

KIC 011968490

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})
011968490-01	OBS	7500.01	0.539448	131.896367	24679.1	2.189	5275.1	2066.5	1.46	6486	30.09	18154.19
011968490-02	OBS	No	1.078419	132.107643	102.3	3.135	17.3	12.8	1.46	6486	1.72	7208.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011968490-01	OBS	FP	0.00	0	1	0	0	DEPTH_ODDEVEN_DV—DEPTH_ODDEVEN_ALT—MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT—DEEP_V_SHAPED
011968490-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED

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.

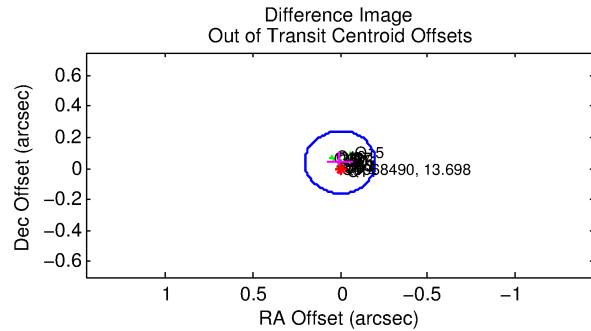
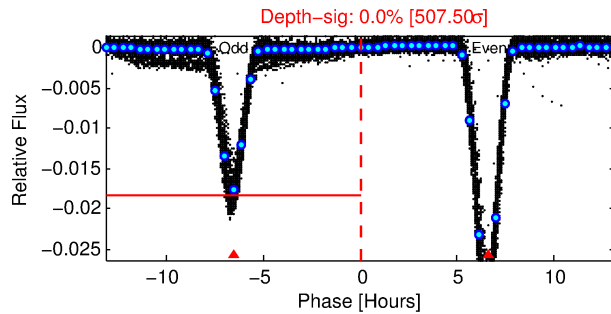
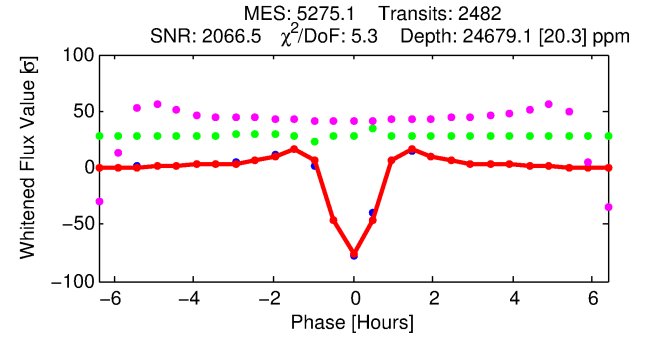
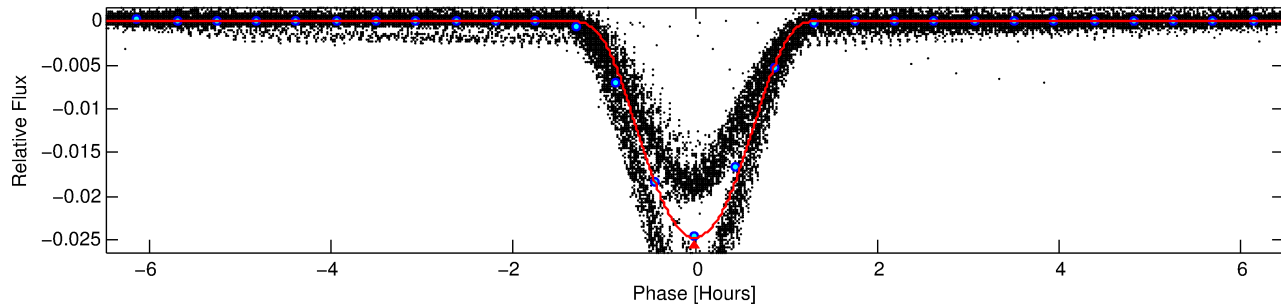
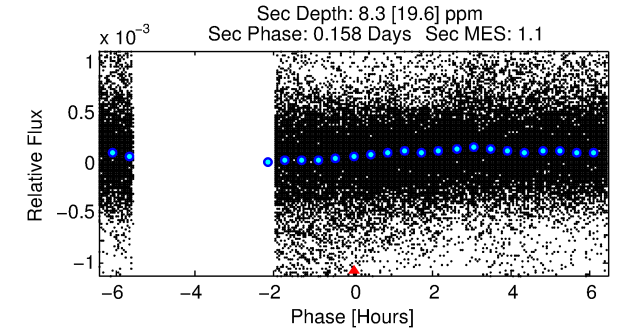
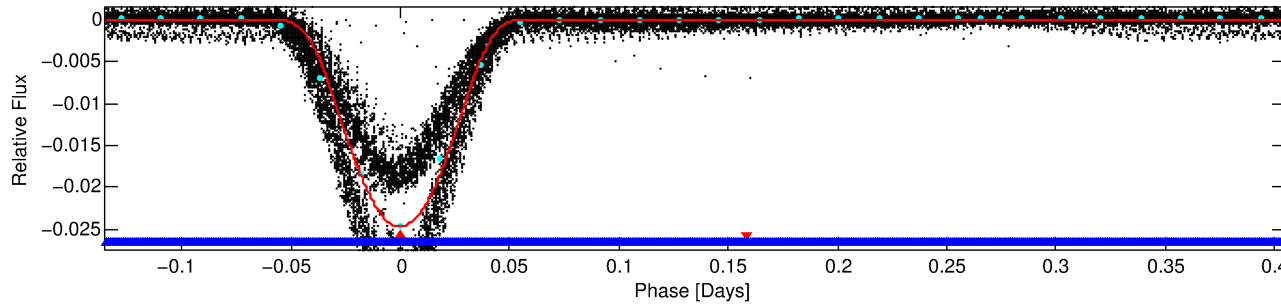
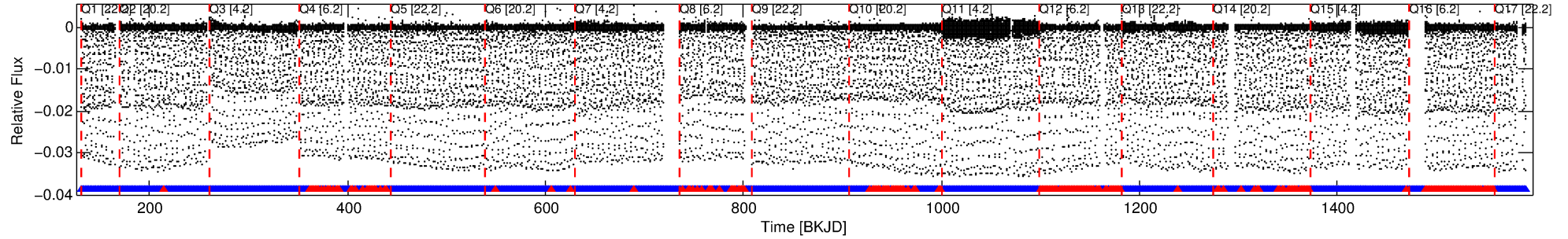
Ephemeris Match Information For 011968490-01

No Significant Match Found

DV One-Page Summary

KIC: 11968490 Candidate: 1 of 2 Period: 0.539 d
KOI: K07500.01 Corr: 0.972

Kp: 13.70 R*: 1.46 Rs Teff: 6486.0 K Logg: 4.17 Fe/H: -0.300



DV Fit Results:

Period = 0.53945 [0.00000] d
Epoch = 131.8964 [0.0000] BKJD
Rp/R* = 0.1894 [0.0016]
a/R* = 1.78 [0.00]
b = 0.90 [0.00]
Seff = 18154.19 [7352.70]
Teq = 2960 [300] K
Rp = 30.09 [8.73] Re
a = 0.0136 [0.0034] AU
Ag = 0.00 [0.00] [-447.74σ]
Teff = 801 [471] K [-3.87σ]

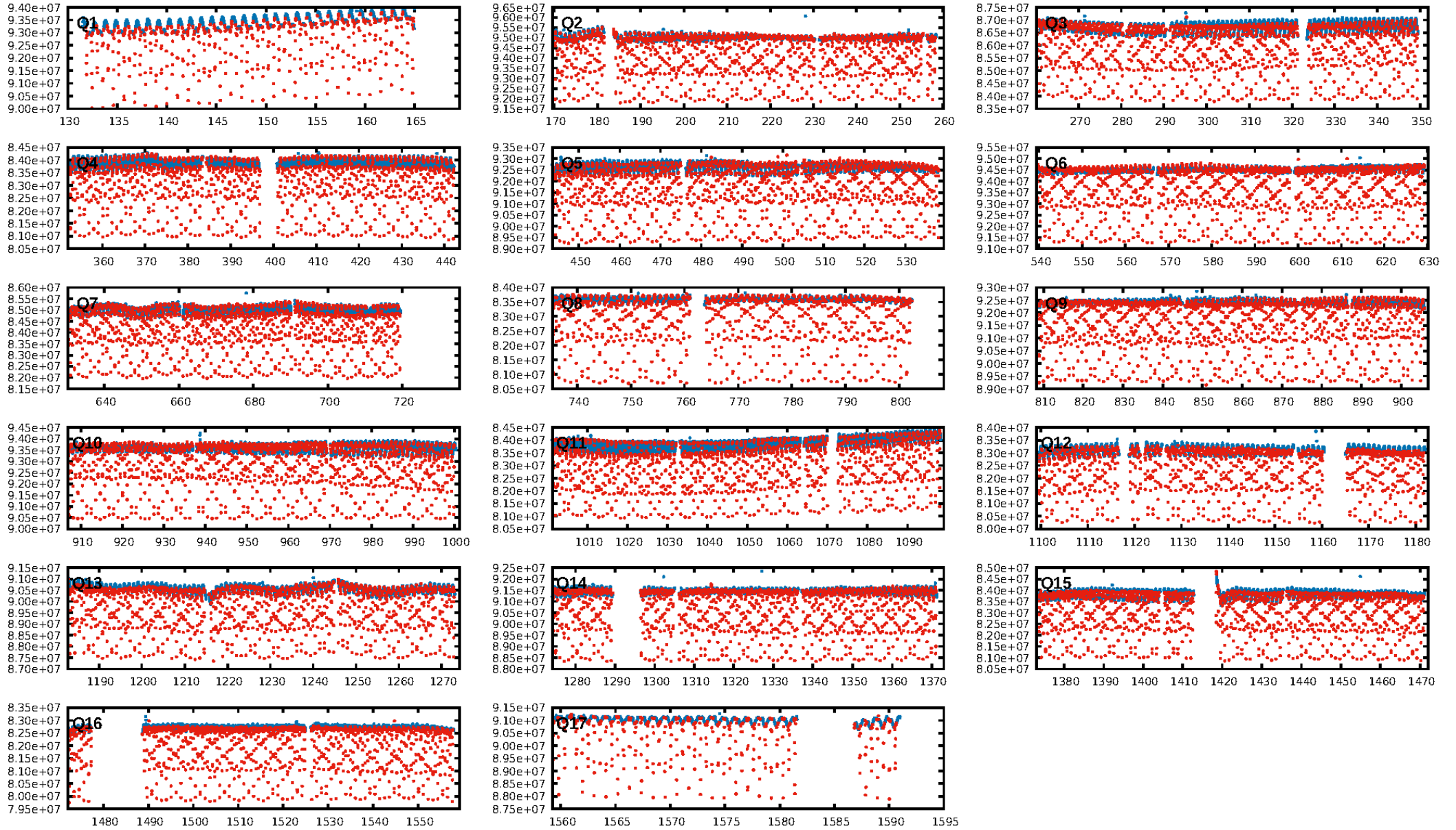
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 99.9% [3.38σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.85 [2022/2370]
GhostDiagnostic-chr: 3.257
Centroid-sig: 0.0%
Centroid-so: 0.020 arcsec [13.24σ]
OotOffset-rm: 0.040 arcsec [0.59σ]
KicOffset-rm: 0.085 arcsec [1.26σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.88 [15/17]

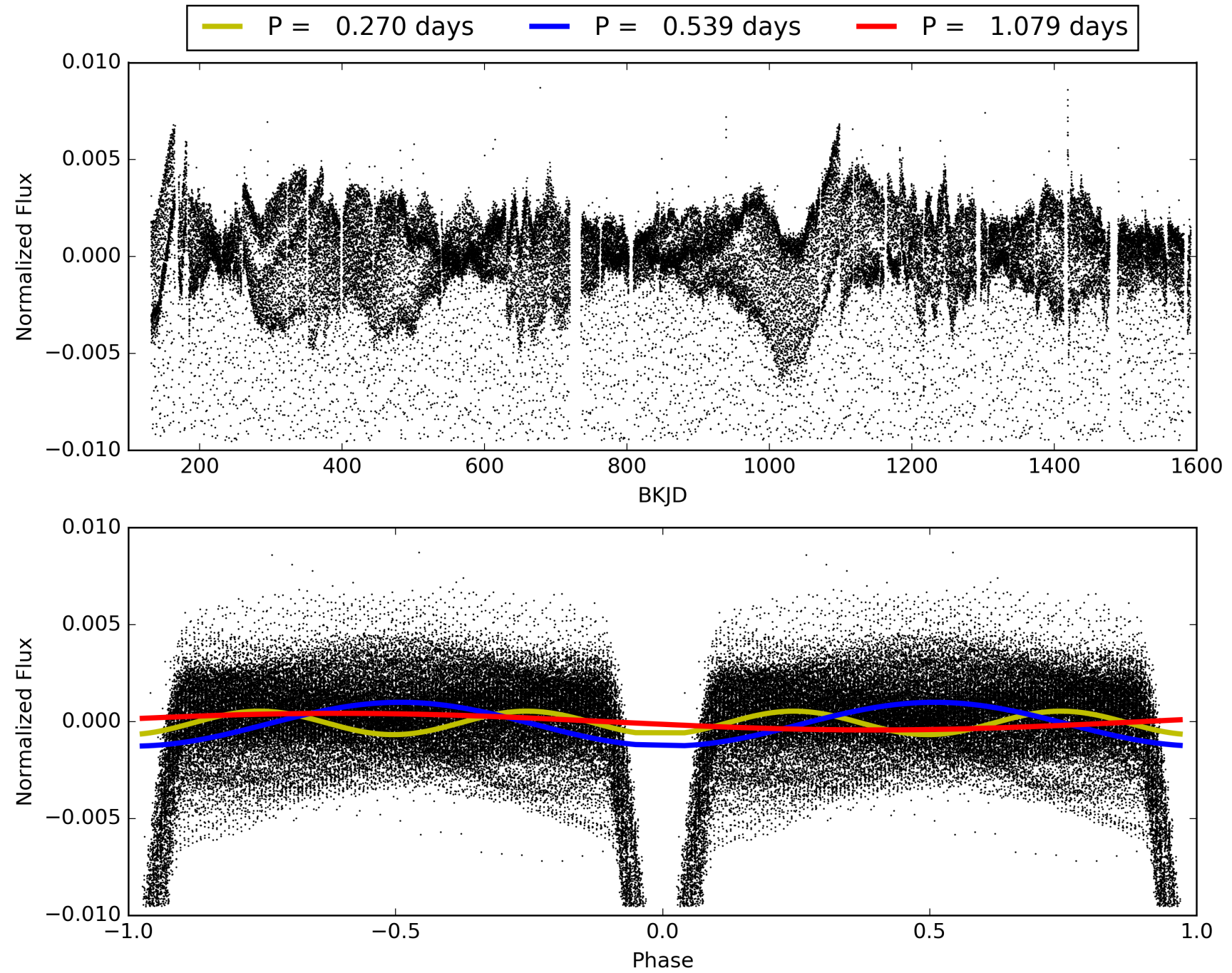
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 07:01:29 Z

