

KIC 007816137

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})
007816137-01	OBS	No	0.574932	132.044645	25.8	4.227	8.2	6.7	0.76	4545	0.38	1473.23
007816137-02	OBS	No	8.909621	134.091649	1278.0	0.533	12.6	15.6	0.76	4545	4.55	38.13
007816137-03	OBS	No	18.591705	142.848497	2123.0	1.500	12.6	-1.0	0.76	4545	3.37	14.30
007816137-04	OBS	No	15.179498	135.971161	695.1	1.028	11.4	10.0	0.76	4545	2.19	18.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007816137-01	OBS	FP	0.00	1	0	1	1	LPP_DV—LPP_ALT—HALO_GHOST—EPHEM_MATCH
007816137-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
007816137-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS
007816137-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—CENT_FEW_MEAS

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.

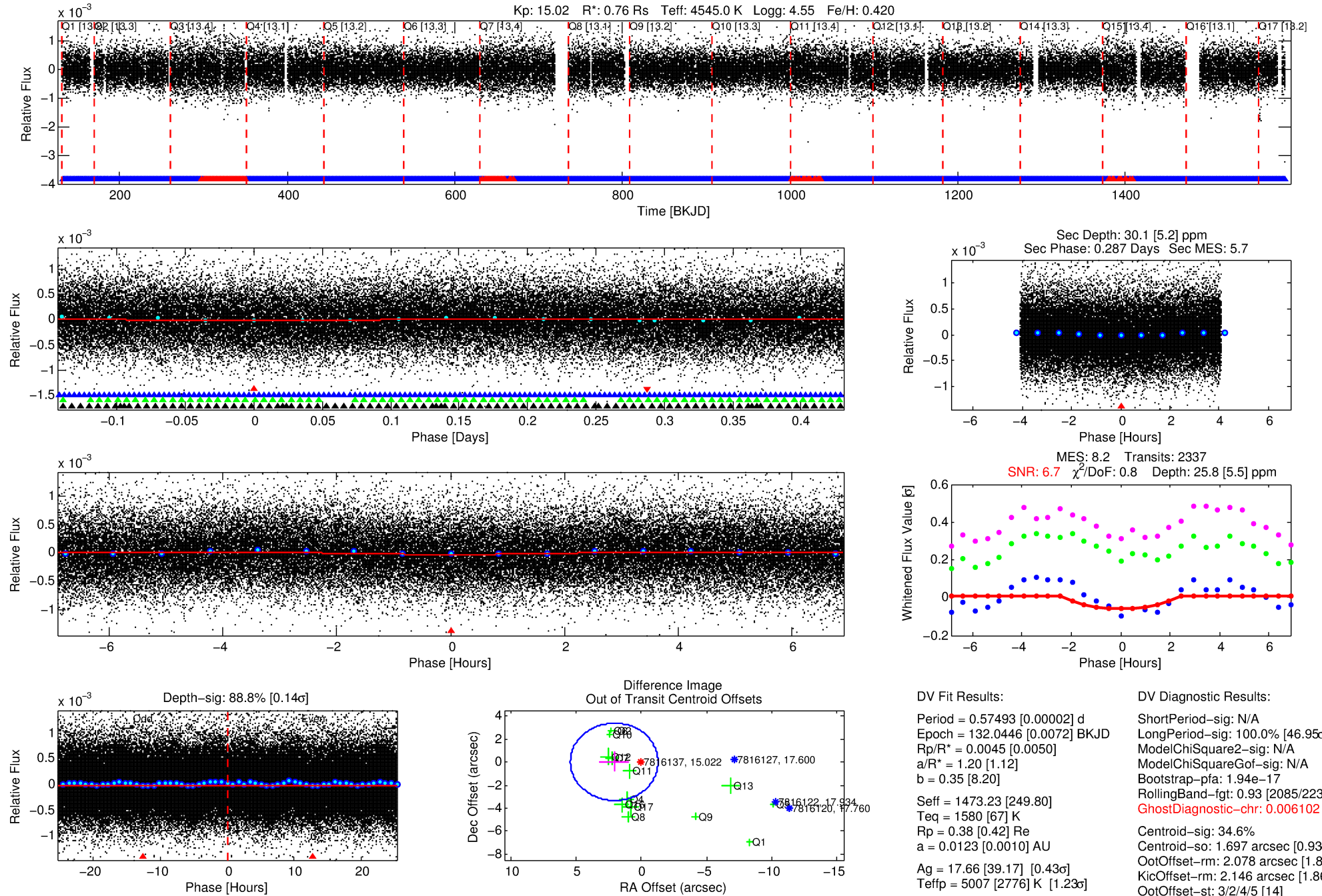
Ephemeris Match Information For 007816137-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
007816137-01	7816137	007816201-pri	7816201	1:1	75.0	-9	17	12.02	15.02	5965.40	Direct-PRF	0	4.90	0.40

Notes: $P_1:P_2$ 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. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 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

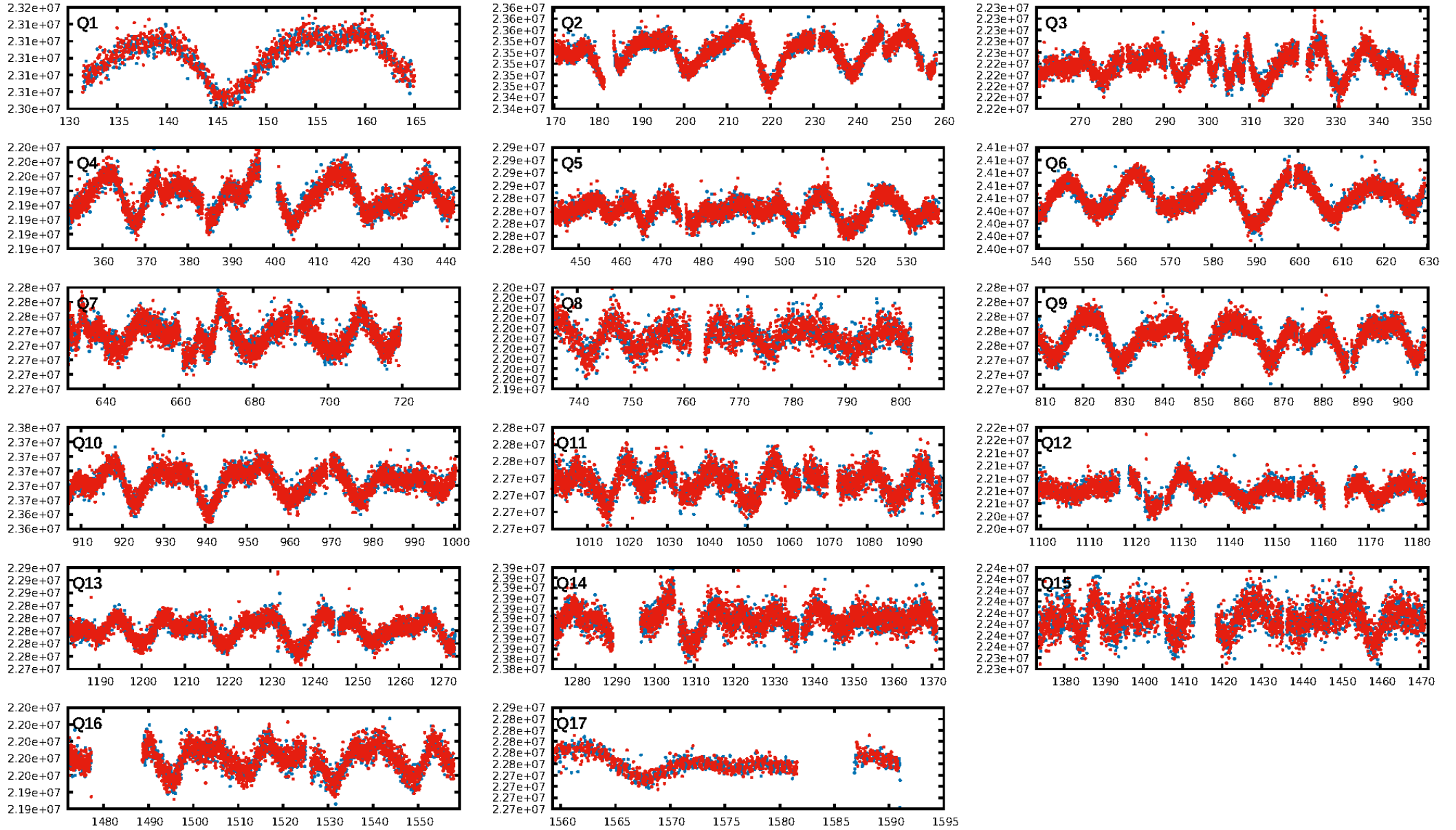
KIC: 7816137 Candidate: 1 of 4 Period: 0.575 d



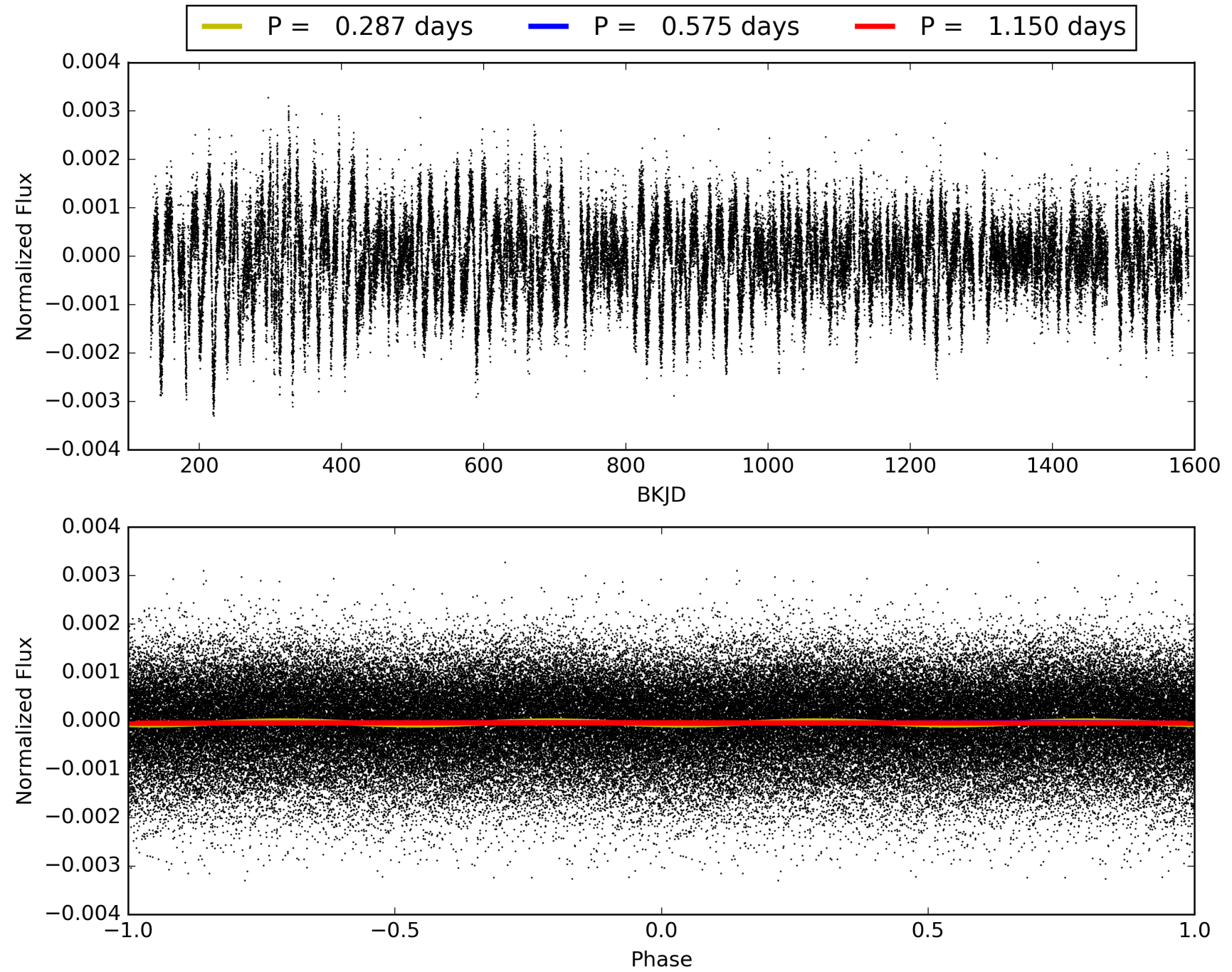
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:56:44 Z

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

TCE 007816137-01, PDC Light Curves

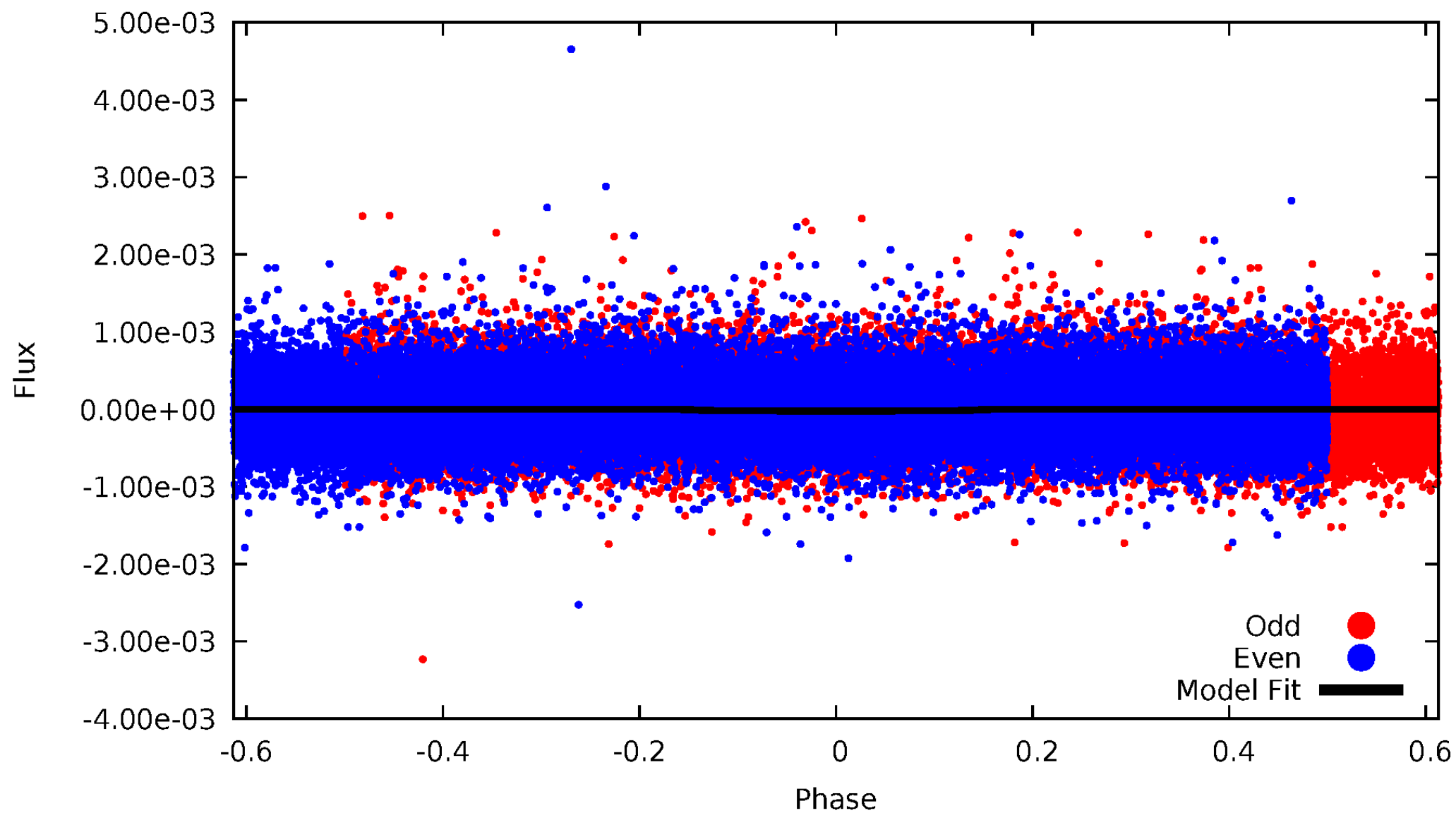


TCE 007816137-01



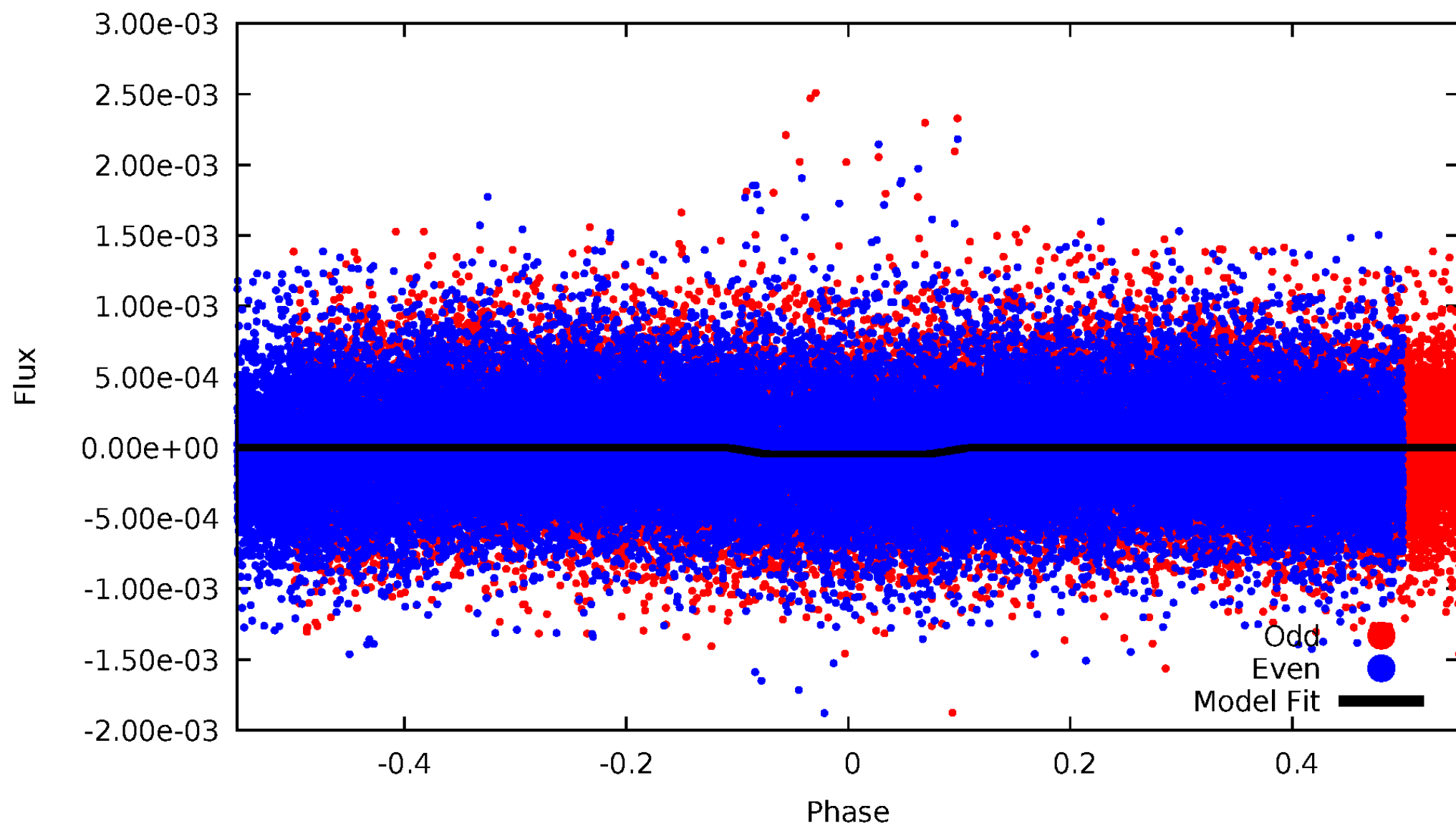
DV Odd/Even

TCE 007816137-01



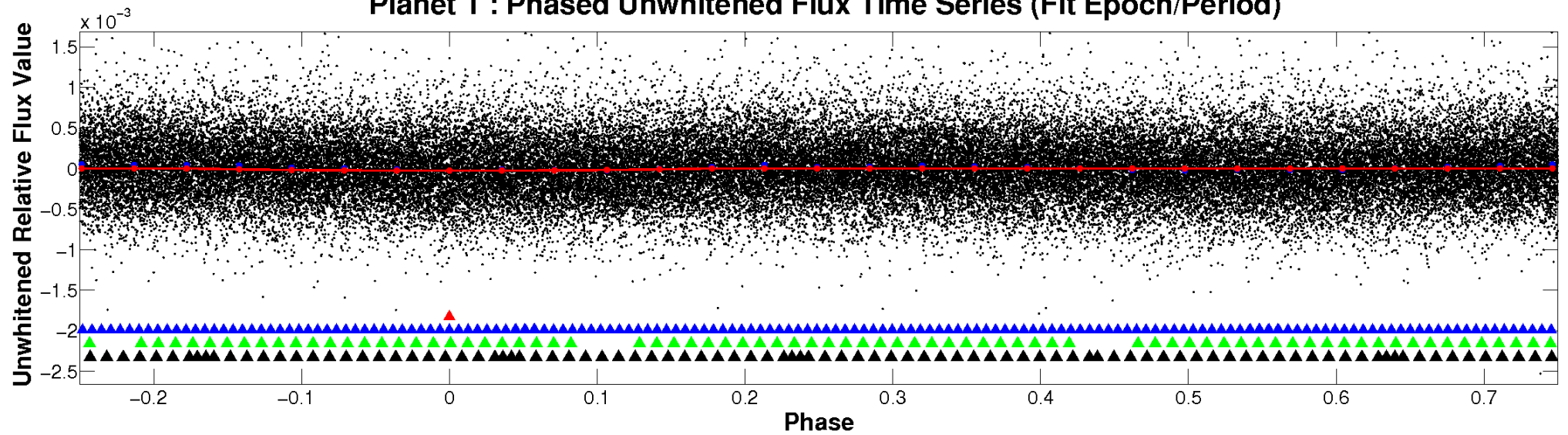
ALT Odd/Even

TCE 007816137-01

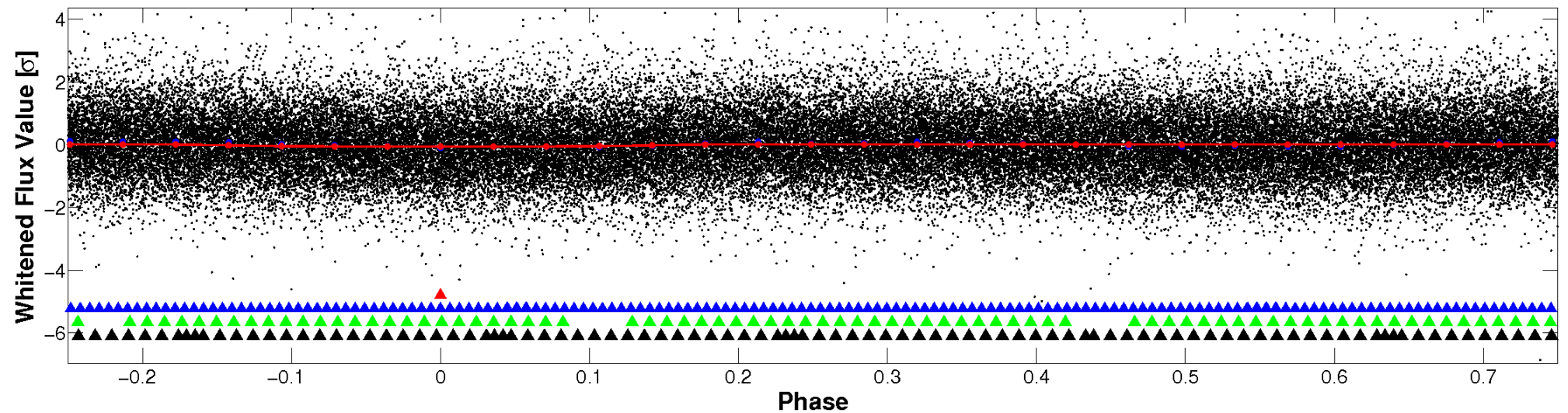


Non-Whitened Vs. Whitened Light Curve

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

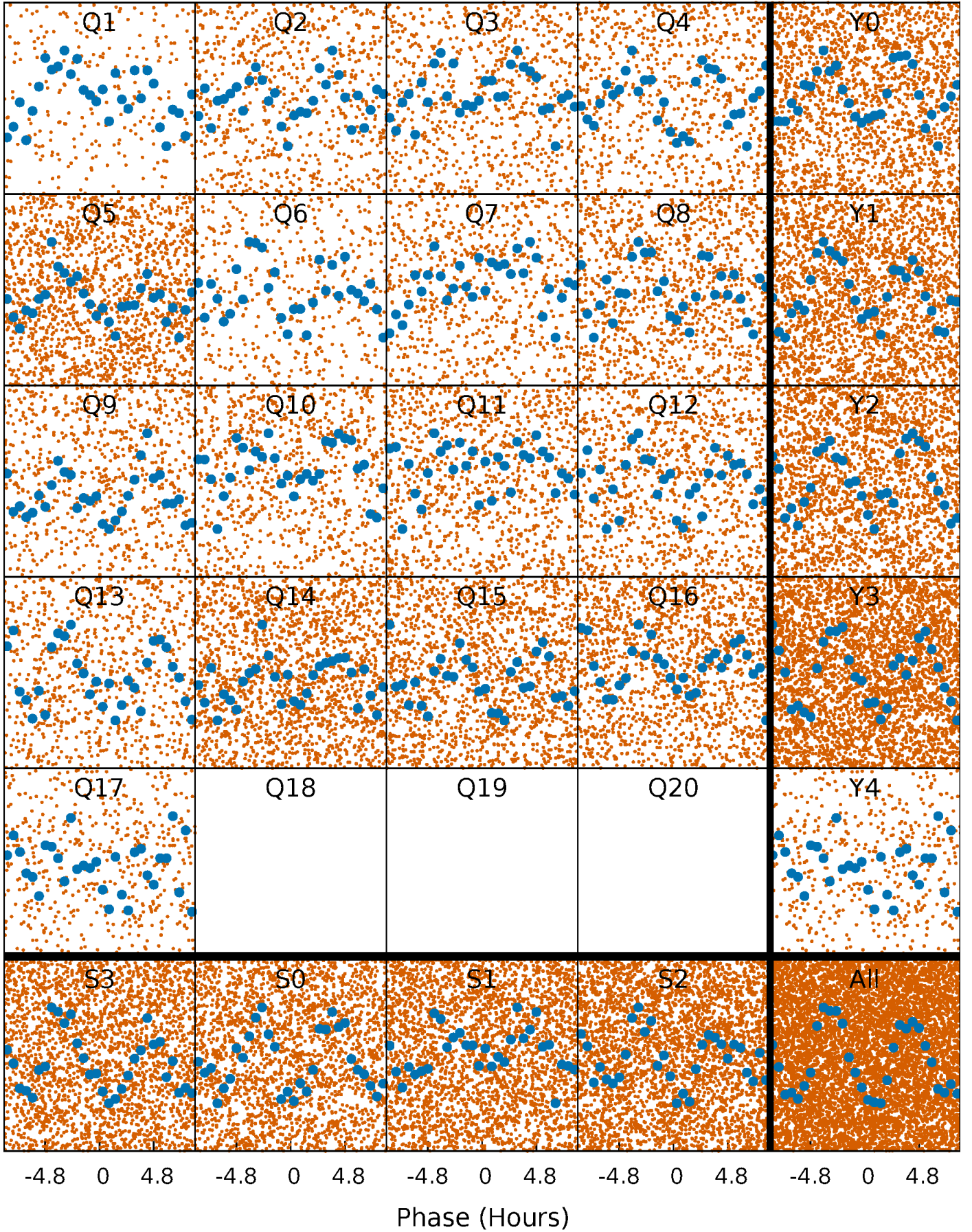


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



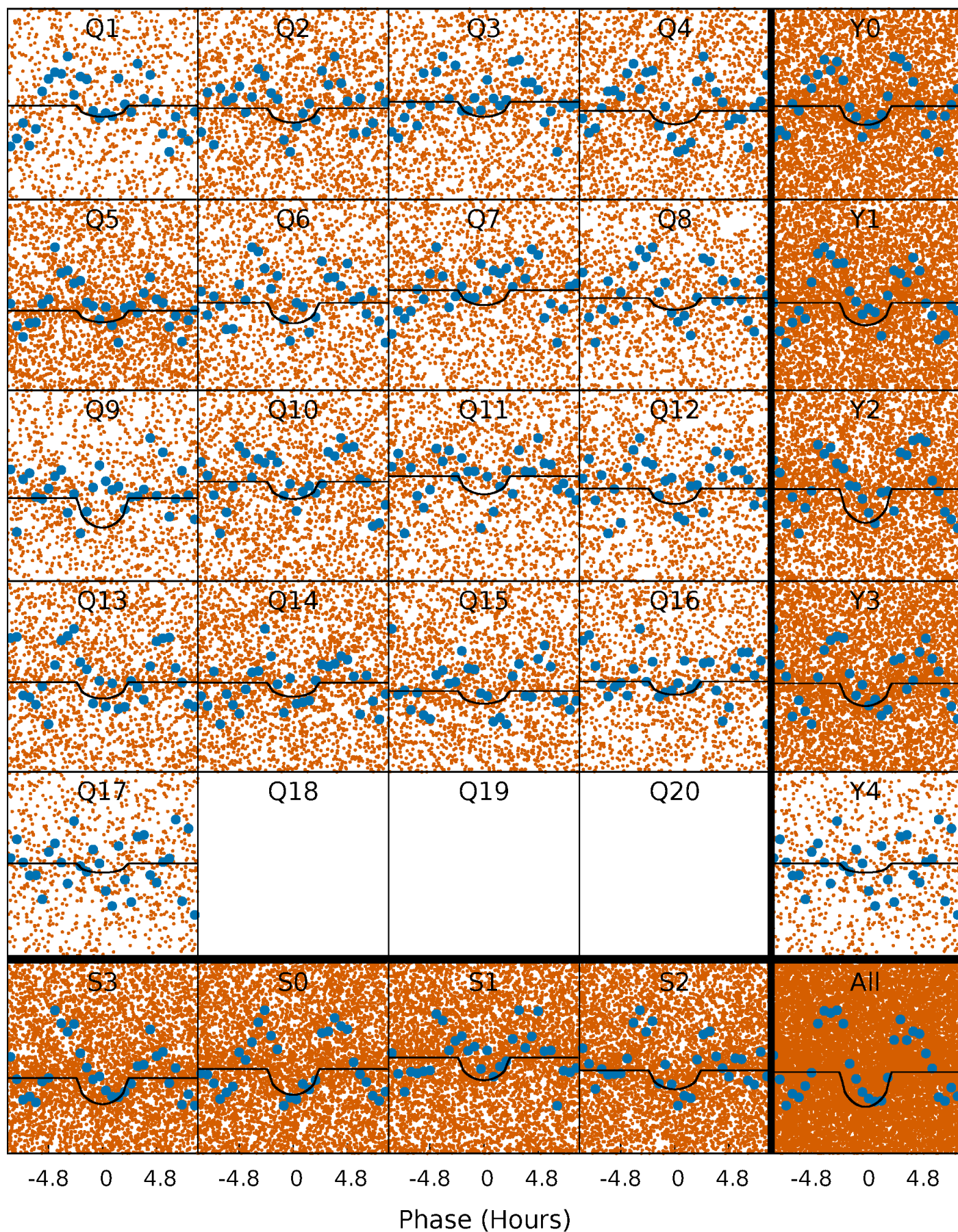
PDC Quarter-Phased Transit Curves

TCE 007816137-01 P= 0.574932 Days $T_0=132.044645$ (BKJD)



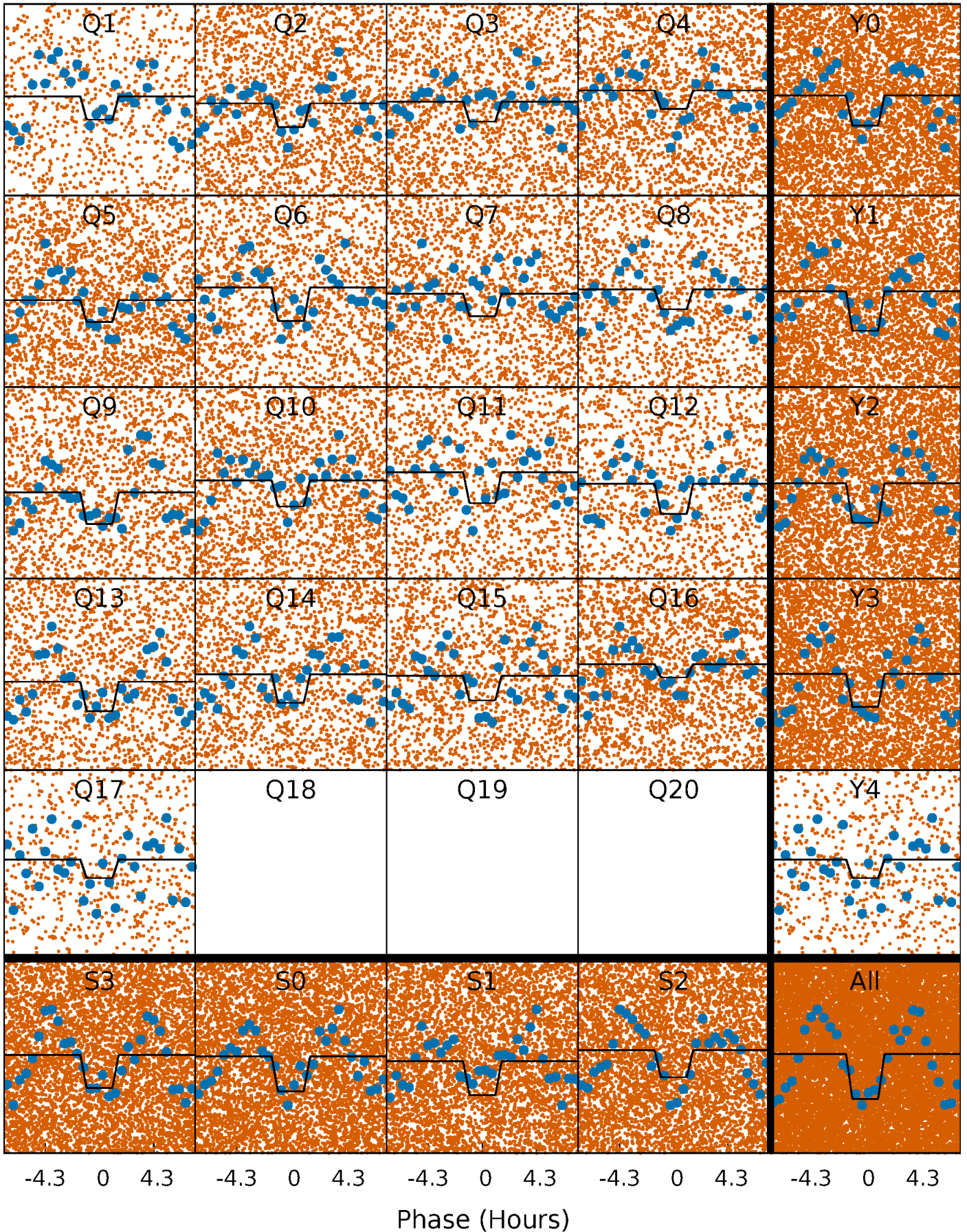
DV Quarter-Phased Transit Curves

TCE 007816137-01 P= 0.574932 Days $T_0=132.044645$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

