

KIC 007031742

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})
007031742-01	OBS	7575.01	0.566742	131.861891	22.0	3.933	11.9	6.4	1.01	6063	0.48	6405.97
007031742-02	OBS	No	31.239645	161.962954	724.4	1.382	9.9	11.5	1.01	6063	2.89	30.54
007031742-03	OBS	No	39.269537	145.406772	455.6	2.826	9.5	10.0	1.01	6063	2.33	22.51
007031742-04	OBS	No	27.360744	133.419153	793.2	0.962	10.1	10.4	1.01	6063	2.87	36.44

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007031742-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_UNRESOLVED_OFFSET—EPHEM_MATCH
007031742-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
007031742-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
007031742-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—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 007031742-01

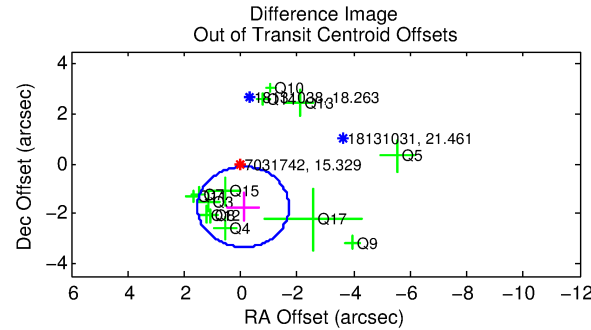
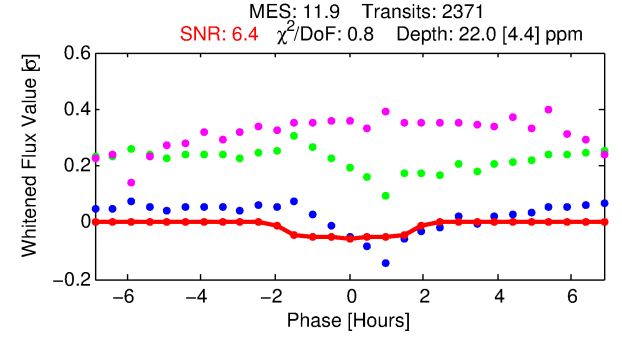
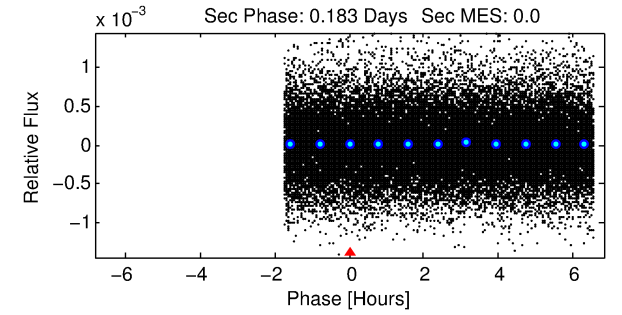
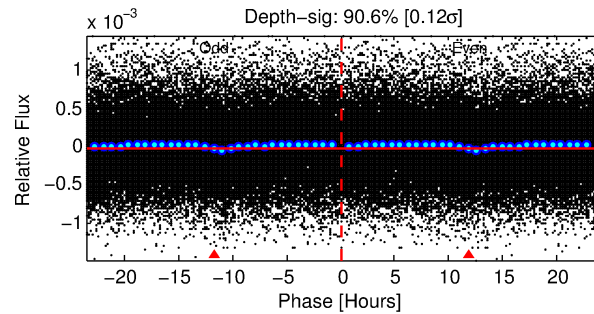
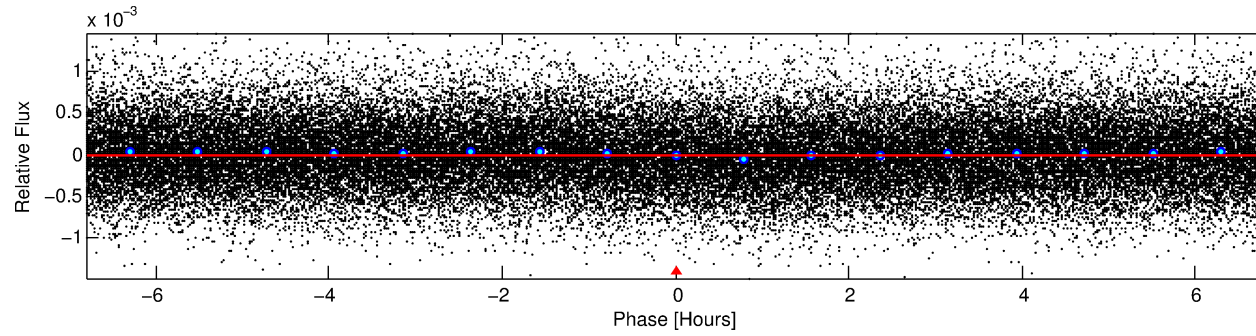
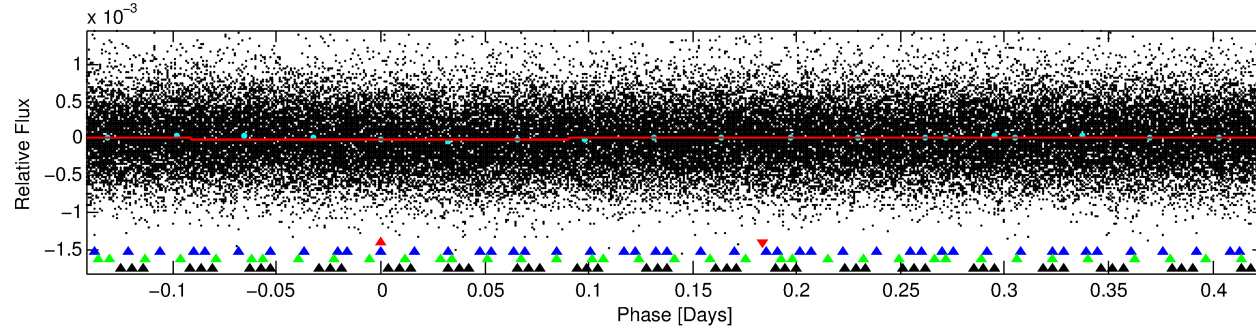
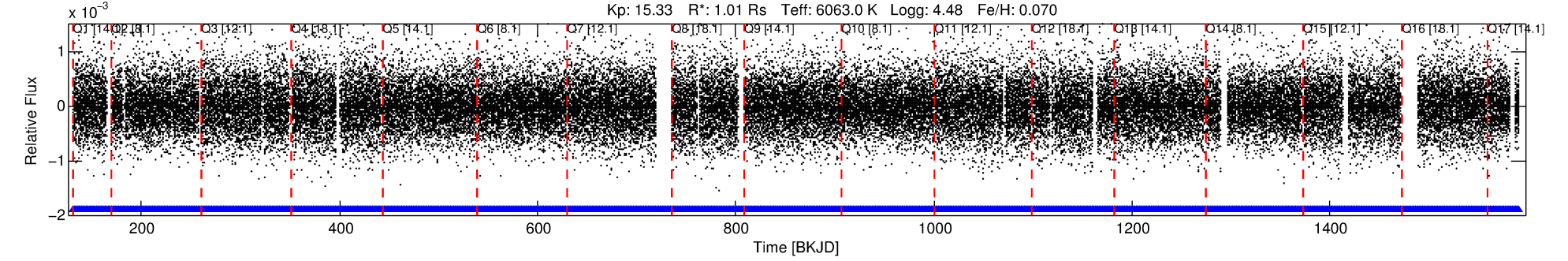
TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist (μ)	Δ Row	Δ Col	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ_P	σ_T
007031742-01	7031742	RR-Lyr-pri	7198959	1:1	939.7	112	-209	7.86	15.33	28332.00	Direct-PRF	0	1.24	22.14

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: 7031742 Candidate: 1 of 4 Period: 0.567 d
KOI: K07575 Corr: No Ephemeris Match

Kp: 15.33 R*: 1.01 Rs Teff: 6063.0 K Logg: 4.48 Fe/H: 0.070



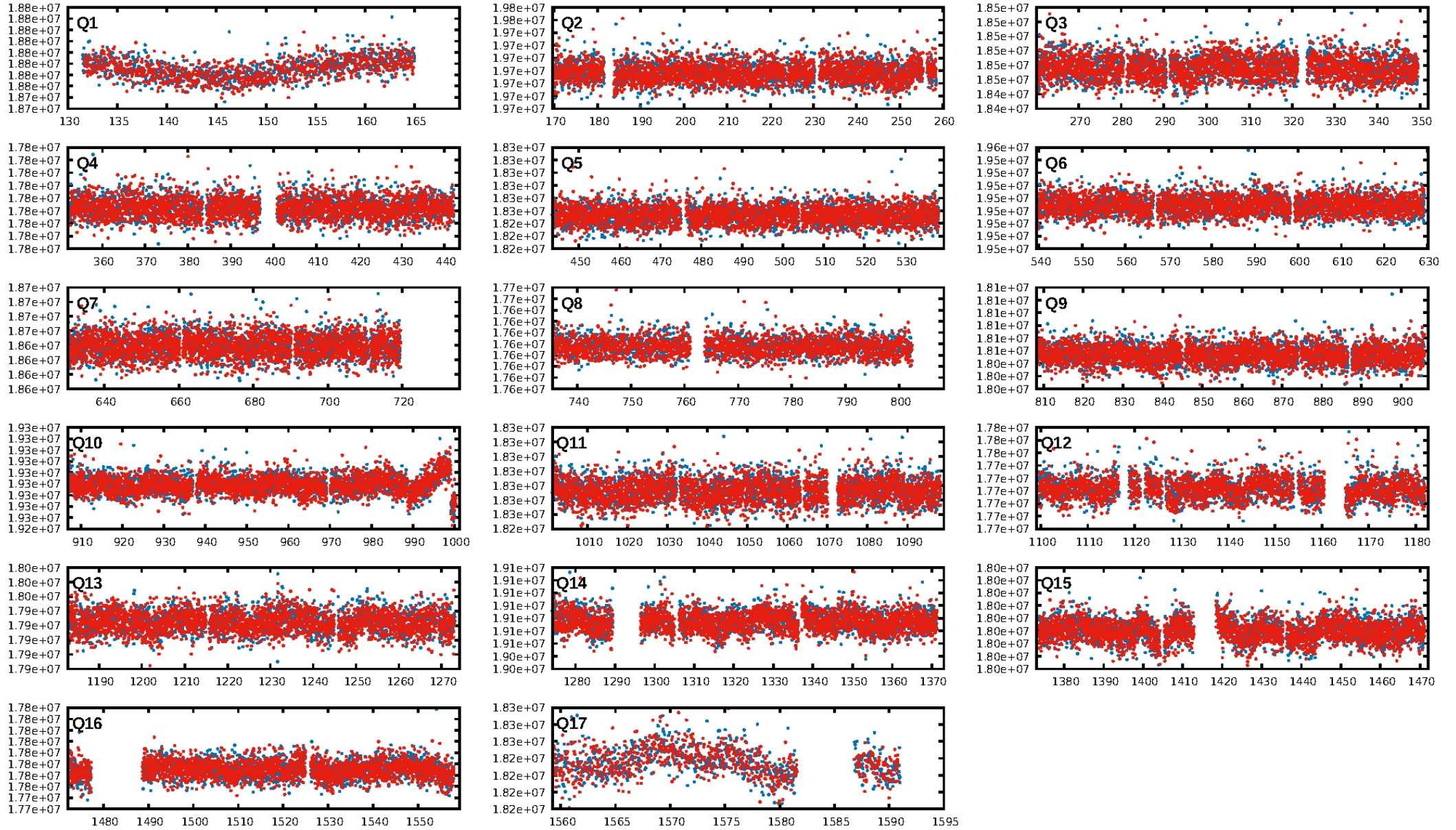
DV Fit Results:

Period = 0.56674 [0.00002] d
Epoch = 131.8619 [0.0073] BKJD
Rp/R* = 0.0043 [0.0091]
a/R* = 1.25 [4.44]
b = 0.31 [29.13]
Seff = 6405.97 [2669.78]
Teff = 2281 [238] K
Rp = 0.48 [1.01] Re
a = 0.0139 [0.0037] AU
Ag = N/A
Teffp = N/A

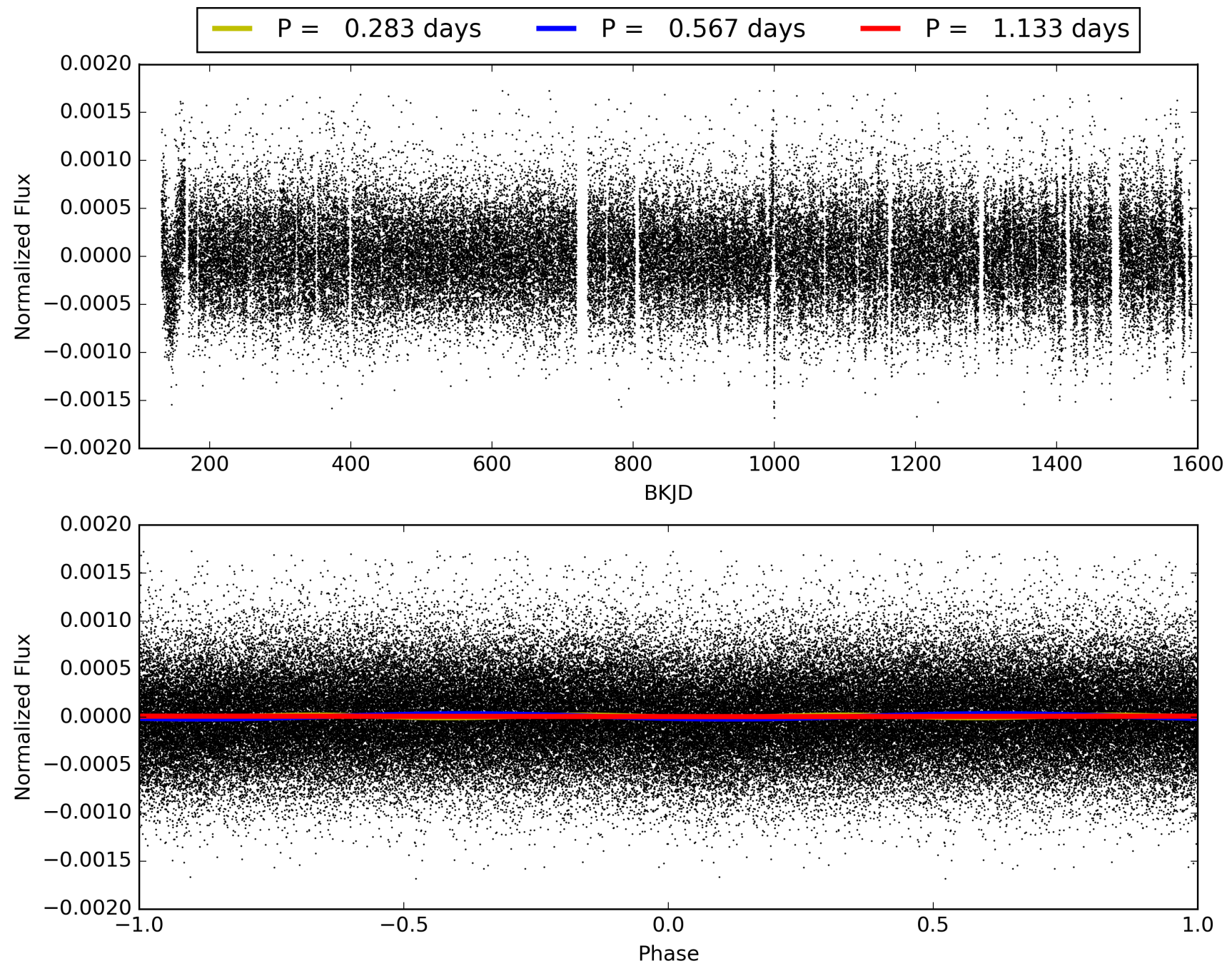
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [158.81σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.30e-15
RollingBand-fgt: 1.00 [2265/2265]
GhostDiagnostic-chr: 0.8892
Centroid-sig: 1.8%
Centroid-so: 3.644 arcsec [1.75σ]
OotOffset-rm: 1.735 arcsec [3.22σ]
KicOffset-rm: 1.789 arcsec [3.19σ]
OotOffset-st: 2/4/3/4 [13]
KicOffset-st: 2/4/3/4 [13]
DiffImageQuality-fgm: 0.54 [7/13]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 007031742-01, PDC Light Curves

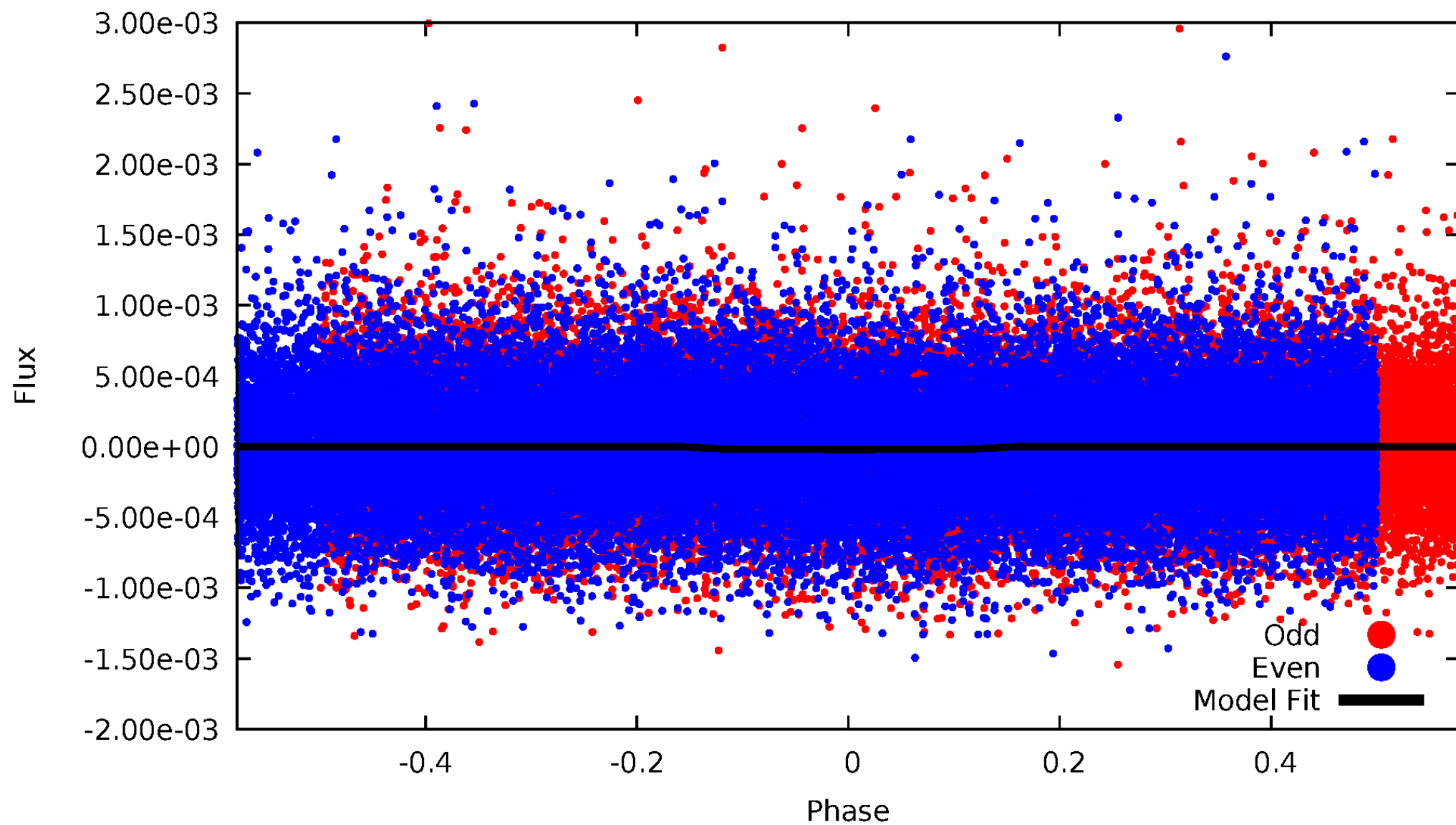


TCE 007031742-01



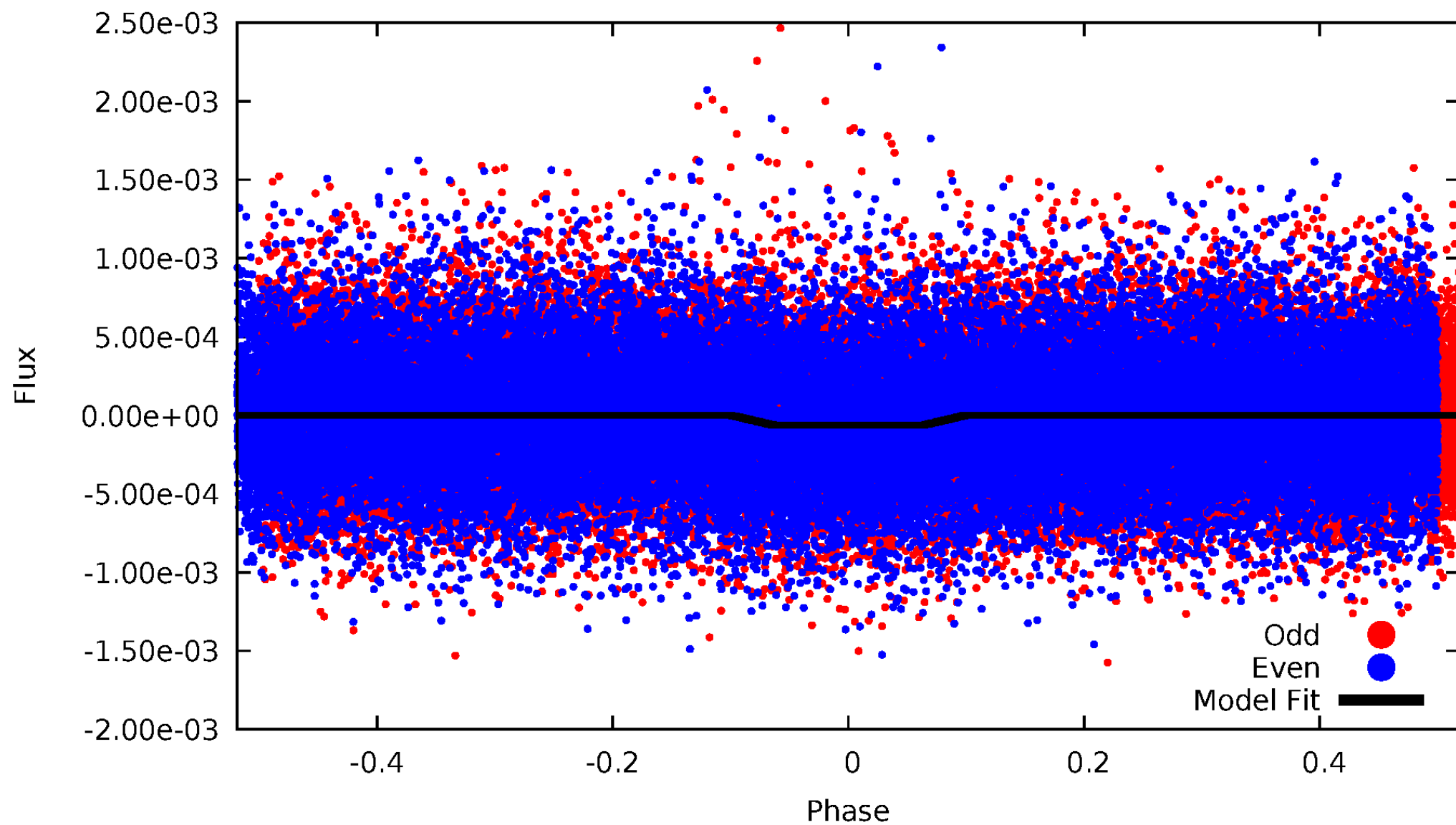
DV Odd/Even

TCE 007031742-01

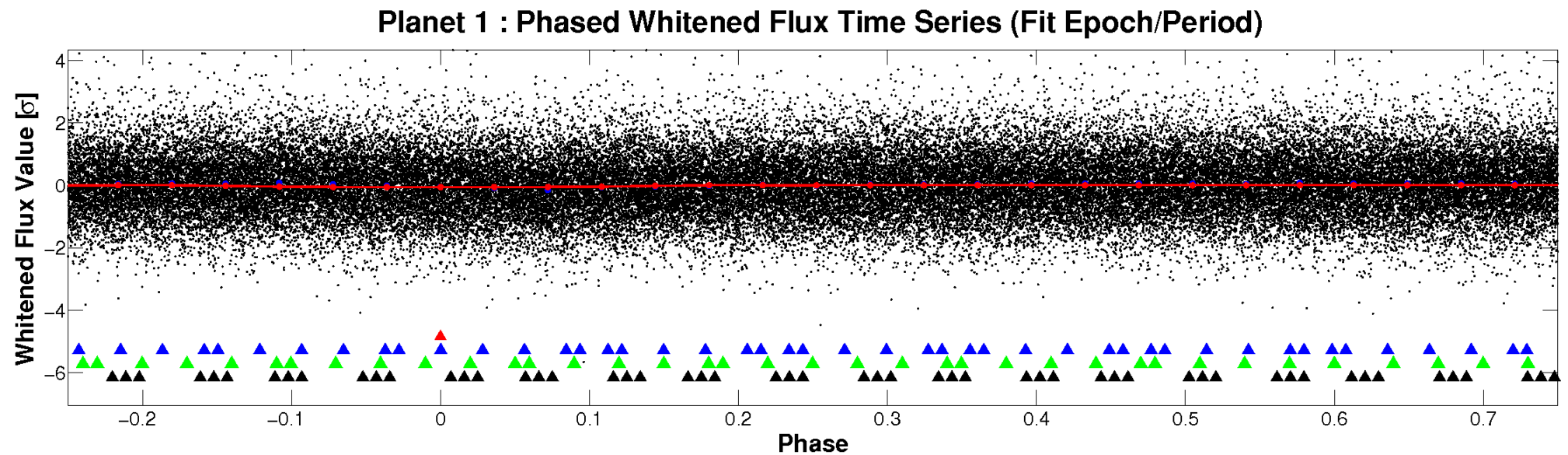
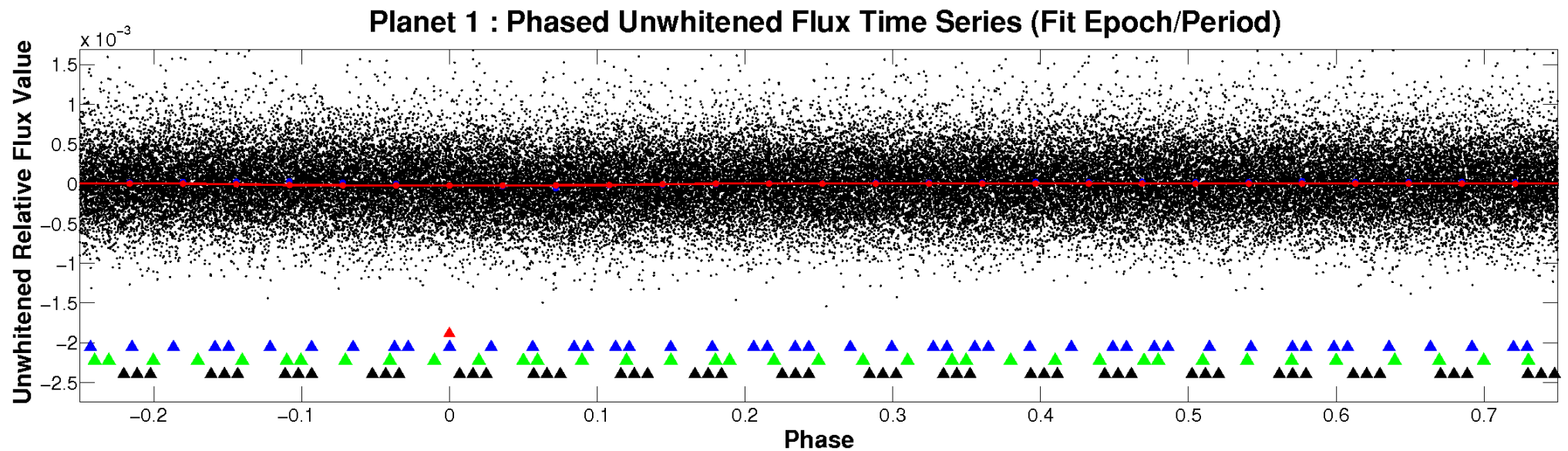


ALT Odd/Even

TCE 007031742-01

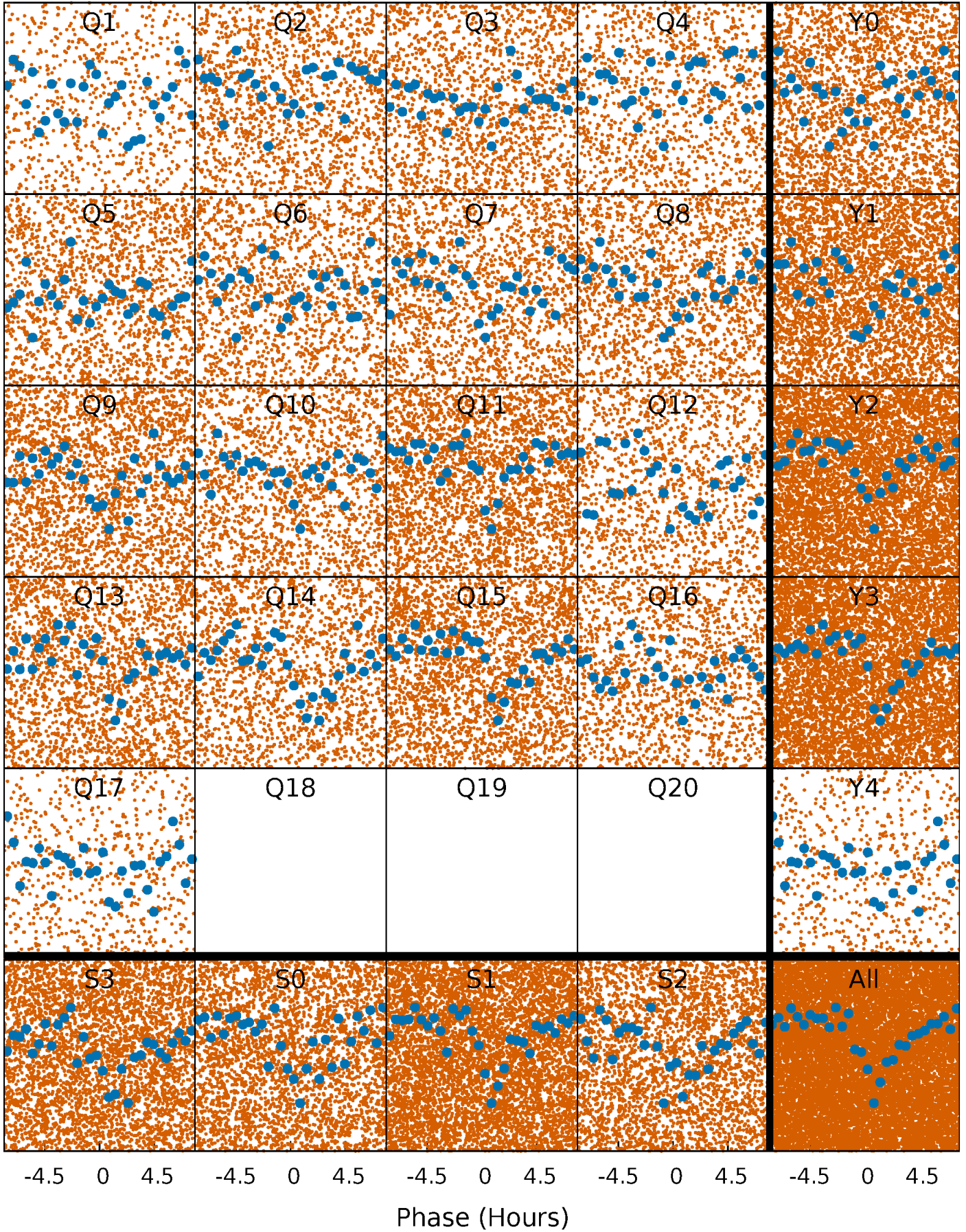


Non-Whitened Vs. Whitened Light Curve



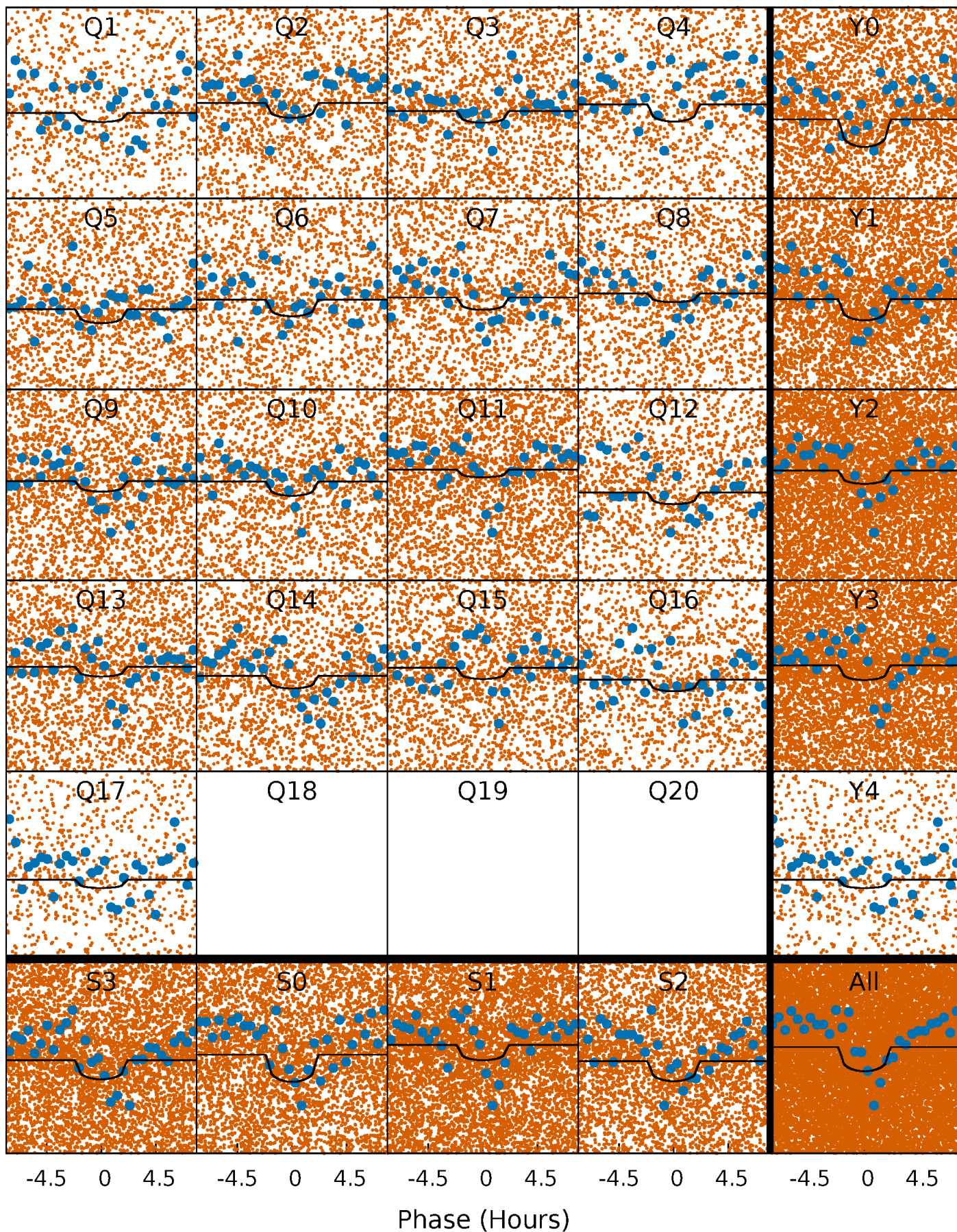
PDC Quarter-Phased Transit Curves

TCE 007031742-01 P= 0.566742 Days $T_0=131.861891$ (BKJD)



