

KIC 005976681

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})
005976681-01	OBS	No	0.585139	131.679531	451.7	2.503	19.1	20.7	2.41	7865	6.50	69826.72
005976681-02	OBS	No	0.585145	131.965592	572.2	2.070	22.3	29.6	2.41	7865	6.70	69825.81

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005976681-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
005976681-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD

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

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

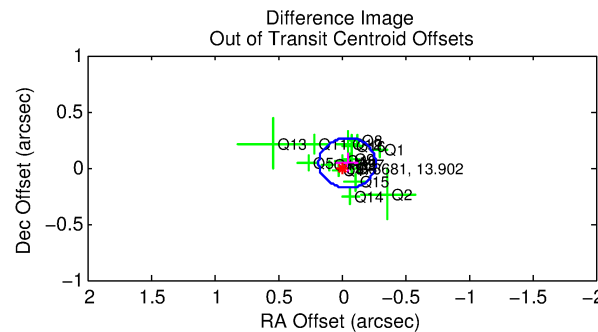
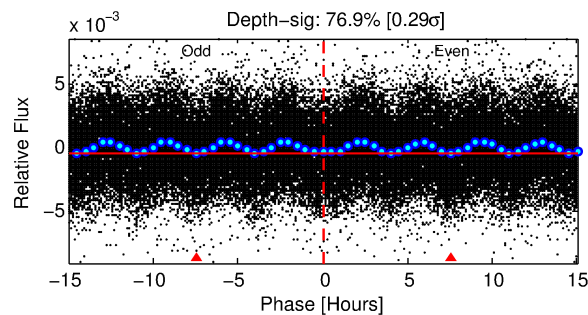
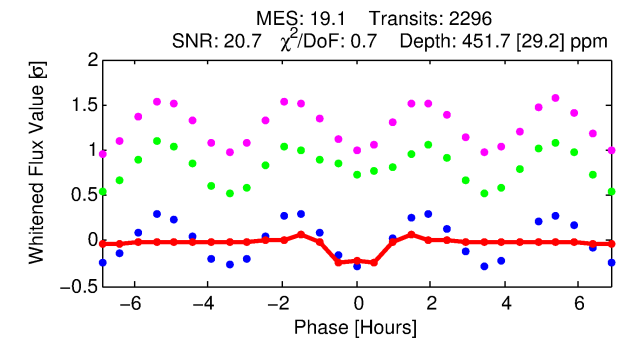
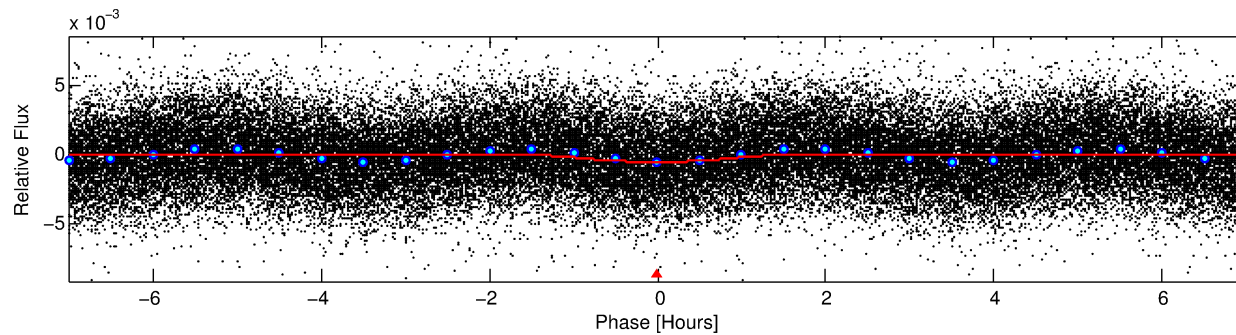
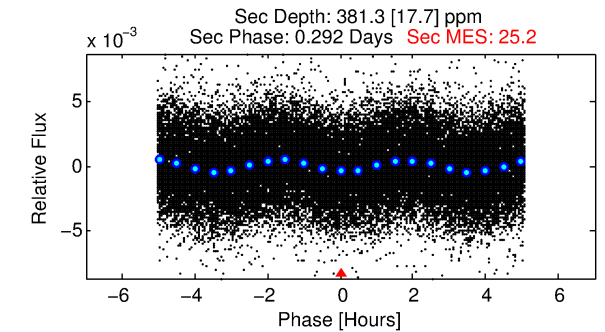
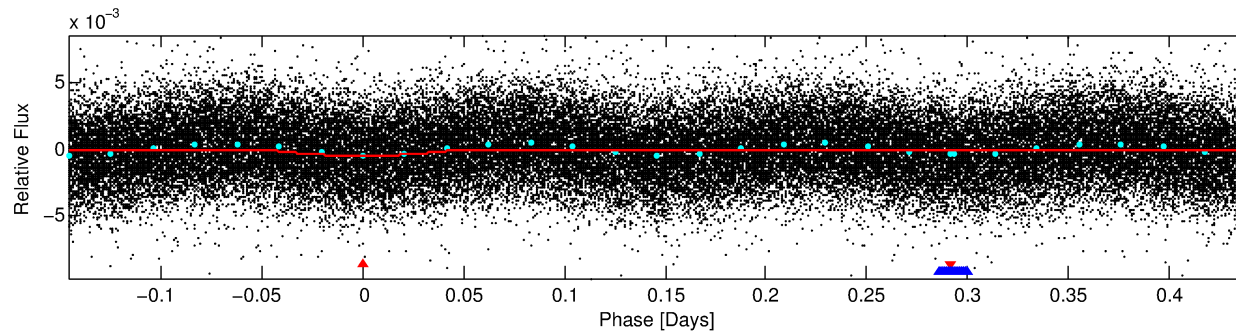
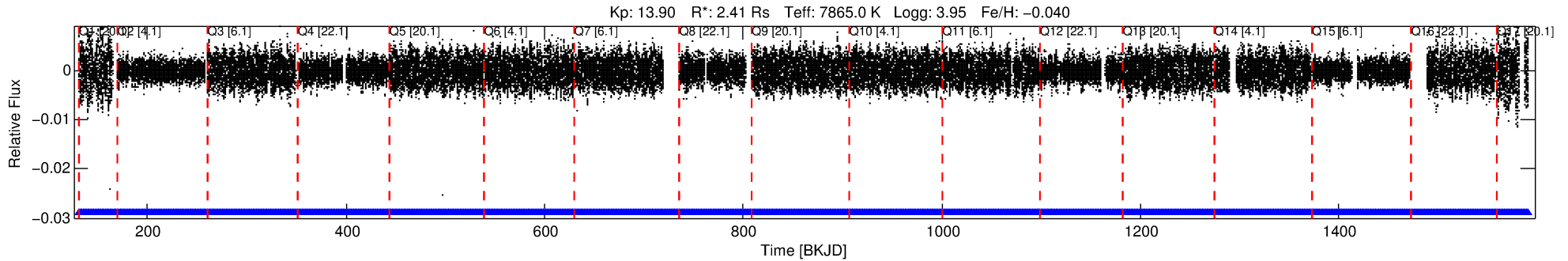
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005976681-01

No Significant Match Found

DV One-Page Summary

KIC: 5976681 Candidate: 1 of 2 Period: 0.585 d



DV Fit Results:

Period = 0.58514 [0.00000] d
Epoch = 131.6795 [0.0009] BKJD
Rp/R* = 0.0247 [0.0009]
a/R* = 1.15 [0.01]
b = 0.97 [0.00]
Seff = 69826.72 [32253.33]
Teff = 4145 [479] K
Rp = 6.50 [2.18] Re
a = 0.0169 [0.0049] AU
Ag = 1.42 [0.62] [0.67σ]
Teffp = 6994 [323] K [4.93σ]

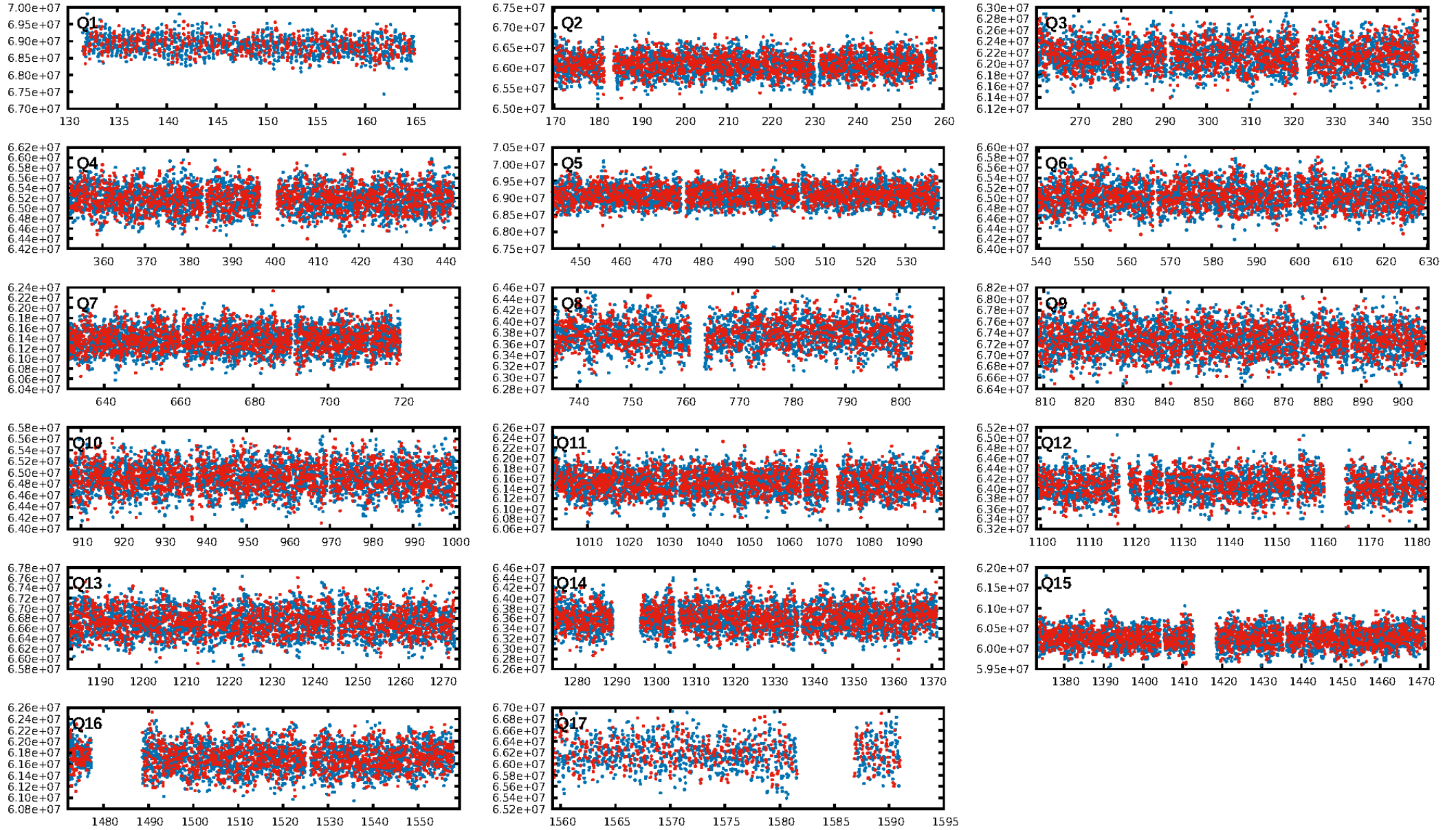
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2192/2192]
GhostDiagnostic-chr: -526.9
Centroid-sig: 12.1%
Centroid-so: 0.094 arcsec [1.41σ]
OotOffset-rm: 0.061 arcsec [0.82σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 0.147 arcsec [1.80σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.00 [0/17]

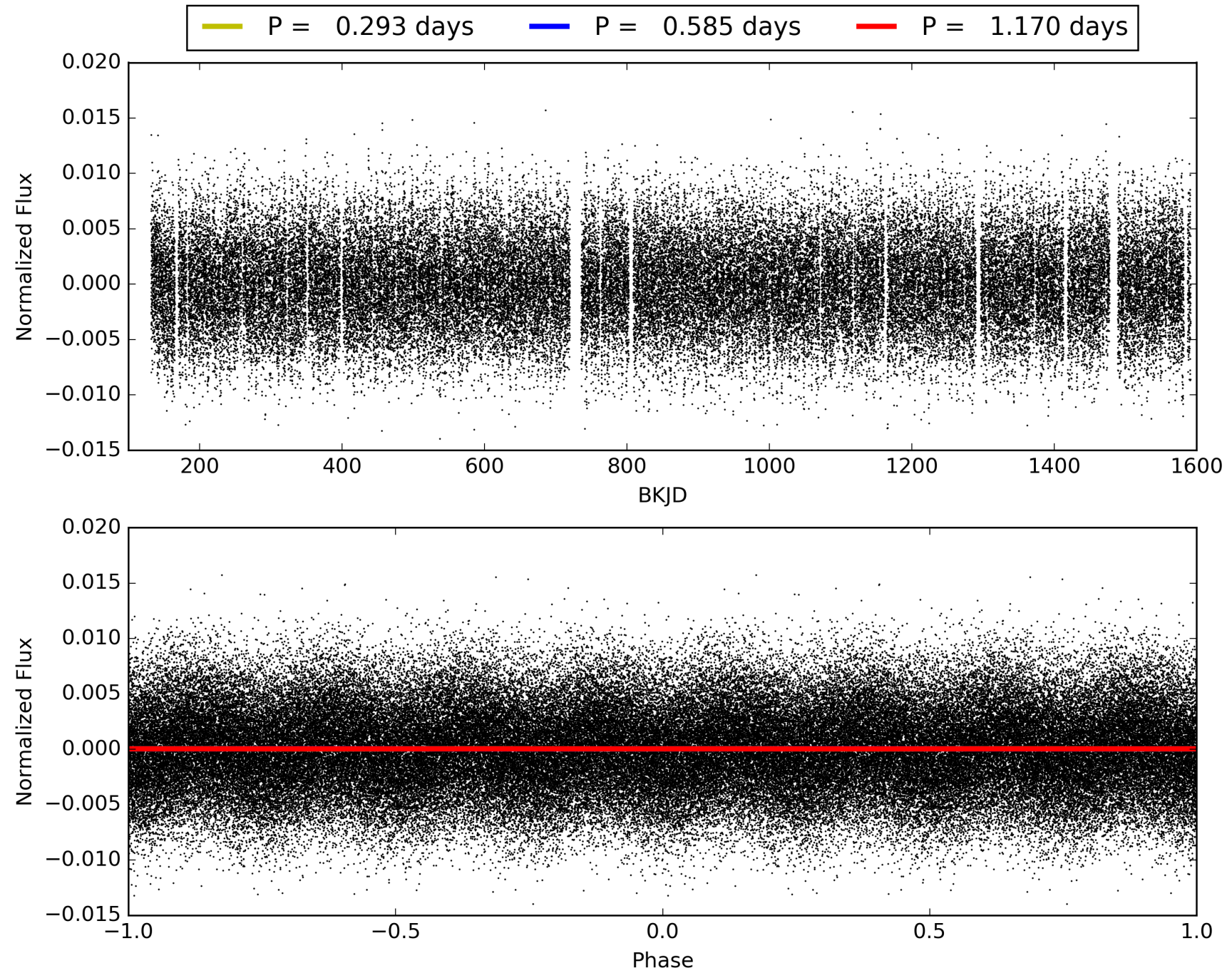
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005976681-01, PDC Light Curves

