

KIC 007289338

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})
007289338-01	OBS	3420.02	12.501474	142.562542	234.1	3.921	9.5	10.4	1.49	5821	2.73	194.74
007289338-02	OBS	3420.01	5.774510	134.515261	140.5	3.839	8.2	9.1	1.49	5821	2.10	545.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007289338-01	OBS	PC	0.97	0	0	0	0	NO_COMMENT
007289338-02	OBS	PC	0.97	0	0	0	0	NO_COMMENT

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 007289338-01

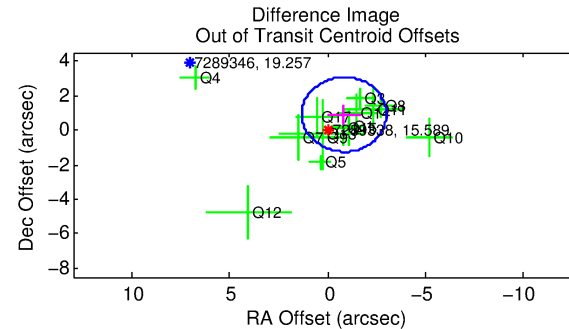
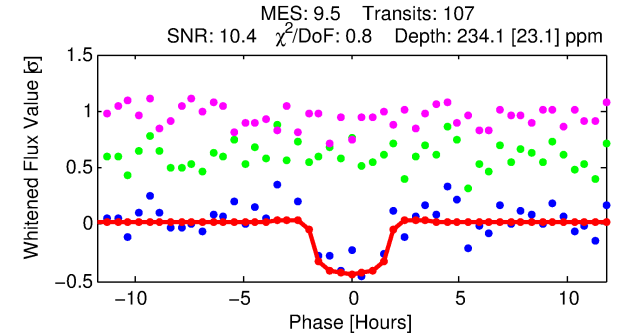
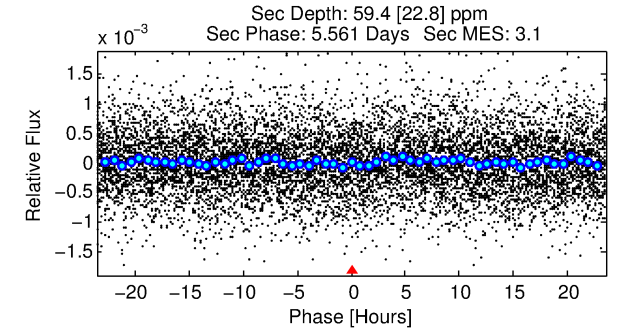
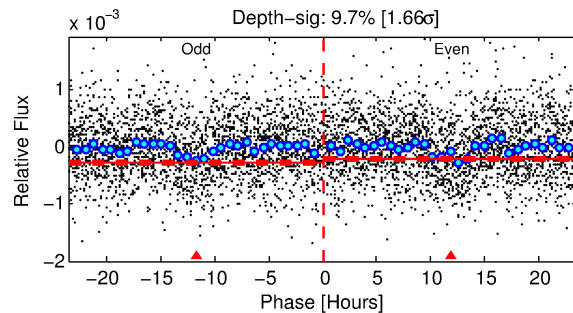
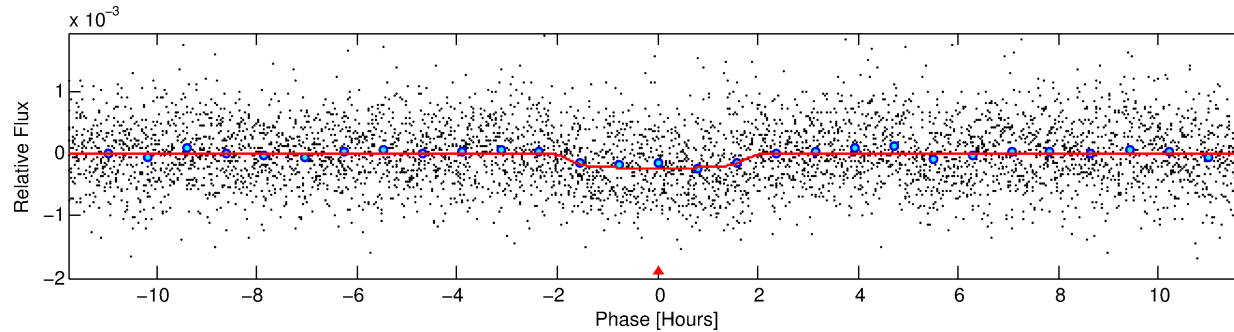
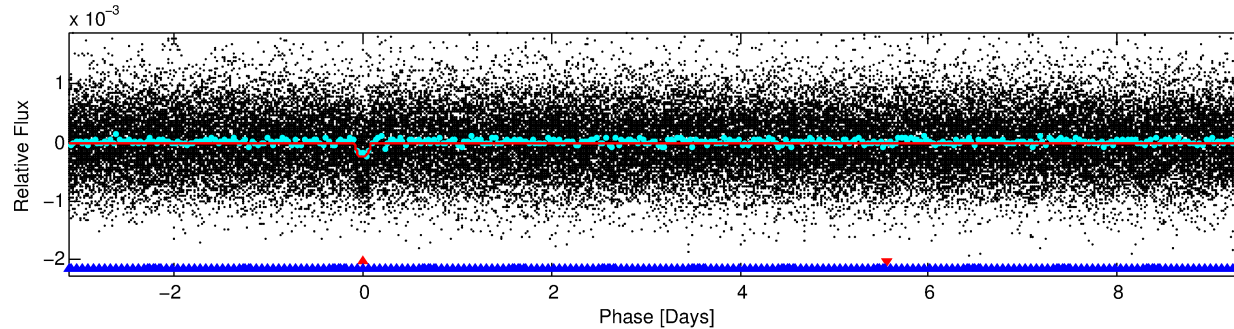
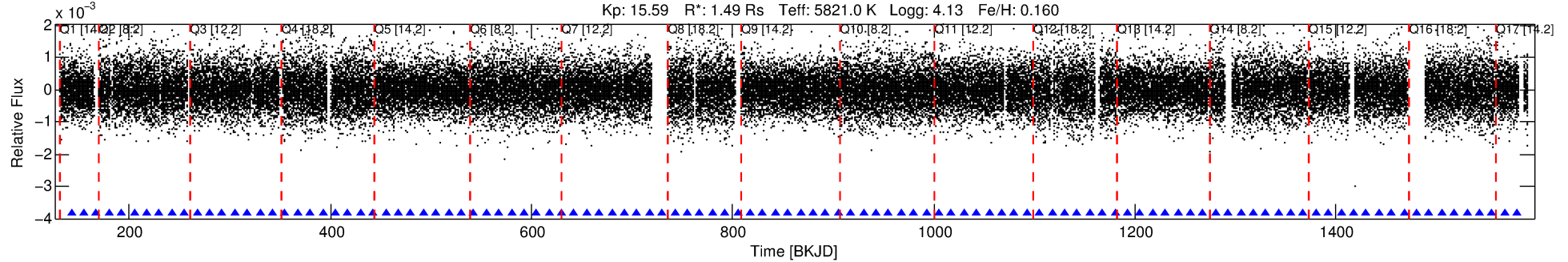
No Significant Match Found

DV One-Page Summary

KIC: 7289338 Candidate: 1 of 2 Period: 12.501 d

KOI: K03420.02 Corr: 0.987

Kp: 15.59 R*: 1.49 Rs Teff: 5821.0 K Logg: 4.13 Fe/H: 0.160



DV Fit Results:

Period = 12.50147 [0.00012] d
Epoch = 142.5625 [0.0078] BKJD
Rp/R* = 0.0168 [0.0057]
a/R* = 11.30 [17.99]
b = 0.91 [0.32]
Seff = 194.74 [61.02]
Teff = 953 [75] K
Rp = 2.73 [1.07] Re
a = 0.1084 [0.0208] AU
Ag = 51.51 [43.32] [1.17σ]
Teffp = 3946 [773] K [3.85σ]

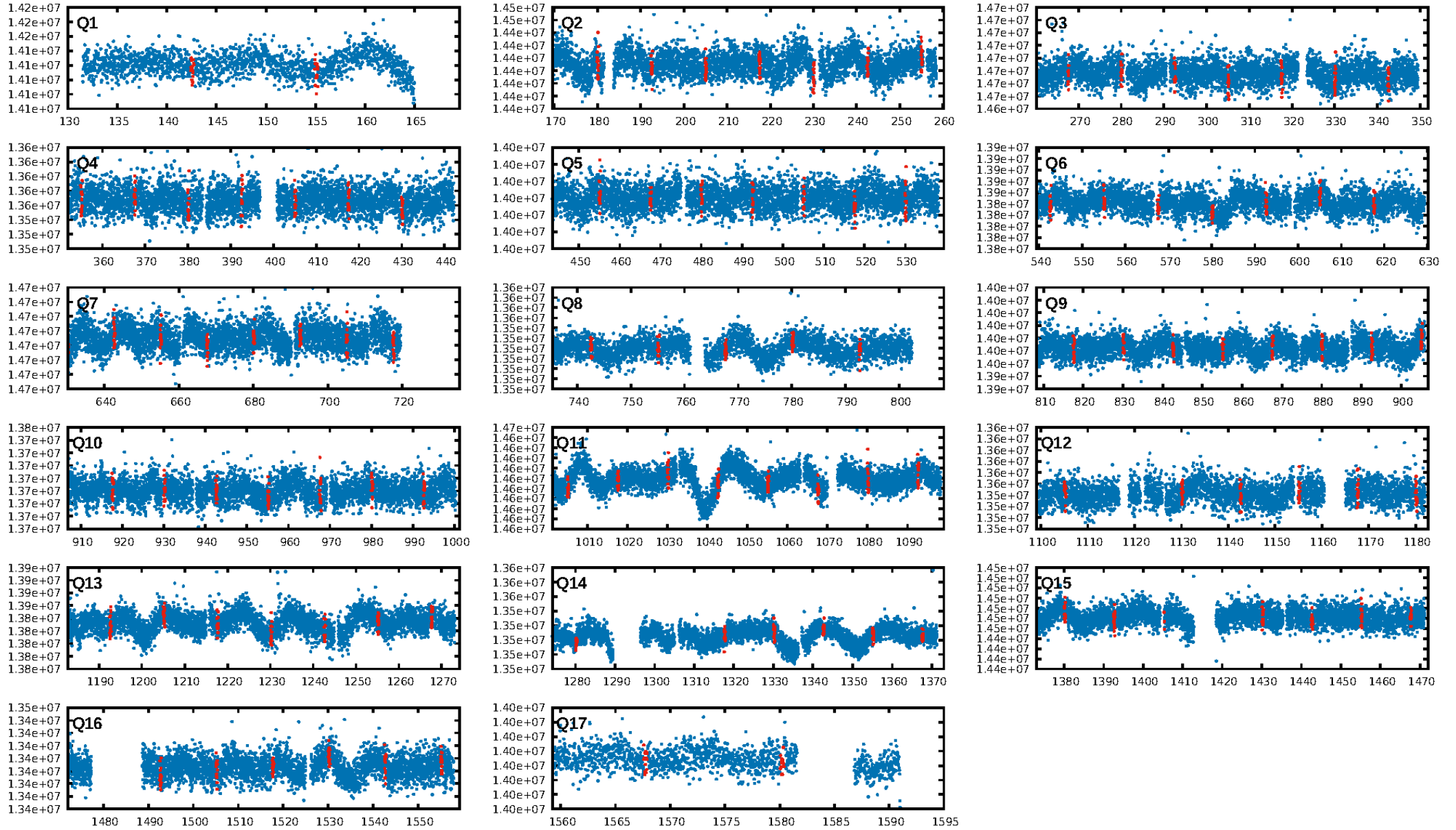
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [29.42σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 98.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.64e-21
RollingBand-fgt: 1.00 [103/103]
GhostDiagnostic-chr: 46.41
Centroid-sig: 32.5%
Centroid-so: 1.051 arcsec [0.78σ]
OotOffset-rm: 1.236 arcsec [1.72σ]
KicOffset-rm: 1.104 arcsec [1.61σ]
OotOffset-st: 2/4/3/5 [14]
KicOffset-st: 2/4/3/5 [14]
DiffImageQuality-fgm: 0.50 [7/14]
DiffImageOverlap-fno: 1.00 [17/17]

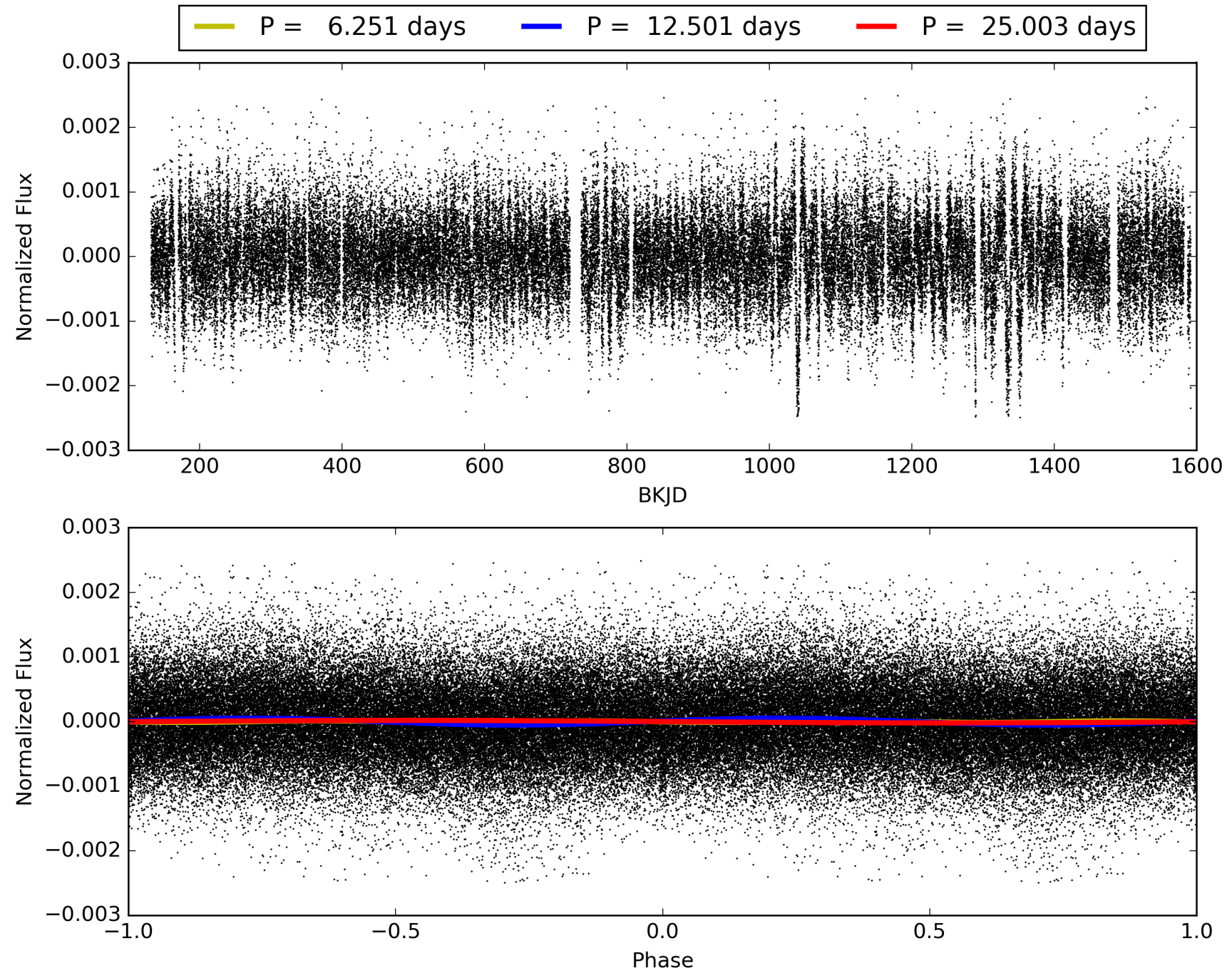
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 08:33:08 Z