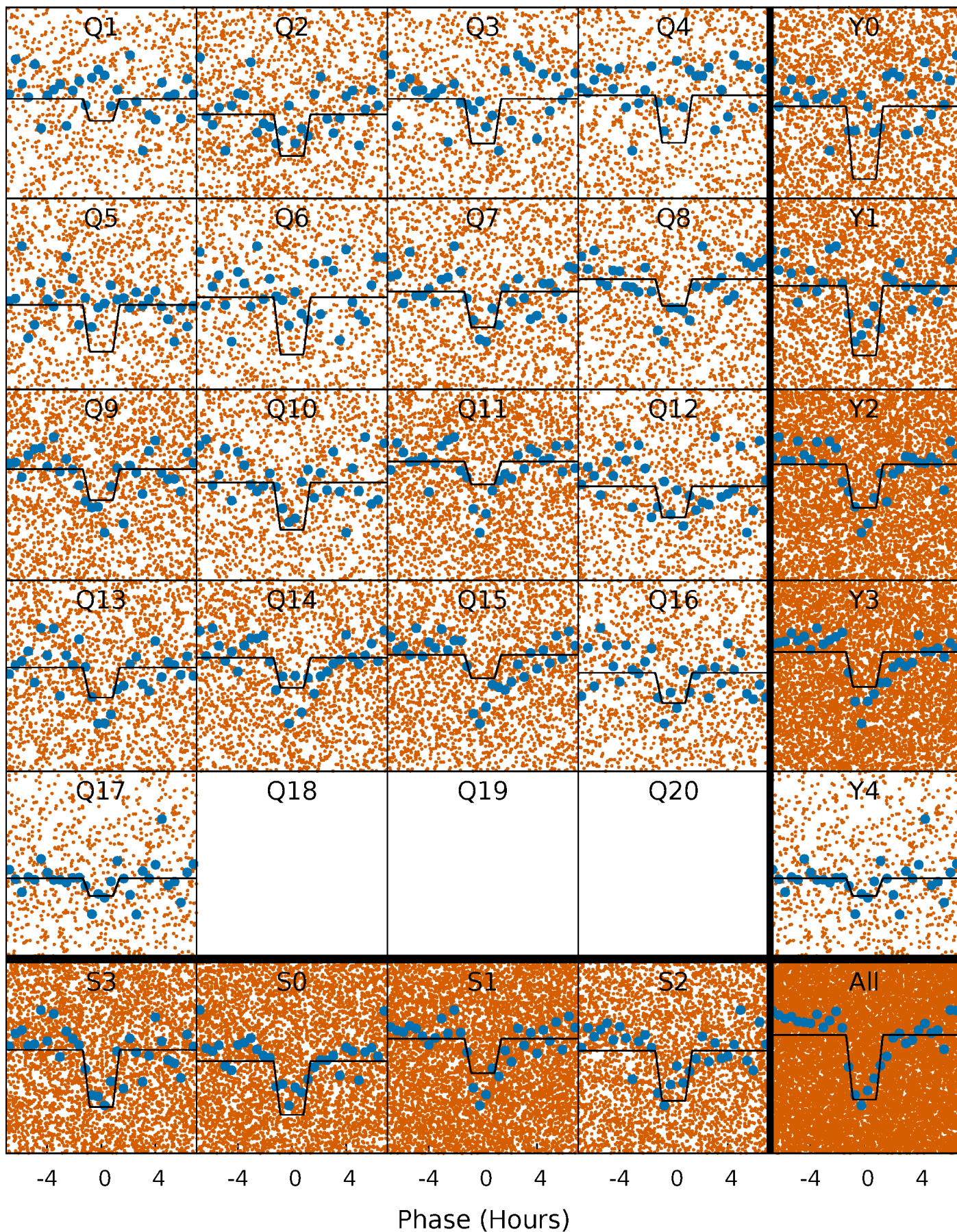
DV Quarter-Phased Transit Curves

TCE 007031742-01 P= 0.566742 Days $T_0=131.861891$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

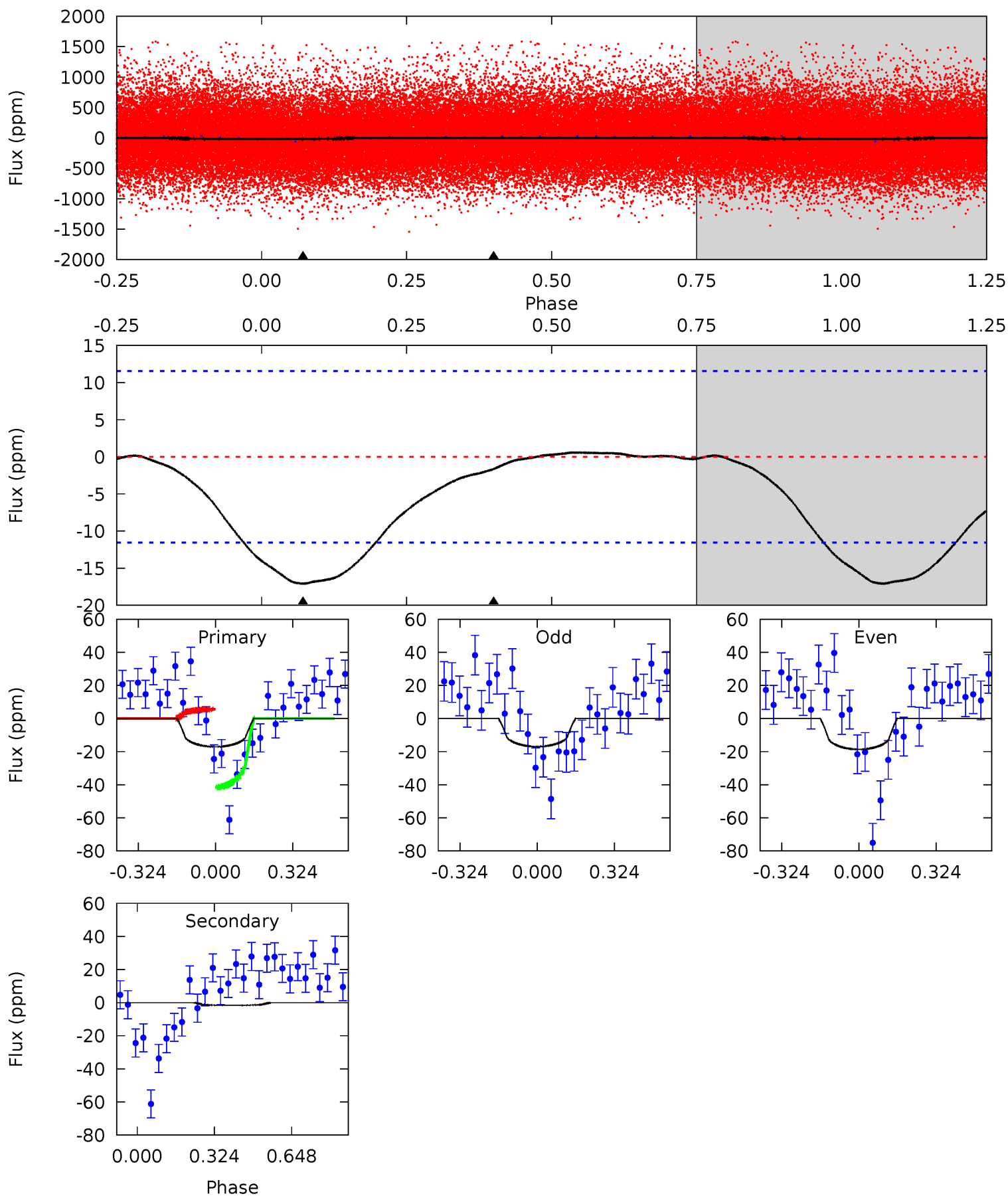
TCE 007031742-01 P= 0.566782 Days $T_0=131.835683$ (BKJD)



DV Model-Shift Uniqueness Test

007031742-01, P = 0.566742 Days, E = 131.295149 Days

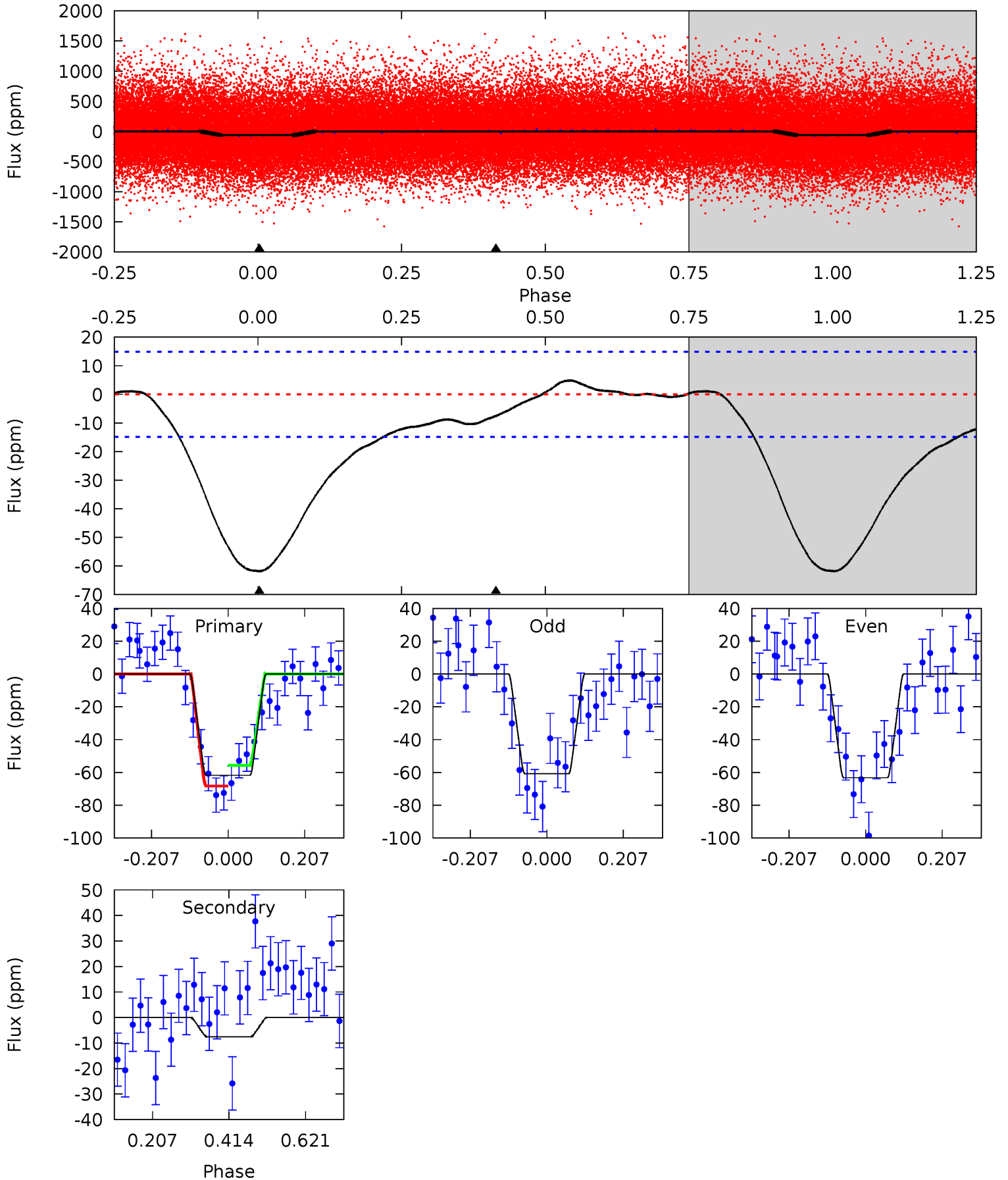
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.38	0.62	0	0	4.31	0.99	0.06	6.38	6.38	0.62	0.62	0.32	0.84	0.03	6.80



Alt Model-Shift Uniqueness Test

007031742-01, P = 0.566782 Days, E = 131.268901 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.3	2.23	0	0	4.41	1.26	0.19	18.3	18.3	2.23	2.23	0.36	0.90	0.07	1.87



Stellar Parameters For KIC 007031742

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6063^{+190}_{-253}	$4.476^{+0.052}_{-0.208}$	$0.070^{+0.250}_{-0.300}$	$1.012^{+0.318}_{-0.106}$	$1.117^{+0.130}_{-0.159}$	$1.519^{+0.404}_{-0.804}$
	+3%/-4%	+1%/-5%	+357%/-429%	+31%/-10%	+12%/-14%	+27%/-53%
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 007031742-01 / KOI 7575.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-2 ± 3	$1.00^{+0.89}_{-0.68}$	3274^{+225}_{-169}	-3033^{+6983}_{-433}	$0.109^{+1.212}_{-0.195}$
Alt.	-8 ± 3	$1.13^{+1.00}_{-0.71}$	3256^{+230}_{-176}	3132^{+1972}_{-6105}	$0.536^{+3.538}_{-0.405}$

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

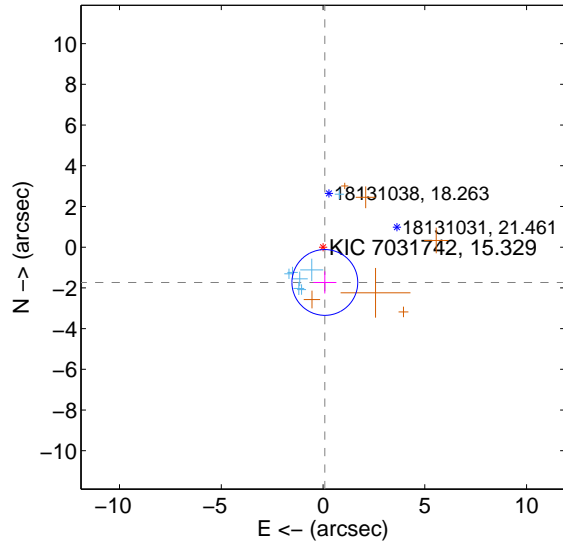
Supplemental centroid analysis for 007031742-01. Kepler magnitude: 15.33. Transit SNR 6.35

There are 7 quarters with good PRF difference image offsets

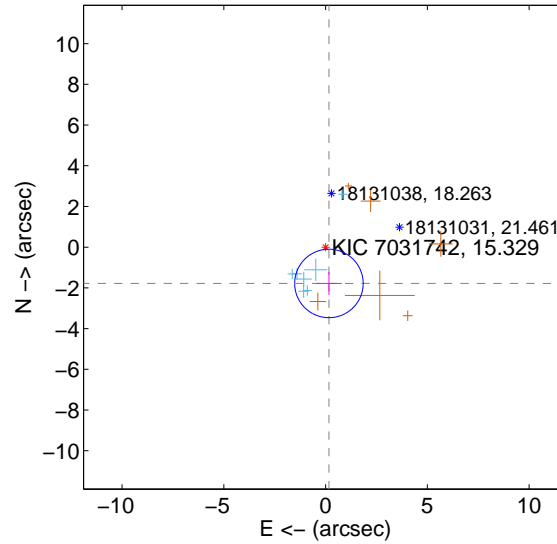
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.735 ± 0.539	3.22	-0.089 ± 0.566	-1.733 ± 0.543
PRF-fit source offset from KIC position	1.789 ± 0.561	3.19	-0.164 ± 0.634	-1.781 ± 0.566
photometric centroid source offset	3.64 ± 2.09	1.75	-1.89 ± 2.29	3.11 ± 2.00

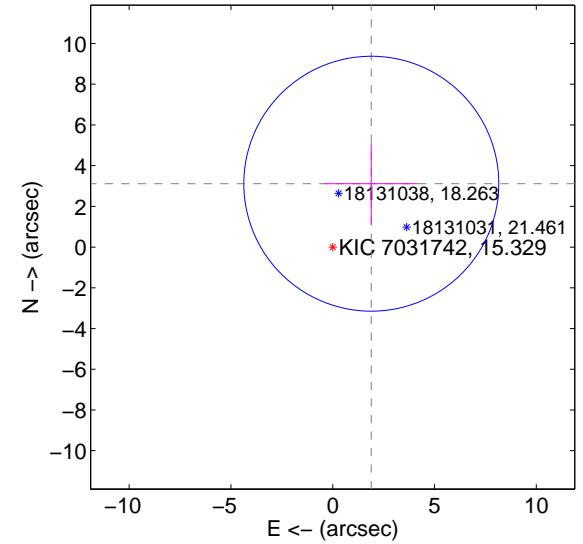
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

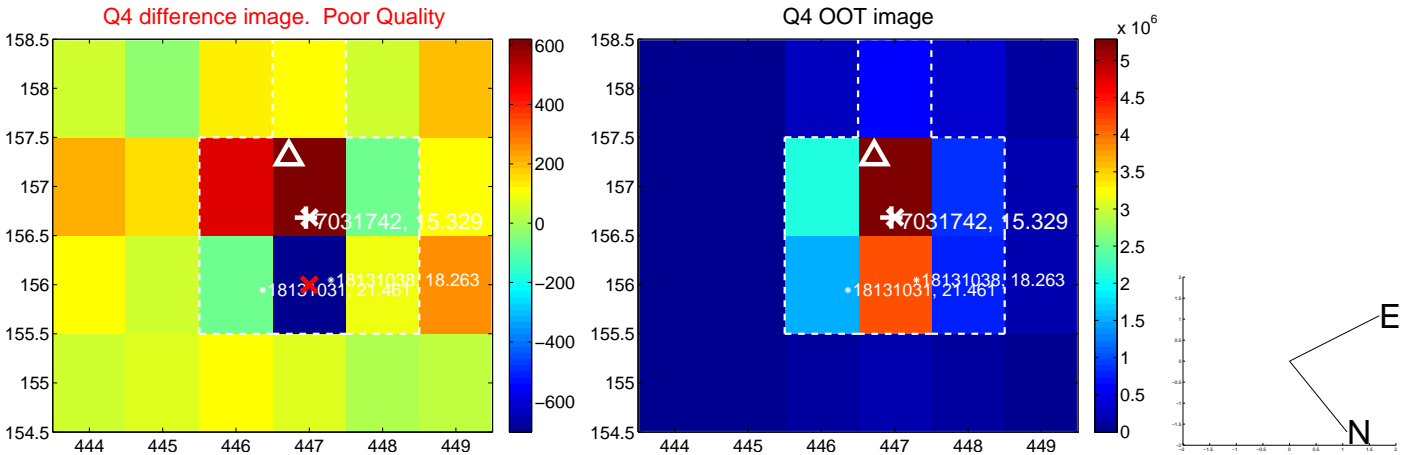
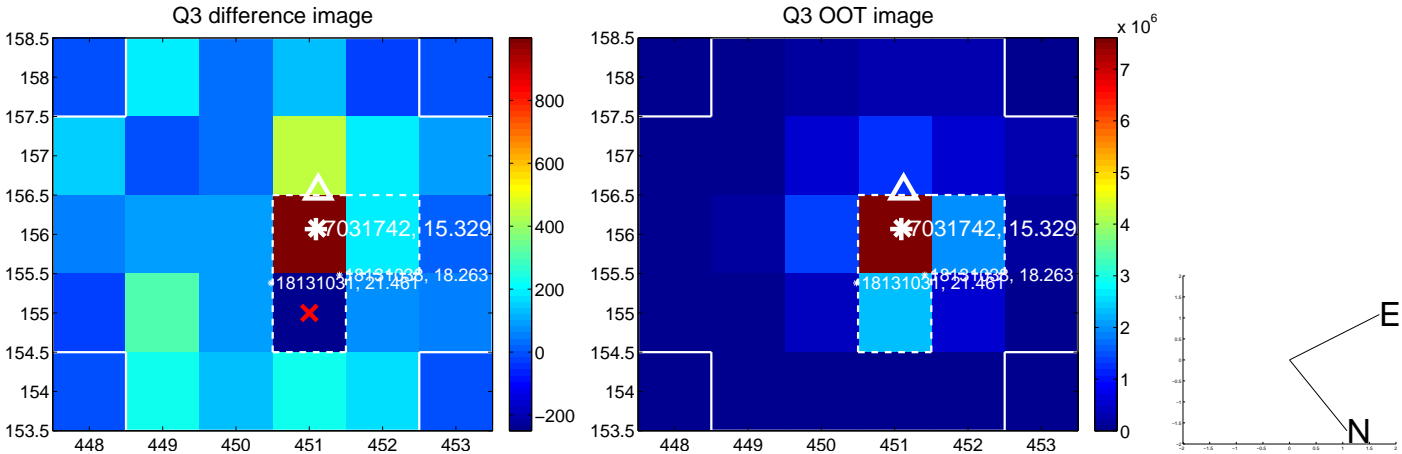
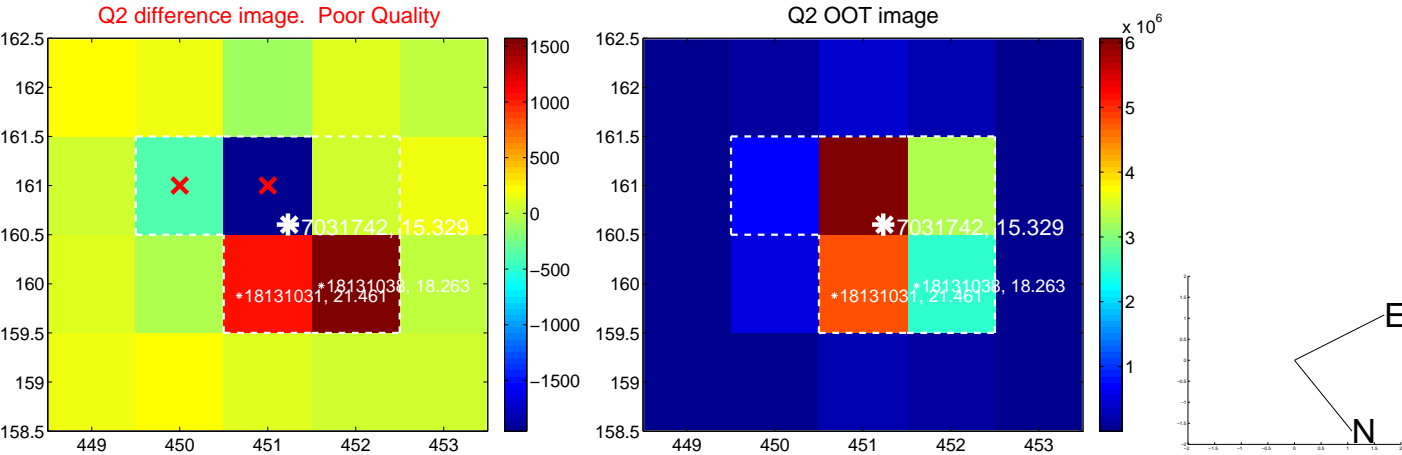
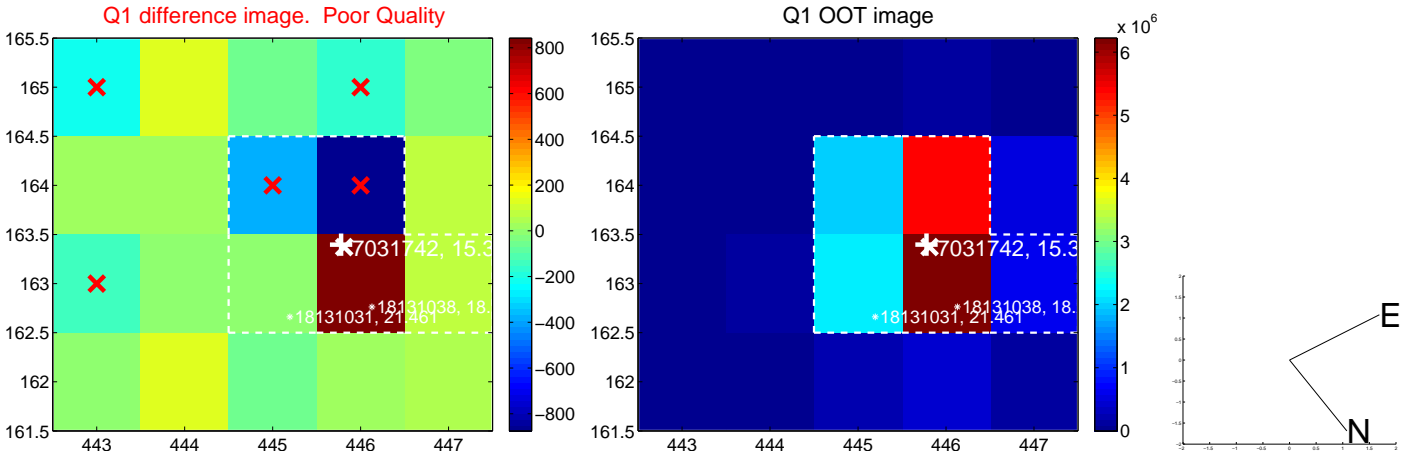


offset from photometric centroids

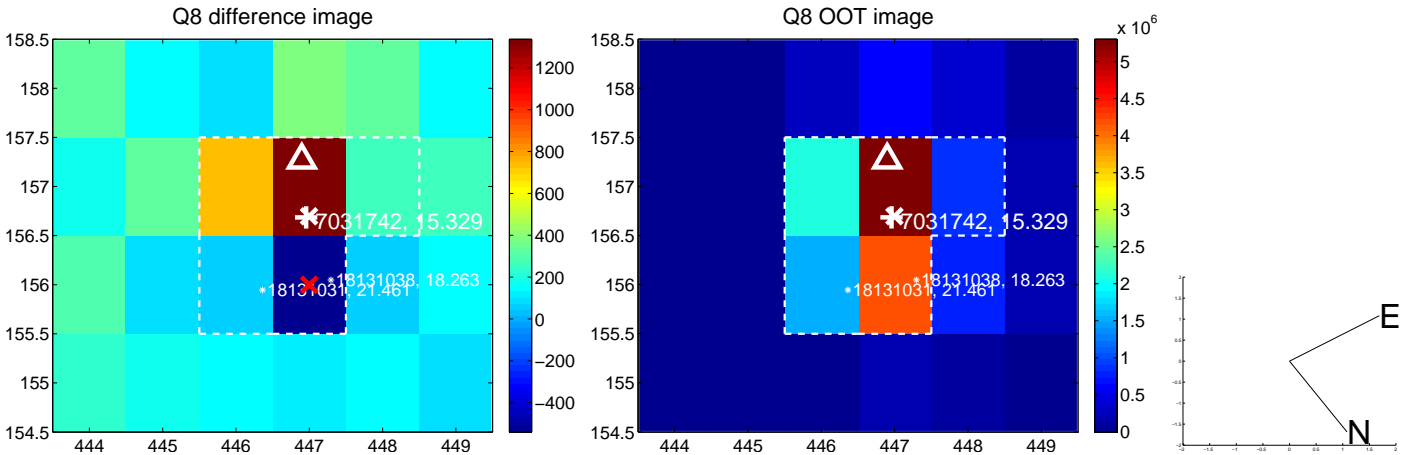
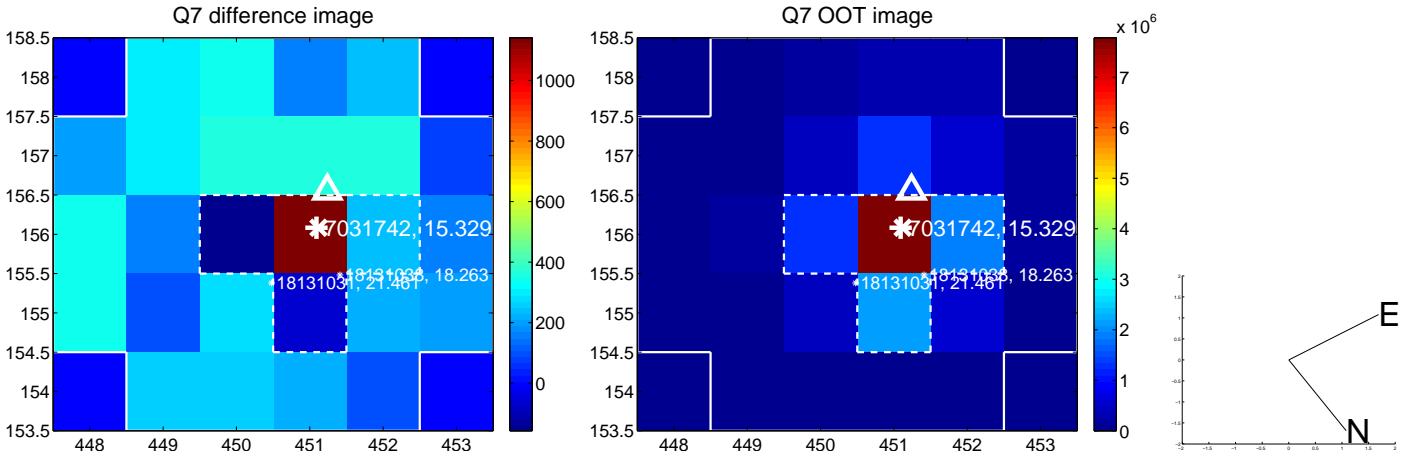
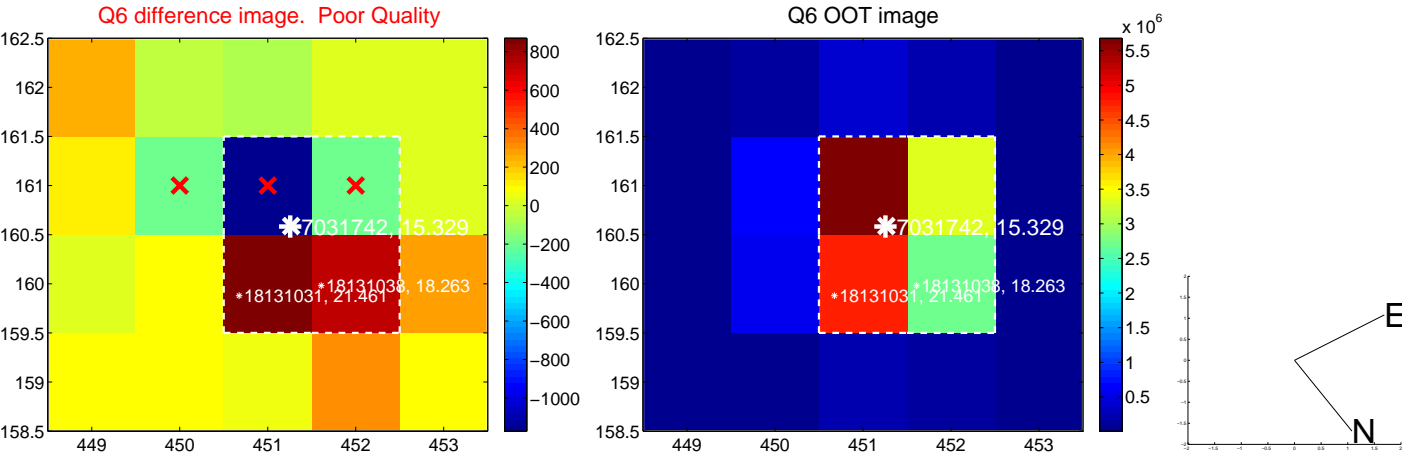
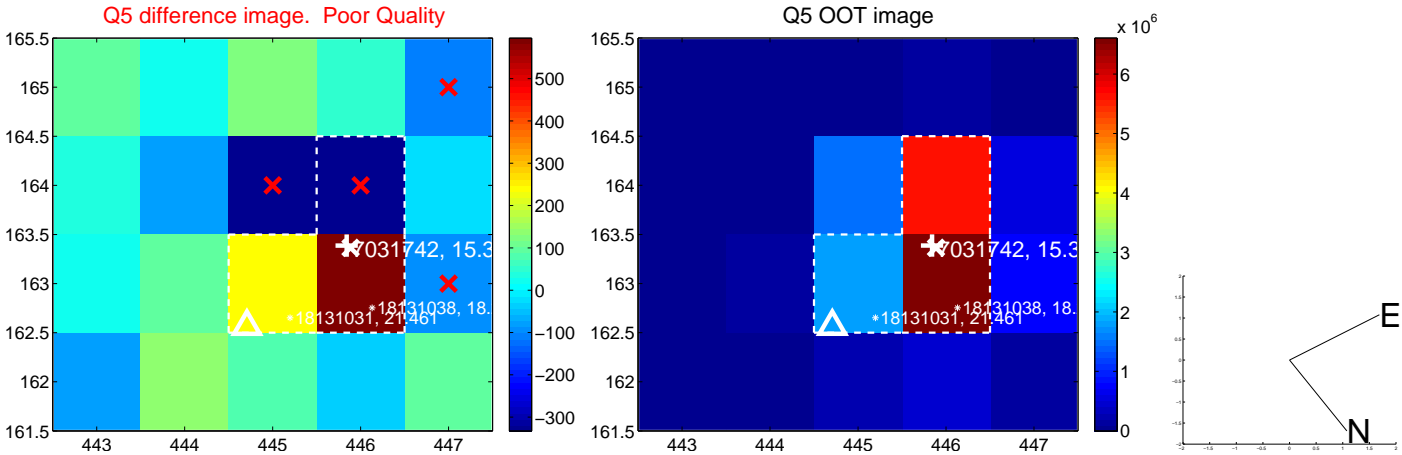