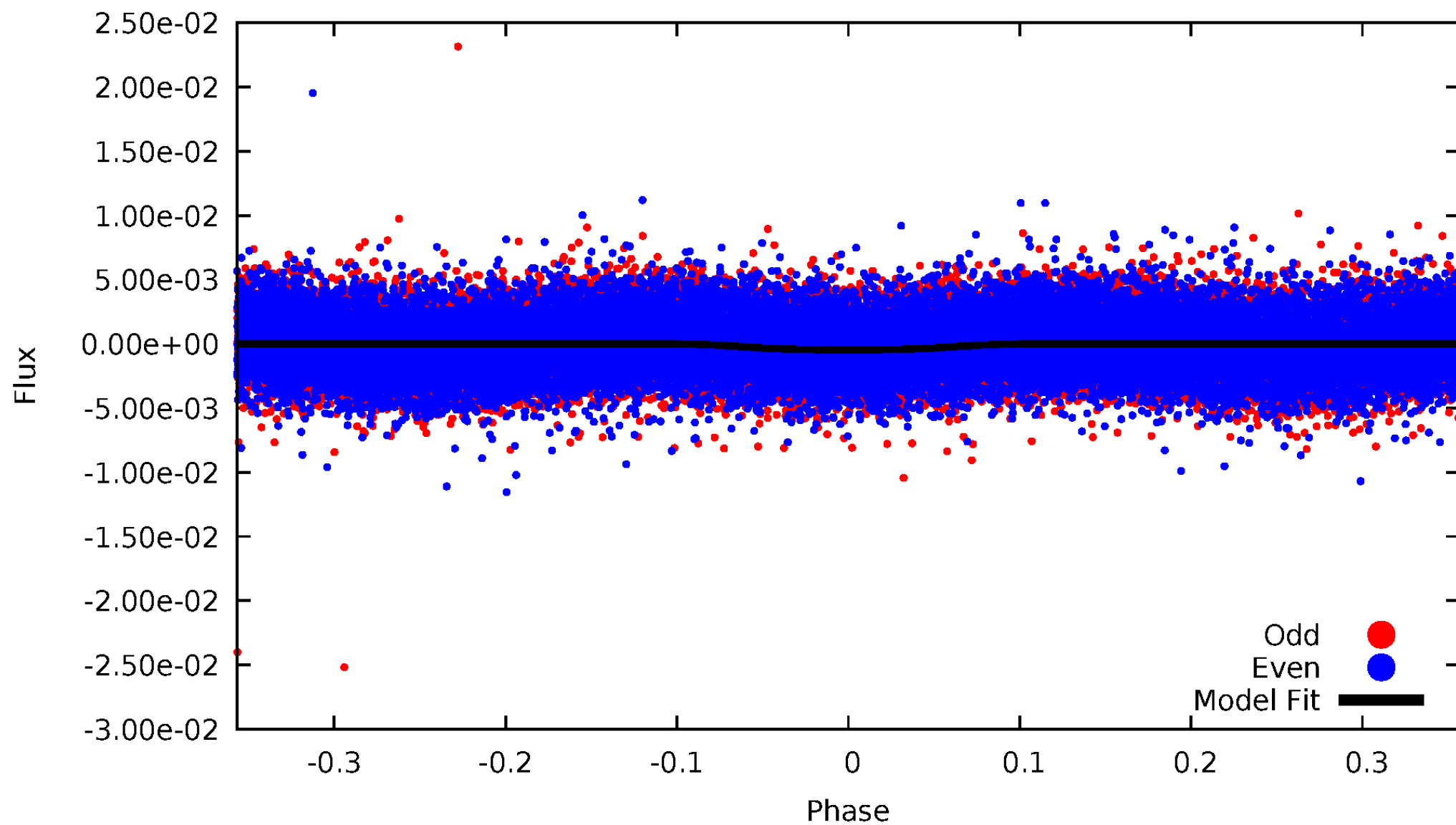


TCE 005976681-01



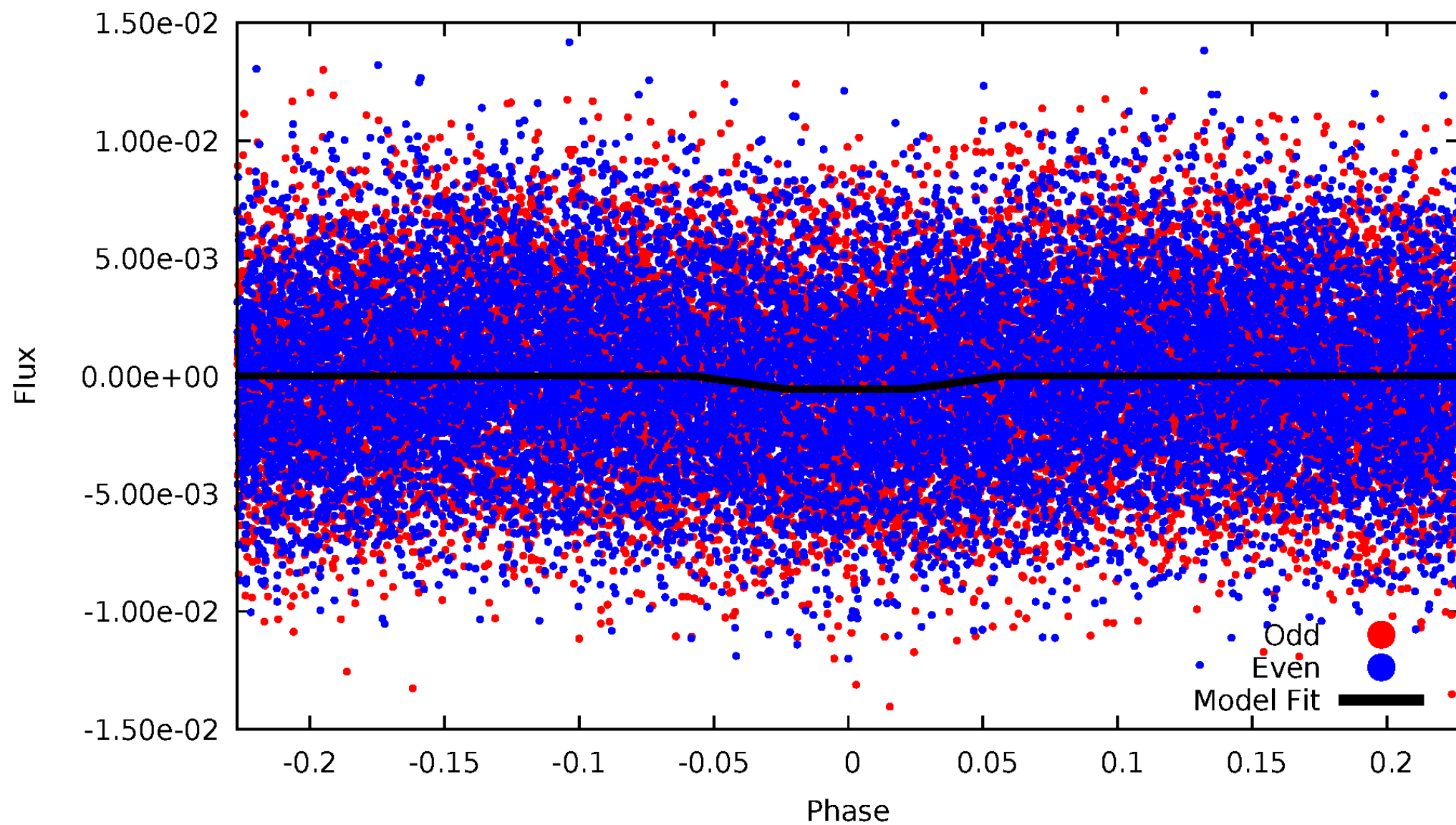
DV Odd/Even

TCE 005976681-01

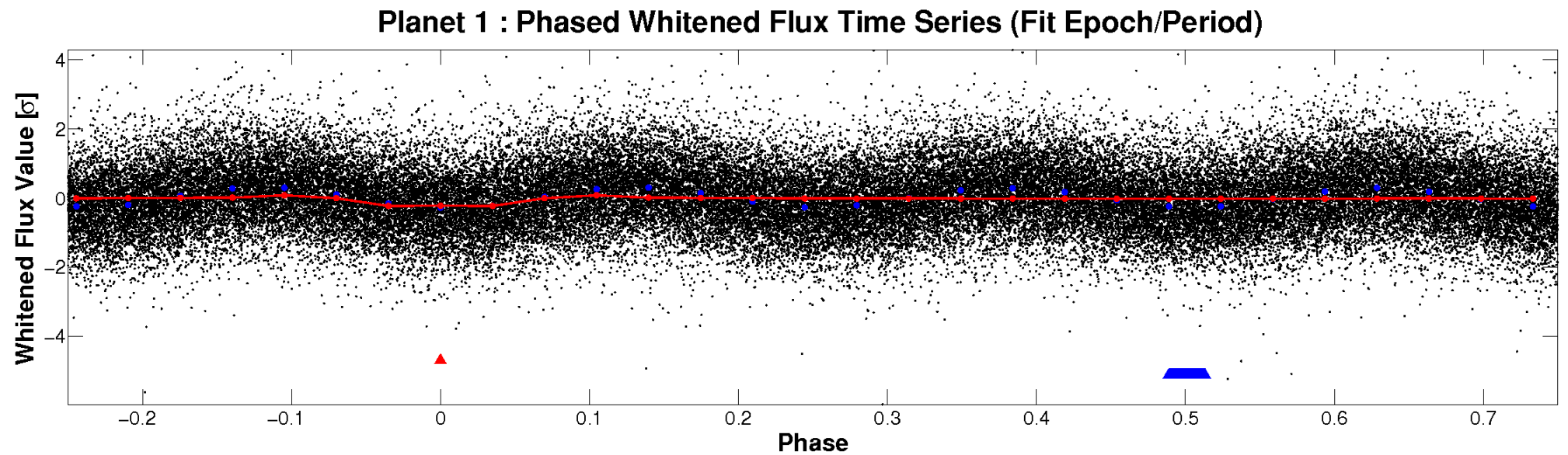
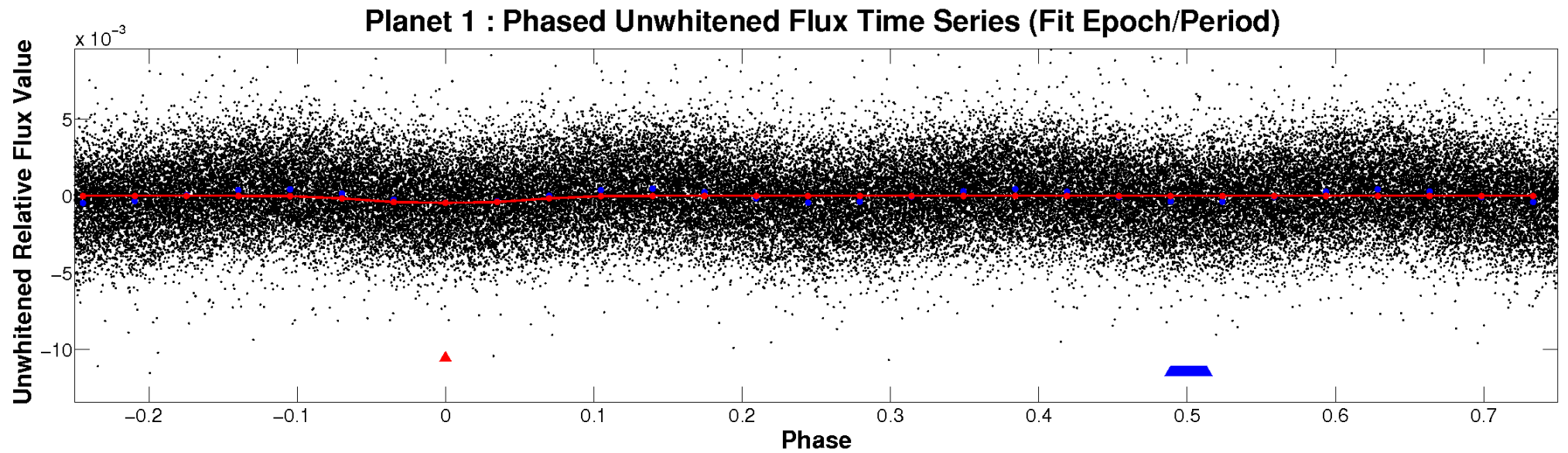


ALT Odd/Even

TCE 005976681-01

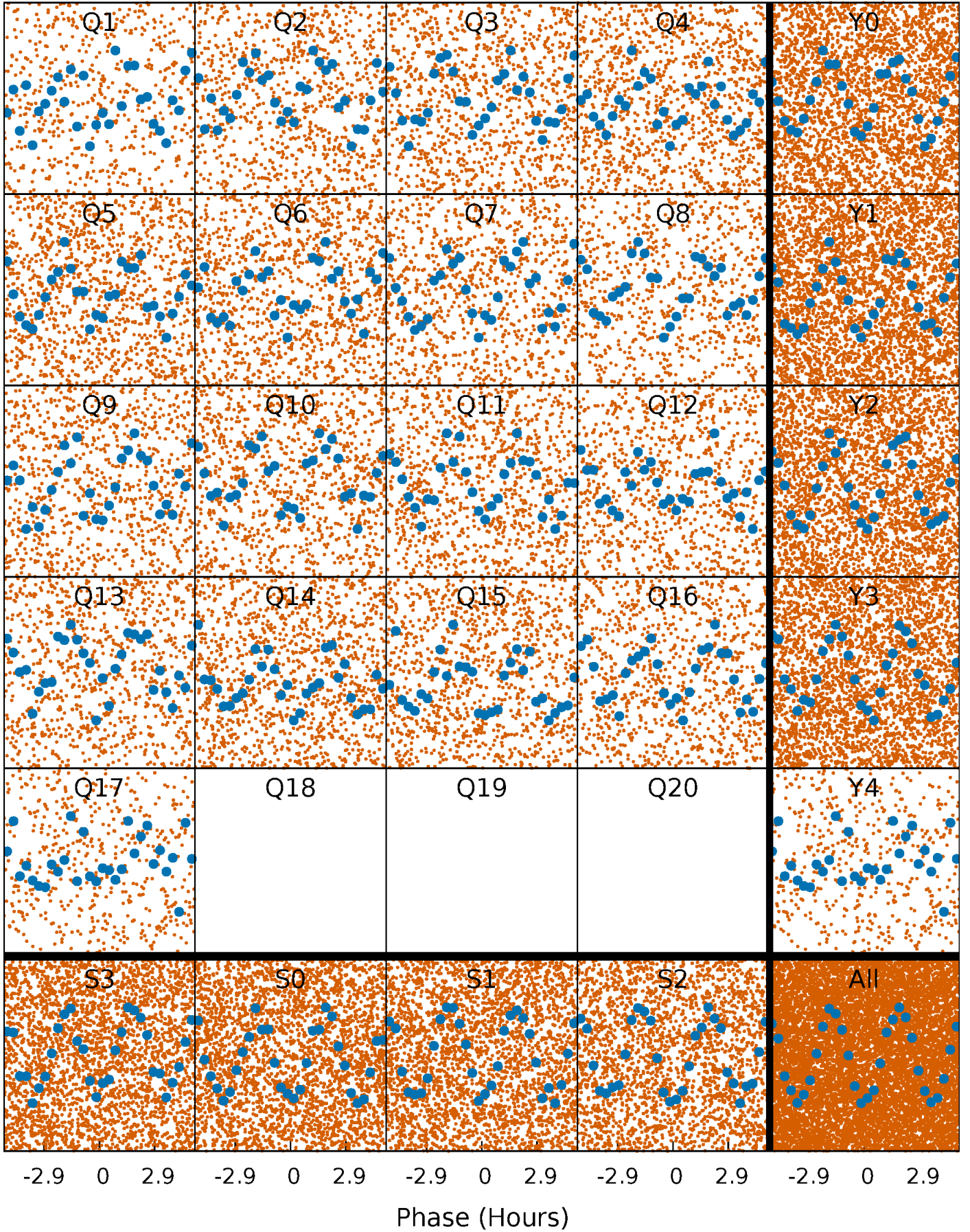


Non-Whitened Vs. Whitened Light Curve



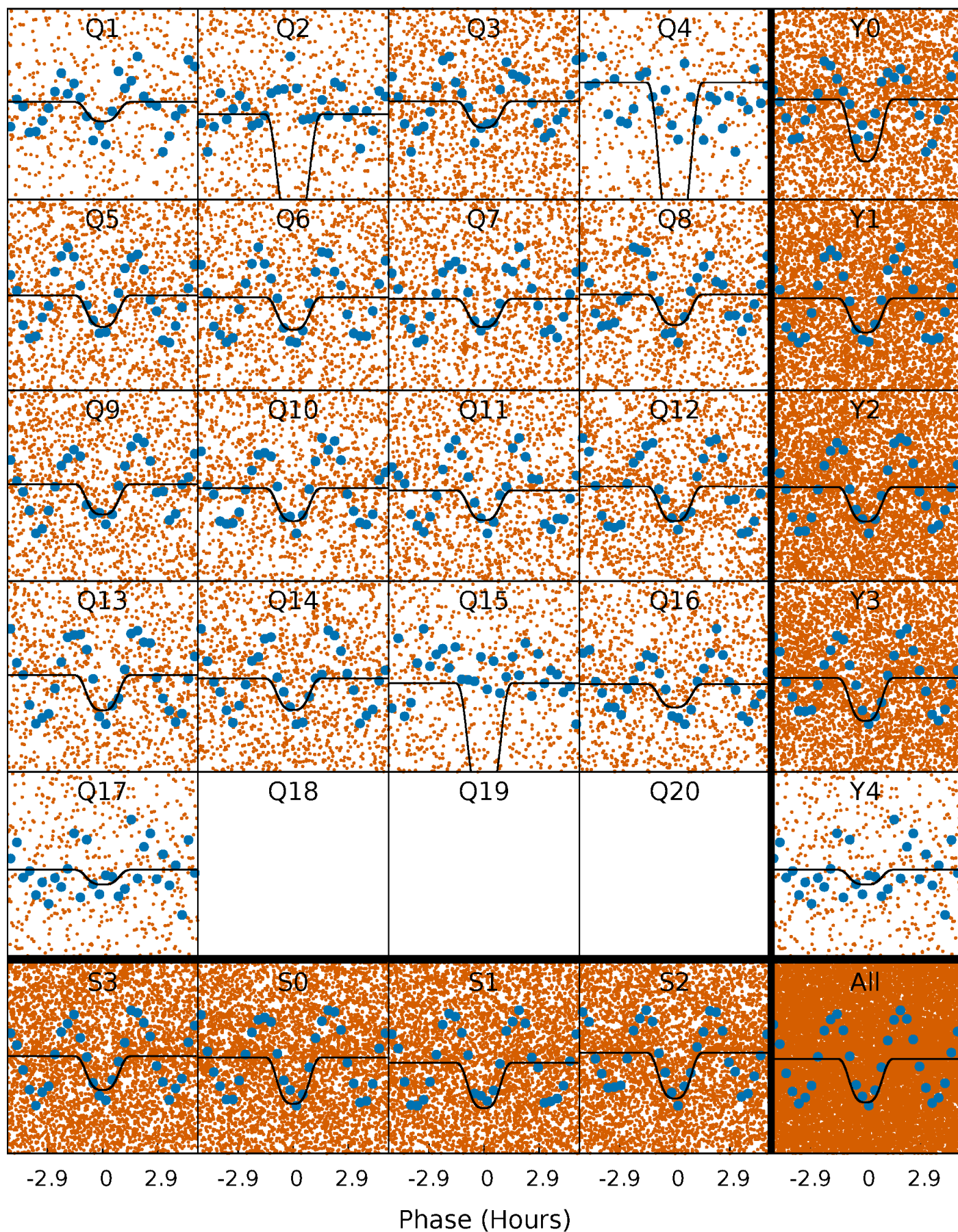
PDC Quarter-Phased Transit Curves

TCE 005976681-01 P= 0.585139 Days $T_0=131.679530$ (BKJD)



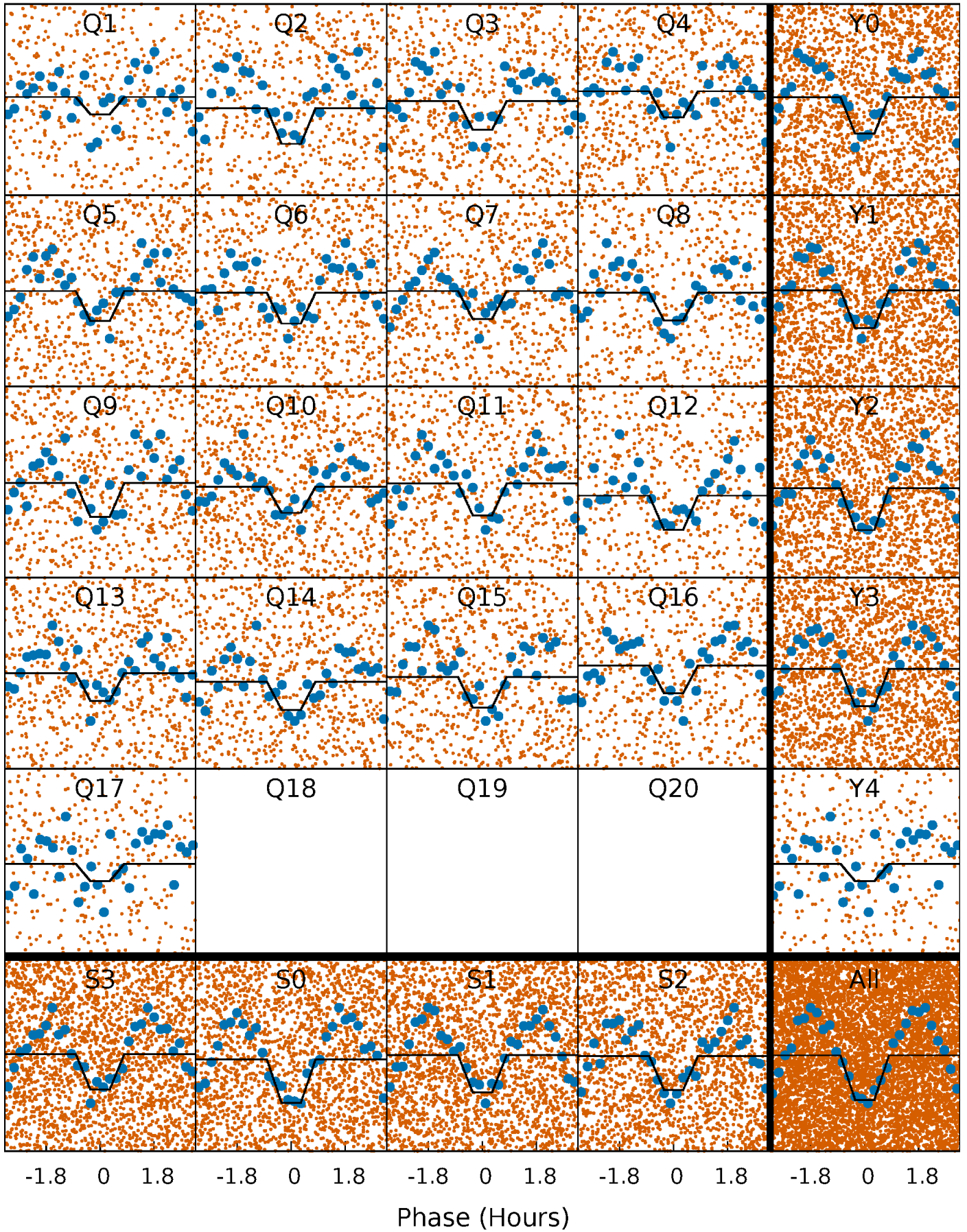
DV Quarter-Phased Transit Curves

TCE 005976681-01 P= 0.585139 Days $T_0=131.679530$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

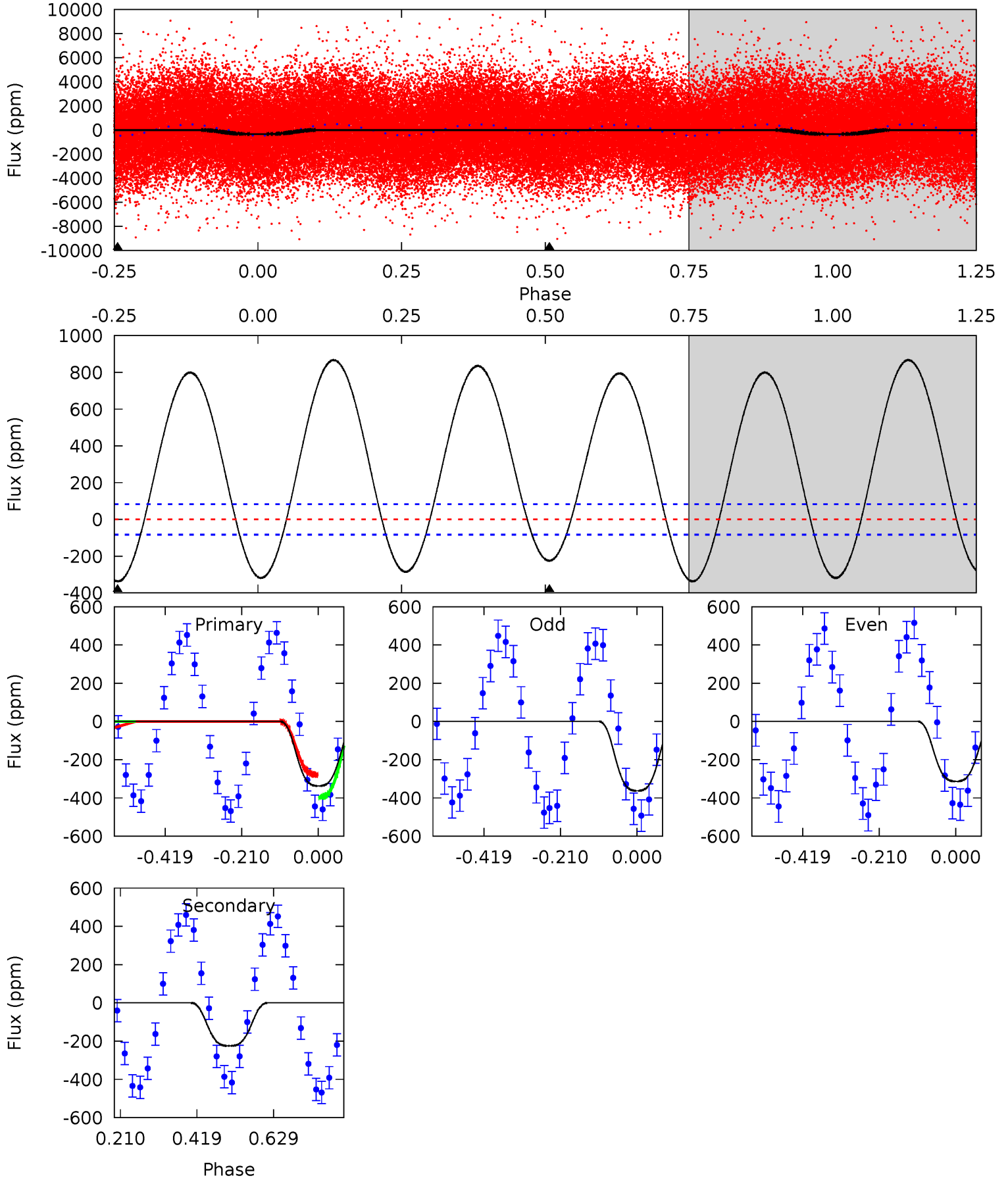
TCE 005976681-01 P= 0.585147 Days $T_0=131.672420$ (BKJD)



DV Model-Shift Uniqueness Test

005976681-01, P = 0.585139 Days, E = 131.094391 Days

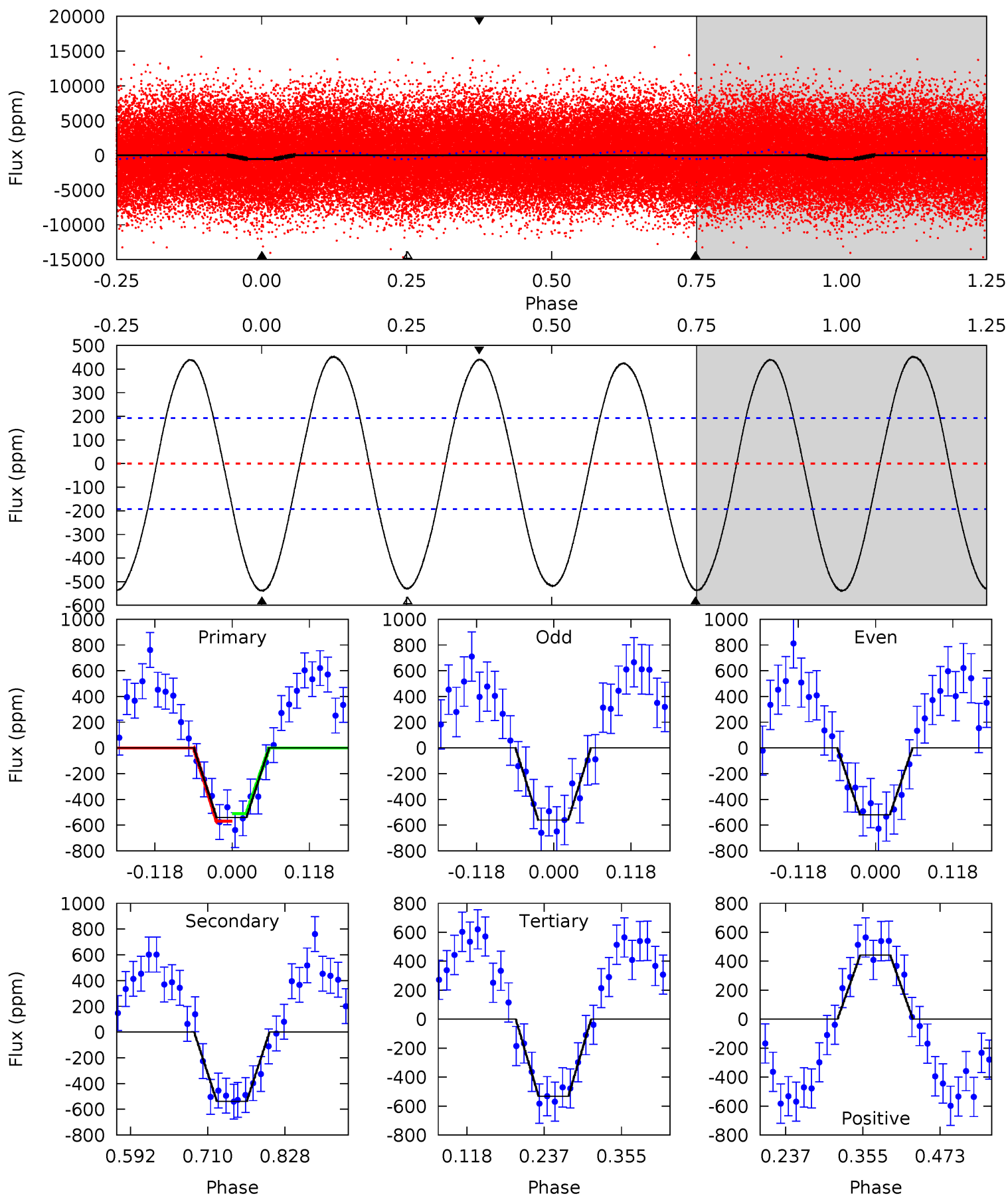
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.9	12.0	0	0	4.41	1.25	22.3	17.9	17.9	12.0	12.0	1.32	1.00	0.72	3.16