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

TCE 007289338-01, PDC Light Curves

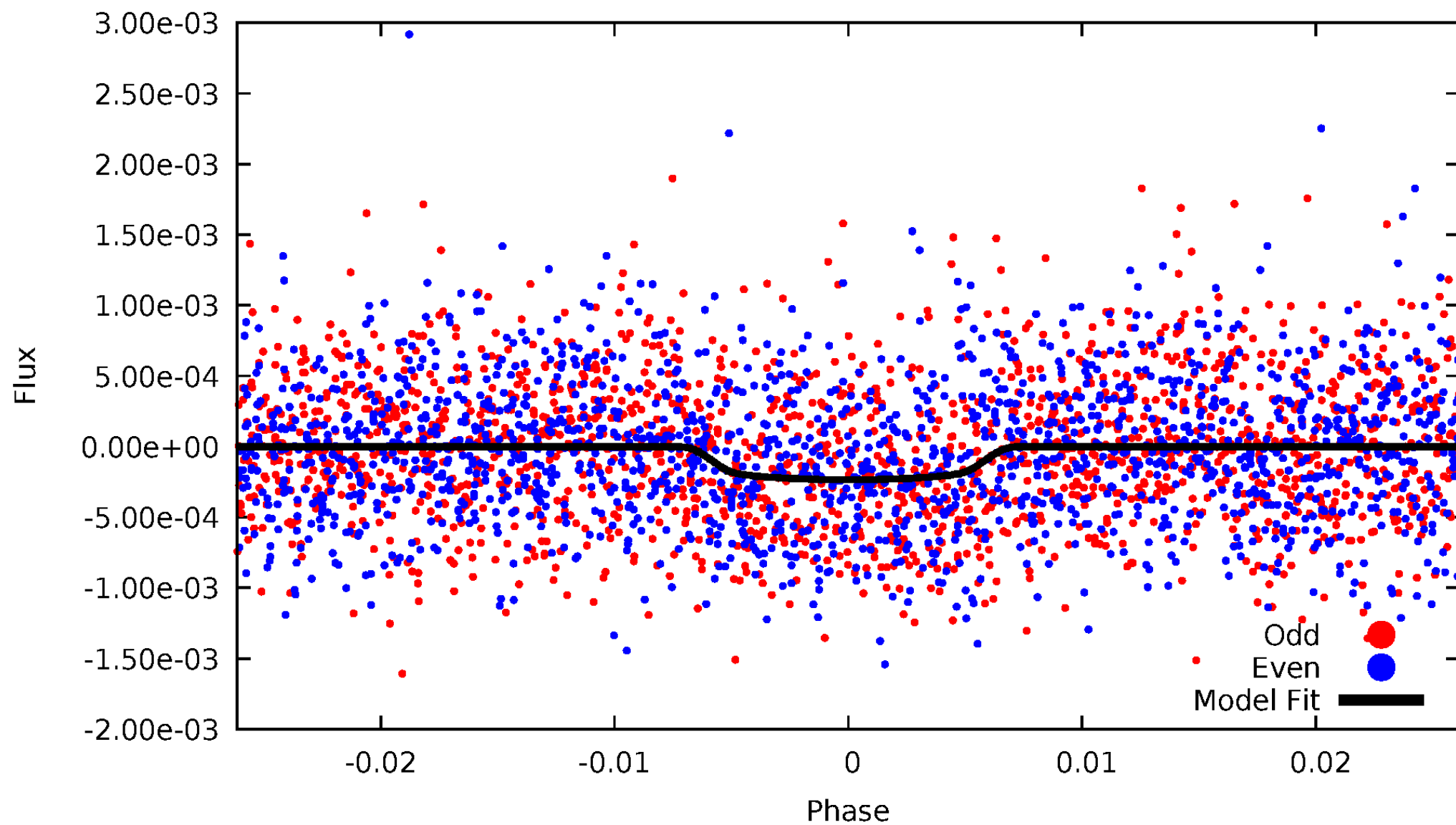


TCE 007289338-01



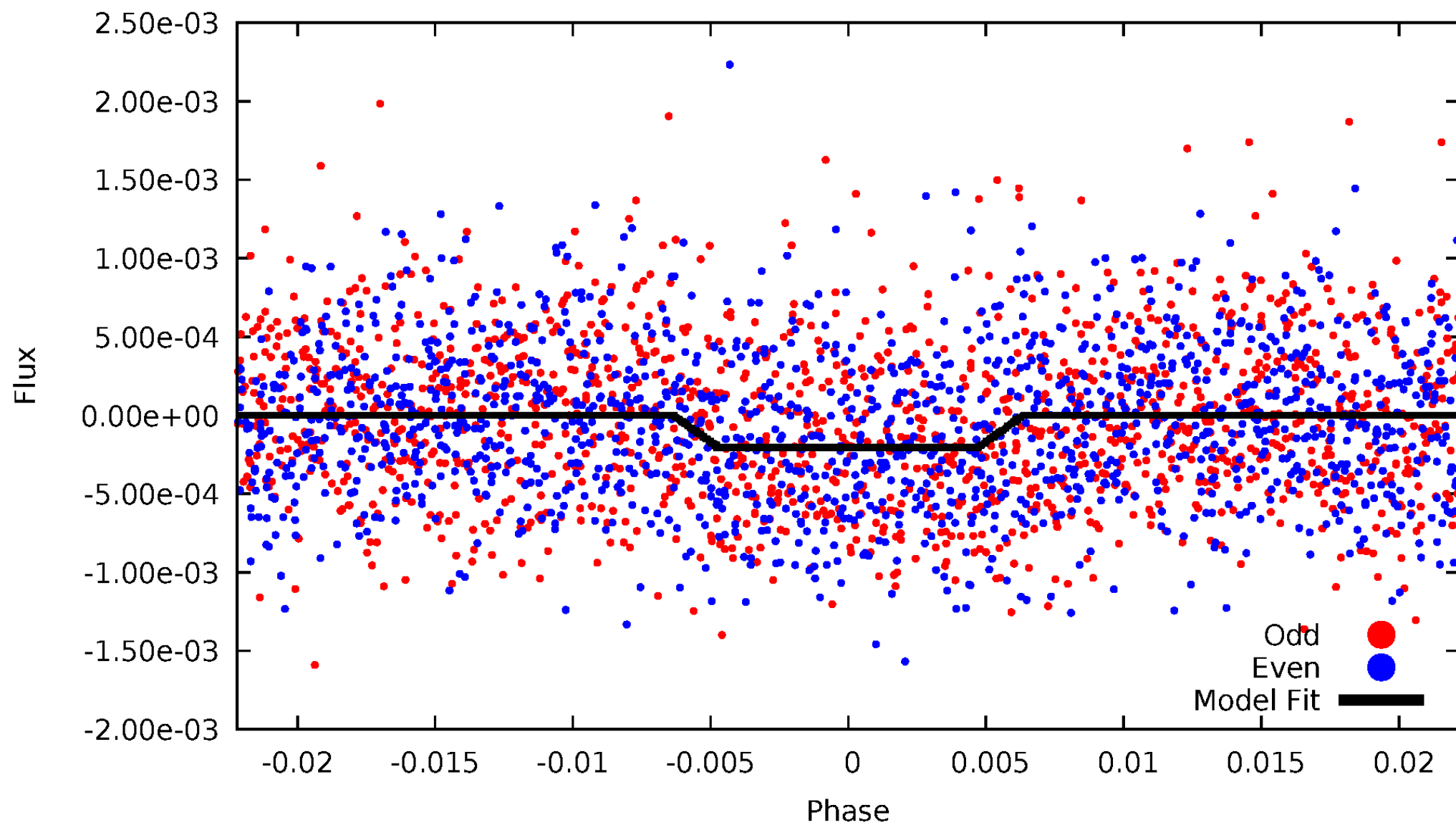
DV Odd/Even

TCE 007289338-01



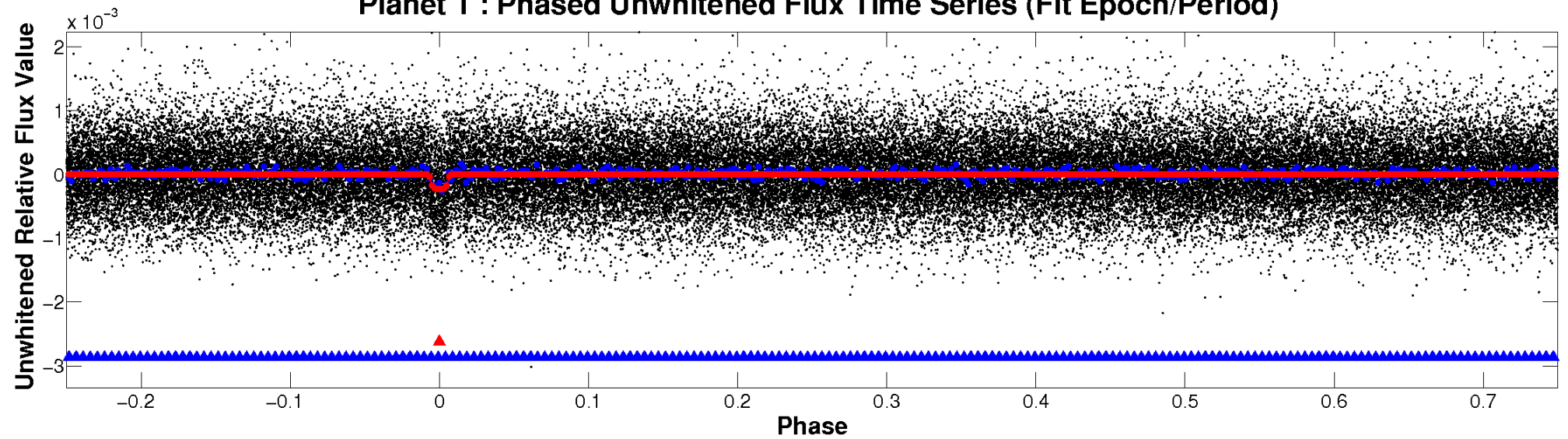
ALT Odd/Even

TCE 007289338-01

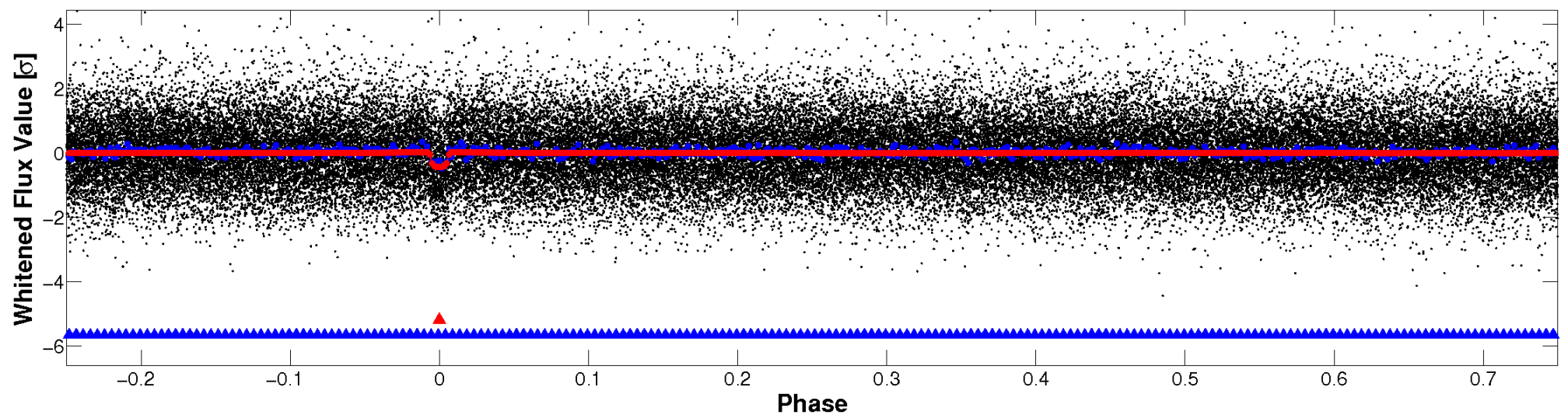


Non-Whitened Vs. Whitened Light Curve

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

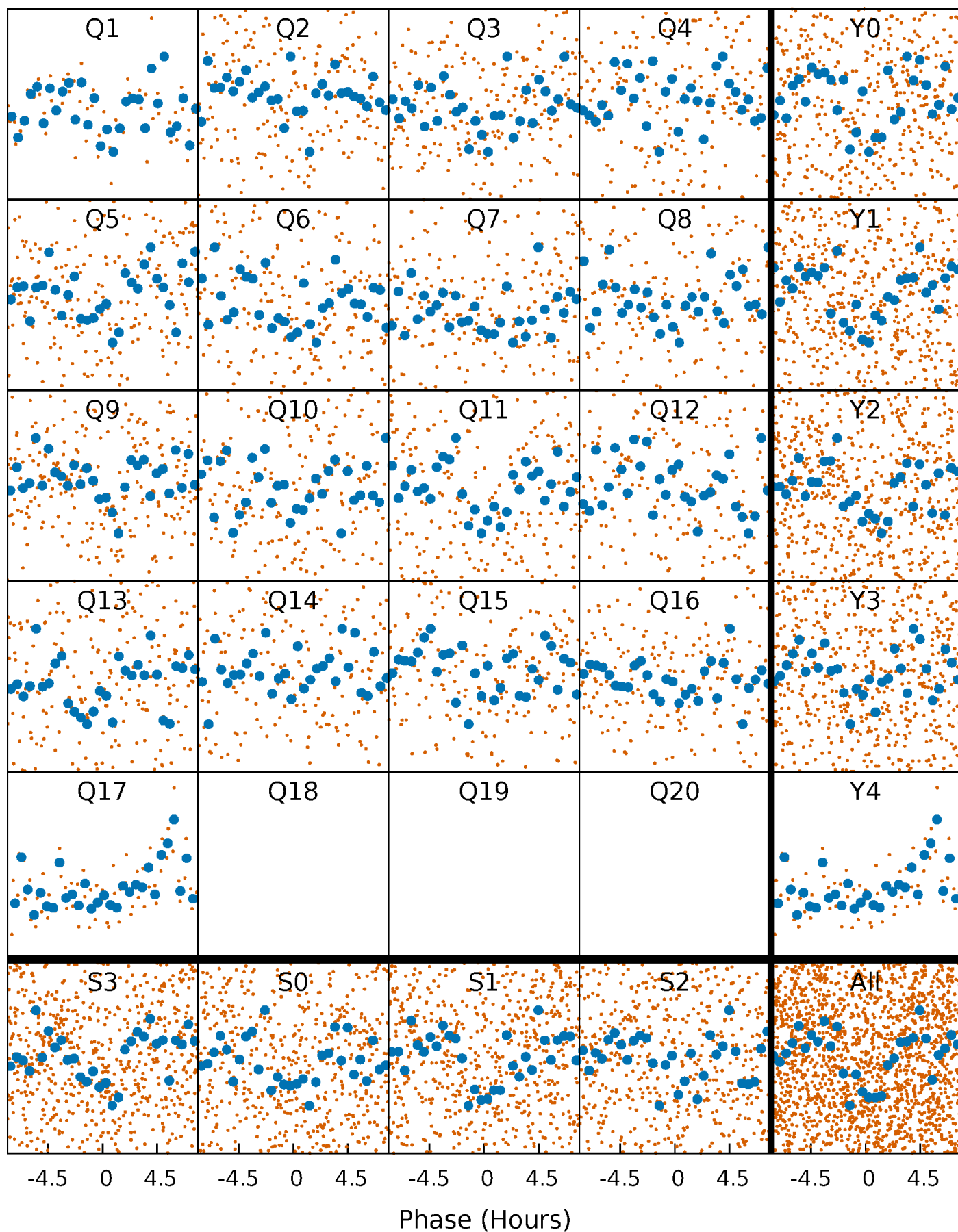


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



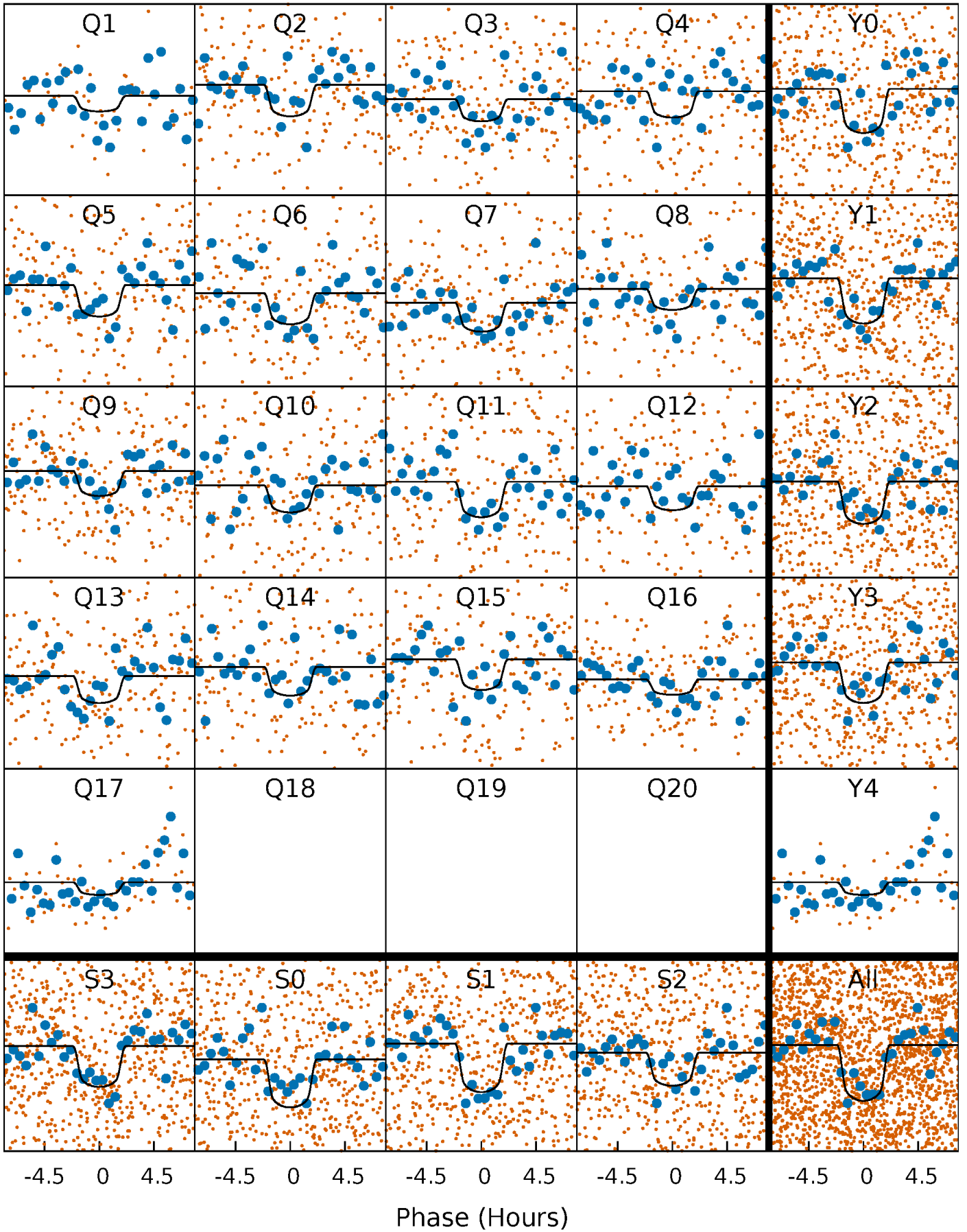
PDC Quarter-Phased Transit Curves

TCE 007289338-01 P= 12.501474 Days $T_0=142.562542$ (BKJD)



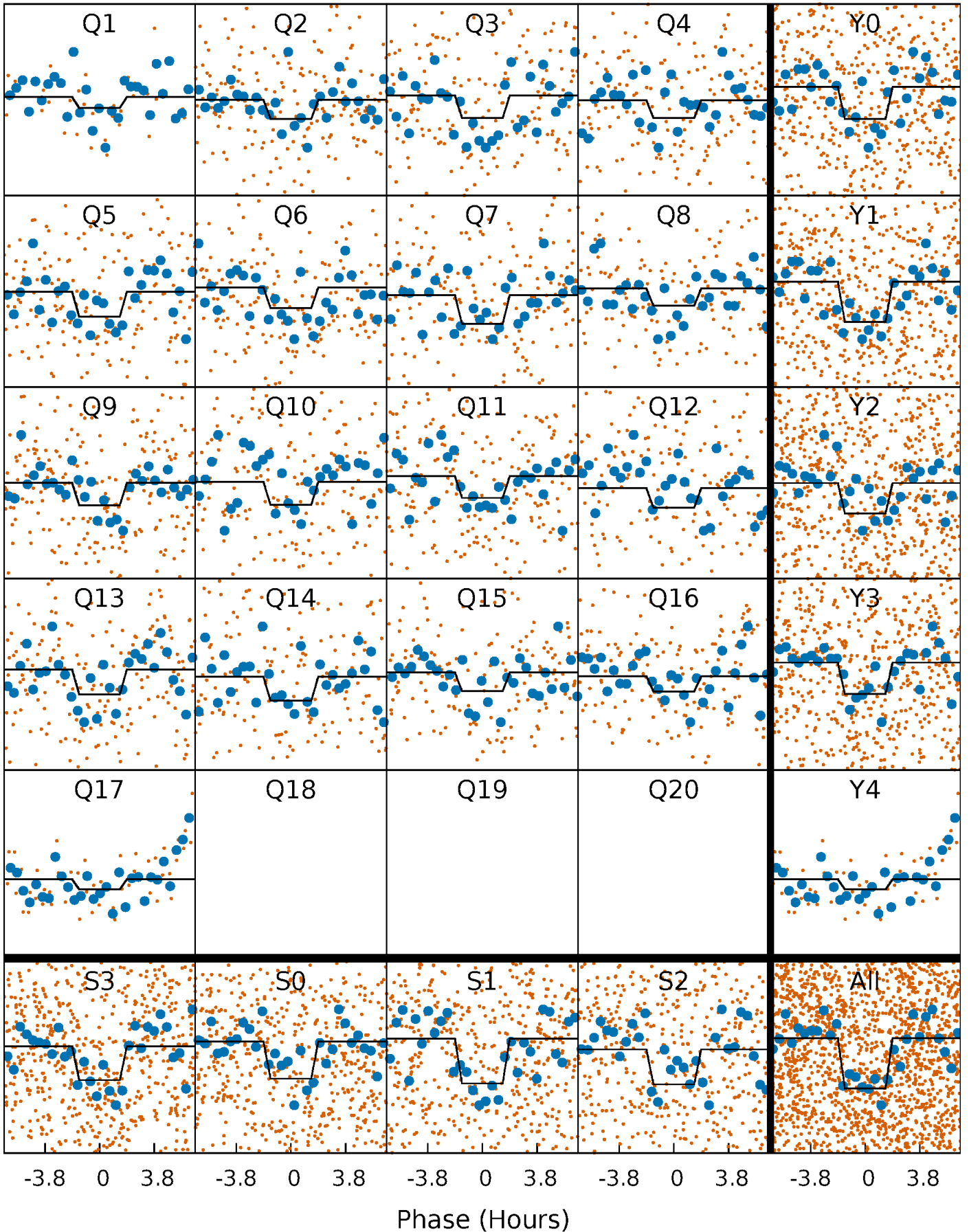
DV Quarter-Phased Transit Curves

TCE 007289338-01 P= 12.501474 Days $T_0=142.562542$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

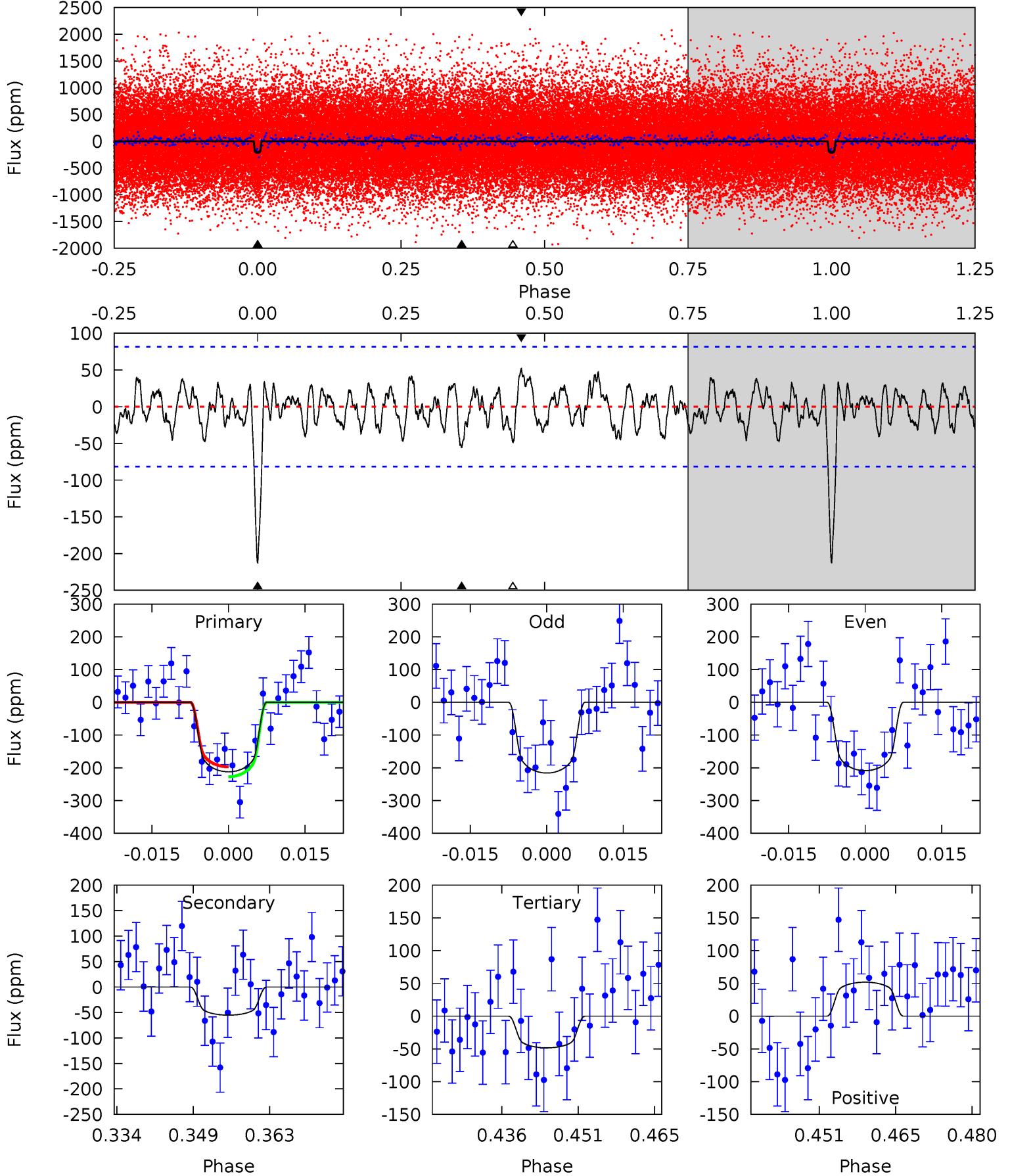
TCE 007289338-01 P= 12.501195 Days $T_0=142.570947$ (BKJD)



DV Model-Shift Uniqueness Test

007289338-01, P = 12.501474 Days, E = 130.061068 Days

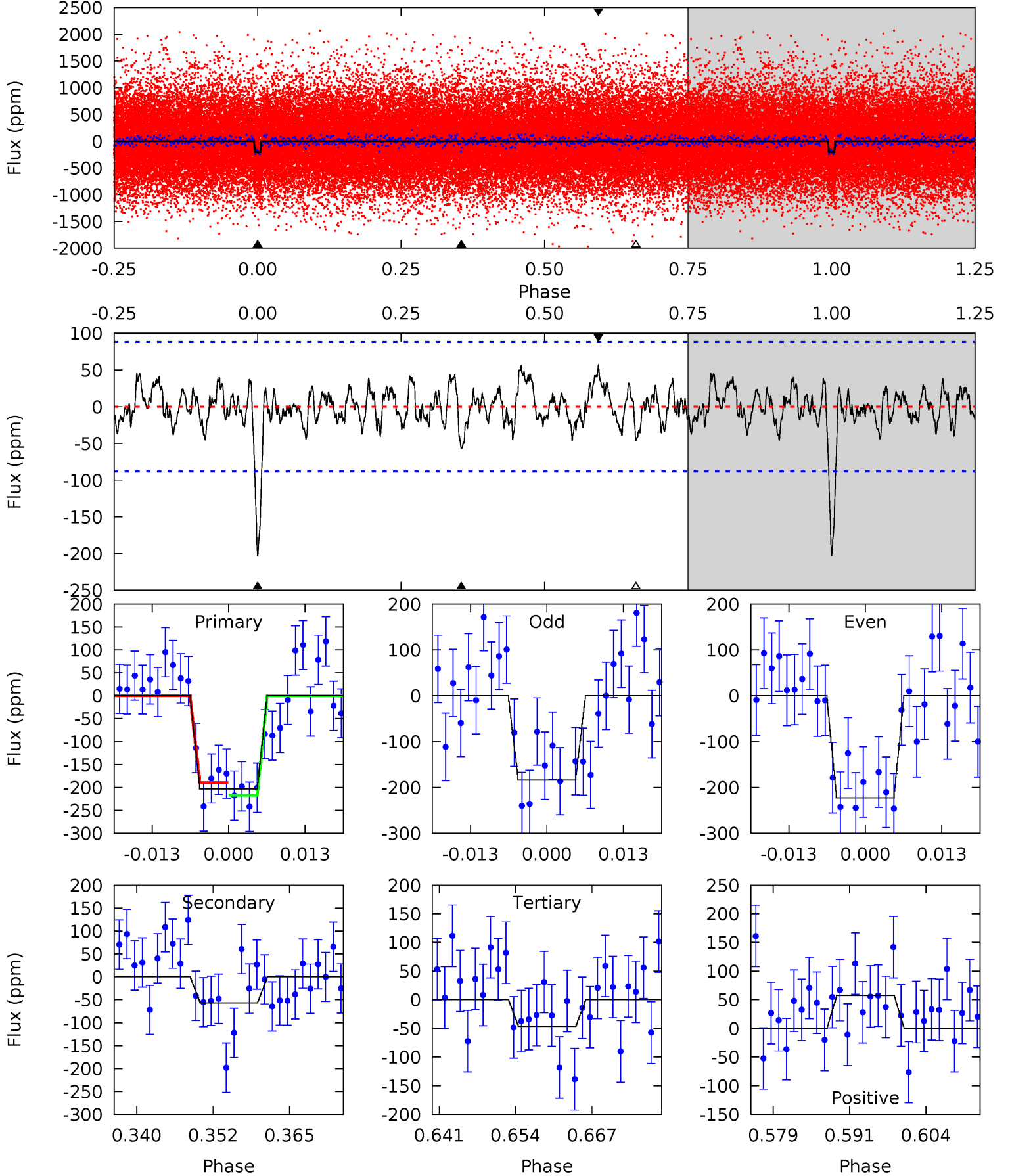
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.9	3.35	2.94	3.15	4.95	2.44	1.27	9.95	9.74	0.41	0.20	0.22	0.84	0.20	0.92



Alt Model-Shift Uniqueness Test

007289338-01, P = 12.501195 Days, E = 130.069752 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.5	3.22	2.62	3.26	4.98	2.50	1.15	8.87	8.24	0.60	-0.03	1.10	0.88	0.22	0.79



