

KIC 007116842

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})
007116842-01	OBS	No	0.566718	131.930427	6.2	4.136	8.8	3.5	0.89	5923	0.23	5422.07
007116842-02	OBS	No	32.283871	154.925755	550.9	0.755	12.7	10.2	0.89	5923	2.27	24.74
007116842-03	OBS	No	31.130237	144.099109	220.3	7.583	13.6	10.6	0.89	5923	1.39	25.97

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007116842-01	OBS	FP	0.00	1	0	0	1	LPP_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—EPHEM_MATCH
007116842-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007116842-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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.

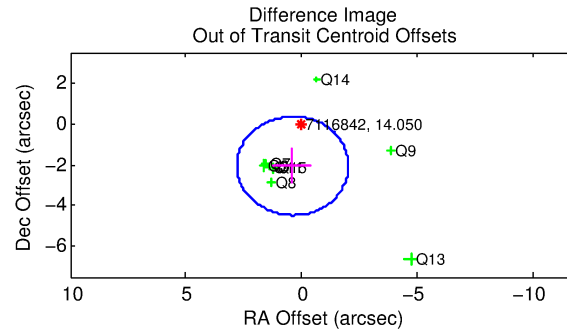
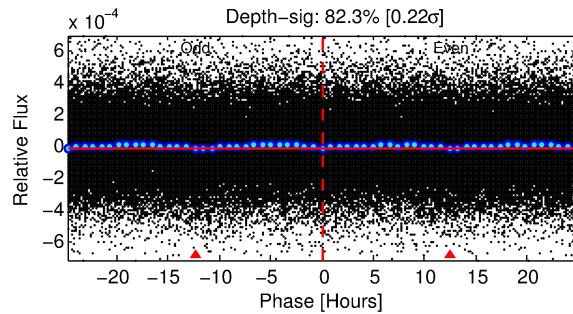
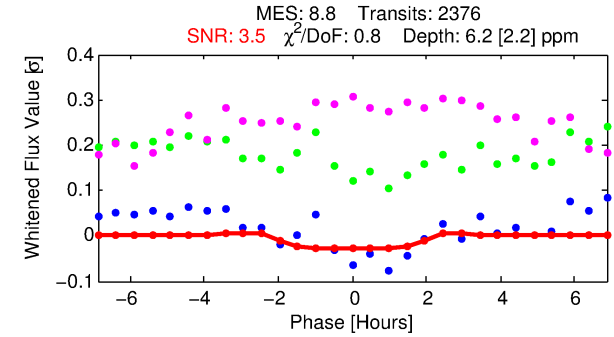
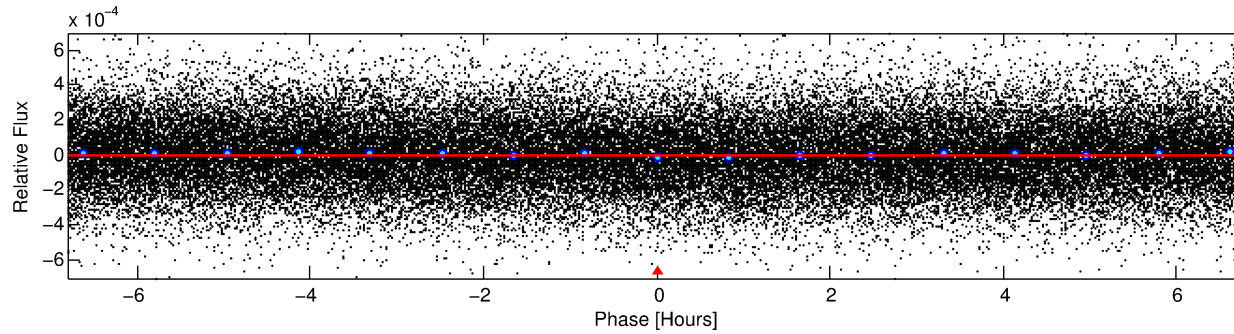
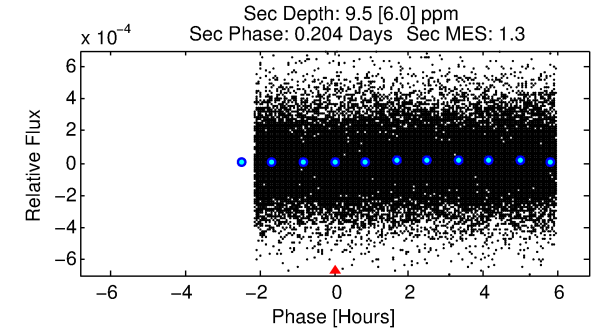
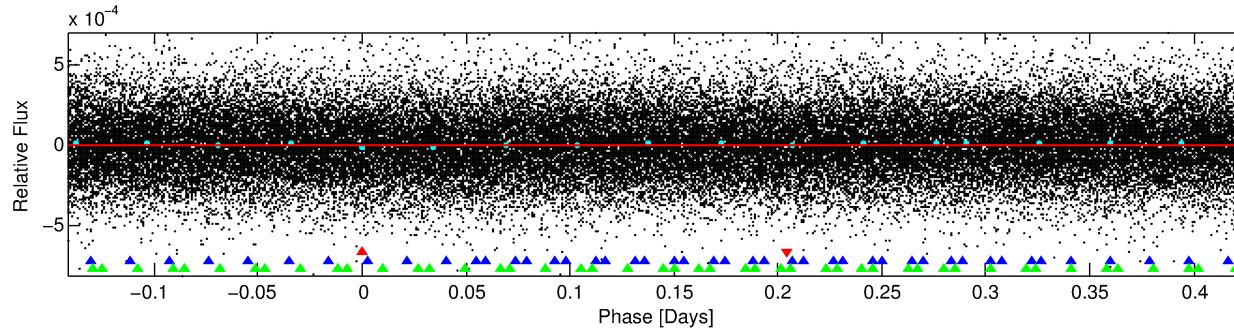
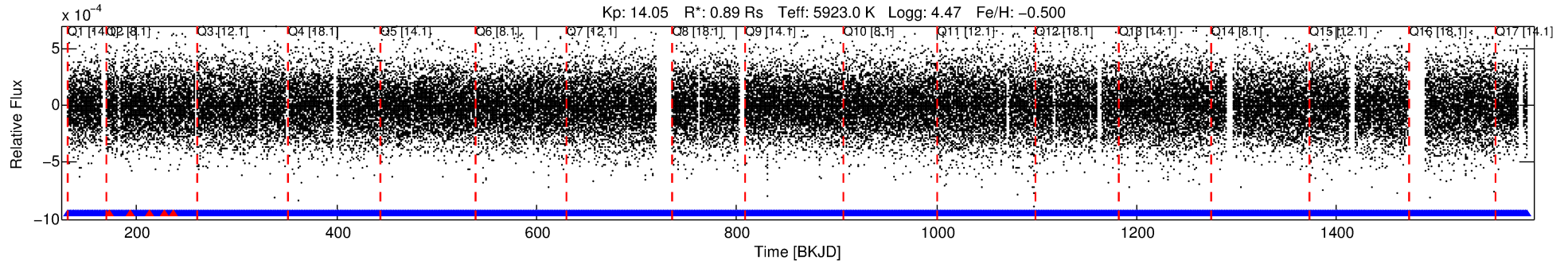
Ephemeris Match Information For 007116842-01

TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist (μ)	Δ Row	Δ Col	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ_P	σ_T
007116842-01	7116842	RR-Lyr-pri	7198959	1:1	718.8	180	-15	7.86	14.05	103880.00	Direct-PRF	0	0.05	9.73

Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 7116842 Candidate: 1 of 3 Period: 0.567 d



DV Fit Results:

Period = 0.56672 [0.00003] d
Epoch = 131.9304 [0.0125] BKJD
Rp/R* = 0.0023 [0.0040]
a/R* = 1.18 [2.73]
b = 0.50 [12.84]
Seff = 5422.07 [1888.92]
Teq = 2188 [191] K
Rp = 0.23 [0.39] Re
a = 0.0127 [0.0029] AU
Ag = 16.13 [55.87] [0.27σ]
Teffp = 6779 [5848] K [0.78σ]

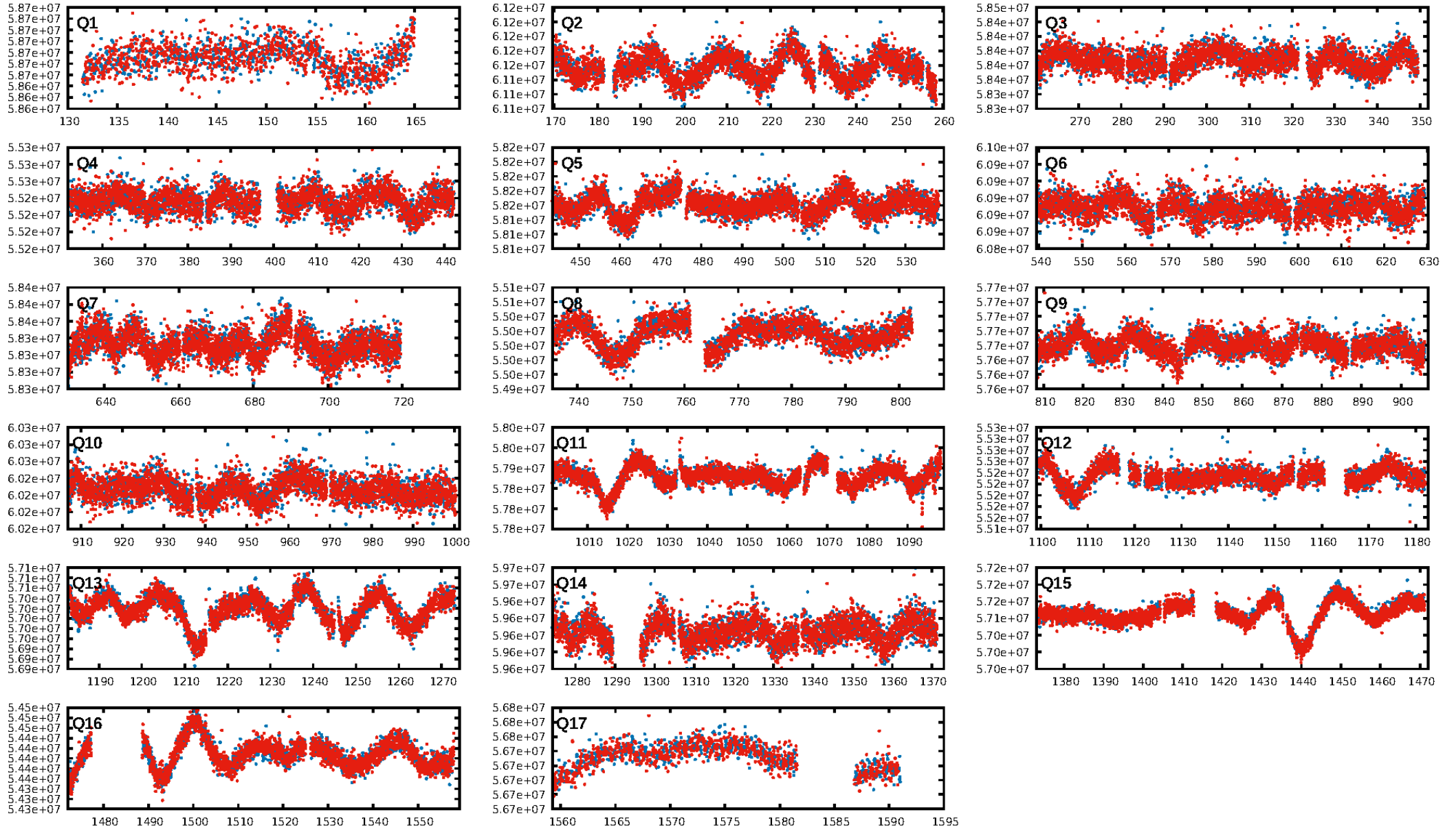
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [84.92σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 7.86e-07
RollingBand-fgt: 1.00 [2265/2270]
GhostDiagnostic-chr: 0.8563
Centroid-sig: 33.6%
Centroid-so: 3.570 arcsec [1.12σ]
OotOffset-rm: 2.097 arcsec [2.60σ]
OotOffset-st: 1/4/1/2 [8]
KicOffset-rm: 2.351 arcsec [3.14σ]
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DiffImageQuality-fgm: 0.62 [5/8]
DiffImageOverlap-fno: 1.00 [17/17]

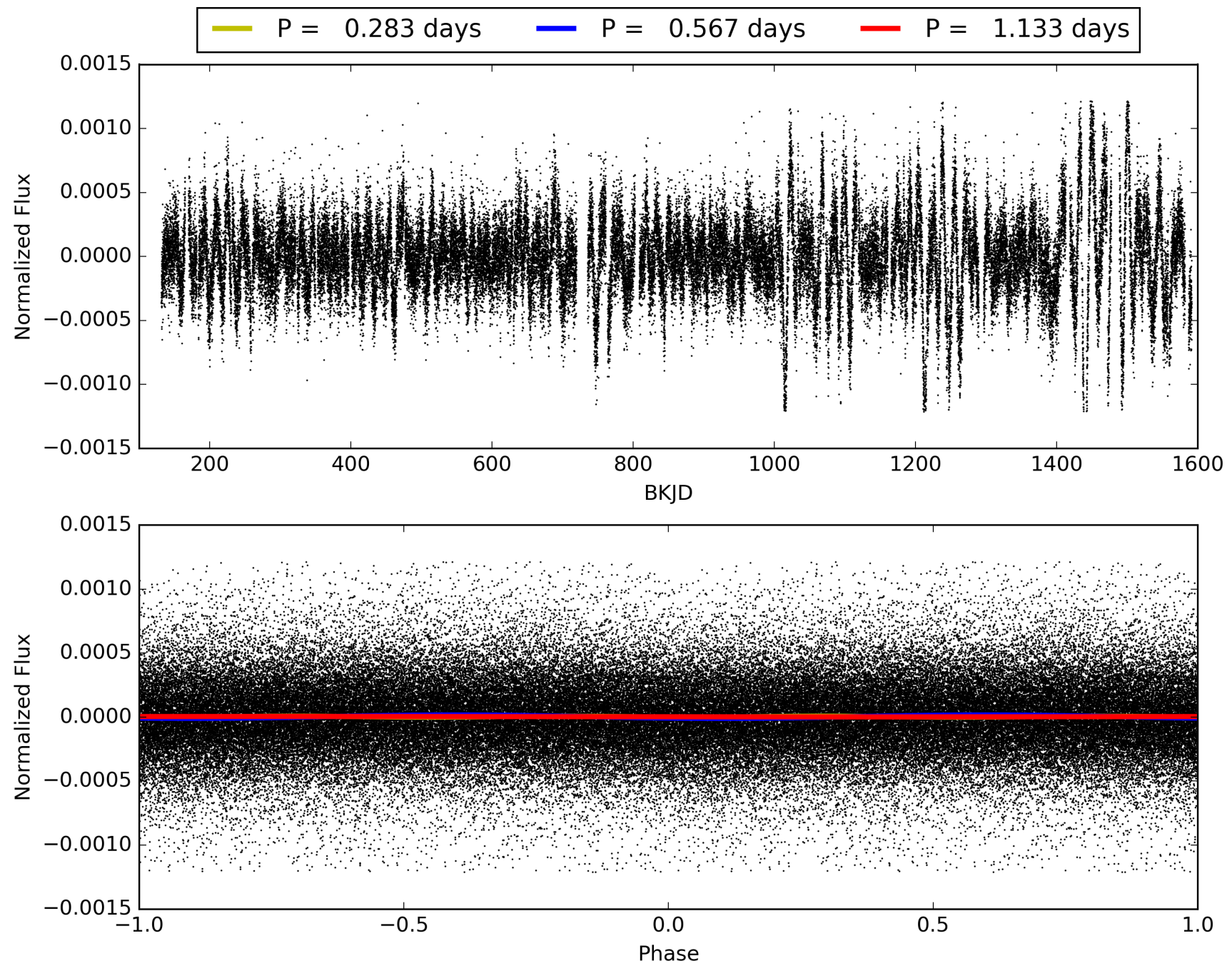
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 007116842-01, PDC Light Curves

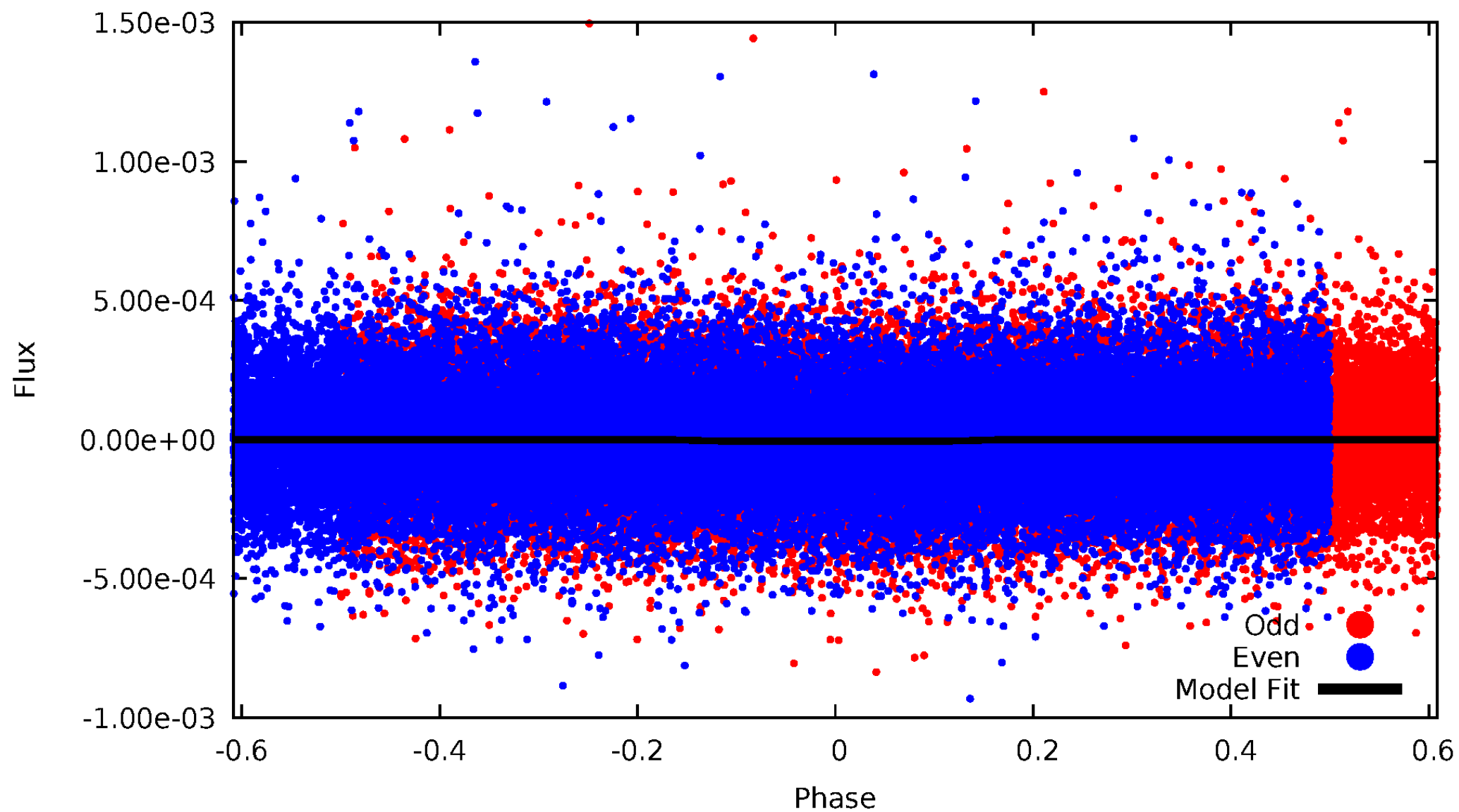


TCE 007116842-01



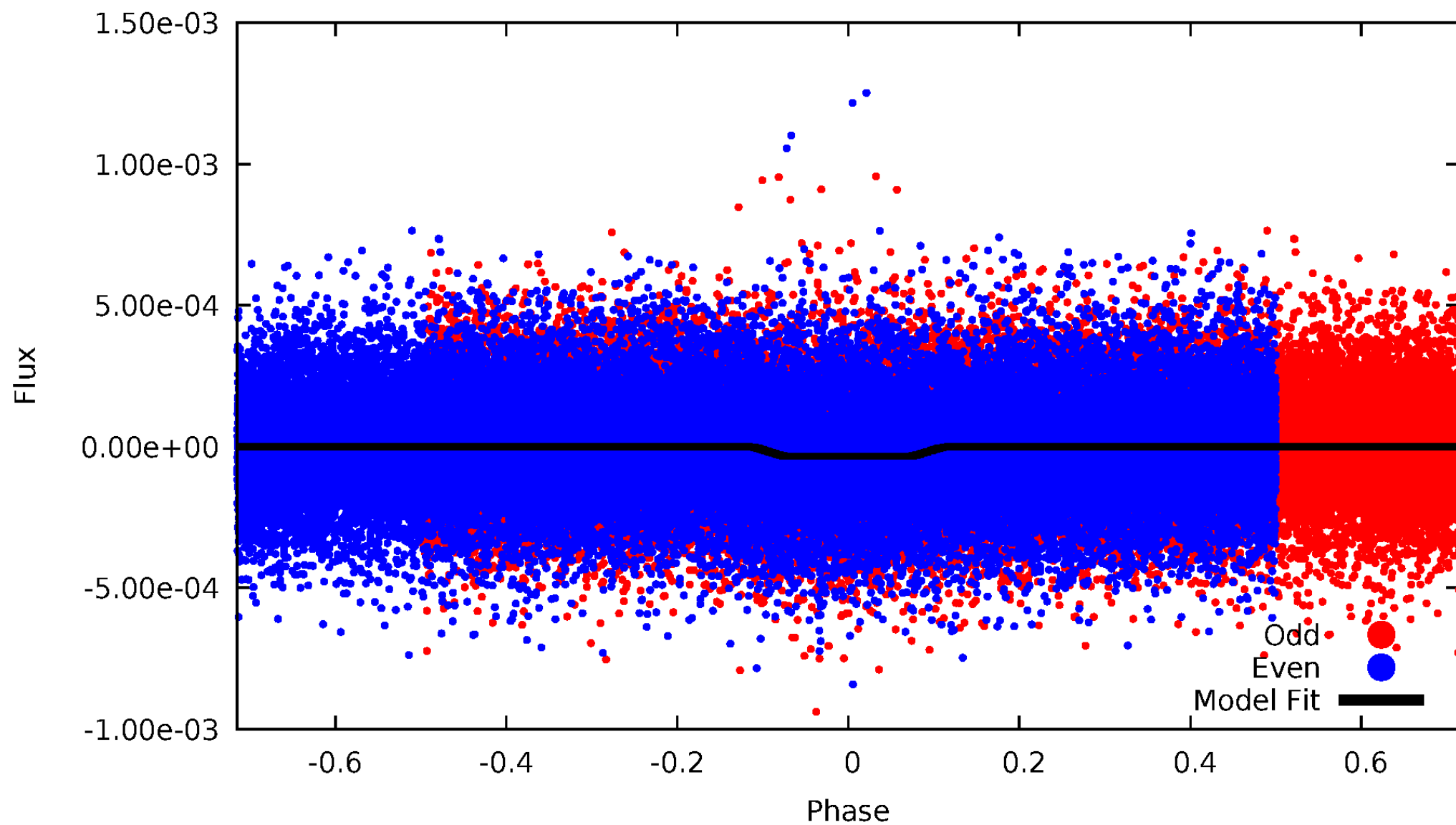
DV Odd/Even

TCE 007116842-01

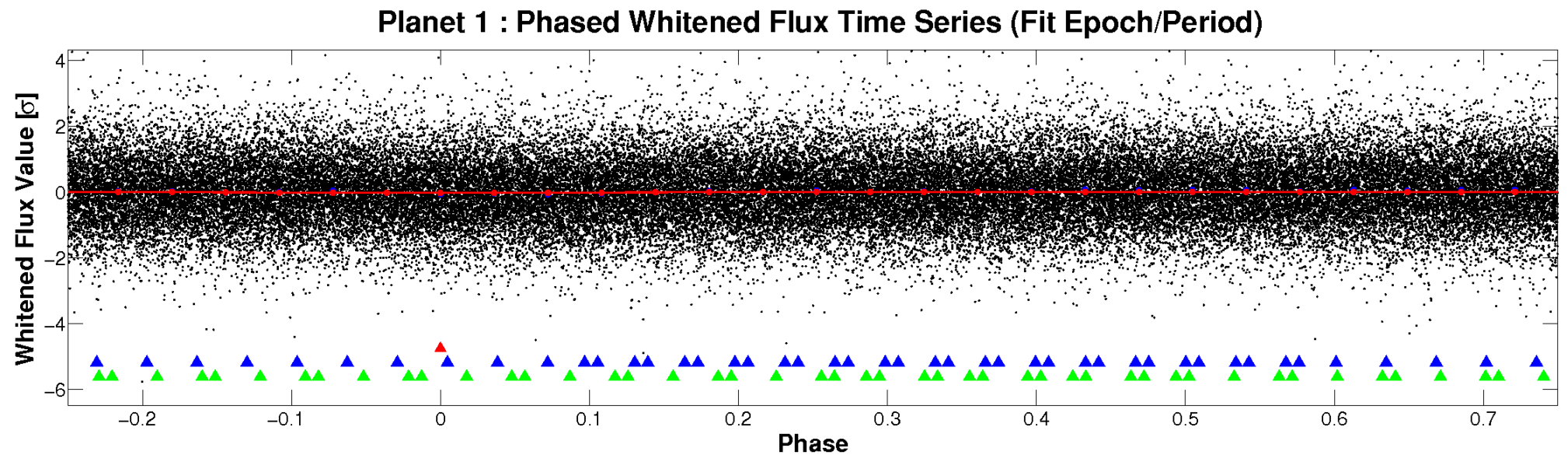
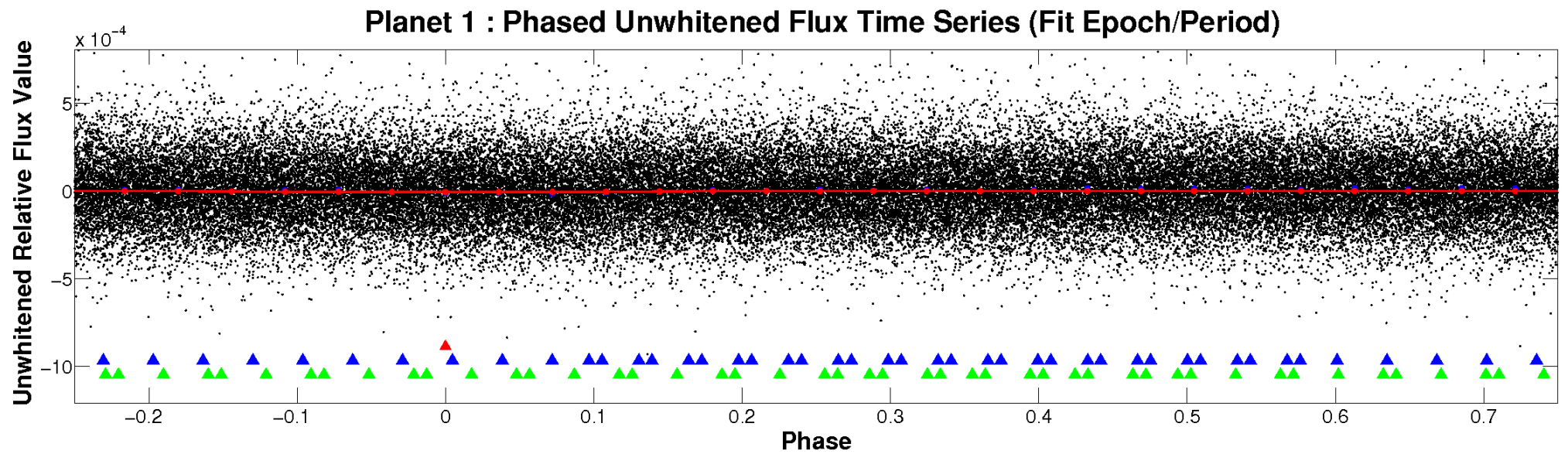


ALT Odd/Even

TCE 007116842-01

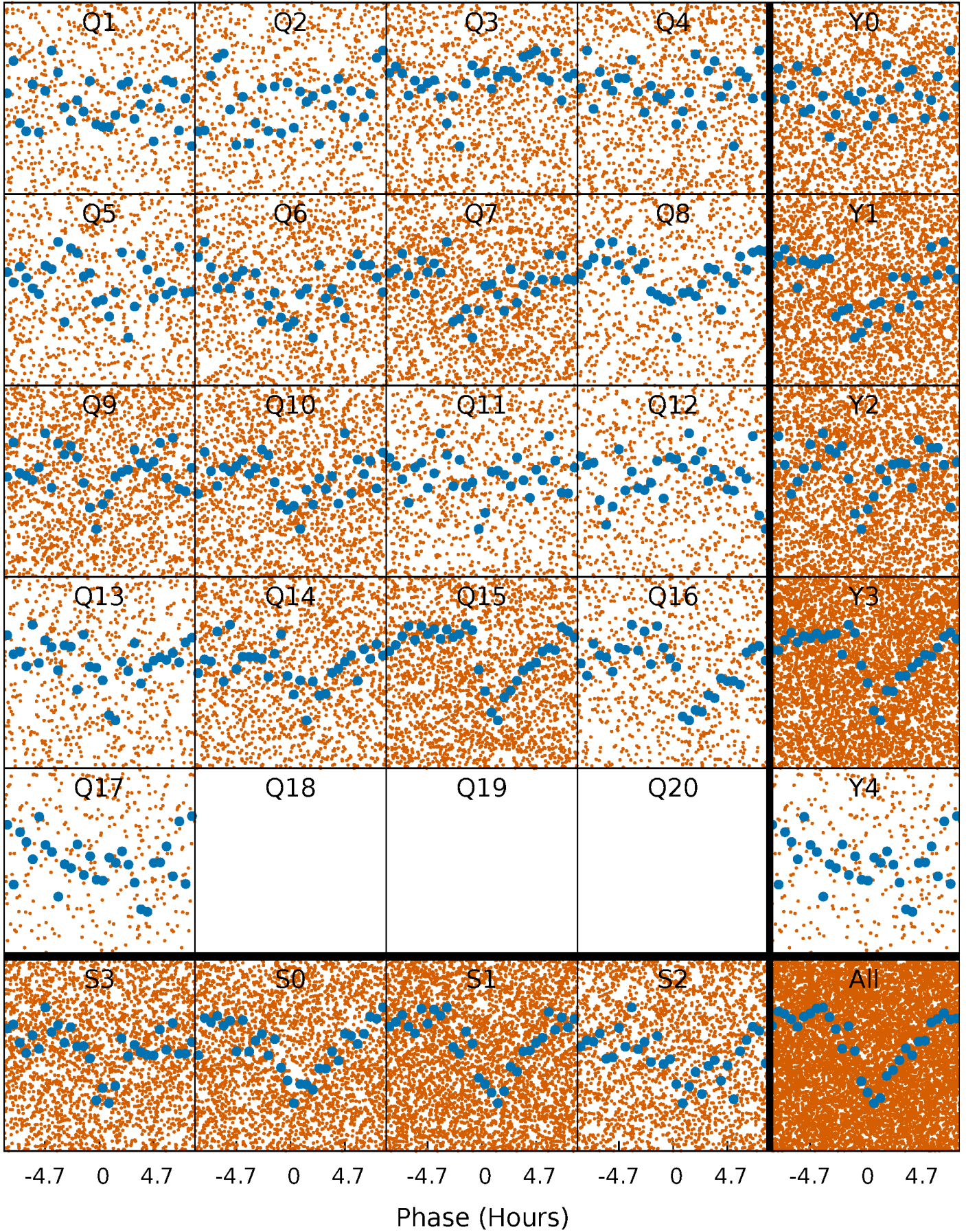


Non-Whitened Vs. Whitened Light Curve



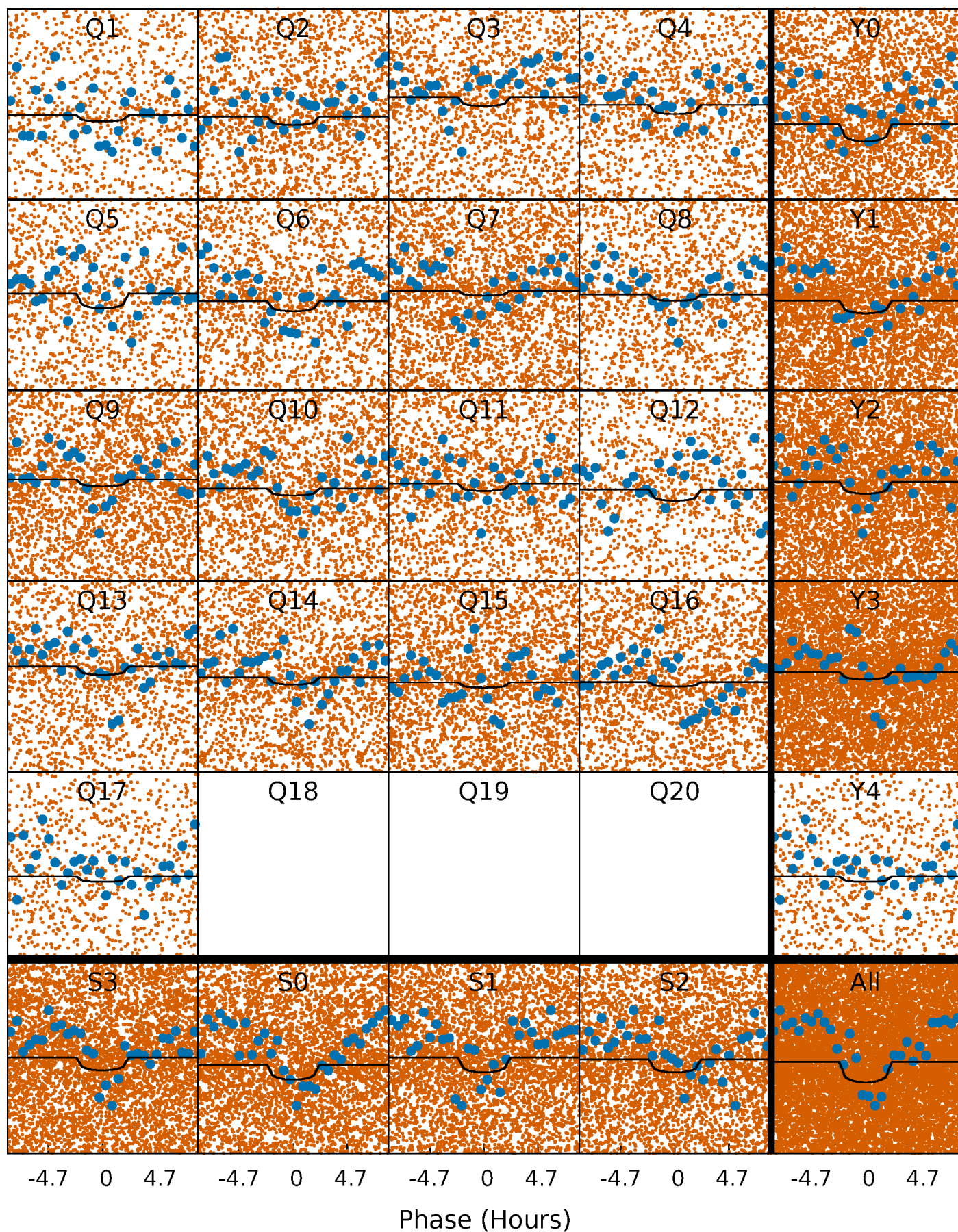
PDC Quarter-Phased Transit Curves

TCE 007116842-01 P= 0.566718 Days $T_0=131.930427$ (BKJD)



