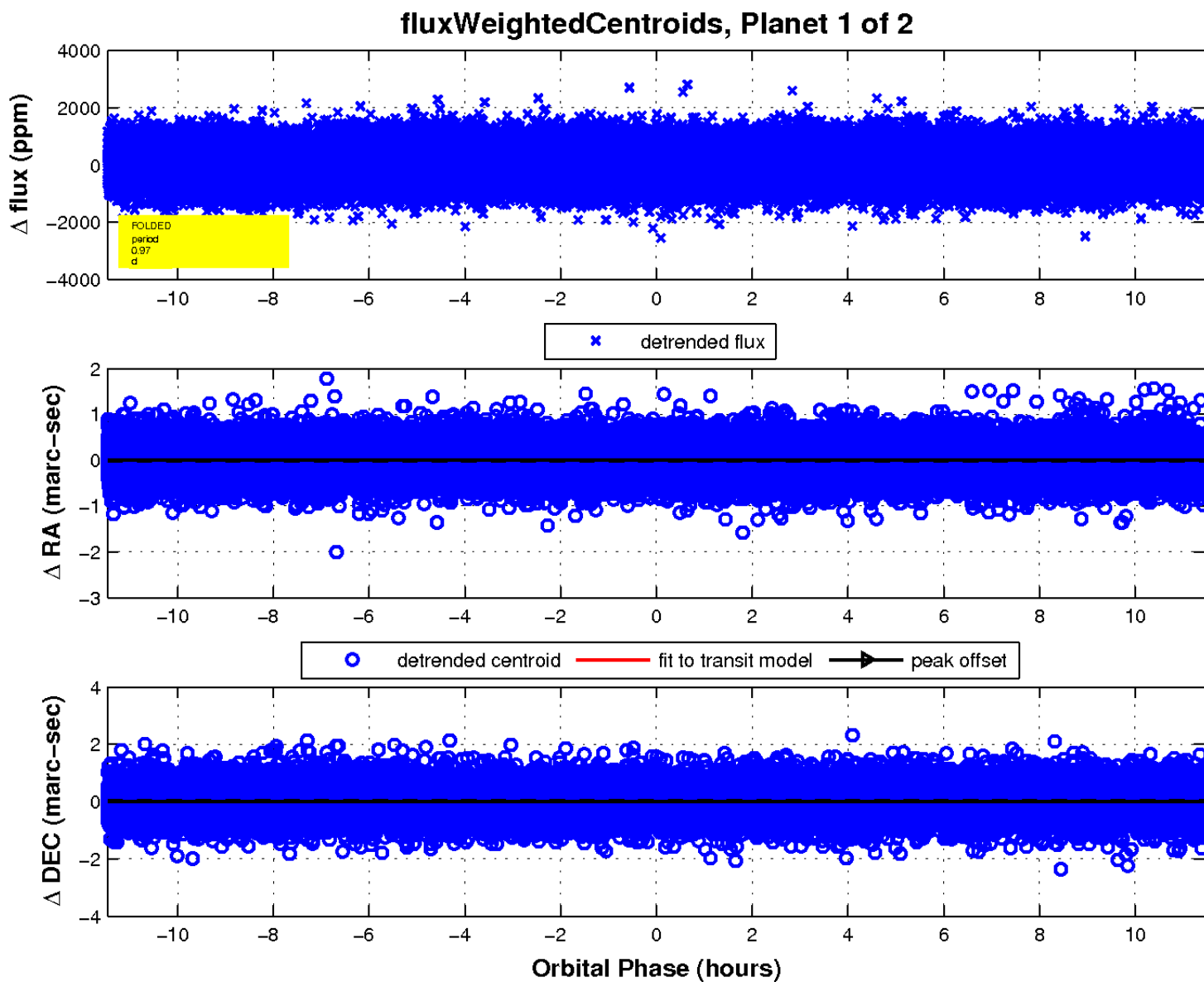
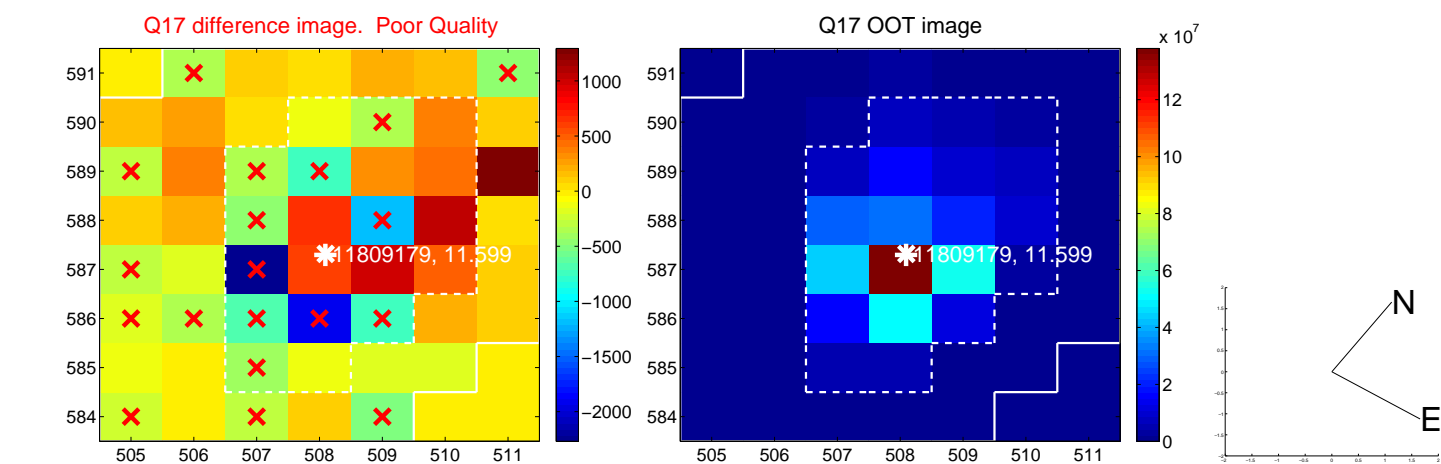
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

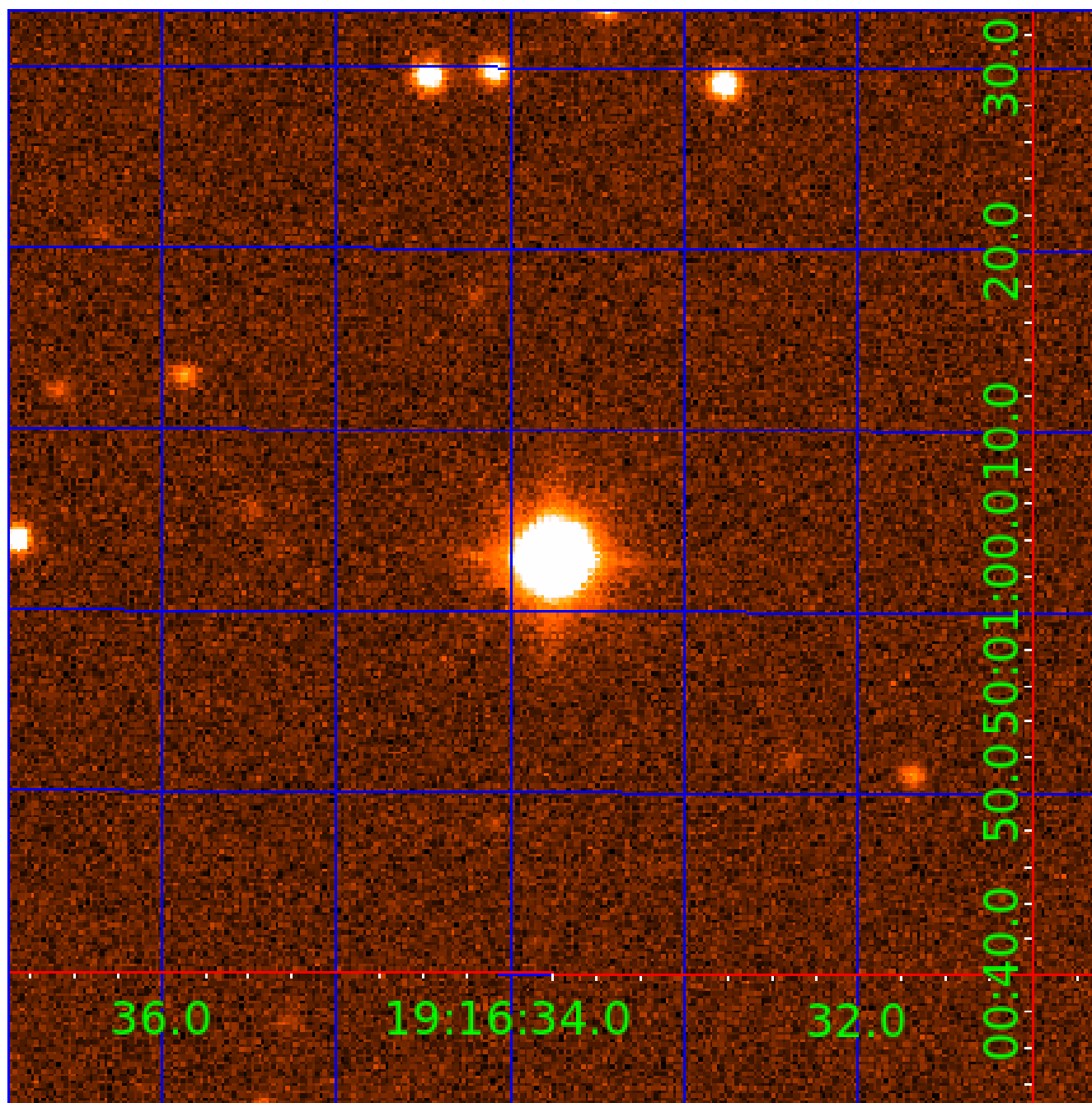


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011809179

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})
011809179-01	OBS	No	0.972416	132.455994	54.9	3.820	12.5	12.7	2.25	8273	1.95	36619.52
011809179-02	OBS	No	0.594442	131.765124	58.6	6.249	8.9	13.8	2.25	8273	1.85	70583.46

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011809179-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
011809179-02	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—LPP_DV—LPP_ALT—CENT_UNRESOLVED_OFFSET