Stellar Parameters For KIC 007289338

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5821^{+78}_{-78}	$4.127^{+0.182}_{-0.098}$	$0.160^{+0.150}_{-0.150}$	$1.492^{+0.241}_{-0.294}$	$1.088^{+0.104}_{-0.083}$	$0.462^{+0.420}_{-0.135}$
	+1%/-1%	+4%/-2%	+94%/-94%	+16%/-20%	+10%/-8%	+91%/-29%
Source	SPE90	SPE90	SPE90	DSEP		

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

Secondary Eclipse Parameters for KIC 007289338-01 / KOI 3420.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-55 ± 16	$2.68^{+1.02}_{-0.90}$	1325^{+59}_{-71}	4116^{+672}_{-470}	49^{+63}_{-25}
Alt.	-57 ± 18	$2.28^{+0.95}_{-1.00}$	1324^{+60}_{-77}	4430^{+1197}_{-596}	71^{+147}_{-39}

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

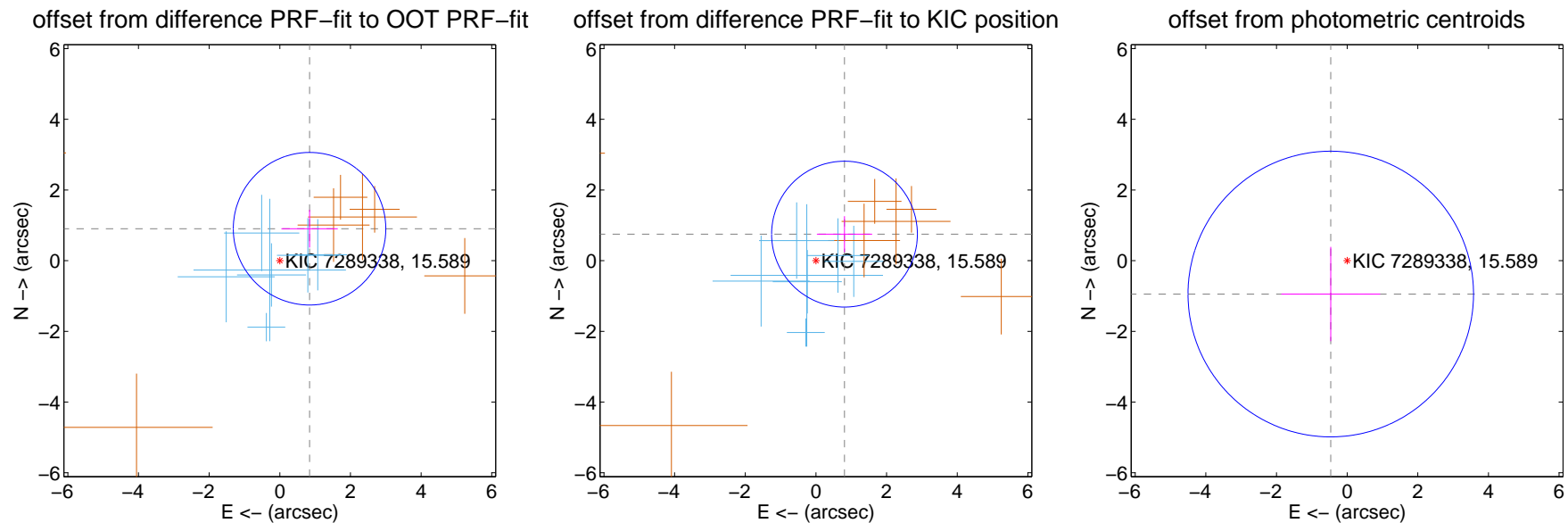
DV Centroid Data

Supplemental centroid analysis for 007289338-01. Kepler magnitude: 15.59. Transit SNR 10.43

There are 7 quarters with good PRF difference image offsets

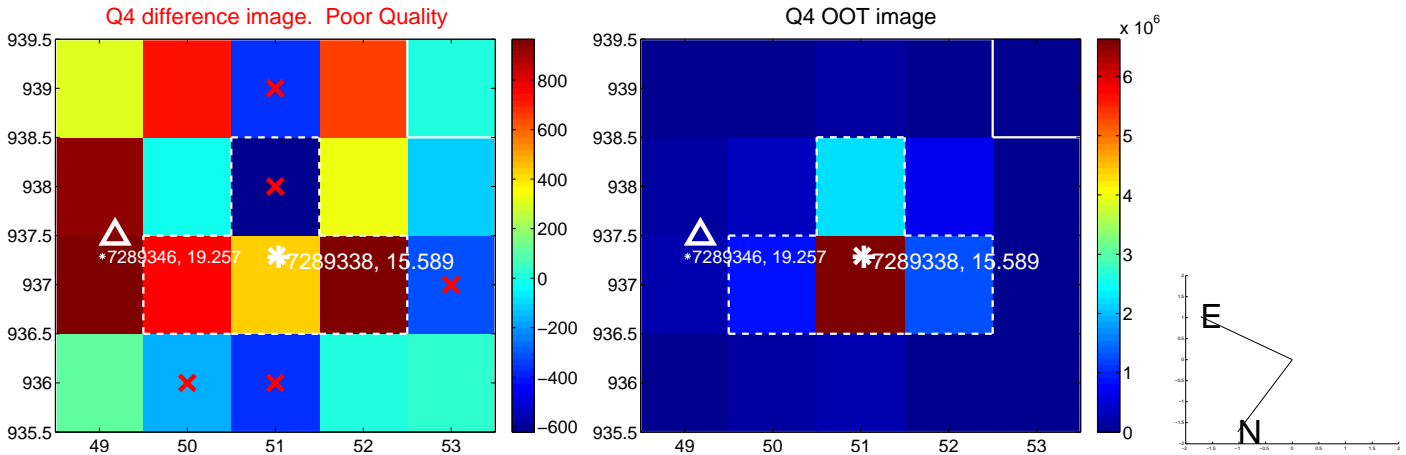
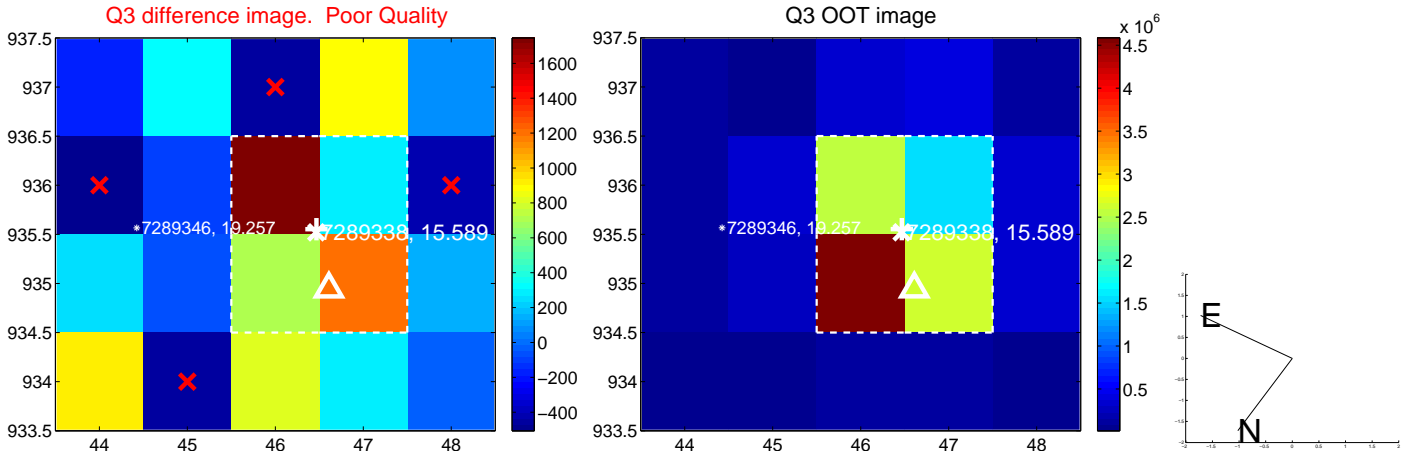
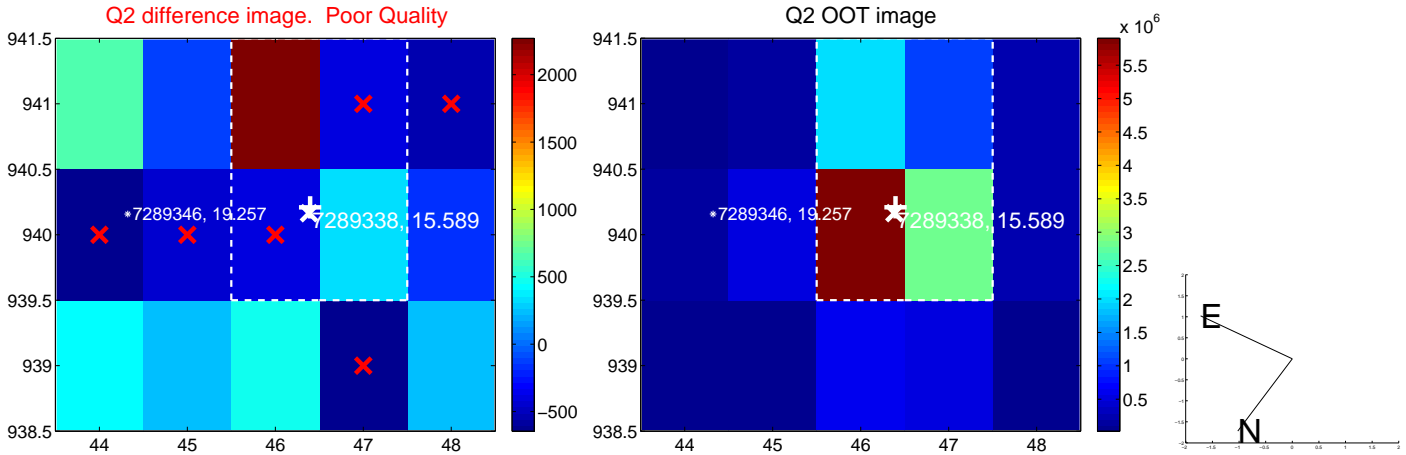
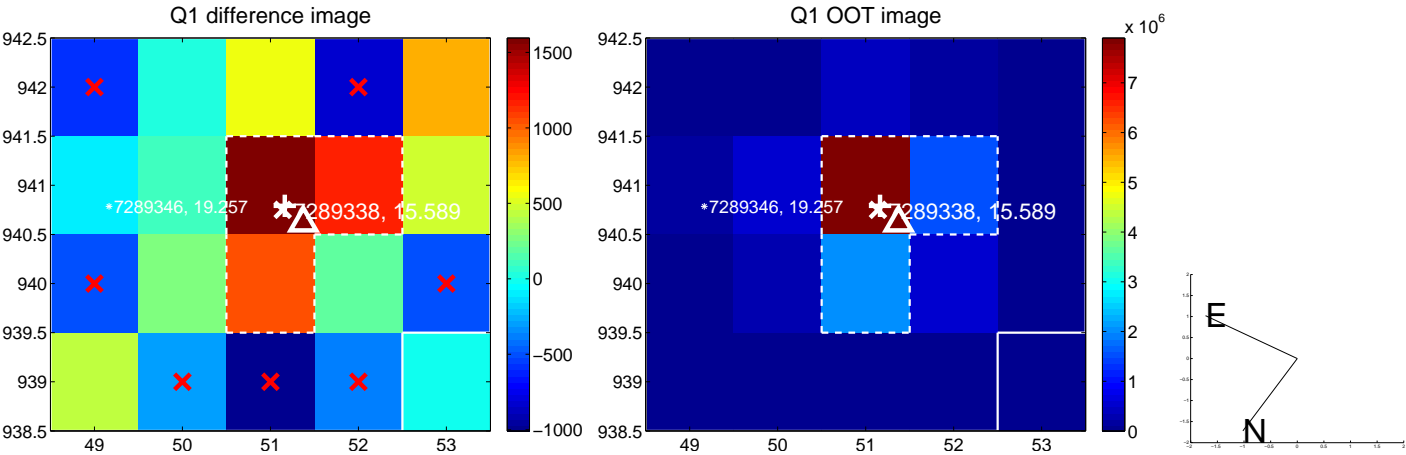
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.236 ± 0.719	1.72	-0.842 ± 0.798	0.904 ± 0.534
PRF-fit source offset from KIC position	1.104 ± 0.688	1.61	-0.809 ± 0.783	0.751 ± 0.509
photometric centroid source offset	1.05 ± 1.35	0.78	0.46 ± 1.40	-0.94 ± 1.33

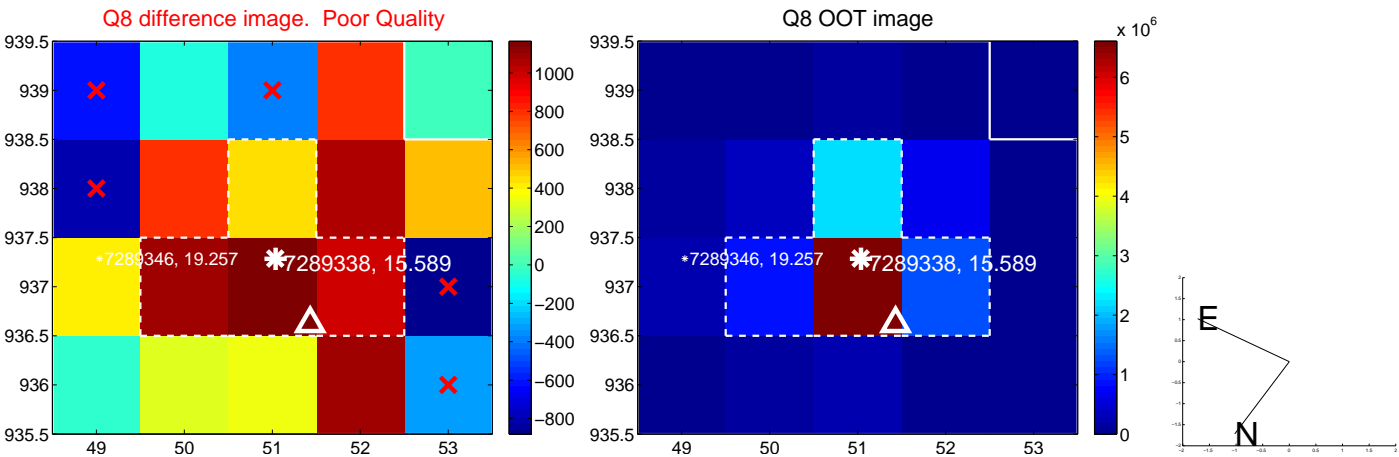
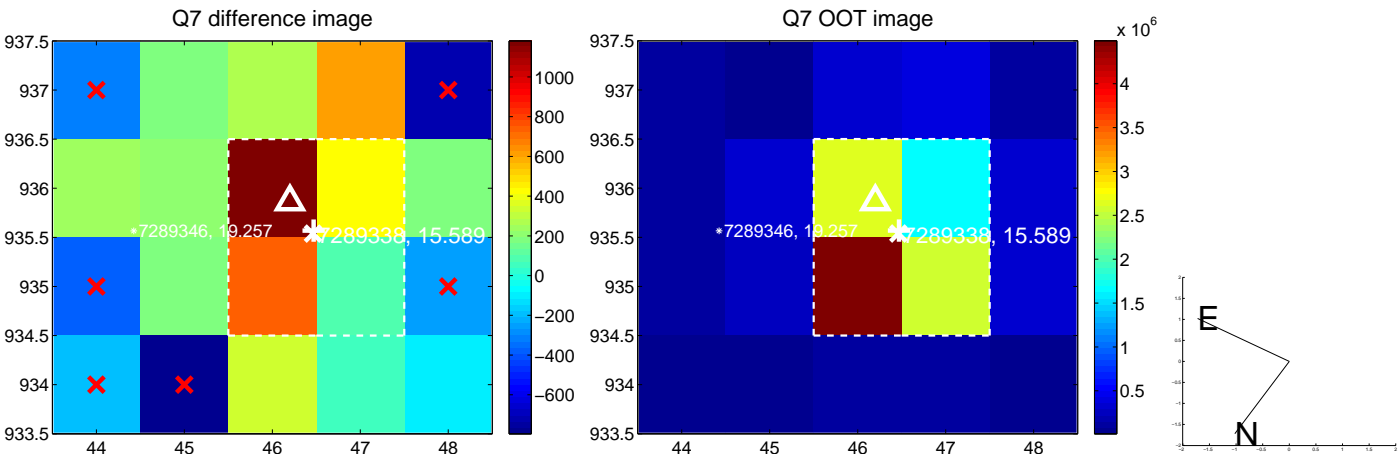
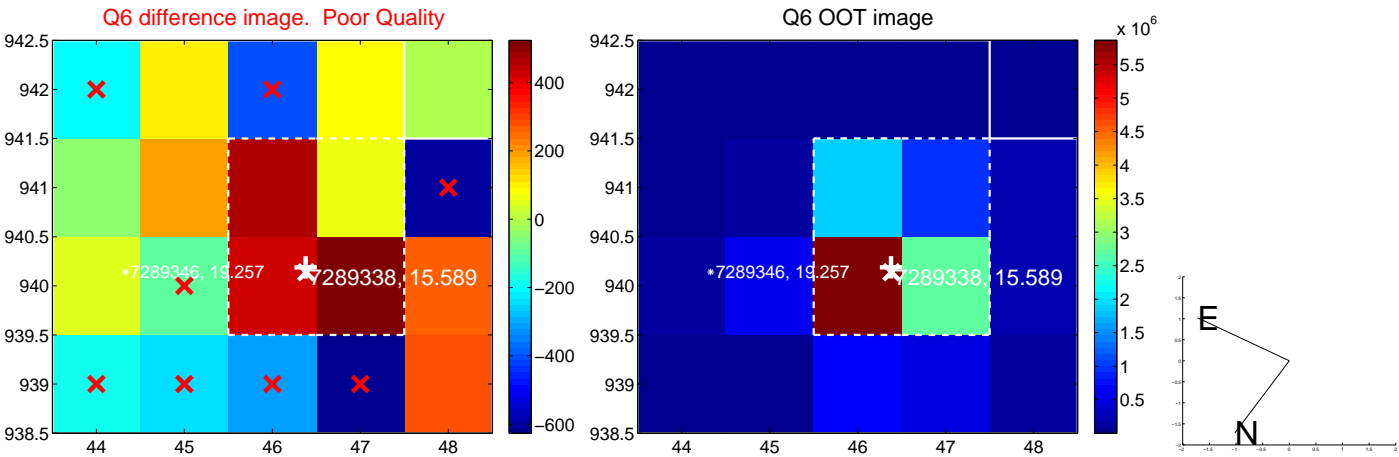
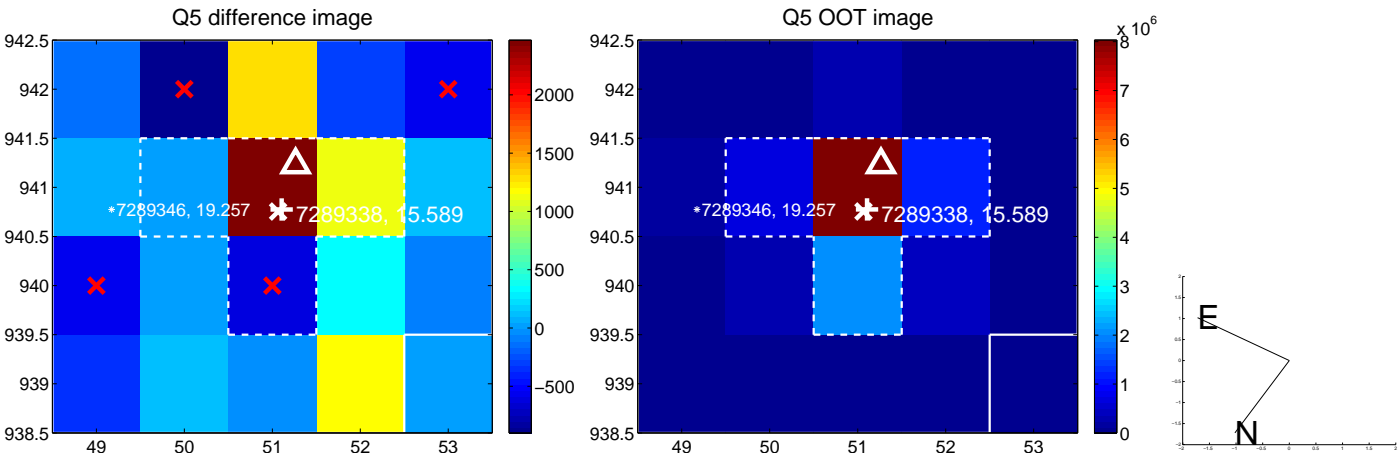