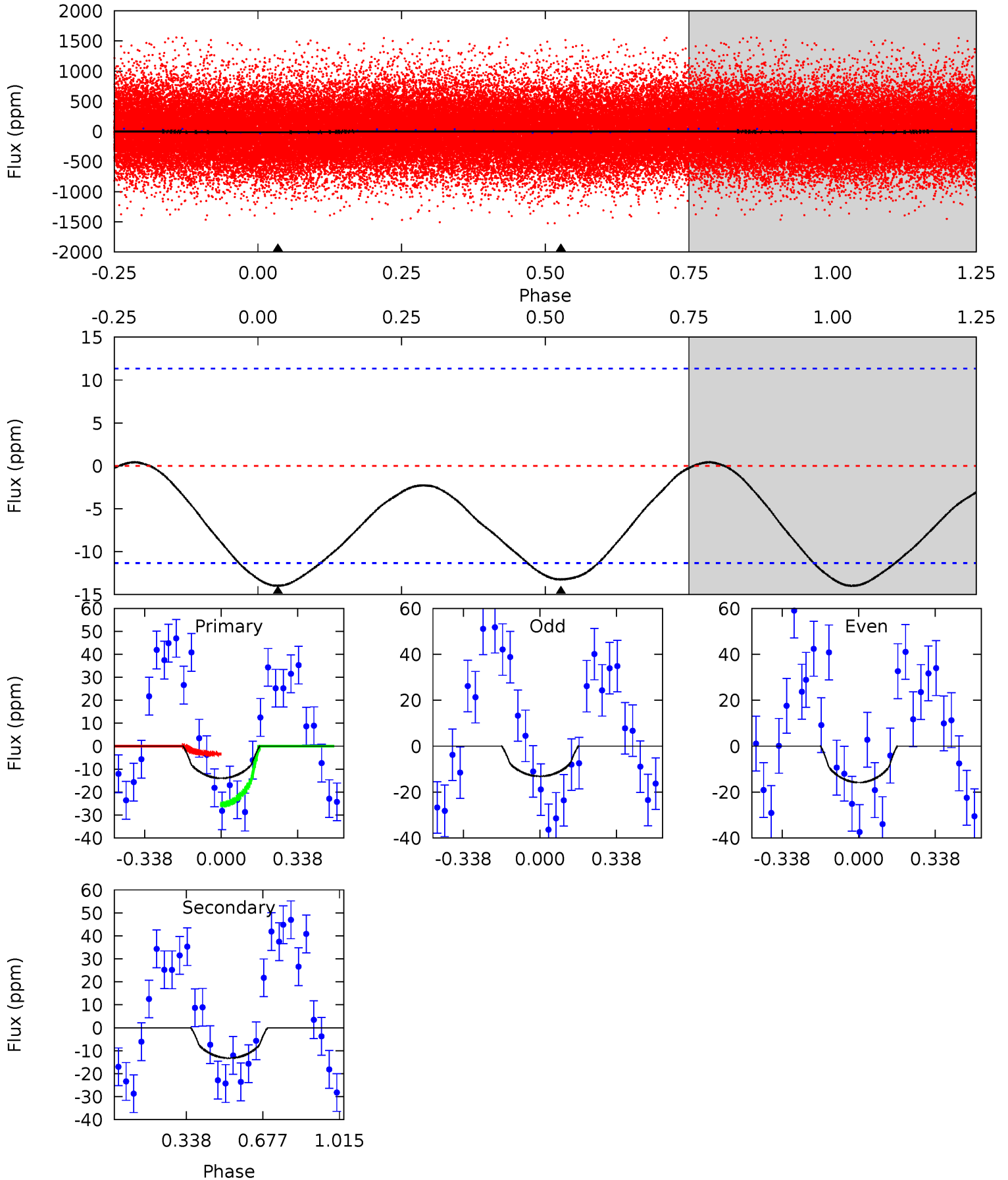
TCE 007816137-01 P= 0.574955 Days $T_0=132.041320$ (BKJD)



DV Model-Shift Uniqueness Test

007816137-01, P = 0.574932 Days, E = 131.469713 Days

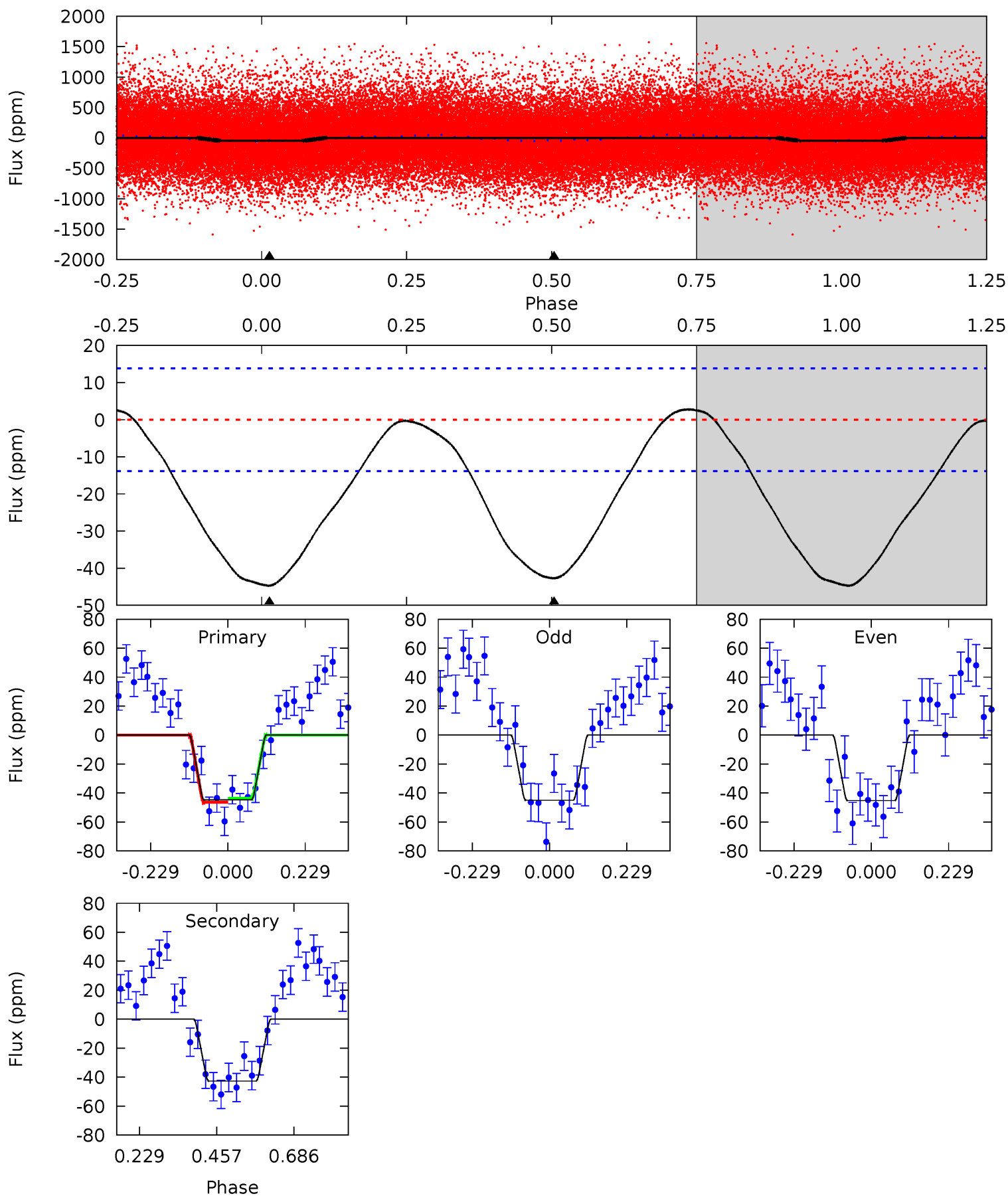
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.31	5.03	0	0	4.30	0.96	0.49	5.31	5.31	5.03	5.03	0.52	0.94	0.03	4.30



Alt Model-Shift Uniqueness Test

007816137-01, P = 0.574955 Days, E = 131.466365 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.2	13.6	0	0	4.39	1.20	0.49	14.2	14.2	13.6	13.6	0.03	0.91	0.06	0.43



Stellar Parameters For KIC 007816137

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4545^{+137}_{-123}	$4.548^{+0.068}_{-0.020}$	$0.420^{+0.050}_{-0.300}$	$0.764^{+0.026}_{-0.066}$	$0.752^{+0.040}_{-0.044}$	$2.376^{+0.644}_{-0.172}$
	+3%/-3%	+1%/-0%	+12%/-71%	+3%/-9%	+5%/-6%	+27%/-7%
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 007816137-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-13 ± 3	$0.48^{+0.33}_{-0.30}$	2192^{+75}_{-70}	3806^{+1759}_{-690}	$4.780^{+27.922}_{-3.134}$
Alt.	-43 ± 3	$0.60^{+0.39}_{-0.39}$	2192^{+73}_{-71}	4369^{+2517}_{-764}	11^{+71}_{-7}

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 $A_{obs} \gg 1.0$

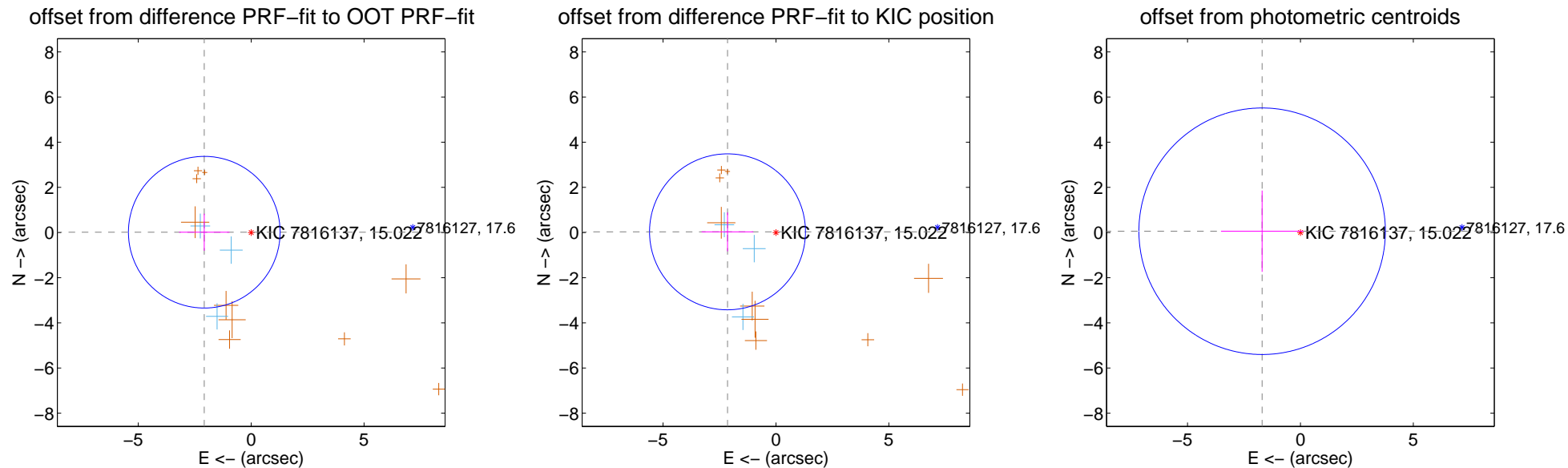
DV Centroid Data

Supplemental centroid analysis for 007816137-01. Kepler magnitude: 15.02. Transit SNR 6.65

There are 4 quarters with good PRF difference image offsets

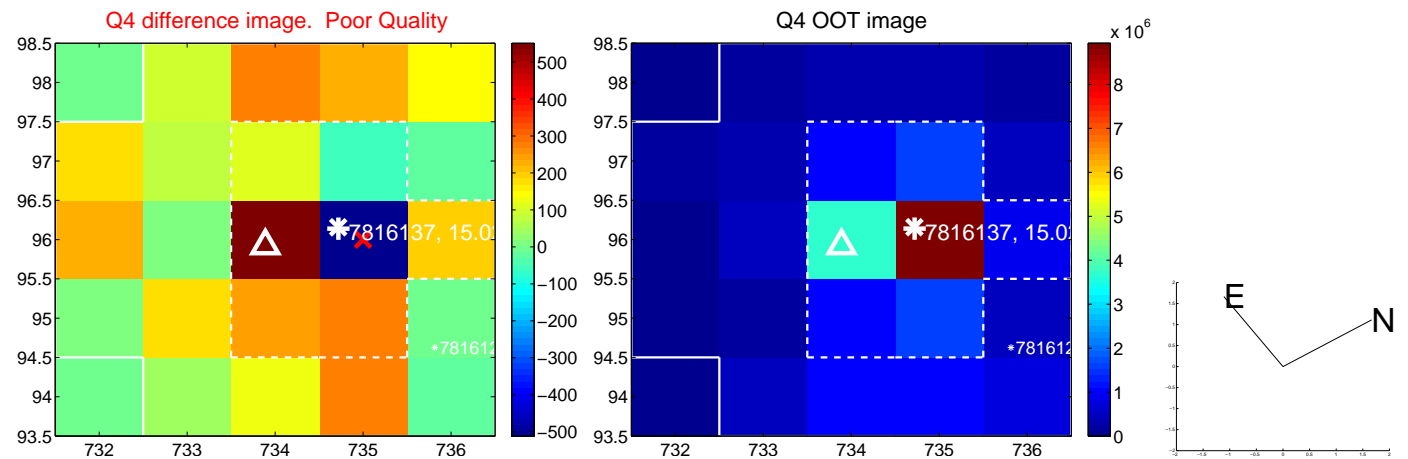
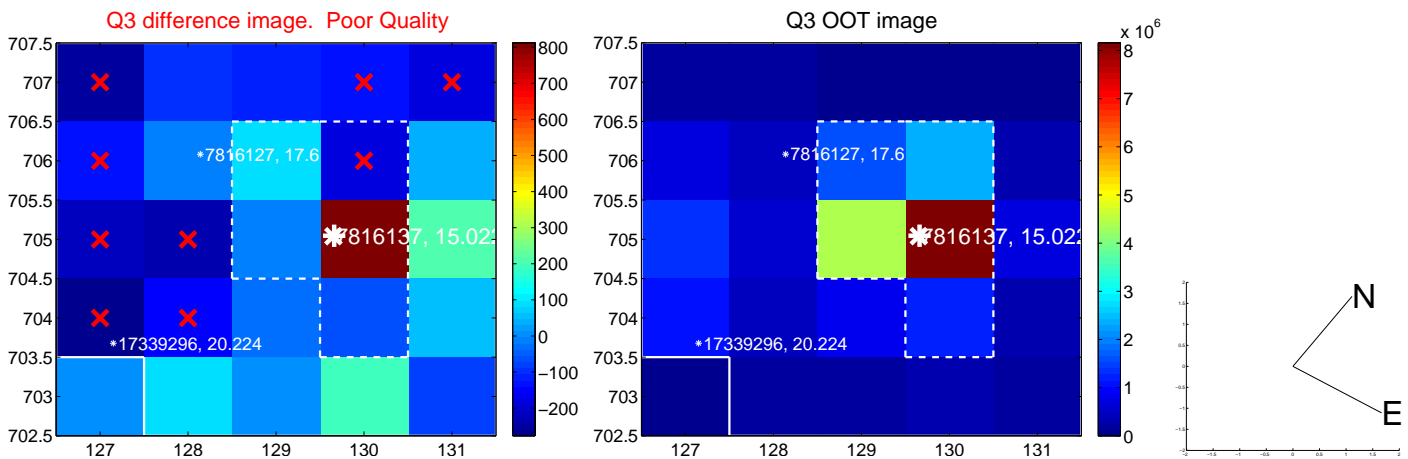
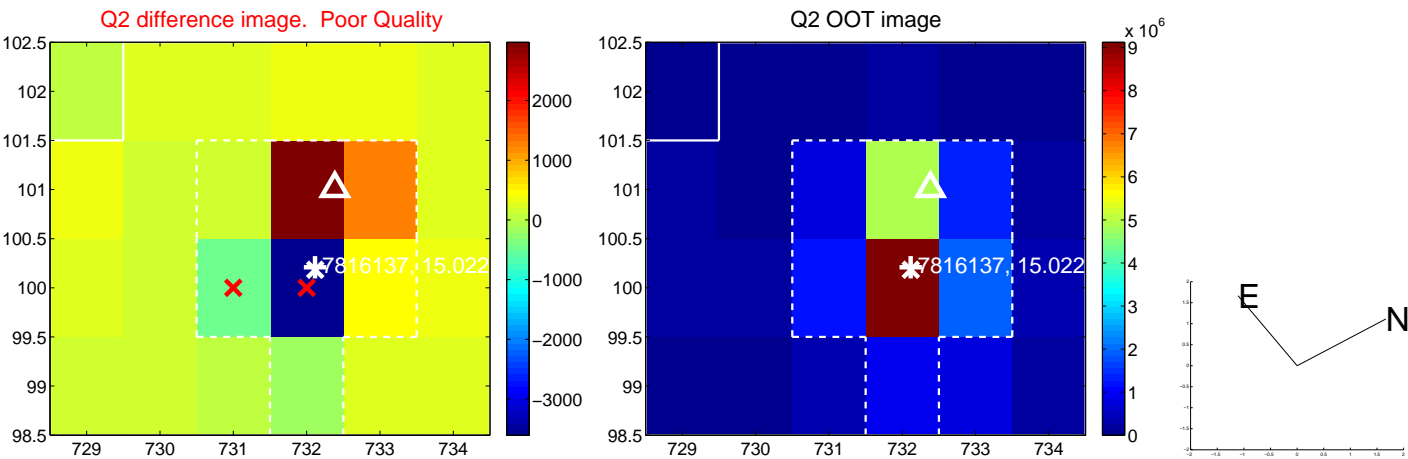
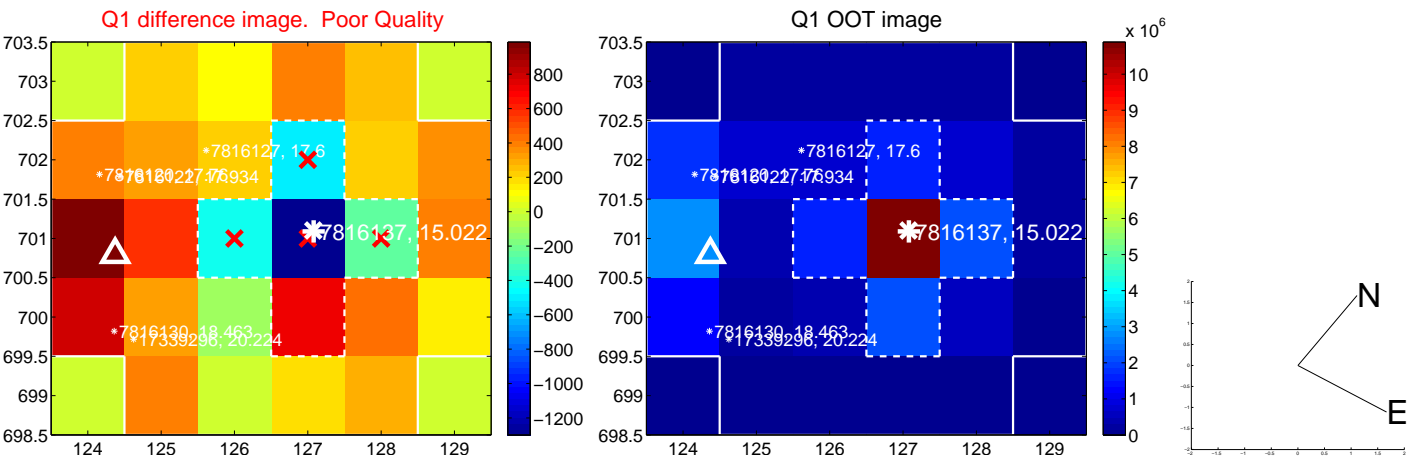
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.078 ± 1.120	1.86	2.078 ± 1.116	0.015 ± 0.821
PRF-fit source offset from KIC position	2.146 ± 1.151	1.86	2.146 ± 1.143	0.031 ± 0.863
photometric centroid source offset	1.70 ± 1.82	0.93	1.70 ± 1.82	0.06 ± 1.80

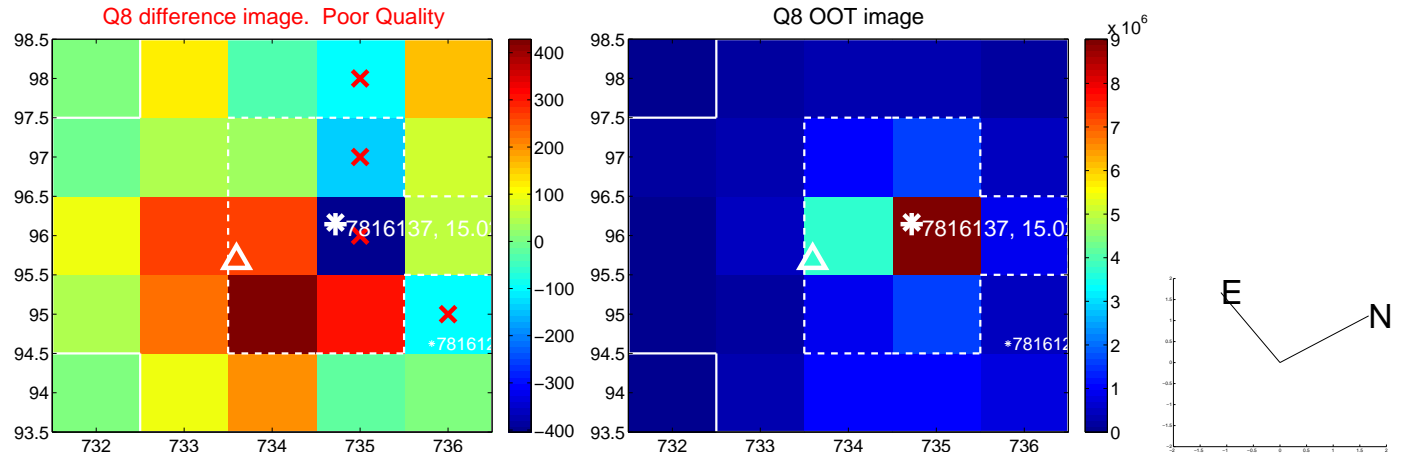
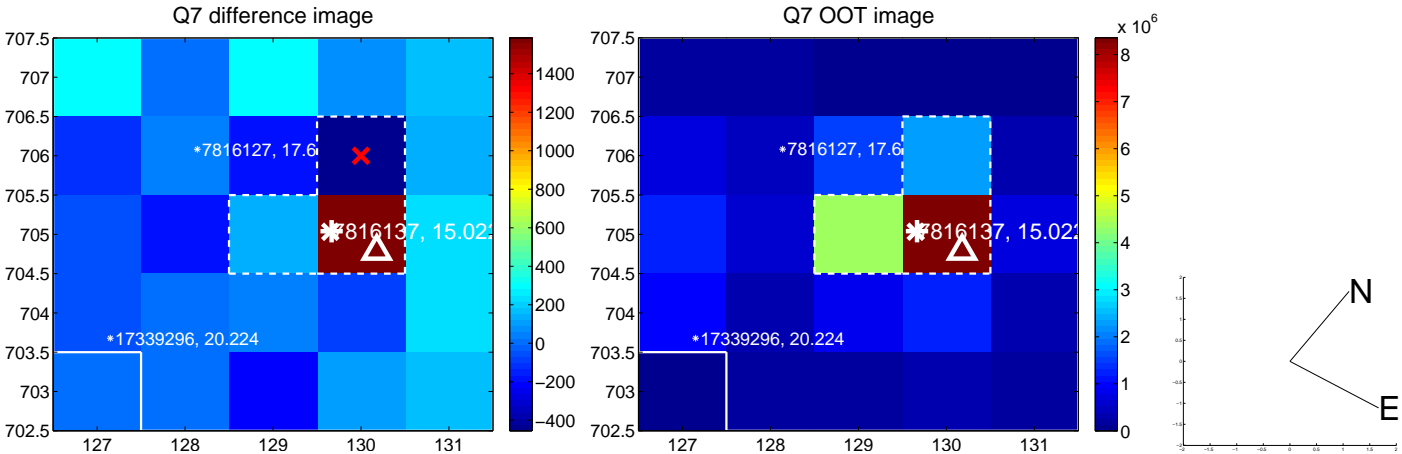
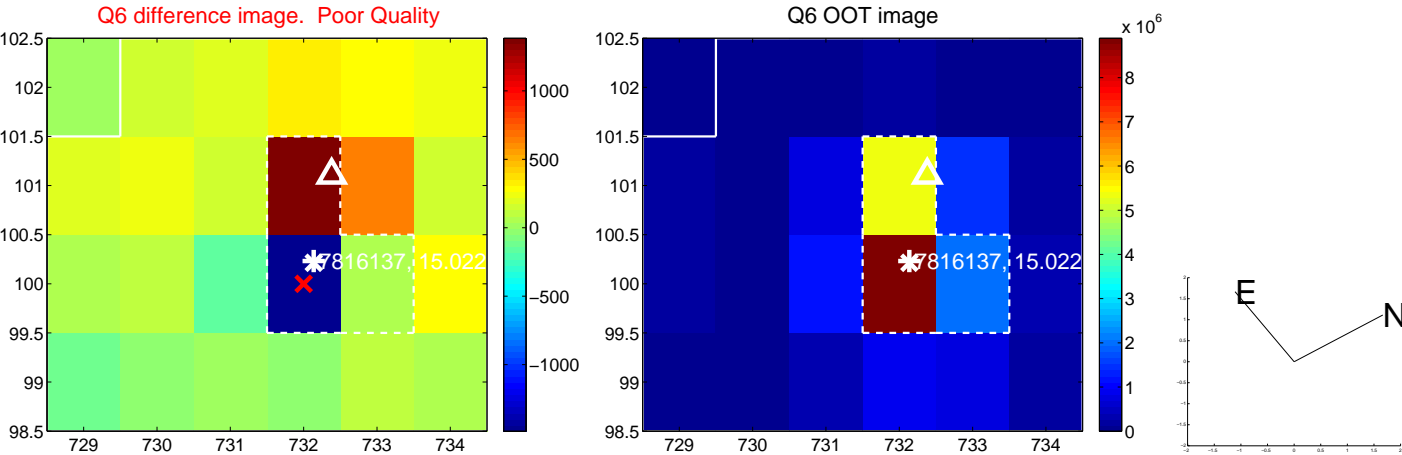
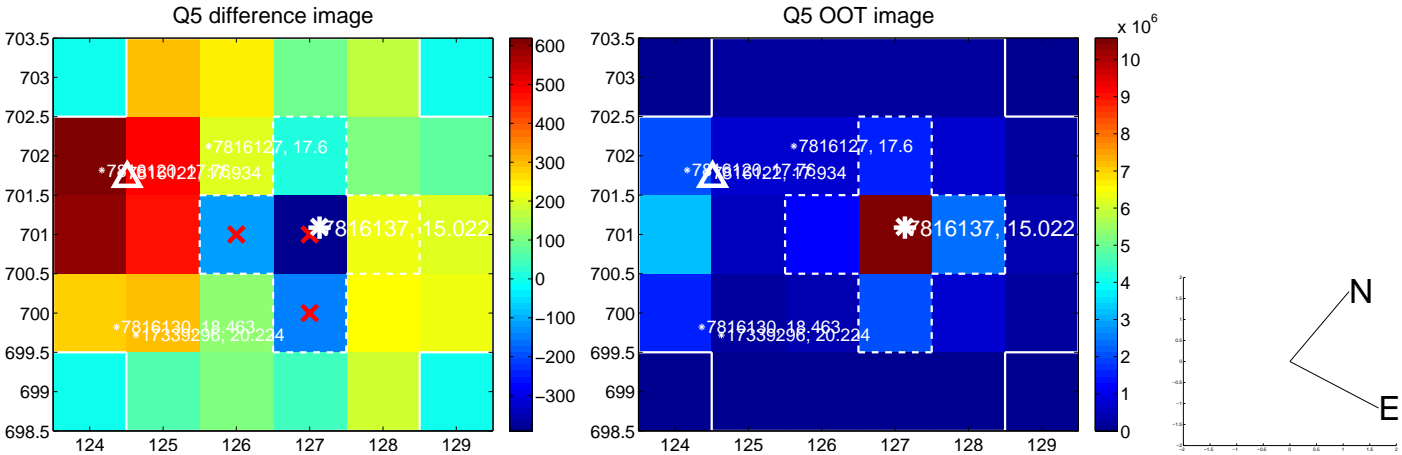


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

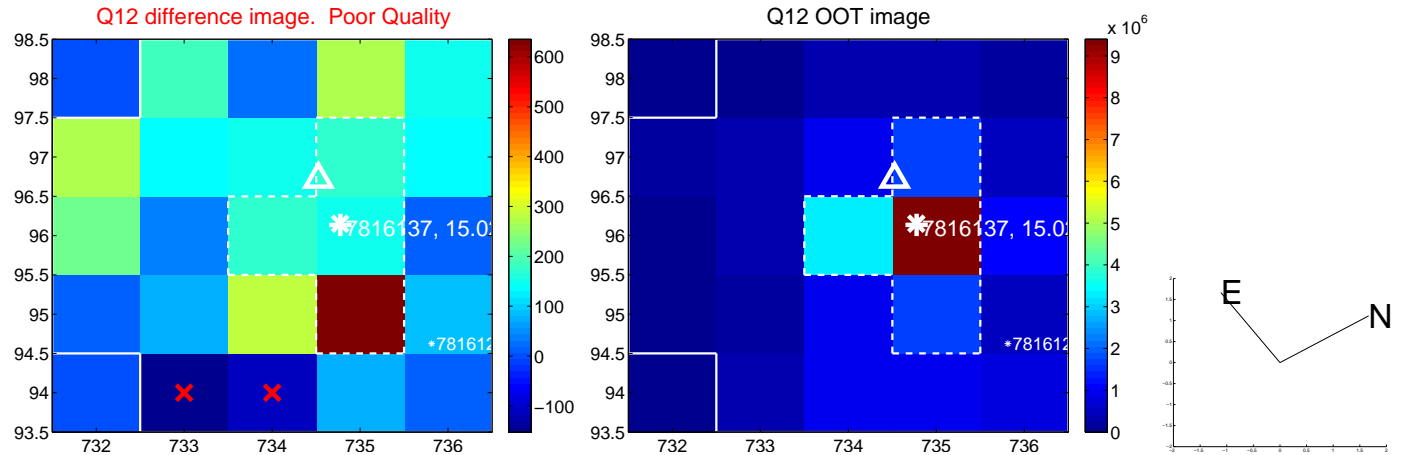
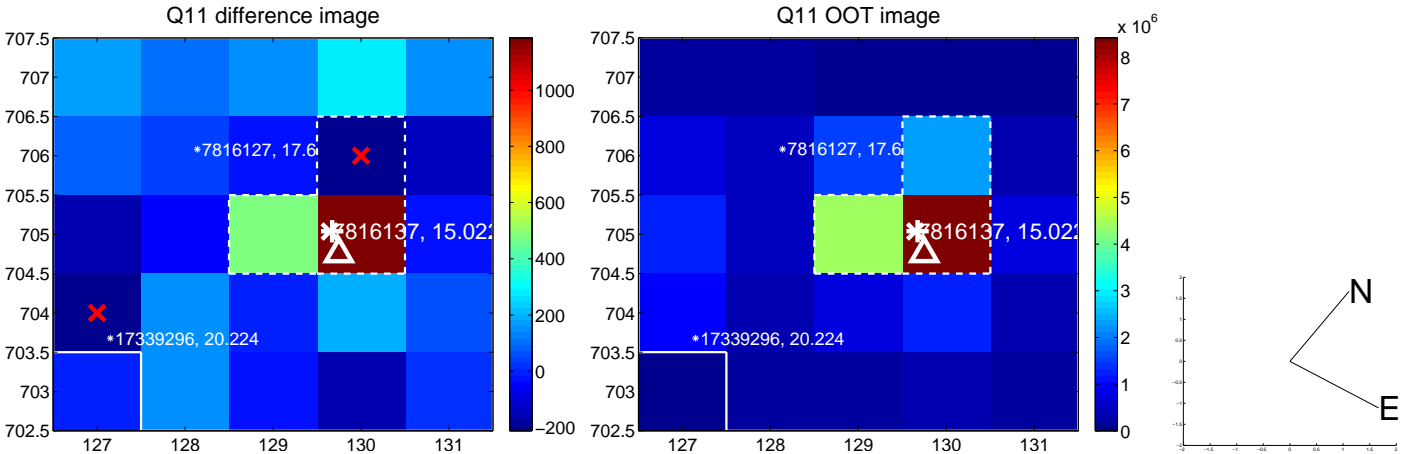
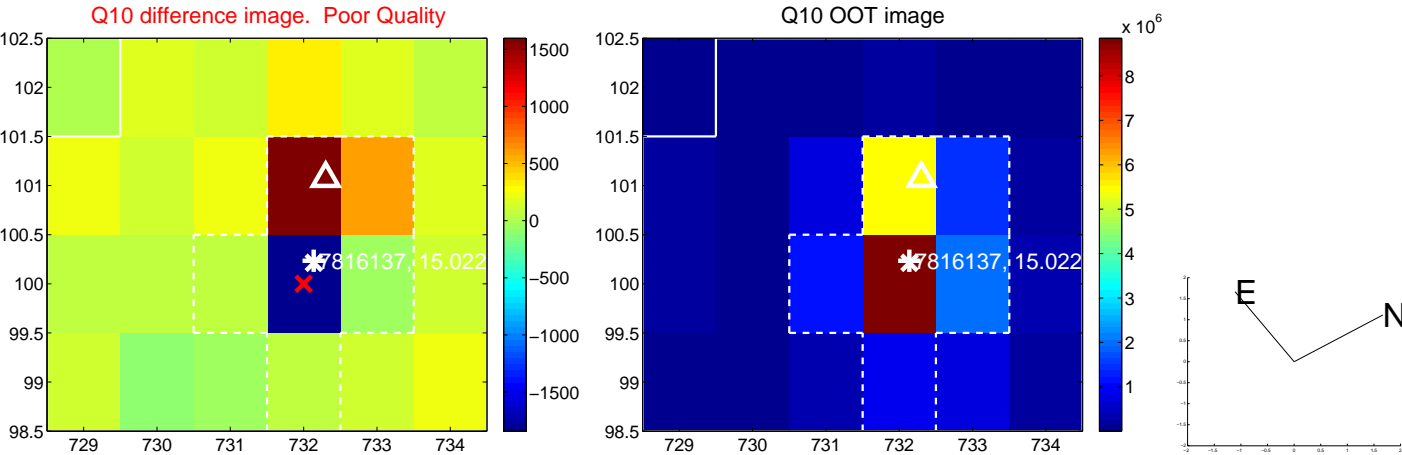
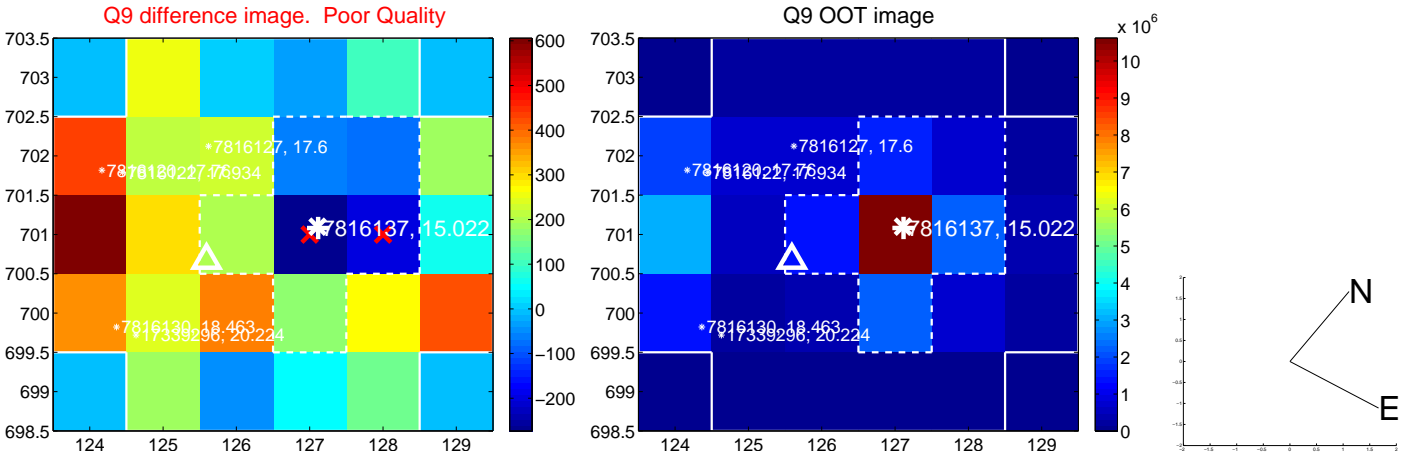
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



