

KIC 003454513

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})
003454513-01	OBS	No	3.037311	132.169227	21.7	14.730	7.3	6.7	2.06	6812	1.03	3611.08
003454513-02	OBS	No	127.415952	206.447106	174.4	18.107	7.5	6.4	2.06	6812	3.03	24.77

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003454513-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
003454513-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

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

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

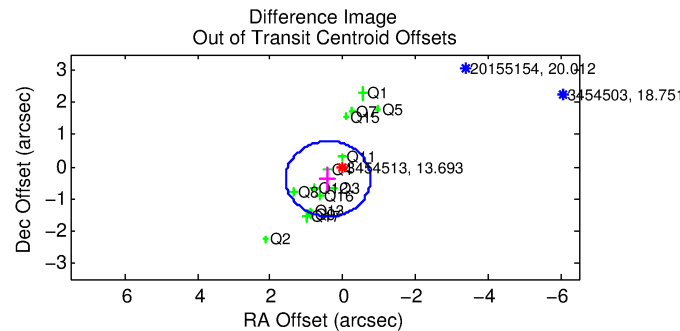
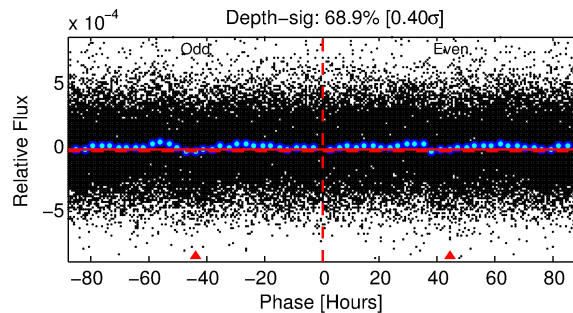
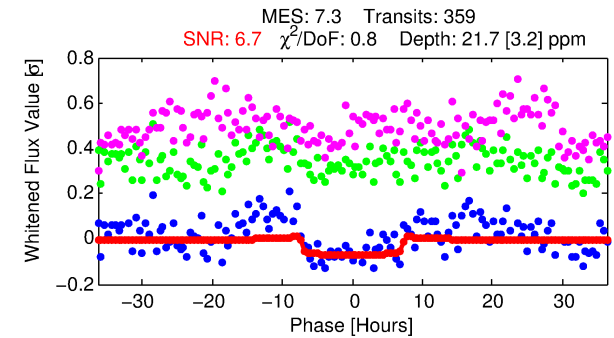
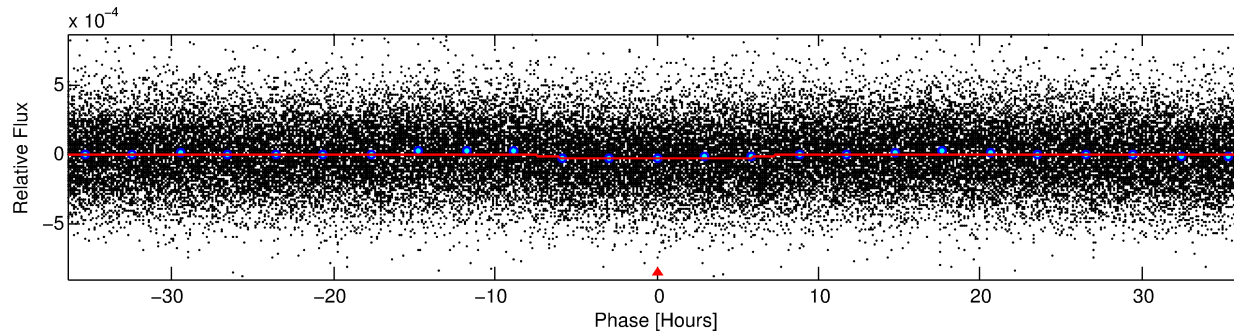
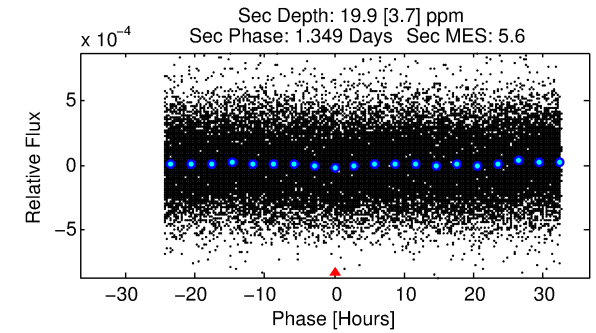
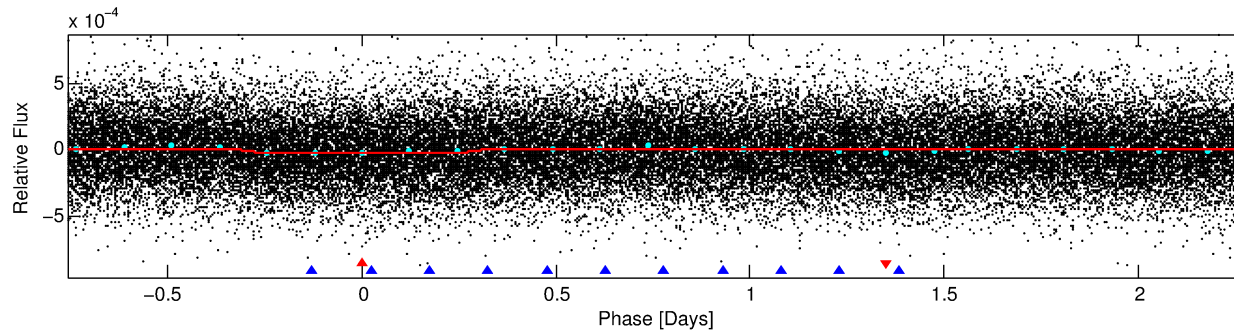
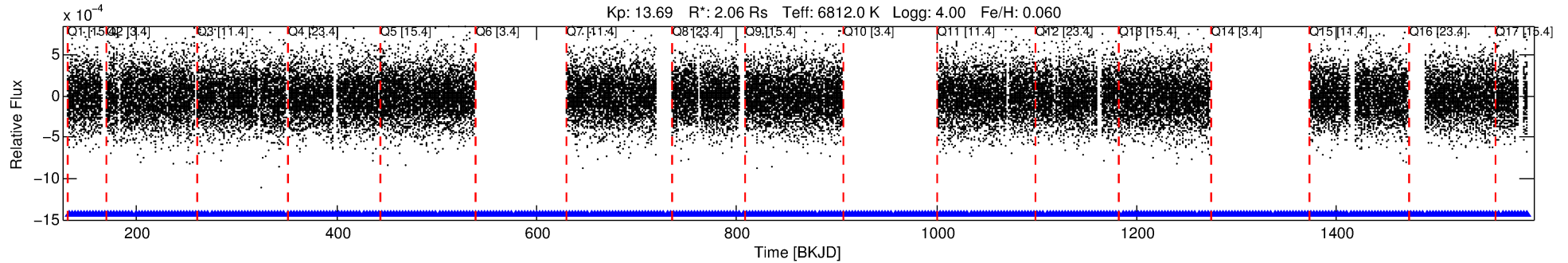
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003454513-01

No Significant Match Found

DV One-Page Summary

KIC: 3454513 Candidate: 1 of 2 Period: 3.037 d



DV Fit Results:

Period = 3.03731 [0.00008] d
Epoch = 132.1692 [0.0162] BKJD
Rp/R* = 0.0046 [0.0027]
a/R* = 1.39 [2.28]
b = 0.71 [2.37]
Seff = 3611.08 [1591.40]
Teq = 1977 [218] K
Rp = 1.03 [0.68] Re
a = 0.0476 [0.0128] AU
Ag = 23.42 [29.46] [0.76σ]
Teffp = 6723 [2019] K [2.34σ]

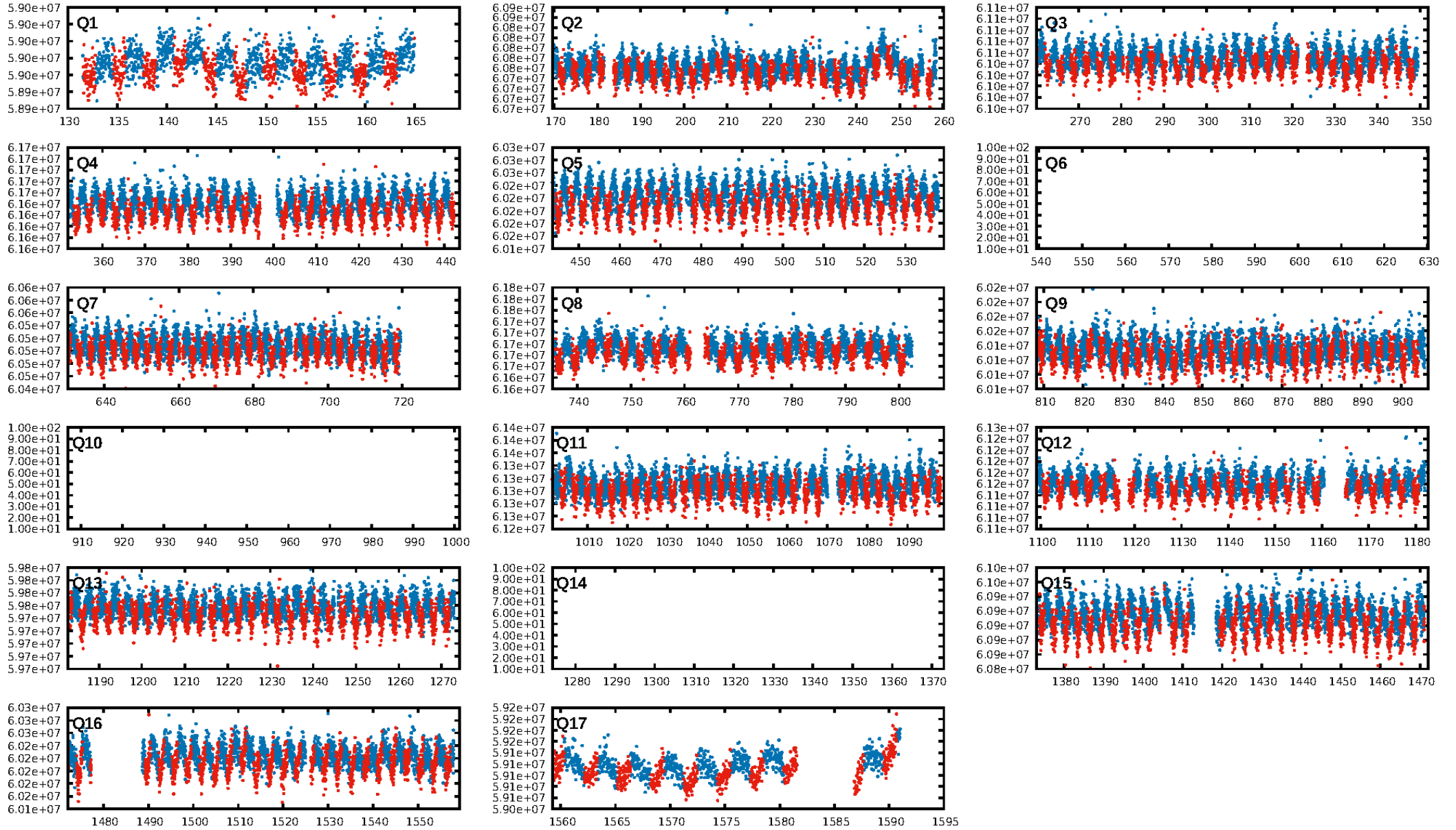
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [127.89σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGoF-sig: N/A
Bootstrap-pfa: 2.72e-12
RollingBand-fgt: 1.00 [338/338]
GhostDiagnostic-chr: 1.654
Centroid-sig: 0.0%
Centroid-so: 14.154 arcsec [4.78σ]
OotOffset-rm: 0.556 arcsec [1.42σ]
KicOffset-rm: 0.539 arcsec [1.57σ]
OotOffset-st: 1/4/4/5 [14]
KicOffset-st: 1/4/4/5 [14]
DiffImageQuality-fgm: 0.86 [12/14]
DiffImageOverlap-fno: 1.00 [14/14]

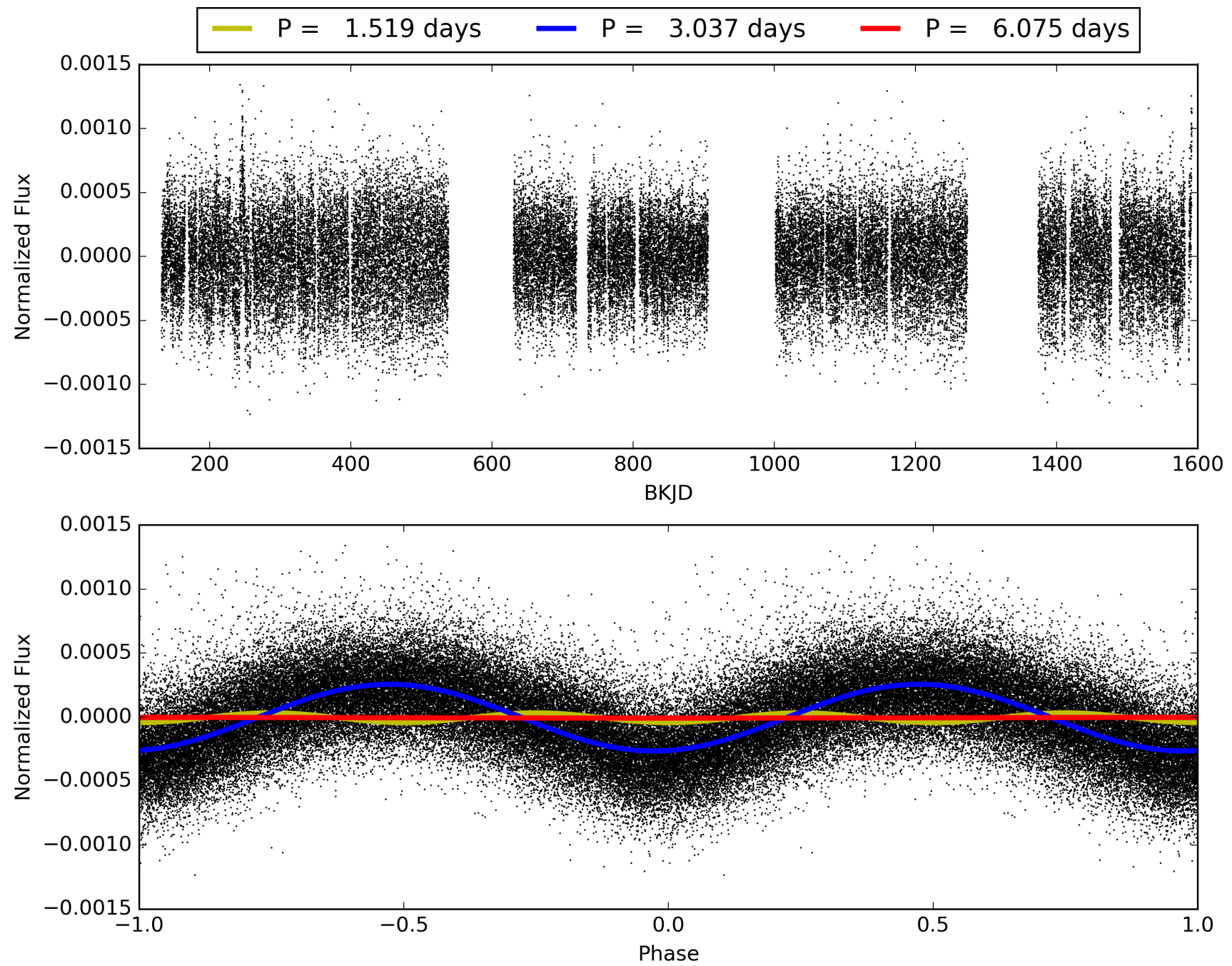
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 17:23:33 Z