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

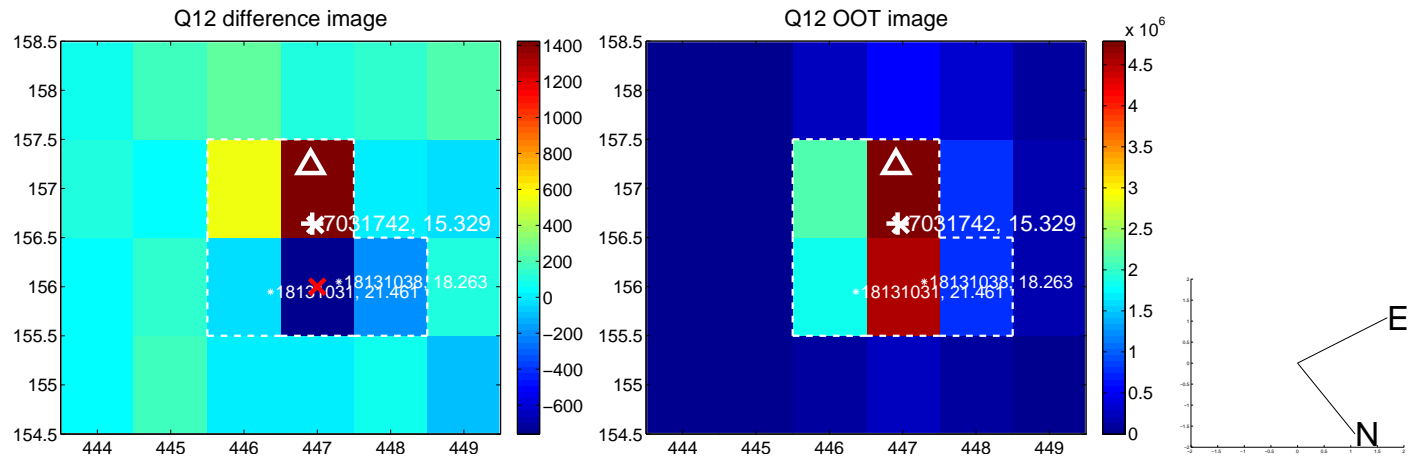
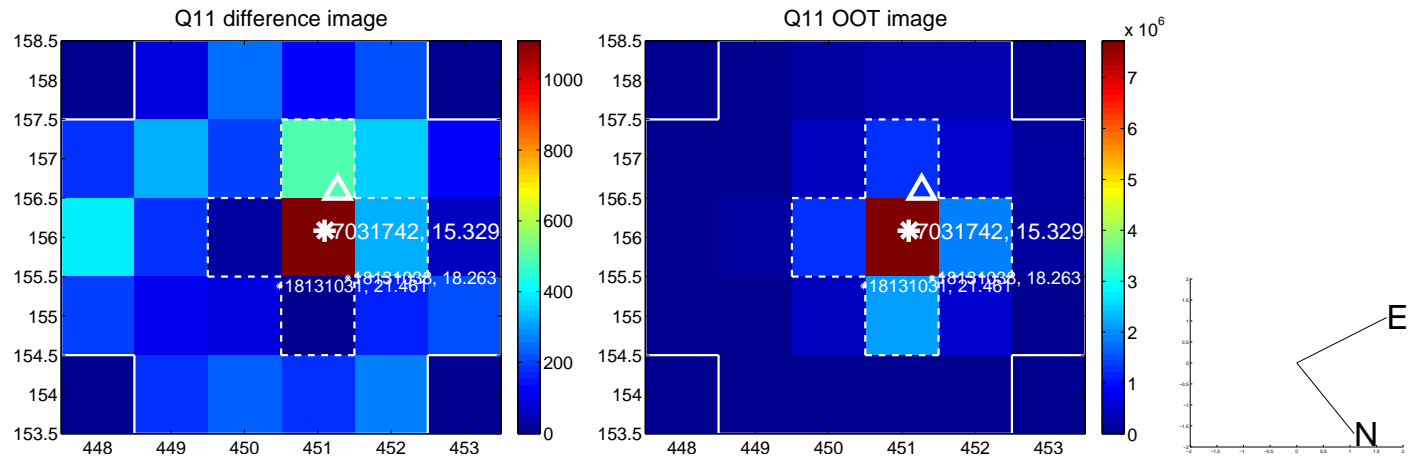
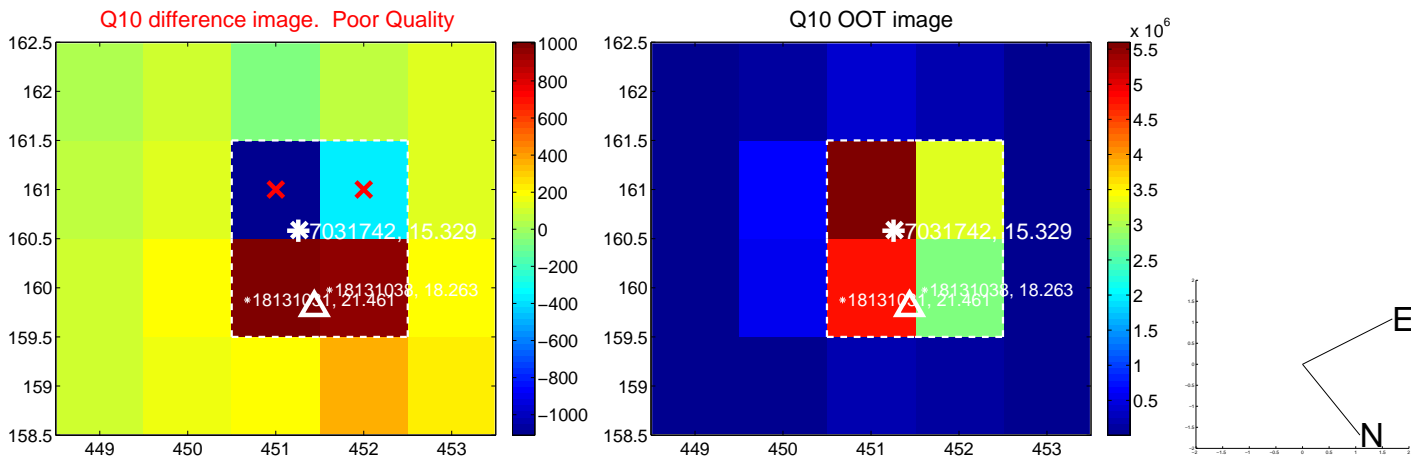
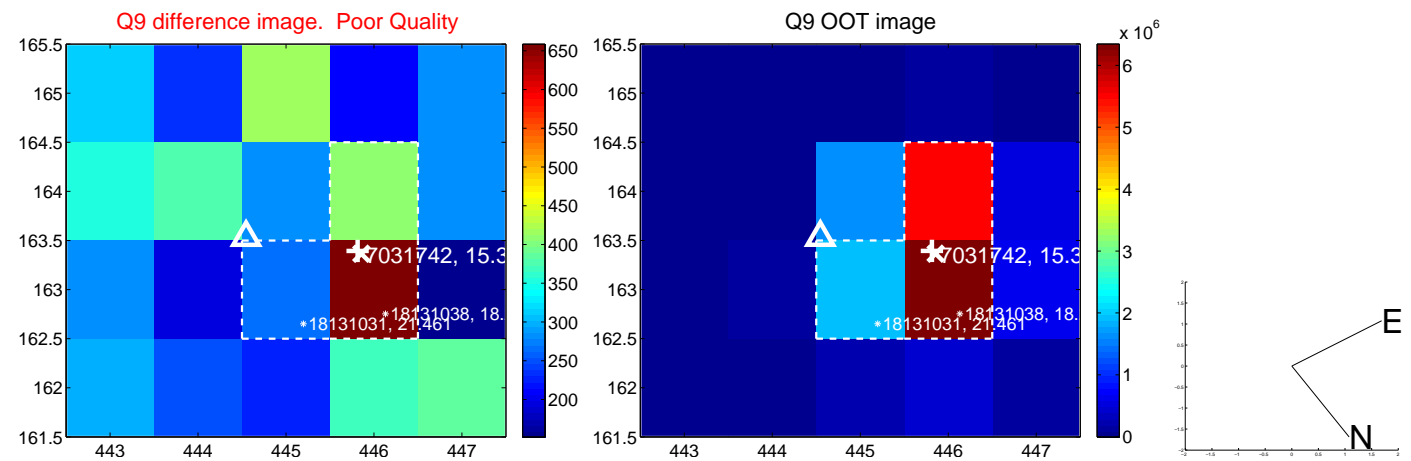
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



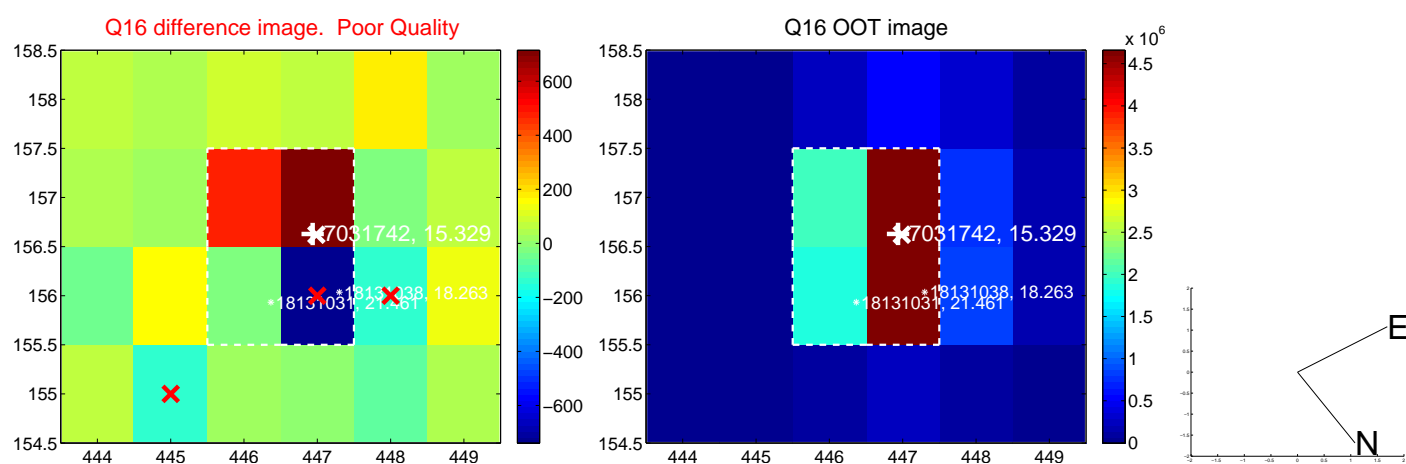
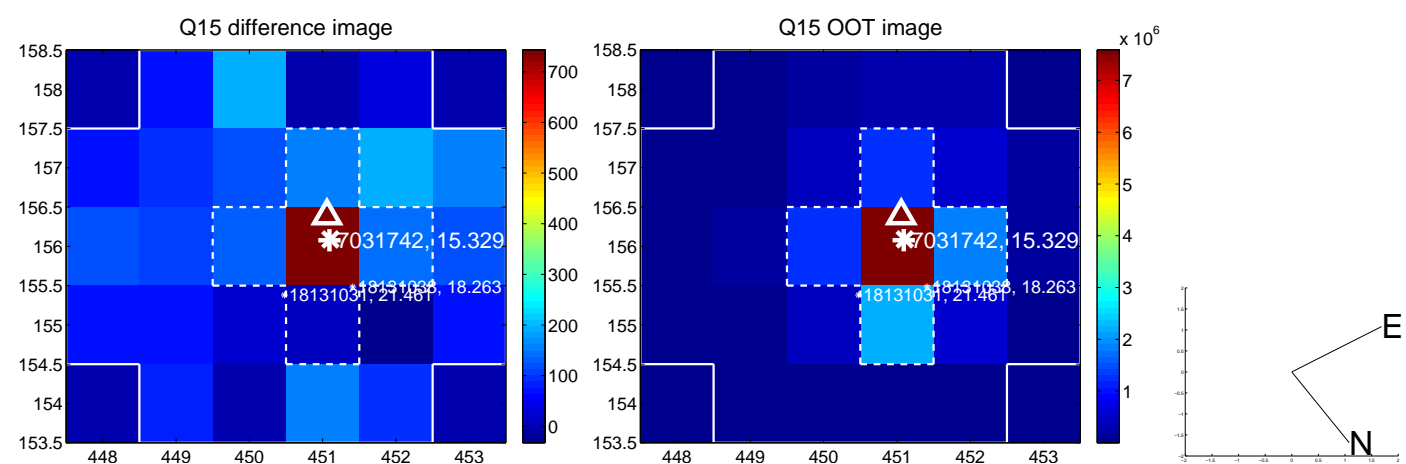
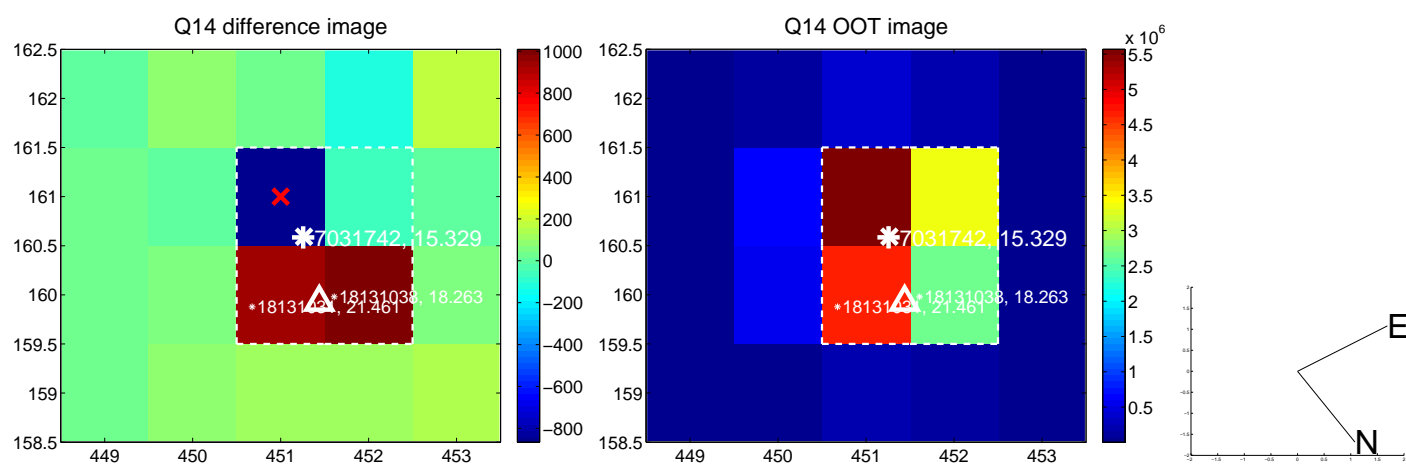
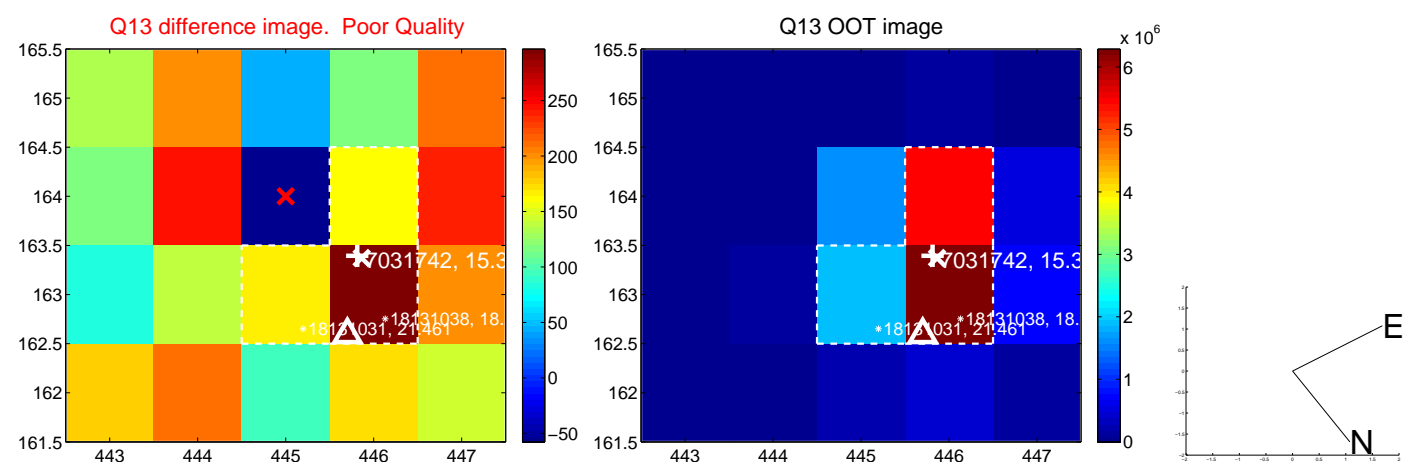
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

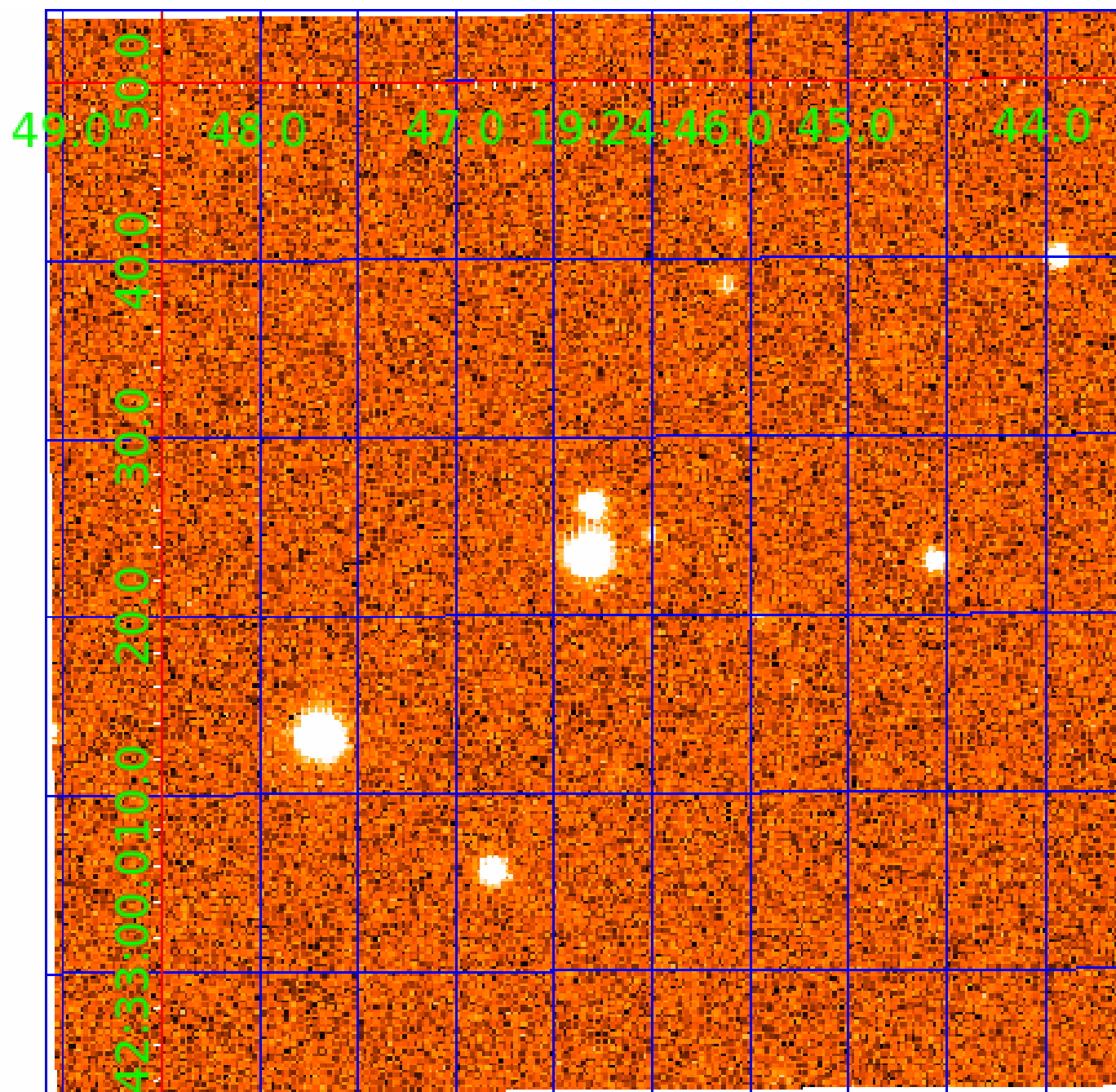


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007031742

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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007031742-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
007031742-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
007031742-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—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 007031742-02

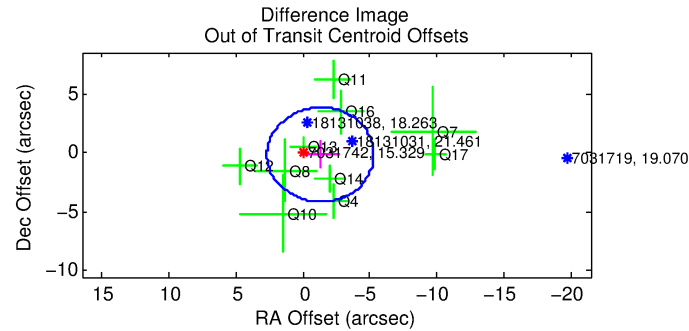
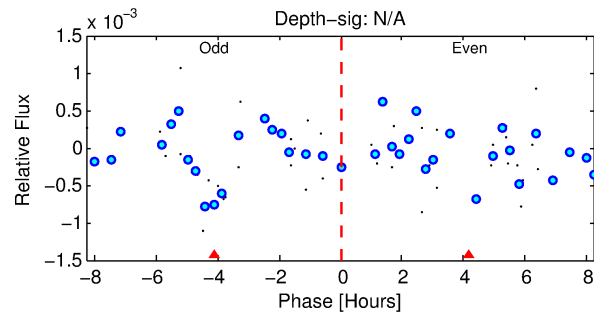
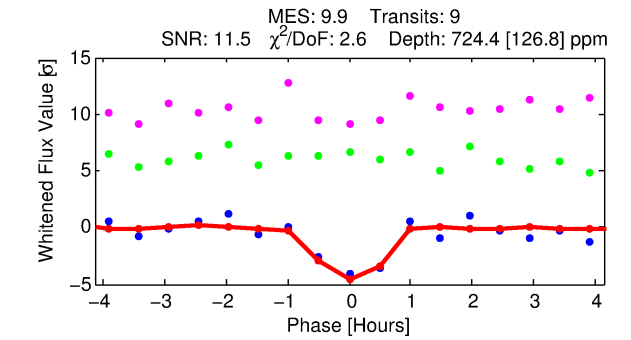
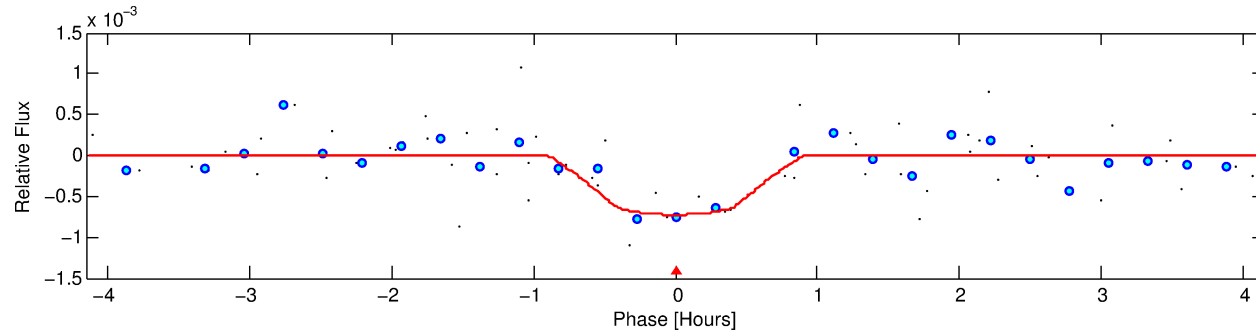
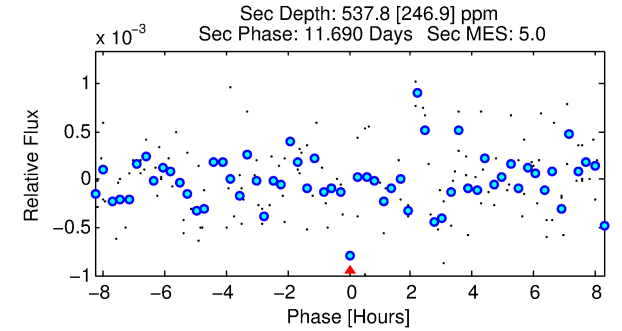
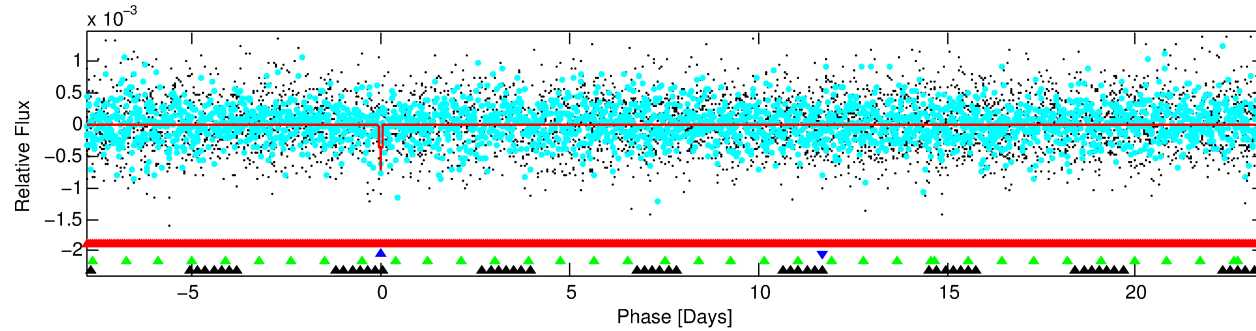
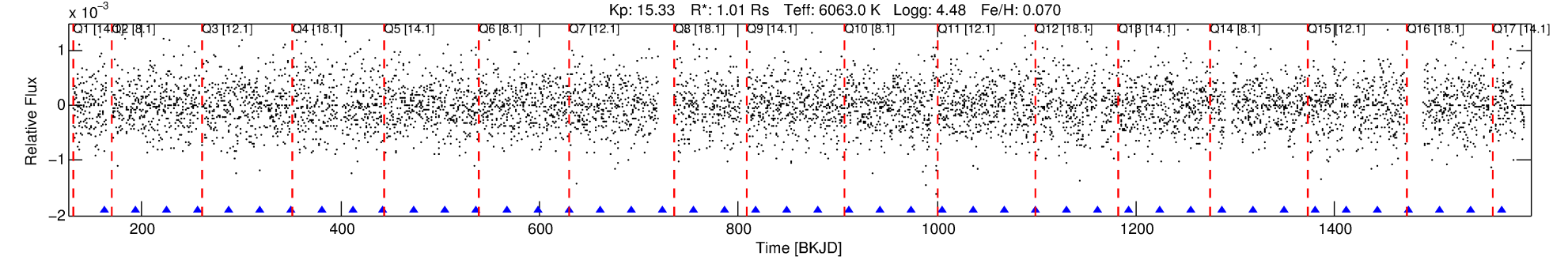
No Significant Match Found

DV One-Page Summary

KIC: 7031742 Candidate: 2 of 4 Period: 31.240 d

KOI: K07575 Corr: No Ephemeris Match

Kp: 15.33 R*: 1.01 Rs Teff: 6063.0 K Logg: 4.48 Fe/H: 0.070



DV Fit Results:

Period = 31.23965 [0.00031] d
Epoch = 161.9630 [0.0091] BKJD
Rp/R* = 0.0262 [0.1213]
a/R* = 136.08 [2969.66]
b = 0.66 [19.12]
Seff = 30.54 [12.73]
Teff = 599 [62] K
Rp = 2.89 [13.42] Re
a = 0.2015 [0.0531] AU
Ag = 1437.45 [13344.81] [0.11σ]
Teffp = 5707 [13235] K [0.39σ]

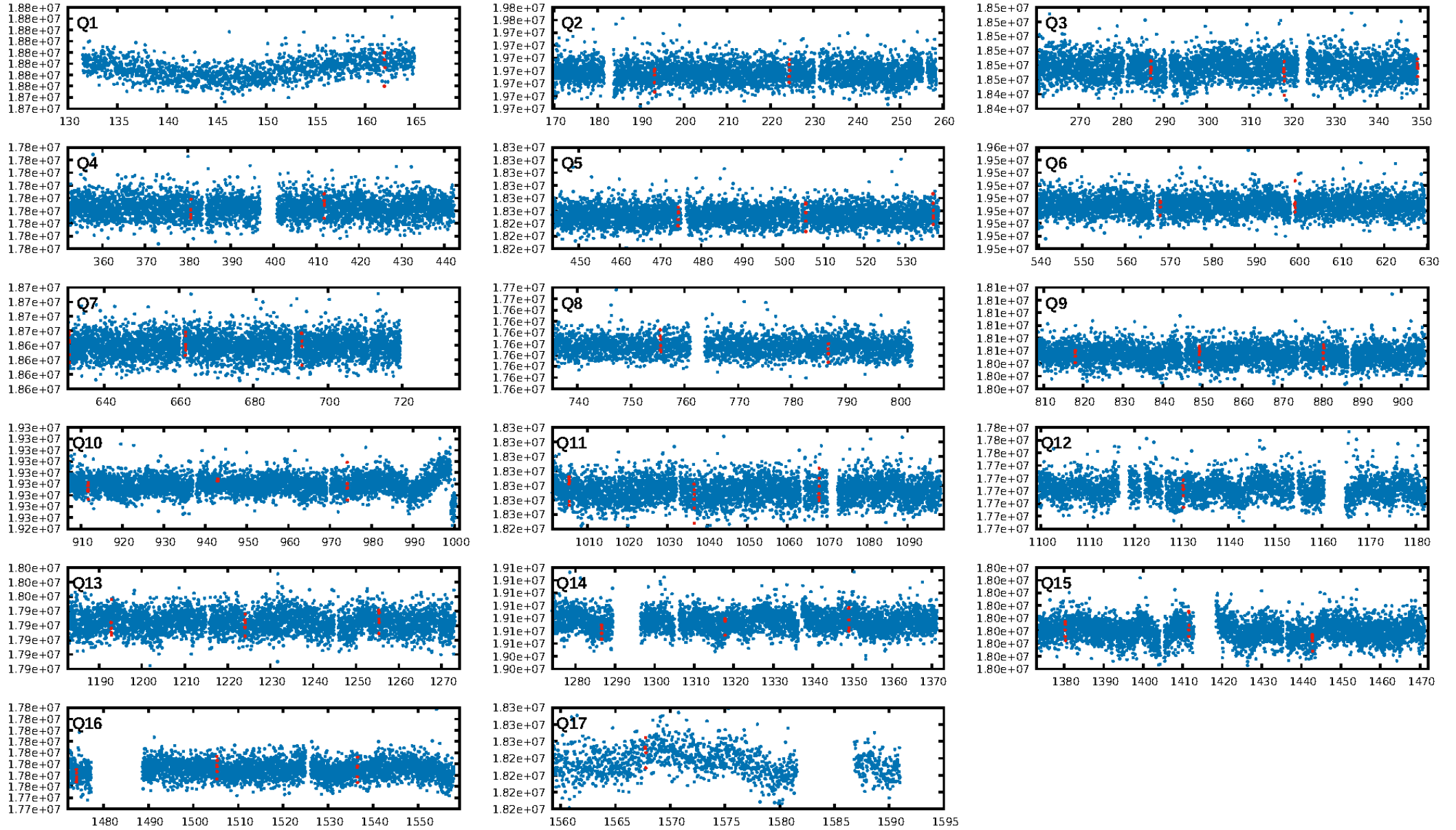
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [55.29σ]
LongPeriod-sig: 100.0% [61.26σ]
ModelChiSquare2-sig: 86.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.84e-09
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: -3.292
Centroid-sig: 97.1%
Centroid-so: 0.262 arcsec [0.29σ]
OotOffset-rm: 1.309 arcsec [0.98σ]
KicOffset-rm: 1.427 arcsec [1.28σ]
OotOffset-st: 2/2/4/2 [10]
KicOffset-st: 2/2/4/2 [10]
DiffImageQuality-fgm: 0.10 [1/10]
DiffImageOverlap-fno: 0.00 [0/16]