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

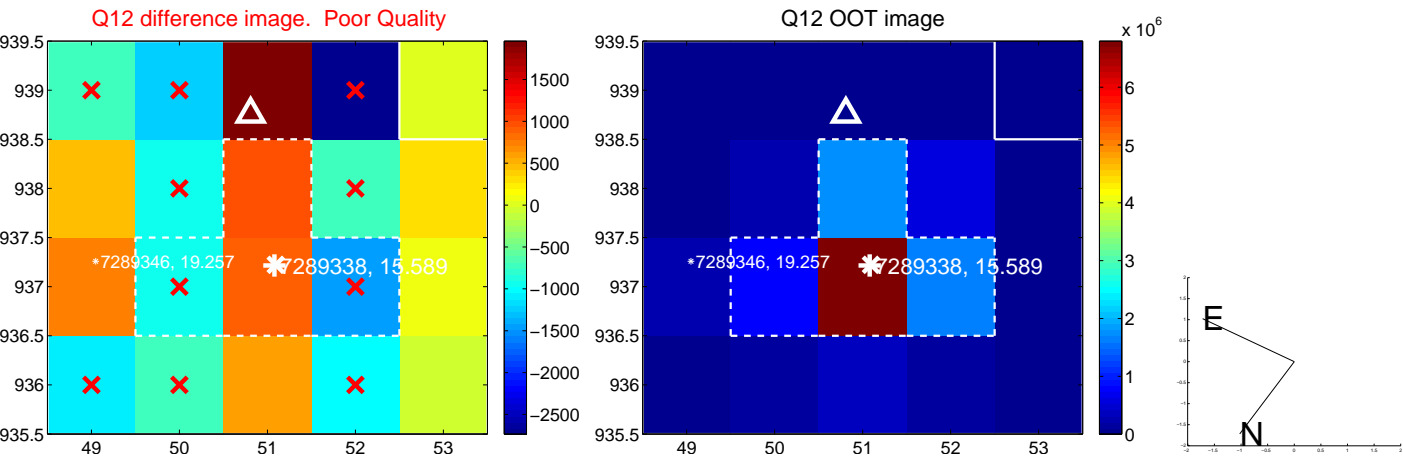
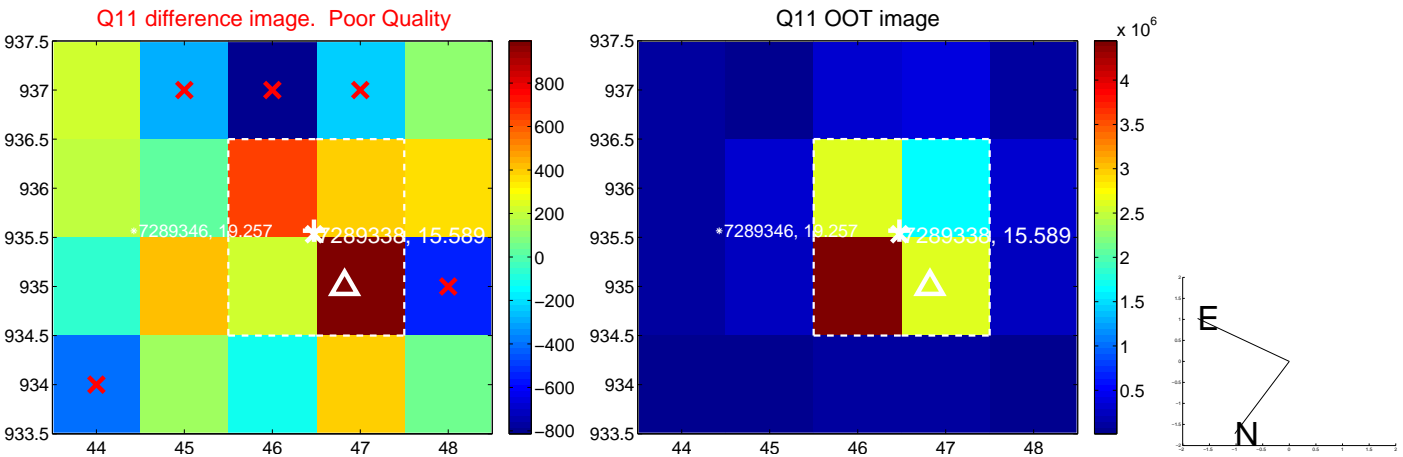
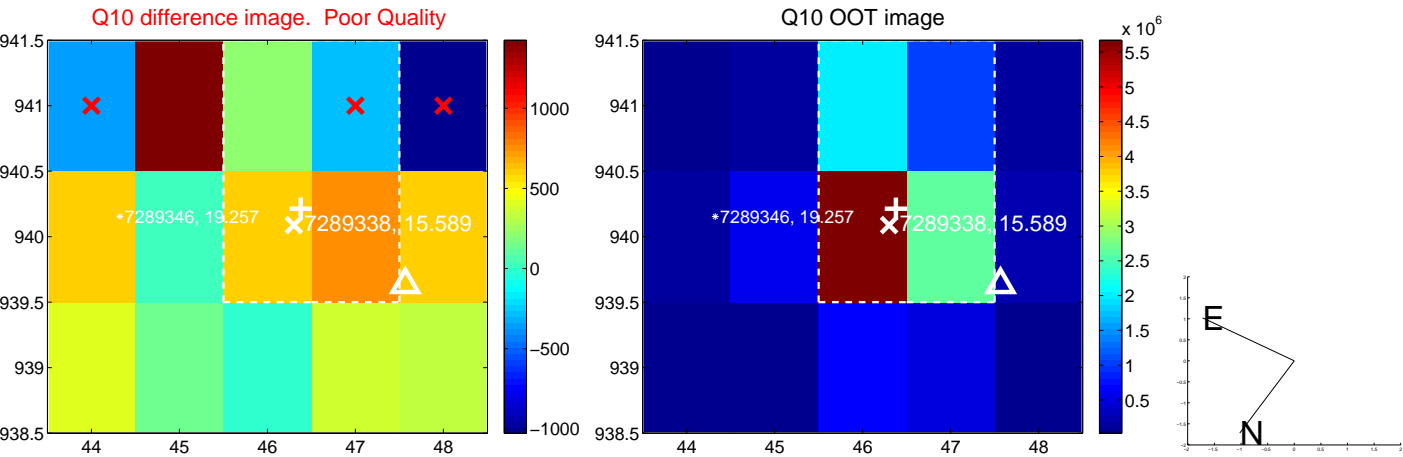
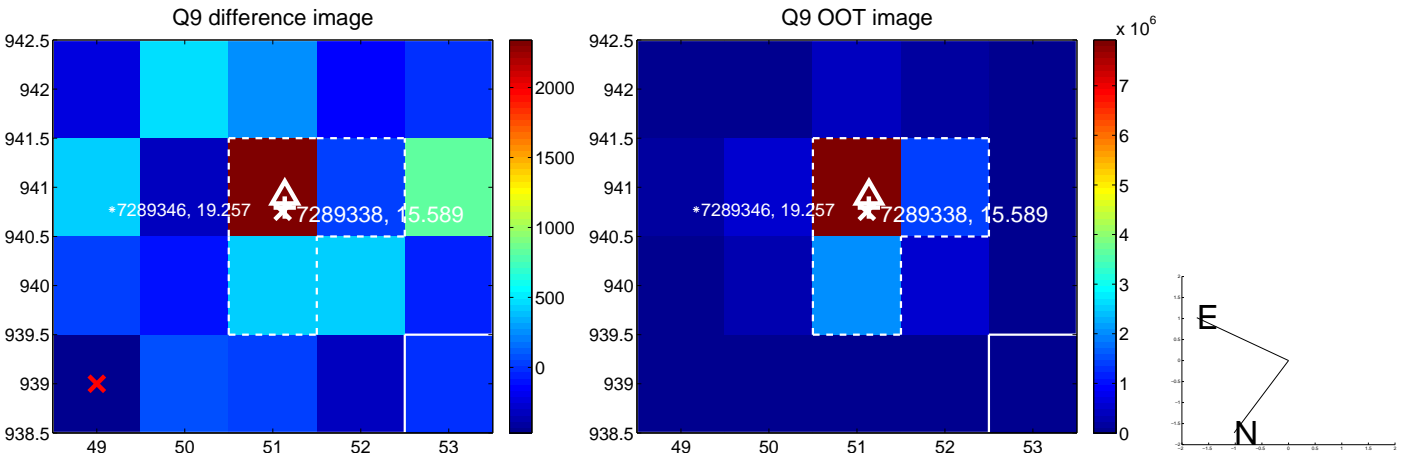
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



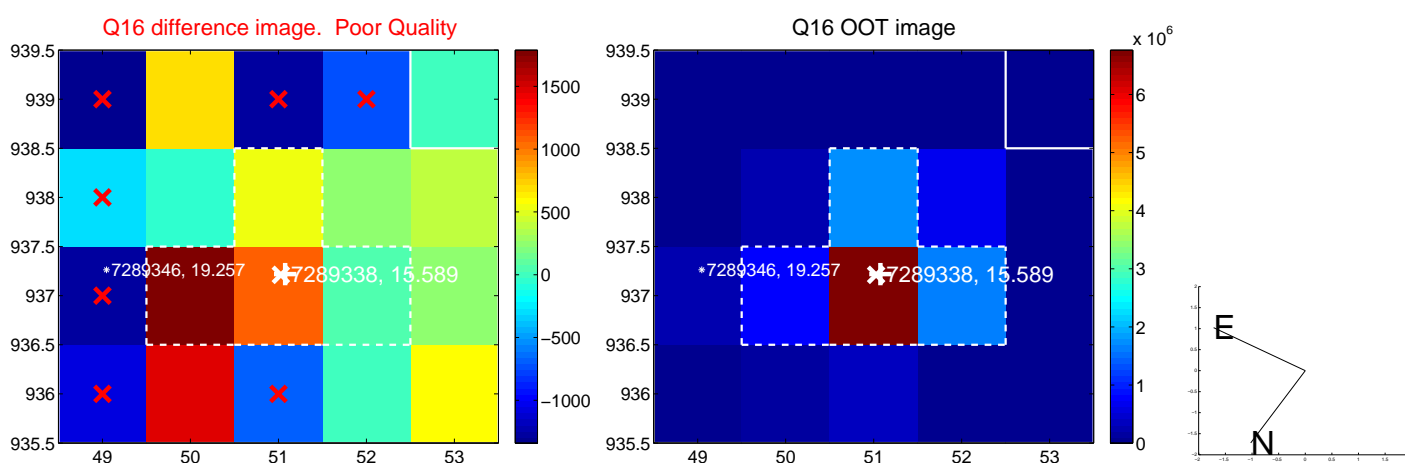
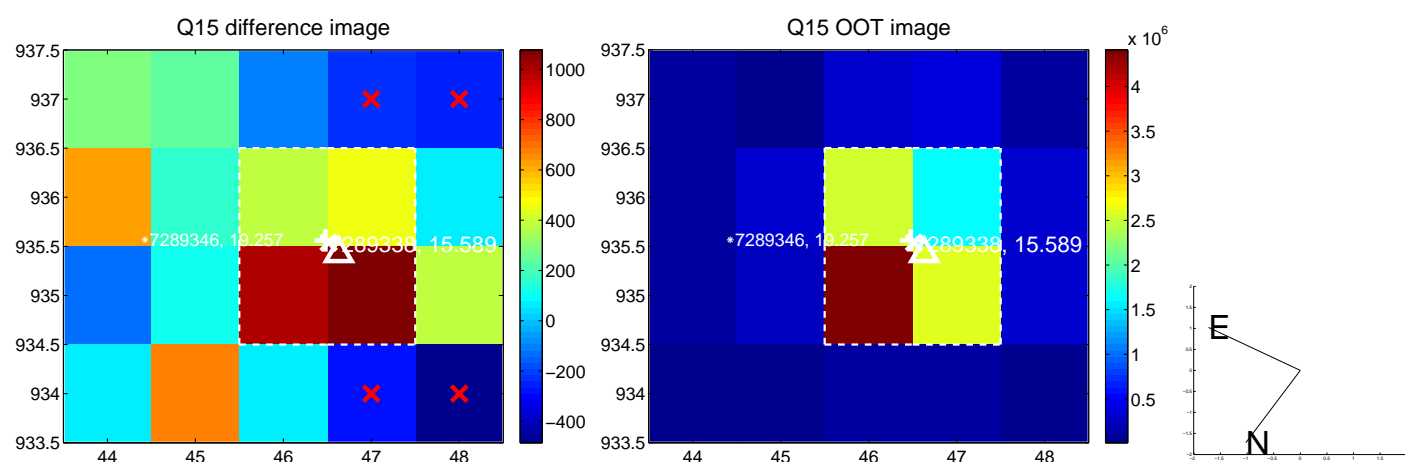
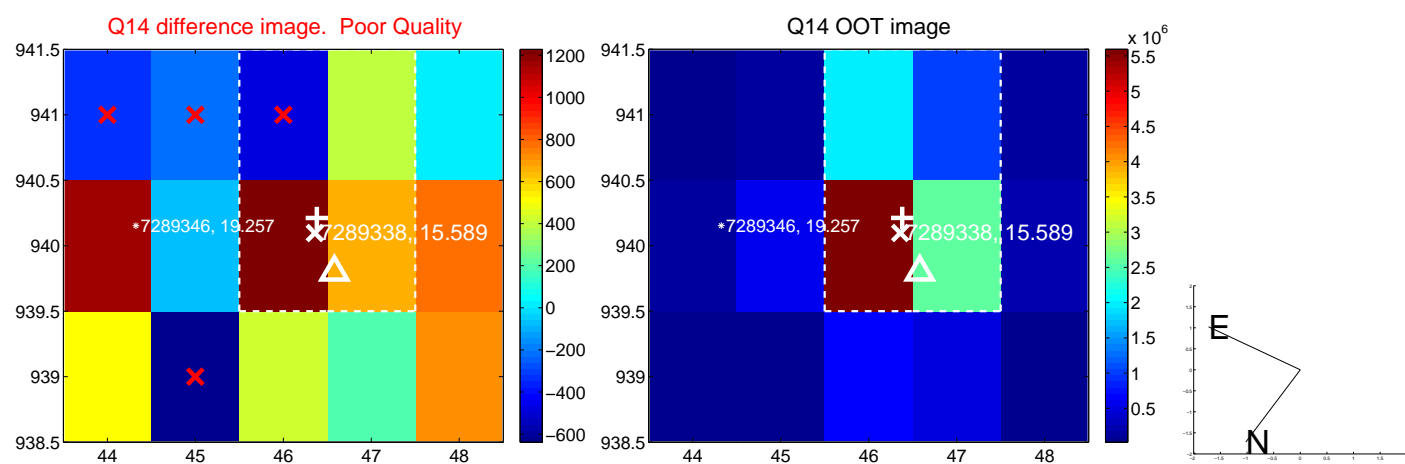
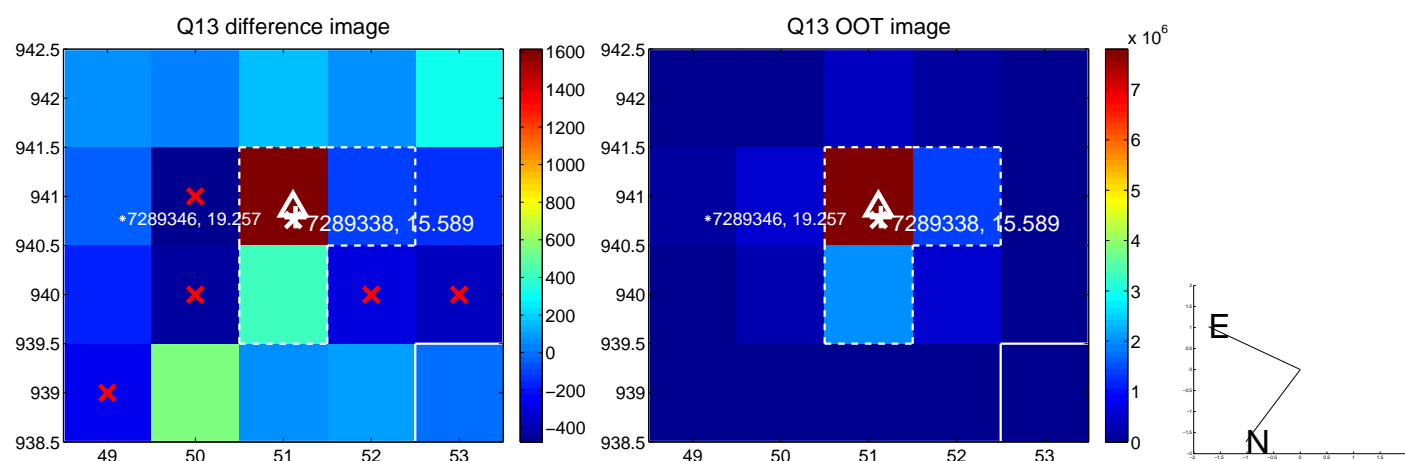
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



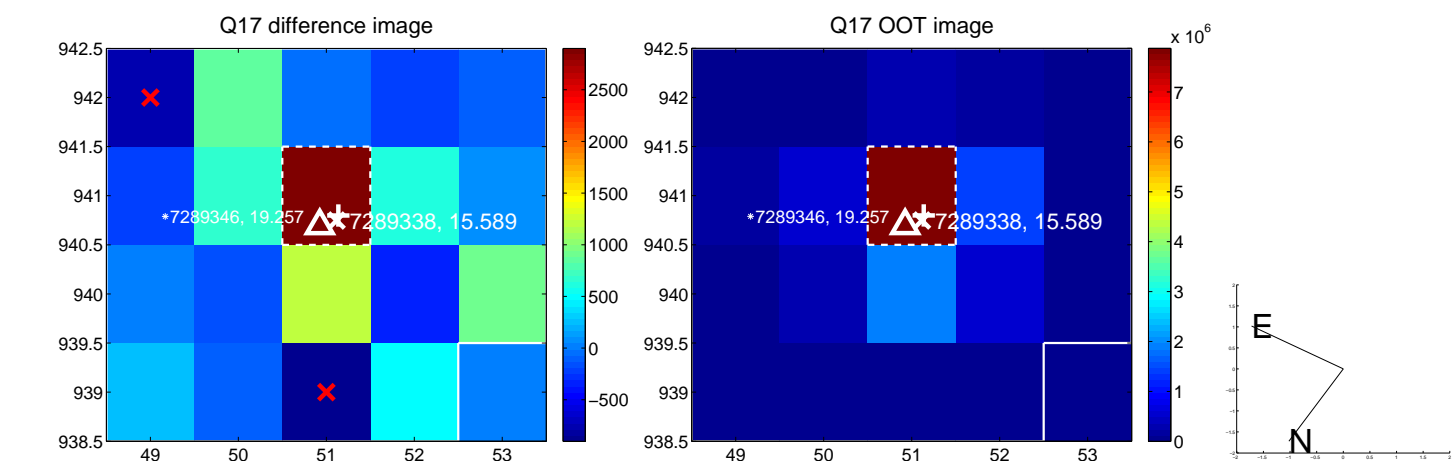
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



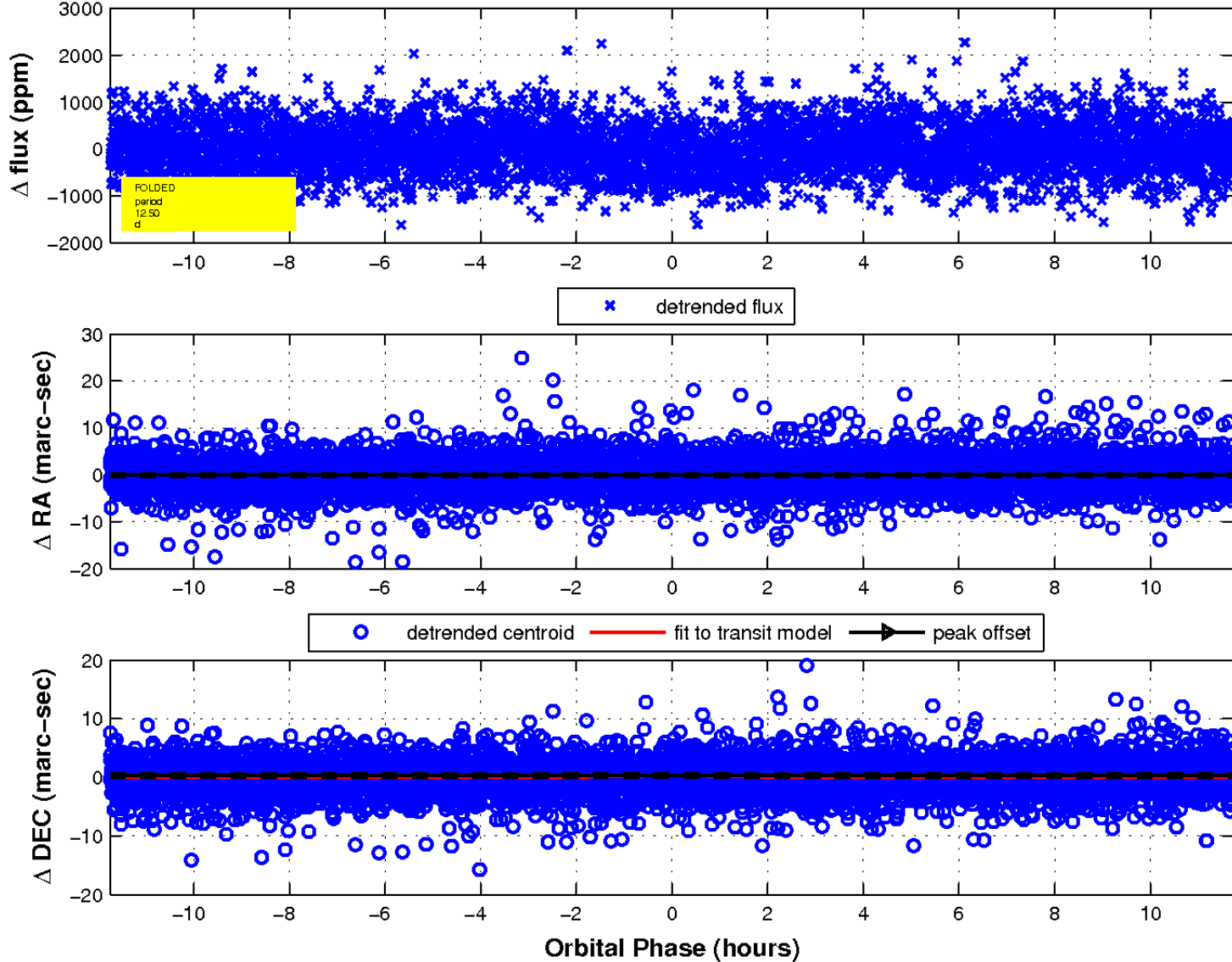
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

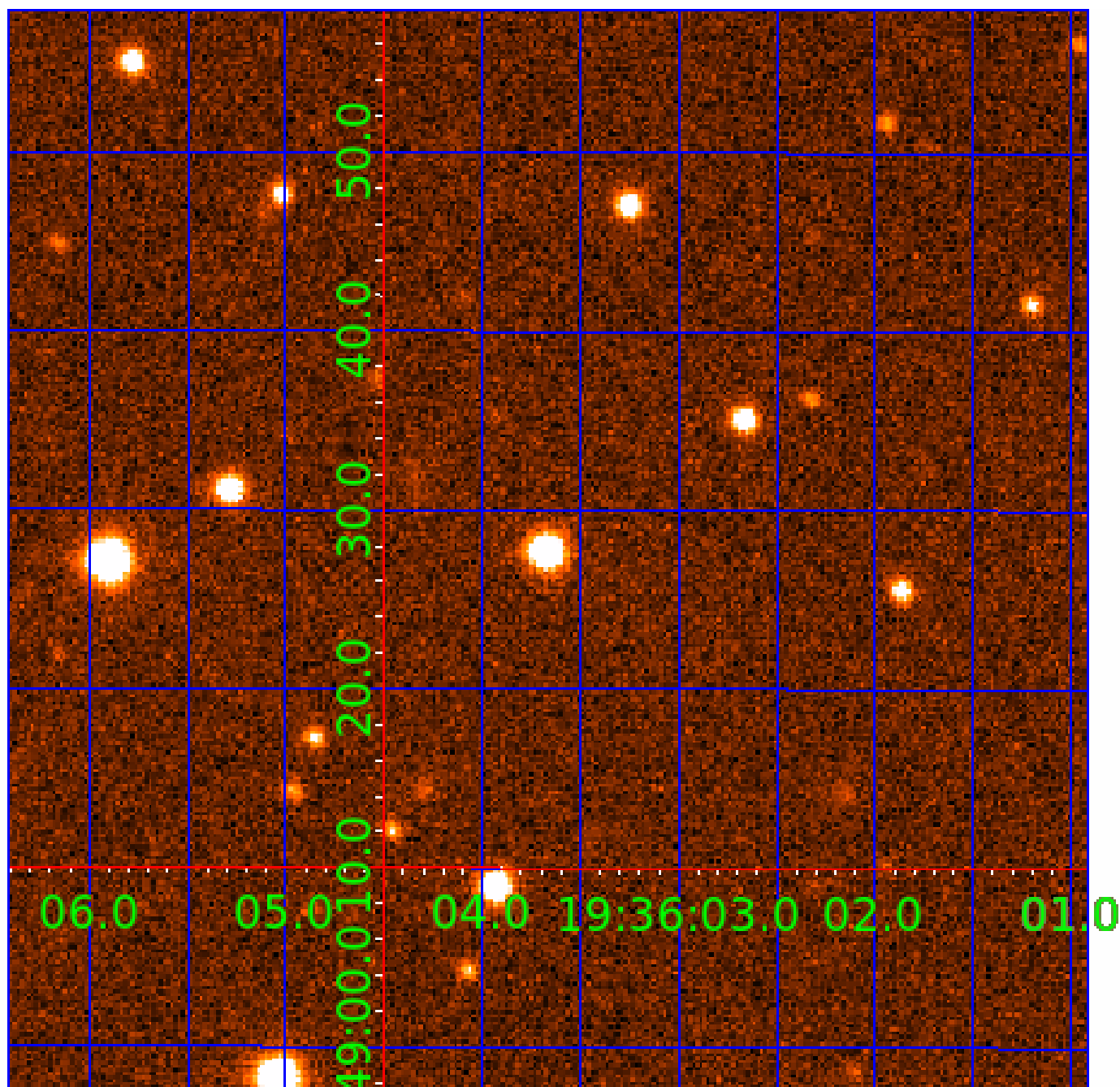


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 007289338

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})
007289338-01	OBS	3420.02	12.501474	142.562542	234.1	3.921	9.5	10.4	1.49	5821	2.73	194.74
007289338-02	OBS	3420.01	5.774510	134.515261	140.5	3.839	8.2	9.1	1.49	5821	2.10	545.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007289338-01	OBS	PC	0.97	0	0	0	0	NO_COMMENT
007289338-02	OBS	PC	0.97	0	0	0	0	NO_COMMENT