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

TCE 003454513-01, PDC Light Curves

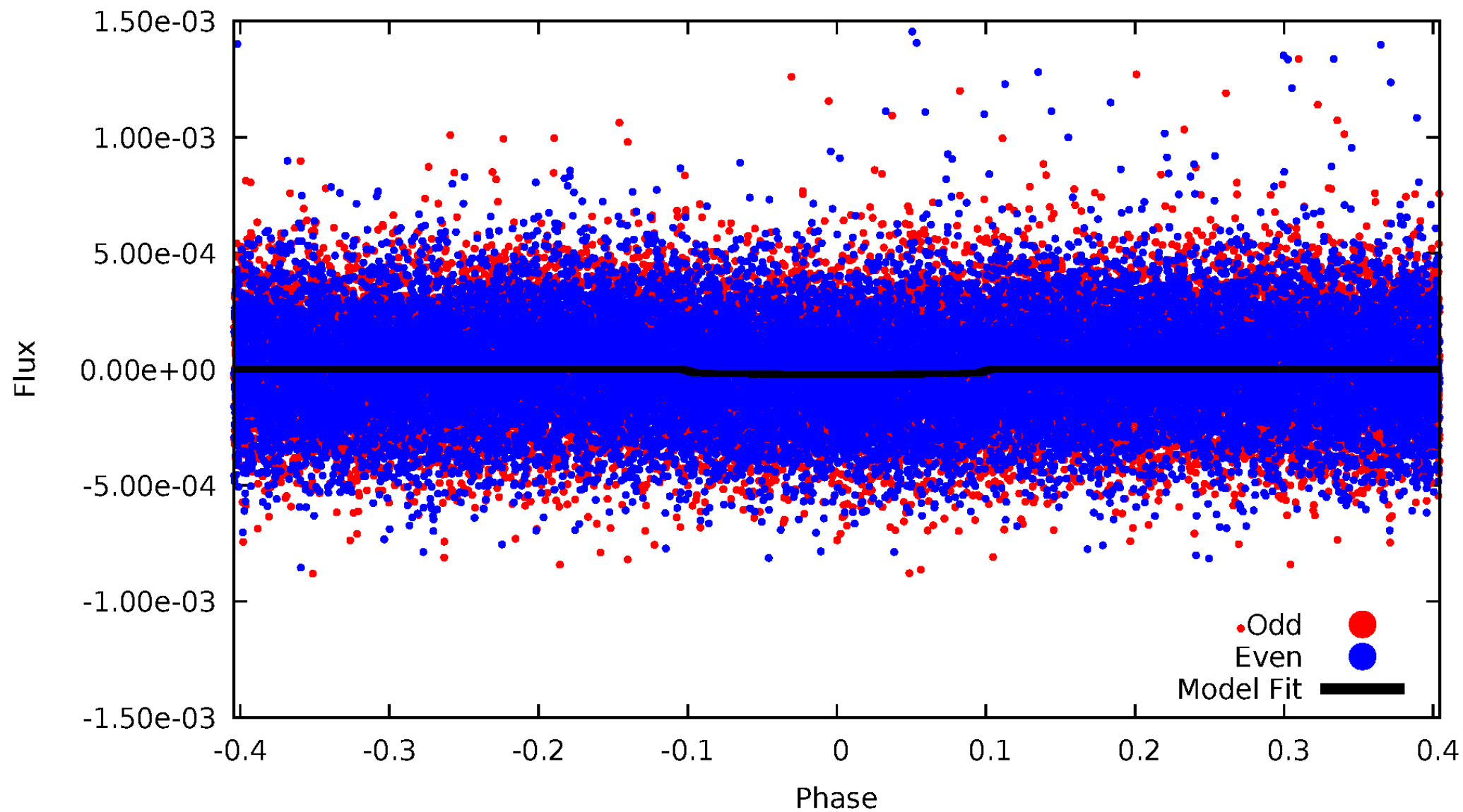


TCE 003454513-01



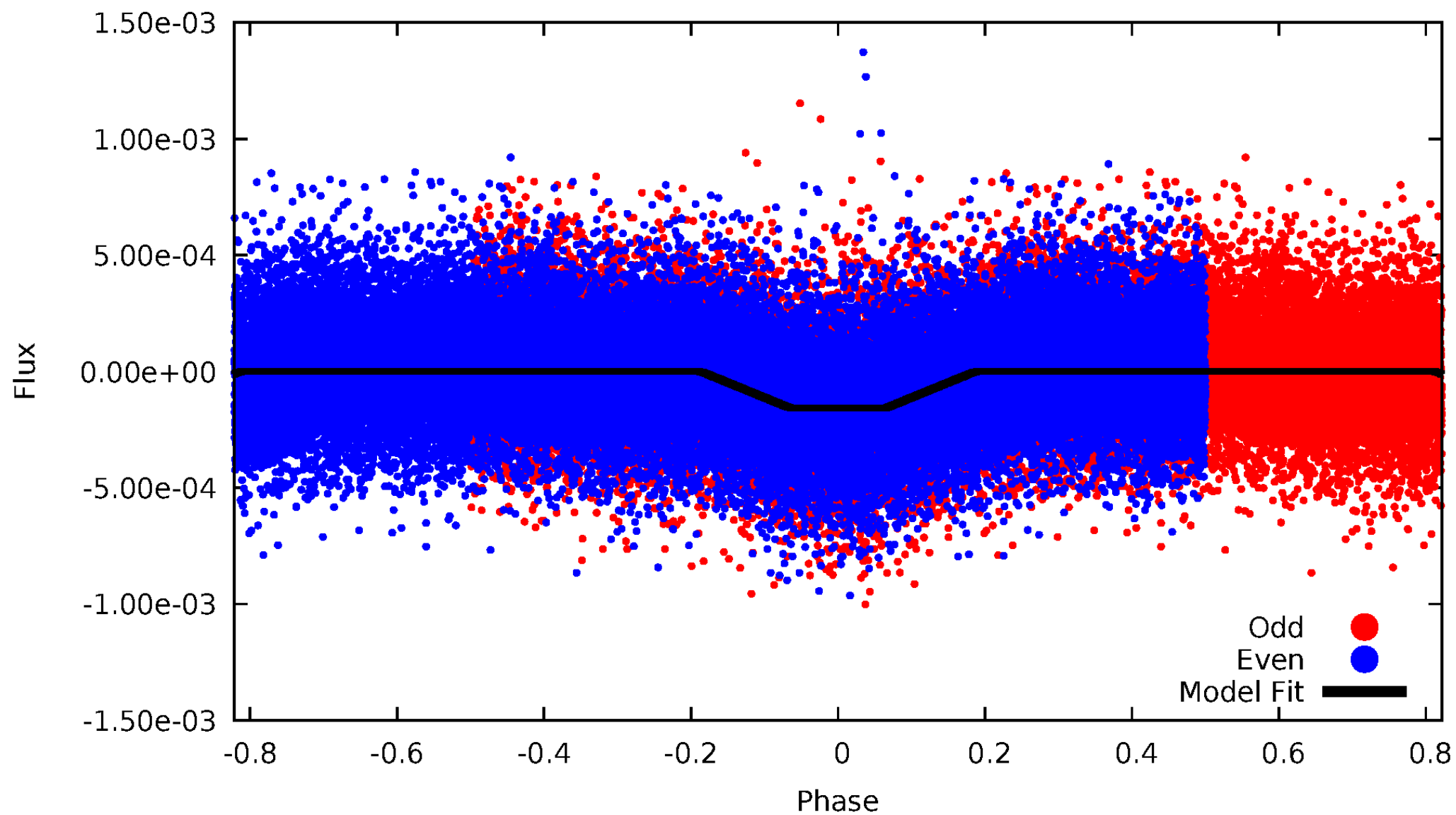
DV Odd/Even

TCE 003454513-01

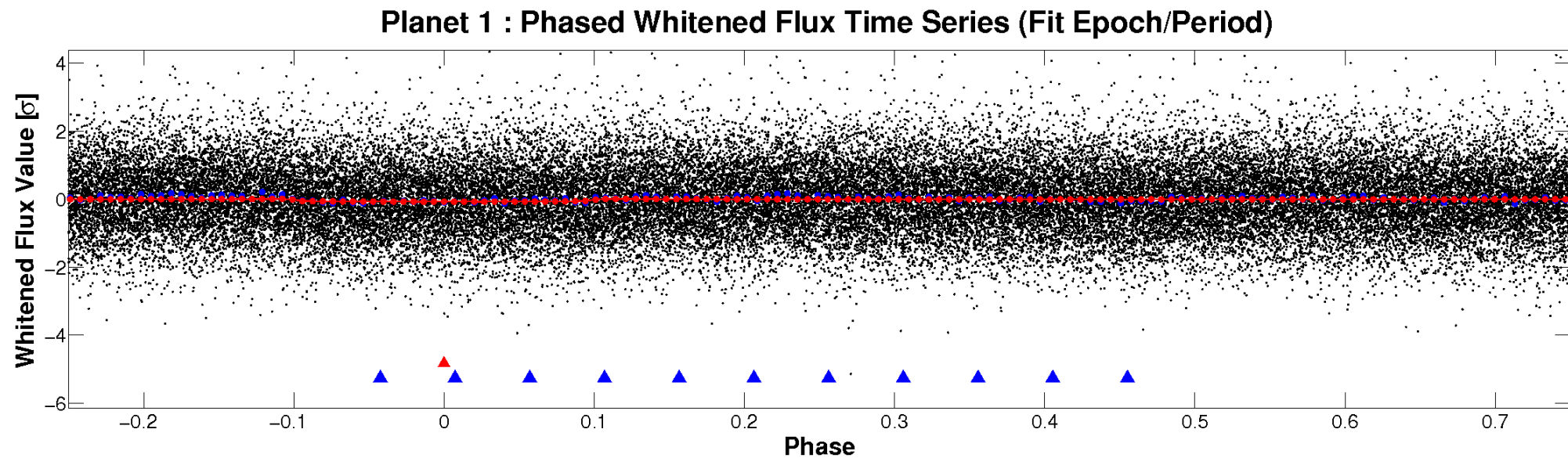
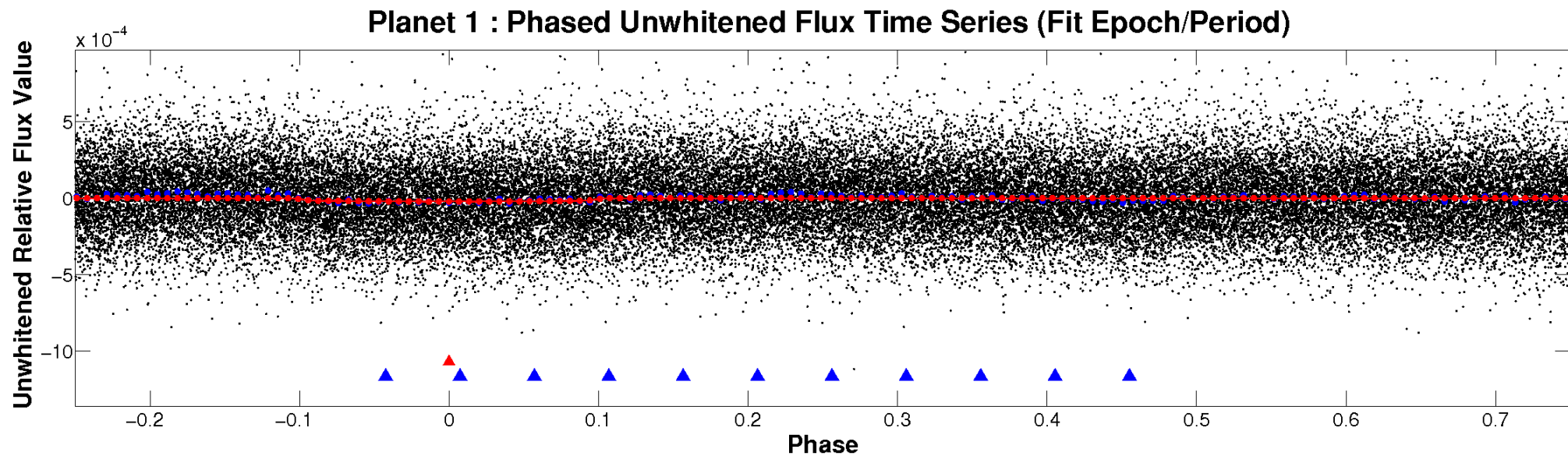


ALT Odd/Even

TCE 003454513-01

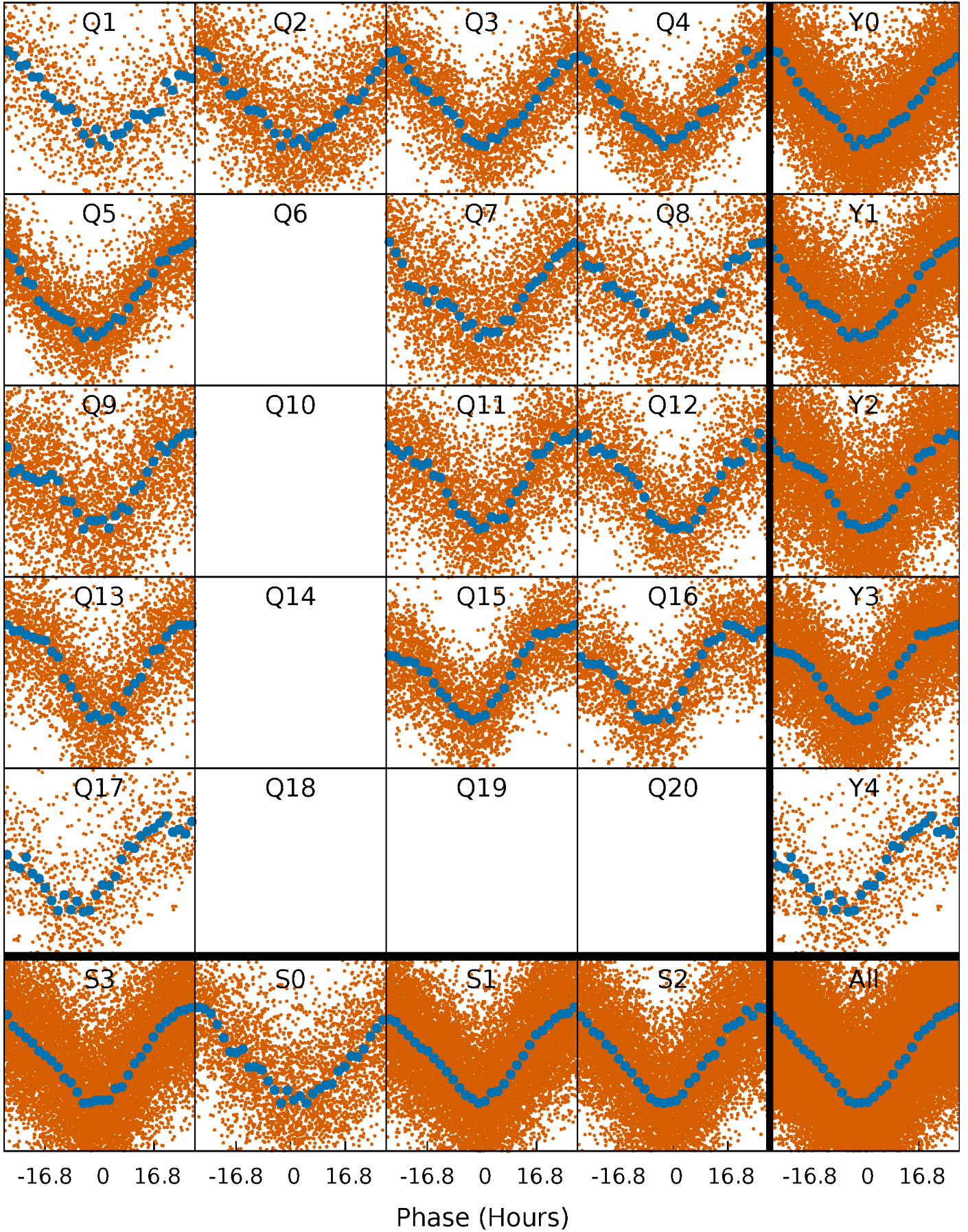


Non-Whitened Vs. Whitened Light Curve



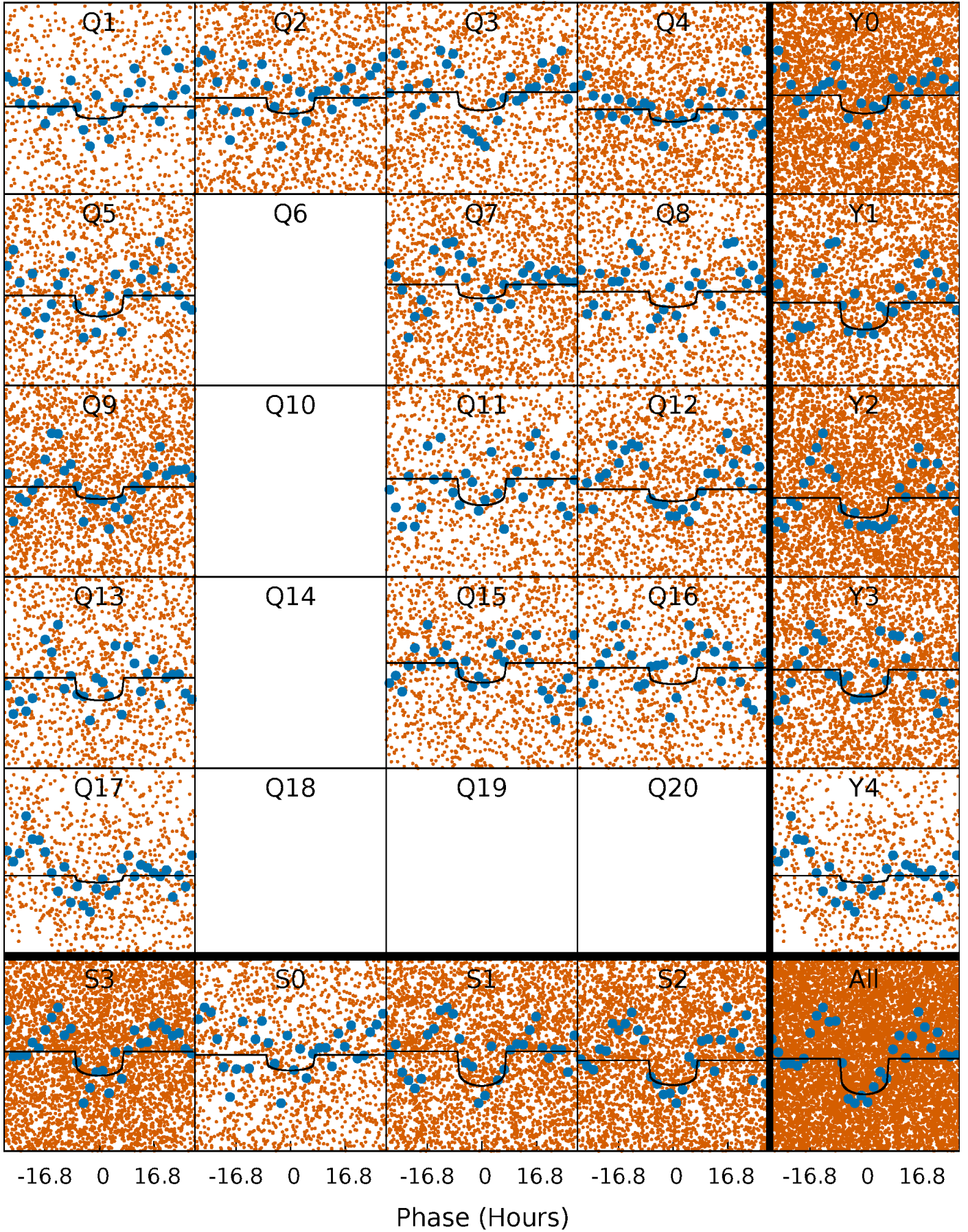
PDC Quarter-Phased Transit Curves

TCE 003454513-01 P= 3.037311 Days $T_0=132.169227$ (BKJD)



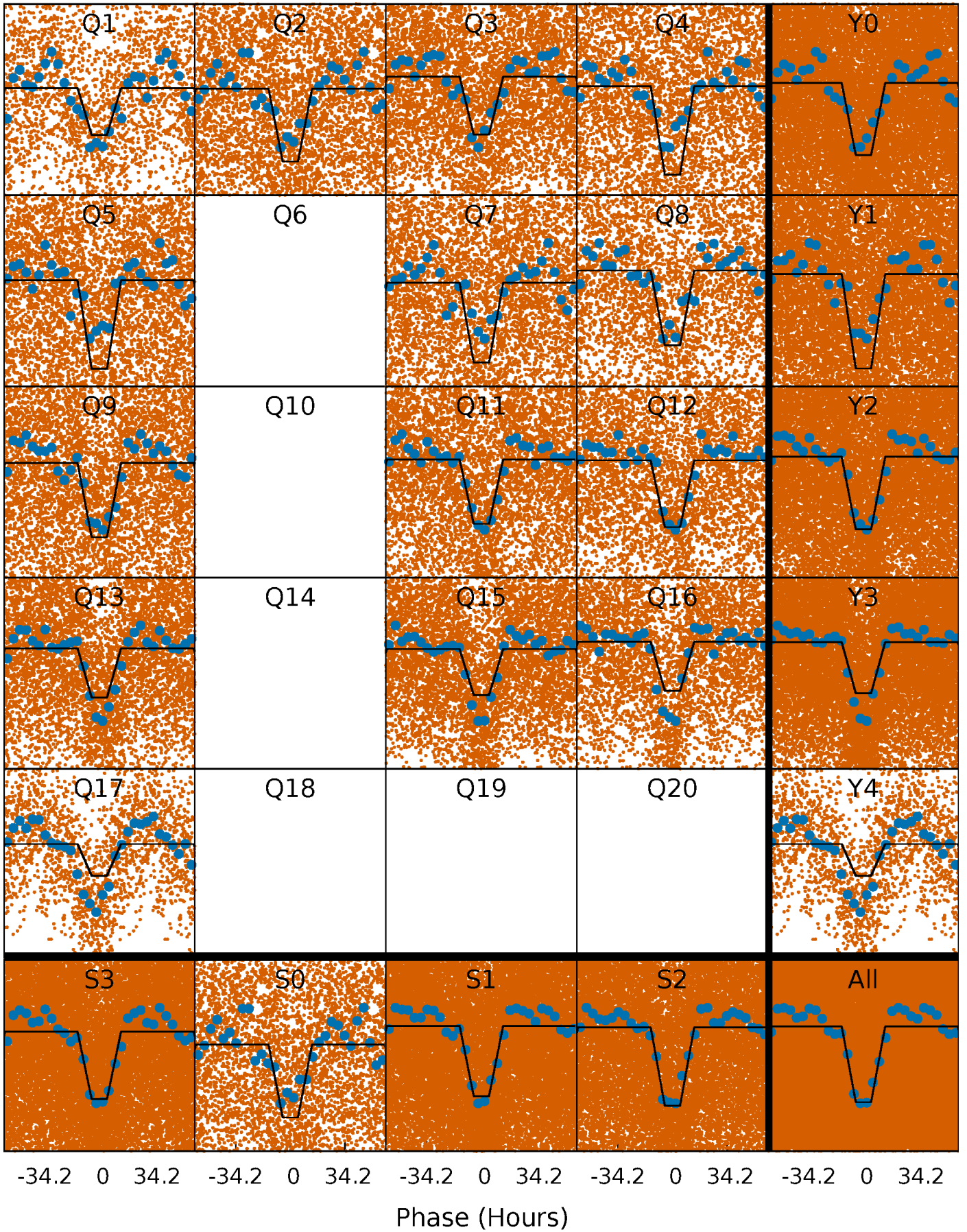
DV Quarter-Phased Transit Curves

TCE 003454513-01 P= 3.037311 Days $T_0=132.169227$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