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

TCE 011968490-01, PDC Light Curves

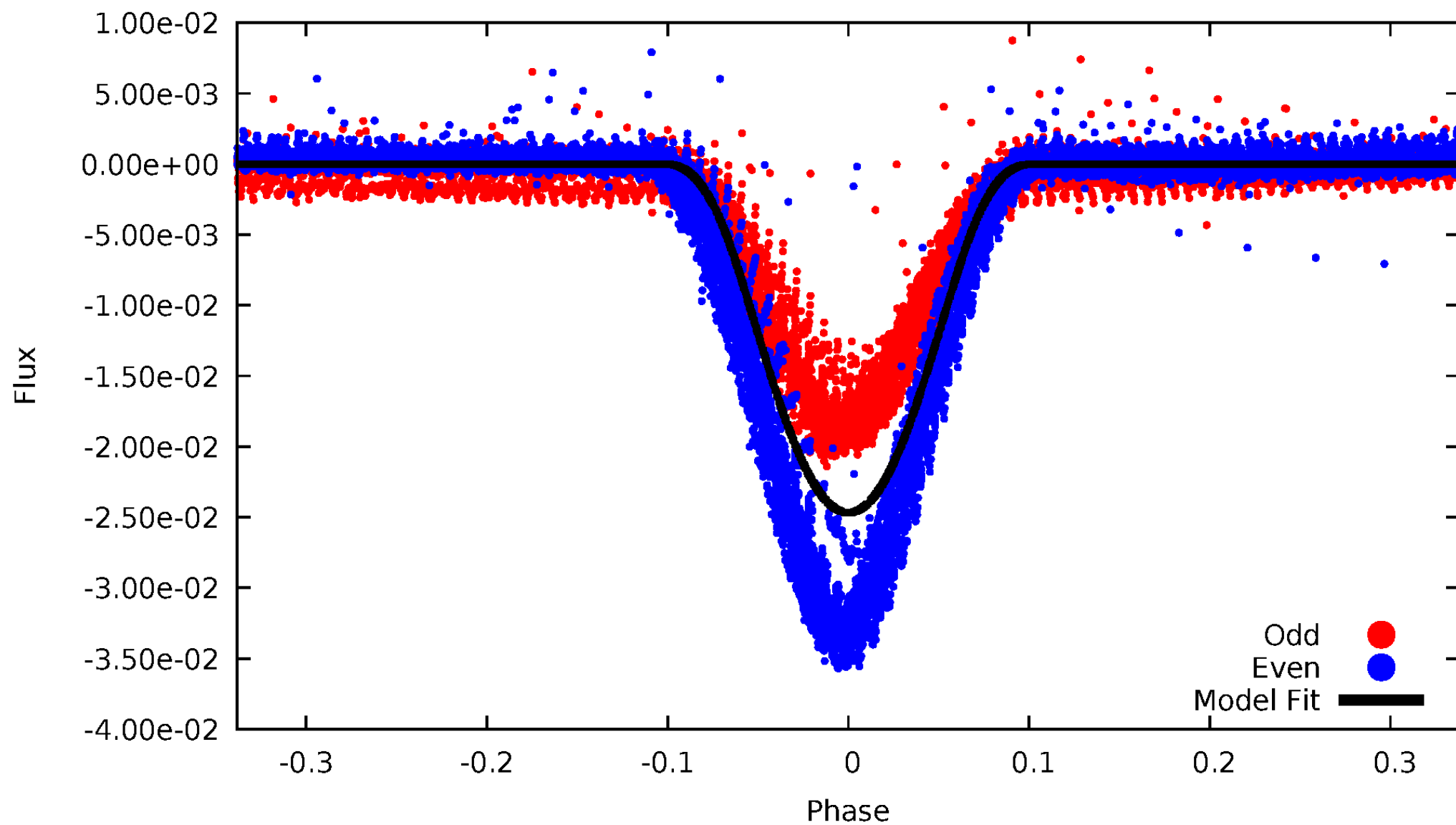


TCE 011968490-01



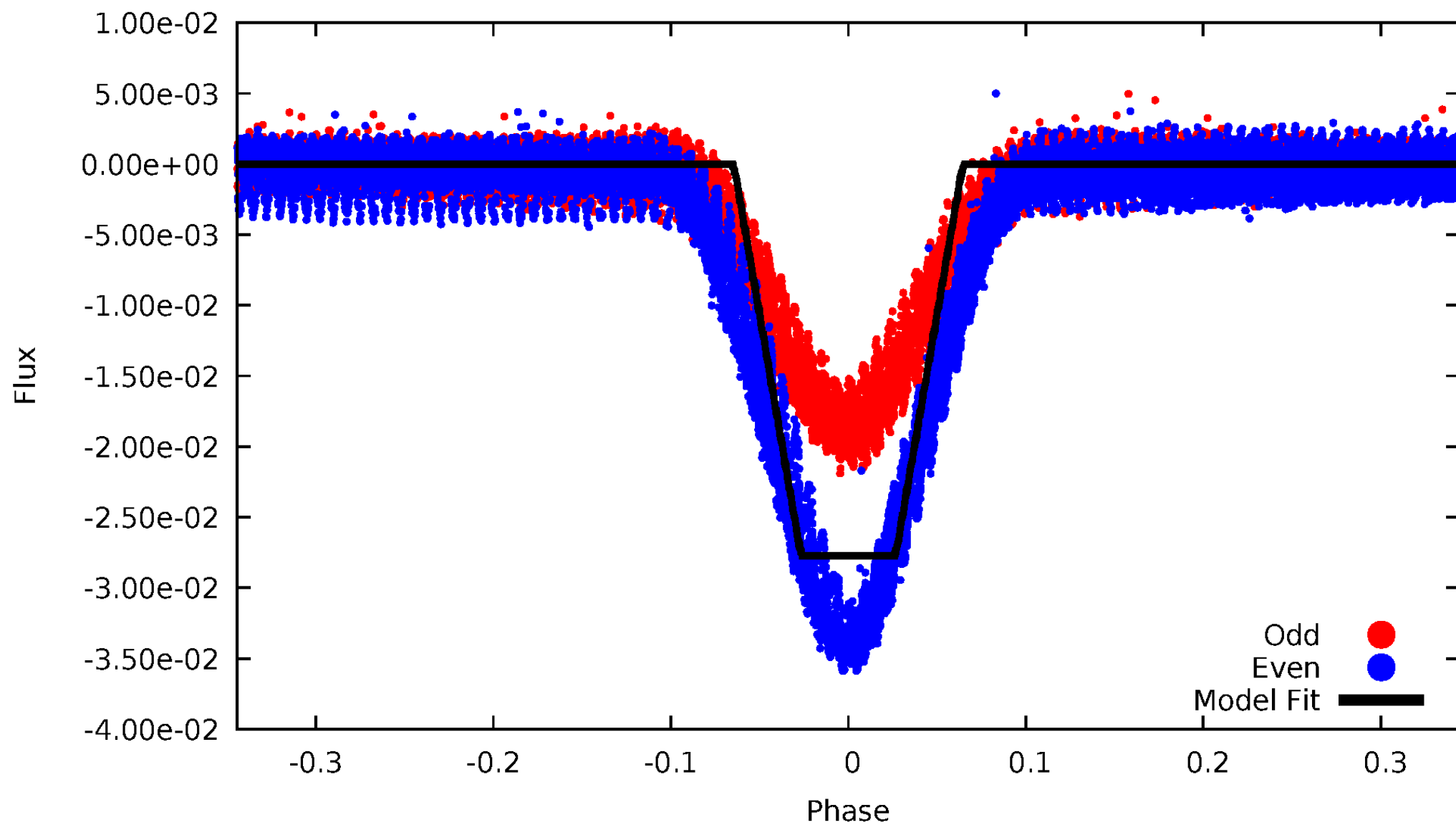
DV Odd/Even

TCE 011968490-01



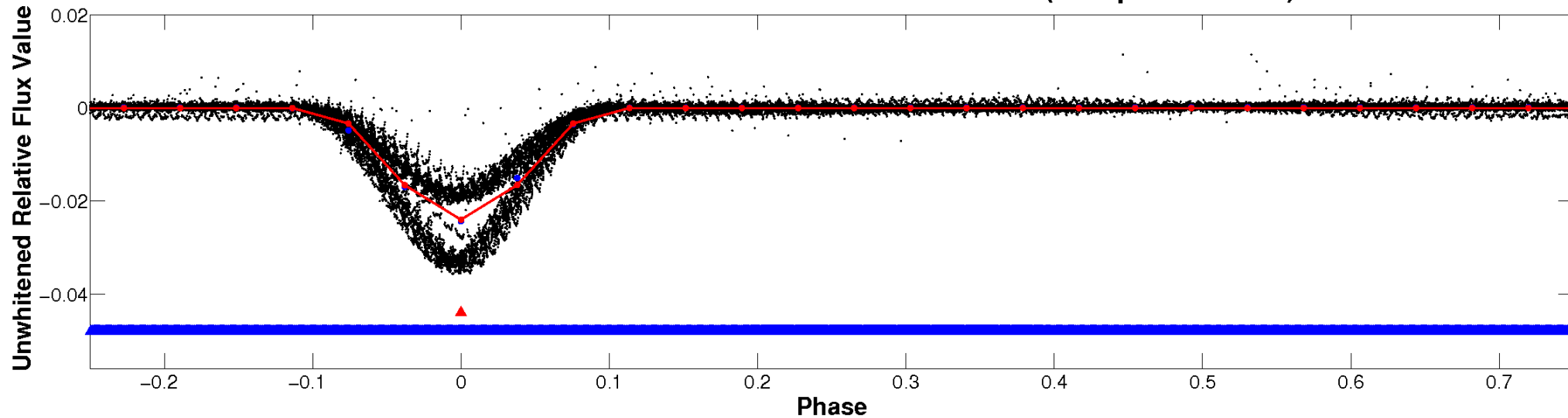
ALT Odd/Even

TCE 011968490-01

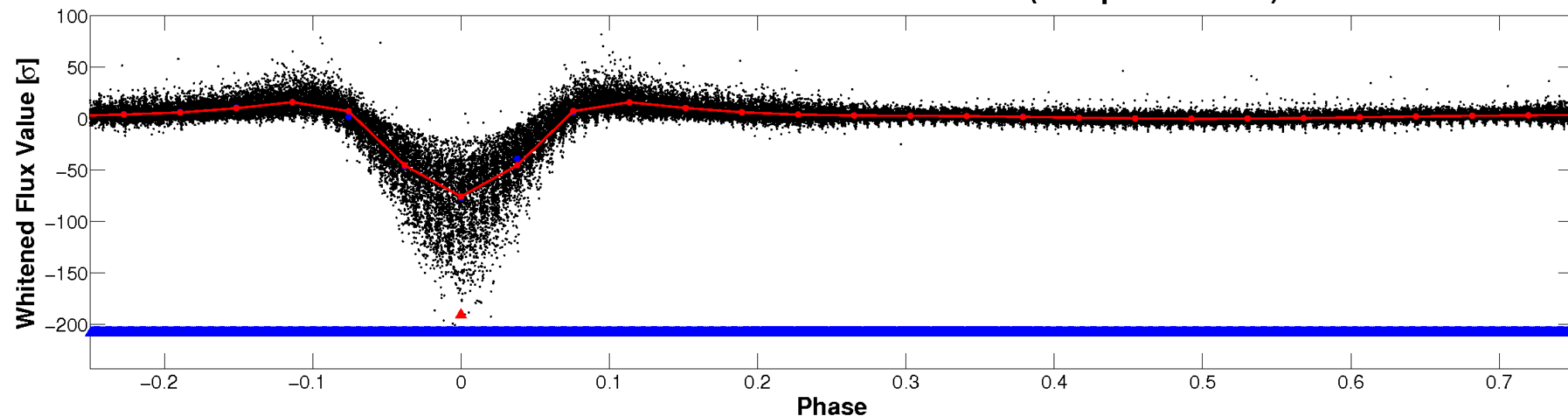


Non-Whitened Vs. Whitened Light Curve

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

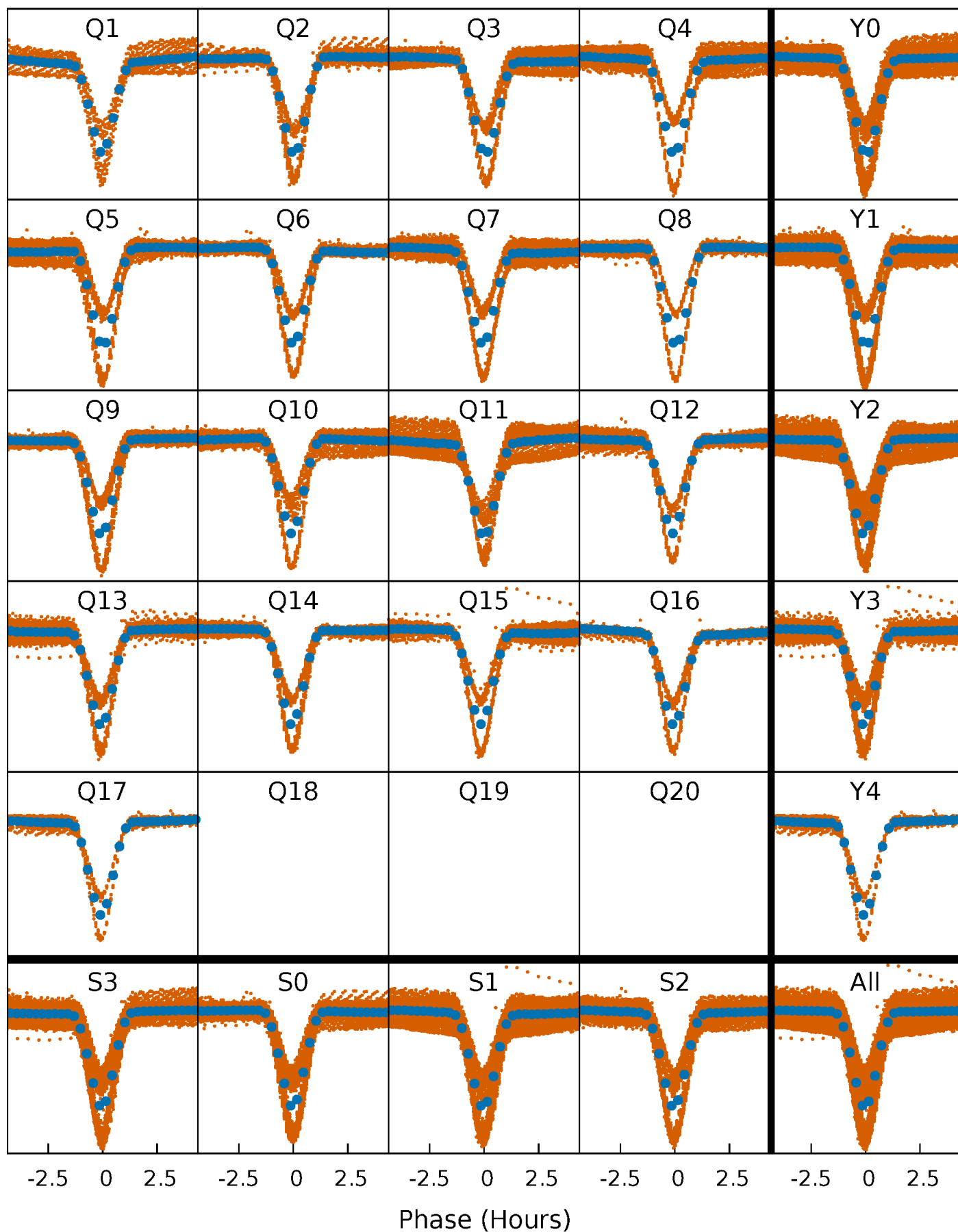


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



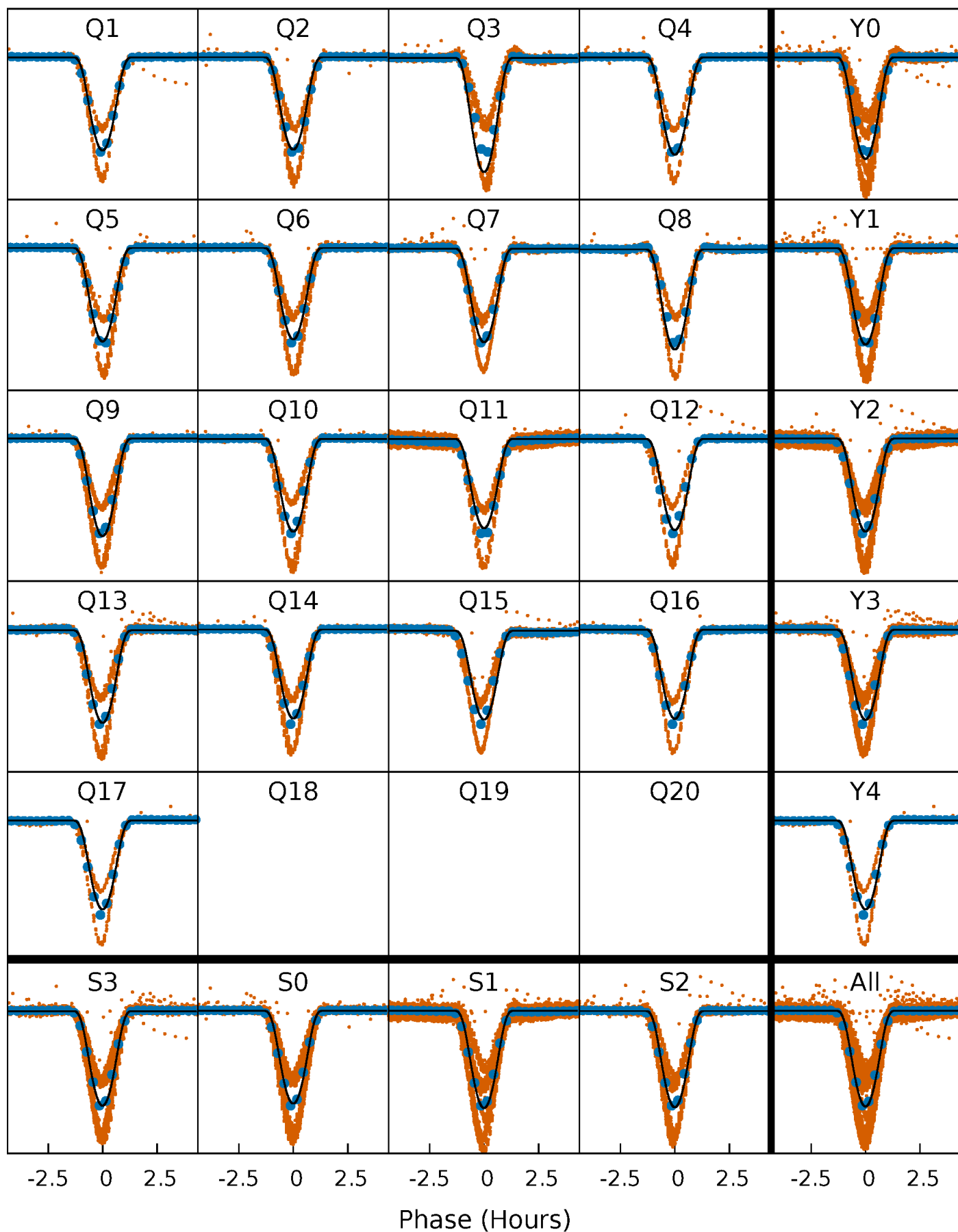
PDC Quarter-Phased Transit Curves

TCE 011968490-01 P= 0.539448 Days $T_0=131.896367$ (BKJD)



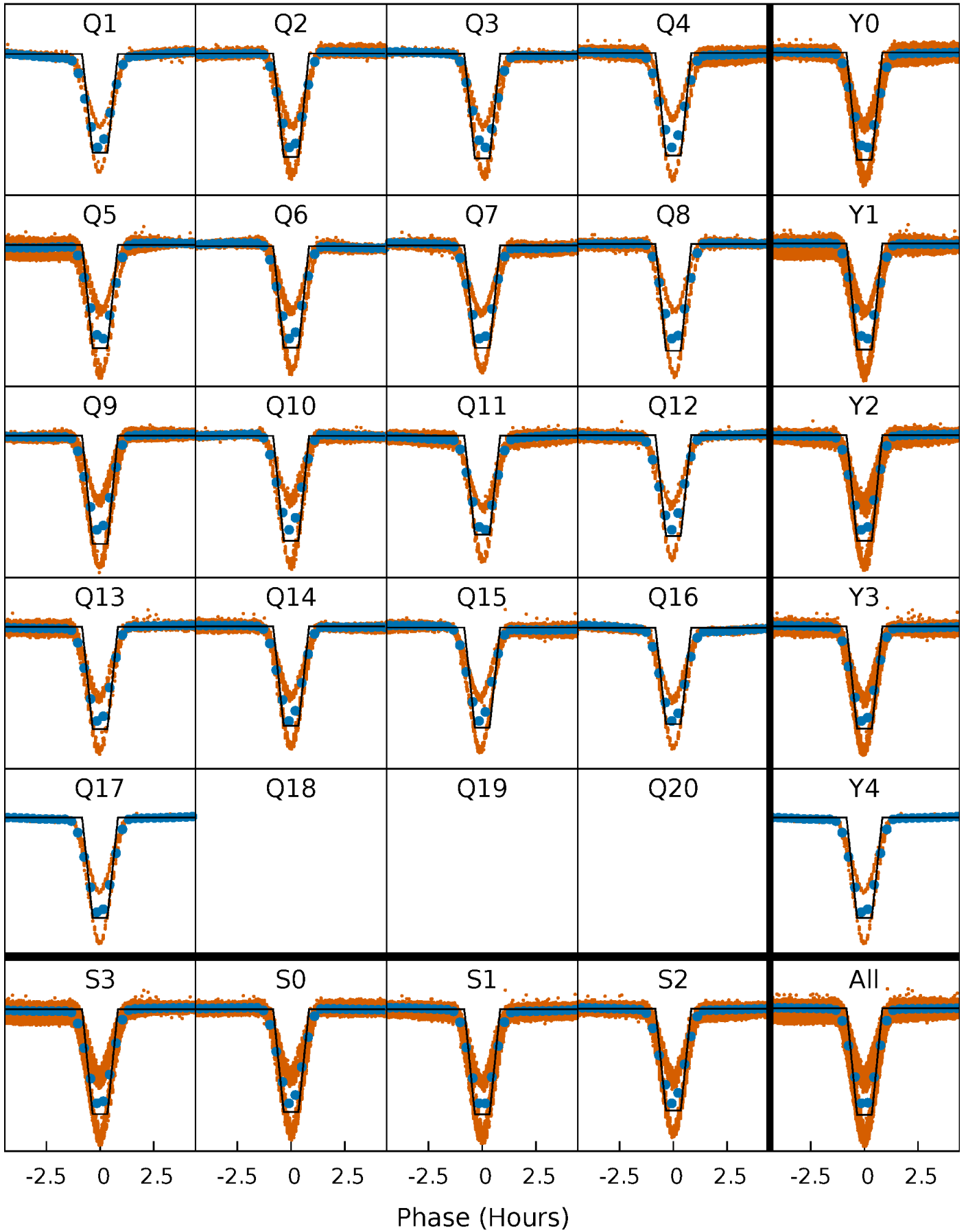
DV Quarter-Phased Transit Curves

TCE 011968490-01 P= 0.539448 Days $T_0=131.896367$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

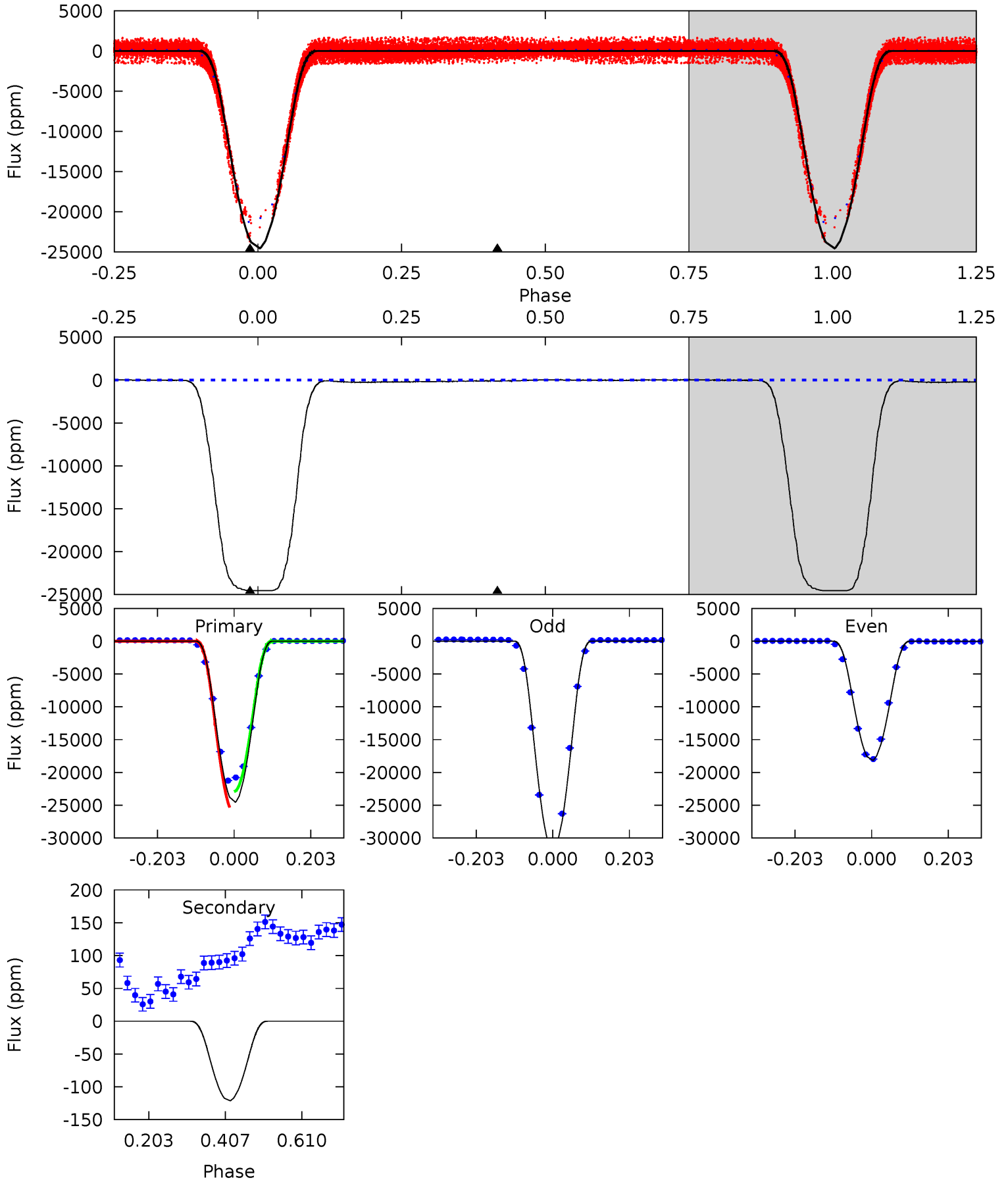
TCE 011968490-01 $P = 0.539447$ Days $T_0 = 131.896525$ (BKJD)



