

KIC 005308780

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})
005308780-01	OBS	No	3.250022	131.618000	121.0	12.716	9.8	9.6	1.22	6415	1.65	1038.37
005308780-02	OBS	No	2.166612	131.679876	122.0	10.134	8.8	9.2	1.22	6415	1.58	1783.04

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005308780-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005308780-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT

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

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

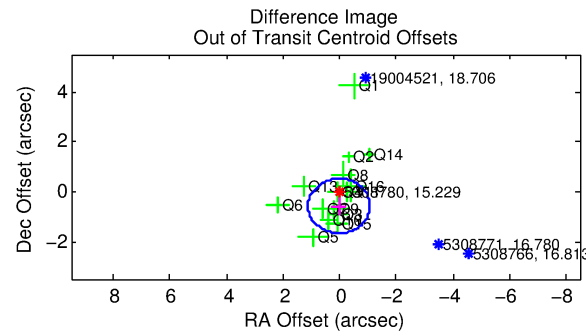
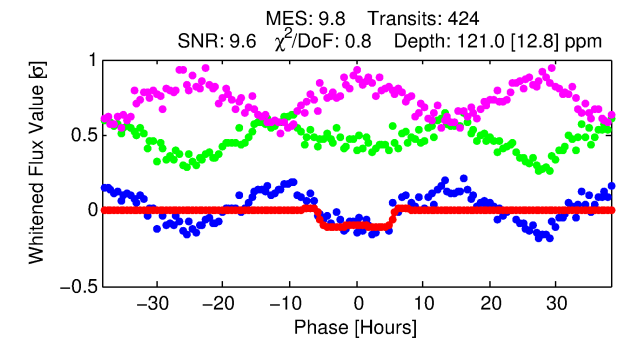
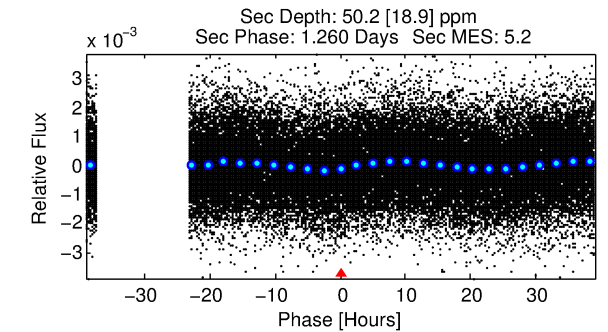
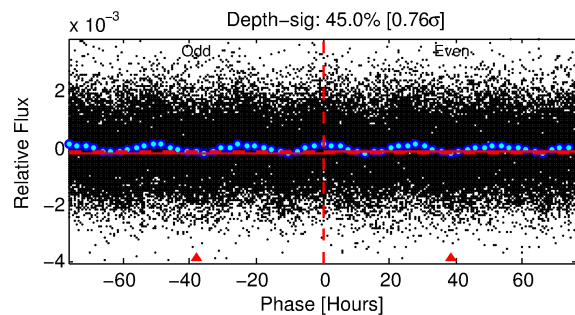
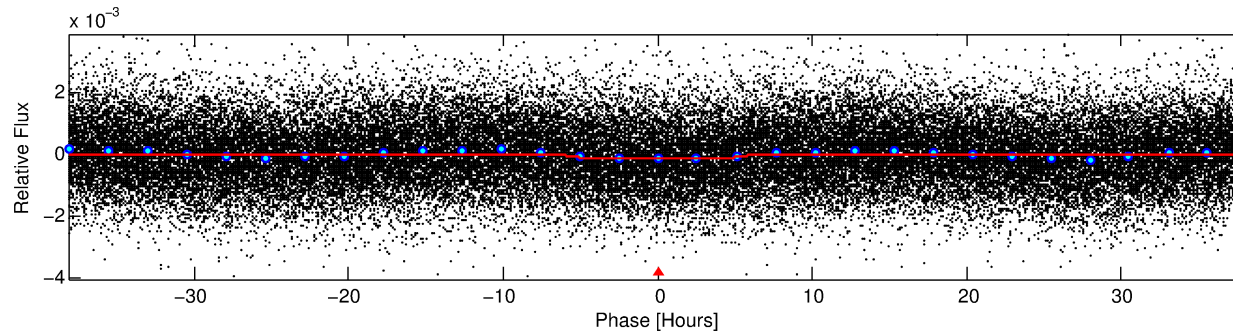
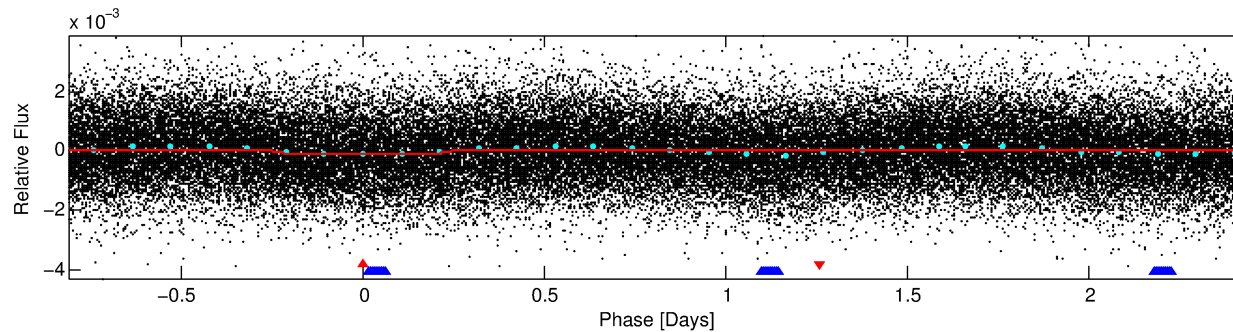
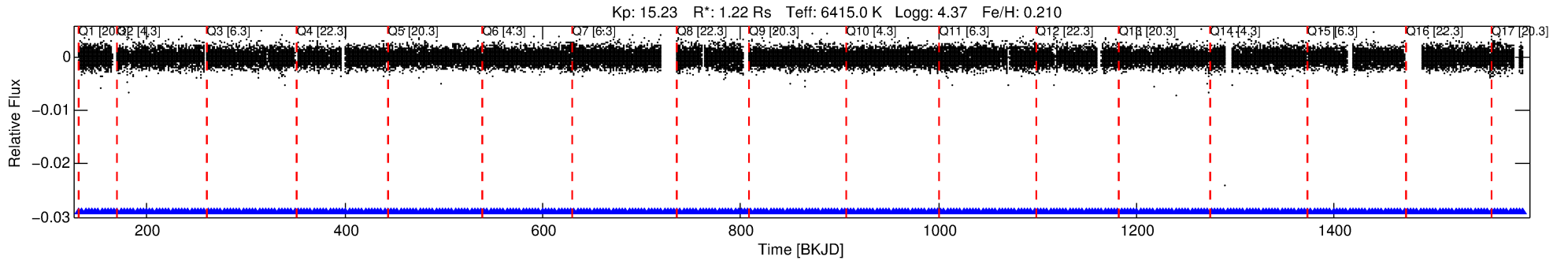
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005308780-01

No Significant Match Found

DV One-Page Summary

KIC: 5308780 Candidate: 1 of 2 Period: 3.250 d



DV Fit Results:

Period = 3.25002 [0.00008] d
Epoch = 131.6180 [0.0176] BKJD
Rp/R* = 0.0124 [0.0015]
a/R* = 1.21 [0.23]
b = 0.94 [0.07]
Seff = 1038.37 [412.98]
Teff = 1447 [144] K
Rp = 1.65 [0.54] Re
a = 0.0468 [0.0118] AU
Ag = 22.18 [12.76] [1.66σ]
Teffp = 4857 [579] K [5.72σ]

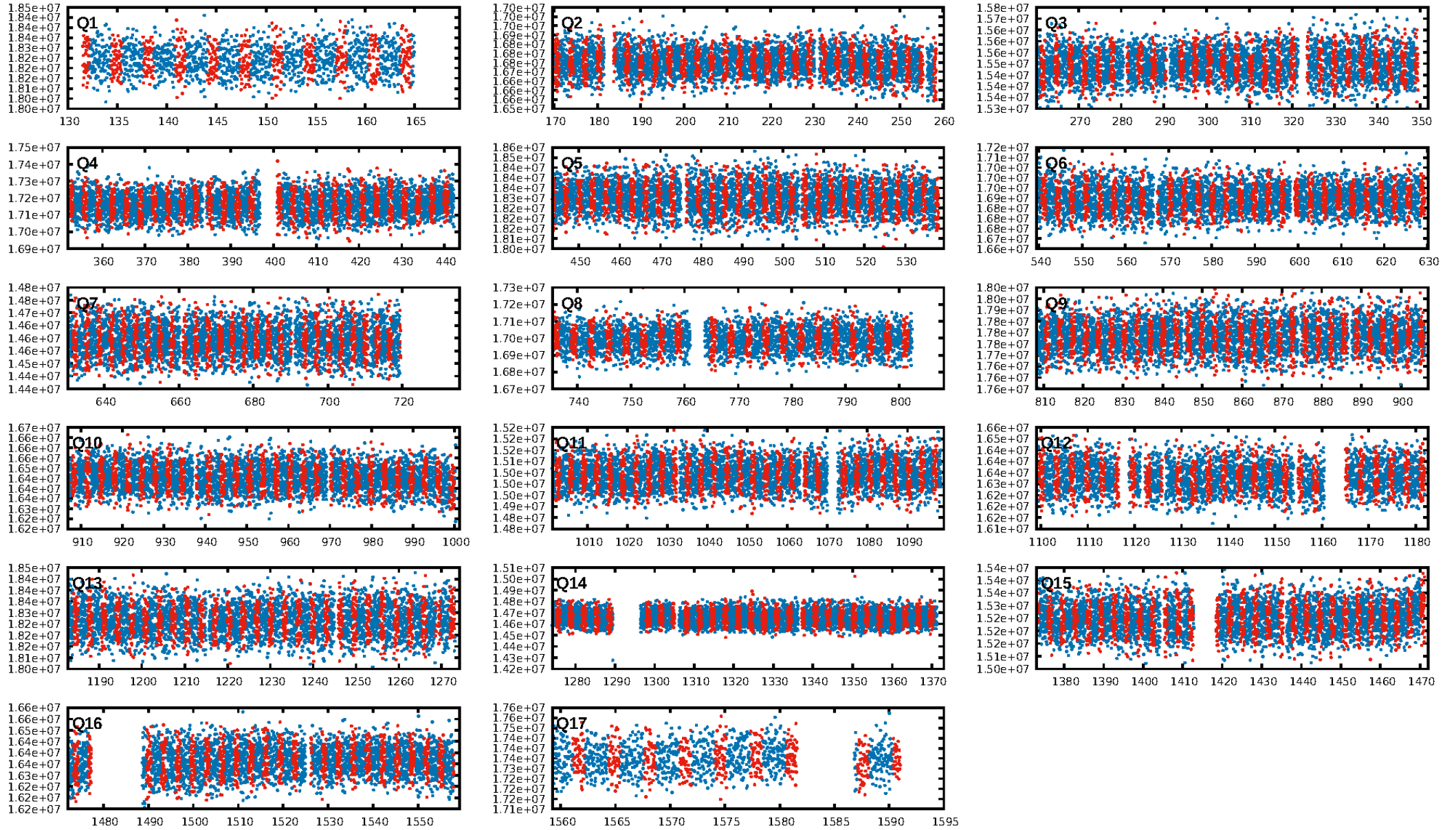
DV Diagnostic Results:

ShortPeriod-sig: 89.0% [1.60σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 9.23e-12
RollingBand-fgt: 1.00 [404/404]
GhostDiagnostic-chr: 1.935
Centroid-sig: 1.0%
Centroid-so: 1.852 arcsec [2.15σ]
OotOffset-rm: 0.579 arcsec [1.59σ]
KicOffset-rm: 0.394 arcsec [1.03σ]
OotOffset-st: 4/4/3/4 [15]
KicOffset-st: 4/4/3/4 [15]
DiffImageQuality-fgm: 1.00 [15/15]
DiffImageOverlap-fno: 0.00 [0/17]

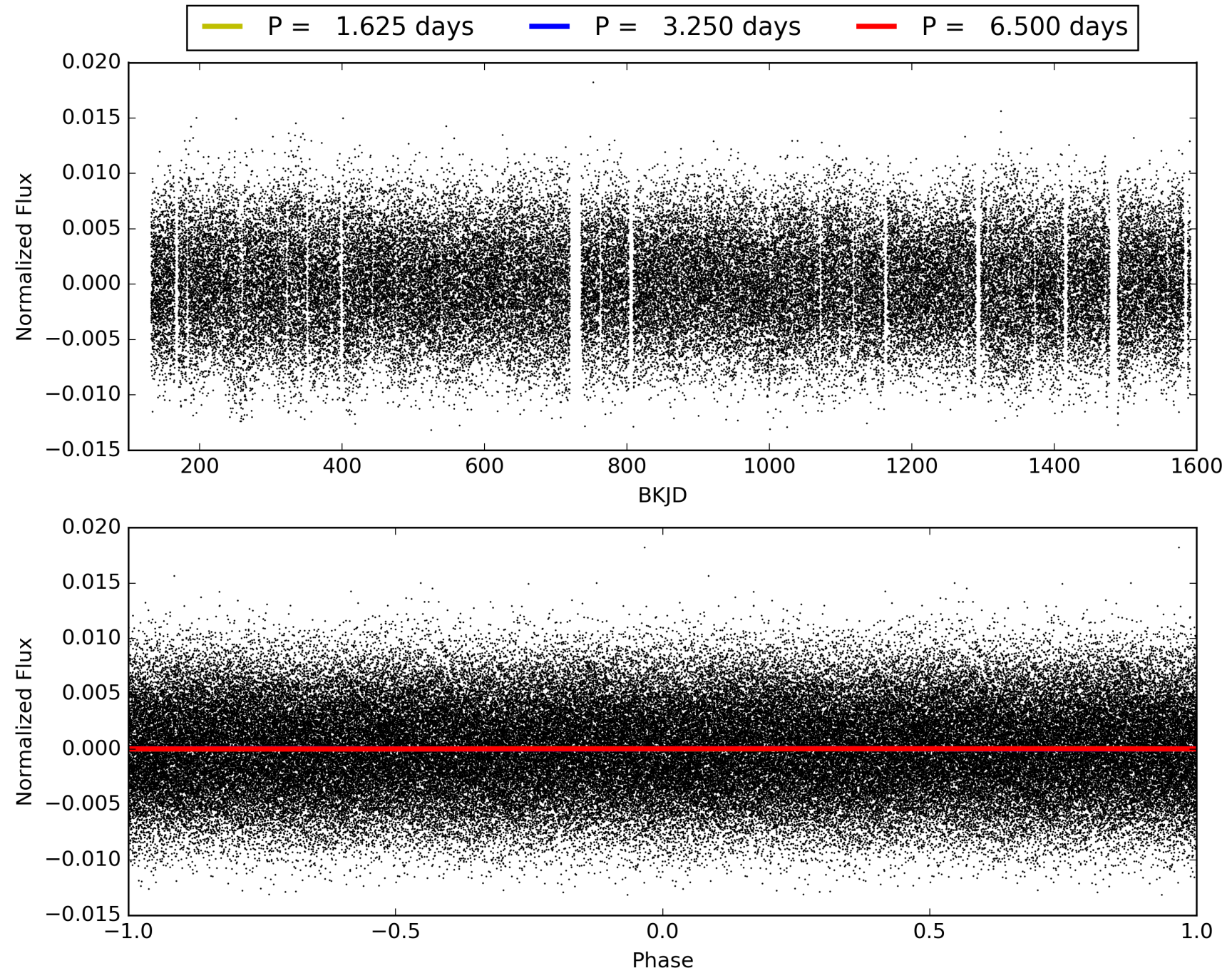
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 23:08:57 Z