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

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

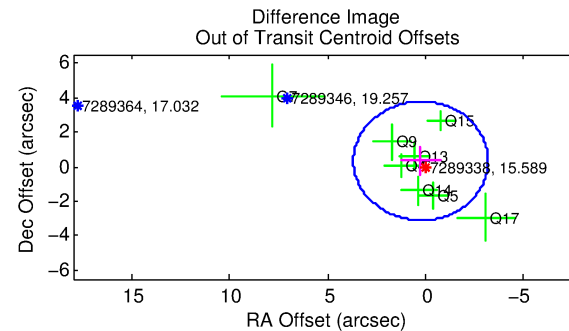
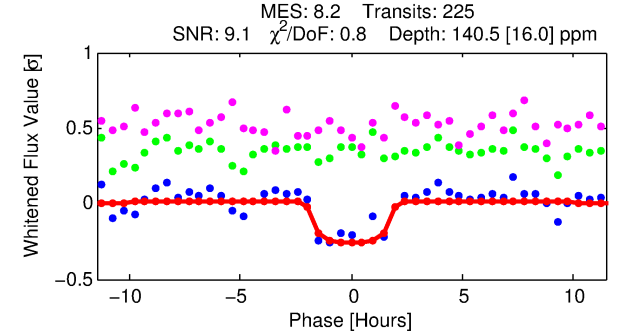
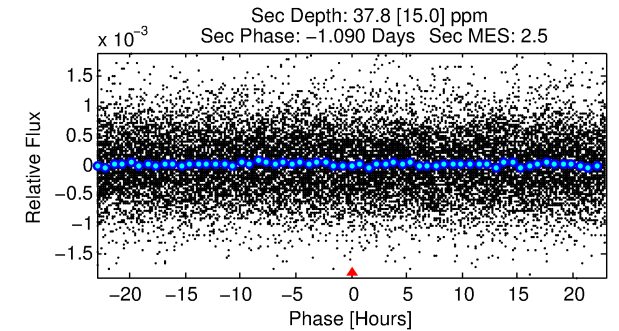
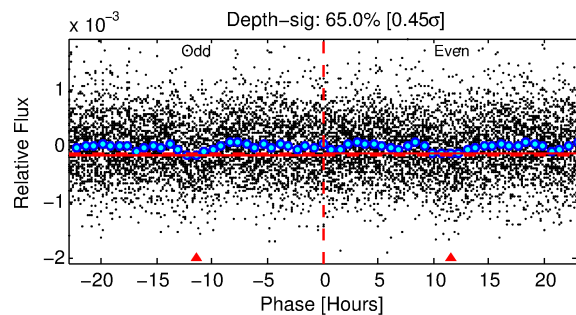
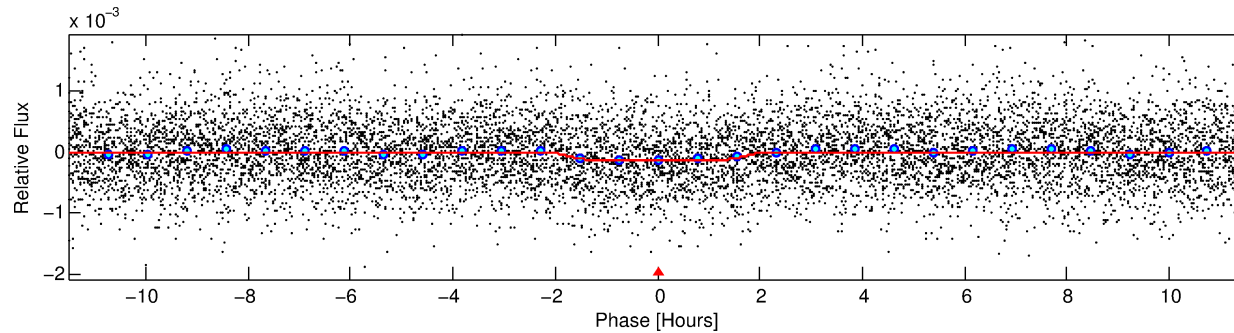
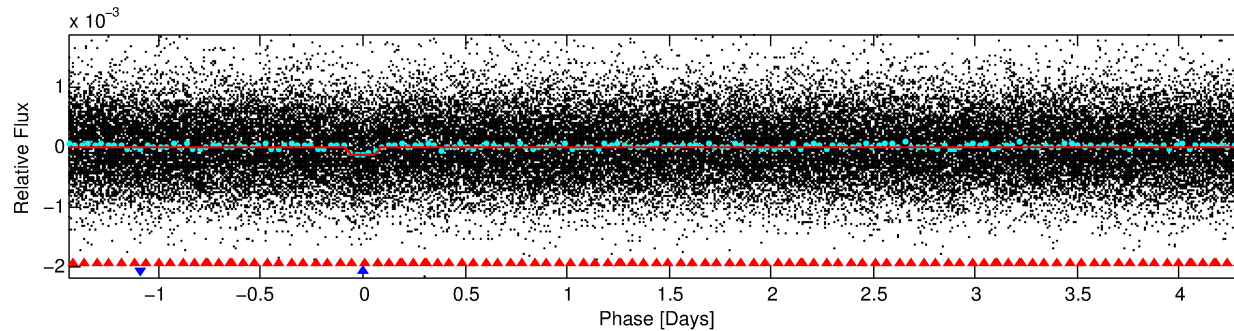
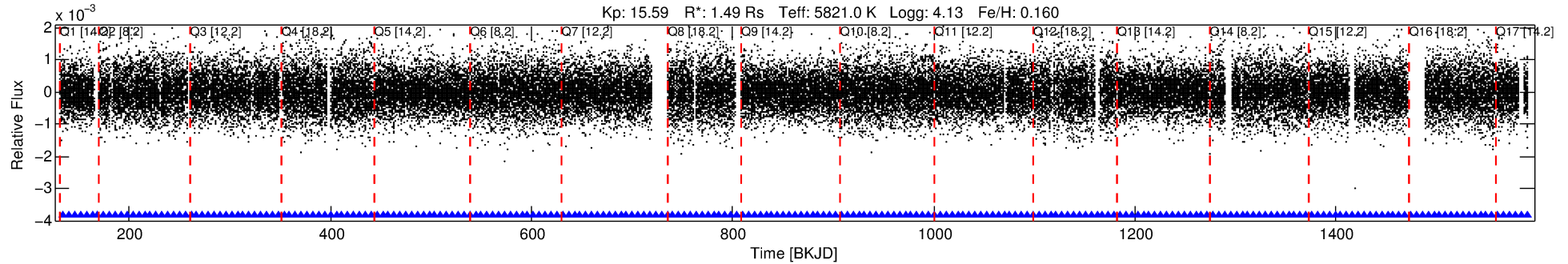
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007289338-02

No Significant Match Found

DV One-Page Summary

KIC: 7289338 Candidate: 2 of 2 Period: 5.775 d
KOI: K03420.01 Corr: 0.951



DV Fit Results:

Period = 5.77451 [0.00006] d
Epoch = 134.5153 [0.0073] BKJD
Rp/R* = 0.0129 [0.0074]
a/R* = 5.42 [14.45]
b = 0.90 [0.59]
Seff = 545.39 [170.90]
Teq = 1232 [97] K
Rp = 2.10 [1.28] Re
a = 0.0648 [0.0124] AU
Ag = 19.73 [24.77] [0.76 σ]
Teffp = 4016 [1222] K [2.27 σ]

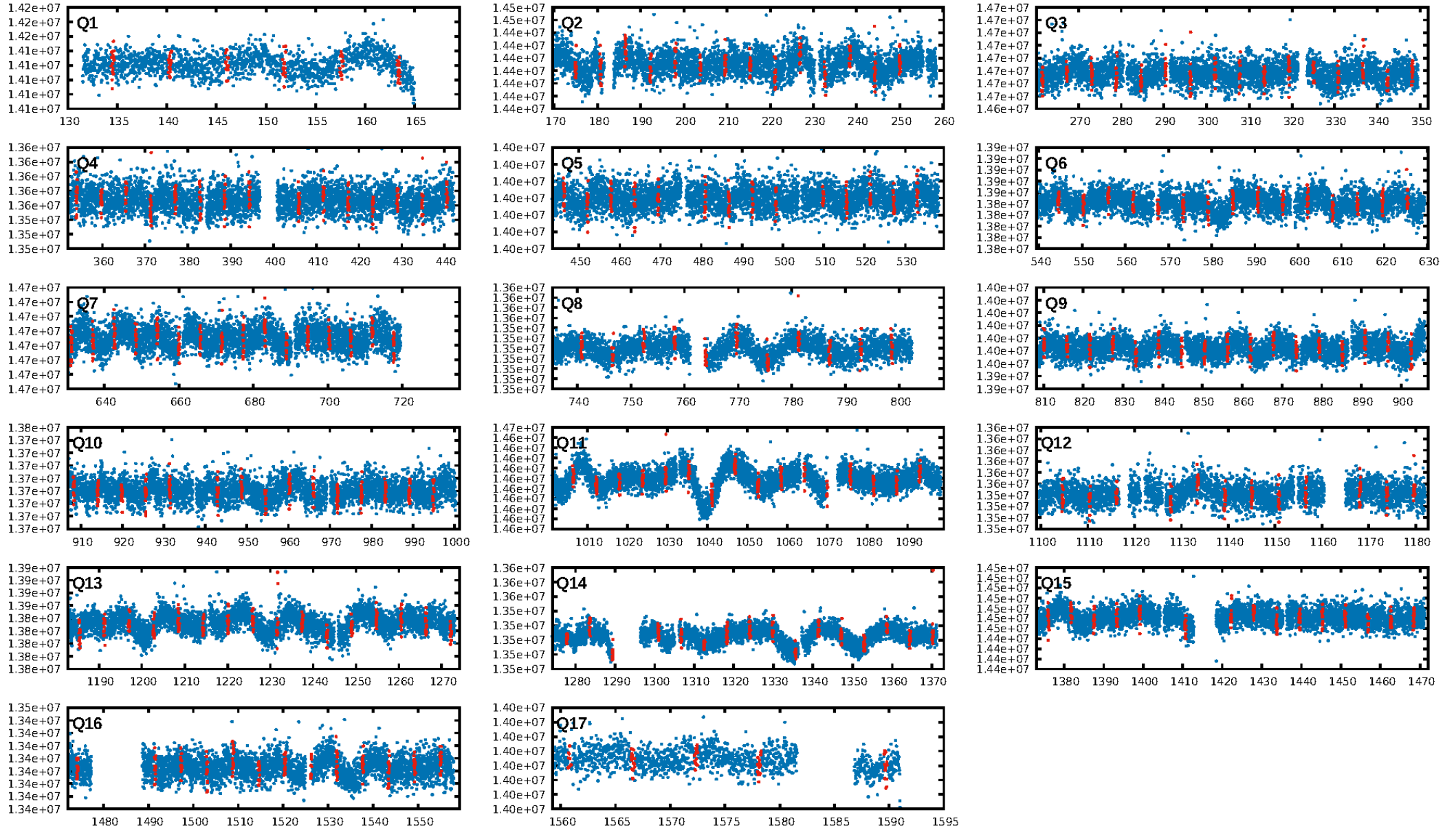
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [29.42 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.57e-16
RollingBand-fgt: 1.00 [214/214]
GhostDiagnostic-chr: 6.161
Centroid-sig: 17.3%
Centroid-so: 2.057 arcsec [1.33 σ]
OotOffset-rm: 0.404 arcsec [0.35 σ]
OotOffset-st: 1/2/1/4 [8]
KicOffset-rm: 0.326 arcsec [0.28 σ]
KicOffset-st: 1/2/1/4 [8]
DiffImageQuality-fgm: 0.50 [4/8]
DiffImageOverlap-fno: 1.00 [17/17]

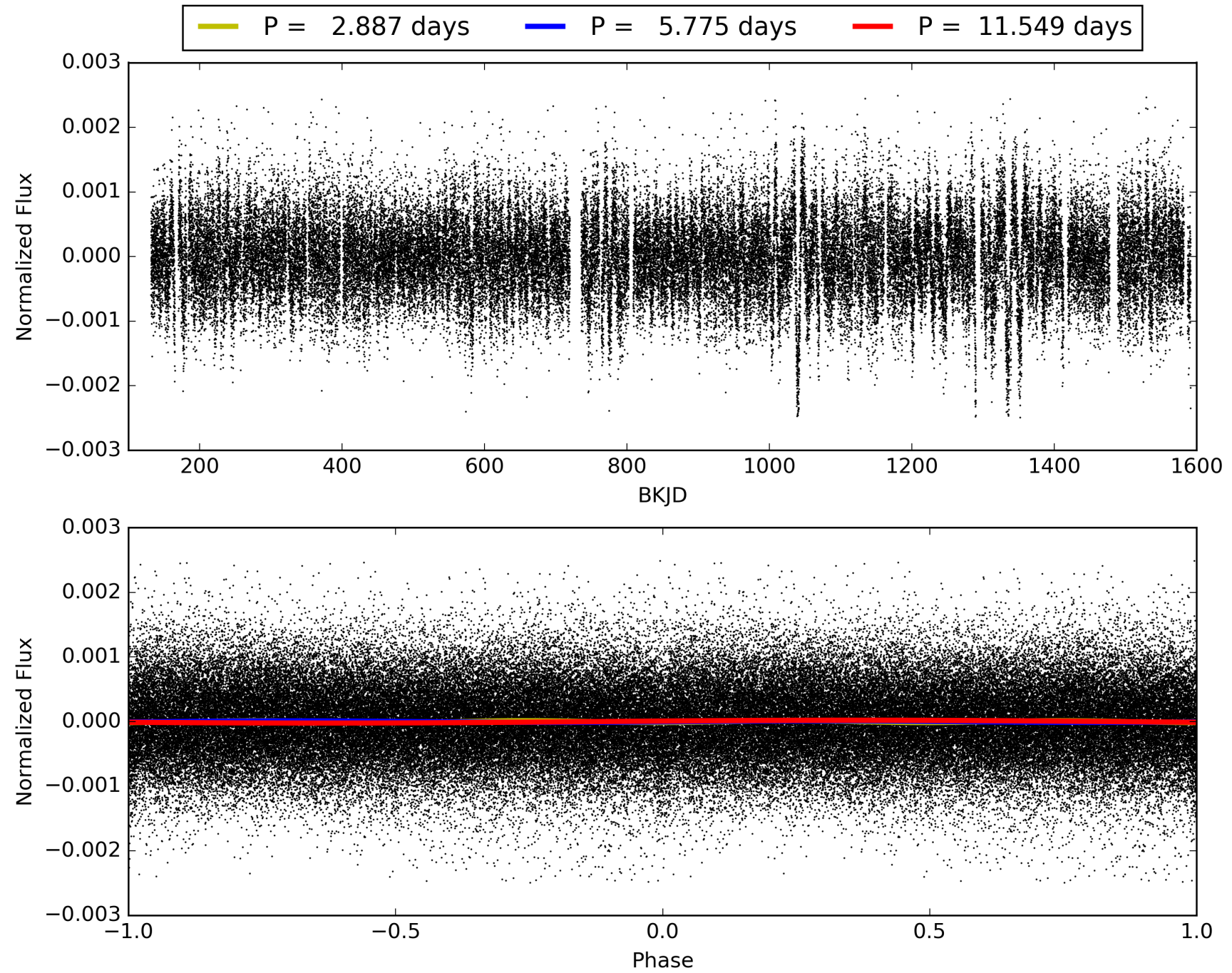
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 08:33:14 Z