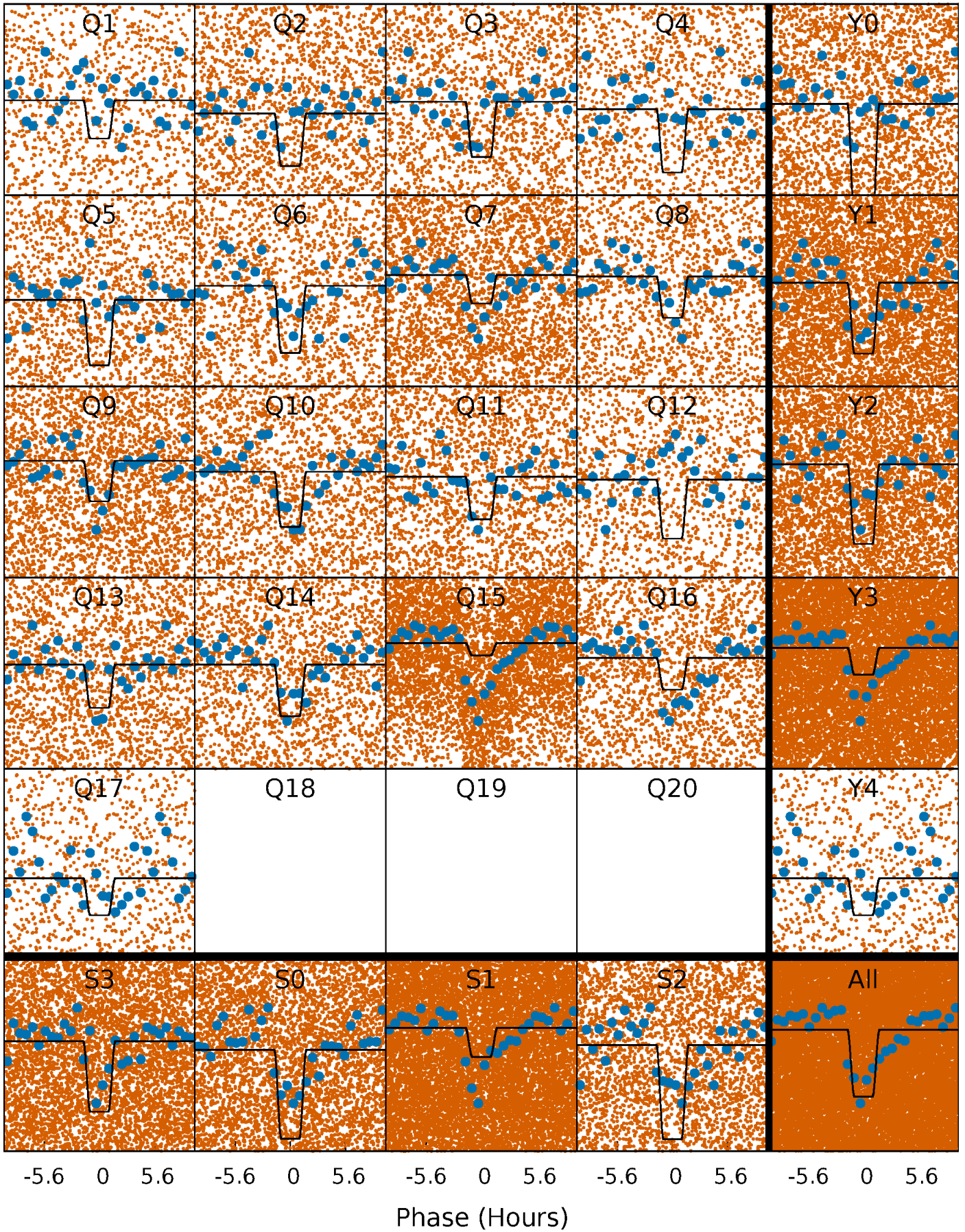
DV Quarter-Phased Transit Curves

TCE 007116842-01 P= 0.566718 Days $T_0=131.930427$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

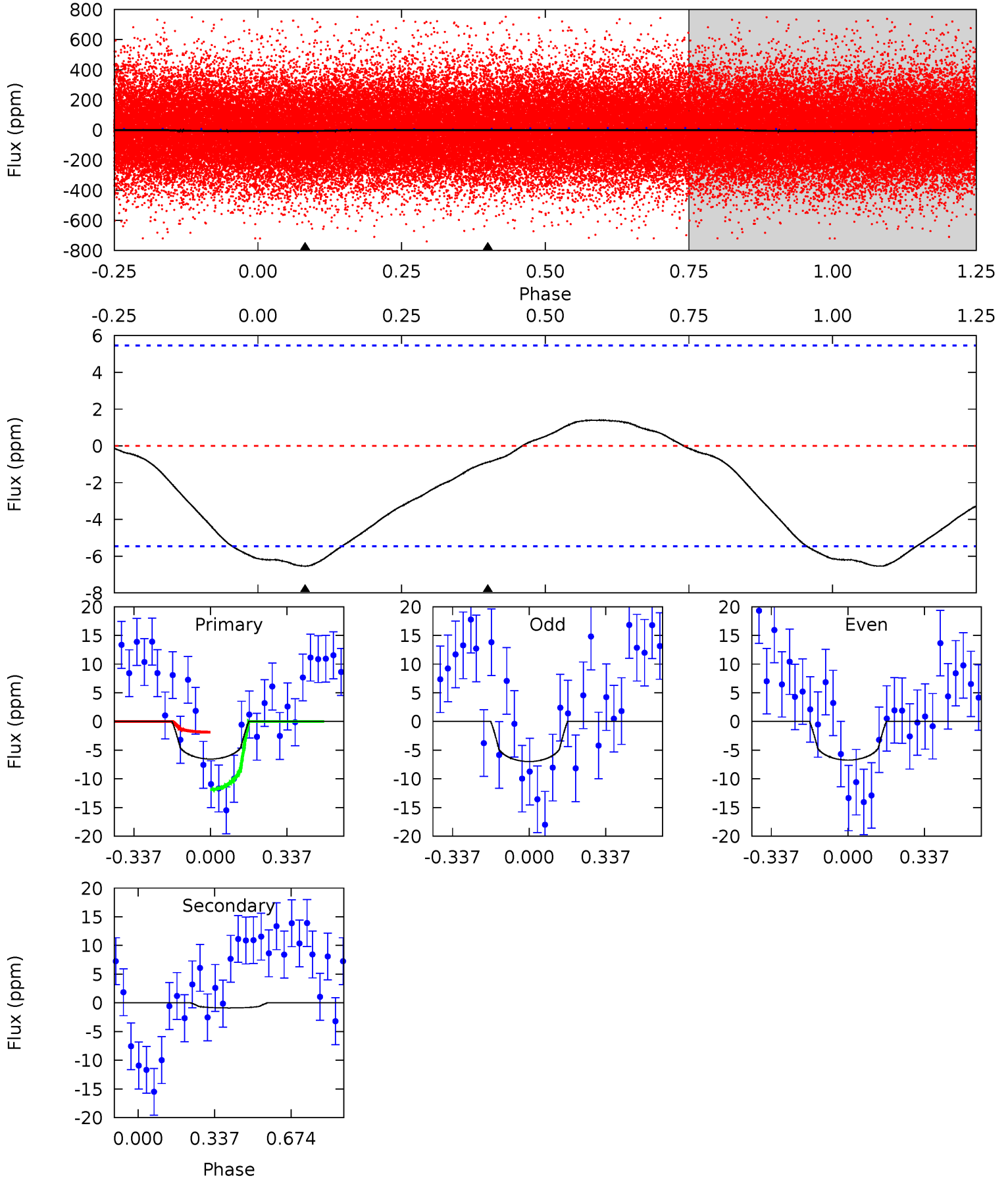
TCE 007116842-01 P= 0.566788 Days $T_0=131.837805$ (BKJD)



DV Model-Shift Uniqueness Test

007116842-01, P = 0.566718 Days, E = 131.363709 Days

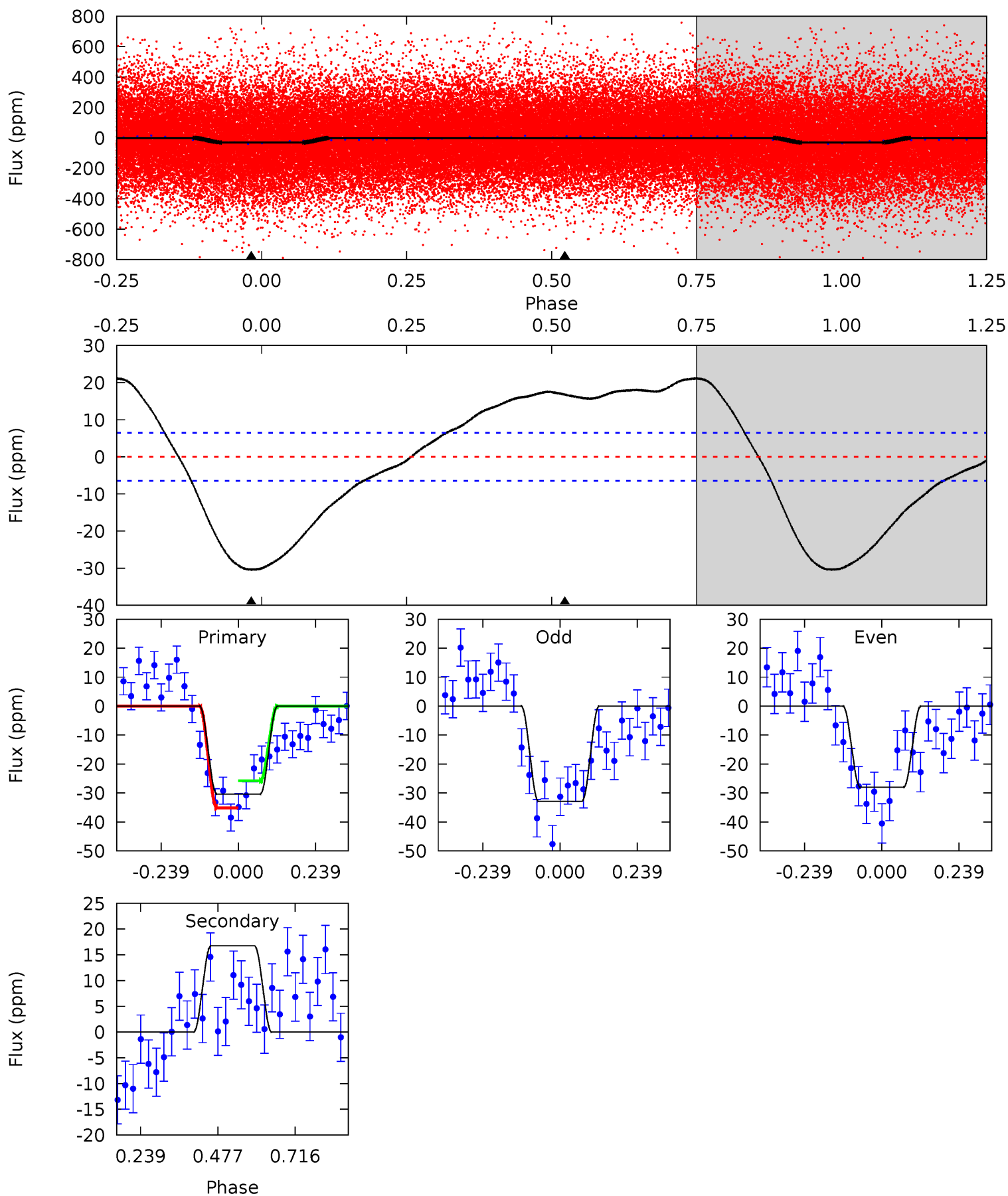
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.16	0.70	0	0	4.30	0.96	0.34	5.16	5.16	0.70	0.70	0.10	1.01	0.18	4.01



Alt Model-Shift Uniqueness Test

007116842-01, P = 0.566788 Days, E = 131.271017 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.6	-11.4	0	0	4.38	1.18	4.71	20.6	20.6	-11.4	-11.4	1.63	1.01	0.41	3.19



Stellar Parameters For KIC 007116842

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5923^{+159}_{-159}	$4.468^{+0.084}_{-0.182}$	$-0.500^{+0.300}_{-0.300}$	$0.890^{+0.238}_{-0.102}$	$0.849^{+0.105}_{-0.070}$	$1.695^{+0.719}_{-0.824}$
	+3%/-3%	+2%/-4%	+60%/-60%	+27%/-11%	+12%/-8%	+42%/-49%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007116842-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1 ± 1	$0.36^{+0.34}_{-0.25}$	3088^{+214}_{-137}	2845^{+2438}_{-6231}	$0.432^{+5.091}_{-0.586}$
Alt.	17 ± 1	$0.62^{+0.42}_{-0.33}$	3089^{+203}_{-151}	-4988^{+785}_{-2154}	$-3.861^{+2.481}_{-14.585}$

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

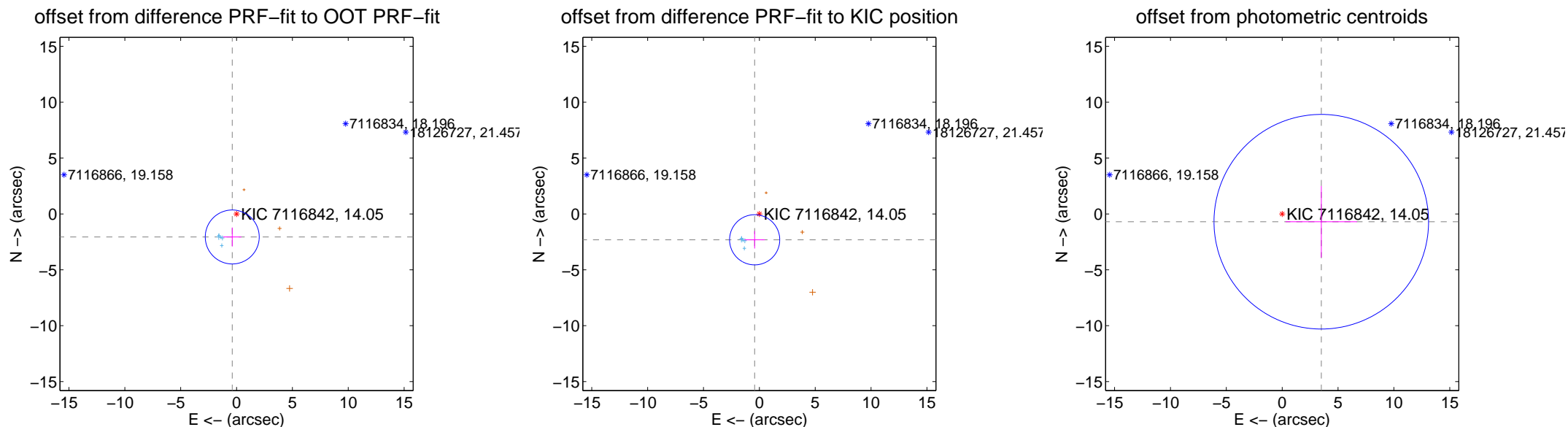
DV Centroid Data

Supplemental centroid analysis for 007116842-01. Kepler magnitude: 14.05. Transit SNR 3.46

There are 5 quarters with good PRF difference image offsets

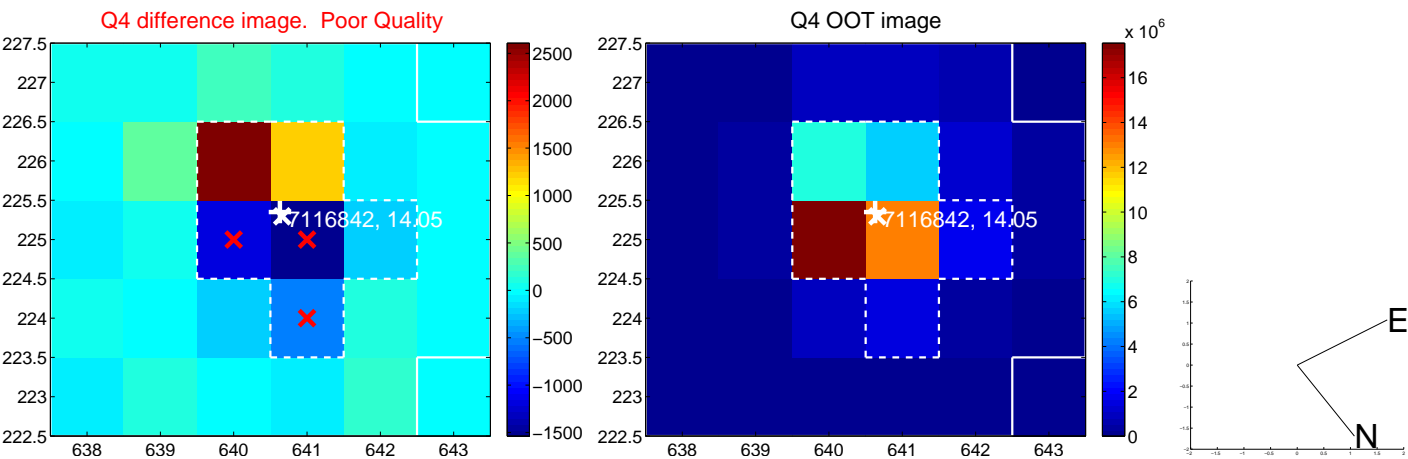
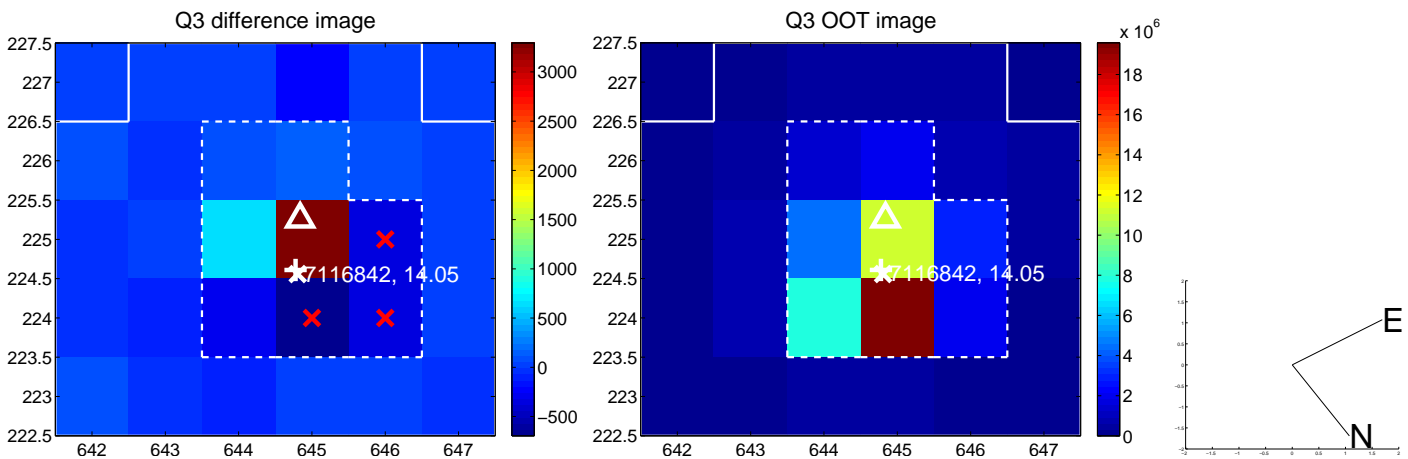
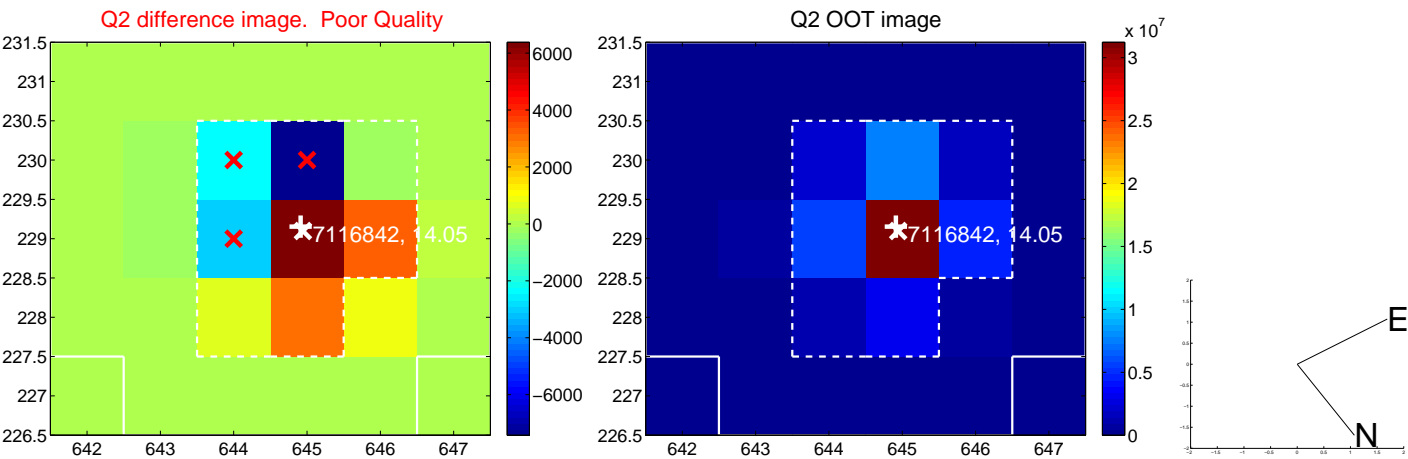
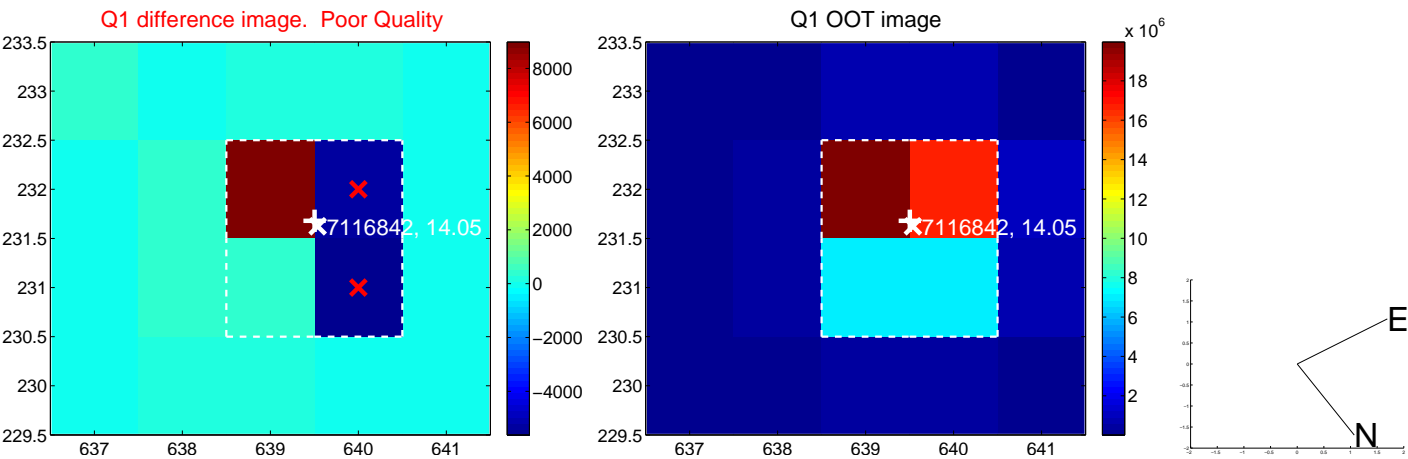
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.097 ± 0.805	2.60	0.385 ± 0.815	-2.061 ± 0.848
PRF-fit source offset from KIC position	2.351 ± 0.748	3.14	0.421 ± 0.894	-2.313 ± 0.779
photometric centroid source offset	3.57 ± 3.20	1.12	-3.50 ± 3.20	-0.70 ± 3.20

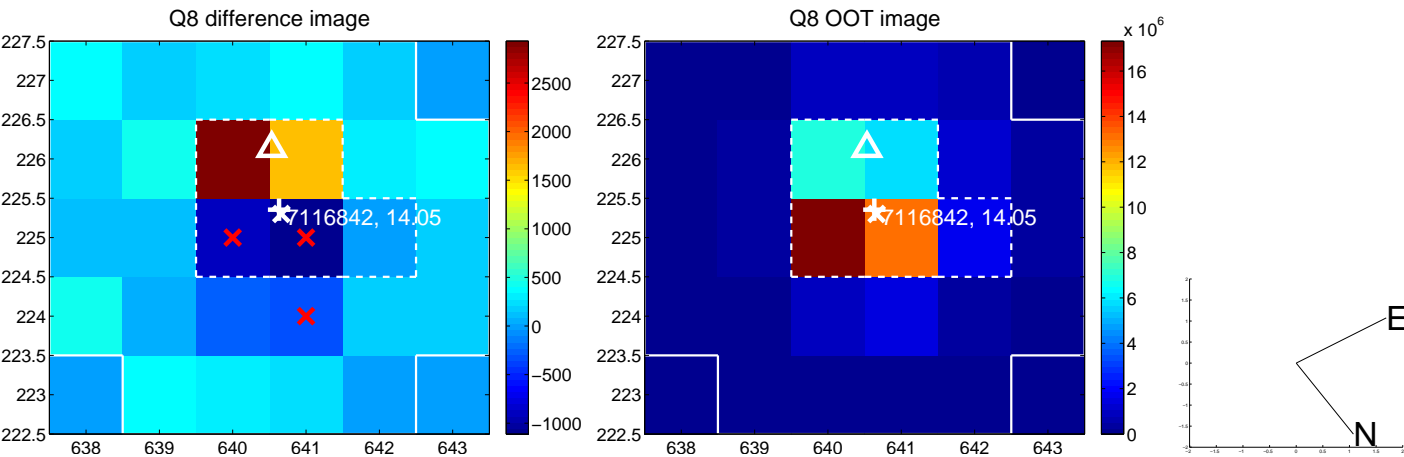
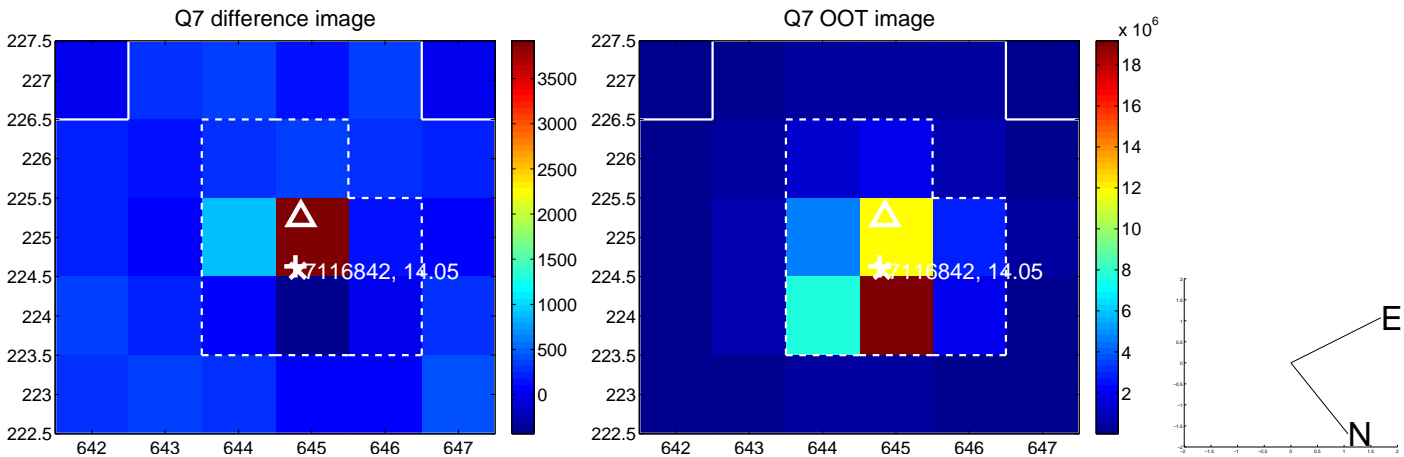
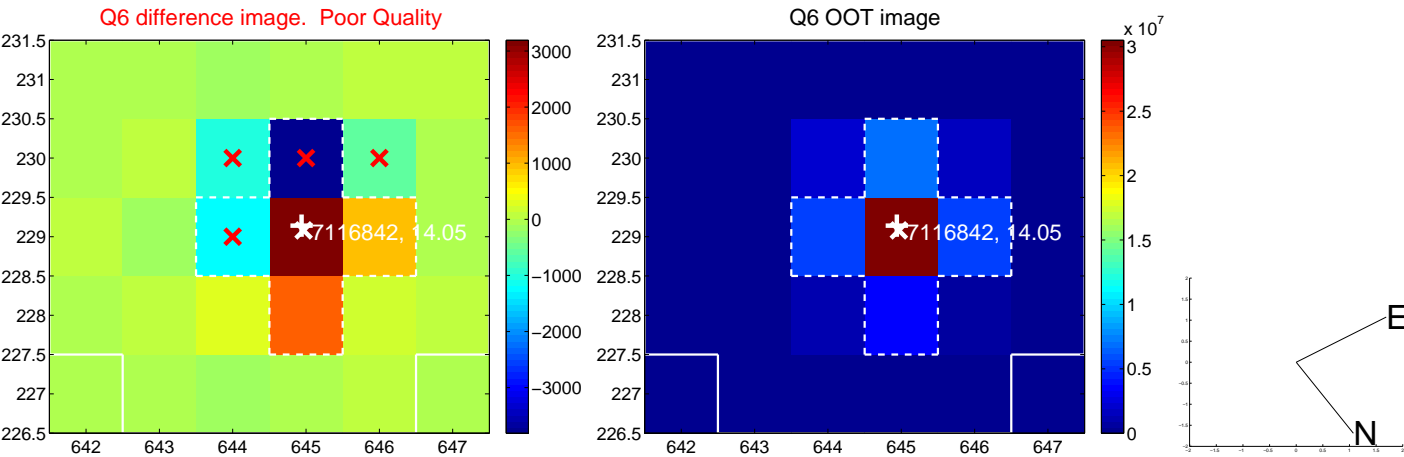
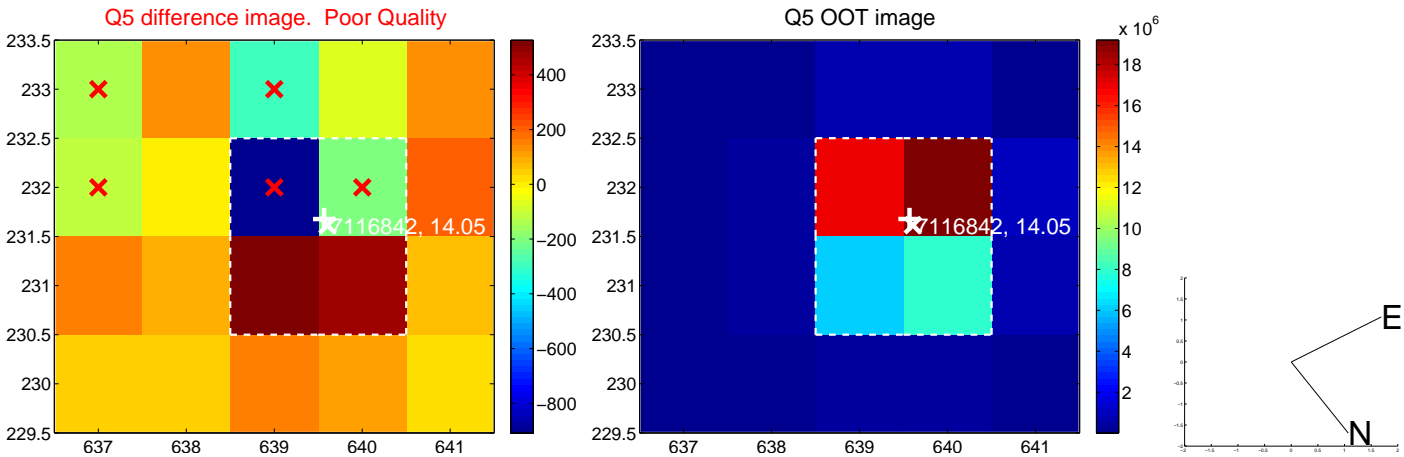