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

TCE 005308780-01, PDC Light Curves

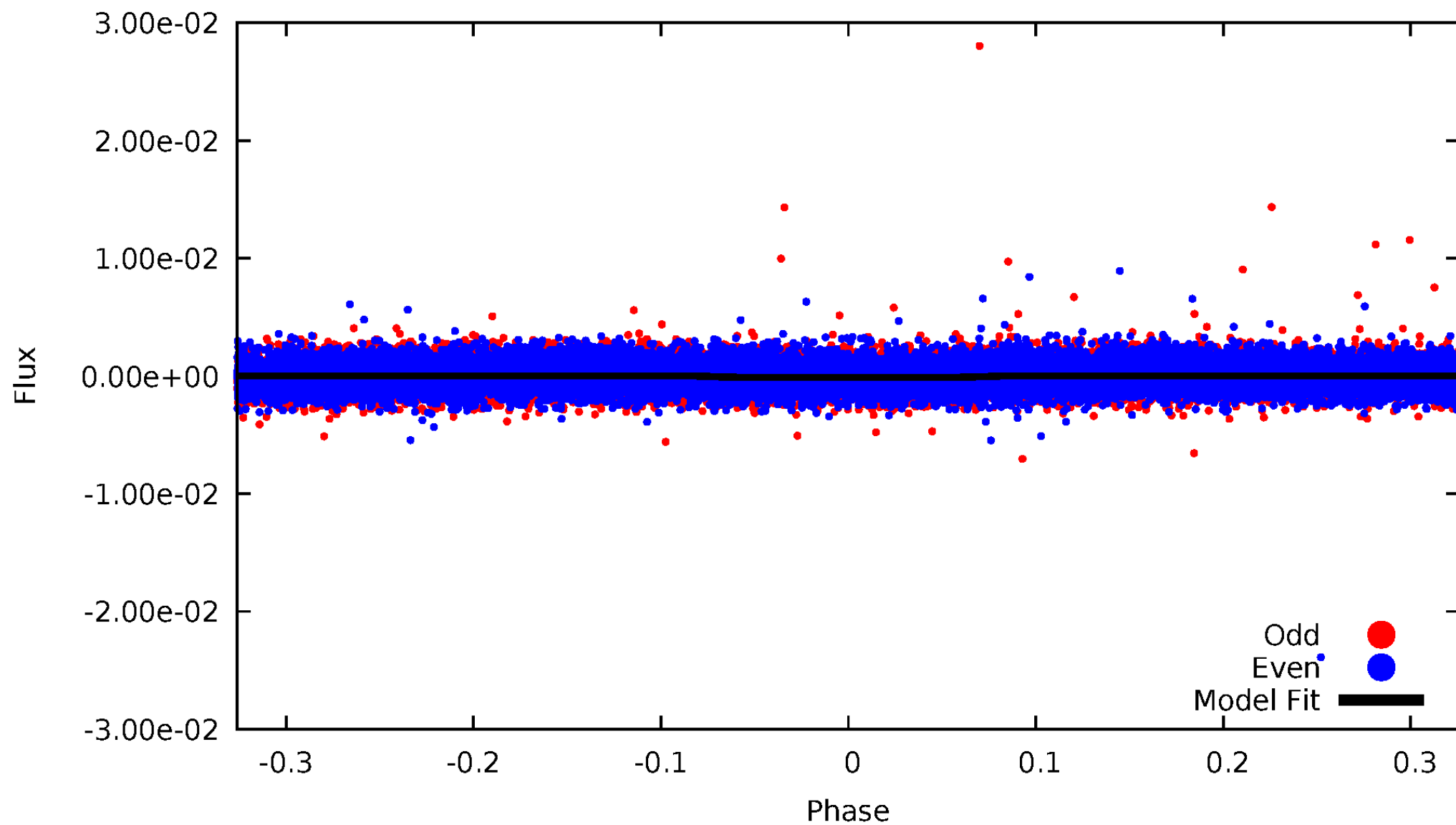


TCE 005308780-01



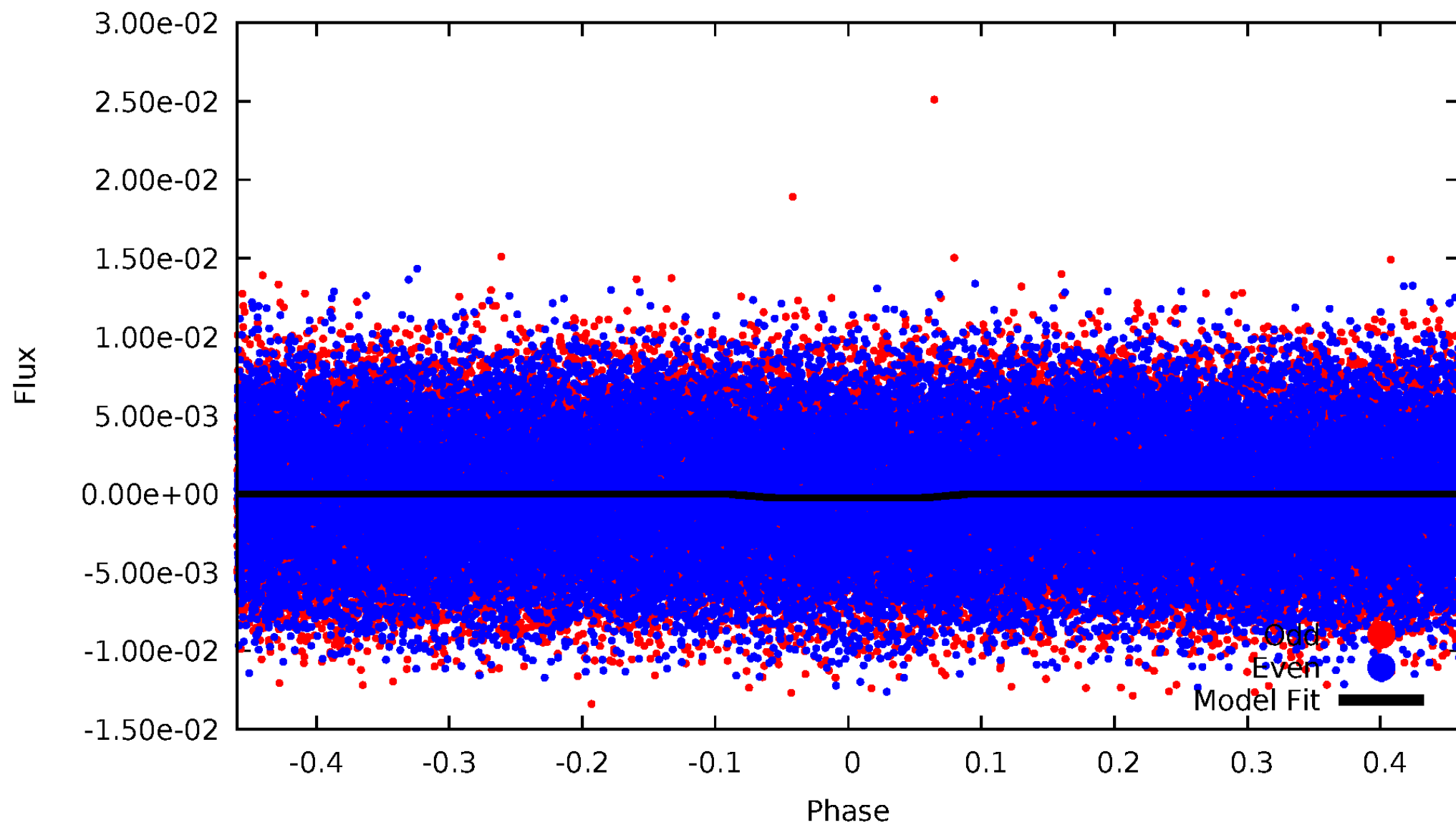
DV Odd/Even

TCE 005308780-01

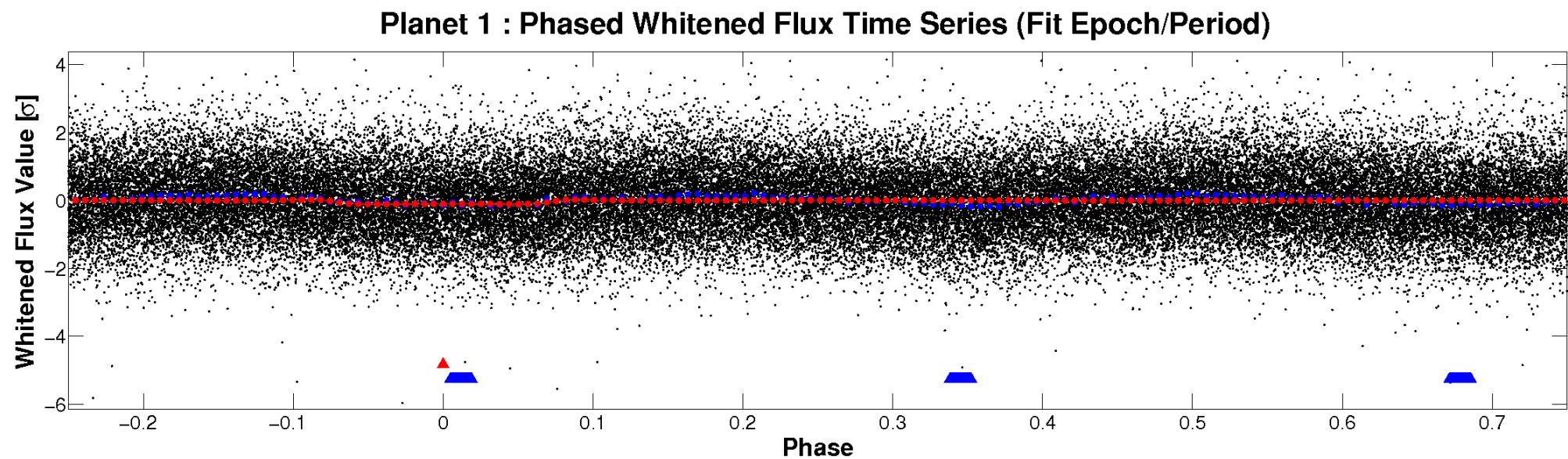
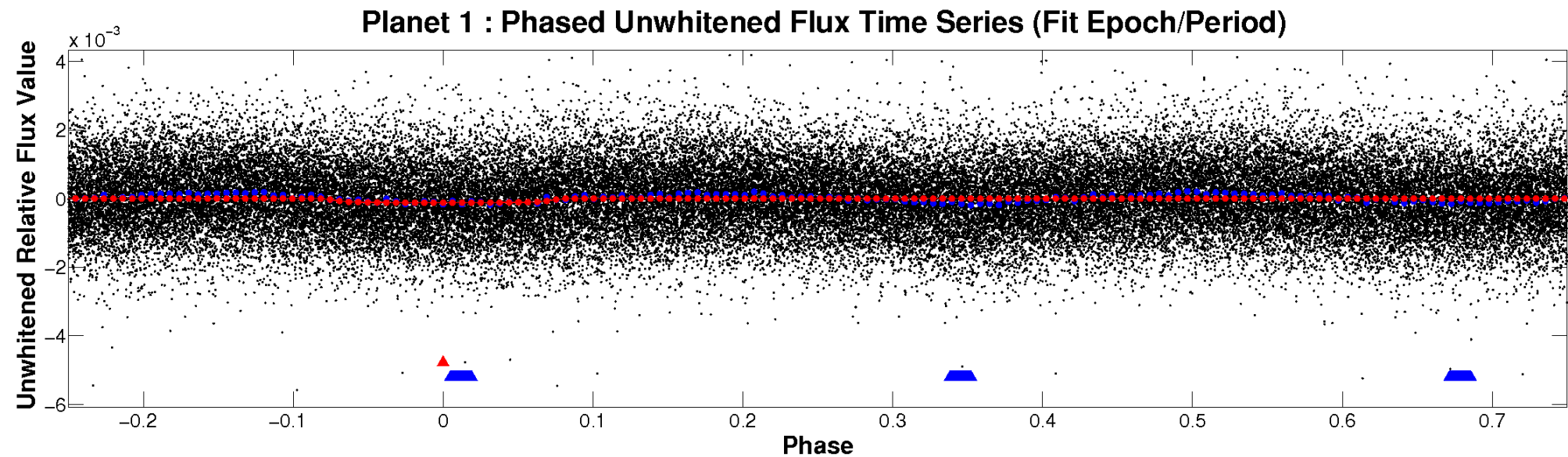


ALT Odd/Even

TCE 005308780-01

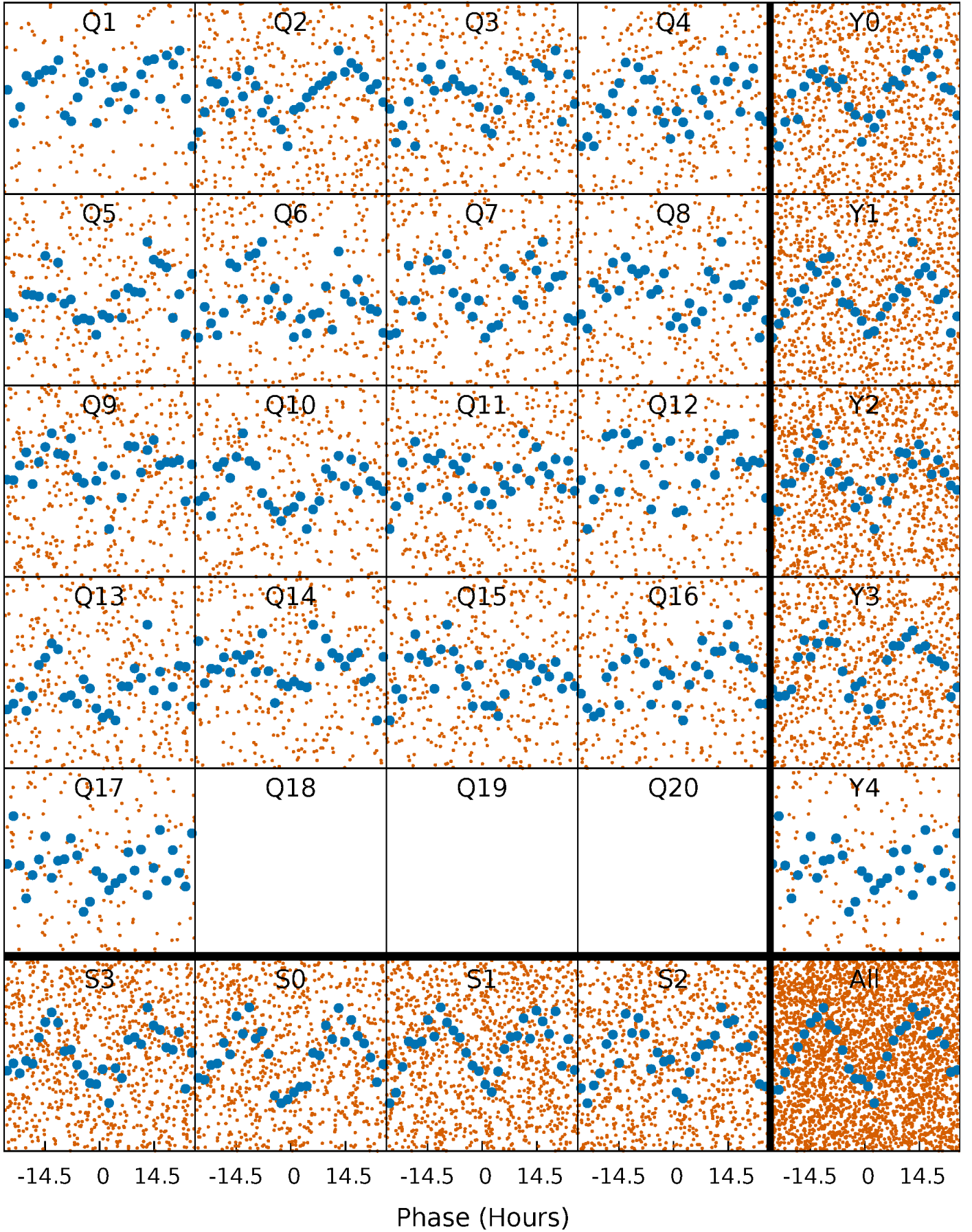


Non-Whitened Vs. Whitened Light Curve



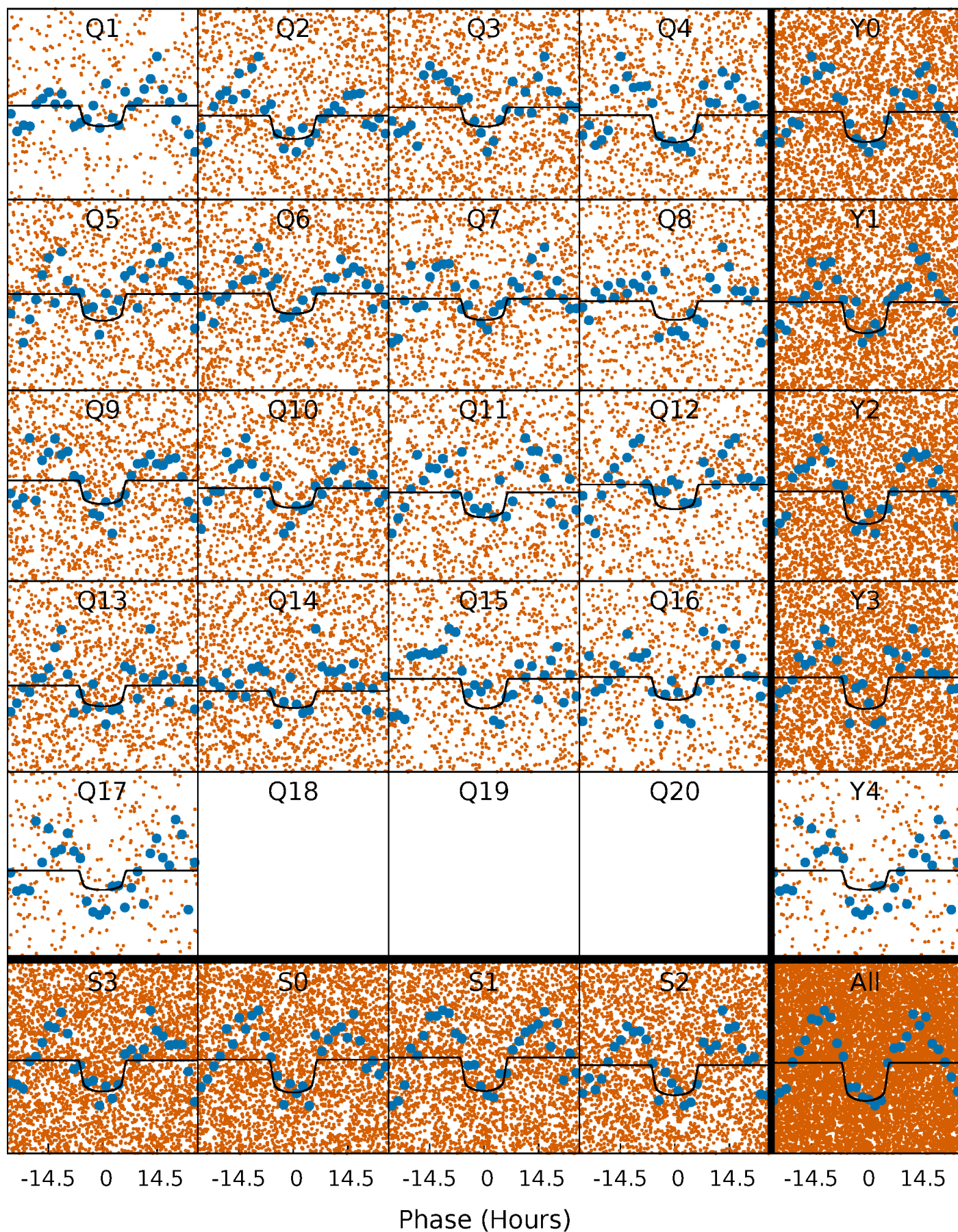
PDC Quarter-Phased Transit Curves

TCE 005308780-01 P= 3.250022 Days $T_0=131.618000$ (BKJD)



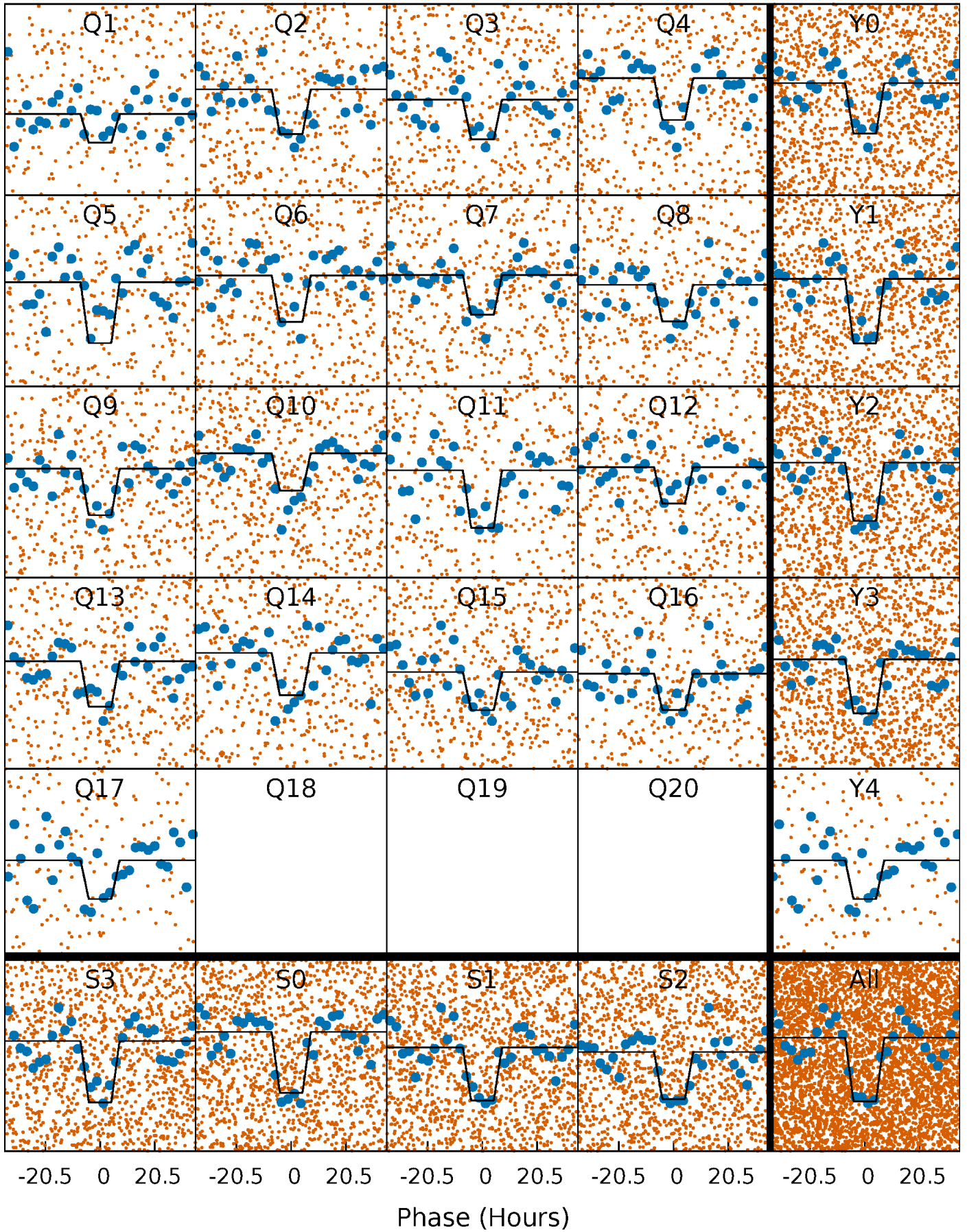
DV Quarter-Phased Transit Curves

TCE 005308780-01 P= 3.250022 Days $T_0=131.618000$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

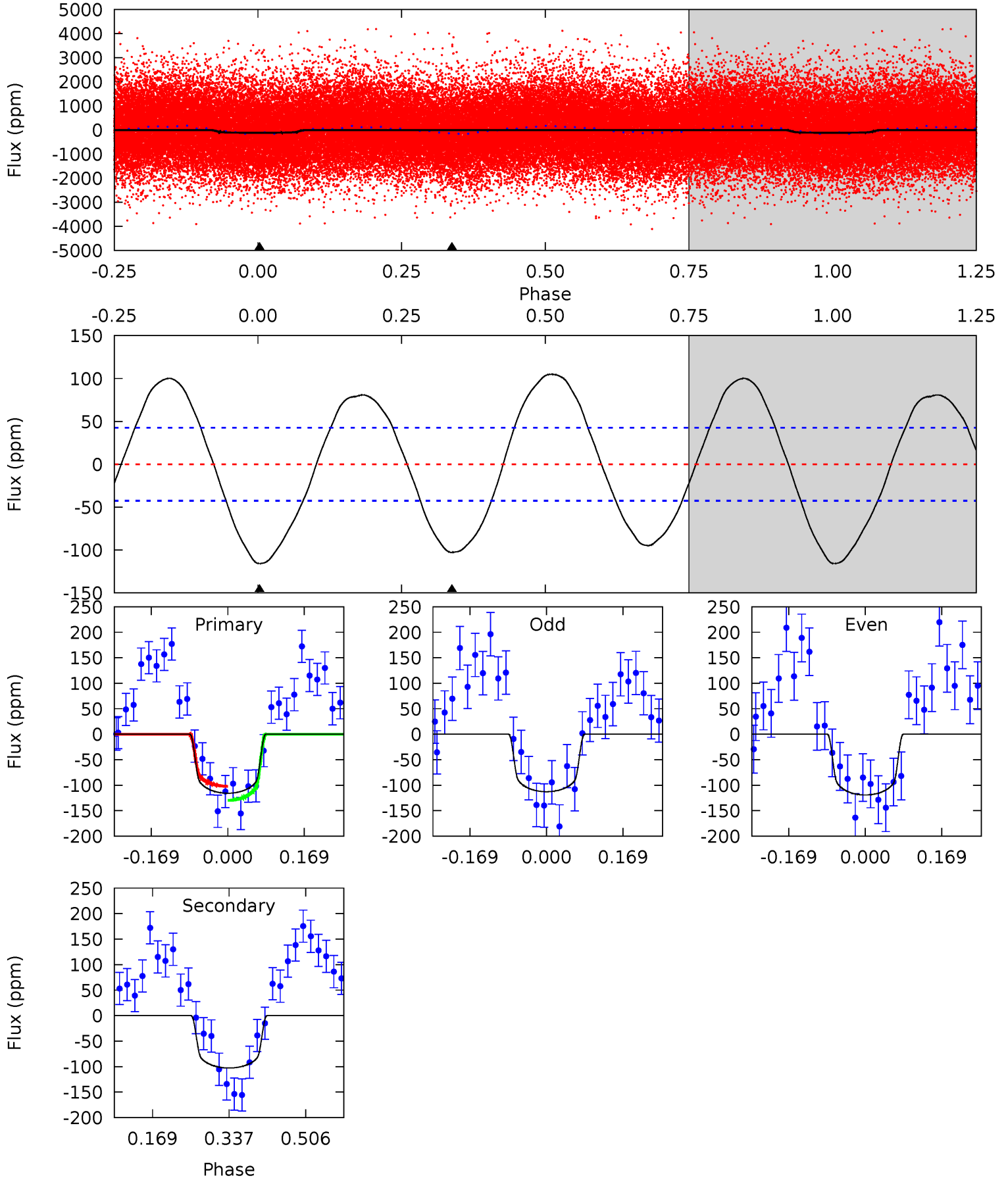
TCE 005308780-01 P= 3.249983 Days $T_0=131.650002$ (BKJD)