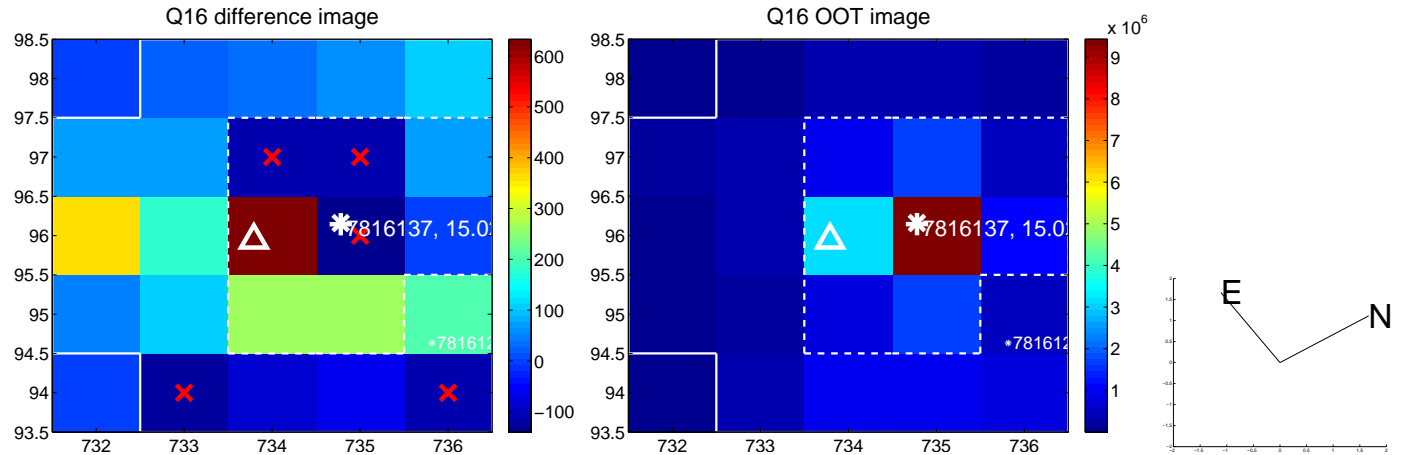
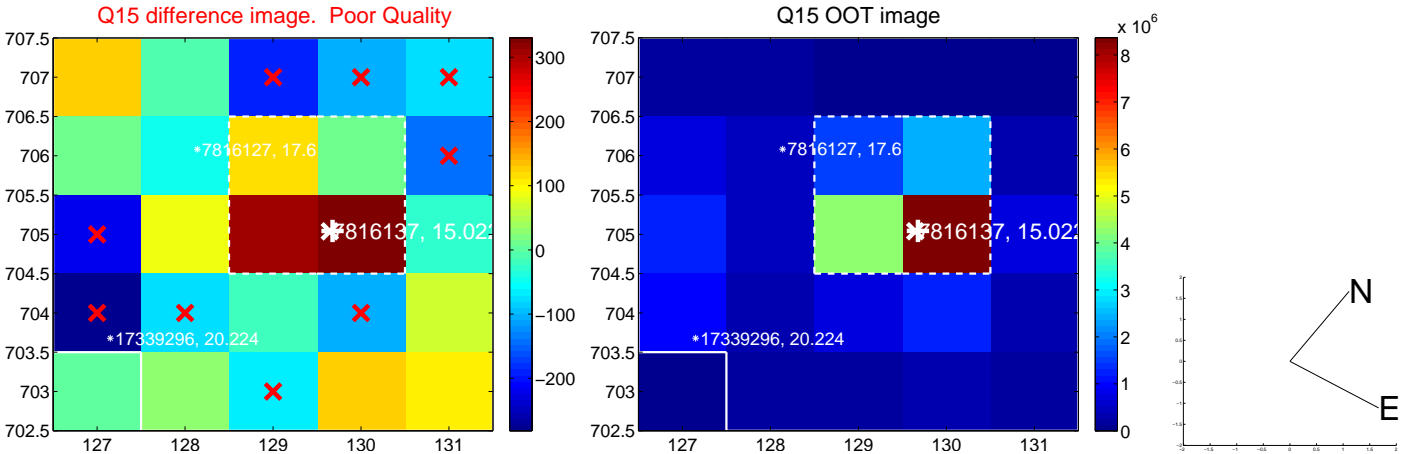
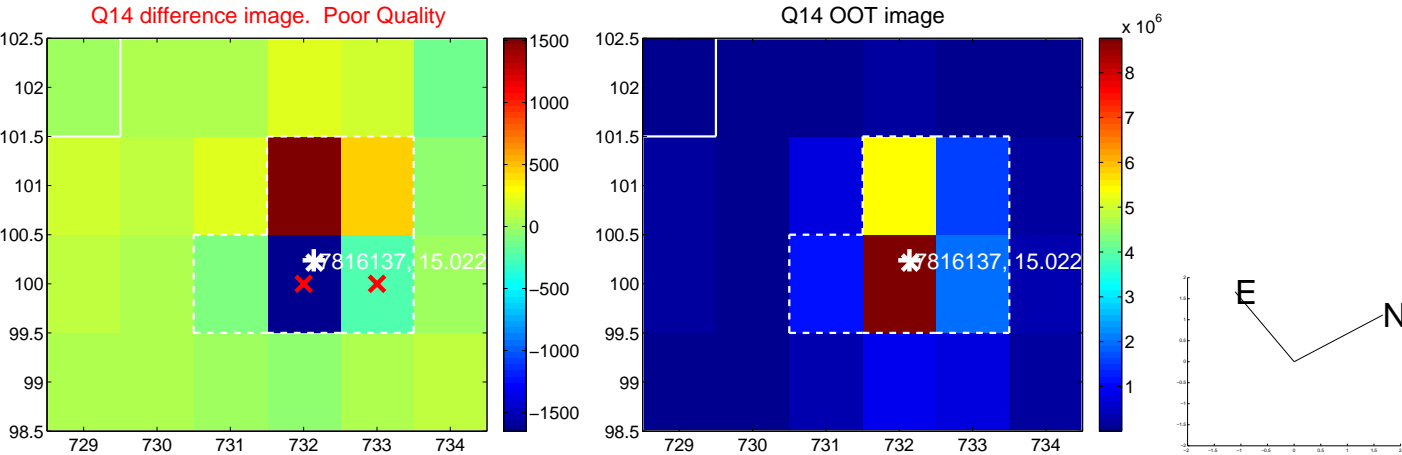
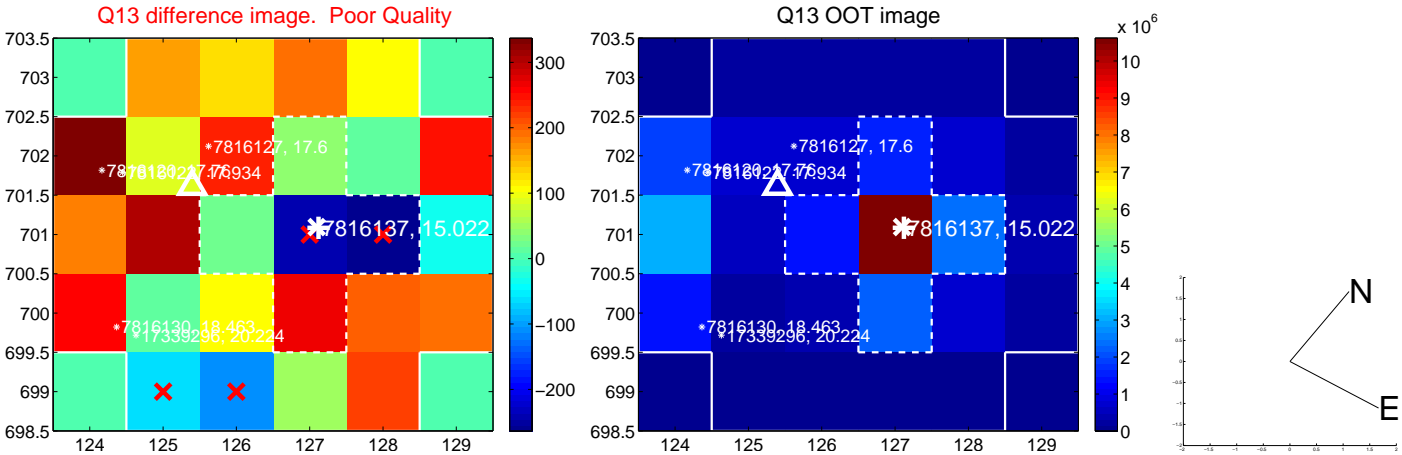
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



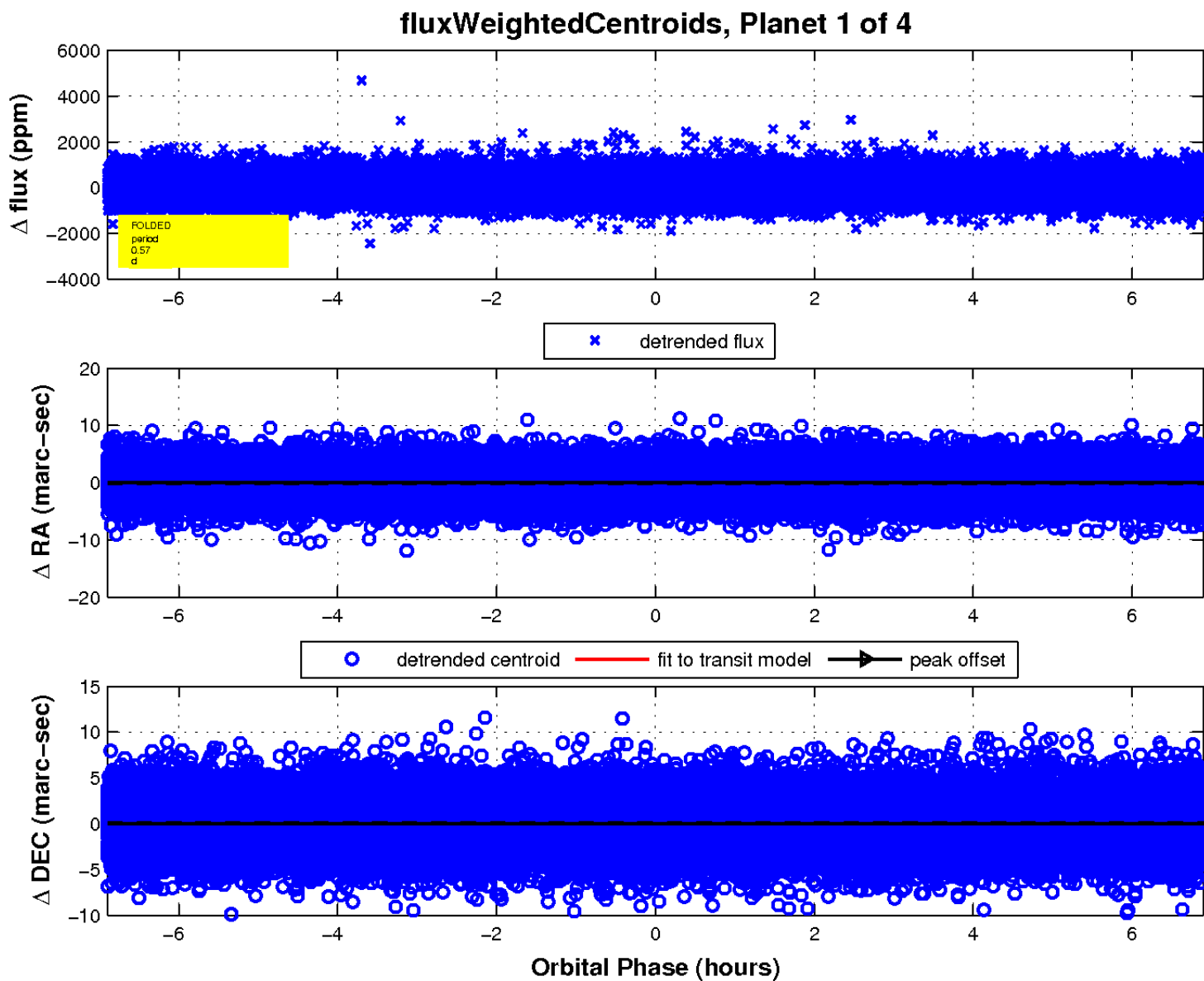
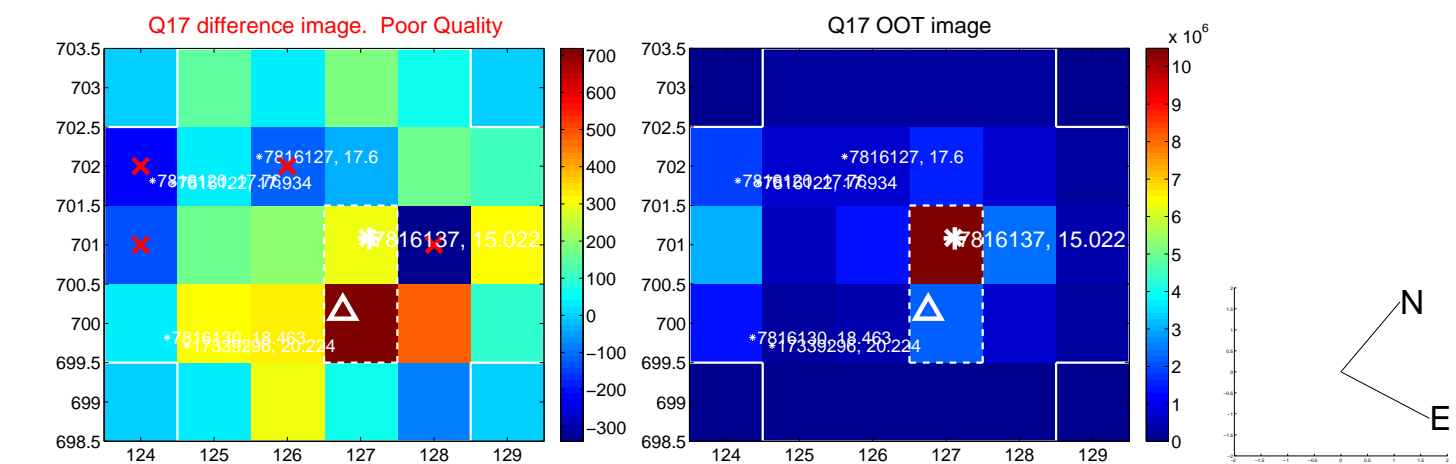
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

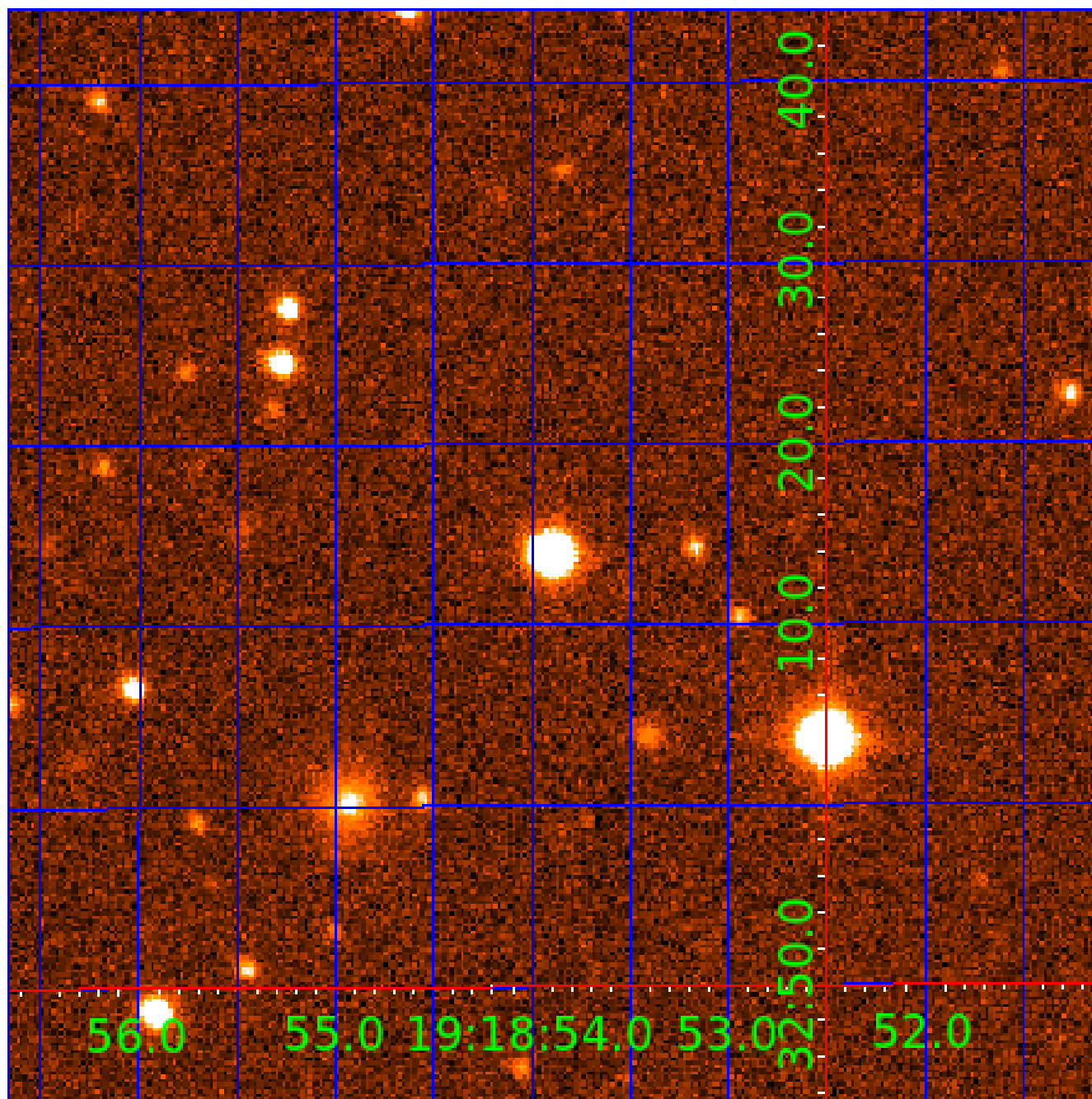


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



UKIRT Image

Declination



KIC 007816137

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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007816137-03	OBS	No	18.591705	142.848497	2123.0	1.500	12.6	-1.0	0.76	4545	3.37	14.30
007816137-04	OBS	No	15.179498	135.971161	695.1	1.028	11.4	10.0	0.76	4545	2.19	18.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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007816137-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
007816137-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS
007816137-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—CENT_FEW_MEAS

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

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

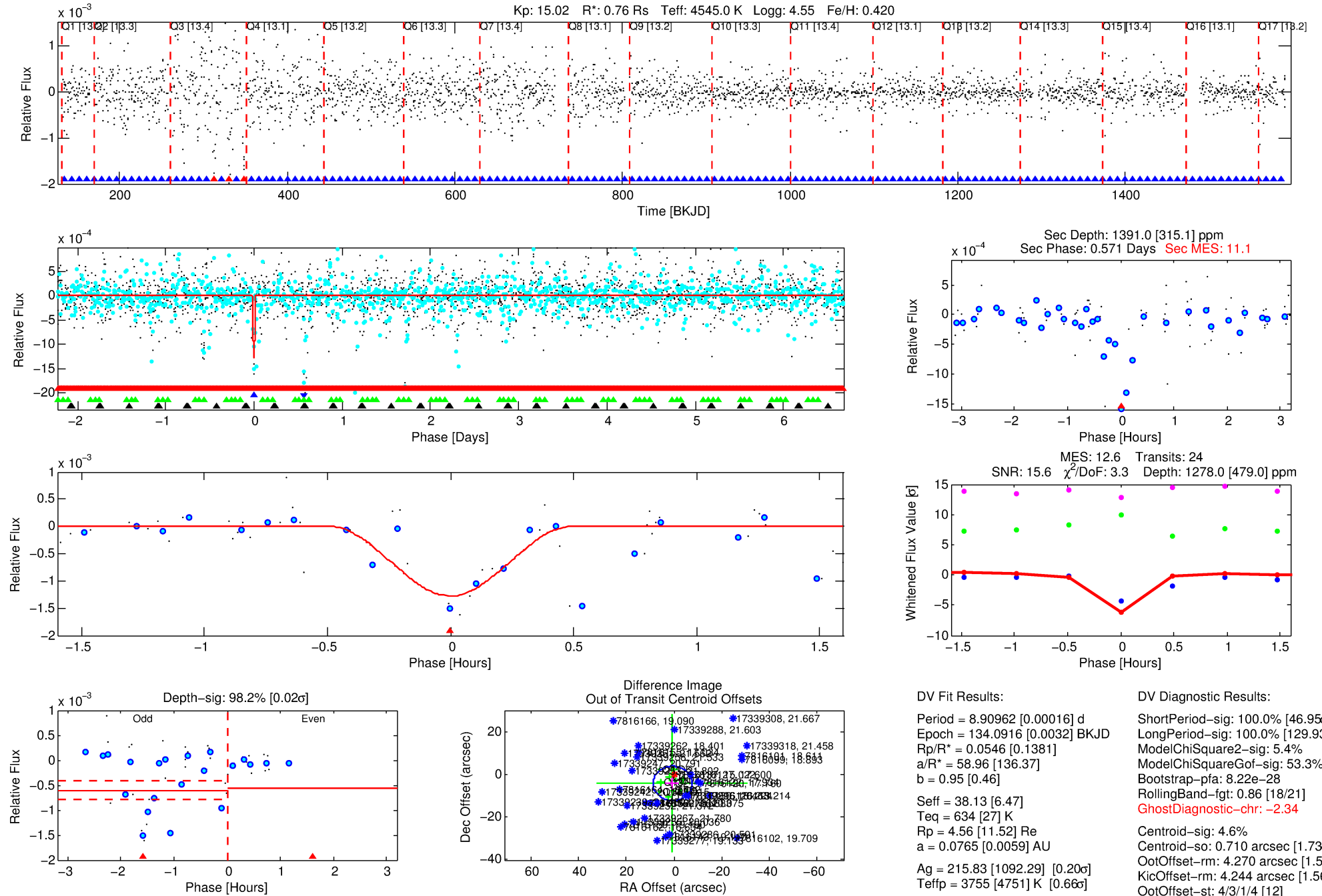
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007816137-02

No Significant Match Found

DV One-Page Summary

KIC: 7816137 Candidate: 2 of 4 Period: 8.910 d



DV Fit Results:

Period = 8.90962 [0.00016] d
Epoch = 134.0916 [0.0032] BKJD
Rp/R* = 0.0546 [0.1381]
a/R* = 58.96 [136.37]
b = 0.95 [0.46]
Seff = 38.13 [6.47]
Teff = 634 [27] K
Rp = 4.56 [11.52] Re
a = 0.0765 [0.0059] AU
Ag = 215.83 [1092.29] [0.20 σ]
Teffp = 3755 [4751] K [0.66 σ]

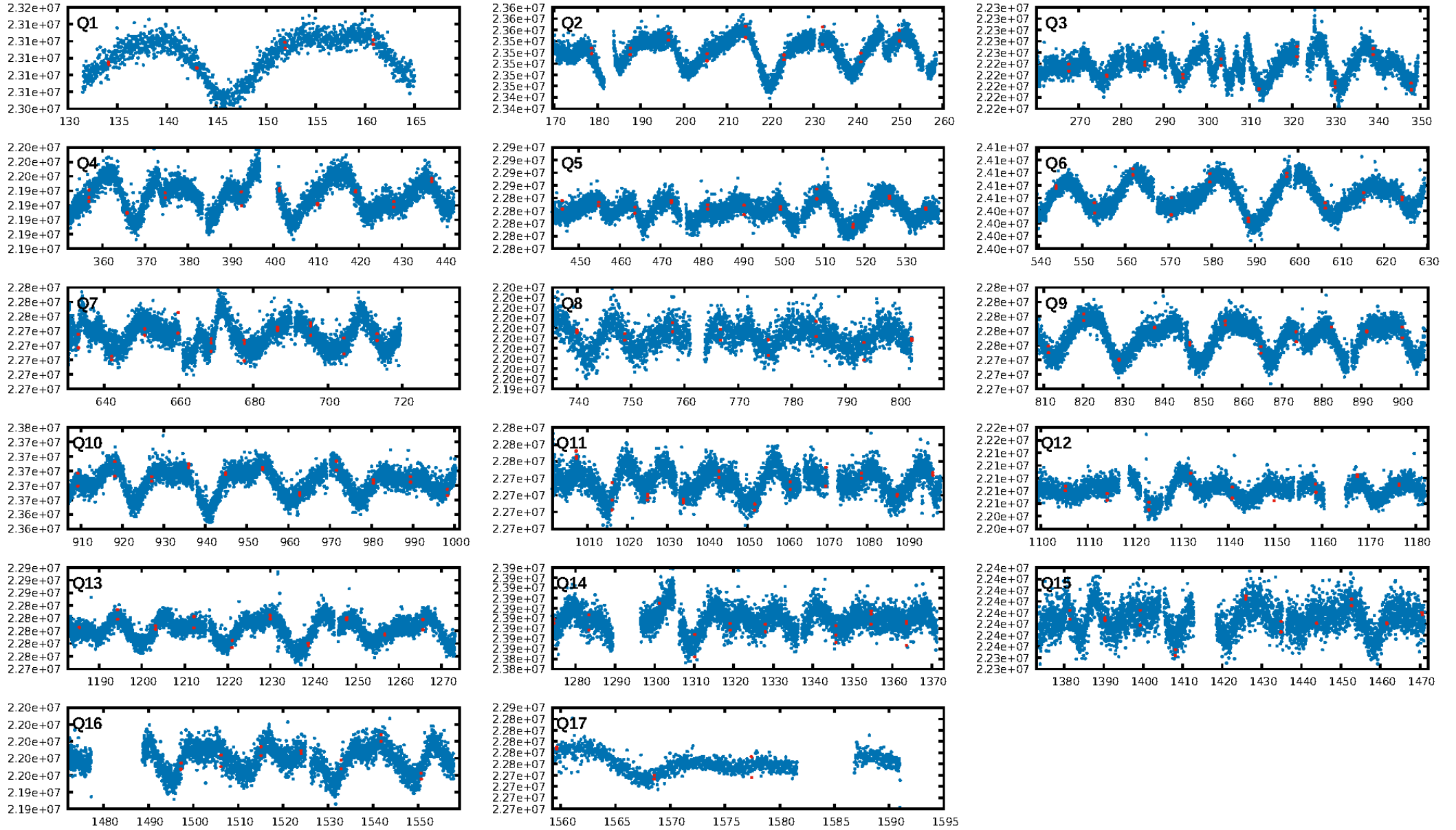
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [46.95 σ]
LongPeriod-sig: 100.0% [129.93 σ]
ModelChiSquare2-sig: 5.4%
ModelChiSquareGof-sig: 53.3%
Bootstrap-pfa: 8.22e-28
RollingBand-fgt: 0.86 [18/21]
GhostDiagnostic-chr: -2.34
Centroid-sig: 4.6%
Centroid-so: 0.710 arcsec [1.73 σ]
OotOffset-rm: 4.270 arcsec [1.57 σ]
KicOffset-rm: 4.244 arcsec [1.56 σ]
OotOffset-st: 4/3/1/4 [12]
KicOffset-st: 4/3/1/4 [12]
DiffImageQuality-fgm: 0.00 [0/12]
DiffImageOverlap-fno: 0.00 [0/15]

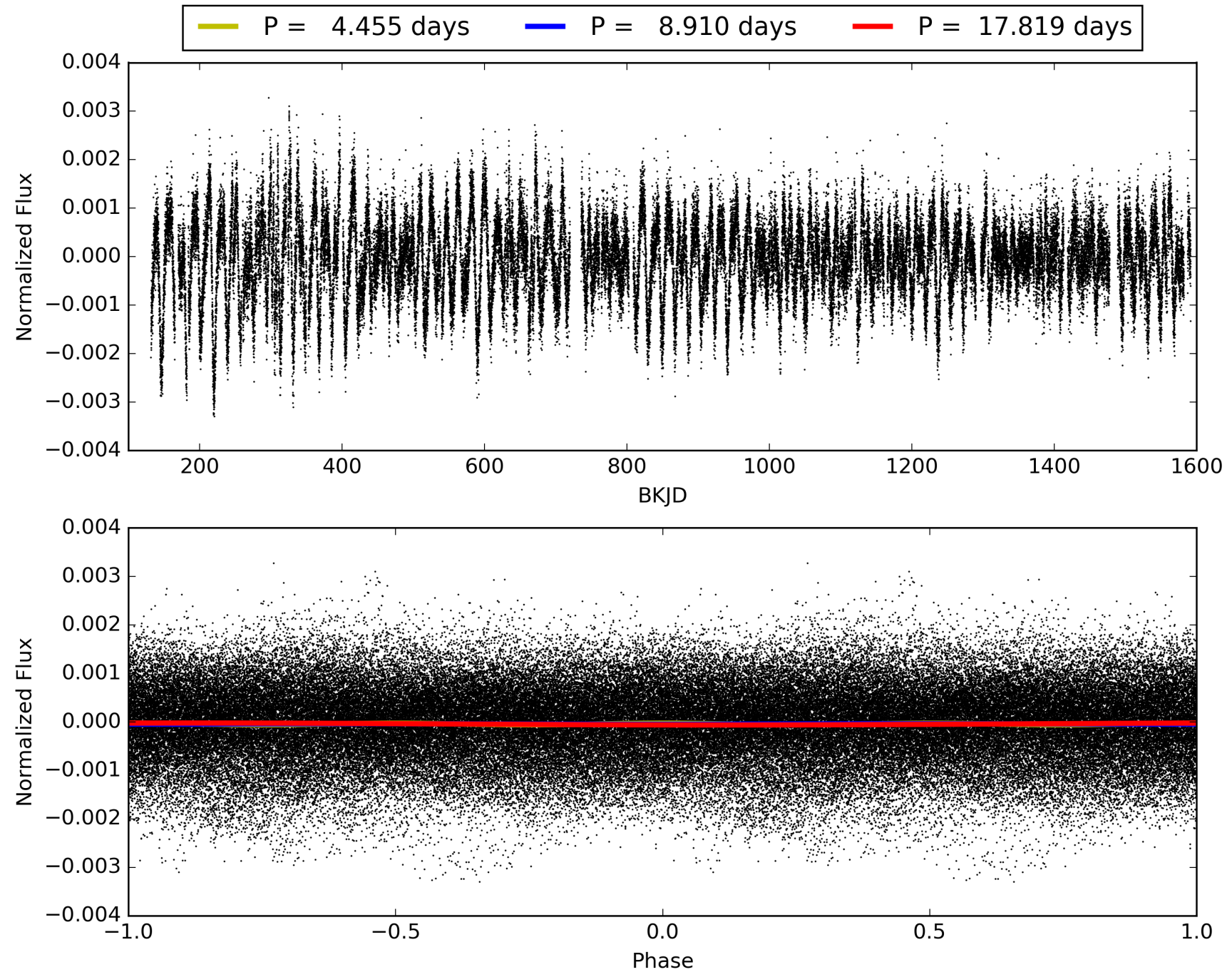
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:57:03 Z