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

TCE 007289338-02, PDC Light Curves

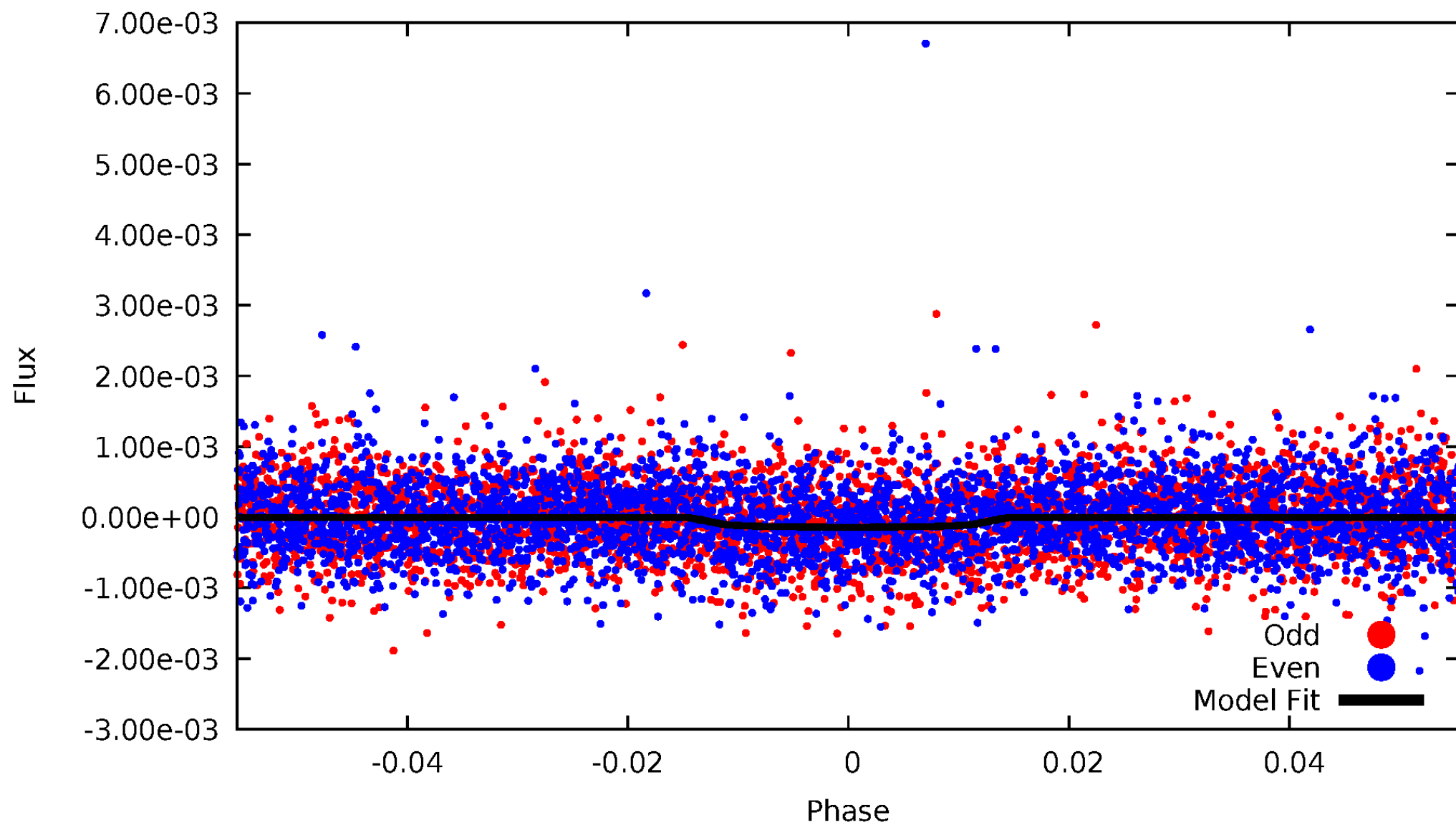


TCE 007289338-02



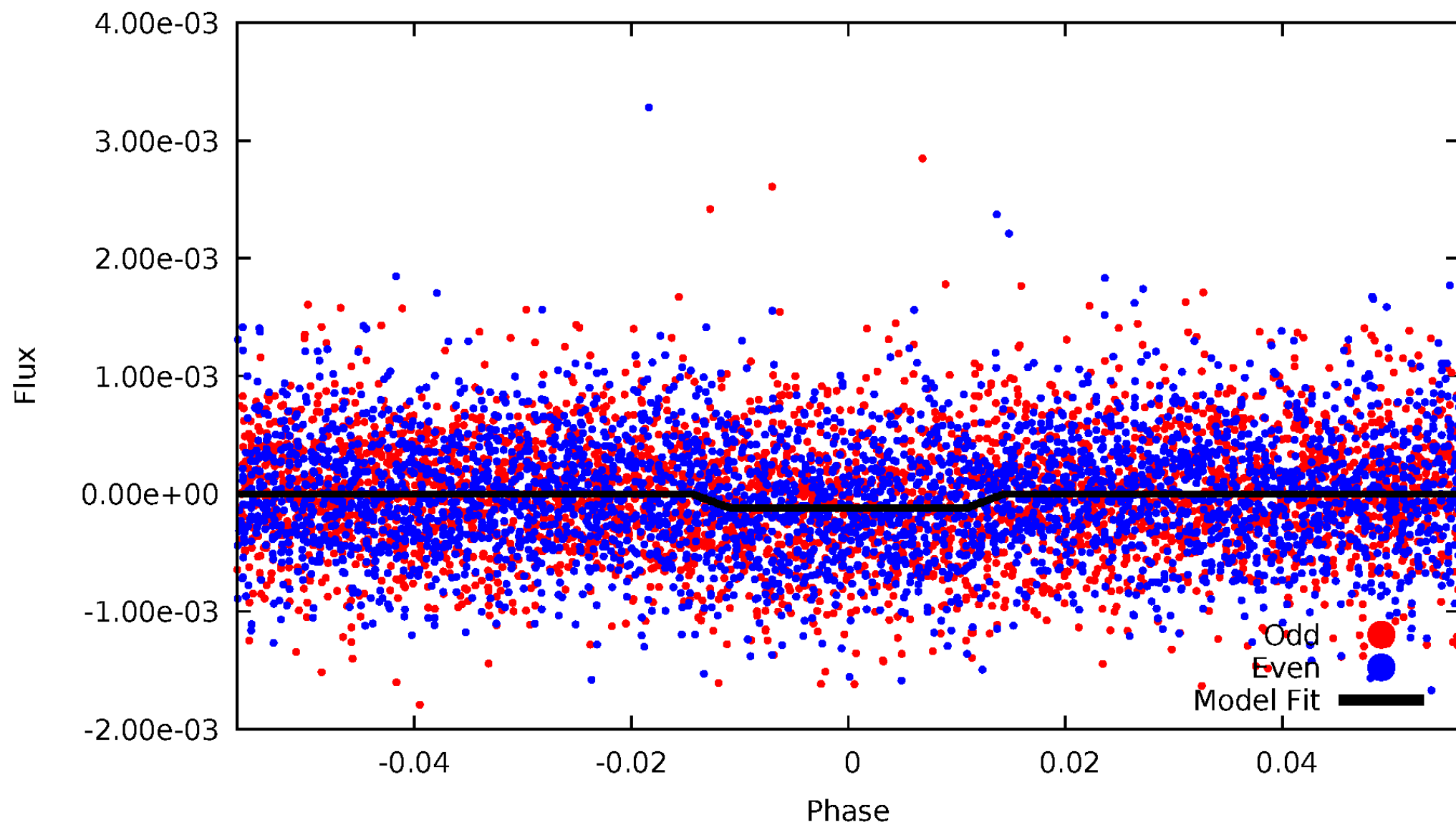
DV Odd/Even

TCE 007289338-02



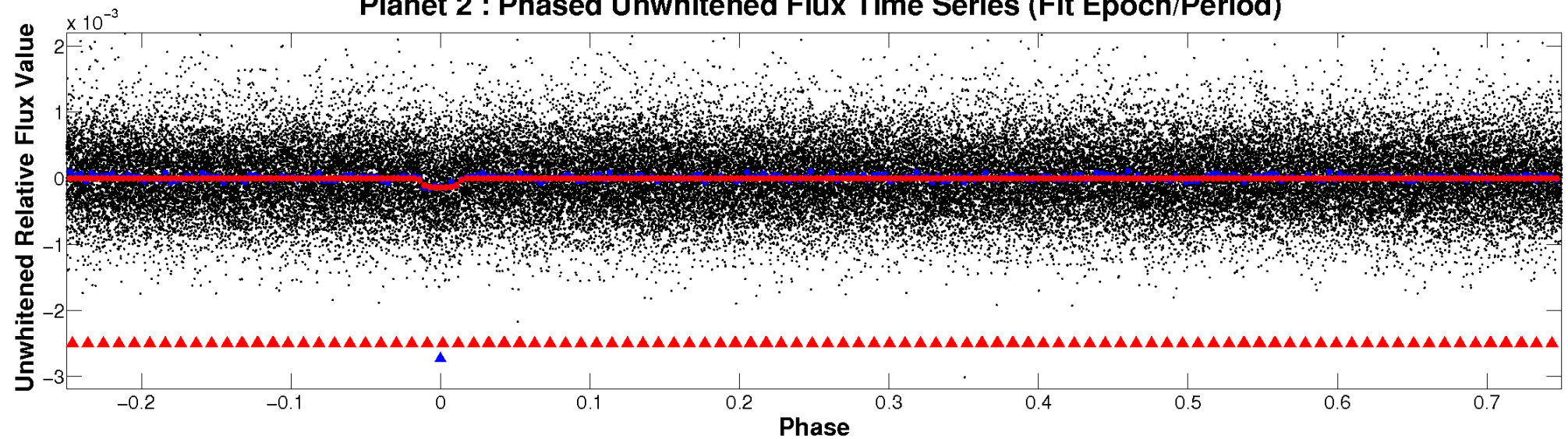
ALT Odd/Even

TCE 007289338-02

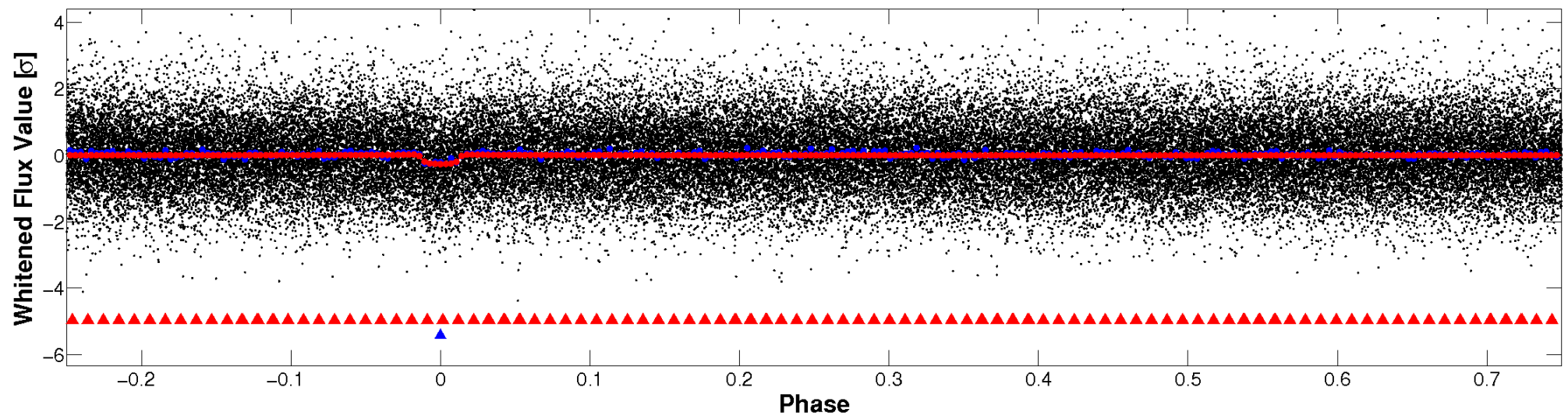


Non-Whitened Vs. Whitened Light Curve

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

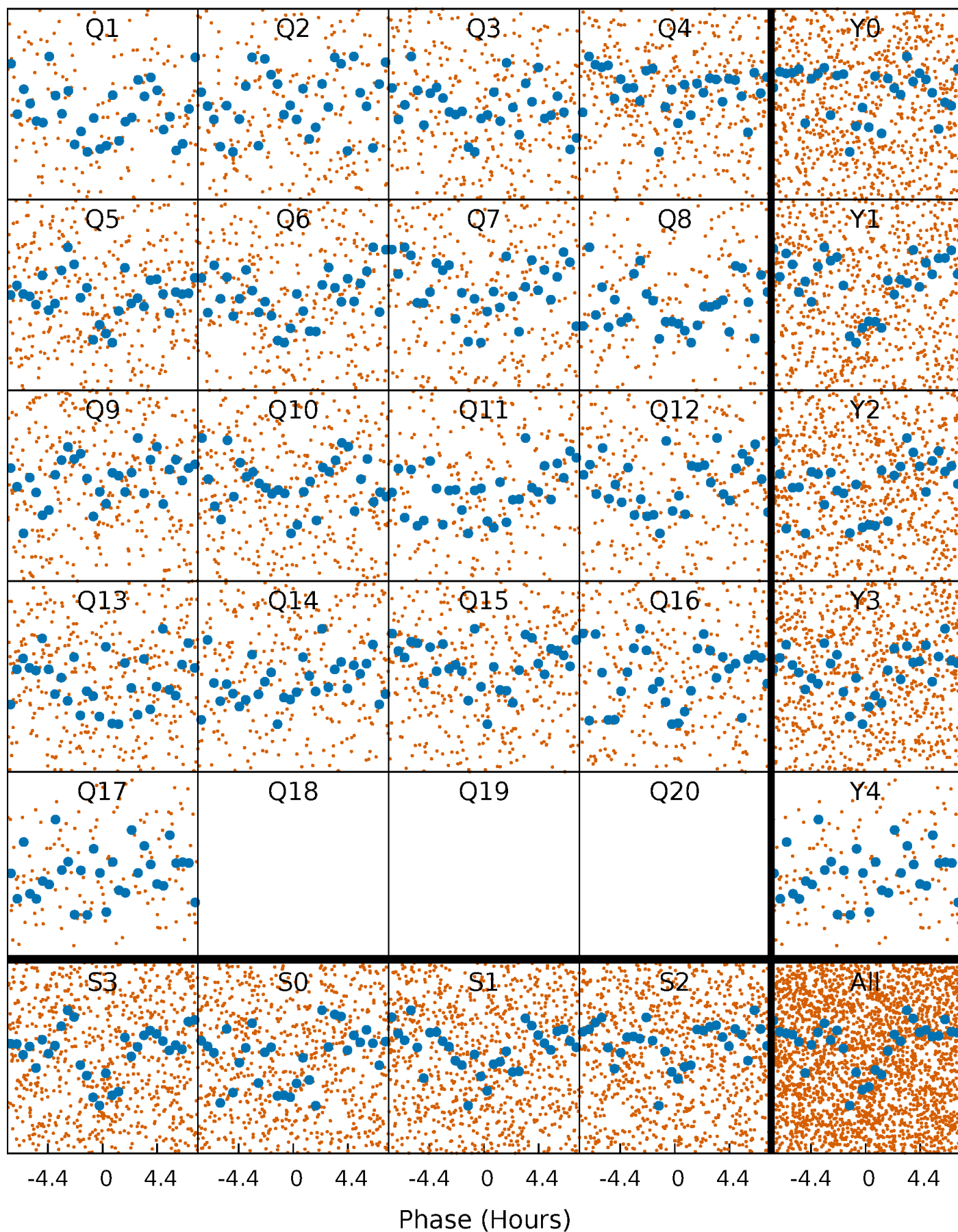


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



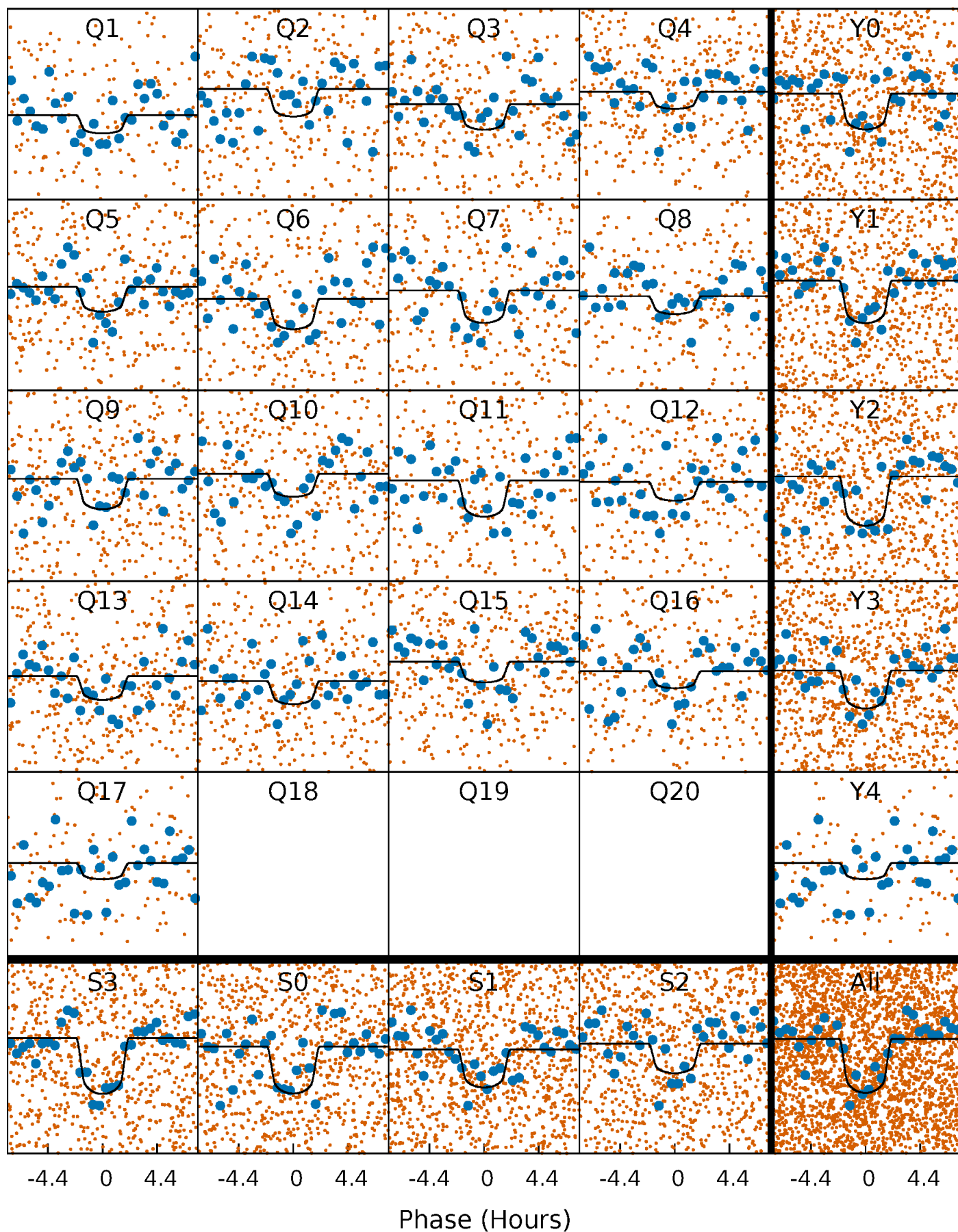
PDC Quarter-Phased Transit Curves

TCE 007289338-02 P= 5.774510 Days $T_0=134.515261$ (BKJD)



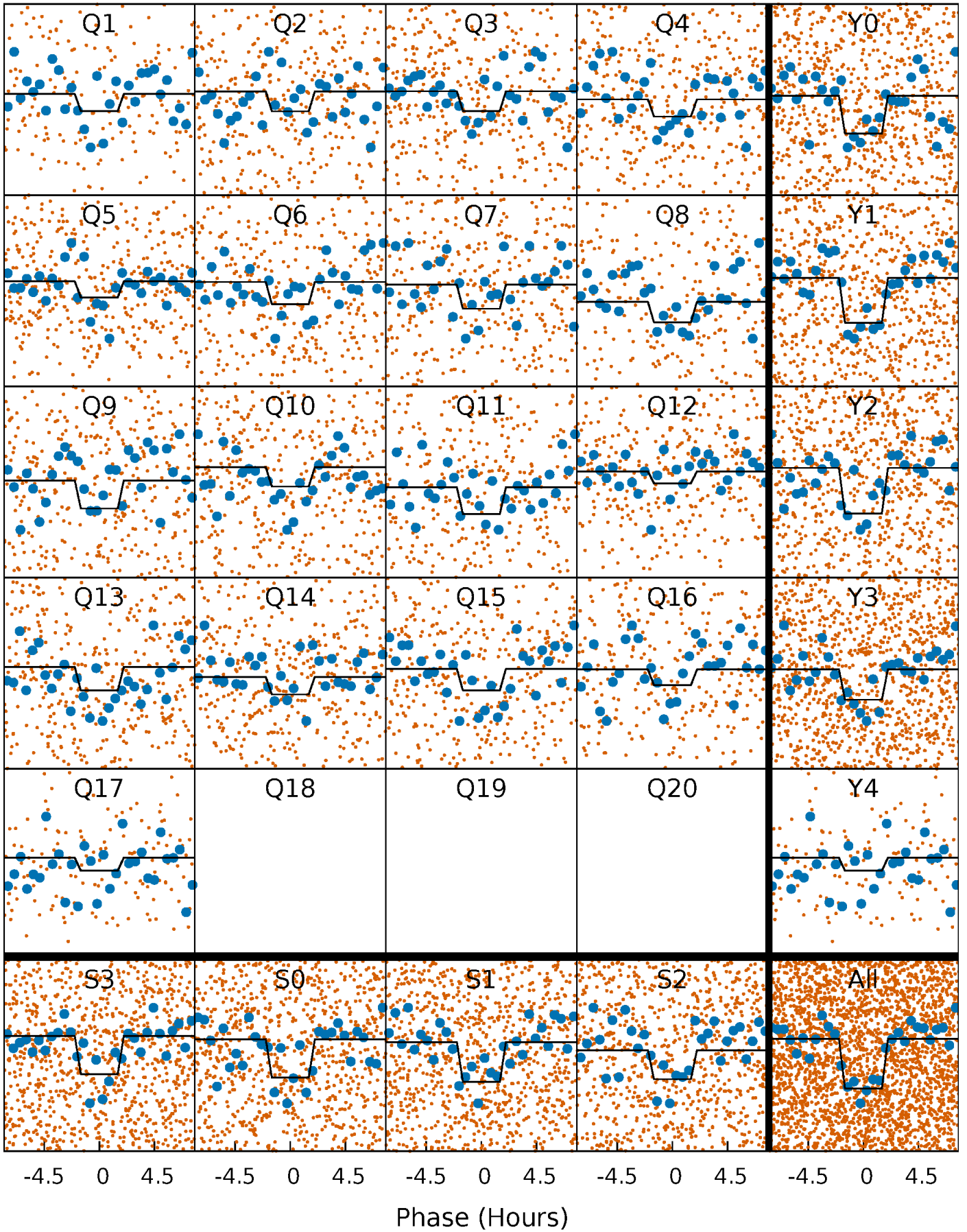
DV Quarter-Phased Transit Curves

TCE 007289338-02 P= 5.774510 Days $T_0=134.515261$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

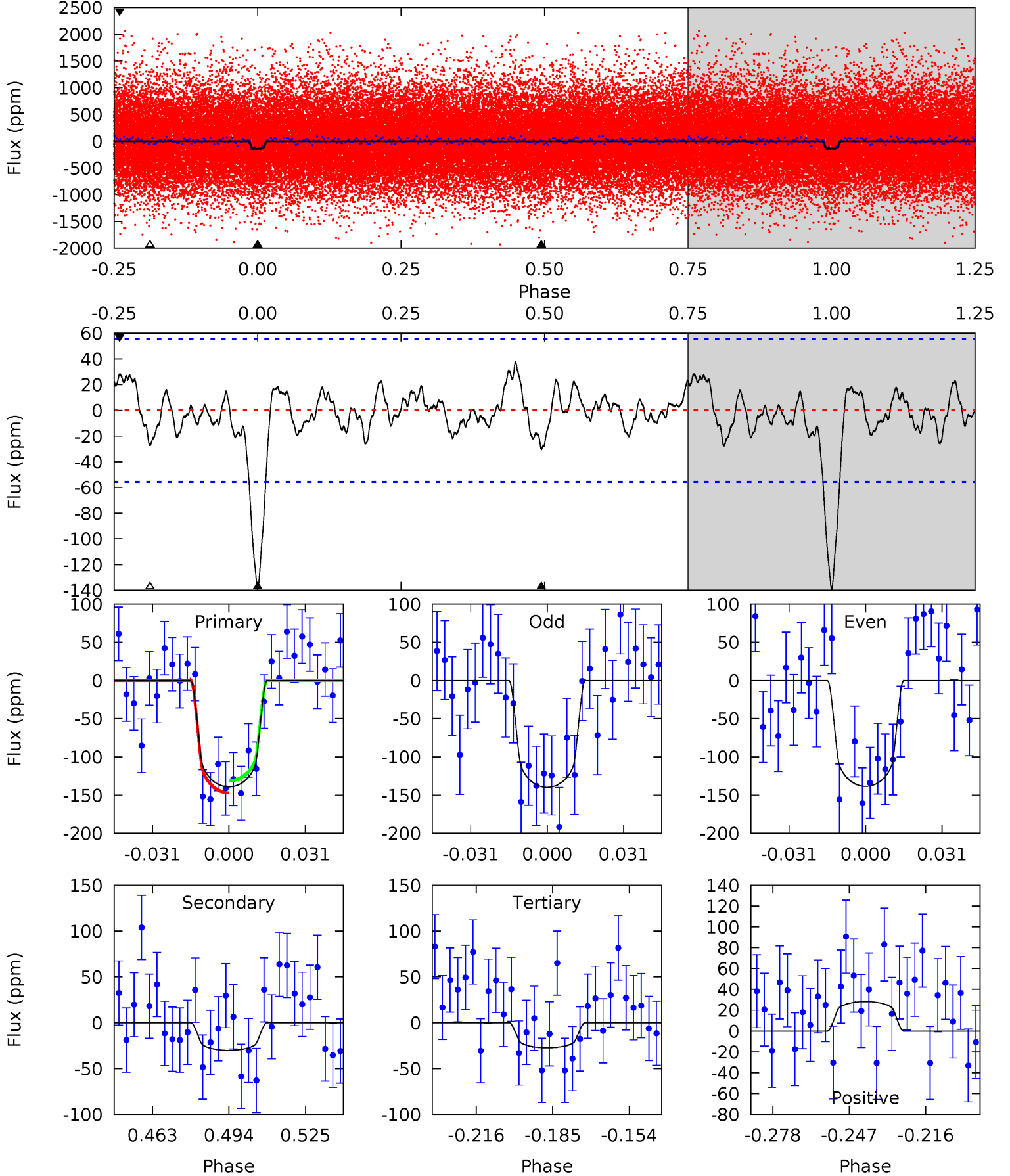
TCE 007289338-02 P= 5.774656 Days $T_0=134.499179$ (BKJD)



DV Model-Shift Uniqueness Test

007289338-02, P = 5.774510 Days, E = 128.740751 Days

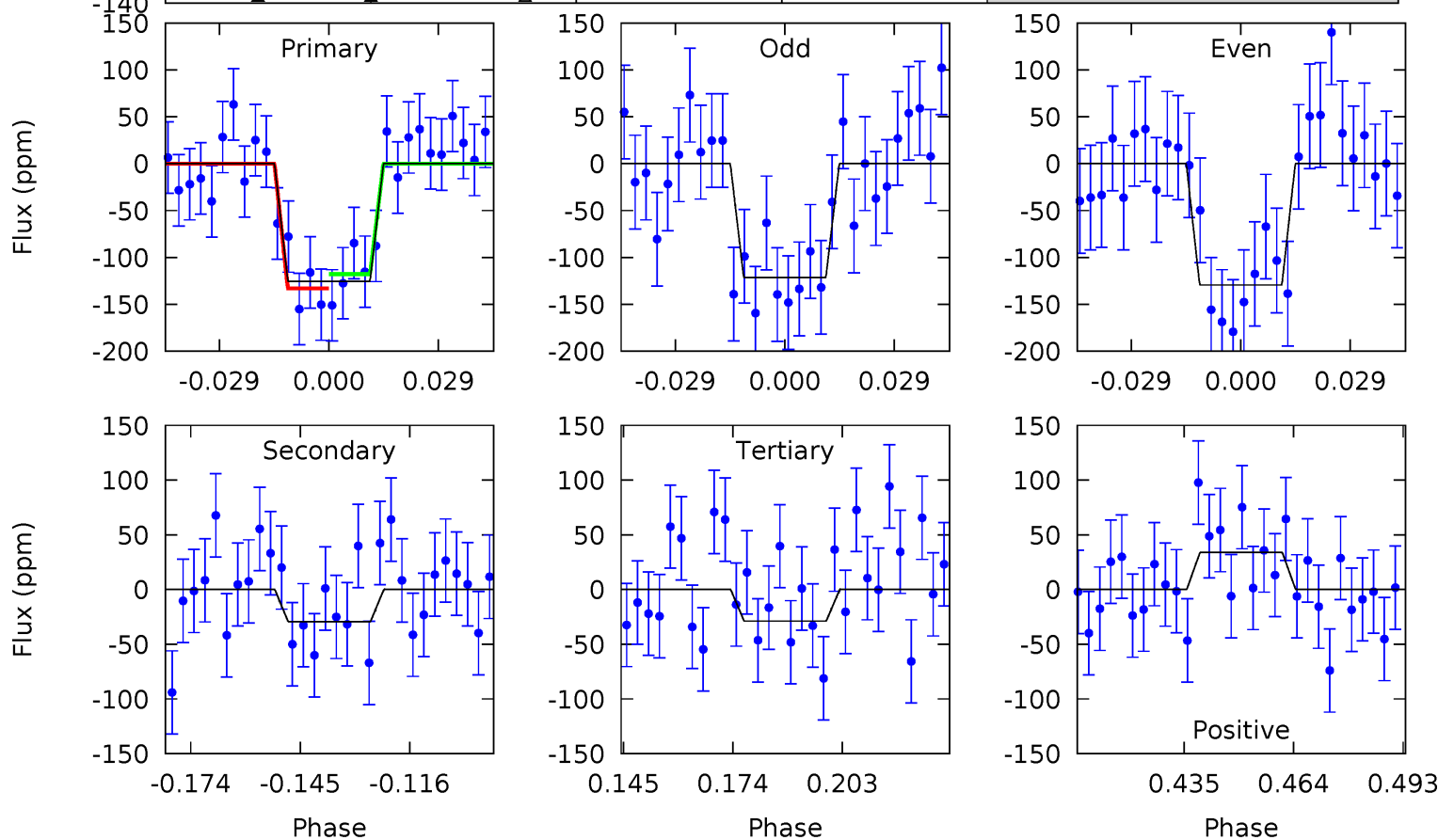
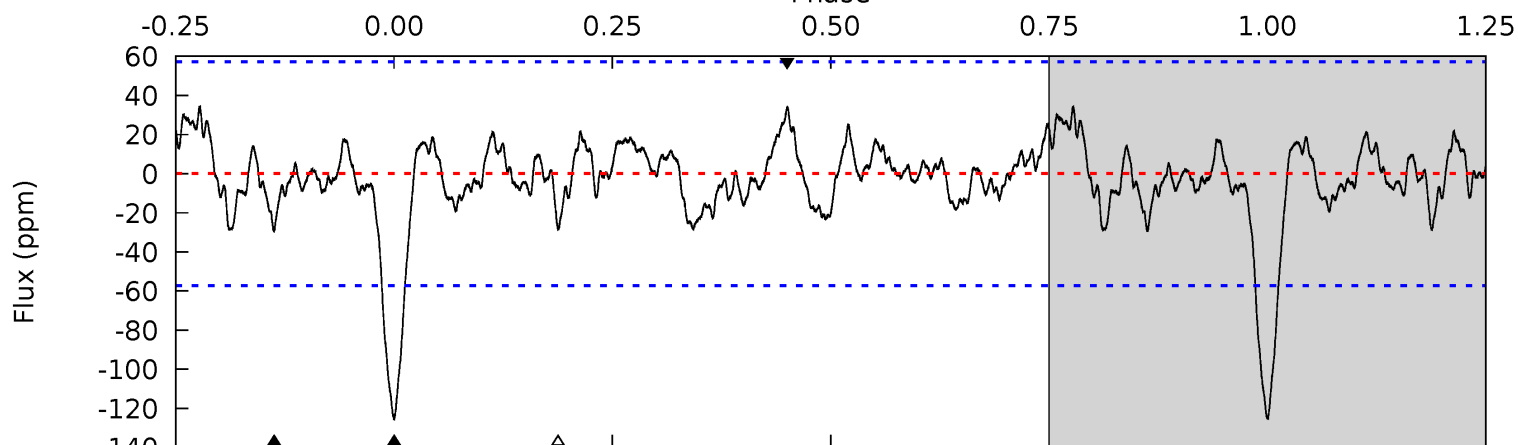
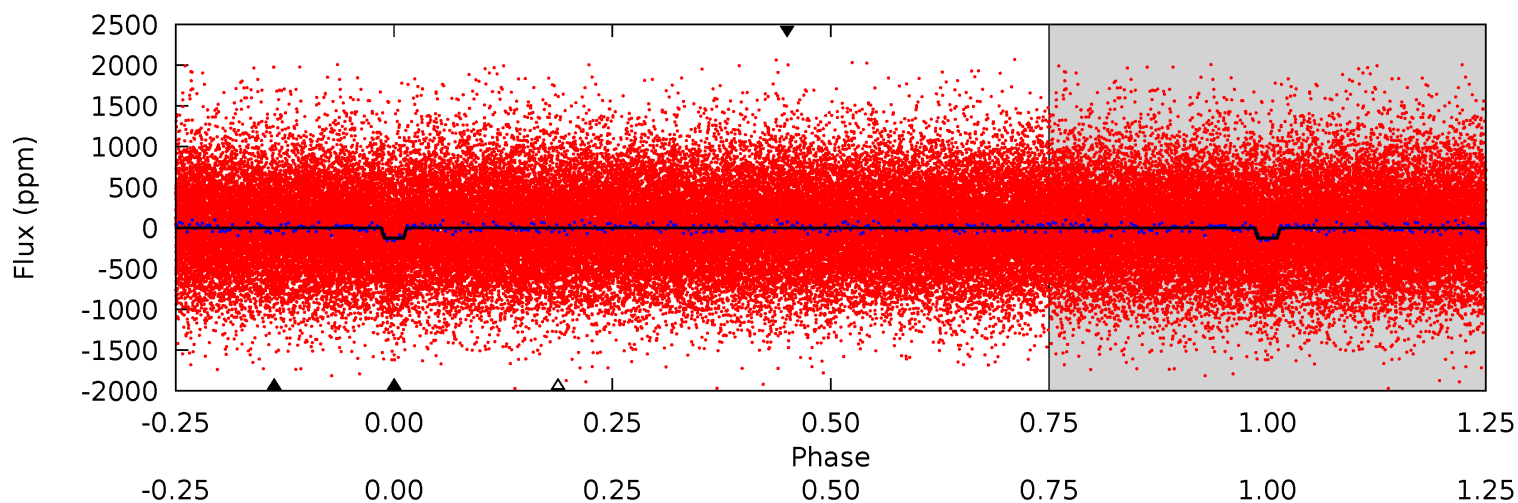
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.0	2.61	2.37	2.44	4.81	2.16	1.08	9.66	9.59	0.24	0.17	0.06	0.81	0.21	0.69