DV Model-Shift Uniqueness Test

005308780-01, P = 3.250022 Days, E = 128.367978 Days

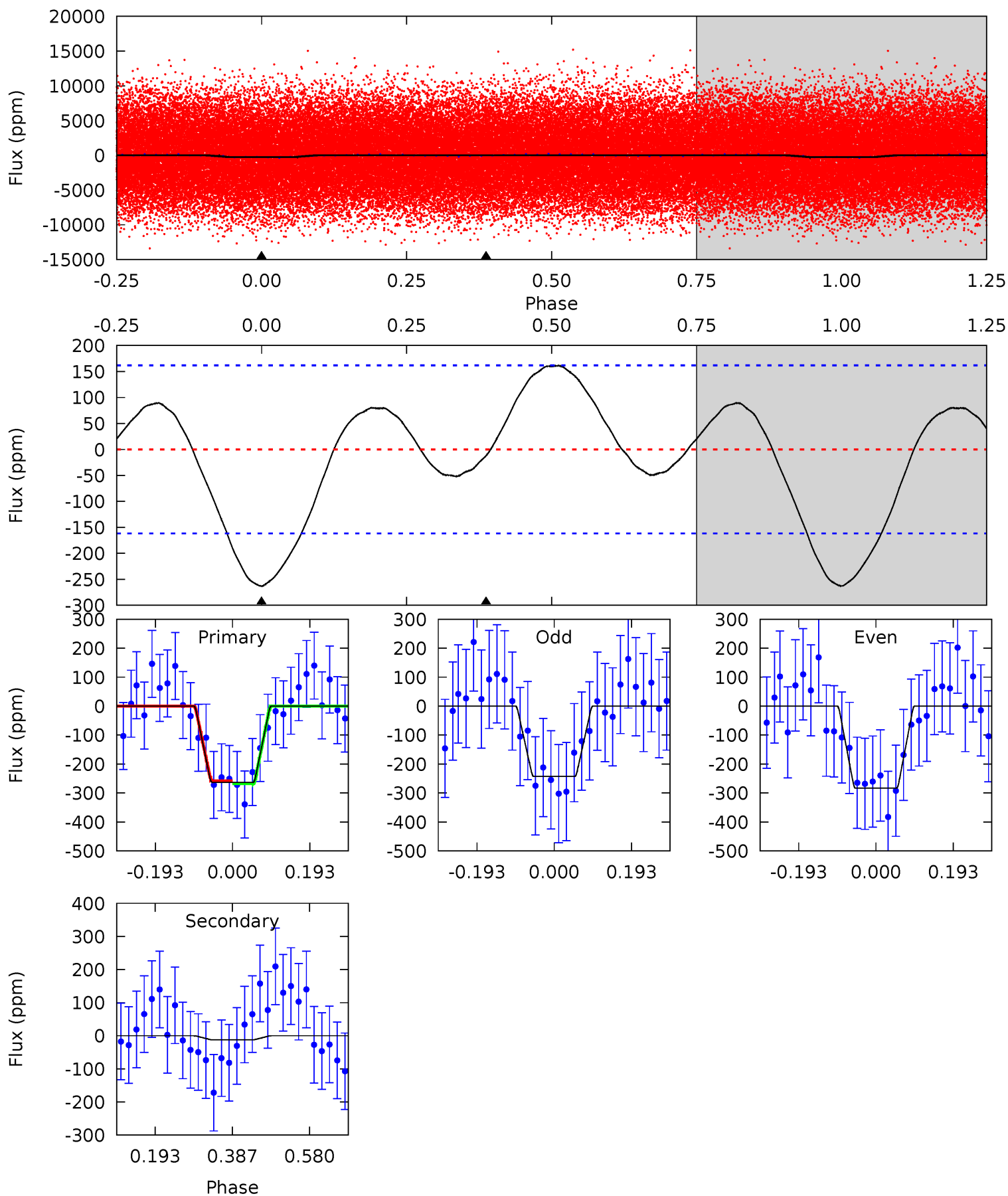
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.1	10.7	0	0	4.45	1.38	7.27	12.1	12.1	10.7	10.7	0.34	1.12	0.48	1.45



Alt Model-Shift Uniqueness Test

005308780-01, P = 3.249983 Days, E = 128.400019 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.20	0.33	0	0	4.42	1.30	1.17	7.20	7.20	0.33	0.33	0.56	0.95	0.38	0.14



Stellar Parameters For KIC 005308780

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6415^{+177}_{-265}	$4.374^{+0.065}_{-0.195}$	$0.210^{+0.150}_{-0.400}$	$1.224^{+0.373}_{-0.160}$	$1.293^{+0.145}_{-0.200}$	$0.994^{+0.347}_{-0.526}$
	+3%/-4%	+1%/-4%	+71%/-190%	+30%/-13%	+11%/-15%	+35%/-53%
Source	PHO1	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 005308780-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-103 ± 10	$1.71^{+0.32}_{-0.27}$	2054^{+149}_{-114}	5769^{+501}_{-374}	41^{+16}_{-11}
Alt.	-12 ± 37	$2.27^{+0.41}_{-0.29}$	2057^{+139}_{-109}	3460^{+969}_{-7327}	$2.913^{+8.821}_{-7.930}$

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

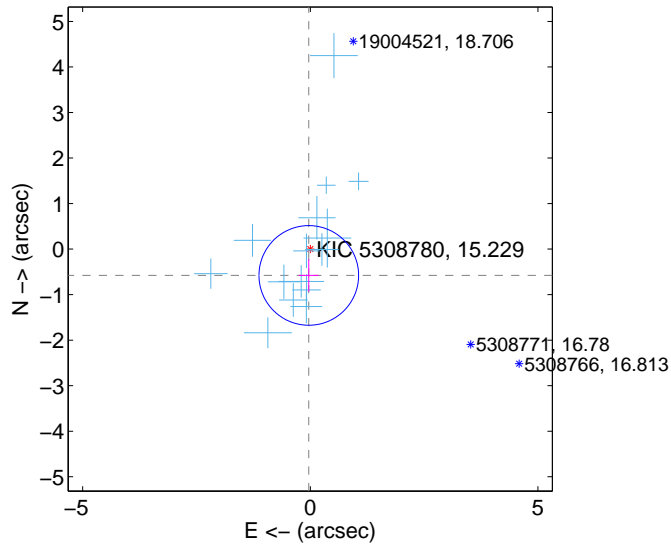
Supplemental centroid analysis for 005308780-01. Kepler magnitude: 15.23. Transit SNR 9.58

There are 15 quarters with good PRF difference image offsets

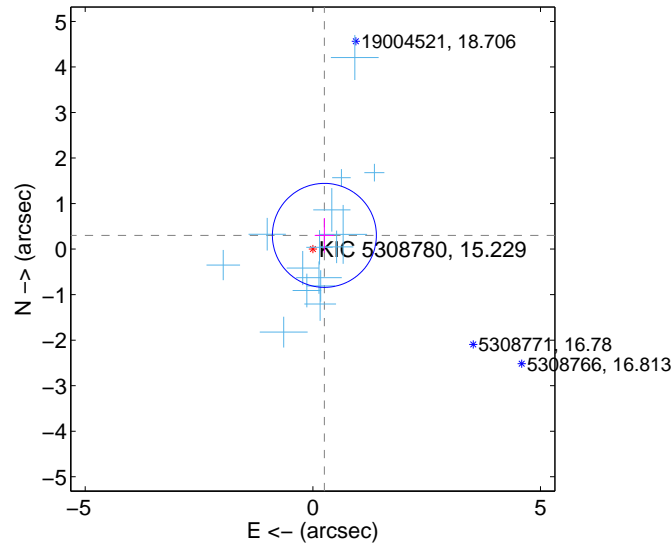
The direct PRF centroid is offset from the target star catalog position by about 0.30 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.579 ± 0.365	1.59	0.033 ± 0.219	-0.578 ± 0.359
PRF-fit source offset from KIC position	0.394 ± 0.381	1.03	-0.253 ± 0.212	0.301 ± 0.381
photometric centroid source offset	1.85 ± 0.86	2.15	1.85 ± 0.86	-0.01 ± 0.85

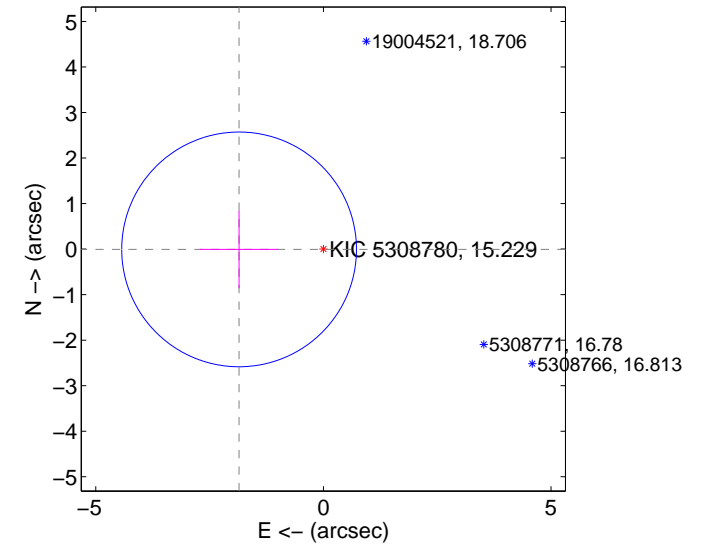
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

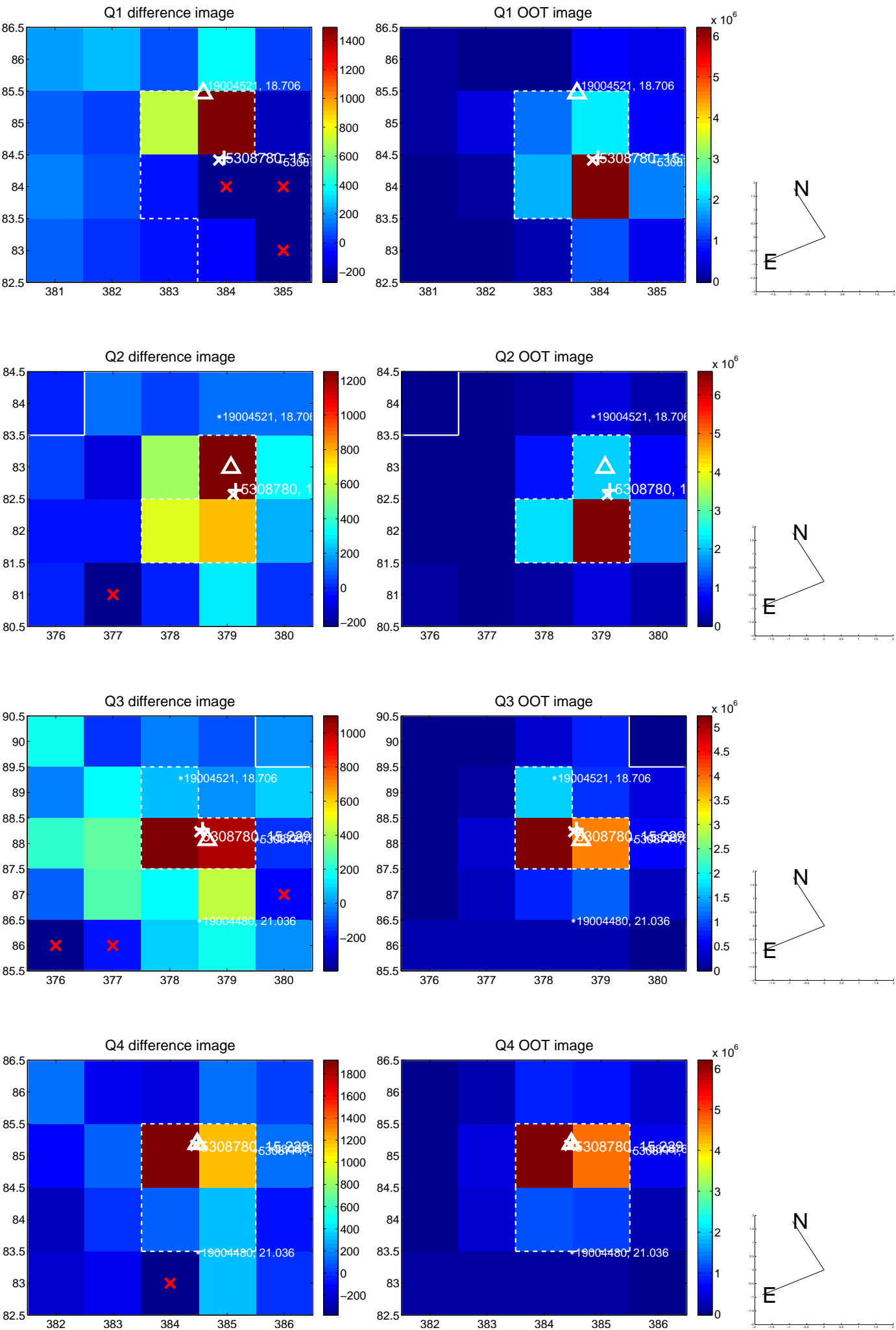


offset from photometric centroids

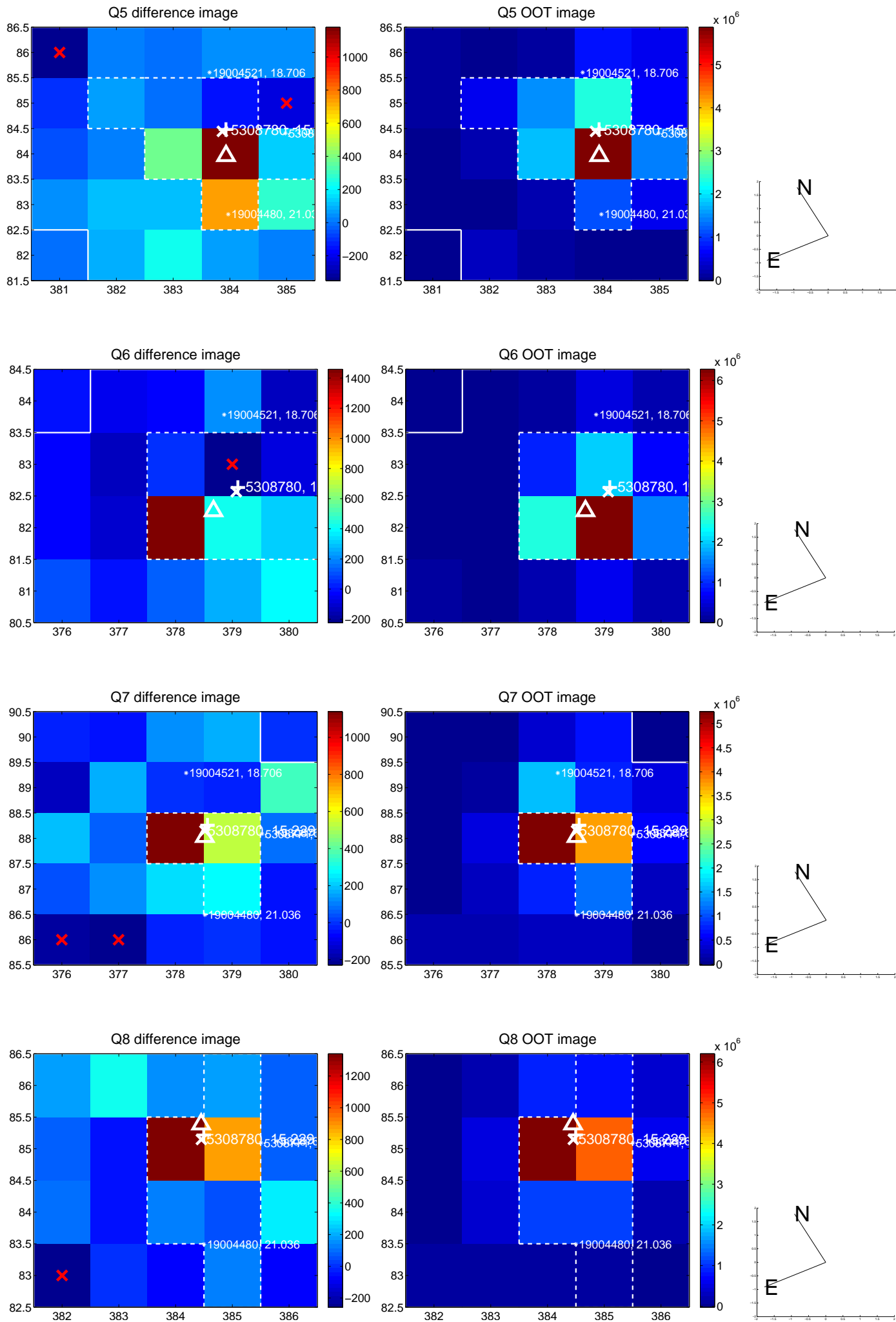


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

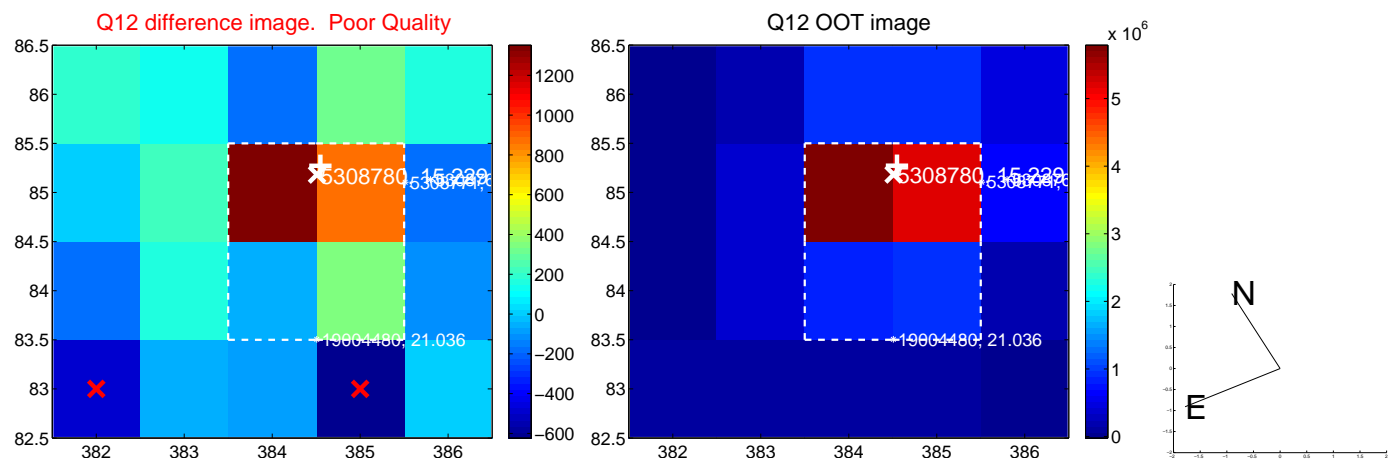
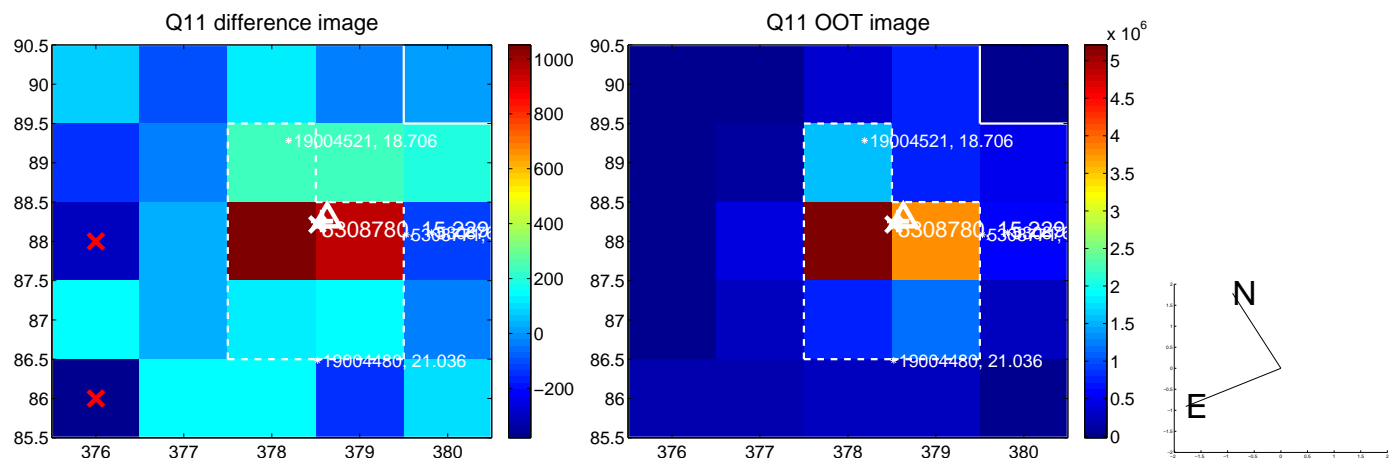
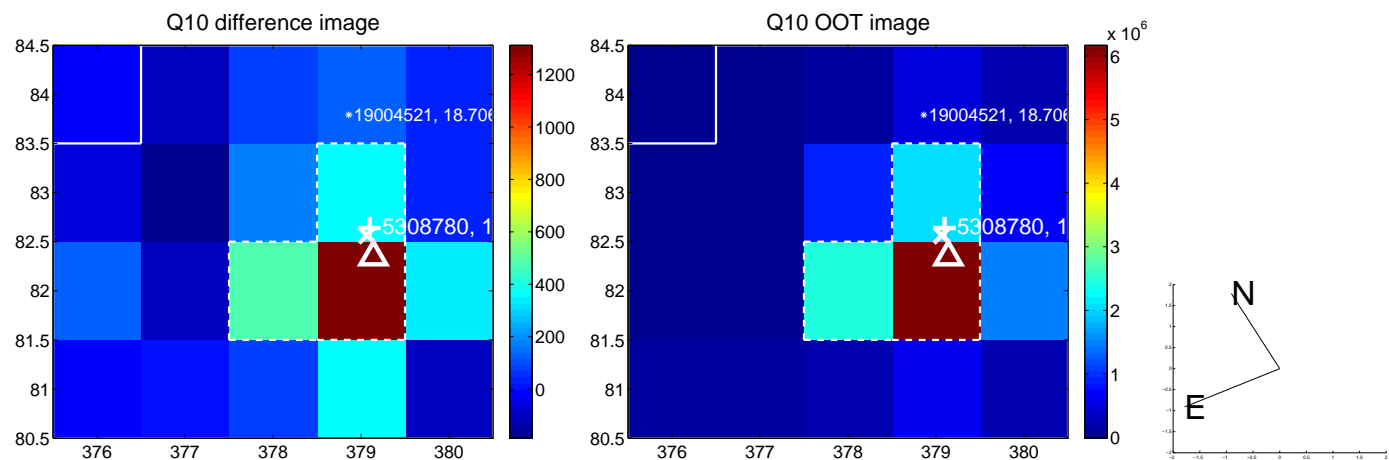
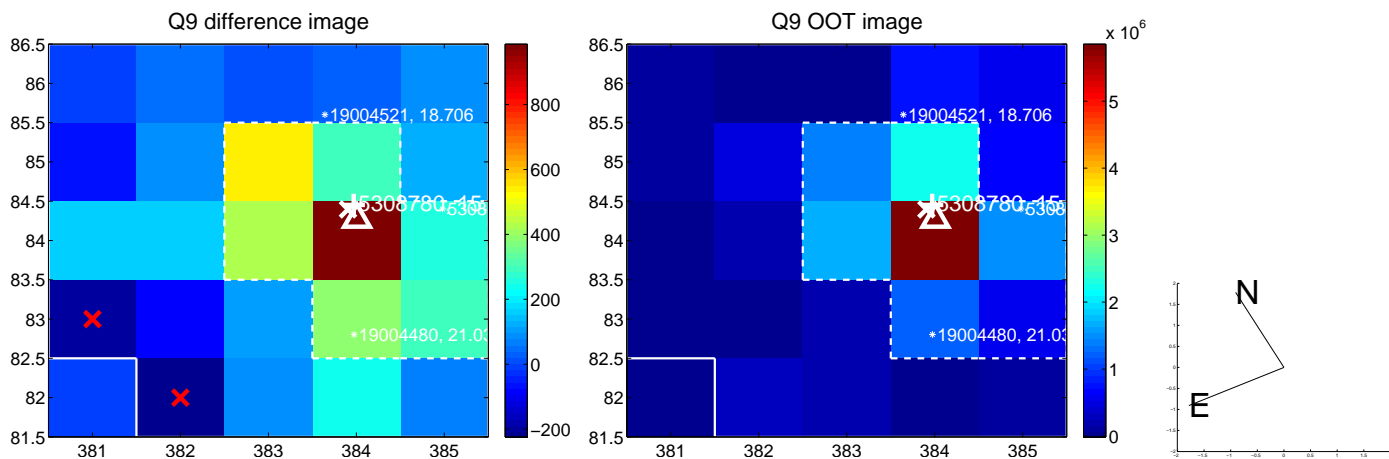
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