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

TCE 007816137-02, PDC Light Curves

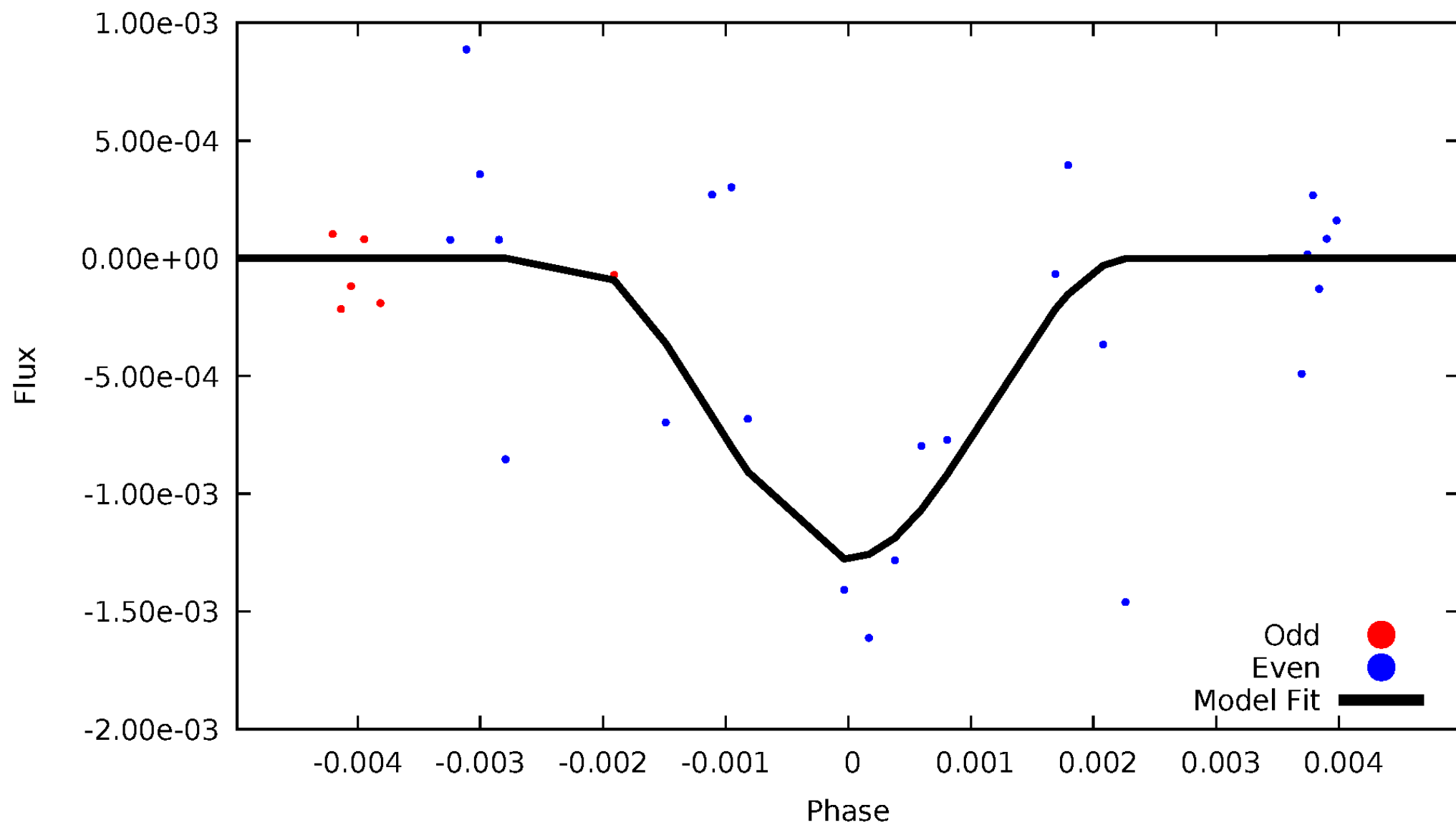


TCE 007816137-02



DV Odd/Even

TCE 007816137-02

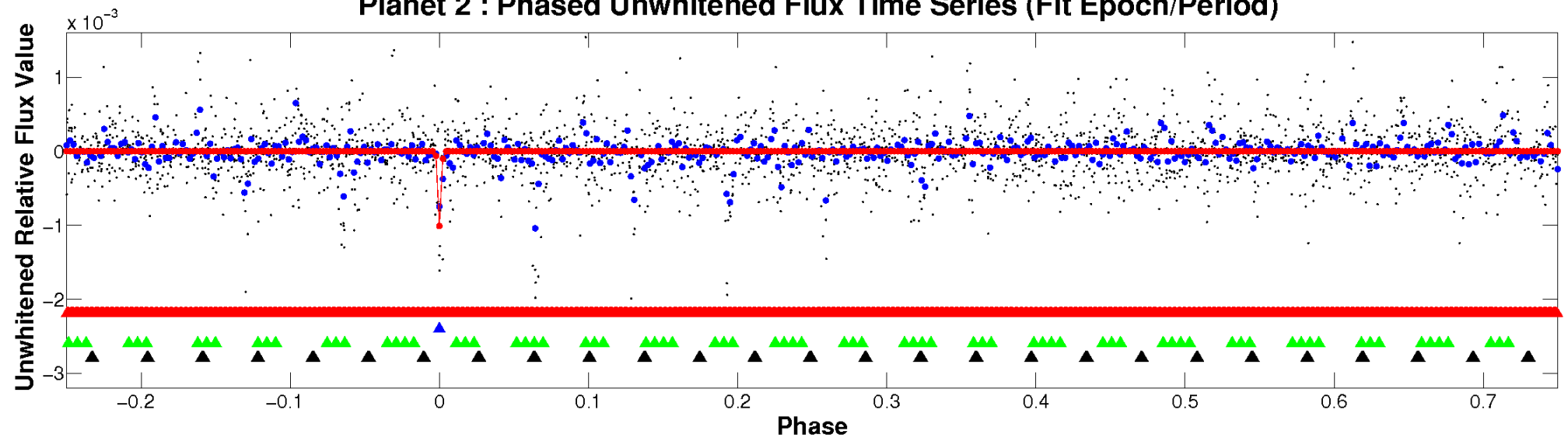


ALT Odd/Even

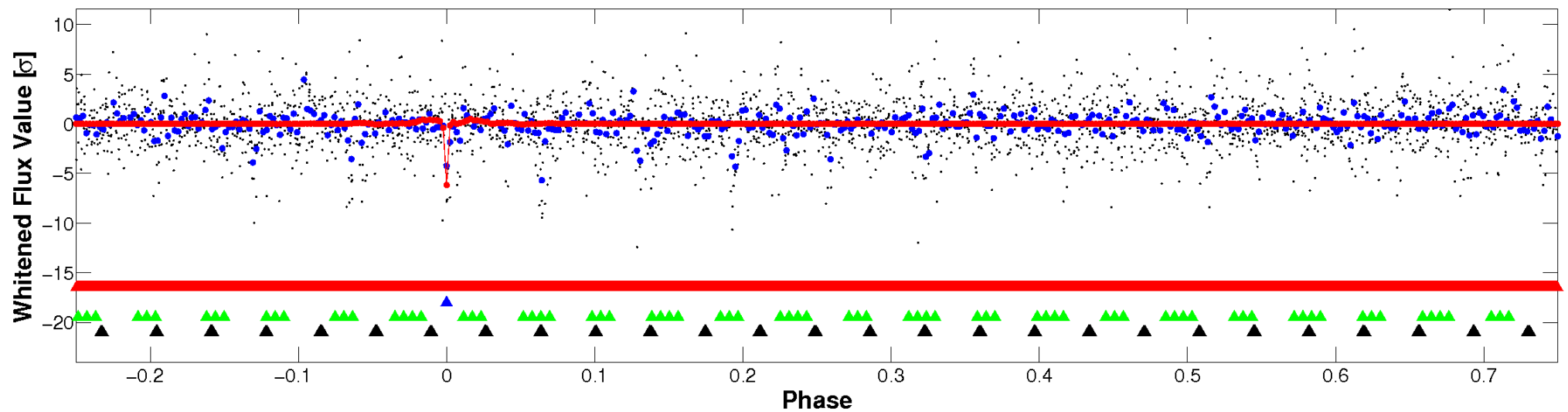
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

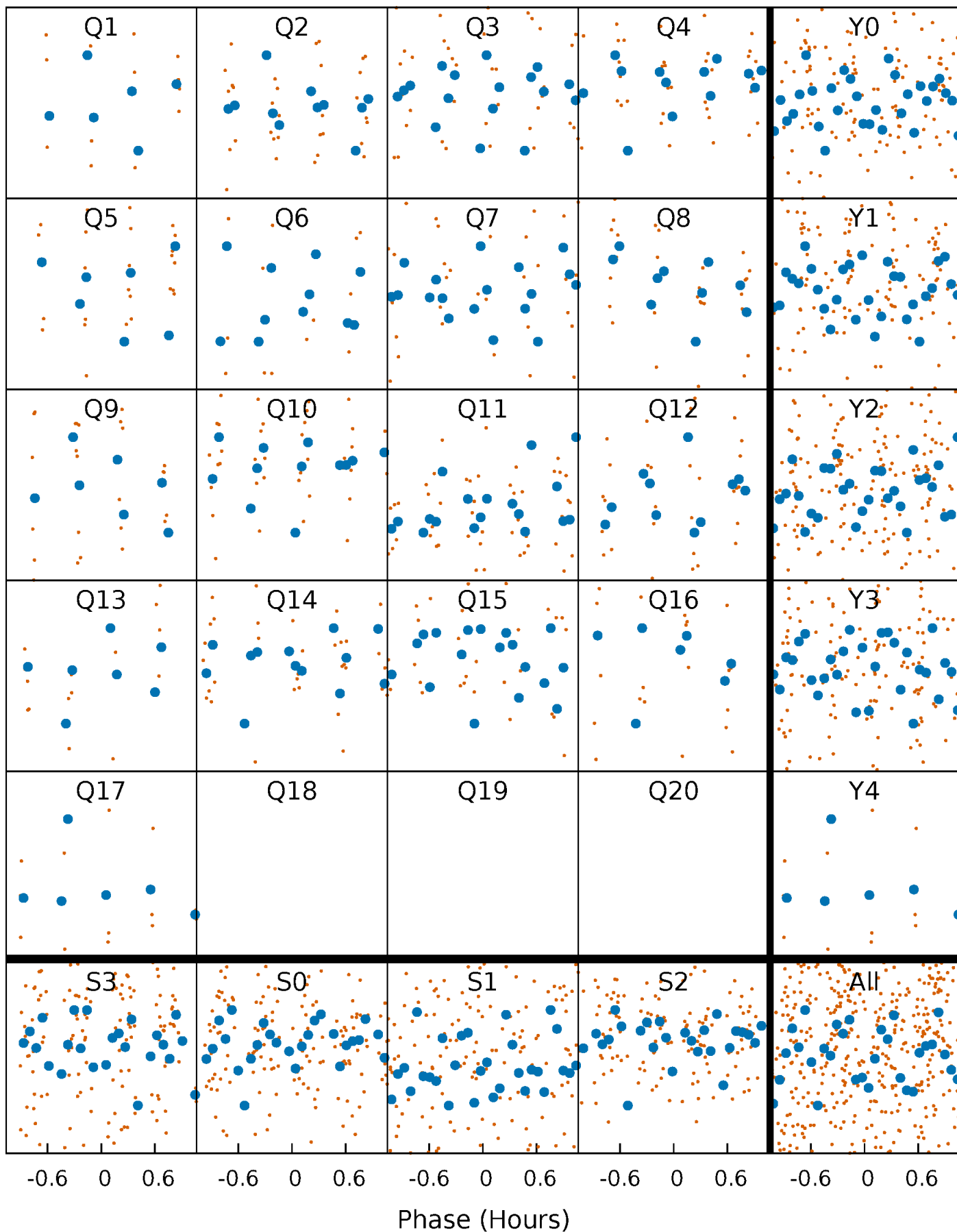


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



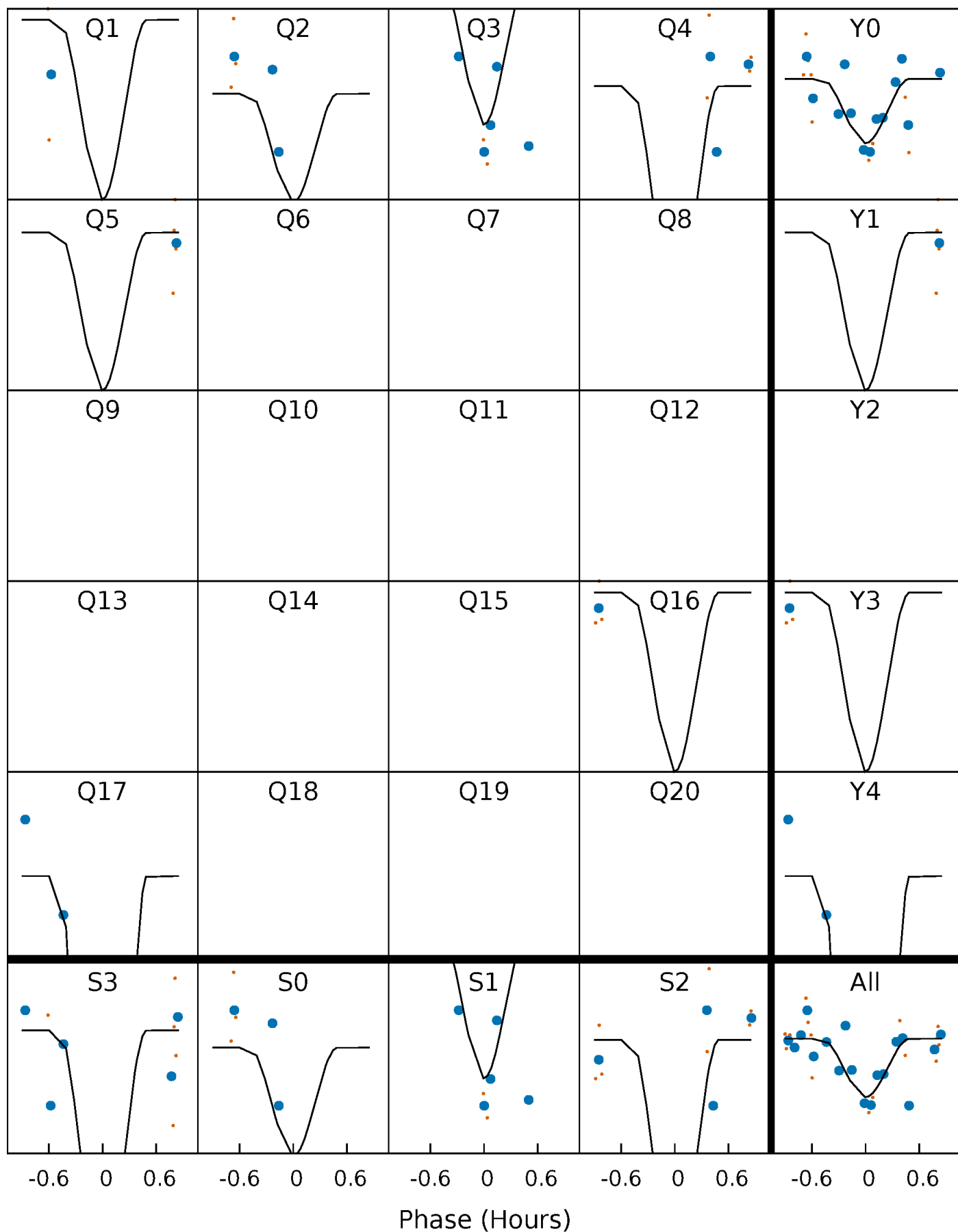
PDC Quarter-Phased Transit Curves

TCE 007816137-02 P= 8.909621 Days $T_0=134.091649$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 007816137-02 P= 8.909621 Days $T_0=134.091649$ (BKJD)

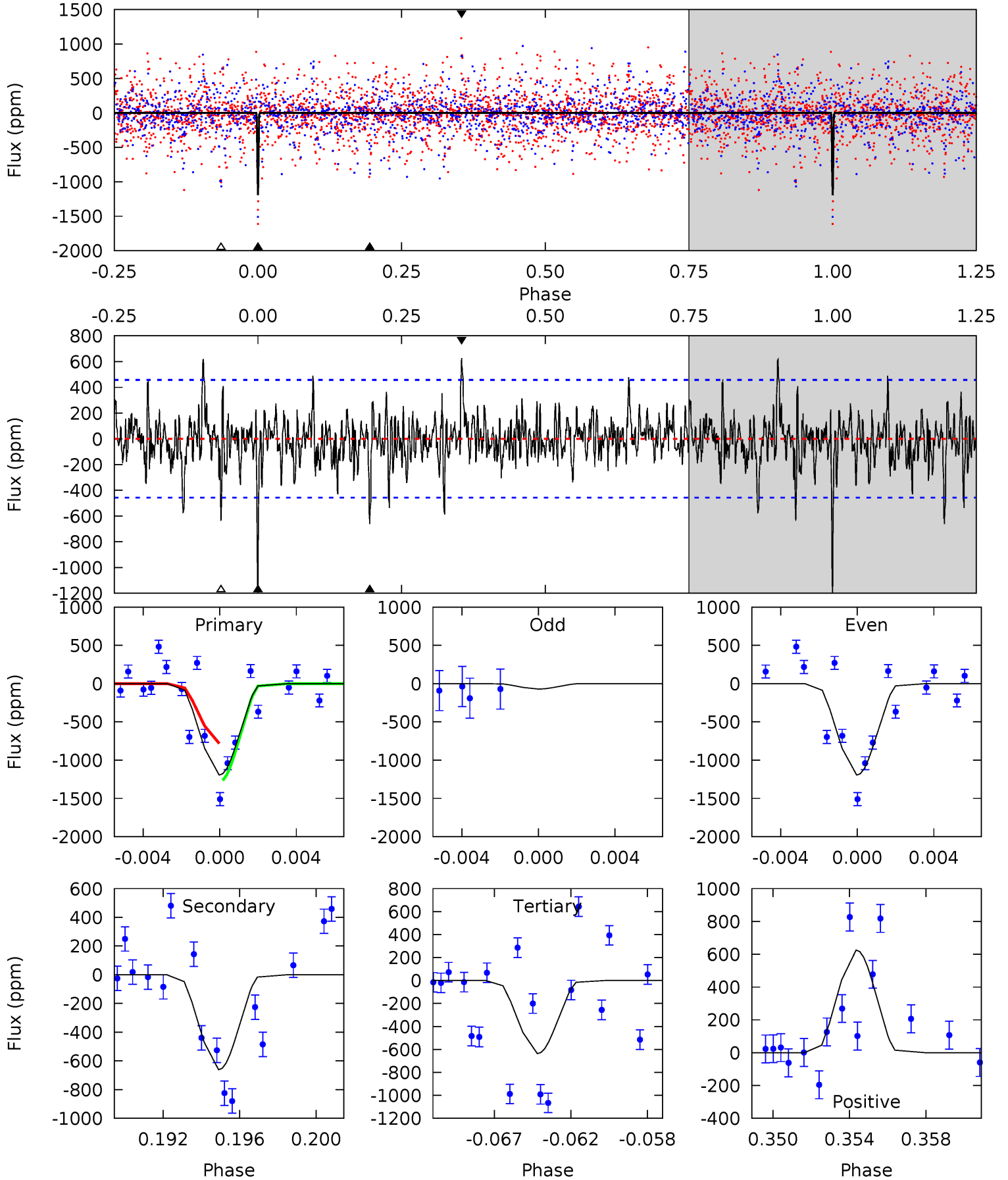


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

007816137-02, P = 8.909621 Days, E = 125.182028 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.6	7.52	7.23	7.10	5.19	2.87	1.64	6.34	6.47	0.29	0.41	8.00	1.00	0.34	2.90



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 007816137

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4545^{+137}_{-123}	$4.548^{+0.068}_{-0.020}$	$0.420^{+0.050}_{-0.300}$	$0.764^{+0.026}_{-0.066}$	$0.752^{+0.040}_{-0.044}$	$2.376^{+0.644}_{-0.172}$
	+3%/-3%	+1%/-0%	+12%/-71%	+3%/-9%	+5%/-6%	+27%/-7%
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 007816137-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-662 ± 88	$9.67^{+9.35}_{-6.99}$	876^{+30}_{-28}	2787^{+1379}_{-430}	23^{+264}_{-17}
Alt.	N/A	N/A	N/A	N/A	N/A

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

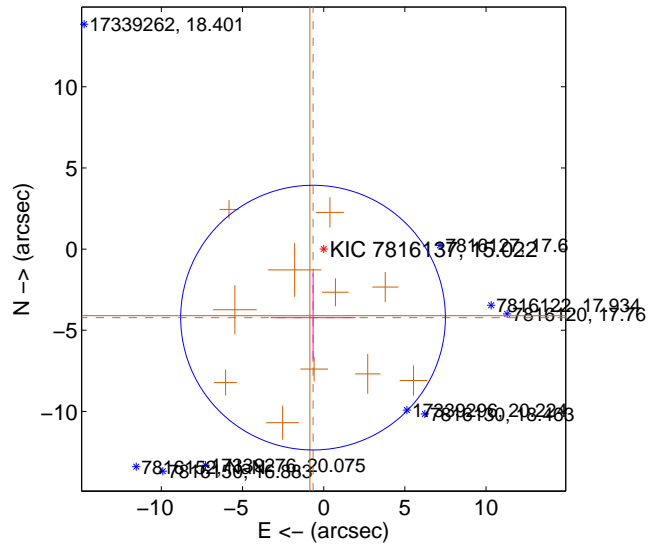
Supplemental centroid analysis for 007816137-02. Kepler magnitude: 15.02. Transit SNR 15.61

There are 0 quarters with good PRF difference image offsets

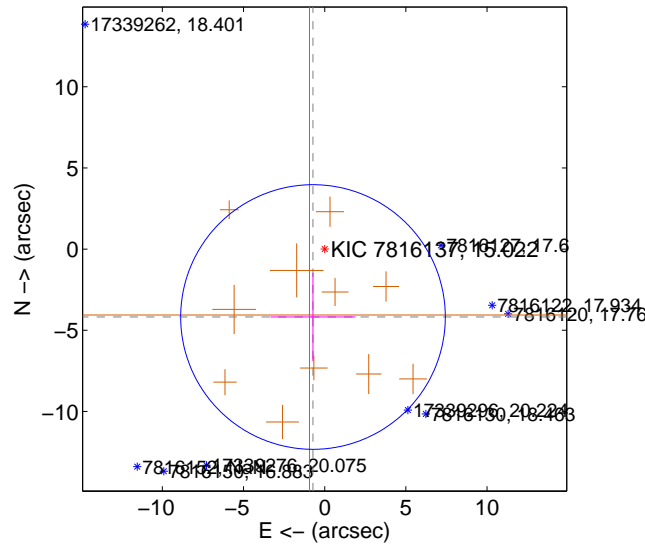
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.270 ± 2.717	1.57	0.655 ± 2.623	-4.220 ± 2.719
PRF-fit source offset from KIC position	4.244 ± 2.716	1.56	0.720 ± 2.623	-4.182 ± 2.719
photometric centroid source offset	0.71 ± 0.41	1.73	0.13 ± 0.40	-0.70 ± 0.41

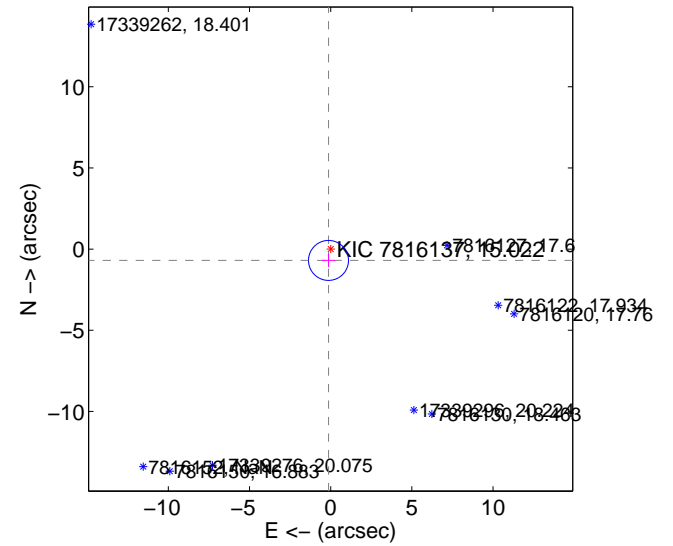
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

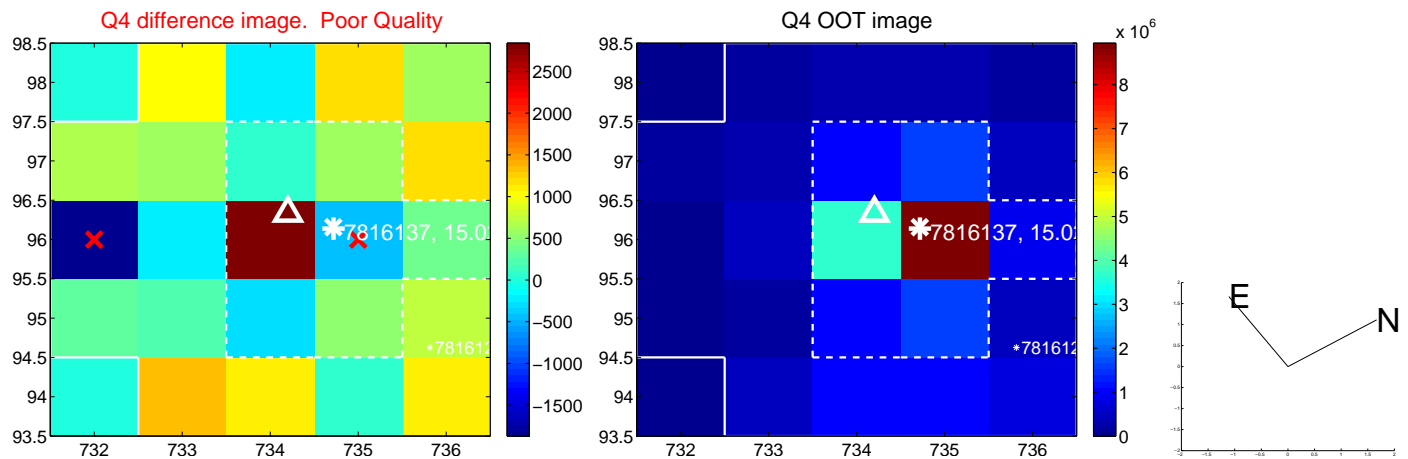
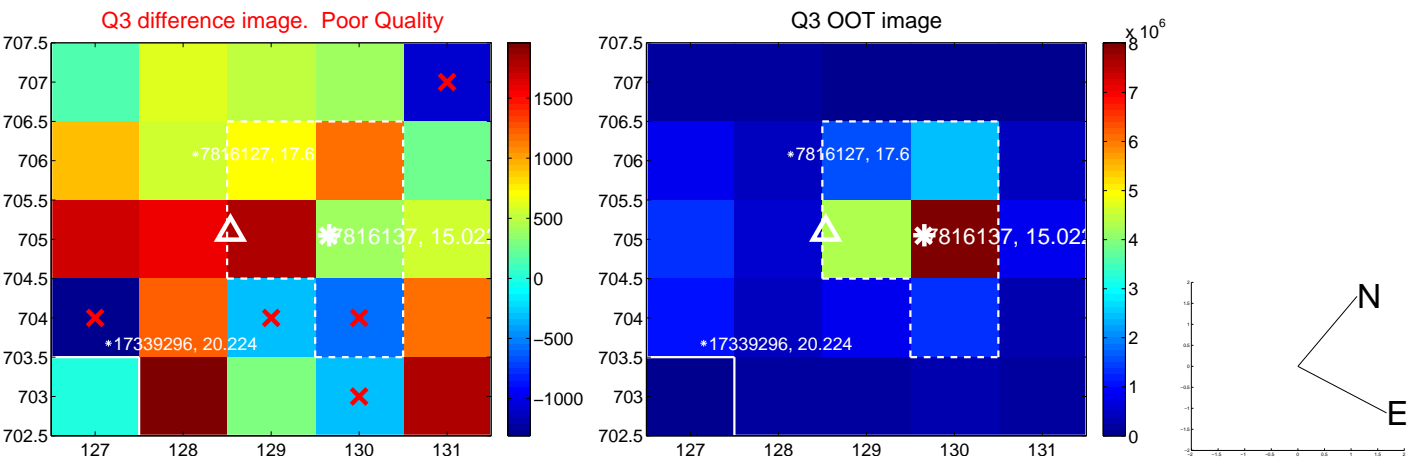
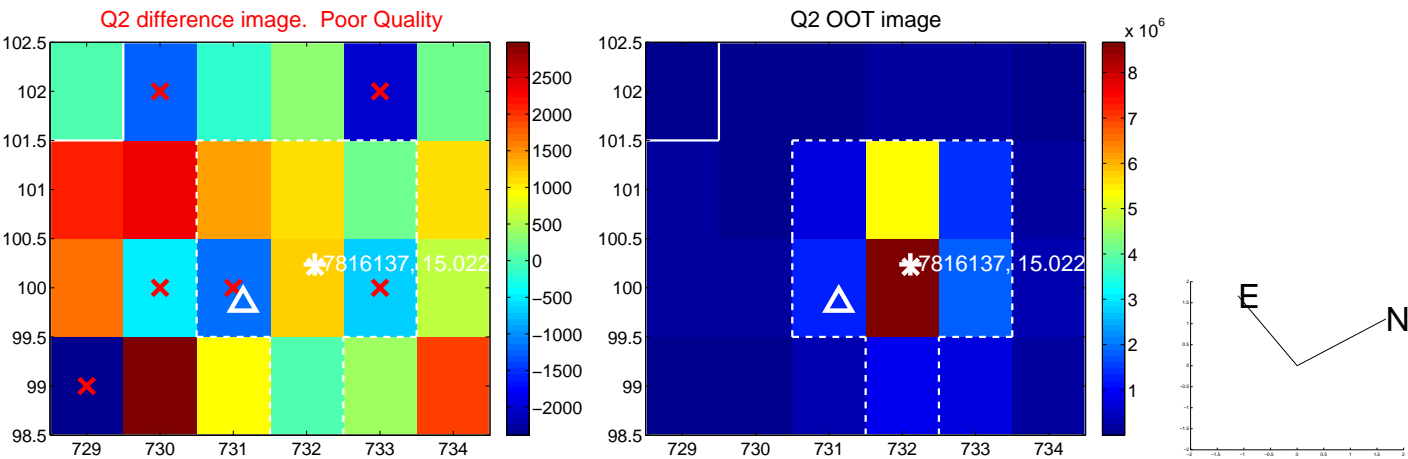
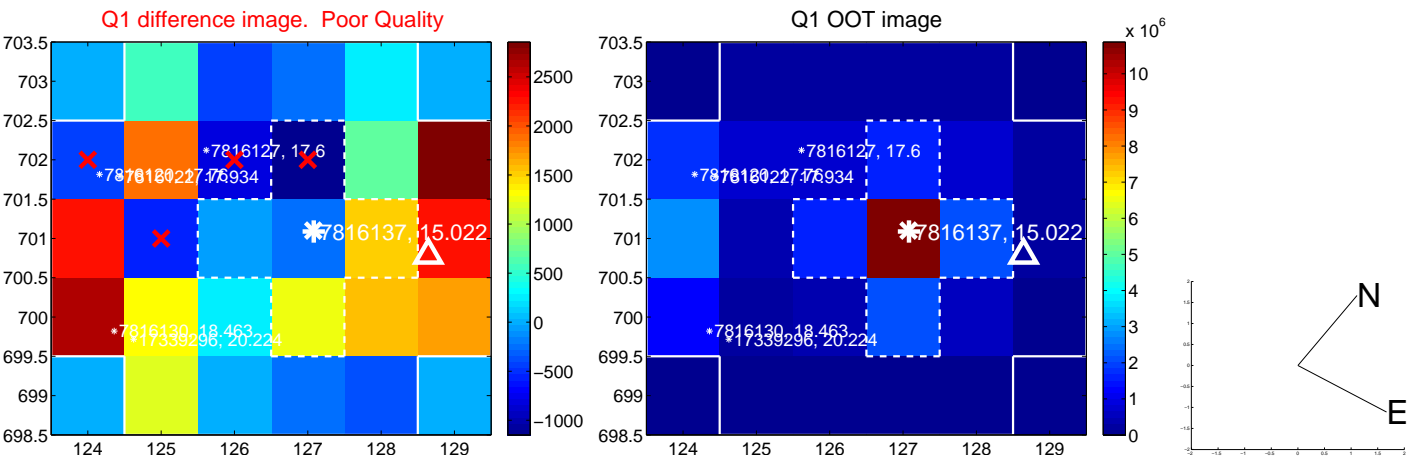