DV Model-Shift Uniqueness Test

011968490-01, P = 0.539448 Days, E = 131.356919 Days

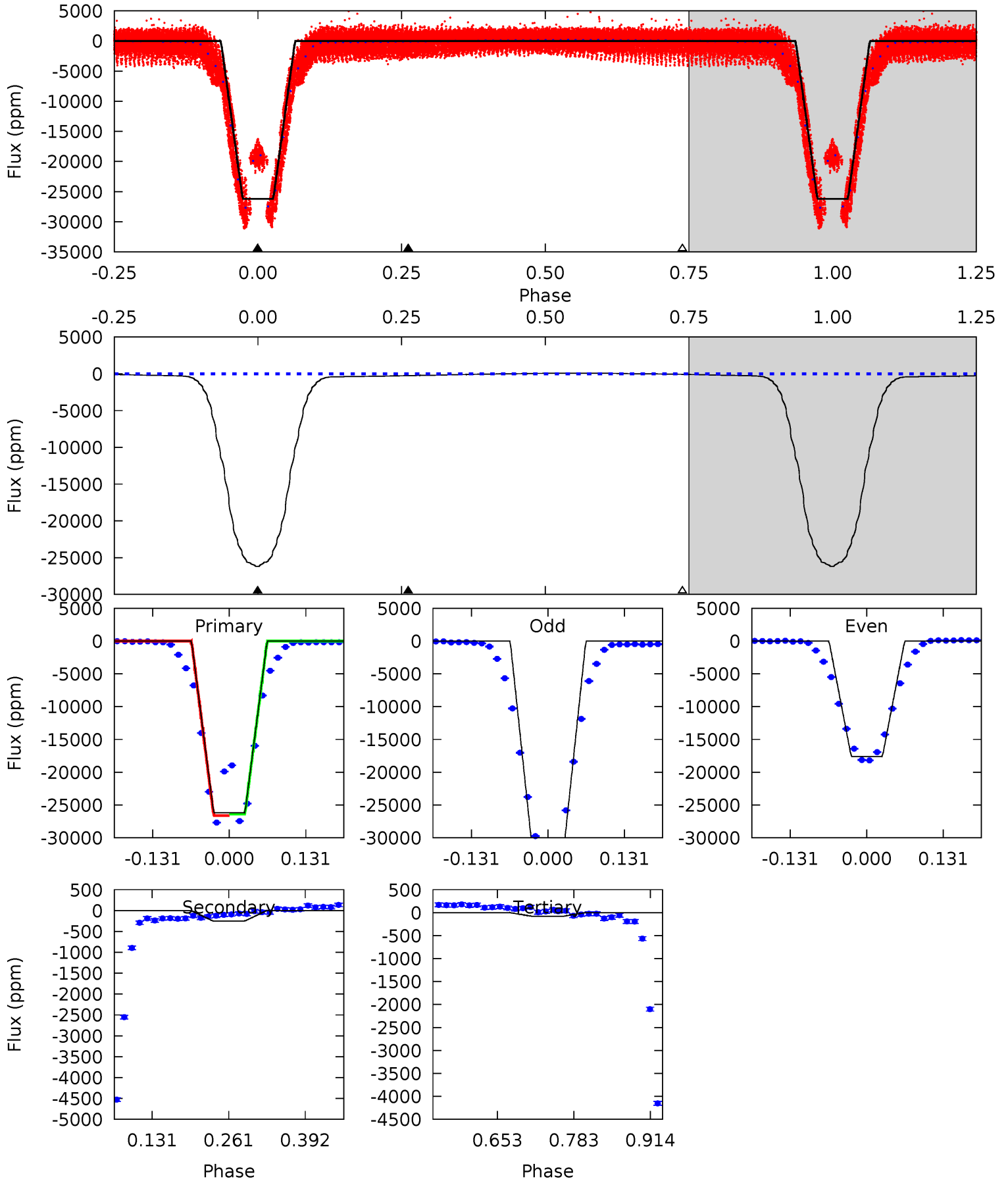
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4146	20.5	0	0	4.41	1.27	14.6	4146	4146	20.5	20.5	1558	1.18	0.00	0



Alt Model-Shift Uniqueness Test

011968490-01, P = 0.539447 Days, E = 131.357078 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1761	17.0	5.32	0	4.51	1.51	7.18	1755	1761	11.7	17.0	643.7	1.06	0.00	0



Stellar Parameters For KIC 011968490

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6486^{+181}_{-250}	$4.174^{+0.209}_{-0.171}$	$-0.300^{+0.250}_{-0.300}$	$1.456^{+0.422}_{-0.384}$	$1.156^{+0.174}_{-0.174}$	$0.527^{+0.614}_{-0.244}$
	+3%/-4%	+5%/-4%	+83%/-100%	+29%/-26%	+15%/-15%	+116%/-46%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 011968490-01 / KOI 7500.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-121 ± 6	$30.16^{+4.72}_{-4.36}$	4131^{+326}_{-346}	-3742^{+219}_{-209}	$0.014^{+0.005}_{-0.003}$
Alt.	-253 ± 15	$26.29^{+4.19}_{-3.61}$	4101^{+320}_{-296}	-3675^{+201}_{-205}	$0.037^{+0.012}_{-0.009}$

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

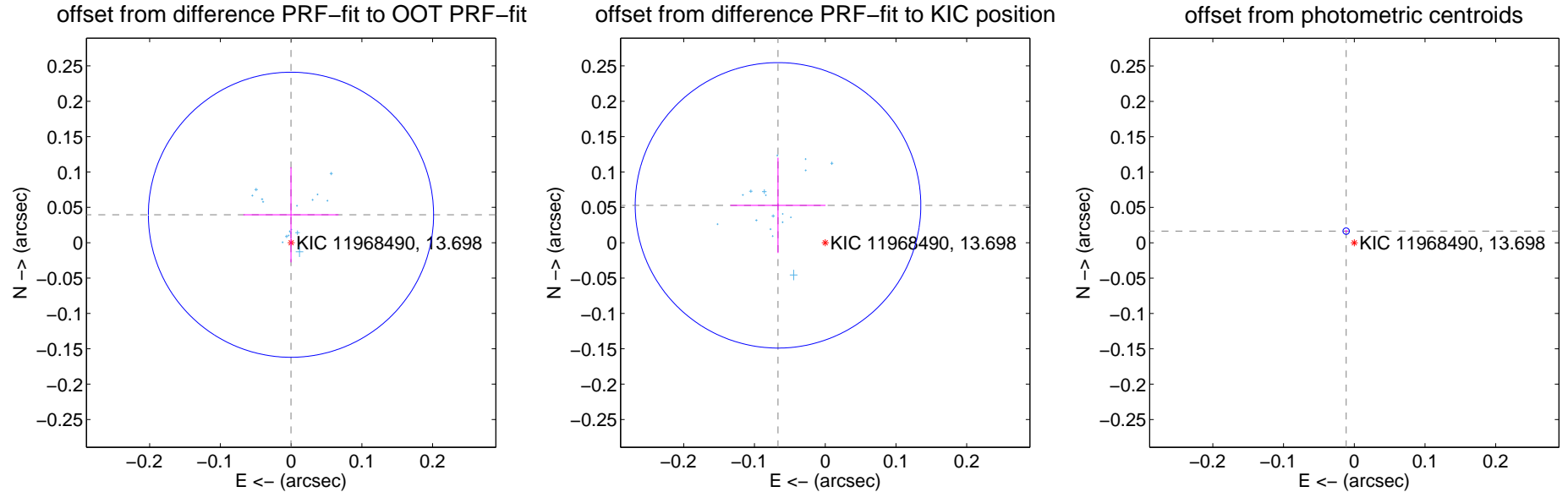
DV Centroid Data

Supplemental centroid analysis for 011968490-01. Kepler magnitude: 13.70. Transit SNR 2066.54

There are 17 quarters with good PRF difference image offsets

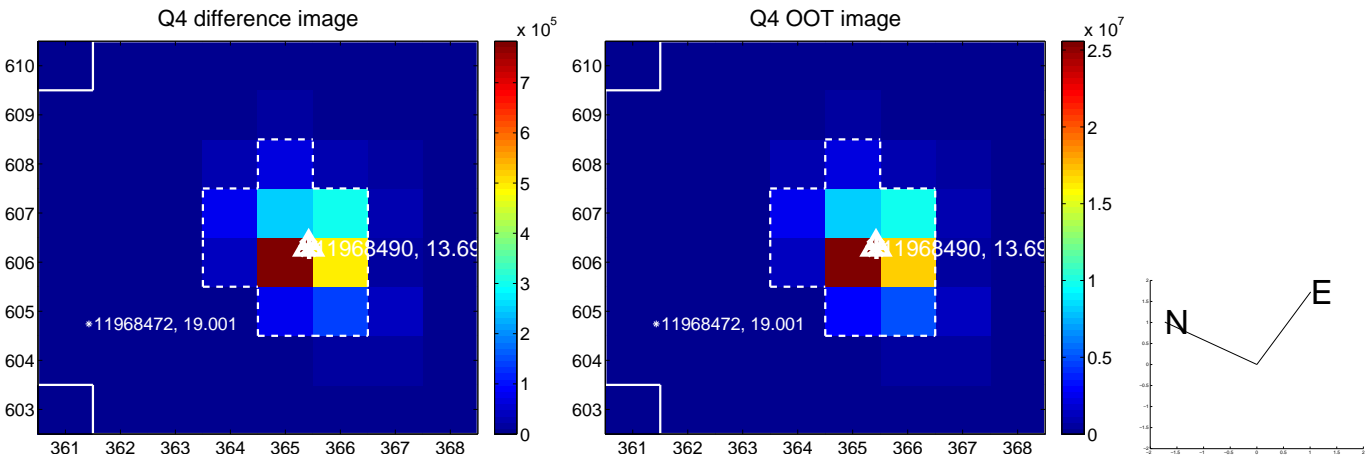
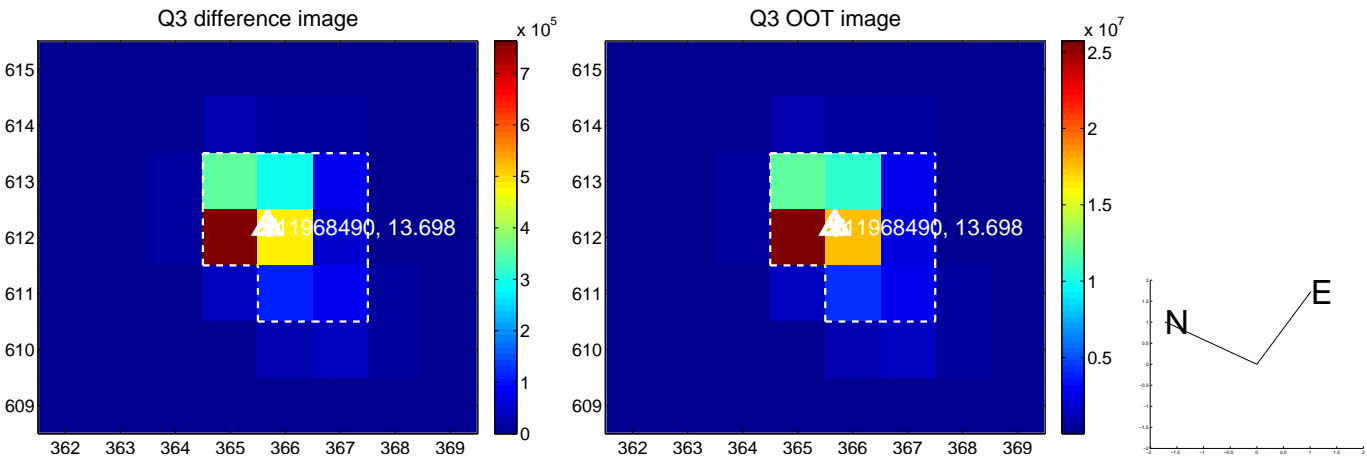
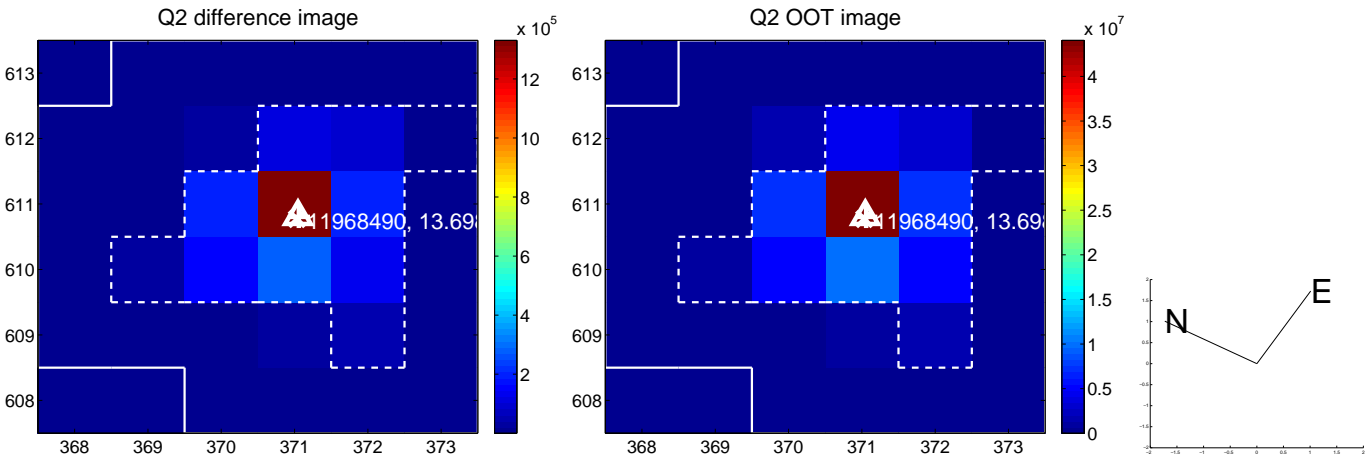
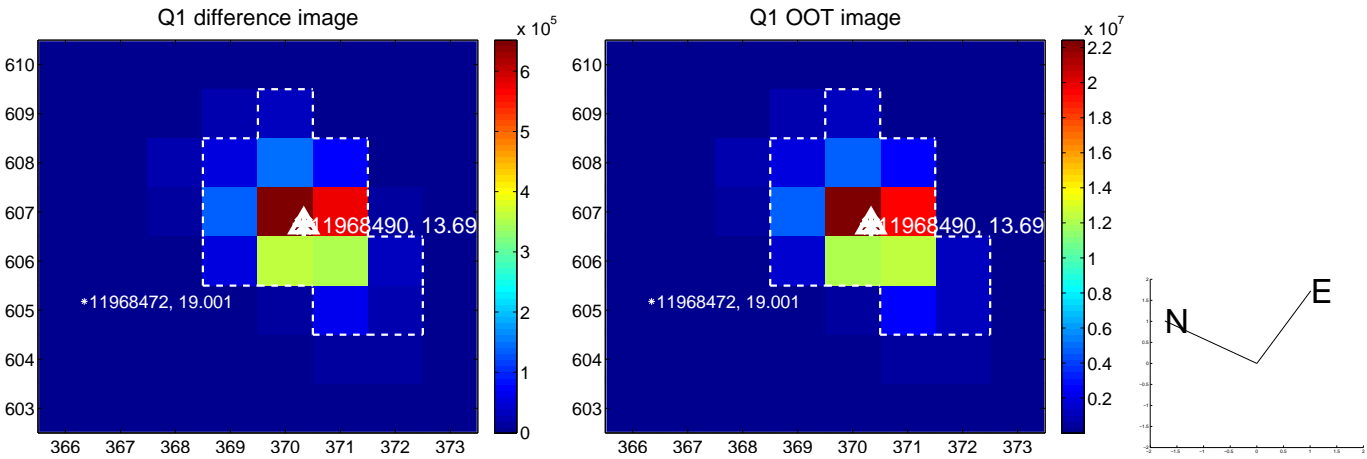
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.040 ± 0.067	0.59	0.000 ± 0.067	0.040 ± 0.067
PRF-fit source offset from KIC position	0.085 ± 0.067	1.26	0.067 ± 0.067	0.053 ± 0.067
photometric centroid source offset	0.02 ± 0.00	13.24	0.01 ± 0.00	0.02 ± 0.00