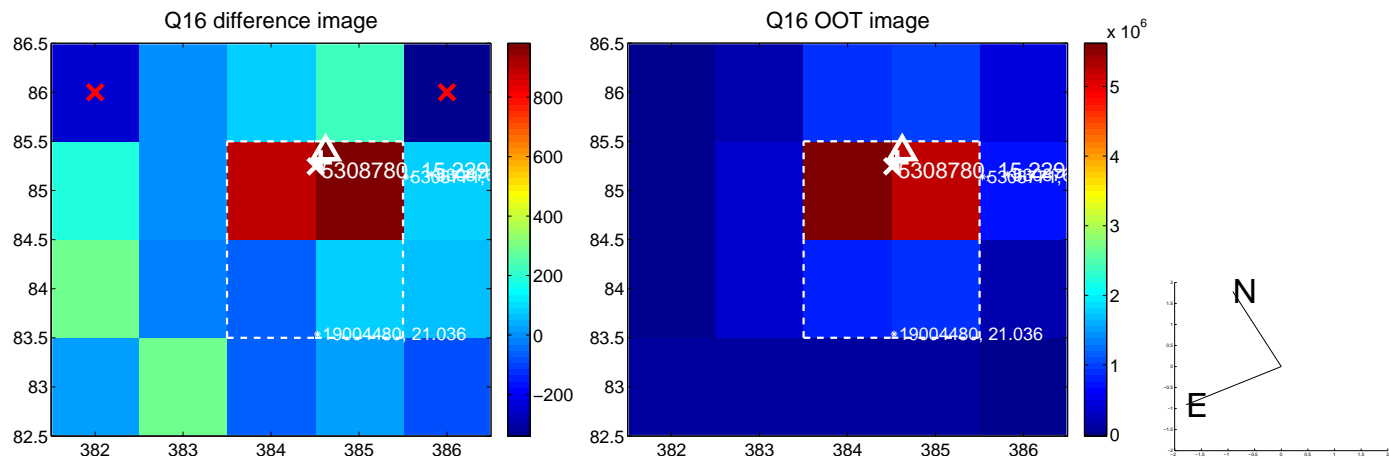
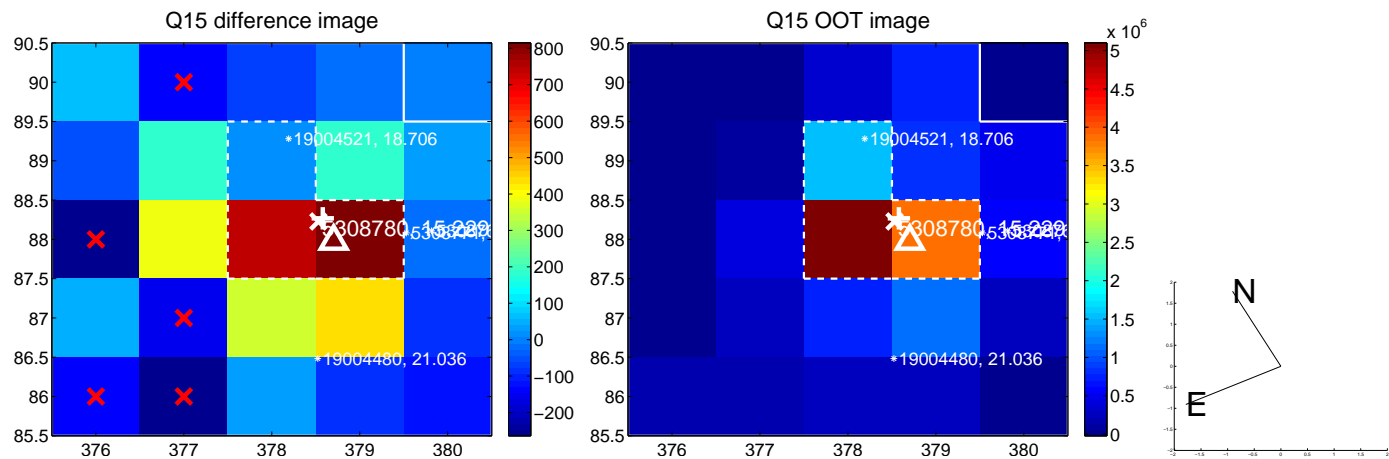
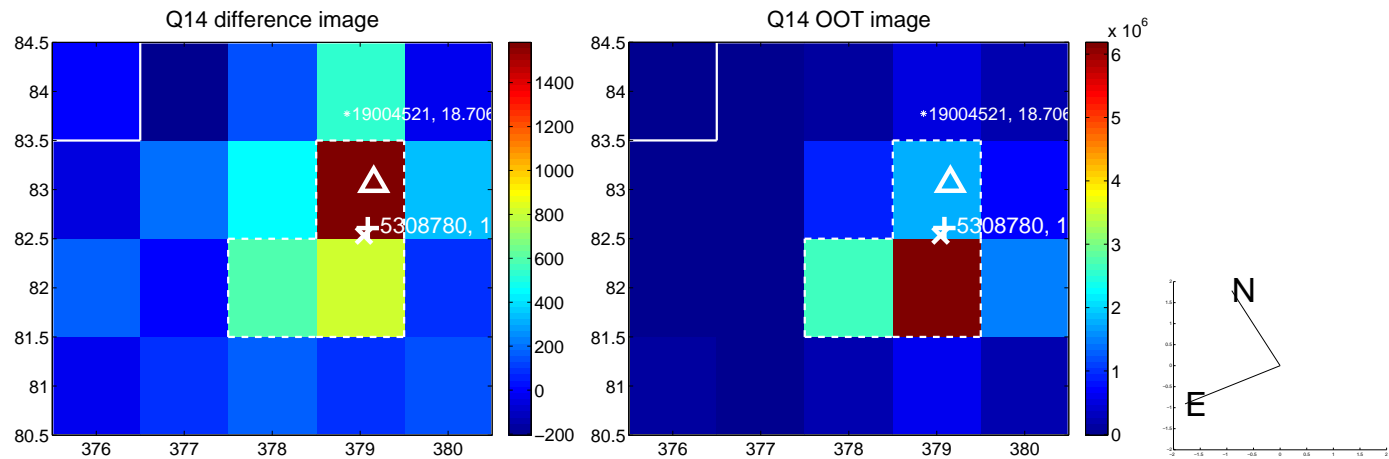
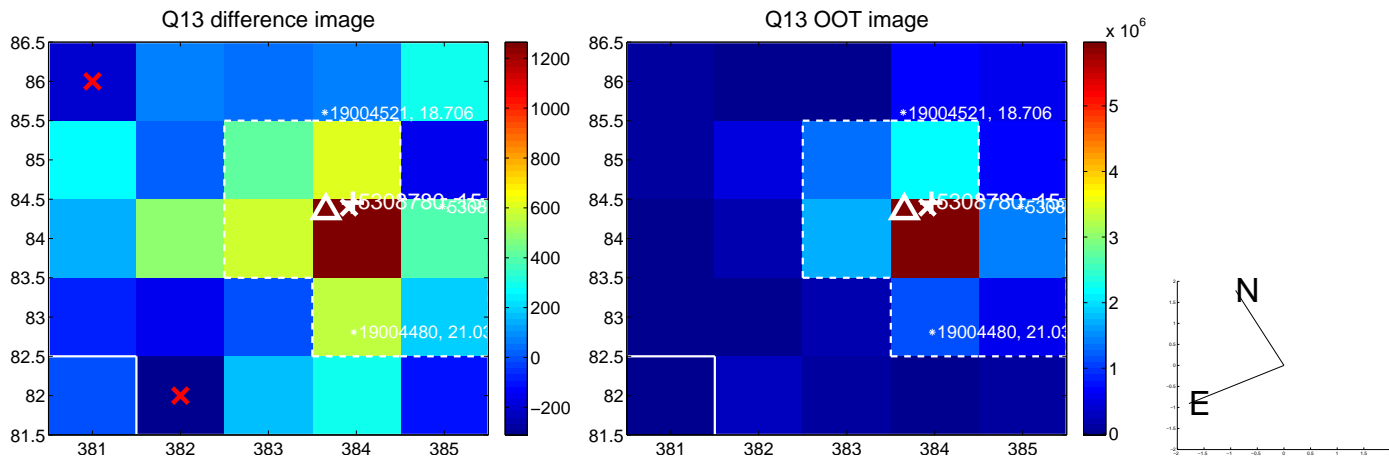
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



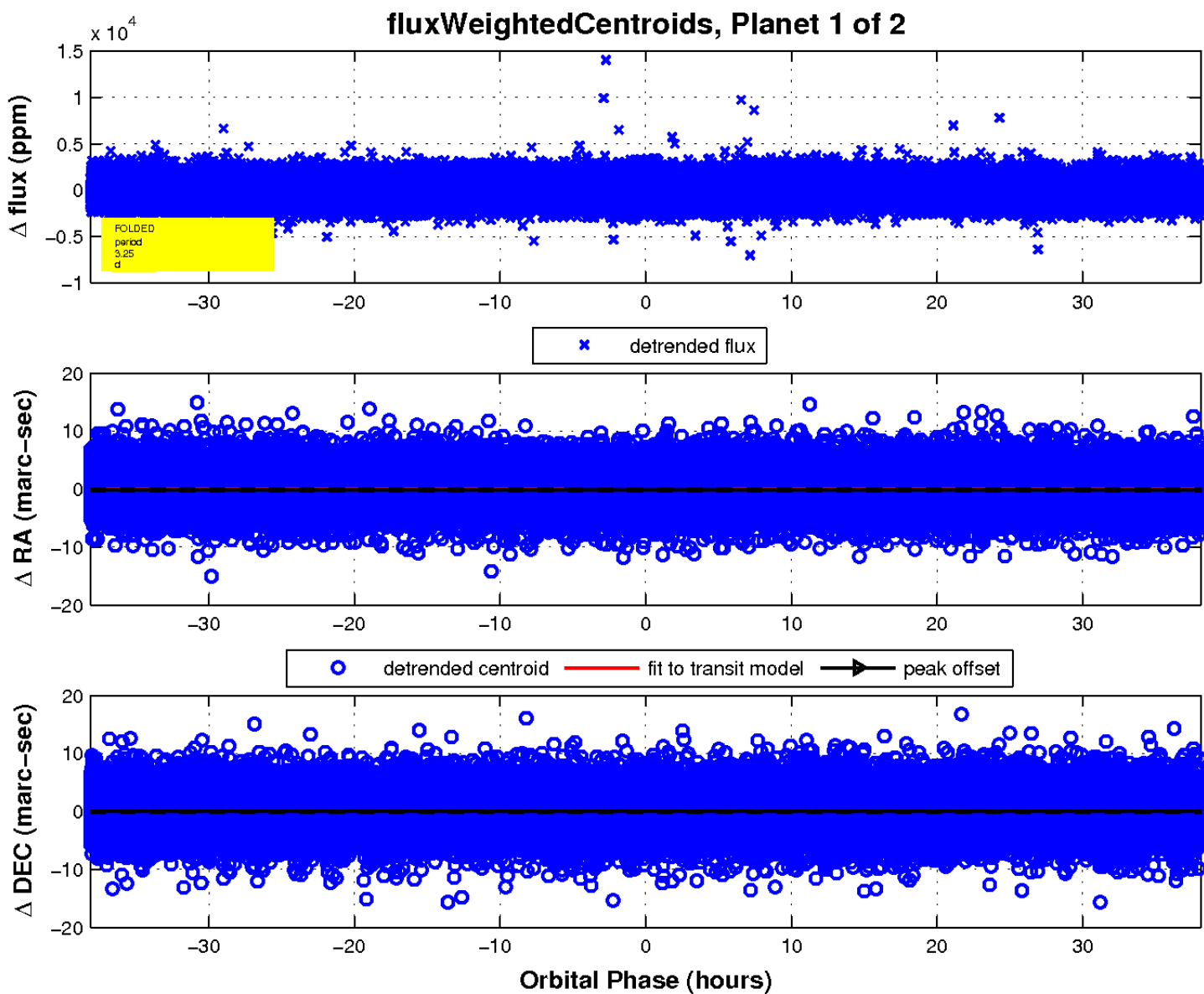
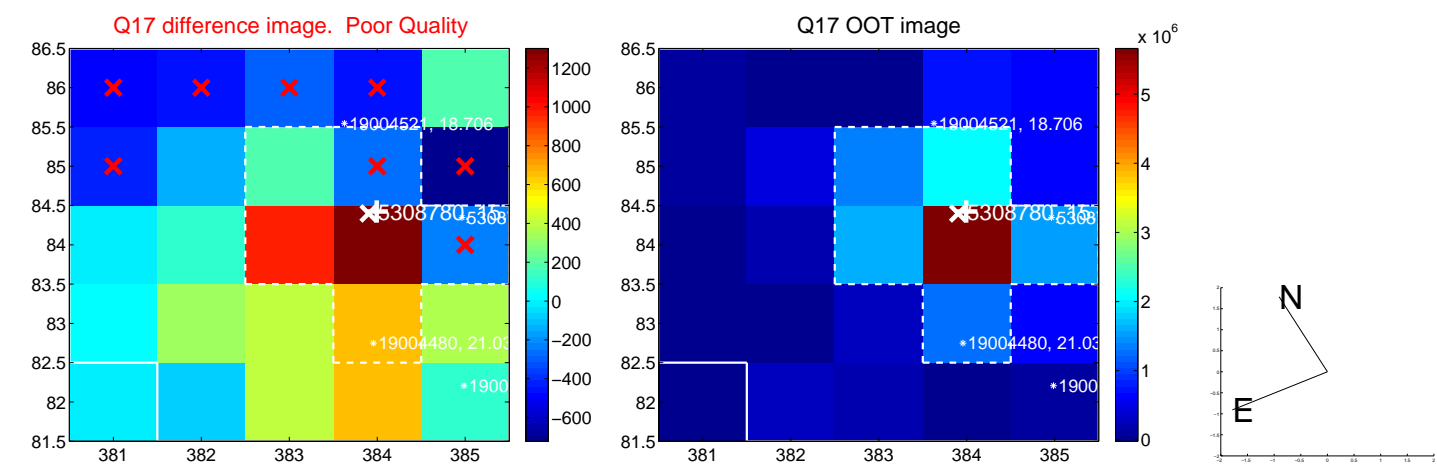
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

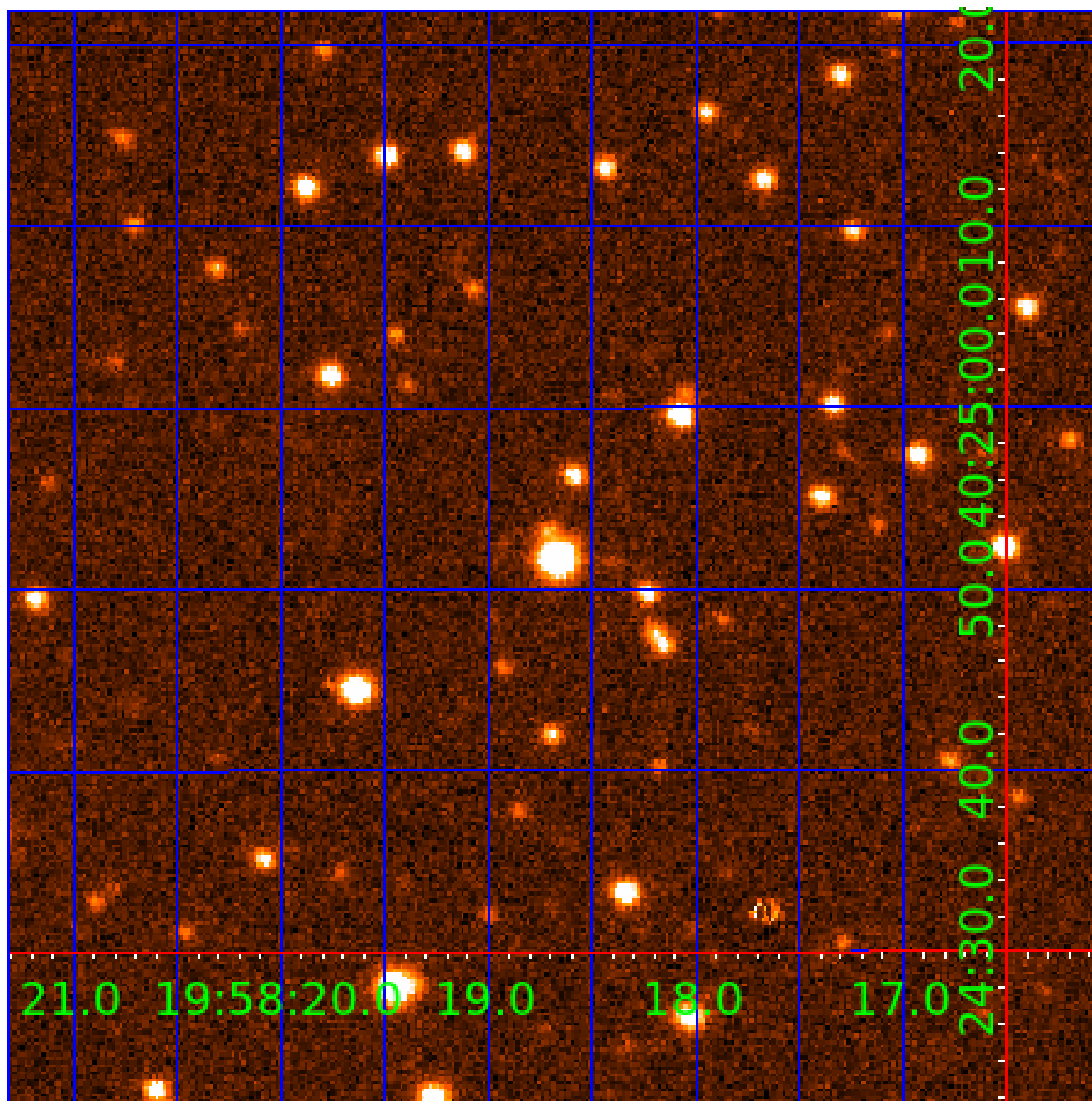


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005308780

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})
005308780-01	OBS	No	3.250022	131.618000	121.0	12.716	9.8	9.6	1.22	6415	1.65	1038.37
005308780-02	OBS	No	2.166612	131.679876	122.0	10.134	8.8	9.2	1.22	6415	1.58	1783.04