offset from photometric centroids

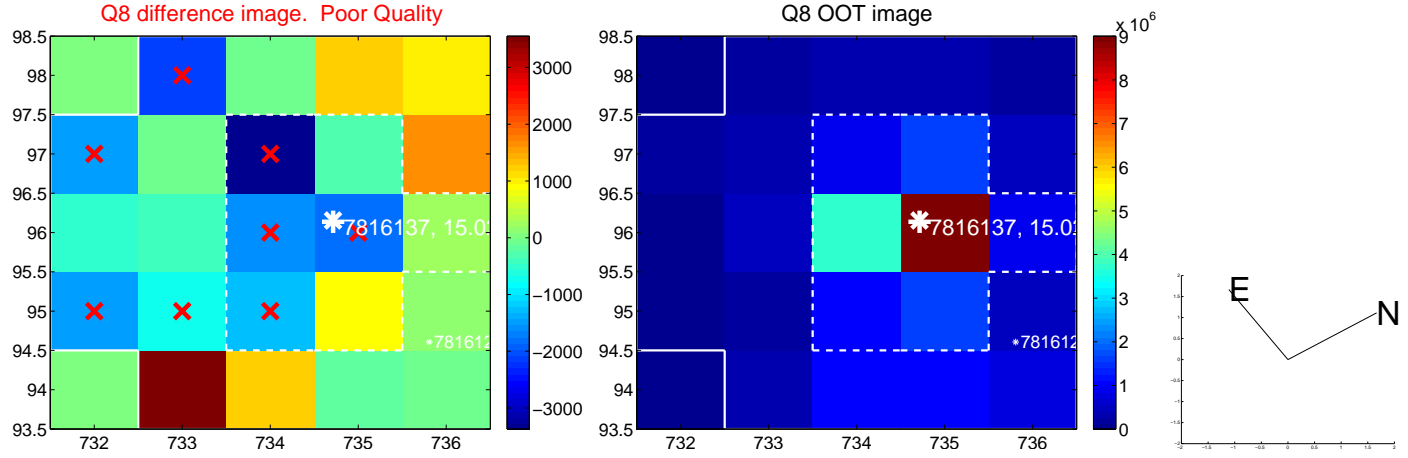
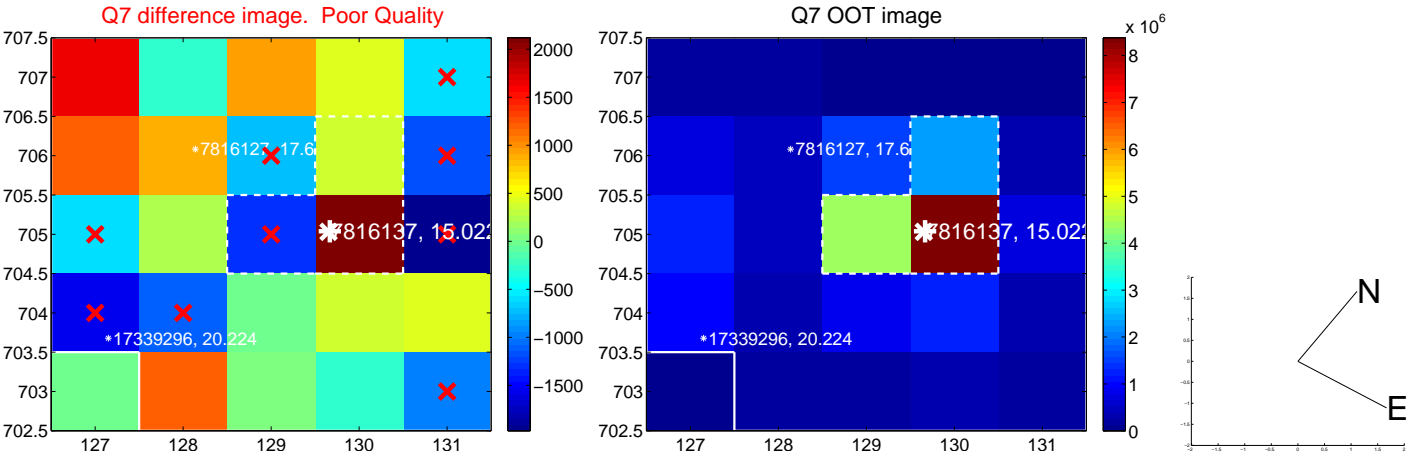
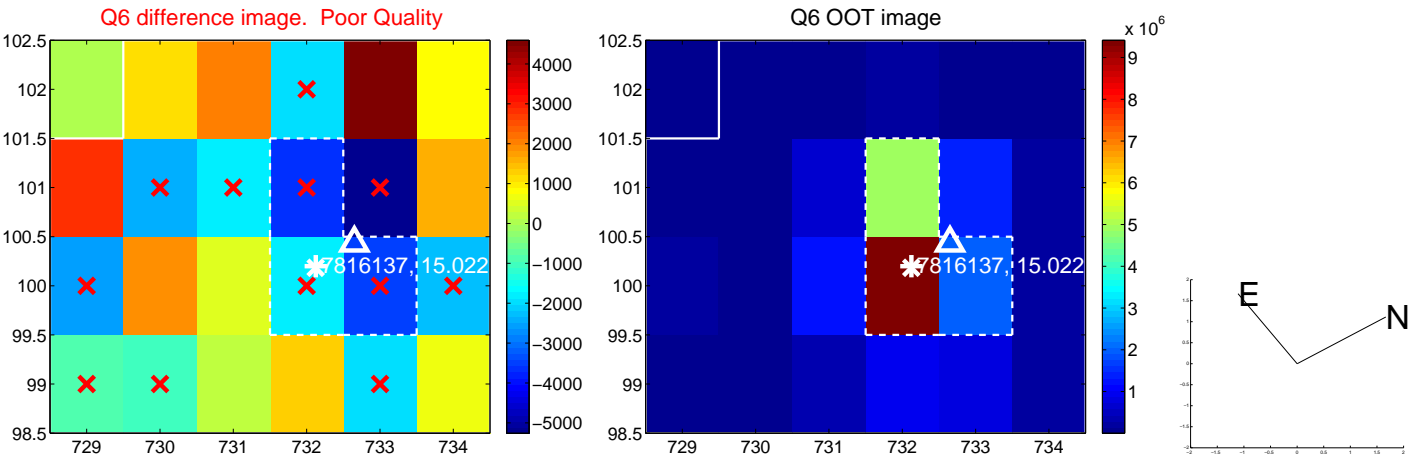
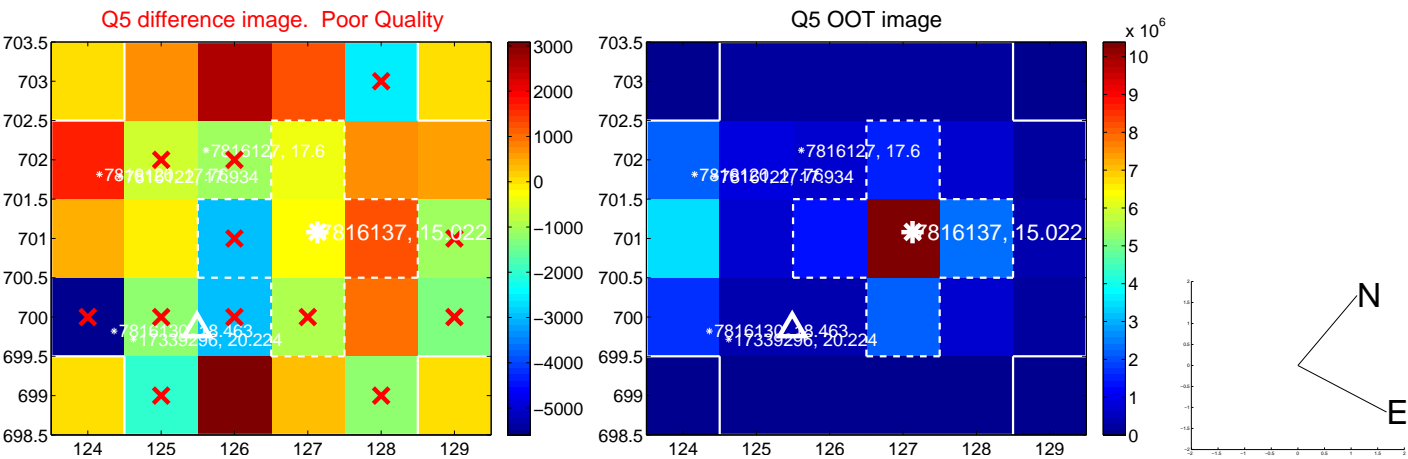


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

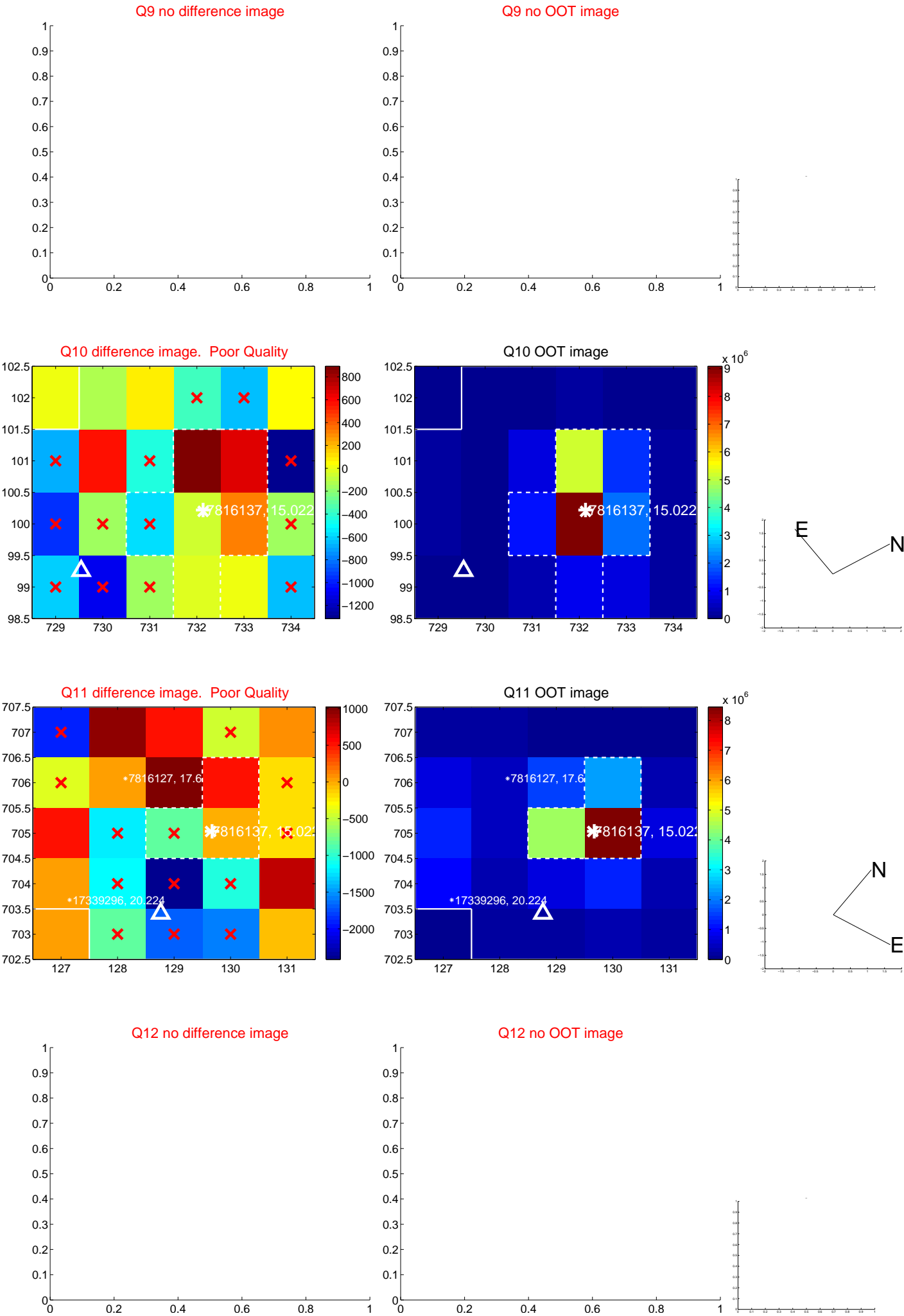
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



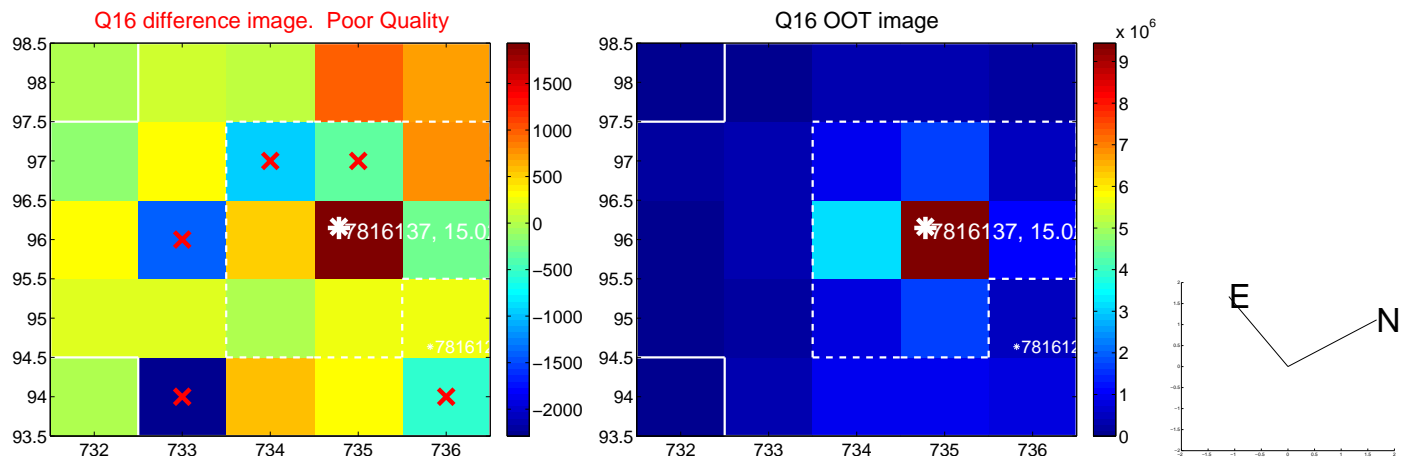
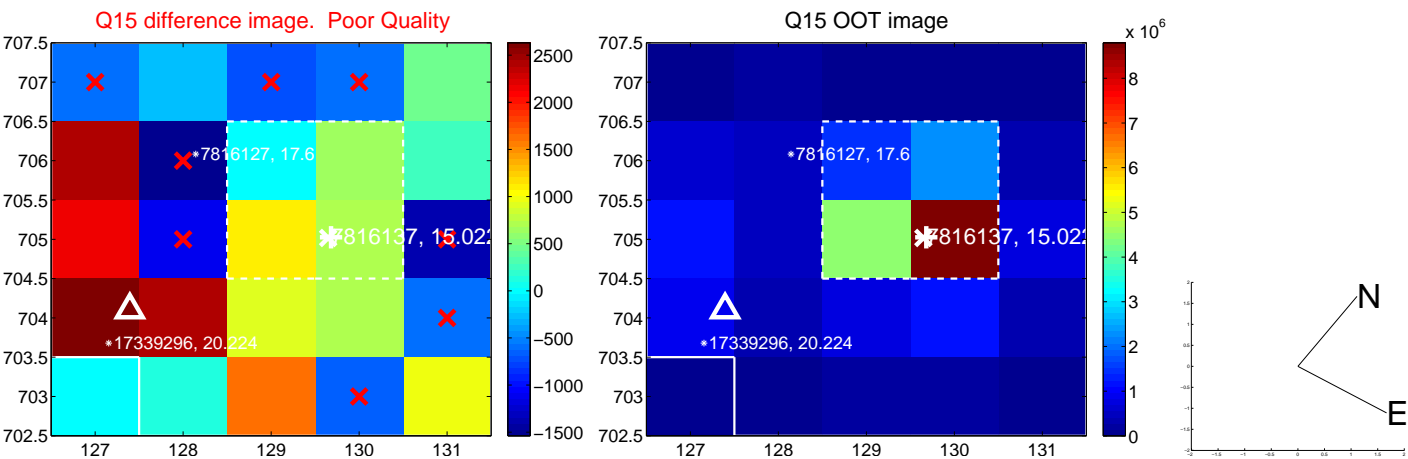
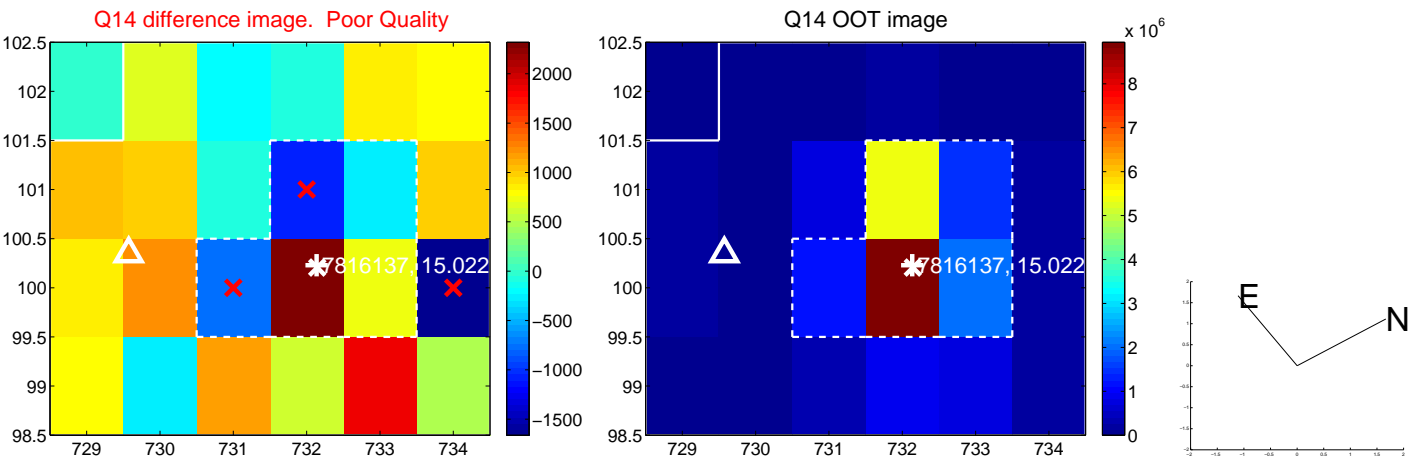
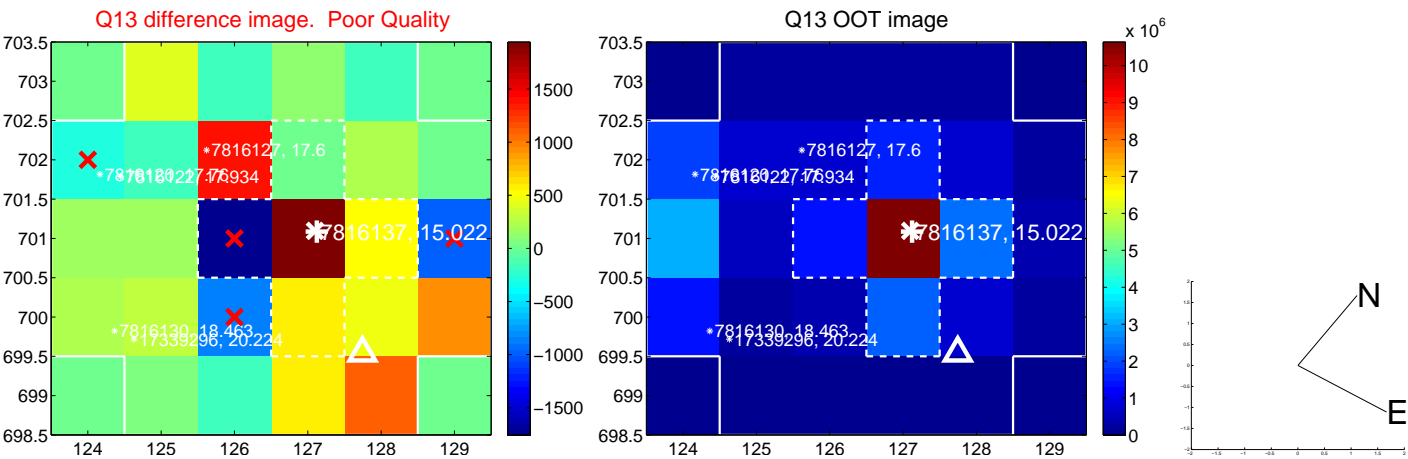
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



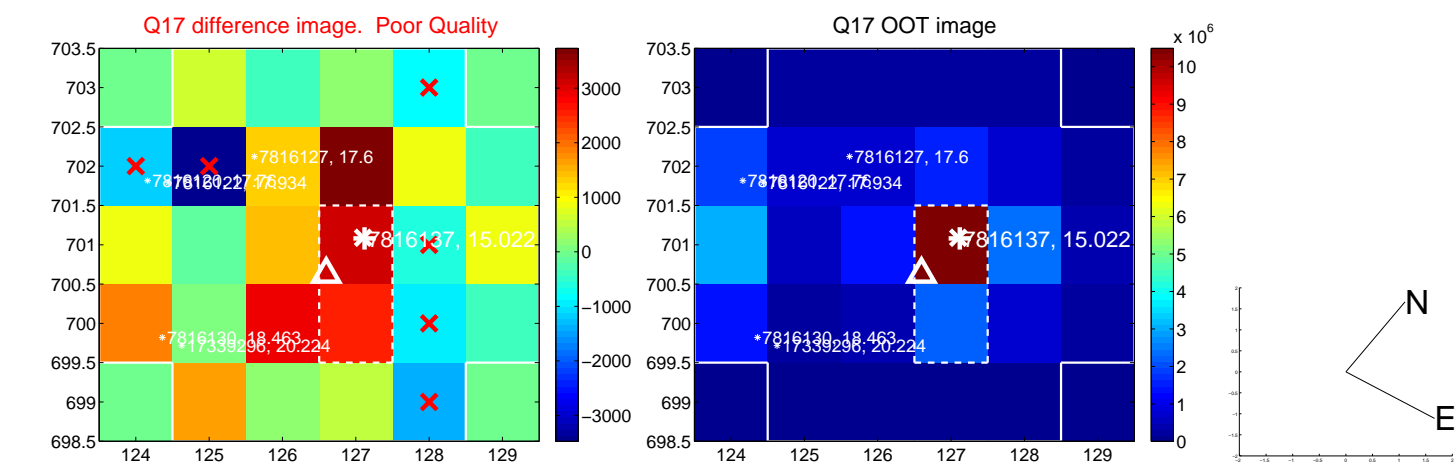
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



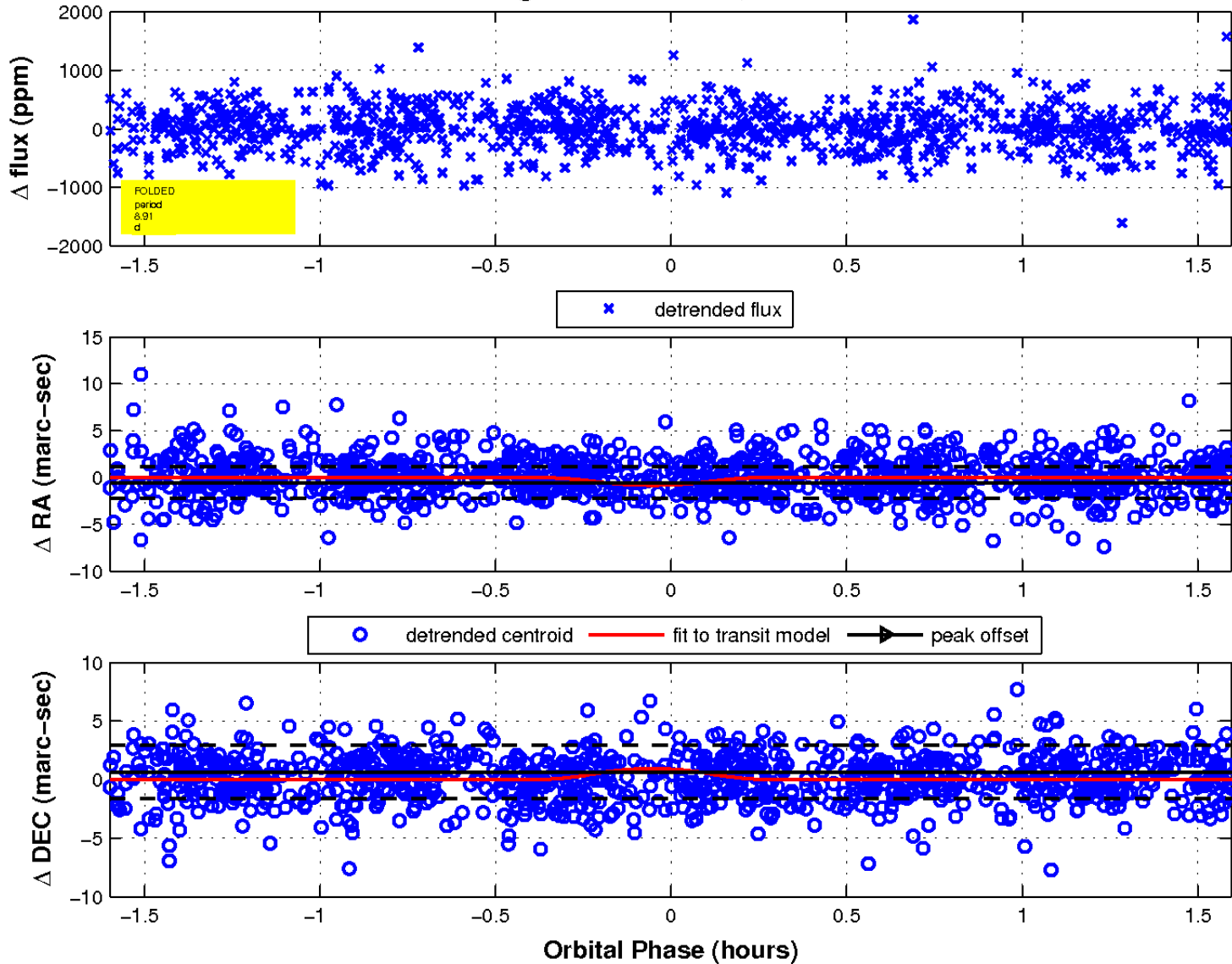
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

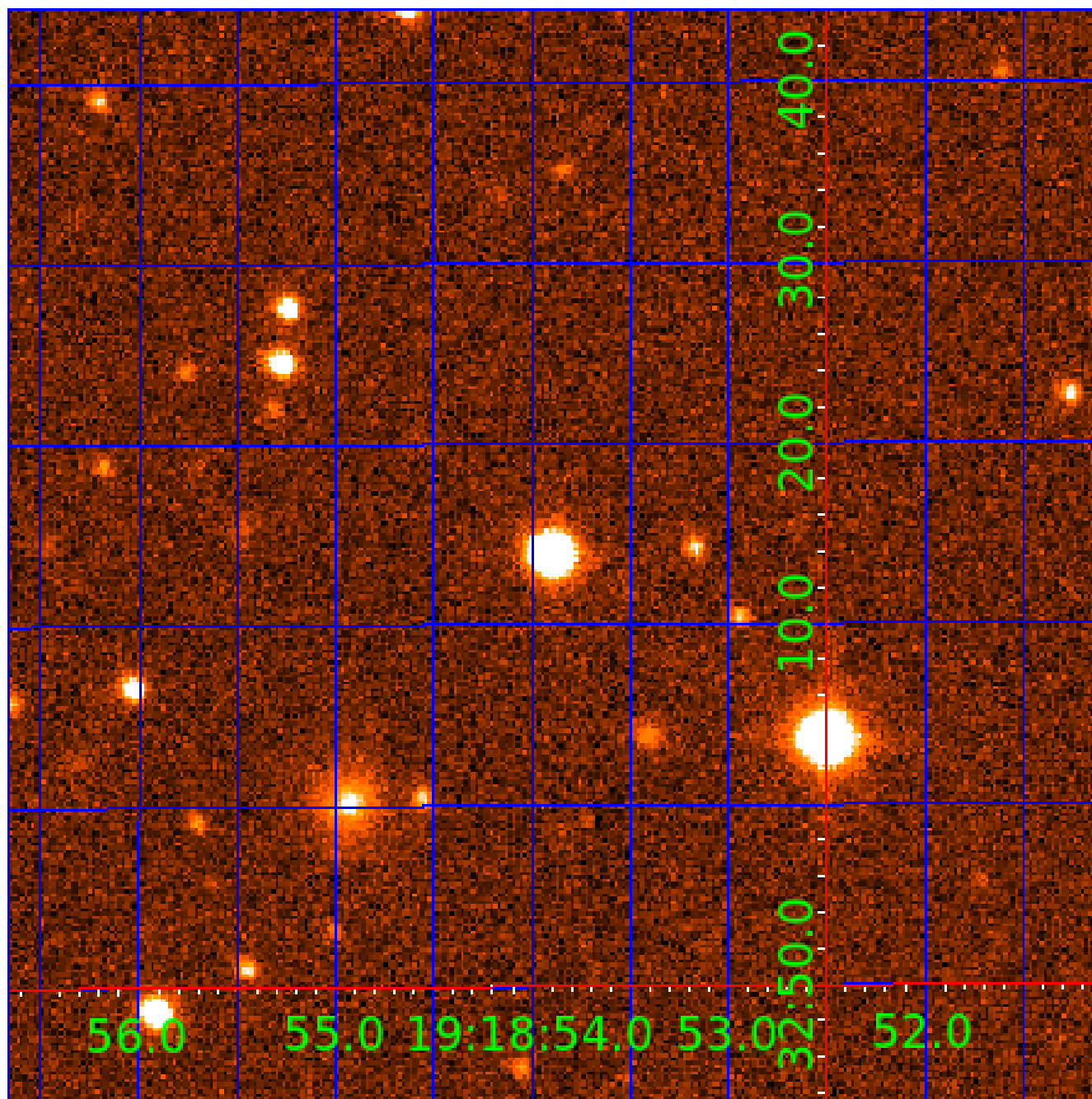


fluxWeightedCentroids, Planet 2 of 4



UKIRT Image

Declination



KIC 007816137

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})
007816137-01	OBS	No	0.574932	132.044645	25.8	4.227	8.2	6.7	0.76	4545	0.38	1473.23
007816137-02	OBS	No	8.909621	134.091649	1278.0	0.533	12.6	15.6	0.76	4545	4.55	38.13
007816137-03	OBS	No	18.591705	142.848497	2123.0	1.500	12.6	-1.0	0.76	4545	3.37	14.30
007816137-04	OBS	No	15.179498	135.971161	695.1	1.028	11.4	10.0	0.76	4545	2.19	18.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007816137-01	OBS	FP	0.00	1	0	1	1	LPP_DV—LPP_ALT—HALO_GHOST—EPHEM_MATCH
007816137-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
007816137-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS
007816137-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—CENT_FEW_MEAS

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

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

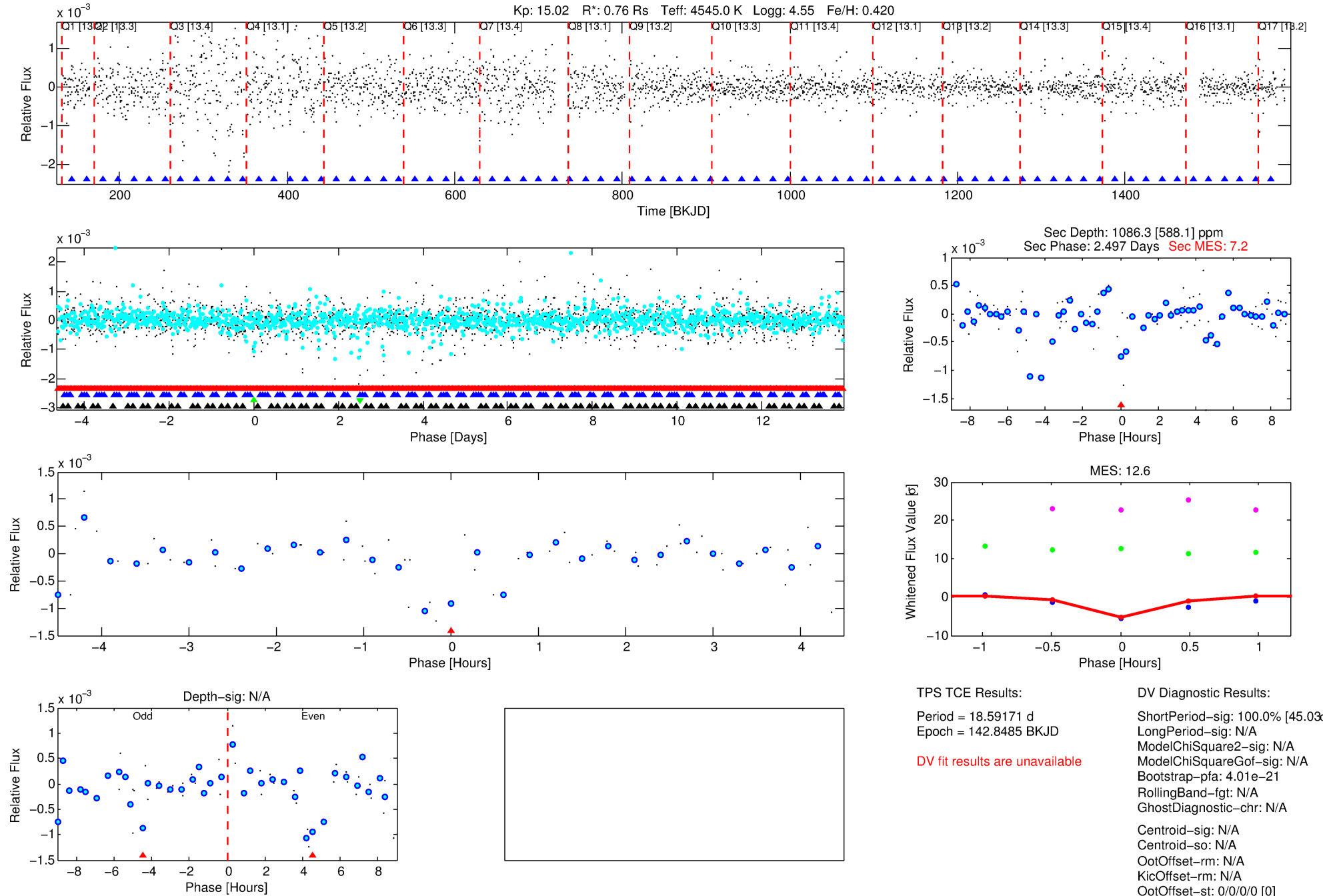
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007816137-03

No Significant Match Found

DV One-Page Summary

KIC: 7816137 Candidate: 3 of 4 Period: 18.592 d



TPS TCE Results:

Period = 18.59171 d
Epoch = 142.8485 BKJD

DV fit results are unavailable

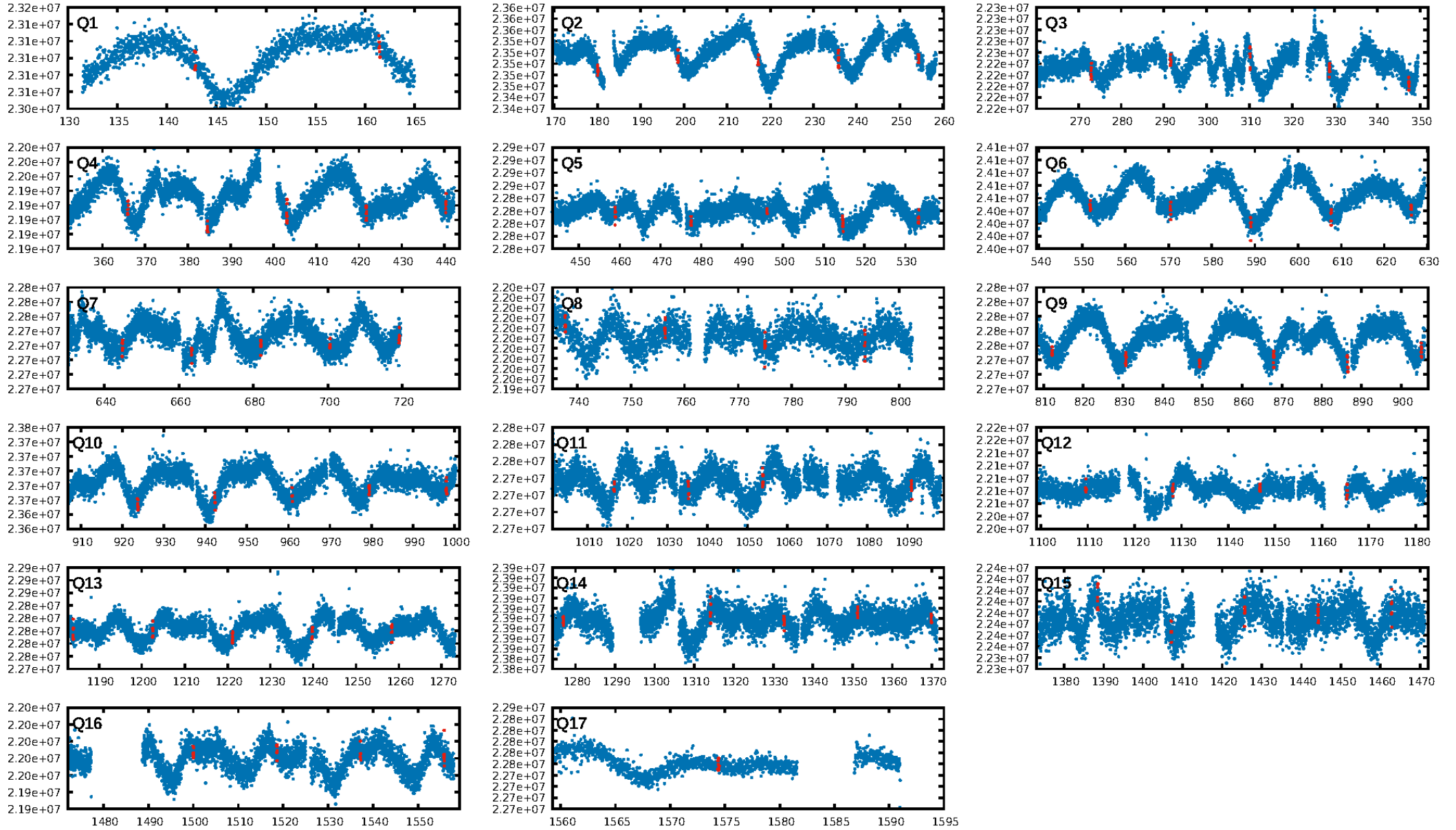
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [45.03 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.01e-21
RollingBand-fgt: N/A
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0/0 [0]
KicOffset-st: 0/0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: N/A