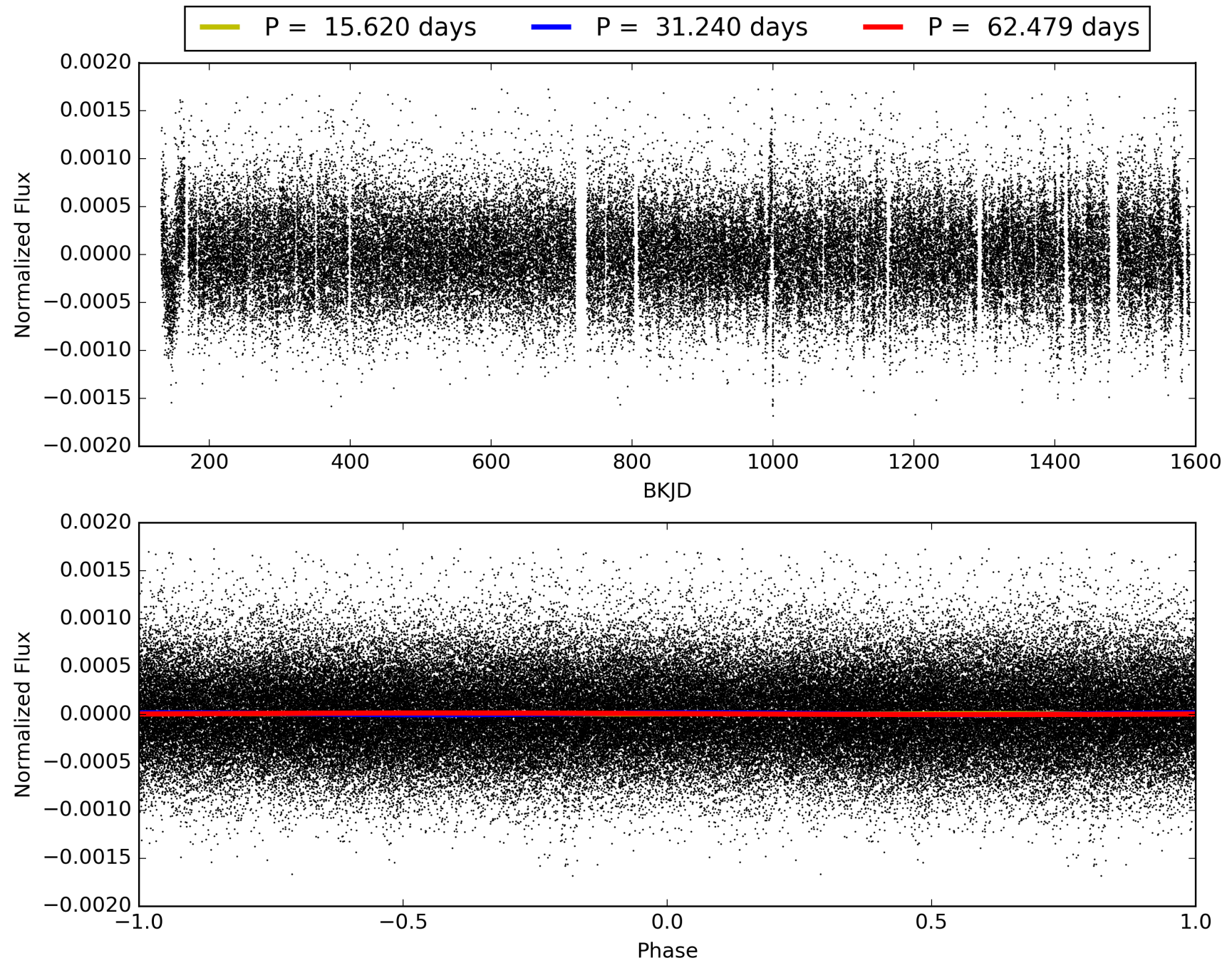
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 18:30:31 Z

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

TCE 007031742-02, PDC Light Curves

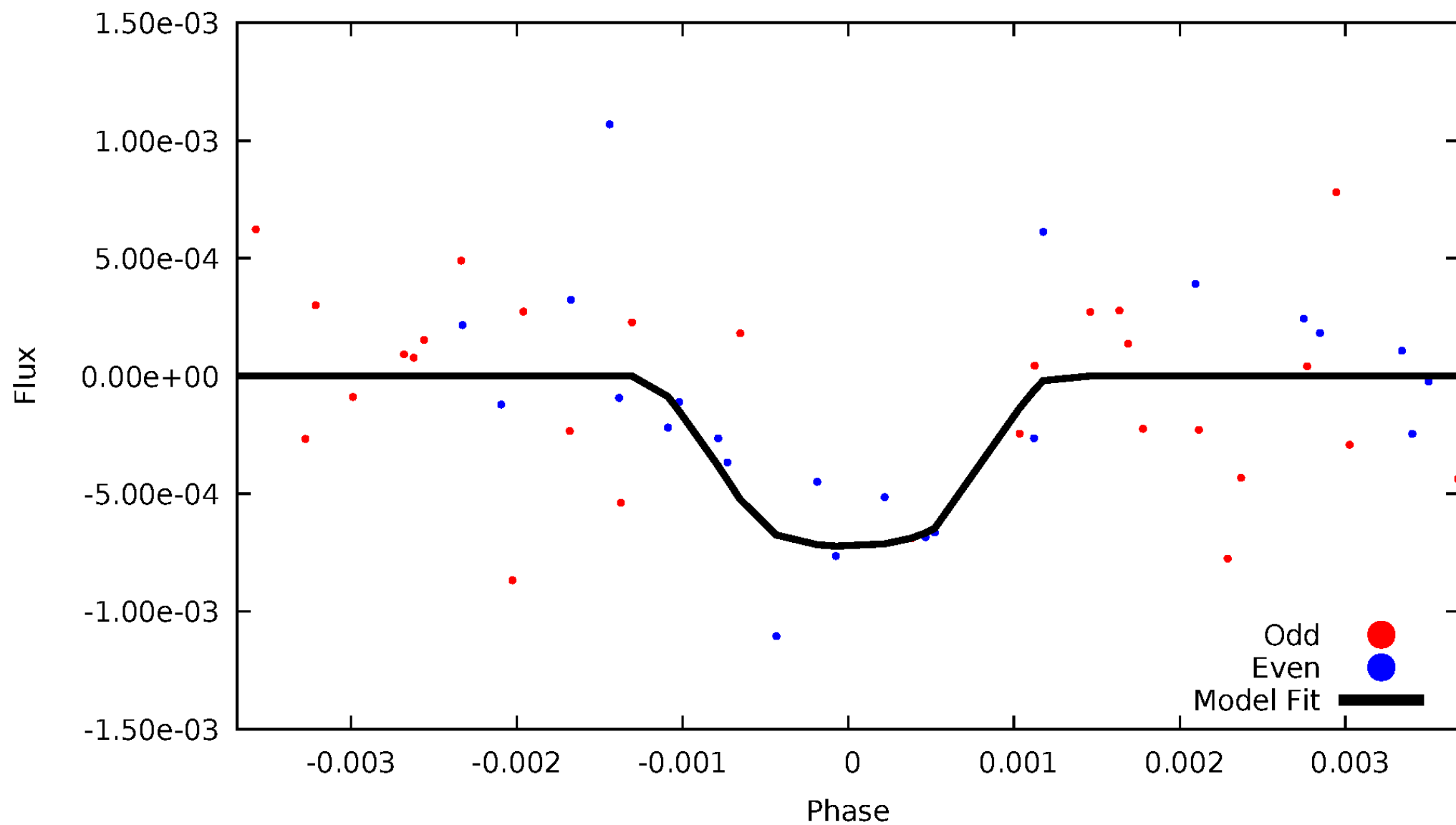


TCE 007031742-02



DV Odd/Even

TCE 007031742-02

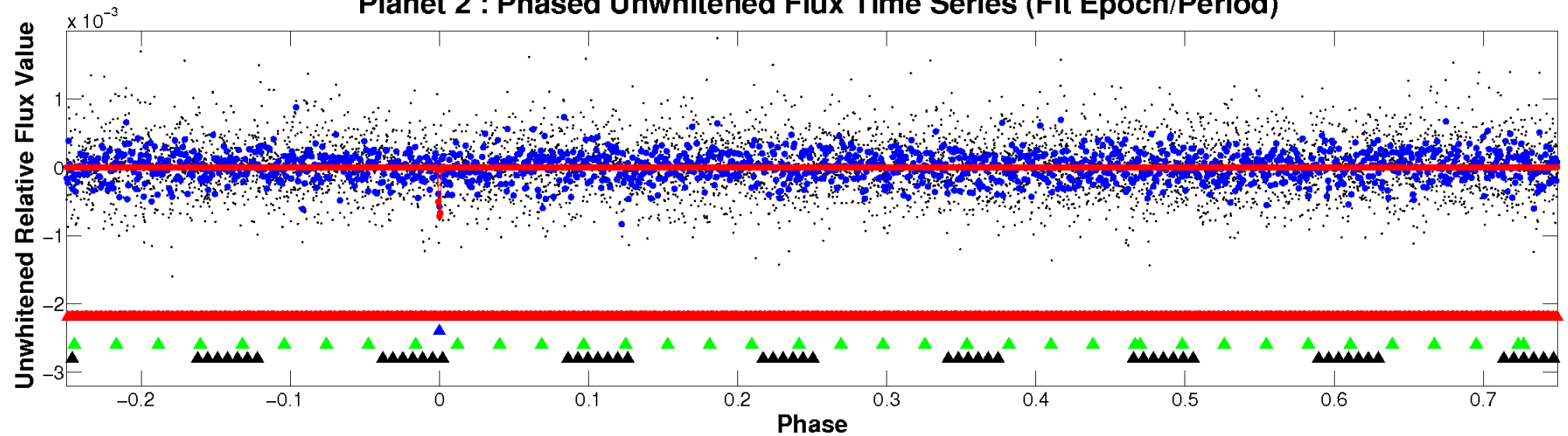


ALT Odd/Even

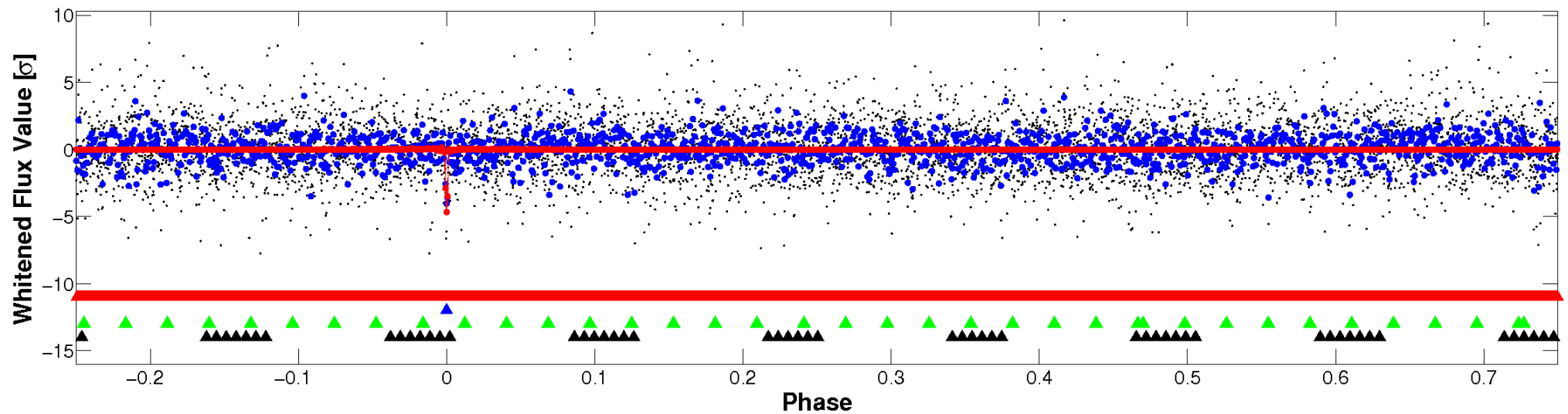
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

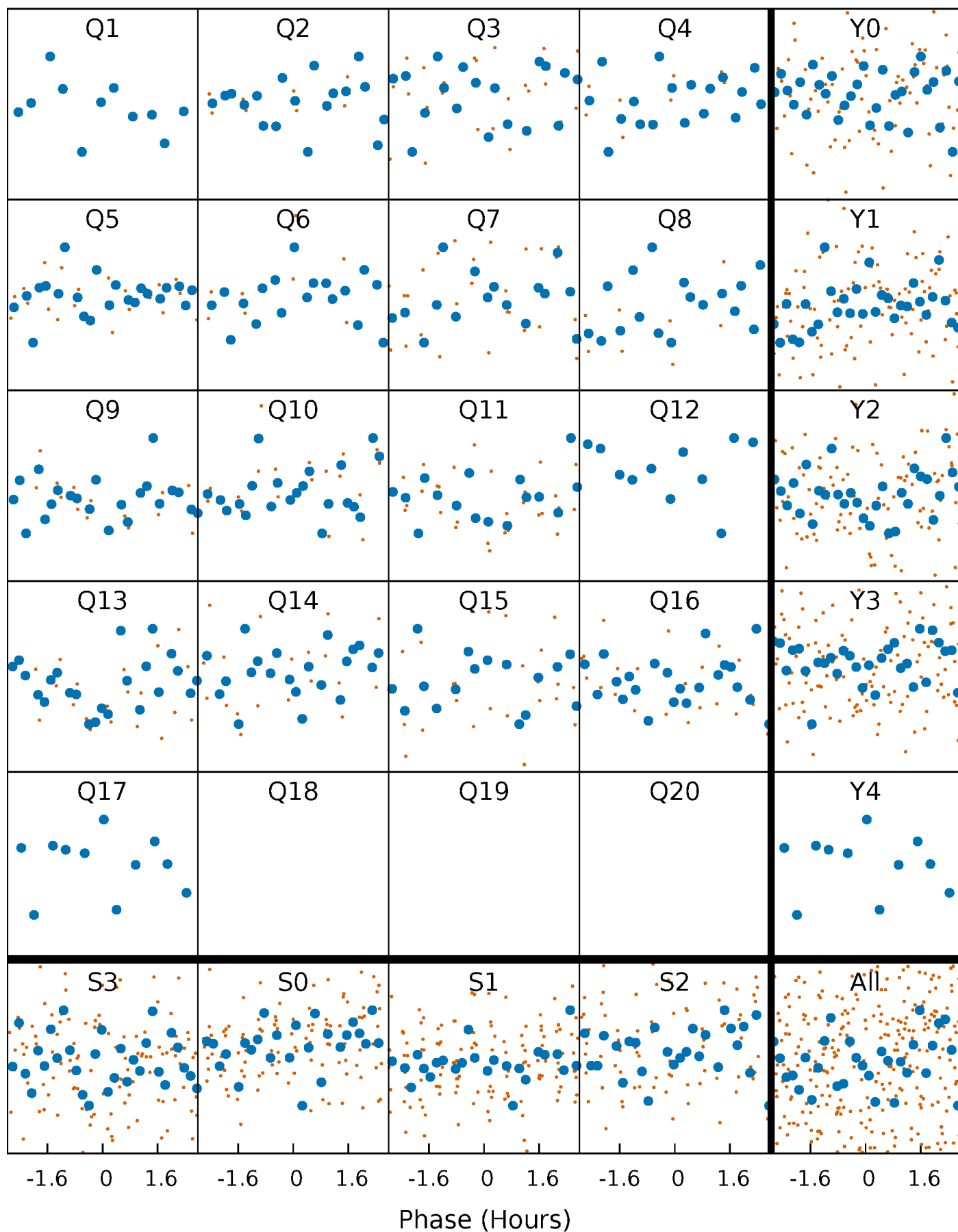


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



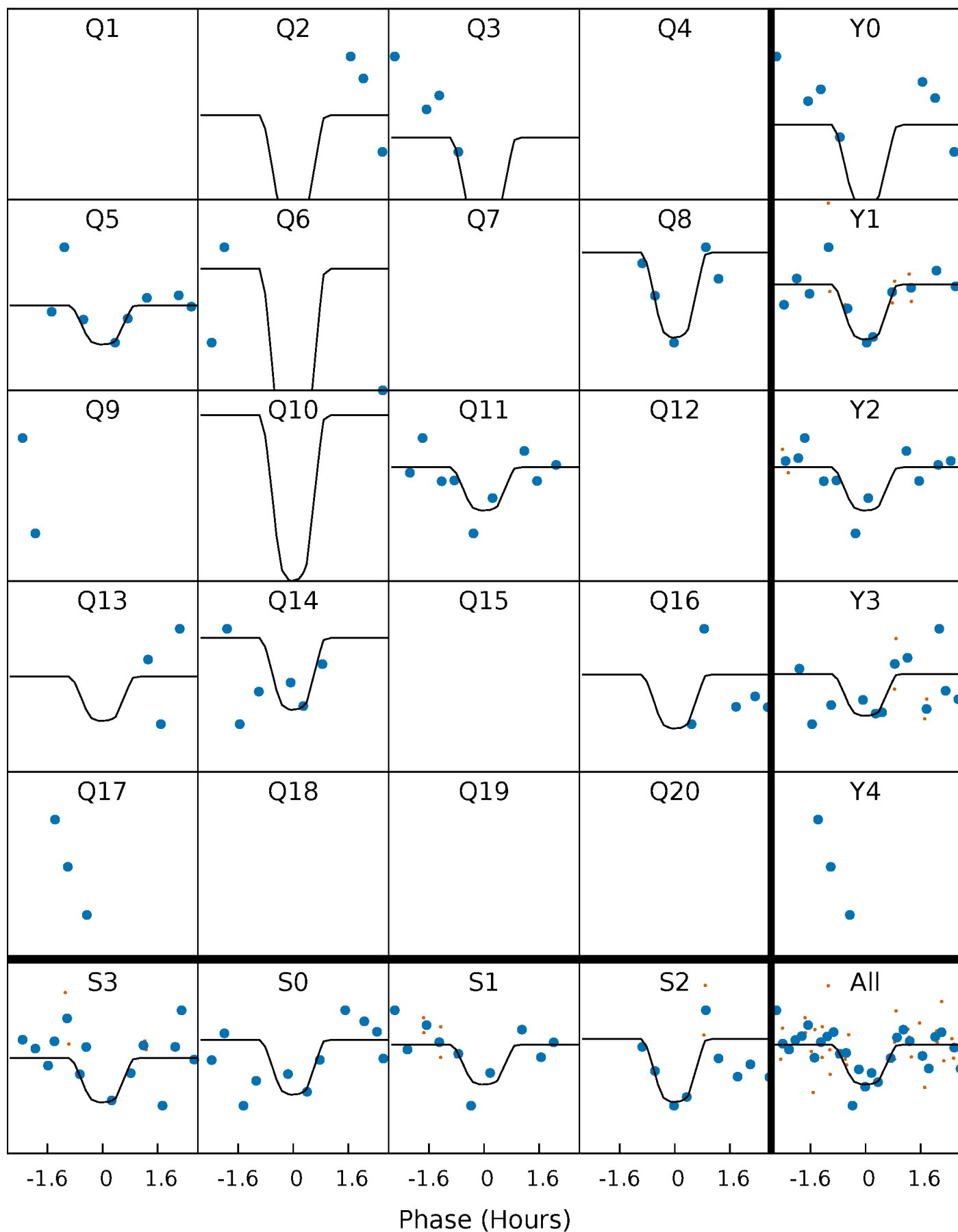
PDC Quarter-Phased Transit Curves

TCE 007031742-02 P= 31.239645 Days $T_0=161.962954$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 007031742-02 P= 31.239645 Days $T_0=161.962954$ (BKJD)

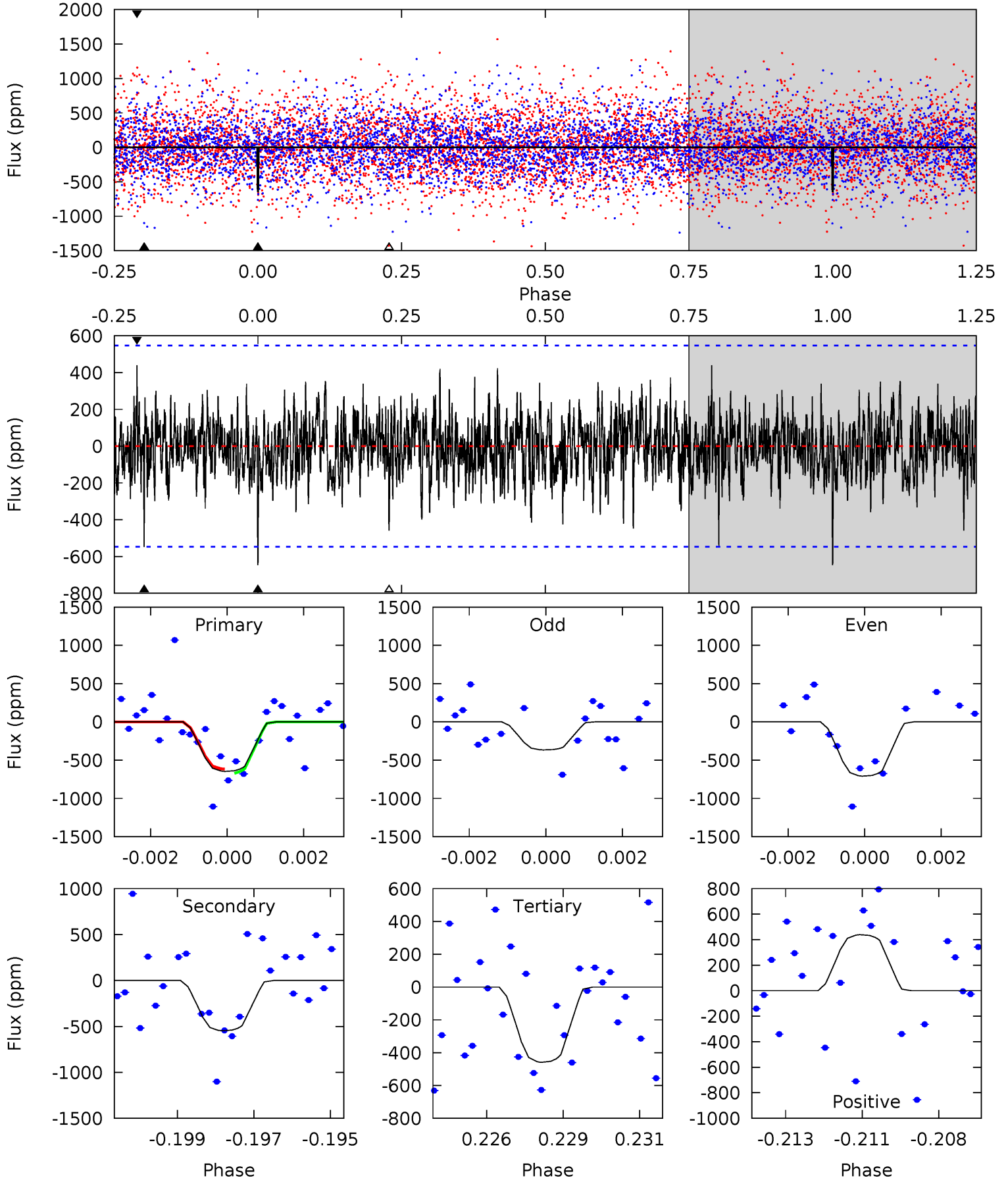


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

007031742-02, P = 31.239645 Days, E = 130.723309 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.28	5.31	4.45	4.26	5.30	3.05	1.32	1.82	2.02	0.86	1.05	1.52	1.01	0.40	0.26



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 007031742

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6063^{+190}_{-253}	$4.476^{+0.052}_{-0.208}$	$0.070^{+0.250}_{-0.300}$	$1.012^{+0.318}_{-0.106}$	$1.117^{+0.130}_{-0.159}$	$1.519^{+0.404}_{-0.804}$
	+3%/-4%	+1%/-5%	+357%/-429%	+31%/-10%	+12%/-14%	+27%/-53%
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 007031742-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-548 ± 103	$10.61^{+10.47}_{-7.26}$	856^{+63}_{-48}	3547^{+1999}_{-693}	107^{+953}_{-81}
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

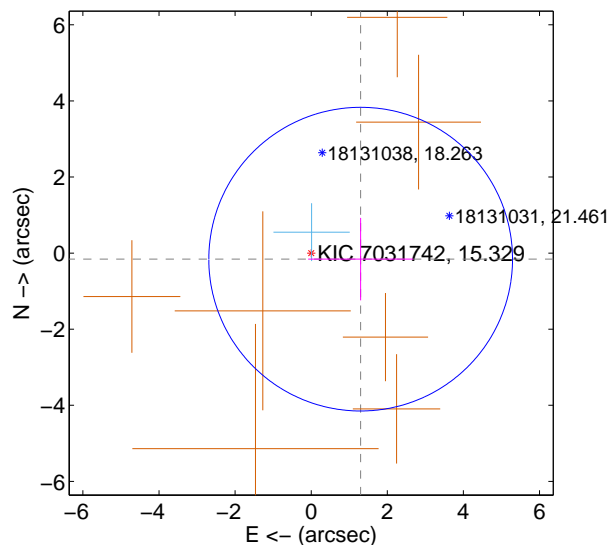
Supplemental centroid analysis for 007031742-02. Kepler magnitude: 15.33. Transit SNR 11.51

There are 1 quarters with good PRF difference image offsets

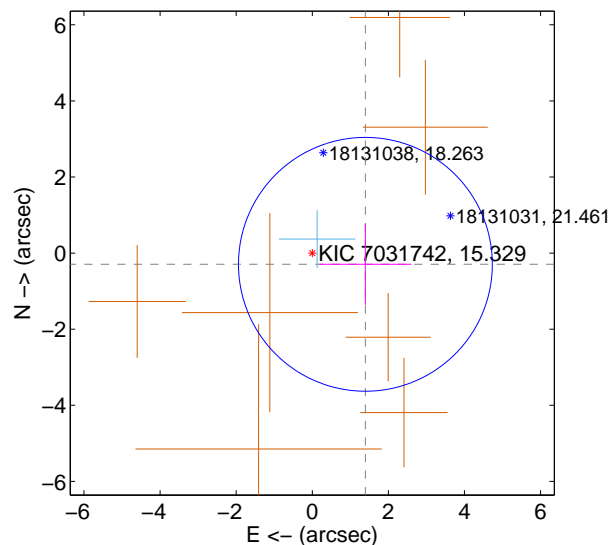
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.309 ± 1.330	0.98	-1.300 ± 1.380	-0.159 ± 1.084
PRF-fit source offset from KIC position	1.427 ± 1.112	1.28	-1.396 ± 1.209	-0.295 ± 1.067
photometric centroid source offset	0.26 ± 0.90	0.29	-0.22 ± 0.93	0.14 ± 0.81

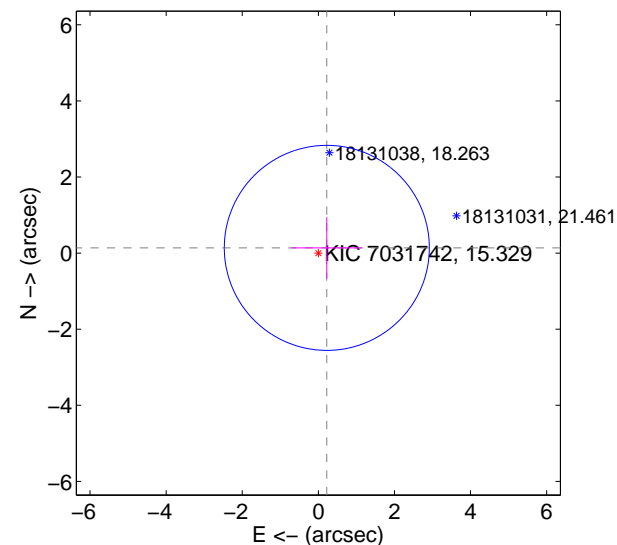
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