Alt Model-Shift Uniqueness Test

007289338-02, P = 5.774656 Days, E = 128.724523 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.5	2.48	2.42	2.86	4.82	2.18	1.08	8.12	7.68	0.06	-0.38	0.34	0.85	0.22	0.63



Stellar Parameters For KIC 007289338

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5821^{+78}_{-78}	$4.127^{+0.182}_{-0.098}$	$0.160^{+0.150}_{-0.150}$	$1.492^{+0.241}_{-0.294}$	$1.088^{+0.104}_{-0.083}$	$0.462^{+0.420}_{-0.135}$
	+1%/-1%	+4%/-2%	+94%/-94%	+16%/-20%	+10%/-8%	+91%/-29%
Source	SPE90	SPE90	SPE90	DSEP		

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

Secondary Eclipse Parameters for KIC 007289338-02 / KOI 3420.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-30 ± 12	$2.07^{+1.21}_{-1.11}$	1709^{+77}_{-96}	4033^{+1582}_{-631}	16^{+63}_{-10}
Alt.	-30 ± 12	$1.83^{+1.14}_{-1.01}$	1707^{+85}_{-94}	4192^{+1840}_{-737}	19^{+92}_{-13}

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 $A_{obs} \gg 1.0$

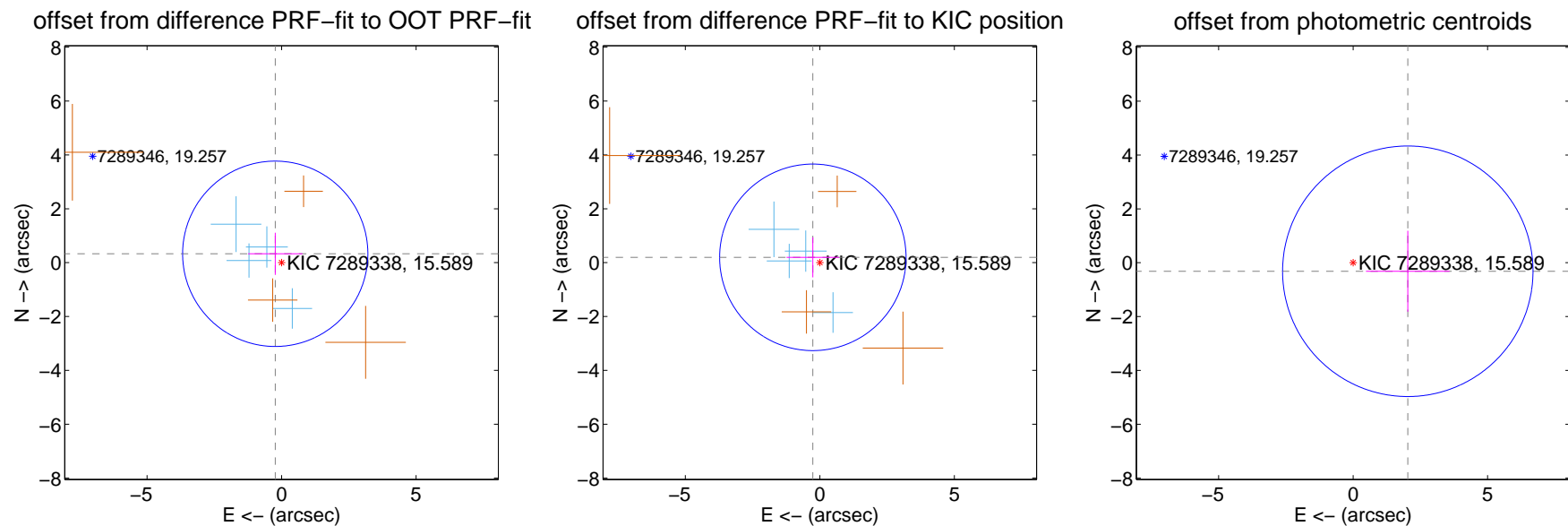
DV Centroid Data

Supplemental centroid analysis for 007289338-02. Kepler magnitude: 15.59. Transit SNR 9.10

There are 4 quarters with good PRF difference image offsets

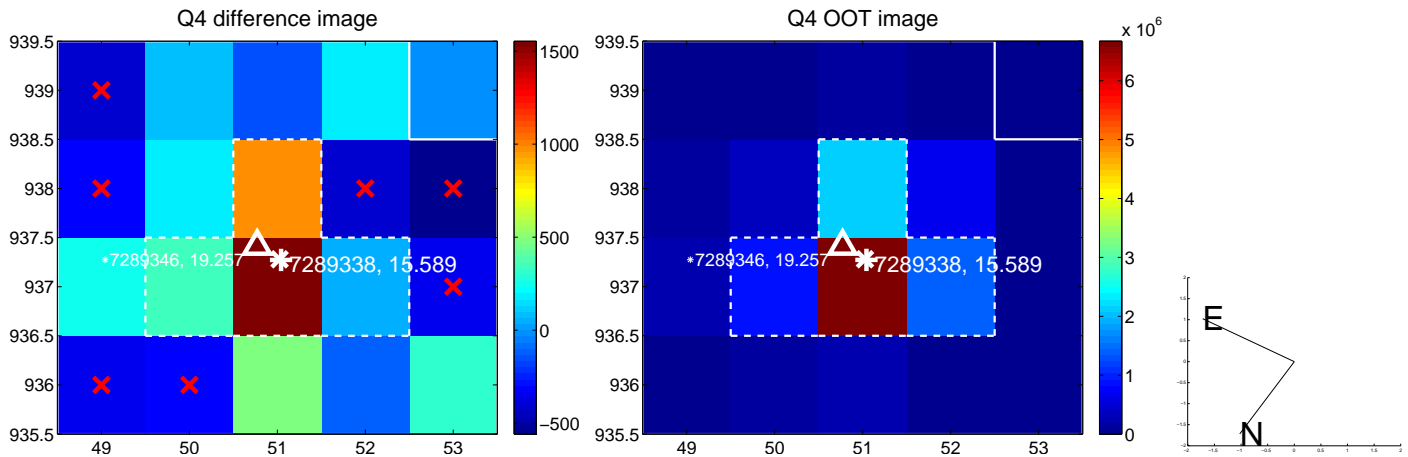
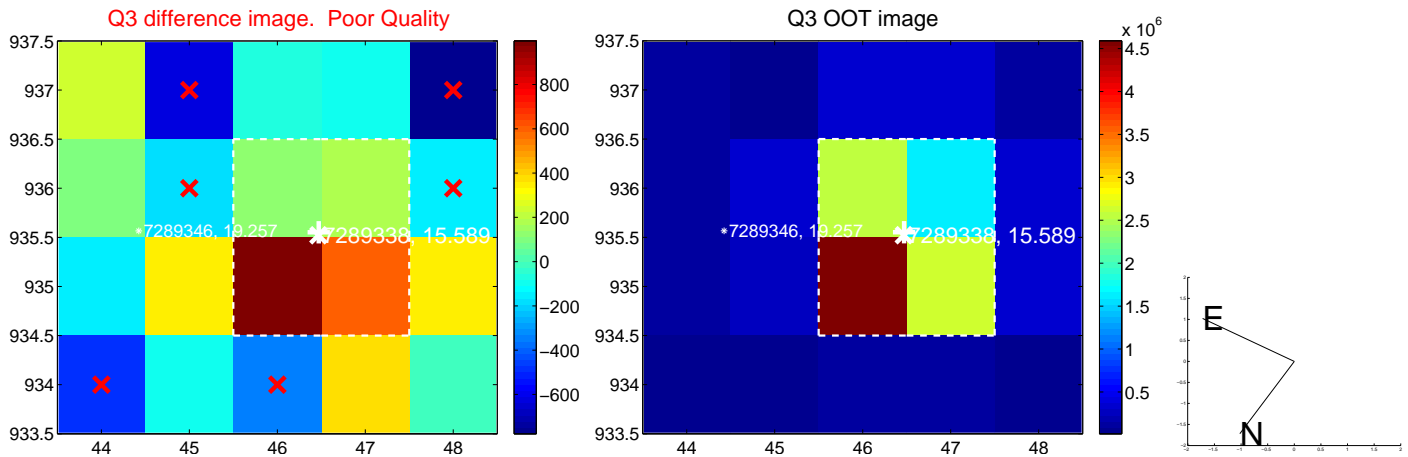
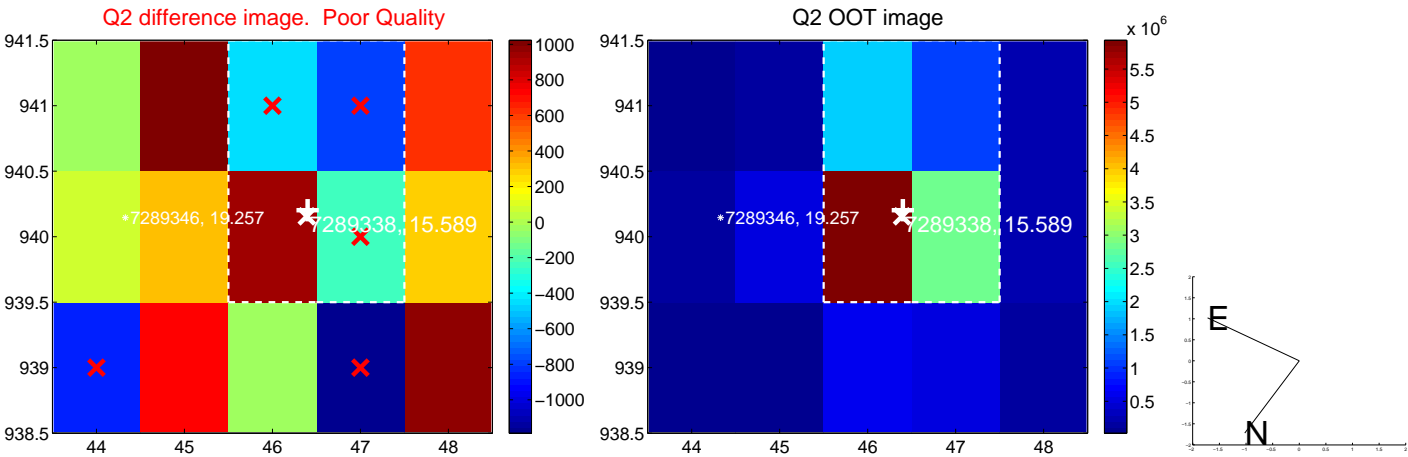
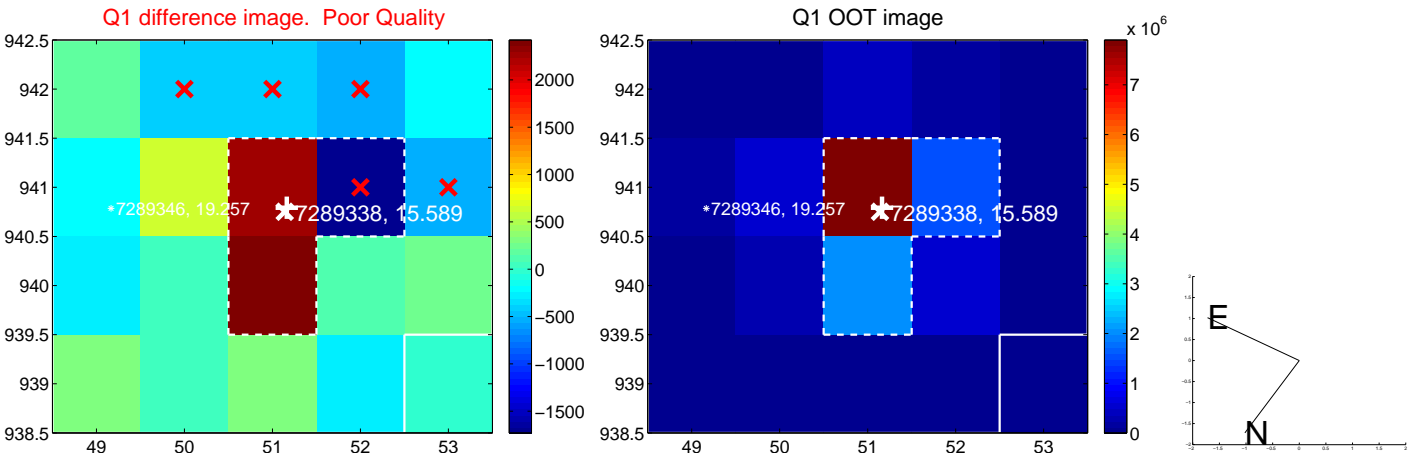
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.404 ± 1.147	0.35	0.235 ± 1.010	0.329 ± 0.783
PRF-fit source offset from KIC position	0.326 ± 1.155	0.28	0.260 ± 0.978	0.197 ± 0.742
photometric centroid source offset	2.06 ± 1.55	1.33	-2.03 ± 1.55	-0.32 ± 1.50

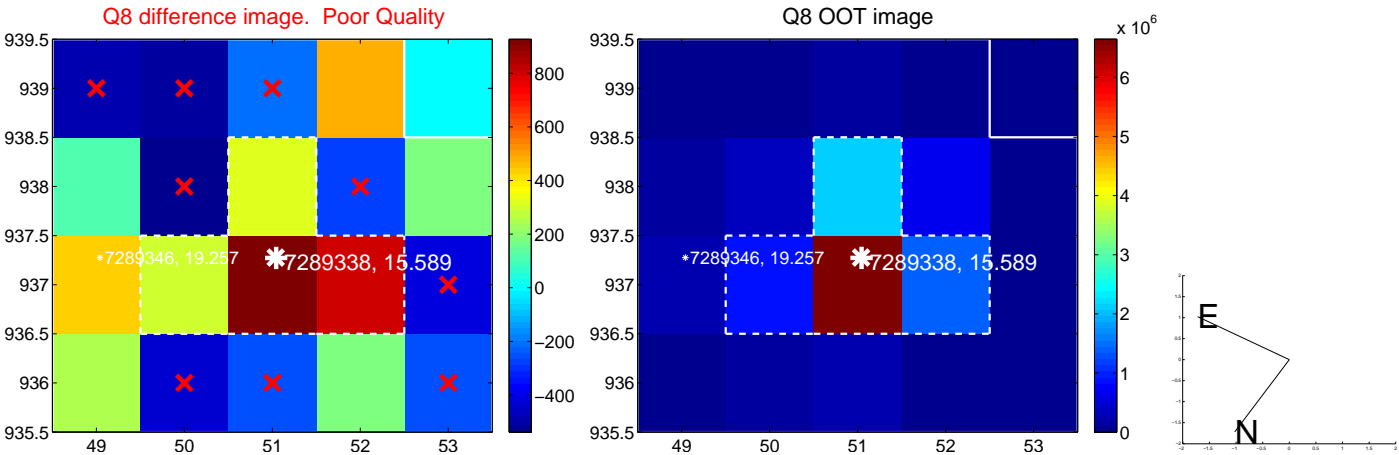
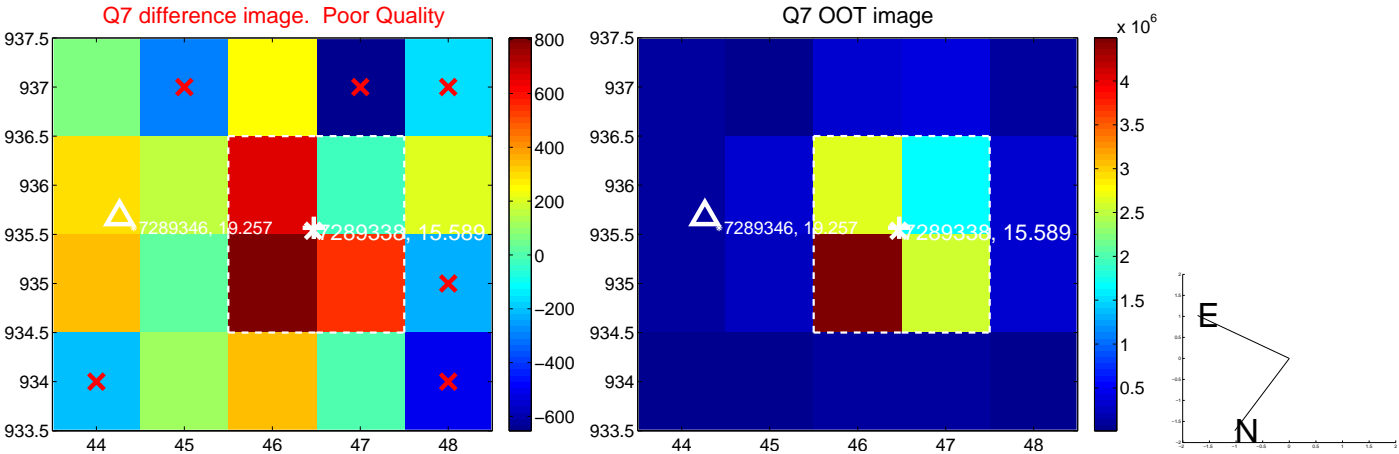
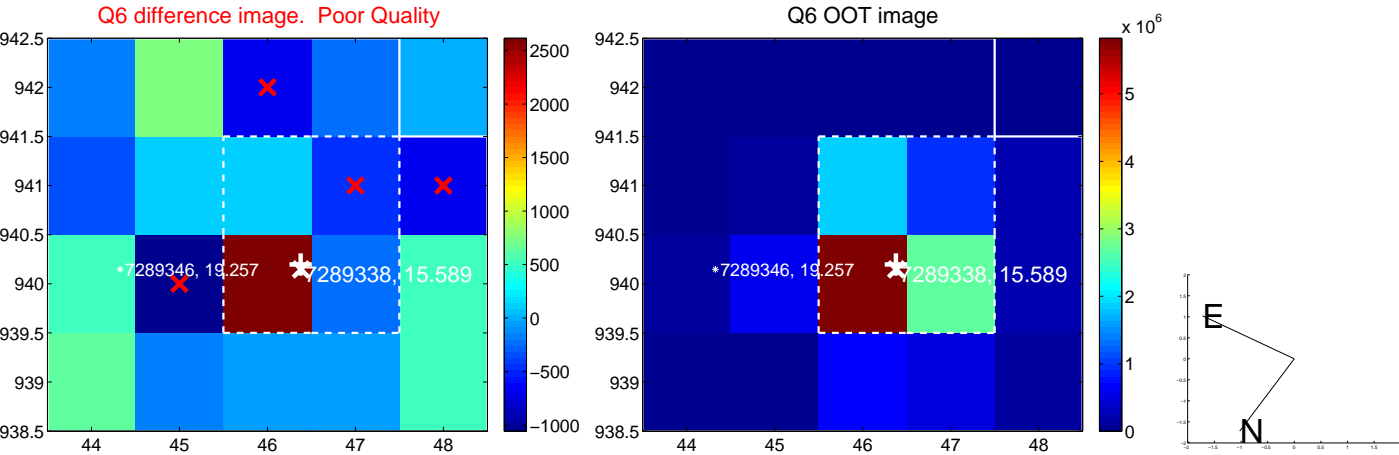
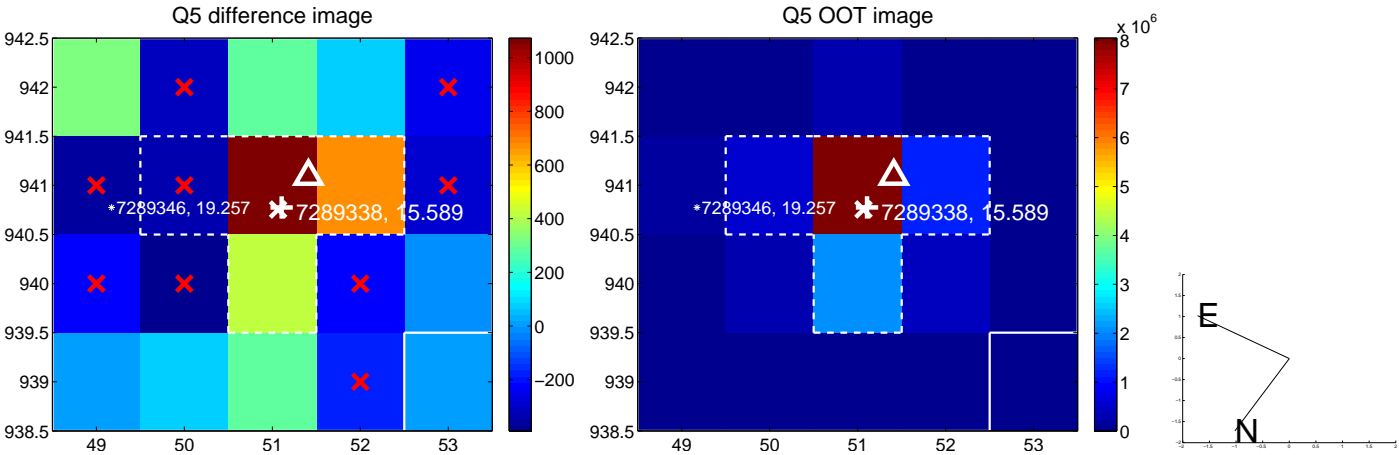