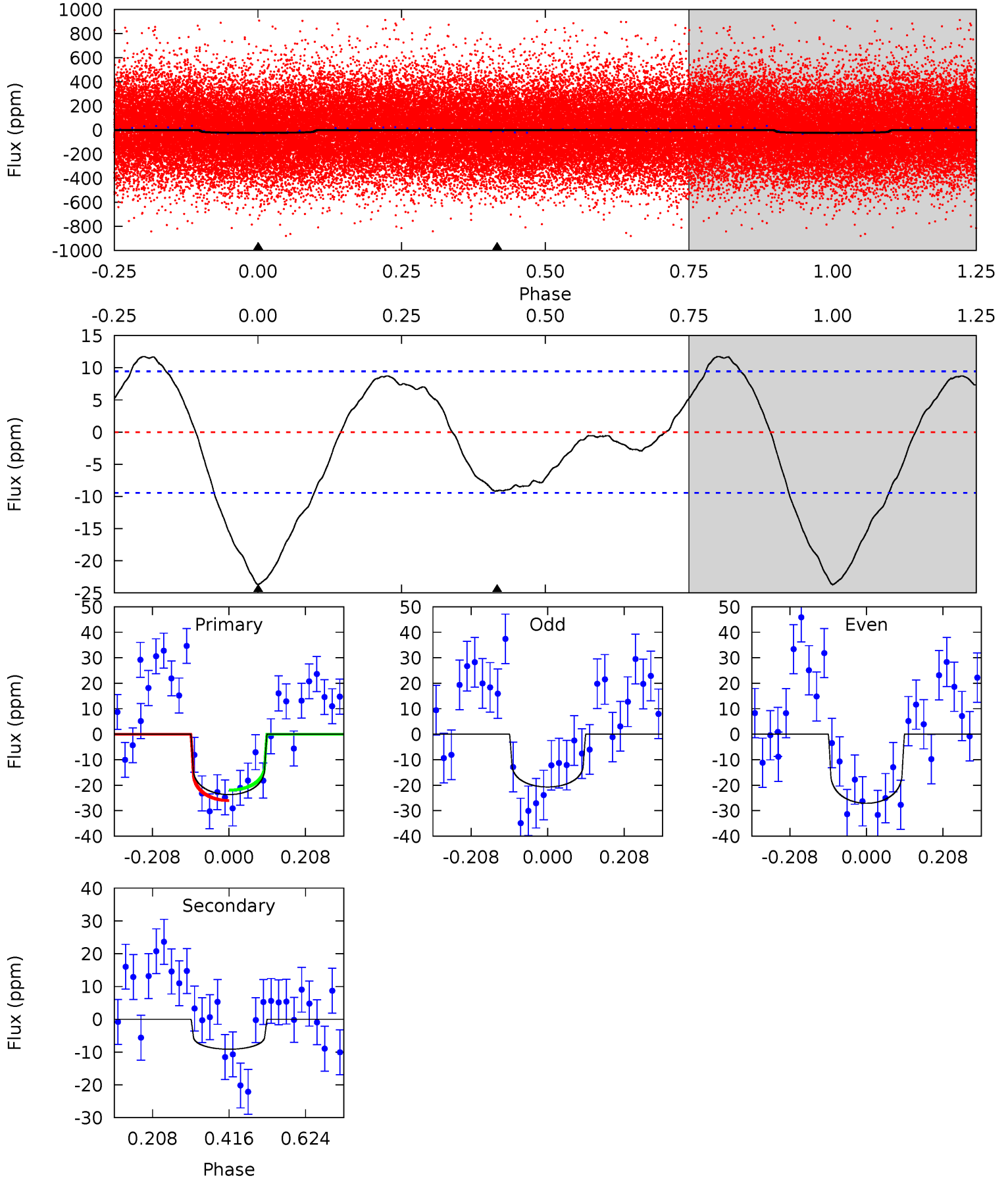
TCE 003454513-01 P= 3.036883 Days $T_0=132.257849$ (BKJD)



DV Model-Shift Uniqueness Test

003454513-01, P = 3.037311 Days, E = 129.131916 Days

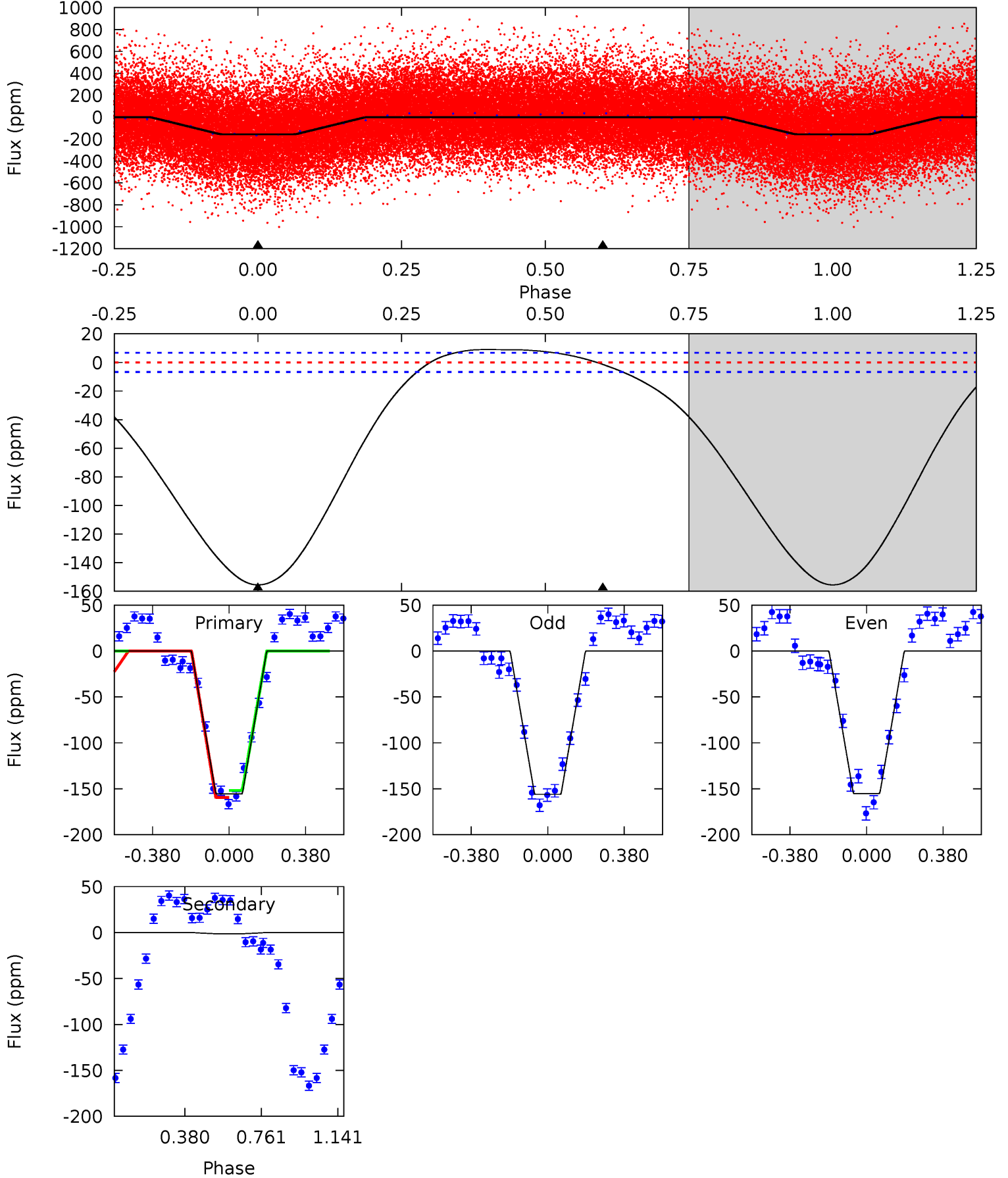
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.1	4.26	0	0	4.41	1.26	2.06	11.1	11.1	4.26	4.26	1.49	0.99	0.33	0.95



Alt Model-Shift Uniqueness Test

003454513-01, P = 3.036883 Days, E = 129.220966 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
99.3	0.87	0	0	4.28	0.88	4.64	99.3	99.3	0.87	0.87	0.29	1.01	0.05	2.38



Stellar Parameters For KIC 003454513

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6812^{+189}_{-283}	$4.003^{+0.231}_{-0.168}$	$0.060^{+0.250}_{-0.350}$	$2.058^{+0.624}_{-0.624}$	$1.553^{+0.207}_{-0.310}$	$0.251^{+0.382}_{-0.114}$
	+3%/-4%	+6%/-4%	+417%/-583%	+30%/-30%	+13%/-20%	+152%/-45%
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 003454513-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-9 ± 2	$1.00^{+0.71}_{-0.53}$	2732^{+224}_{-221}	5395^{+2903}_{-1035}	11^{+42}_{-7}
Alt.	-1 ± 2	$2.69^{+0.76}_{-0.66}$	2734^{+206}_{-226}	-2454^{+5301}_{-521}	$0.224^{+0.348}_{-0.232}$

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

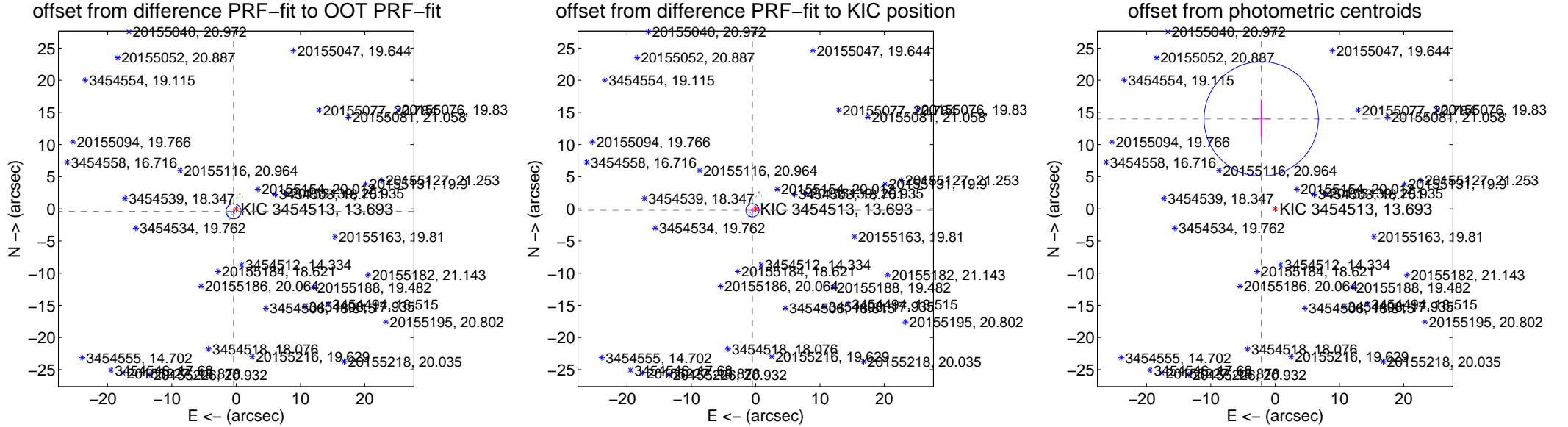
DV Centroid Data

Supplemental centroid analysis for 003454513-01. Kepler magnitude: 13.69. Transit SNR 6.70

There are 12 quarters with good PRF difference image offsets

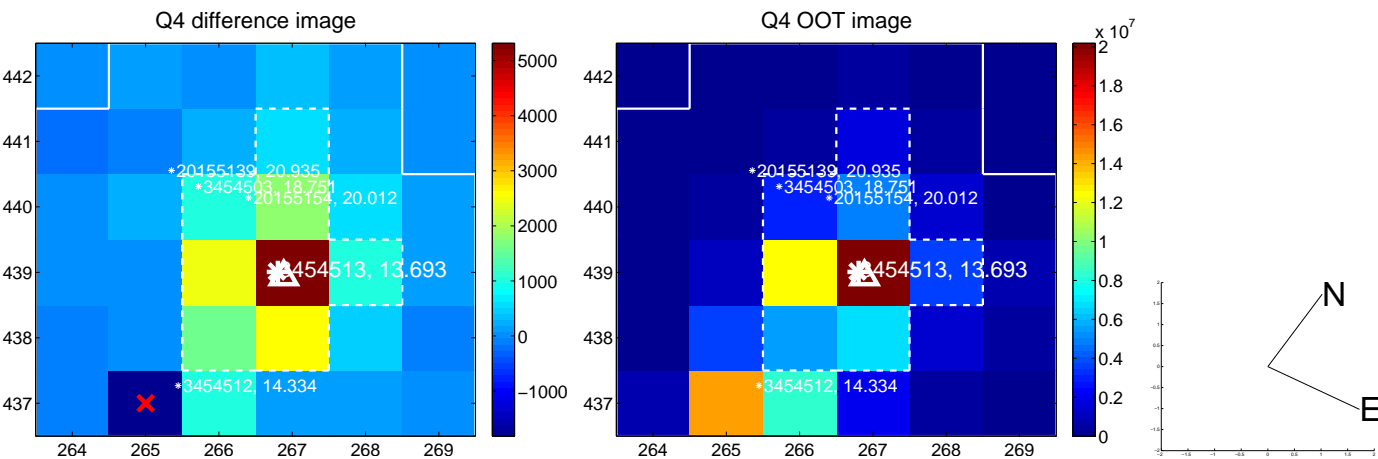
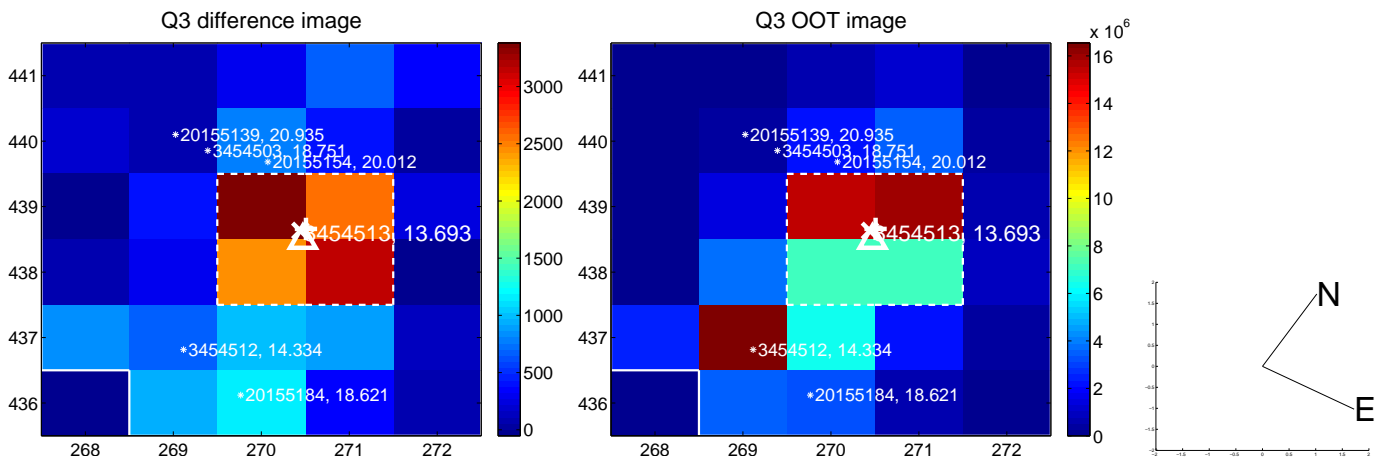
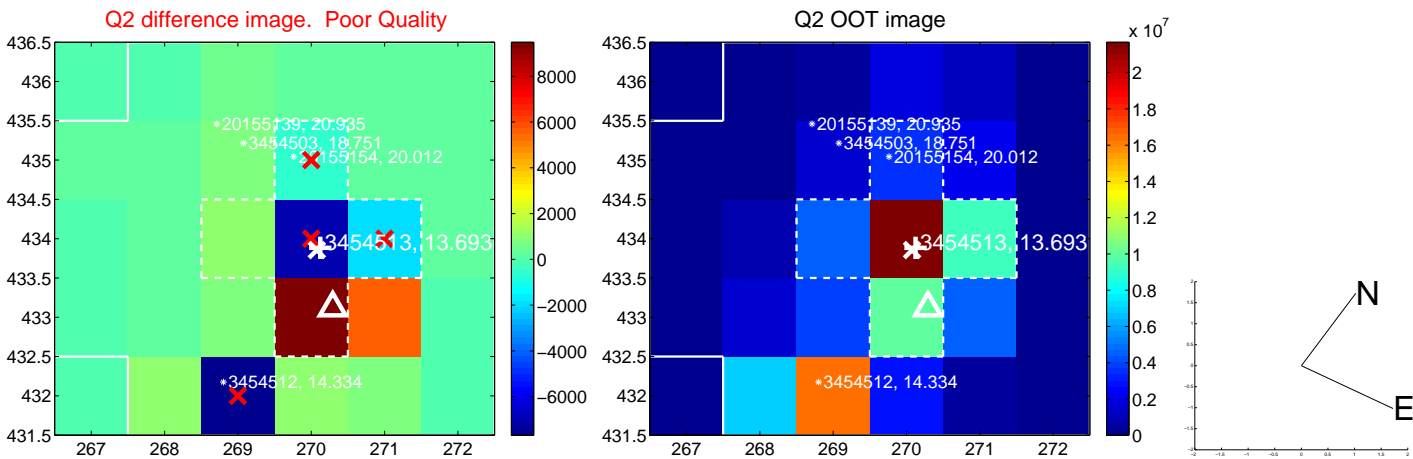
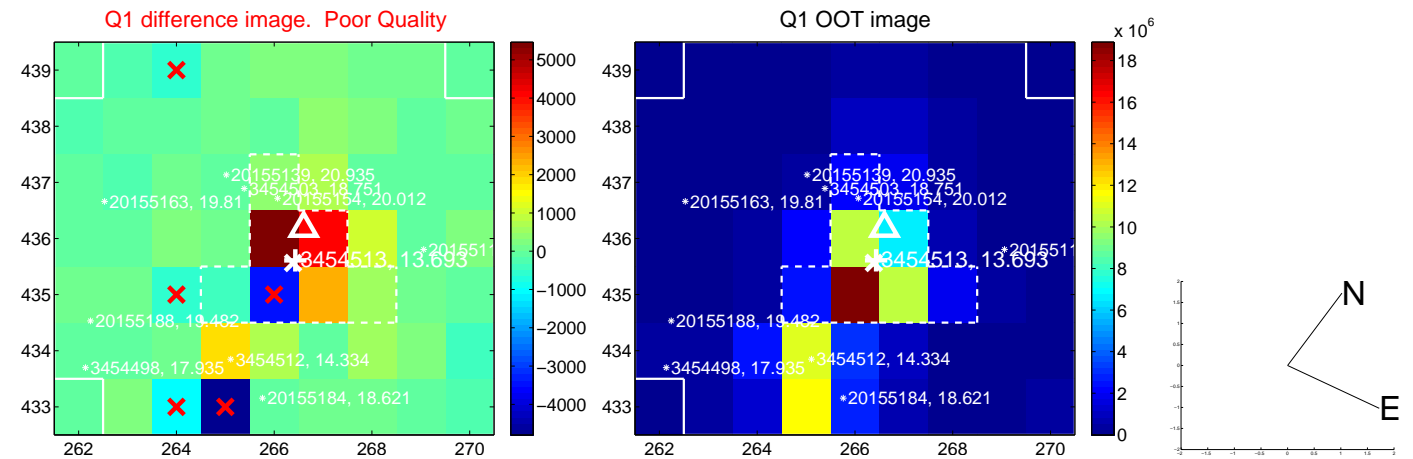
The direct PRF centroid is offset from the target star catalog position by about 0.31 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.556 ± 0.390	1.42	0.406 ± 0.208	-0.380 ± 0.371
PRF-fit source offset from KIC position	0.539 ± 0.343	1.57	0.493 ± 0.217	-0.216 ± 0.390
photometric centroid source offset	14.15 ± 2.96	4.78	2.16 ± 1.43	13.99 ± 2.99