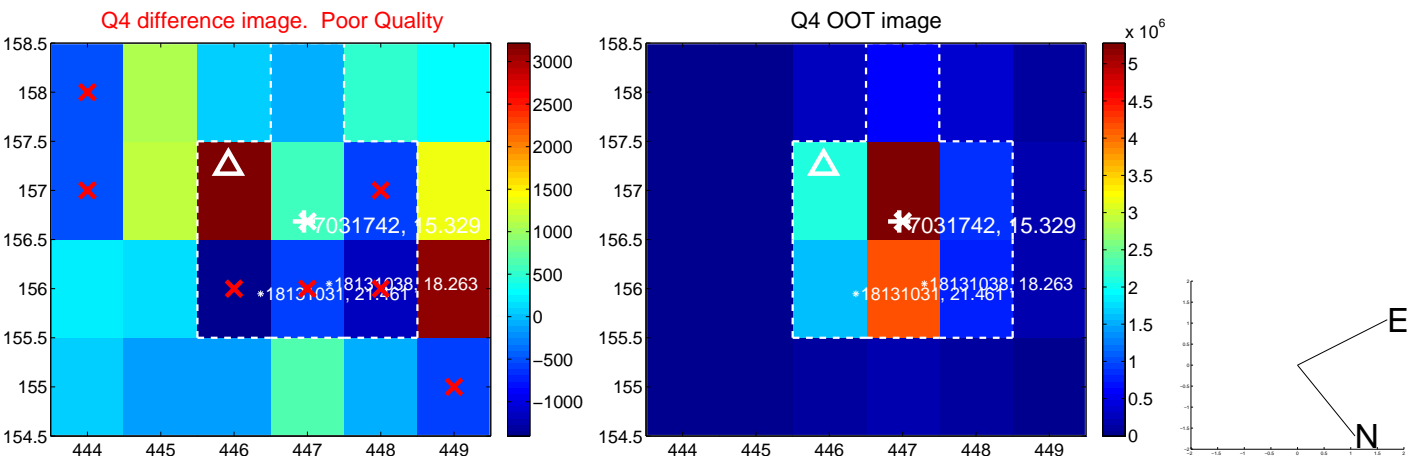
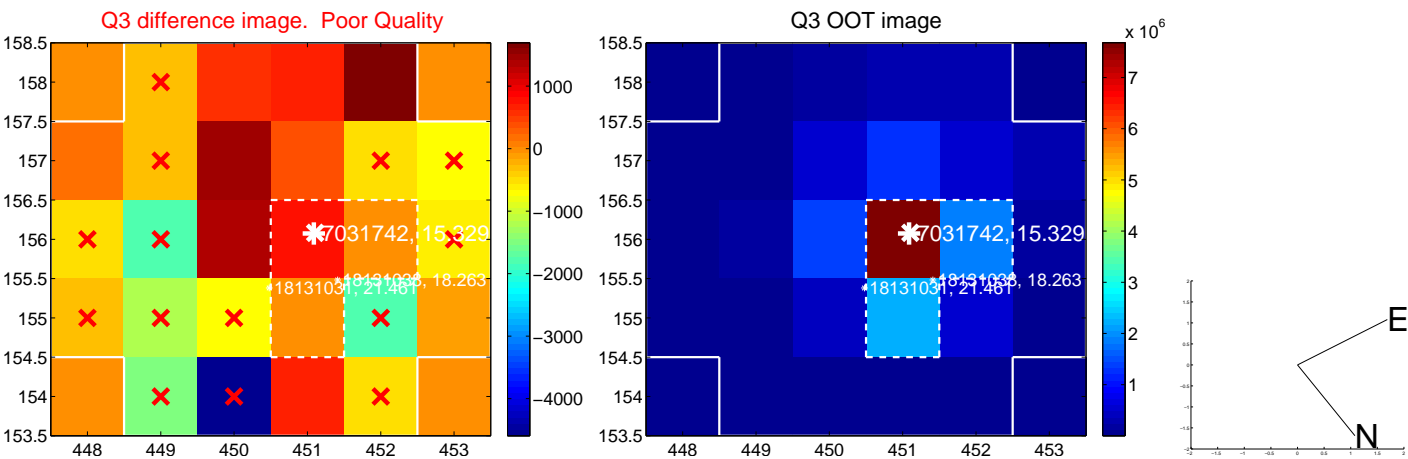
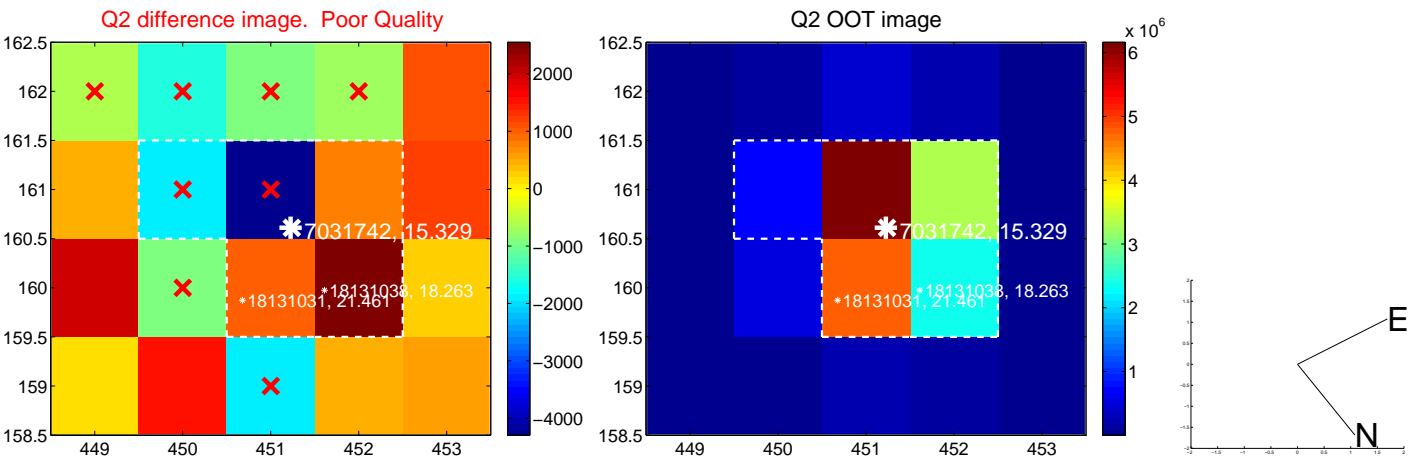
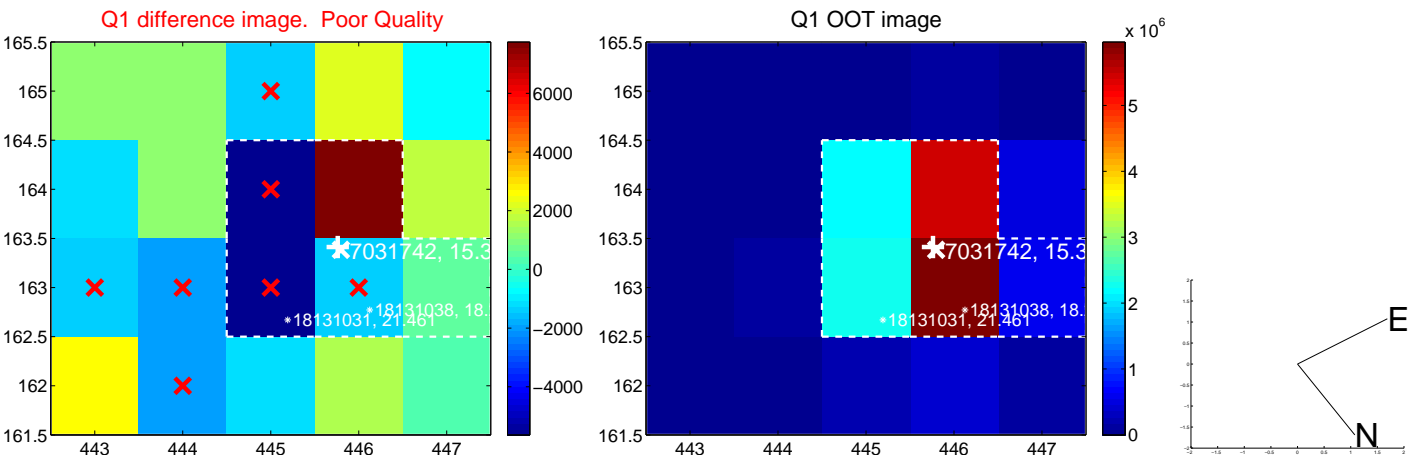


offset from photometric centroids

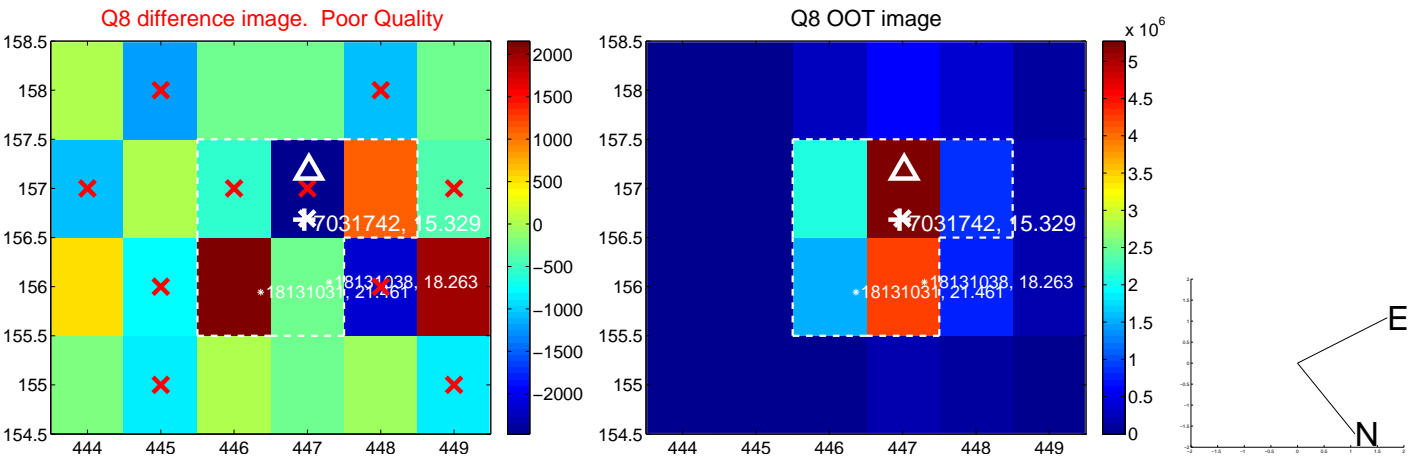
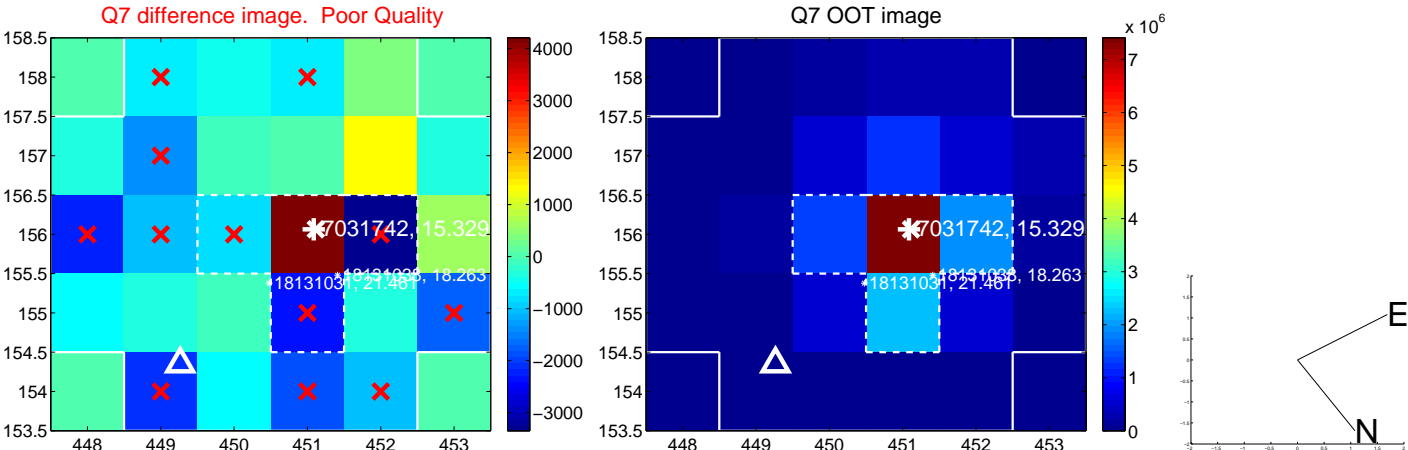
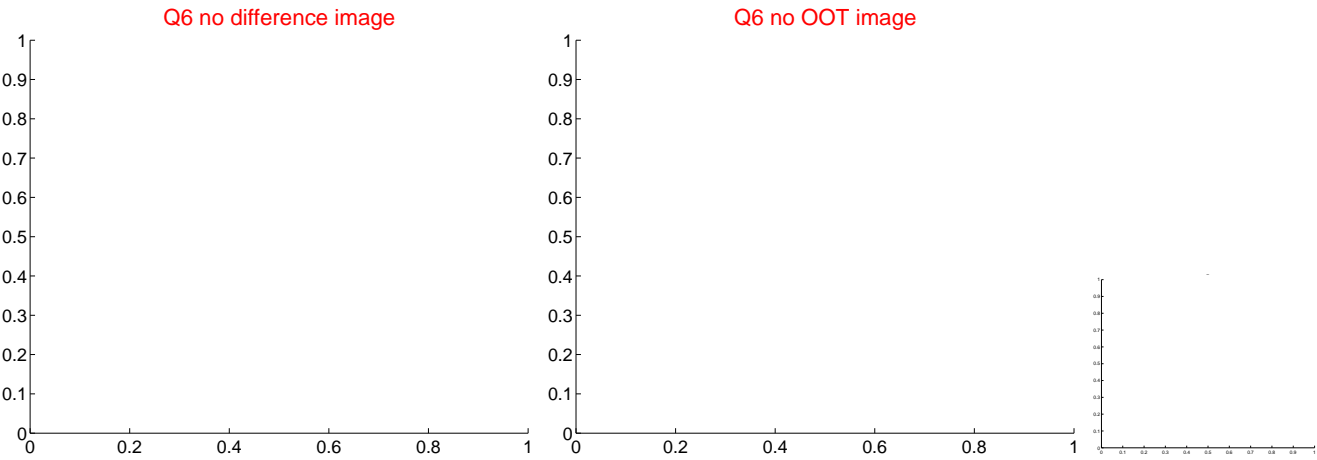
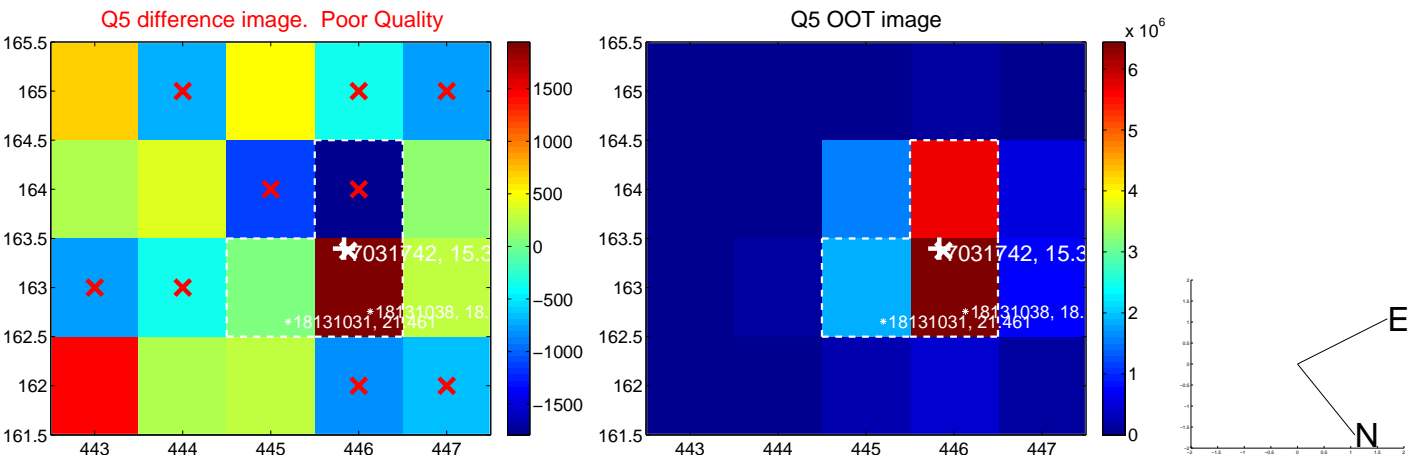


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

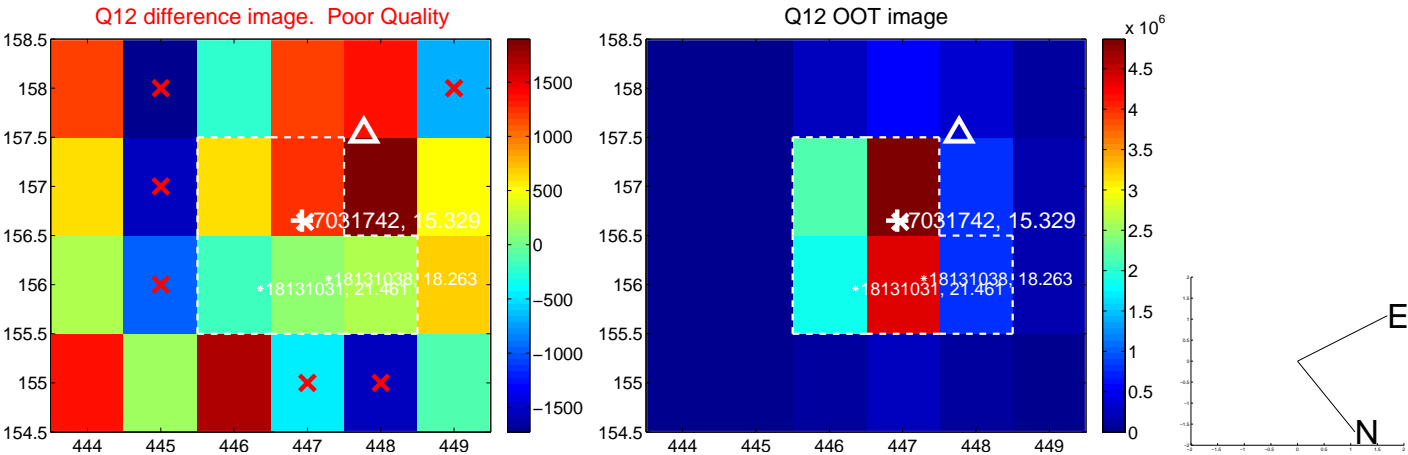
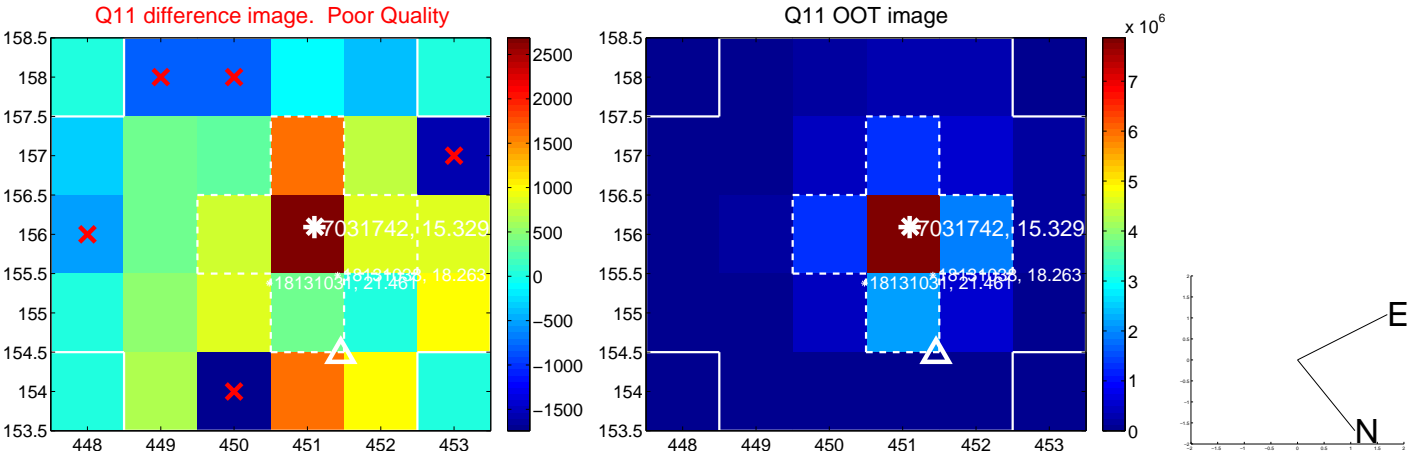
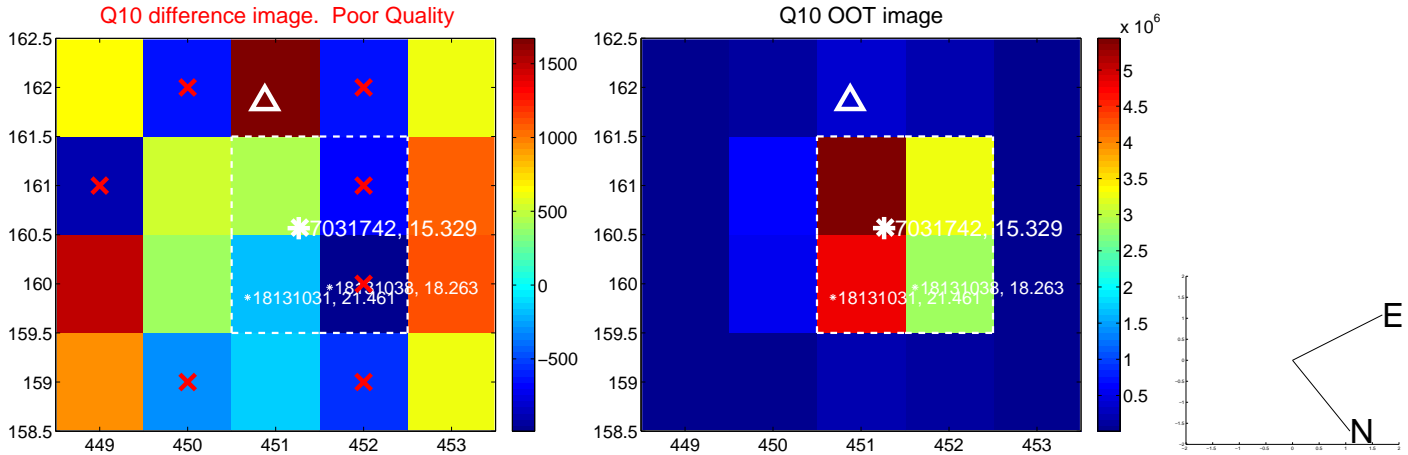
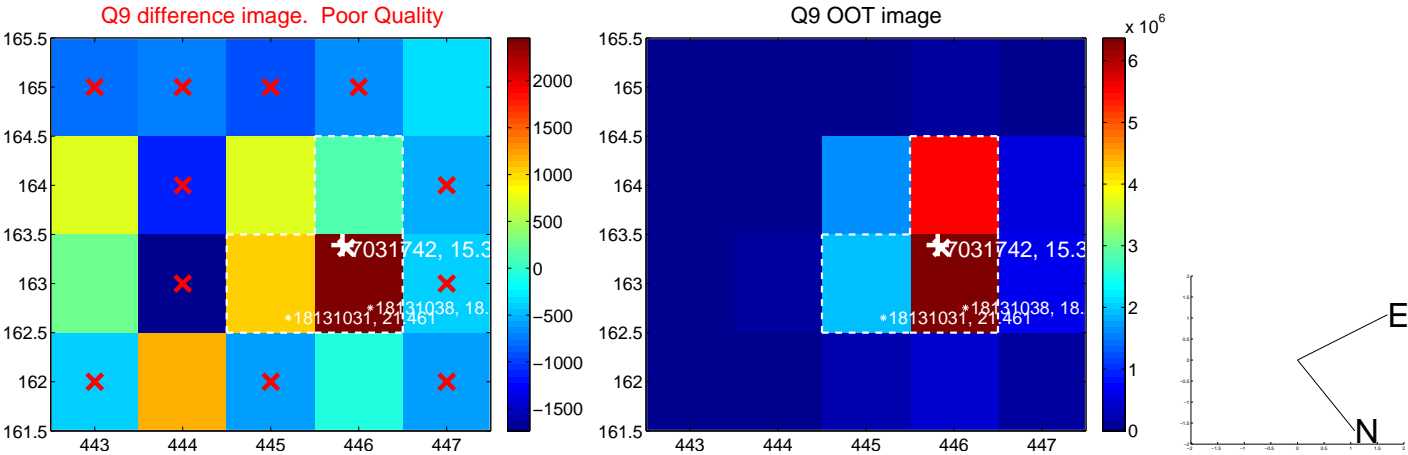
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



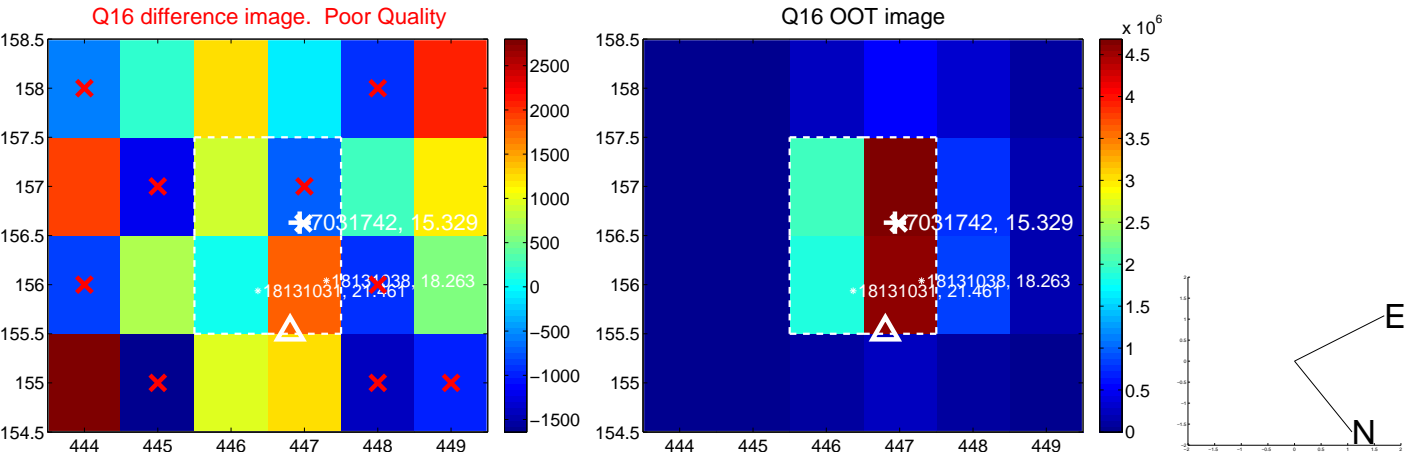
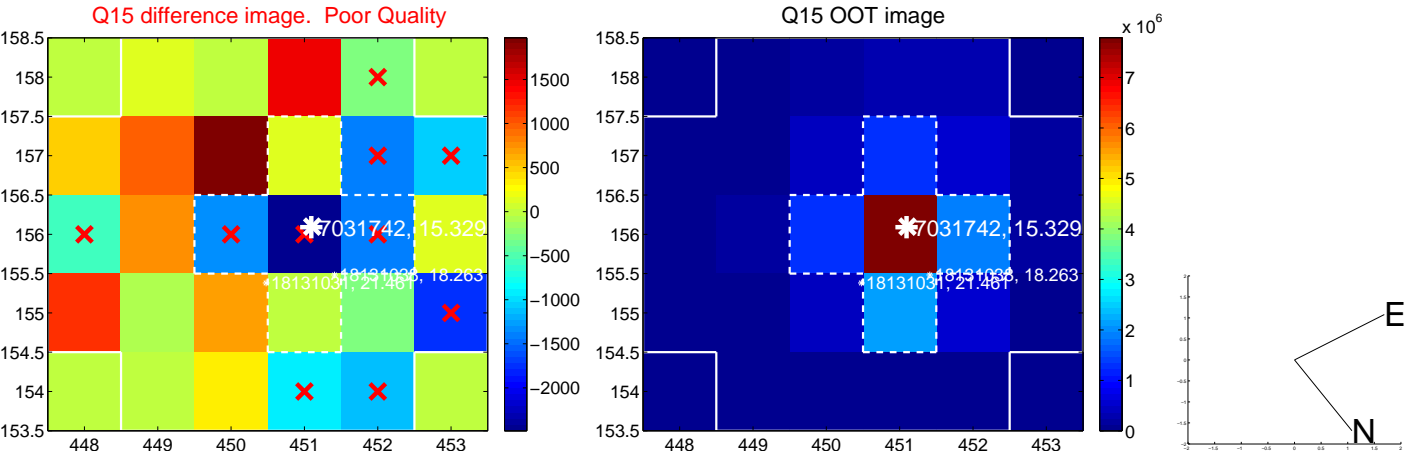
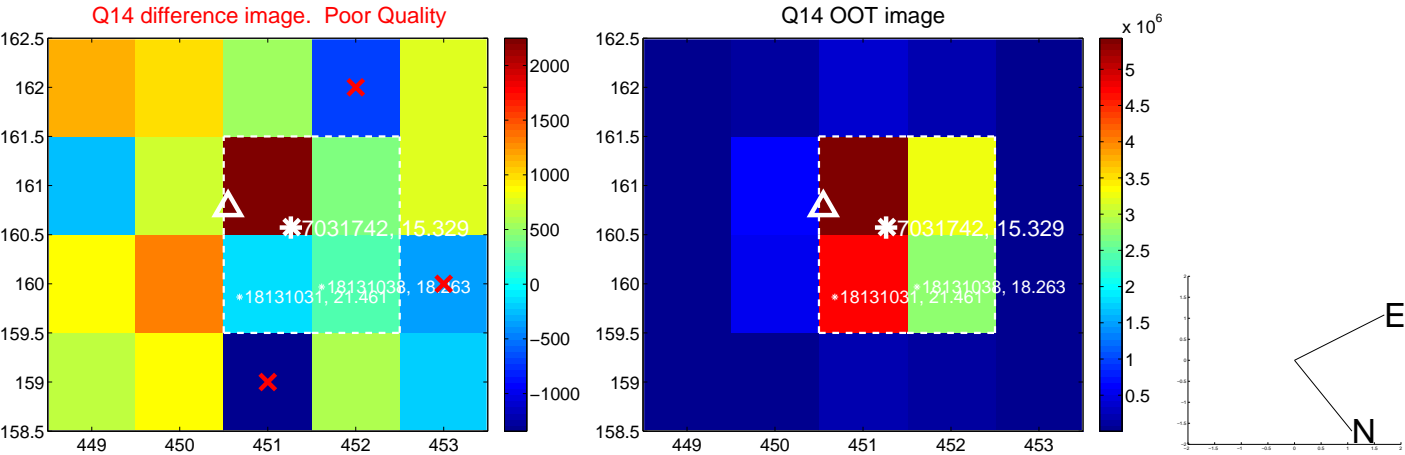
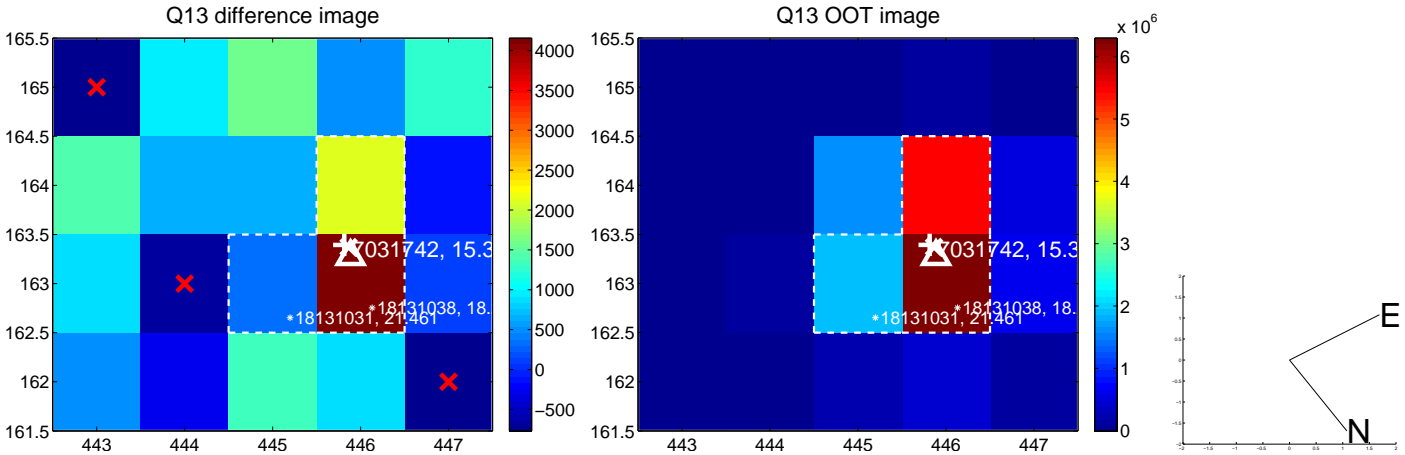
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



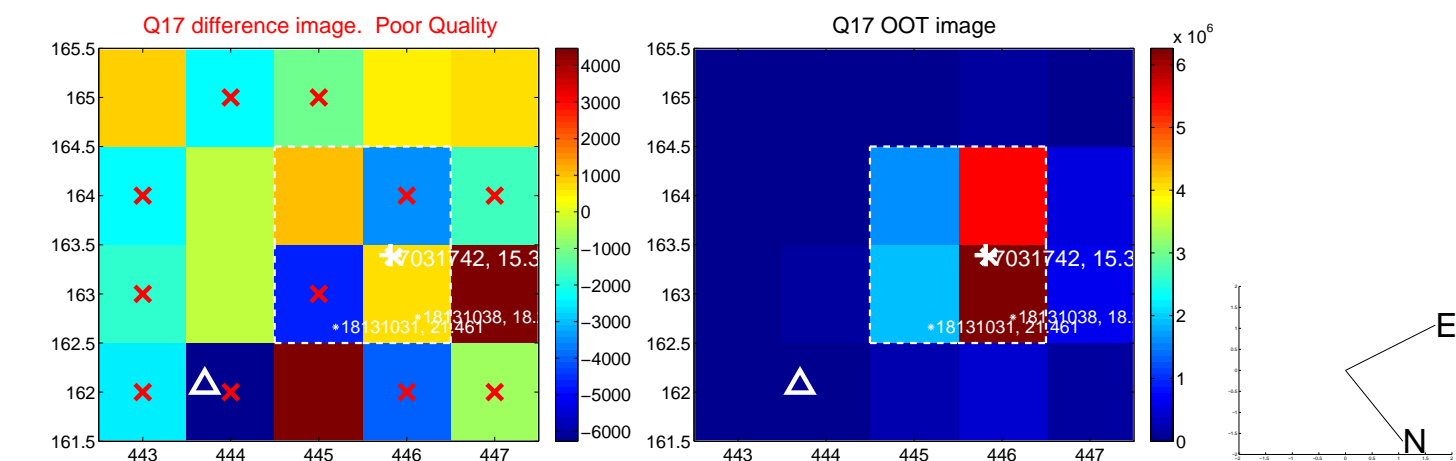
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