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

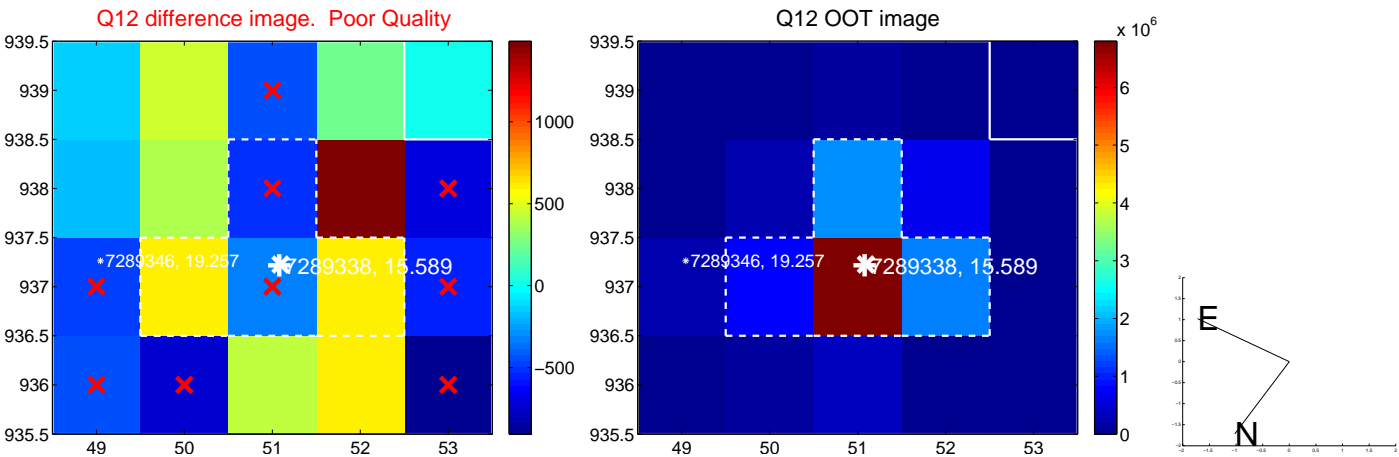
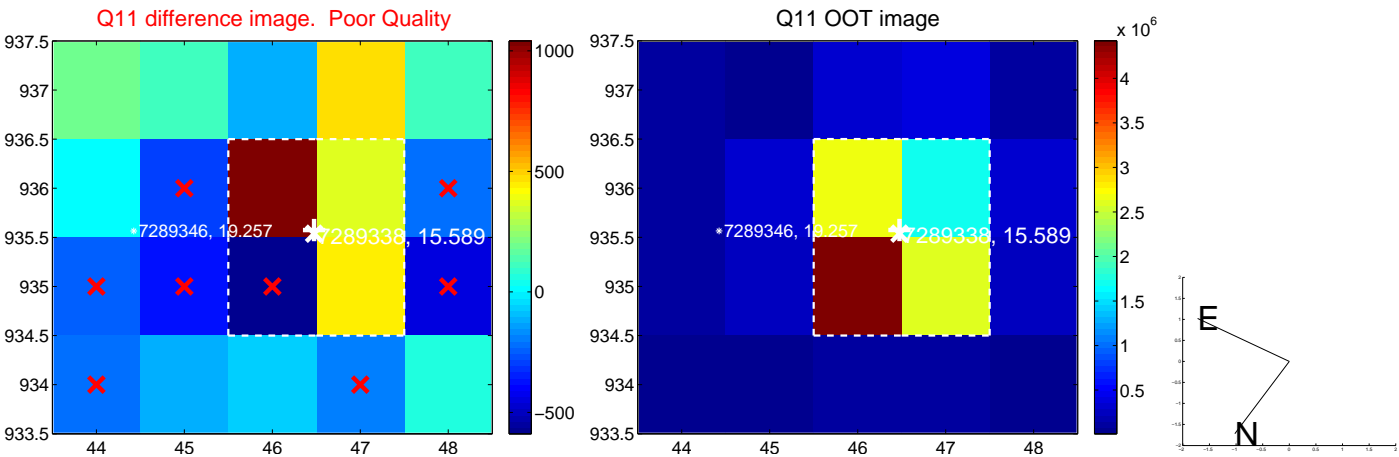
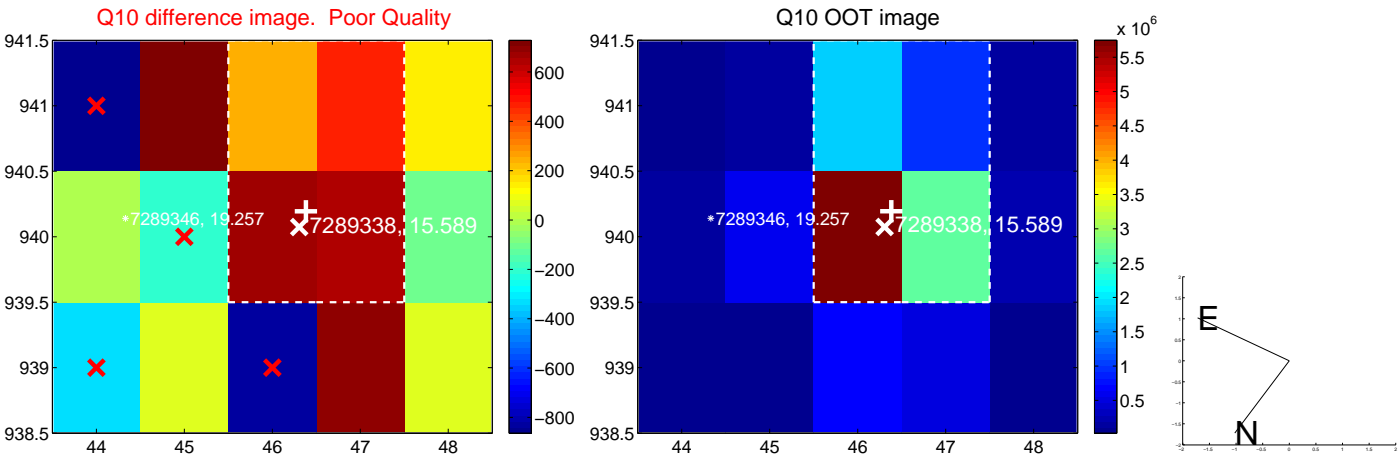
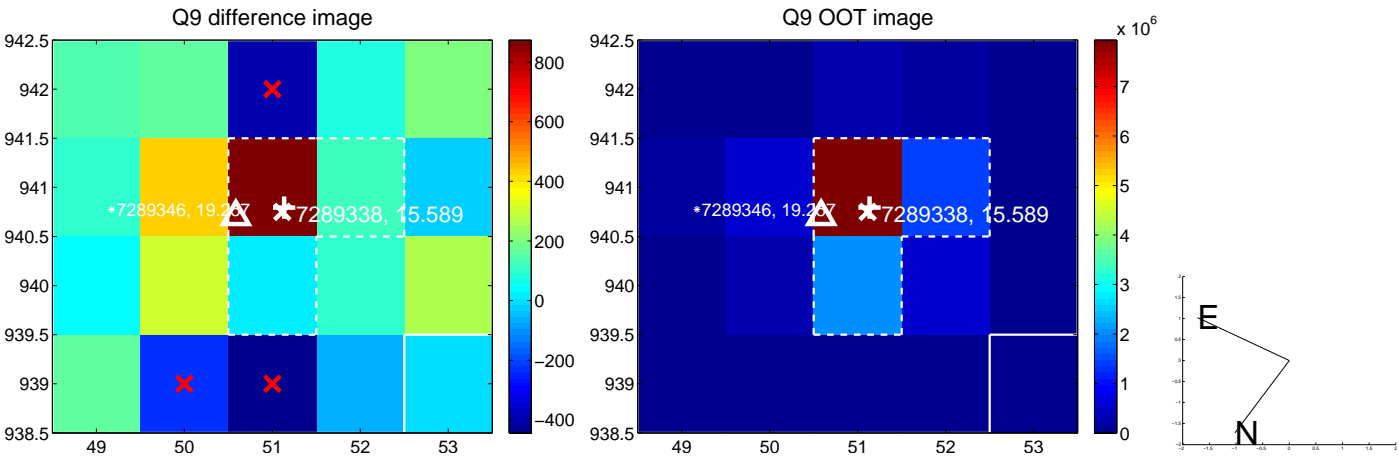
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



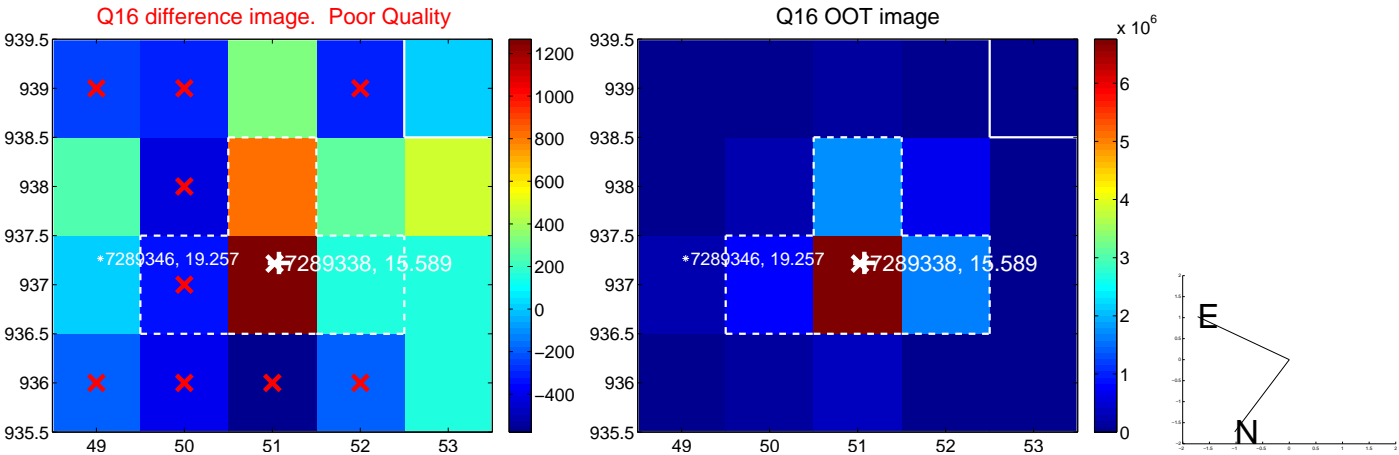
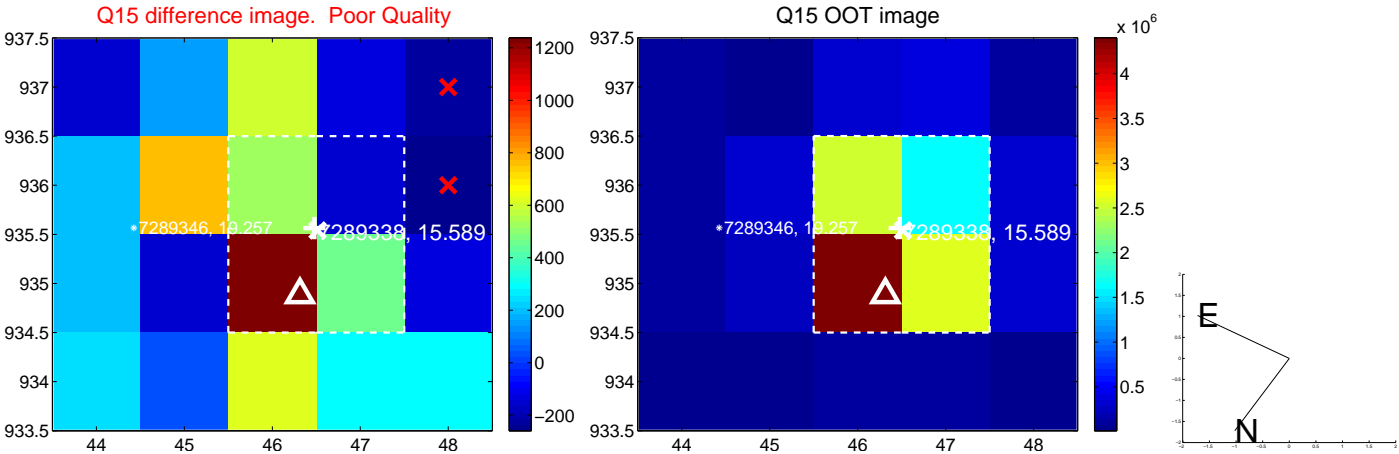
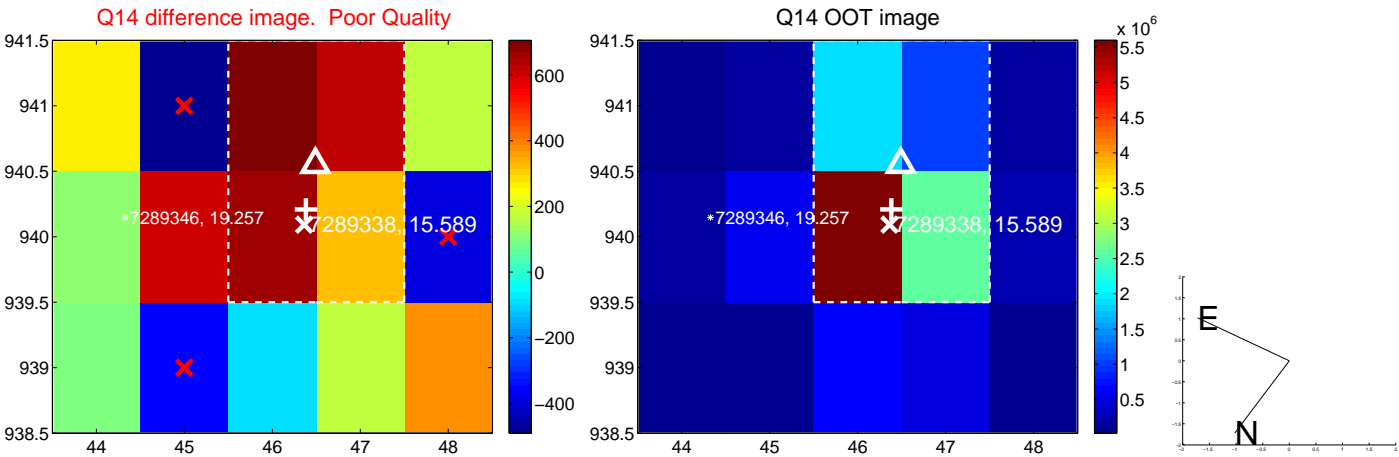
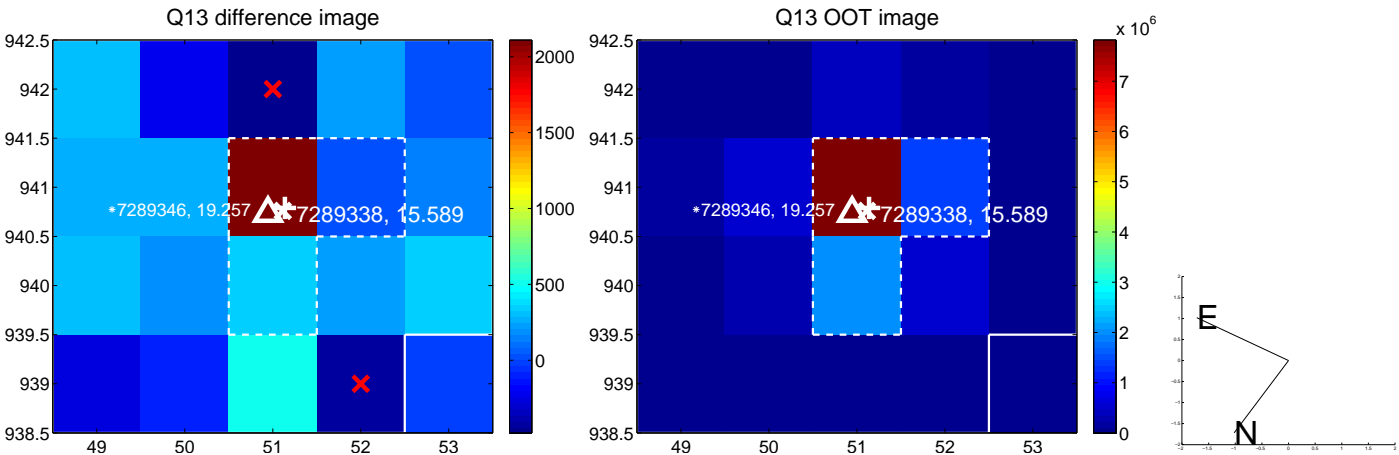
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



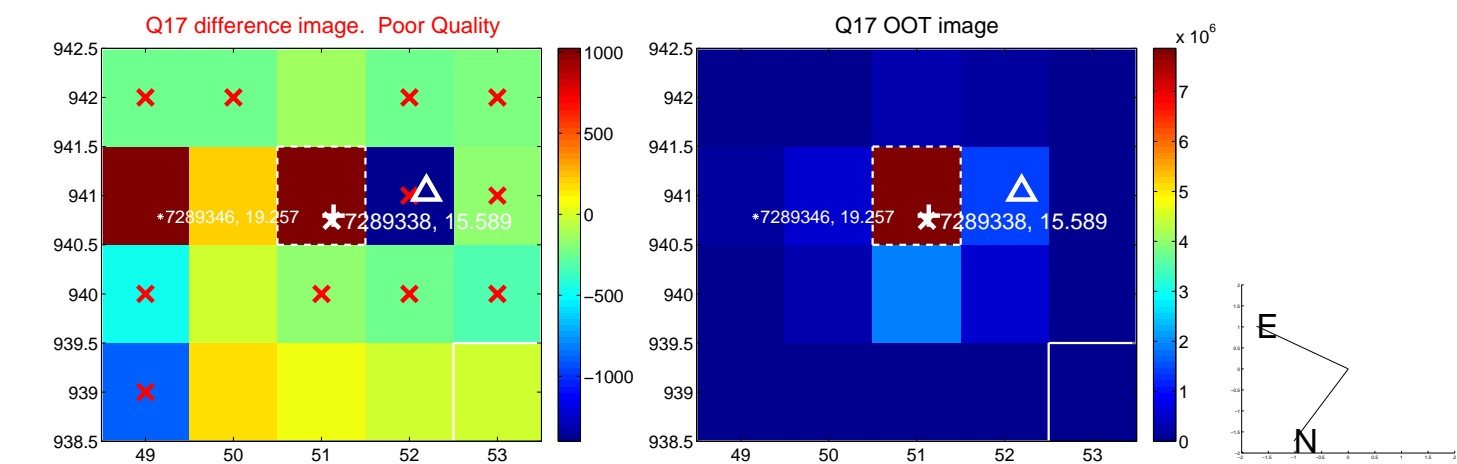
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



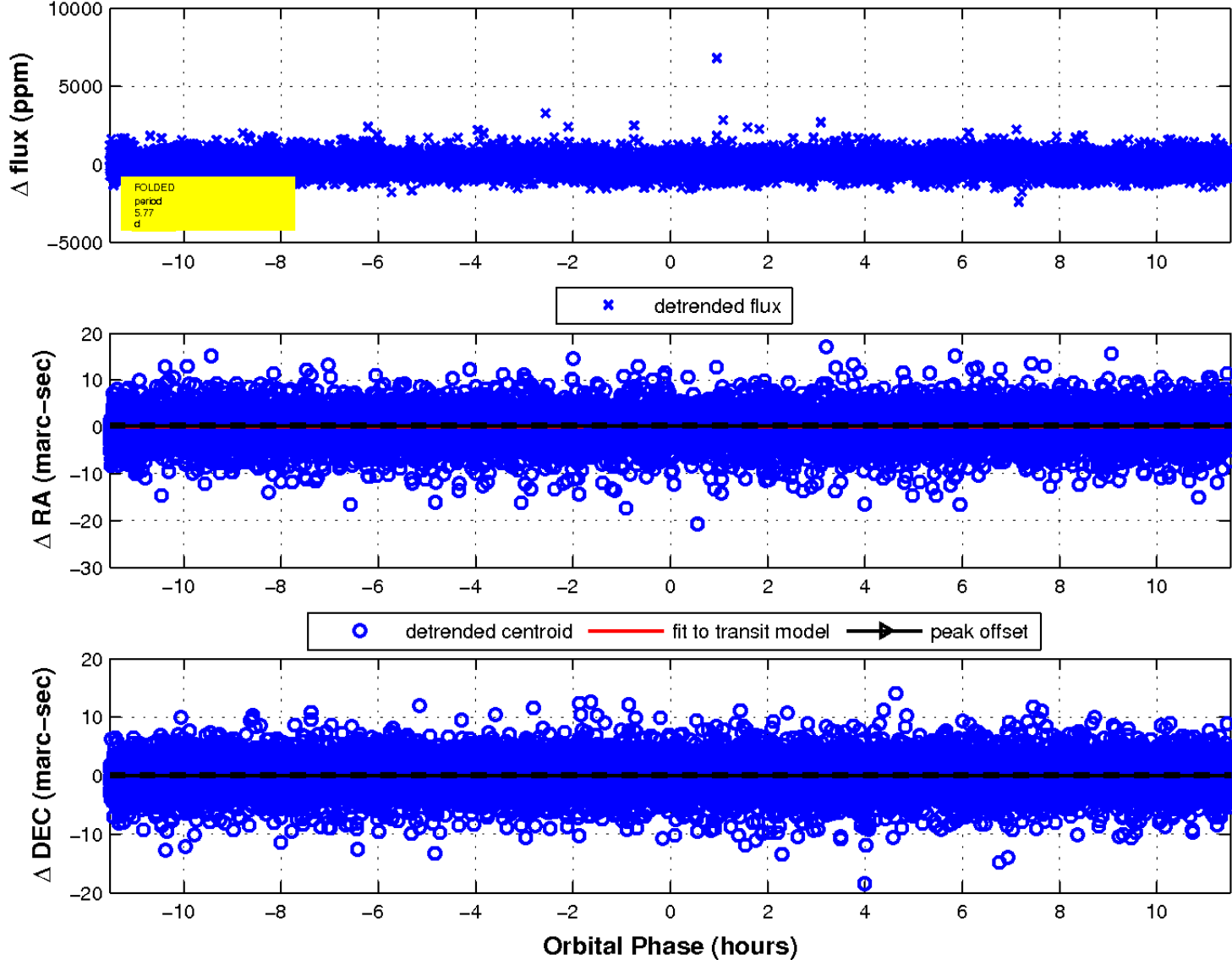
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