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

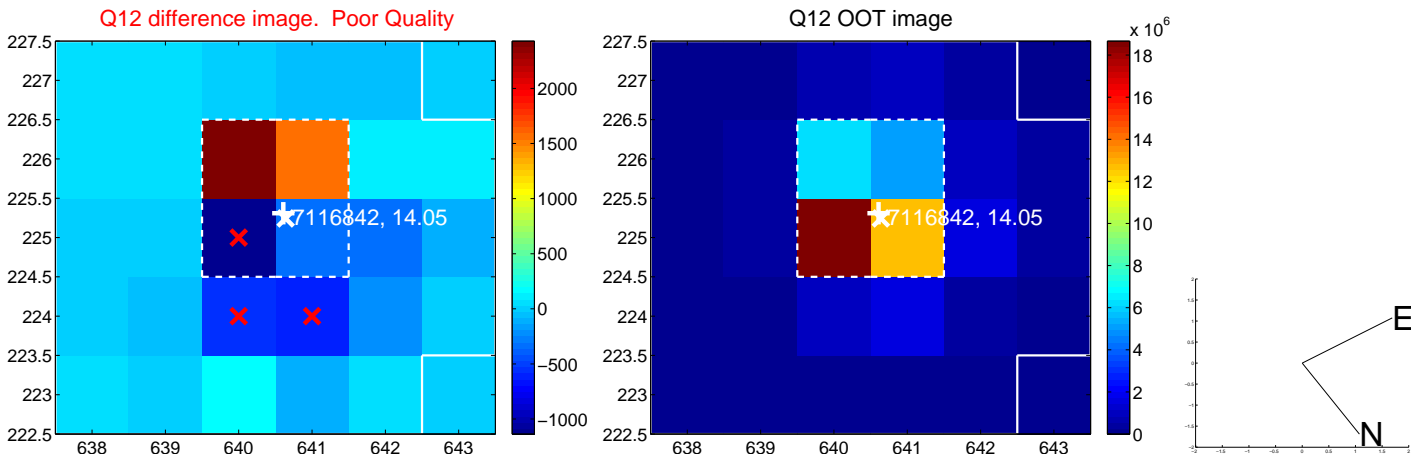
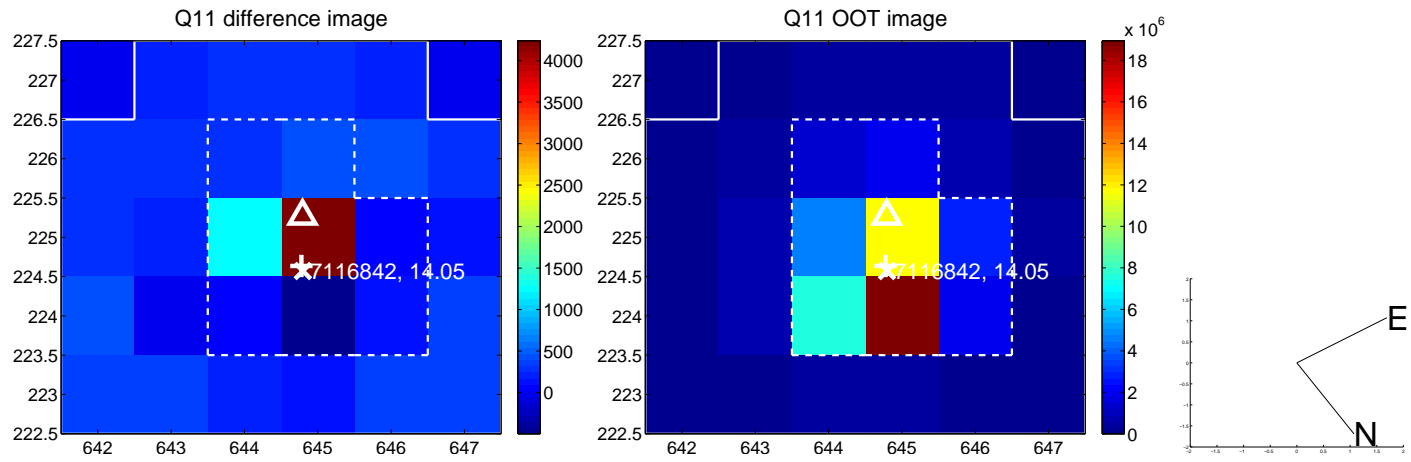
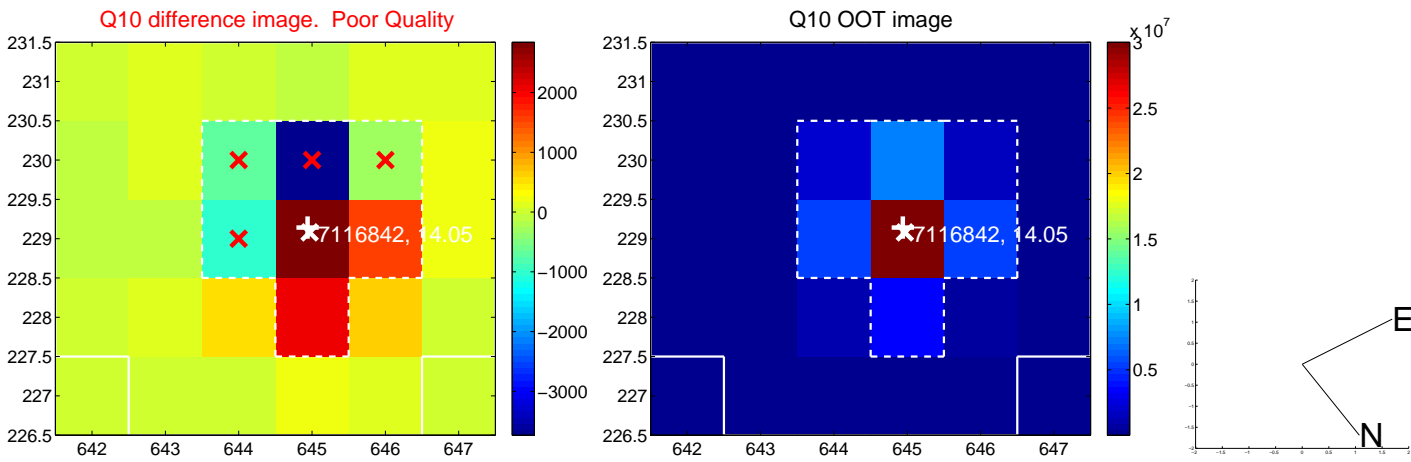
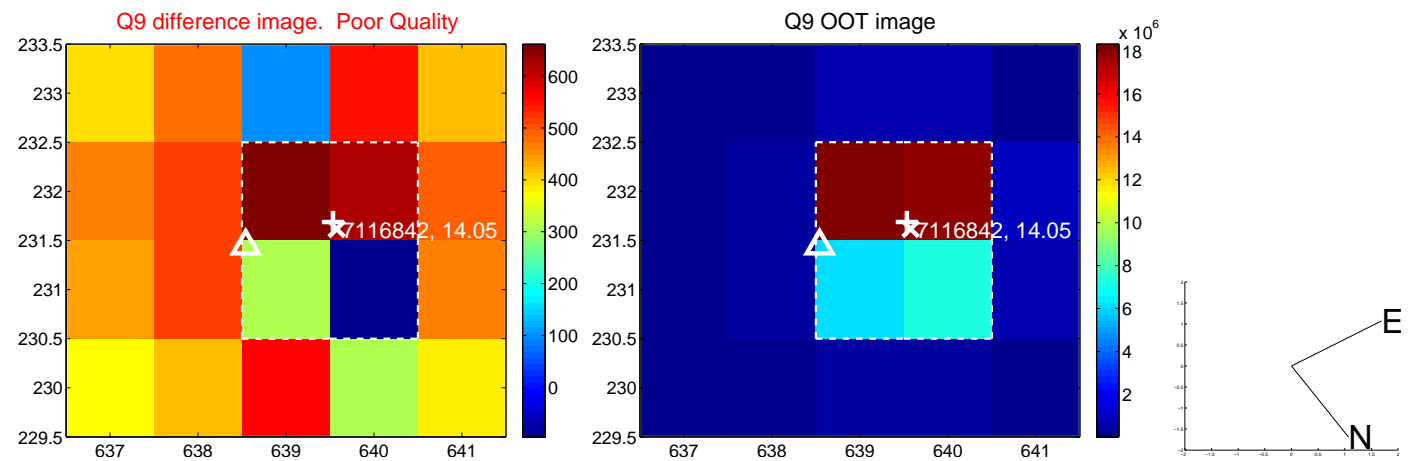
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



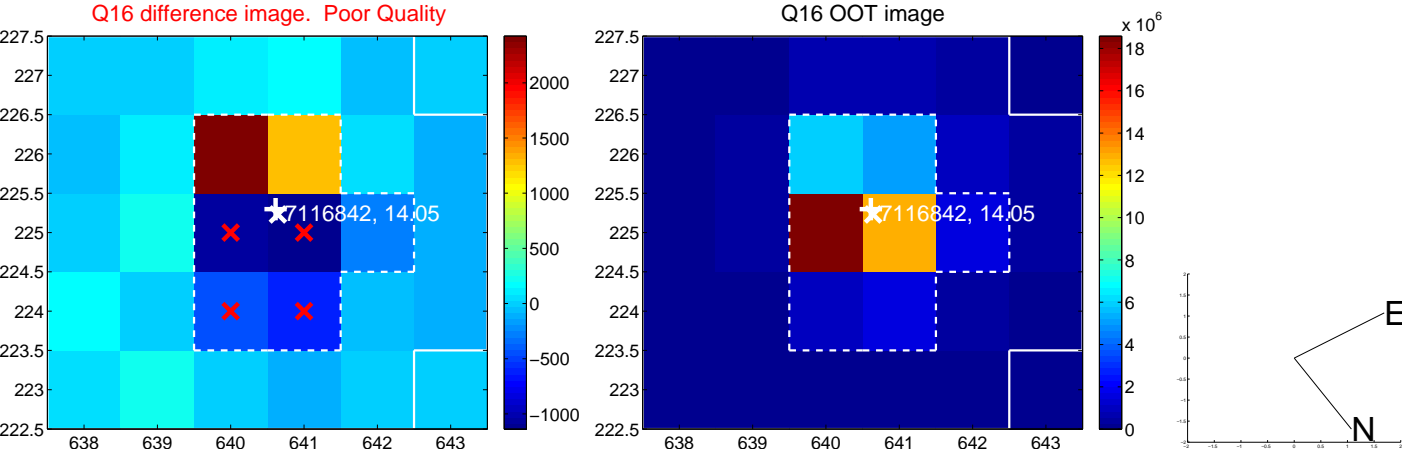
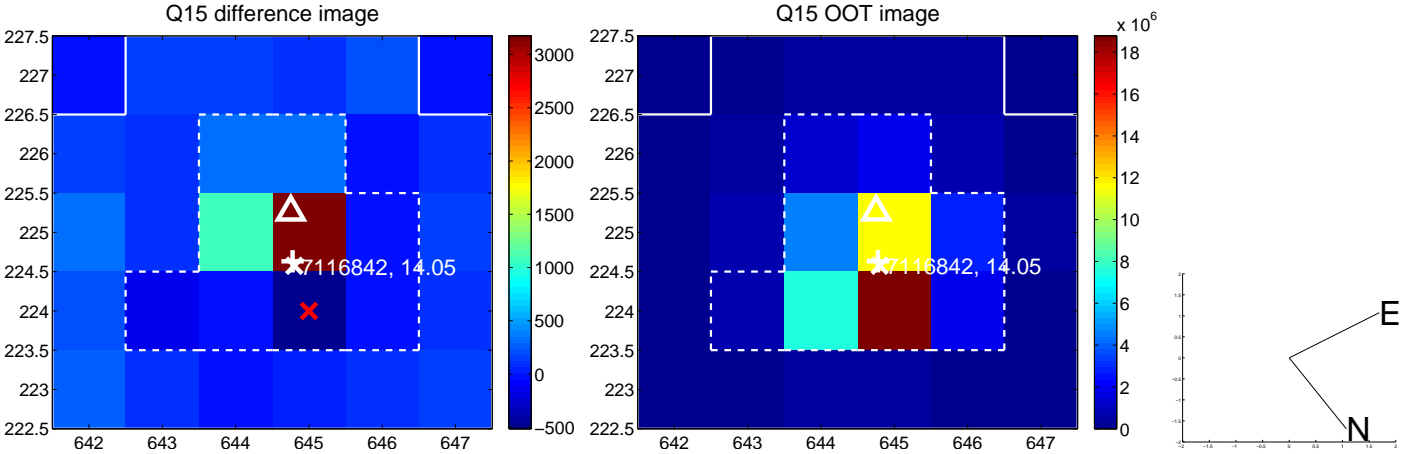
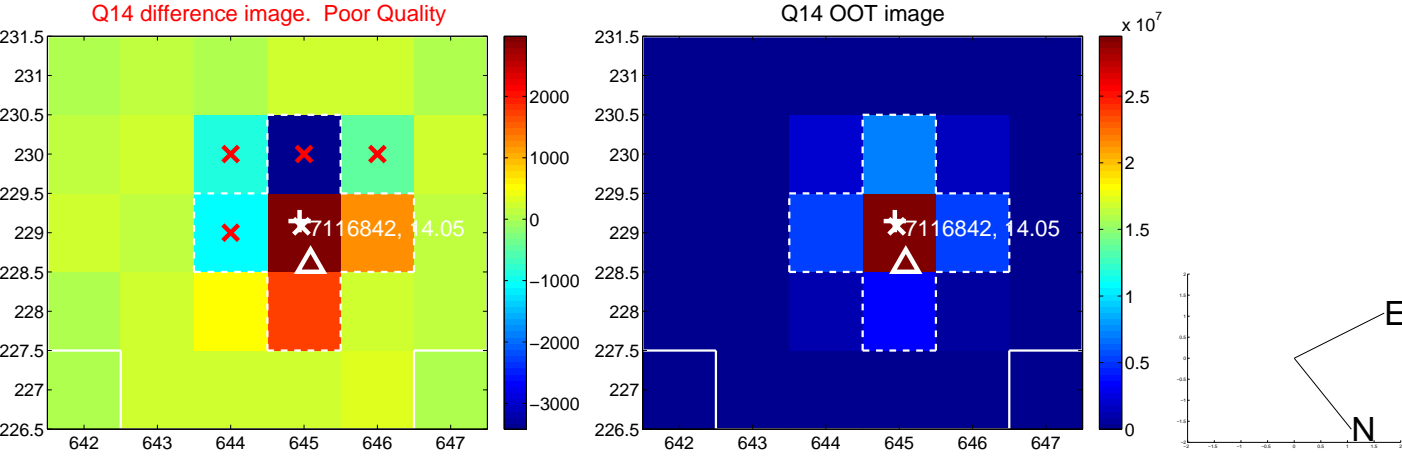
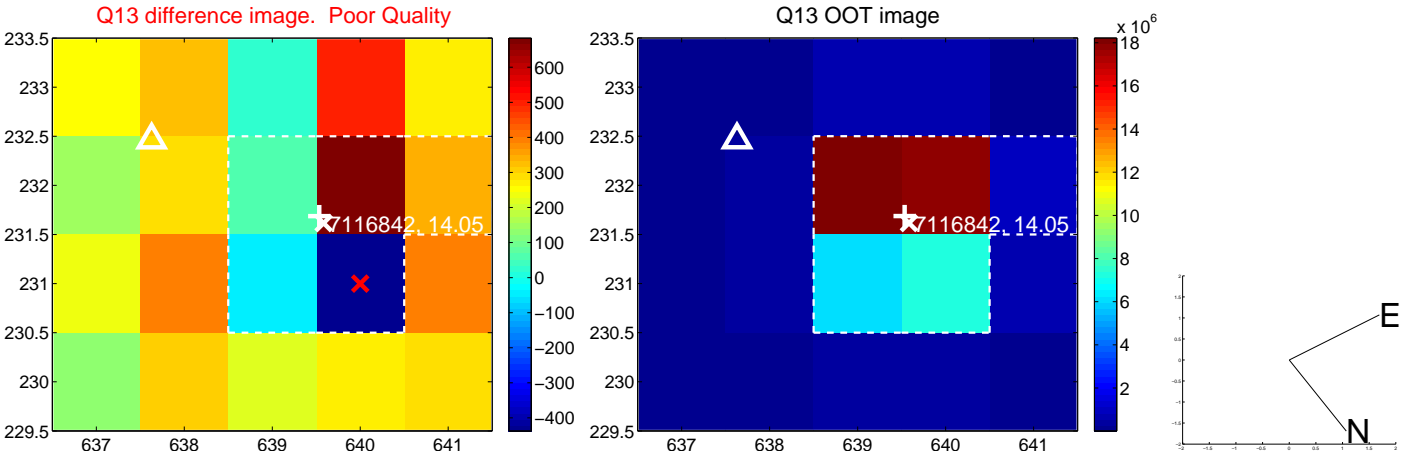
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



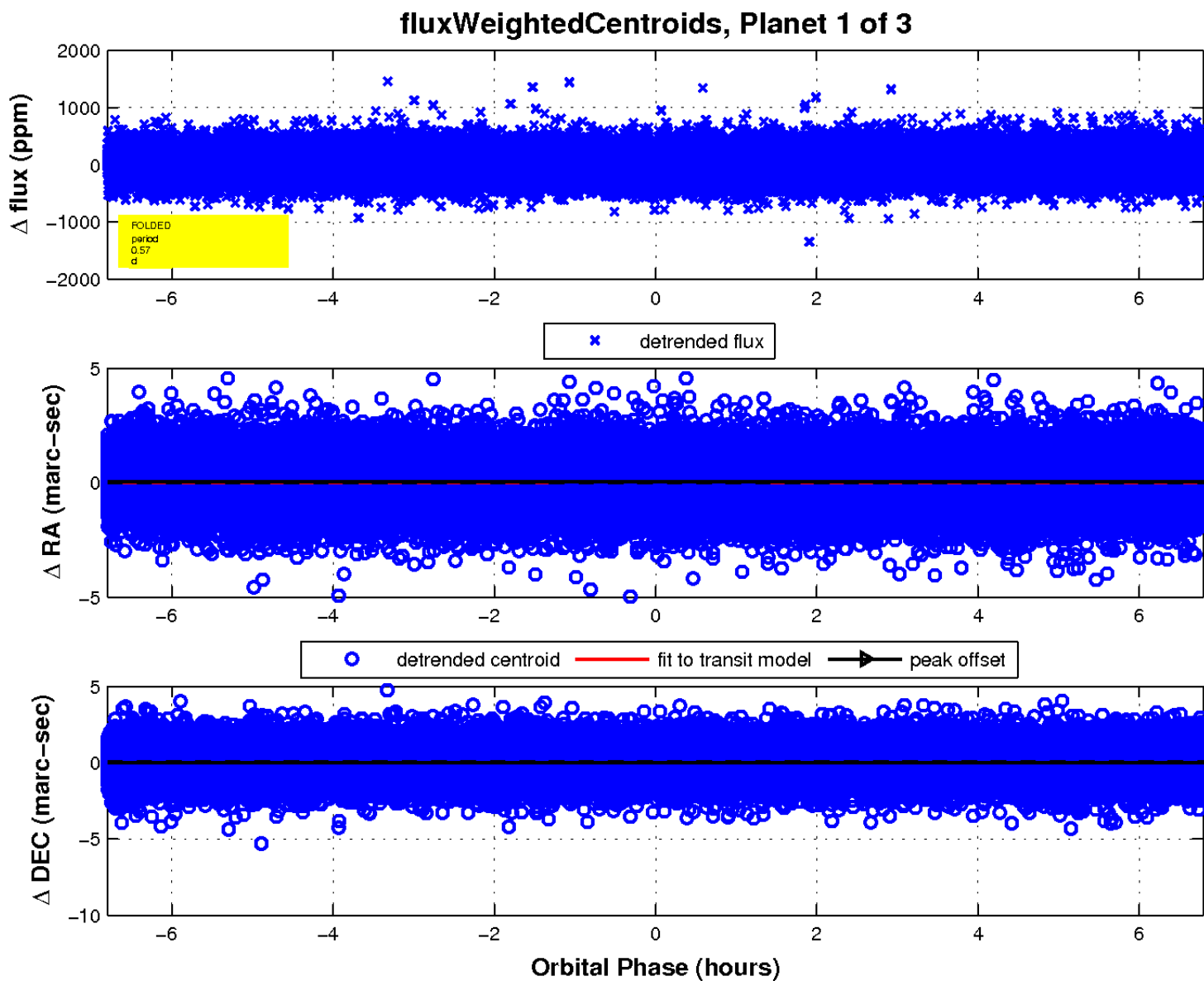
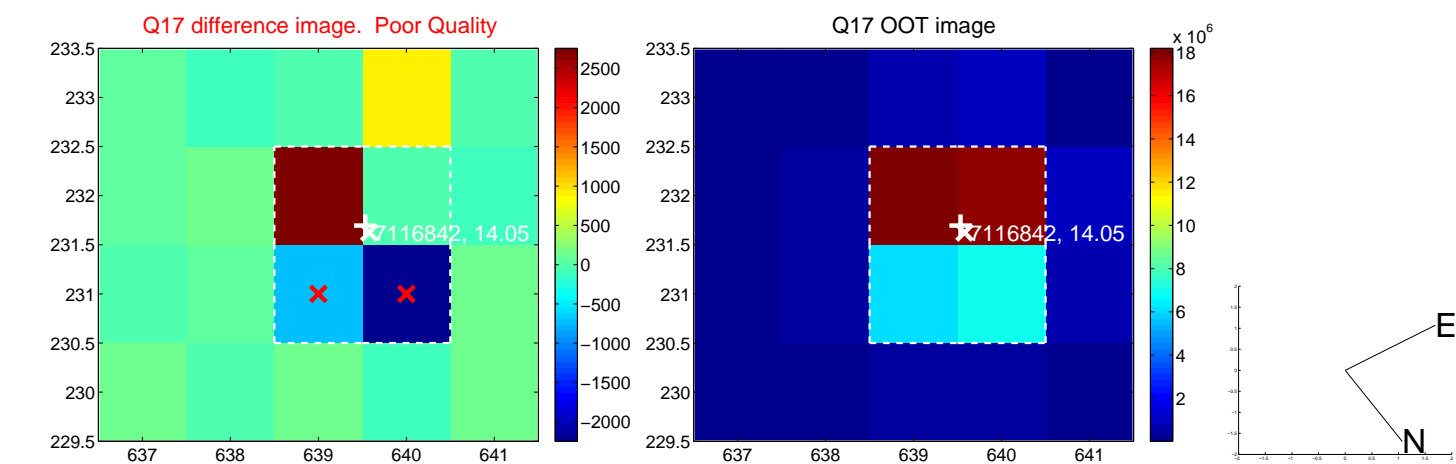
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

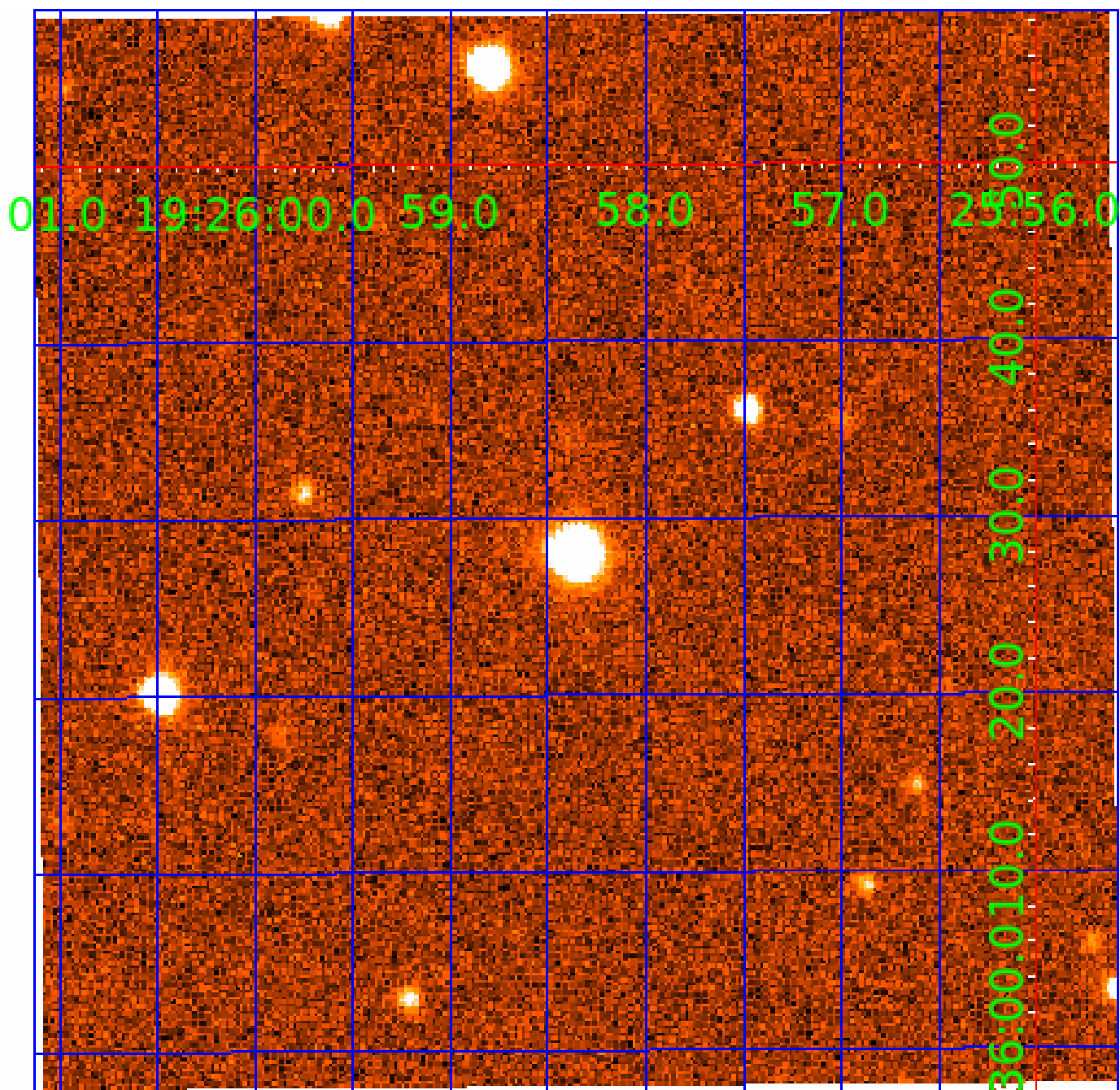


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007116842

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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Robovetter Results

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007116842-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

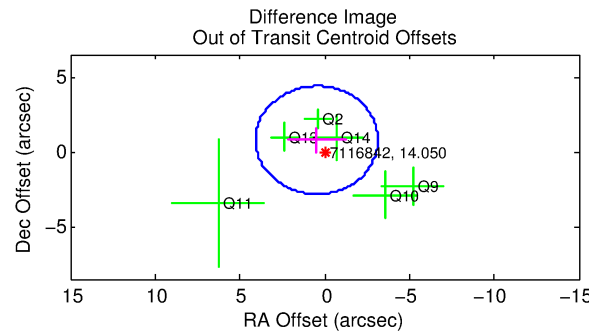
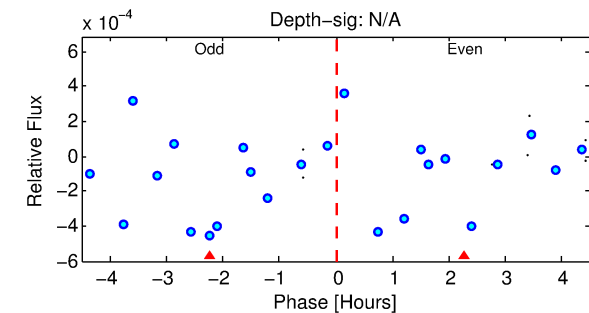
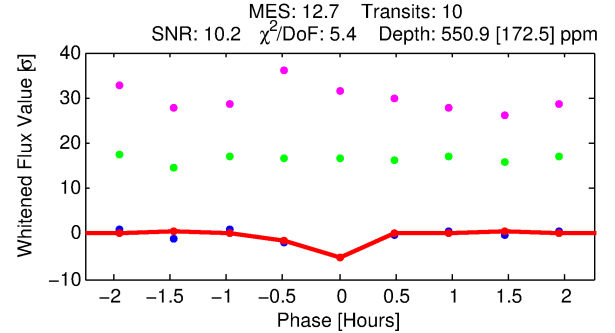
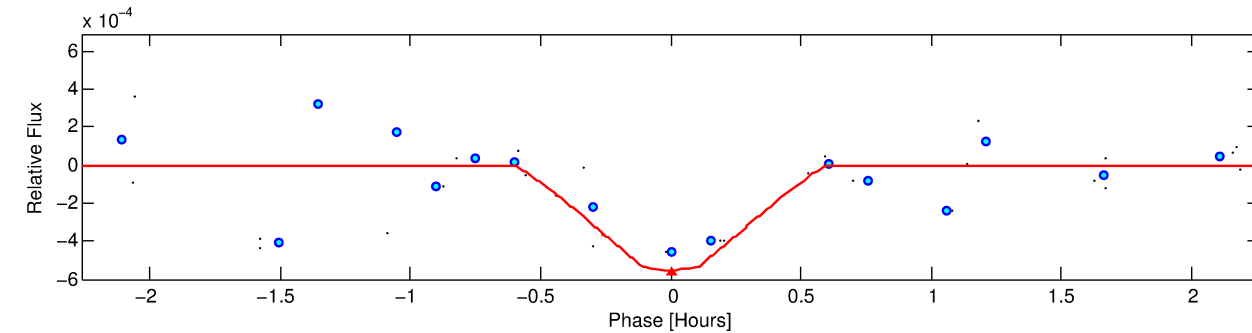
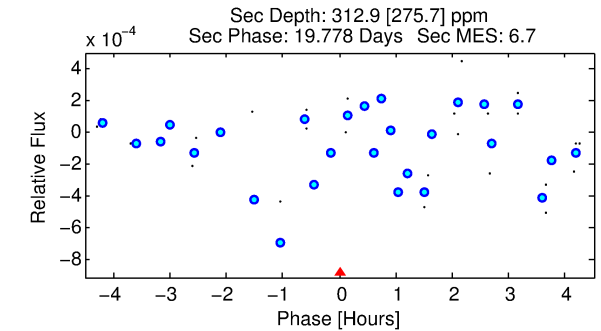
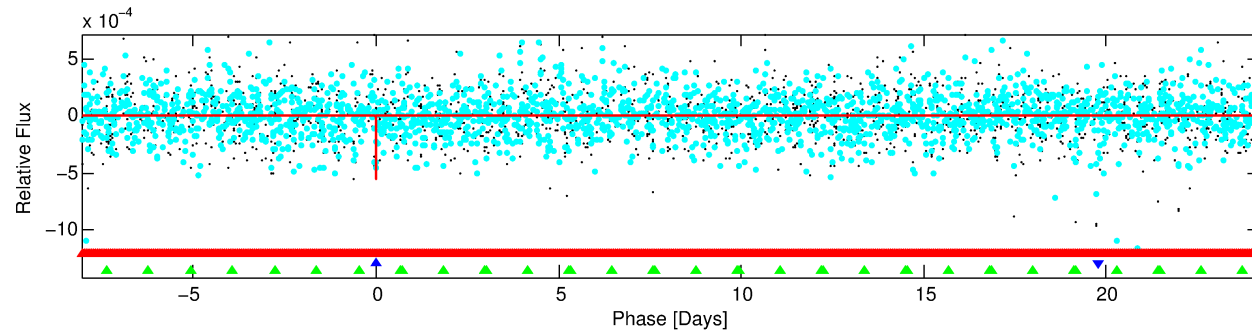
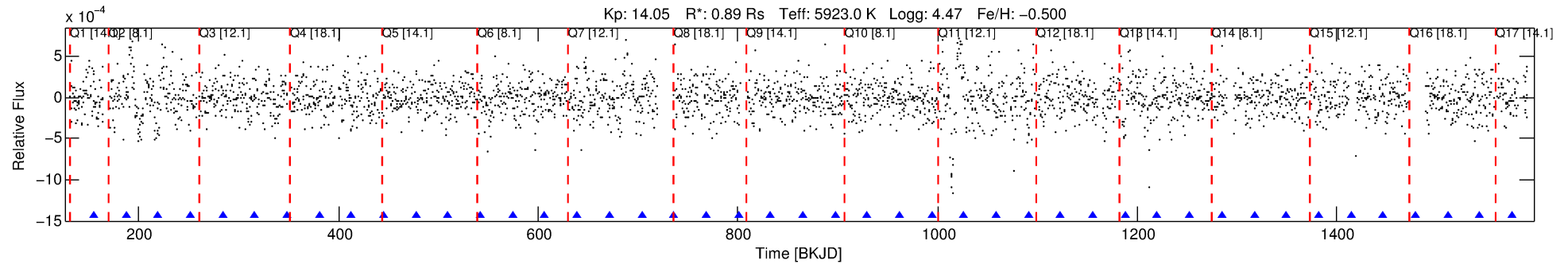
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007116842-02

No Significant Match Found

DV One-Page Summary

KIC: 7116842 Candidate: 2 of 3 Period: 32.284 d



DV Fit Results:

Period = 32.28387 [0.00031] d
Epoch = 154.9258 [0.0046] BKJD
Rp/R* = 0.0234 [0.0344]
a/R* = 243.57 [1721.21]
b = 0.70 [5.29]
Seff = 24.74 [8.62]
Teq = 569 [50] K
Rp = 2.27 [3.40] Re
a = 0.1879 [0.0426] AU
Ag = 1176.13 [3633.20] [0.32] σ
Teffp = 5149 [3956] K [1.16] σ

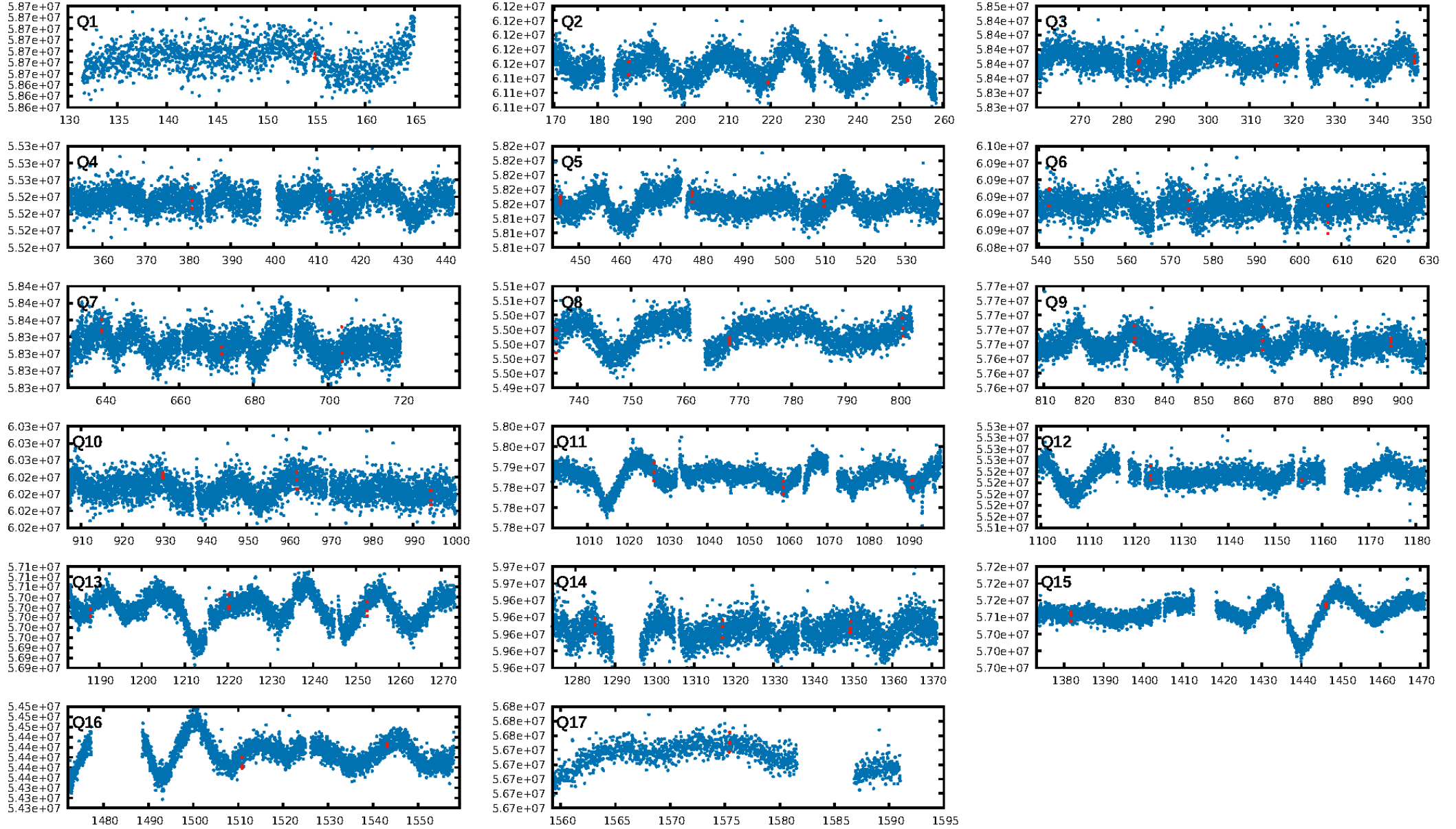
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [3.63] σ
LongPeriod-sig: N/A
ModelChiSquare2-sig: 47.6%
ModelChiSquareGof-sig: 99.7%
Bootstrap-pfa: 3.87e-13
RollingBand-fgt: 1.00 [9/9]
GhostDiagnostic-chr: 0.7591
Centroid-sig: 3.7%
Centroid-so: 1.233 arcsec [1.91] σ
OotOffset-rm: 0.903 arcsec [0.75] σ
OotOffset-st: 3/1/0/2 [6]
KicOffset-rm: 0.679 arcsec [0.54] σ
KicOffset-st: 3/1/0/2 [6]
DiffImageQuality-fgm: 0.33 [2/6]
DiffImageOverlap-fno: 0.00 [0/15]