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005308780-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005308780-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT

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

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

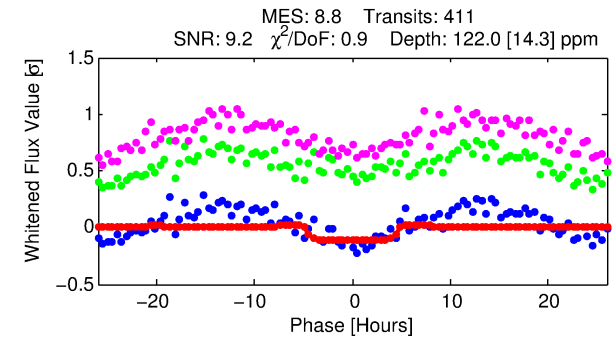
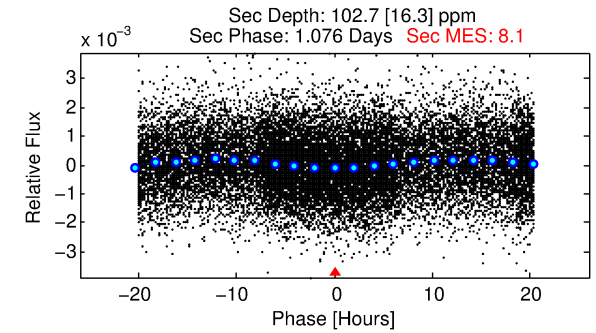
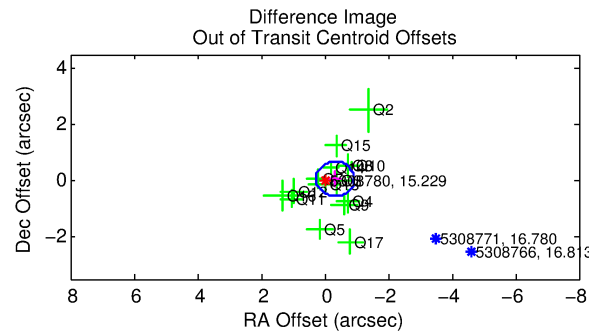
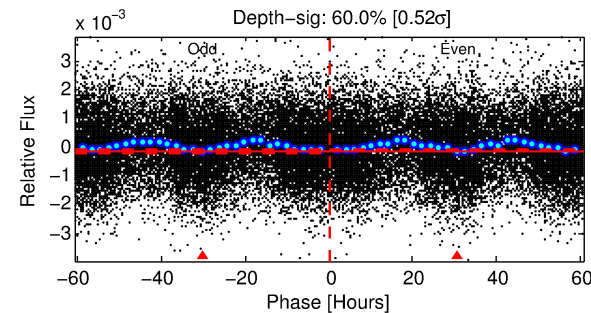
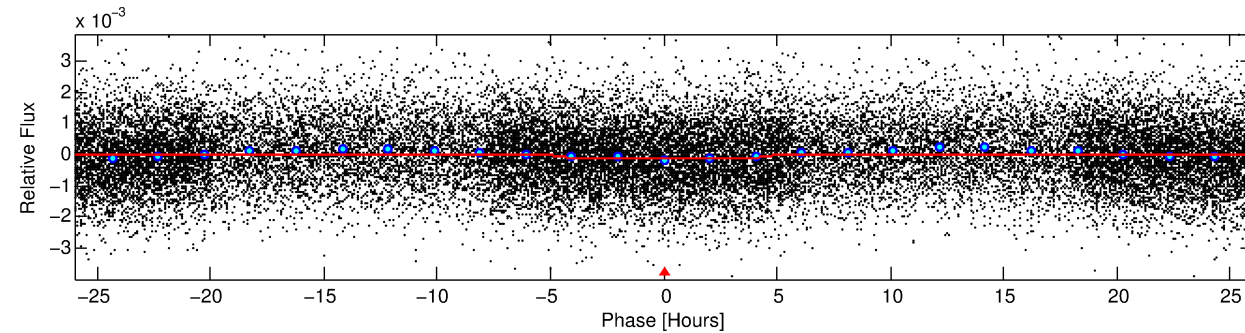
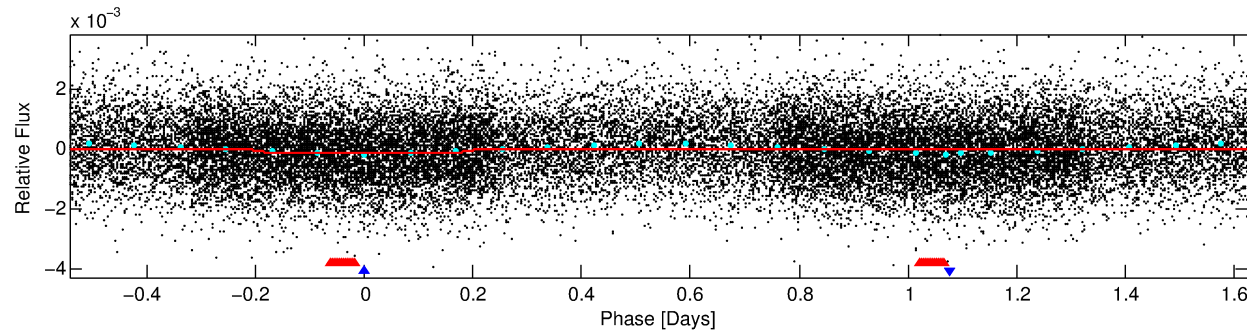
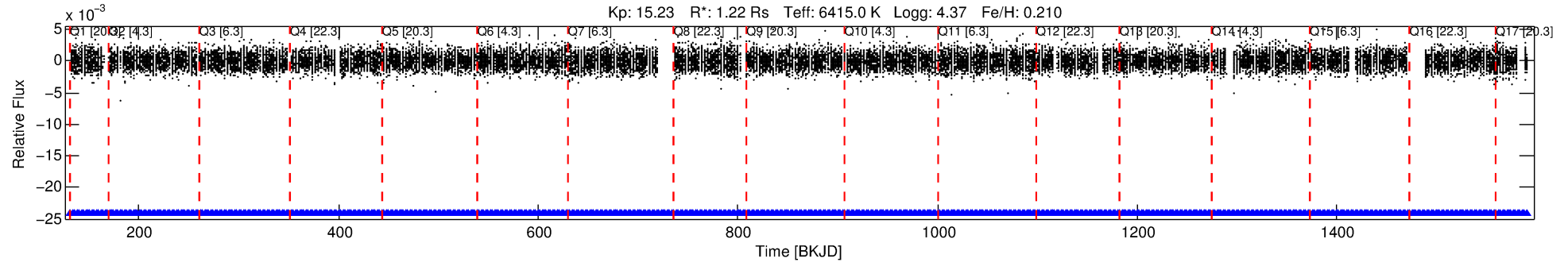
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005308780-02

No Significant Match Found

DV One-Page Summary

KIC: 5308780 Candidate: 2 of 2 Period: 2.167 d



DV Fit Results:

Period = 2.16661 [0.00004] d
Epoch = 131.6799 [0.0119] BKJD
Rp/R* = 0.0119 [0.0028]
a/R* = 1.21 [0.47]
b = 0.90 [0.27]
Seff = 1783.04 [709.14]
Teq = 1657 [165] K
Rp = 1.58 [0.61] Re
a = 0.0357 [0.0090] AU
Ag = 28.69 [17.53] [1.58 σ]
Teff = 5929 [770] K [5.43 σ]

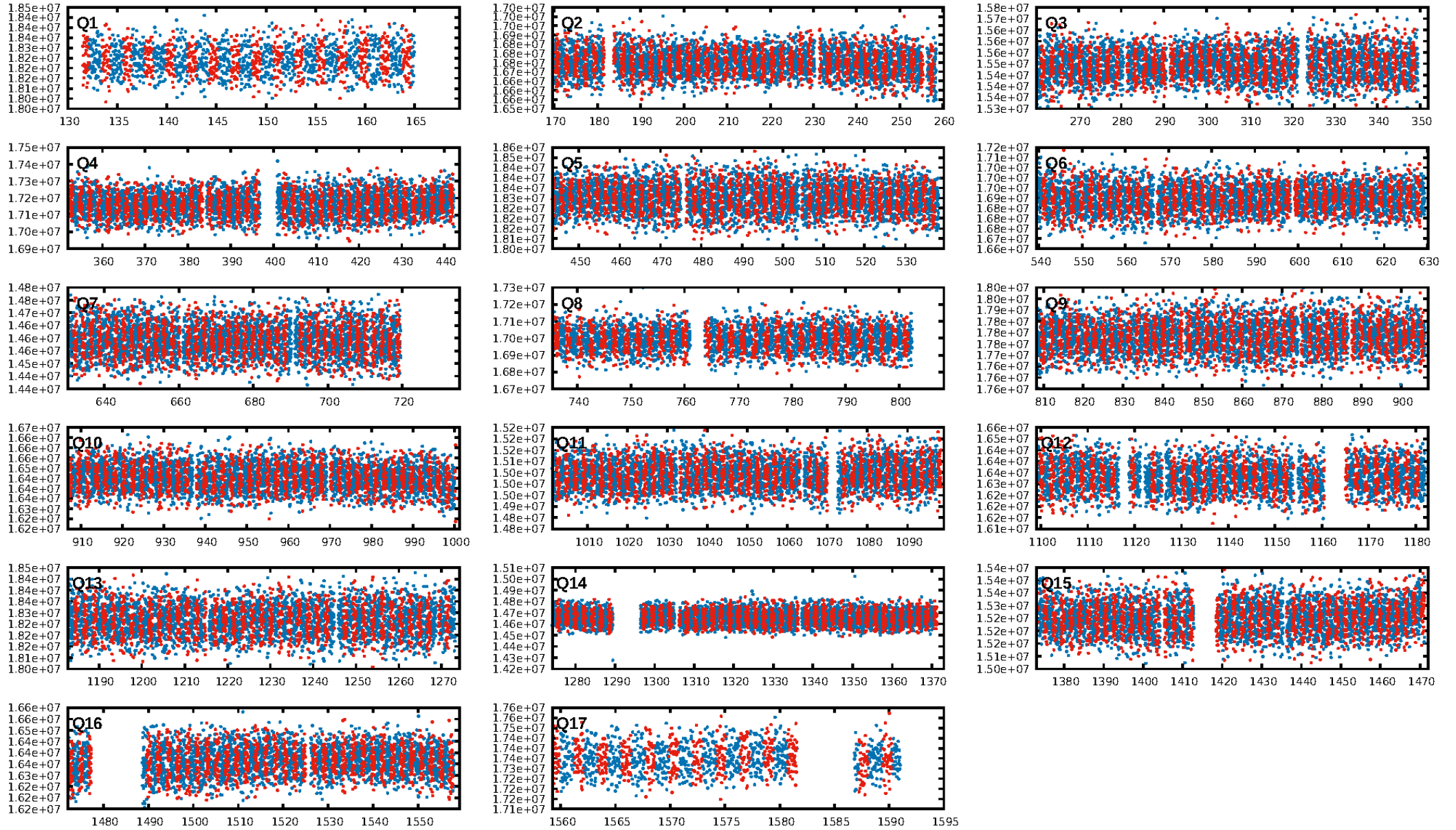
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 89.0% [1.60 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.09e-10
RollingBand-fgt: 1.00 [393/393]
GhostDiagnostic-chr: 1.714
Centroid-sig: 90.0%
Centroid-so: 0.673 arcsec [0.90 σ]
OotOffset-rm: 0.326 arcsec [1.60 σ]
KicOffset-rm: 0.639 arcsec [2.74 σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 1.00 [17/17]

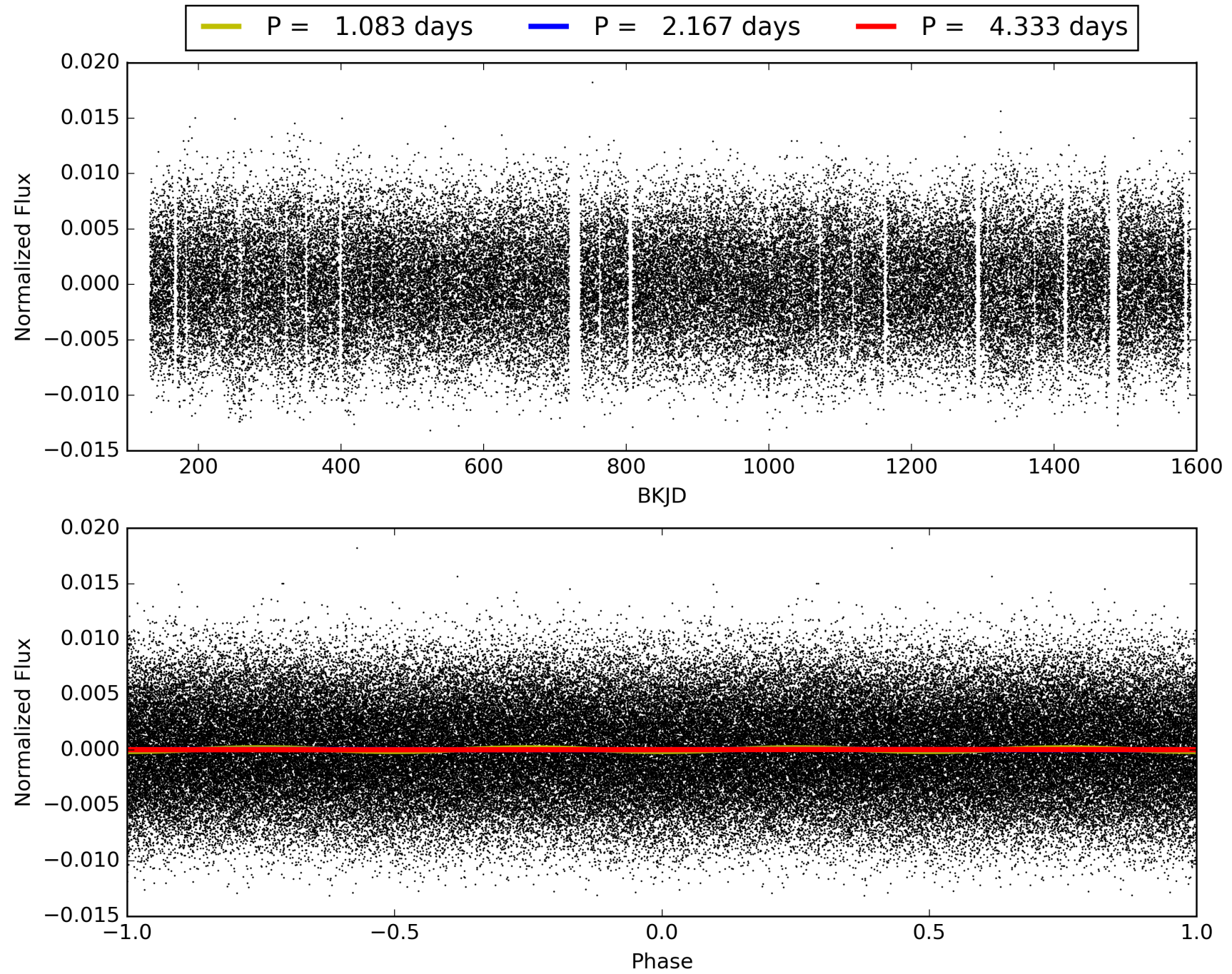
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005308780-02, PDC Light Curves