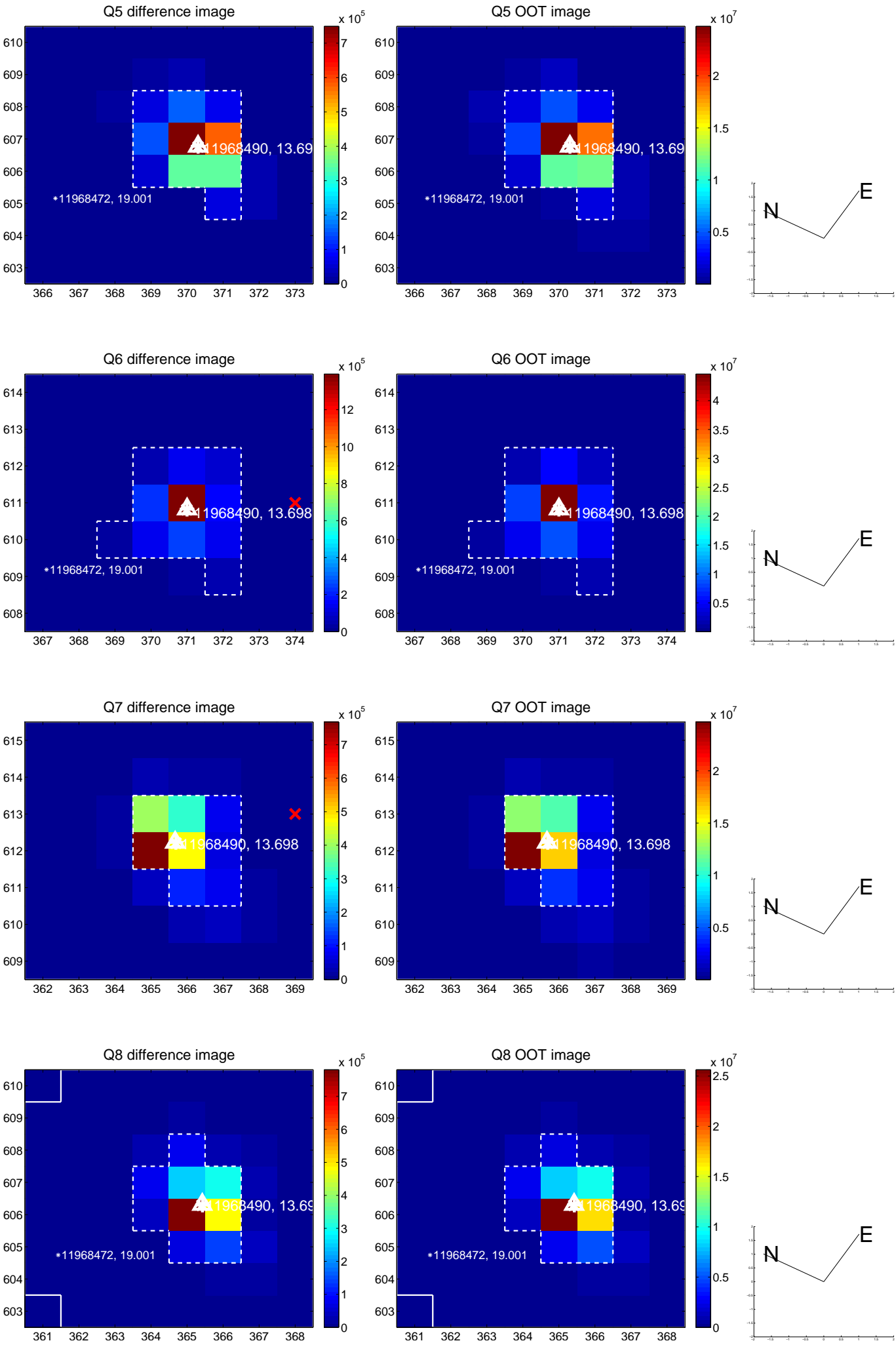


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

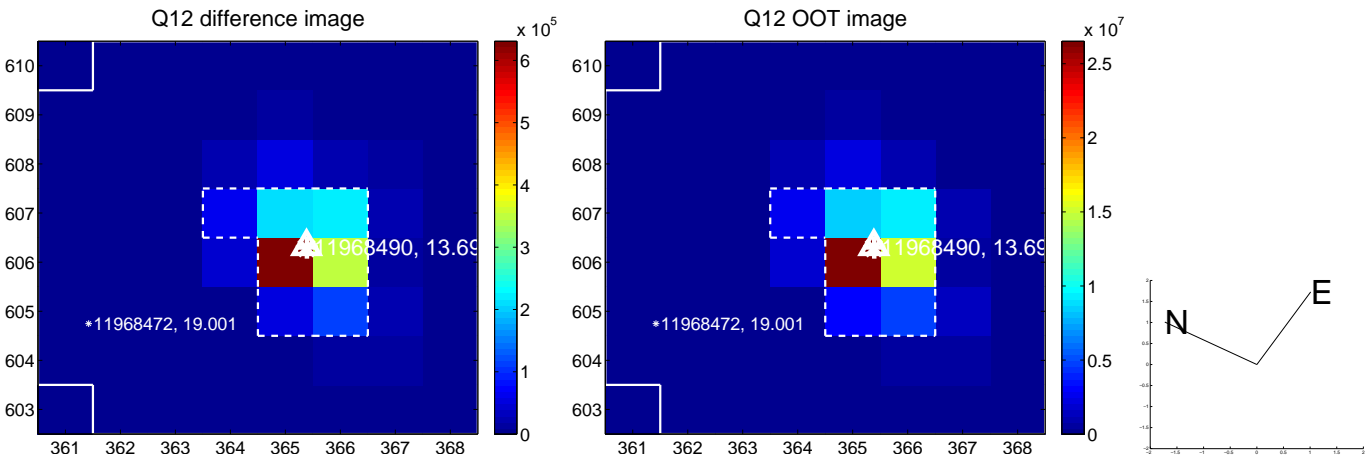
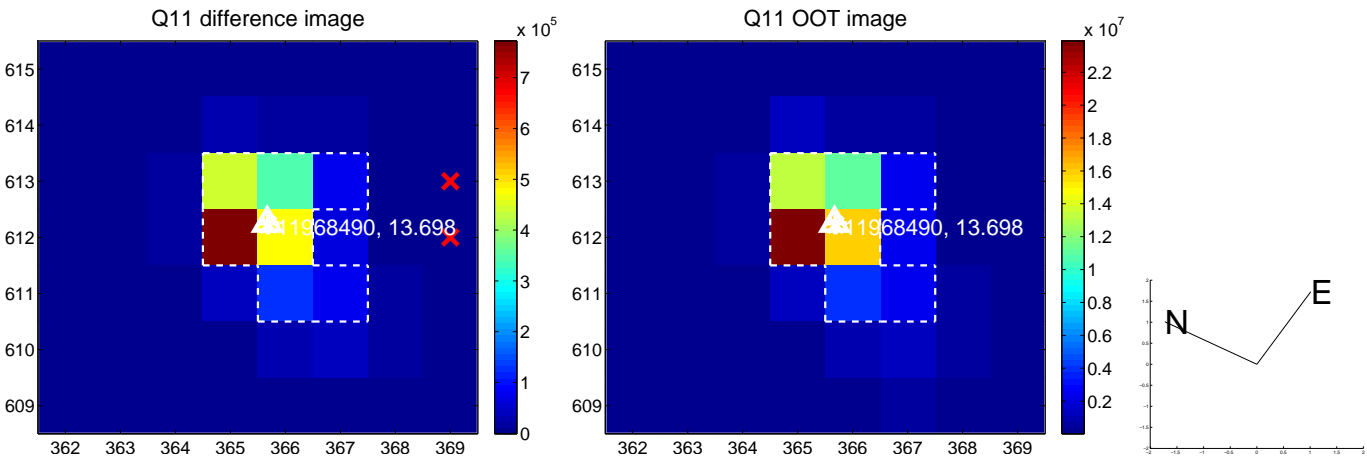
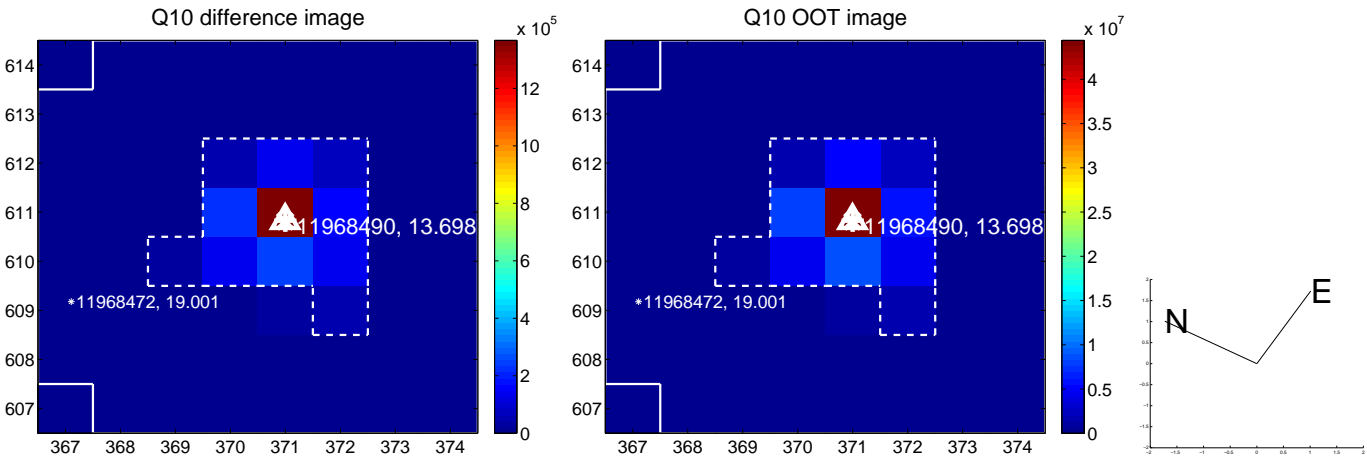
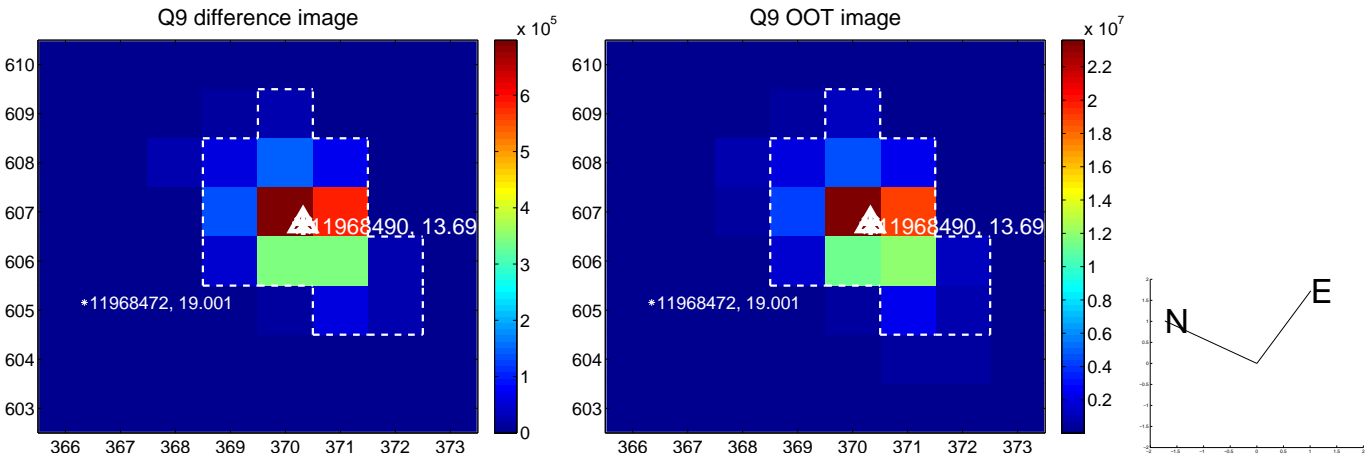
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



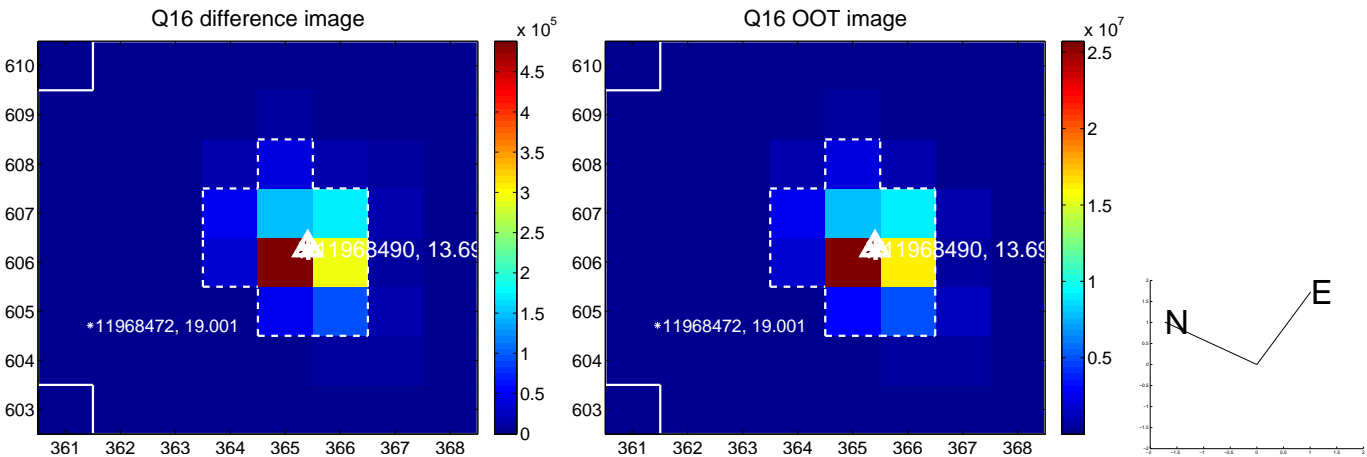
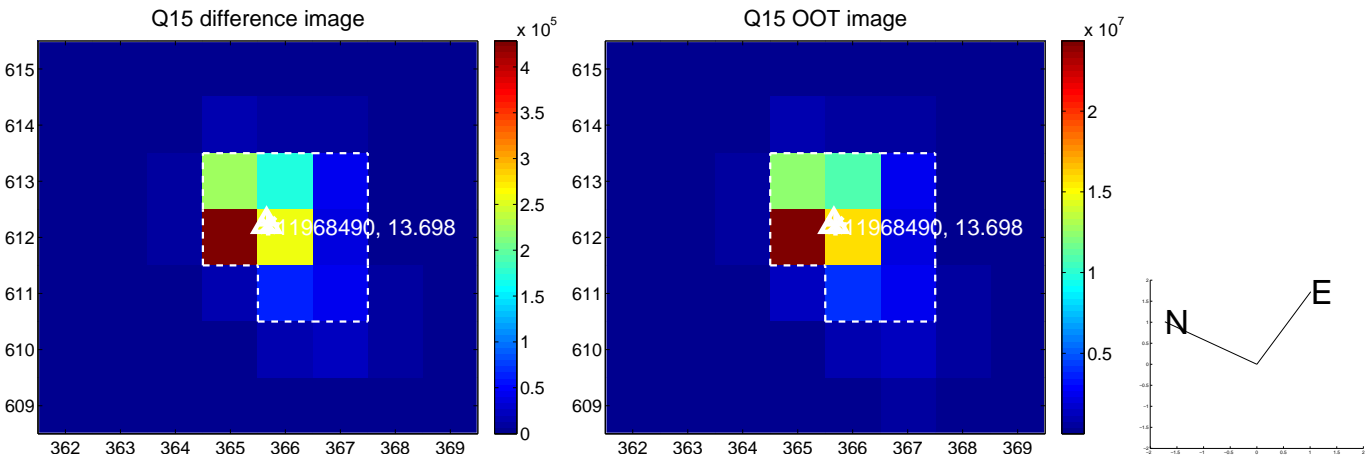
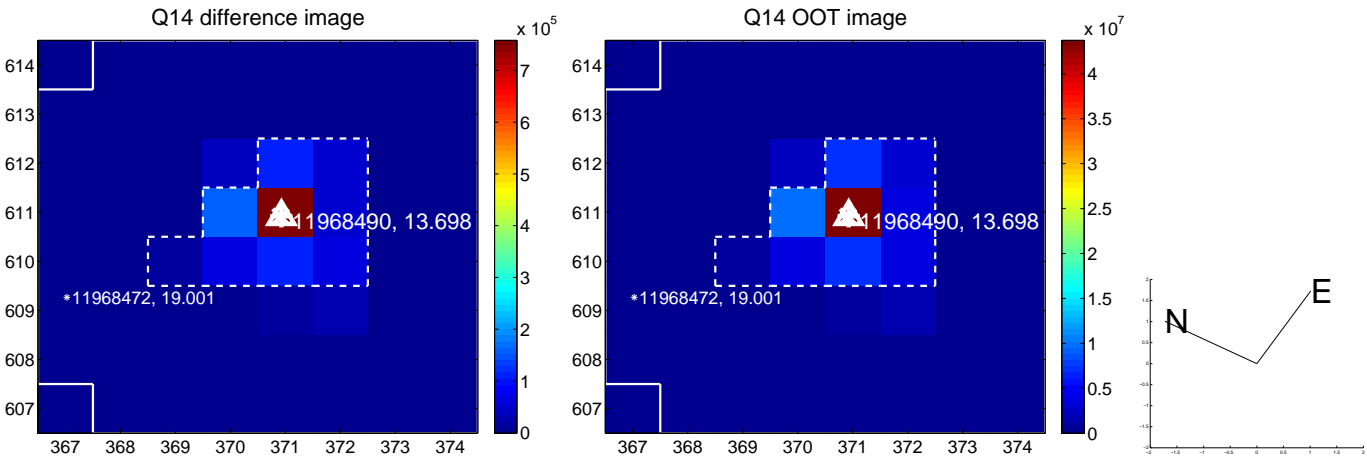
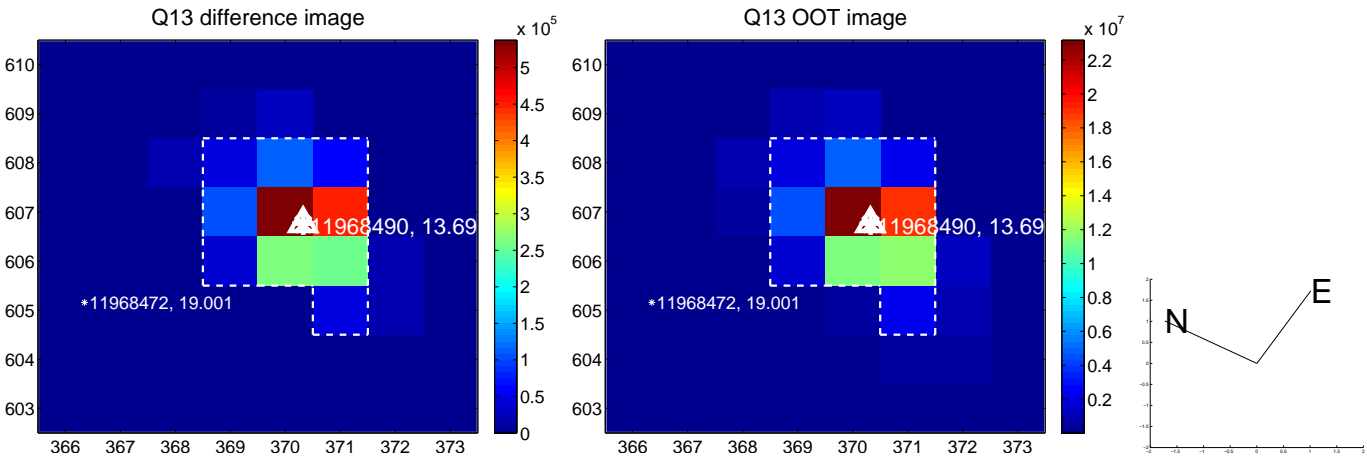
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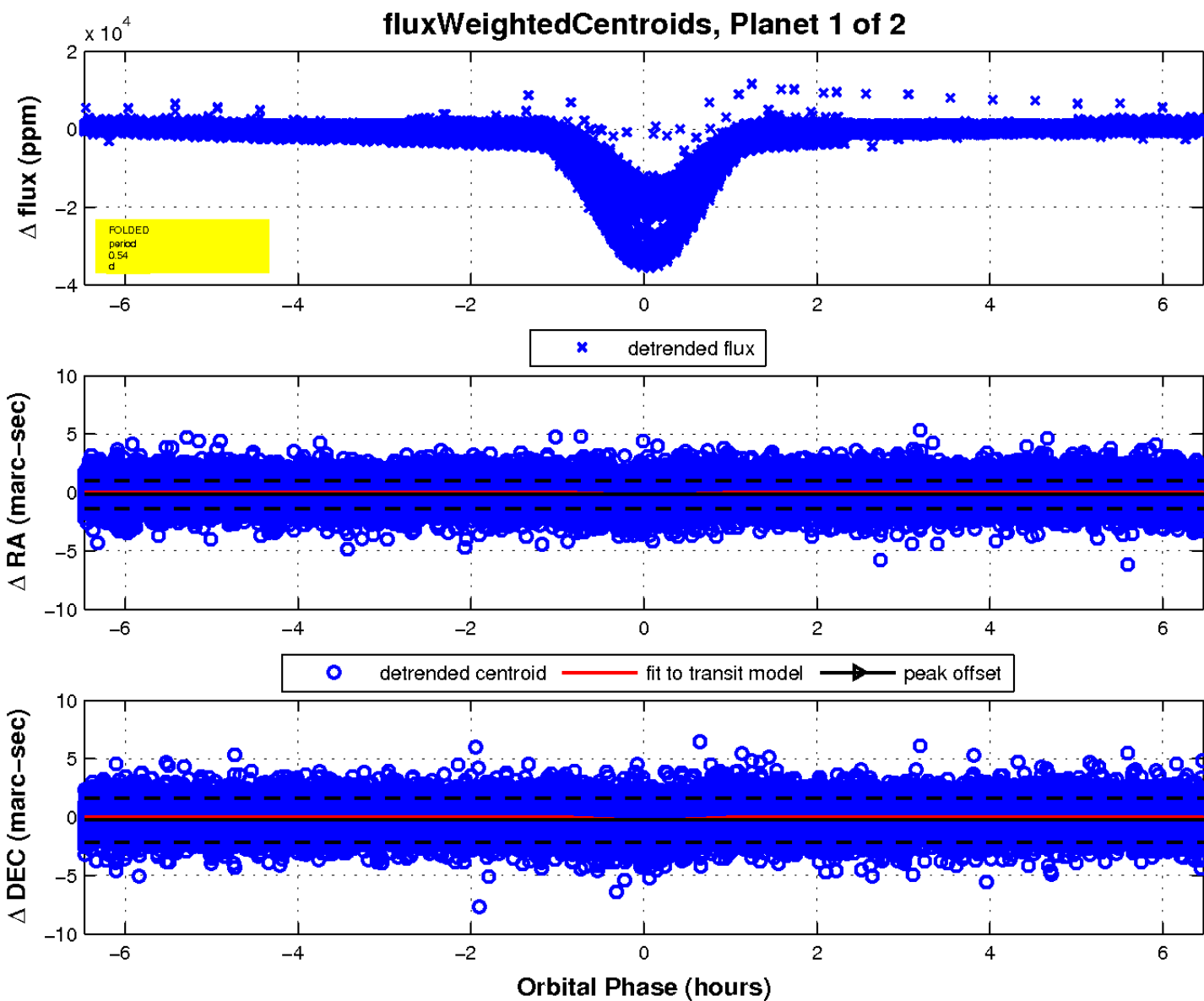
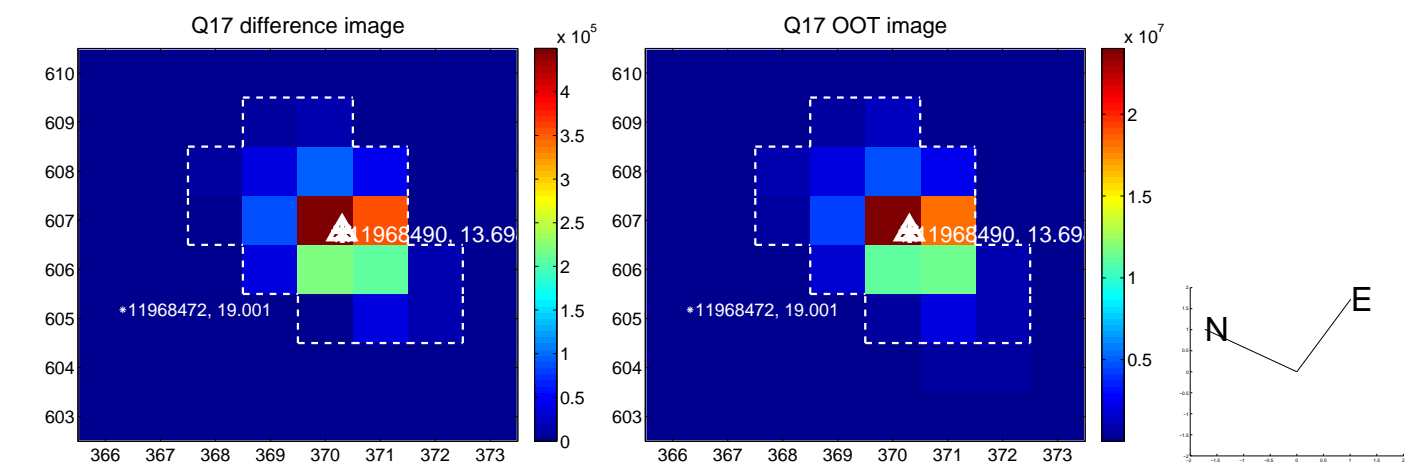
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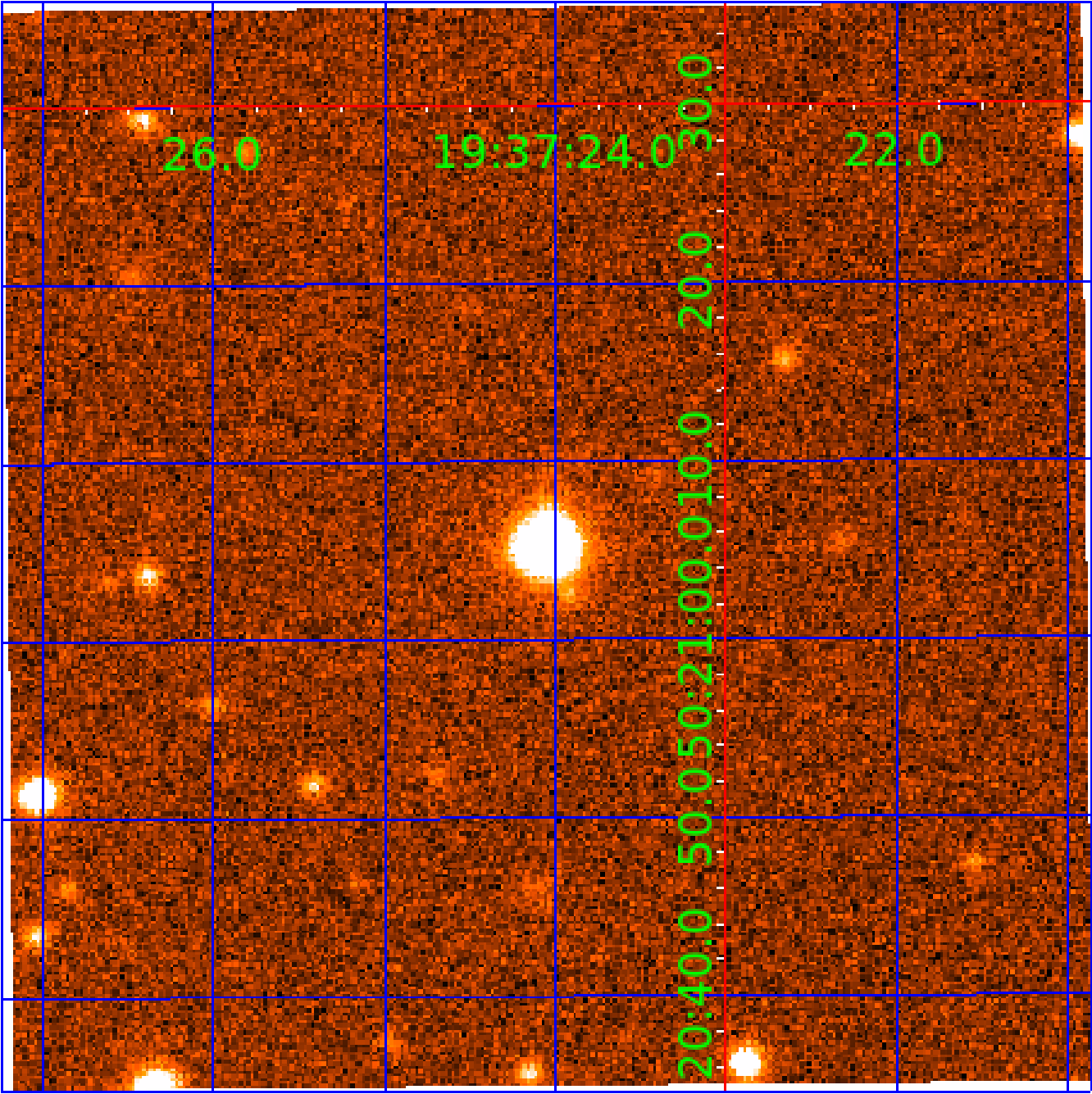