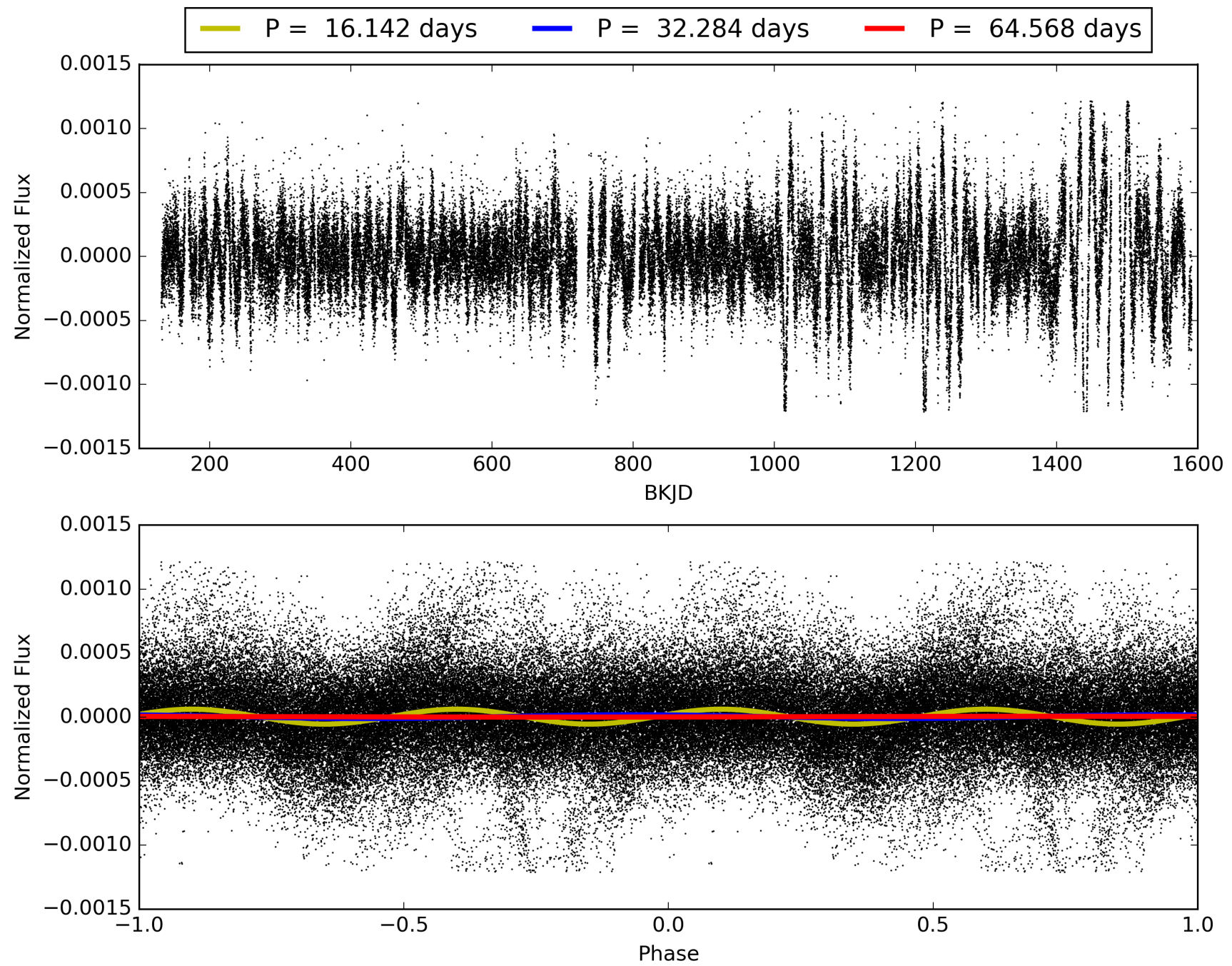
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 00:15:19 Z

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

TCE 007116842-02, PDC Light Curves

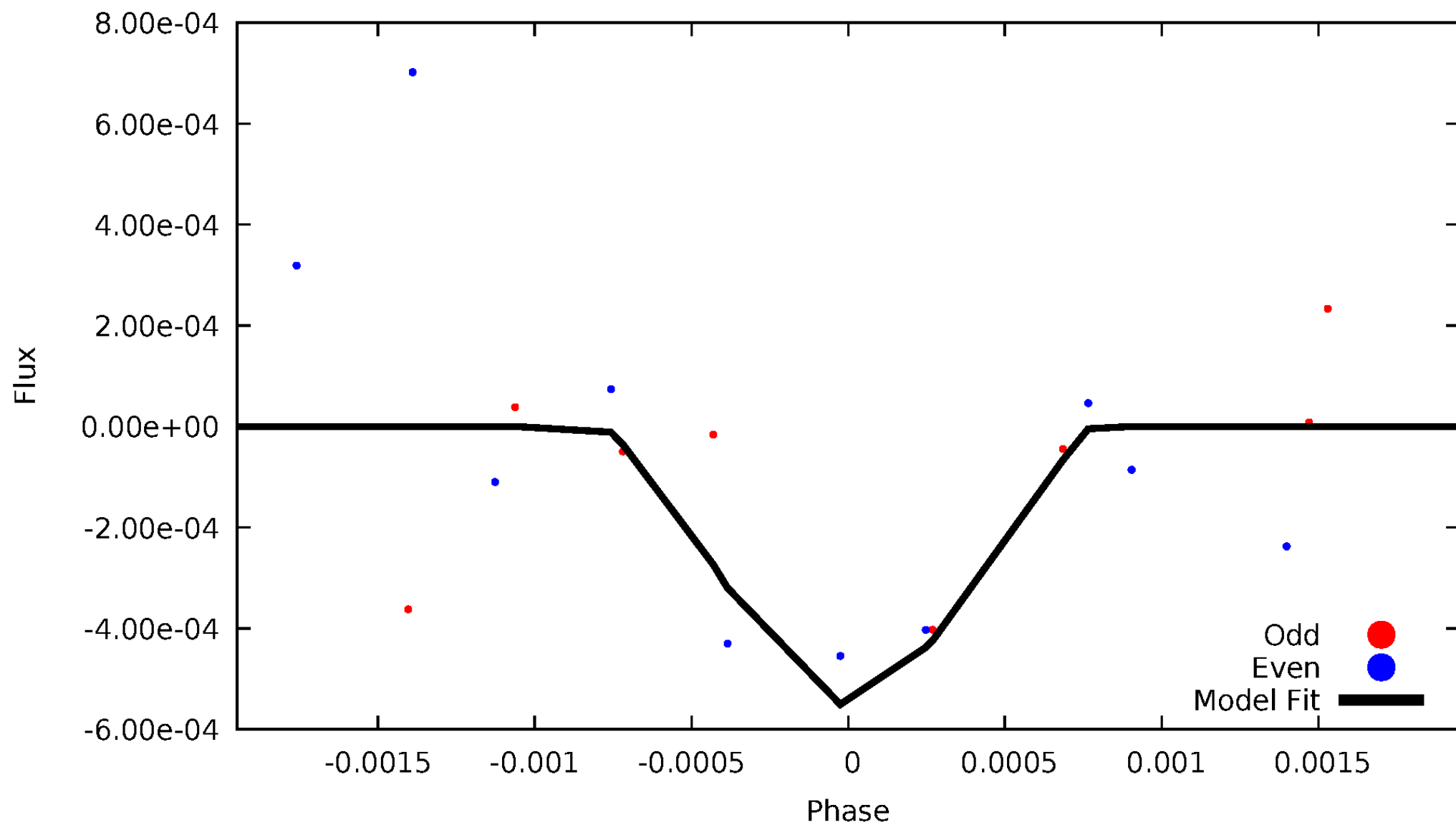


TCE 007116842-02



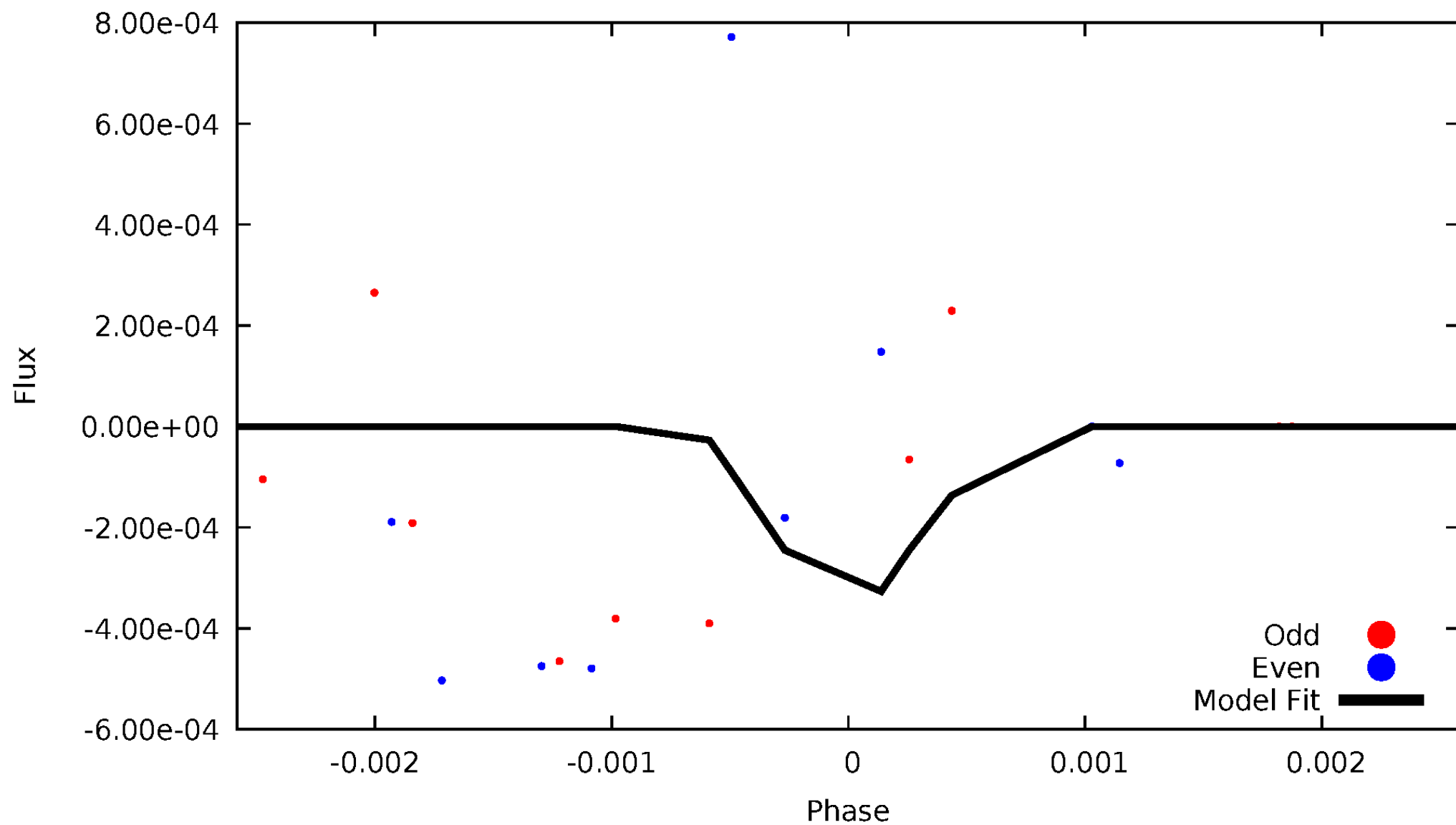
DV Odd/Even

TCE 007116842-02



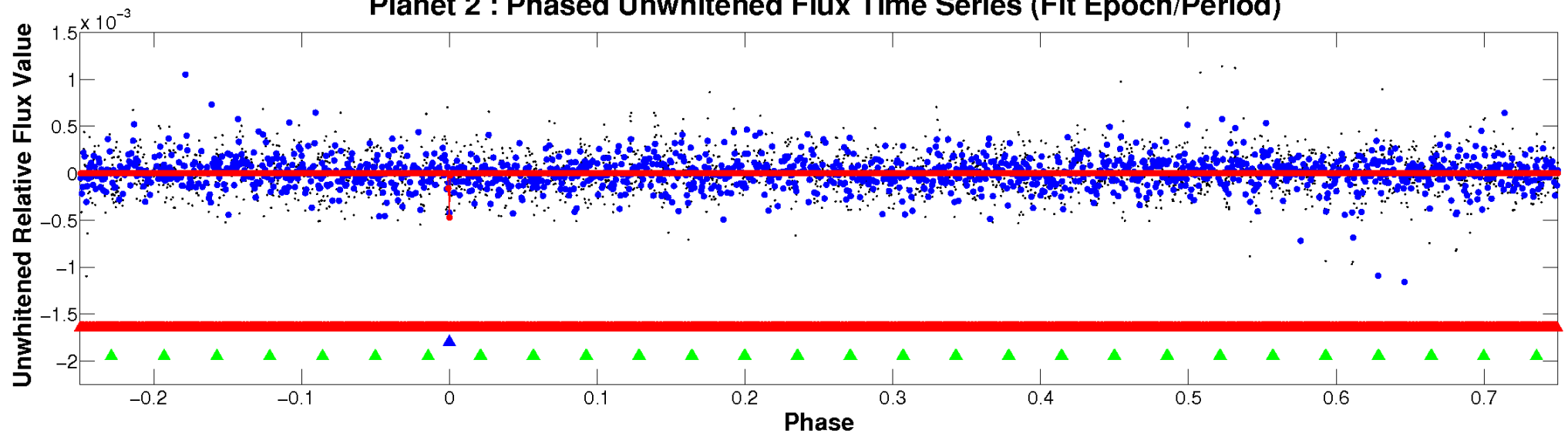
ALT Odd/Even

TCE 007116842-02

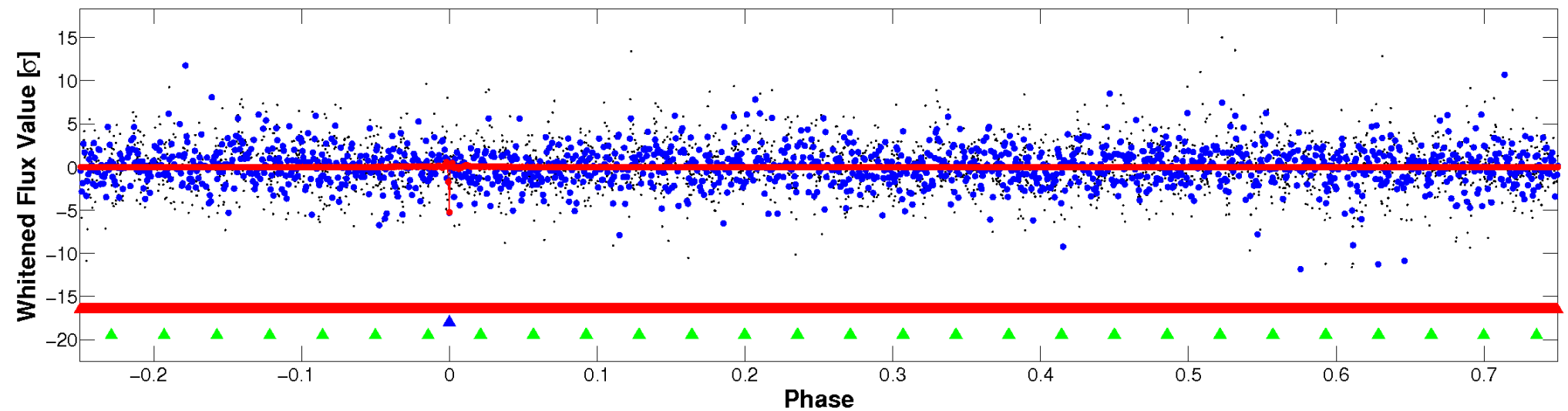


Non-Whitened Vs. Whitened Light Curve

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

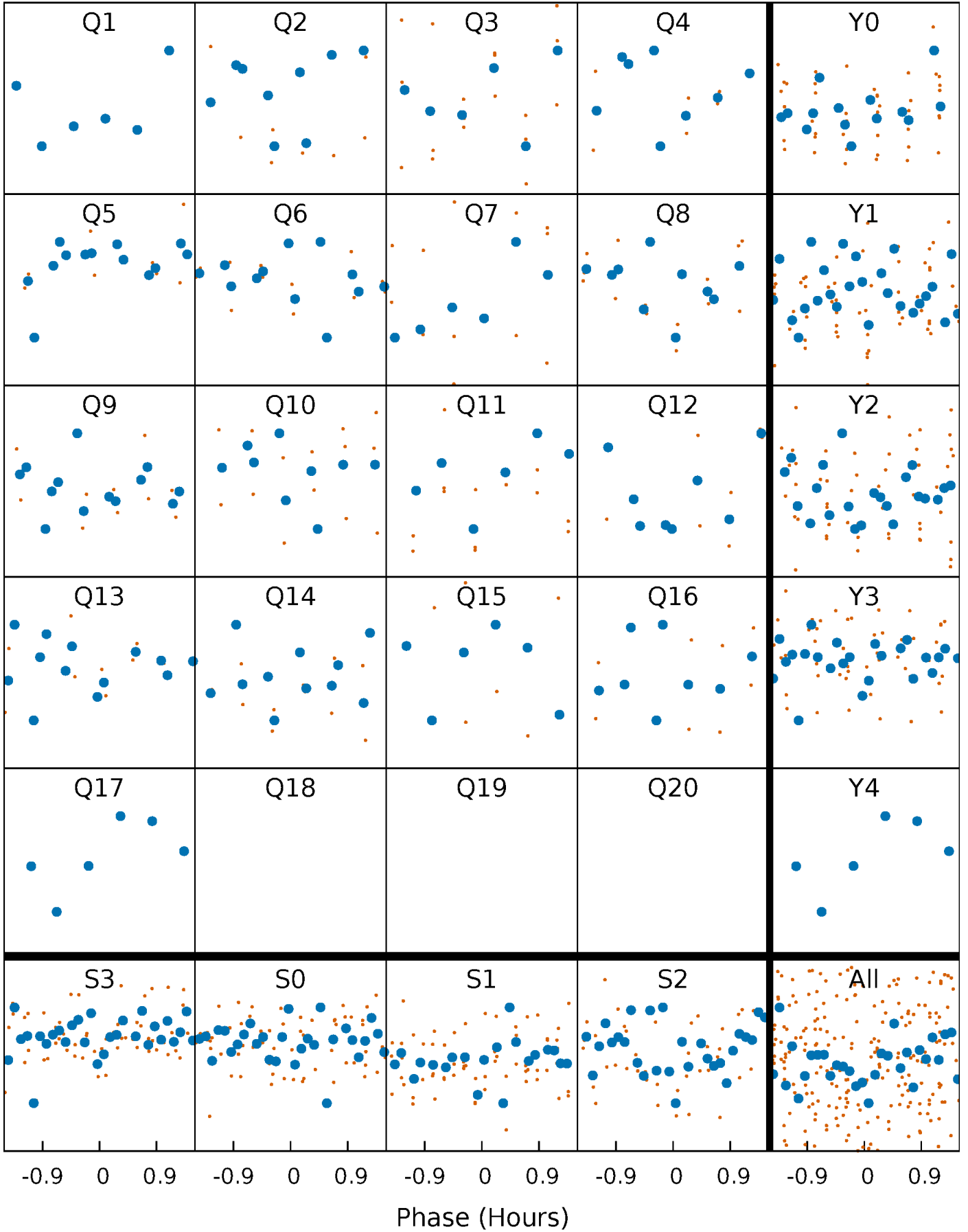


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



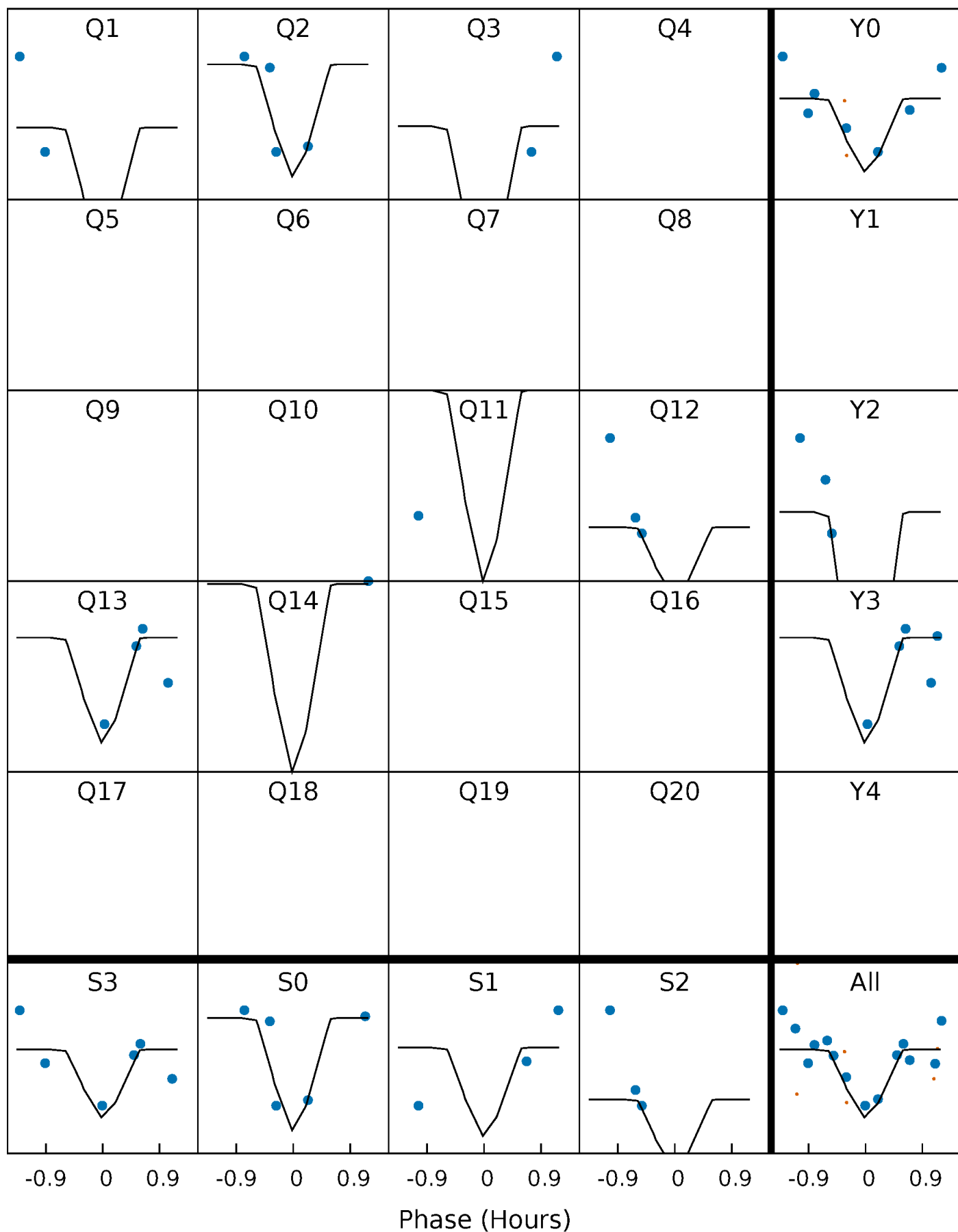
PDC Quarter-Phased Transit Curves

TCE 007116842-02 P= 32.283871 Days $T_0=154.925755$ (BKJD)



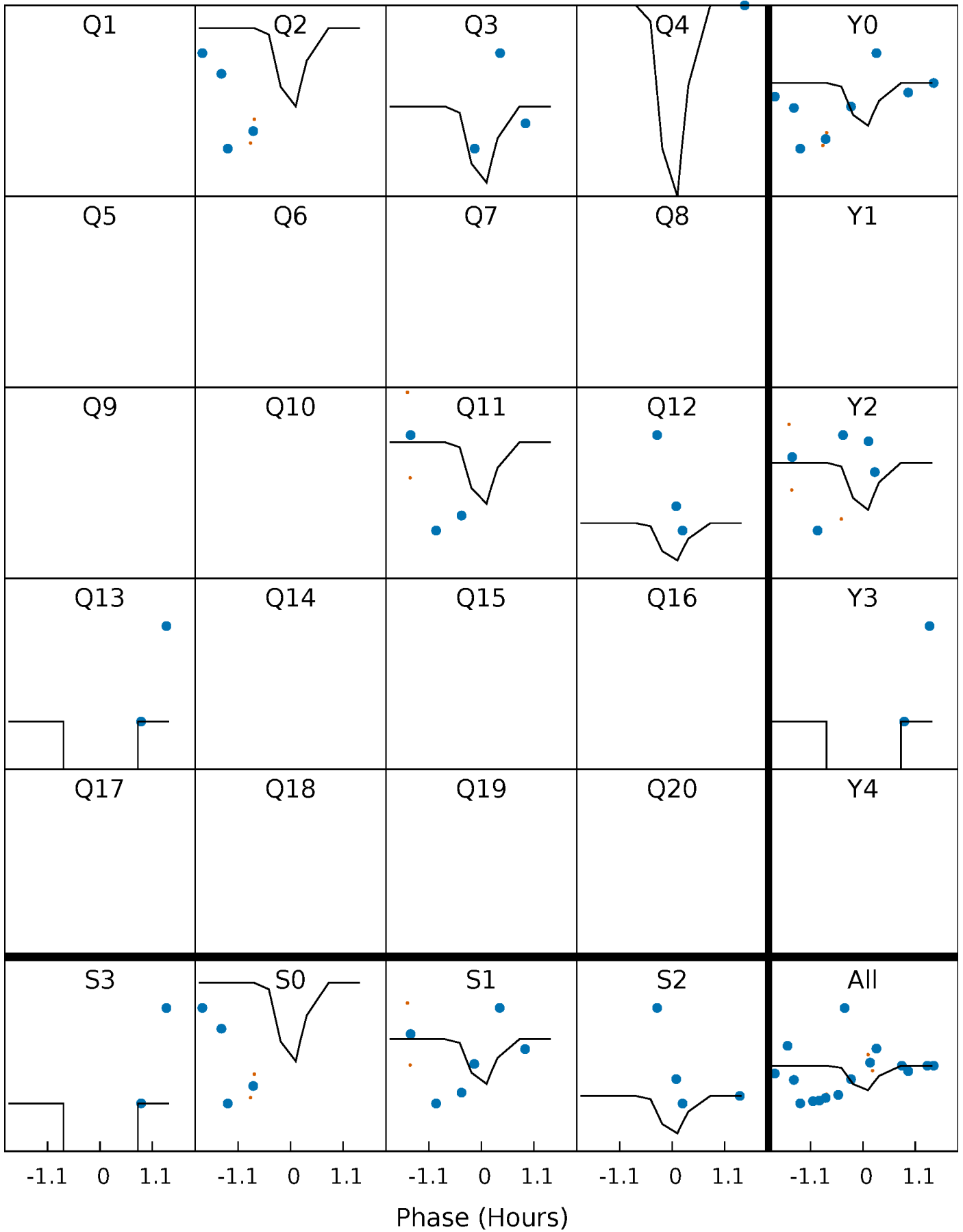
DV Quarter-Phased Transit Curves

TCE 007116842-02 P= 32.283871 Days $T_0=154.925755$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

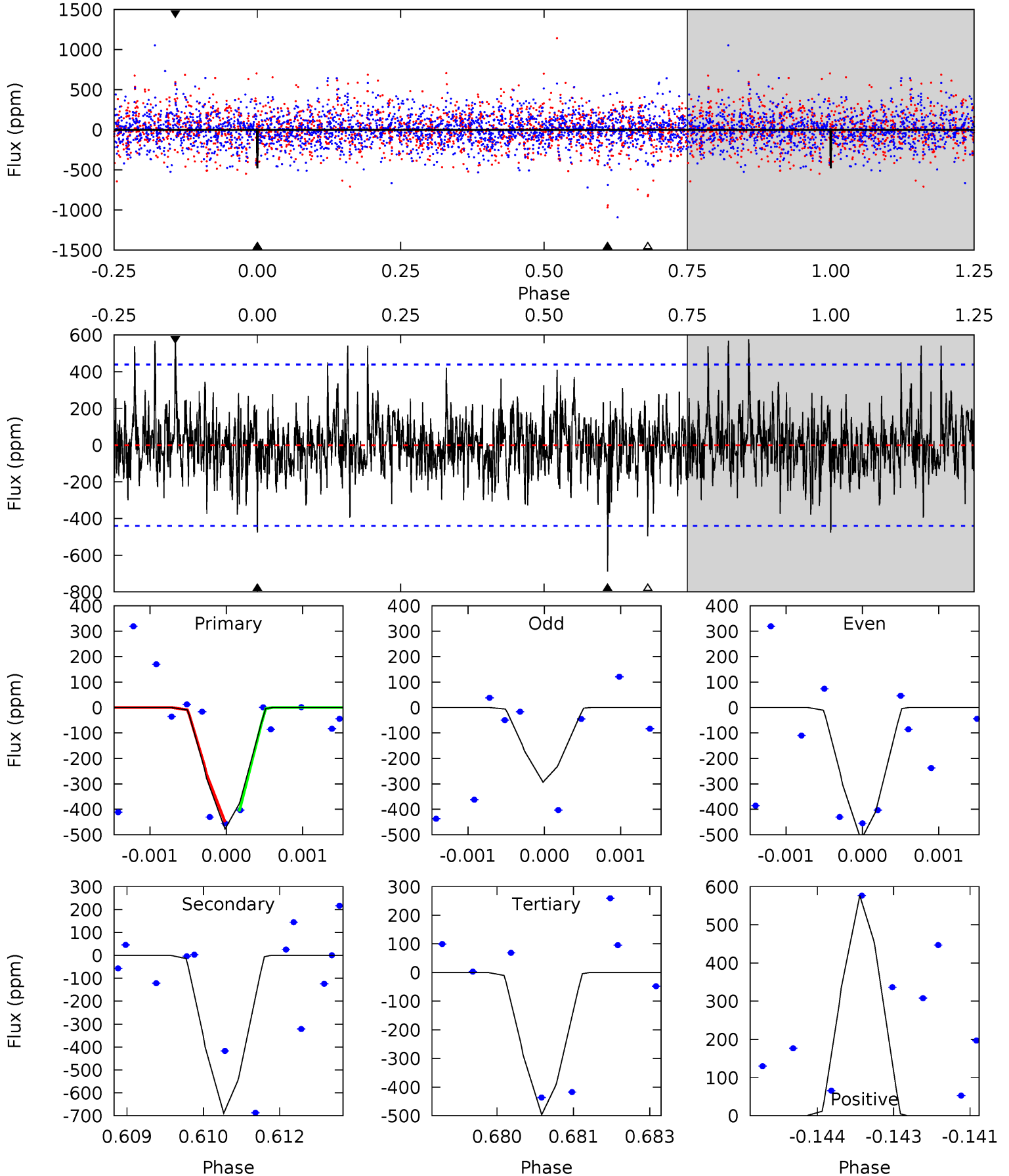
TCE 007116842-02 P= 32.281303 Days $T_0=154.973872$ (BKJD)



DV Model-Shift Uniqueness Test

007116842-02, P = 32.283871 Days, E = 122.641884 Days

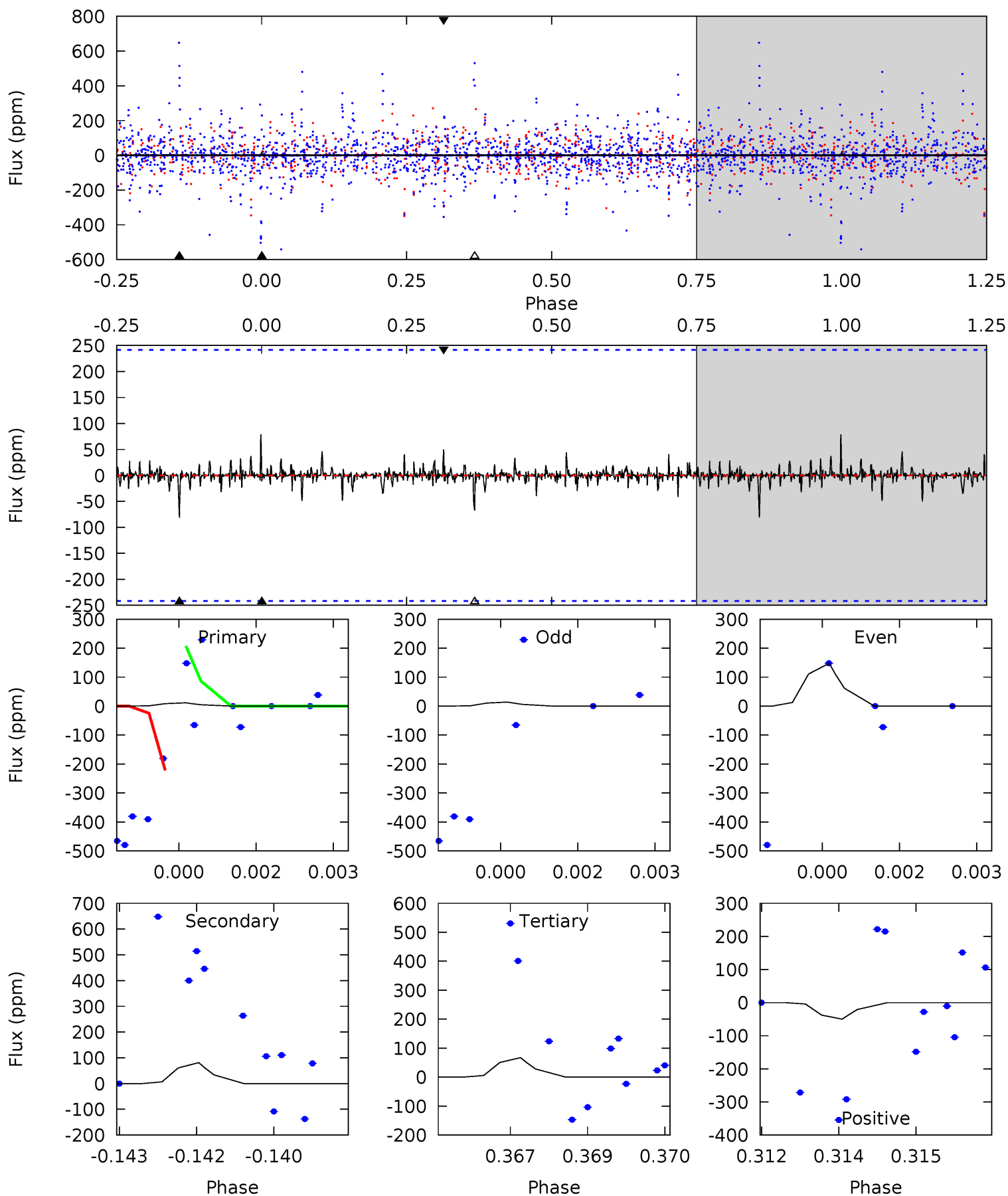
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.84	8.43	6.07	7.05	5.38	3.18	1.57	-0.23	-1.21	2.36	1.38	1.36	1.00	0.46	0.26