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

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

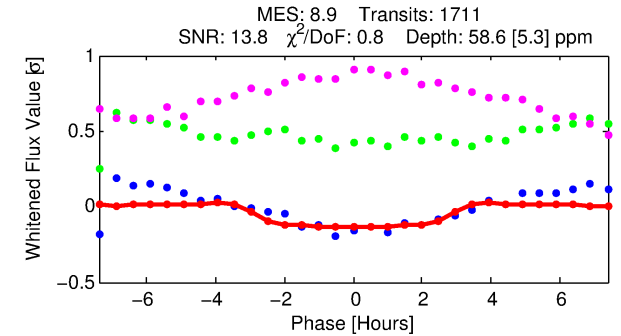
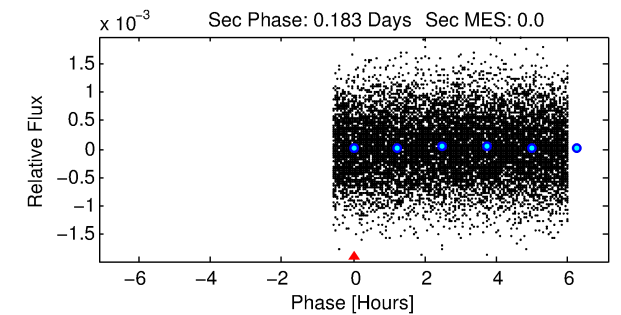
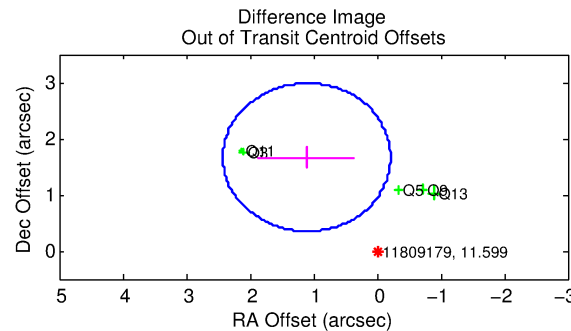
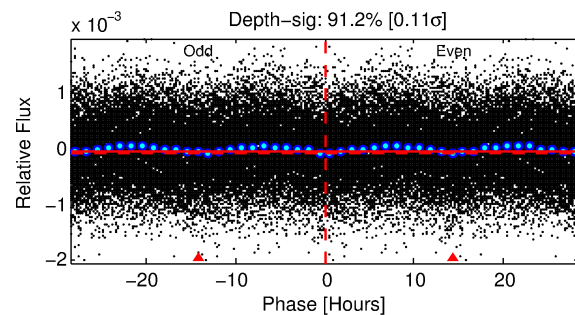
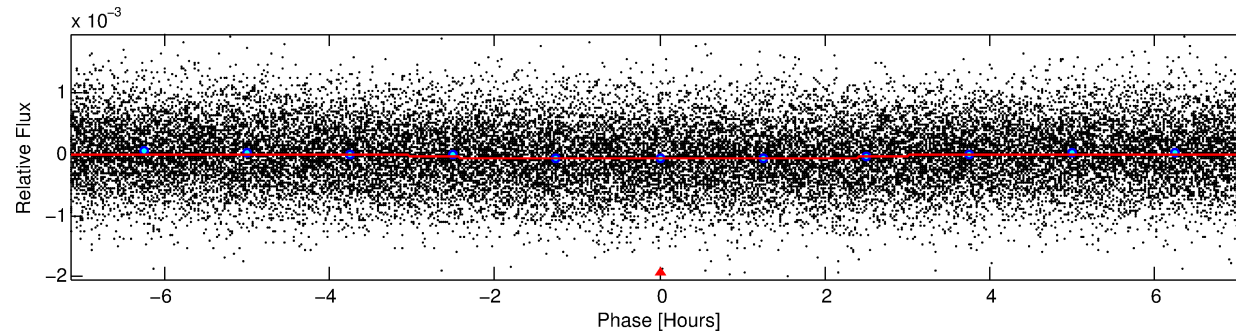
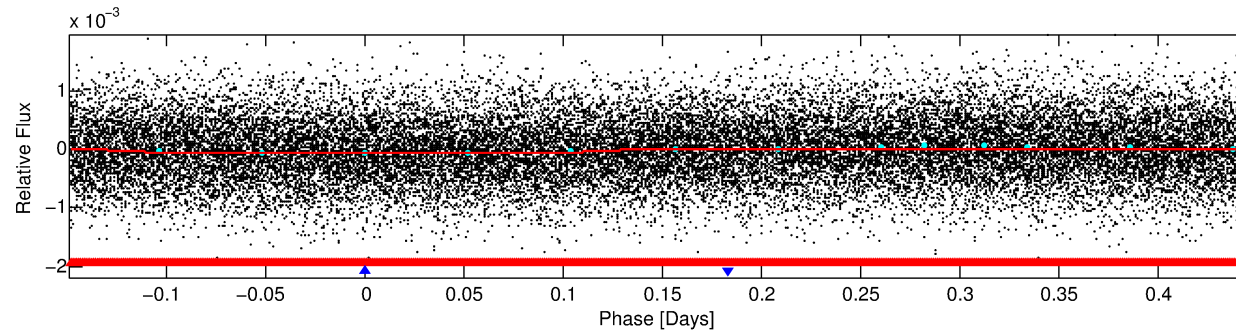
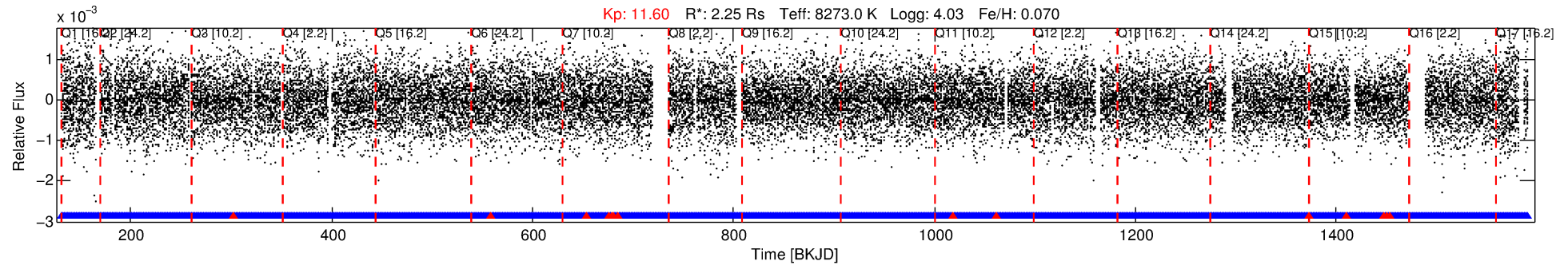
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011809179-02

No Significant Match Found

DV One-Page Summary

KIC: 11809179 Candidate: 2 of 2 Period: 0.594 d



DV Fit Results:

Period = 0.59444 [0.00001] d
Epoch = 131.7651 [0.0048] BKJD
 R_p/R^* = 0.0075 [0.0043]
 a/R^* = 1.02 [0.11]
 b = 0.70 [2.55]
 Seff = 70583.46 [26392.31]
 T_{eq} = 4156 [389] K
 R_p = 1.85 [1.18] R_e
 a = 0.0174 [0.0040] AU
 A_g = N/A
 T_{eff} = N/A

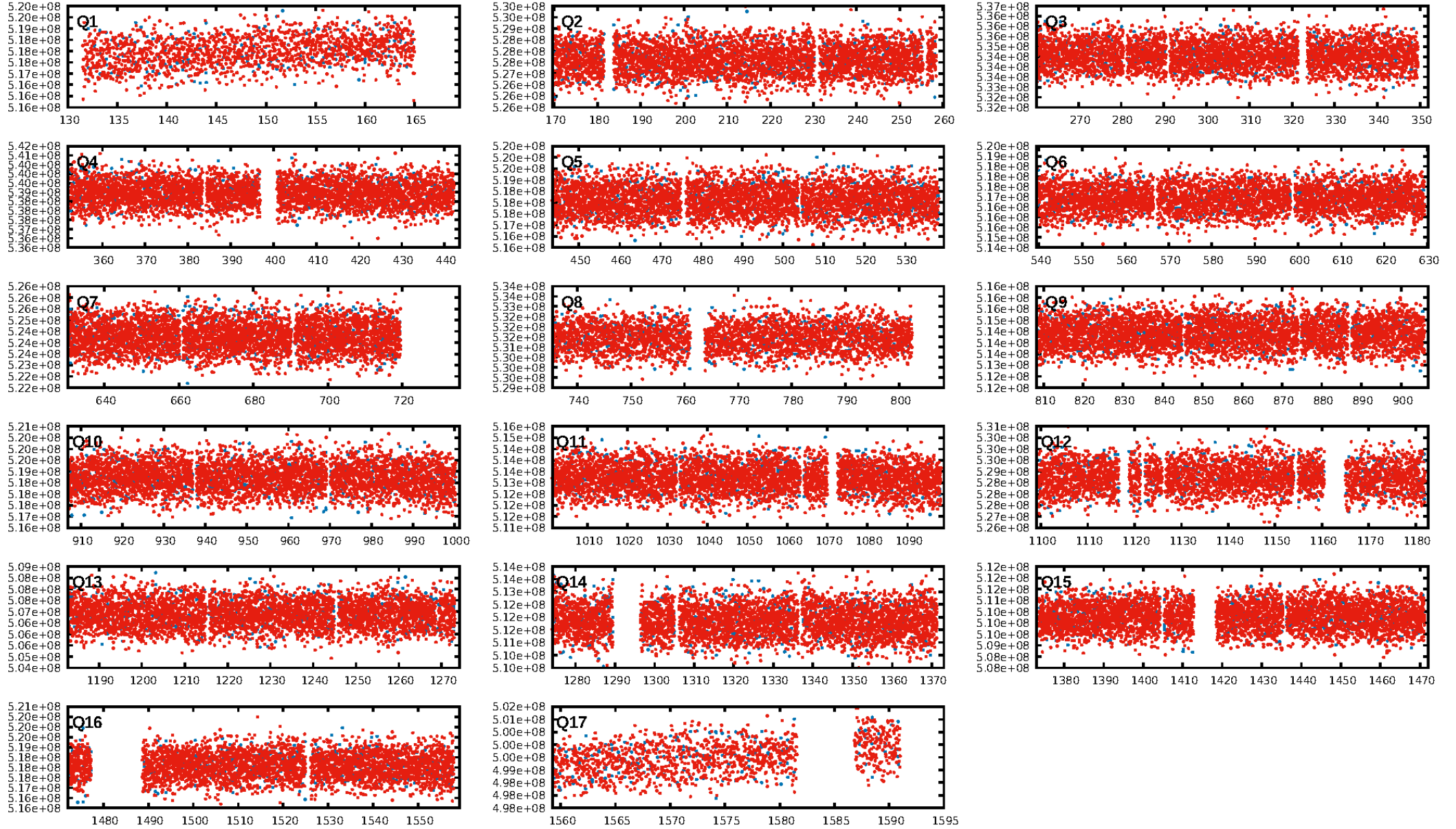
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 78.4% [1.24 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [1618/1632]
GhostDiagnostic-chr: 2.955
Centroid-sig: 2.5%
Centroid-so: 0.148 arcsec [1.44 σ]
OotOffset-rm: 2.000 arcsec [4.55 σ]
KicOffset-rm: 1.922 arcsec [4.30 σ]
OotOffset-st: 0/2/0/3 [5]
KicOffset-st: 0/2/0/3 [5]
DiffImageQuality-fgm: 0.60 [3/5]
DiffImageOverlap-fno: 1.00 [17/17]

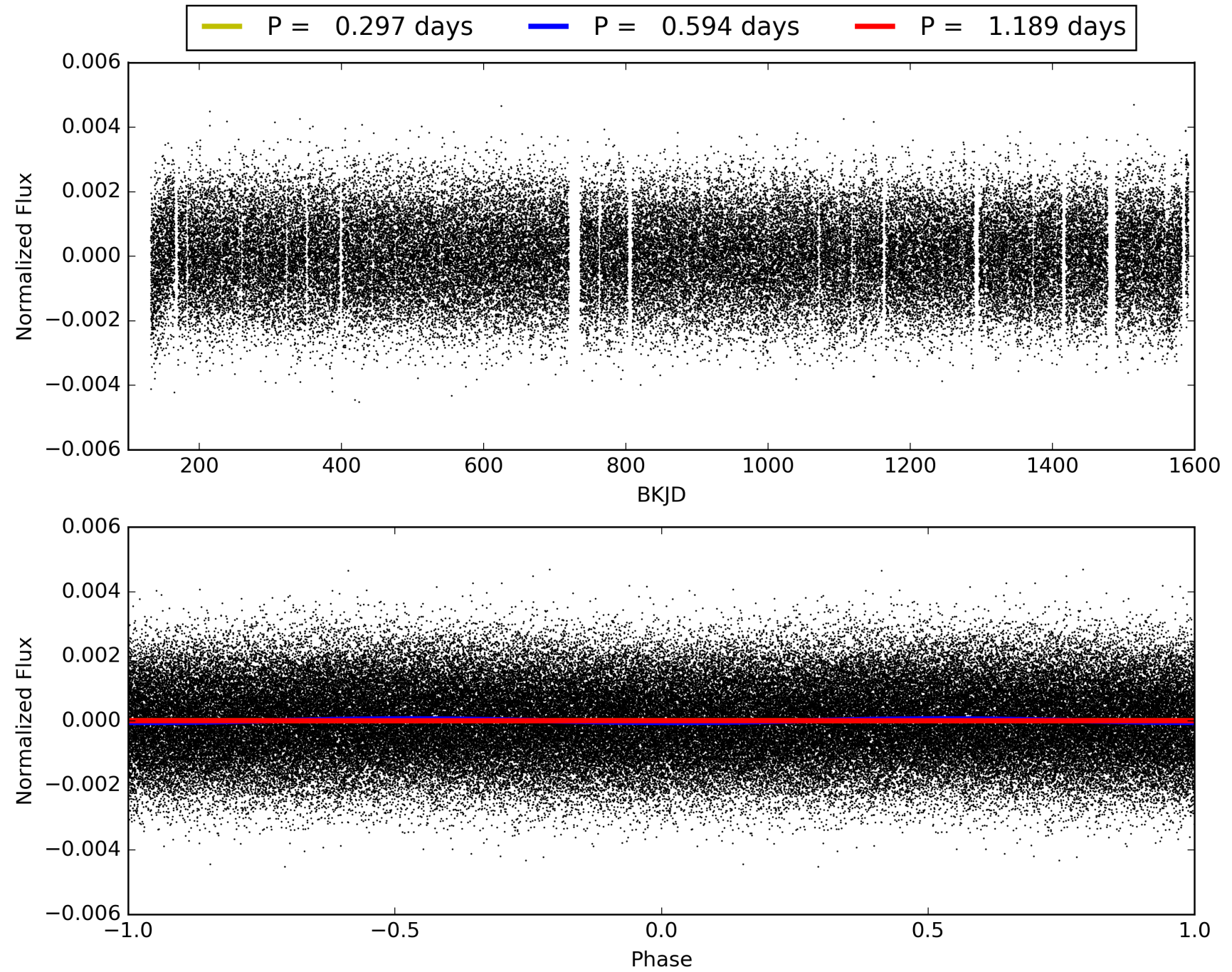
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 06:47:43 Z