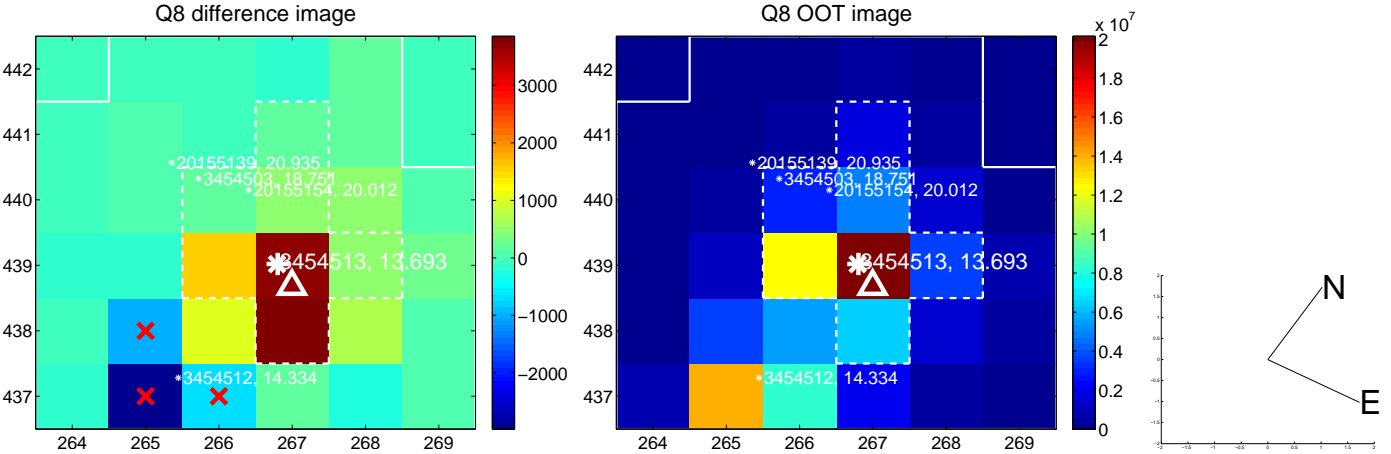
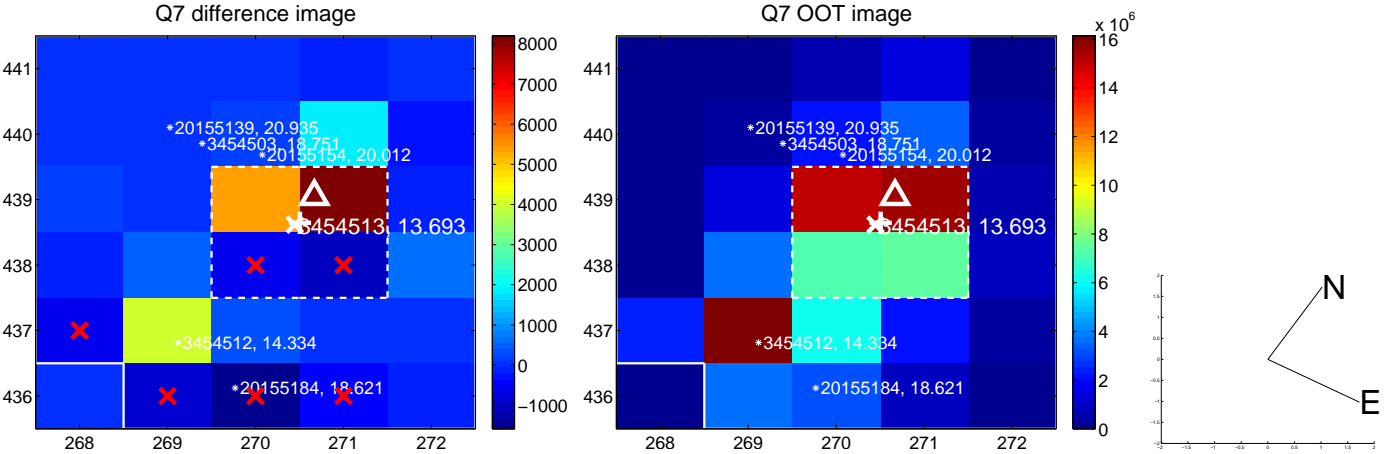
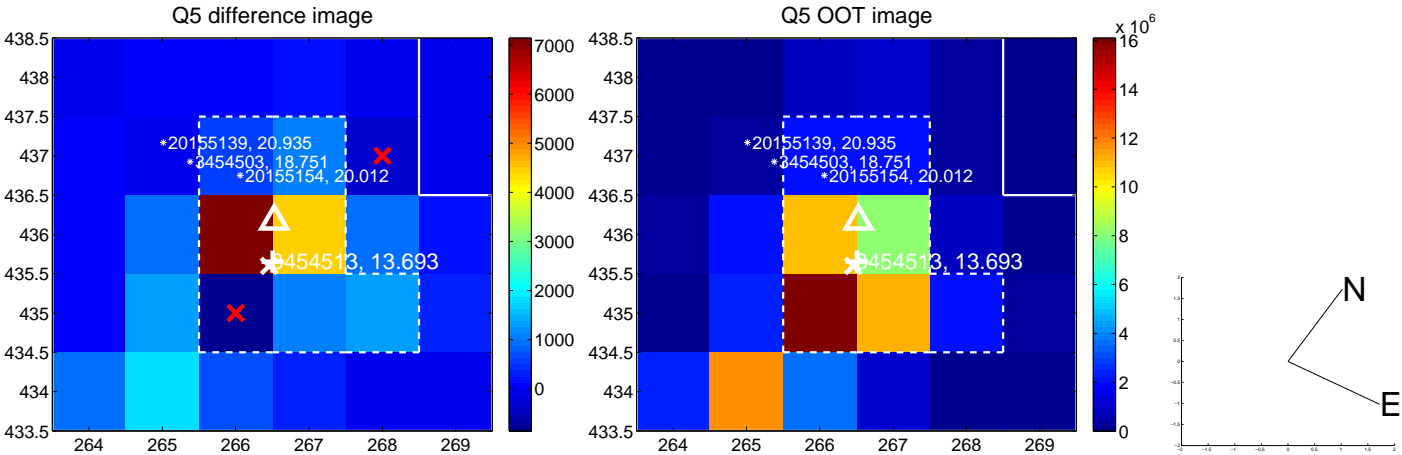


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

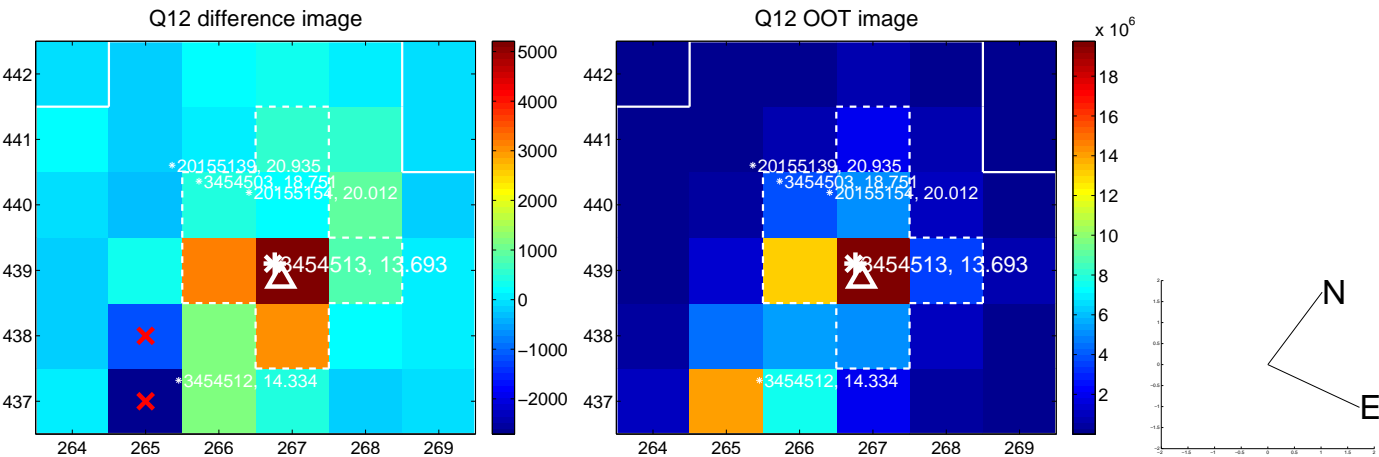
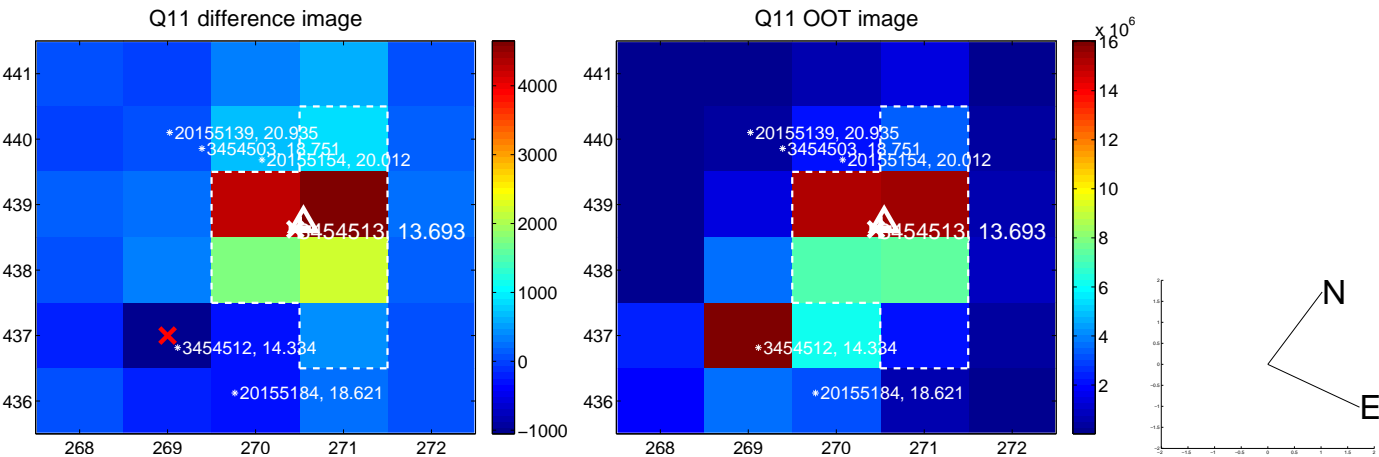
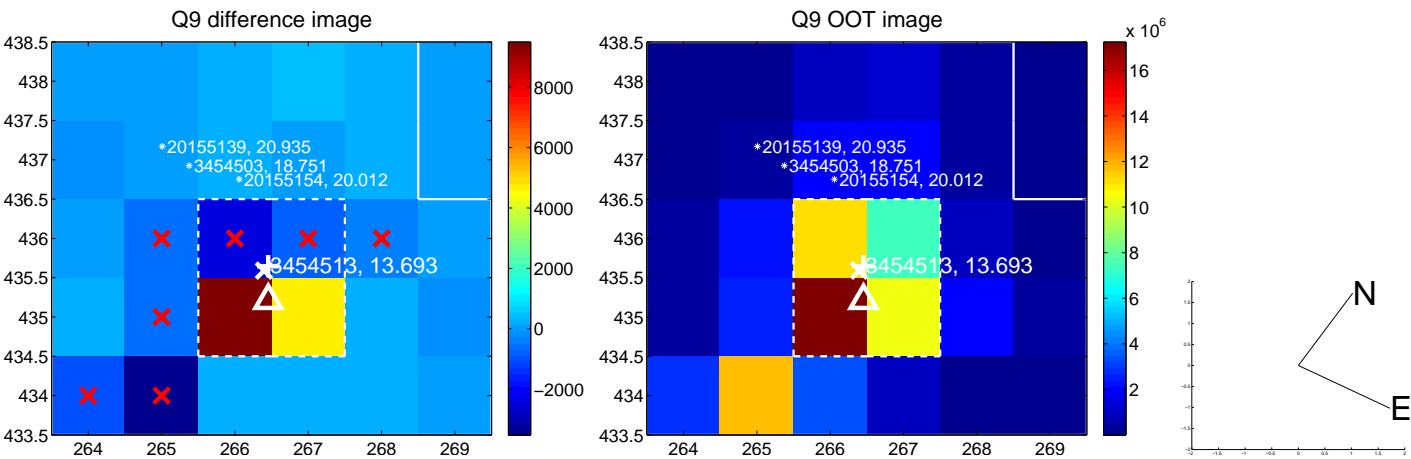
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



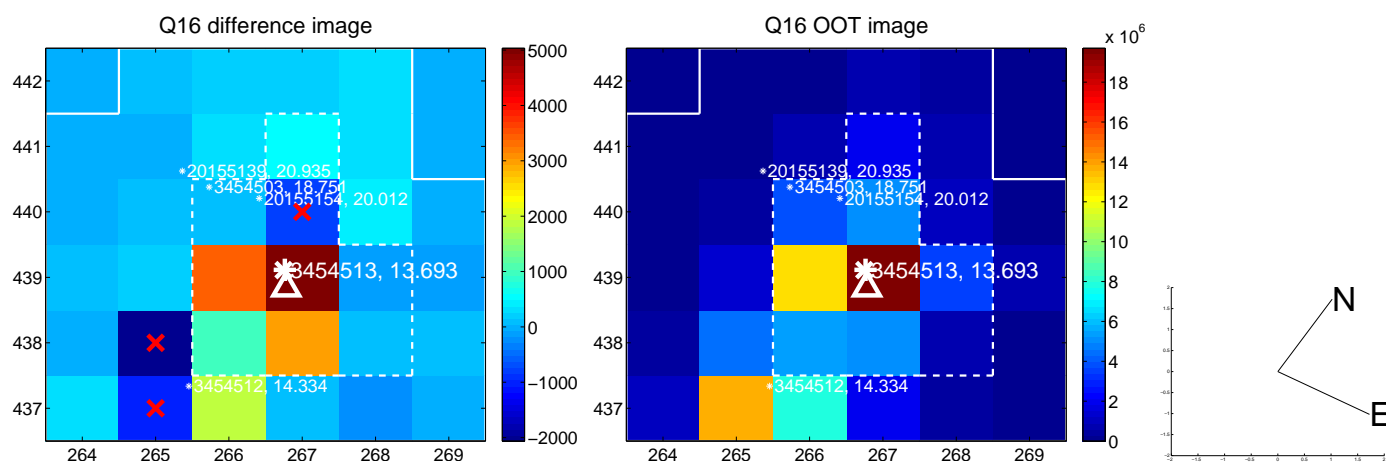
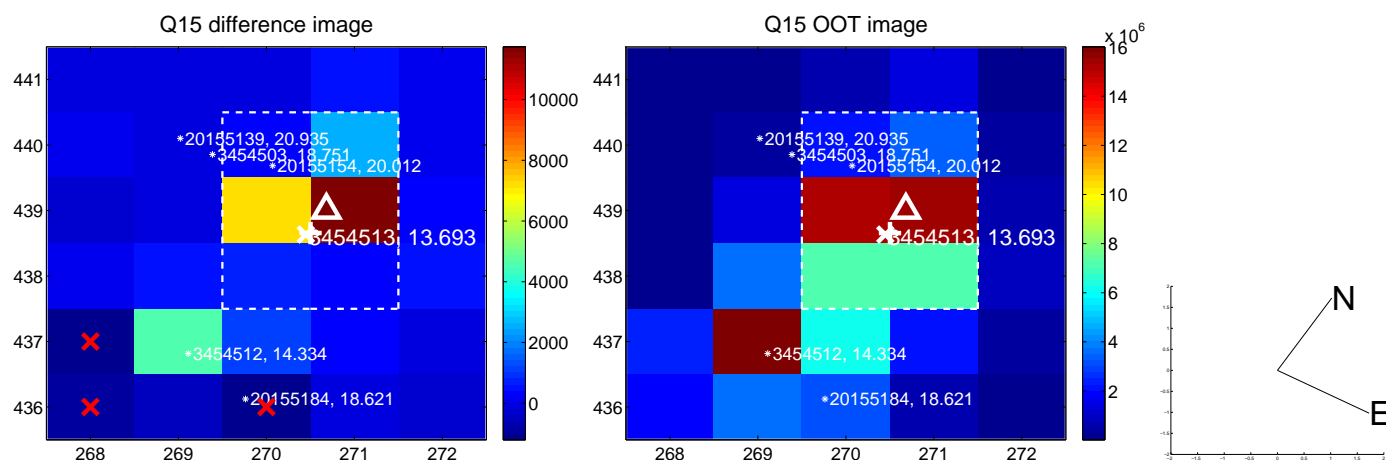
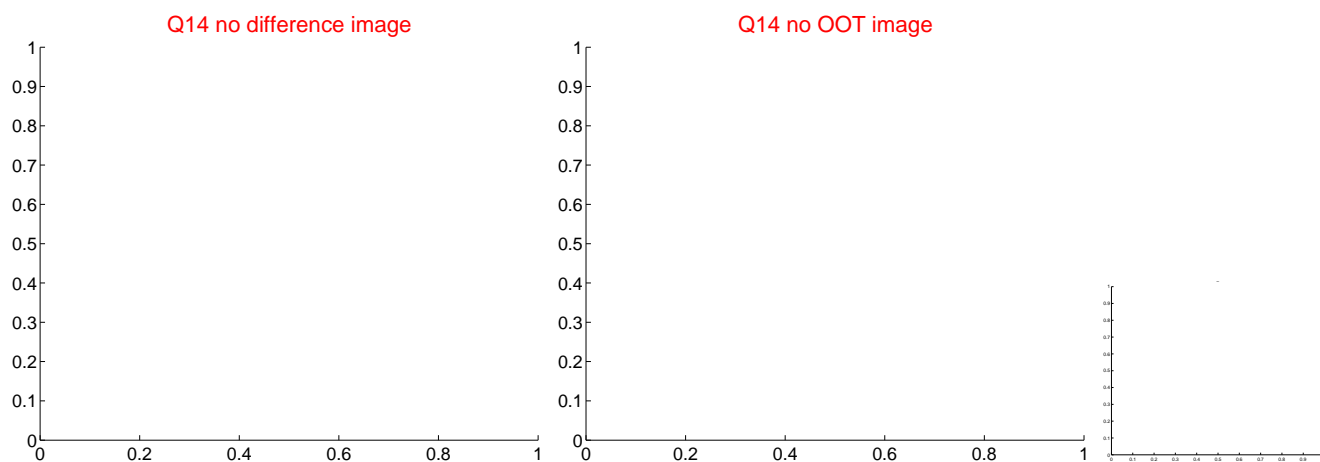
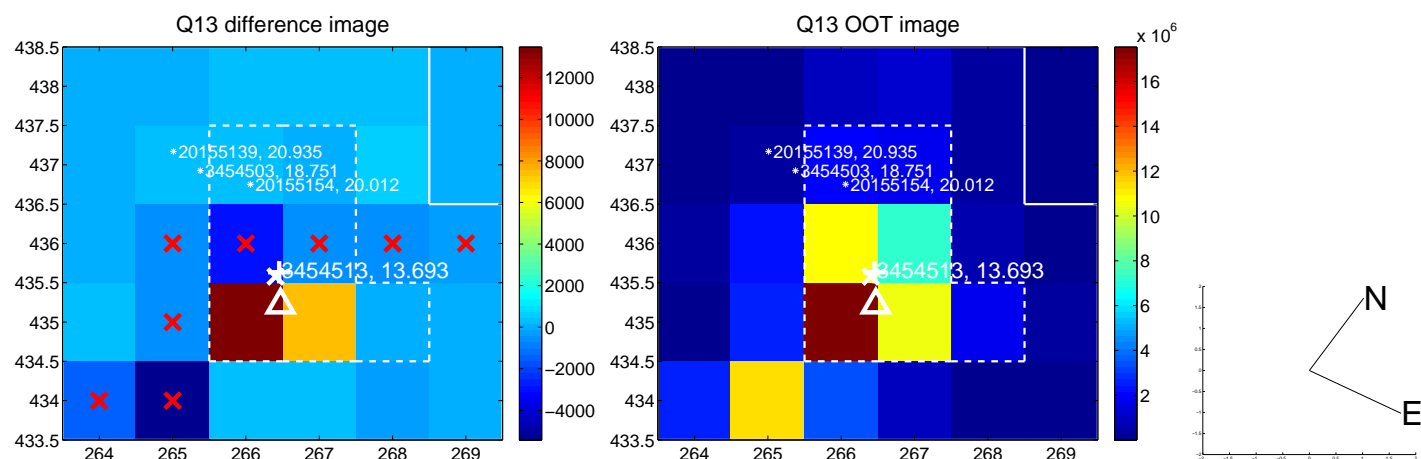
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