Alt Model-Shift Uniqueness Test

007116842-02, P = 32.281303 Days, E = 122.692569 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.25	1.80	1.50	1.11	5.38	3.17	0.21	-1.25	-0.86	0.31	0.69	0.98	1.00	0.49	0.13



Stellar Parameters For KIC 007116842

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5923^{+159}_{-159}	$4.468^{+0.084}_{-0.182}$	$-0.500^{+0.300}_{-0.300}$	$0.890^{+0.238}_{-0.102}$	$0.849^{+0.105}_{-0.070}$	$1.695^{+0.719}_{-0.824}$
	+3%/-3%	+2%/-4%	+60%/-60%	+27%/-11%	+12%/-8%	+42%/-49%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007116842-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-689 ± 82	$3.55^{+3.22}_{-2.32}$	803^{+52}_{-37}	5173^{+3806}_{-1151}	1061^{+7863}_{-773}
Alt.	-81 ± 45	$3.21^{+2.95}_{-2.03}$	805^{+51}_{-37}	3496^{+1666}_{-742}	130^{+1016}_{-106}

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

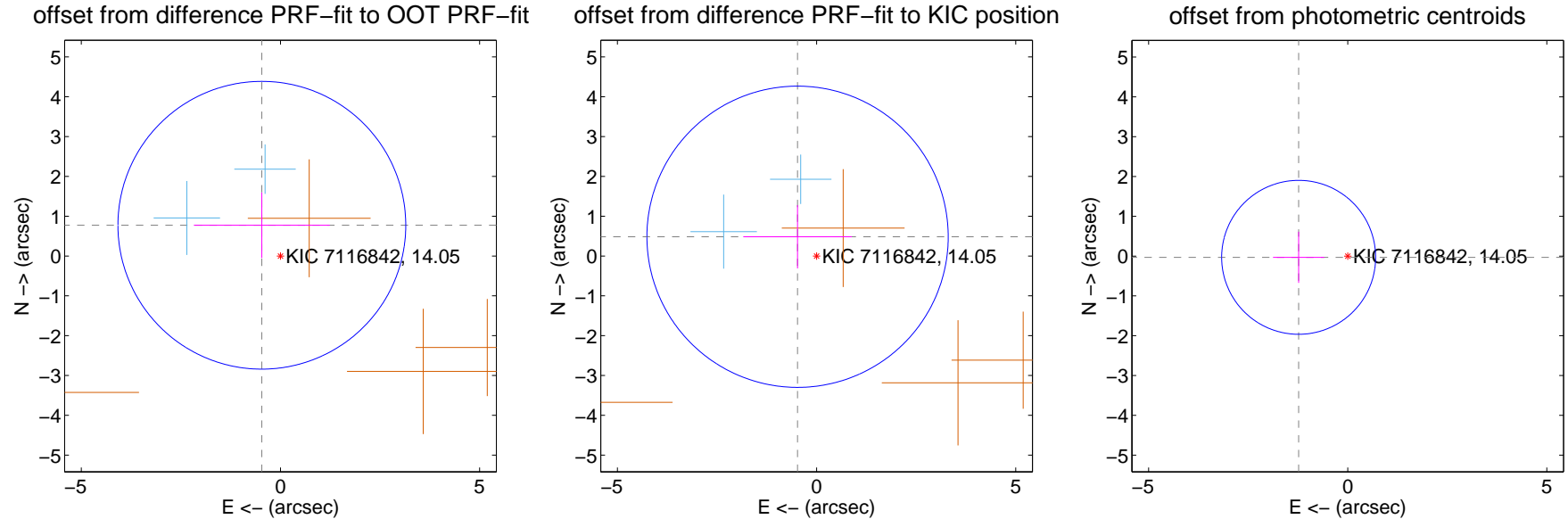
DV Centroid Data

Supplemental centroid analysis for 007116842-02. Kepler magnitude: 14.05. Transit SNR 10.23

There are 2 quarters with good PRF difference image offsets

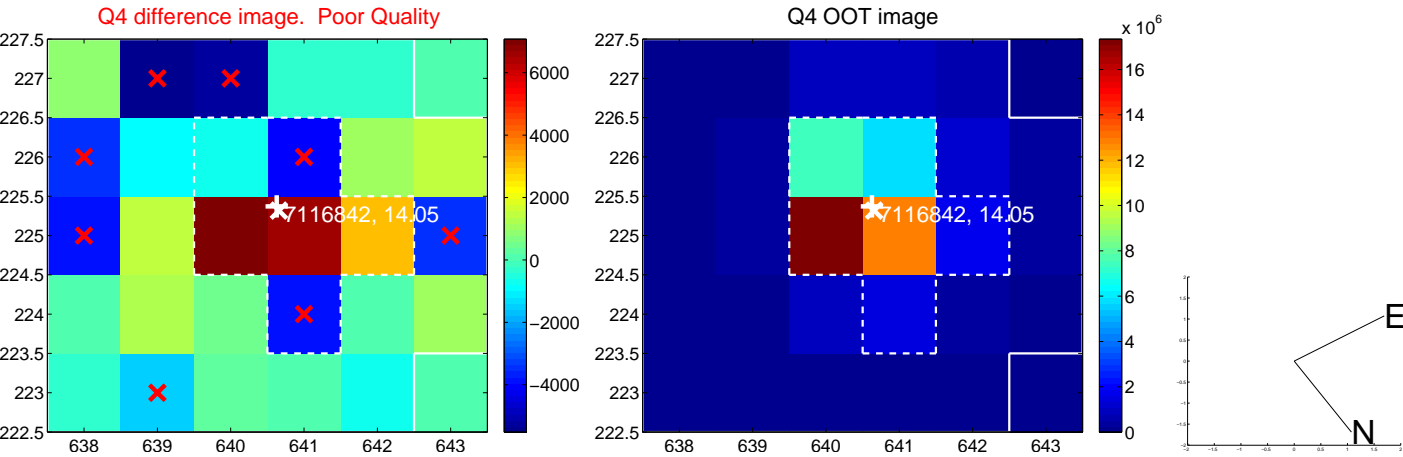
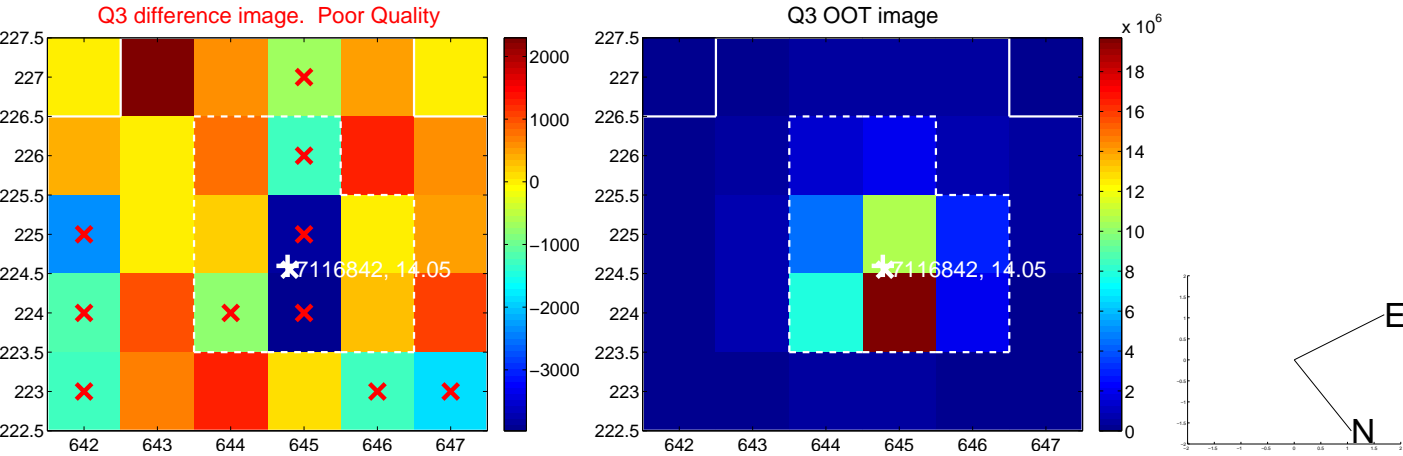
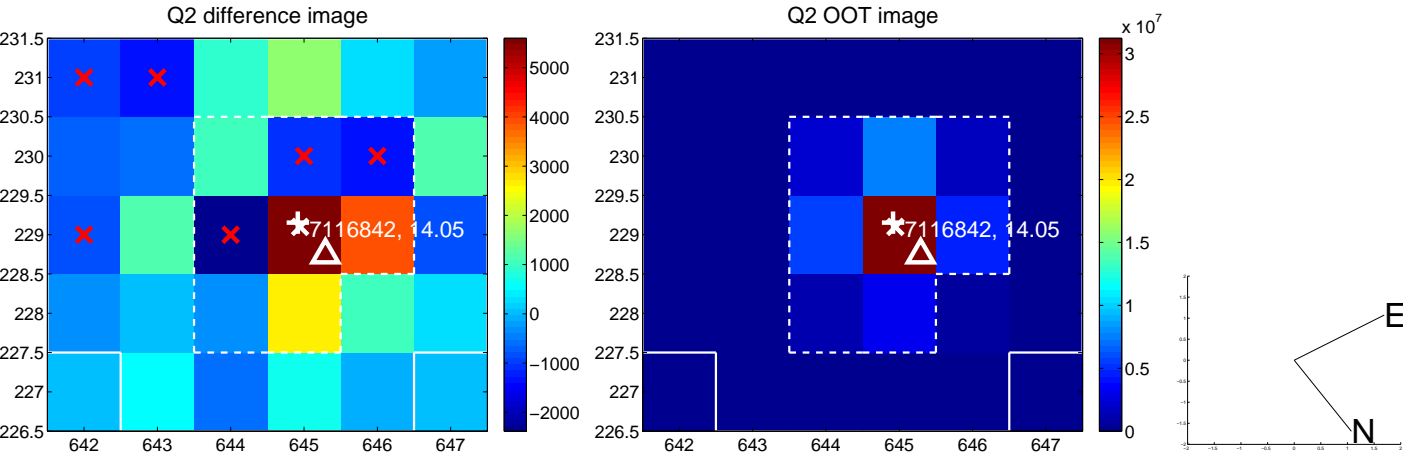
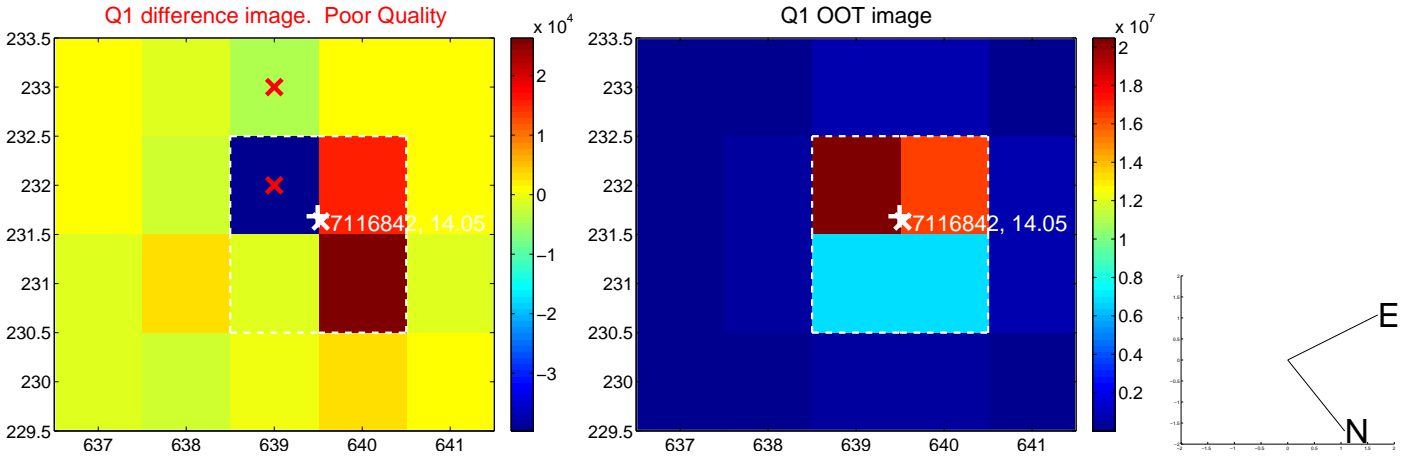
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.903 ± 1.204	0.75	0.467 ± 1.705	0.773 ± 0.823
PRF-fit source offset from KIC position	0.679 ± 1.261	0.54	0.477 ± 1.362	0.484 ± 0.794
photometric centroid source offset	1.23 ± 0.64	1.91	1.23 ± 0.64	-0.03 ± 0.64

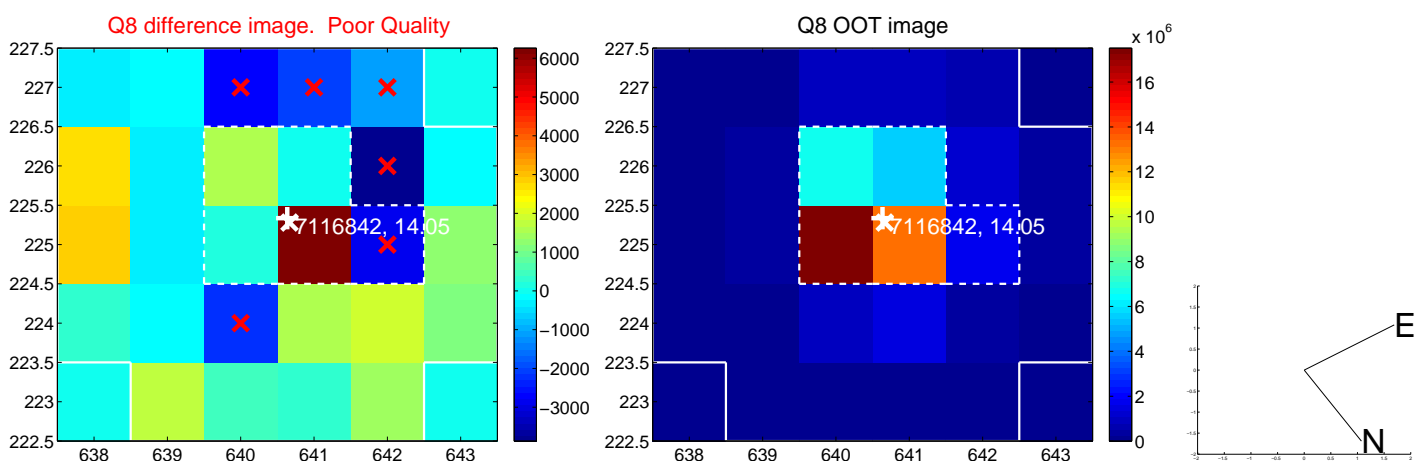
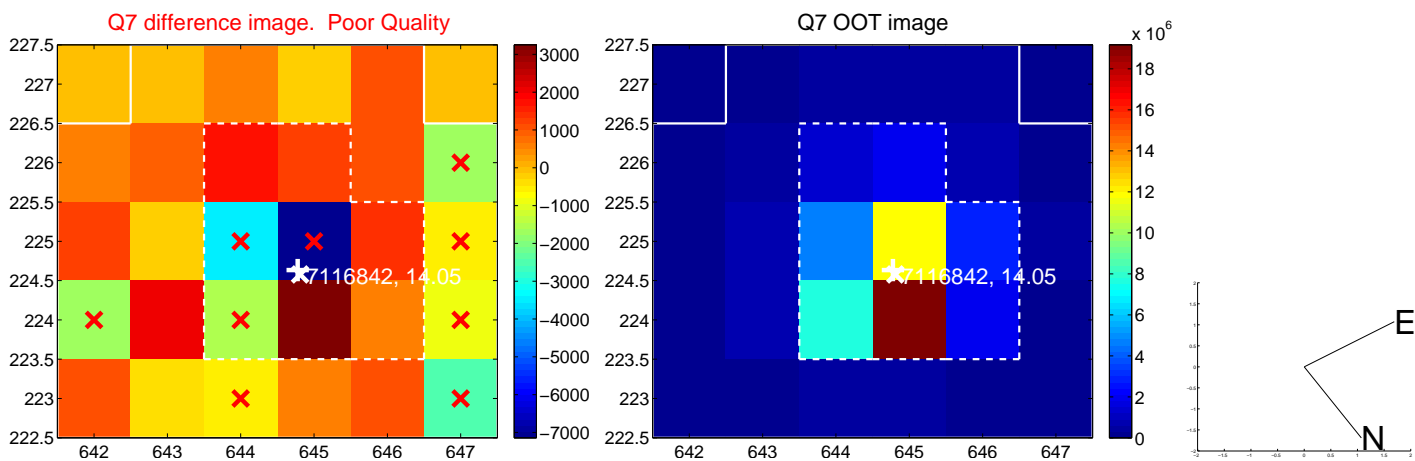
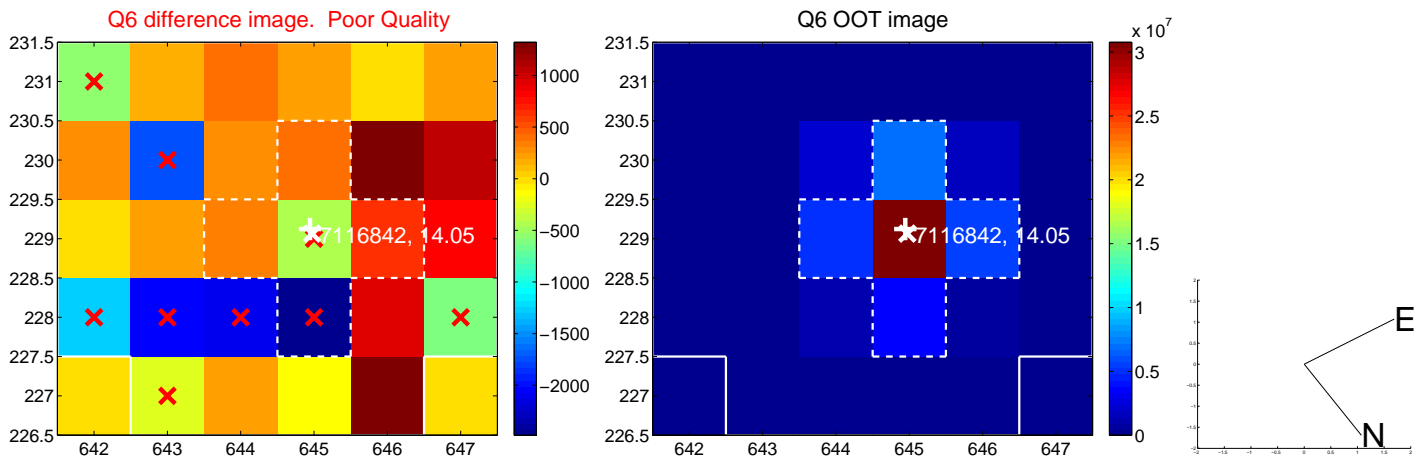
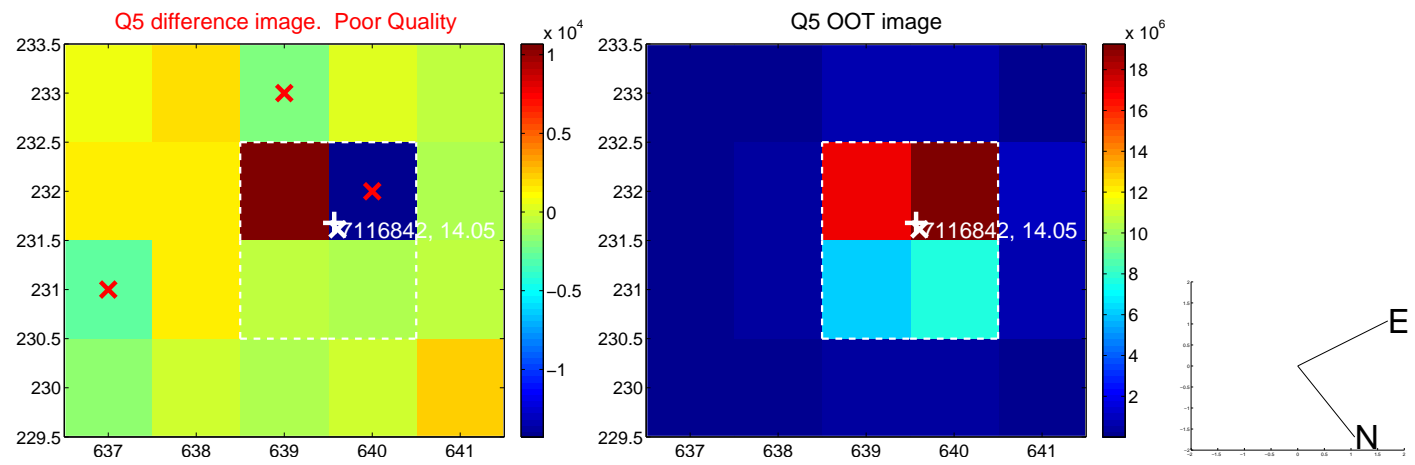


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

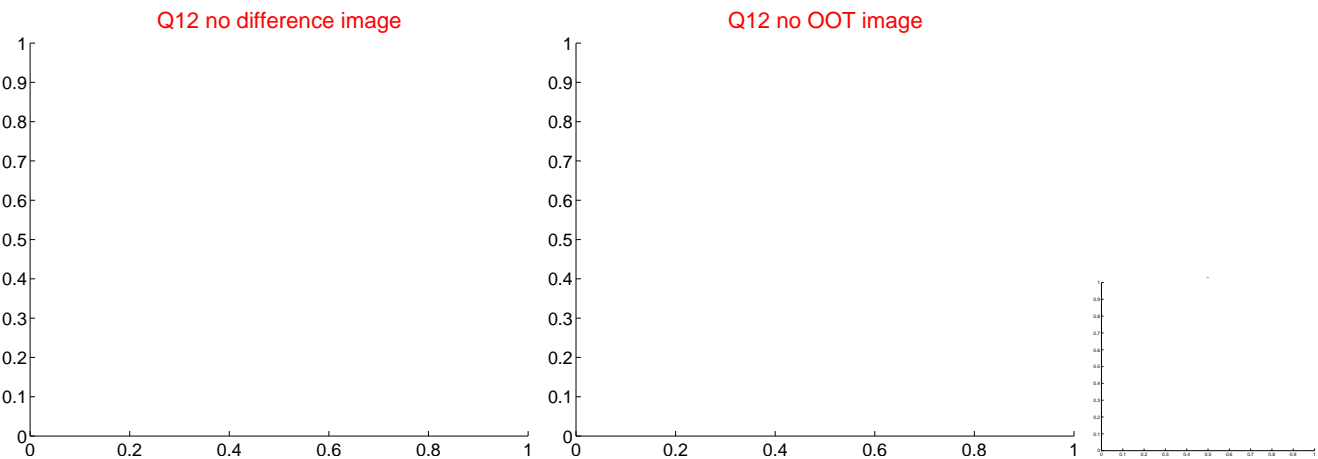
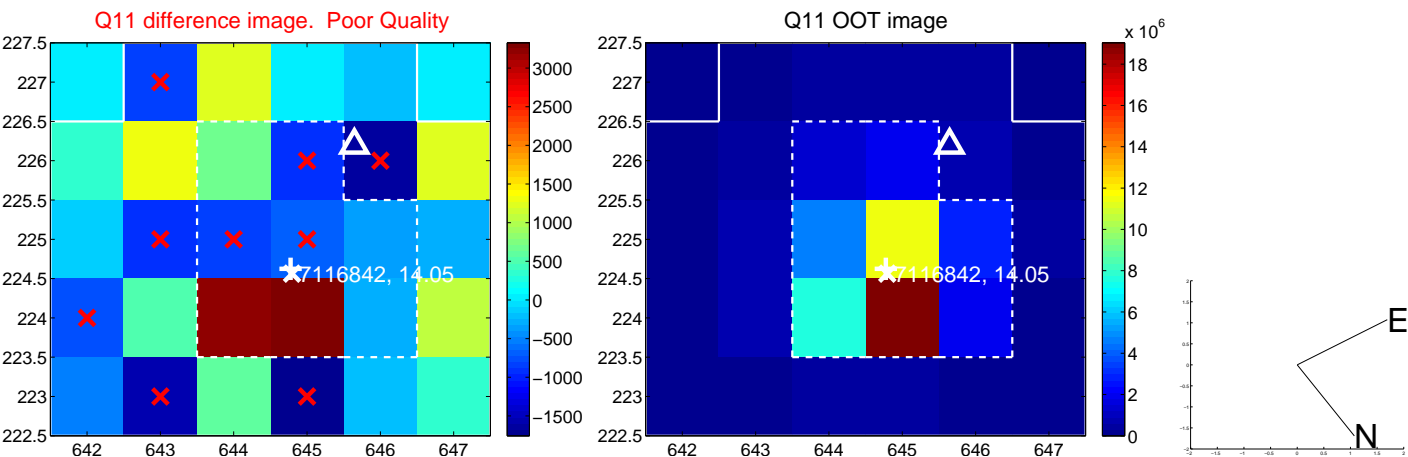
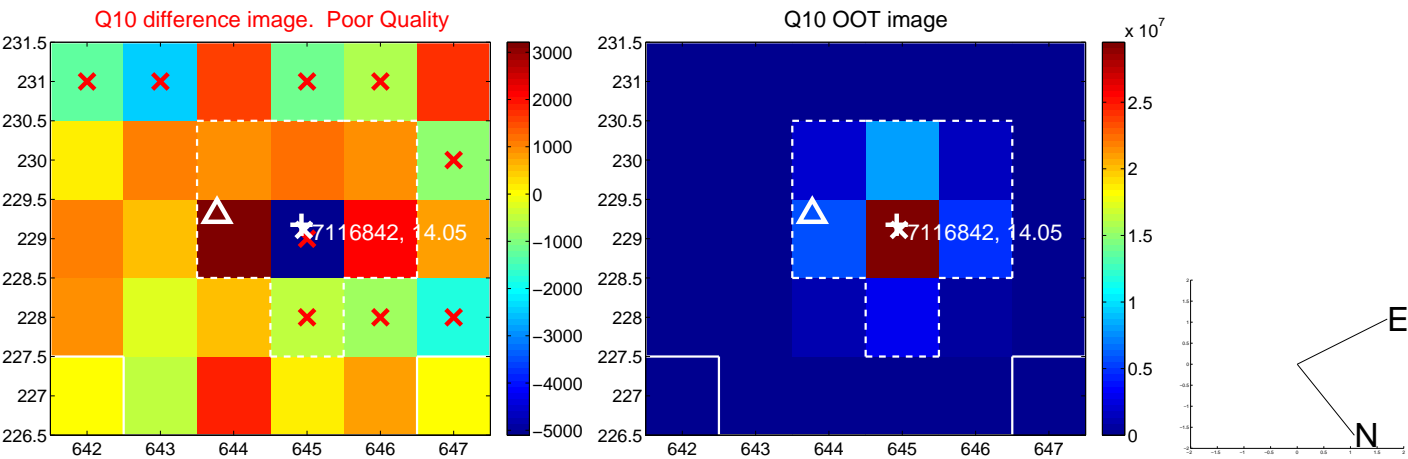
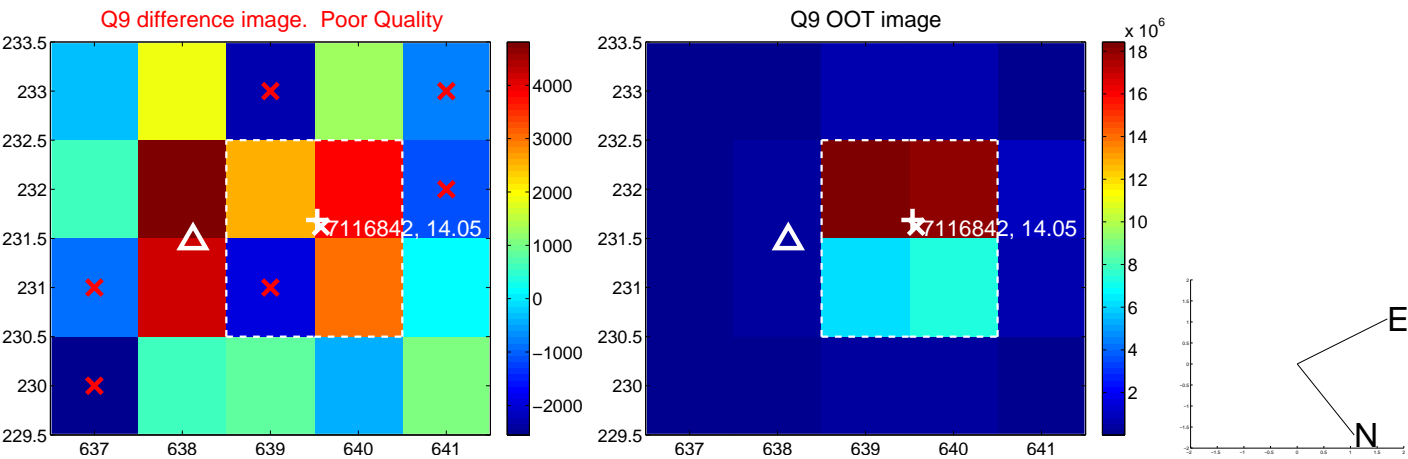
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