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

TCE 011809179-02, PDC Light Curves

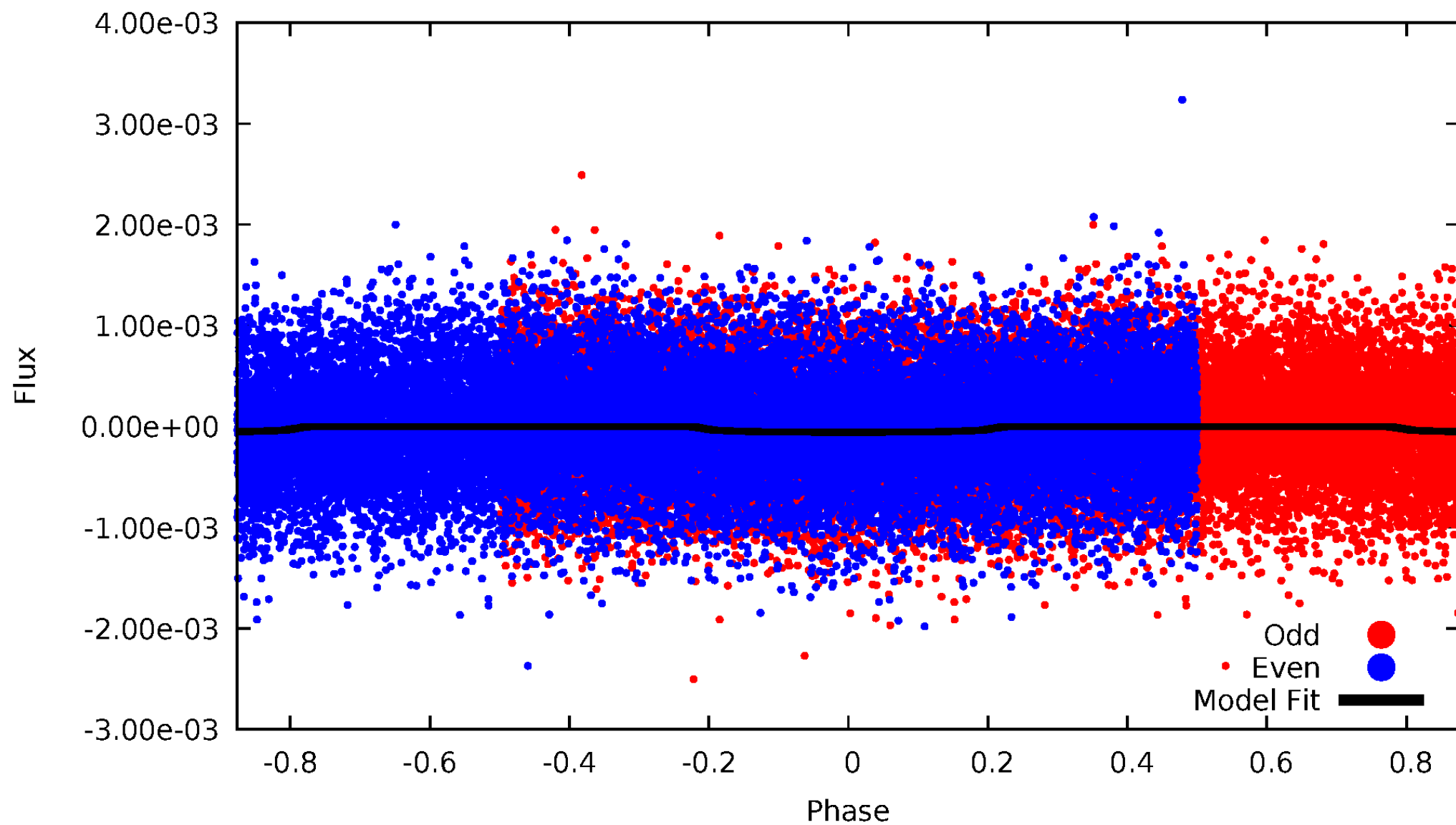


TCE 011809179-02



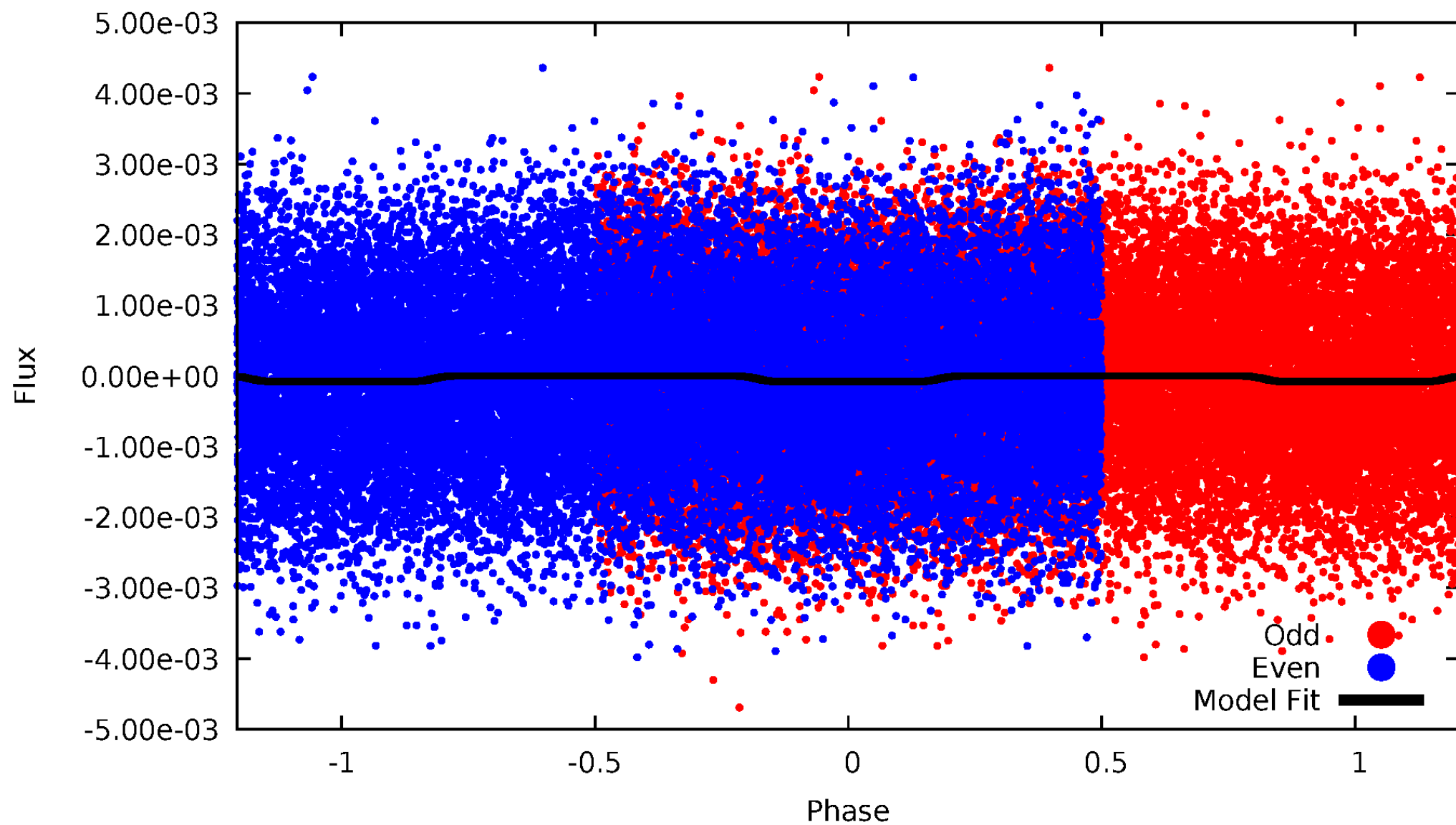
DV Odd/Even

TCE 011809179-02



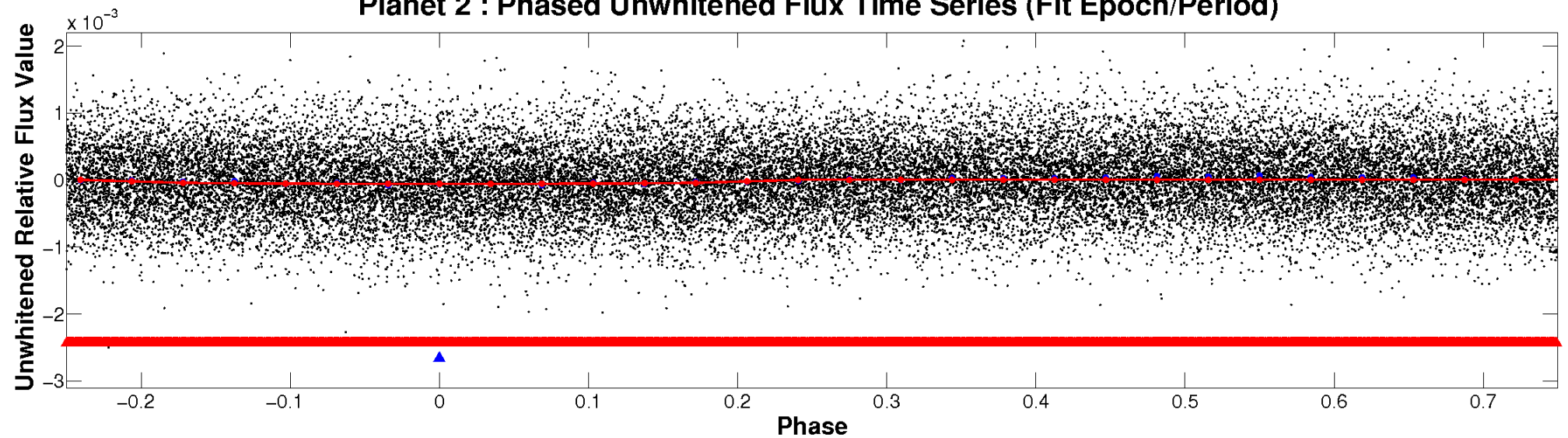
ALT Odd/Even

TCE 011809179-02

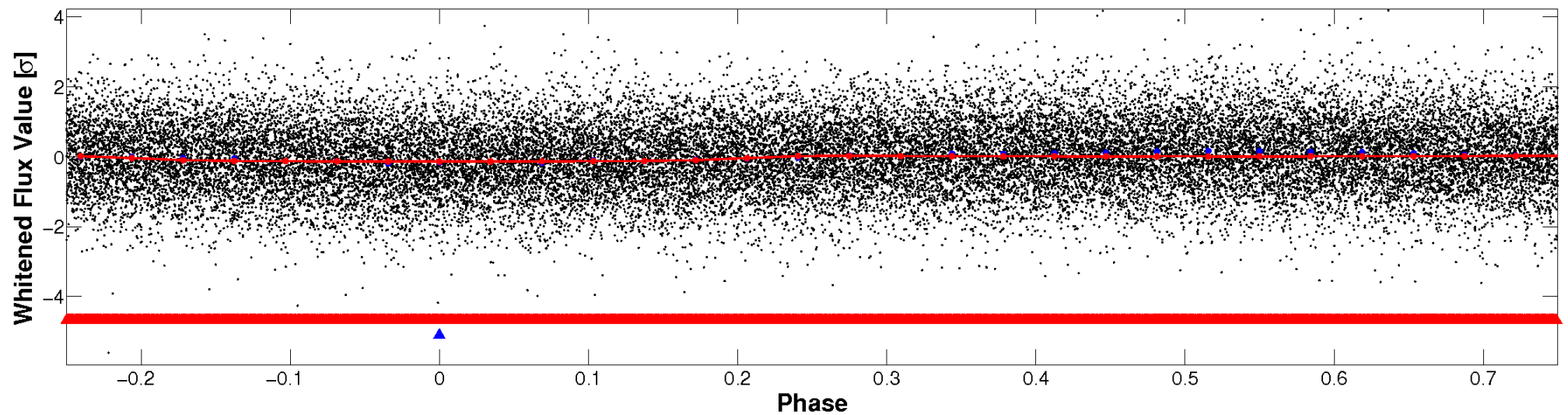


Non-Whitened Vs. Whitened Light Curve

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