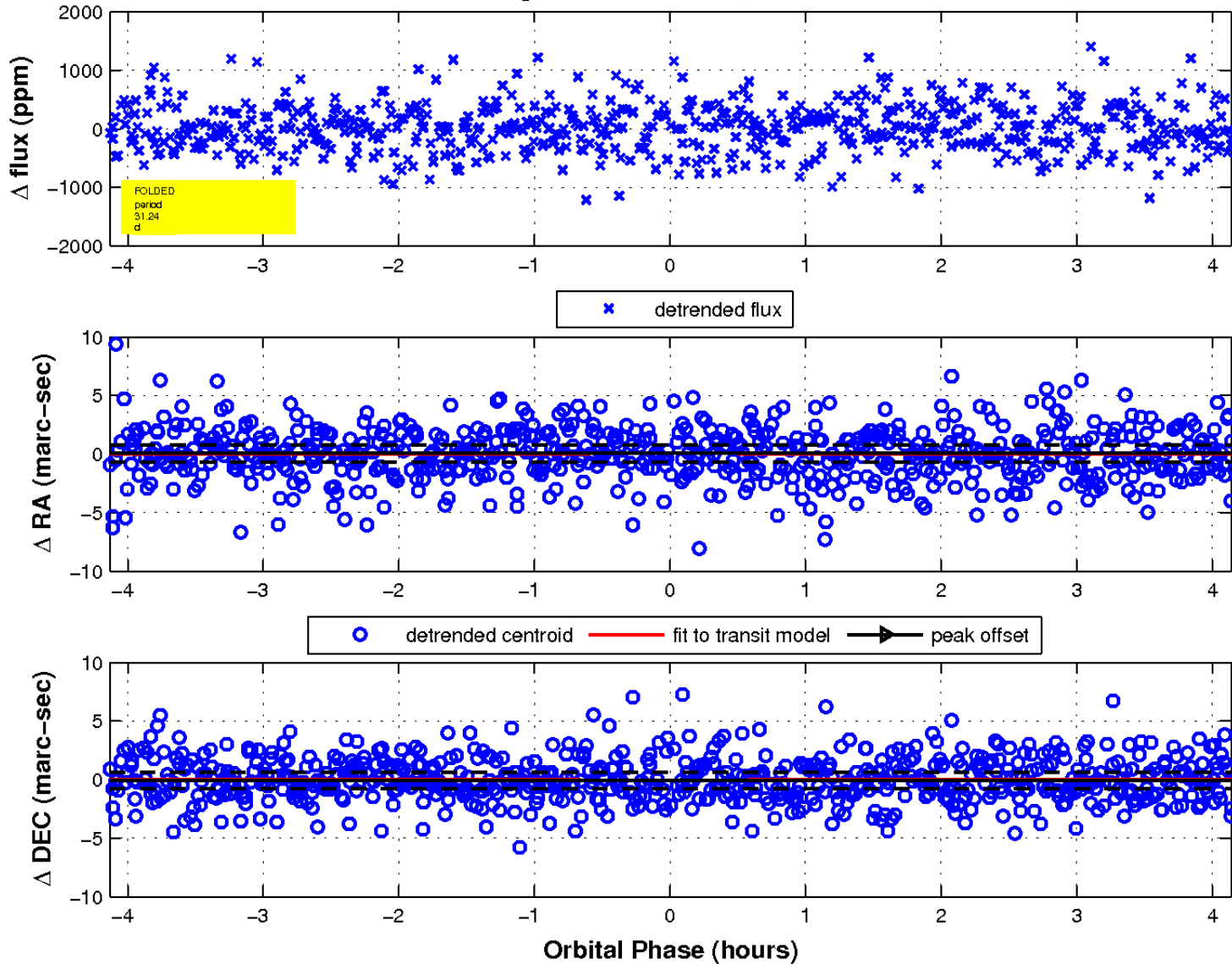
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

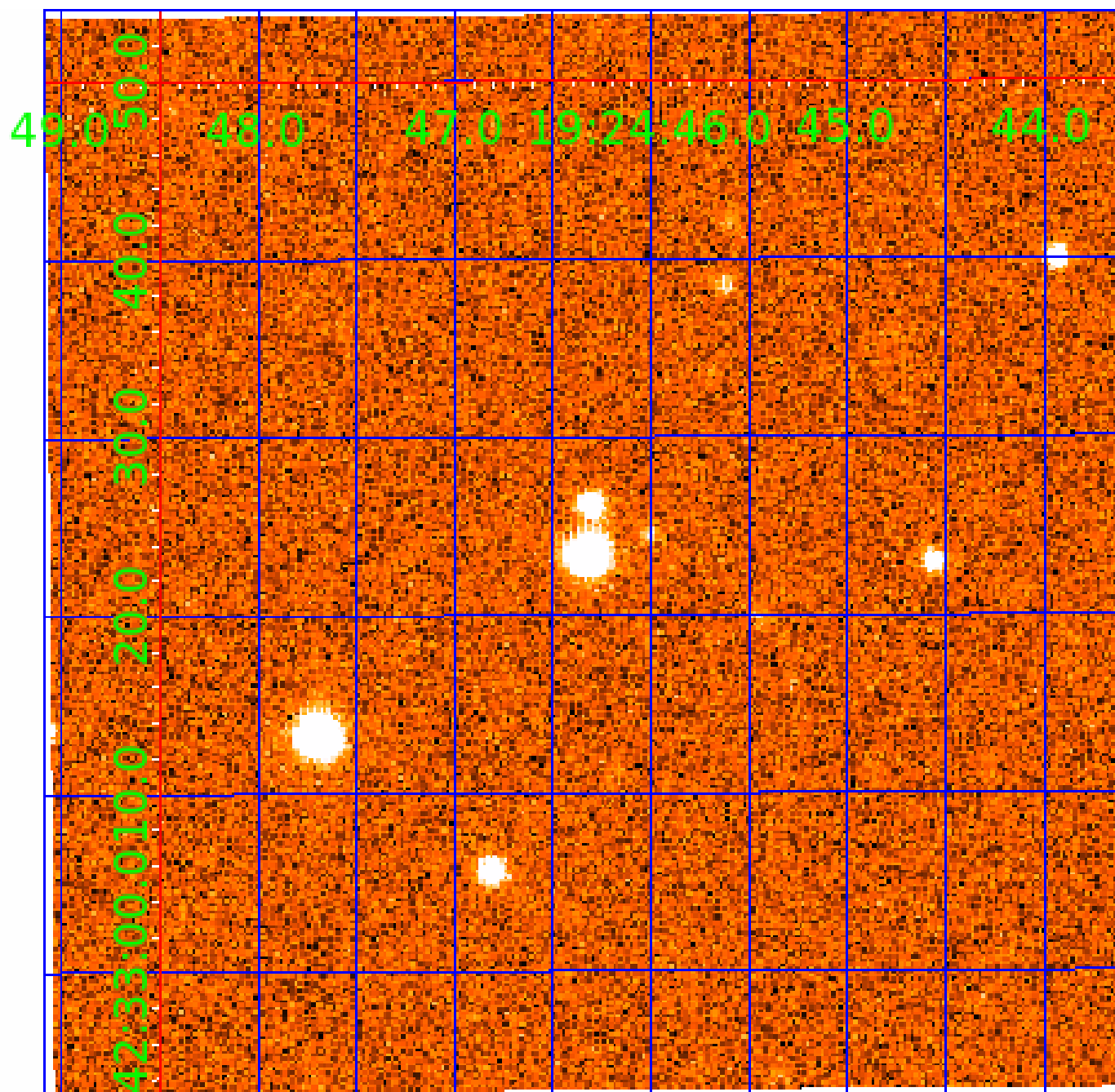


fluxWeightedCentroids, Planet 2 of 4



UKIRT Image

Declination



KIC 007031742

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})
007031742-01	OBS	7575.01	0.566742	131.861891	22.0	3.933	11.9	6.4	1.01	6063	0.48	6405.97
007031742-02	OBS	No	31.239645	161.962954	724.4	1.382	9.9	11.5	1.01	6063	2.89	30.54
007031742-03	OBS	No	39.269537	145.406772	455.6	2.826	9.5	10.0	1.01	6063	2.33	22.51
007031742-04	OBS	No	27.360744	133.419153	793.2	0.962	10.1	10.4	1.01	6063	2.87	36.44

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007031742-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_UNRESOLVED_OFFSET—EPHEM_MATCH
007031742-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
007031742-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
007031742-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—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 007031742-03

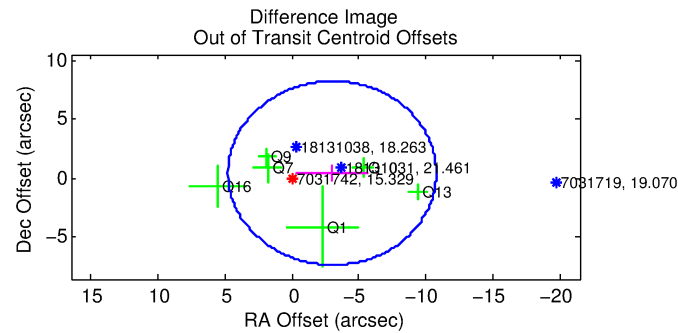
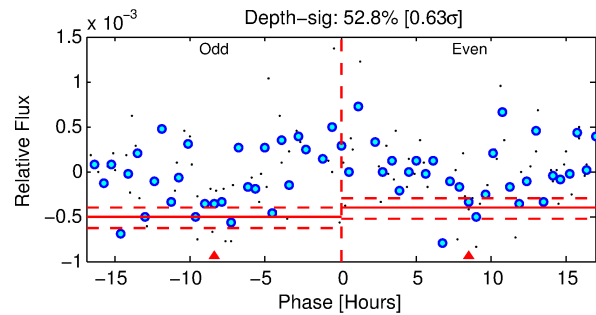
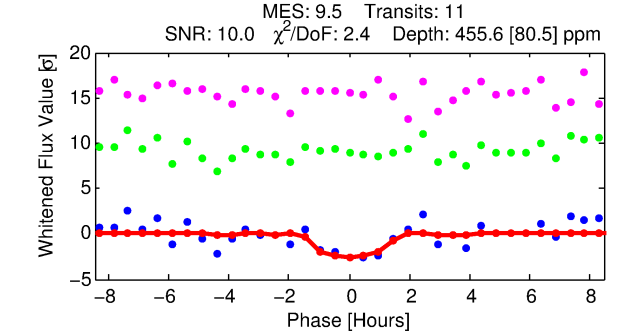
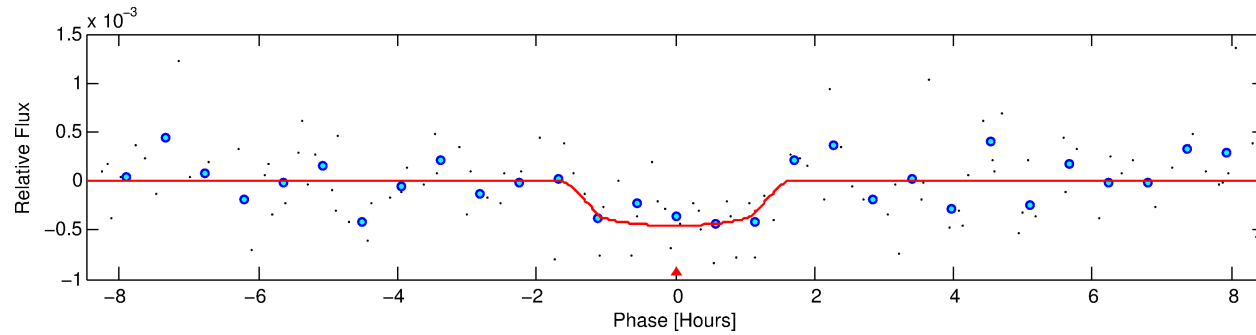
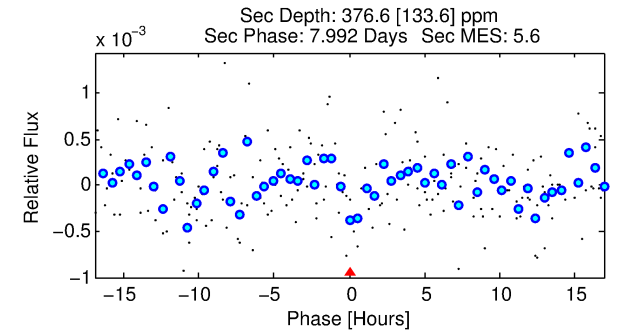
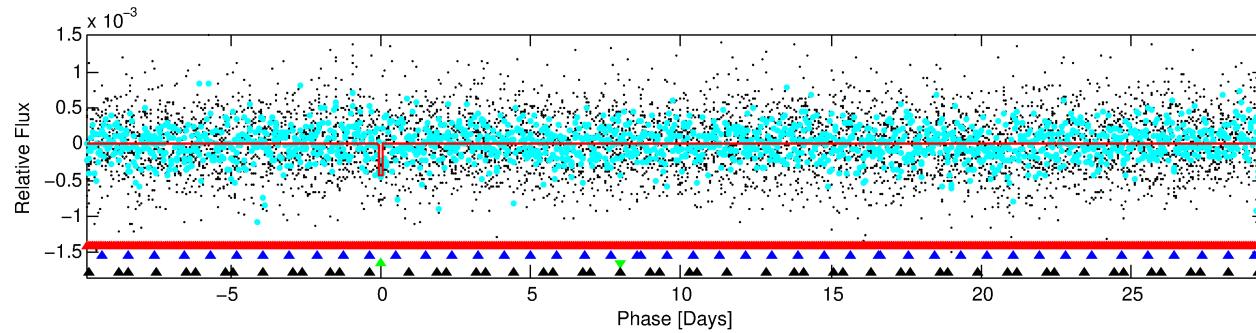
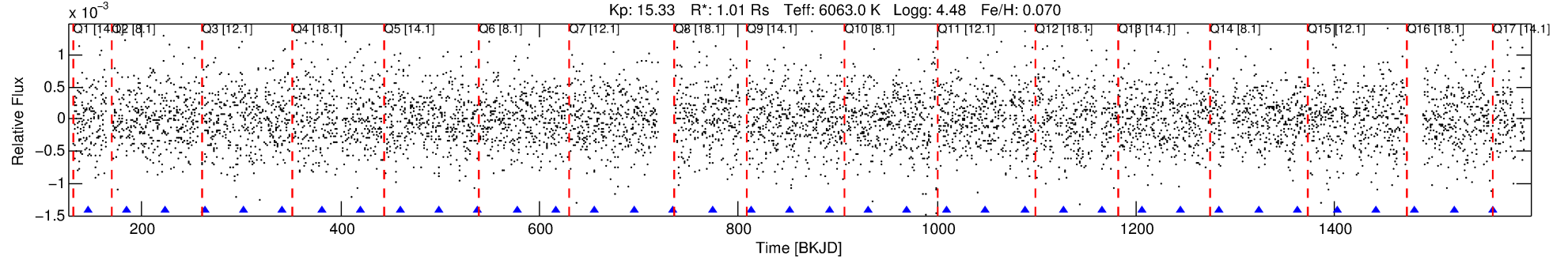
No Significant Match Found

DV One-Page Summary

KIC: 7031742 Candidate: 3 of 4 Period: 39.270 d

KOI: K07575 Corr: No Ephemeris Match

Kp: 15.33 R*: 1.01 Rs Teff: 6063.0 K Logg: 4.48 Fe/H: 0.070



DV Fit Results:

Period = 39.26954 [0.00083] d
Epoch = 145.4068 [0.0167] BKJD
Rp/R* = 0.0211 [0.0452]
a/R* = 75.23 [761.08]
b = 0.74 [6.41]
Seff = 22.51 [9.38]
Teff = 555 [58] K
Rp = 2.34 [5.04] Re
a = 0.2347 [0.0618] AU
Ag = 2092.81 [9011.99] [0.23σ]
Teffp = 5808 [6233] K [0.84σ]

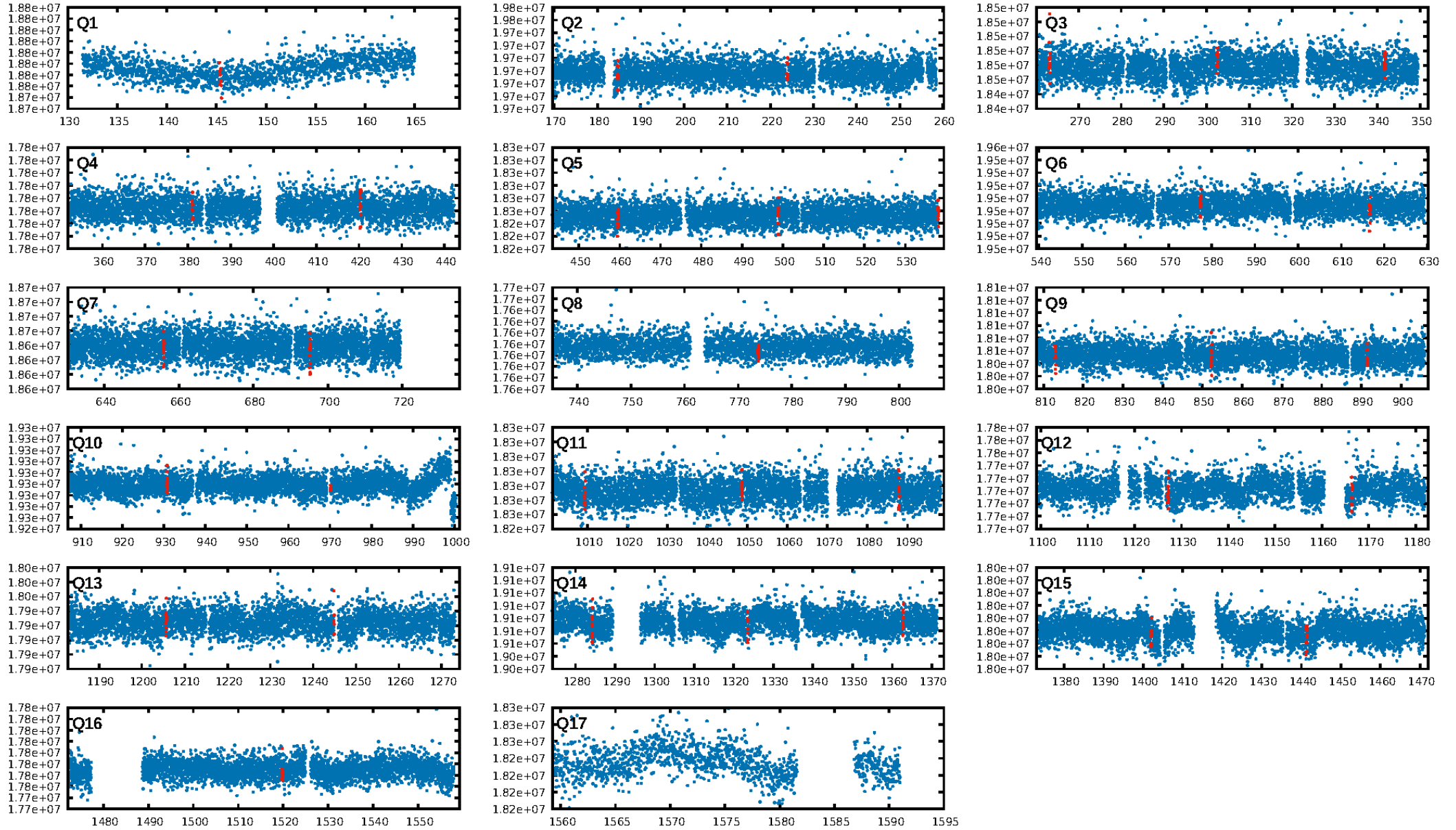
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [61.26σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.13e-09
RollingBand-fgt: 1.00 [11/11]
GhostDiagnostic-chr: -3.535
Centroid-sig: 14.7%
Centroid-so: 1.424 arcsec [1.31σ]
OotOffset-rm: 3.033 arcsec [1.17σ]
KicOffset-rm: 3.093 arcsec [1.19σ]
OotOffset-st: 1/1/1/3 [6]
KicOffset-st: 1/1/1/3 [6]
DiffImageQuality-fgm: 0.00 [0/6]
DiffImageOverlap-fno: 0.00 [0/14]

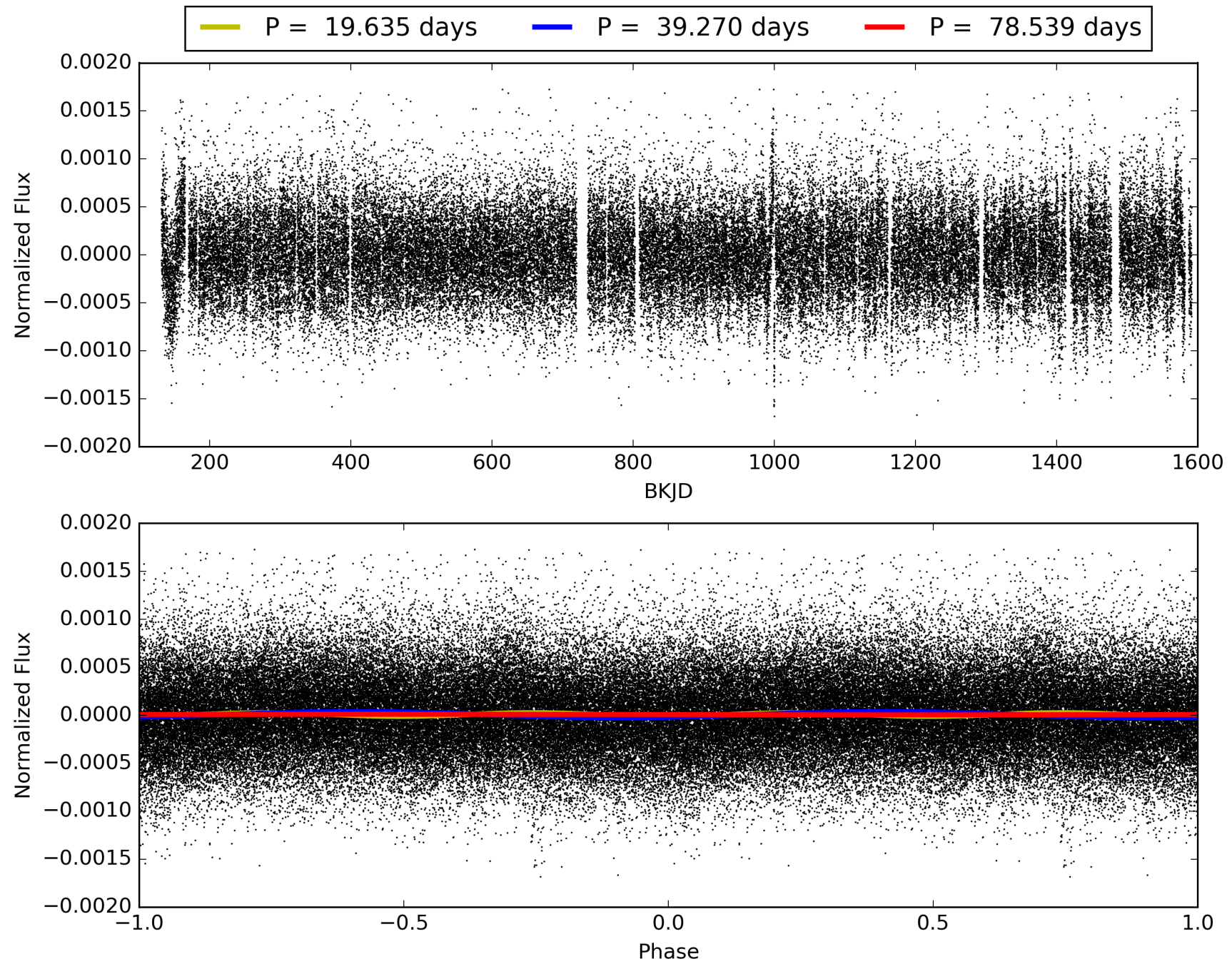
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 18:30:35 Z