Alt Model-Shift Uniqueness Test

005976681-01, P = 0.585147 Days, E = 131.087273 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.7	12.7	12.5	10.4	4.53	1.56	8.19	0.19	2.28	0.16	2.25	0.48	0.96	0.46	0.66



Stellar Parameters For KIC 005976681

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7865^{+216}_{-324}	$3.947^{+0.241}_{-0.130}$	$-0.040^{+0.200}_{-0.350}$	$2.410^{+0.432}_{-0.803}$	$1.878^{+0.098}_{-0.393}$	$0.189^{+0.306}_{-0.063}$
	+3%/-4%	+6%/-3%	+500%/-875%	+18%/-33%	+5%/-21%	+162%/-33%
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 005976681-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-225 ± 19	$6.35^{+0.81}_{-1.05}$	5717^{+374}_{-479}	5410^{+285}_{-316}	$0.869^{+0.354}_{-0.192}$
Alt.	-539 ± 43	$6.20^{+0.65}_{-1.07}$	5728^{+385}_{-445}	7378^{+372}_{-333}	$2.191^{+0.814}_{-0.447}$

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

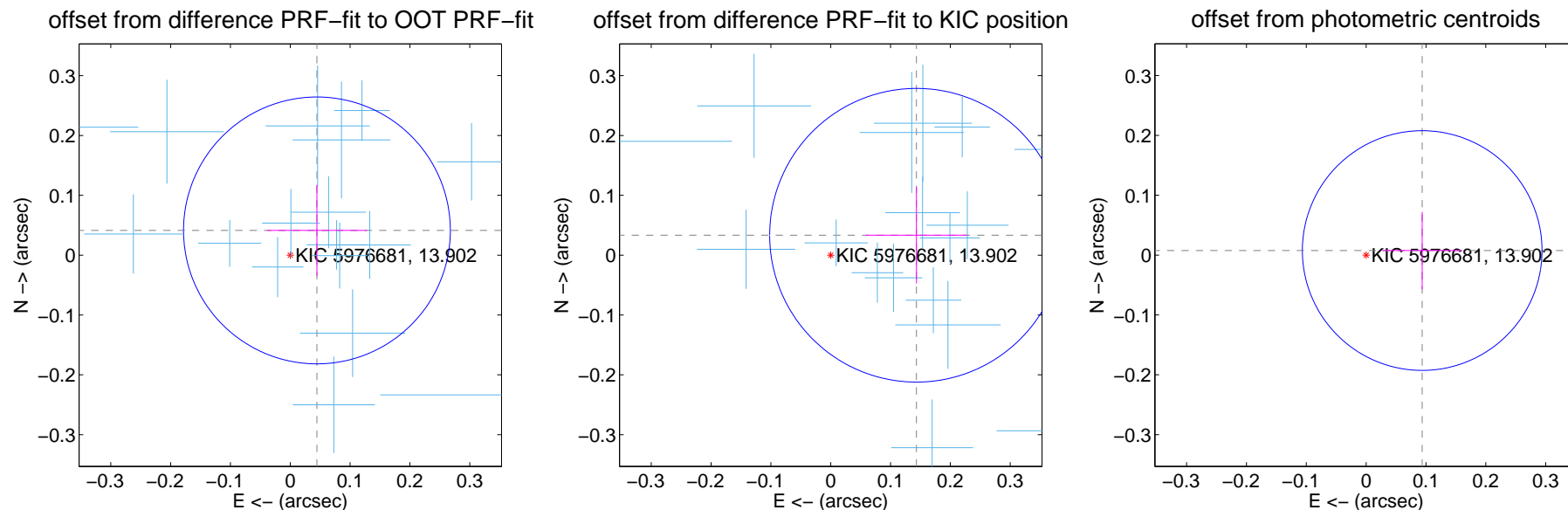
DV Centroid Data

Supplemental centroid analysis for 005976681-01. Kepler magnitude: 13.90. Transit SNR 20.71

There are 17 quarters with good PRF difference image offsets

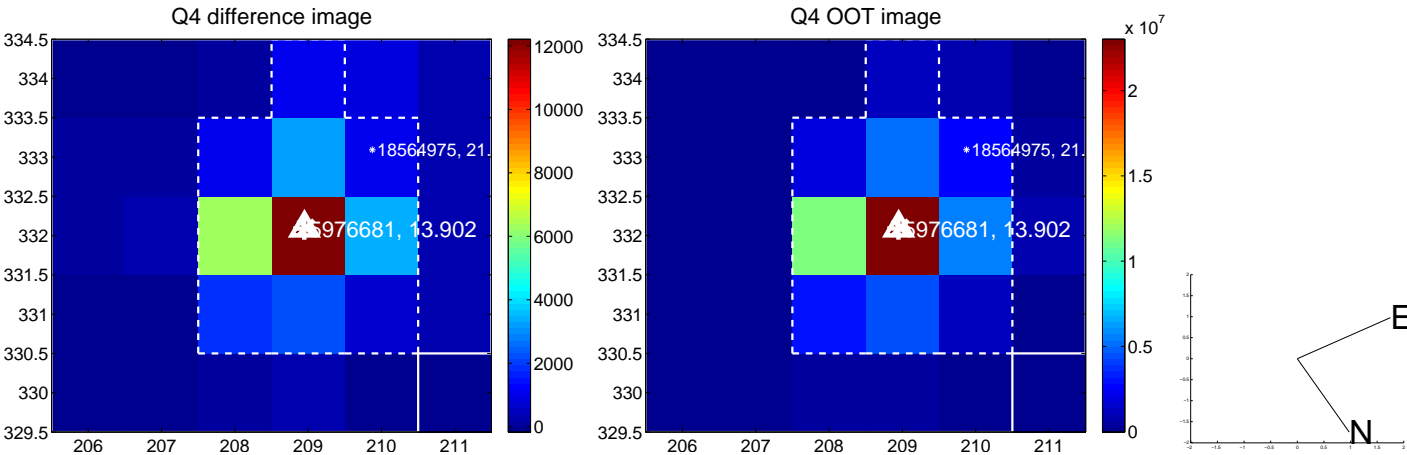
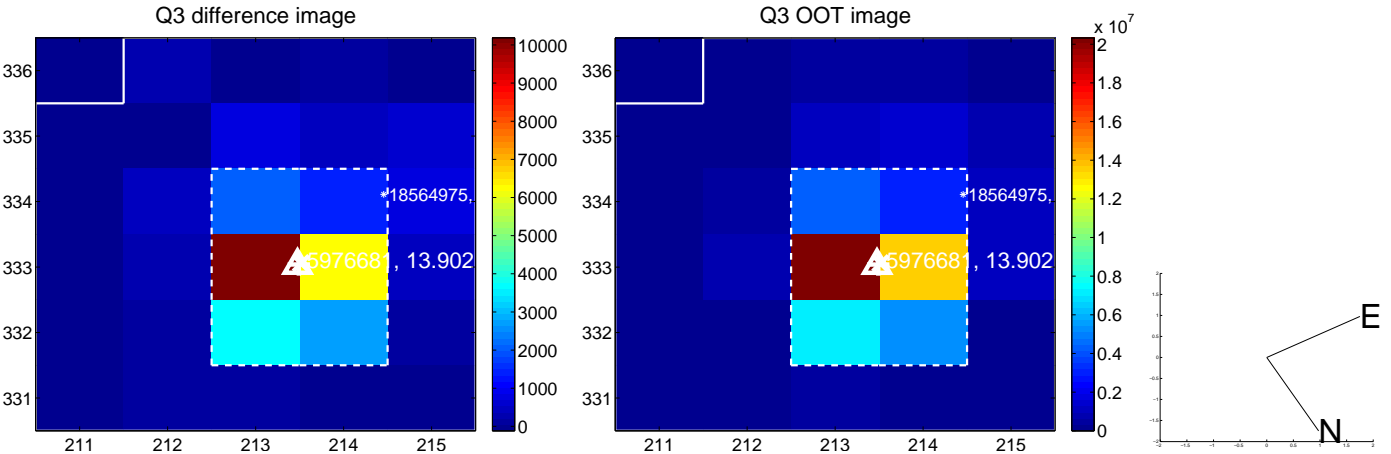
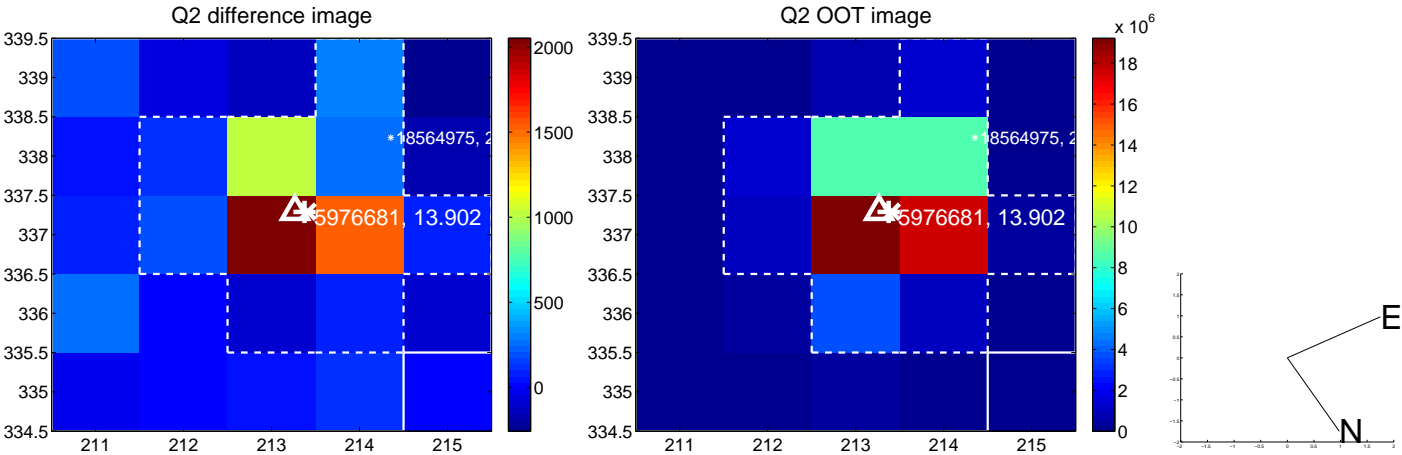
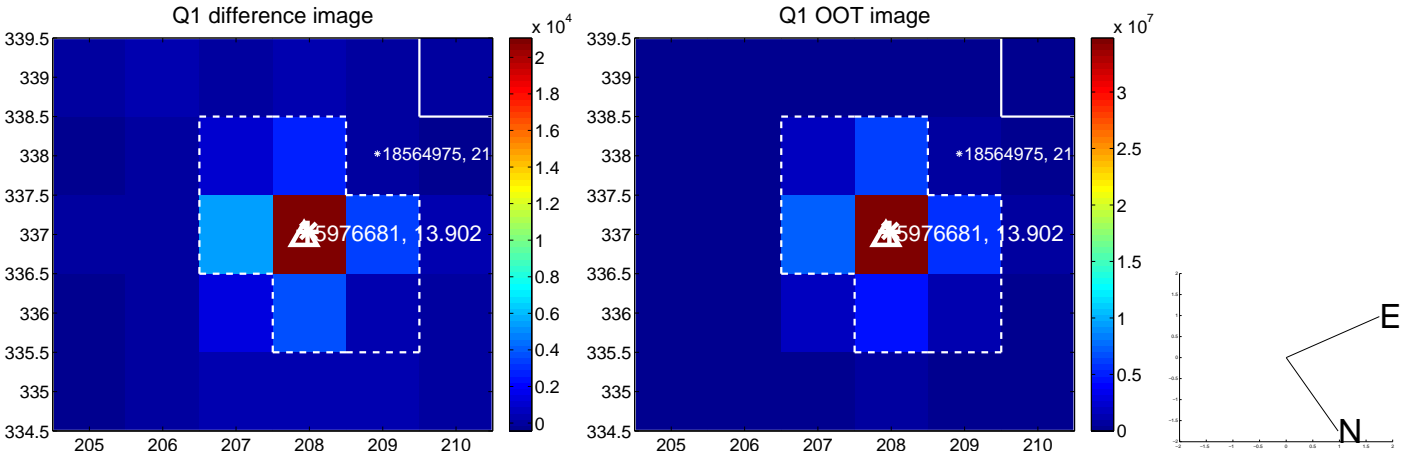
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.061 ± 0.074	0.82	-0.045 ± 0.083	0.041 ± 0.076
PRF-fit source offset from KIC position	0.147 ± 0.082	1.80	-0.143 ± 0.085	0.033 ± 0.081
photometric centroid source offset	0.09 ± 0.07	1.41	-0.09 ± 0.07	0.01 ± 0.06

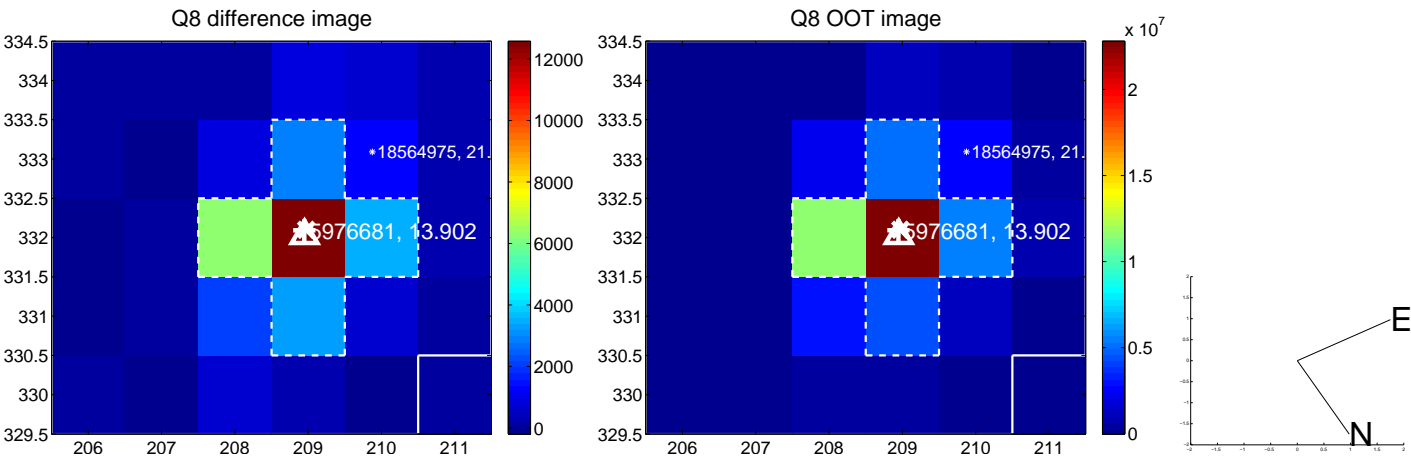
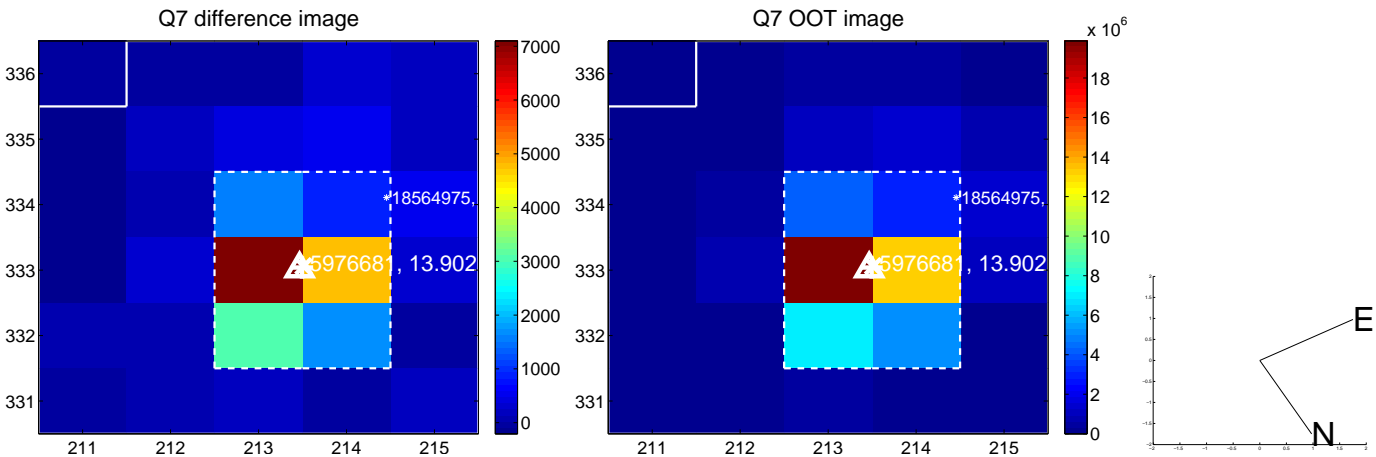
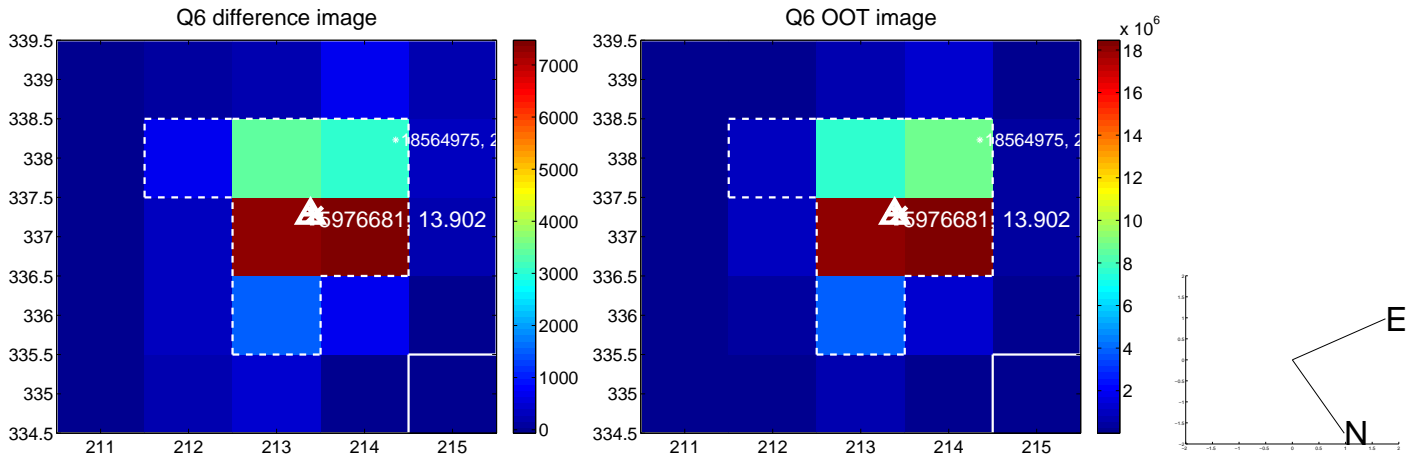
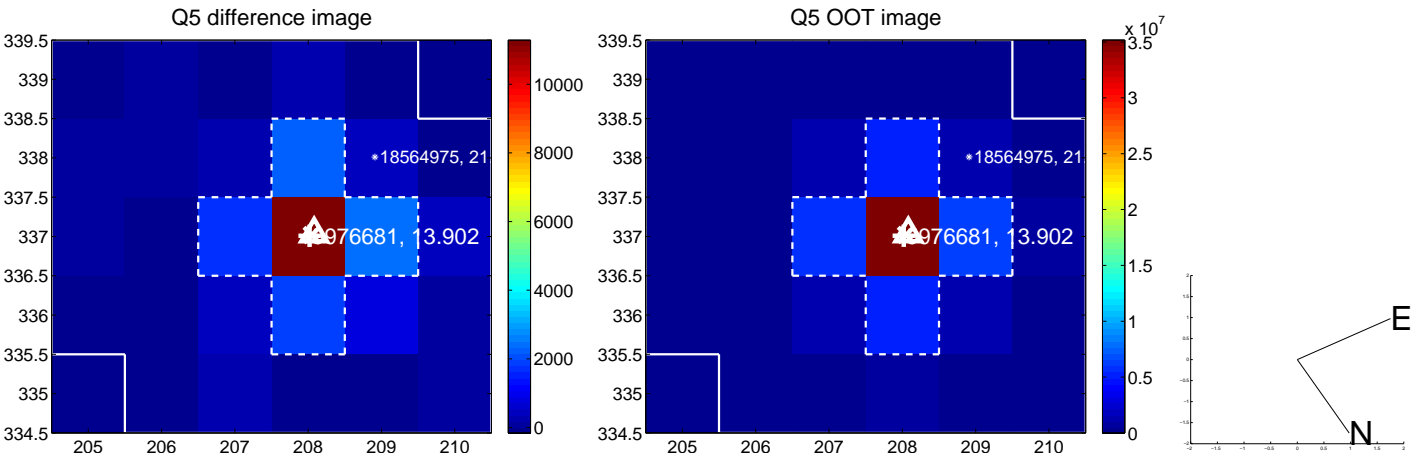