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011968490

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})
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011968490-02	OBS	No	1.078419	132.107643	102.3	3.135	17.3	12.8	1.46	6486	1.72	7208.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011968490-01	OBS	FP	0.00	0	1	0	0	DEPTH_ODDEVEN_DV—DEPTH_ODDEVEN_ALT—MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT—DEEP_V_SHAPED
011968490-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED

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.

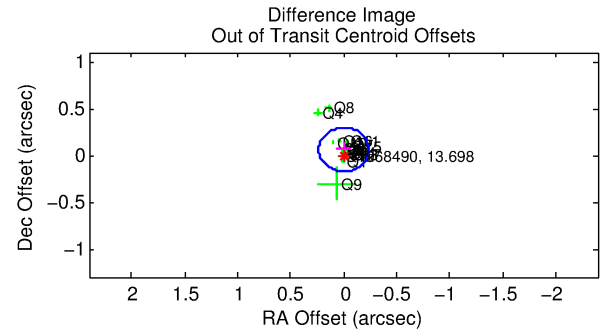
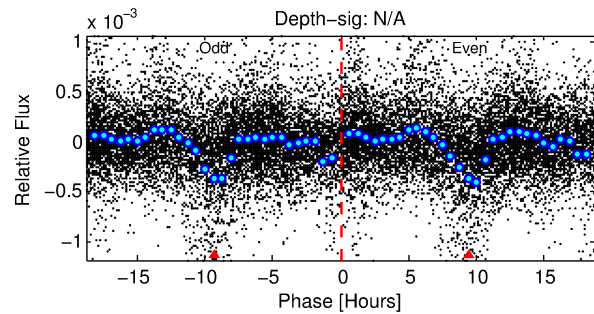
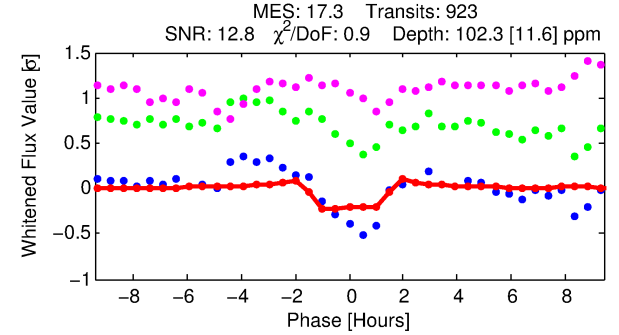
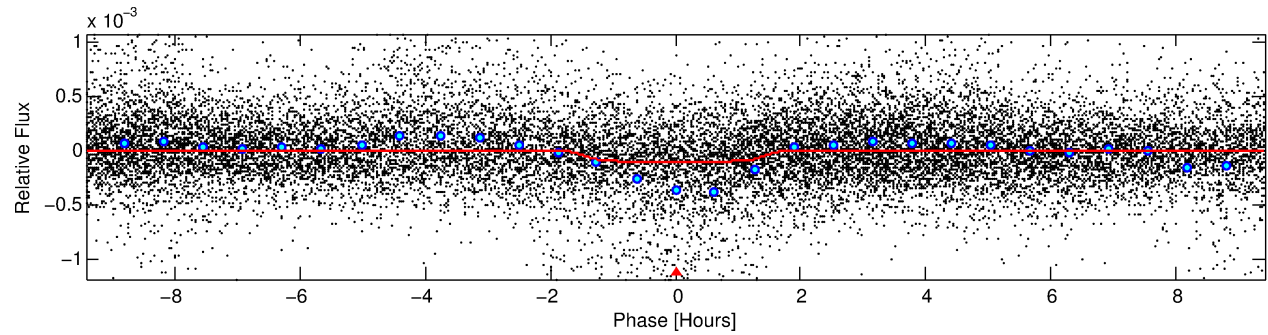
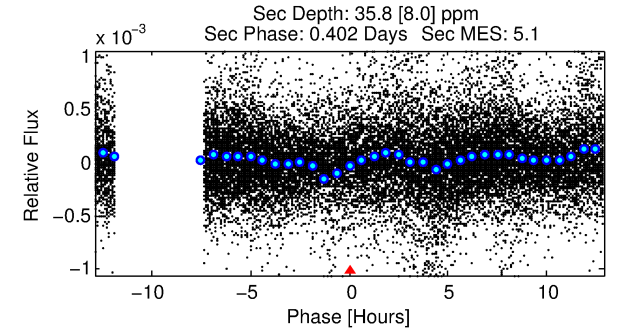
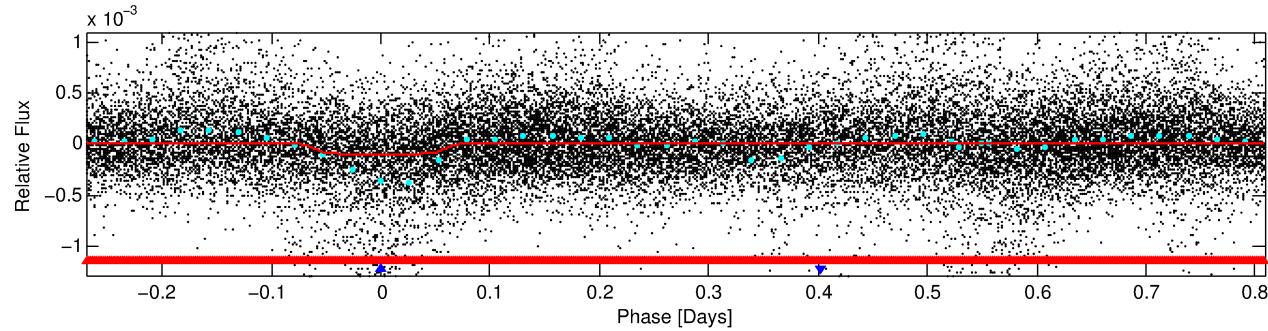
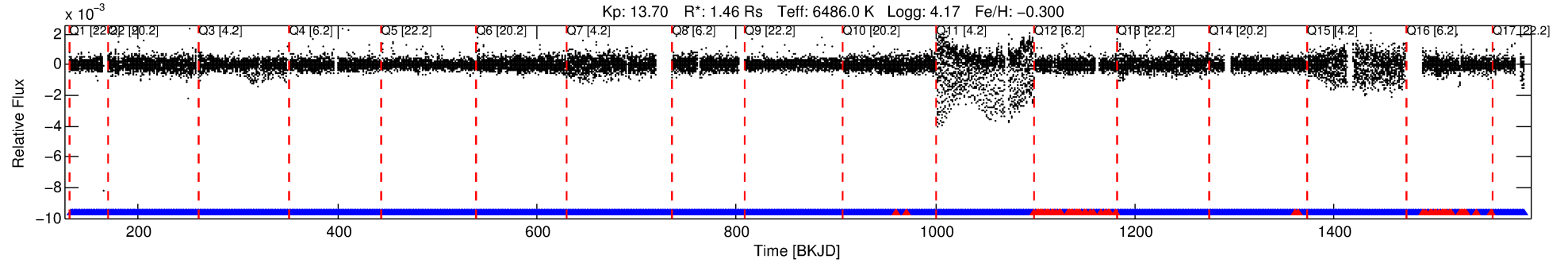
Ephemeris Match Information For 011968490-02

No Significant Match Found

DV One-Page Summary

KIC: 11968490 Candidate: 2 of 2 Period: 1.078 d

KOI: K07500 Corr: No Ephemeris Match



DV Fit Results:

Period = 1.07842 [0.00001] d
Epoch = 132.1076 [0.0021] BKJD
Rp/R* = 0.0109 [0.0031]
a/R* = 1.52 [1.39]
b = 0.90 [0.33]
Seff = 7208.75 [2919.64]
Teq = 2350 [238] K
Rp = 1.72 [0.70] Re
a = 0.0216 [0.0054] AU
Ag = 3.09 [2.22] [0.94σ]
Teffp = 4818 [760] K [3.10σ]

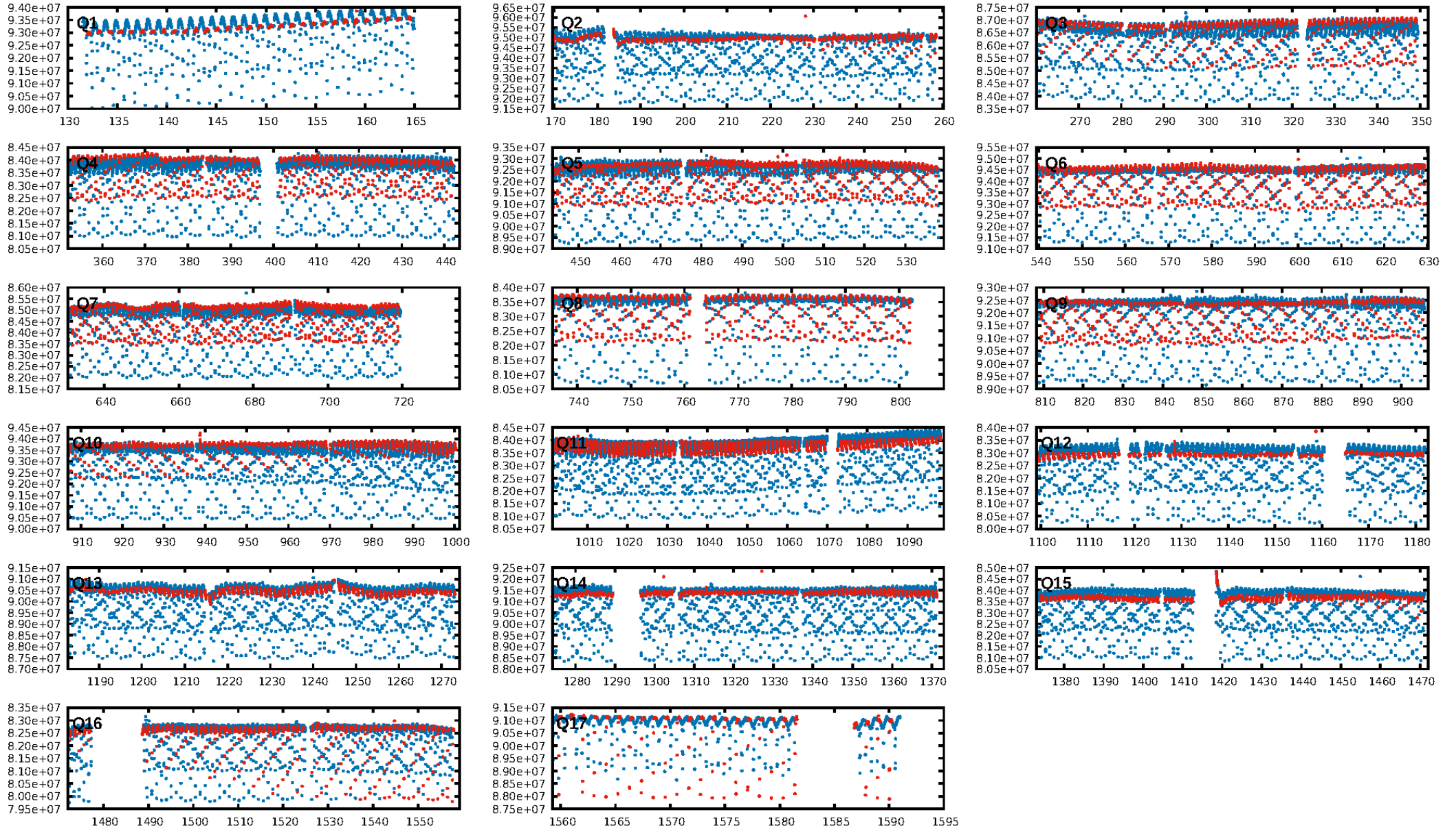
DV Diagnostic Results:

ShortPeriod-sig: 99.9% [3.38σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.94 [811/867]
GhostDiagnostic-chr: 1.92
Centroid-sig: 1.6%
Centroid-so: 0.683 arcsec [2.28σ]
OotOffset-rm: 0.061 arcsec [0.78σ]
KicOffset-rm: 0.101 arcsec [1.34σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.29 [5/17]
DiffImageOverlap-fno: 0.00 [0/17]

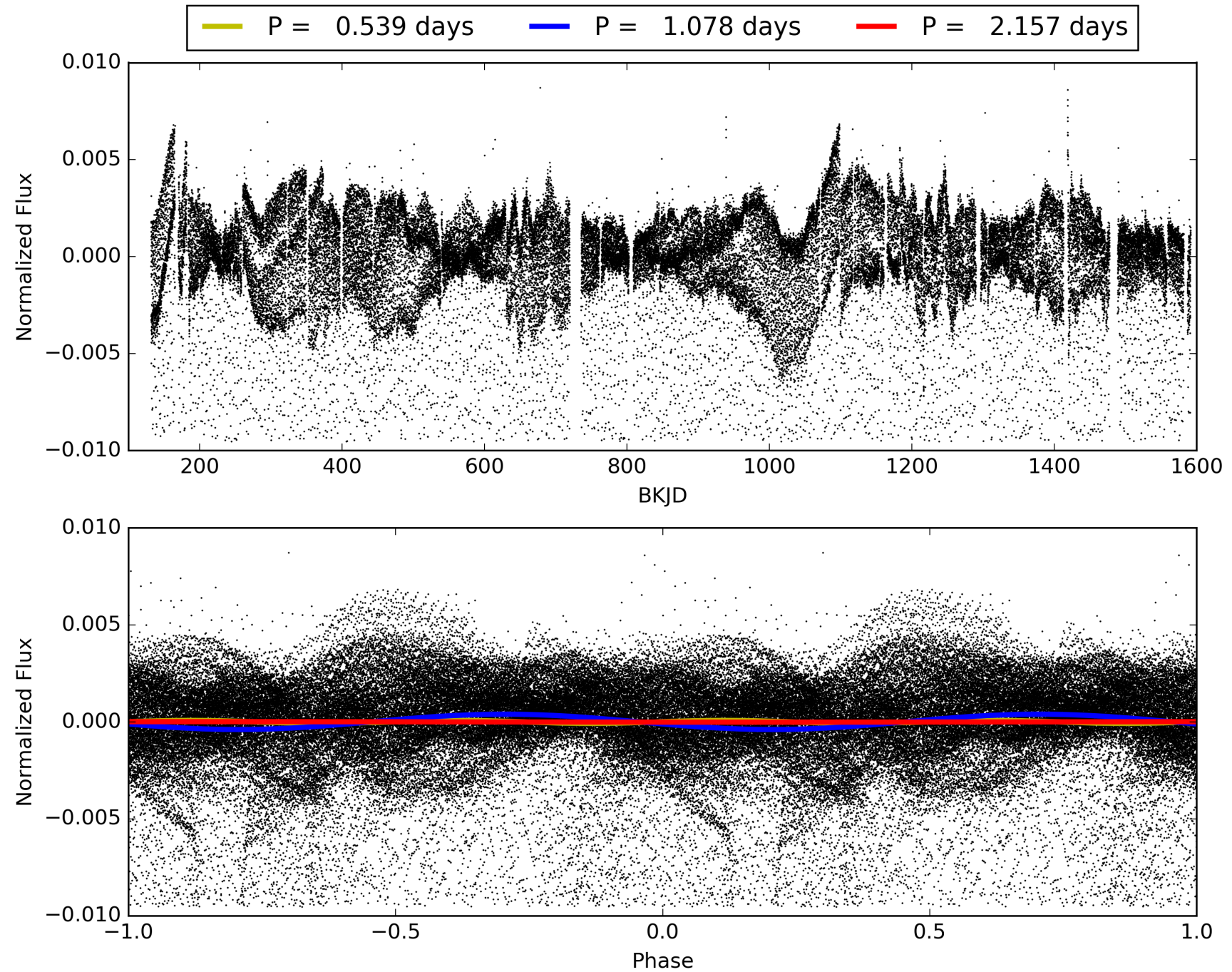
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 07:01:39 Z