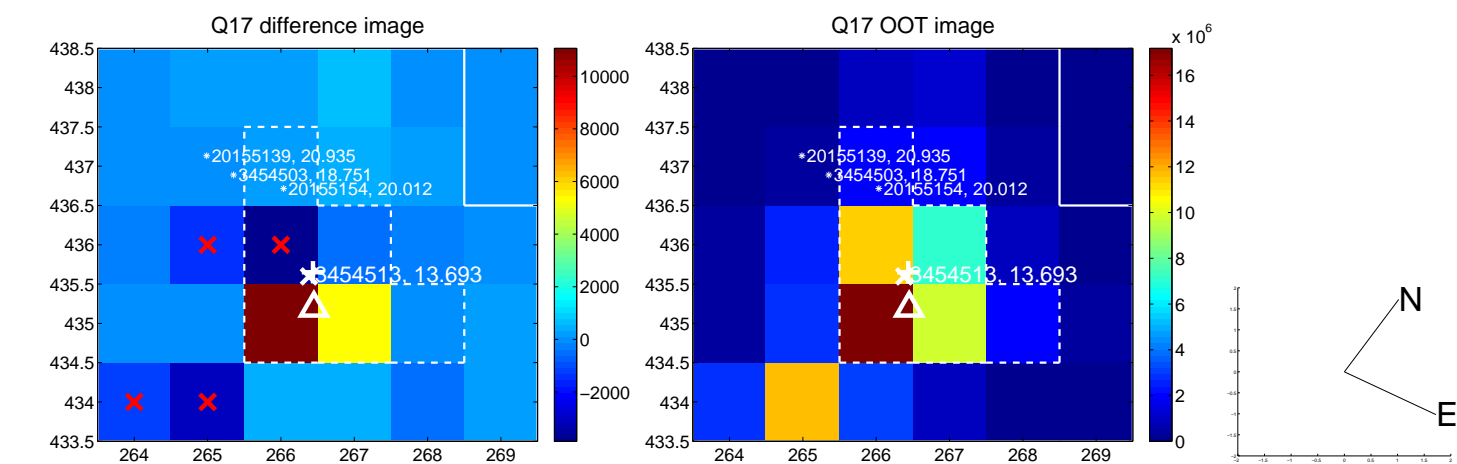
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



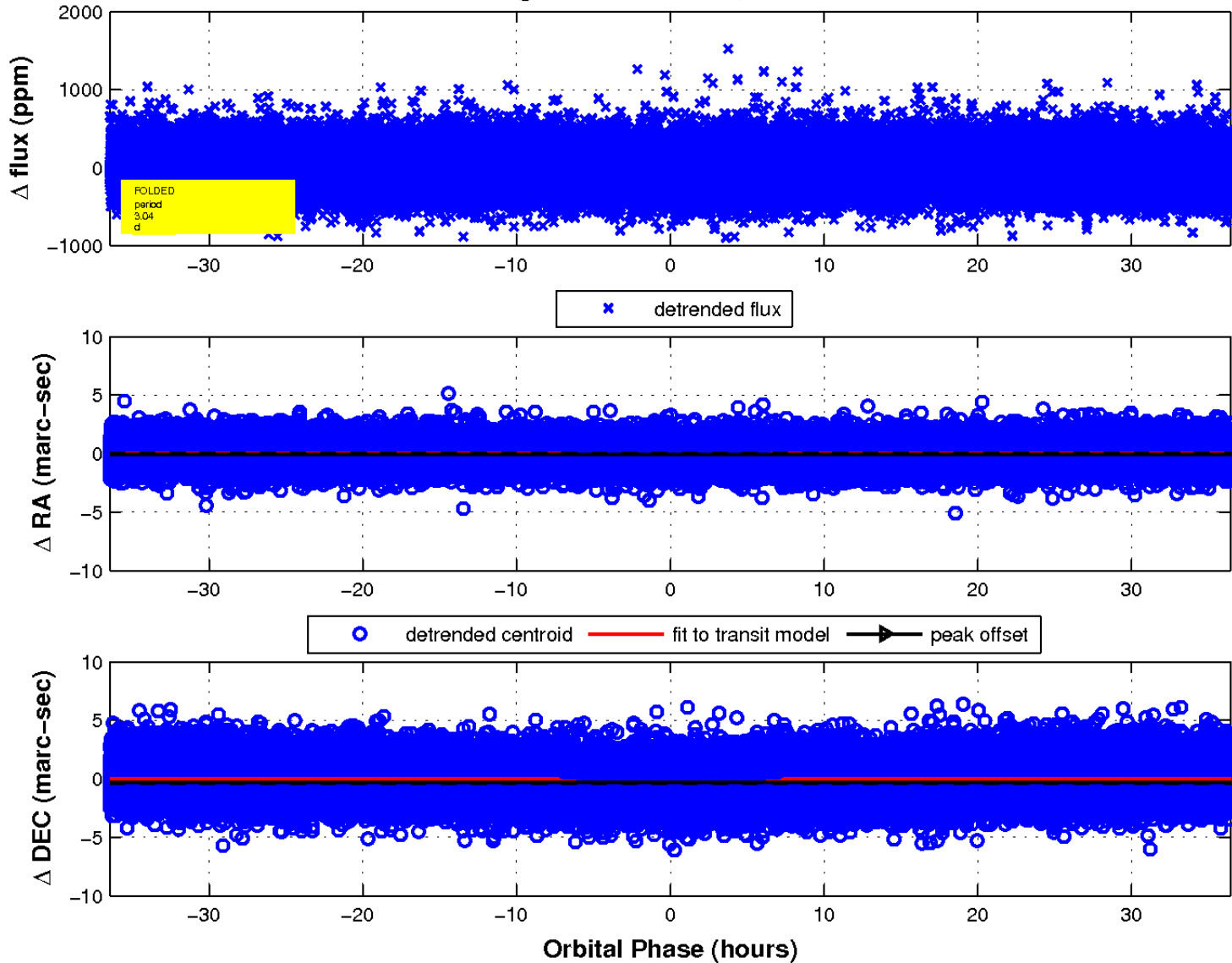
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

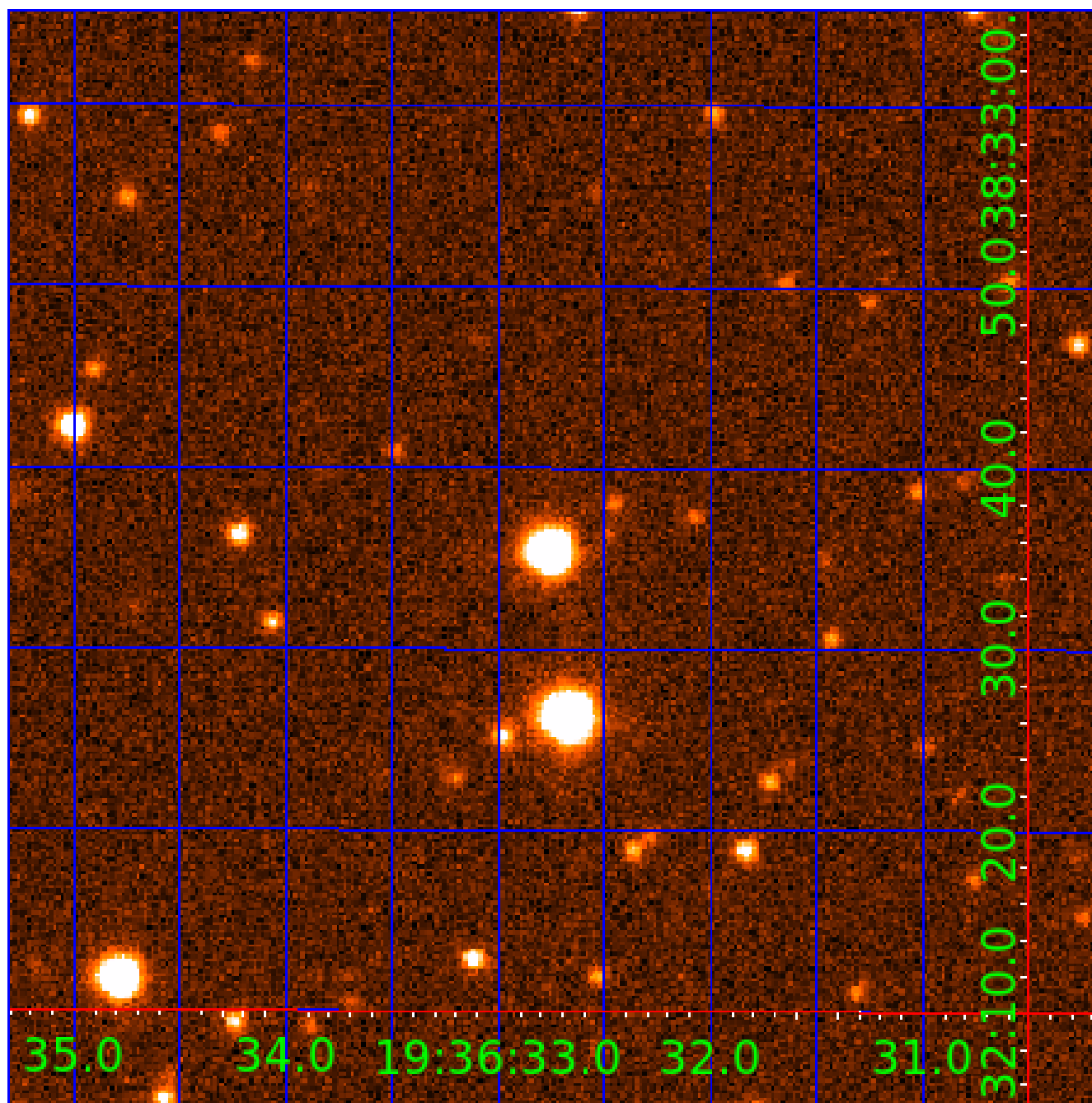


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 003454513

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})
003454513-01	OBS	No	3.037311	132.169227	21.7	14.730	7.3	6.7	2.06	6812	1.03	3611.08
003454513-02	OBS	No	127.415952	206.447106	174.4	18.107	7.5	6.4	2.06	6812	3.03	24.77

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003454513-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
003454513-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

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

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

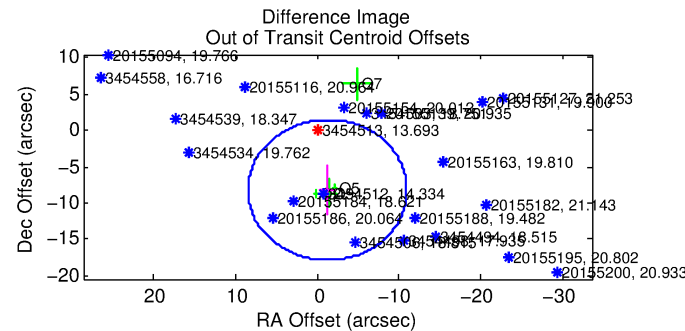
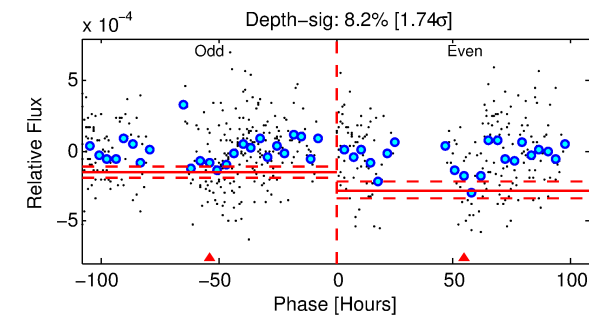
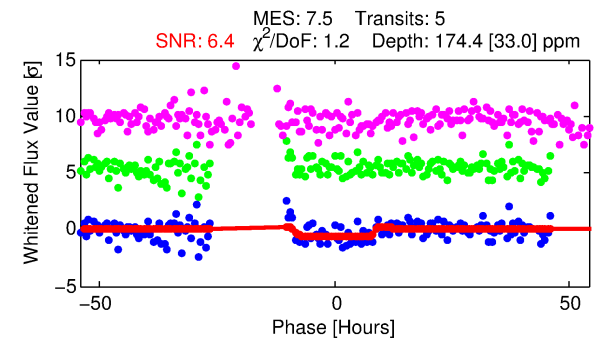
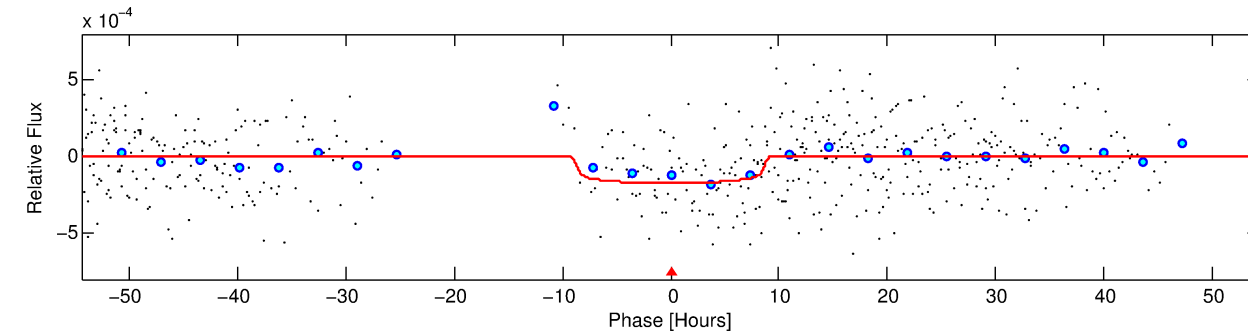
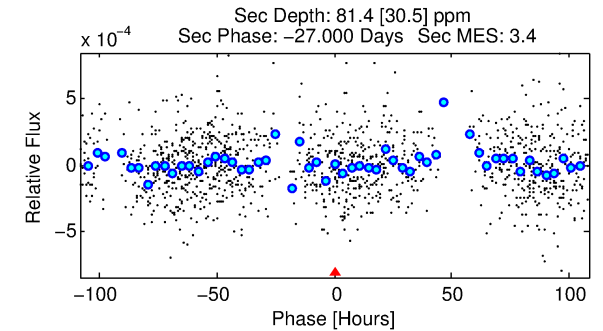
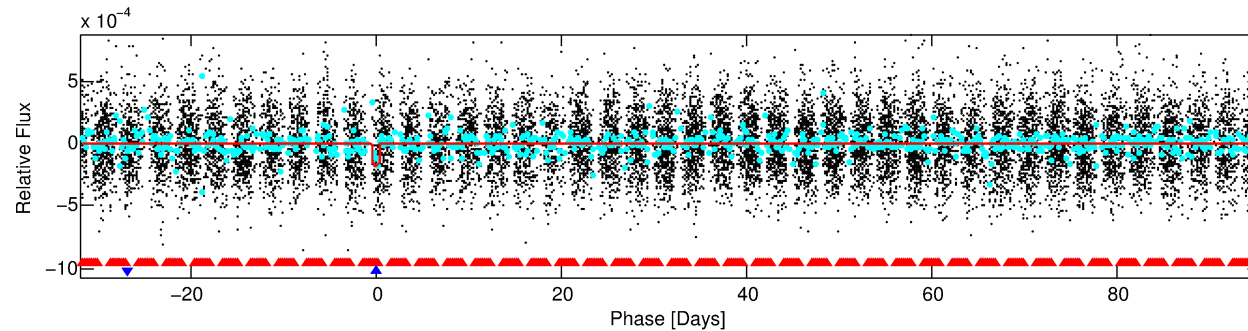
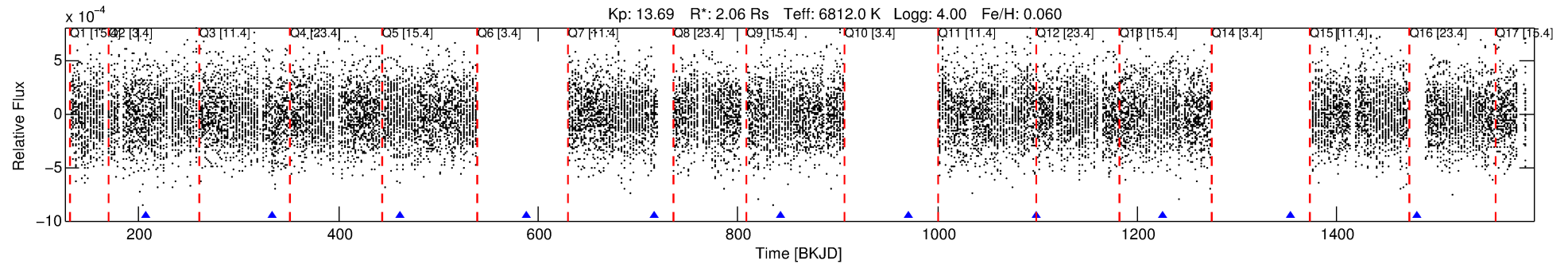
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003454513-02

No Significant Match Found

DV One-Page Summary

KIC: 3454513 Candidate: 2 of 2 Period: 127.416 d



DV Fit Results:

Period = 127.41595 [0.01200] d
Epoch = 206.4471 [0.0329] BKJD
Rp/R* = 0.0135 [0.0036]
a/R* = 31.82 [45.44]
b = 0.82 [0.56]
Seff = 24.77 [10.92]
Teff = 569 [63] K
Rp = 3.03 [1.22] Re
a = 0.5743 [0.1544] AU
Ag = 1612.10 [1242.04] [1.30σ]
Teffp = 5573 [939] K [5.32σ]