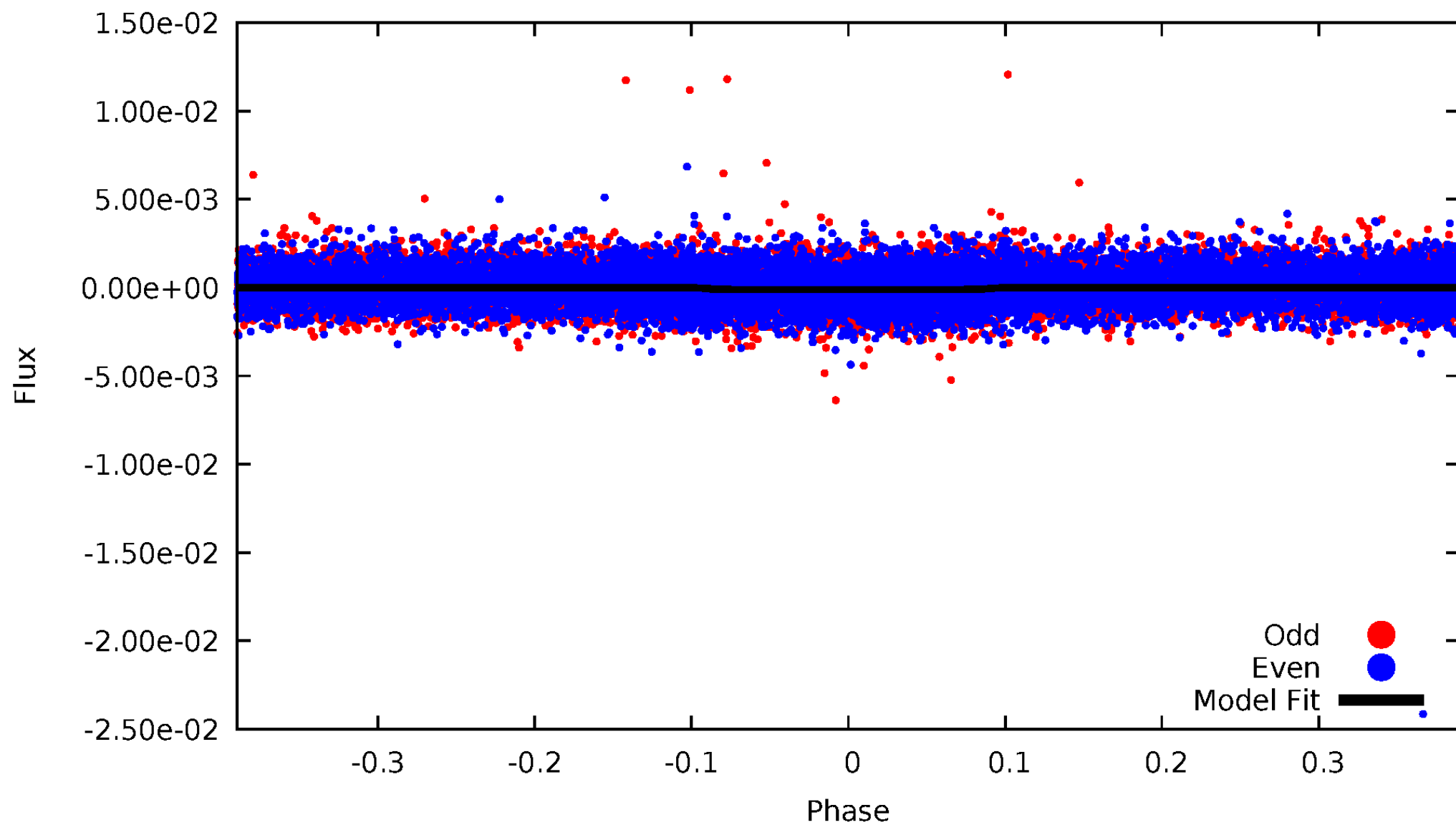


TCE 005308780-02



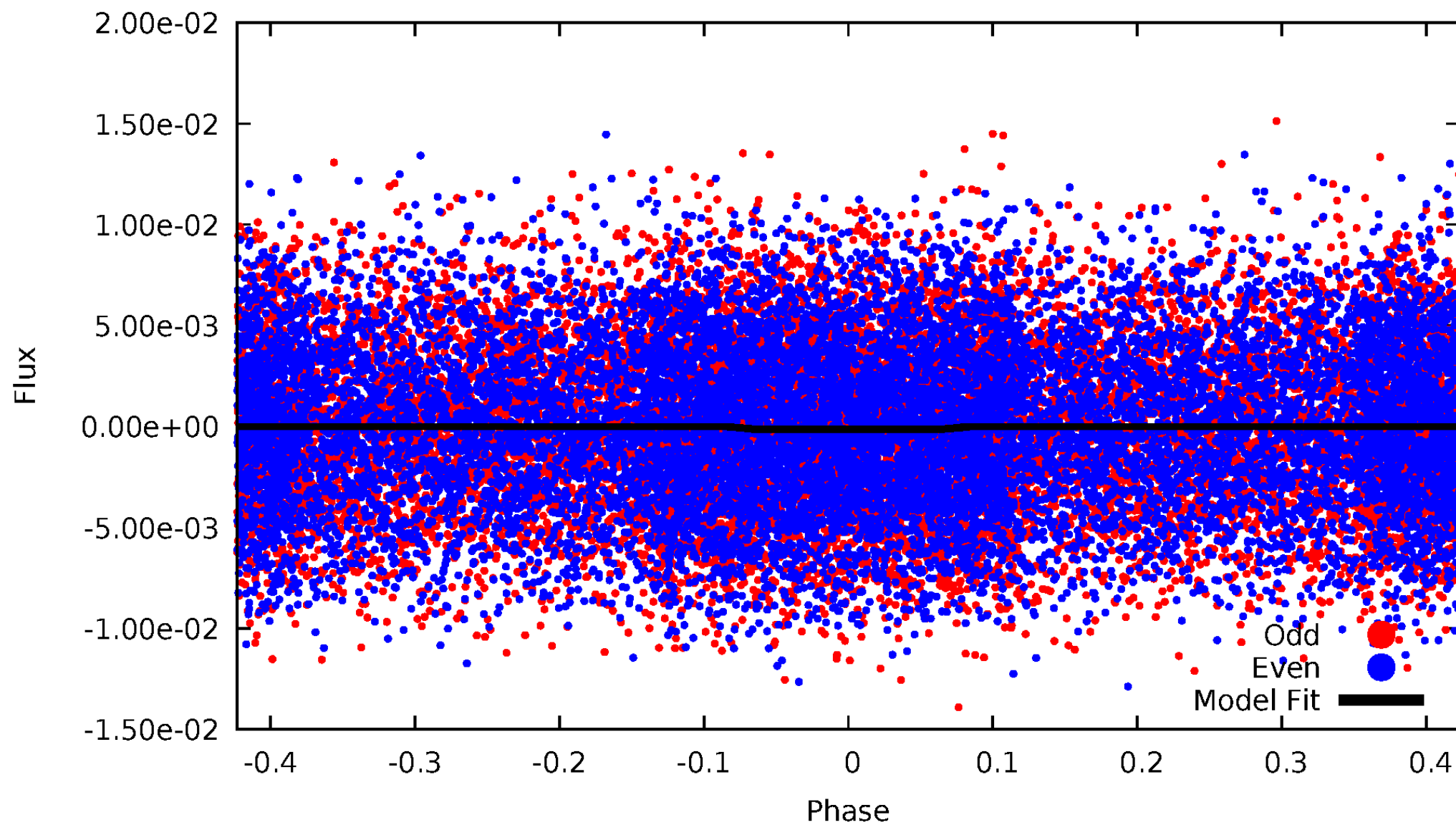
DV Odd/Even

TCE 005308780-02



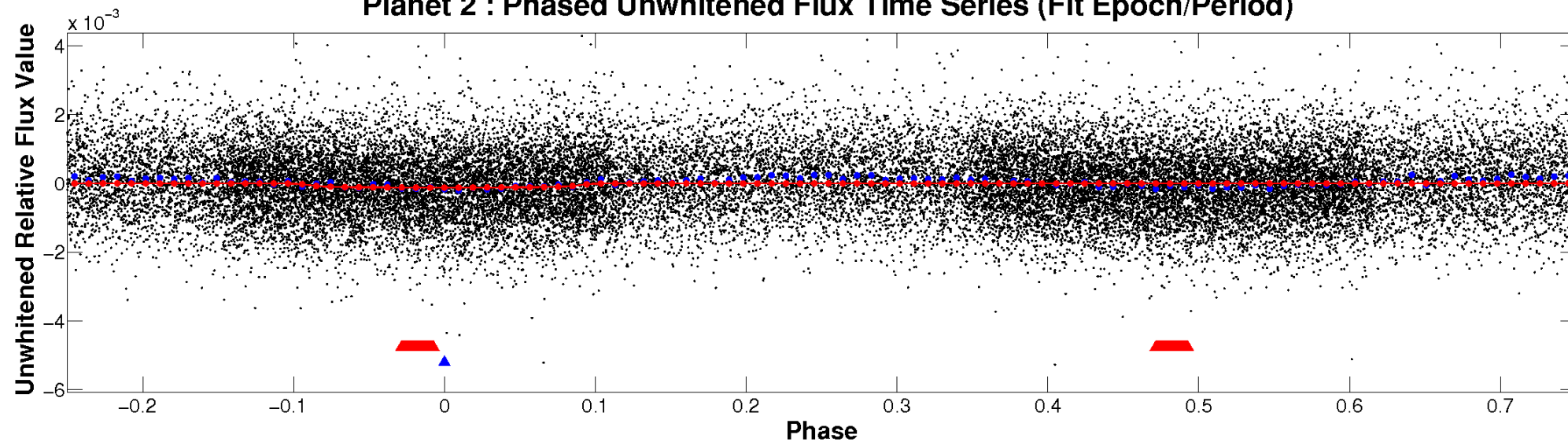
ALT Odd/Even

TCE 005308780-02

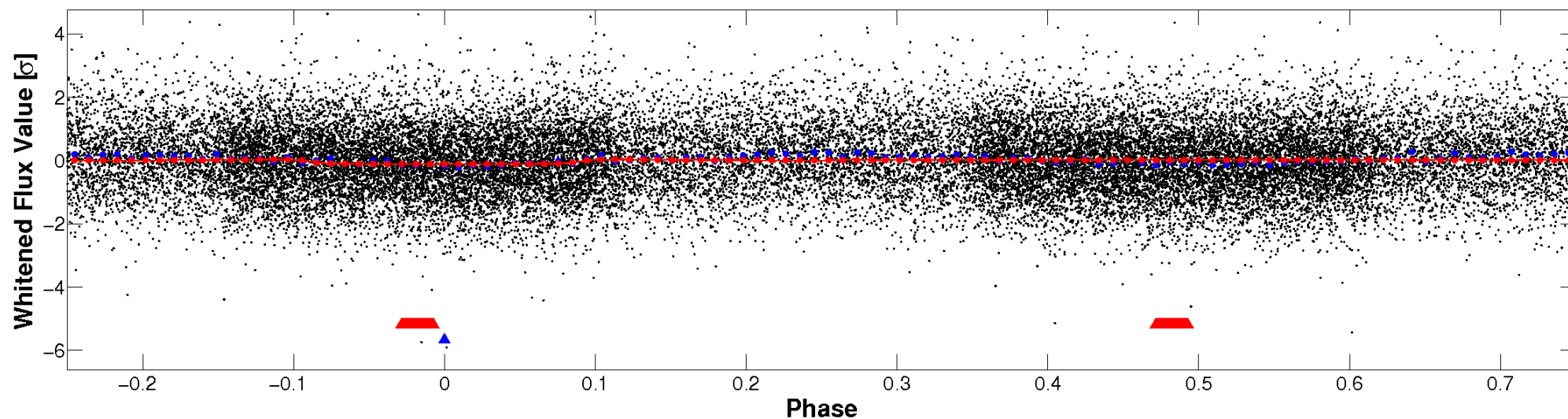


Non-Whitened Vs. Whitened Light Curve

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

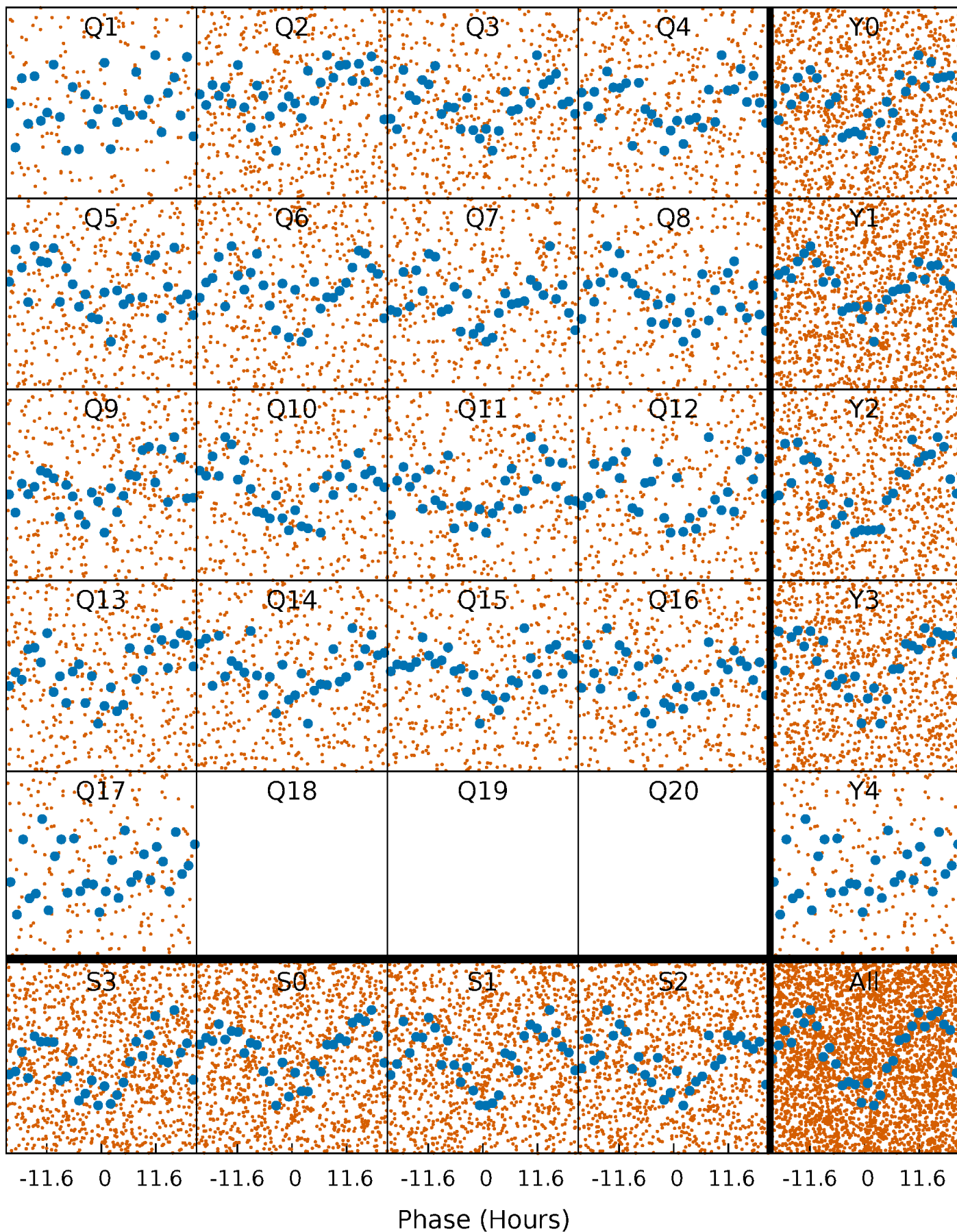


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



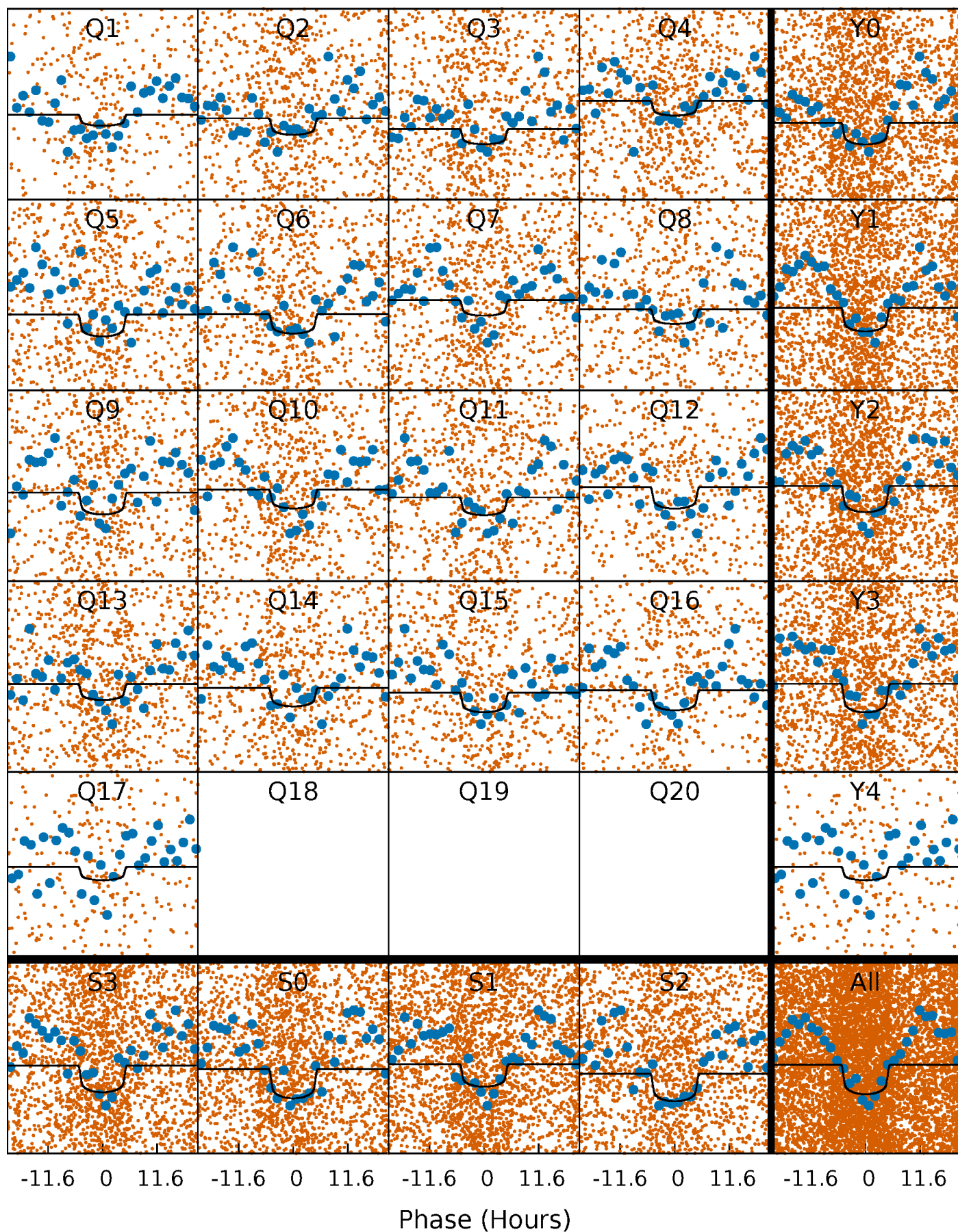
PDC Quarter-Phased Transit Curves

TCE 005308780-02 P= 2.166612 Days $T_0=131.679876$ (BKJD)



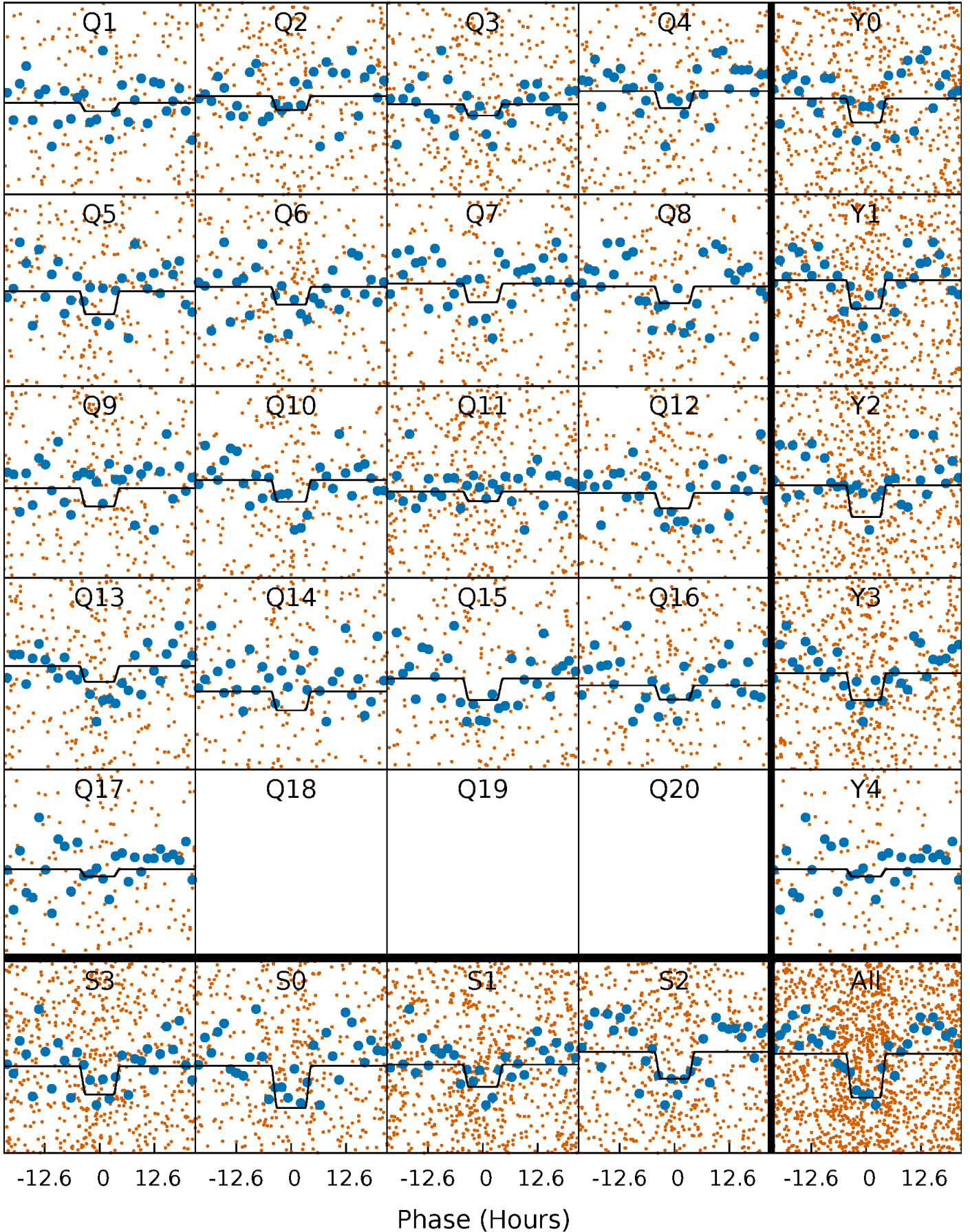
DV Quarter-Phased Transit Curves

TCE 005308780-02 P= 2.166612 Days $T_0=131.679876$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

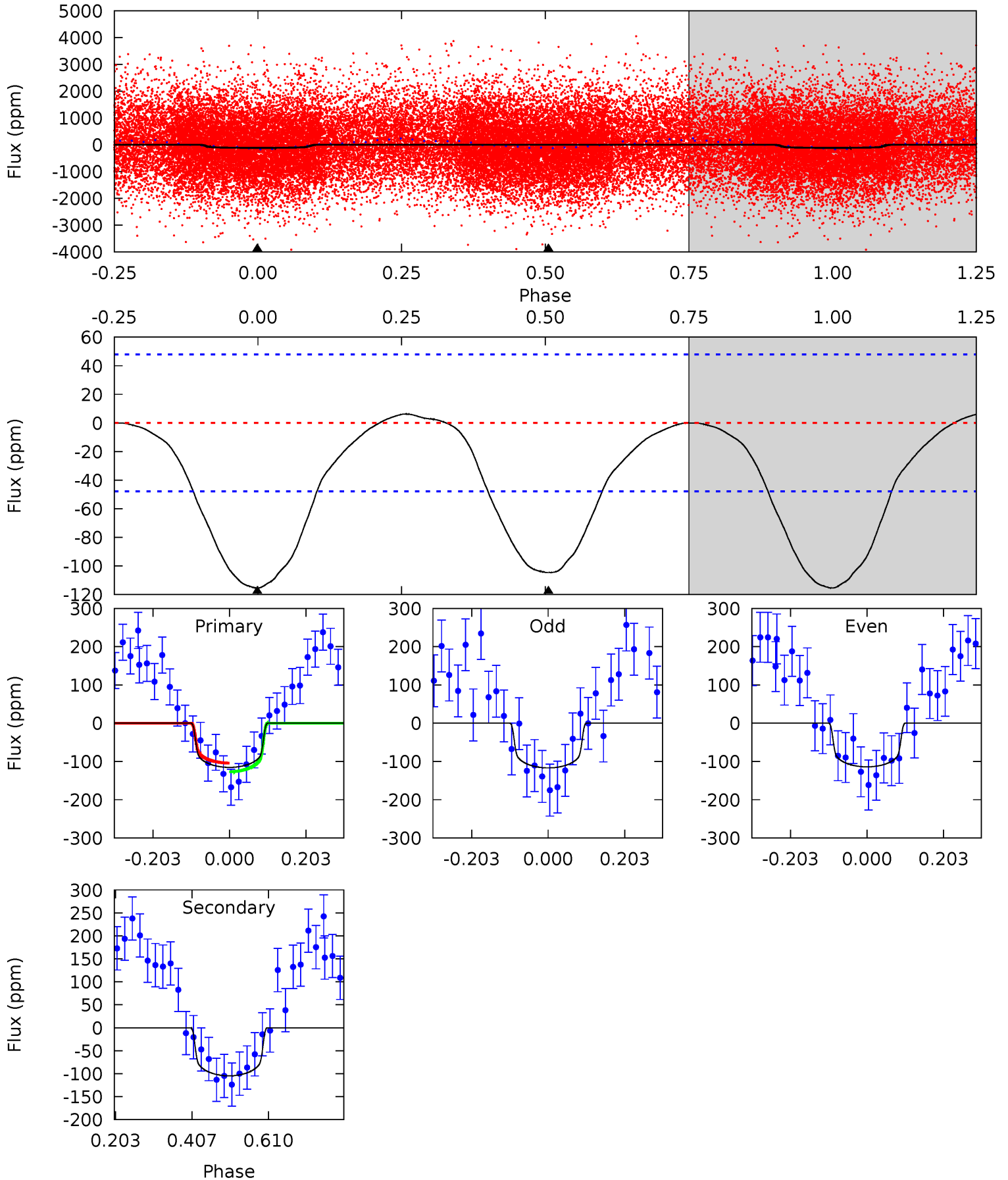
TCE 005308780-02 $P = 2.166596$ Days $T_0 = 131.671426$ (BKJD)