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

TCE 011968490-02, PDC Light Curves

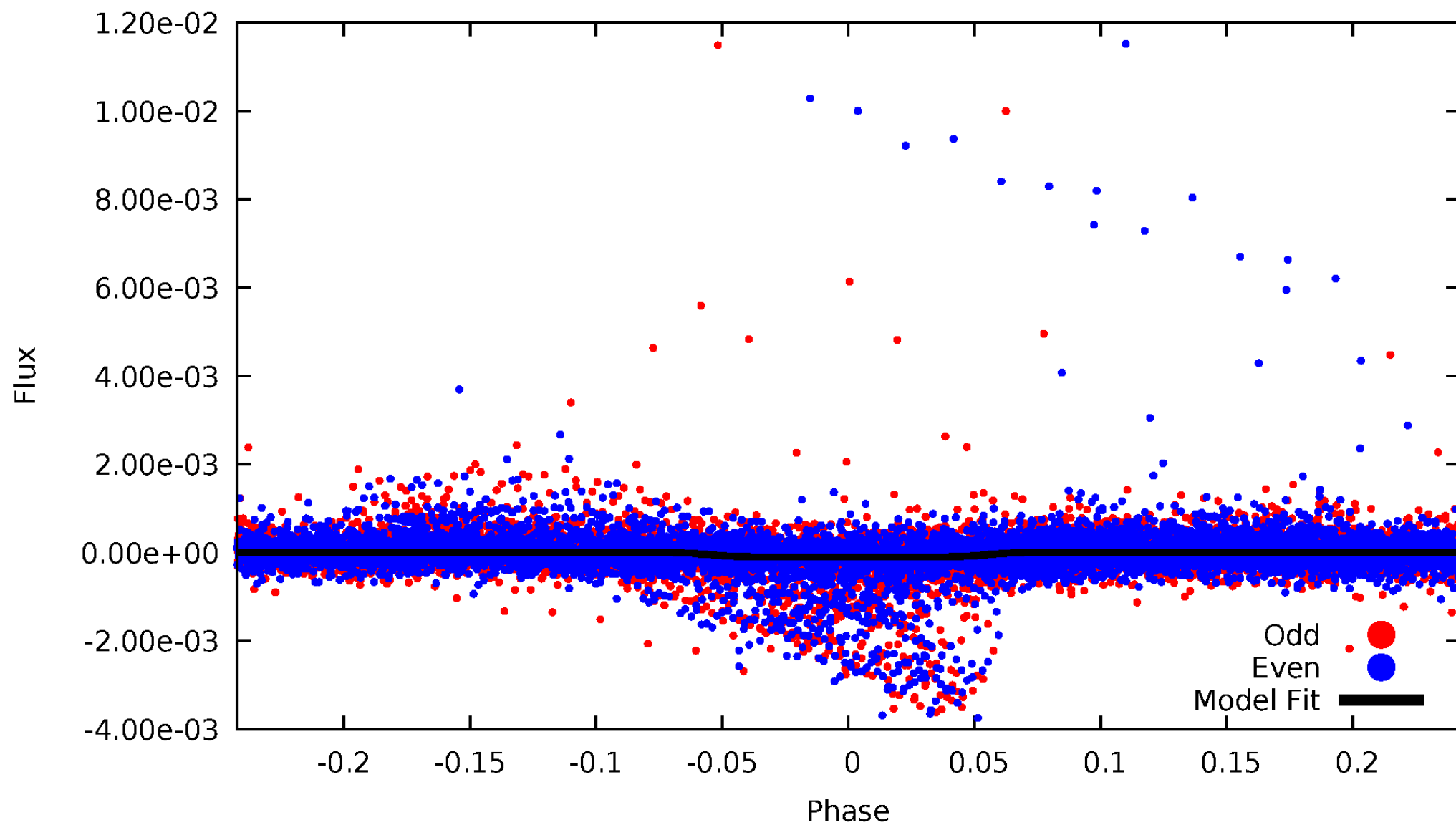


TCE 011968490-02



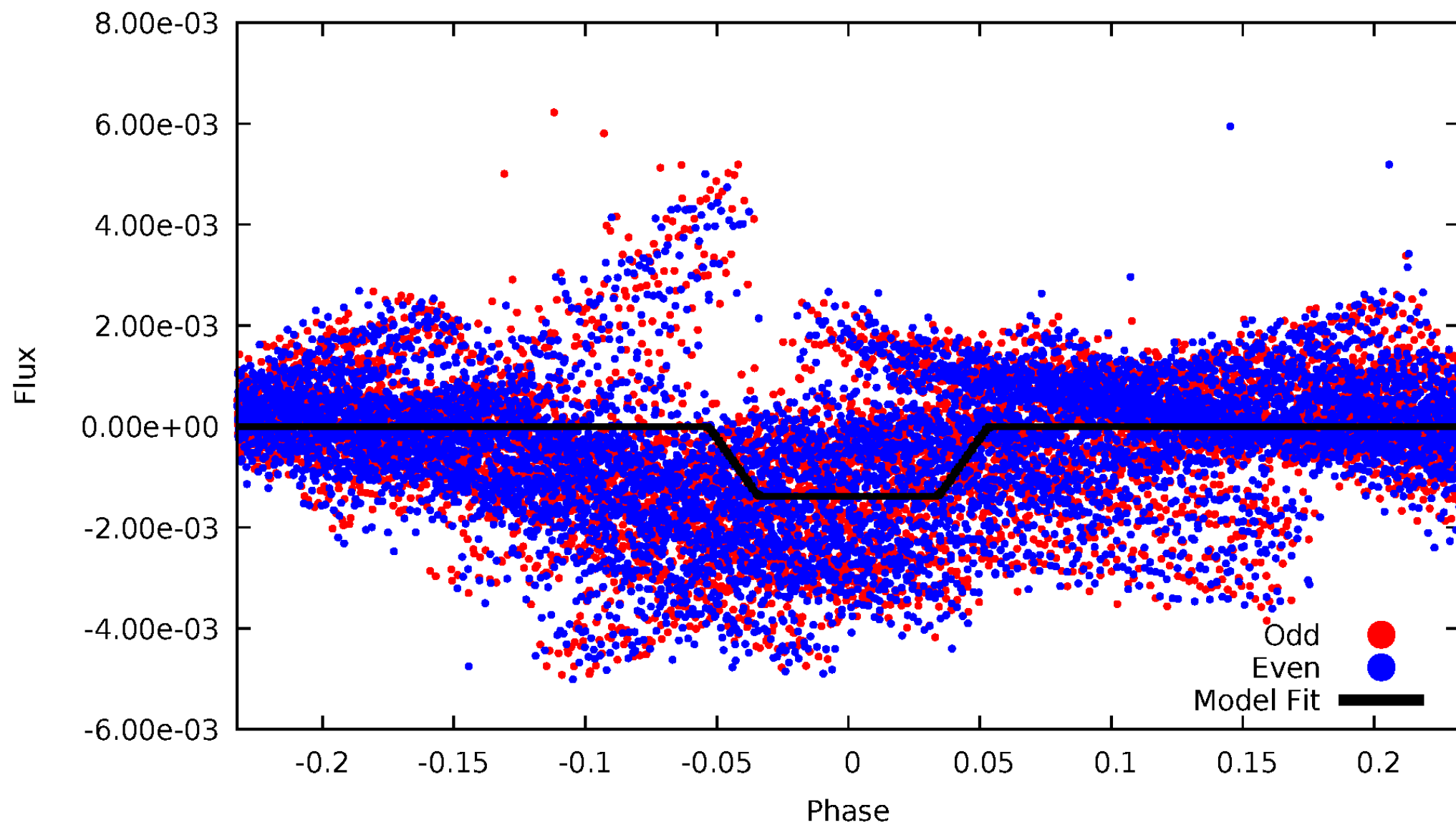
DV Odd/Even

TCE 011968490-02



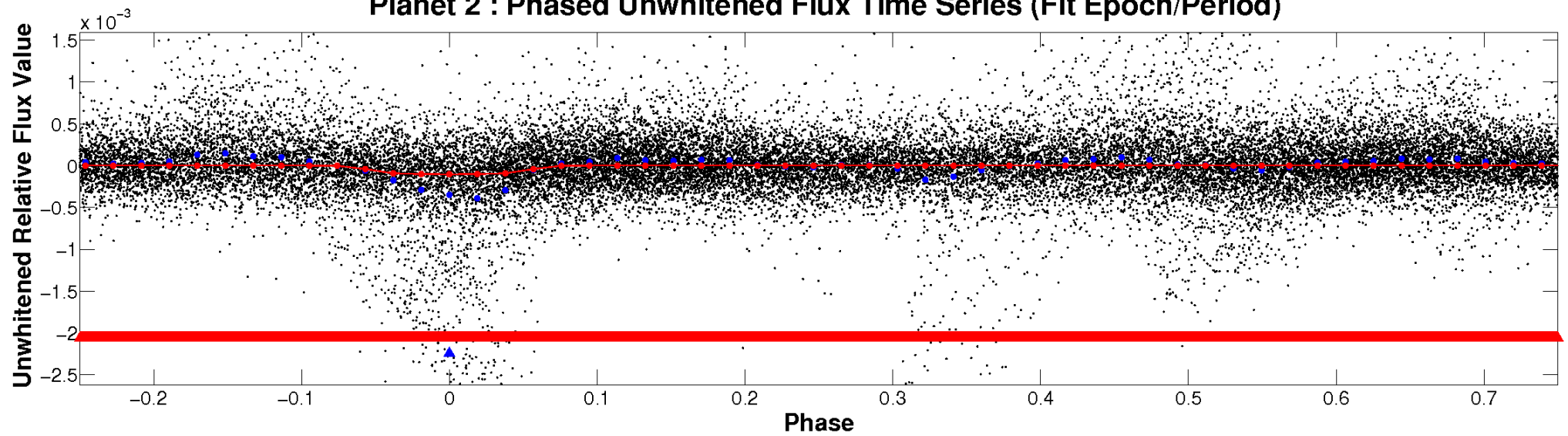
ALT Odd/Even

TCE 011968490-02

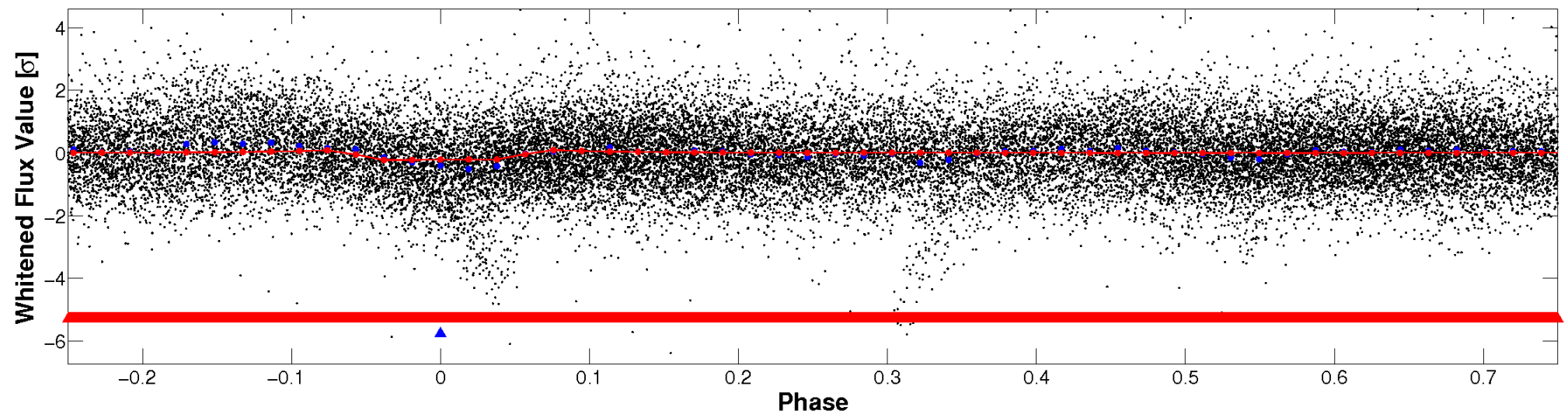


Non-Whitened Vs. Whitened Light Curve

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

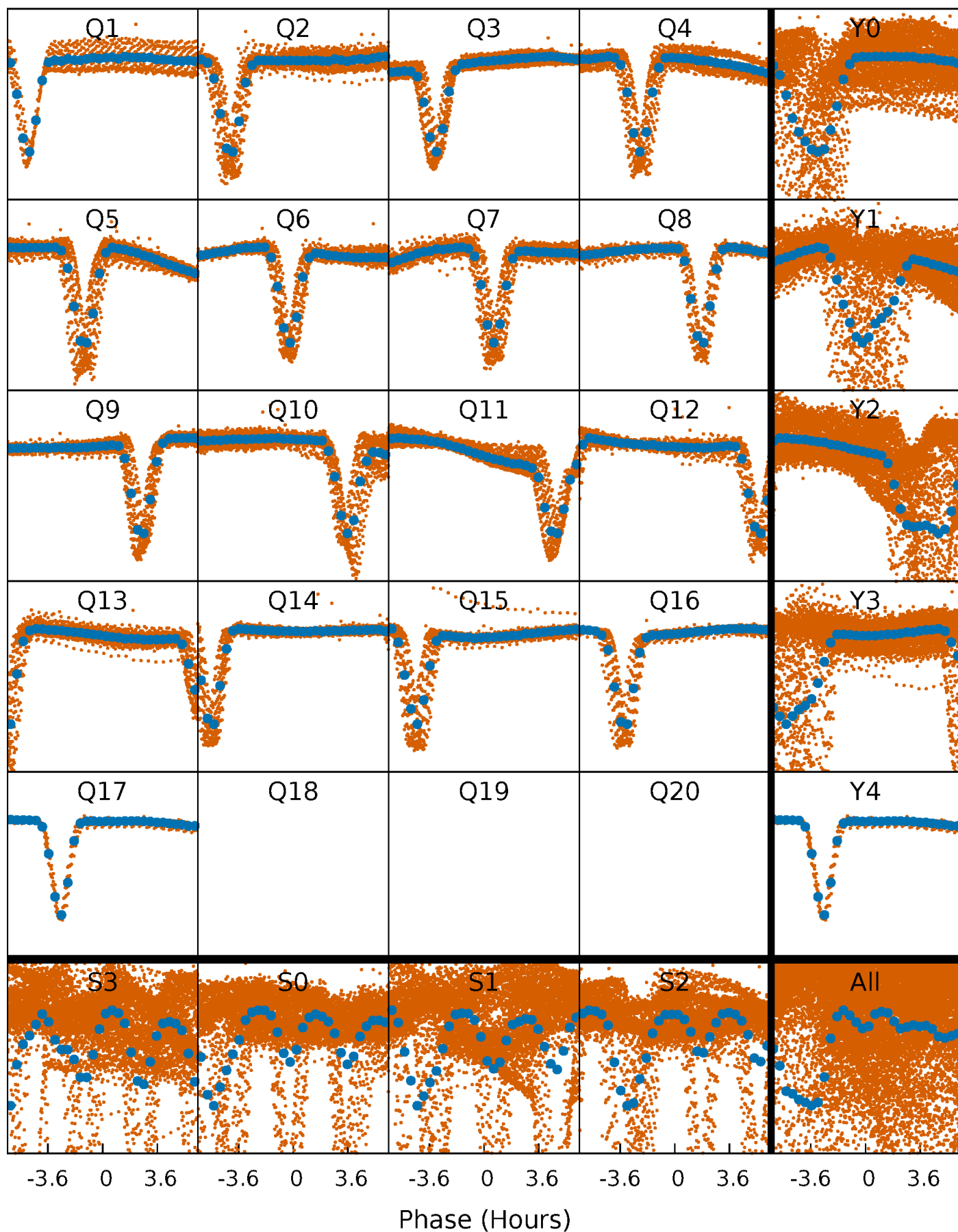


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



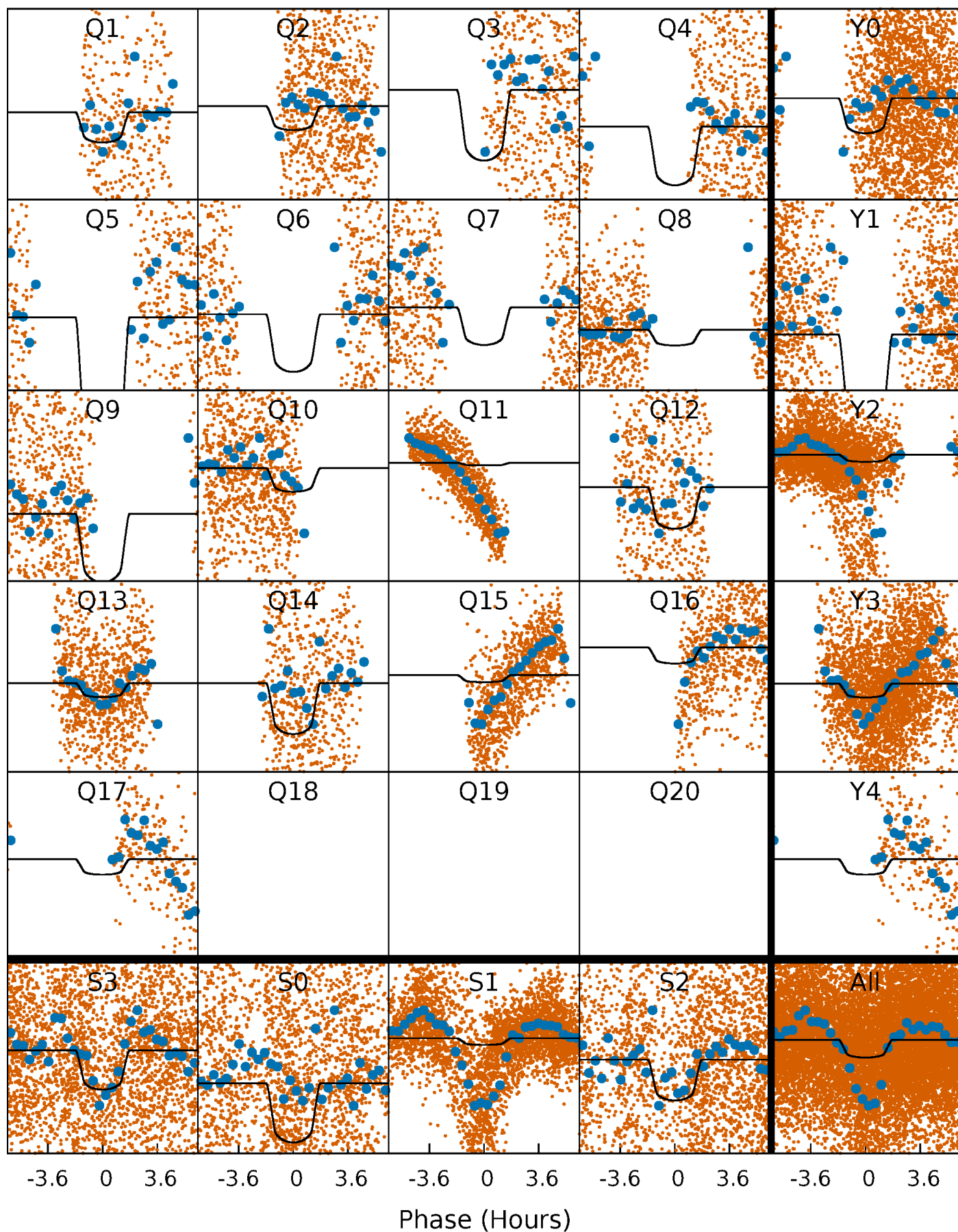
PDC Quarter-Phased Transit Curves

TCE 011968490-02 $P = 1.078419$ Days $T_0 = 132.107643$ (BKJD)



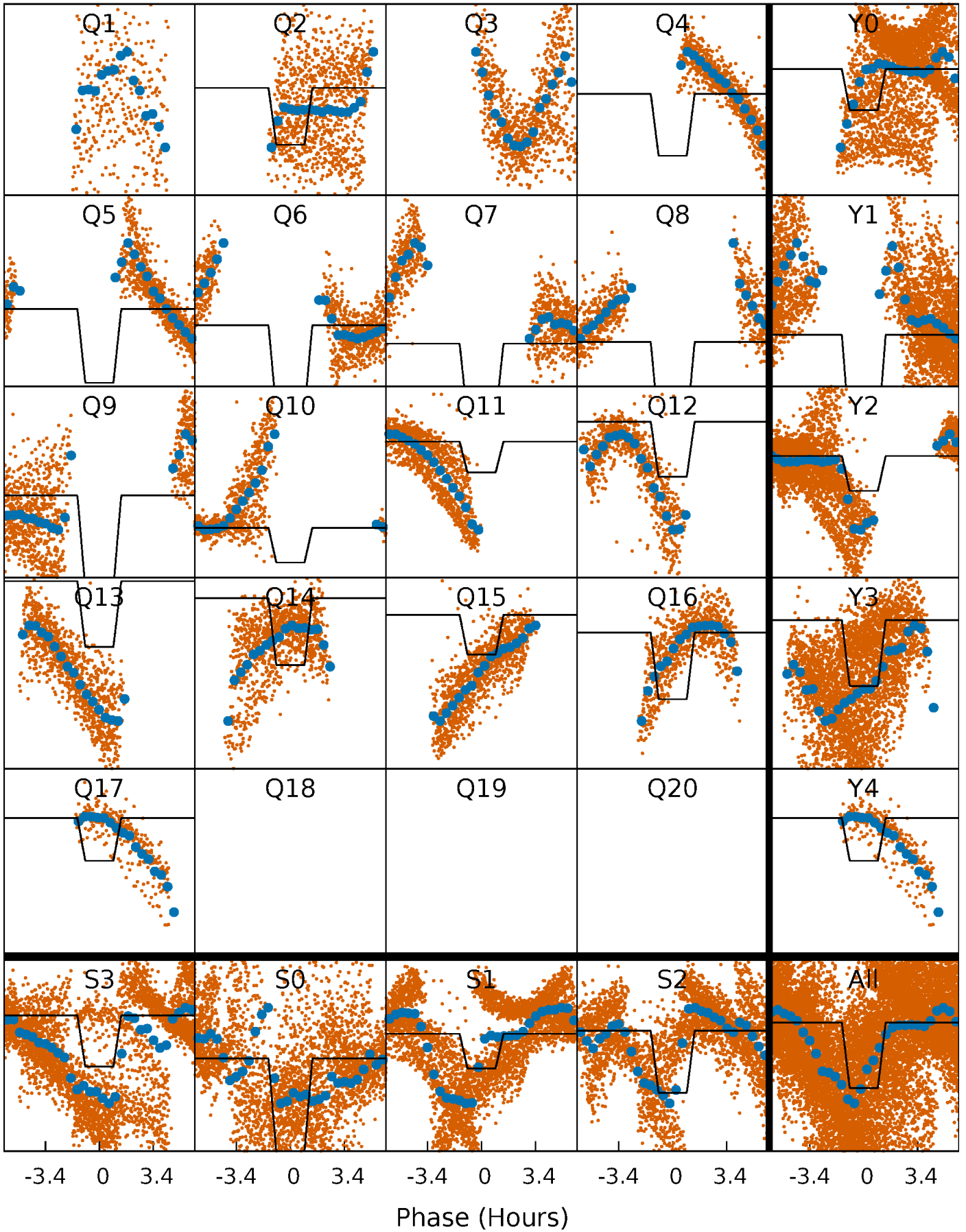
DV Quarter-Phased Transit Curves

TCE 011968490-02 P= 1.078419 Days $T_0=132.107643$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