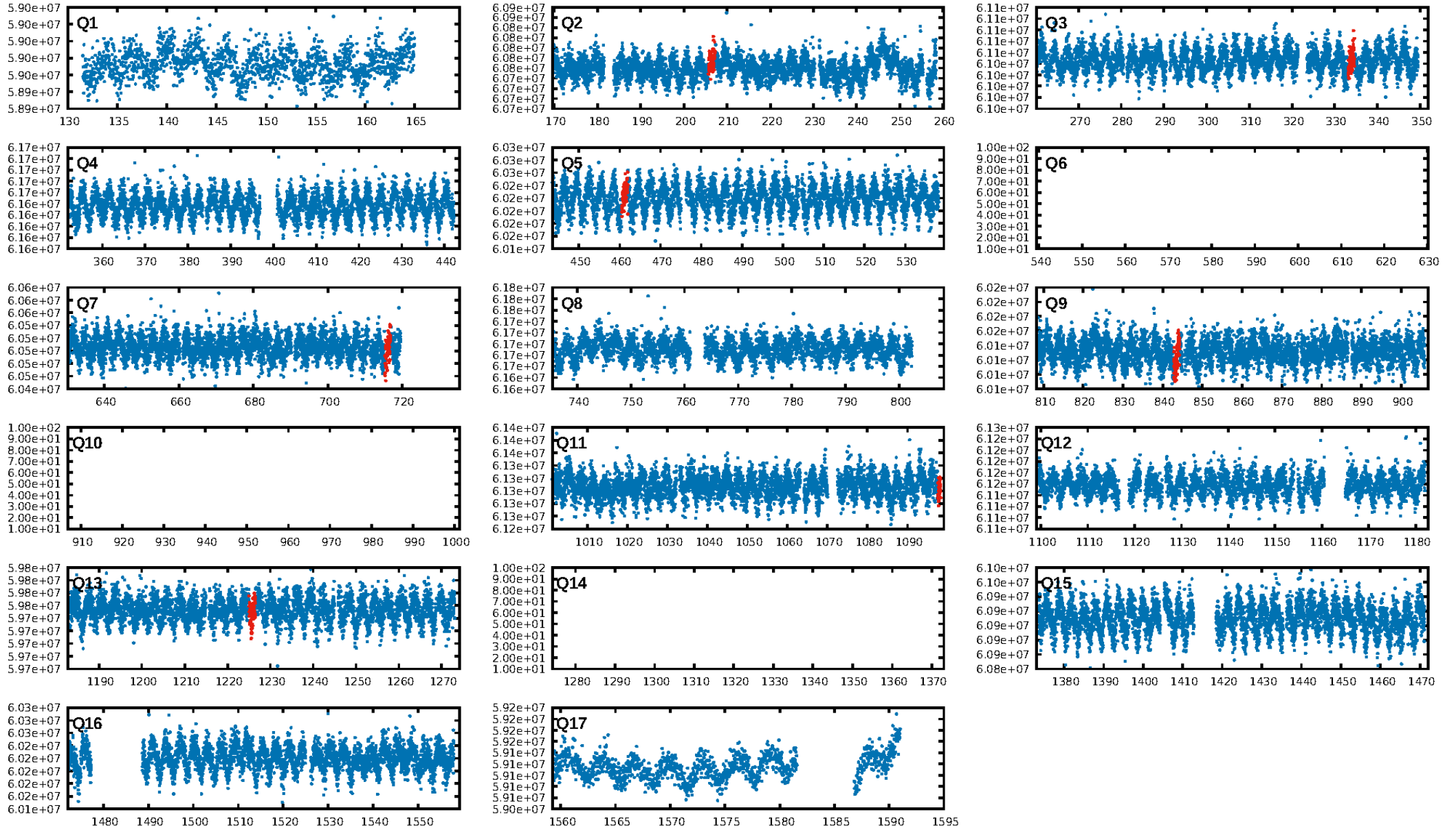
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [127.89σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 11.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.39e-09
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: -0.1271
Centroid-sig: 29.0%
Centroid-so: 3.832 arcsec [1.22σ]
OotOffset-rm: 8.321 arcsec [2.58σ]
KicOffset-rm: 8.003 arcsec [3.67σ]
OotOffset-st: 1/1/0/2 [4]
KicOffset-st: 1/1/0/2 [4]
DiffImageQuality-fgm: 0.25 [1/4]
DiffImageOverlap-fno: 0.00 [0/5]

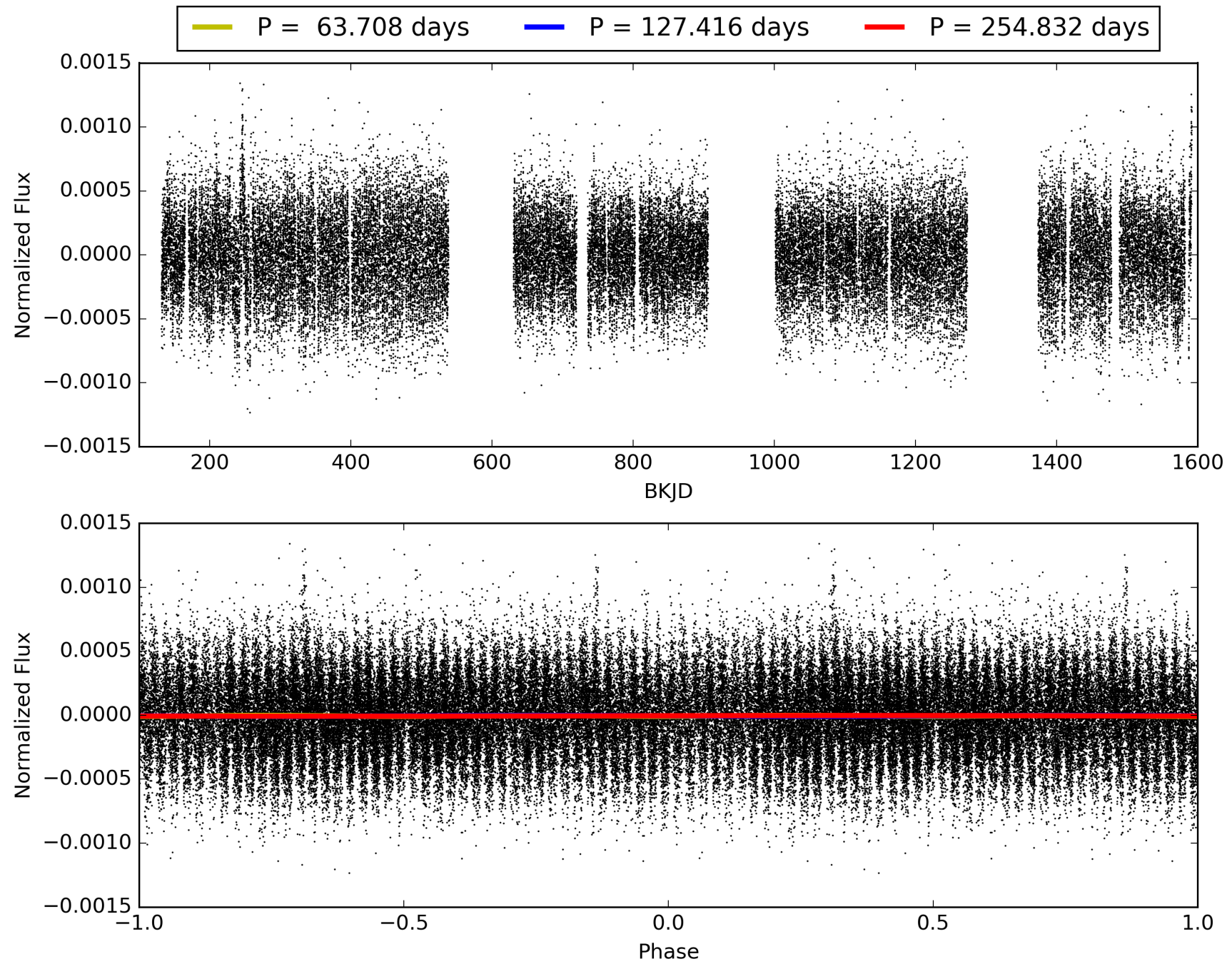
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 17:23:43 Z