DV Model-Shift Uniqueness Test

005308780-02, P = 2.166612 Days, E = 131.679876 Days

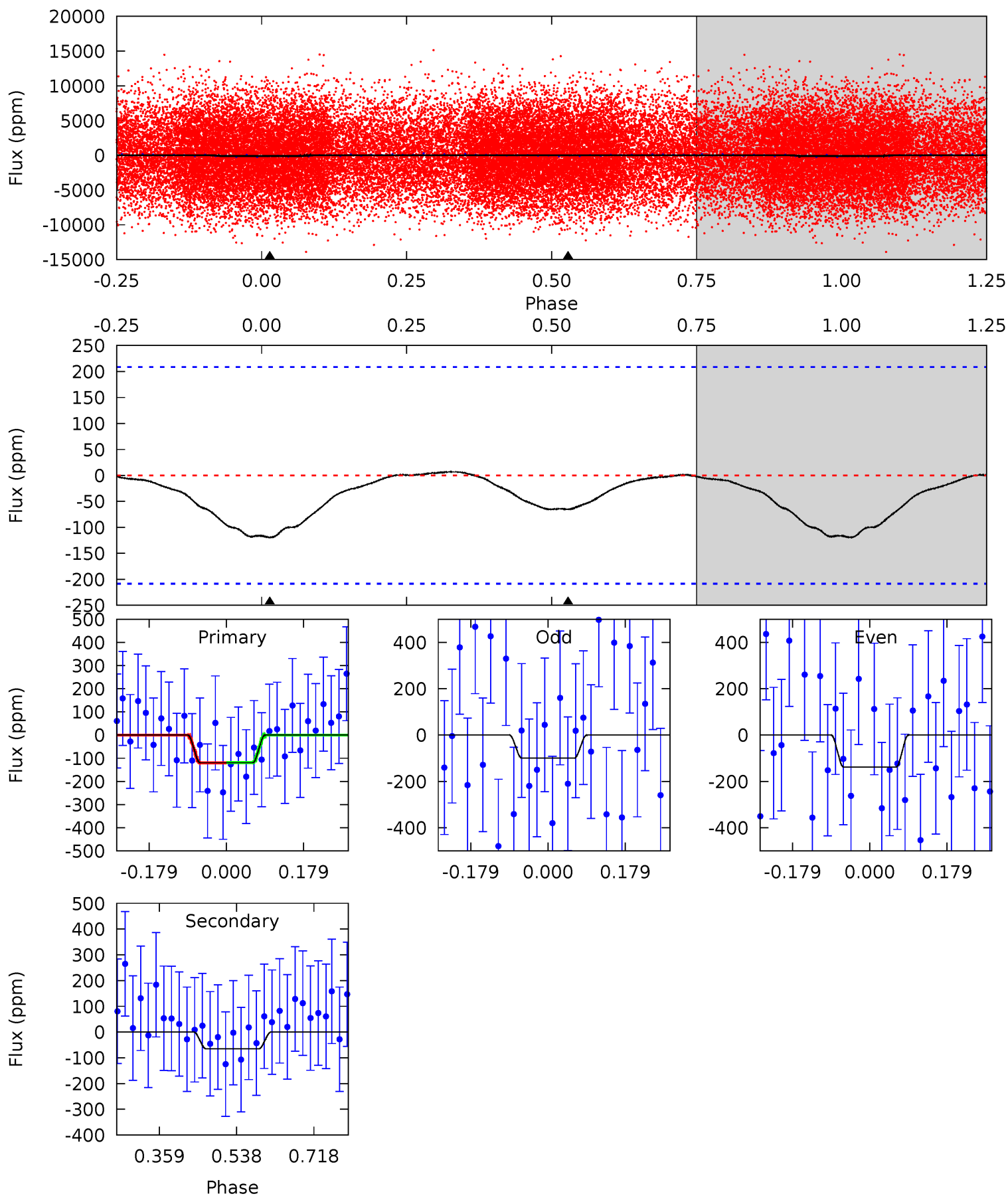
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.7	9.65	0	0	4.41	1.27	0.28	10.7	10.7	9.65	9.65	0.13	0.87	0.05	1.06



Alt Model-Shift Uniqueness Test

005308780-02, P = 2.166596 Days, E = 131.671426 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.54	1.39	0	0	4.44	1.34	0.15	2.54	2.54	1.39	1.39	0.41	0.65	0.05	0.01



Stellar Parameters For KIC 005308780

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6415^{+177}_{-265}	$4.374^{+0.065}_{-0.195}$	$0.210^{+0.150}_{-0.400}$	$1.224^{+0.373}_{-0.160}$	$1.293^{+0.145}_{-0.200}$	$0.994^{+0.347}_{-0.526}$
	+3%/-4%	+1%/-4%	+71%/-190%	+30%/-13%	+11%/-15%	+35%/-53%
Source	PHO1	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 005308780-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-105 ± 11	$1.65^{+0.45}_{-0.40}$	2355^{+156}_{-127}	5919^{+827}_{-594}	26^{+18}_{-10}
Alt.	-65 ± 47	$1.62^{+0.43}_{-0.41}$	2352^{+160}_{-140}	5178^{+1199}_{-1133}	16^{+22}_{-11}

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 $A_{obs} \gg 1.0$

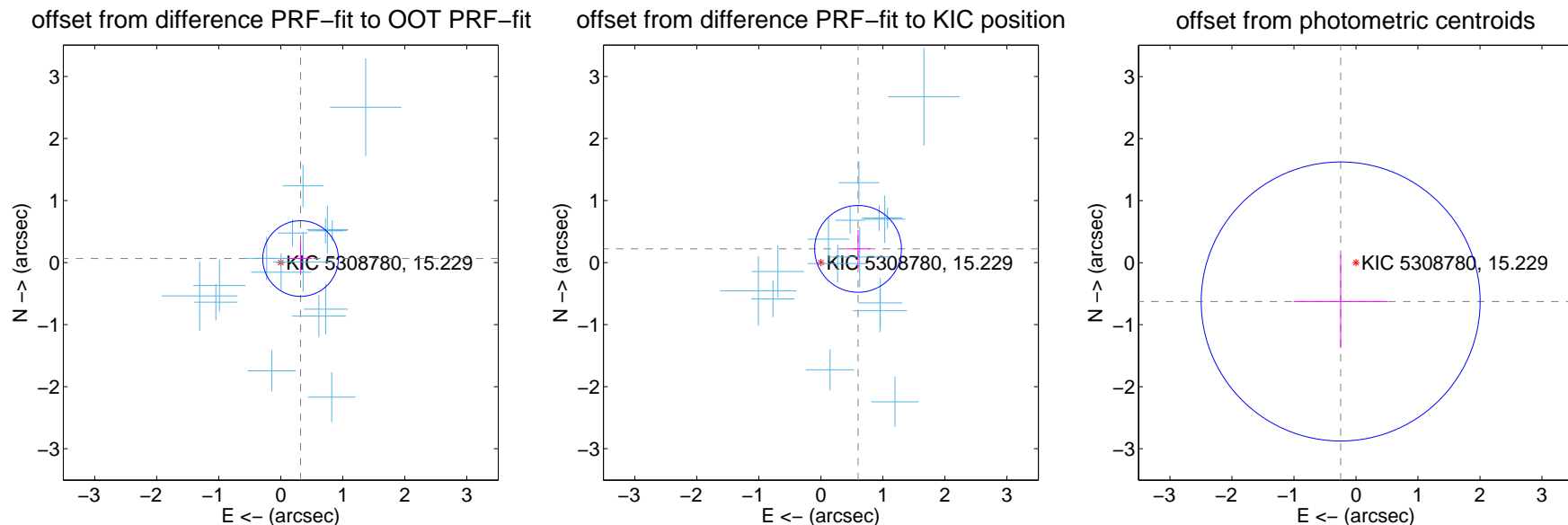
DV Centroid Data

Supplemental centroid analysis for 005308780-02. Kepler magnitude: 15.23. Transit SNR 9.16

There are 16 quarters with good PRF difference image offsets

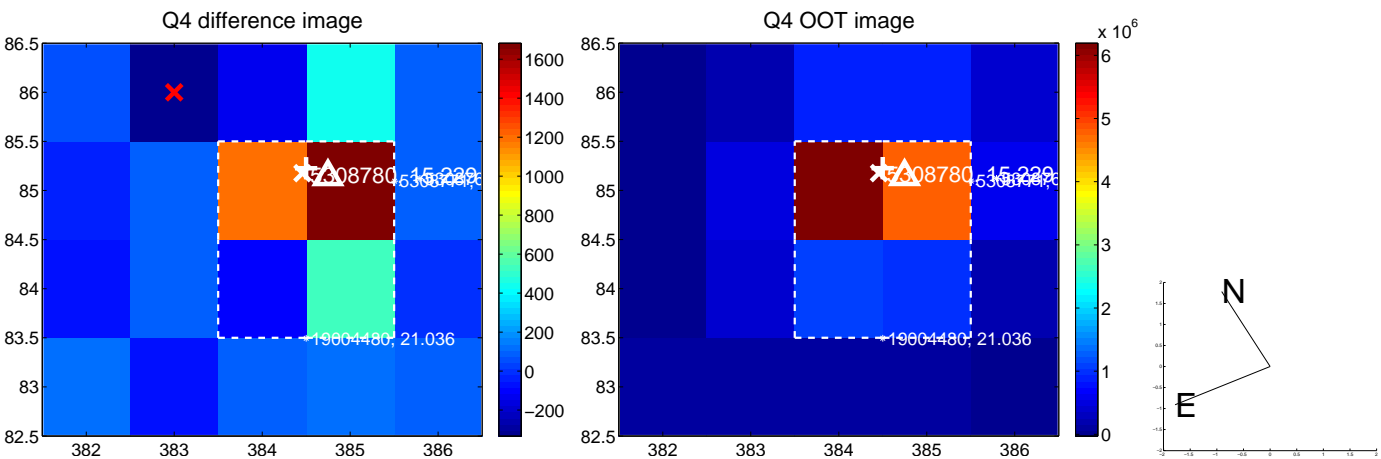
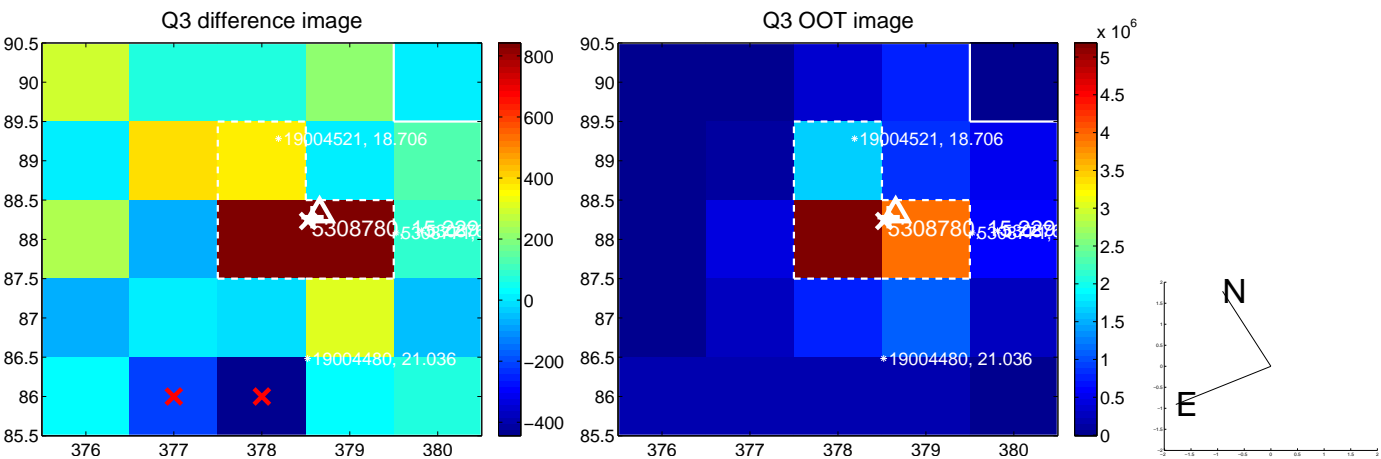
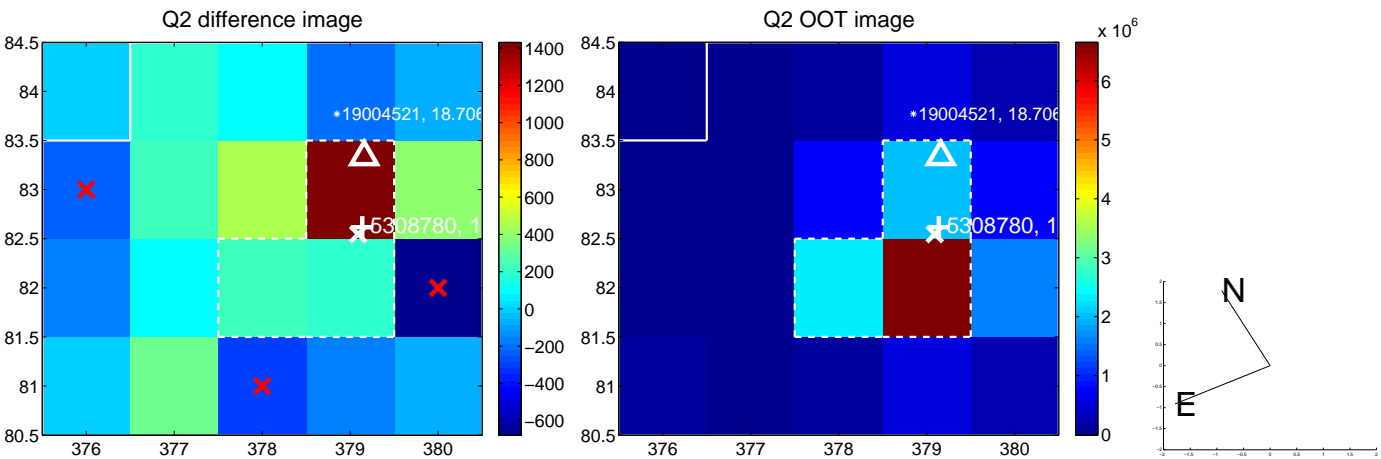
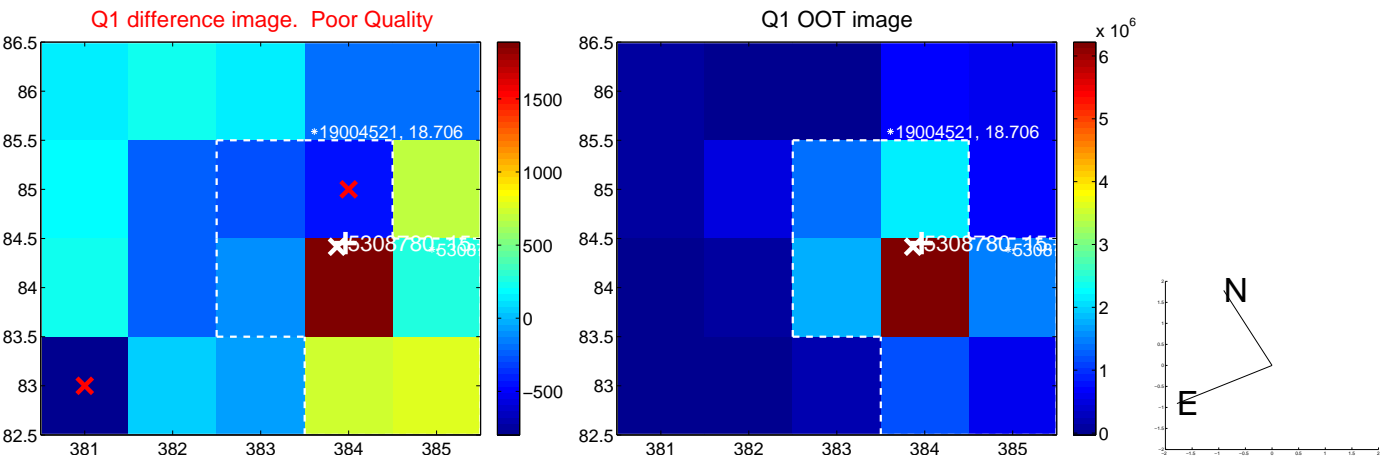
The direct PRF centroid is offset from the target star catalog position by about 0.38 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.326 ± 0.203	1.60	-0.319 ± 0.185	0.065 ± 0.264
PRF-fit source offset from KIC position	0.639 ± 0.233	2.74	-0.600 ± 0.195	0.221 ± 0.305
photometric centroid source offset	0.67 ± 0.75	0.90	0.25 ± 0.76	-0.63 ± 0.75

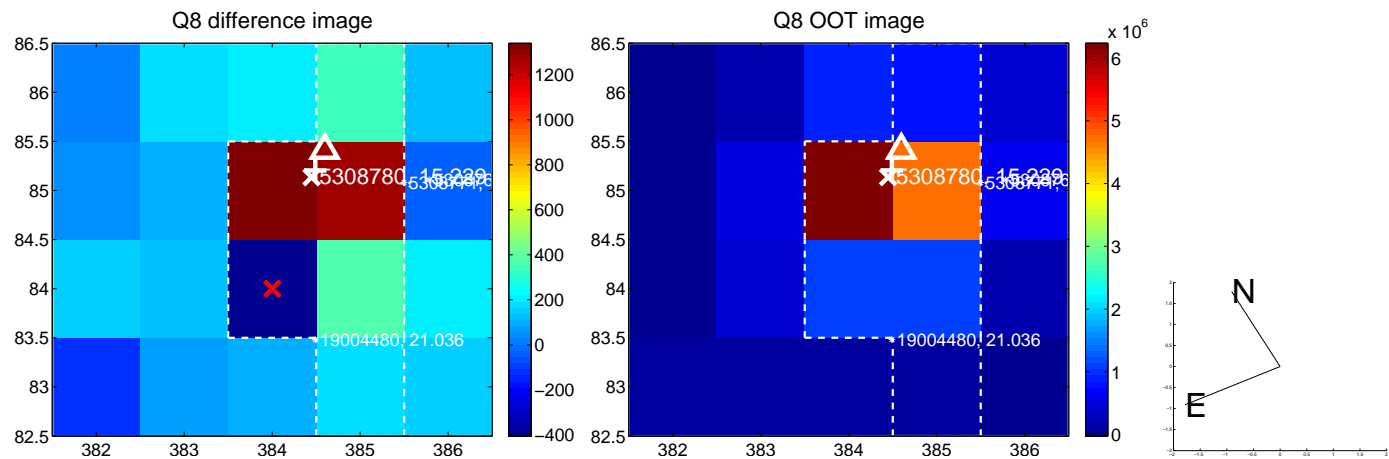
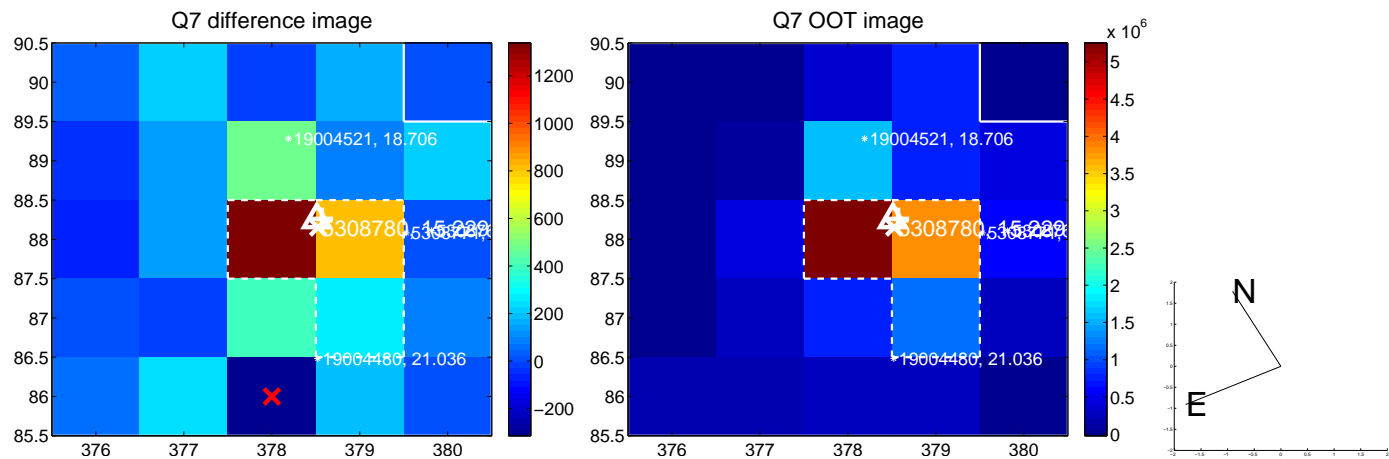
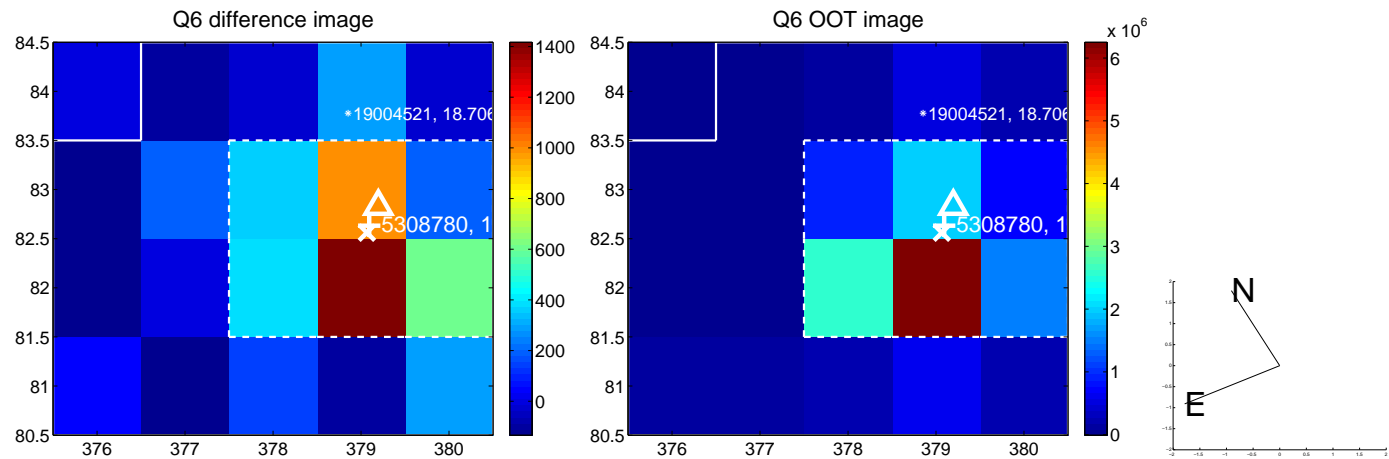
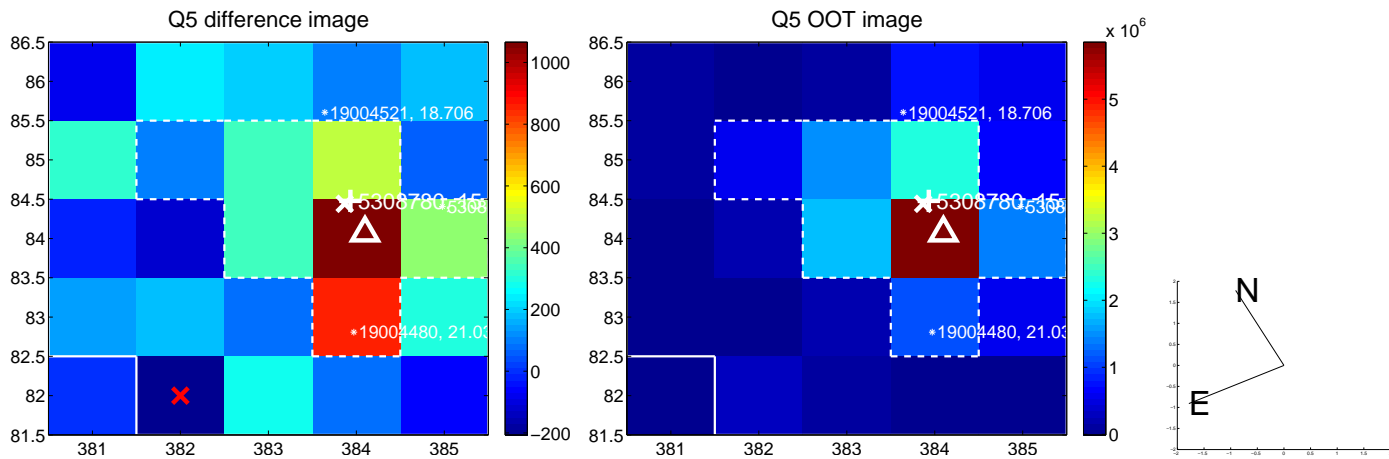