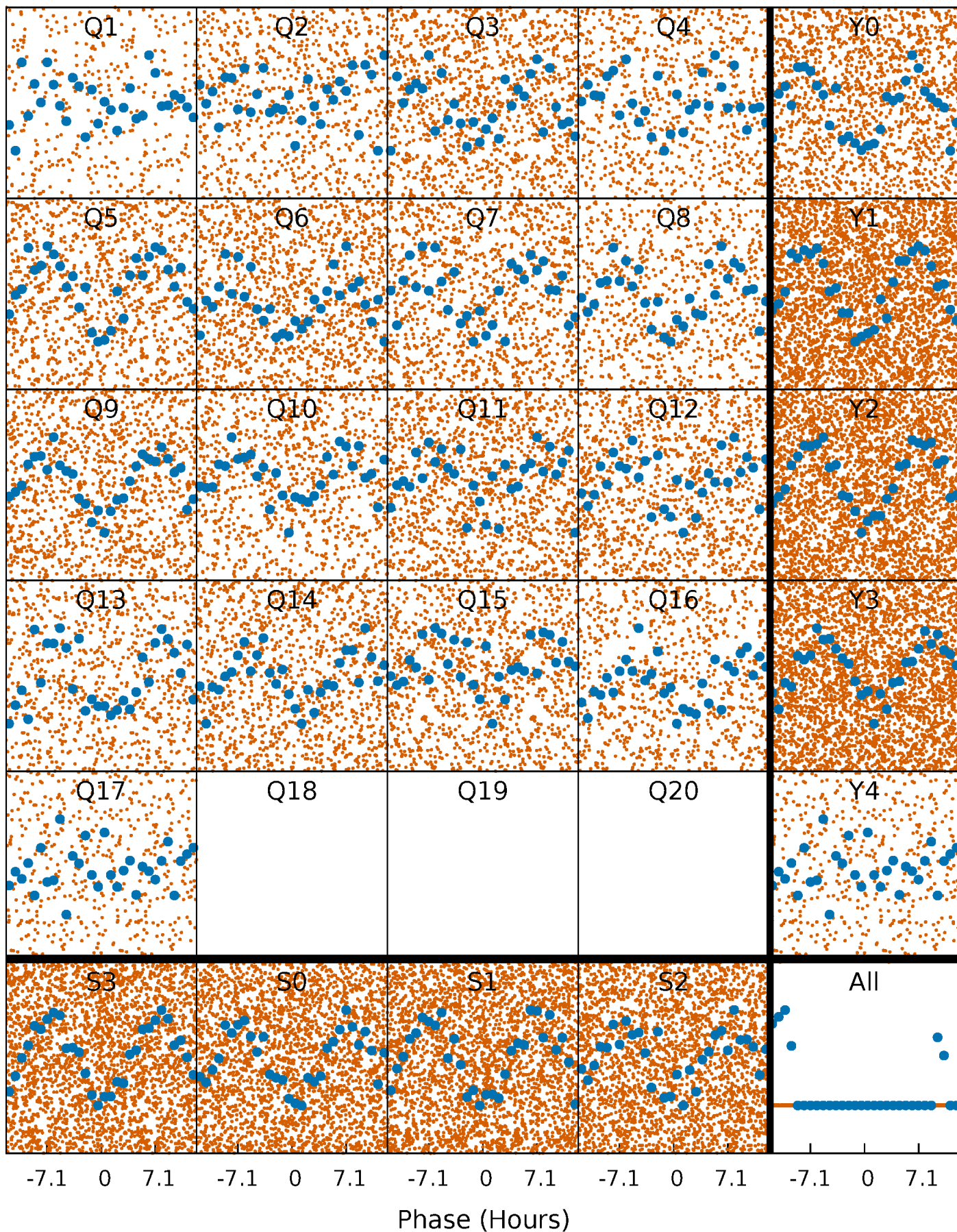


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



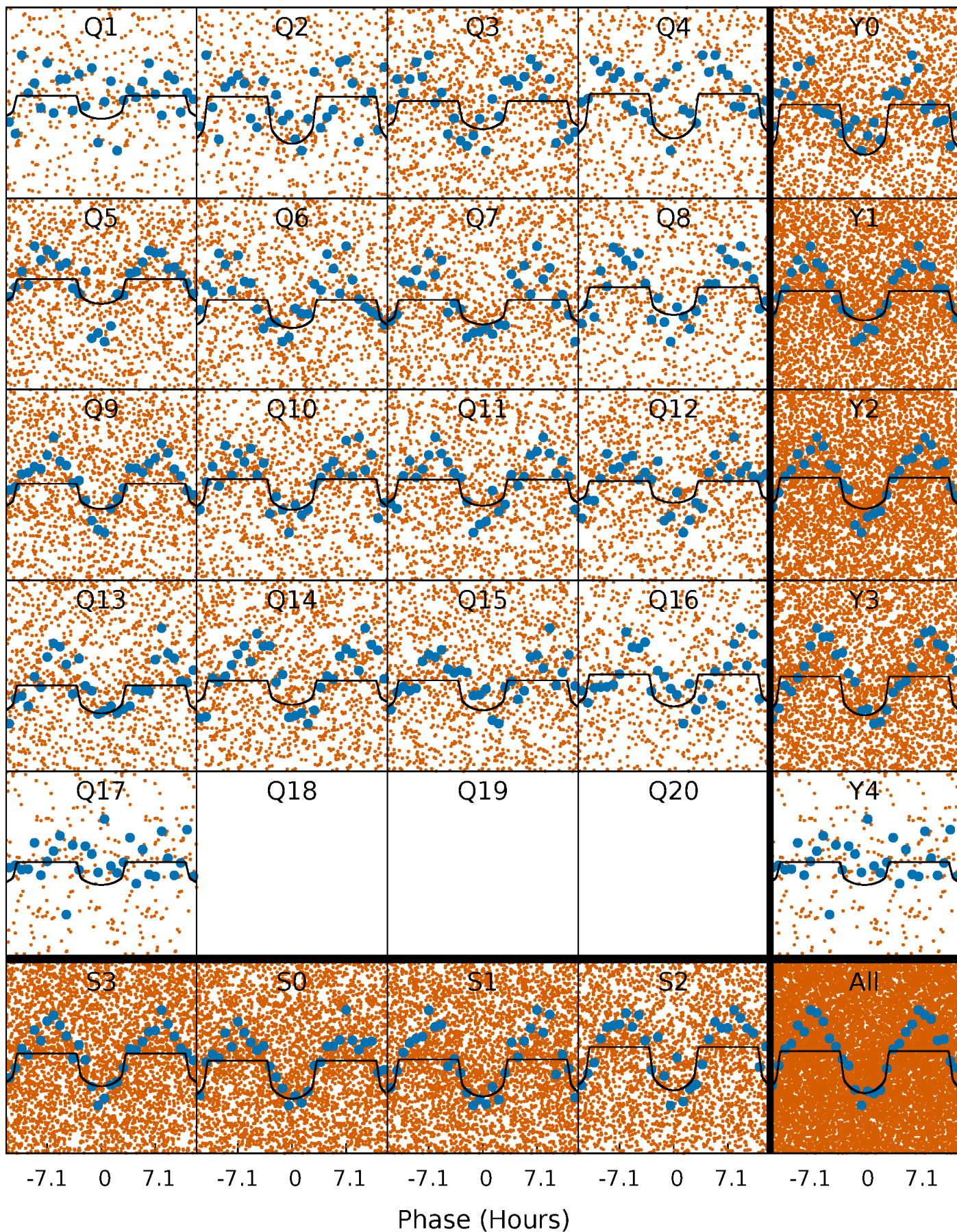
PDC Quarter-Phased Transit Curves

TCE 011809179-02 P= 0.594442 Days $T_0=131.765124$ (BKJD)



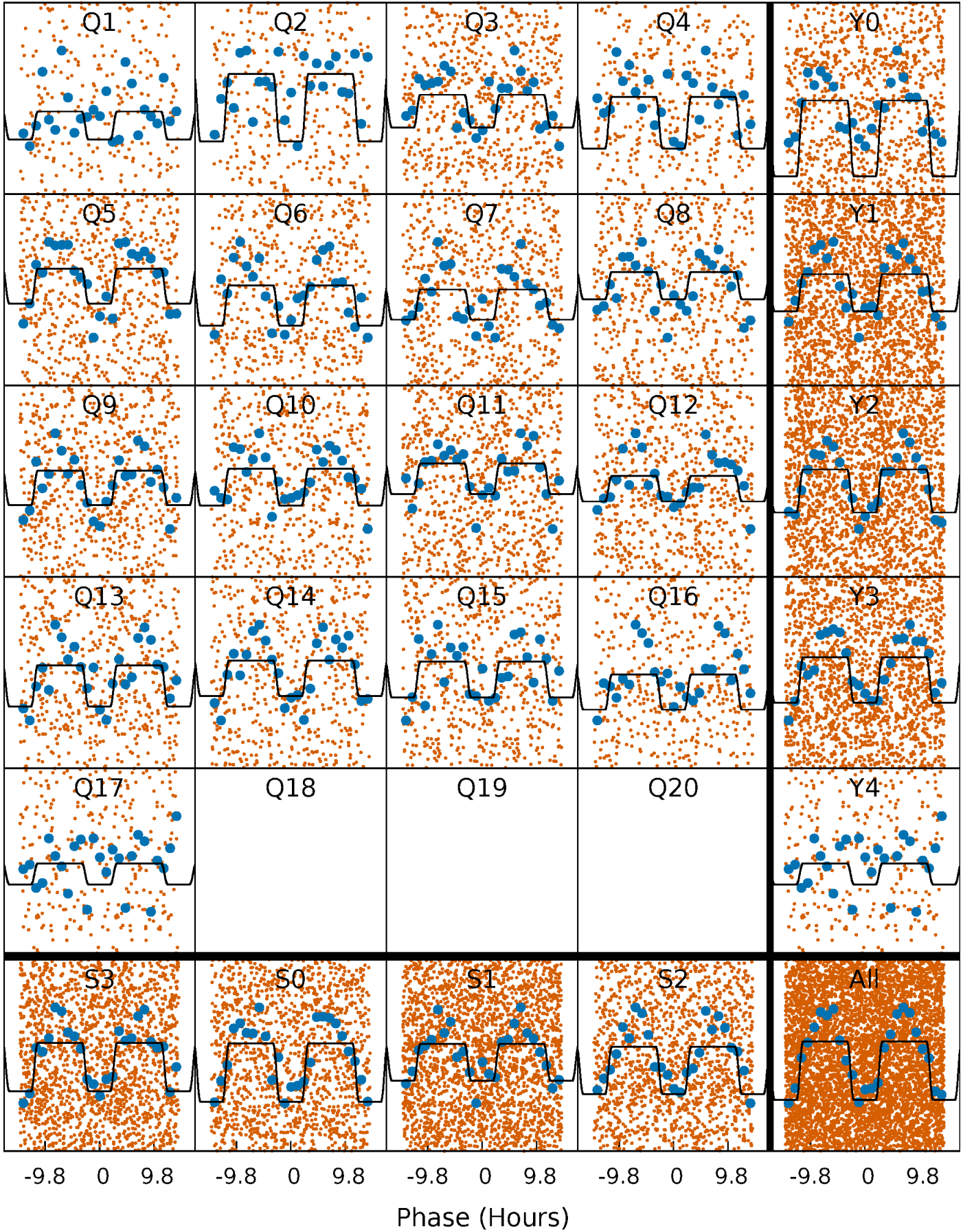
DV Quarter-Phased Transit Curves

TCE 011809179-02 P= 0.594442 Days $T_0=131.765124$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