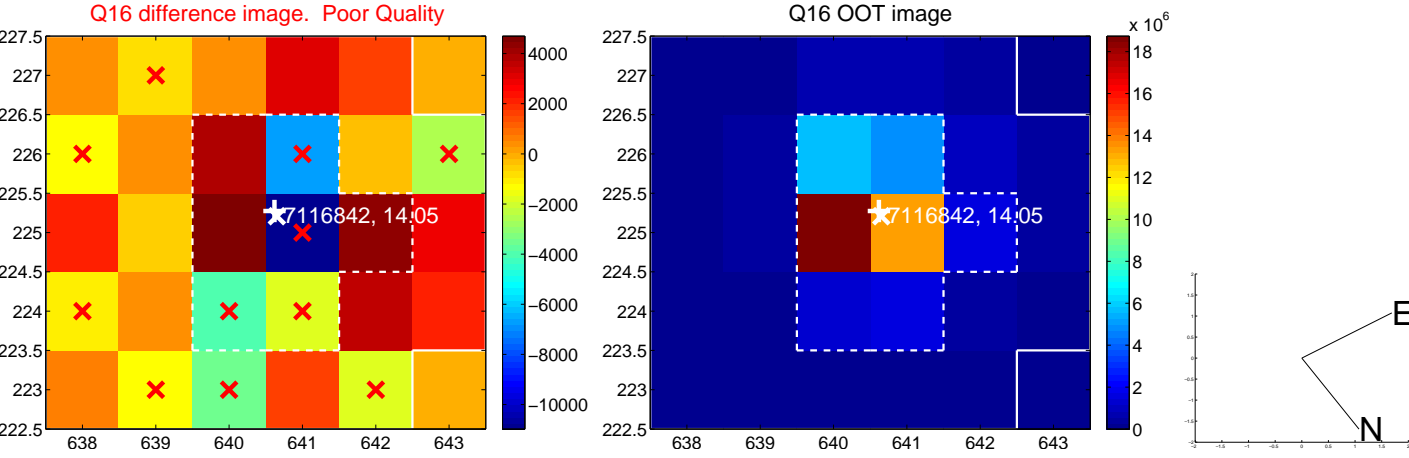
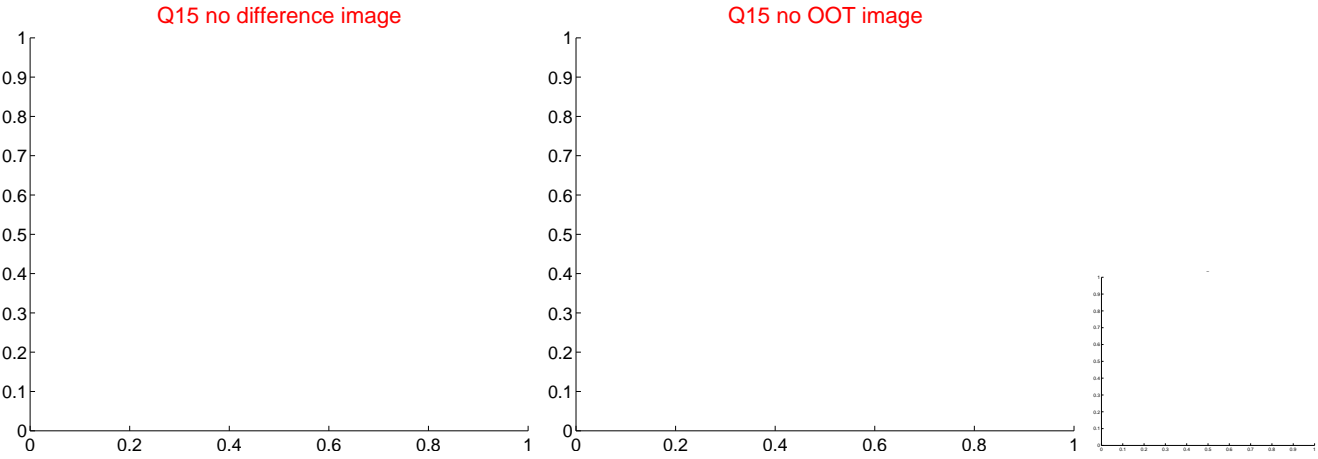
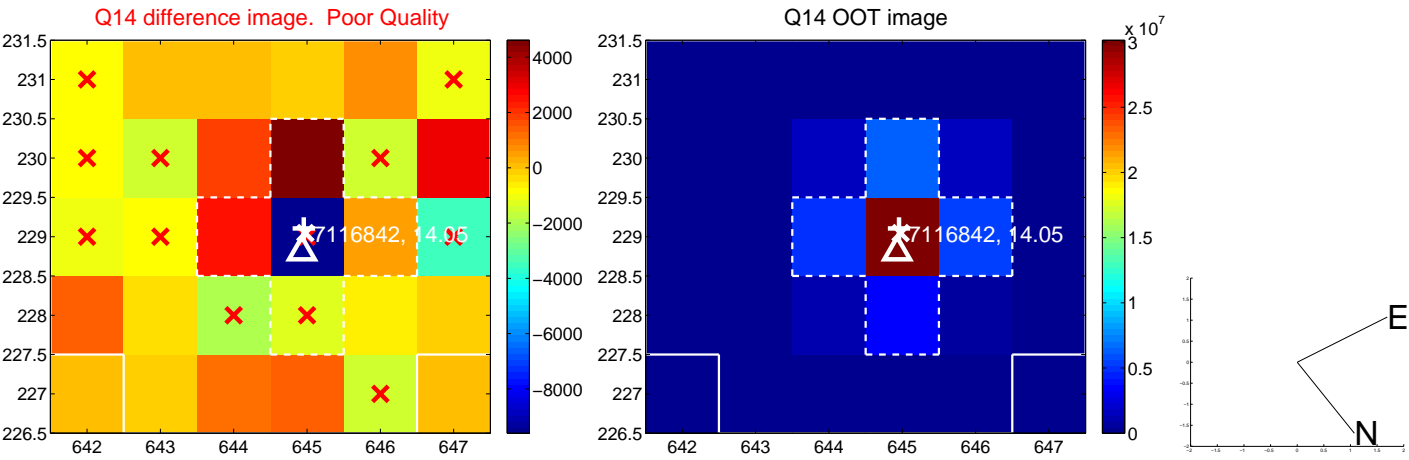
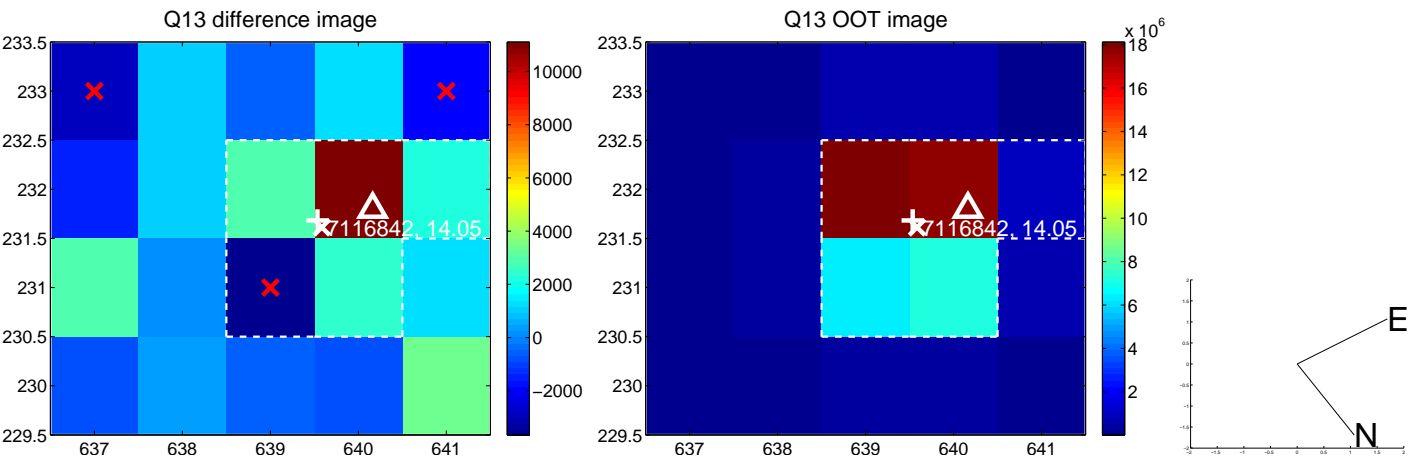
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



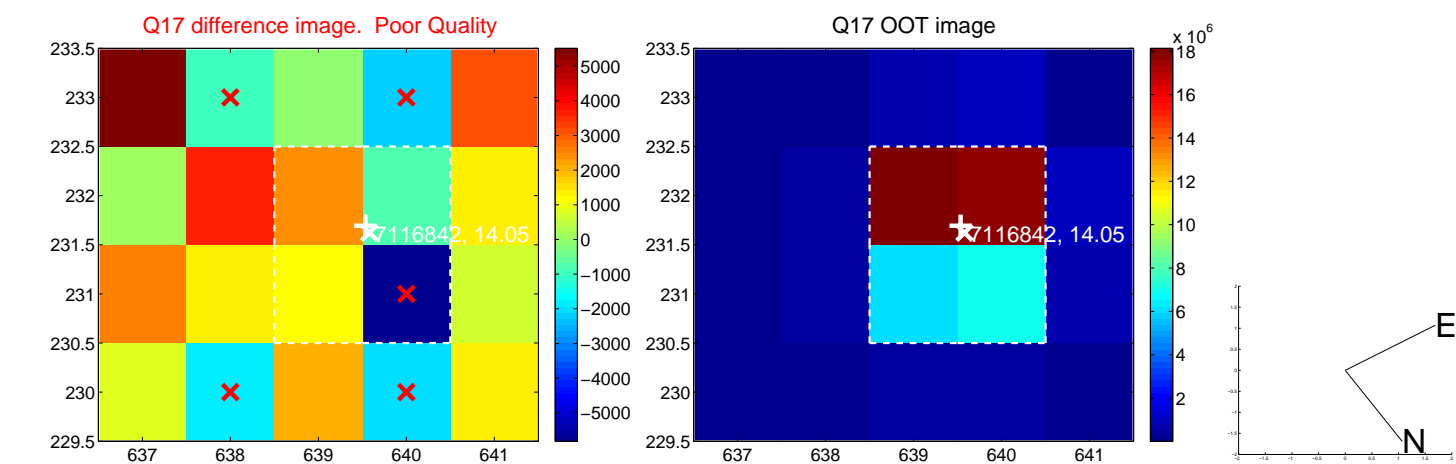
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



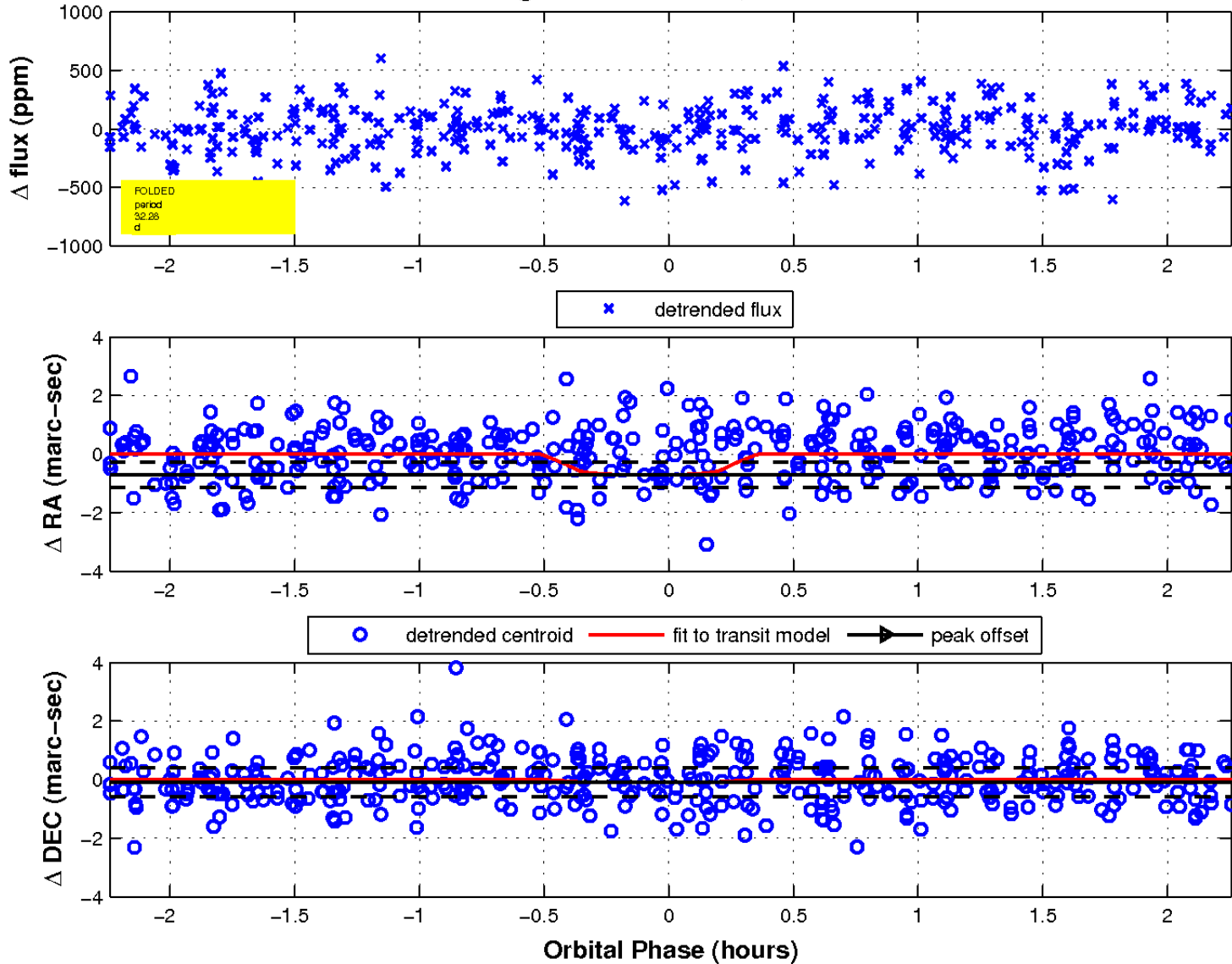
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

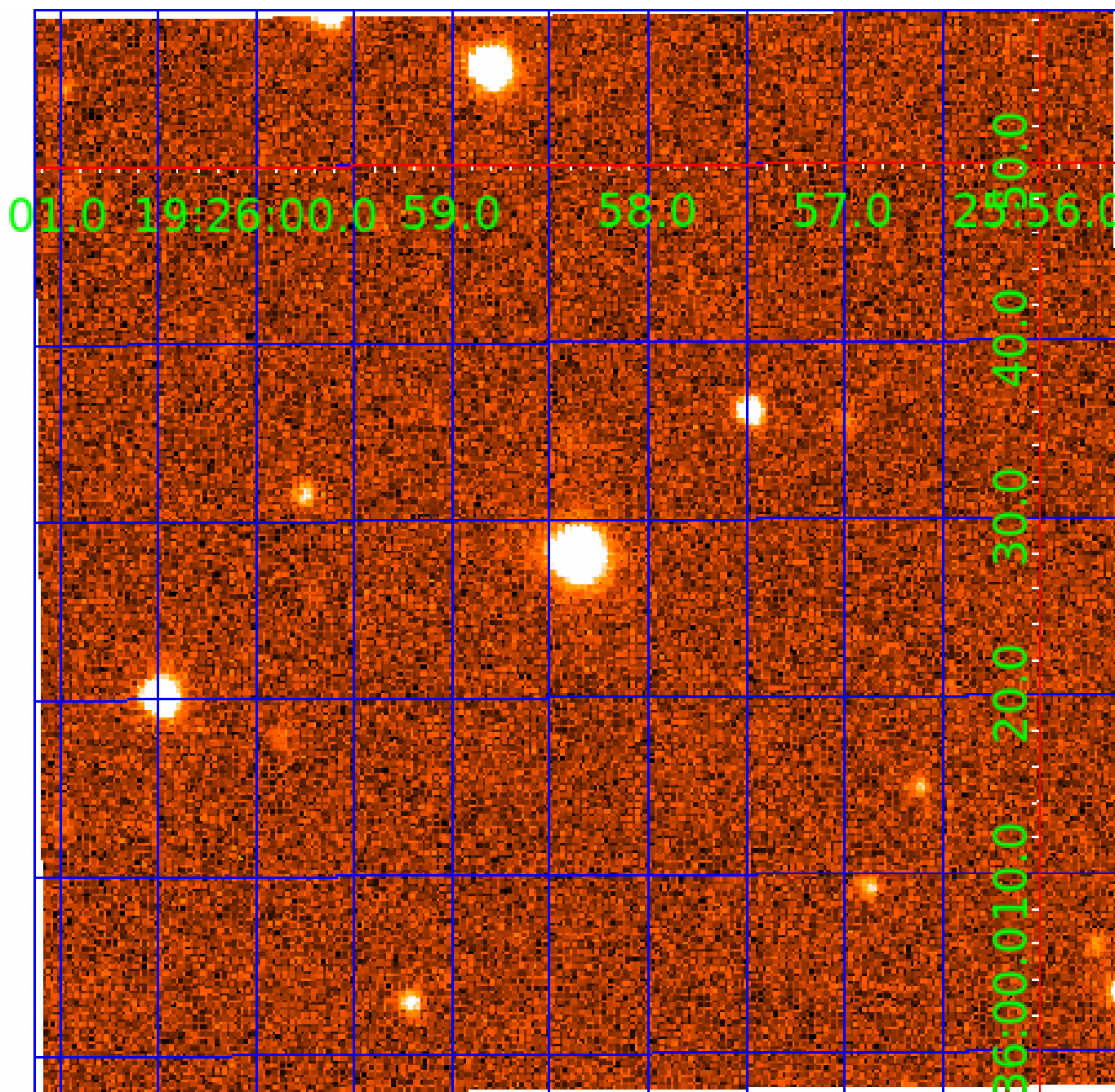


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



KIC 007116842

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})
007116842-01	OBS	No	0.566718	131.930427	6.2	4.136	8.8	3.5	0.89	5923	0.23	5422.07
007116842-02	OBS	No	32.283871	154.925755	550.9	0.755	12.7	10.2	0.89	5923	2.27	24.74
007116842-03	OBS	No	31.130237	144.099109	220.3	7.583	13.6	10.6	0.89	5923	1.39	25.97

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007116842-01	OBS	FP	0.00	1	0	0	1	LPP_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—EPHEM_MATCH
007116842-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007116842-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

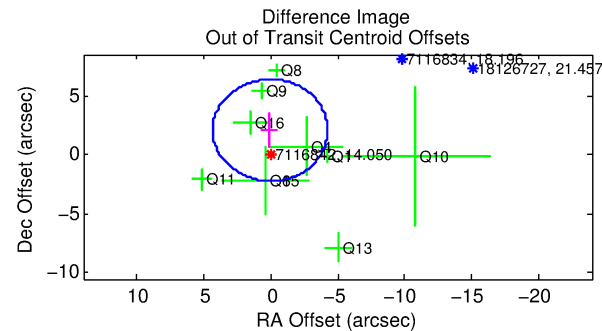
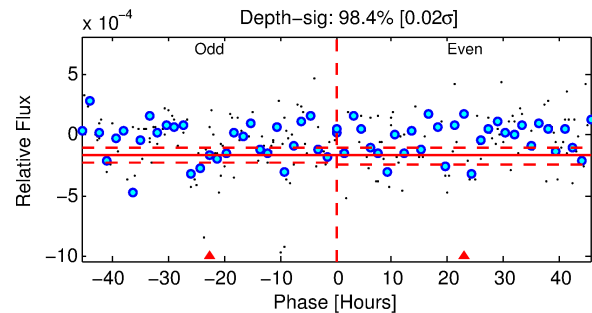
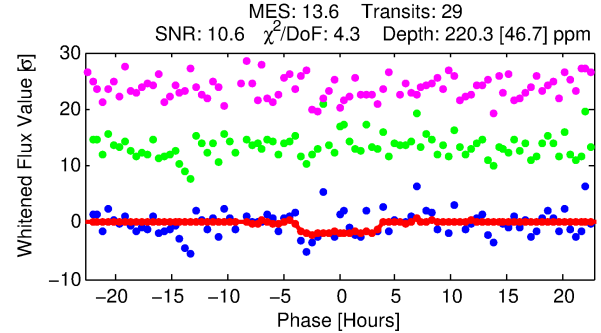
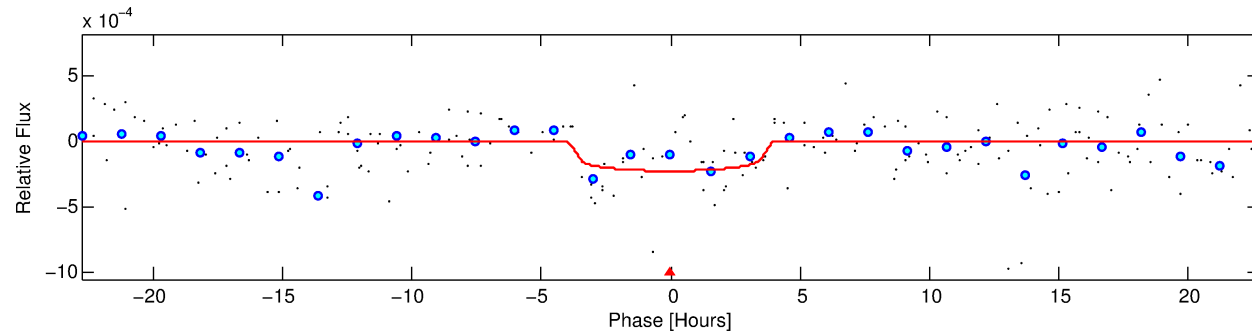
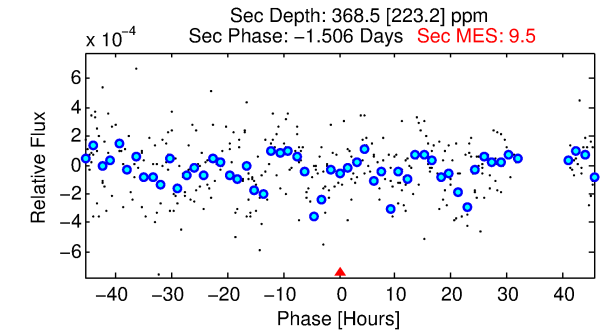
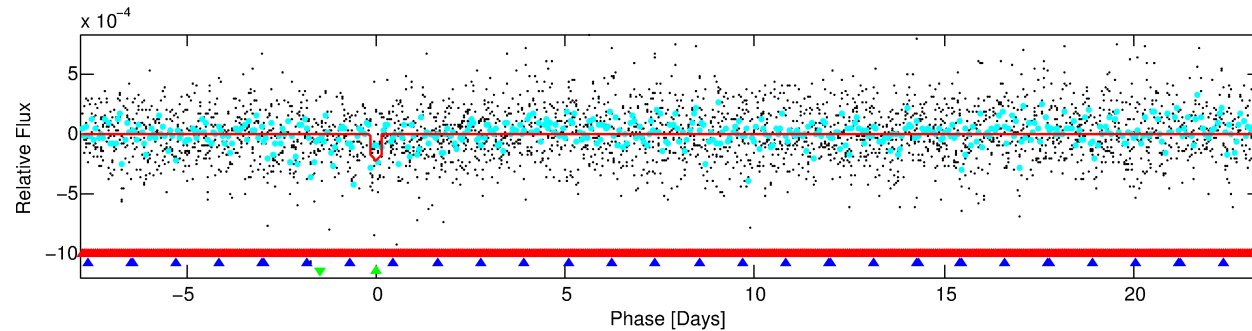
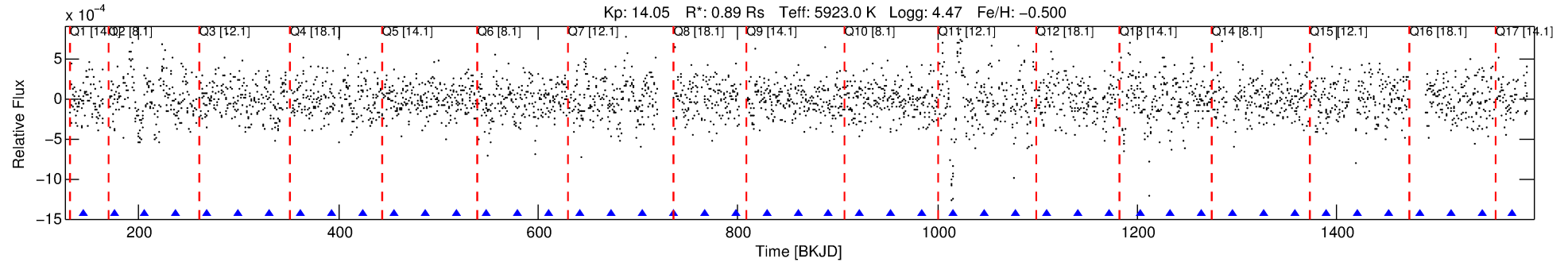
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007116842-03

No Significant Match Found

DV One-Page Summary

KIC: 7116842 Candidate: 3 of 3 Period: 31.130 d



DV Fit Results:

Period = 31.13024 [0.00135] d
Epoch = 144.0991 [0.0384] BKJD
Rp/R* = 0.0143 [0.0205]
a/R* = 24.52 [173.64]
b = 0.65 [6.46]
Seff = 25.97 [9.05]
Teq = 576 [50] K
Rp = 1.39 [2.03] Re
a = 0.1834 [0.0415] AU
Ag = 3512.93 [10331.06] [0.34 σ]
Teffp = 6852 [5009] K [1.25 σ]

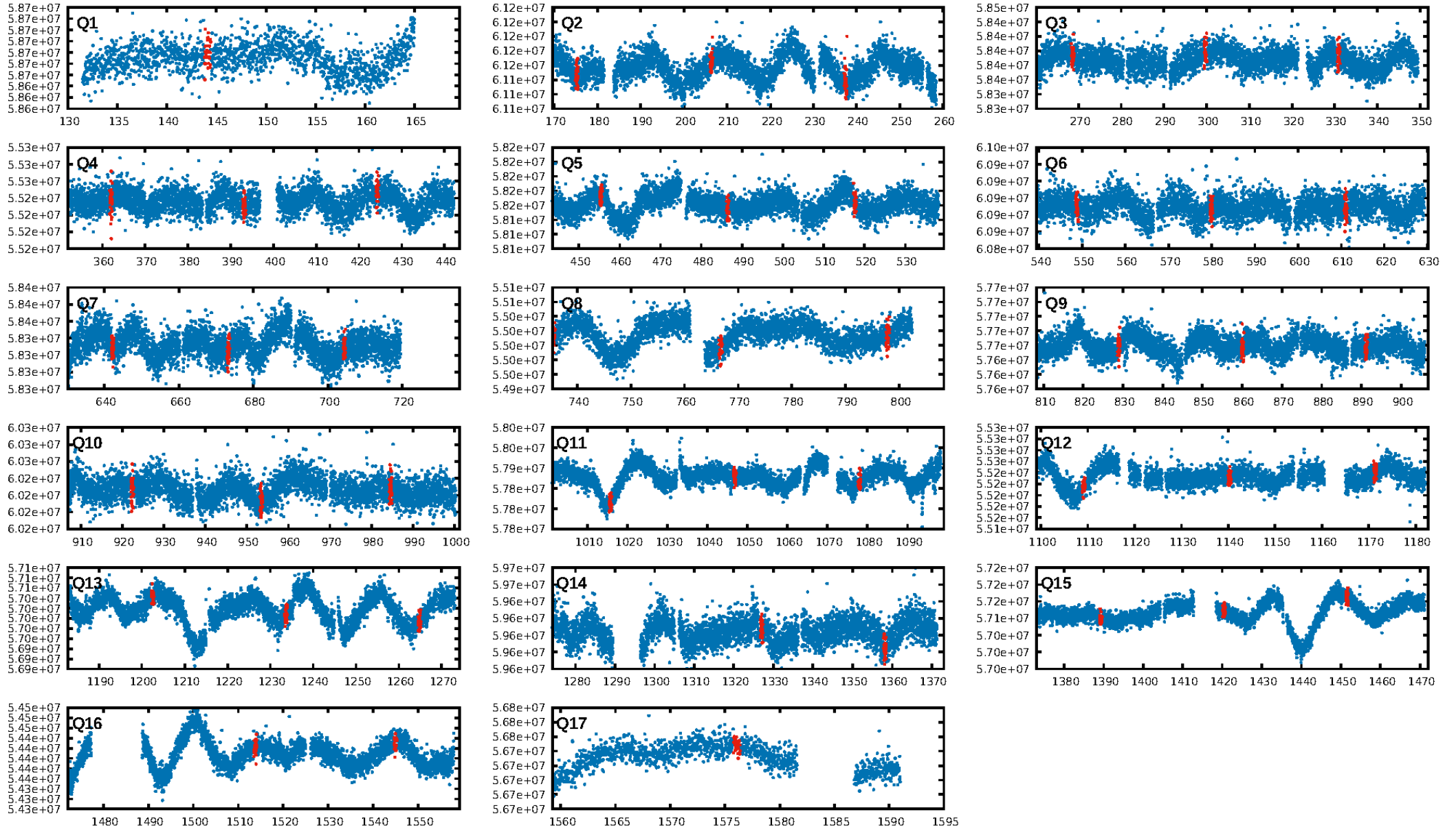
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [84.92 σ]
LongPeriod-sig: 100.0% [3.63 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 9.74e-15
RollingBand-fgt: 1.00 [27/27]
GhostDiagnostic-chr: 0.5122
Centroid-sig: 30.5%
Centroid-so: 0.406 arcsec [0.85 σ]
OotOffset-rm: 2.082 arcsec [1.45 σ]
OotOffset-st: 2/2/3/3 [10]
KicOffset-rm: 1.799 arcsec [1.26 σ]
KicOffset-st: 2/2/3/3 [10]
DiffImageQuality-fgm: 0.00 [0/10]
DiffImageOverlap-fno: 0.00 [0/17]

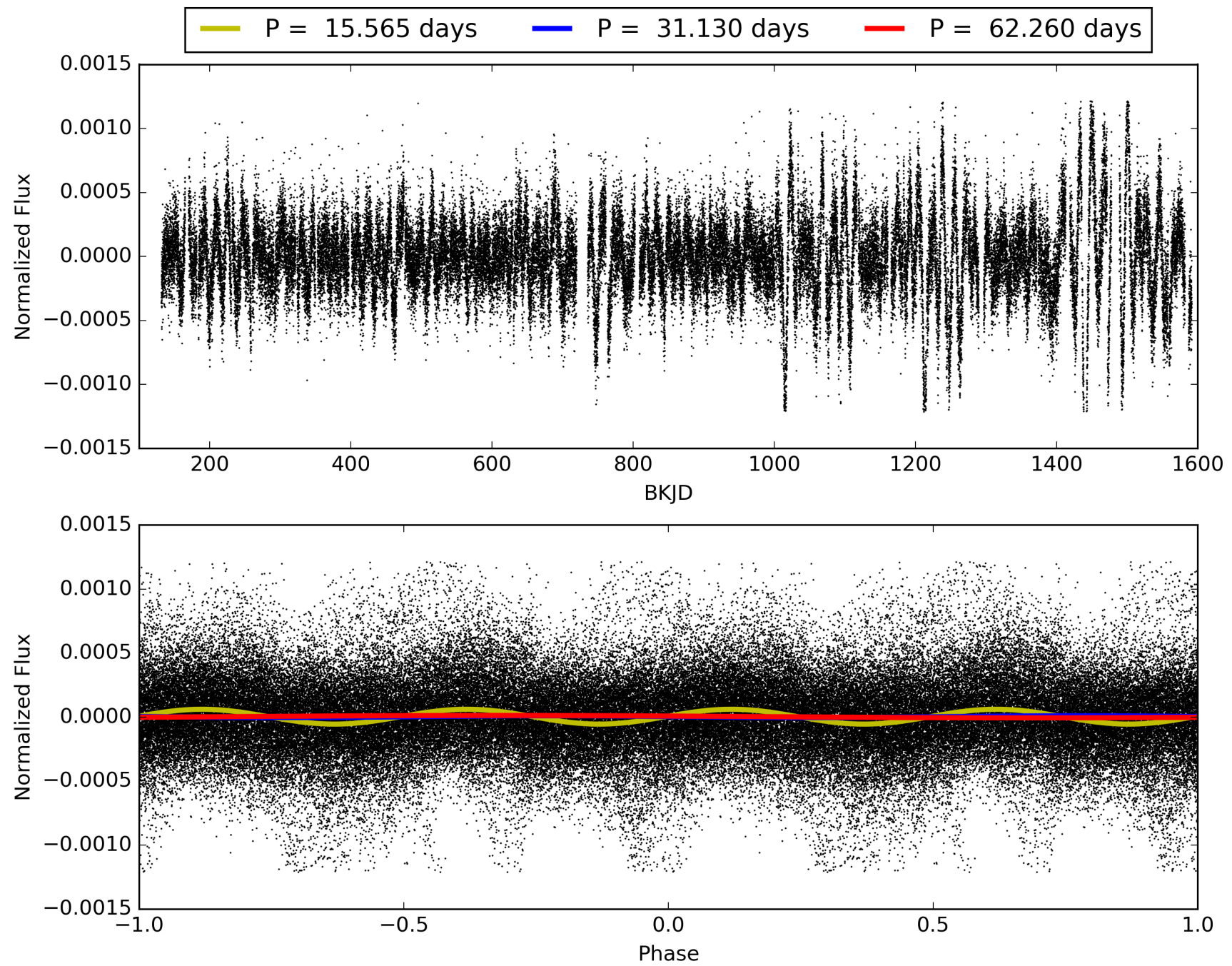
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 00:15:22 Z