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

TCE 007031742-03, PDC Light Curves

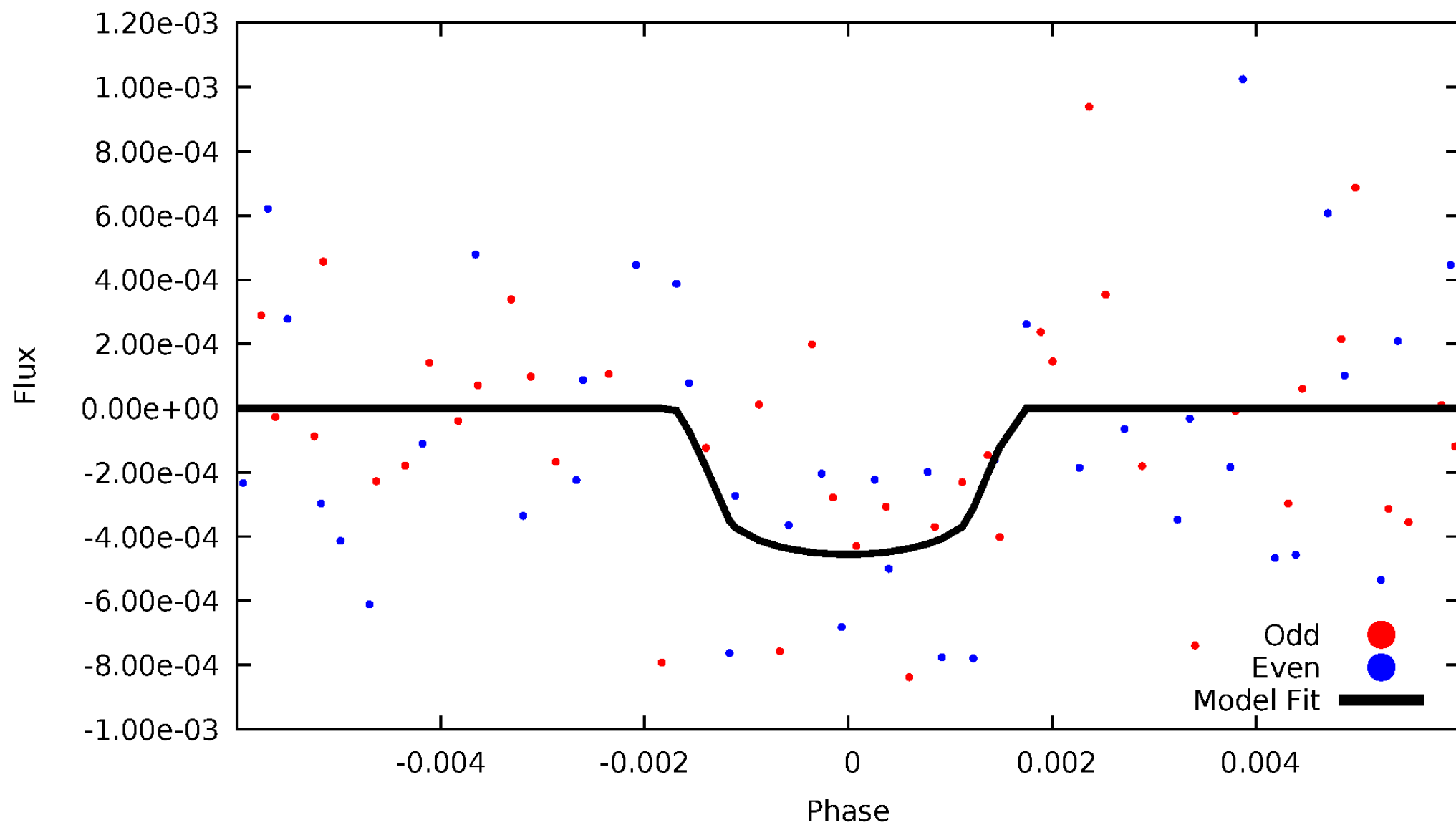


TCE 007031742-03



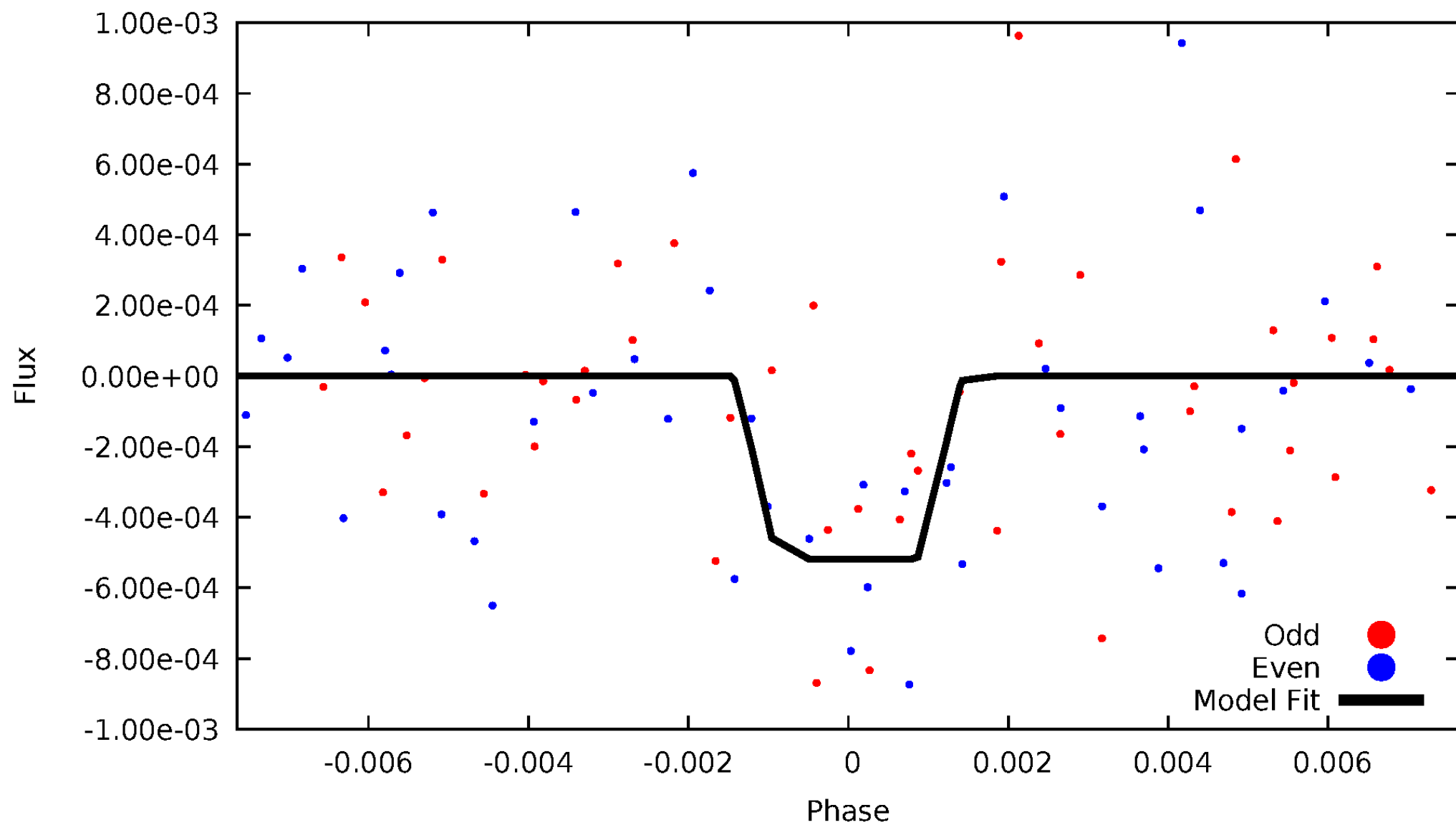
DV Odd/Even

TCE 007031742-03



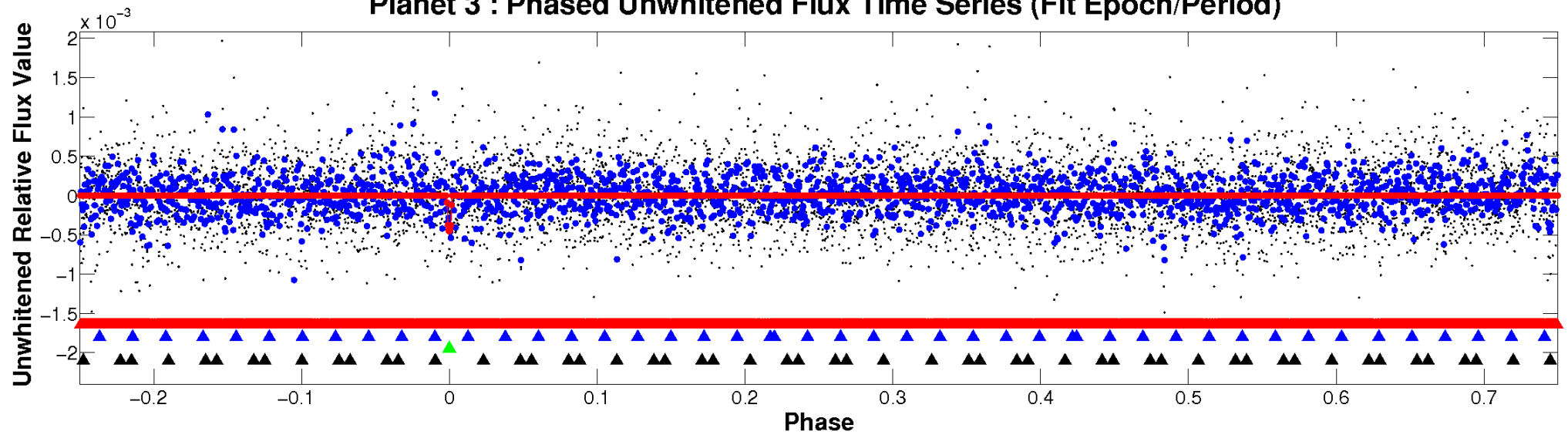
ALT Odd/Even

TCE 007031742-03

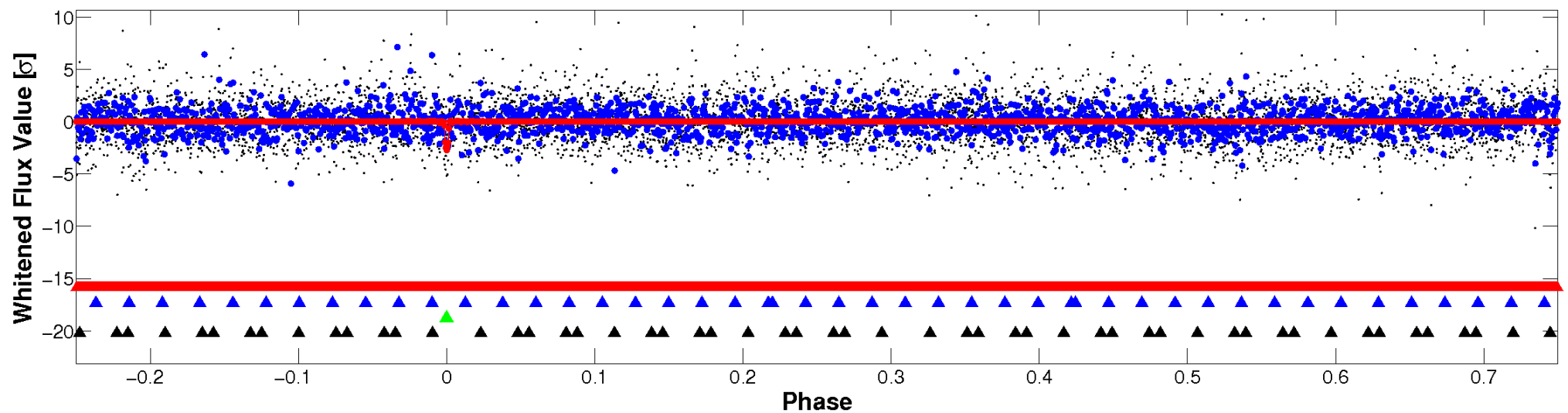


Non-Whitened Vs. Whitened Light Curve

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

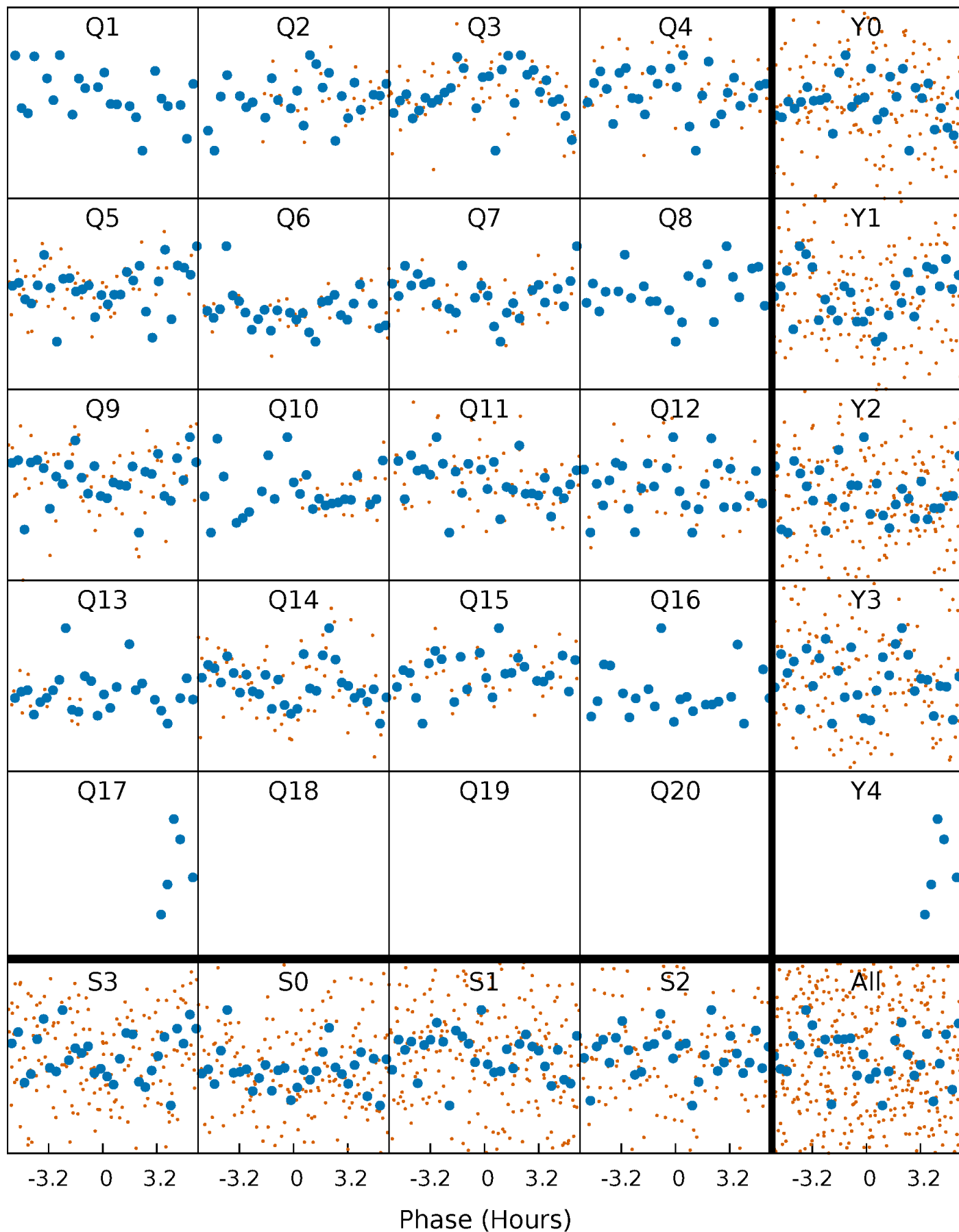


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



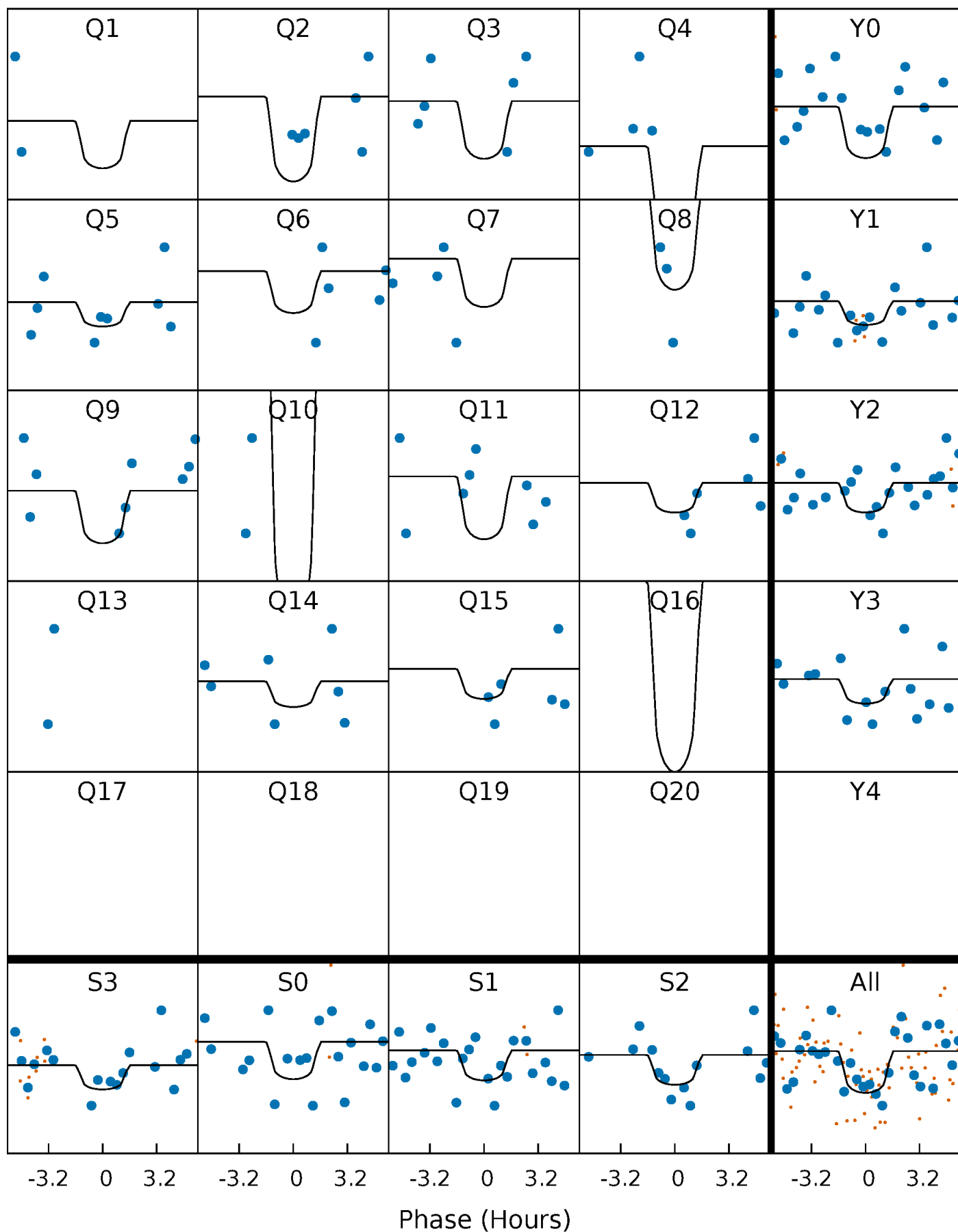
PDC Quarter-Phased Transit Curves

TCE 007031742-03 P= 39.269537 Days $T_0=145.406772$ (BKJD)



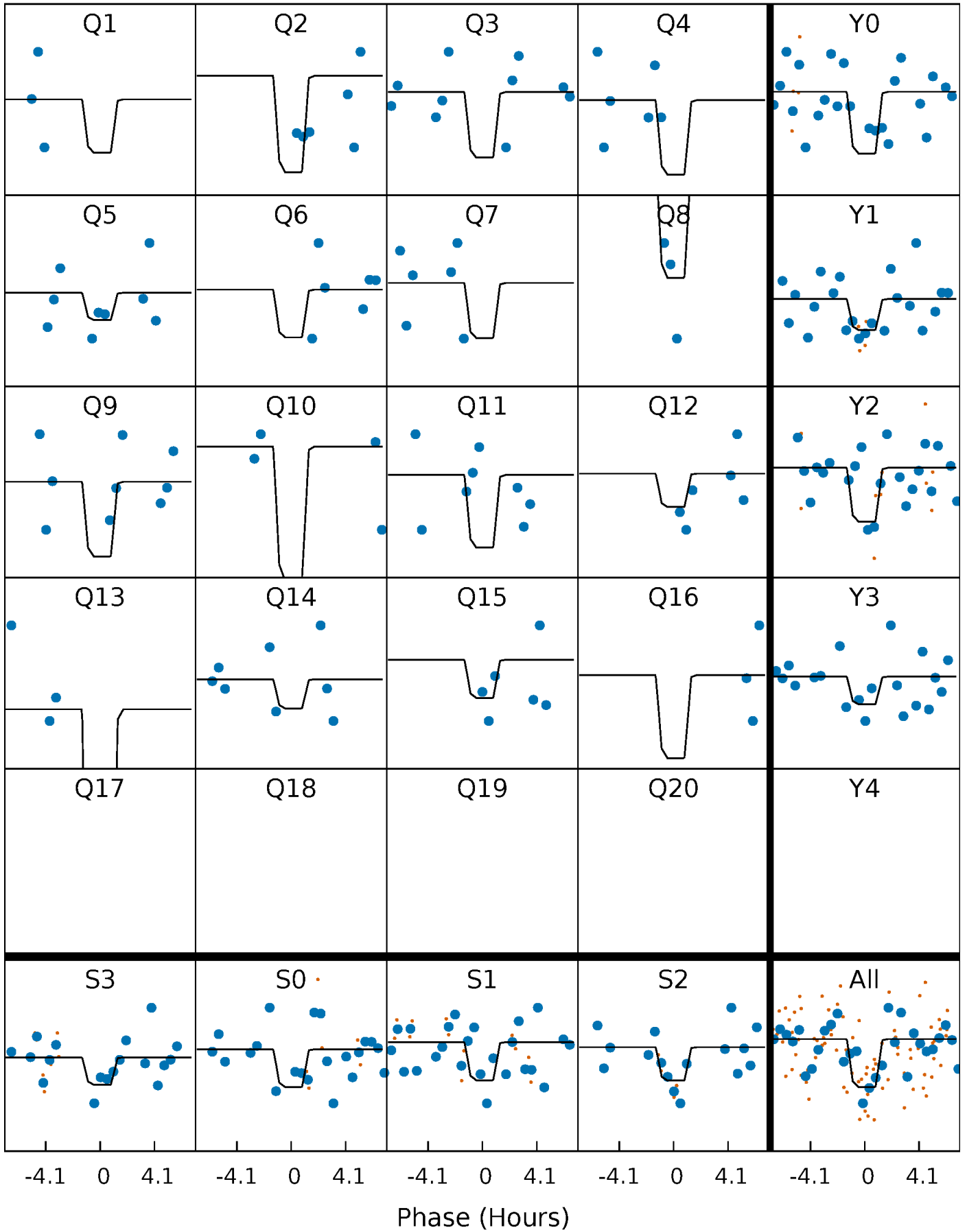
DV Quarter-Phased Transit Curves

TCE 007031742-03 P= 39.269537 Days $T_0=145.406772$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

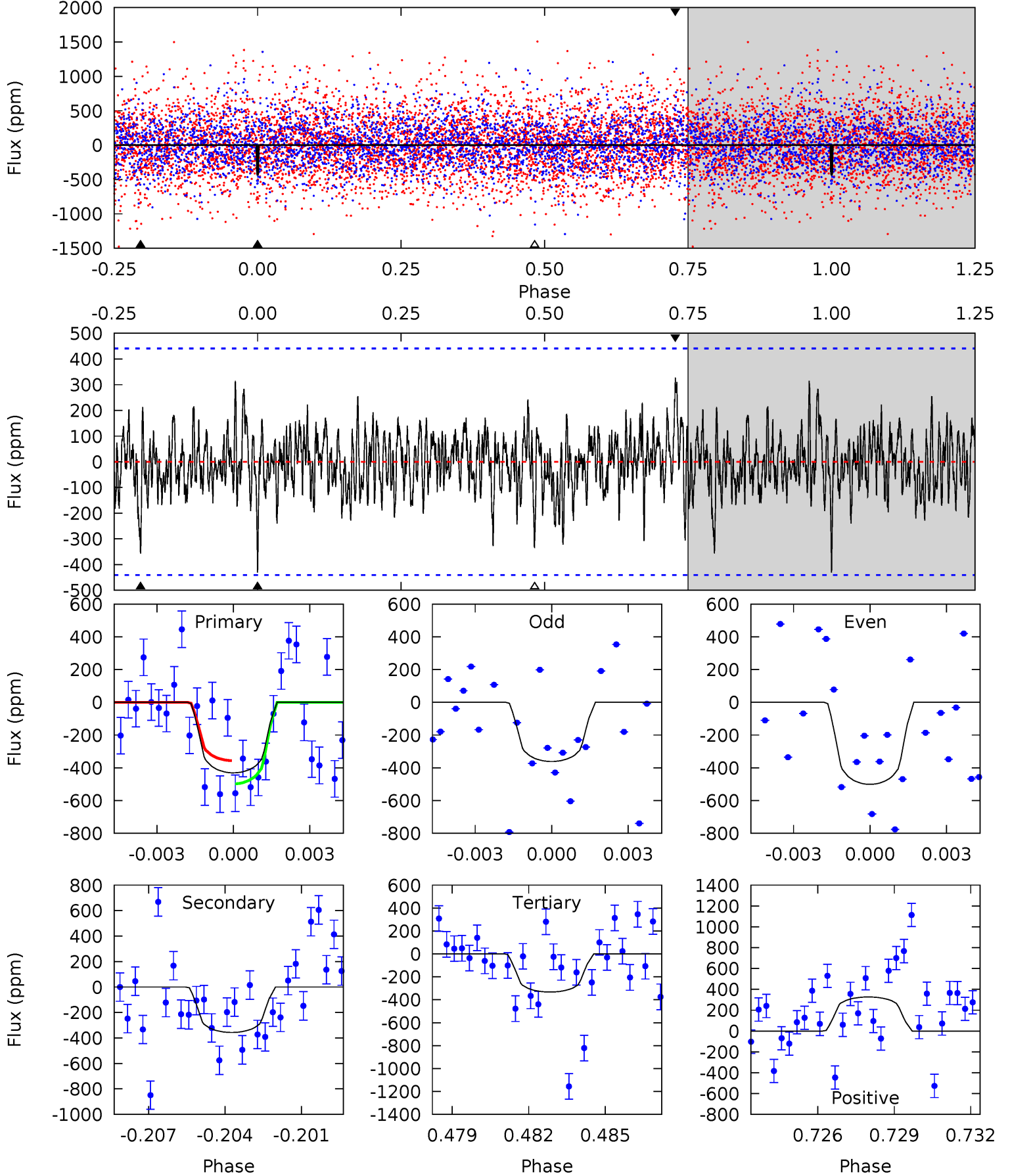
TCE 007031742-03 P= 39.270529 Days $T_0=145.387075$ (BKJD)



DV Model-Shift Uniqueness Test

007031742-03, P = 39.269537 Days, E = 106.137235 Days

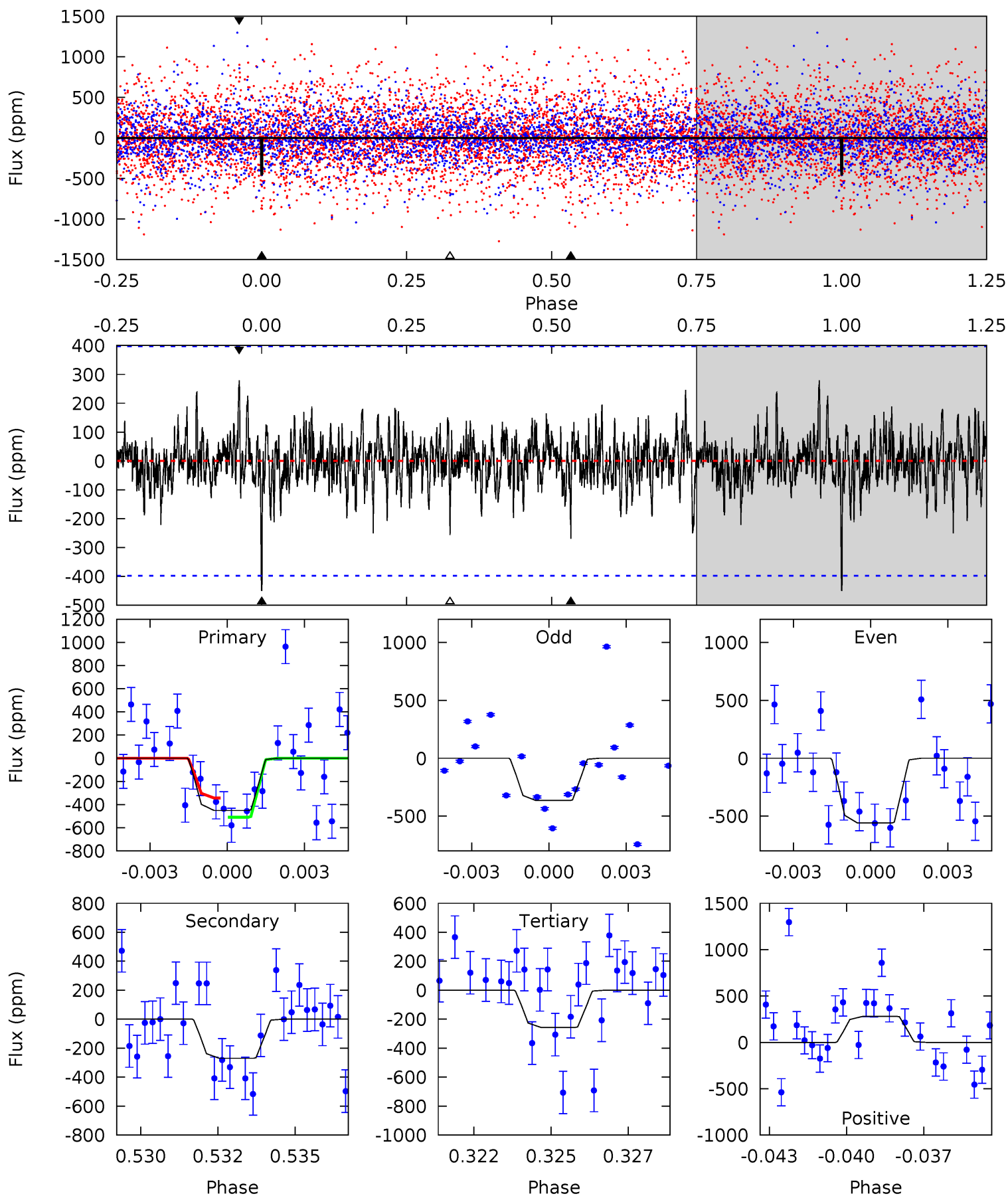
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.13	4.25	3.96	3.89	5.25	2.96	1.17	1.17	1.24	0.29	0.36	0.84	0.97	0.43	0.84



Alt Model-Shift Uniqueness Test

007031742-03, P = 39.270529 Days, E = 106.116546 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.96	3.57	3.40	3.70	5.26	2.98	0.93	2.56	2.26	0.17	-0.13	1.30	0.83	0.38	1.05



Stellar Parameters For KIC 007031742

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6063^{+190}_{-253}	$4.476^{+0.052}_{-0.208}$	$0.070^{+0.250}_{-0.300}$	$1.012^{+0.318}_{-0.106}$	$1.117^{+0.130}_{-0.159}$	$1.519^{+0.404}_{-0.804}$
	+3%/-4%	+1%/-5%	+357%/-429%	+31%/-10%	+12%/-14%	+27%/-53%
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 007031742-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-357 ± 84	$4.64^{+4.47}_{-3.01}$	795^{+57}_{-46}	4351^{+2665}_{-912}	471^{+3610}_{-349}
Alt.	-270 ± 76	$4.76^{+4.56}_{-3.26}$	790^{+62}_{-43}	4160^{+2827}_{-912}	359^{+3372}_{-274}

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

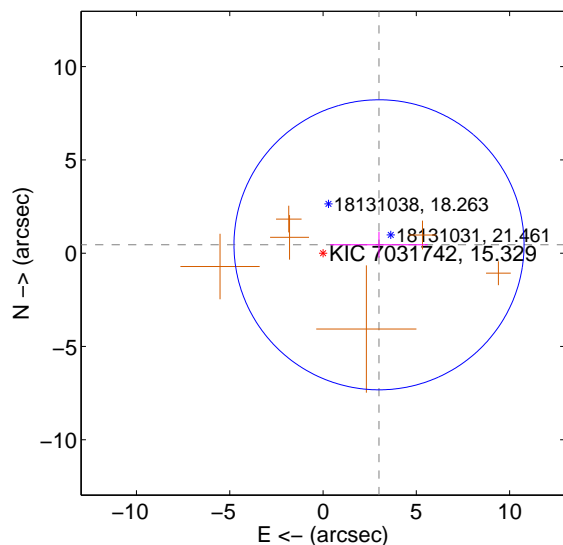
Supplemental centroid analysis for 007031742-03. Kepler magnitude: 15.33. Transit SNR 10.03

There are 0 quarters with good PRF difference image offsets

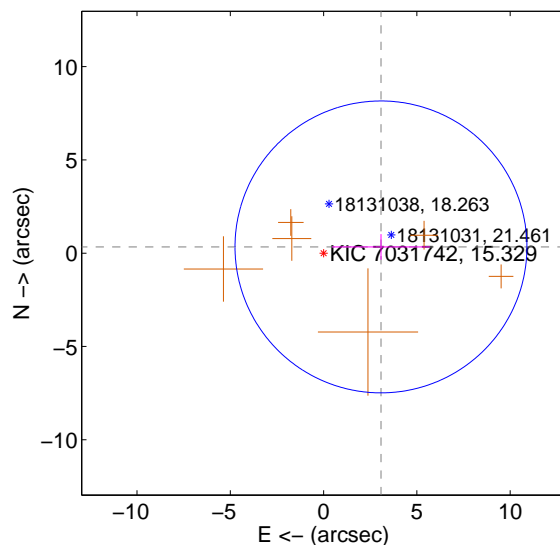
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.033 ± 2.590	1.17	-3.000 ± 2.617	0.448 ± 0.693
PRF-fit source offset from KIC position	3.093 ± 2.607	1.19	-3.075 ± 2.621	0.335 ± 0.688
photometric centroid source offset	1.42 ± 1.09	1.31	1.41 ± 1.09	-0.19 ± 0.97

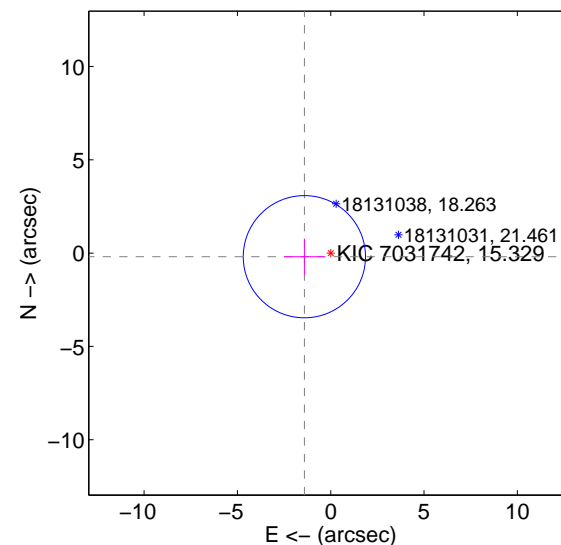
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

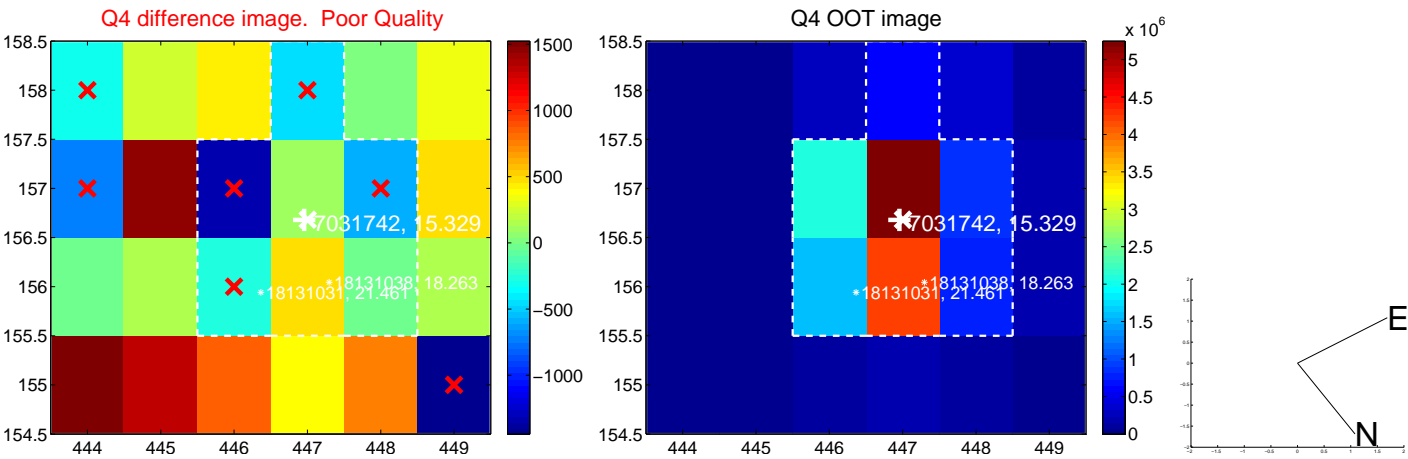
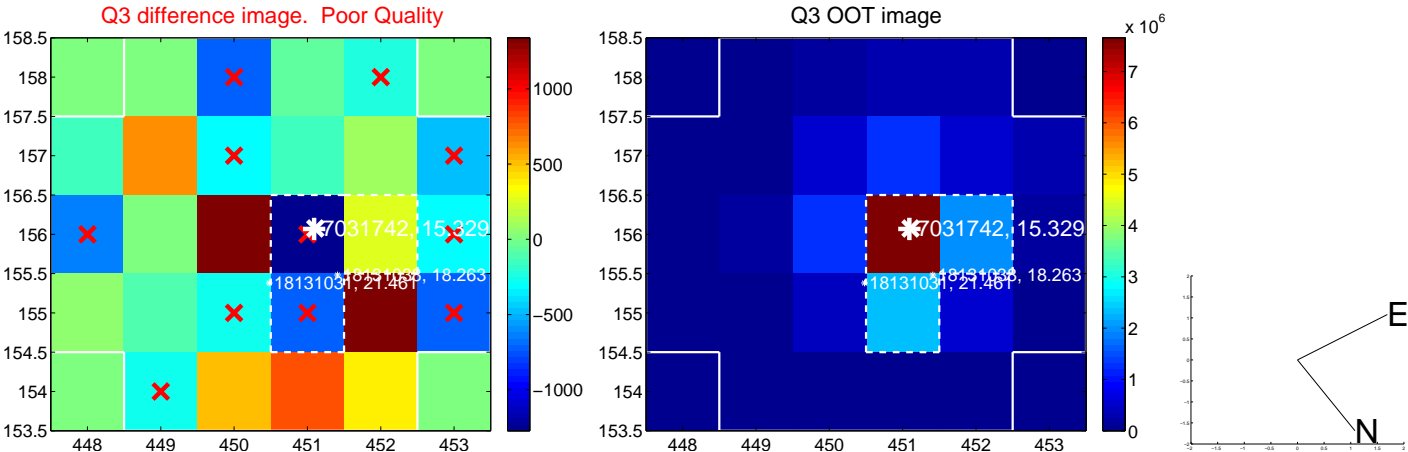
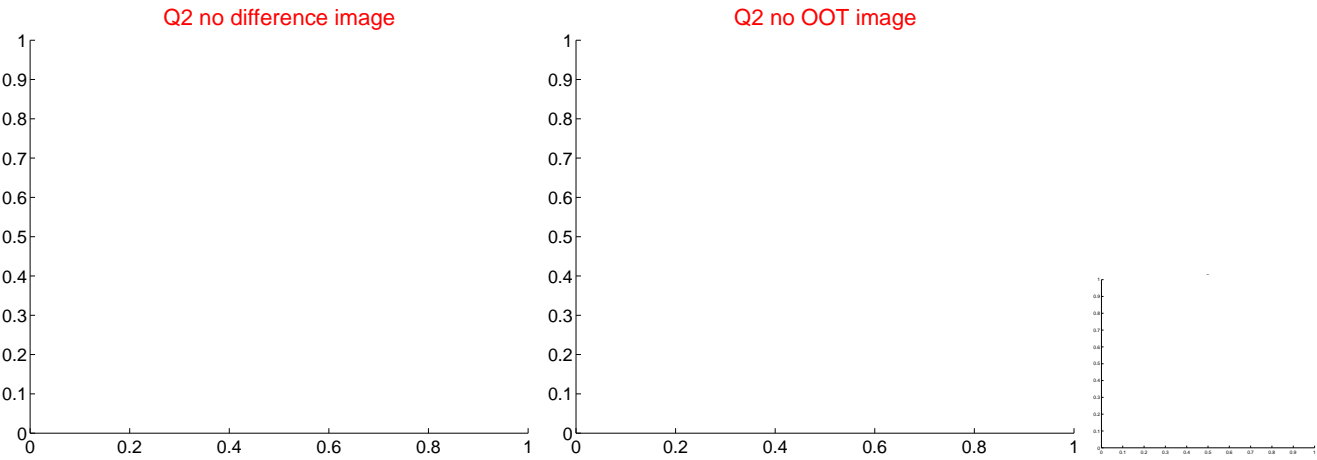
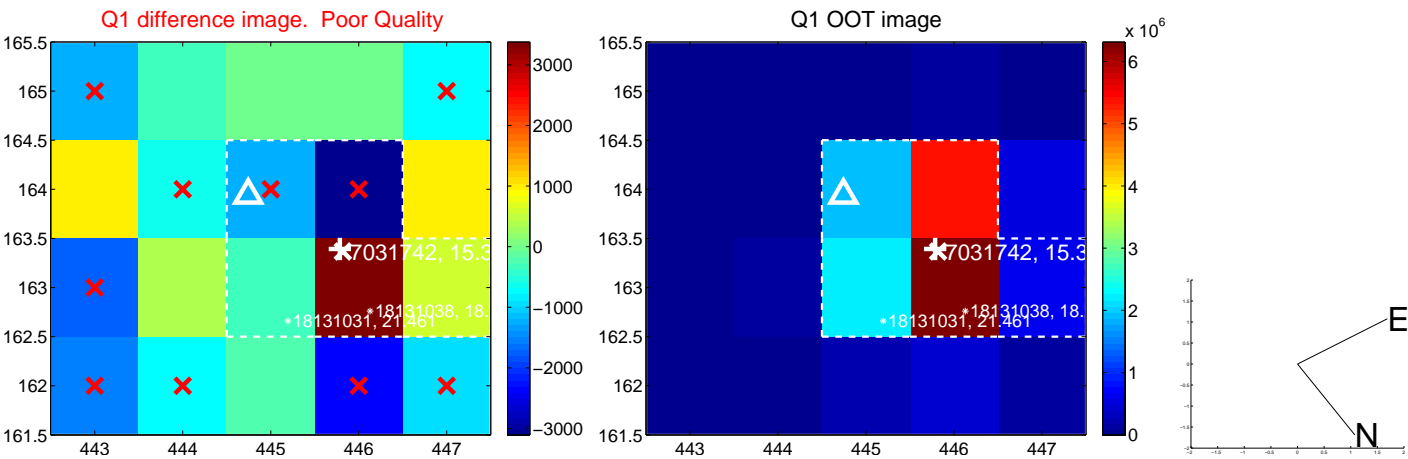