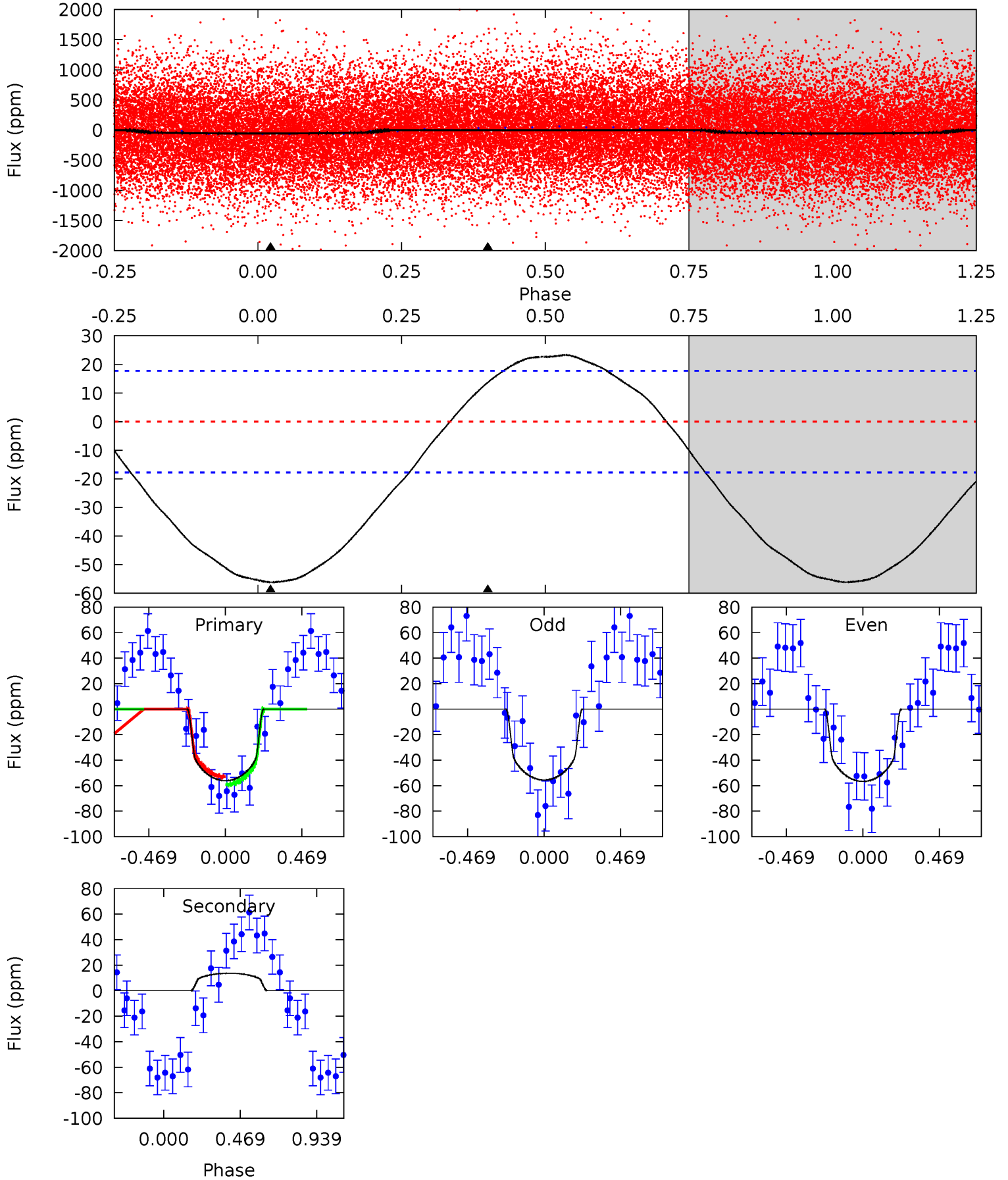
TCE 011809179-02 $P = 0.594459$ Days $T_0 = 131.760234$ (BKJD)



DV Model-Shift Uniqueness Test

011809179-02, P = 0.594442 Days, E = 131.170682 Days

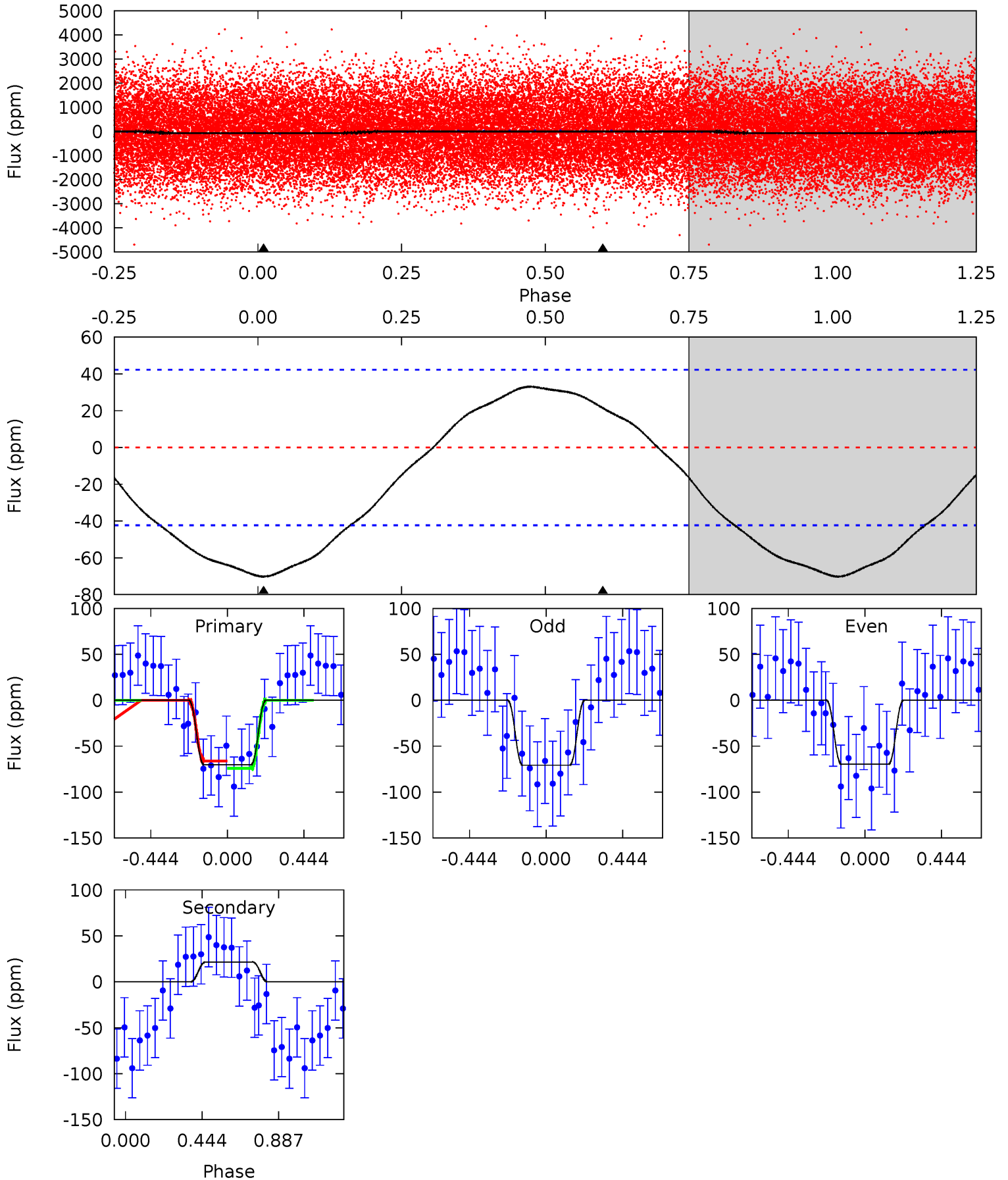
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.4	-3.27	0	0	4.23	0.72	1.68	13.4	13.4	-3.27	-3.27	0.13	1.04	0.29	0.76



Alt Model-Shift Uniqueness Test

011809179-02, P = 0.594459 Days, E = 131.165775 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.05	-2.16	0	0	4.24	0.77	0.87	7.05	7.05	-2.16	-2.16	0.05	1.04	0.32	0.39



Stellar Parameters For KIC 011809179

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8273^{+198}_{-368}	$4.029^{+0.176}_{-0.128}$	$0.070^{+0.150}_{-0.500}$	$2.254^{+0.423}_{-0.634}$	$1.982^{+0.295}_{-0.442}$	$0.244^{+0.279}_{-0.098}$
	+2%/-4%	+4%/-3%	+214%/-714%	+19%/-28%	+15%/-22%	+114%/-40%
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 011809179-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	14 ± 4	$1.86^{+1.12}_{-0.95}$	5768^{+338}_{-404}	-6067^{+728}_{-2265}	$-0.653^{+0.420}_{-2.020}$
Alt.	21 ± 10	$2.14^{+1.13}_{-1.03}$	5786^{+342}_{-394}	-6230^{+823}_{-2161}	$-0.731^{+0.448}_{-1.909}$

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

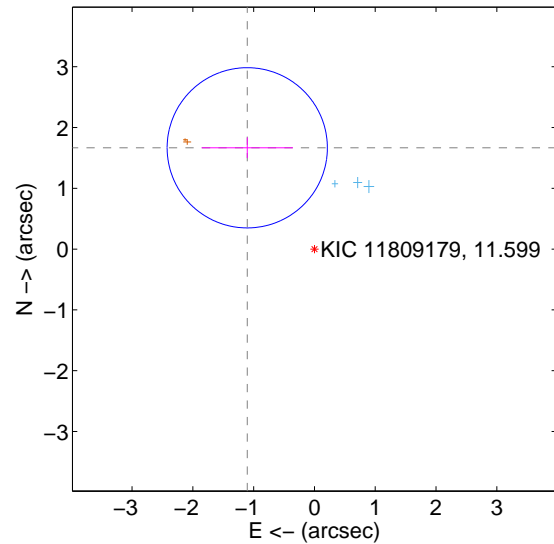
Supplemental centroid analysis for 011809179-02. **Kepler magnitude: 11.60.** Transit SNR 13.76

There are 3 quarters with good PRF difference image offsets

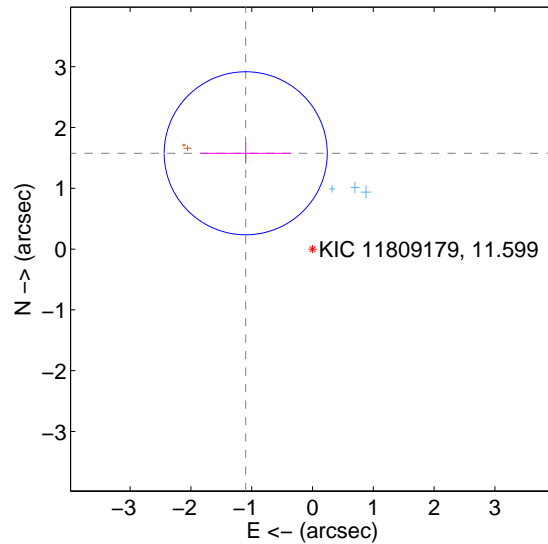
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.000 ± 0.439	4.55	1.105 ± 0.752	1.666 ± 0.170
PRF-fit source offset from KIC position	1.922 ± 0.447	4.30	1.099 ± 0.742	1.576 ± 0.171
photometric centroid source offset	0.15 ± 0.10	1.44	0.12 ± 0.09	0.09 ± 0.12

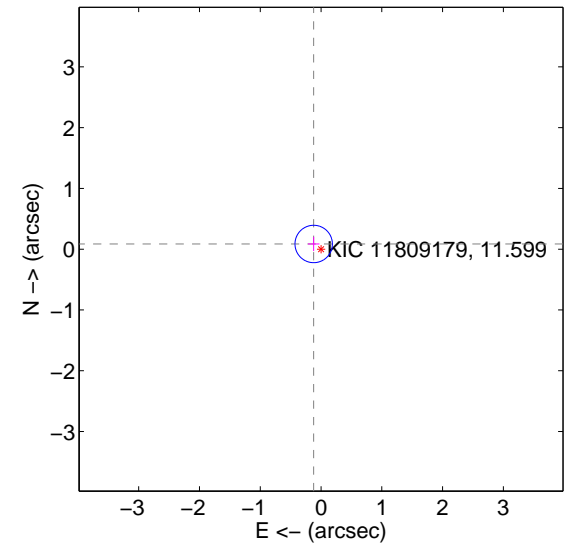
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