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

TCE 003454513-02, PDC Light Curves

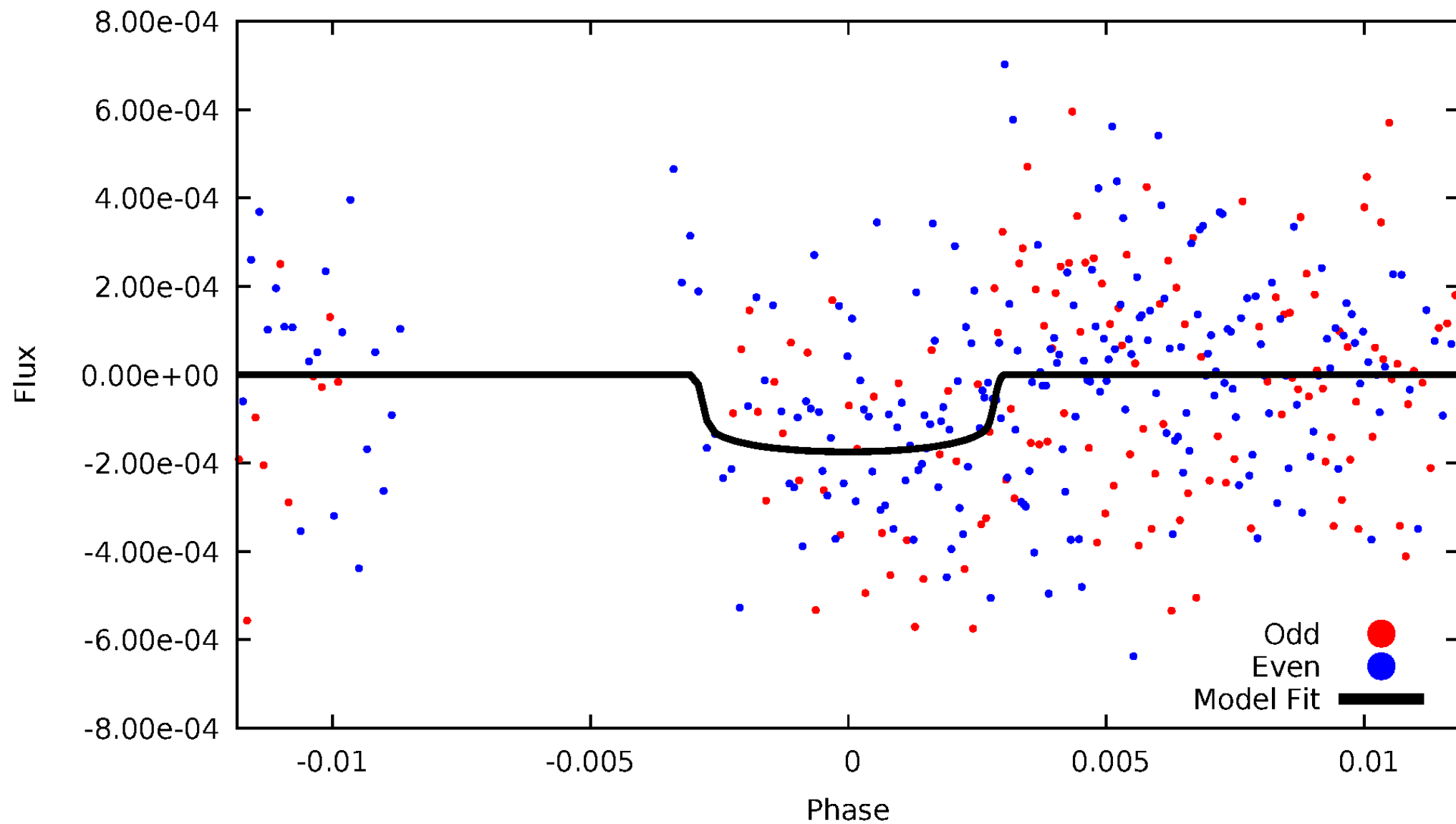


TCE 003454513-02



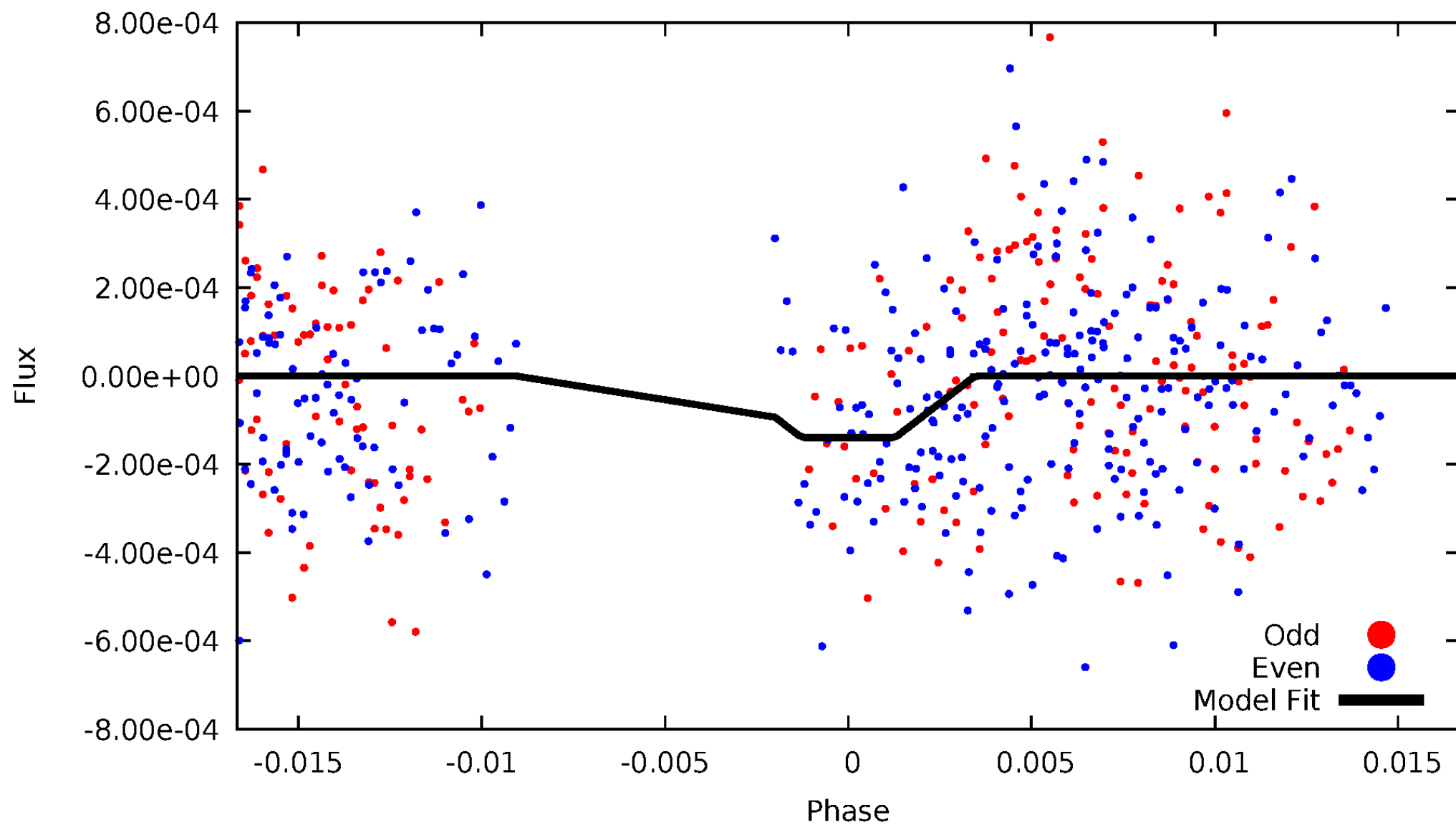
DV Odd/Even

TCE 003454513-02



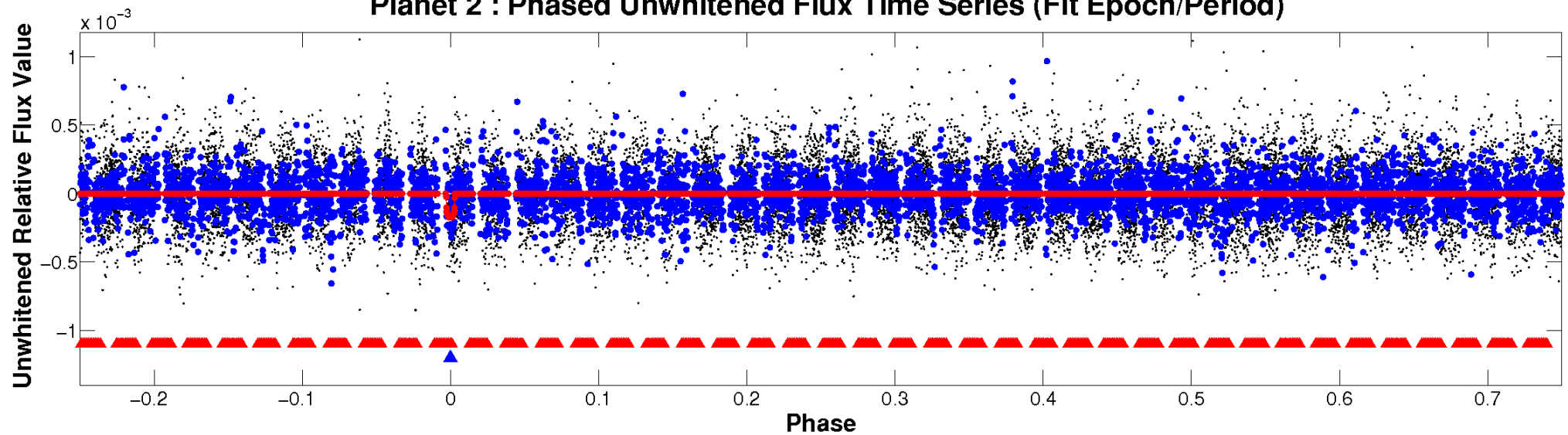
ALT Odd/Even

TCE 003454513-02

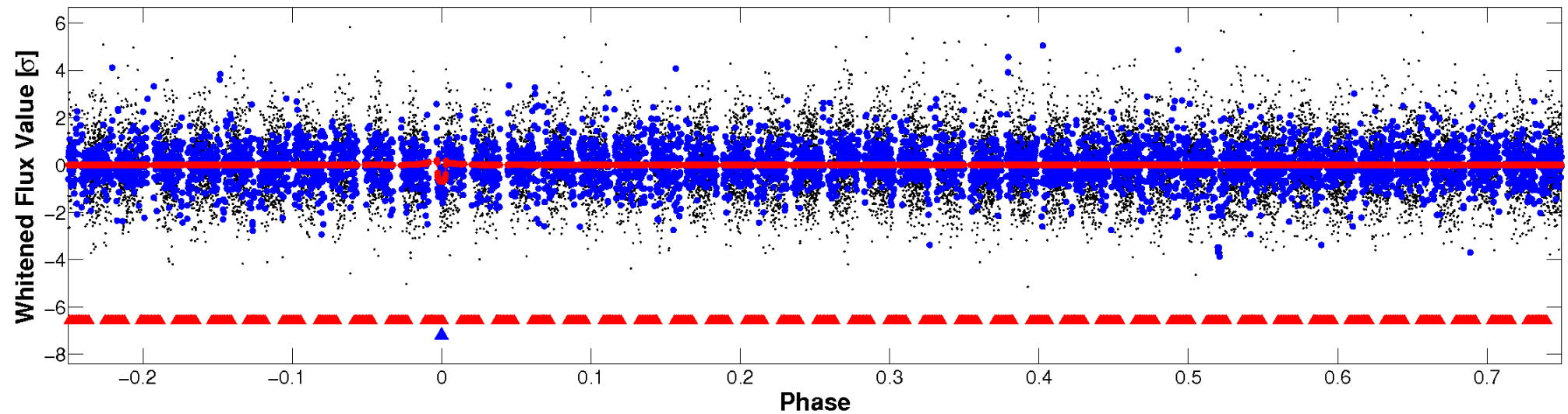


Non-Whitened Vs. Whitened Light Curve

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

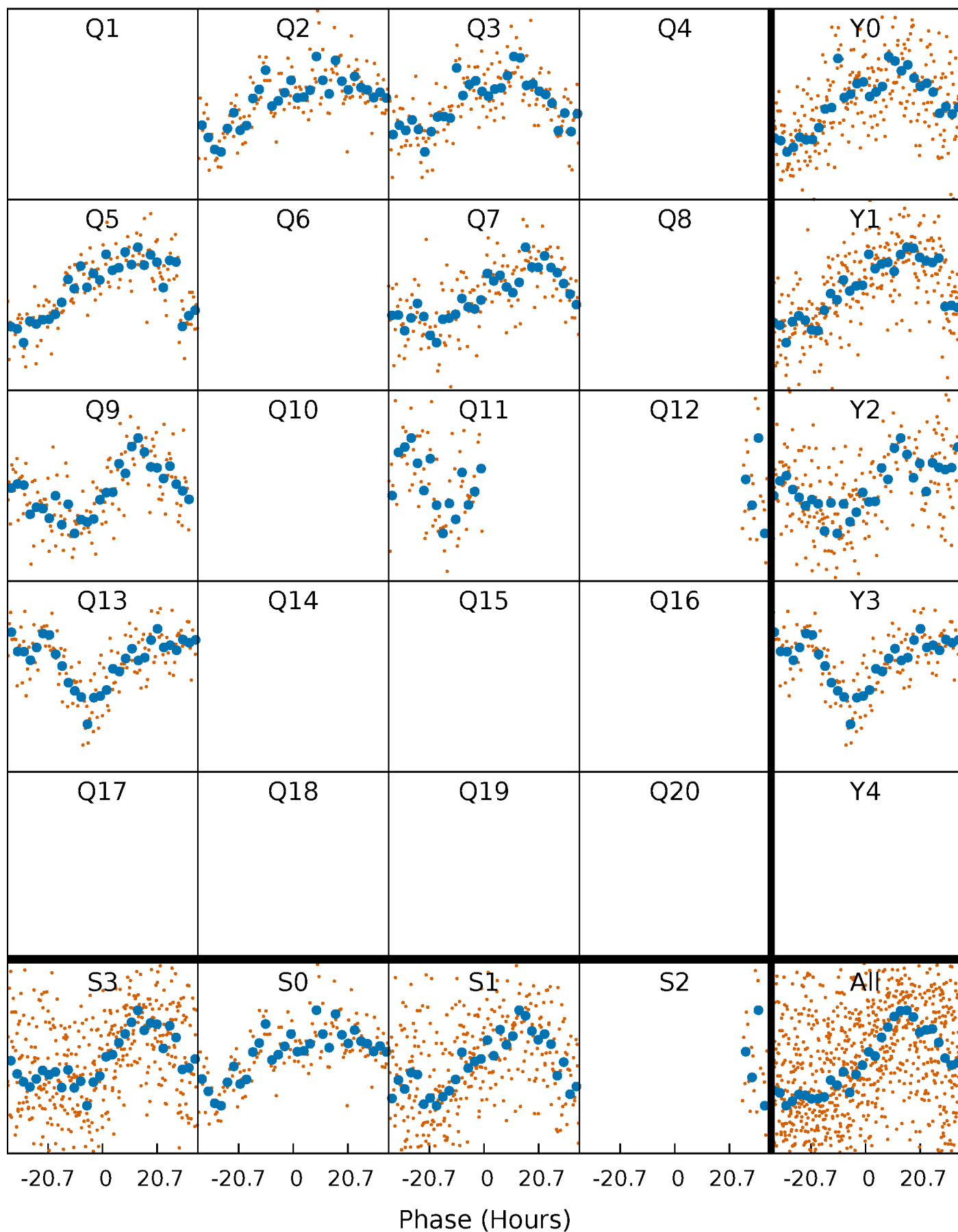


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



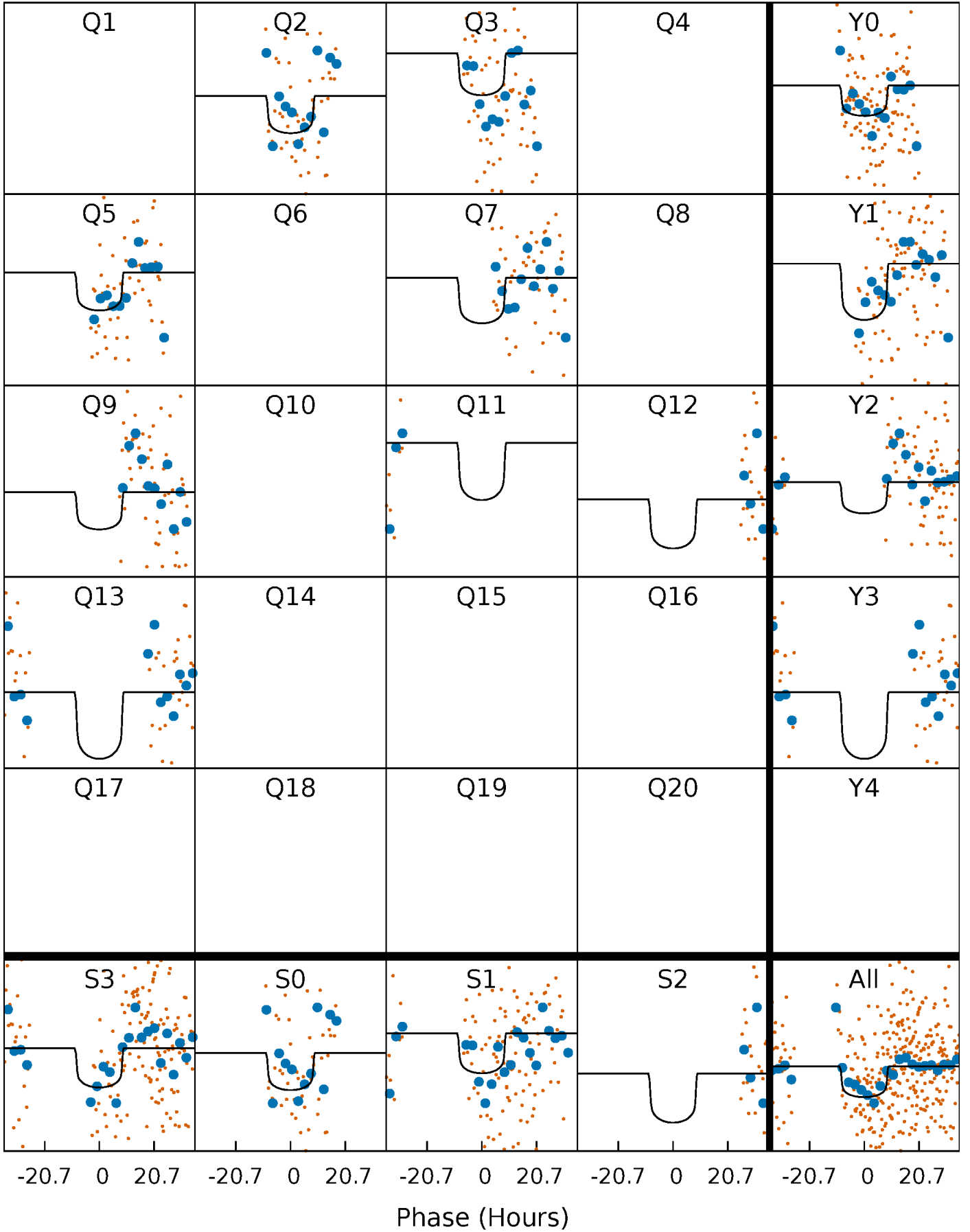
PDC Quarter-Phased Transit Curves

TCE 003454513-02 P=127.415952 Days $T_0=206.447106$ (BKJD)



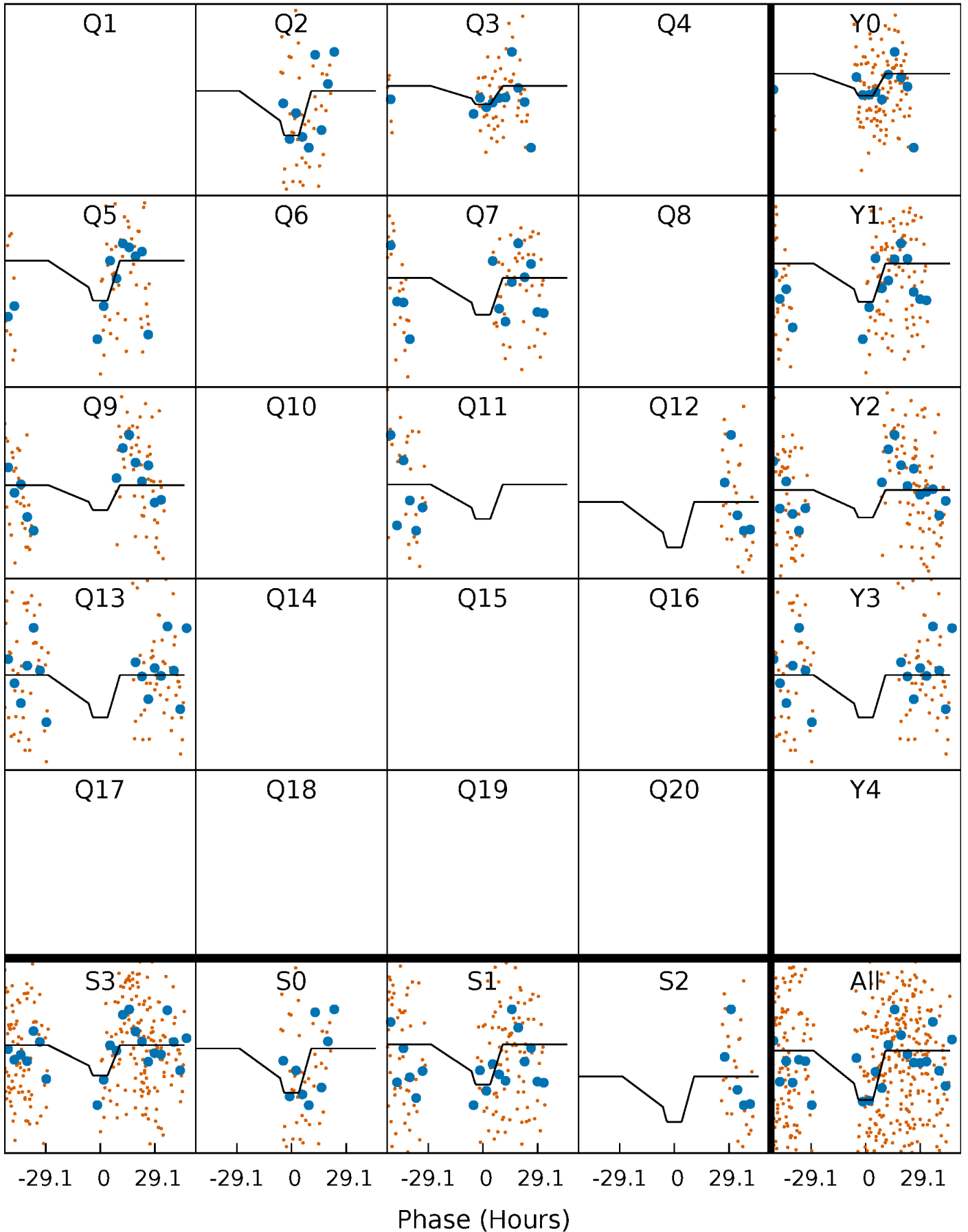
DV Quarter-Phased Transit Curves

TCE 003454513-02 P=127.415952 Days $T_0=206.447106$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

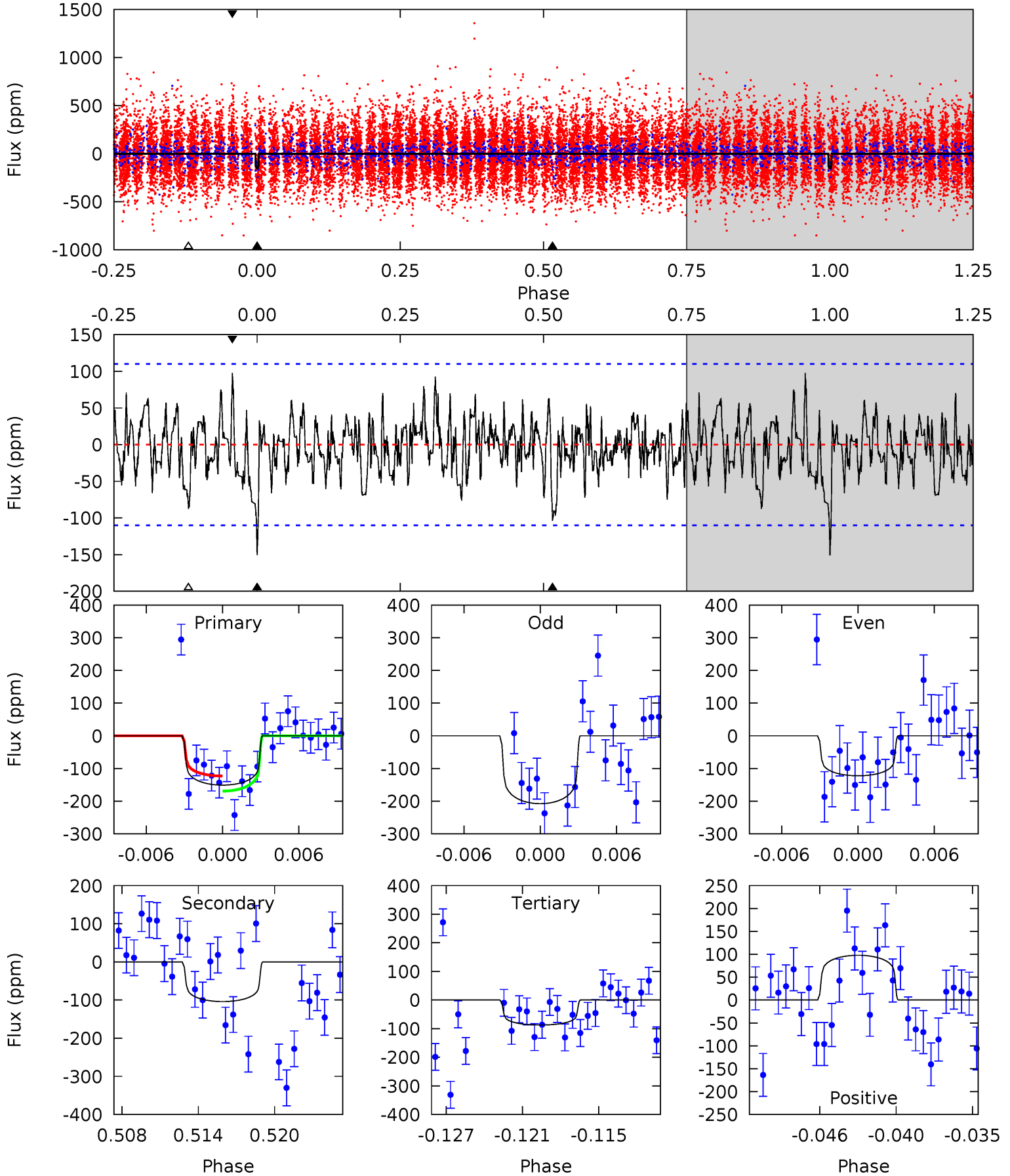
TCE 003454513-02 P=127.444114 Days $T_0=206.270652$ (BKJD)



DV Model-Shift Uniqueness Test

003454513-02, $P = 127.415952$ Days, $E = 79.031154$ Days

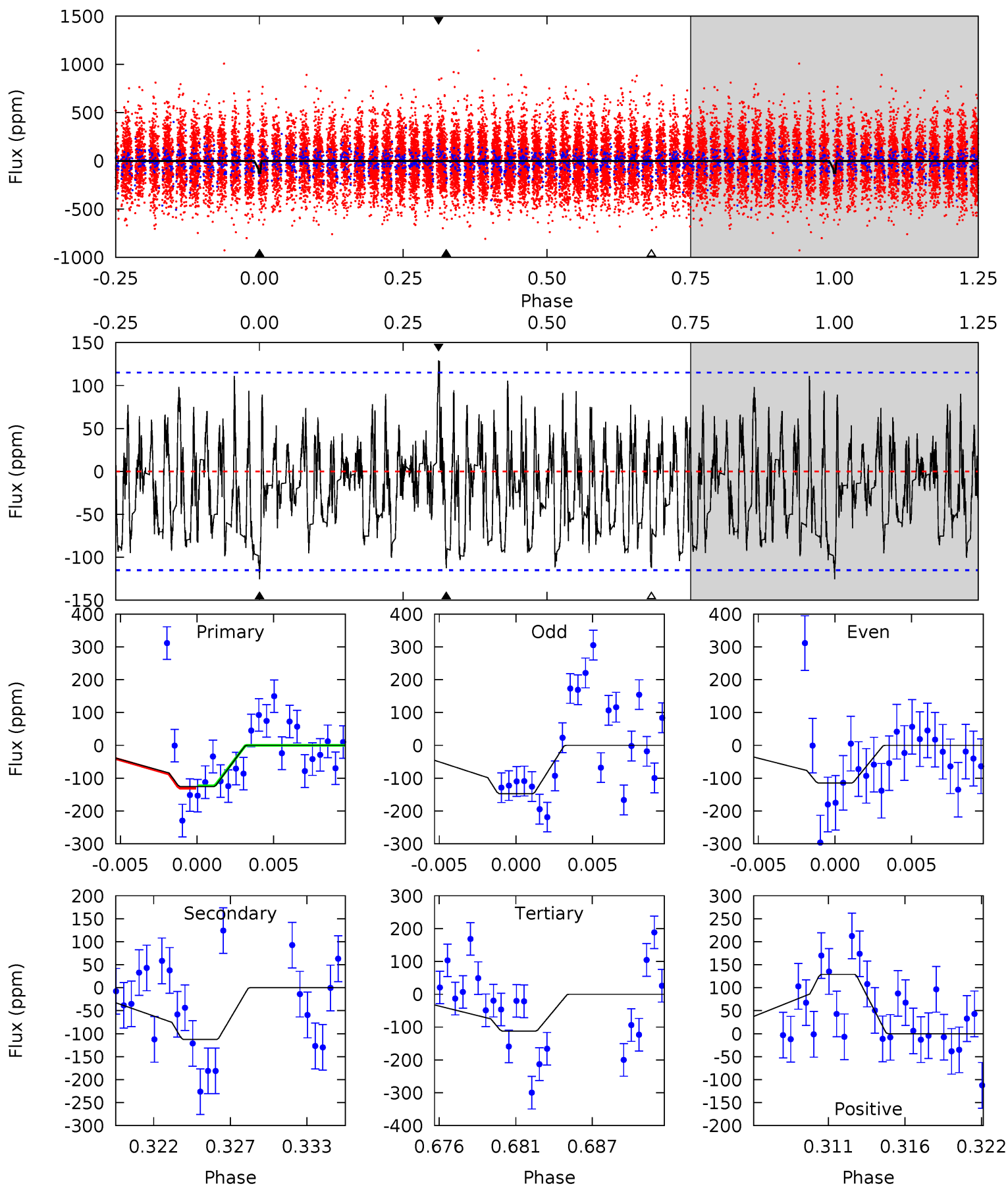
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.03	4.85	4.07	4.56	5.13	2.76	1.38	2.96	2.47	0.77	0.29	1.90	0.88	0.39	1.03



Alt Model-Shift Uniqueness Test

003454513-02, $P = 127.444114$ Days, $E = 78.826538$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.61	5.04	5.01	5.77	5.14	2.78	1.76	0.60	-0.16	0.03	-0.73	0.70	0.91	0.51	0.12



Stellar Parameters For KIC 003454513

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6812^{+189}_{-283}	$4.003^{+0.231}_{-0.168}$	$0.060^{+0.250}_{-0.350}$	$2.058^{+0.624}_{-0.624}$	$1.553^{+0.207}_{-0.310}$	$0.251^{+0.382}_{-0.114}$
	+3%/-4%	+6%/-4%	+417%/-583%	+30%/-30%	+13%/-20%	+152%/-45%
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 003454513-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-104±21	$2.97^{+1.03}_{-0.86}$	783^{+65}_{-59}	5814^{+1032}_{-681}	2087^{+2192}_{-980}
Alt.	-113±22	$2.60^{+0.93}_{-0.86}$	790^{+61}_{-66}	6396^{+1569}_{-851}	3030^{+3631}_{-1483}