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

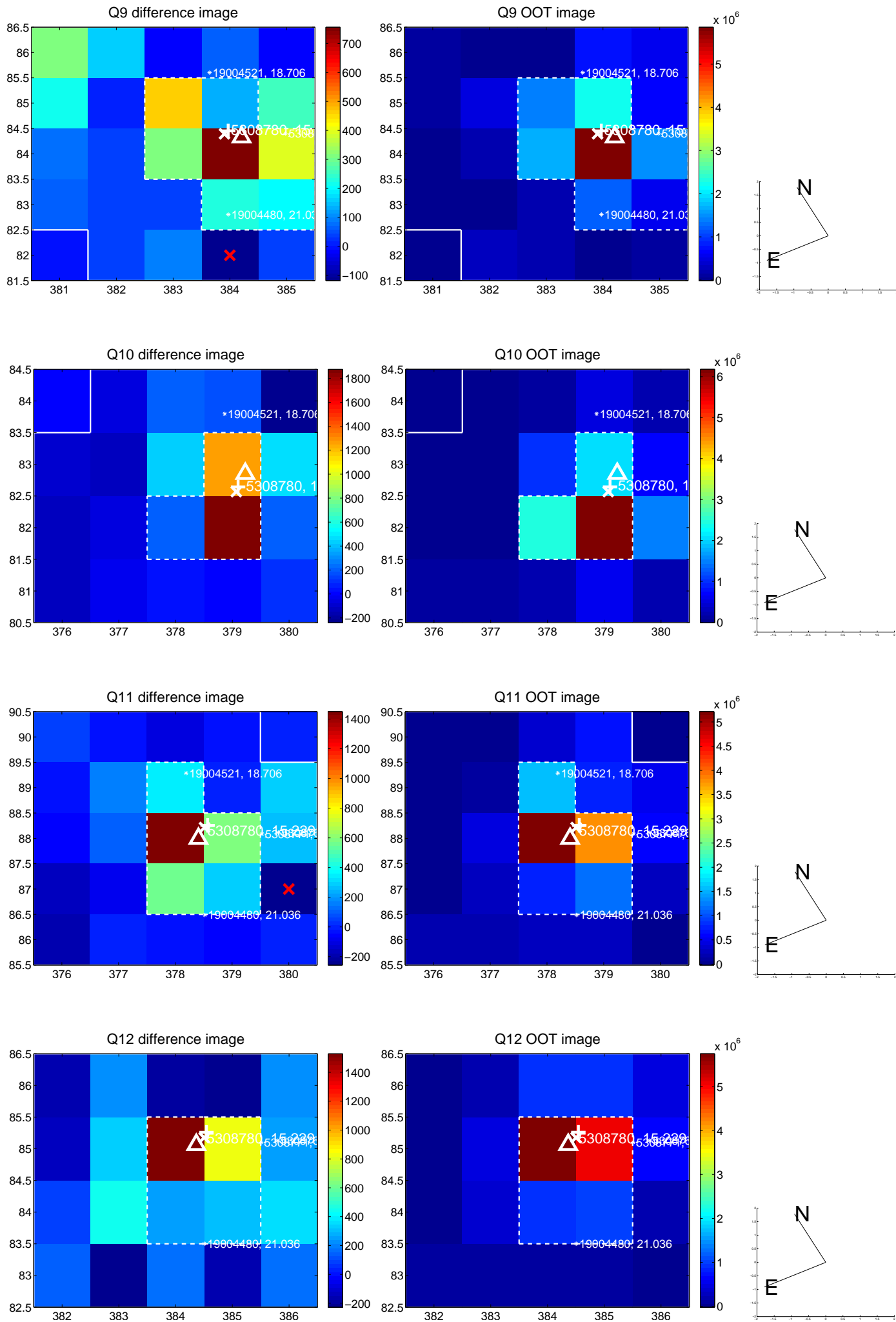
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



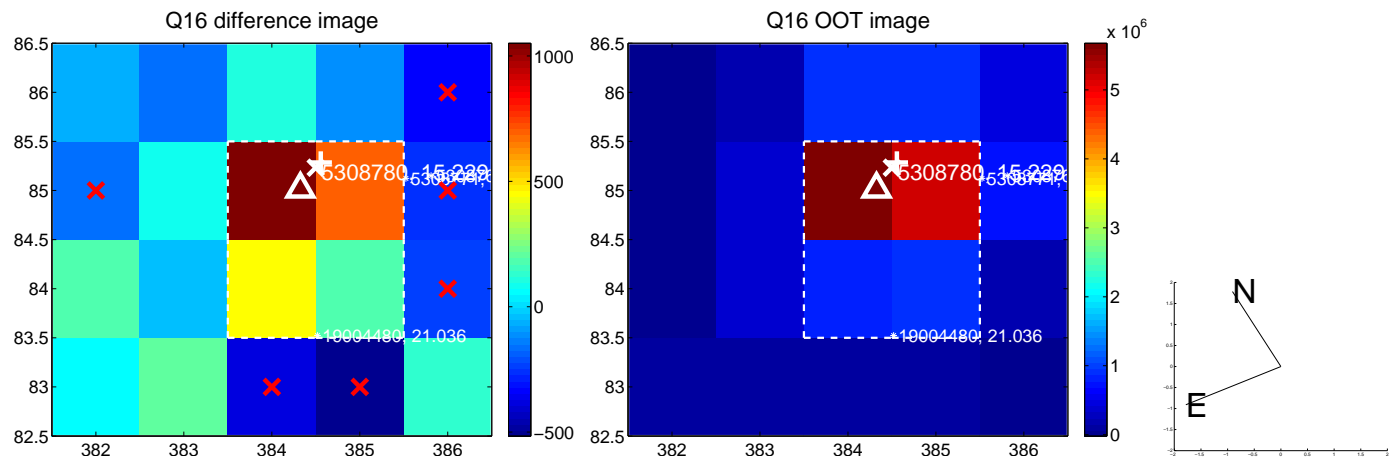
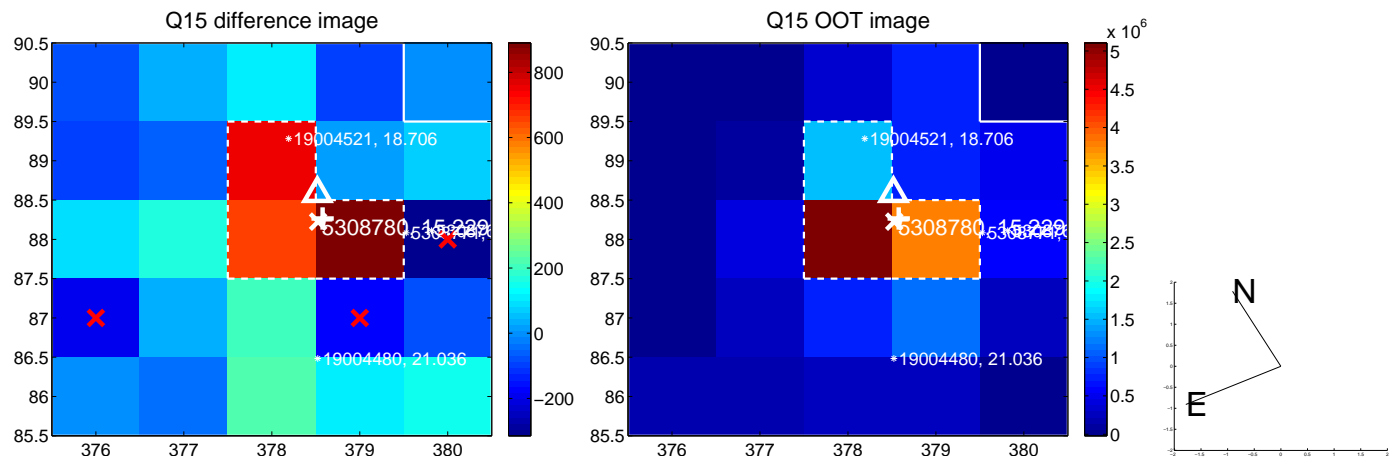
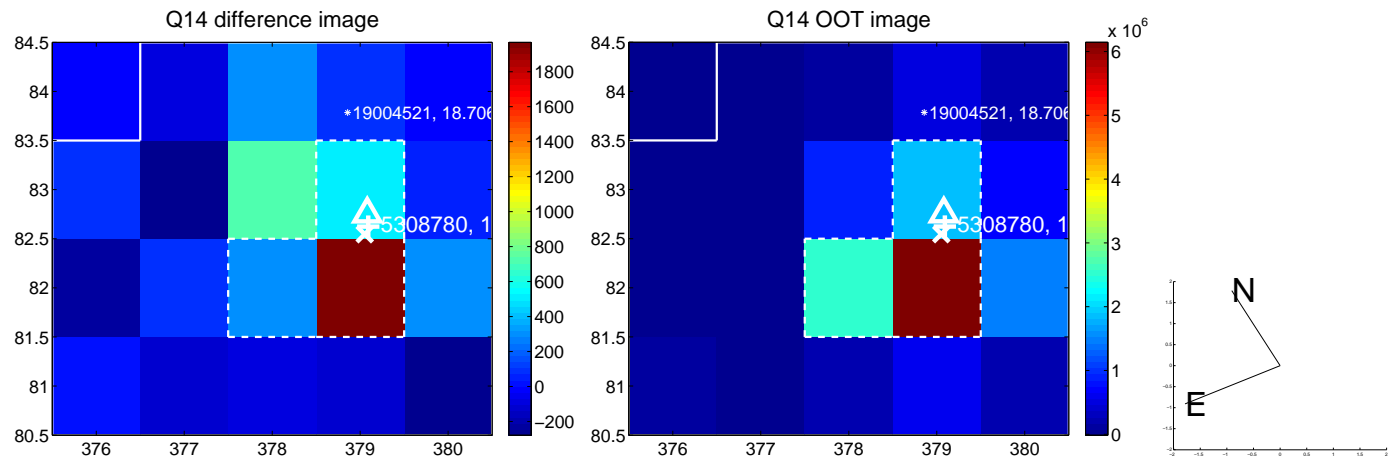
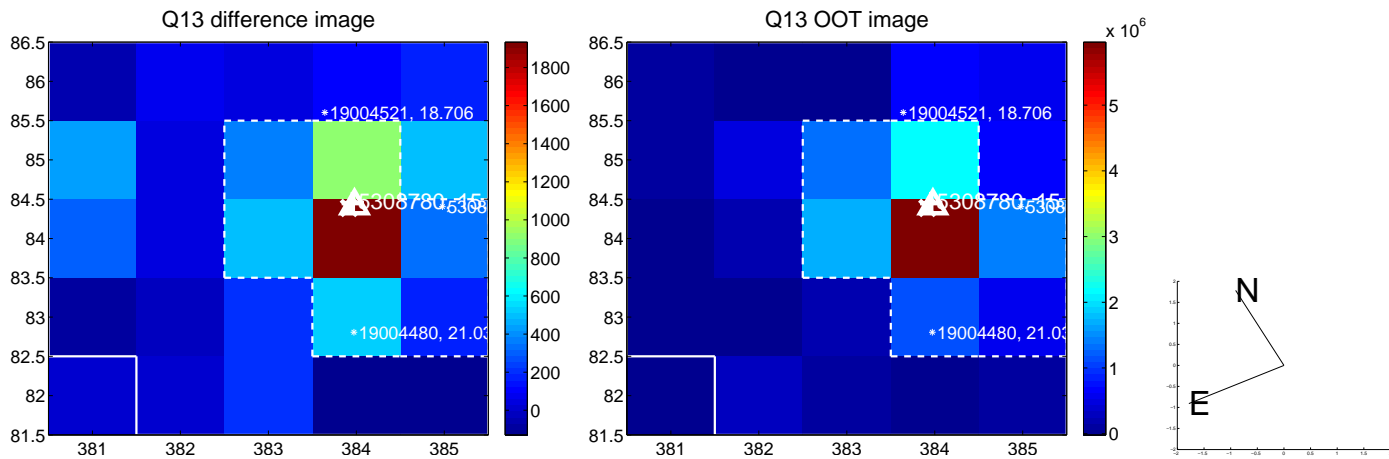
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



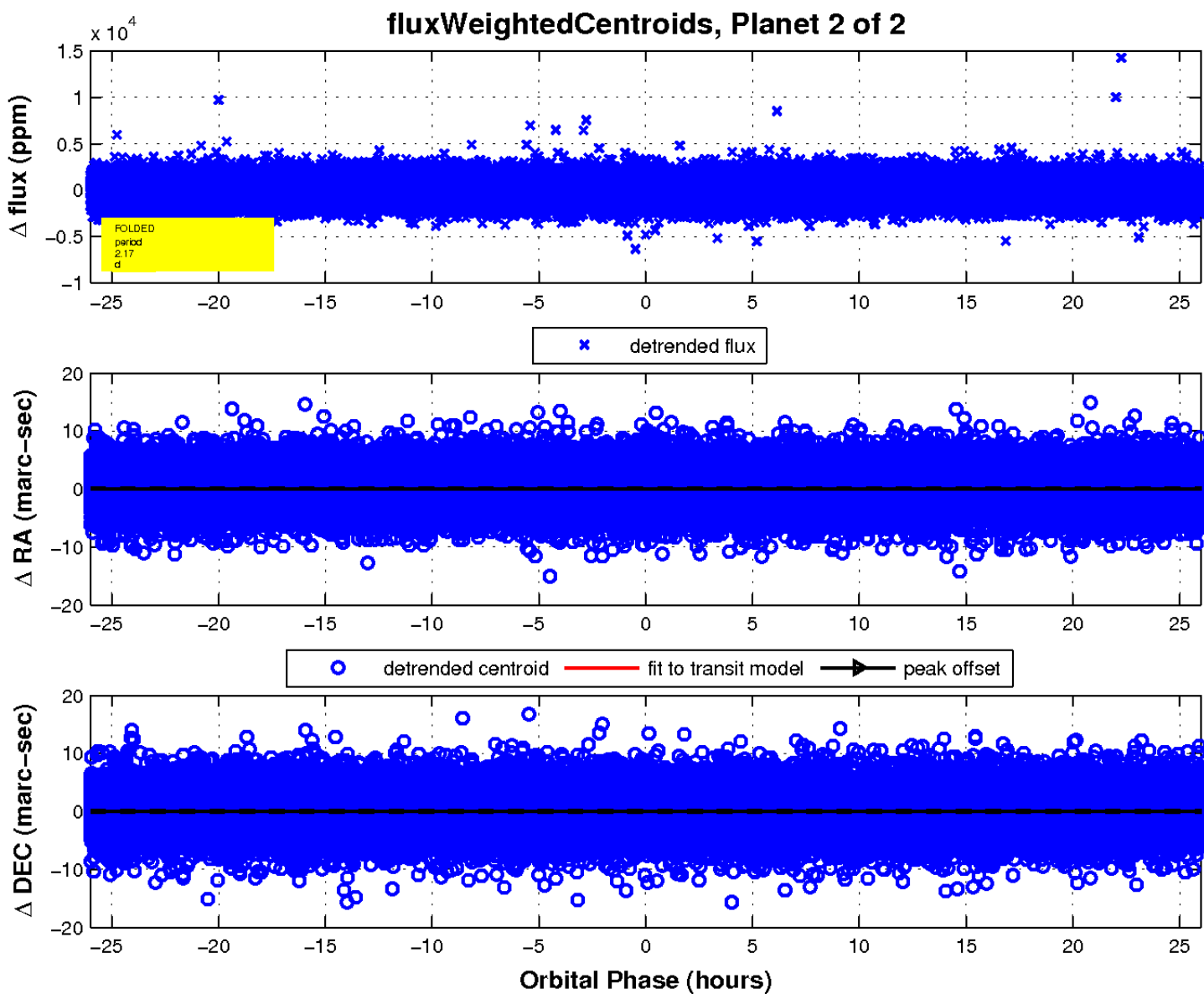
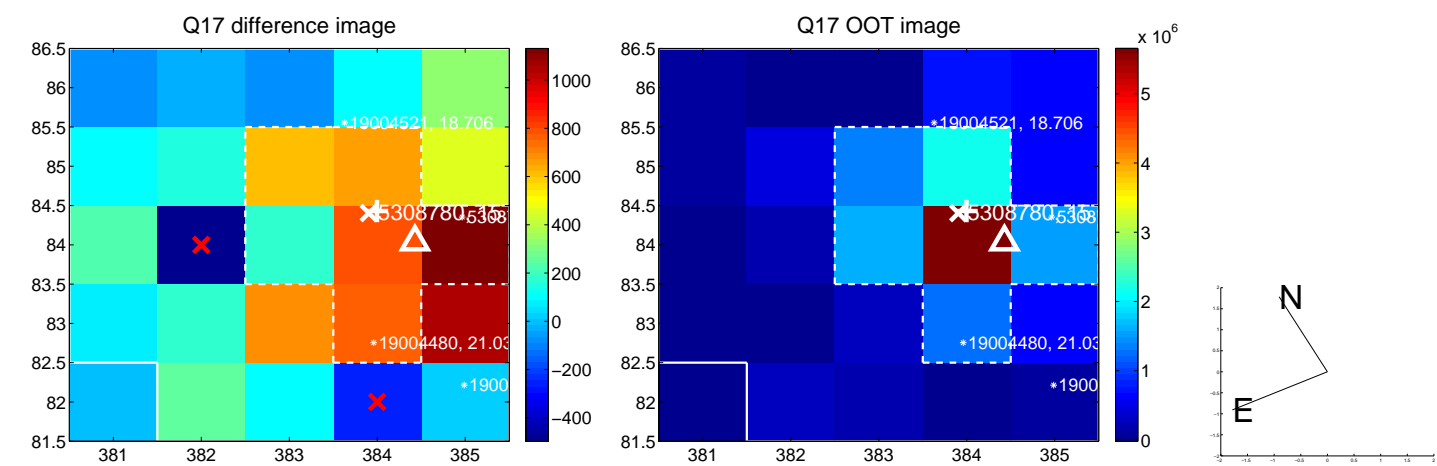
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