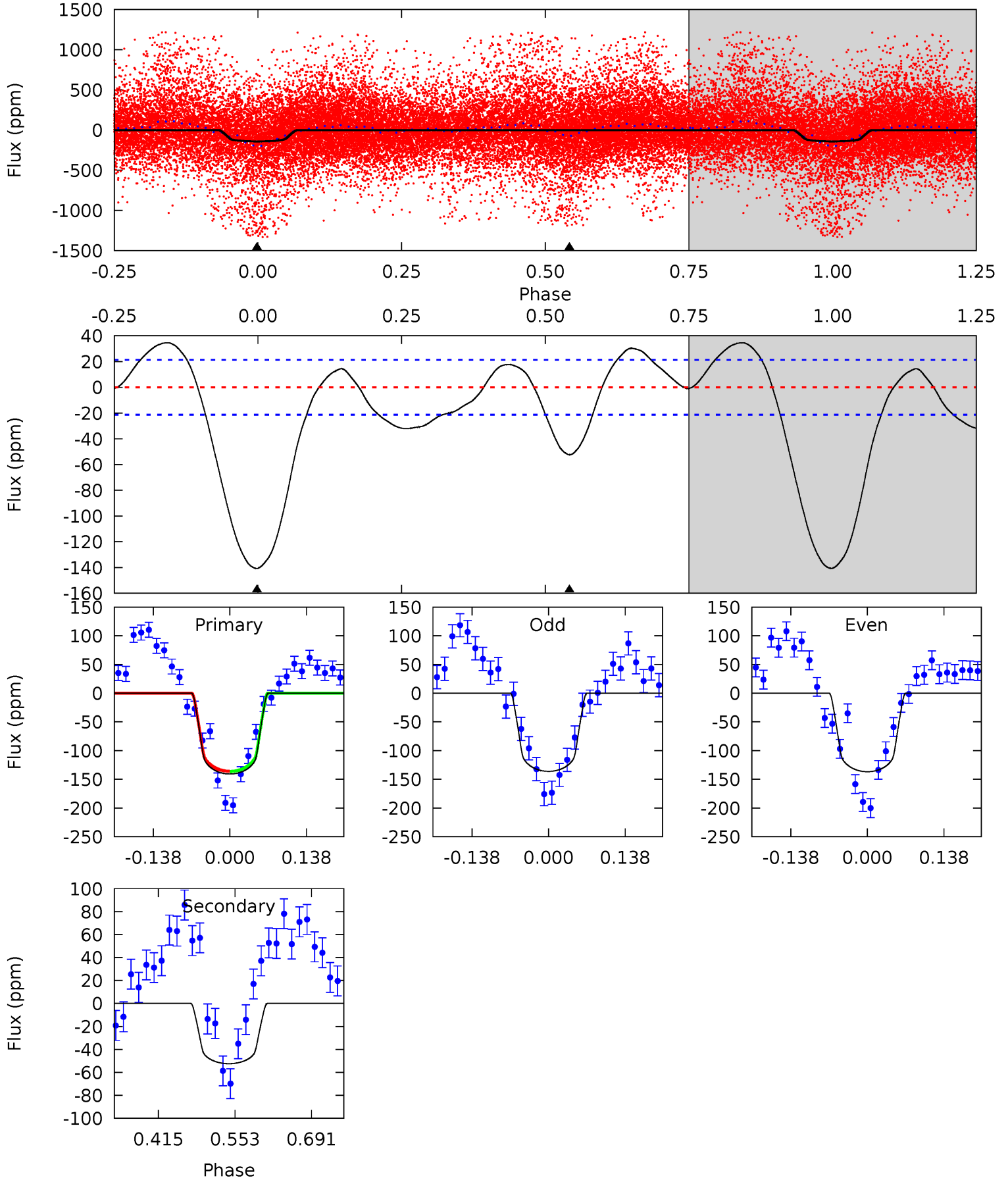
TCE 011968490-02 P= 1.078484 Days $T_0=132.116756$ (BKJD)



DV Model-Shift Uniqueness Test

011968490-02, P = 1.078419 Days, E = 131.029224 Days

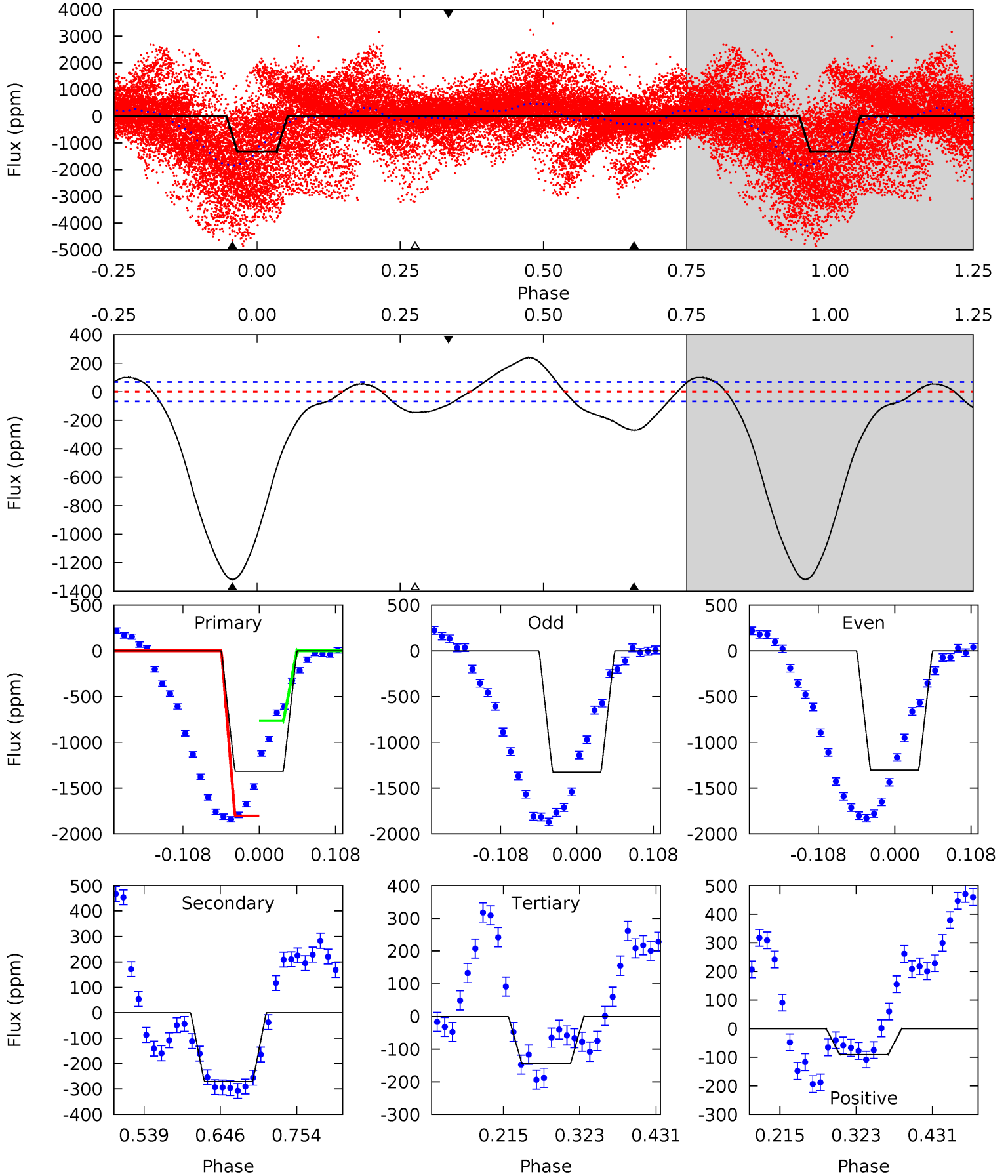
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.6	11.0	0	0	4.50	1.48	4.28	29.6	29.6	11.0	11.0	0.07	2.64	0.20	0.02



Alt Model-Shift Uniqueness Test

011968490-02, P = 1.078484 Days, E = 131.038272 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
88.8	18.2	9.79	-6.09	4.55	1.61	7.80	79.0	94.9	8.41	24.3	0.80	1.03	0.15	38.8



Stellar Parameters For KIC 011968490

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6486^{+181}_{-250}	$4.174^{+0.209}_{-0.171}$	$-0.300^{+0.250}_{-0.300}$	$1.456^{+0.422}_{-0.384}$	$1.156^{+0.174}_{-0.174}$	$0.527^{+0.614}_{-0.244}$
	+3%/-4%	+5%/-4%	+83%/-100%	+29%/-26%	+15%/-15%	+116%/-46%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 011968490-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-52 ± 5	$1.73^{+0.56}_{-0.58}$	3262^{+259}_{-249}	5253^{+1012}_{-636}	$4.489^{+5.665}_{-1.871}$
Alt.	-270 ± 15	$5.86^{+1.16}_{-0.99}$	3278^{+238}_{-249}	4349^{+208}_{-215}	$2.005^{+0.891}_{-0.568}$

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 $A_{obs} \gg 1.0$

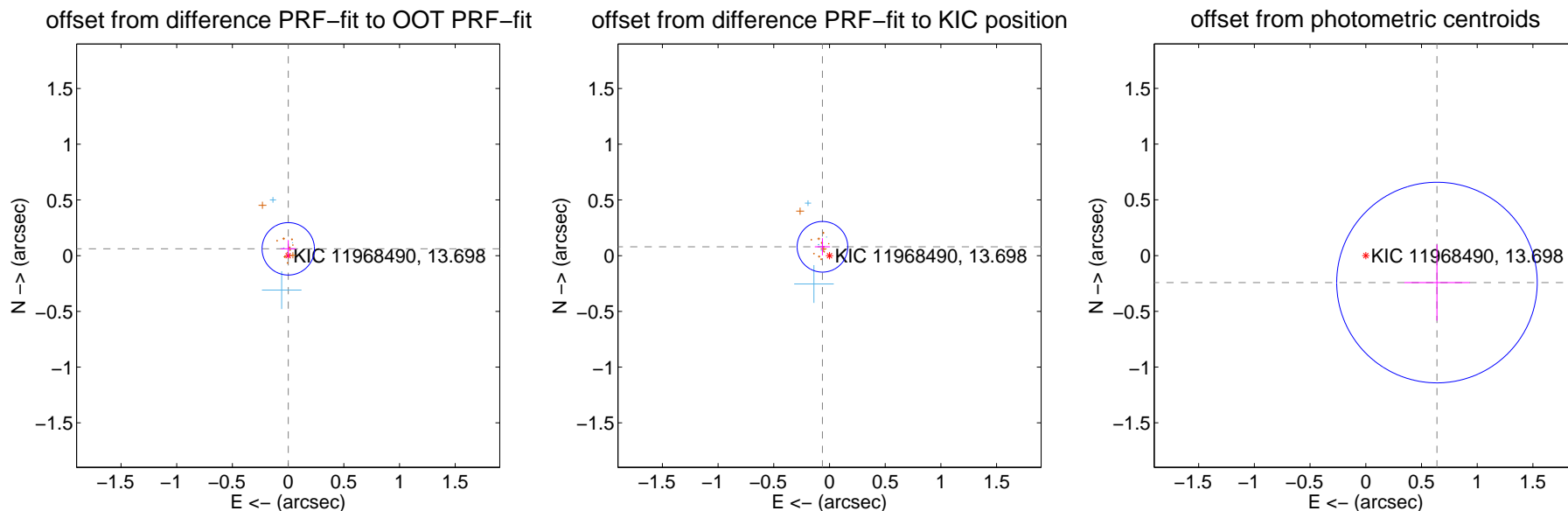
DV Centroid Data

Supplemental centroid analysis for 011968490-02. Kepler magnitude: 13.70. Transit SNR 12.82

There are 5 quarters with good PRF difference image offsets

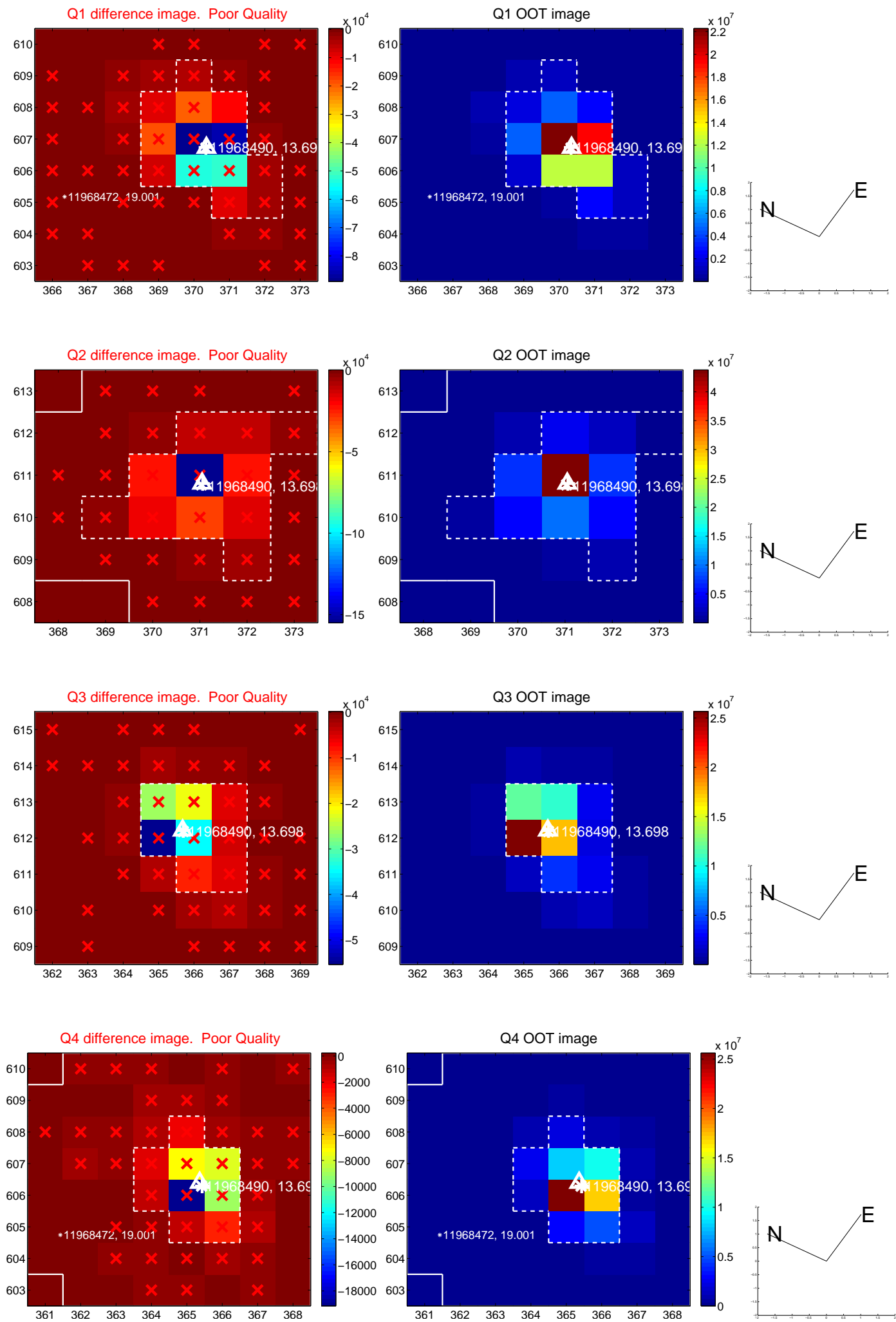
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.061 ± 0.078	0.78	-0.001 ± 0.069	0.061 ± 0.078
PRF-fit source offset from KIC position	0.101 ± 0.076	1.34	0.063 ± 0.068	0.079 ± 0.077
photometric centroid source offset	0.68 ± 0.30	2.28	-0.64 ± 0.29	-0.24 ± 0.34