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

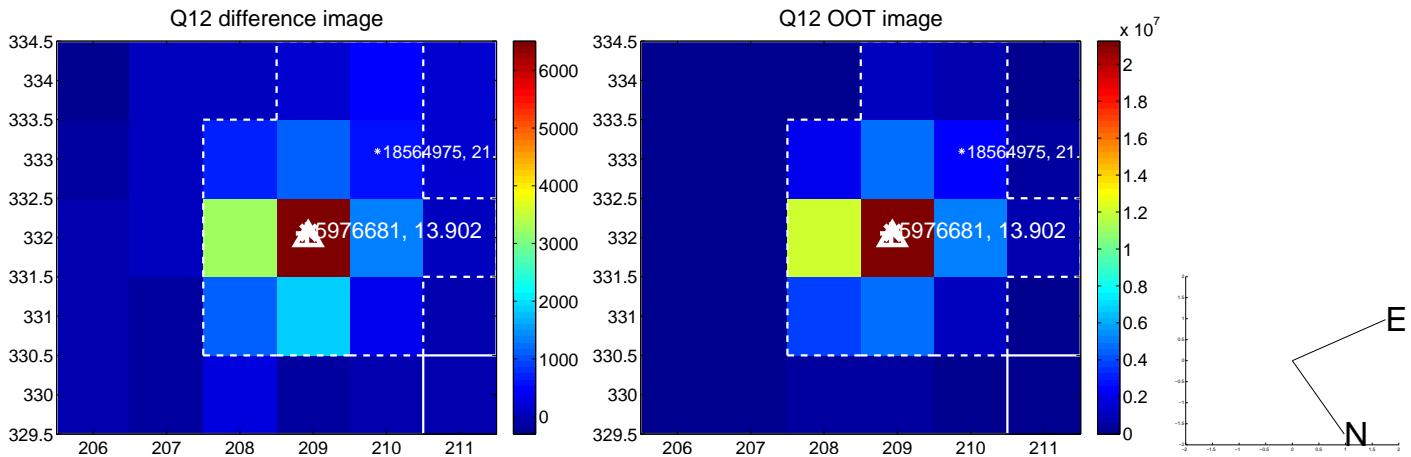
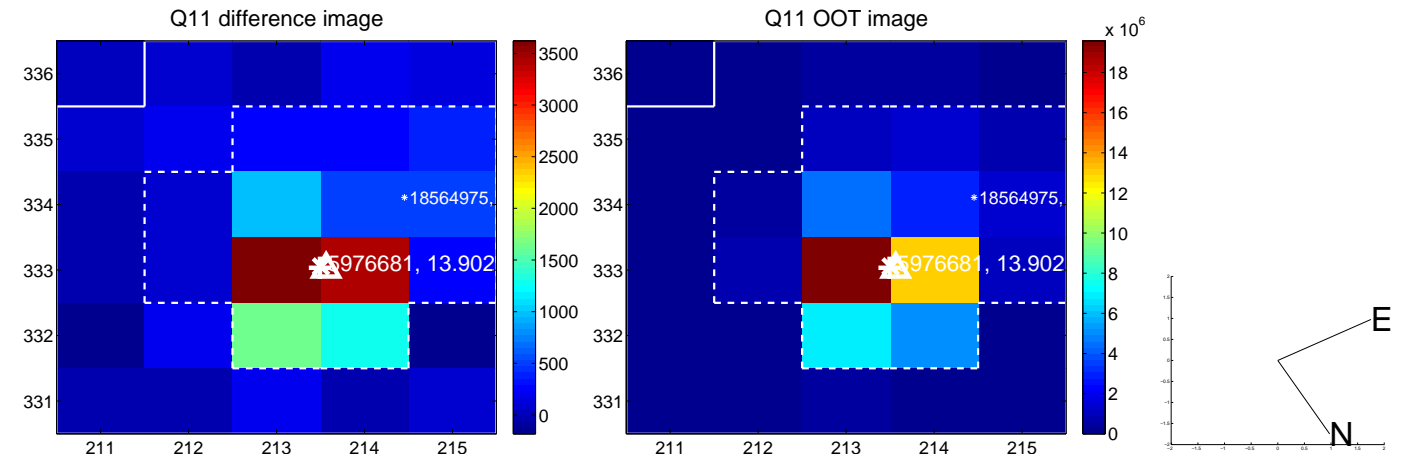
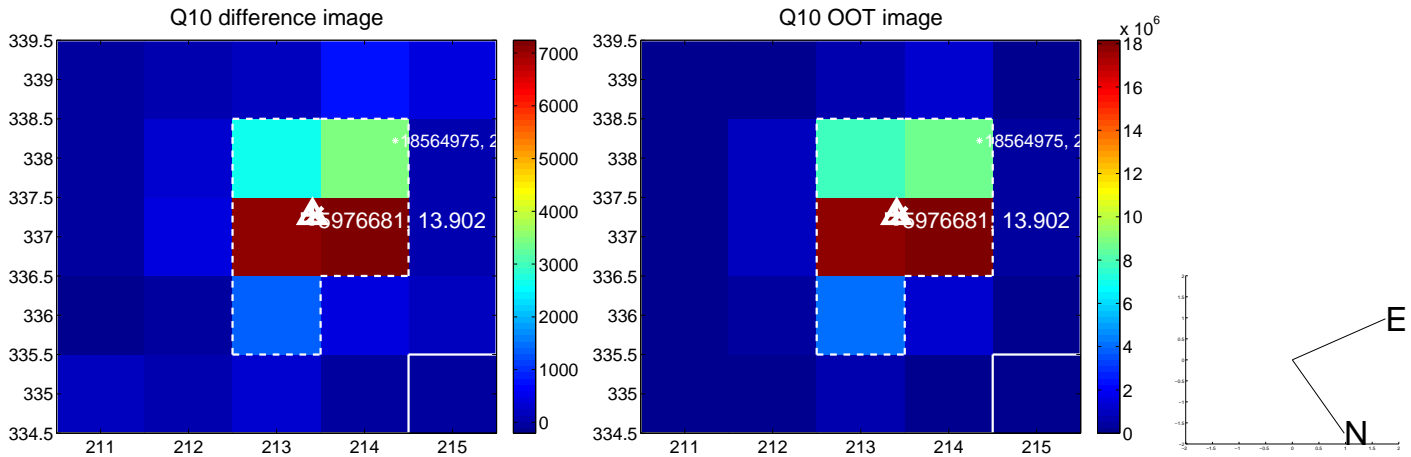
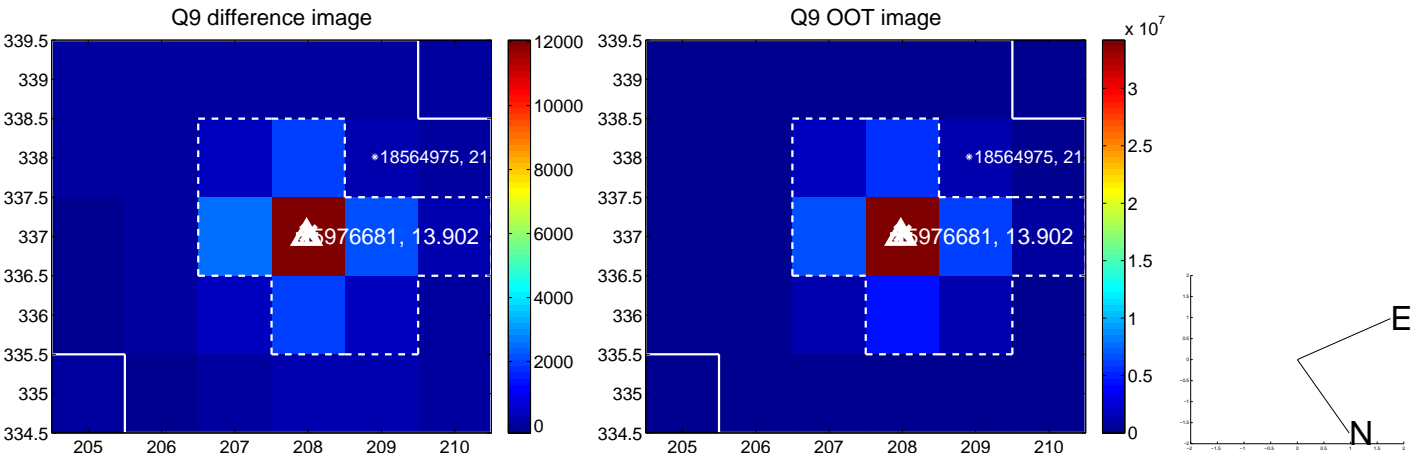
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



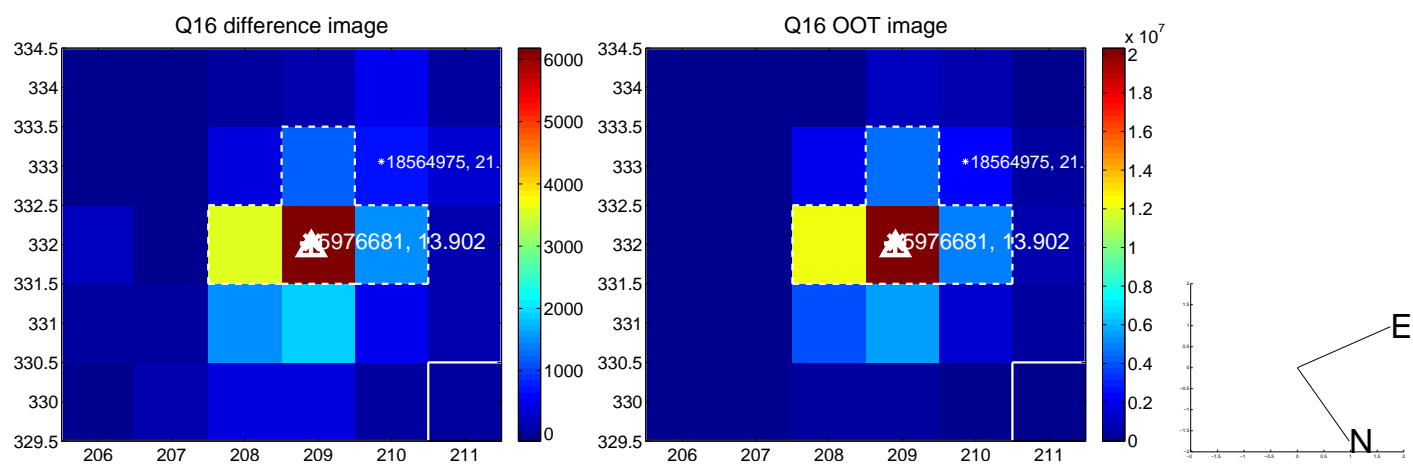
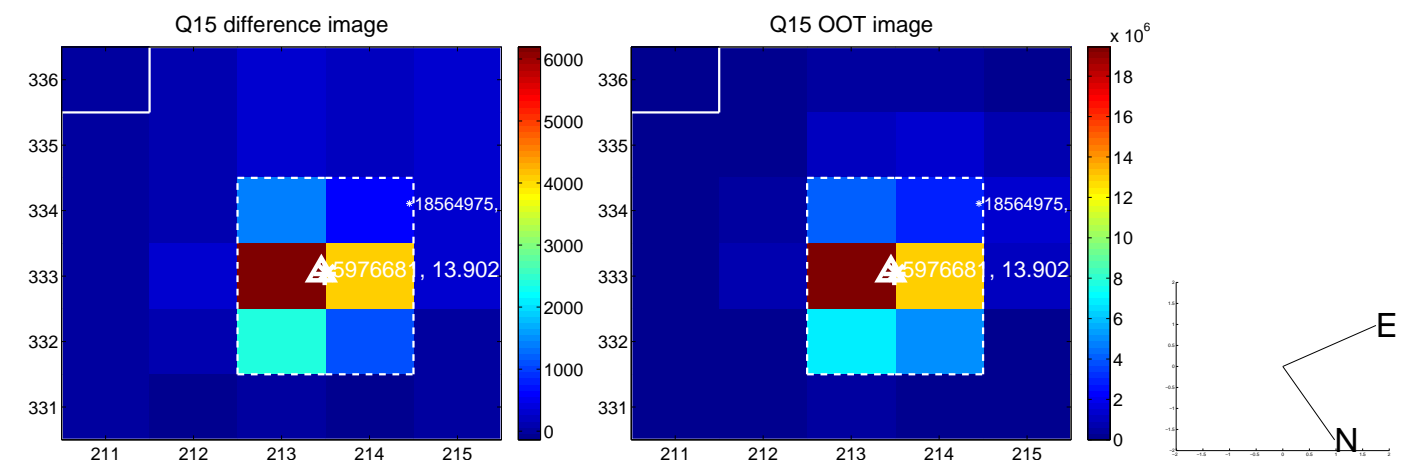
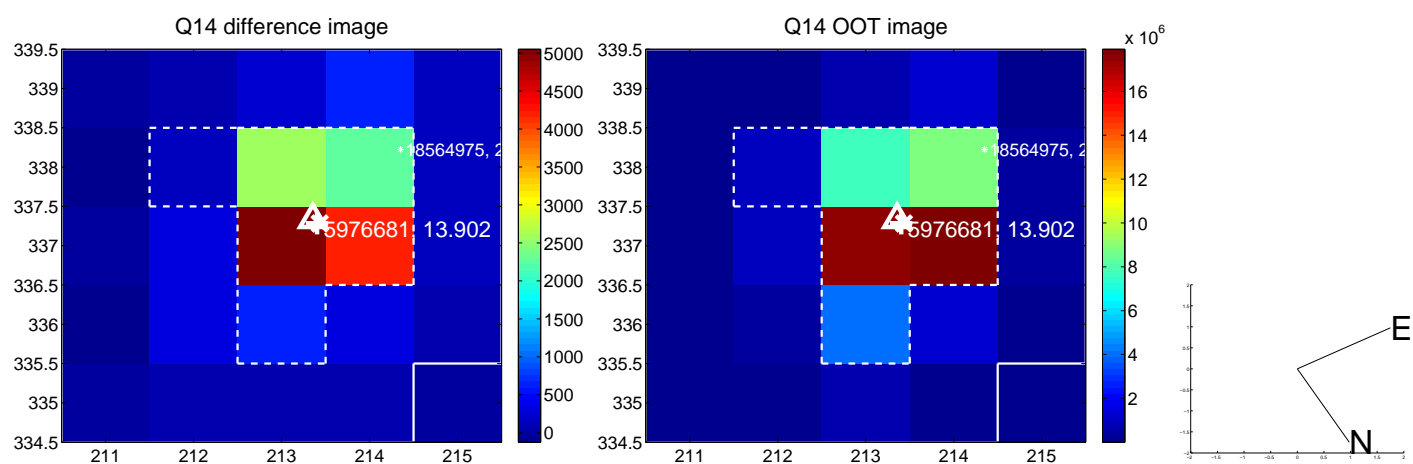
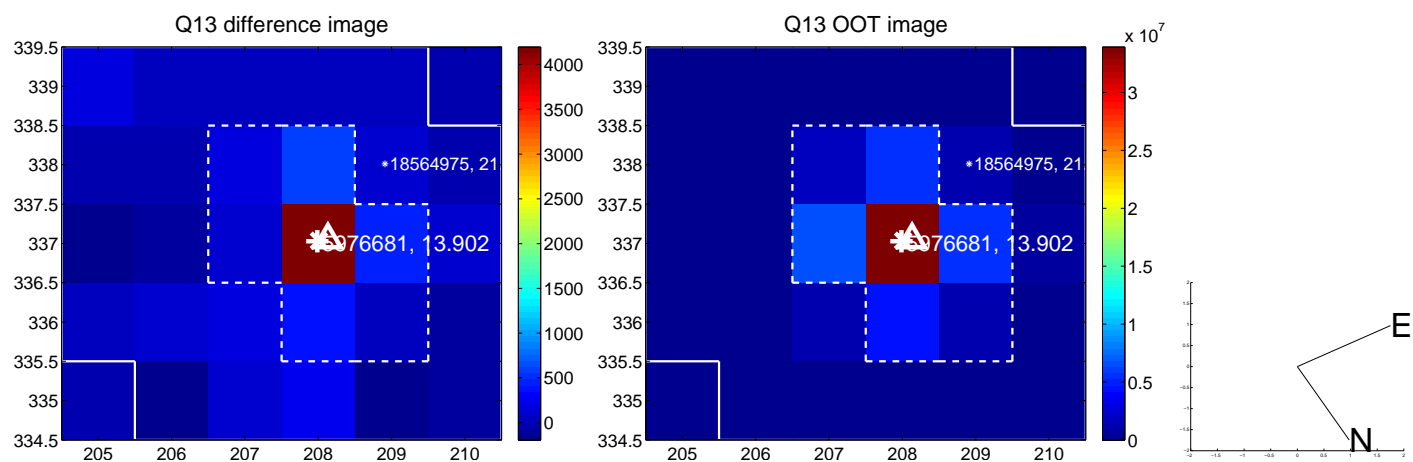
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



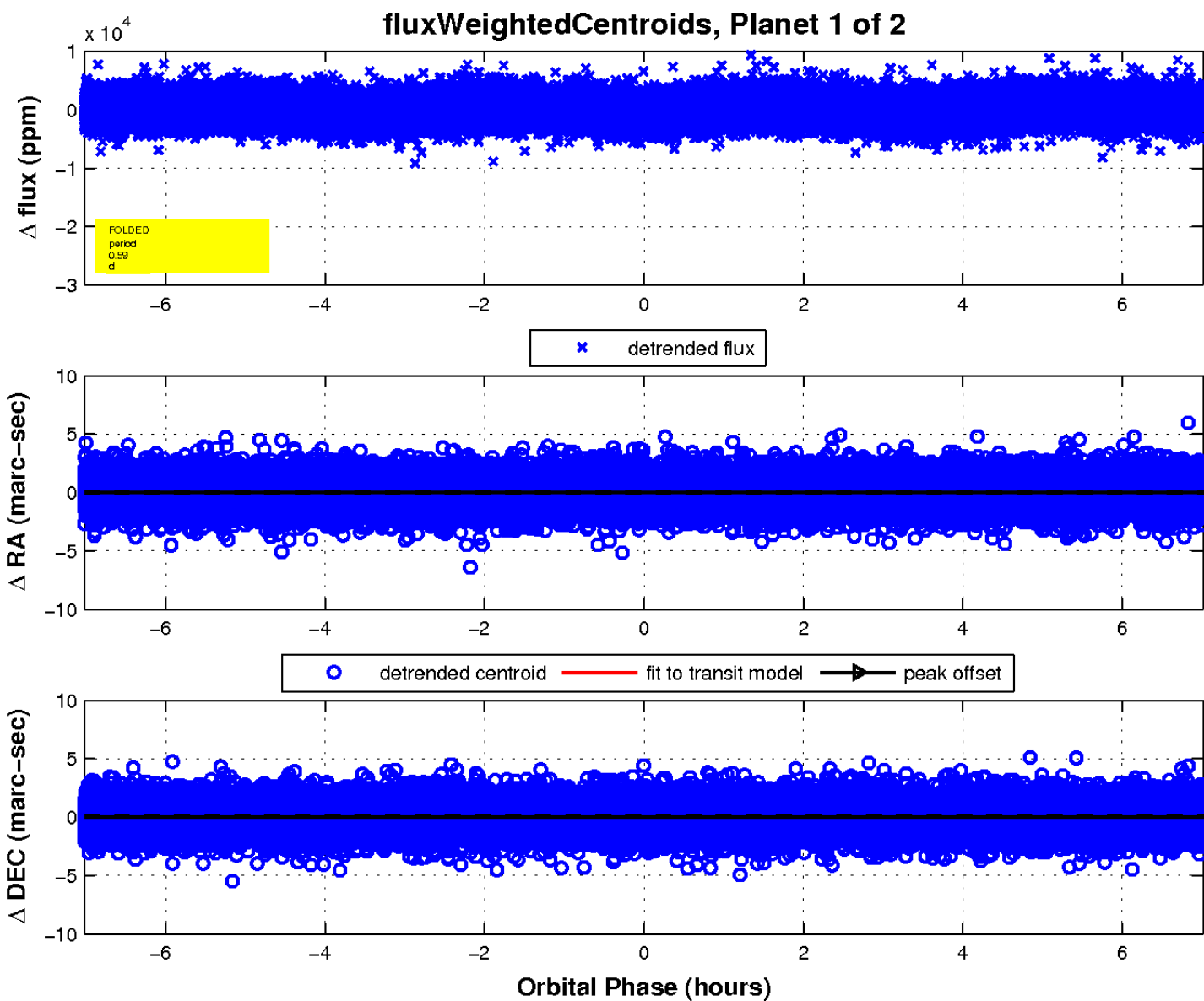
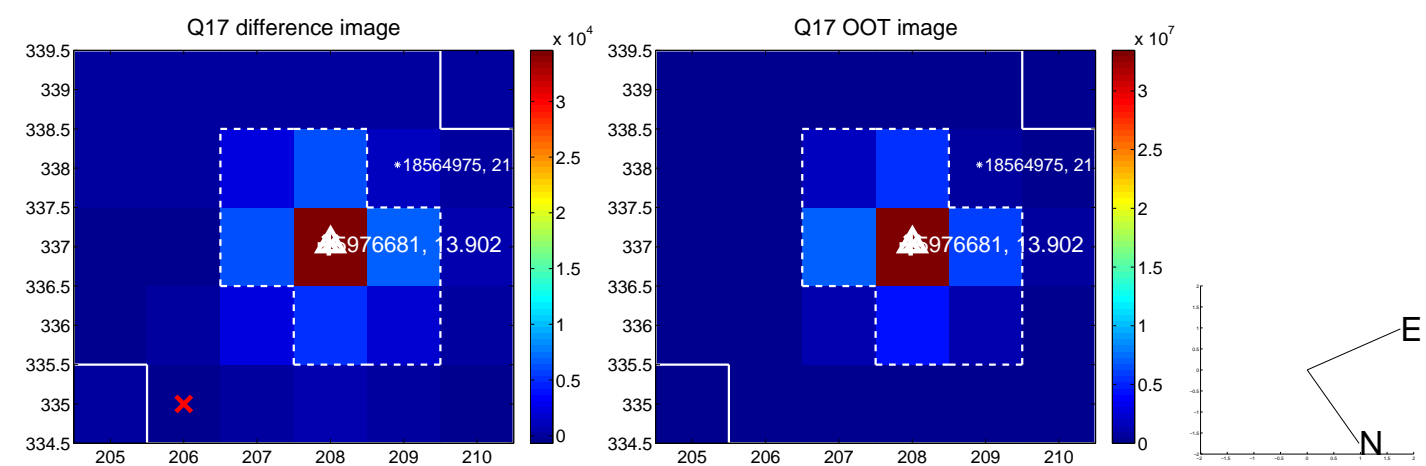
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