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

TCE 007116842-03, PDC Light Curves

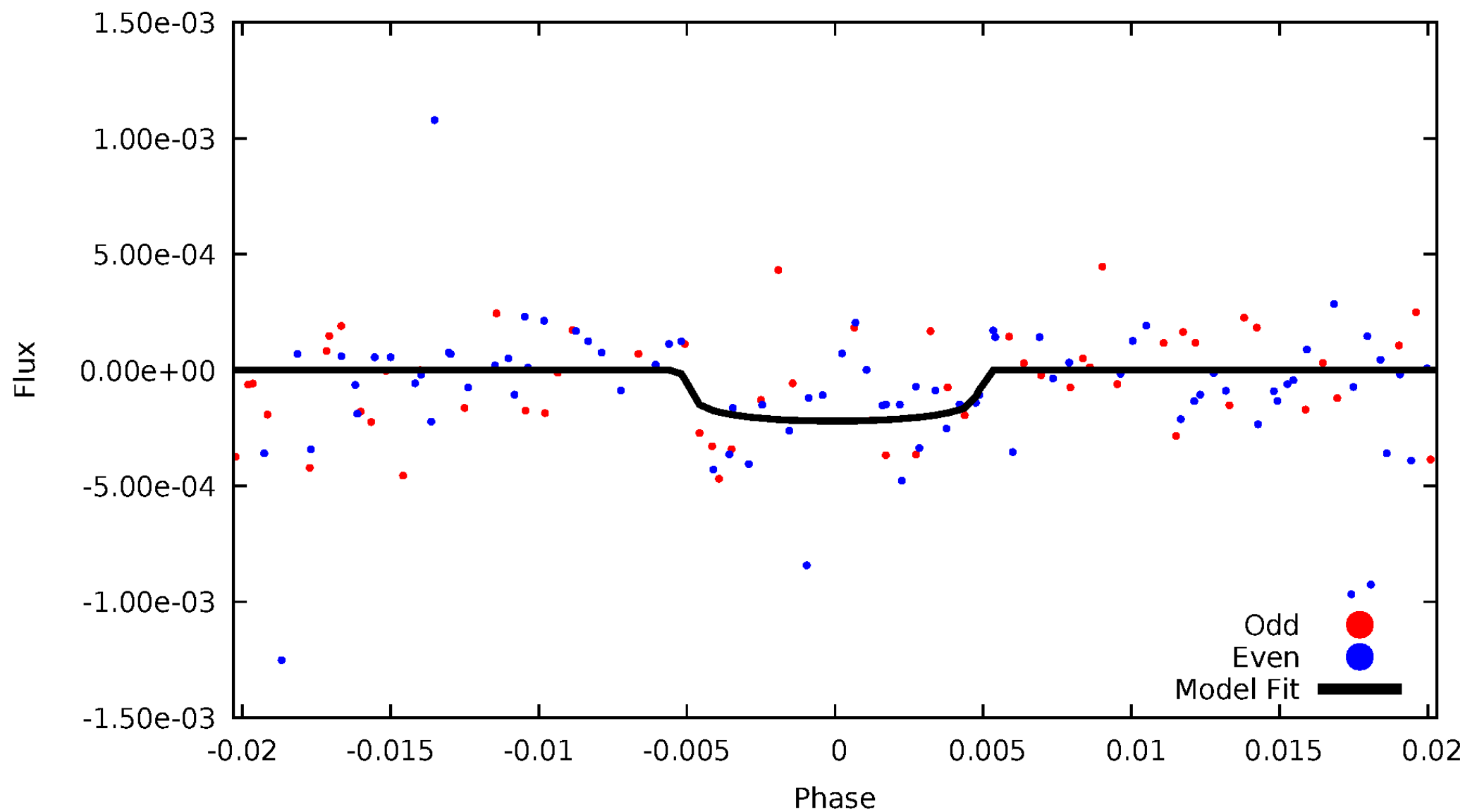


TCE 007116842-03



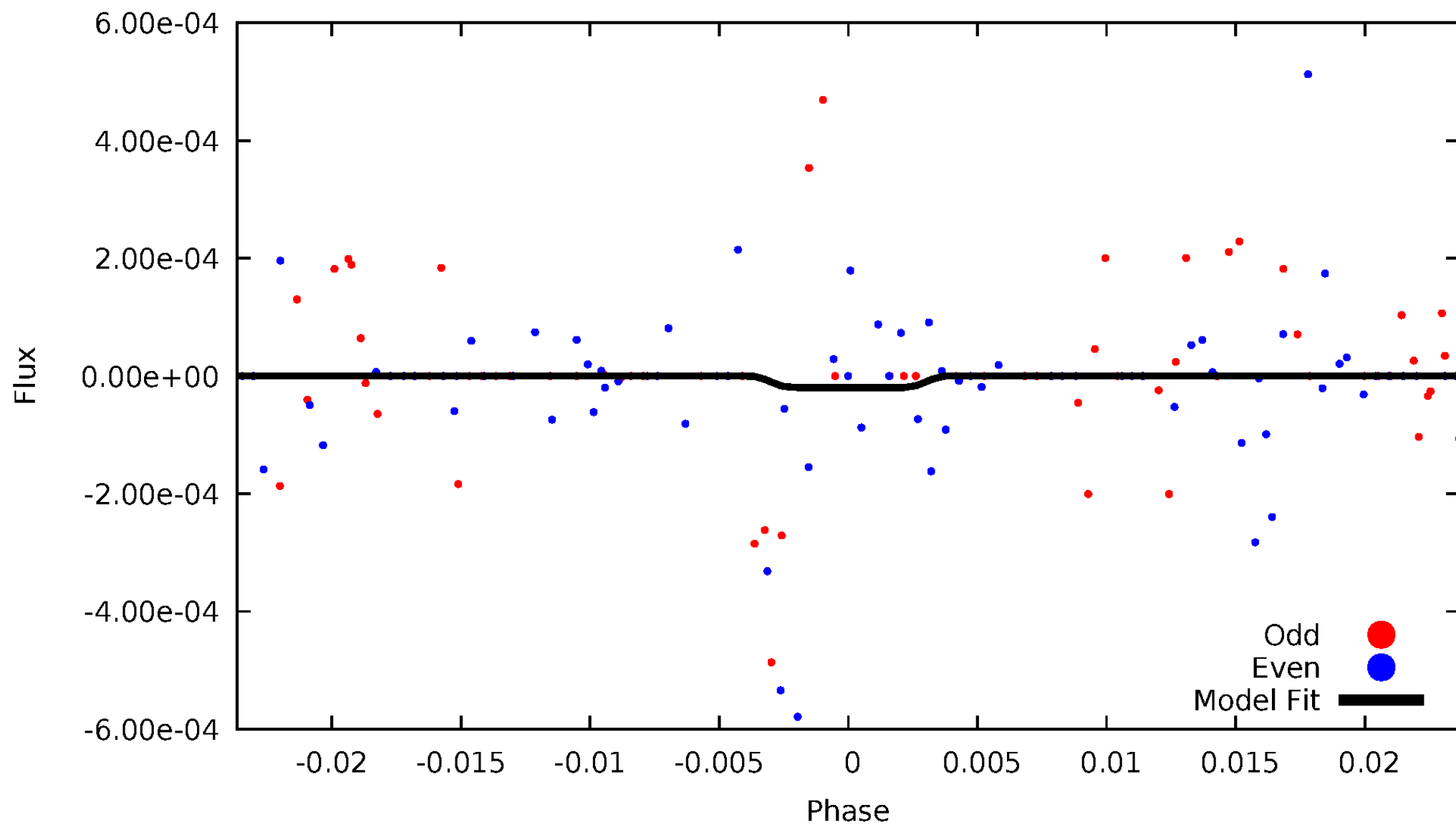
DV Odd/Even

TCE 007116842-03



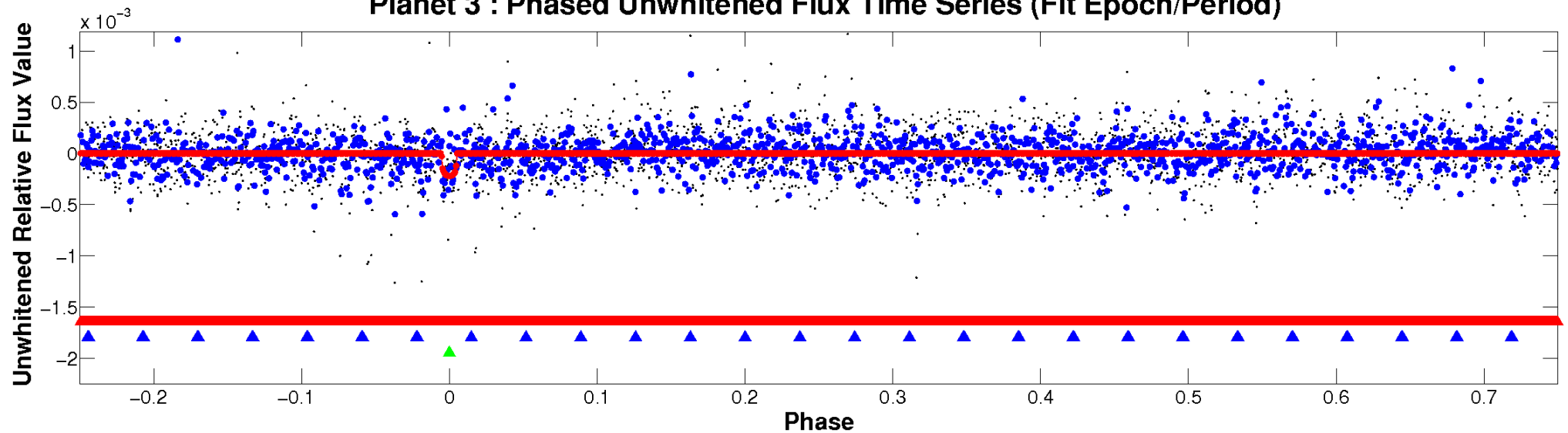
ALT Odd/Even

TCE 007116842-03

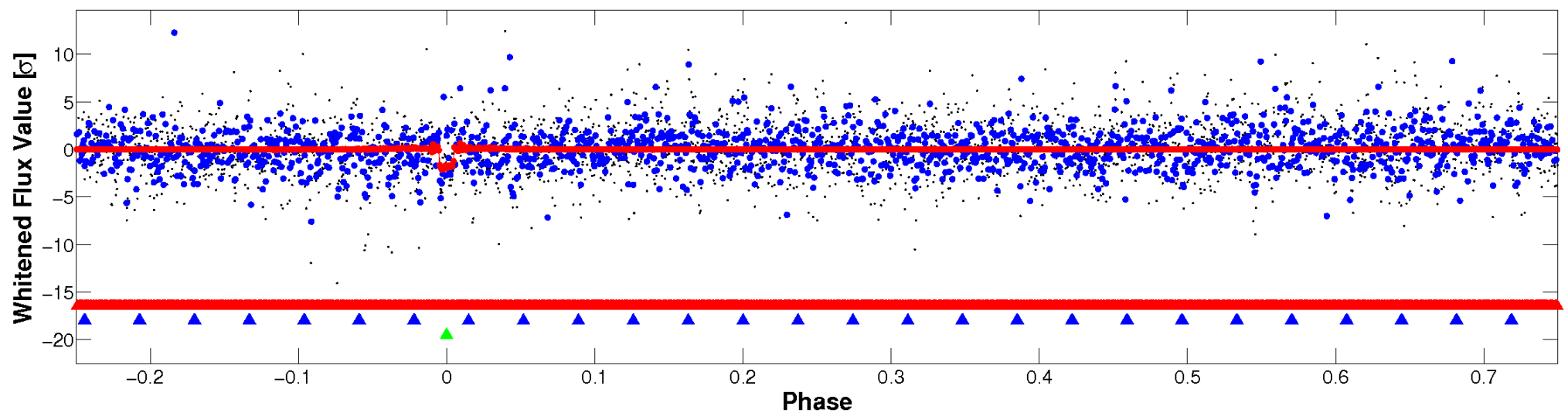


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

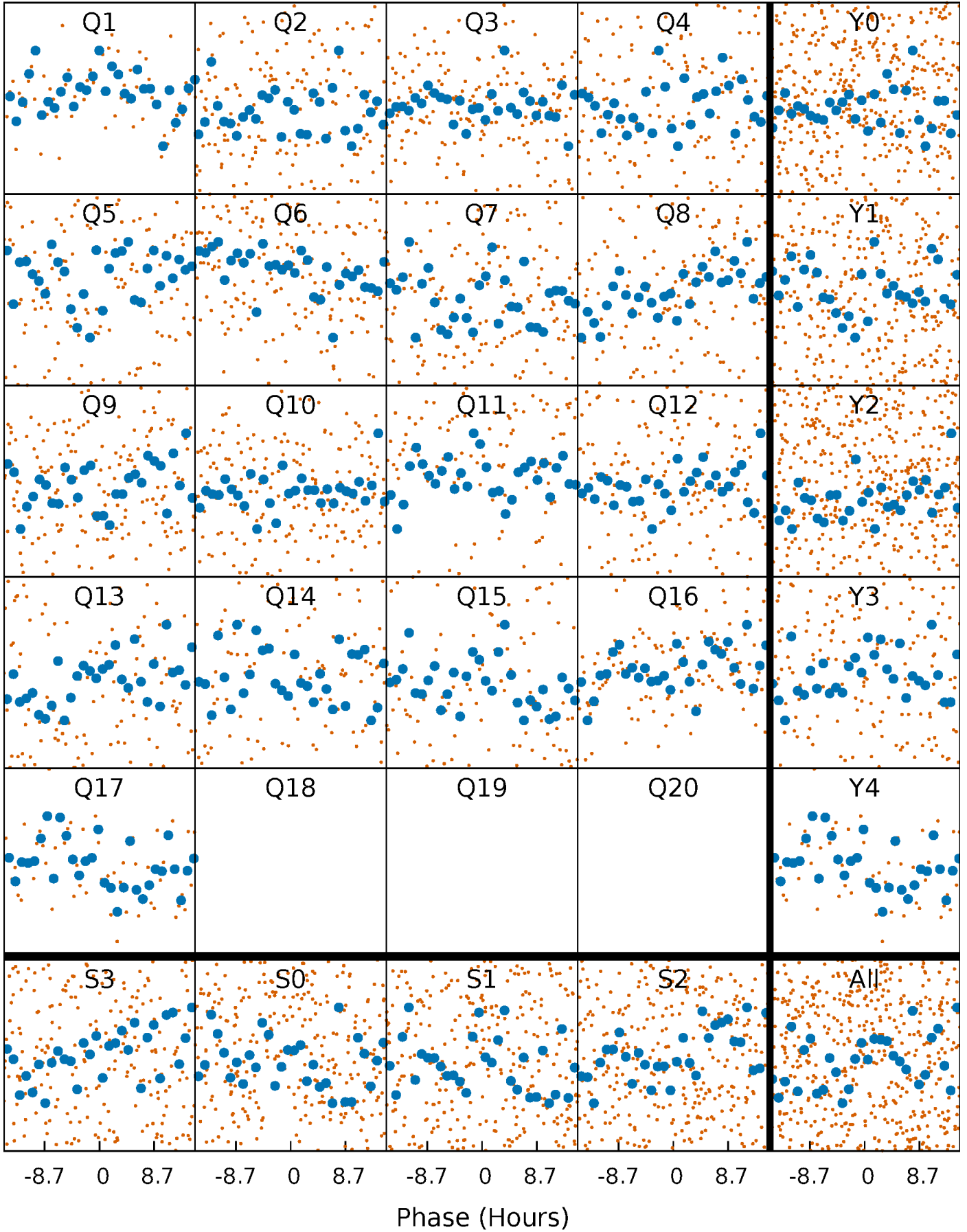


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



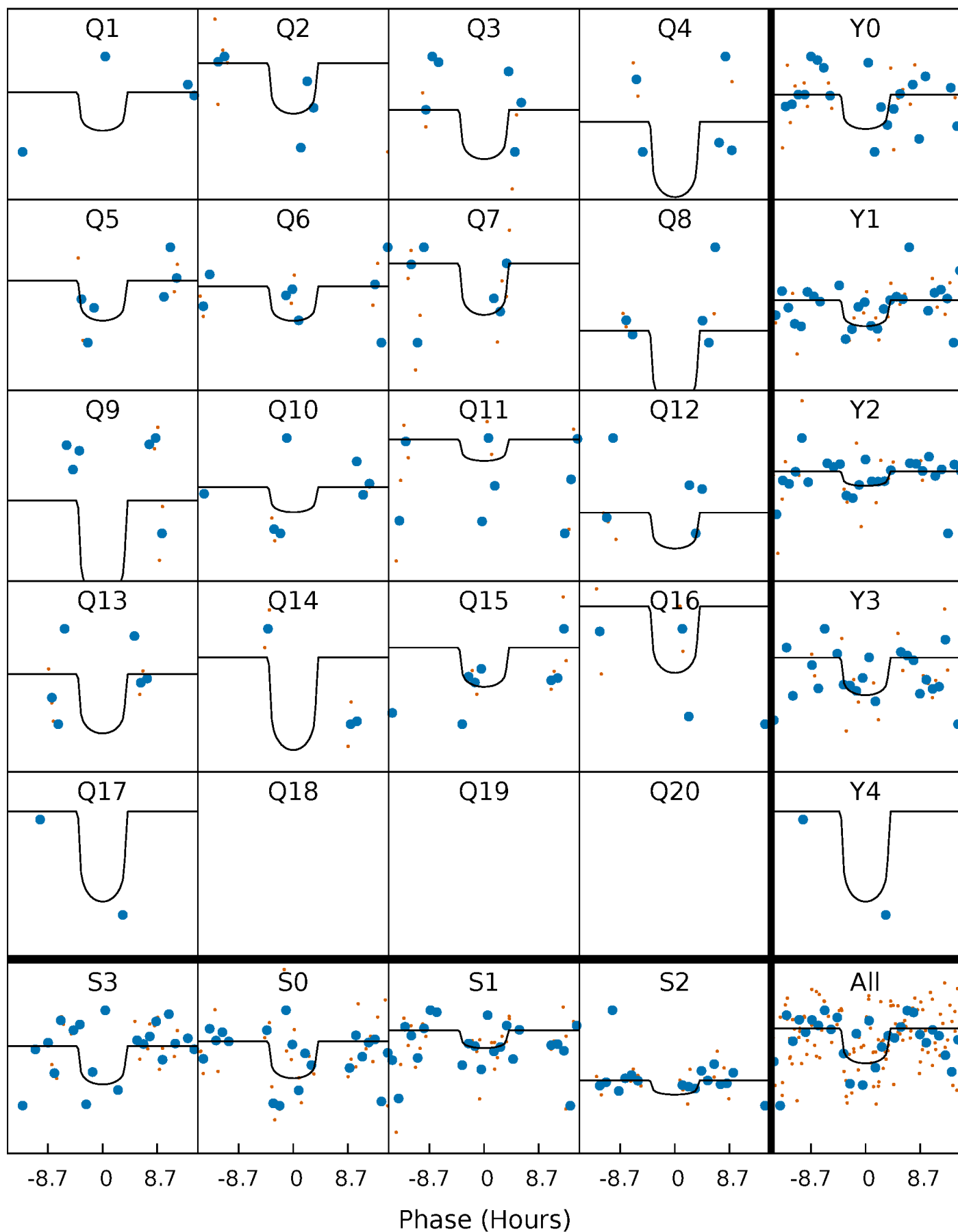
PDC Quarter-Phased Transit Curves

TCE 007116842-03 P= 31.130237 Days $T_0=144.099109$ (BKJD)



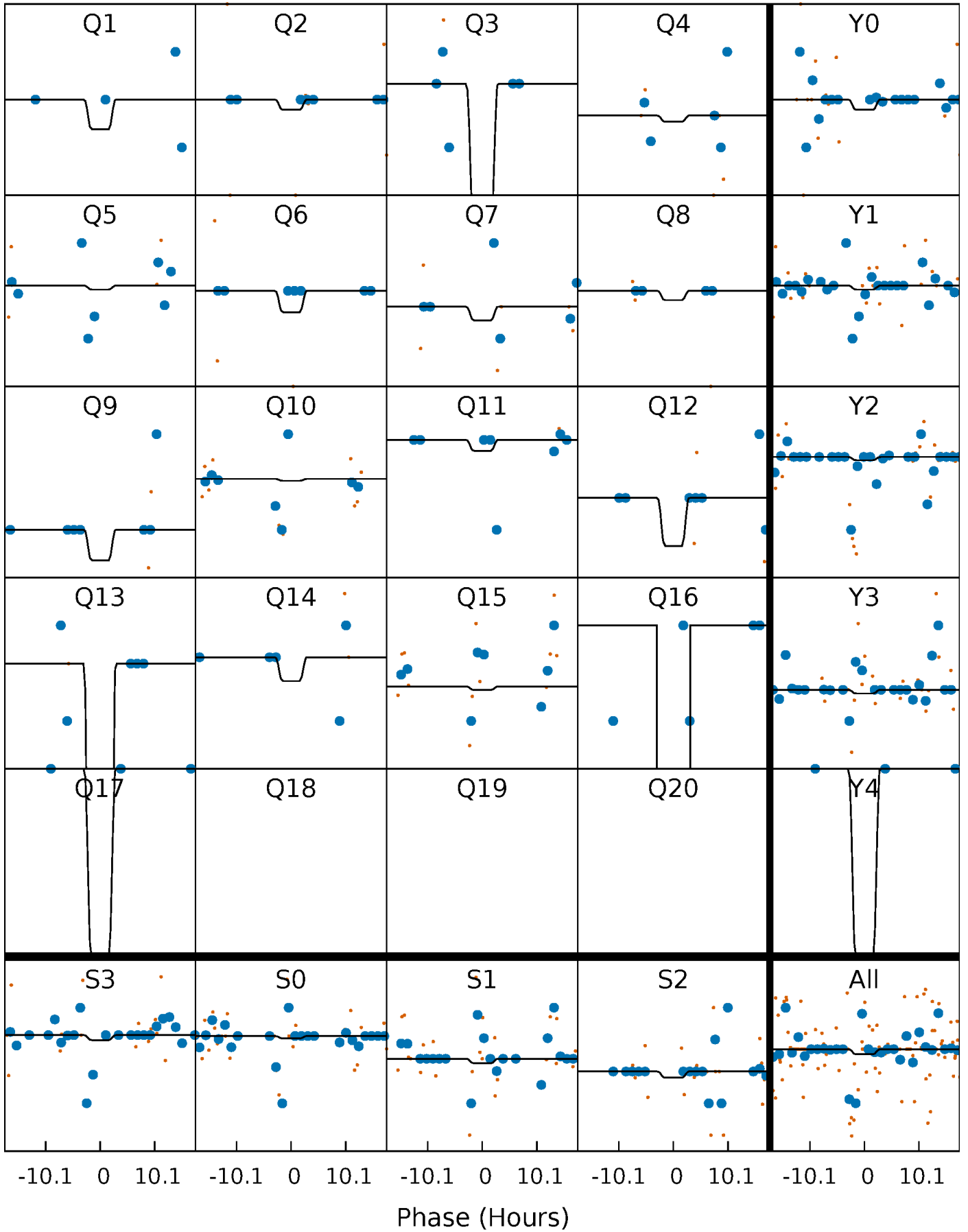
DV Quarter-Phased Transit Curves

TCE 007116842-03 P= 31.130237 Days $T_0=144.099109$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

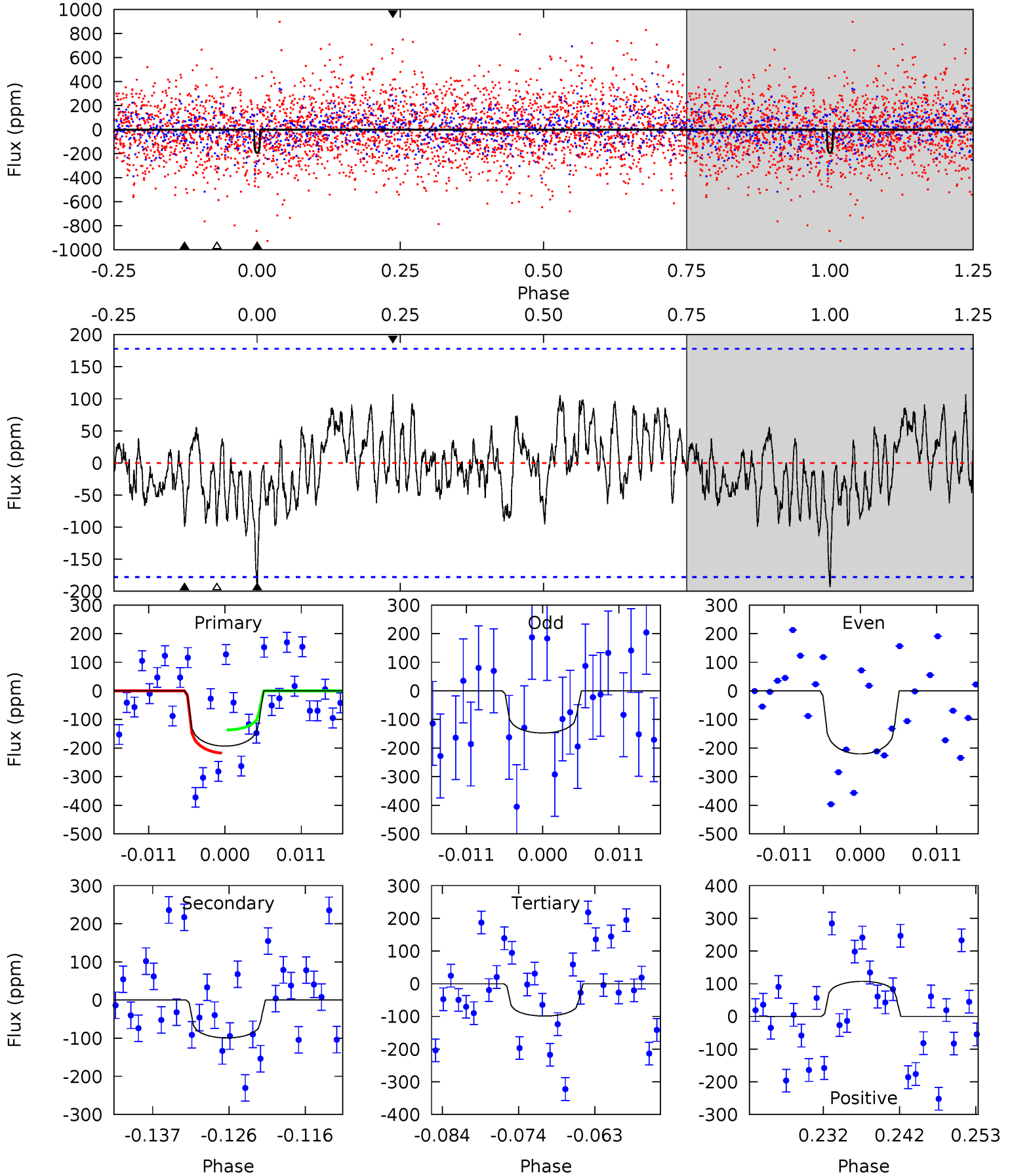
TCE 007116842-03 P= 31.130181 Days $T_0=144.071161$ (BKJD)



DV Model-Shift Uniqueness Test

007116842-03, $P = 31.130237$ Days, $E = 112.968872$ Days

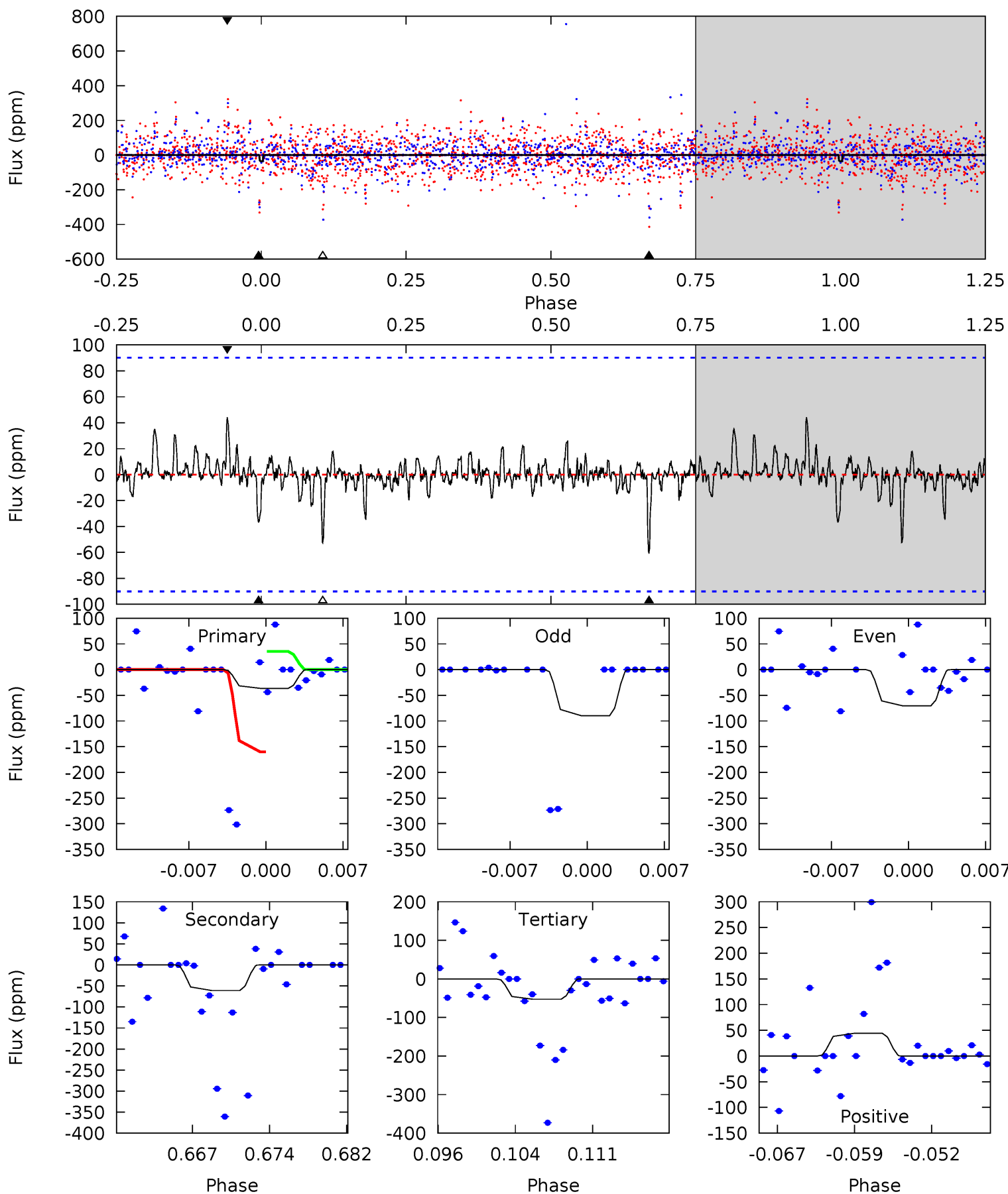
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.45	2.80	2.79	3.02	5.02	2.56	1.24	2.66	2.43	0.01	-0.22	1.01	1.01	0.36	1.13



Alt Model-Shift Uniqueness Test

007116842-03, P = 31.130181 Days, E = 112.940980 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.06	3.43	2.97	2.49	5.08	2.68	0.48	-0.91	-0.43	0.46	0.93	0.48	2.46	0.42	3.52



Stellar Parameters For KIC 007116842

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	ρ_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5923^{+159}_{-159}	$4.468^{+0.084}_{-0.182}$	$-0.500^{+0.300}_{-0.300}$	$0.890^{+0.238}_{-0.102}$	$0.849^{+0.105}_{-0.070}$	$1.695^{+0.719}_{-0.824}$
	+3%/-3%	+2%/-4%	+60%/-60%	+27%/-11%	+12%/-8%	+42%/-49%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 007116842-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-99 ± 35	$2.08^{+1.78}_{-1.41}$	812^{+57}_{-37}	4304^{+3021}_{-887}	420^{+3228}_{-311}
Alt.	-61 ± 18	$1.64^{+1.62}_{-1.08}$	814^{+56}_{-39}	4292^{+2579}_{-927}	418^{+3073}_{-321}

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 $A_{obs} \gg 1.0$

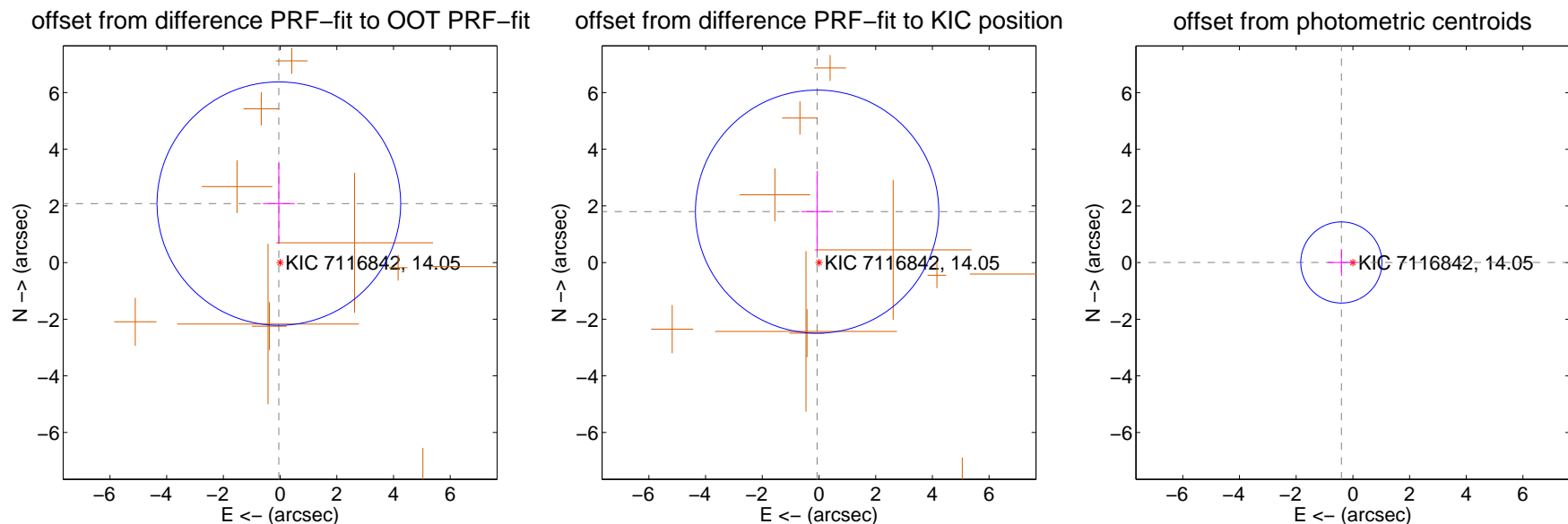
DV Centroid Data

Supplemental centroid analysis for 007116842-03. Kepler magnitude: 14.05. Transit SNR 10.59

There are 0 quarters with good PRF difference image offsets

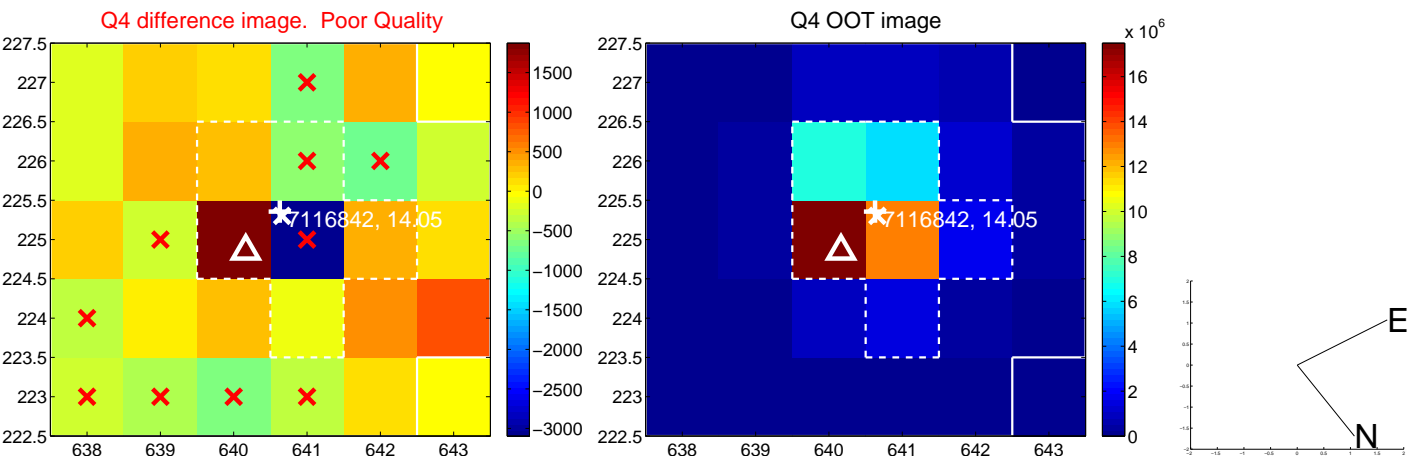
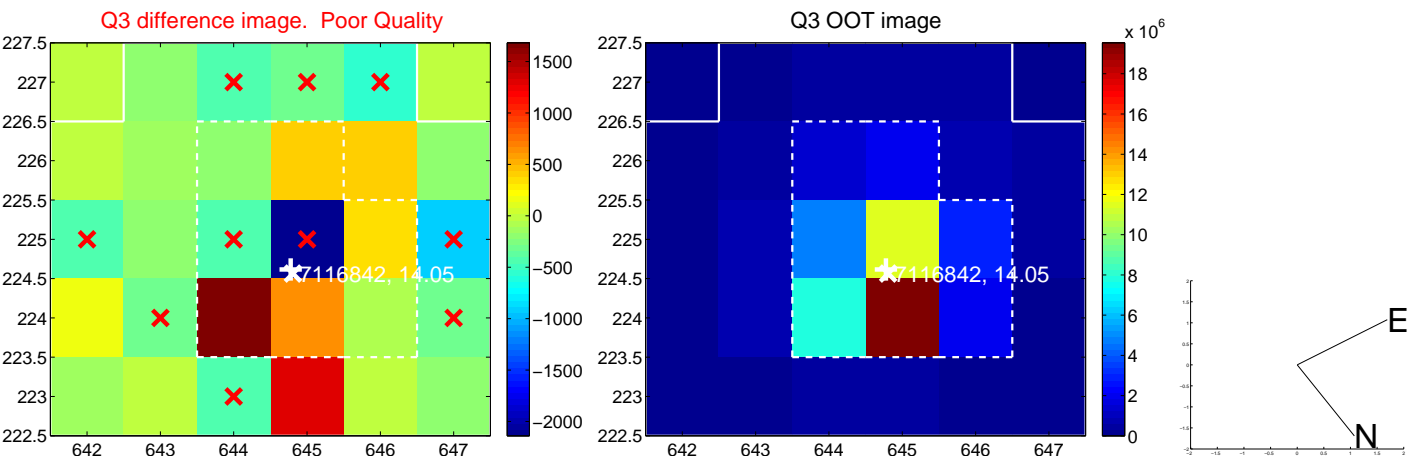
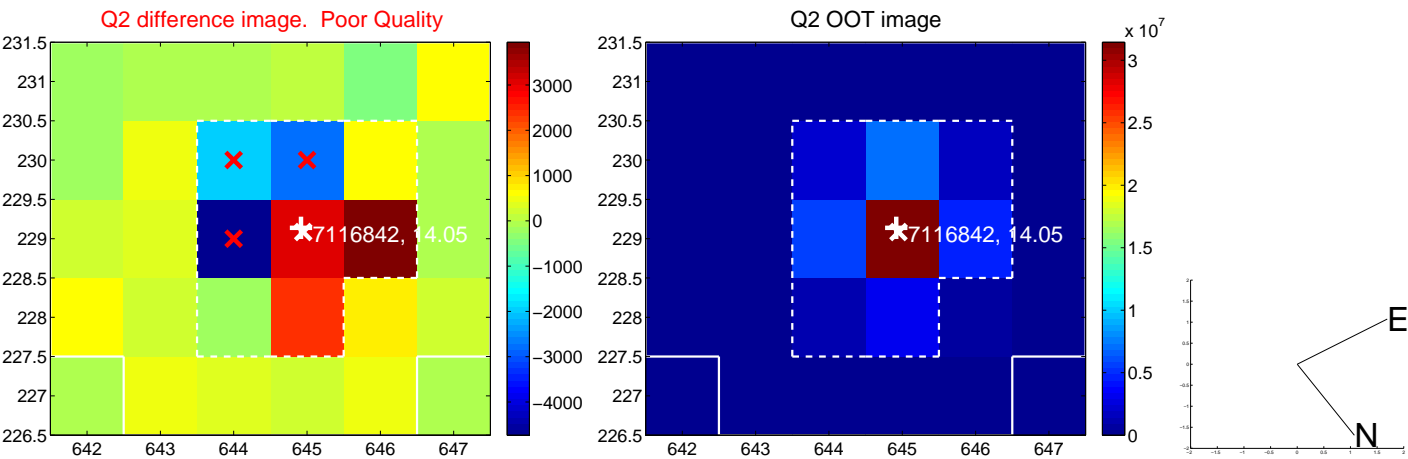
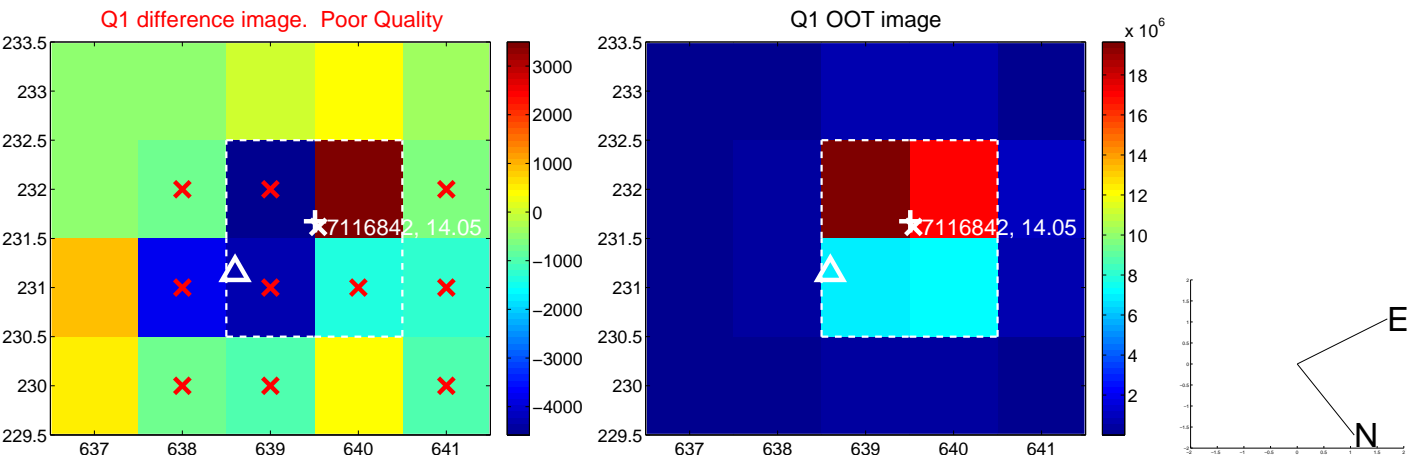
The direct PRF centroid is offset from the target star catalog position by about 0.29 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.082 ± 1.432	1.45	0.044 ± 0.561	2.081 ± 1.433
PRF-fit source offset from KIC position	1.799 ± 1.431	1.26	0.066 ± 0.556	1.797 ± 1.431
photometric centroid source offset	0.41 ± 0.48	0.85	0.41 ± 0.48	0.00 ± 0.48