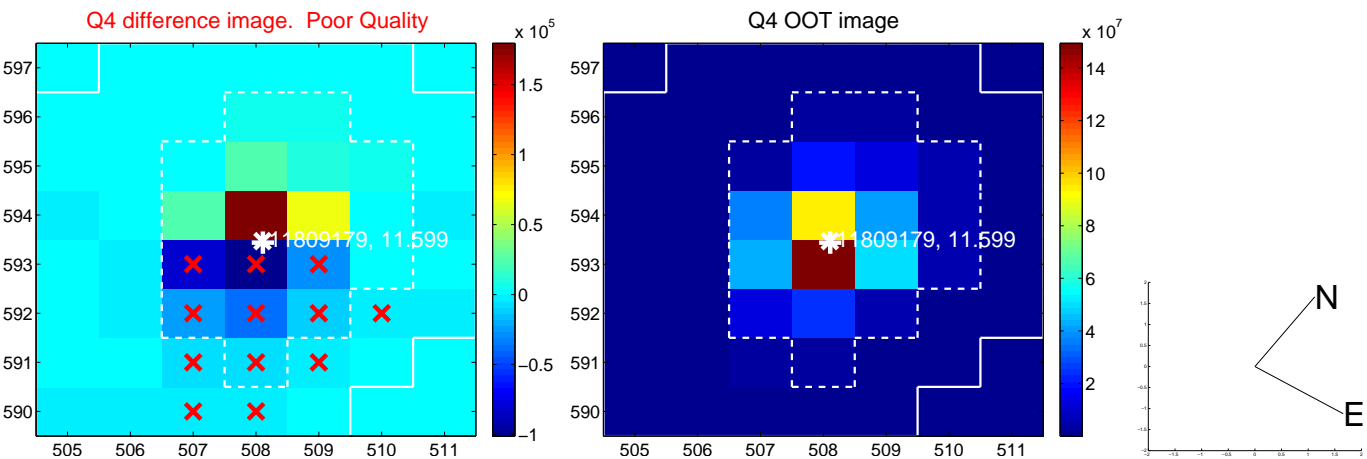
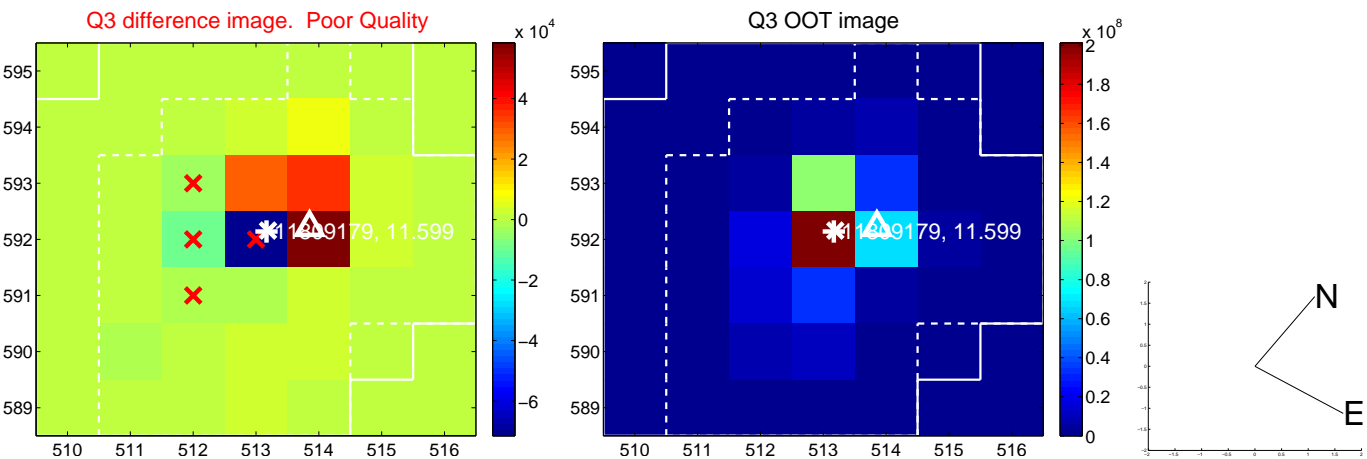
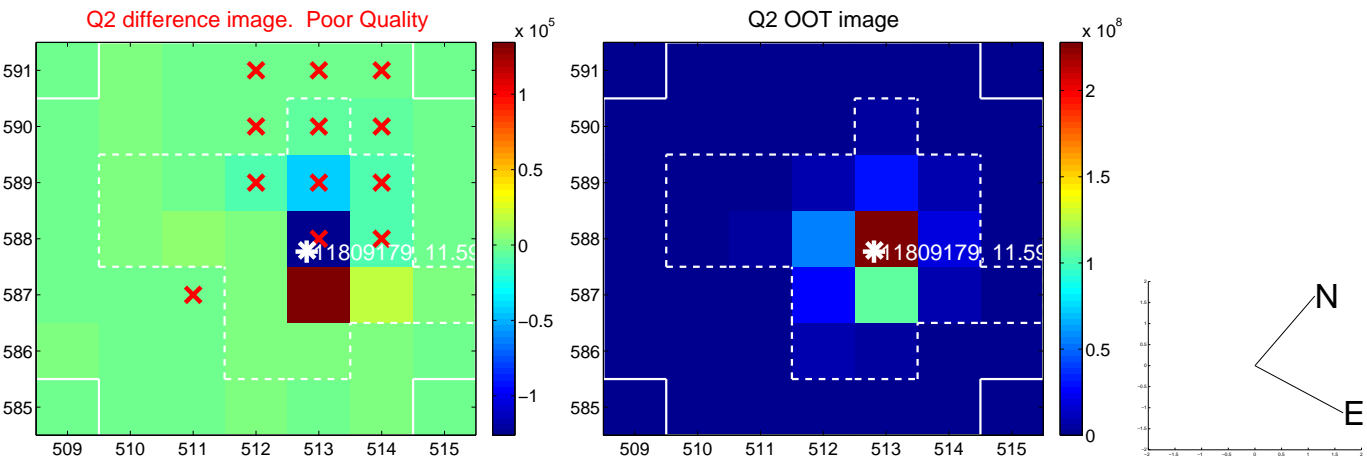
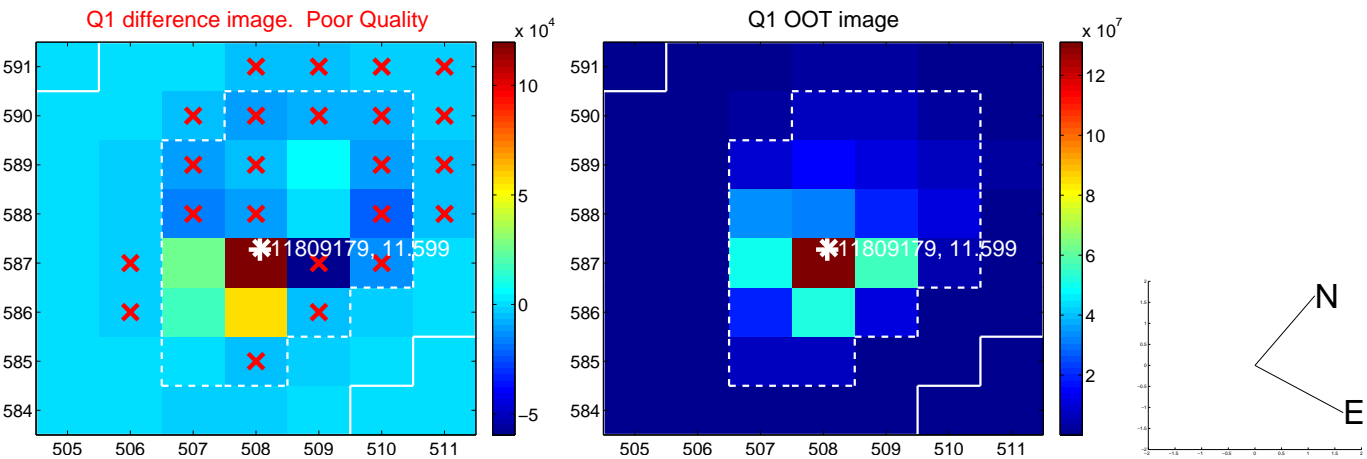


offset from photometric centroids

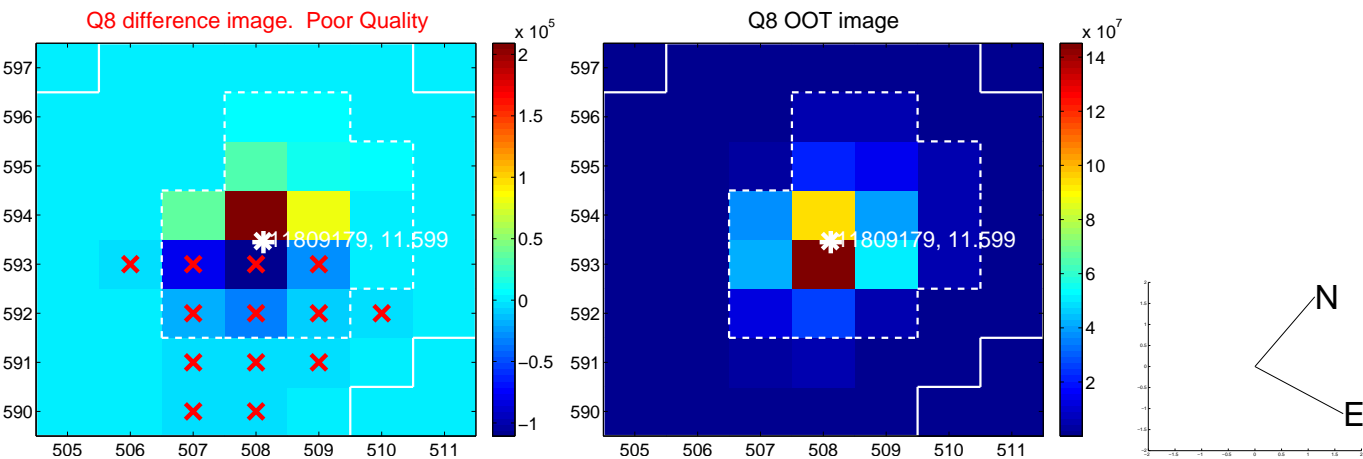
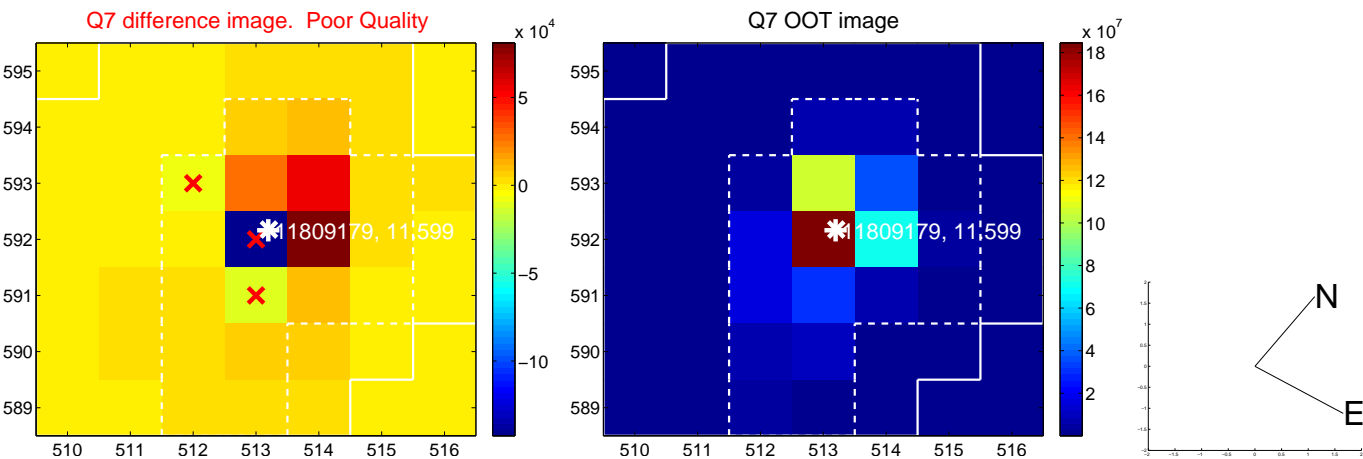
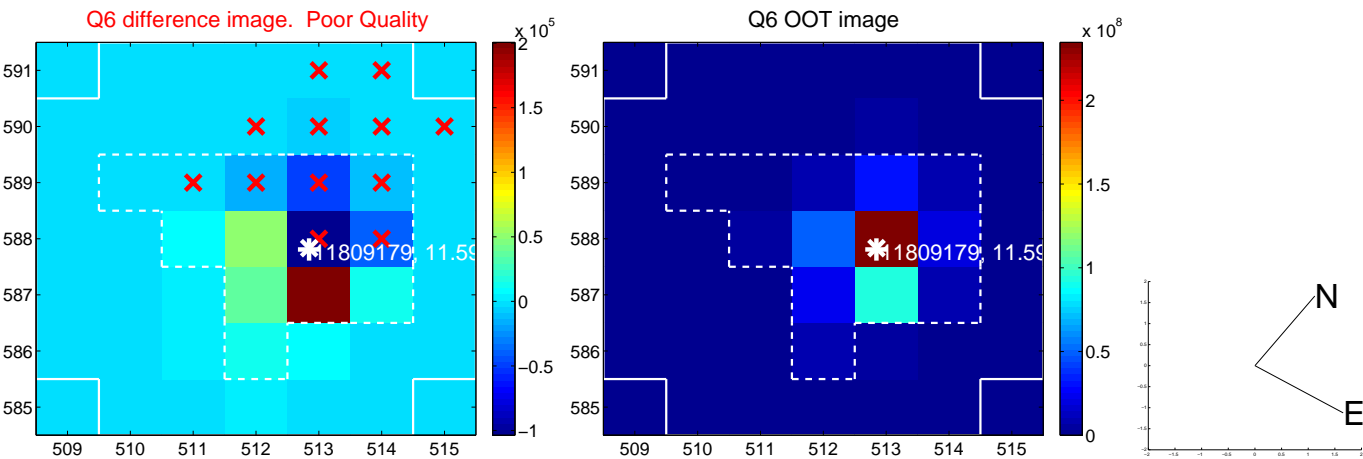
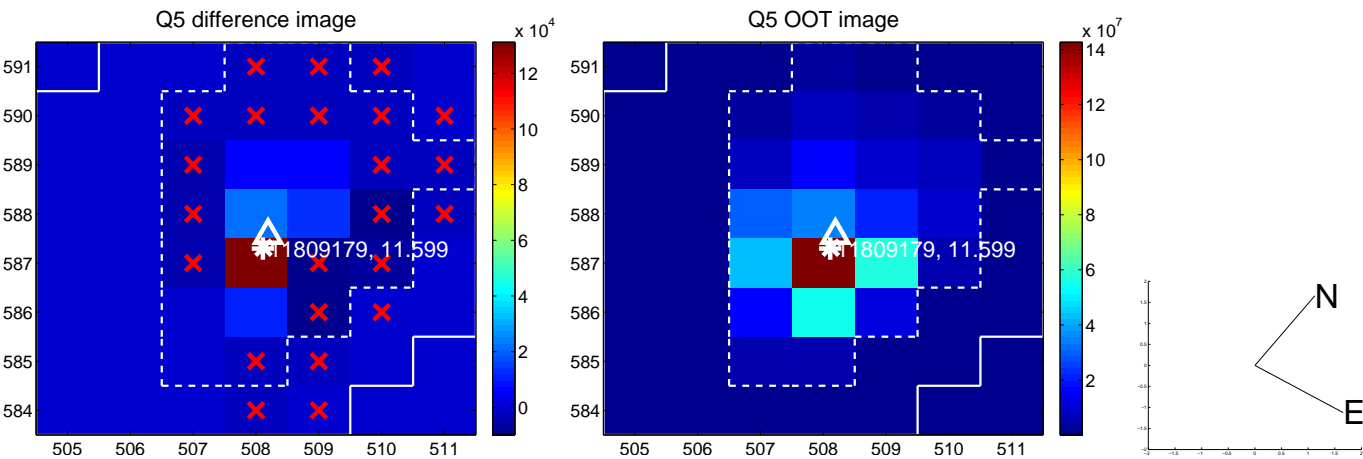