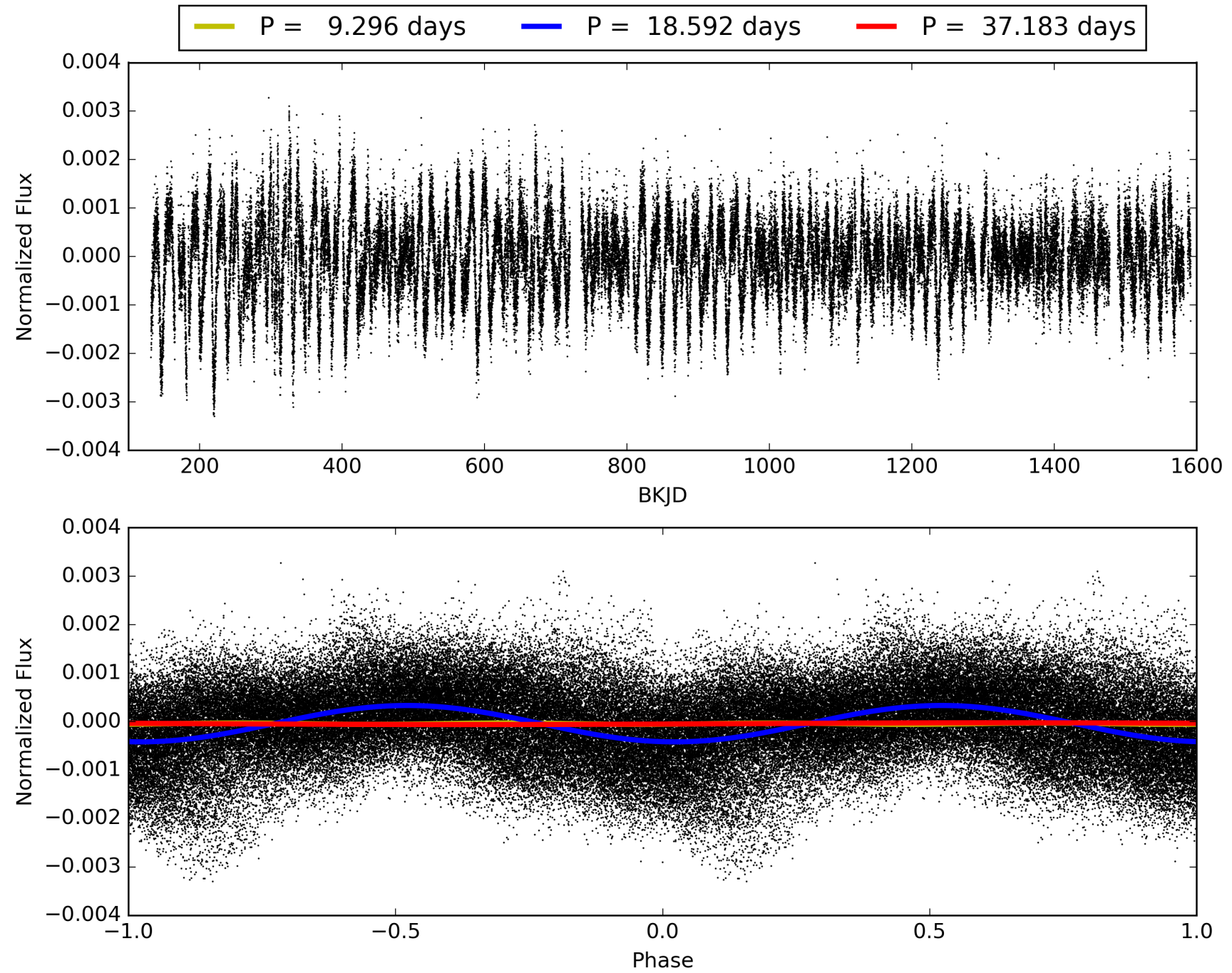
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:57:05 Z

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

TCE 007816137-03, PDC Light Curves

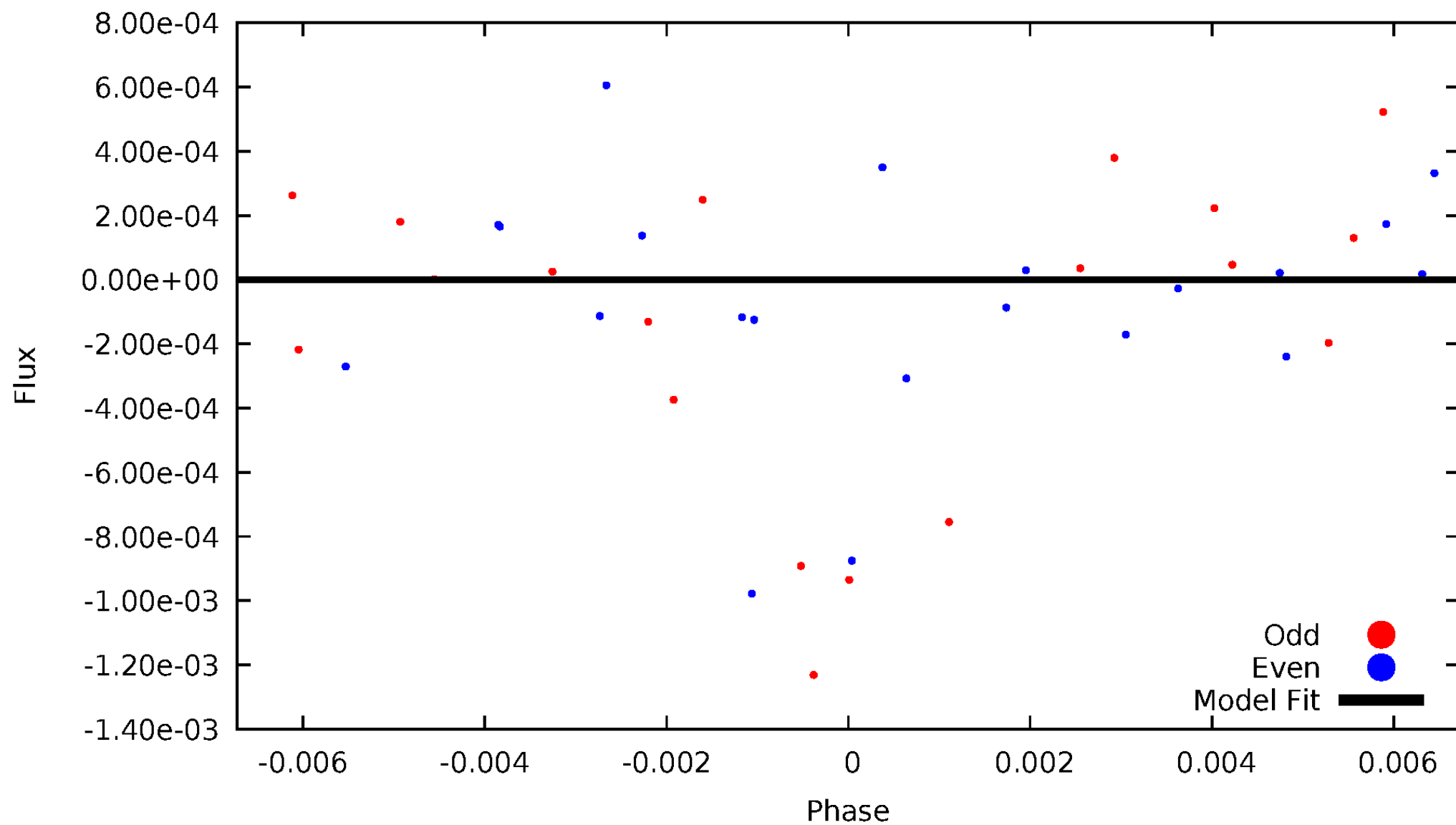


TCE 007816137-03



DV Odd/Even

TCE 007816137-03

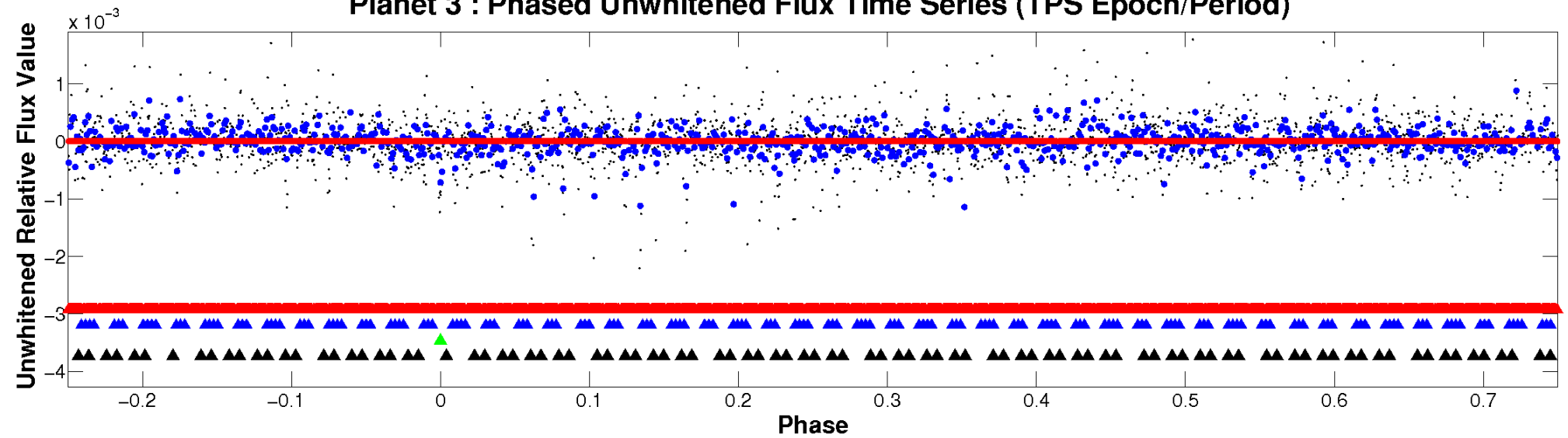


ALT Odd/Even

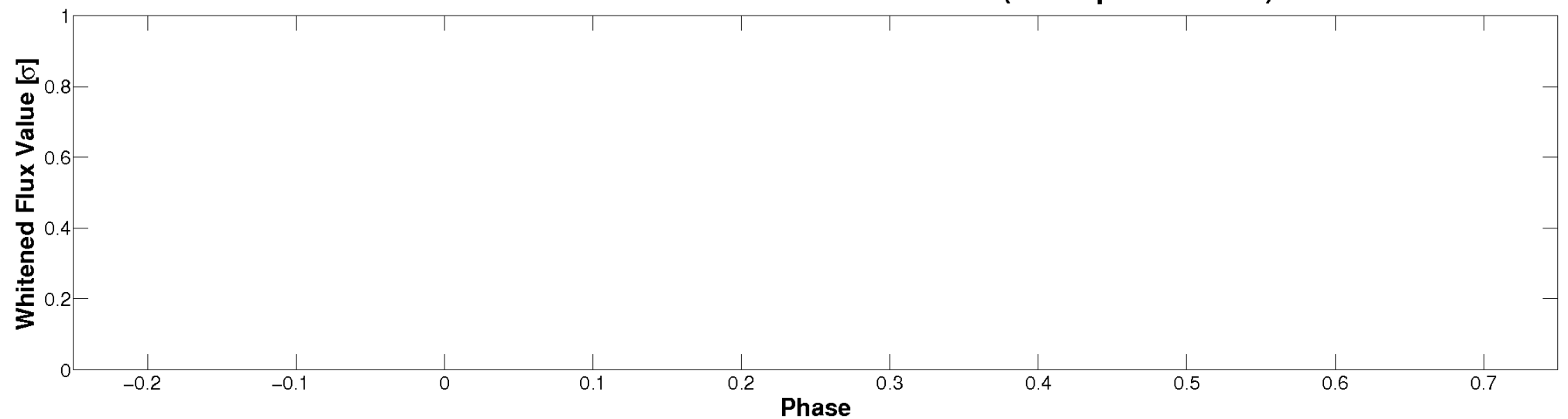
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

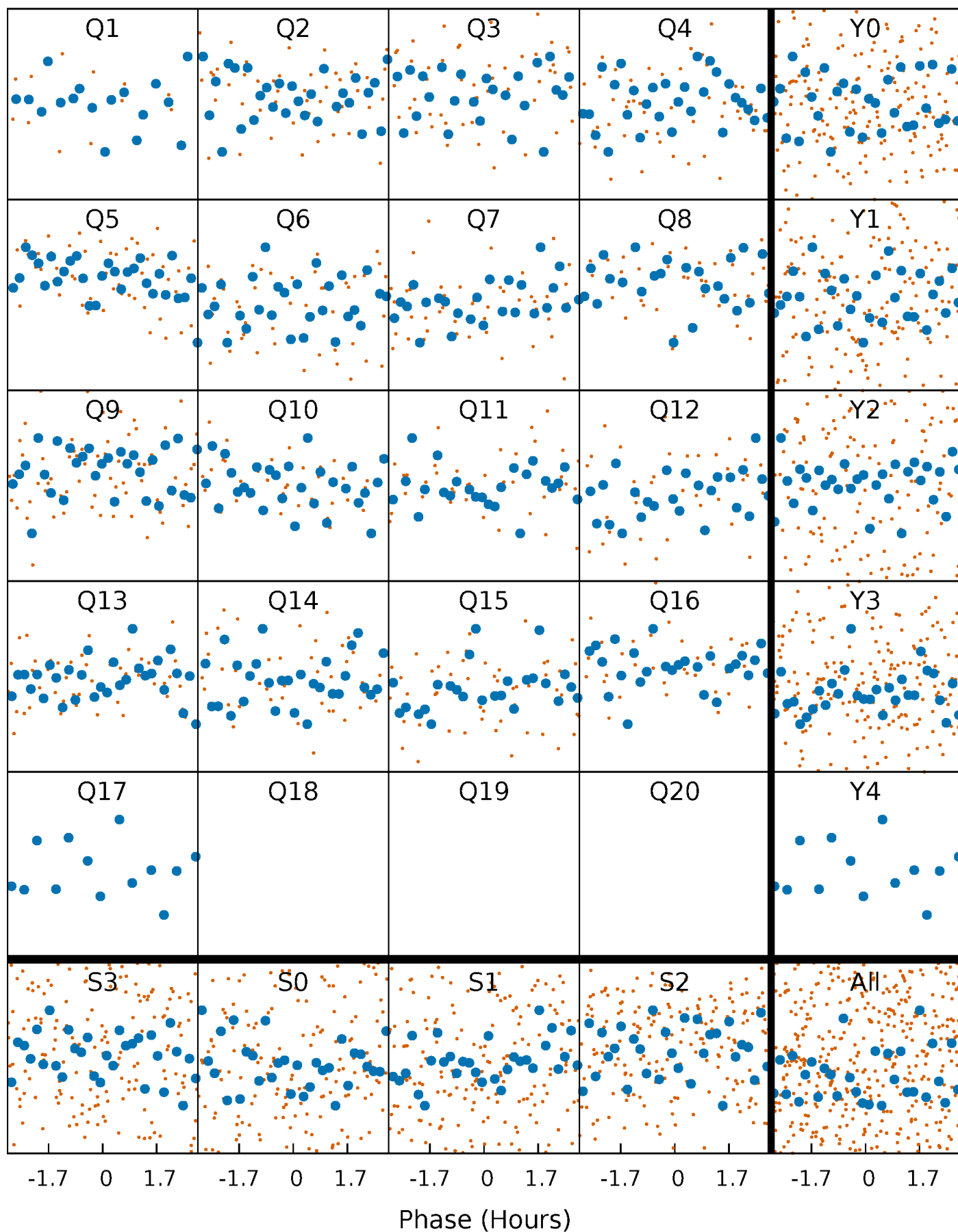


Planet 3 : Phased Whitened Flux Time Series (TPS Epoch/Period)



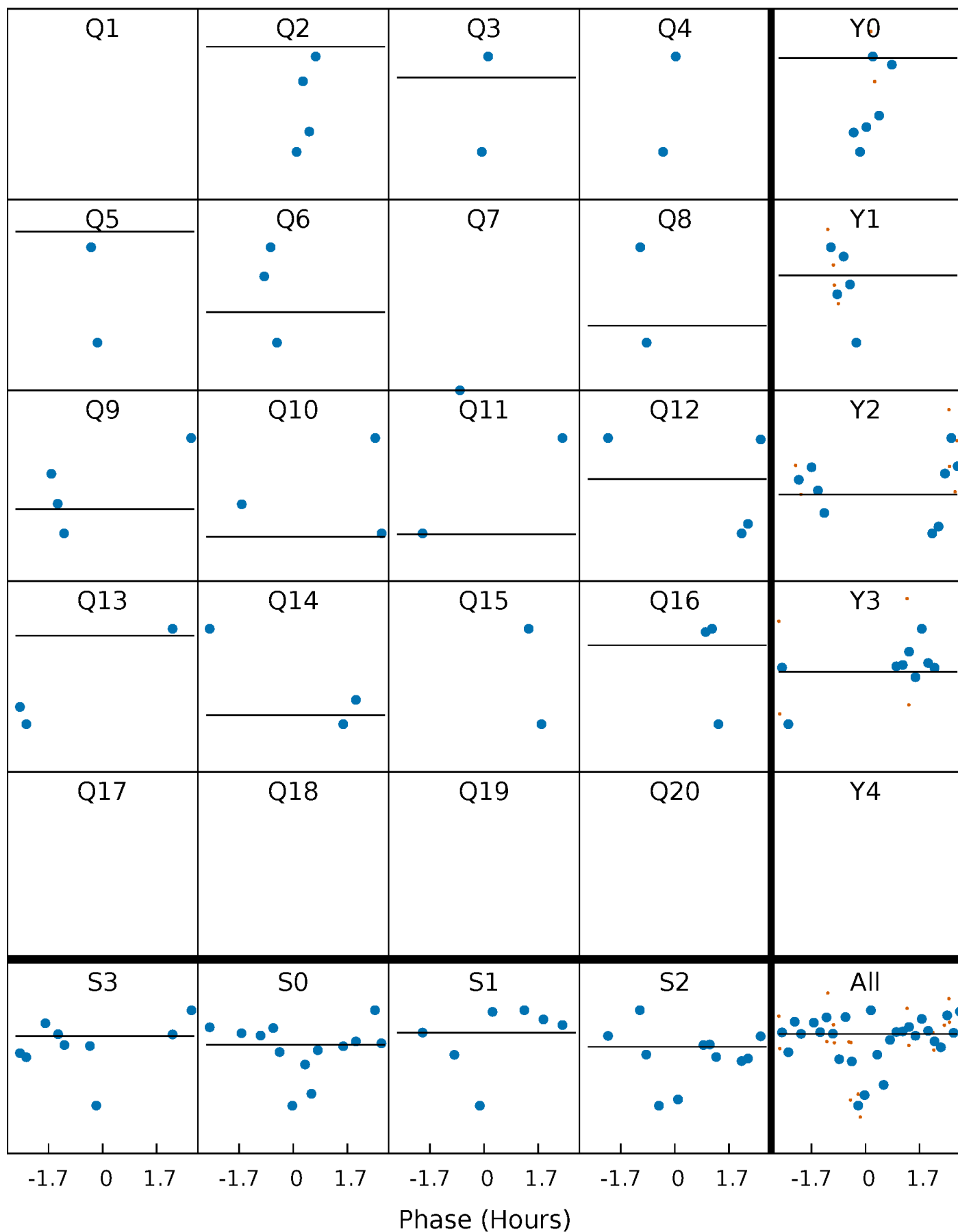
PDC Quarter-Phased Transit Curves

TCE 007816137-03 P= 18.591705 Days $T_0=142.848497$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 007816137-03 P= 18.591705 Days $T_0=142.848497$ (BKJD)

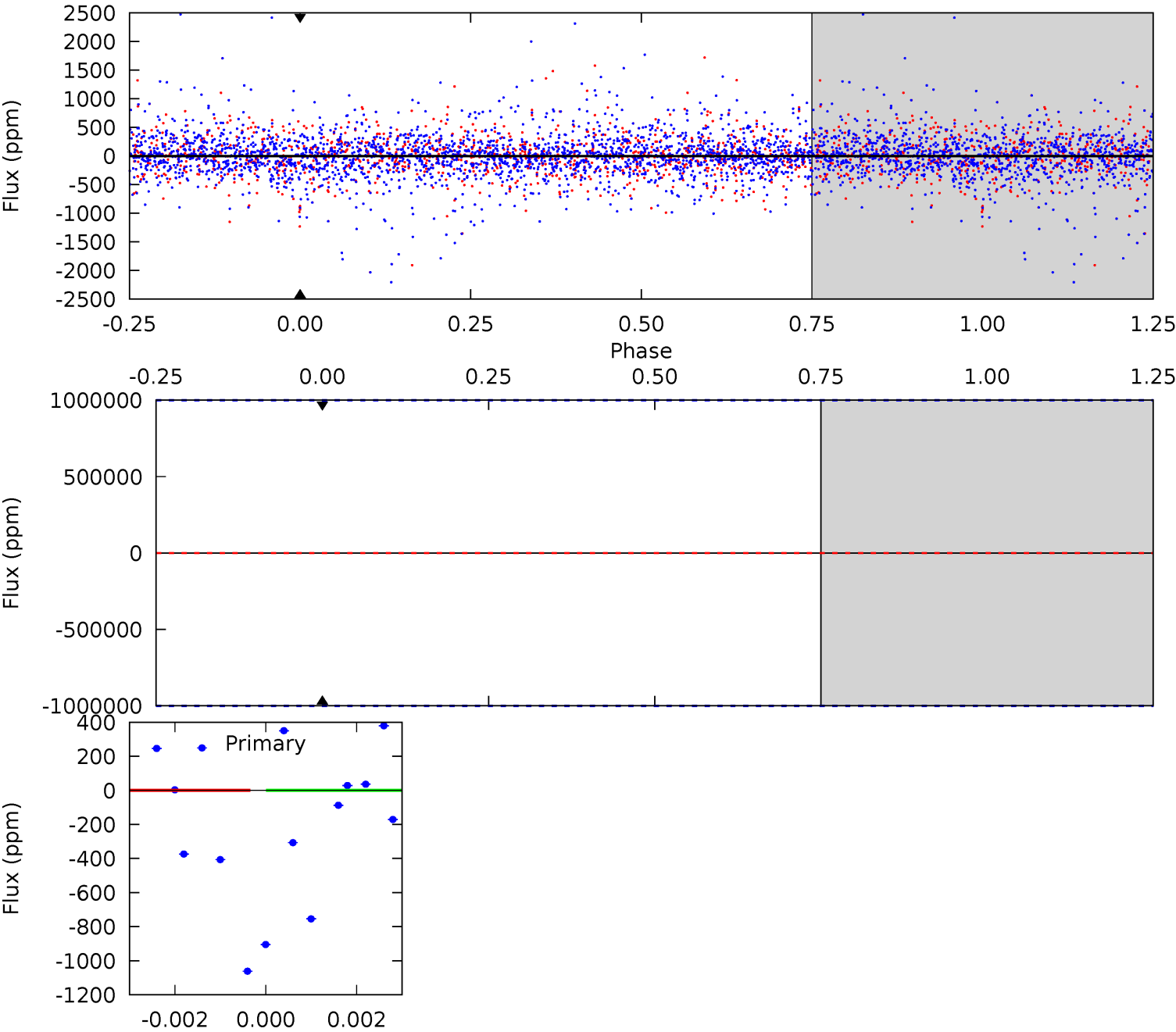


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

007816137-03, P = 18.591705 Days, E = 124.256792 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	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 007816137

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4545^{+137}_{-123}	$4.548^{+0.068}_{-0.020}$	$0.420^{+0.050}_{-0.300}$	$0.764^{+0.026}_{-0.066}$	$0.752^{+0.040}_{-0.044}$	$2.376^{+0.644}_{-0.172}$
	+3%/-3%	+1%/-0%	+12%/-71%	+3%/-9%	+5%/-6%	+27%/-7%
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 007816137-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$6.88^{+6.62}_{-4.88}$	688^{+22}_{-22}	3357^{+8000}_{-13840}	239^{+35378}_{-29107}
Alt.	N/A	N/A	N/A	N/A	N/A

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 007816137-03. Kepler magnitude: 15.02. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	—	—	—	—



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.



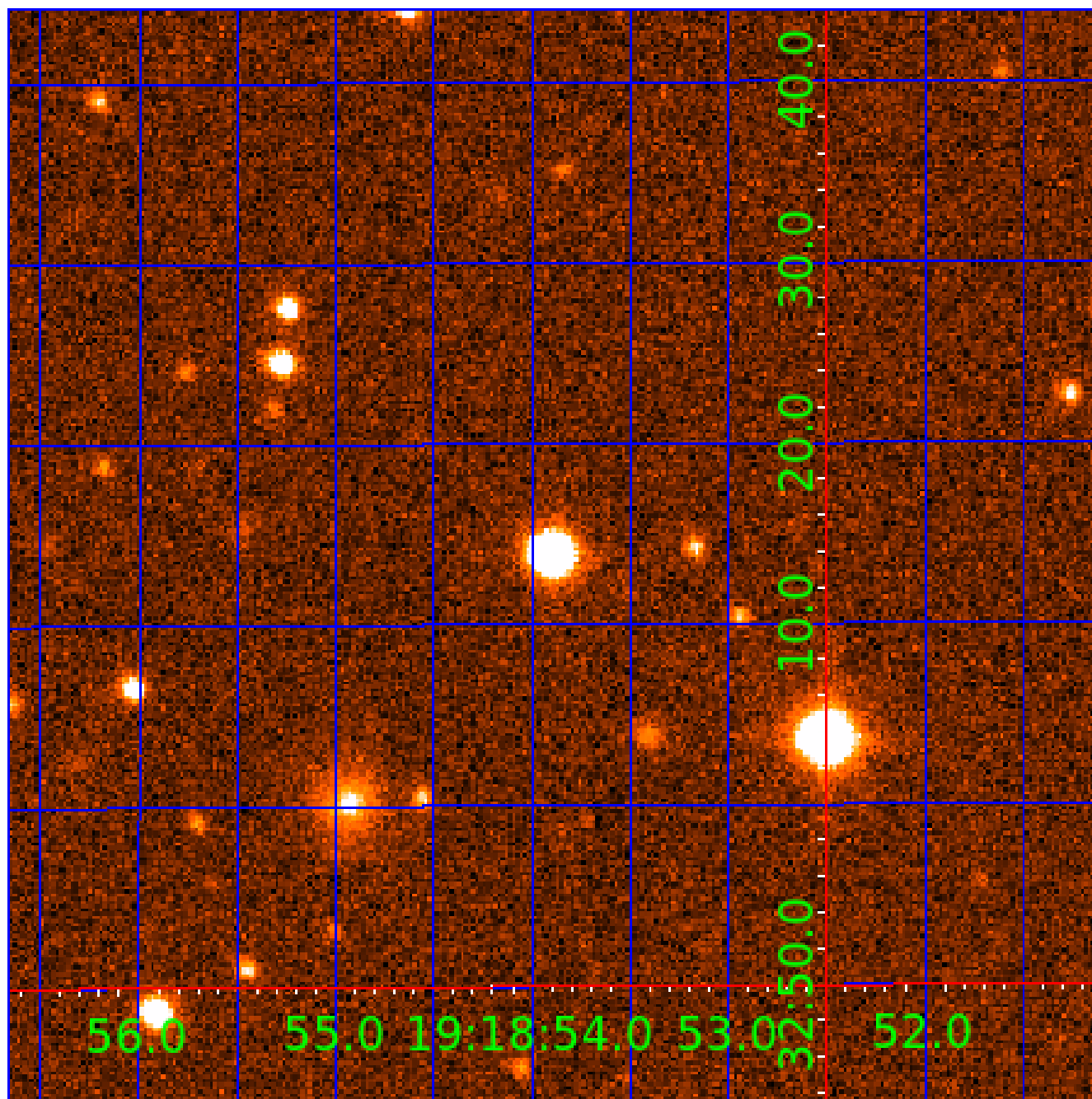
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination



KIC 007816137

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})
007816137-01	OBS	No	0.574932	132.044645	25.8	4.227	8.2	6.7	0.76	4545	0.38	1473.23
007816137-02	OBS	No	8.909621	134.091649	1278.0	0.533	12.6	15.6	0.76	4545	4.55	38.13
007816137-03	OBS	No	18.591705	142.848497	2123.0	1.500	12.6	-1.0	0.76	4545	3.37	14.30
007816137-04	OBS	No	15.179498	135.971161	695.1	1.028	11.4	10.0	0.76	4545	2.19	18.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007816137-01	OBS	FP	0.00	1	0	1	1	LPP_DV—LPP_ALT—HALO_GHOST—EPHEM_MATCH
007816137-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
007816137-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—NO_FITS—CENT_NOFITS
007816137-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_POS_DV—CENT_FEW_MEAS

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

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

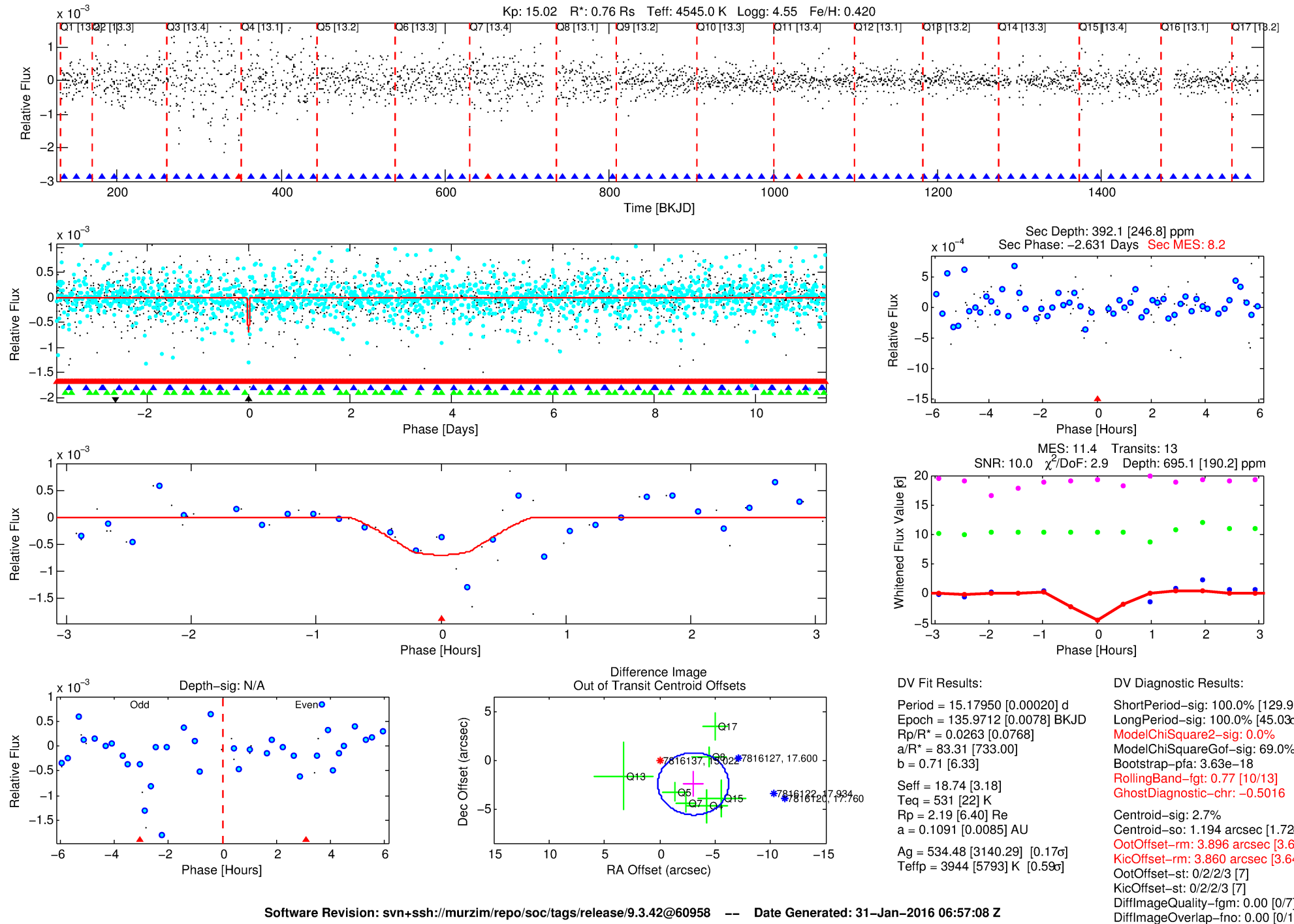
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007816137-04