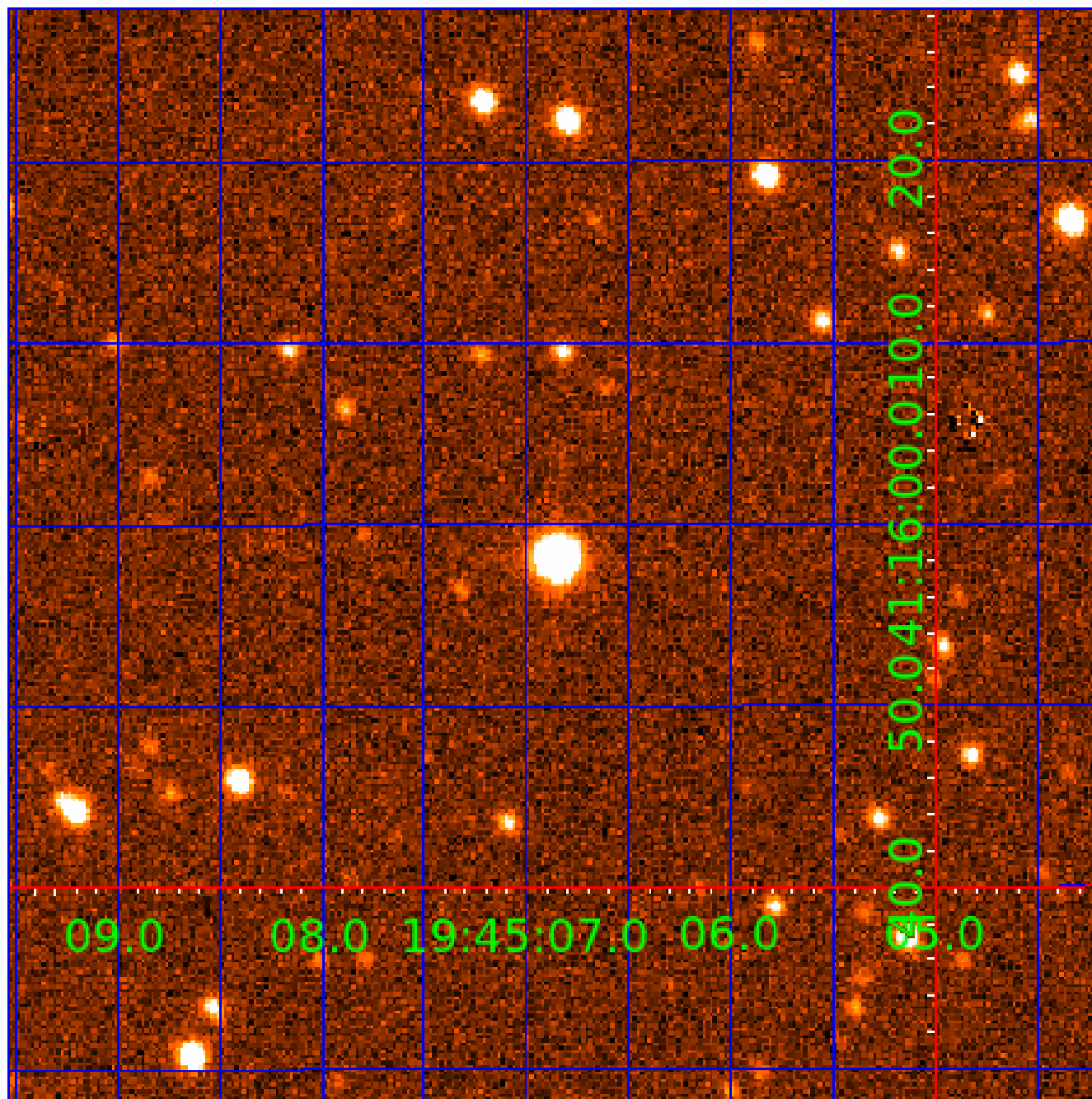


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005976681

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})
005976681-01	OBS	No	0.585139	131.679531	451.7	2.503	19.1	20.7	2.41	7865	6.50	69826.72
005976681-02	OBS	No	0.585145	131.965592	572.2	2.070	22.3	29.6	2.41	7865	6.70	69825.81

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005976681-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
005976681-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD

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

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

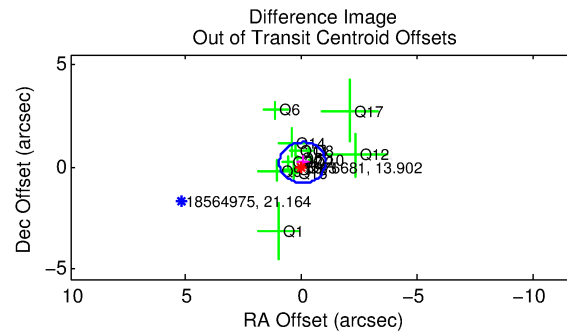
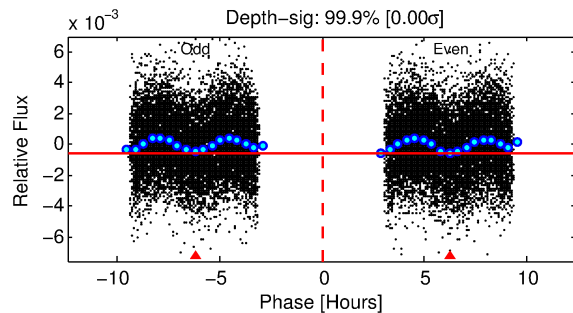
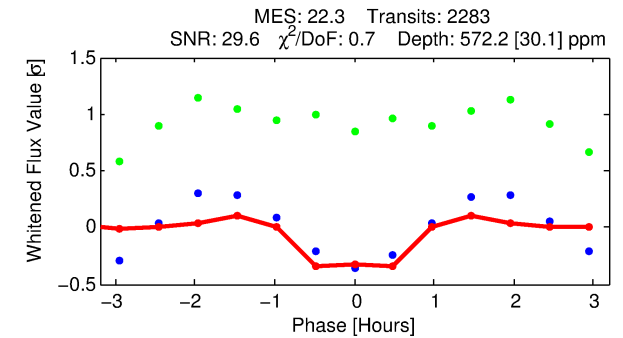
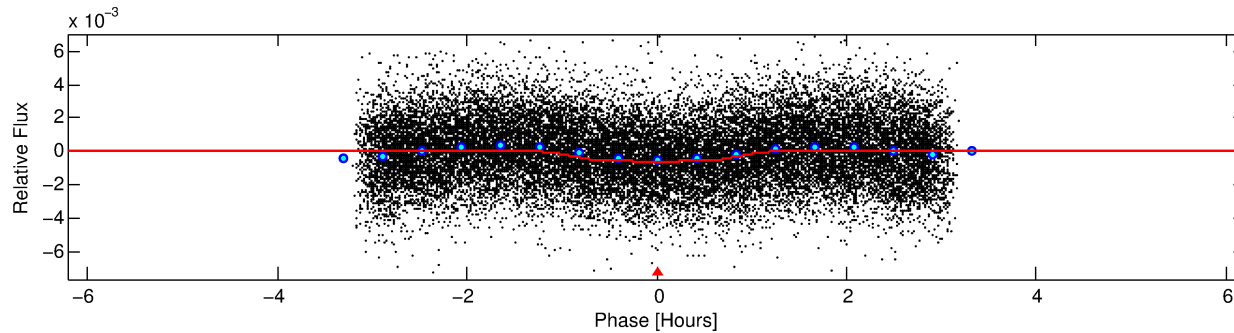
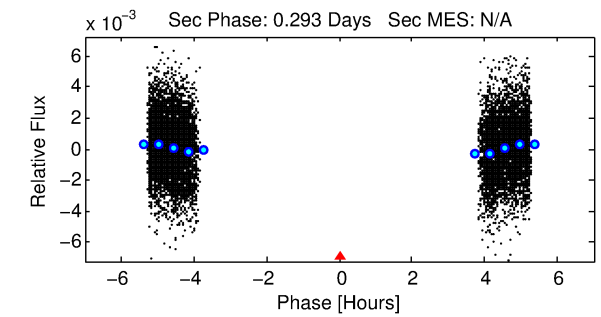
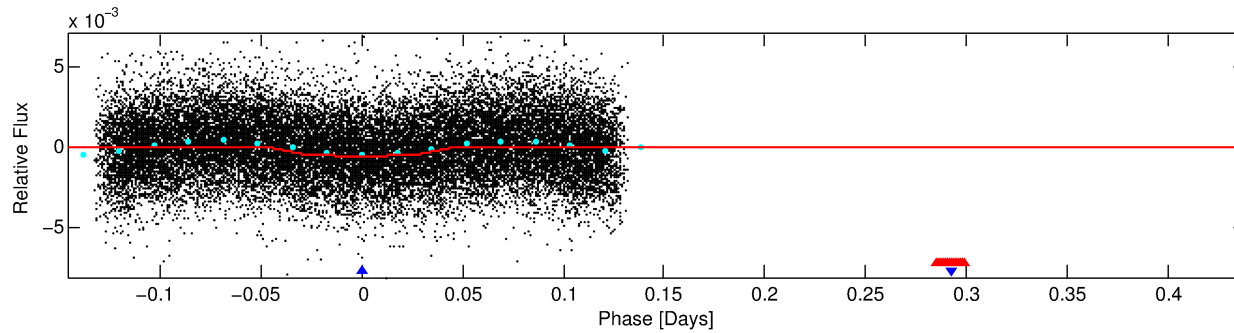
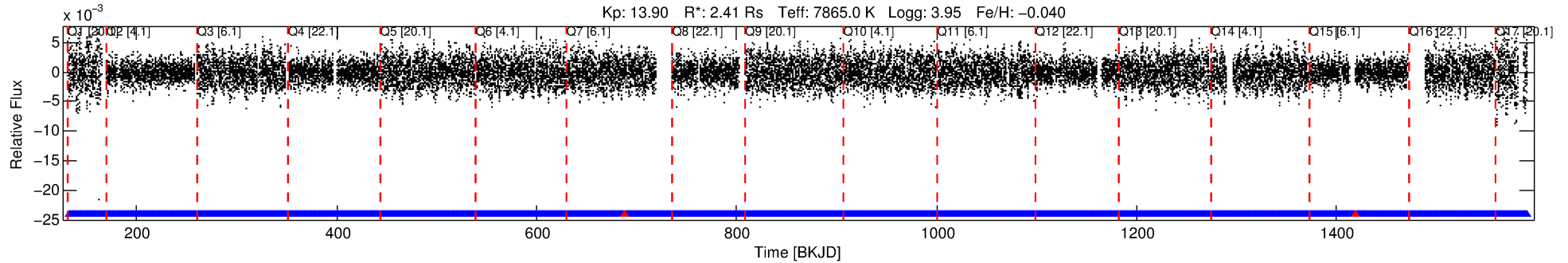
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005976681-02

No Significant Match Found

DV One-Page Summary

KIC: 5976681 Candidate: 2 of 2 Period: 0.585 d



DV Fit Results:

Period = 0.58514 [0.00000] d
Epoch = 131.9656 [0.0006] BKJD
Rp/R* = 0.0255 [0.0014]
a/R* = 1.42 [0.21]
b = 0.90 [0.06]
Seff = 69825.81 [32252.91]
Teq = 4145 [479] K
Rp = 6.70 [2.27] Re
a = 0.0169 [0.0049] AU

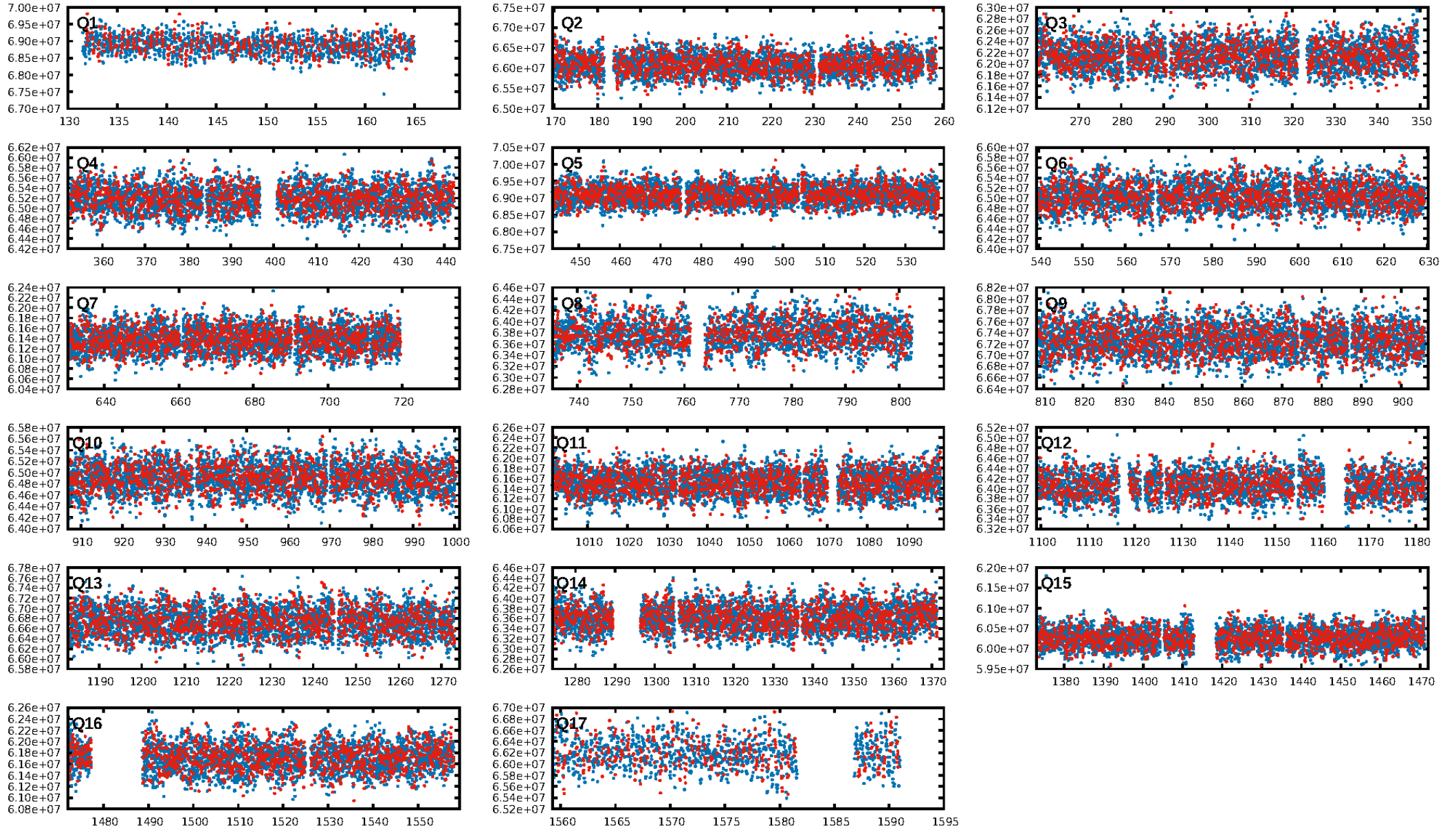
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2179/2181]
GhostDiagnostic-chr: 1.908
Centroid-sig: 10.1%
Centroid-so: 0.168 arcsec [3.34σ]
OotOffset-rm: 0.199 arcsec [0.60σ]
KicOffset-rm: 0.216 arcsec [0.64σ]
OotOffset-st: 4/4/3/5 [16]
KicOffset-st: 4/4/3/5 [16]
DiffImageQuality-fgm: 0.75 [12/16]
DiffImageOverlap-fno: 0.00 [0/17]

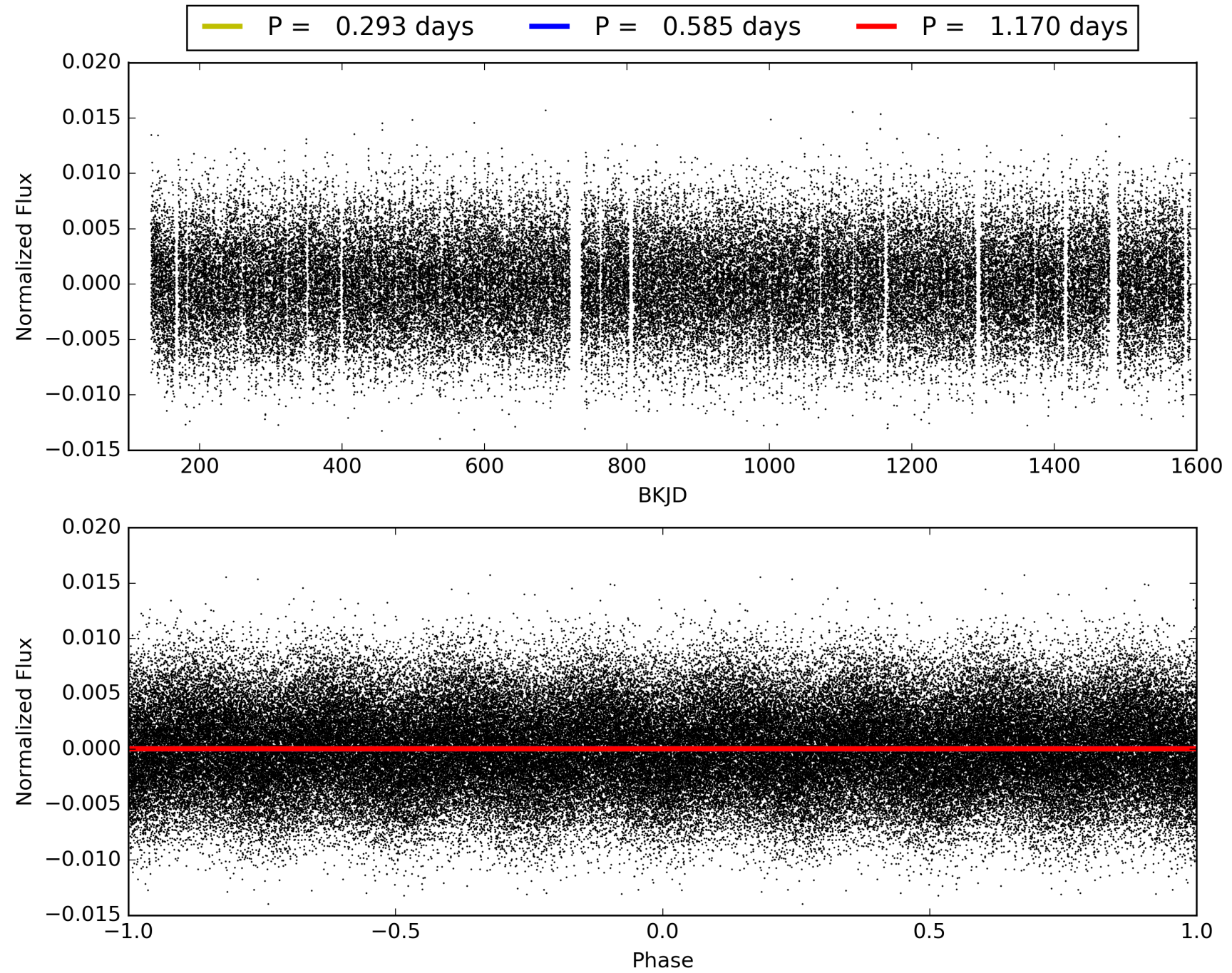
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 04:17:15 Z