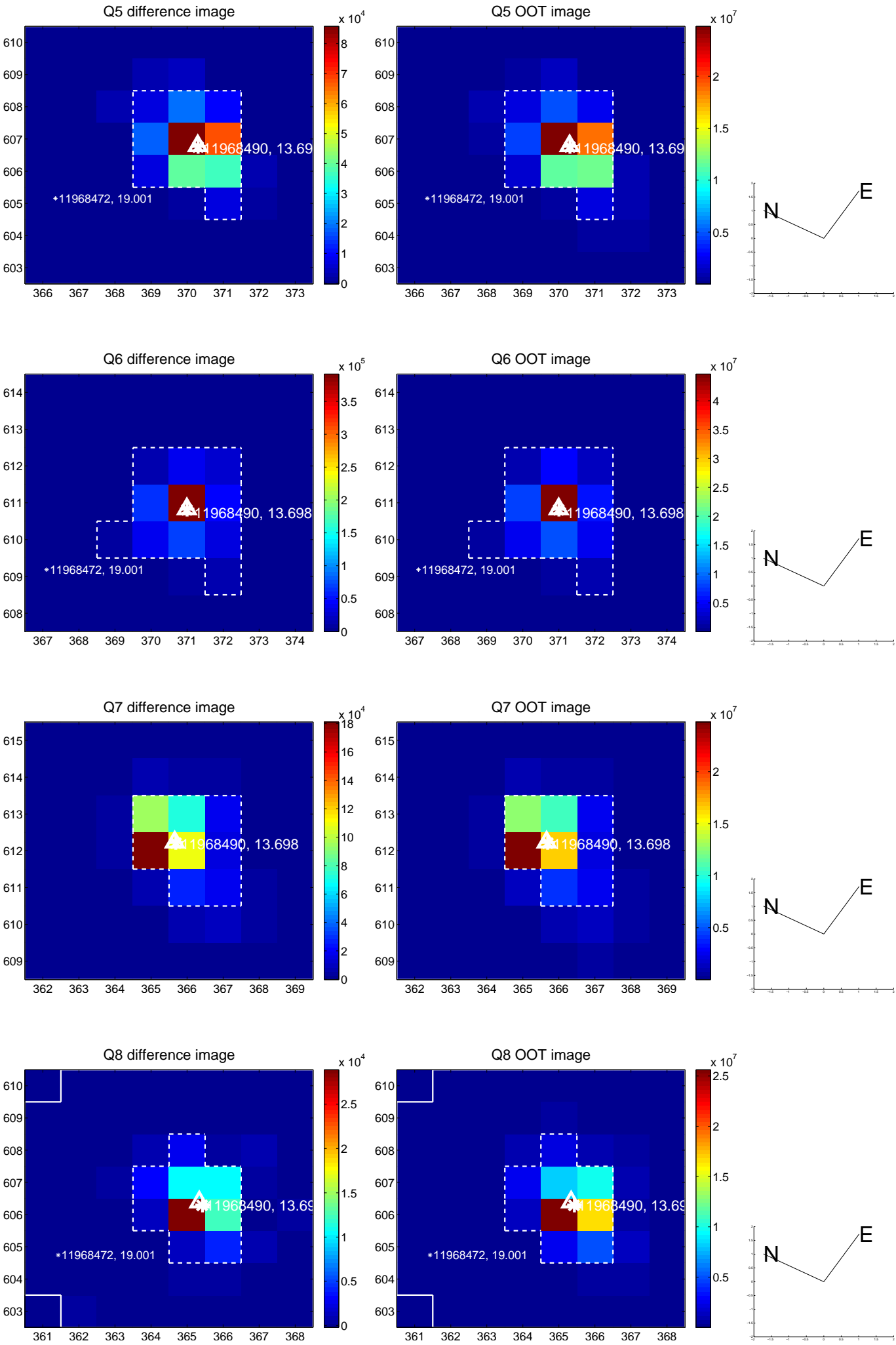


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

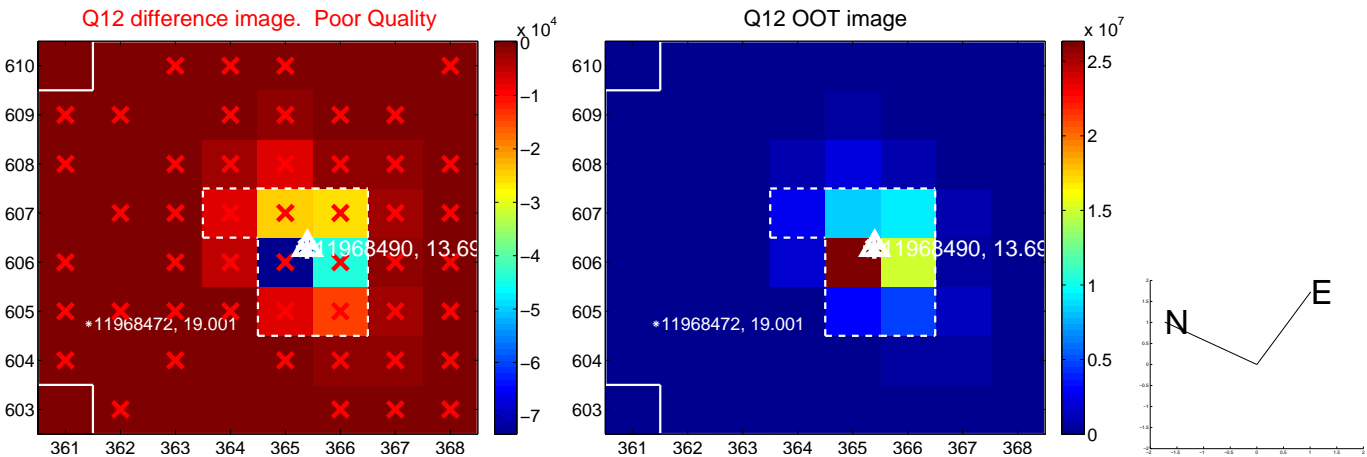
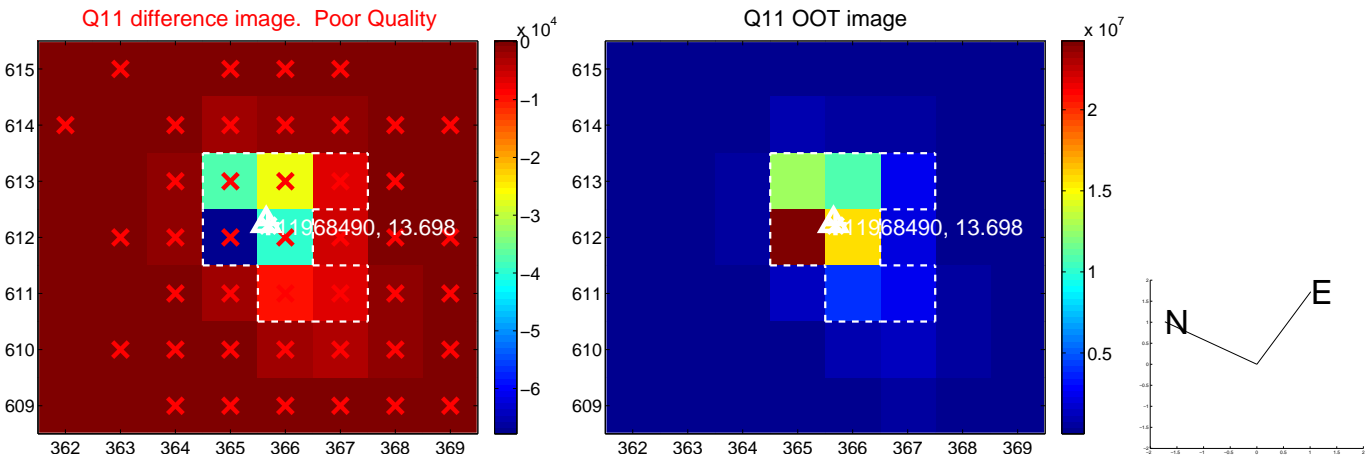
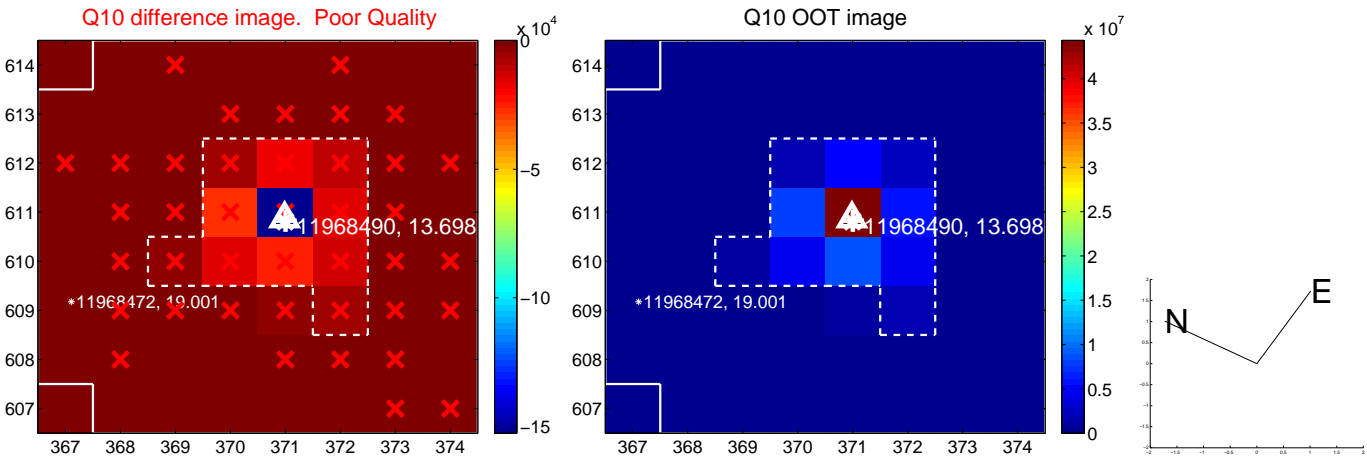
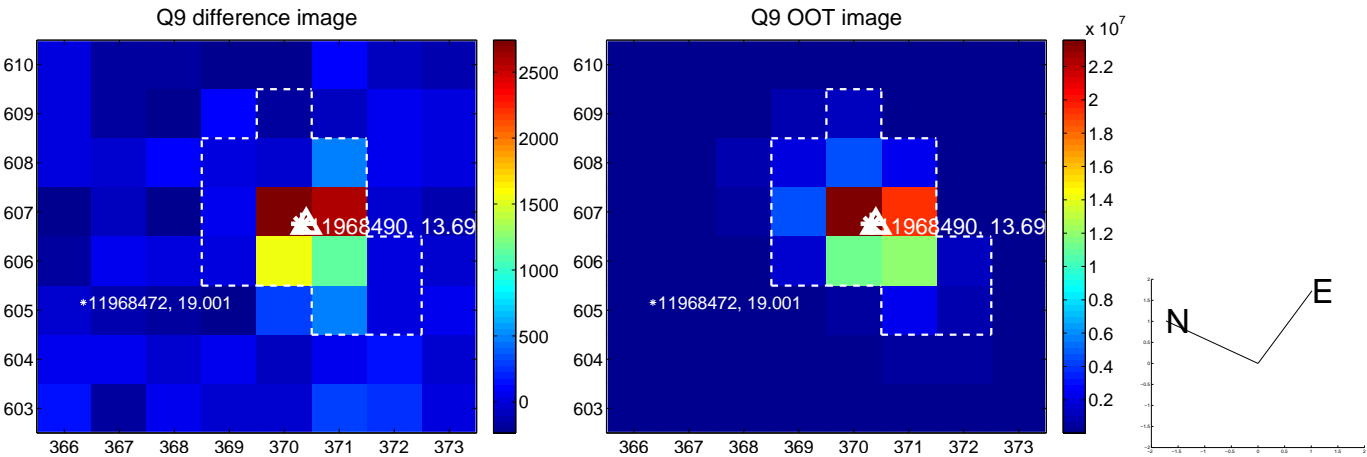
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



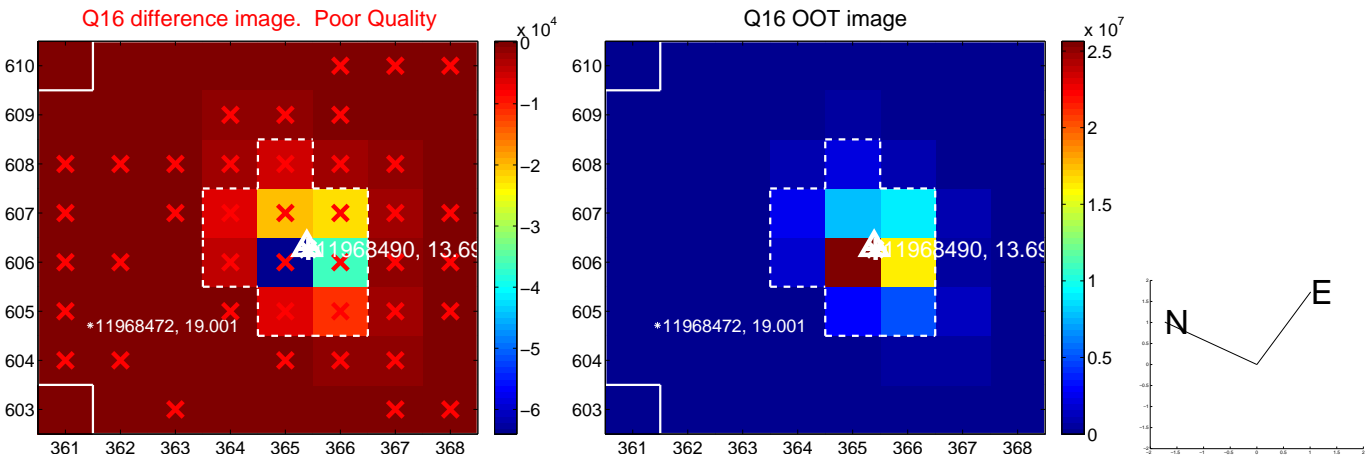
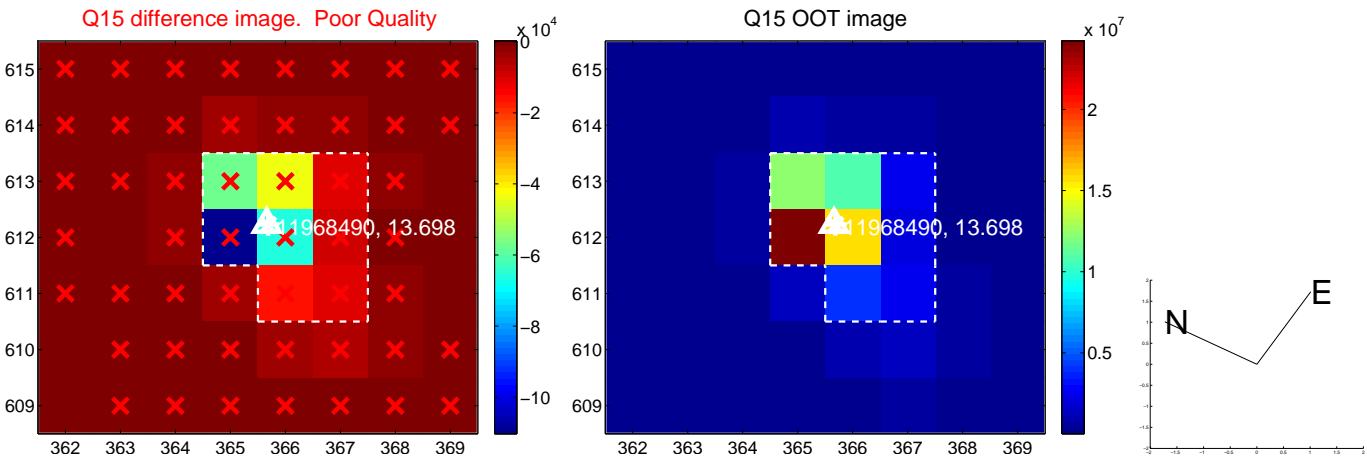
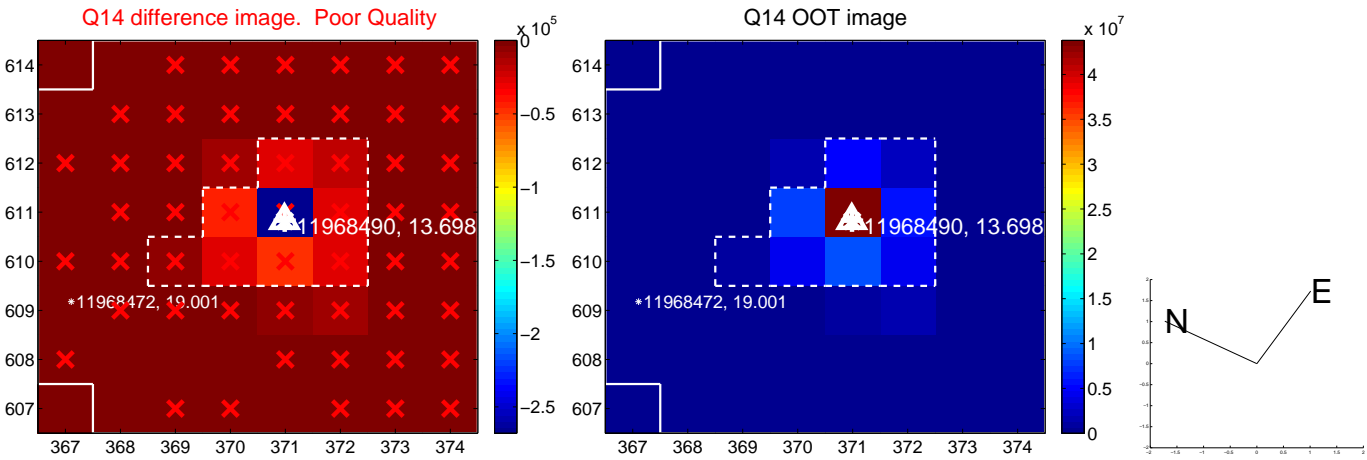
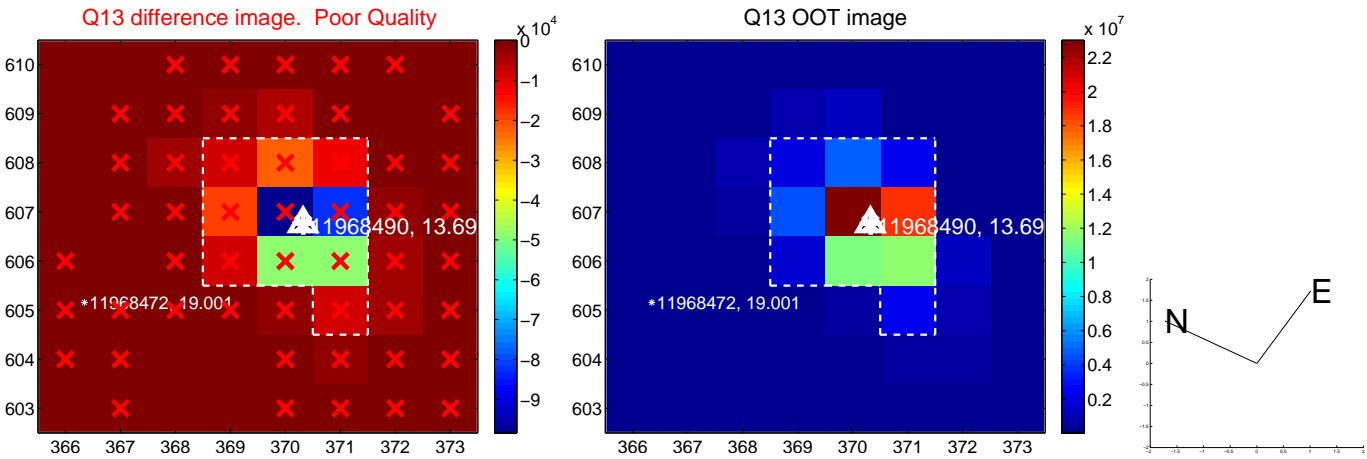
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



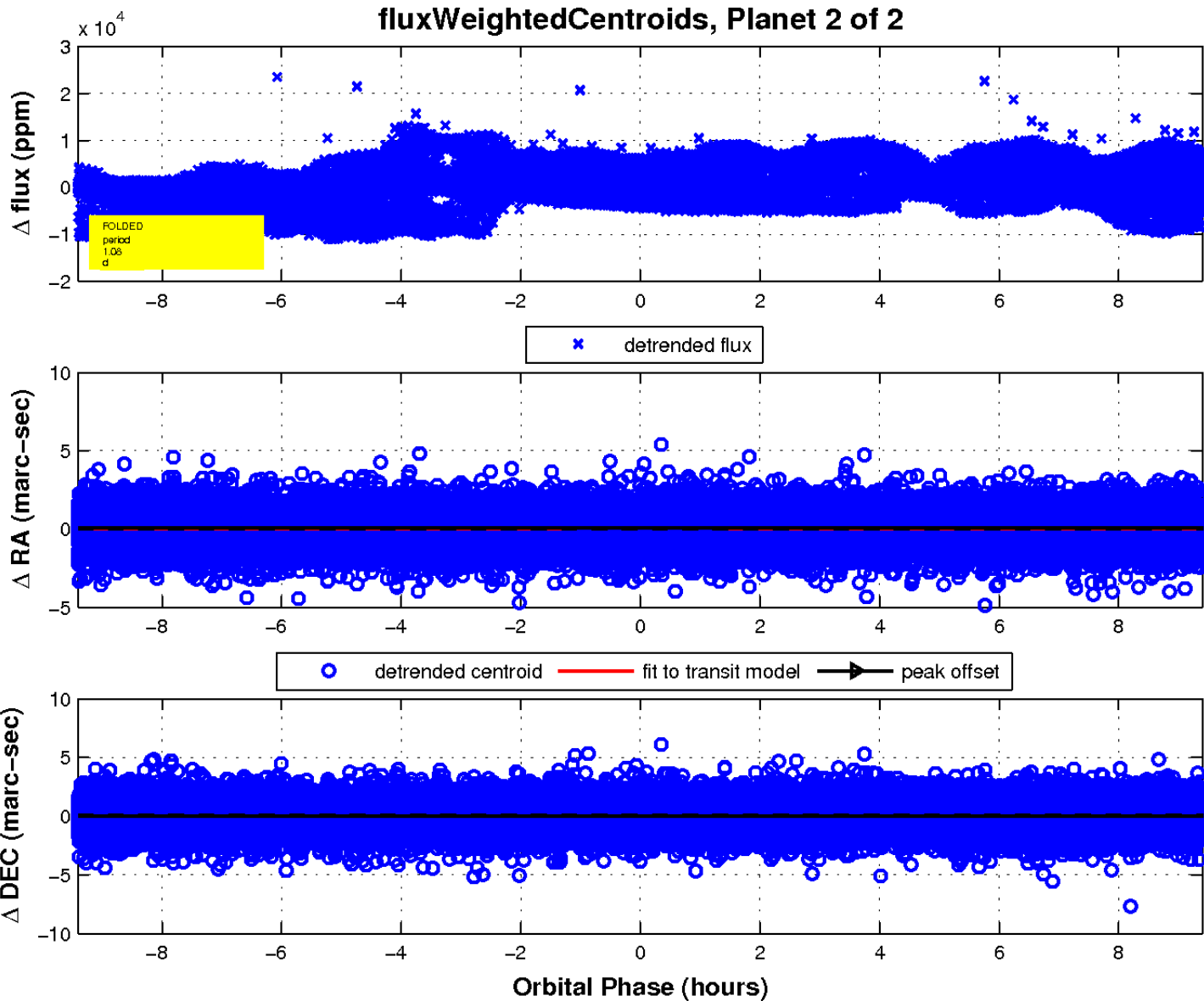
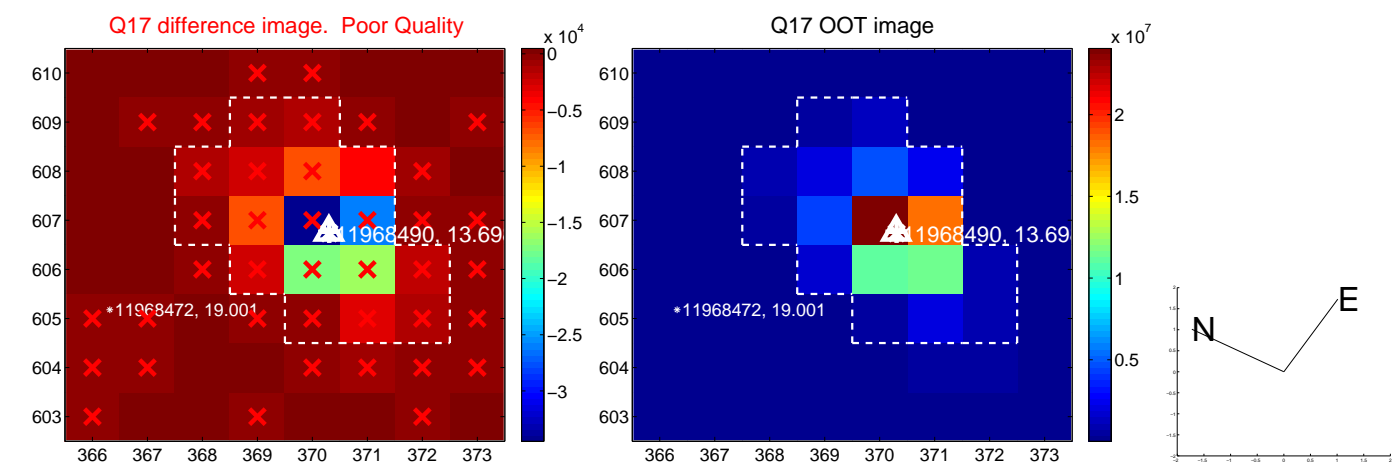
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