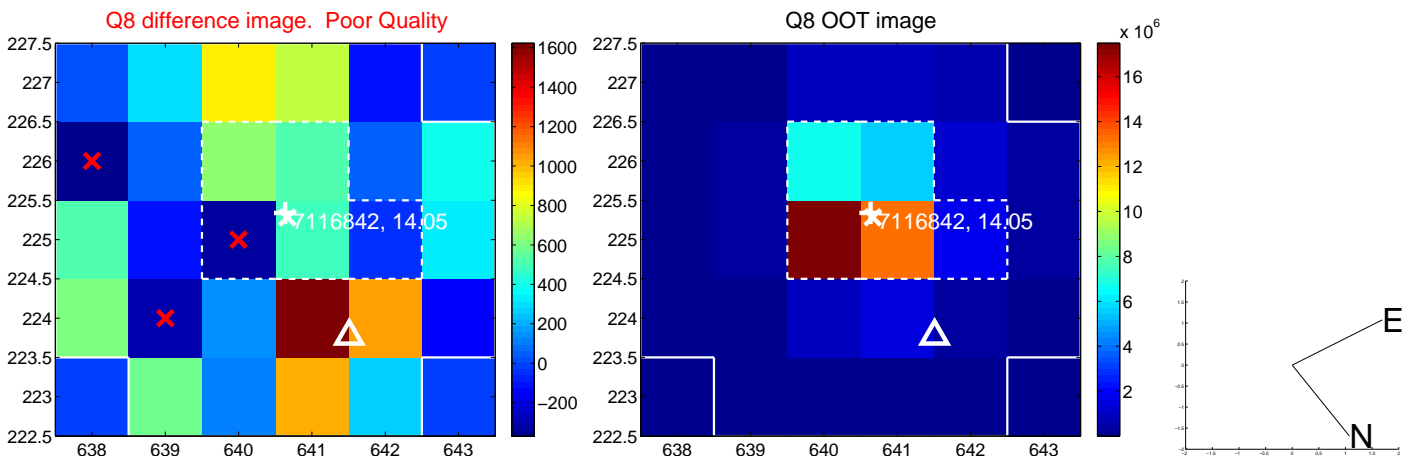
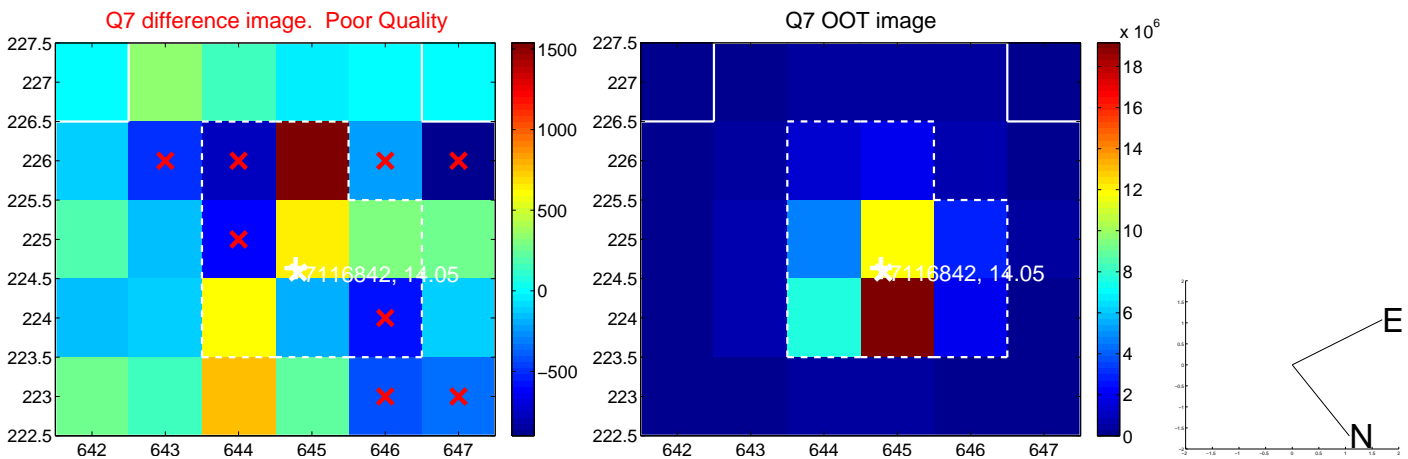
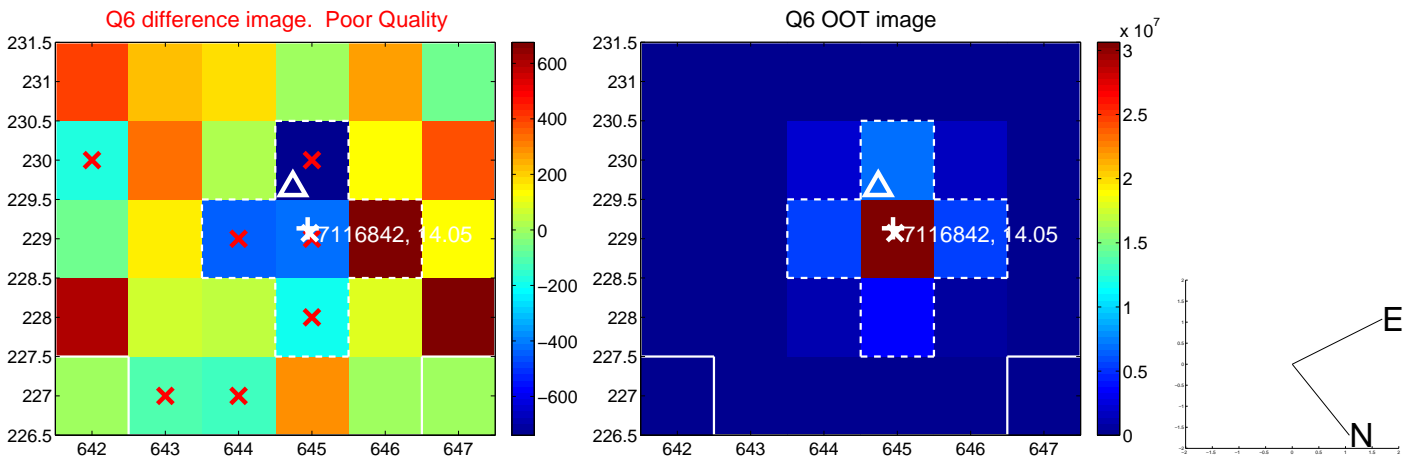
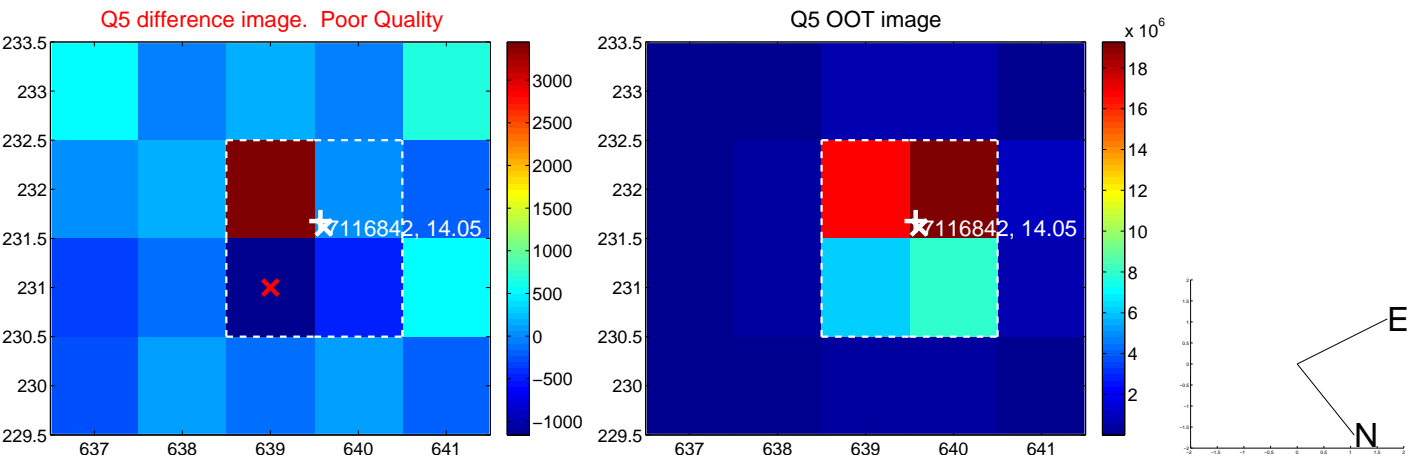


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

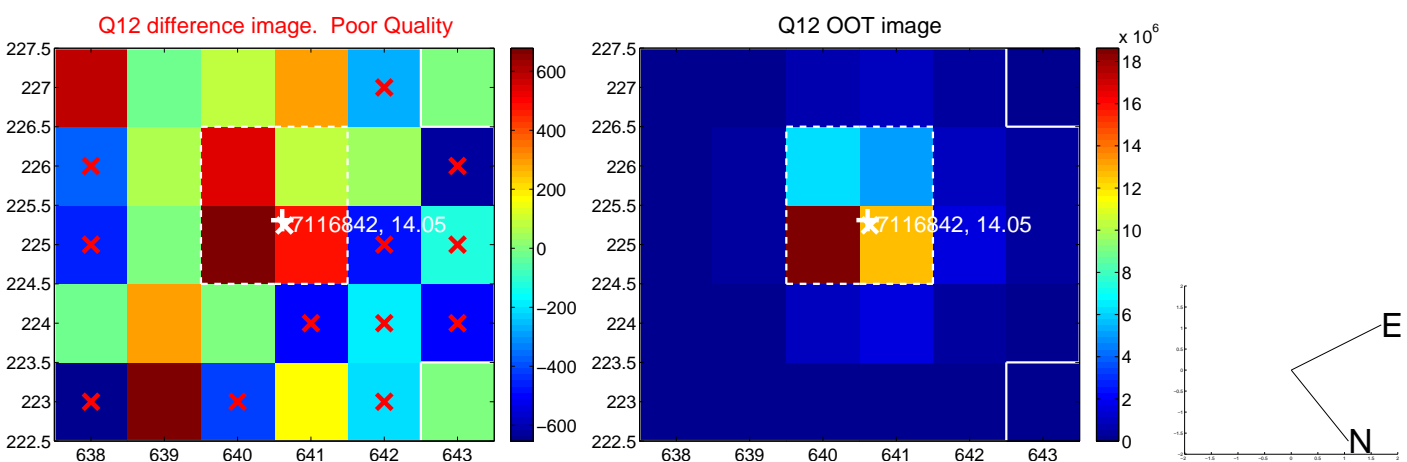
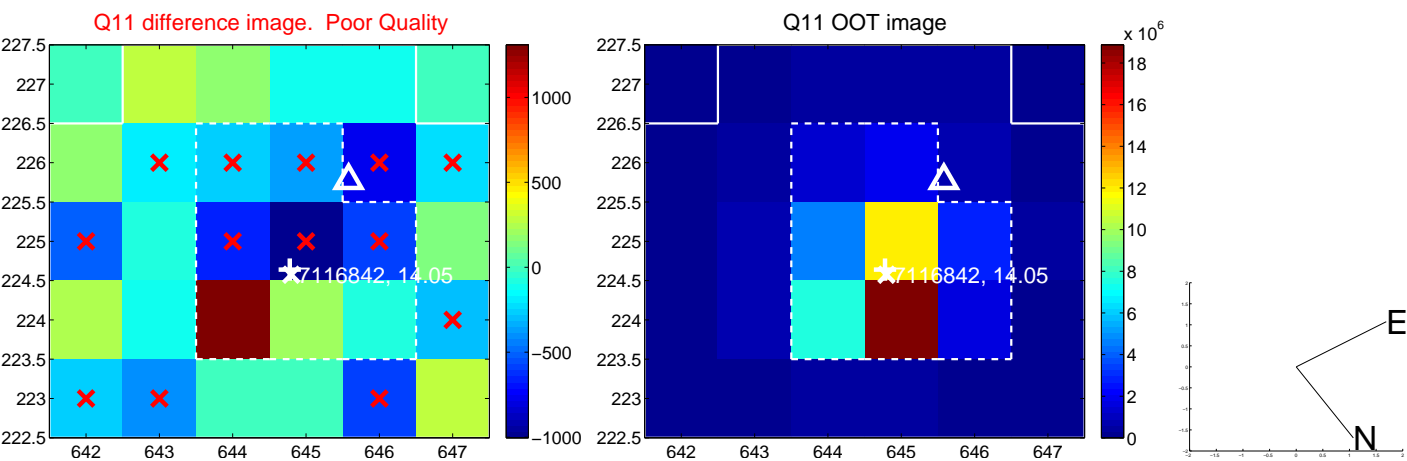
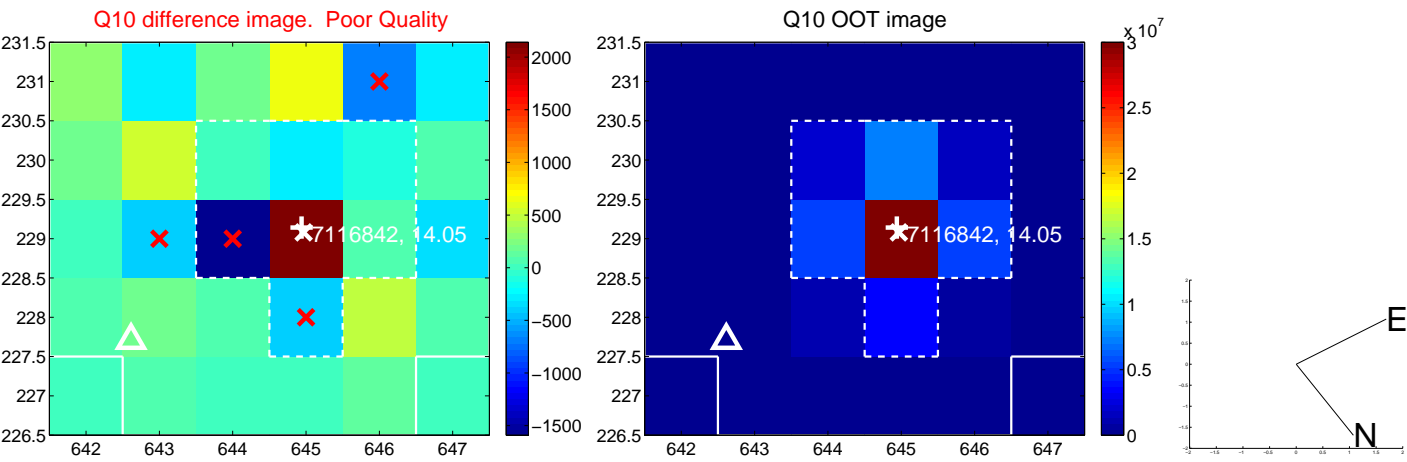
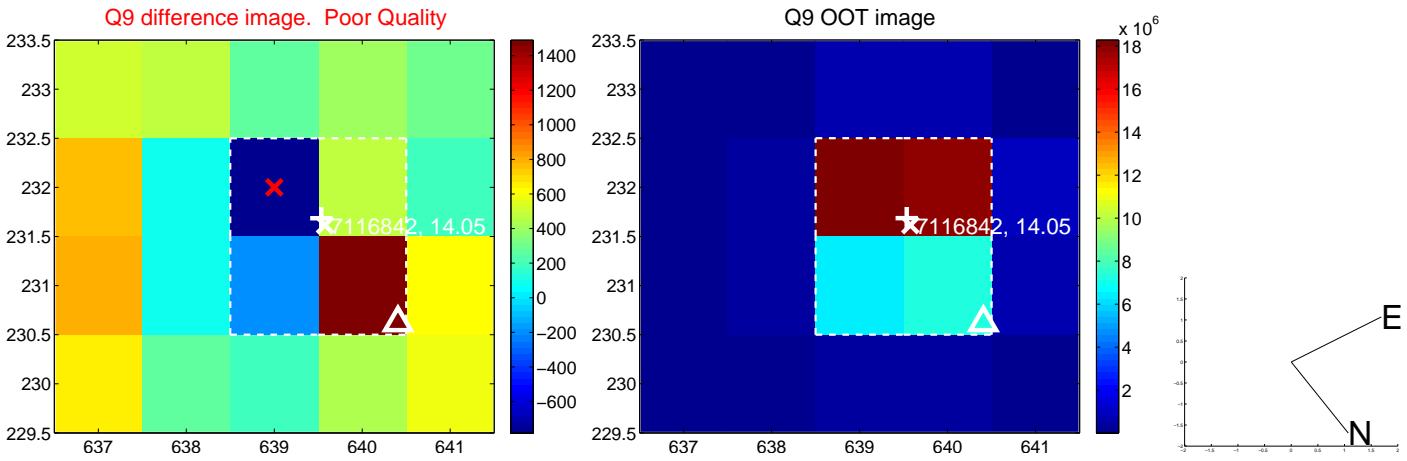
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



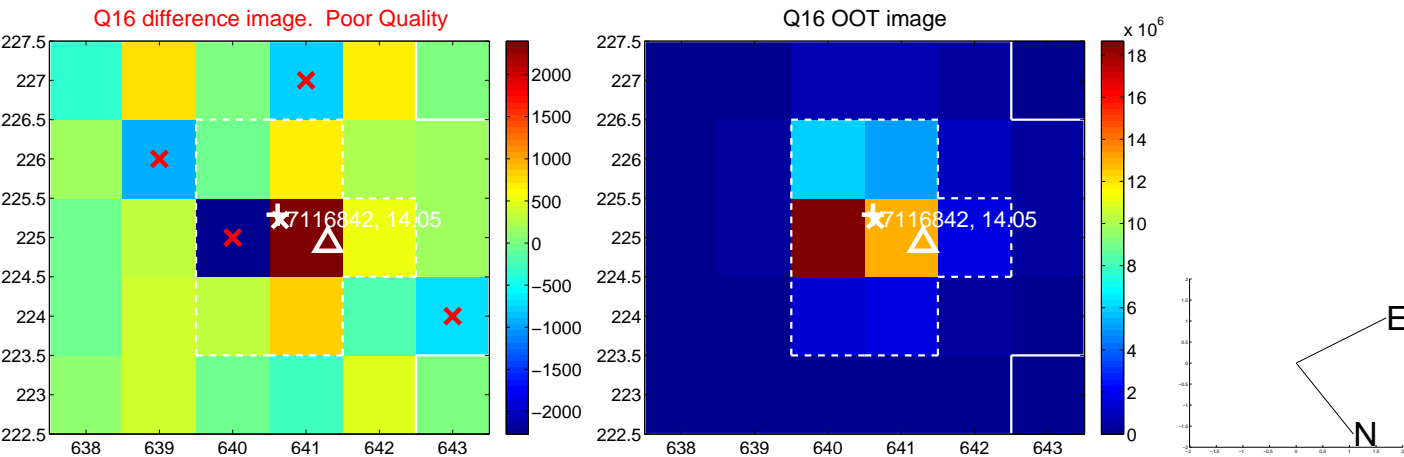
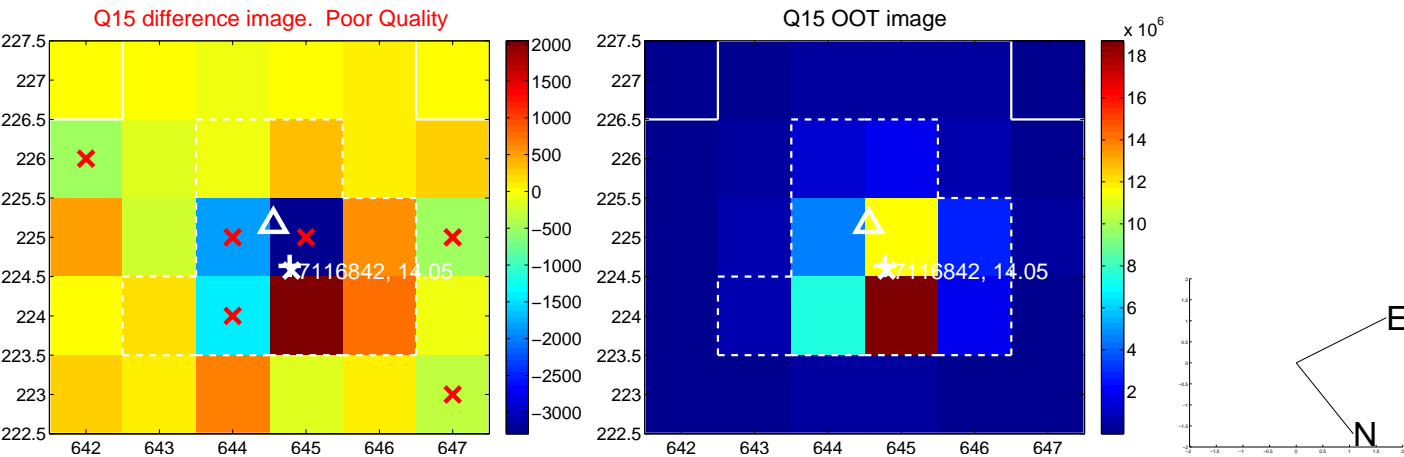
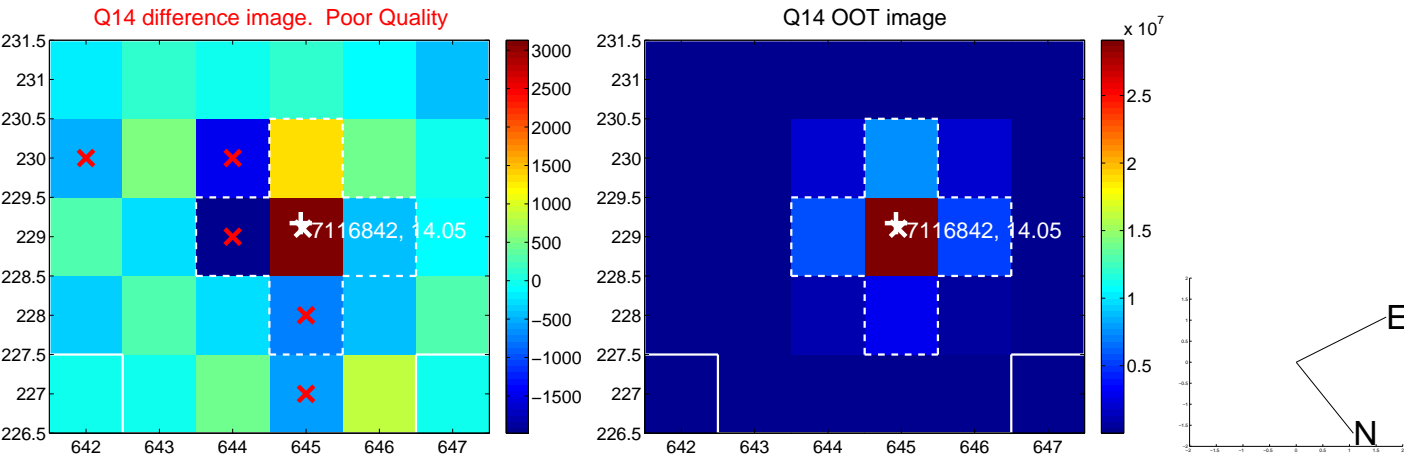
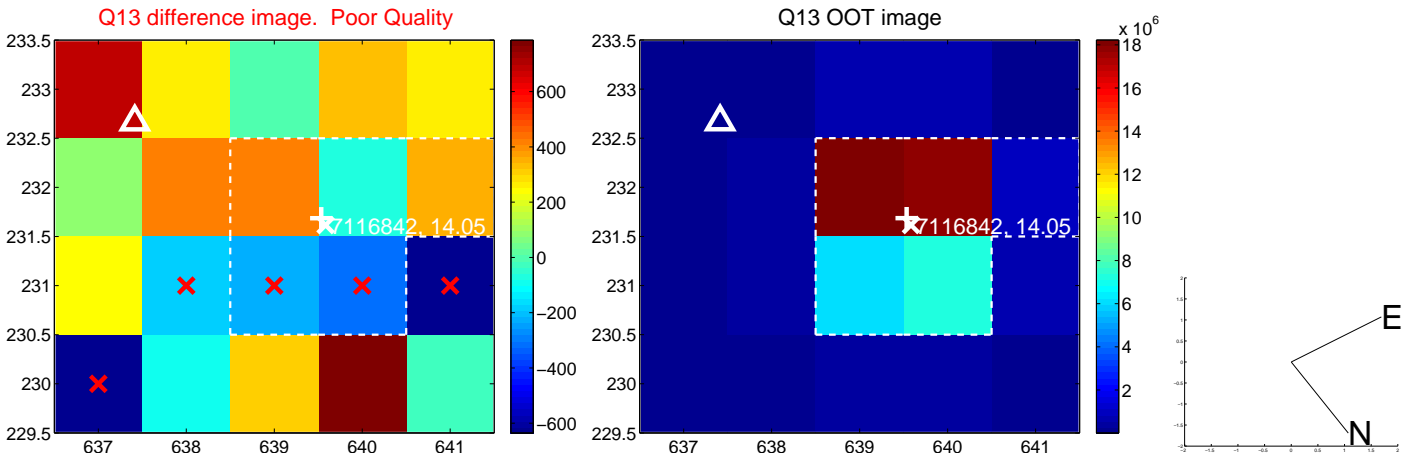
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



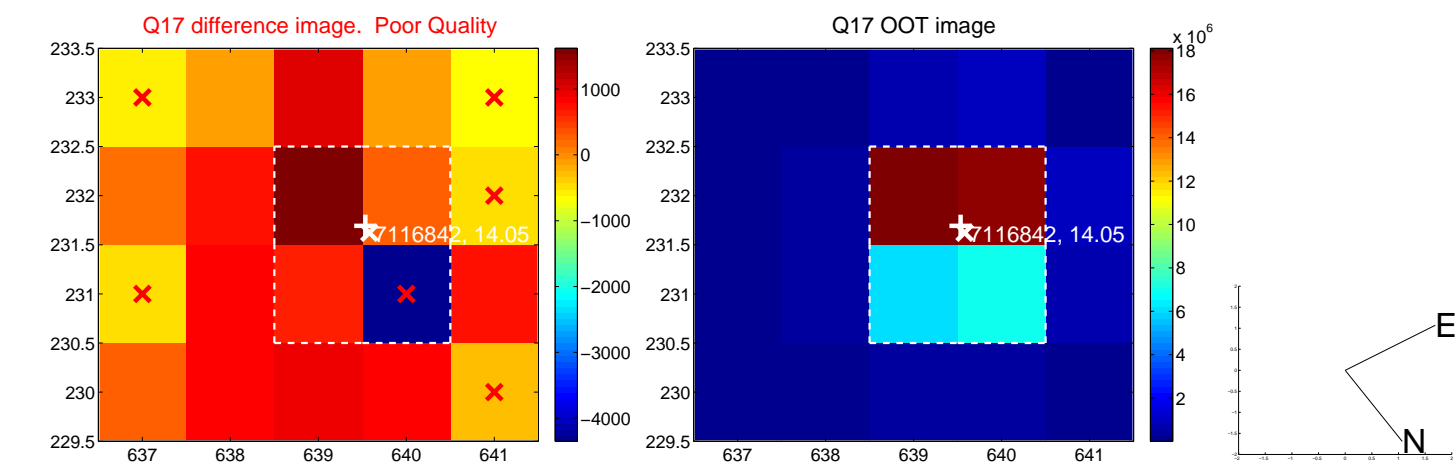
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



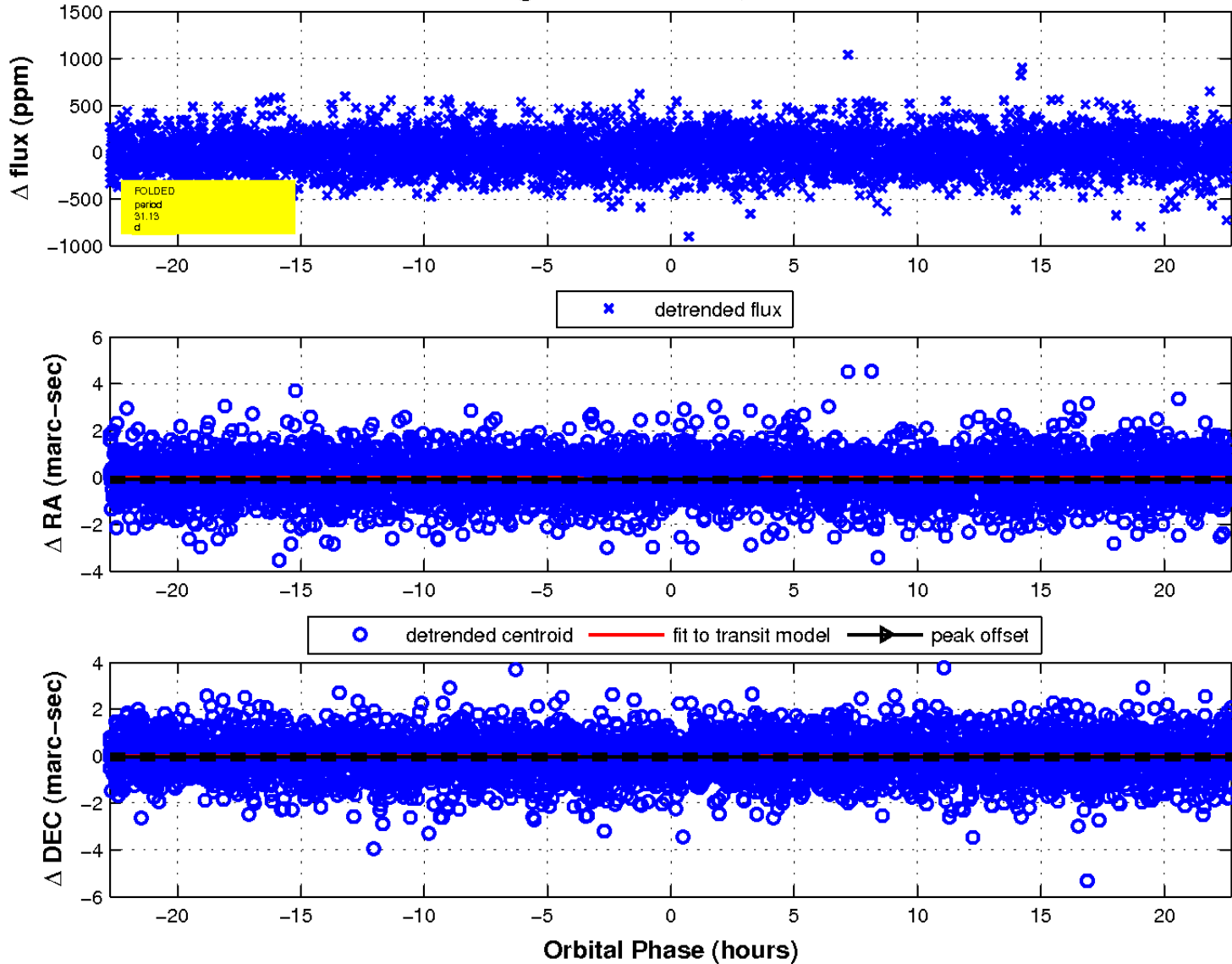
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 3 of 3



UKIRT Image

Declination