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

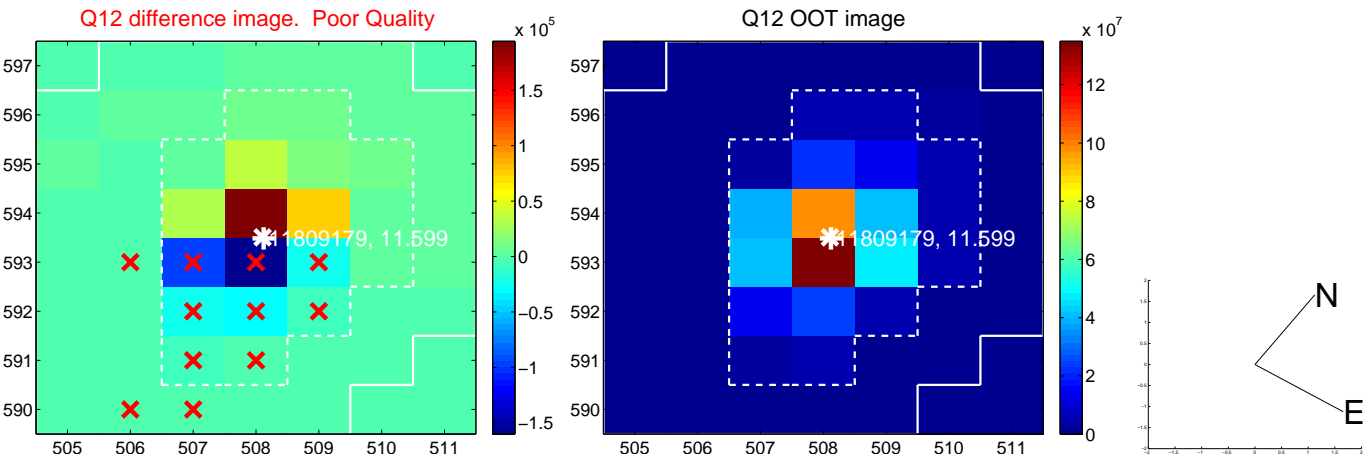
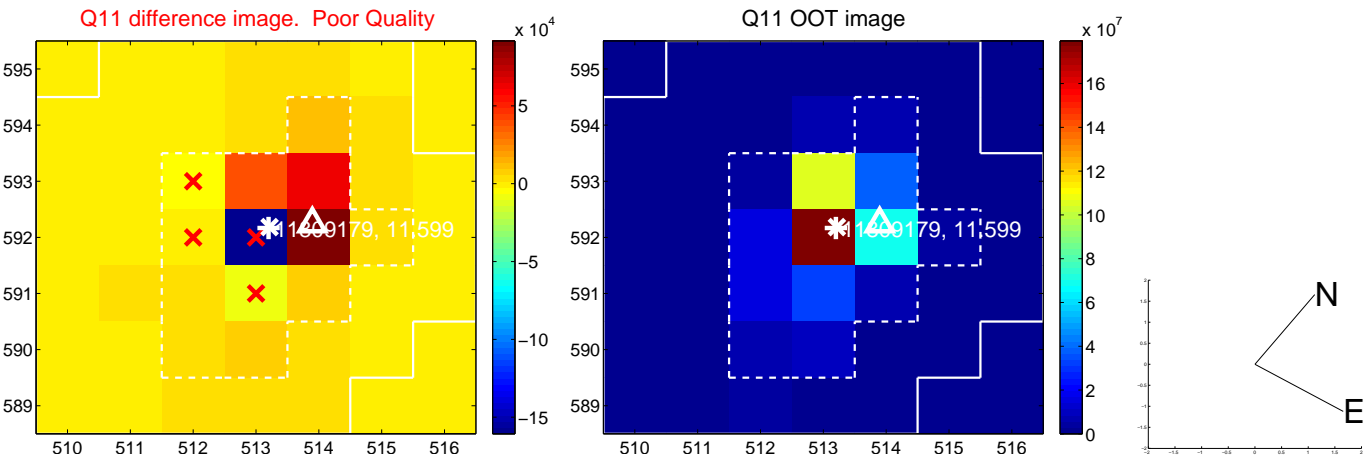
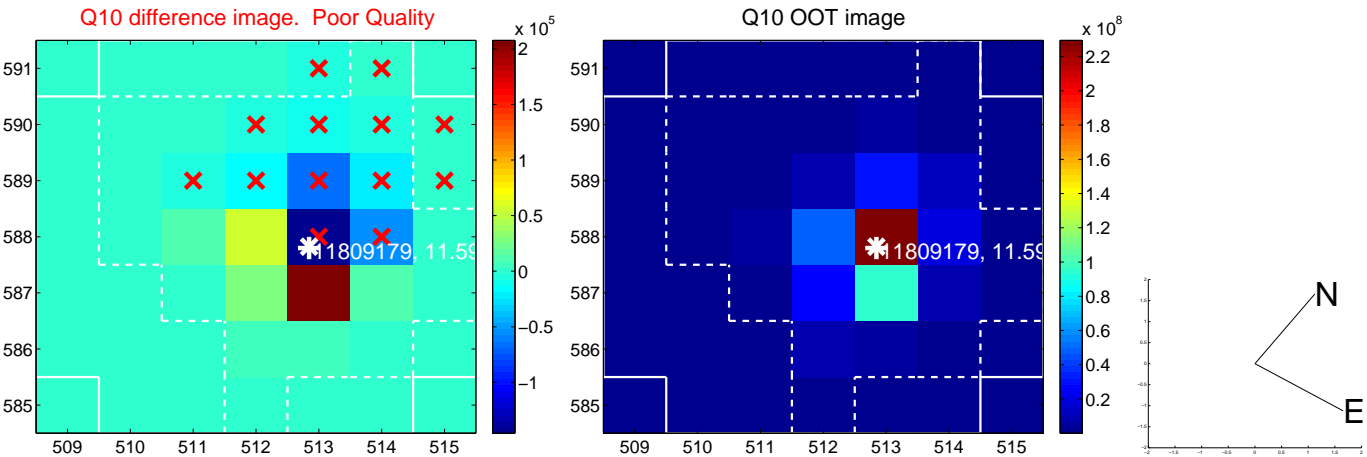
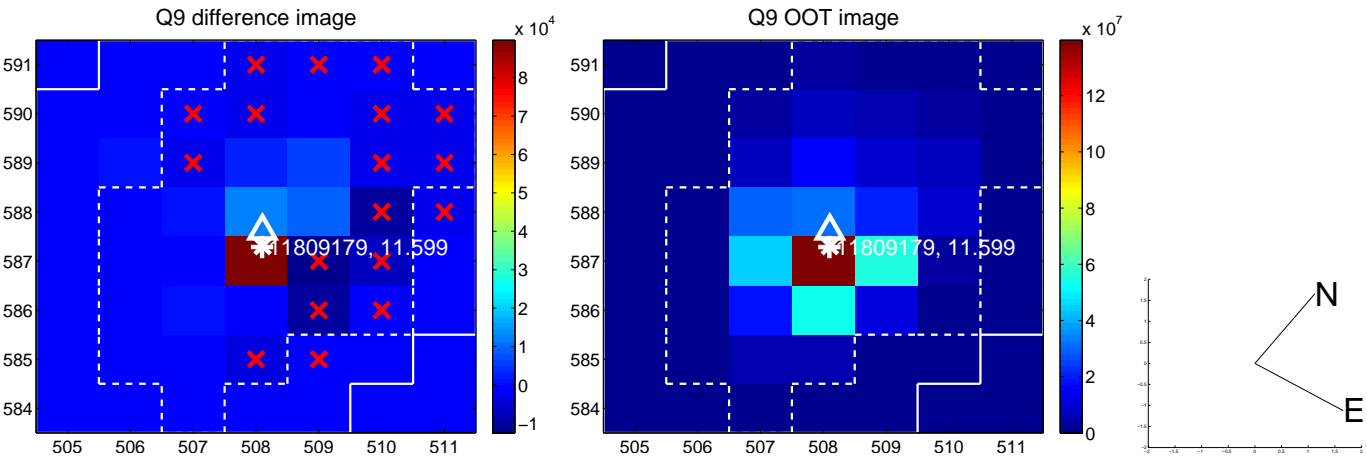
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