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

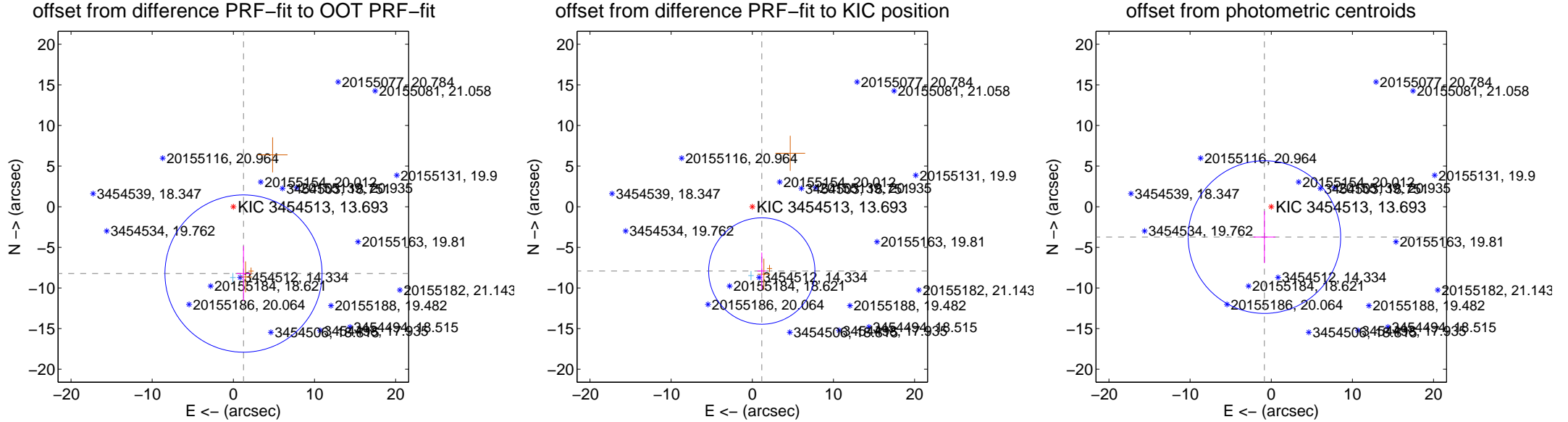
DV Centroid Data

Supplemental centroid analysis for 003454513-02. Kepler magnitude: 13.69. Transit SNR 6.40

There are 1 quarters with good PRF difference image offsets

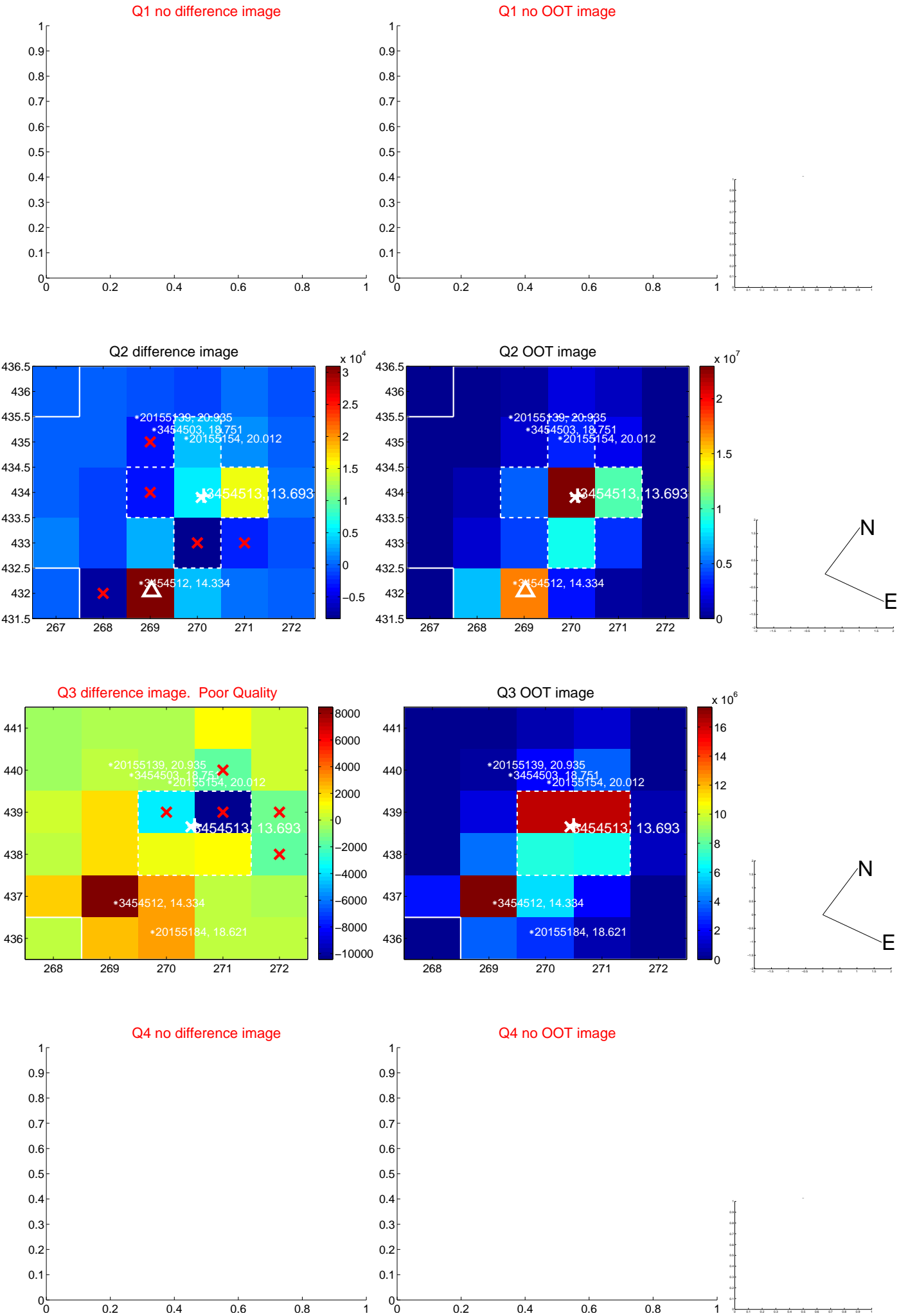
The direct PRF centroid is offset from the target star catalog position by about 0.34 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	8.321 ± 3.227	2.58	-1.251 ± 0.856	-8.226 ± 3.385
PRF-fit source offset from KIC position	8.003 ± 2.183	3.67	-1.170 ± 0.542	-7.917 ± 2.270
photometric centroid source offset	3.83 ± 3.13	1.22	0.84 ± 1.35	-3.74 ± 3.20

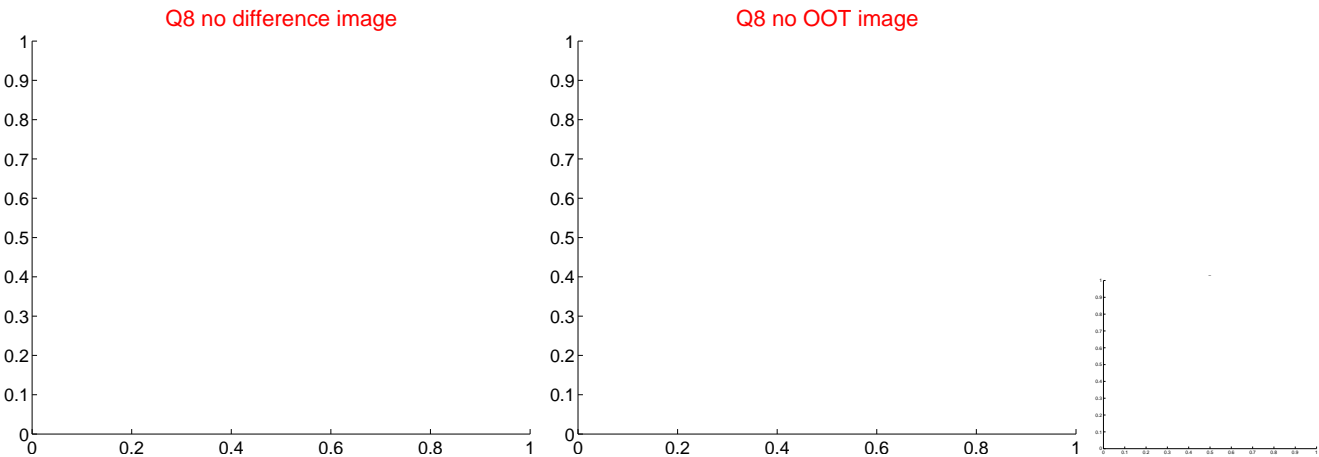
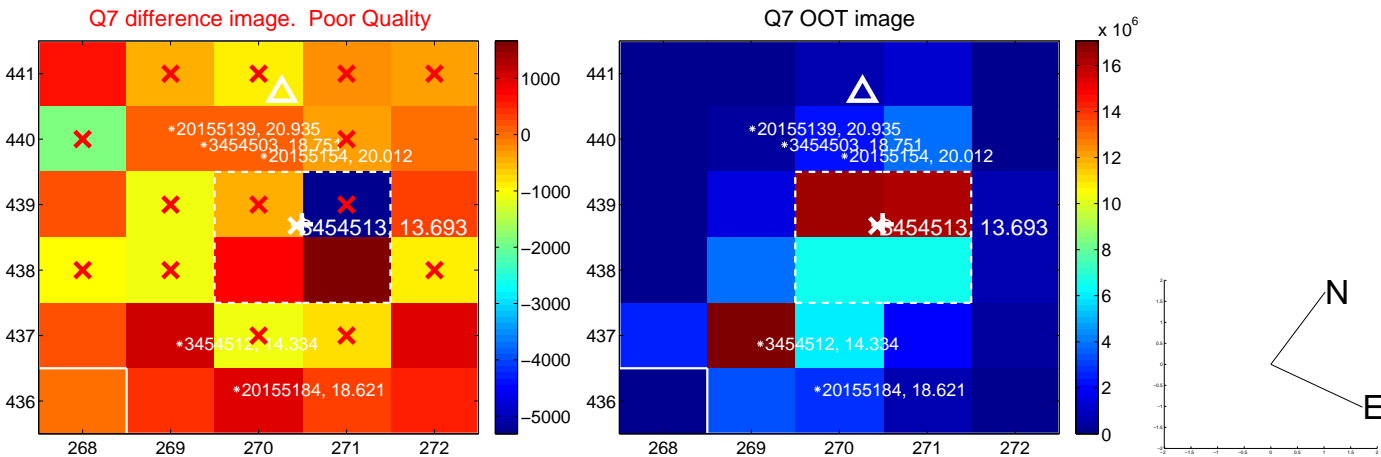
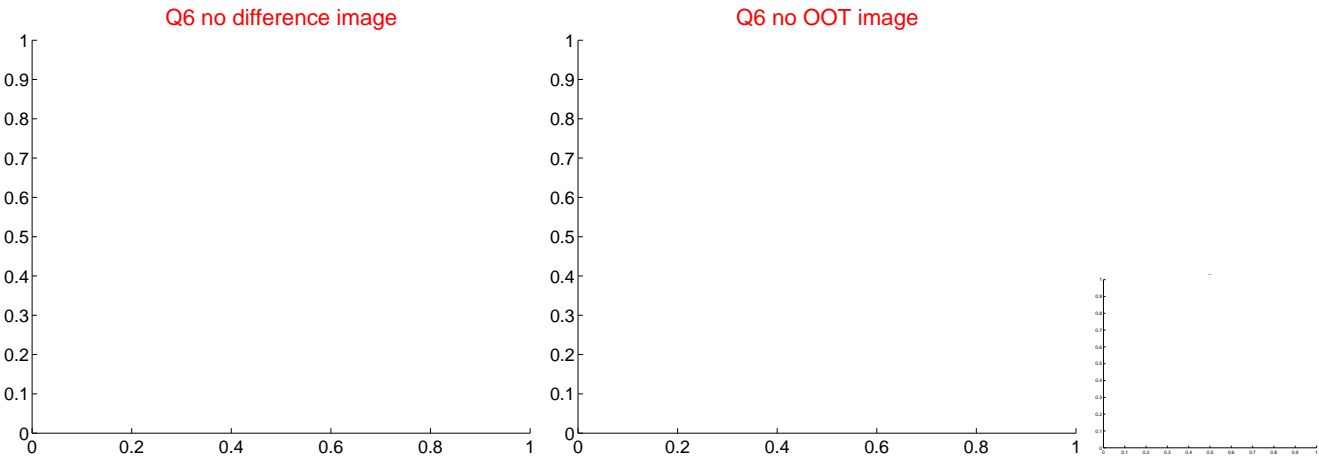
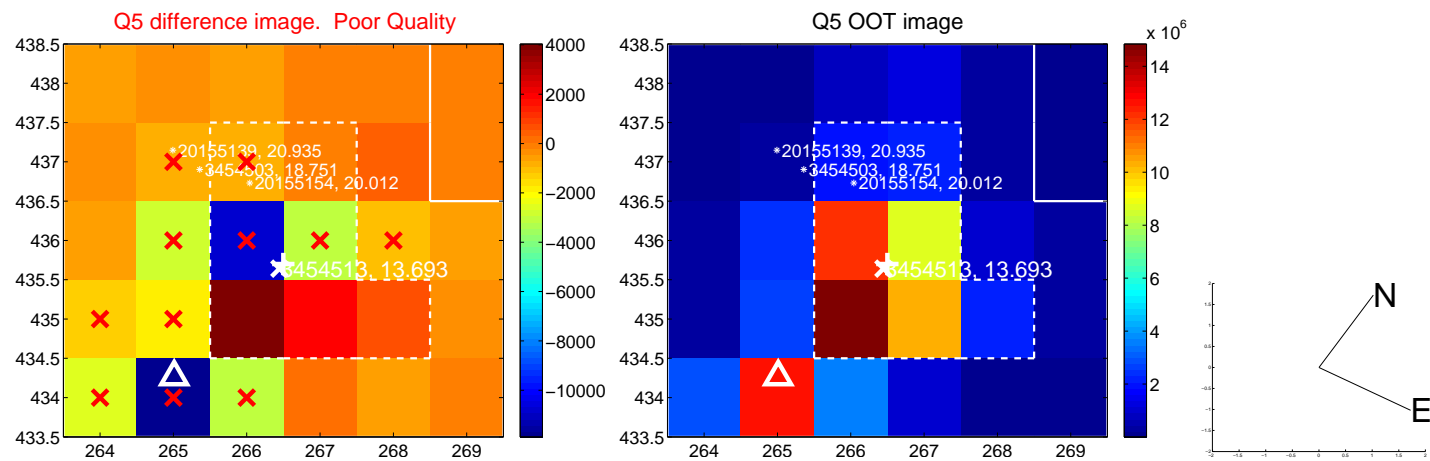


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

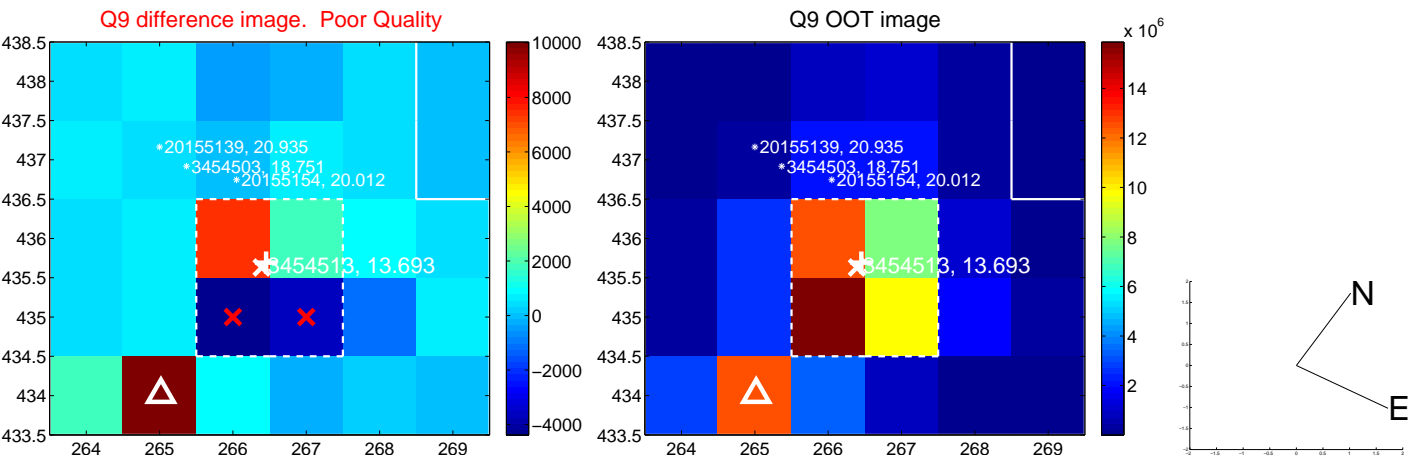
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



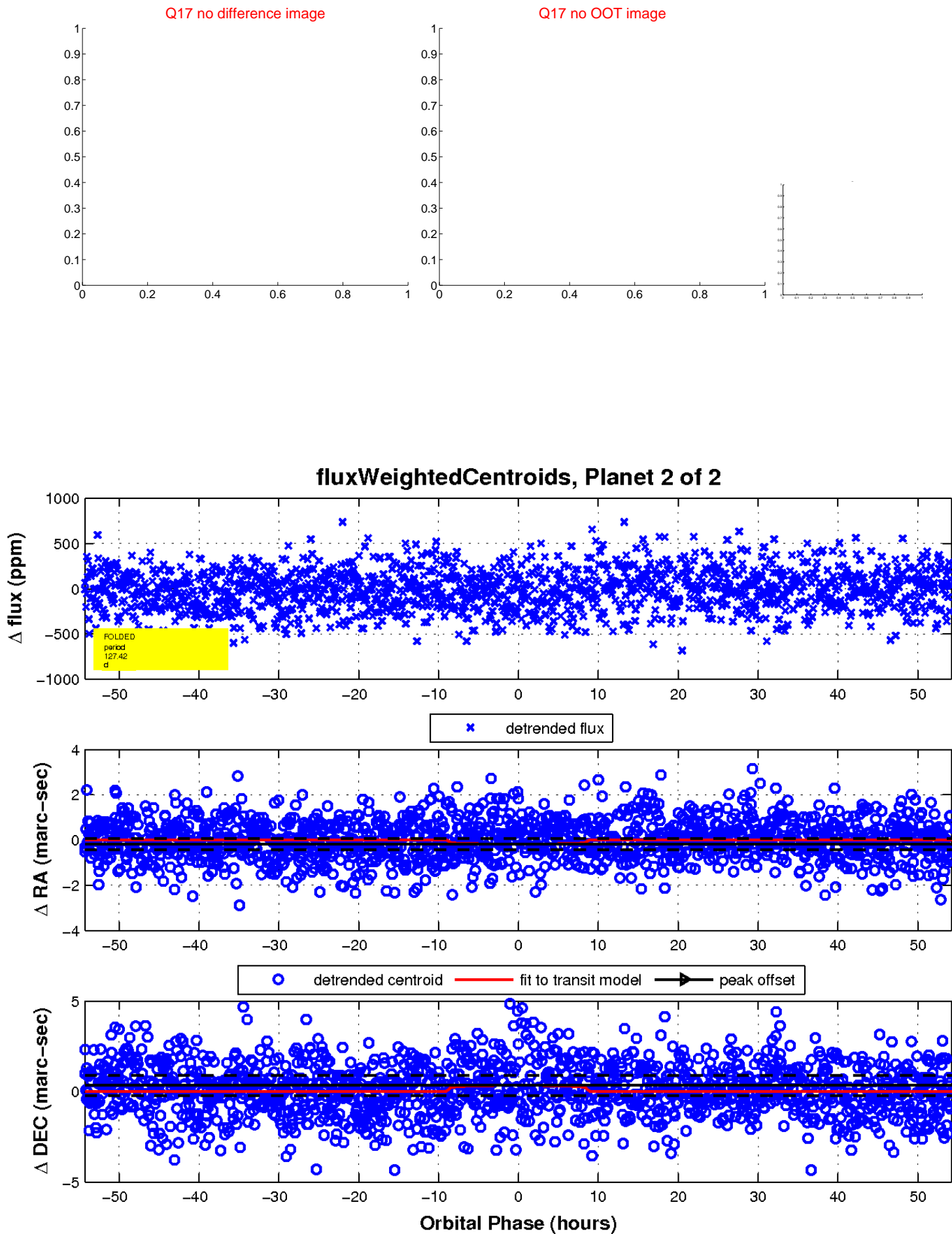
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