No Significant Match Found

DV One-Page Summary

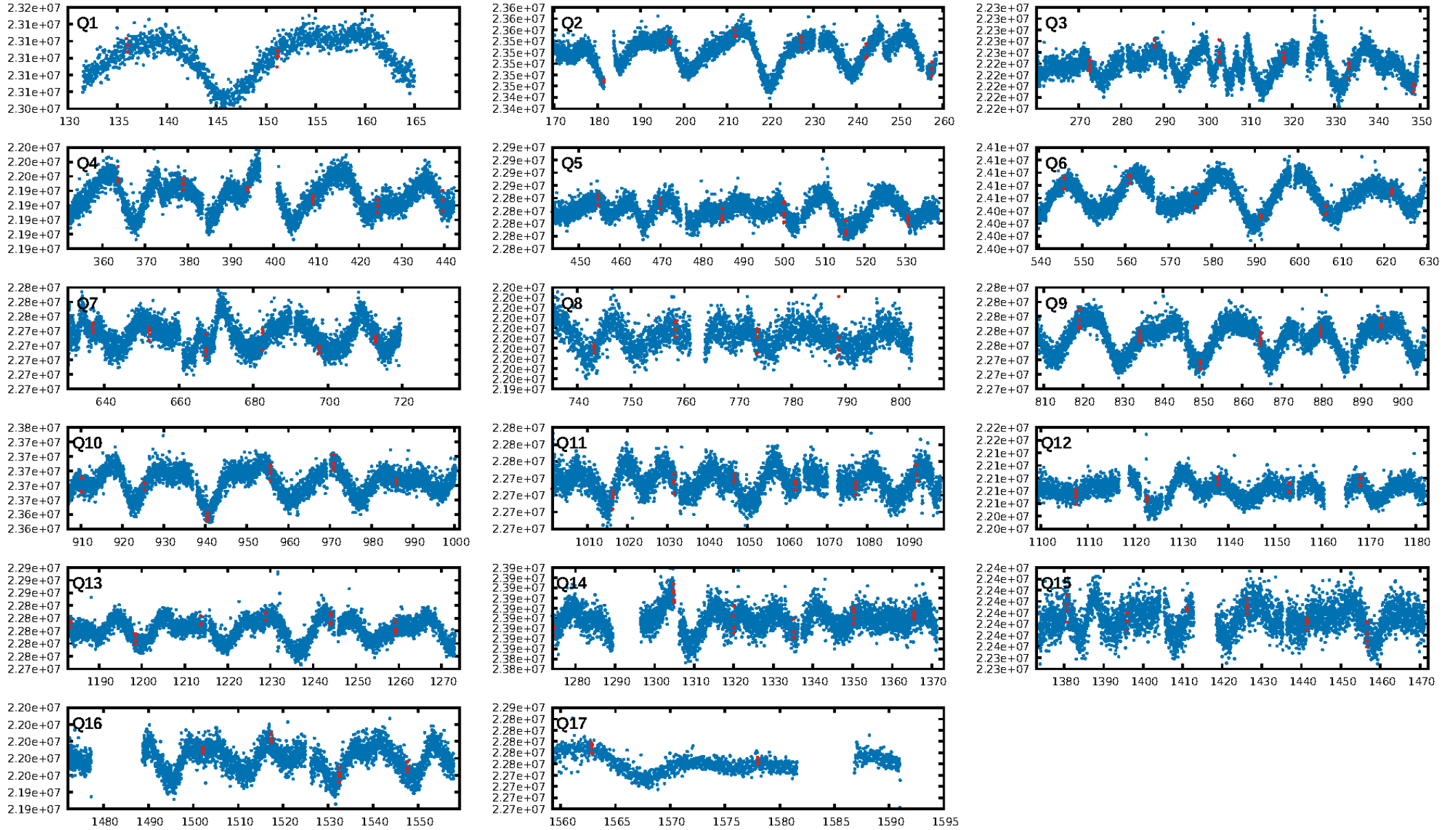
KIC: 7816137 Candidate: 4 of 4 Period: 15.179 d



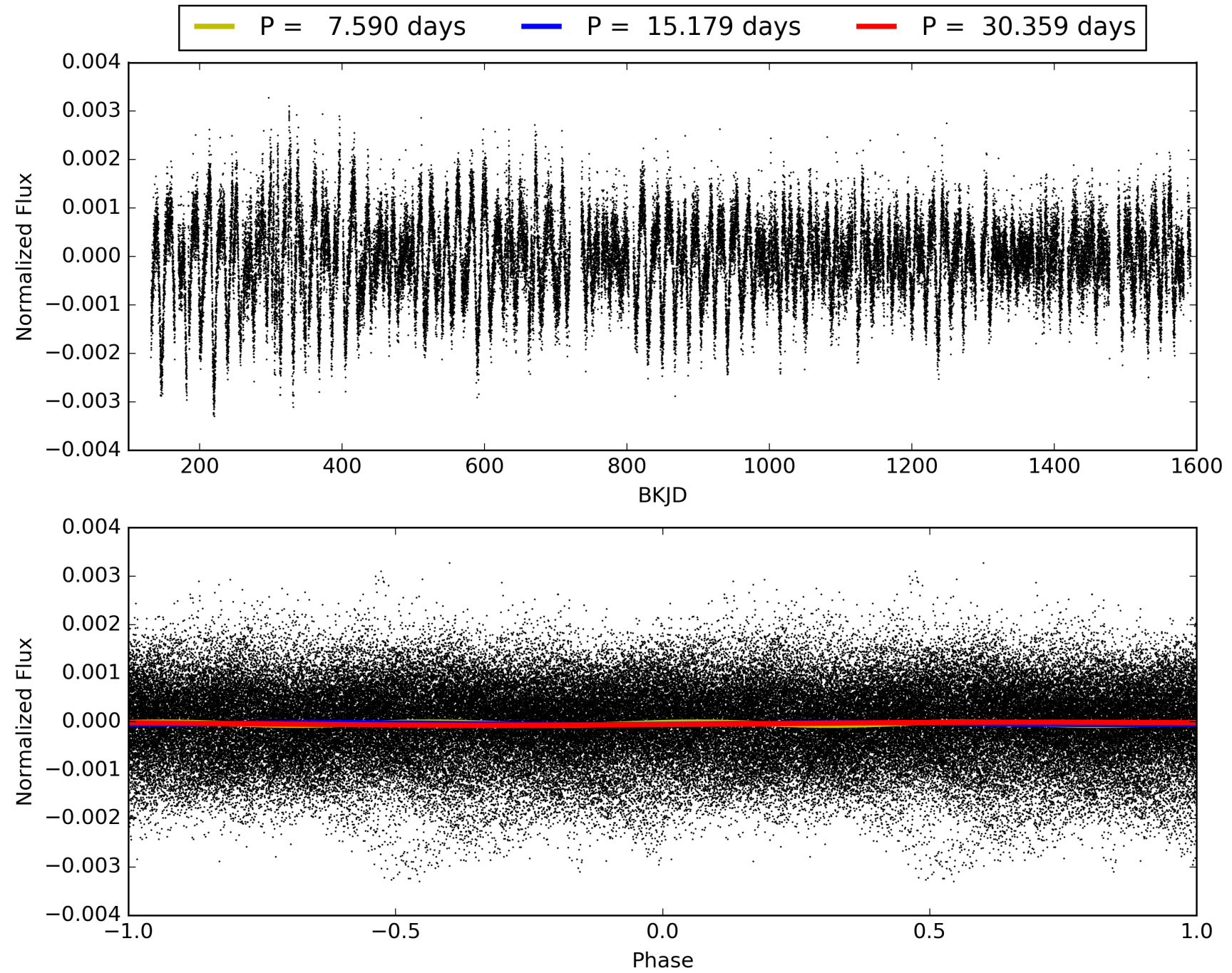
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:57:08 Z

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

TCE 007816137-04, PDC Light Curves

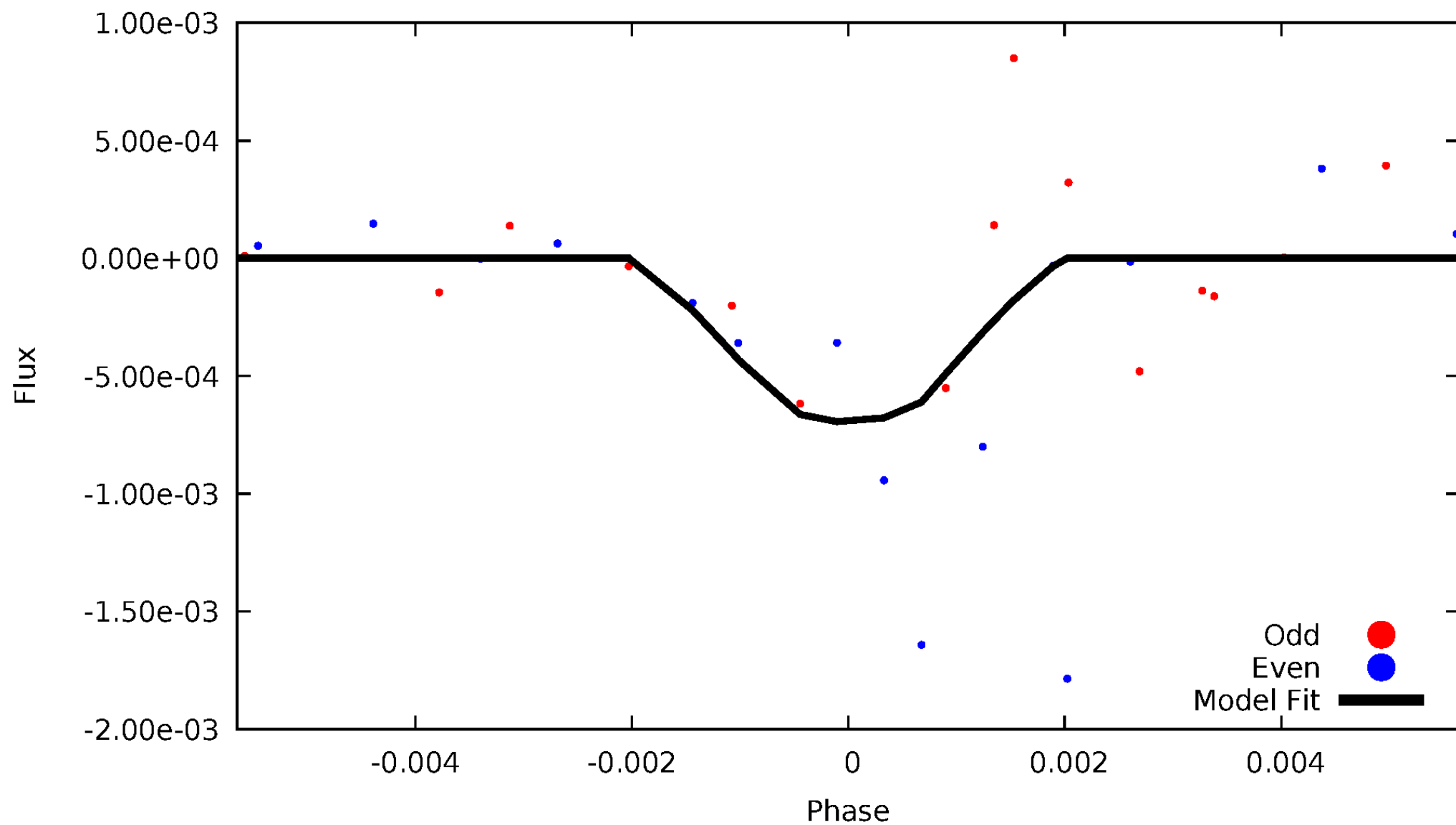


TCE 007816137-04



DV Odd/Even

TCE 007816137-04

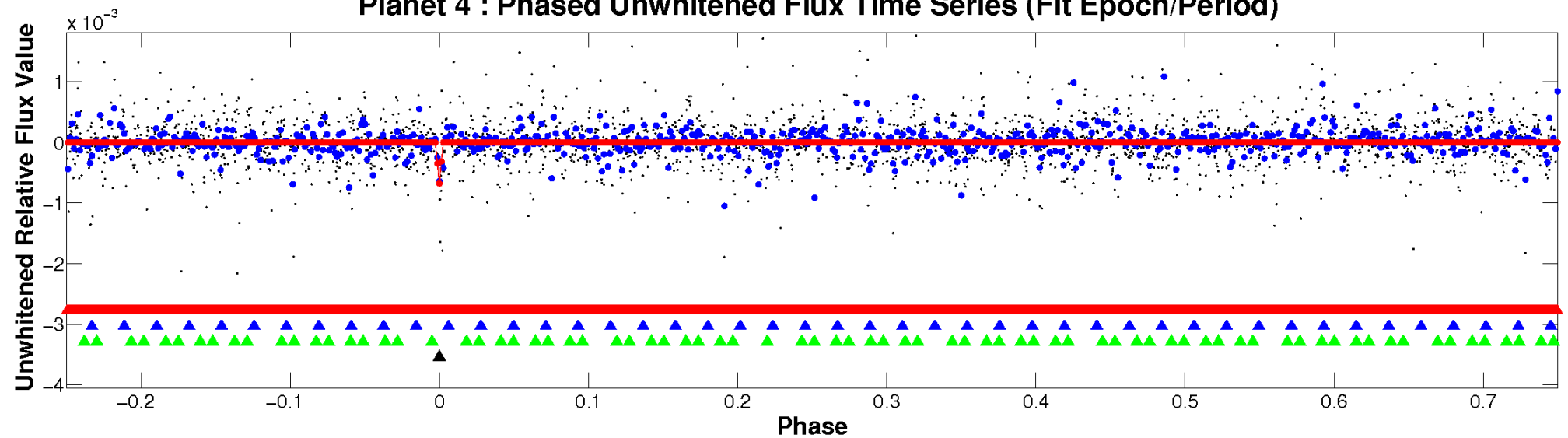


ALT Odd/Even

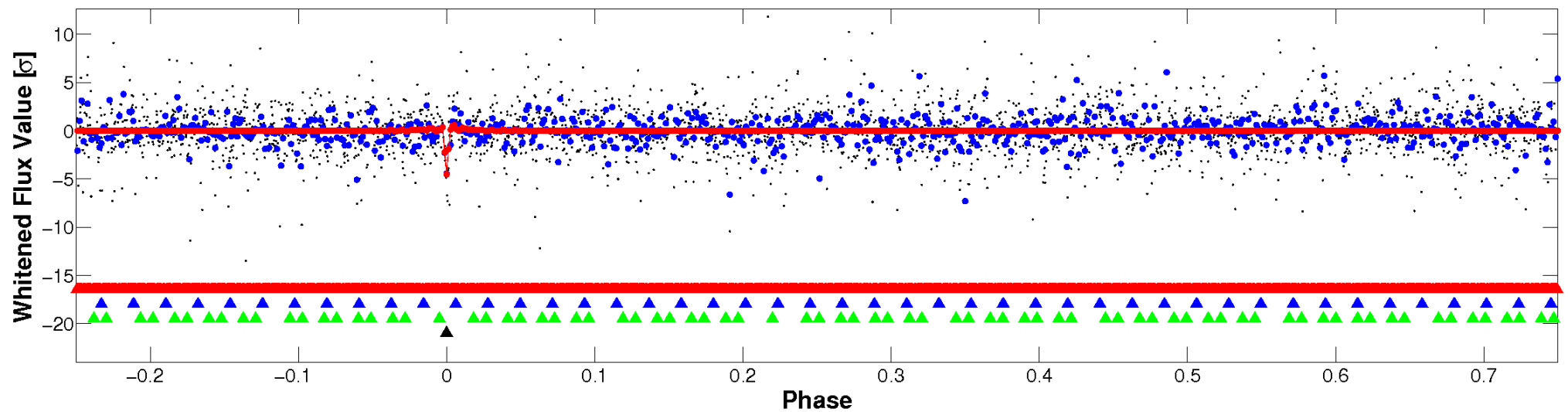
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

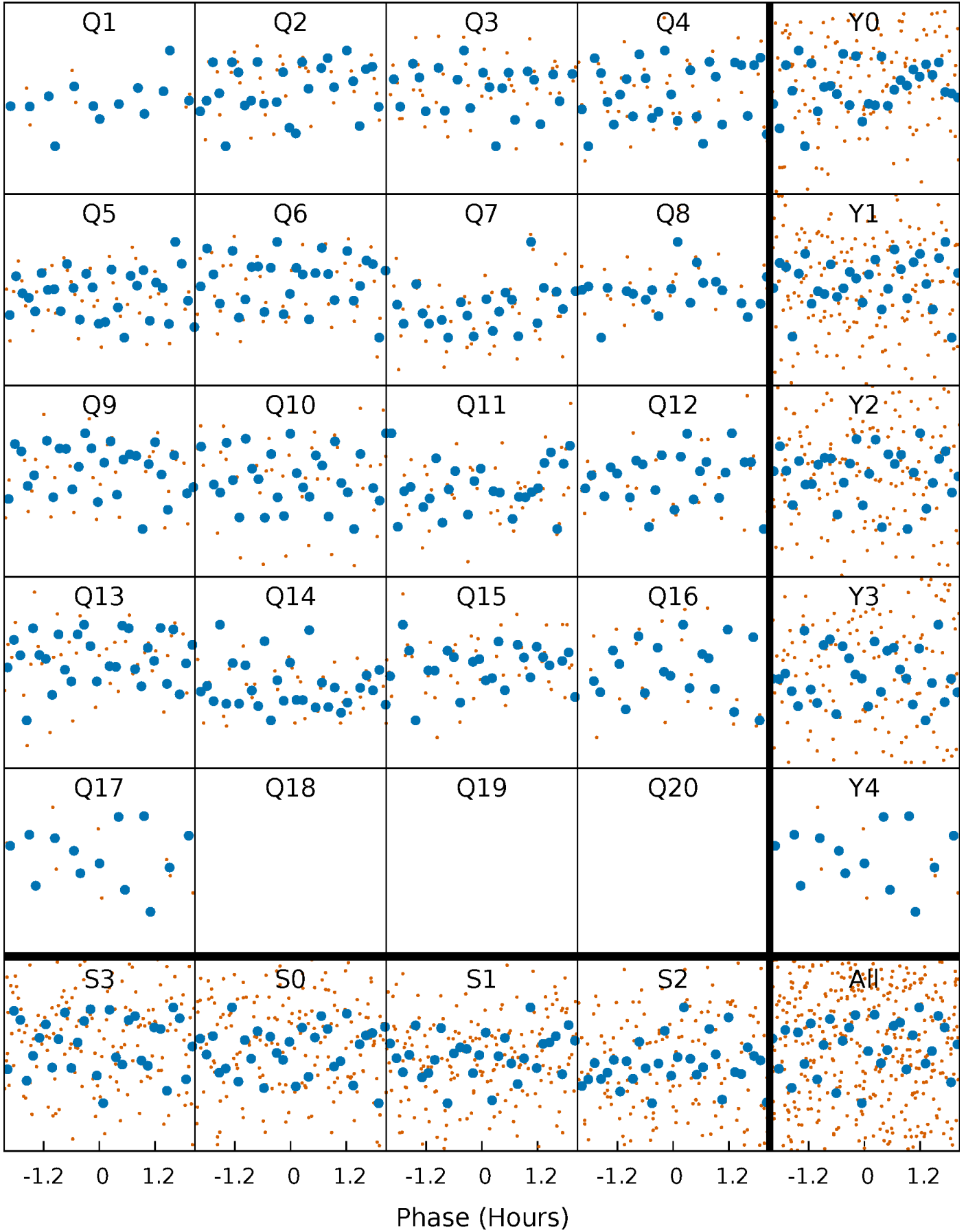


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



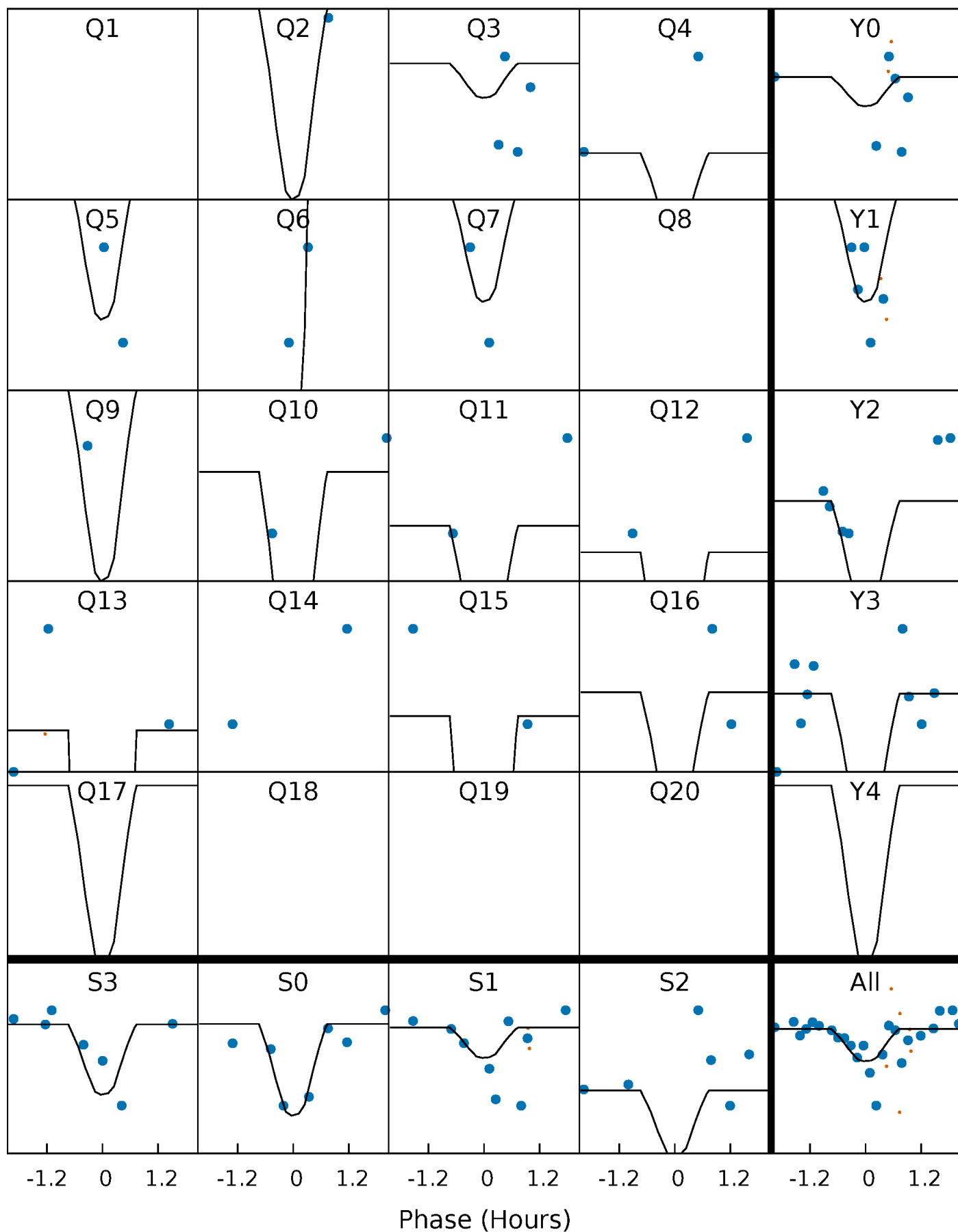
PDC Quarter-Phased Transit Curves

TCE 007816137-04 P= 15.179498 Days $T_0=135.971161$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 007816137-04 P= 15.179498 Days $T_0=135.971161$ (BKJD)

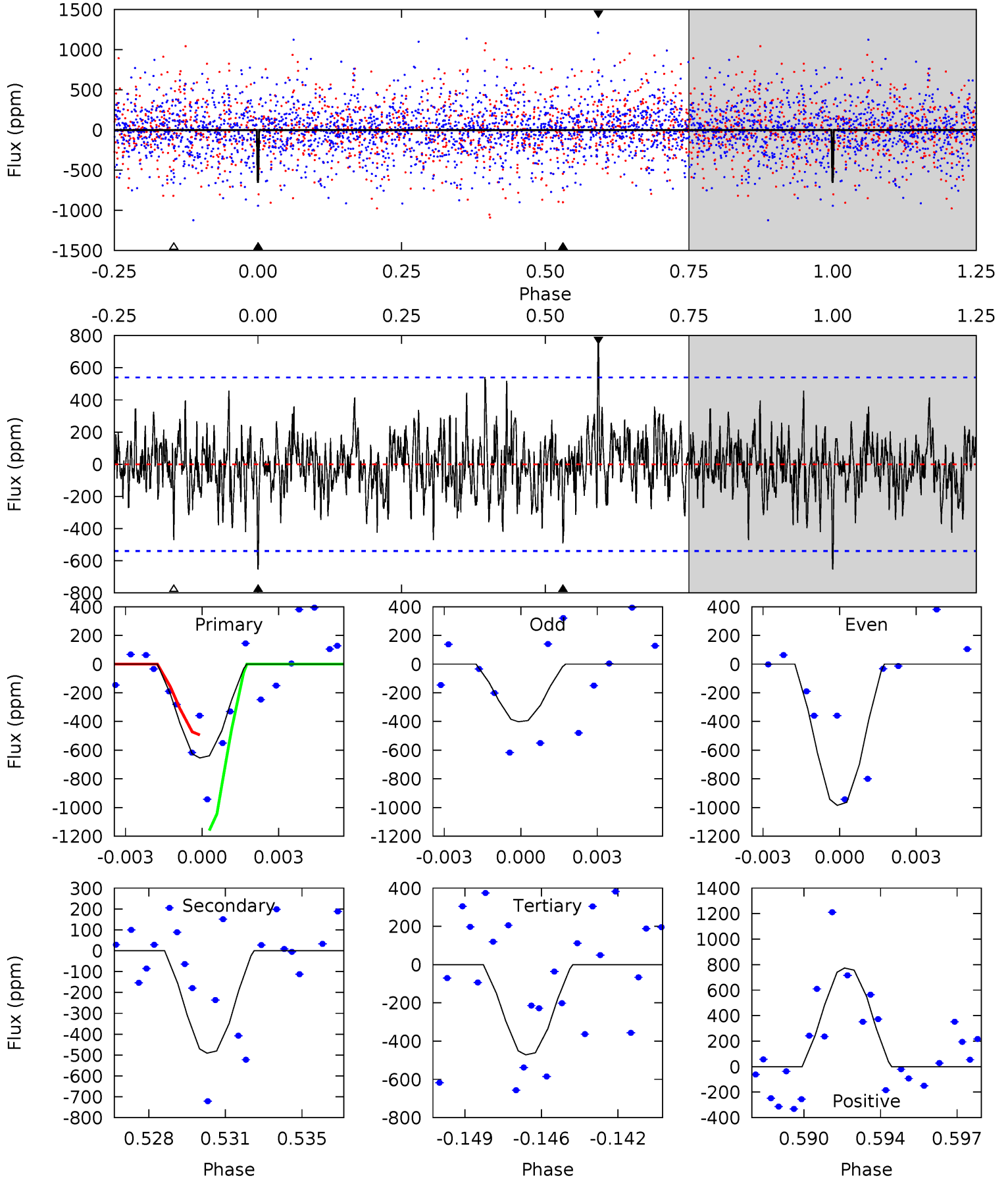


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

007816137-04, P = 15.179498 Days, E = 120.791663 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.34	4.76	4.57	7.49	5.23	2.92	1.48	1.77	-1.16	0.19	-2.73	3.09	1.30	0.54	3.44



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 007816137

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4545^{+137}_{-123}	$4.548^{+0.068}_{-0.020}$	$0.420^{+0.050}_{-0.300}$	$0.764^{+0.026}_{-0.066}$	$0.752^{+0.040}_{-0.044}$	$2.376^{+0.644}_{-0.172}$
	+3%/-3%	+1%/-0%	+12%/-71%	+3%/-9%	+5%/-6%	+27%/-7%
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 007816137-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-491 ± 103	$5.04^{+5.61}_{-3.39}$	736^{+26}_{-24}	3210^{+1515}_{-608}	127^{+1103}_{-100}
Alt.	N/A	N/A	N/A	N/A	N/A

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 $A_{obs} \gg 1.0$

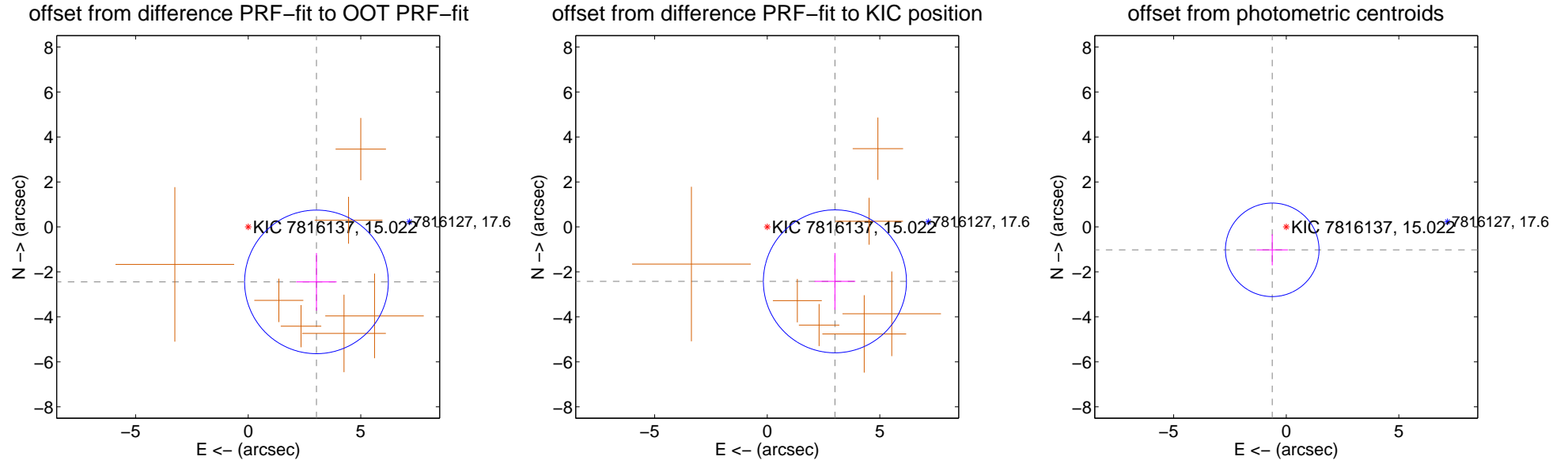
DV Centroid Data

Supplemental centroid analysis for 007816137-04. Kepler magnitude: 15.02. Transit SNR 10.01

There are 0 quarters with good PRF difference image offsets

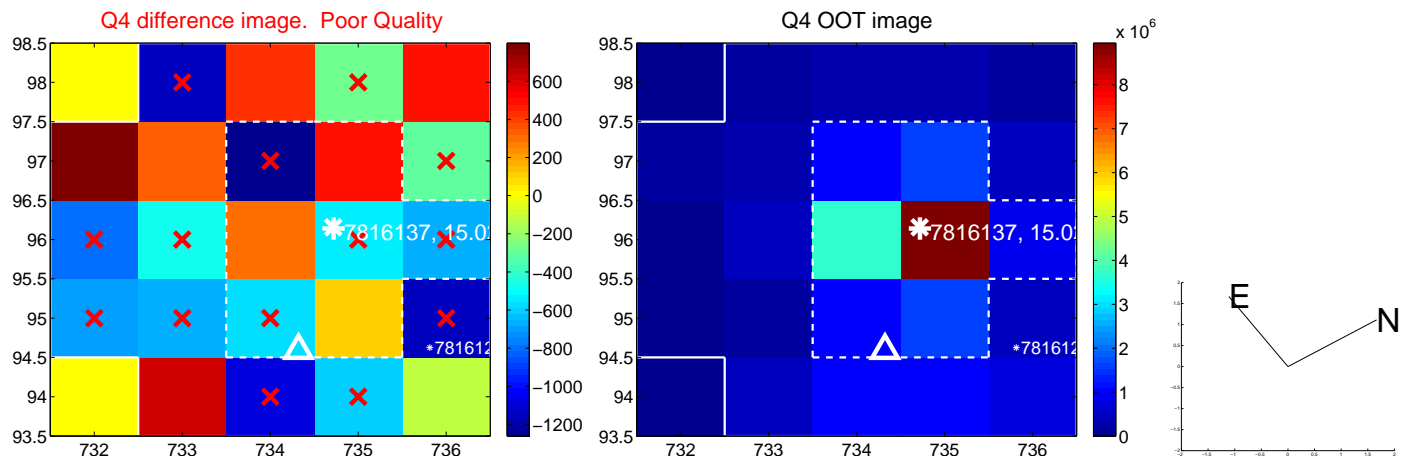
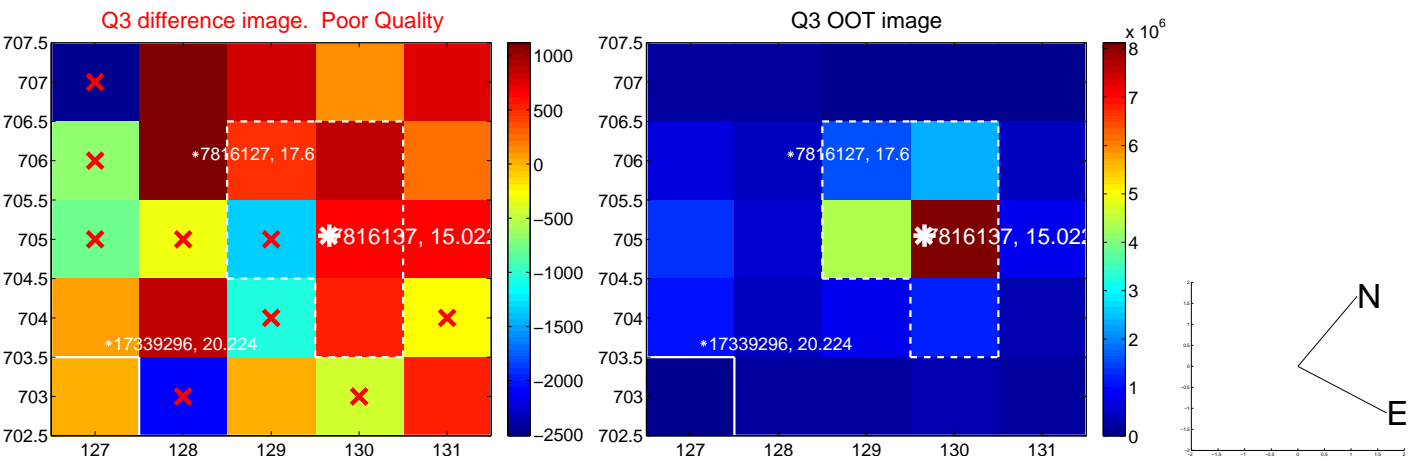
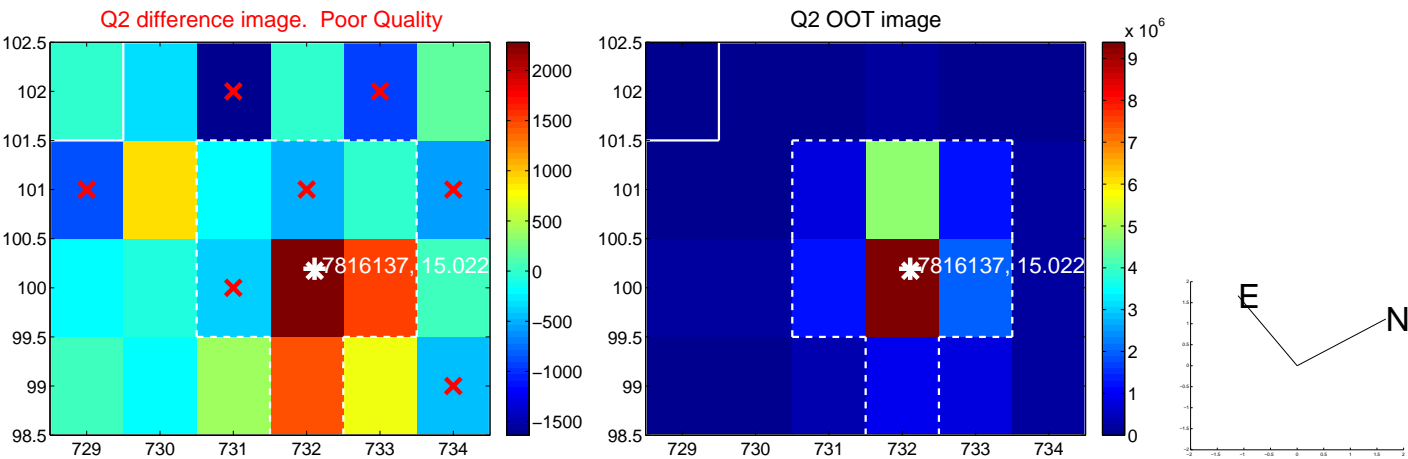
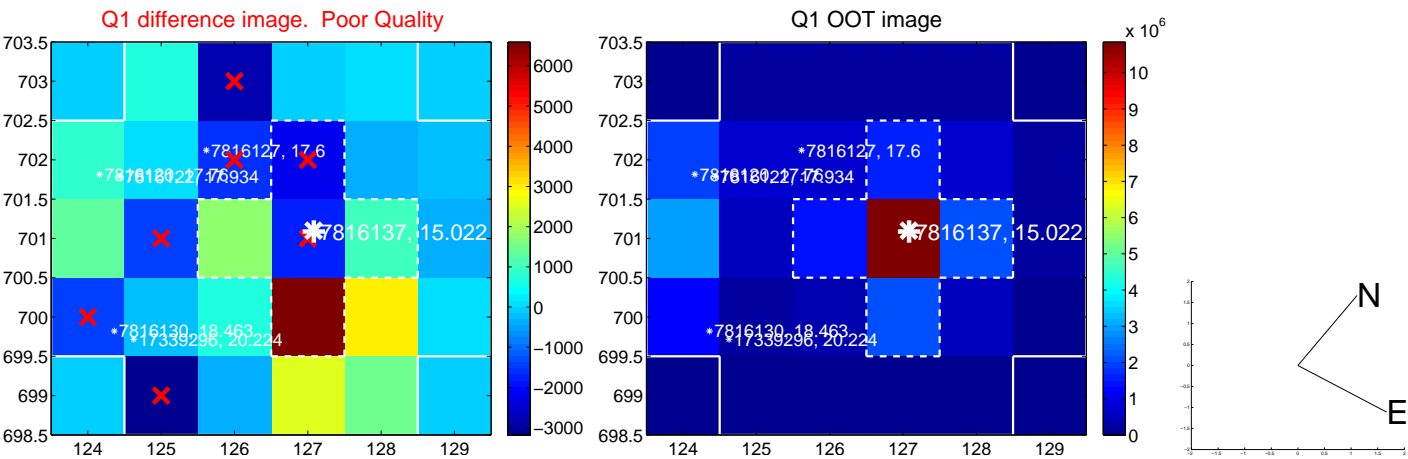
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.896 ± 1.064	3.66	-3.033 ± 0.895	-2.444 ± 1.281
PRF-fit source offset from KIC position	3.860 ± 1.059	3.64	-3.007 ± 0.906	-2.420 ± 1.260
photometric centroid source offset	1.19 ± 0.69	1.72	0.62 ± 0.70	-1.02 ± 0.69