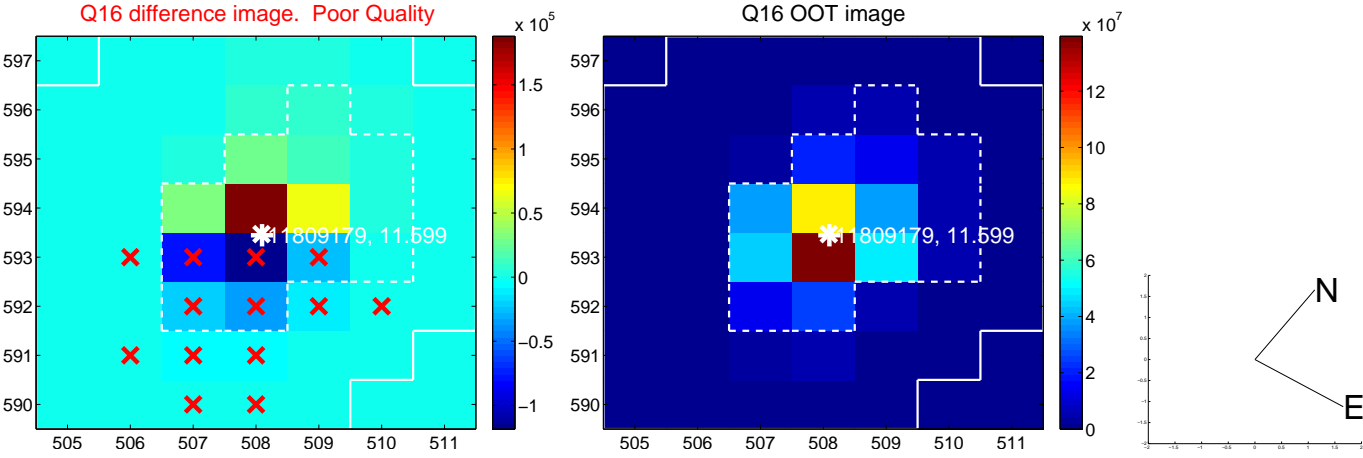
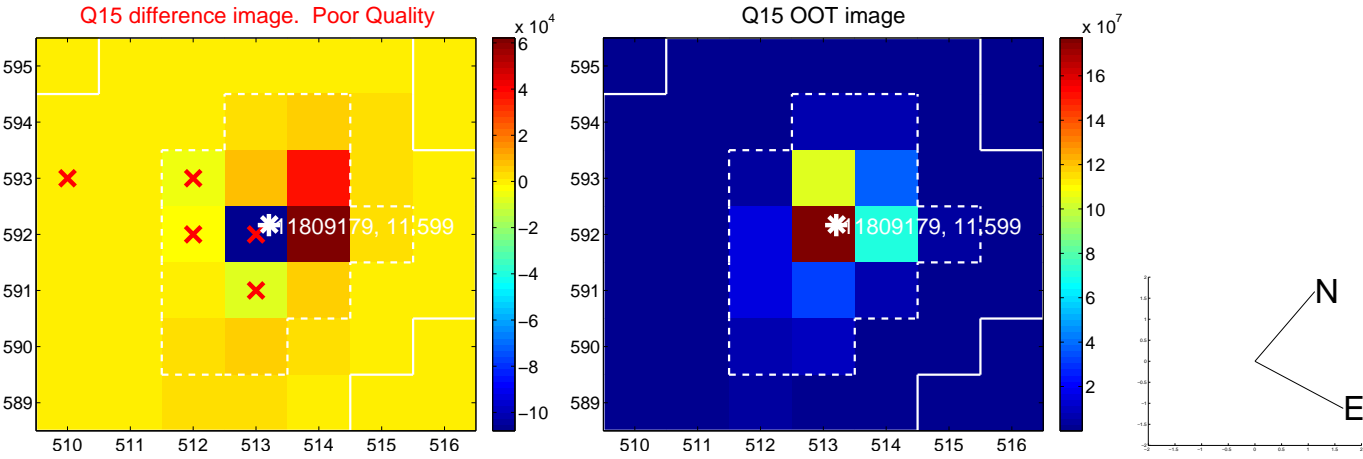
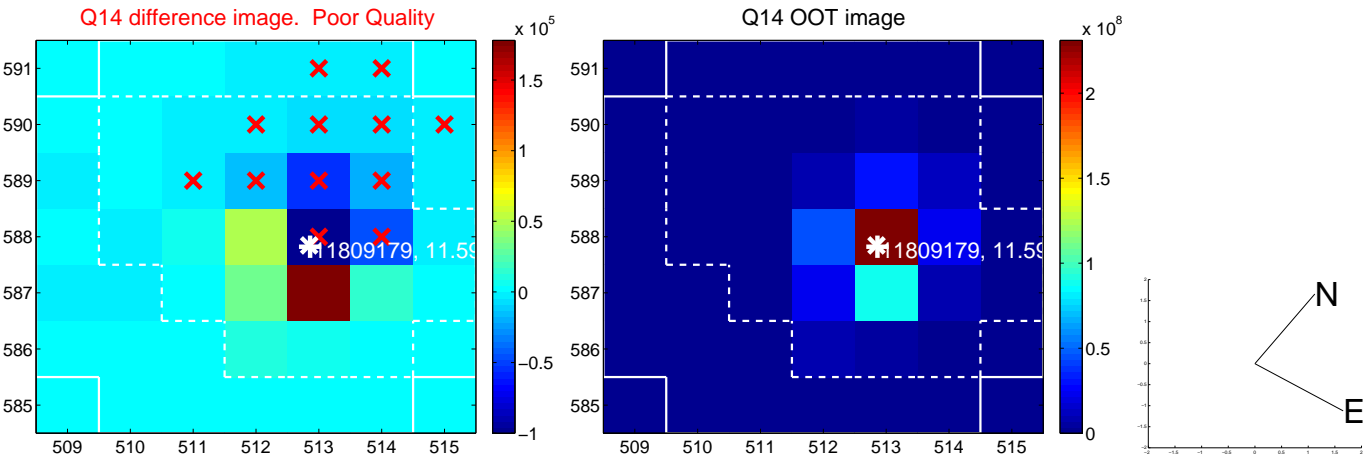
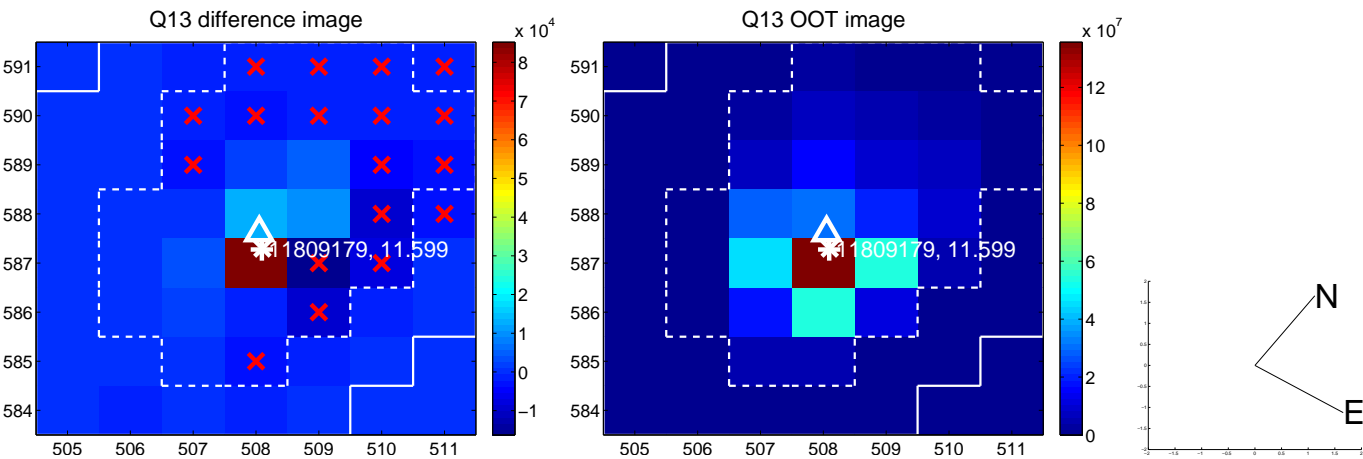
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



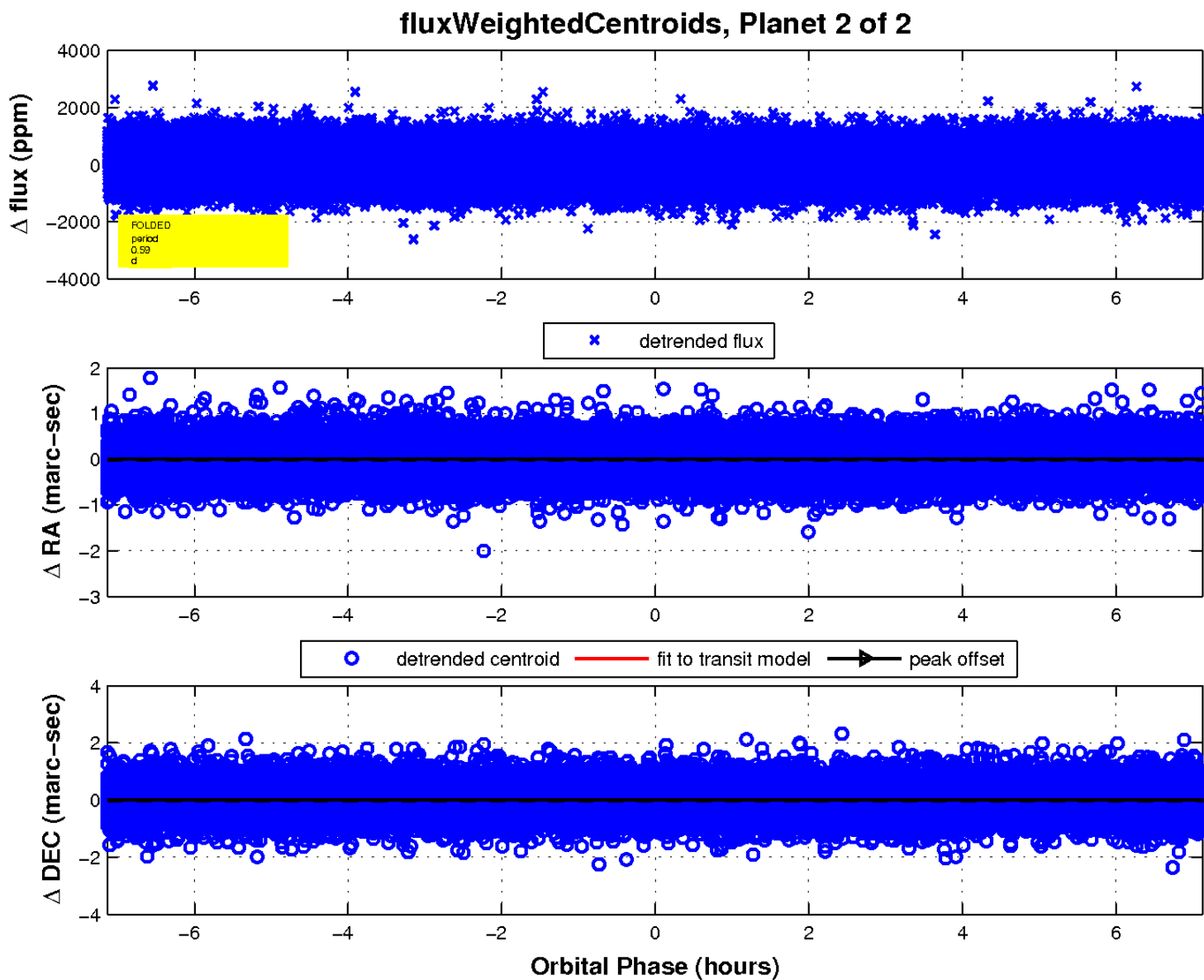
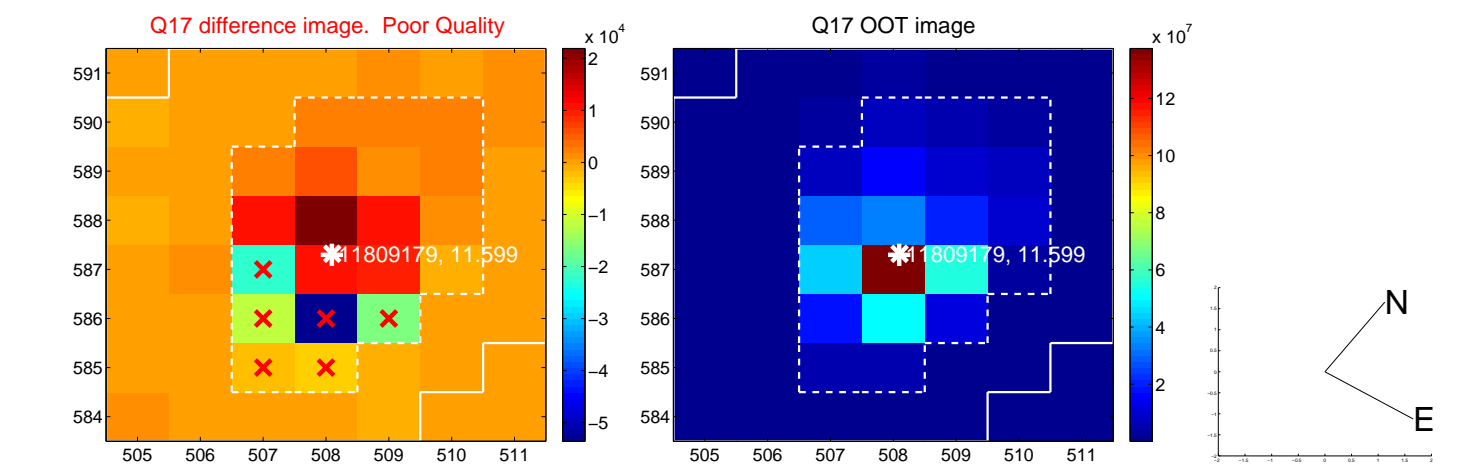
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