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

TCE 005976681-02, PDC Light Curves

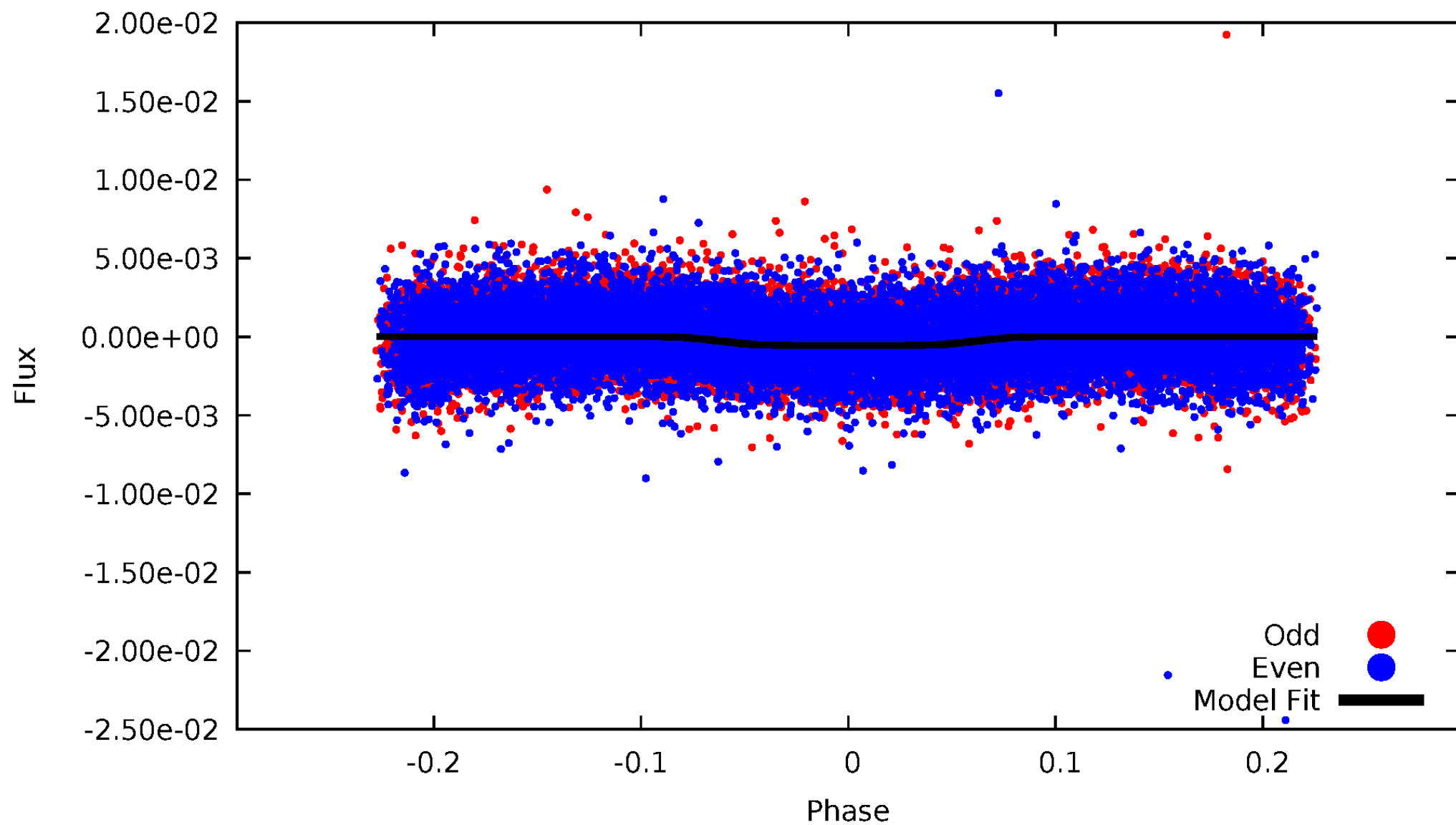


TCE 005976681-02



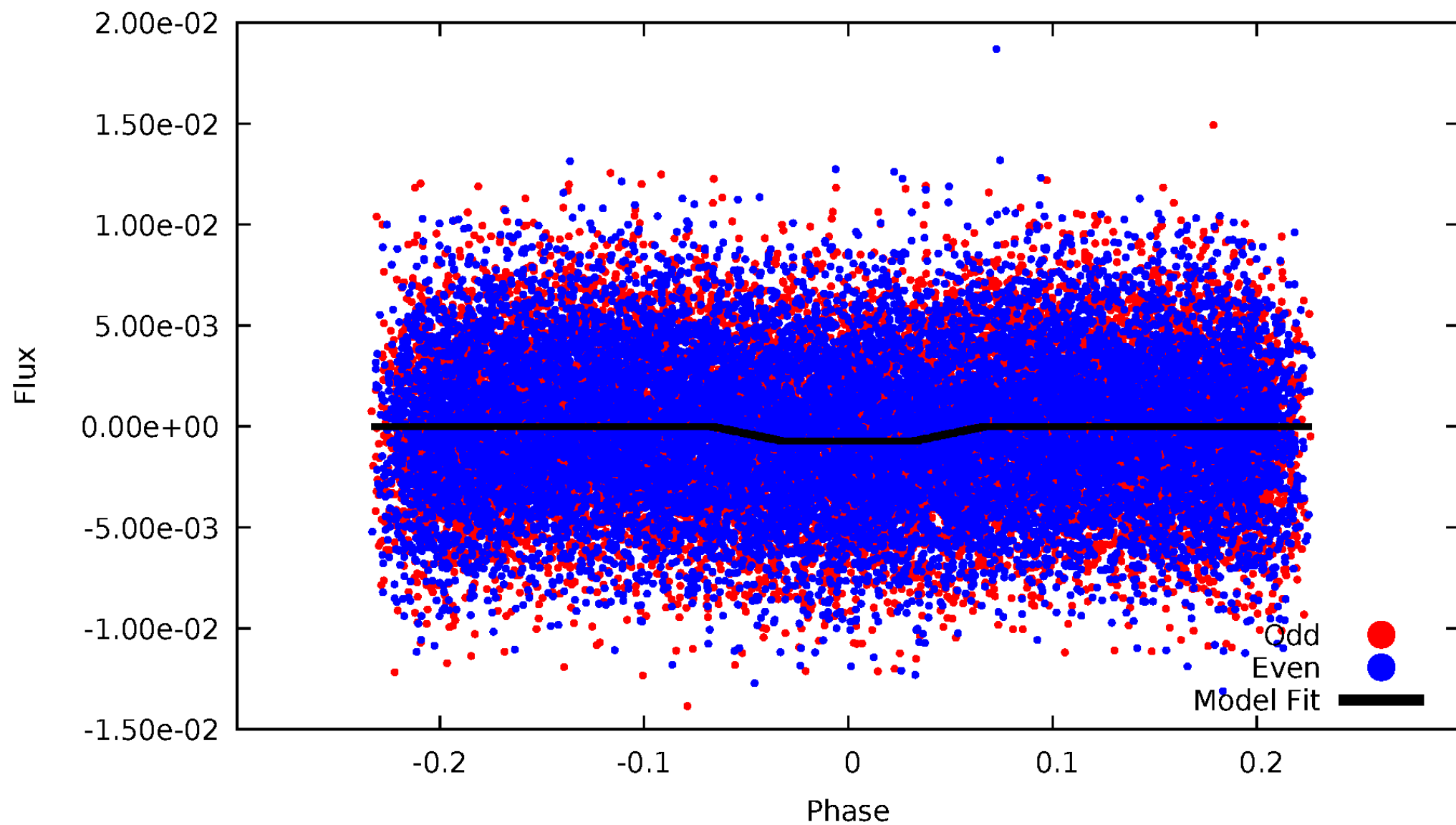
DV Odd/Even

TCE 005976681-02



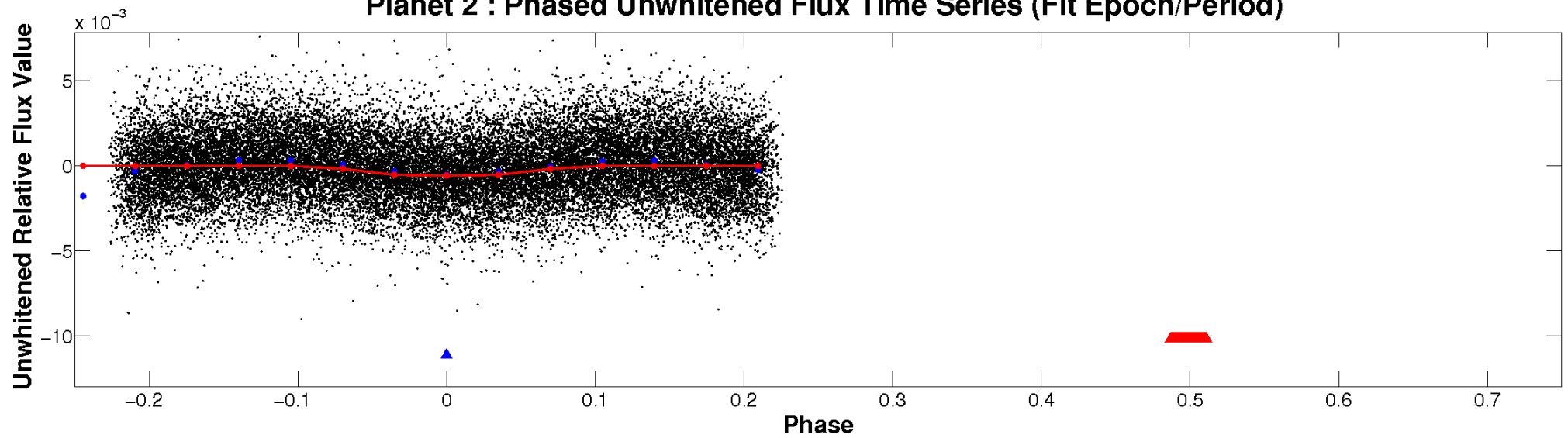
ALT Odd/Even

TCE 005976681-02

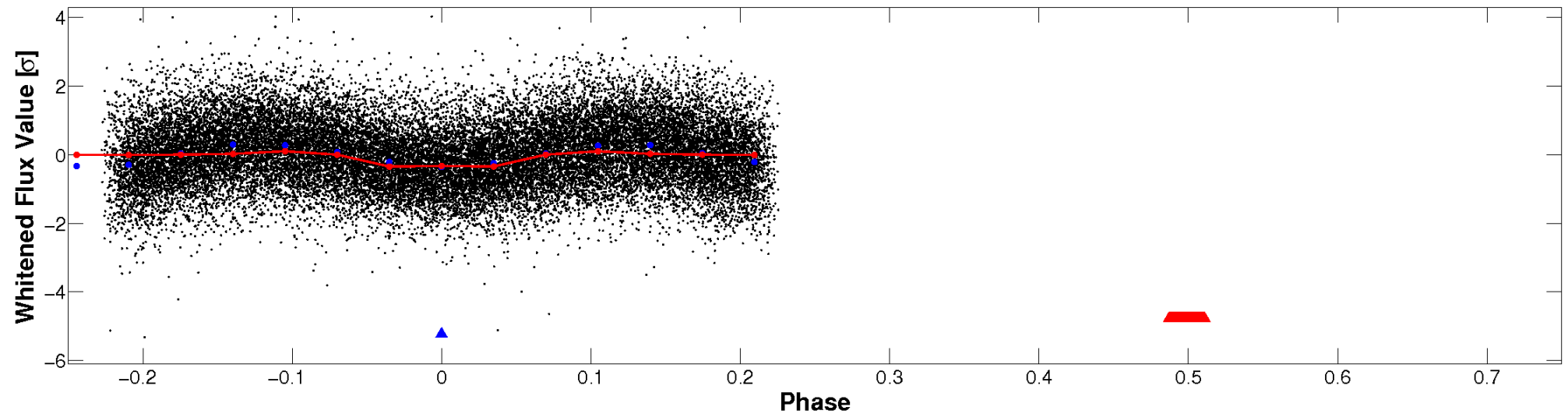


Non-Whitened Vs. Whitened Light Curve

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

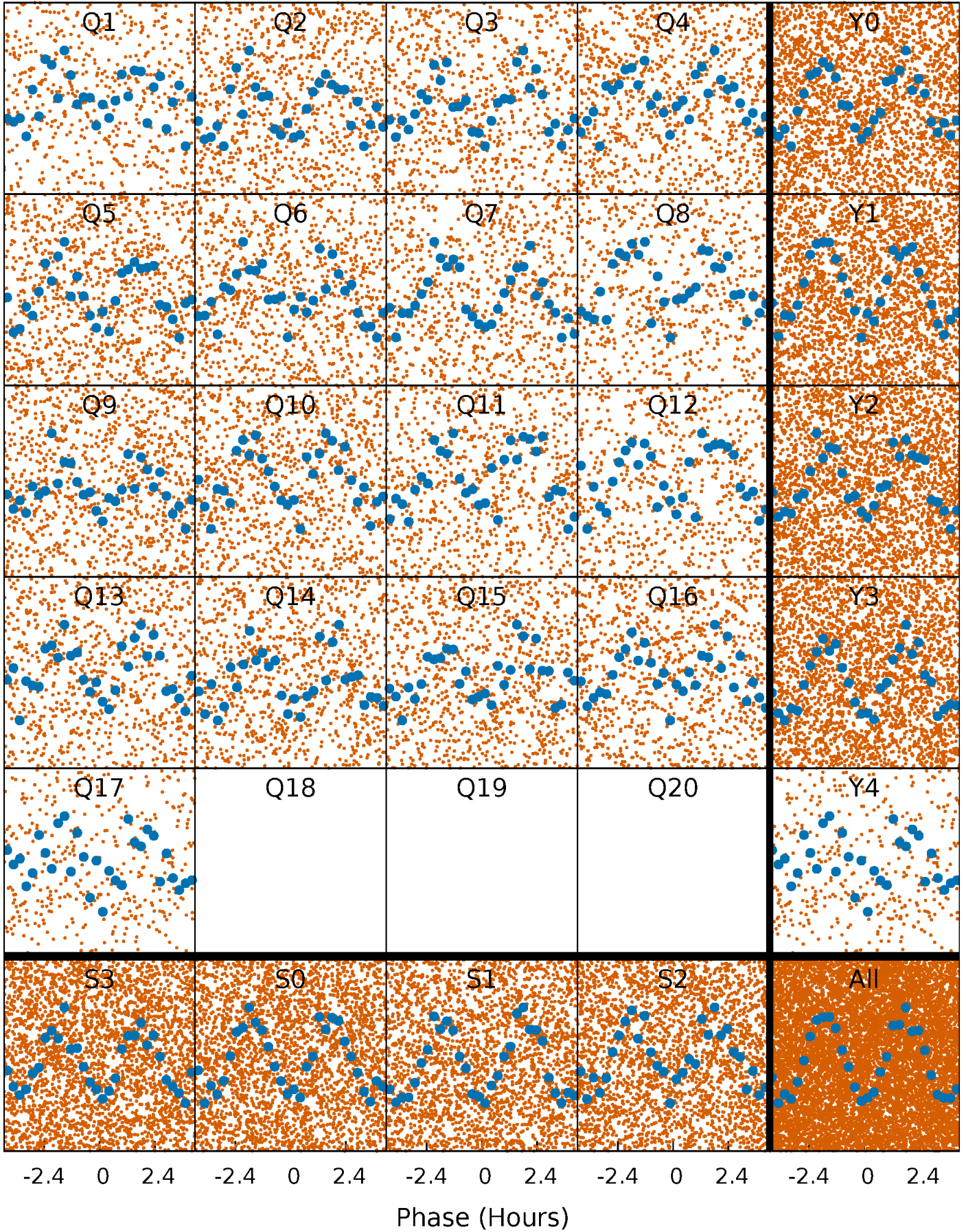


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



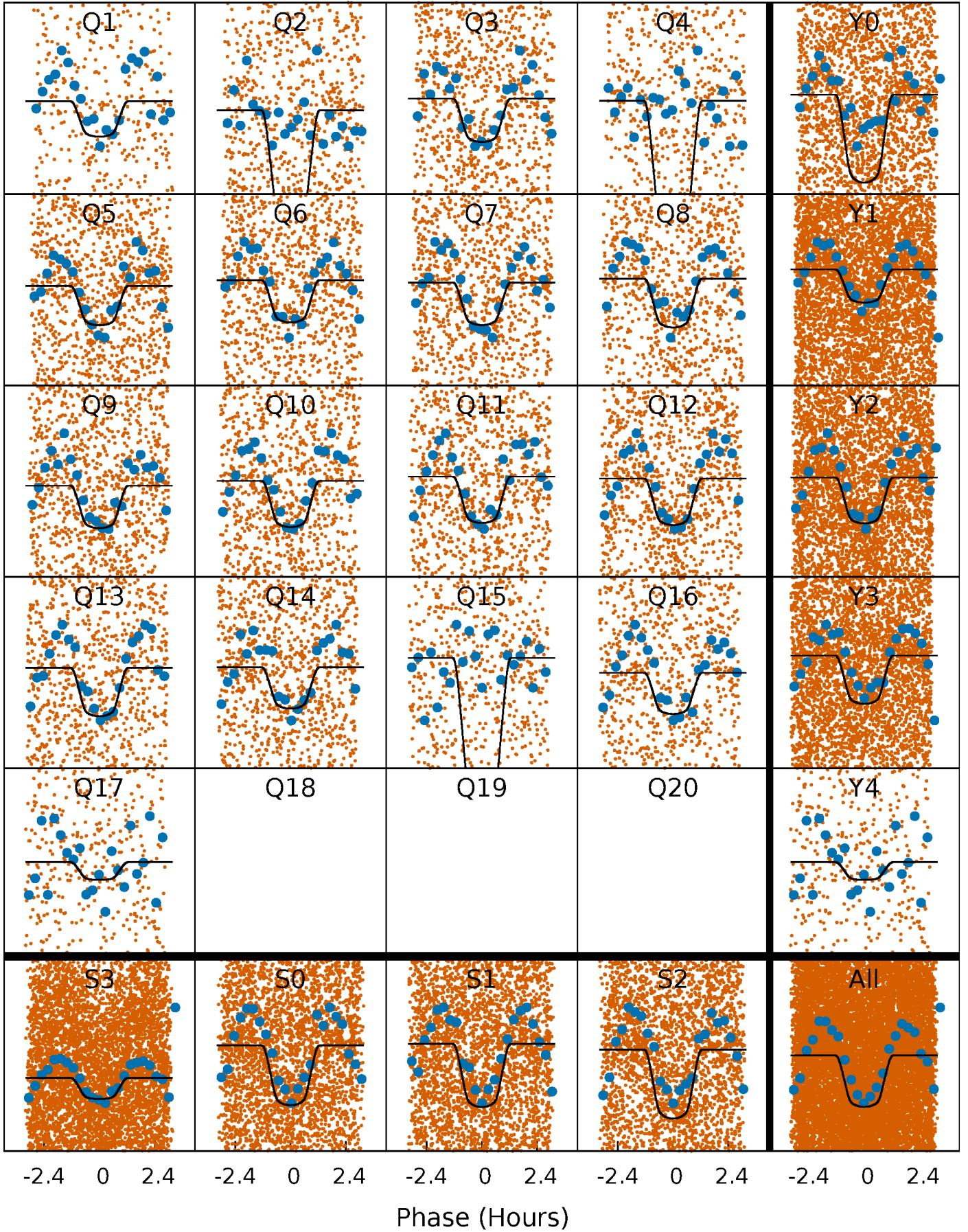
PDC Quarter-Phased Transit Curves

TCE 005976681-02 P= 0.585145 Days $T_0=131.965592$ (BKJD)



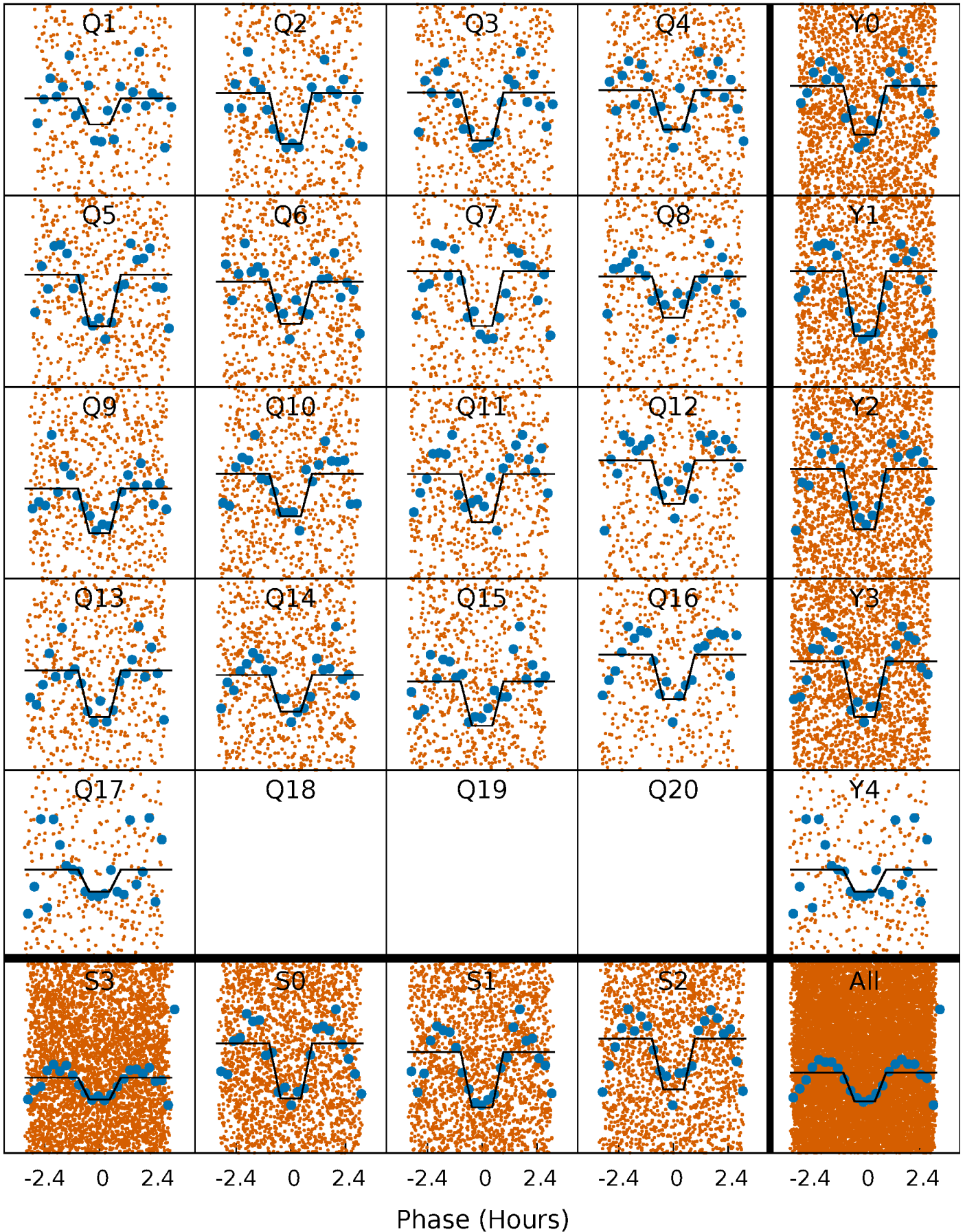
DV Quarter-Phased Transit Curves

TCE 005976681-02 P= 0.585145 Days $T_0=131.965592$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

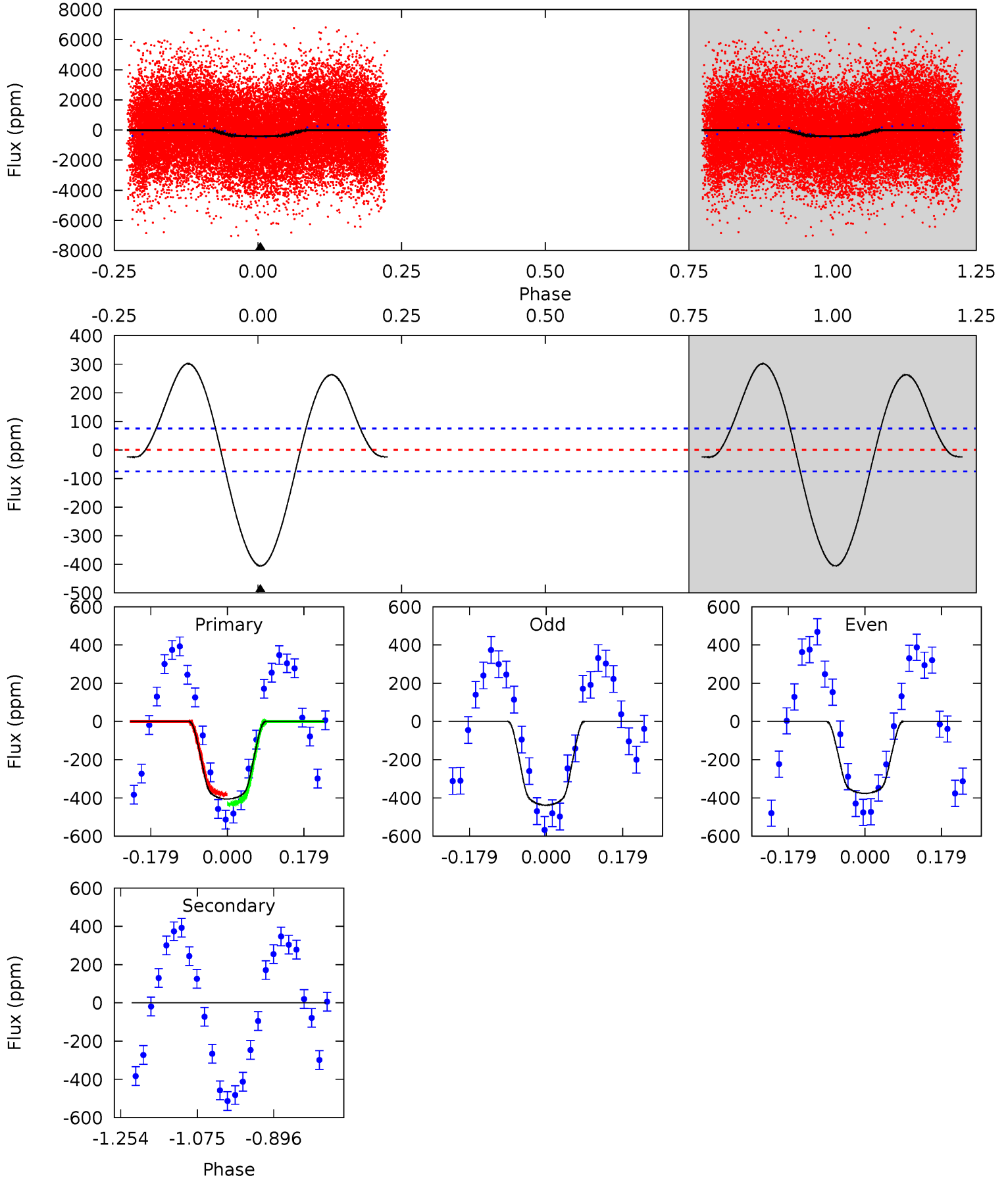
TCE 005976681-02 $P = 0.585147$ Days $T_0 = 131.965170$ (BKJD)