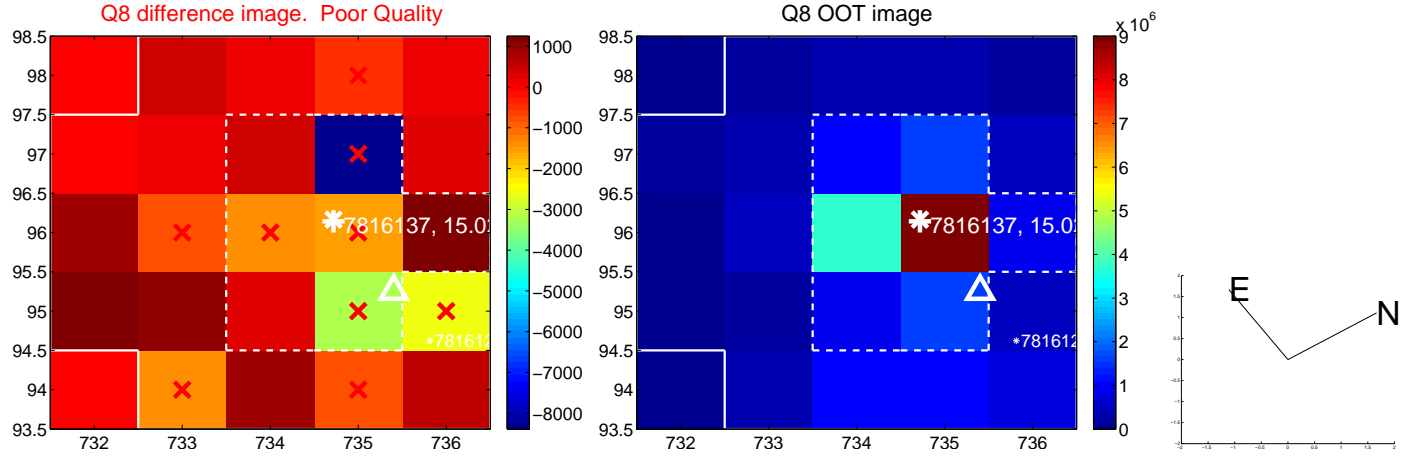
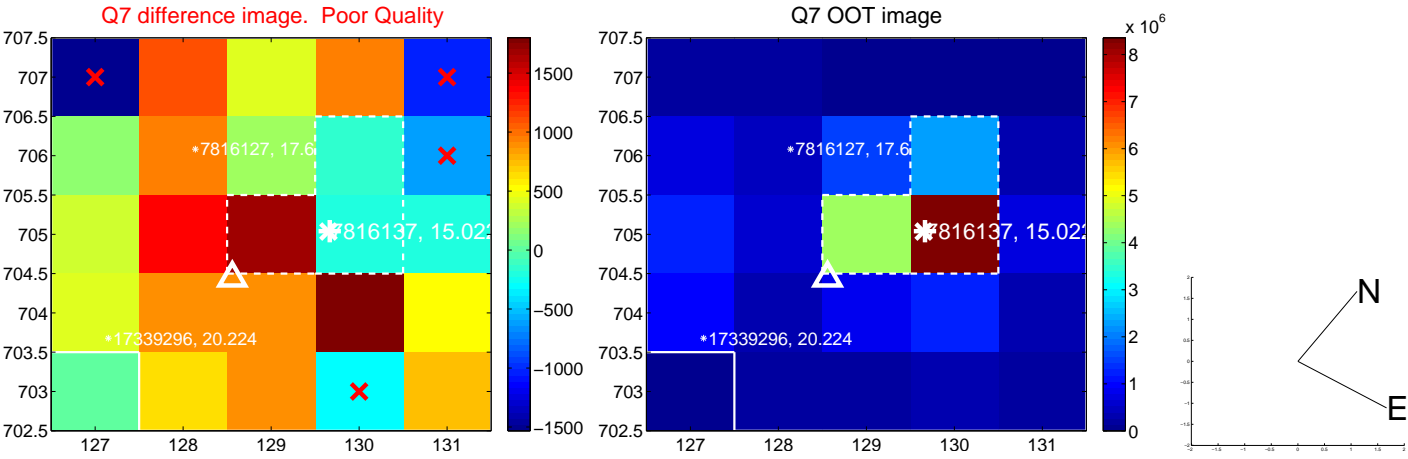
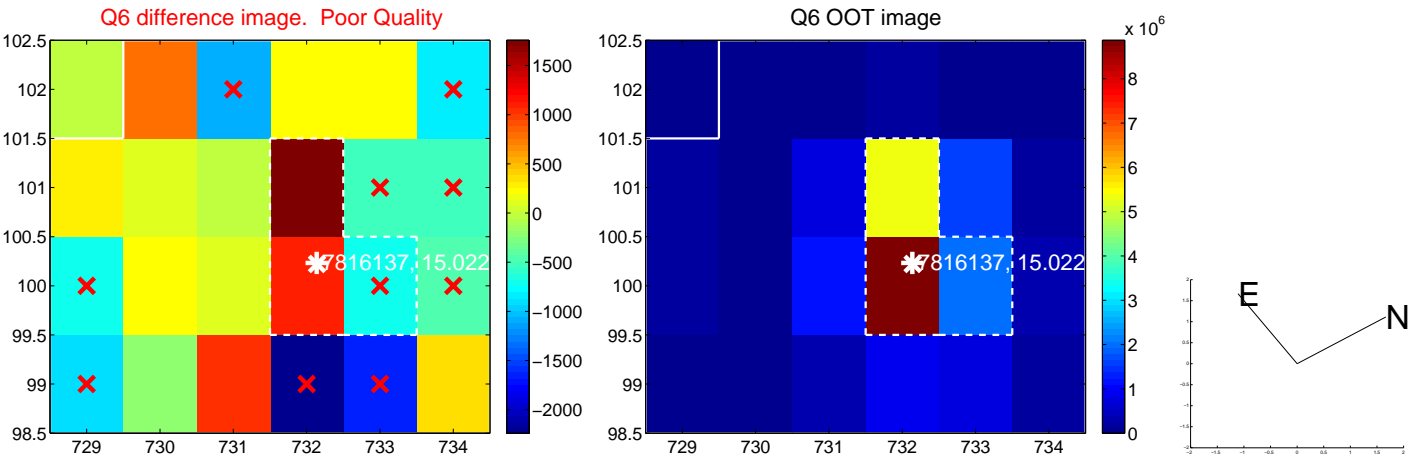
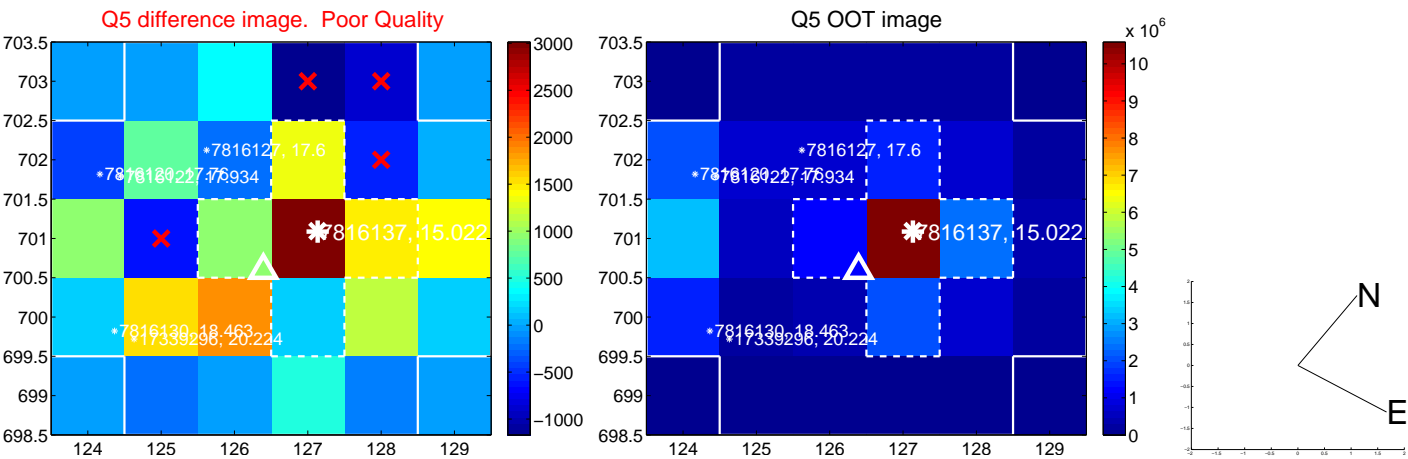


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

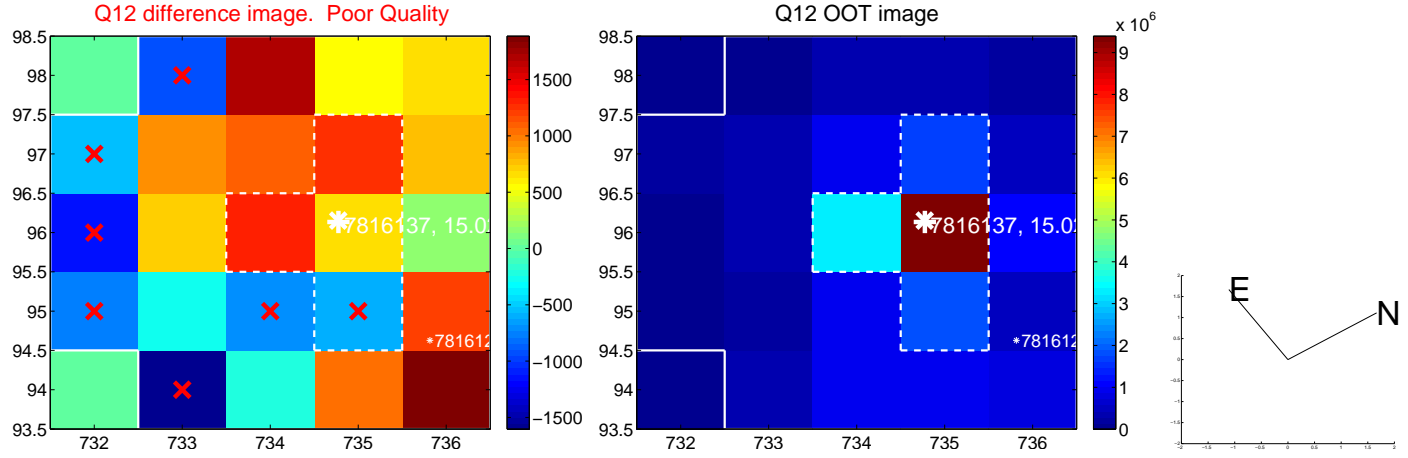
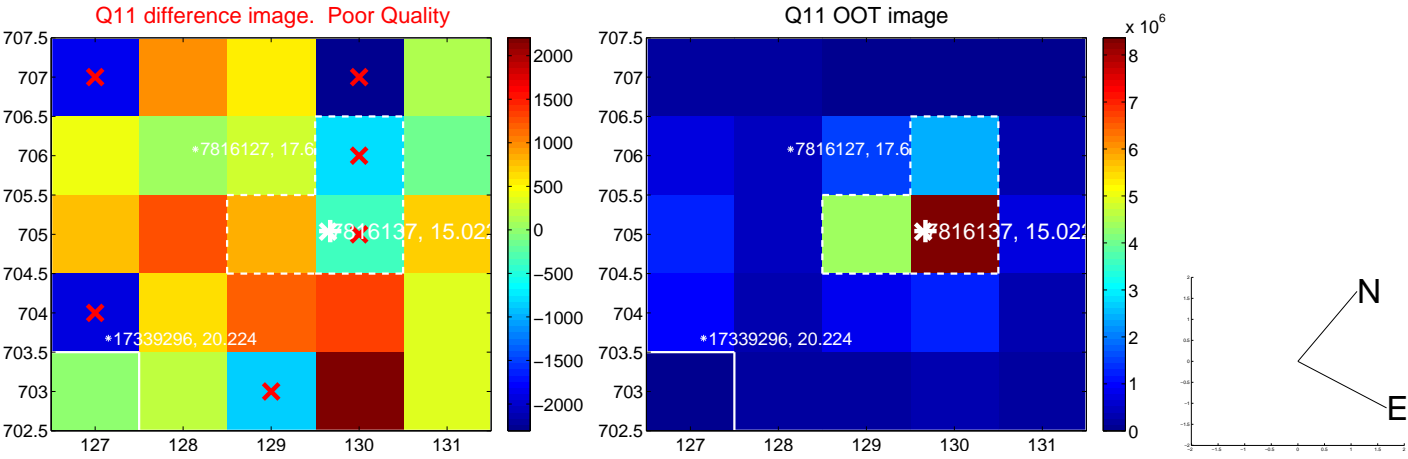
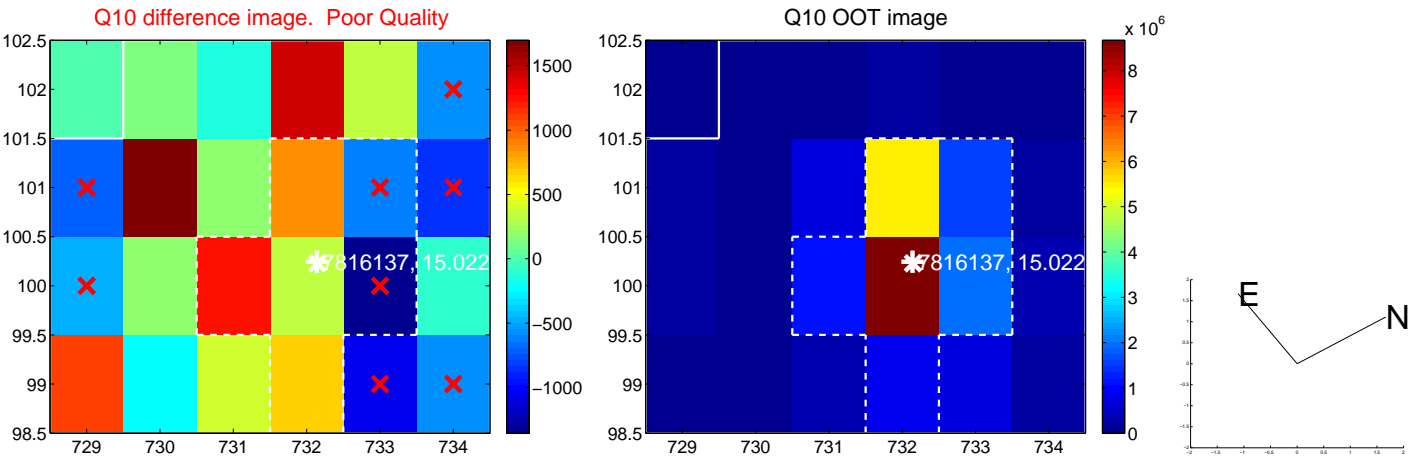
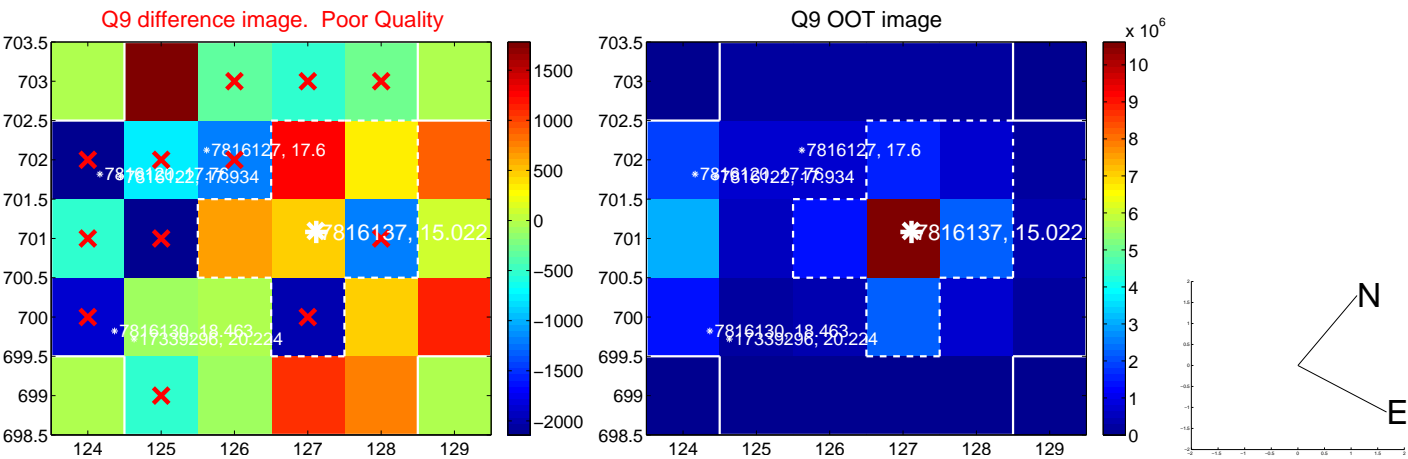
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



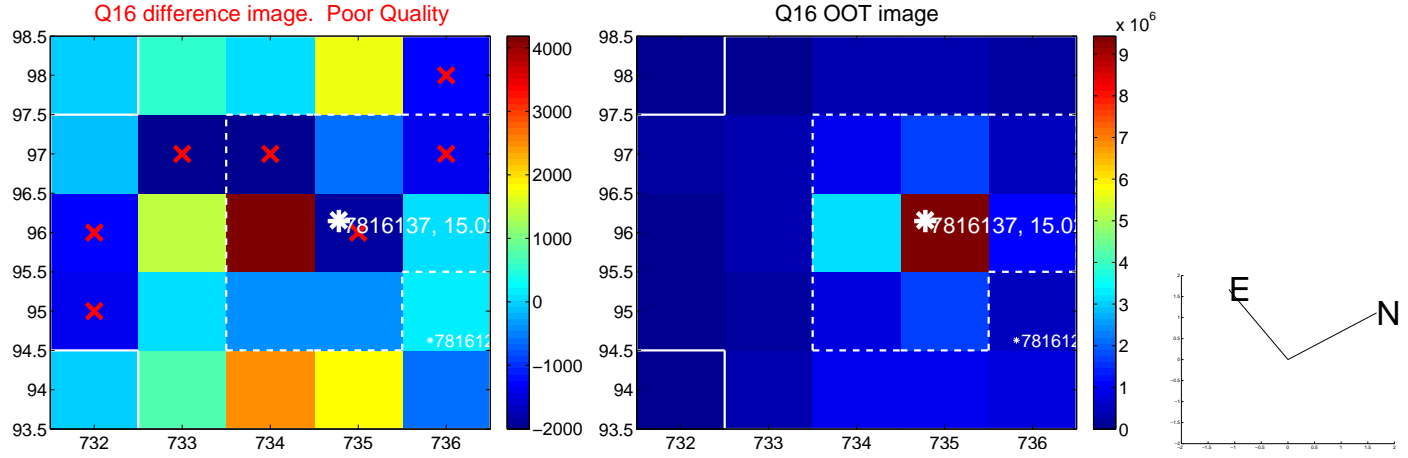
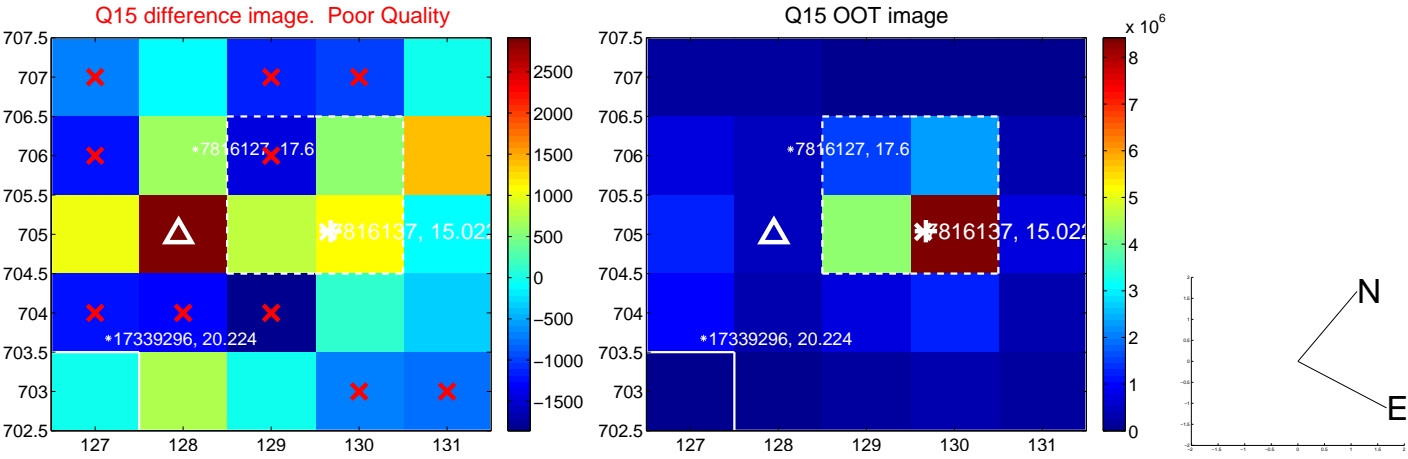
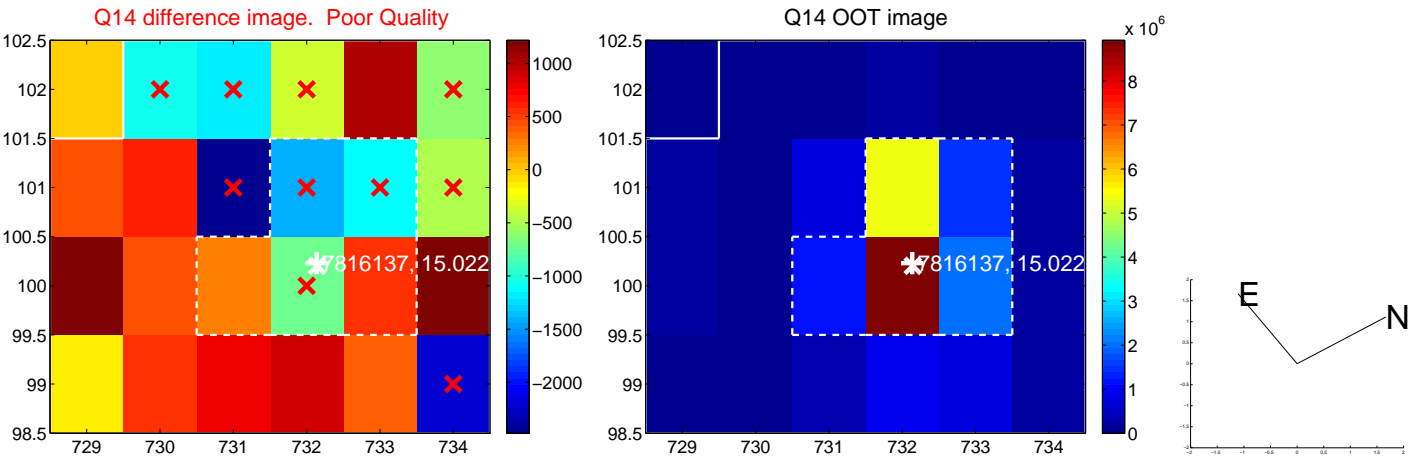
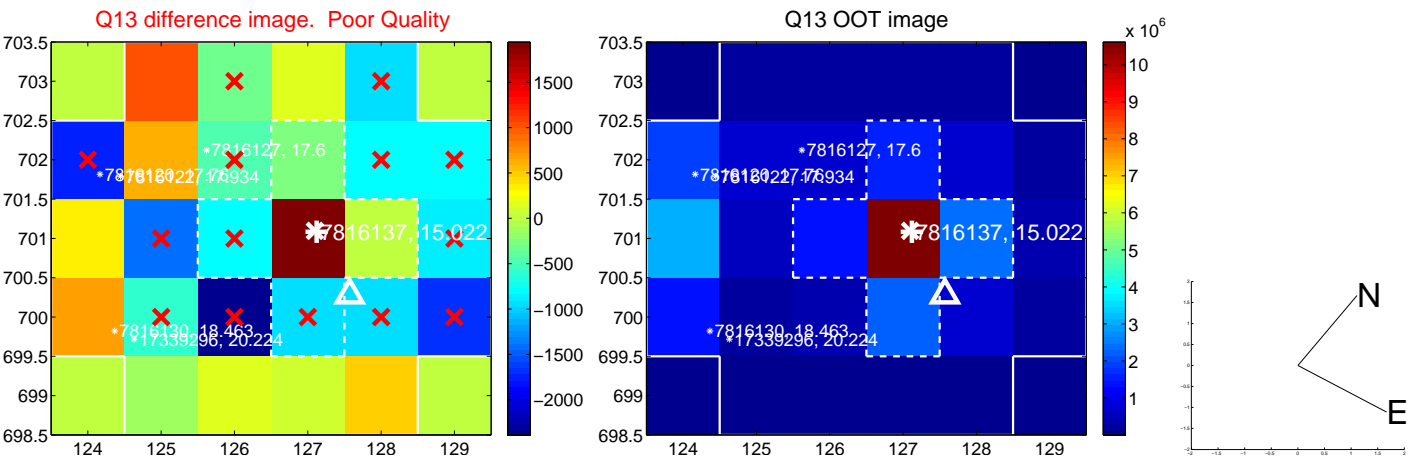
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



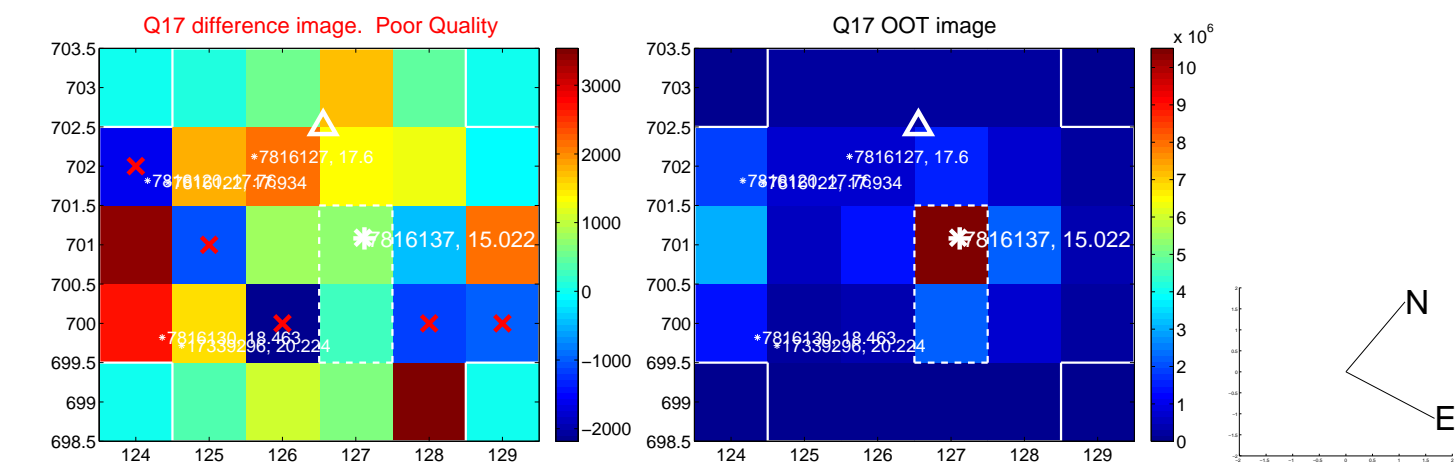
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



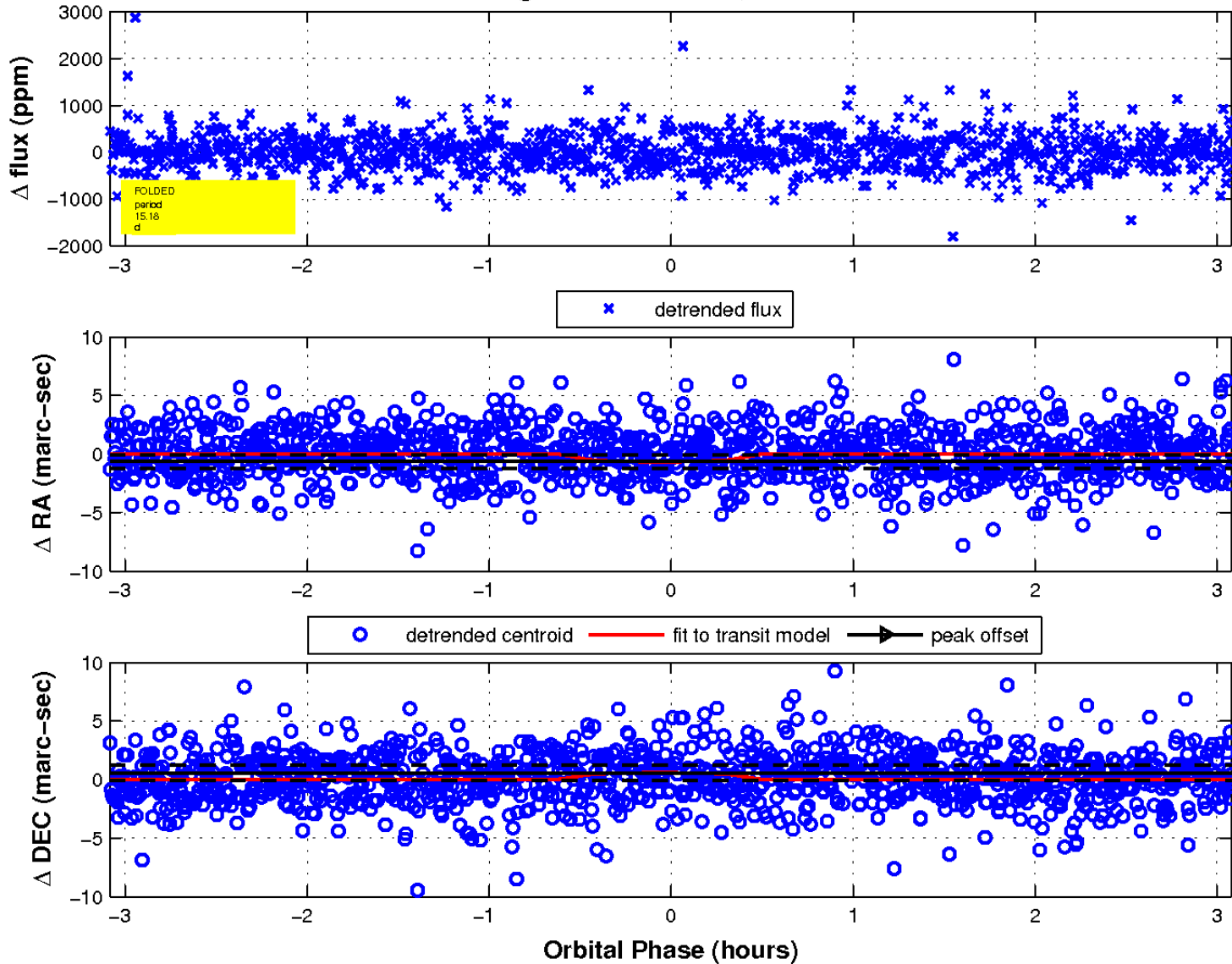
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 4 of 4



UKIRT Image

Declination