DV Model-Shift Uniqueness Test

005976681-02, P = 0.585145 Days, E = 131.380447 Days

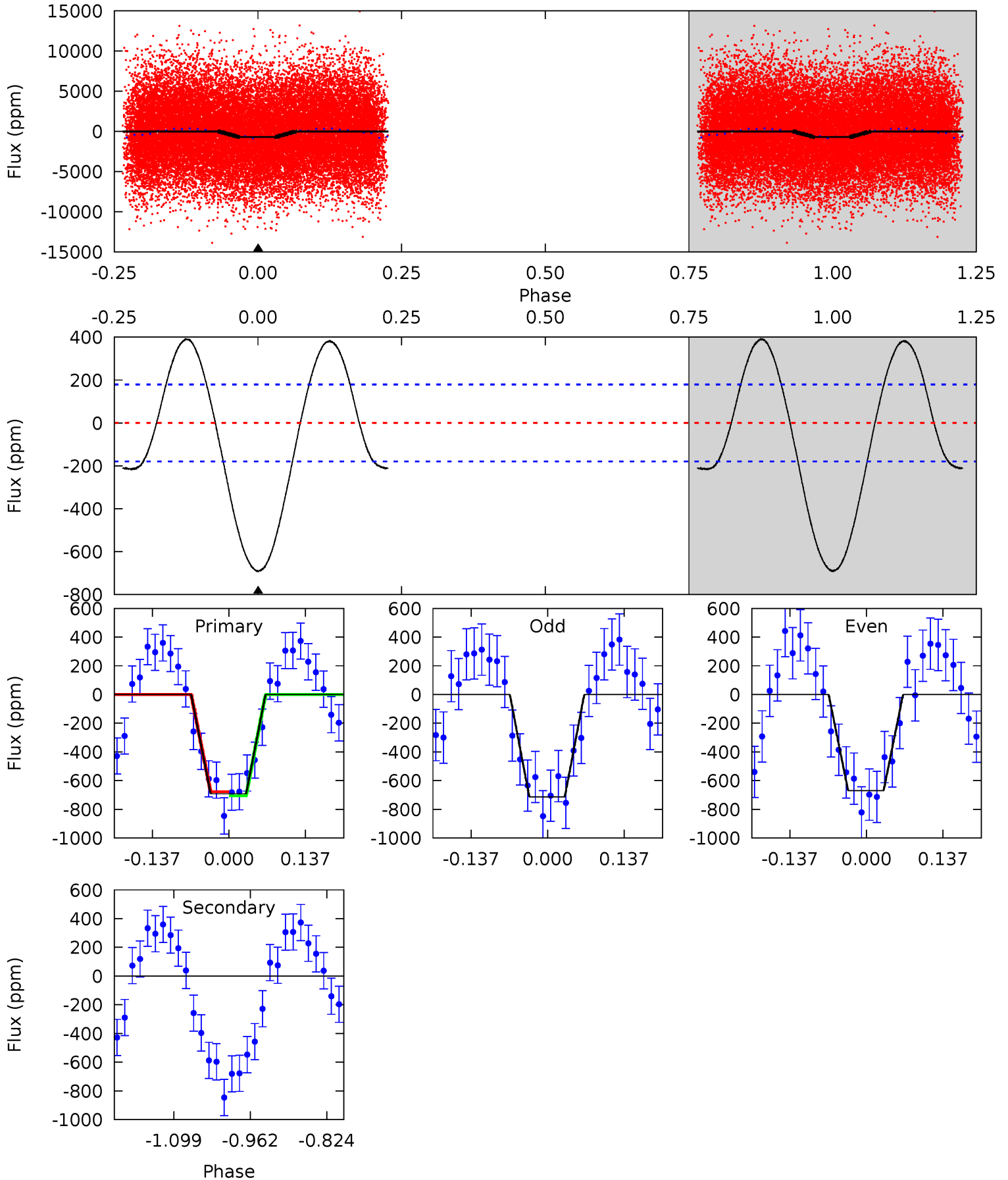
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.9	0	0	0	4.44	1.34	1.74	23.9	23.9	0	0	1.82	0.95	0.43	1.57



Alt Model-Shift Uniqueness Test

005976681-02, P = 0.585147 Days, E = 131.380023 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.4	0	0	0	4.50	1.49	4.81	17.4	17.4	0	0	0.55	0.85	0.36	0.35



Stellar Parameters For KIC 005976681

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7865^{+216}_{-324}	$3.947^{+0.241}_{-0.130}$	$-0.040^{+0.200}_{-0.350}$	$2.410^{+0.432}_{-0.803}$	$1.878^{+0.098}_{-0.393}$	$0.189^{+0.306}_{-0.063}$
	+3%/-4%	+6%/-3%	+500%/-875%	+18%/-33%	+5%/-21%	+162%/-33%
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 005976681-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 17	$6.61^{+0.87}_{-1.17}$	5730^{+378}_{-484}	-4737^{+377}_{-300}	$-0.001^{+0.063}_{-0.064}$
Alt.	0 ± 40	$7.03^{+0.90}_{-1.19}$	5764^{+352}_{-507}	-4764^{+563}_{-369}	$-0.010^{+0.127}_{-0.124}$

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 $A_{obs} \gg 1.0$

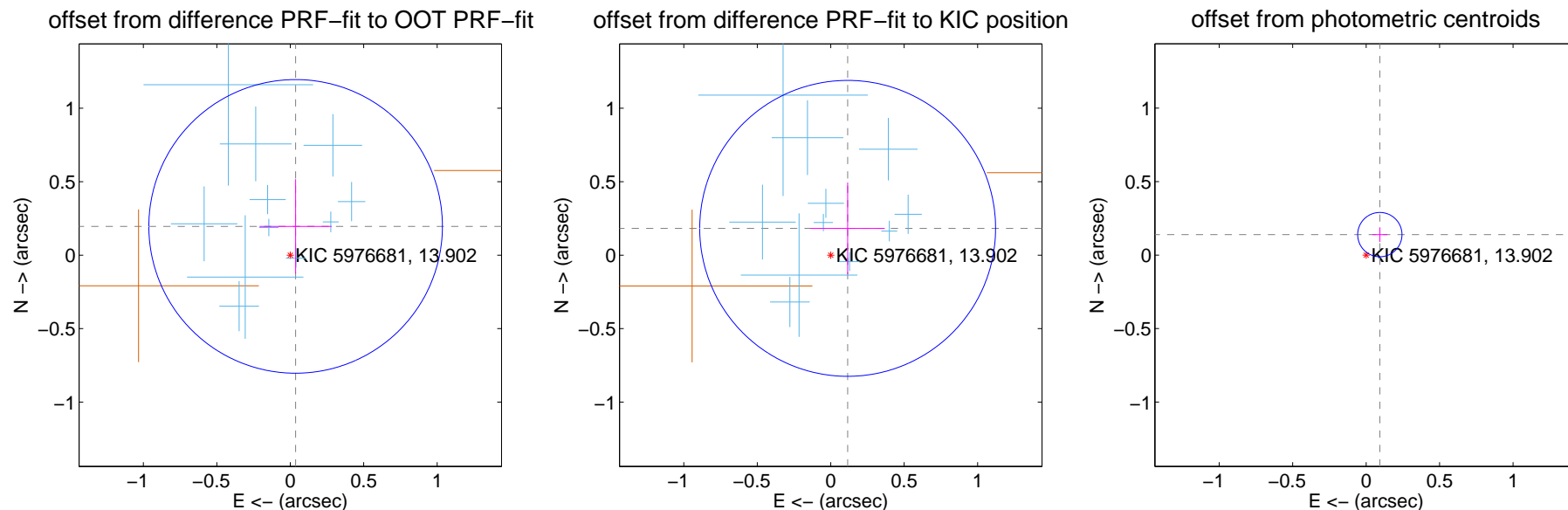
DV Centroid Data

Supplemental centroid analysis for 005976681-02. Kepler magnitude: 13.90. Transit SNR 29.63

There are 12 quarters with good PRF difference image offsets

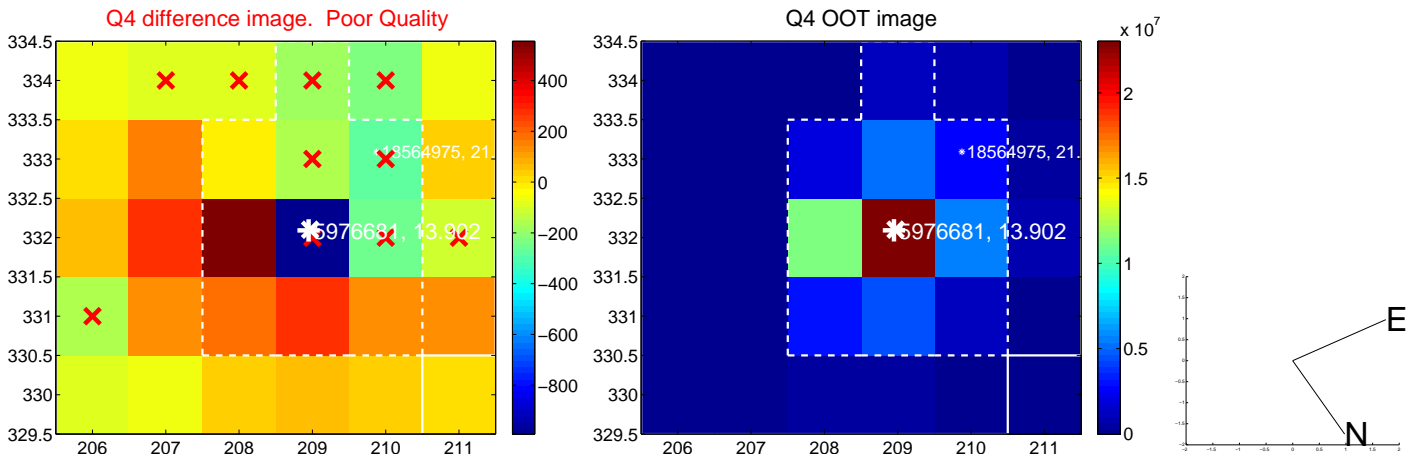
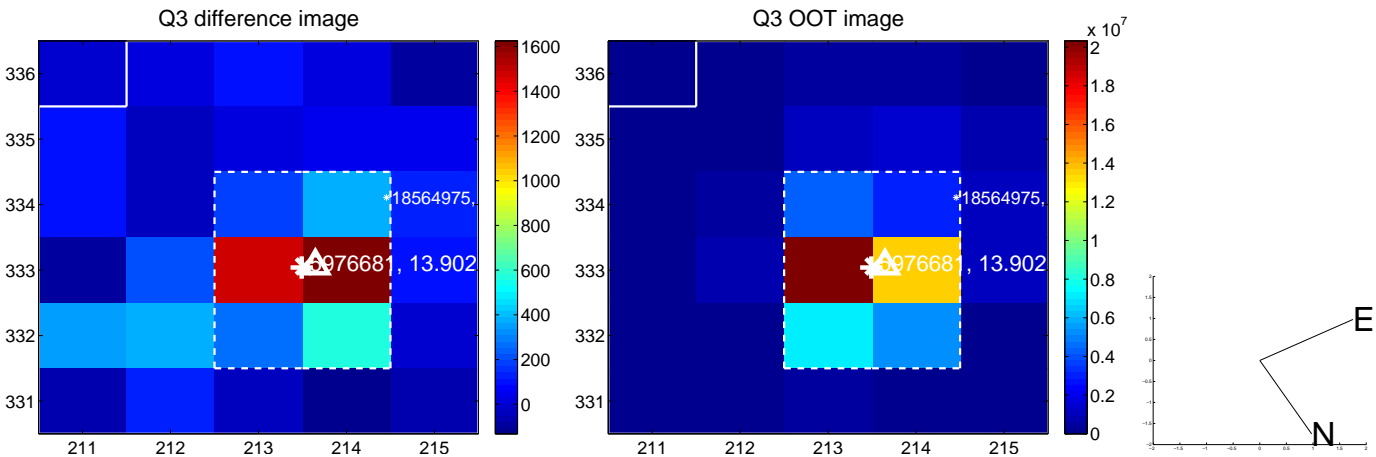
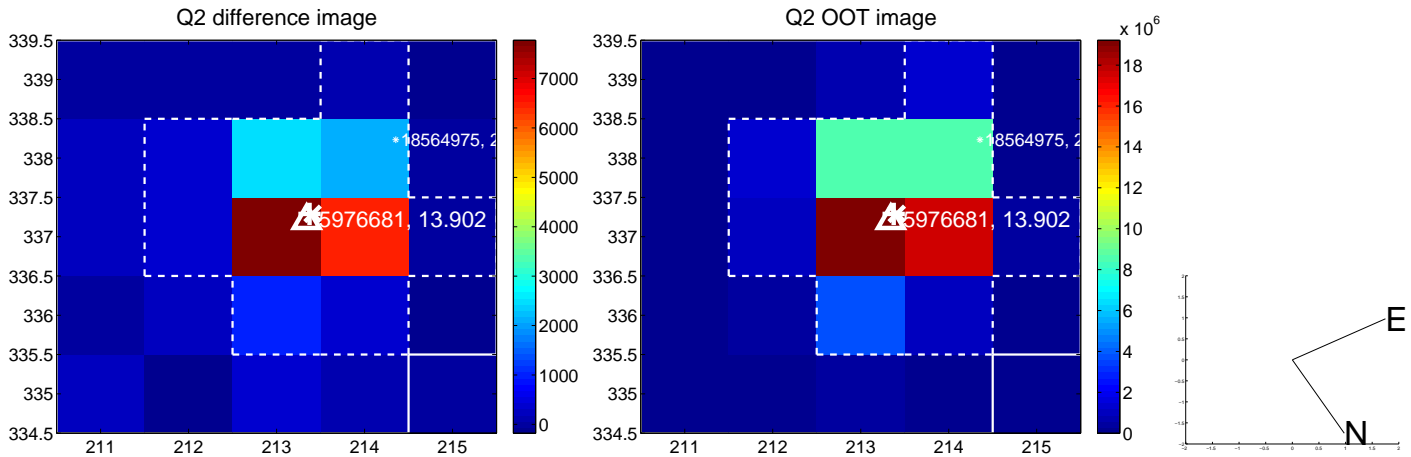
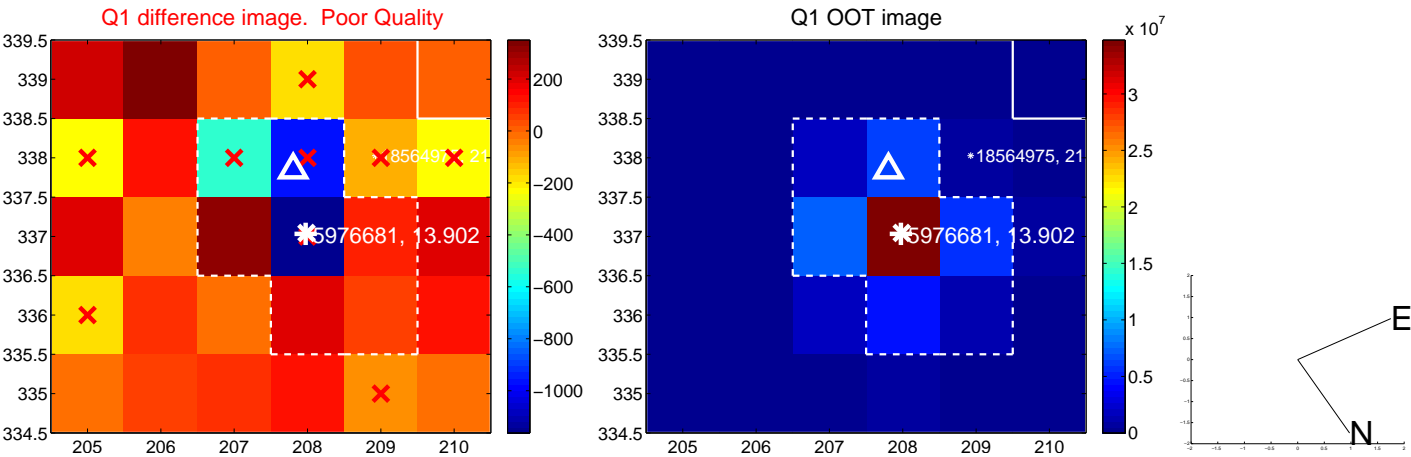
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.199 ± 0.333	0.60	-0.036 ± 0.246	0.196 ± 0.321
PRF-fit source offset from KIC position	0.216 ± 0.336	0.64	-0.115 ± 0.253	0.182 ± 0.312
photometric centroid source offset	0.17 ± 0.05	3.34	-0.09 ± 0.05	0.14 ± 0.05

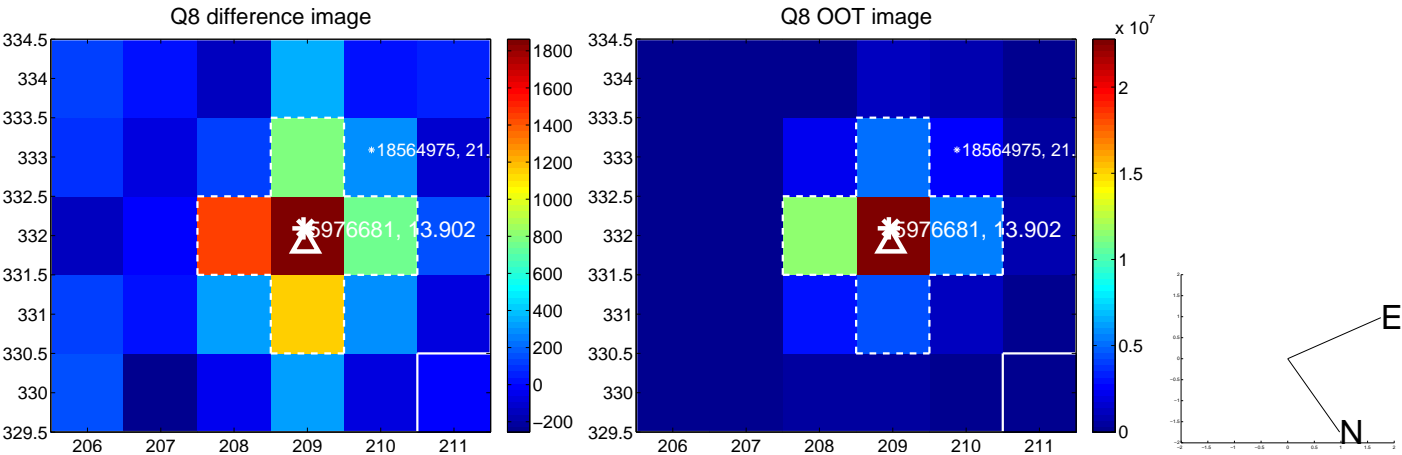
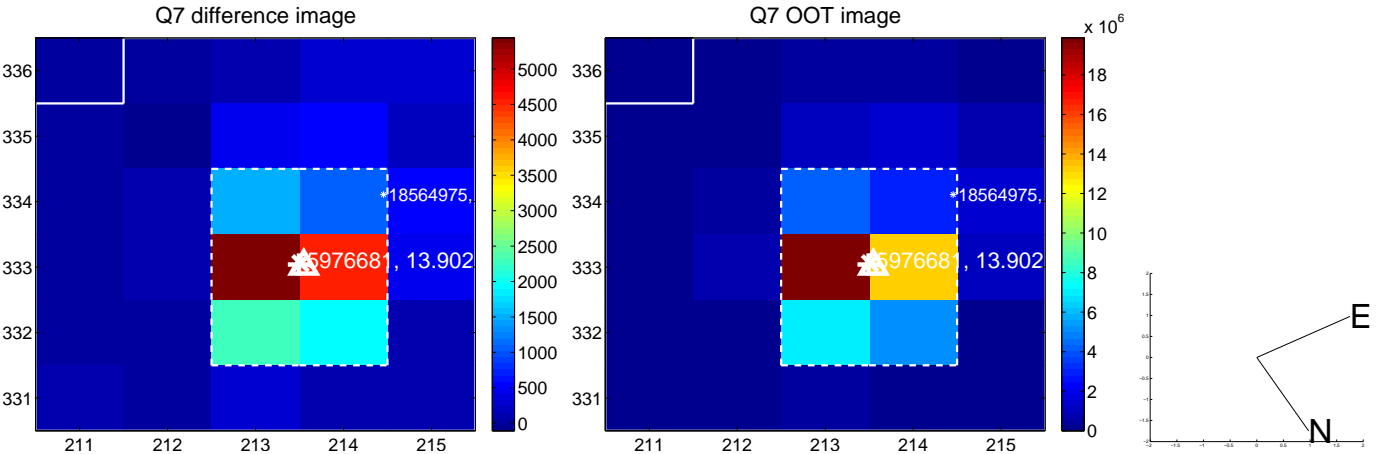
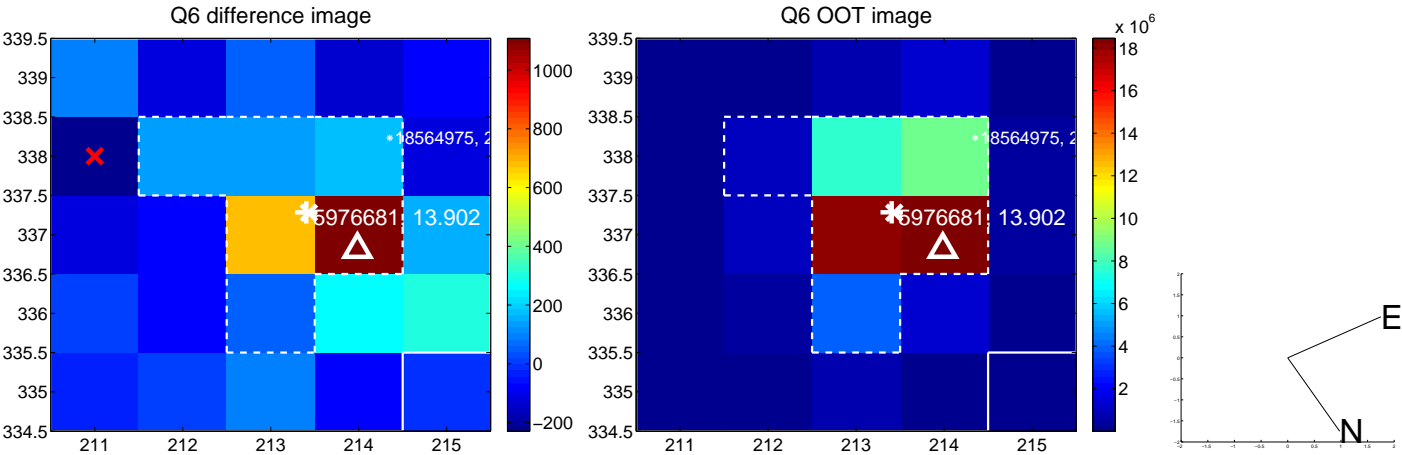
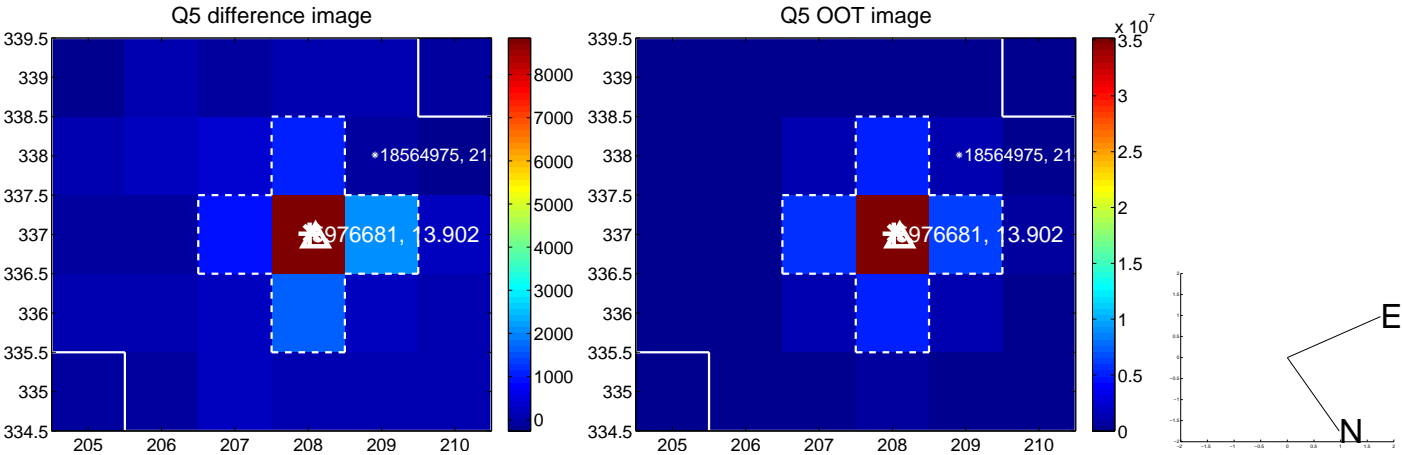


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

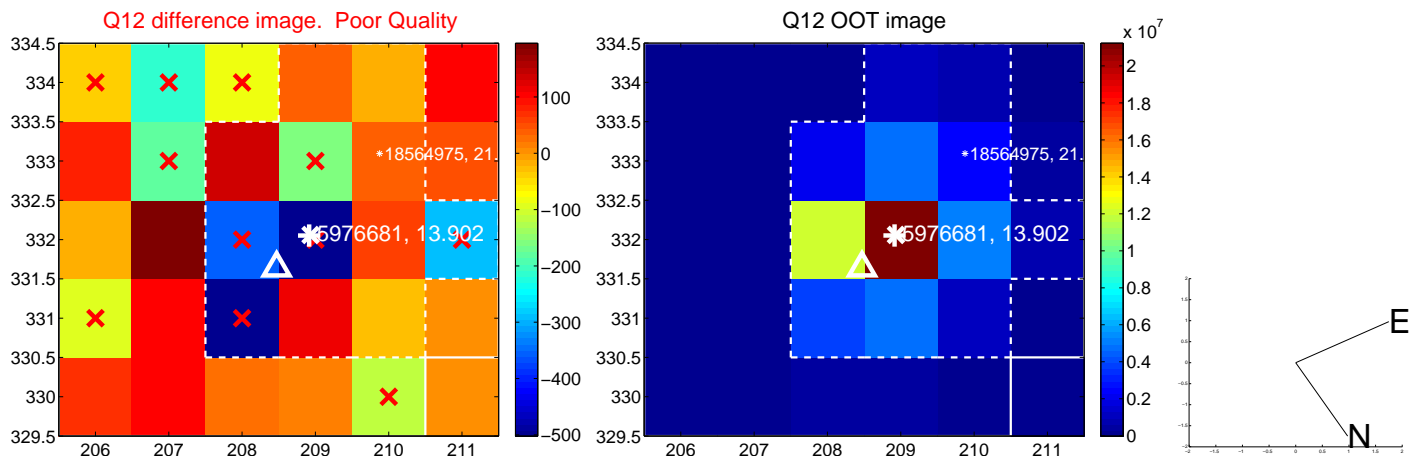
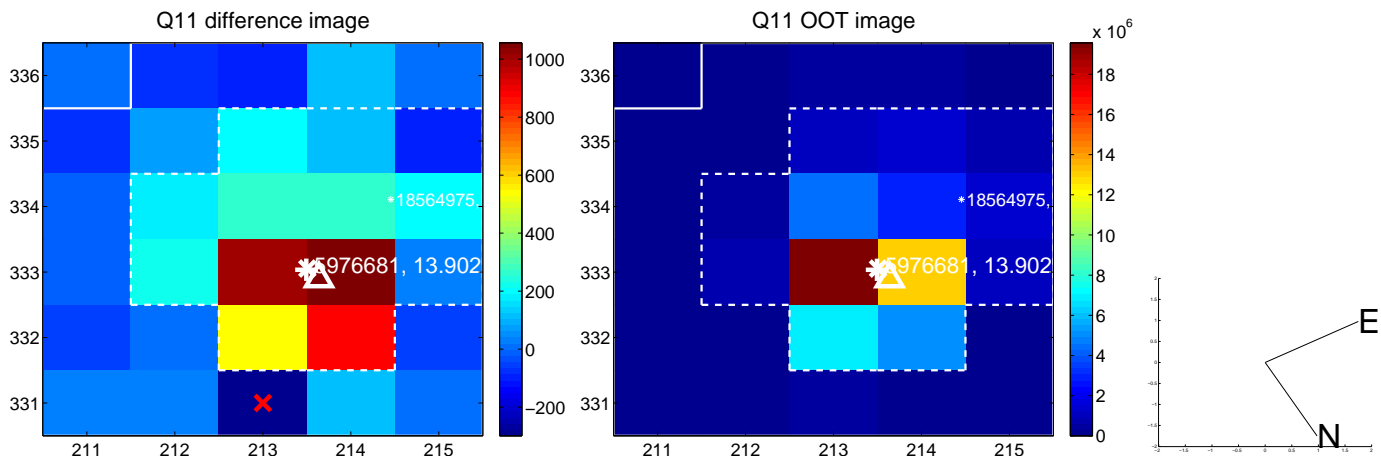
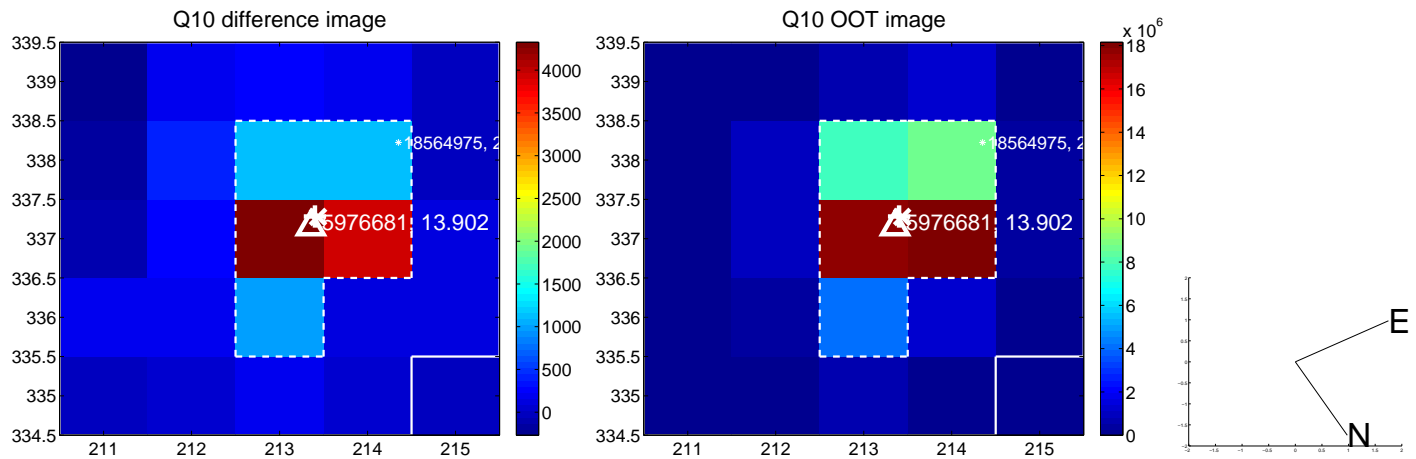
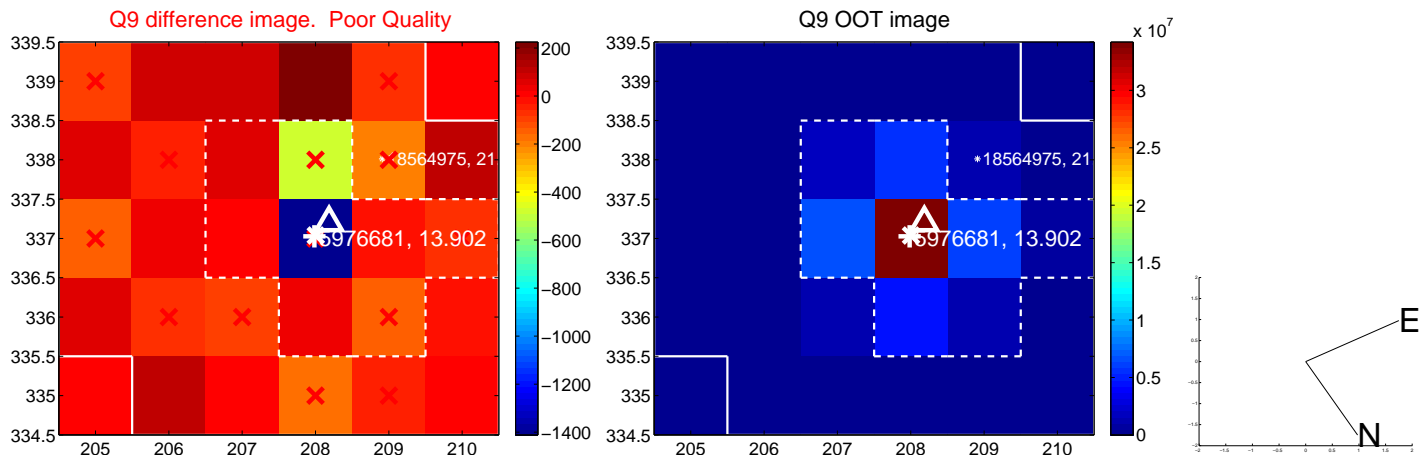
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



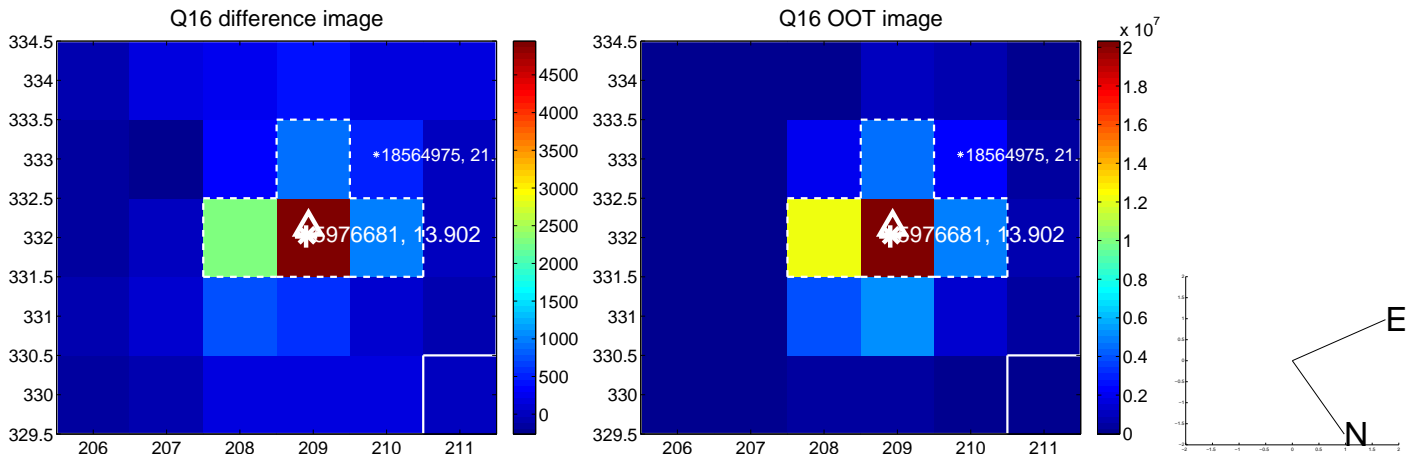
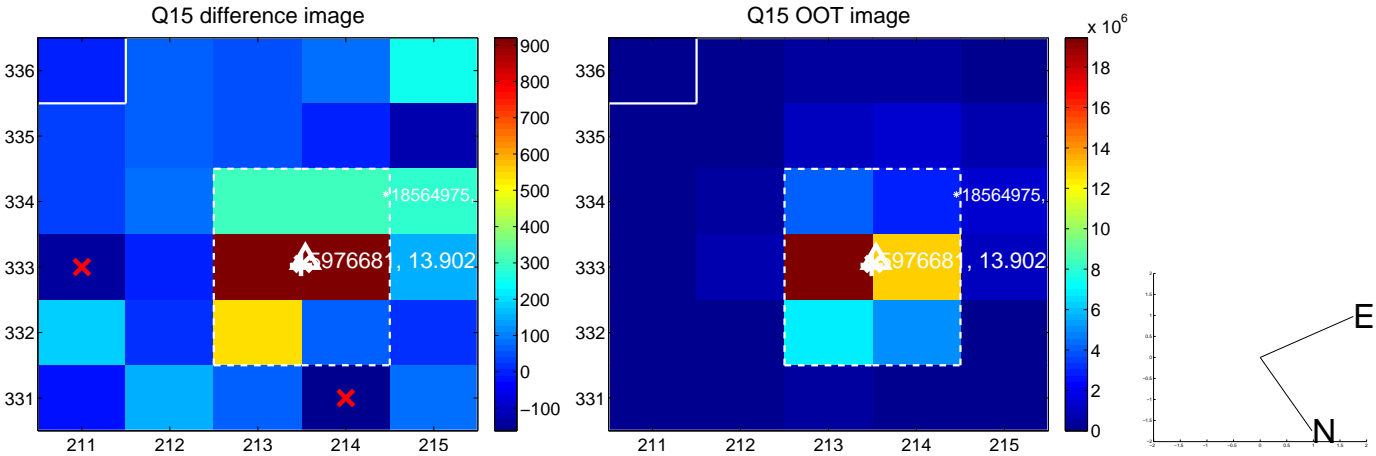
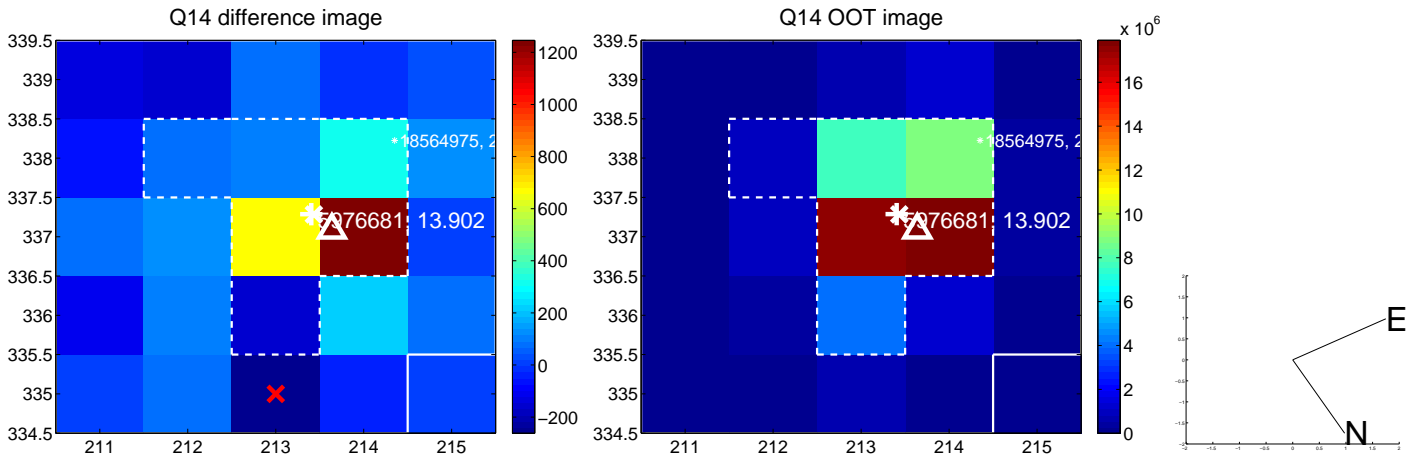
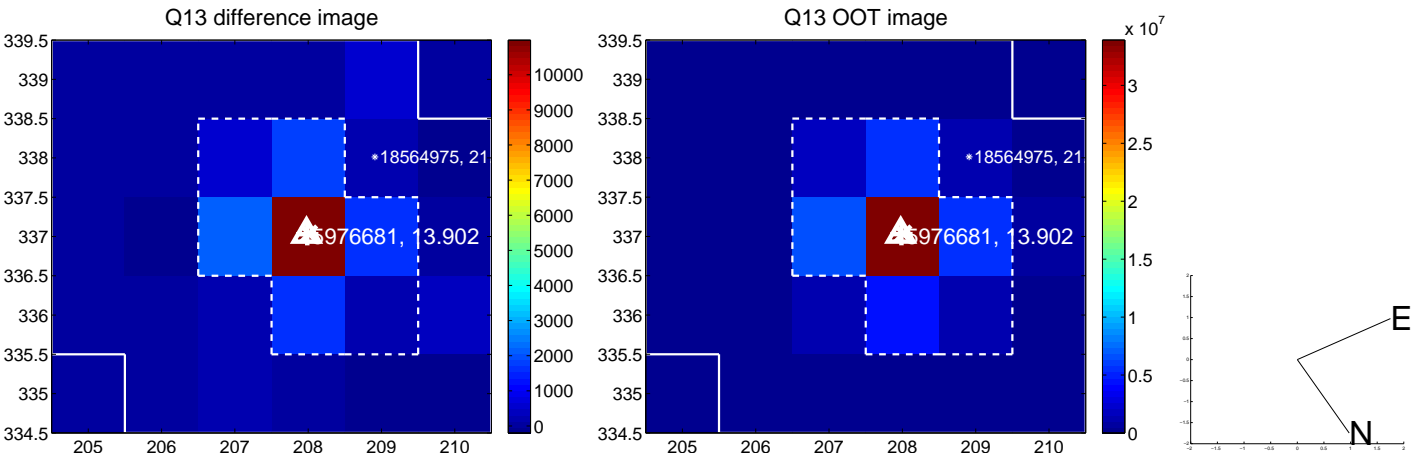
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



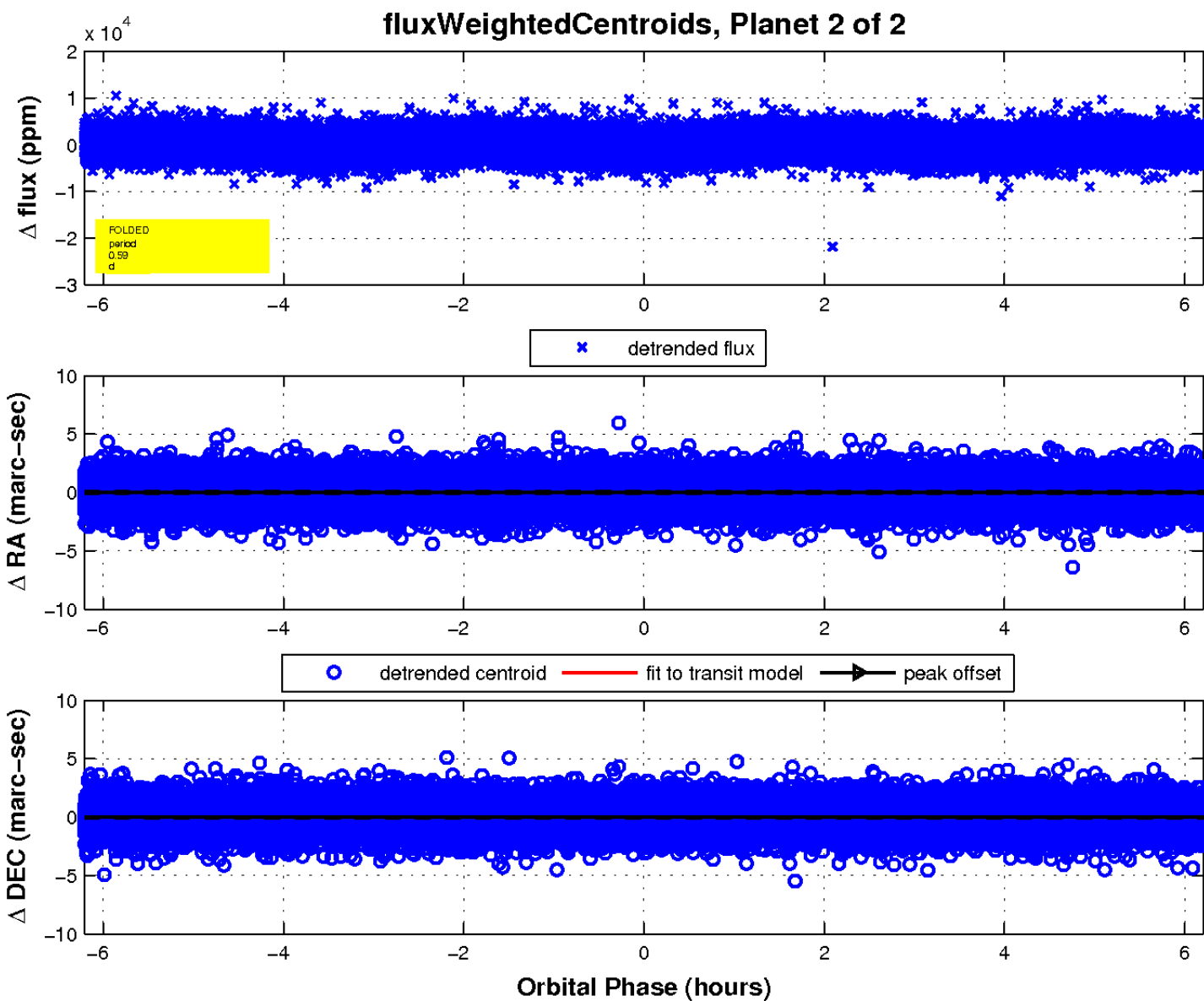
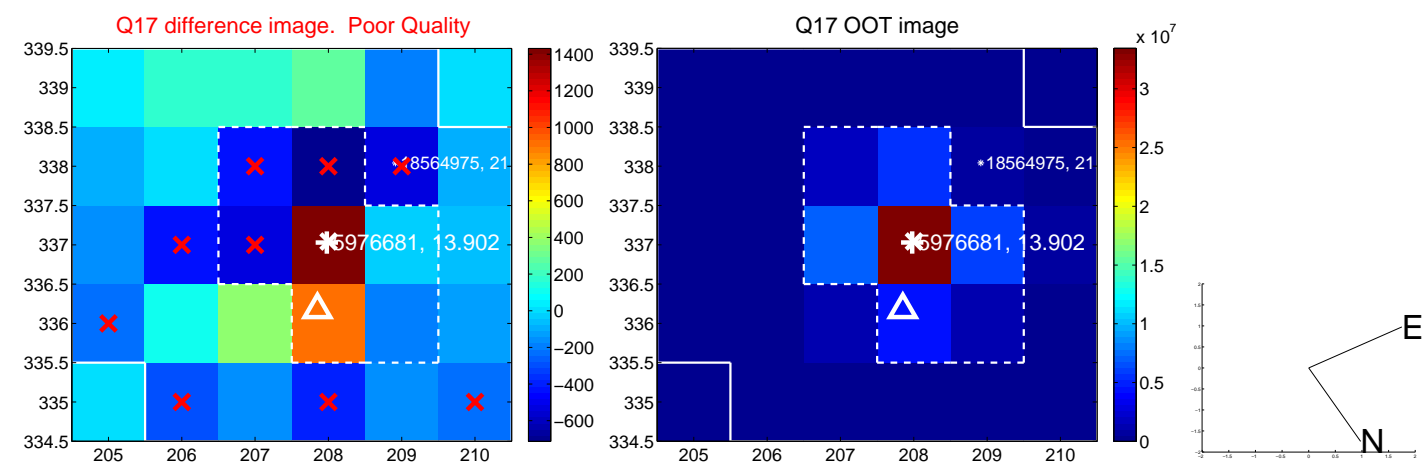
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