offset from photometric centroids

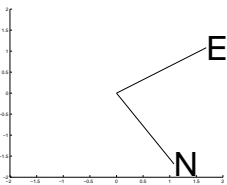
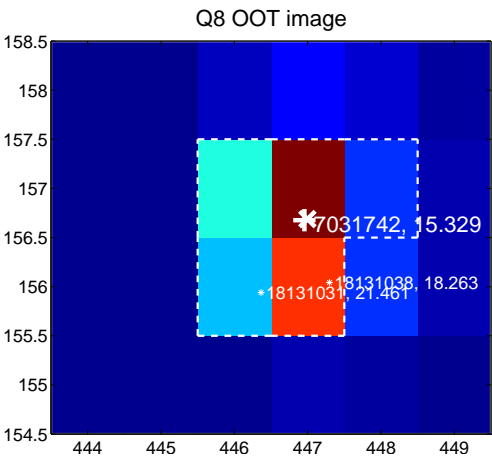
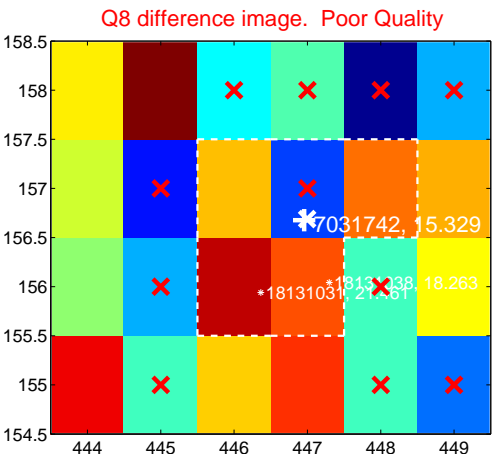
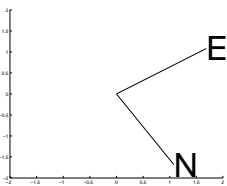
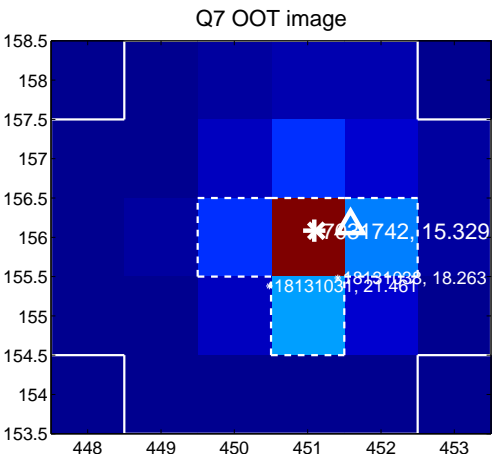
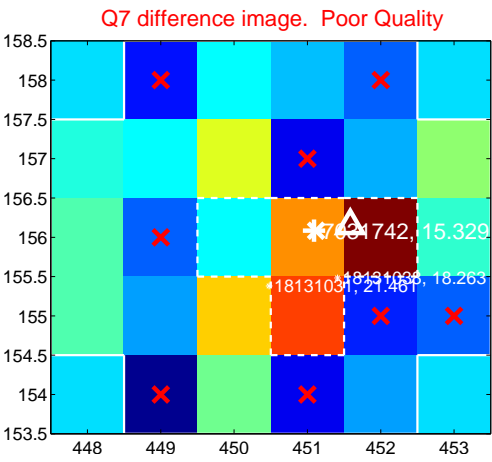
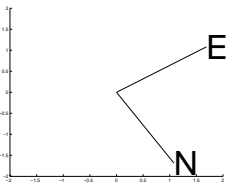
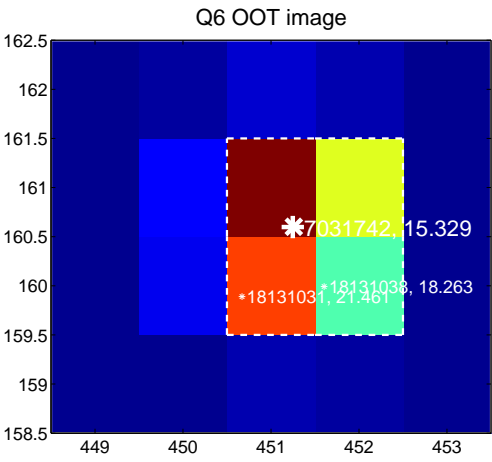
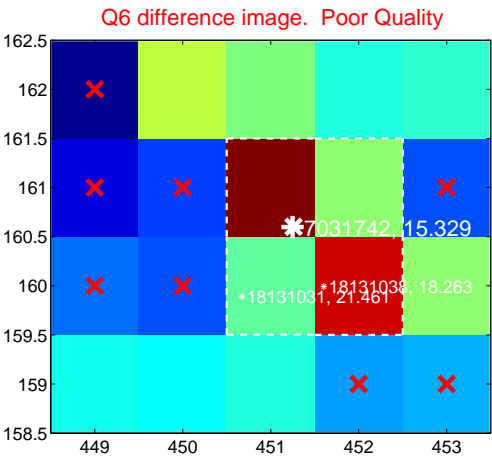
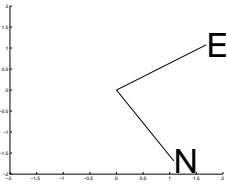
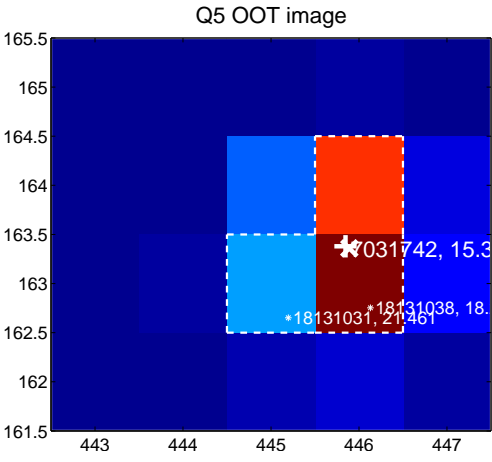
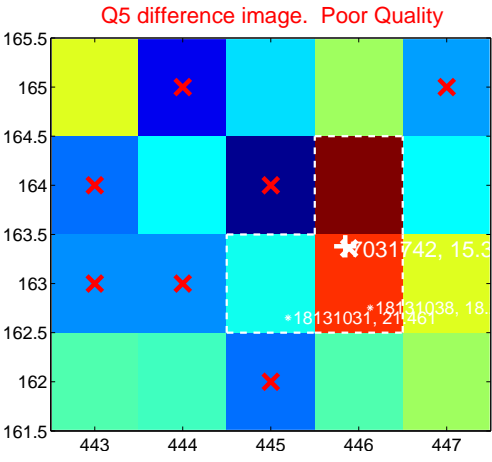


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

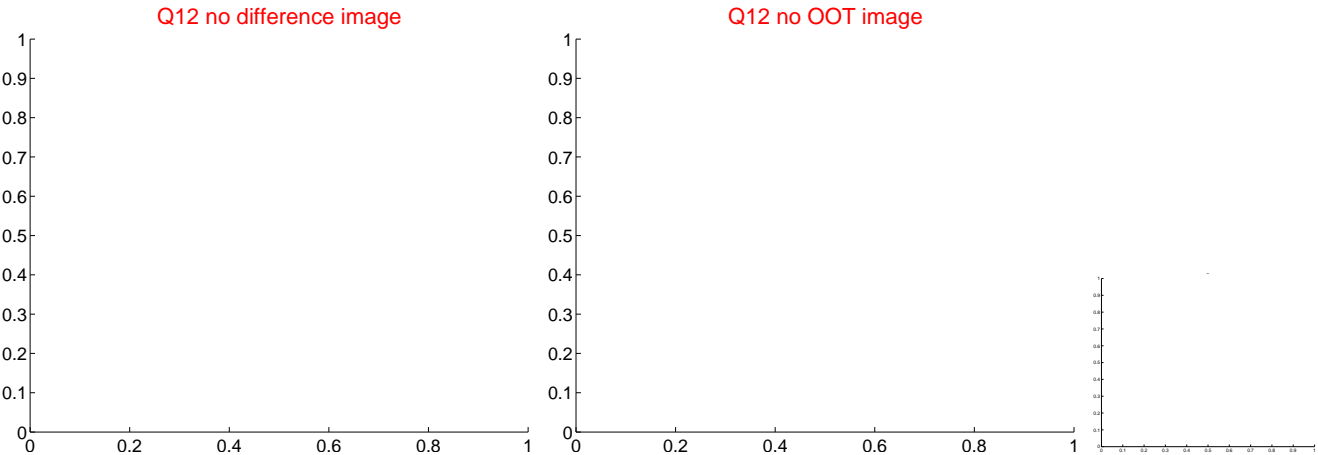
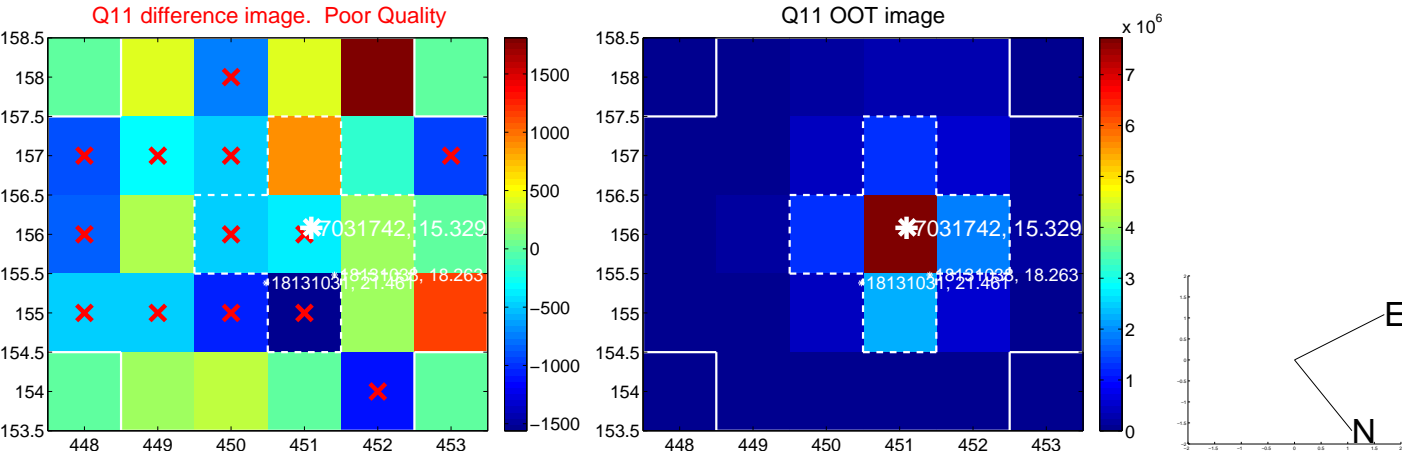
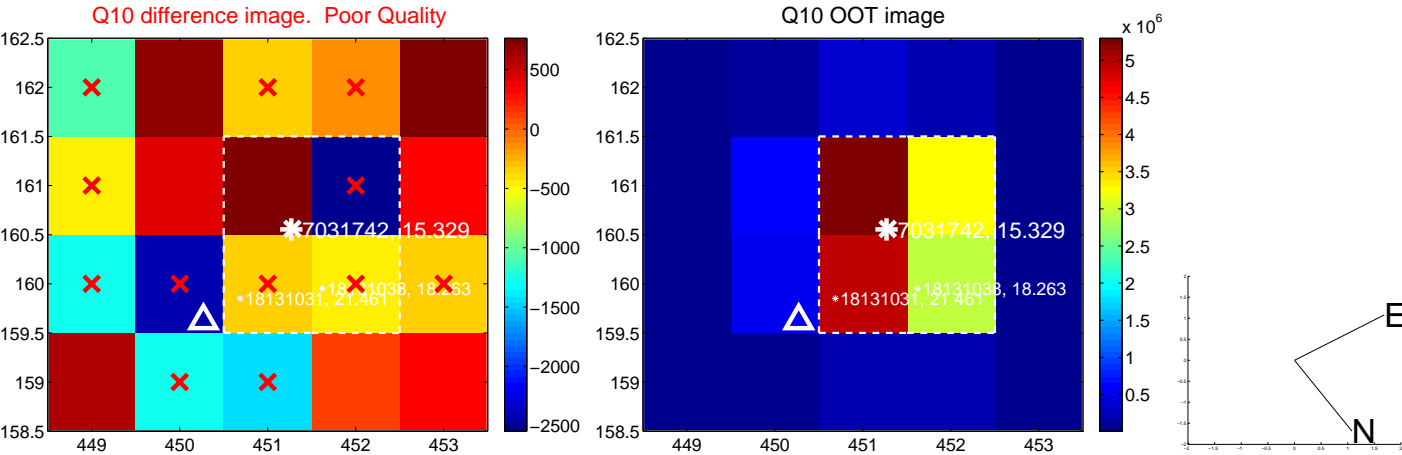
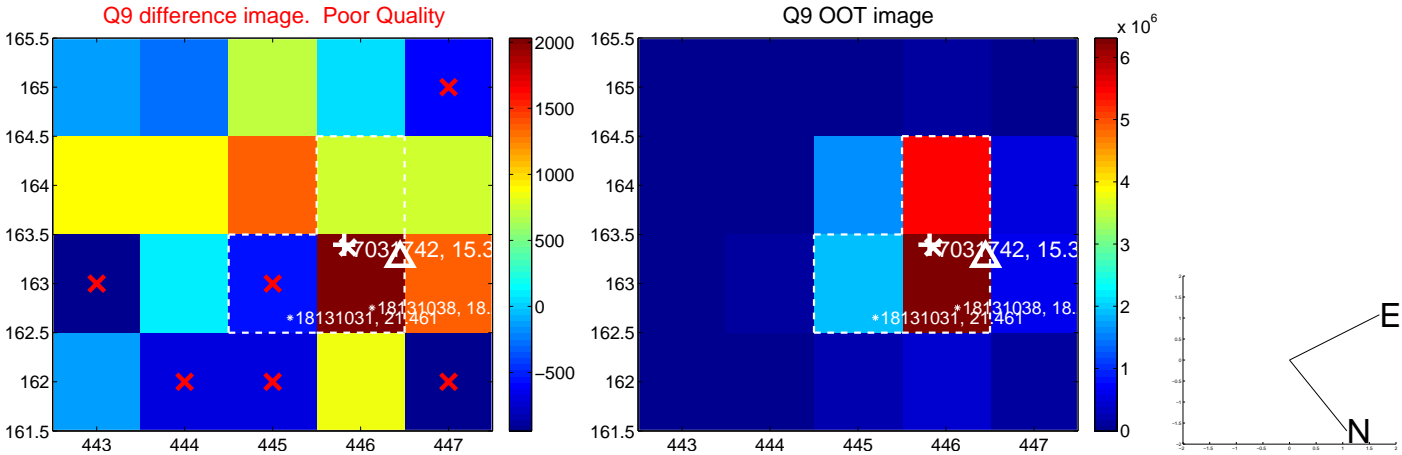
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



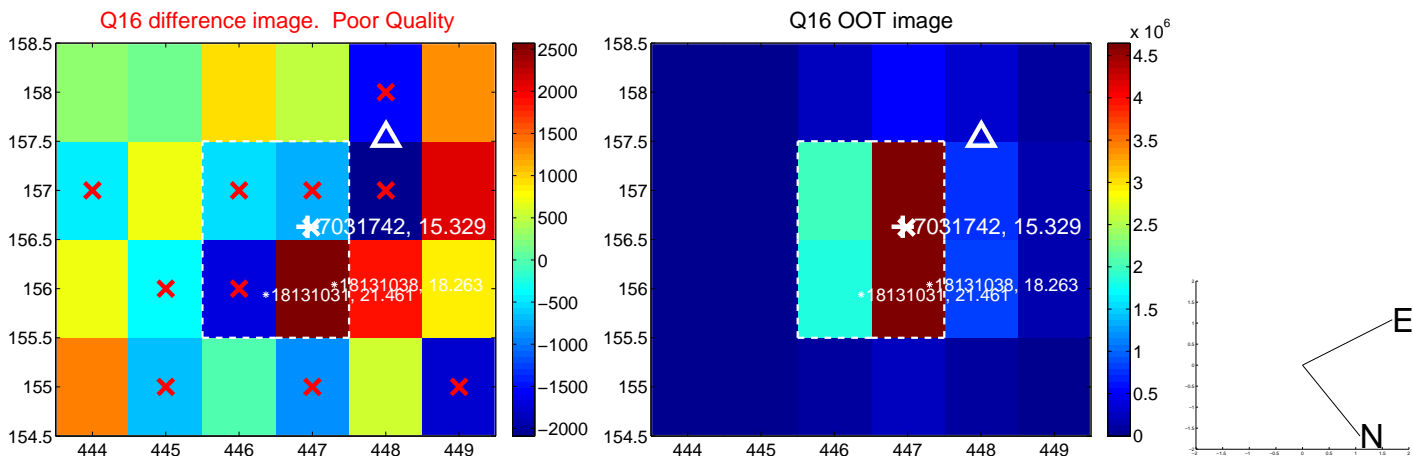
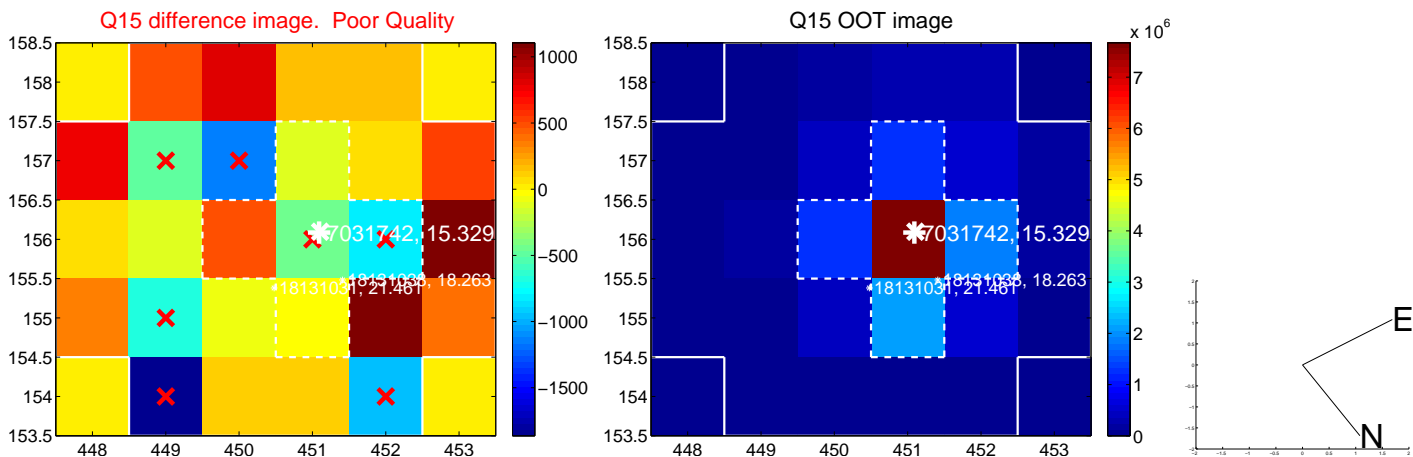
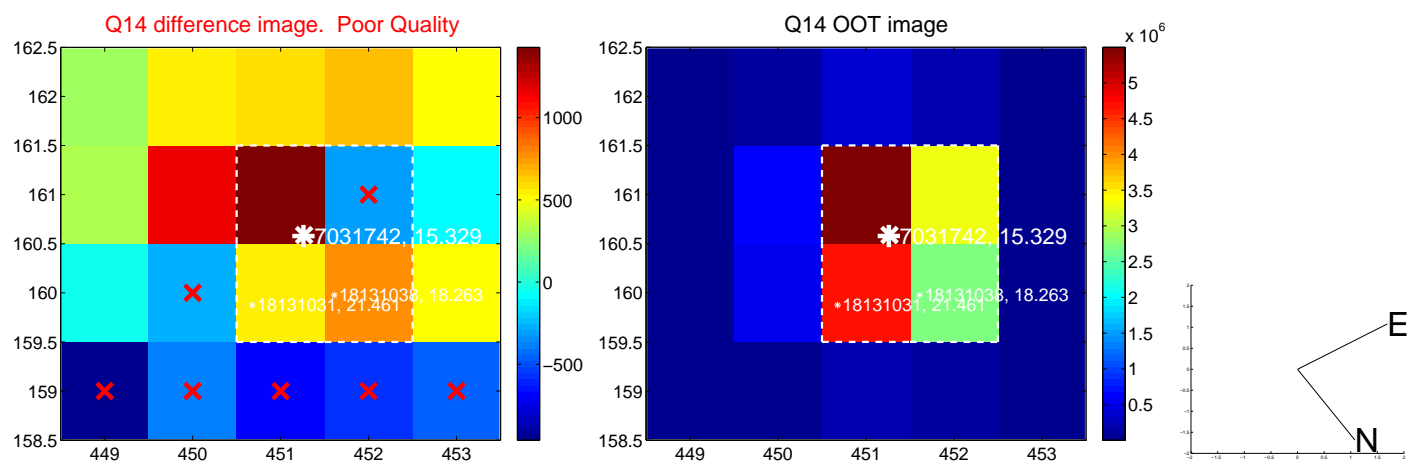
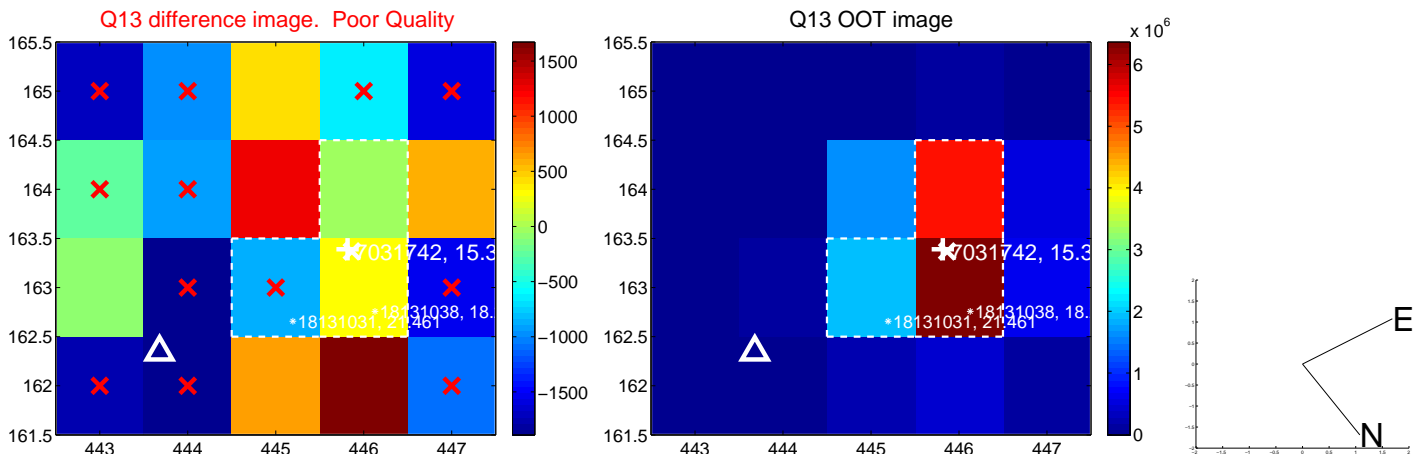
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



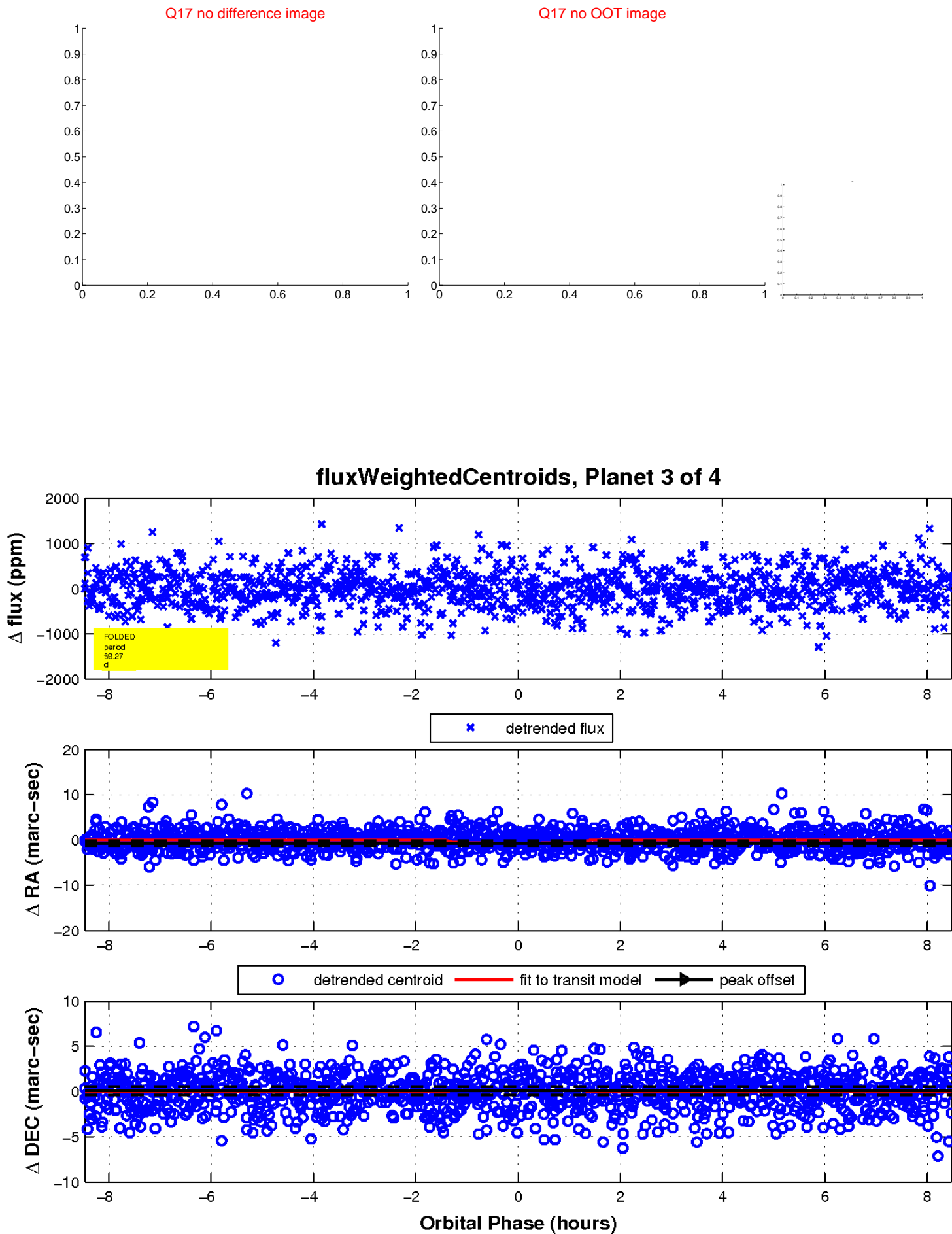
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

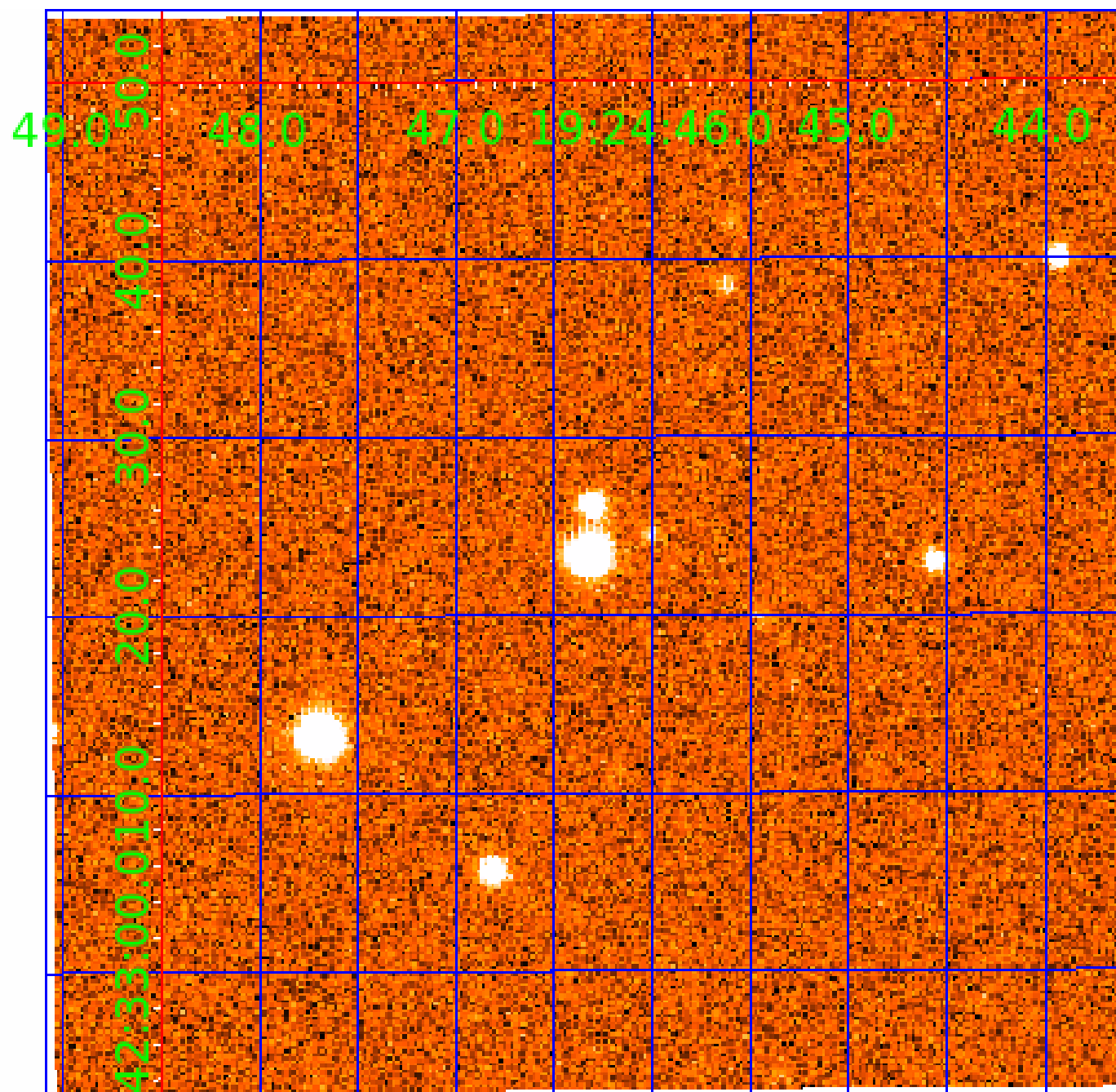


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007031742

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})
007031742-01	OBS	7575.01	0.566742	131.861891	22.0	3.933	11.9	6.4	1.01	6063	0.48	6405.97
007031742-02	OBS	No	31.239645	161.962954	724.4	1.382	9.9	11.5	1.01	6063	2.89	30.54
007031742-03	OBS	No	39.269537	145.406772	455.6	2.826	9.5	10.0	1.01	6063	2.33	22.51
007031742-04	OBS	No	27.360744	133.419153	793.2	0.962	10.1	10.4	1.01	6063	2.87	36.44

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007031742-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_UNRESOLVED_OFFSET—EPHEM_MATCH
007031742-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
007031742-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
007031742-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—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.

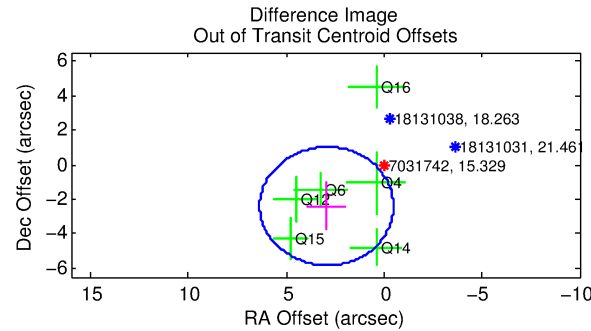
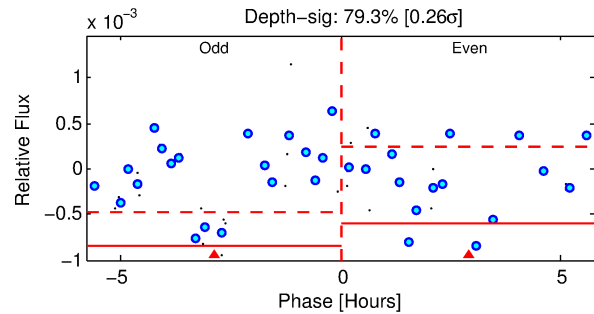
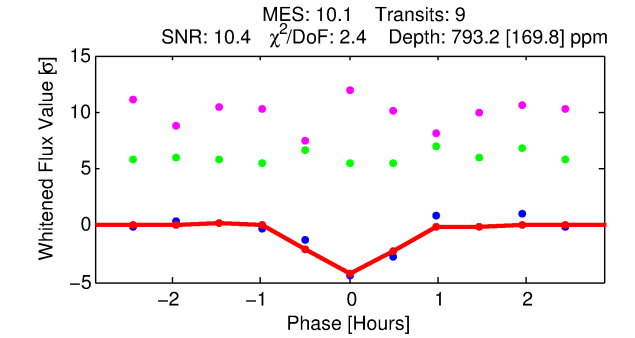
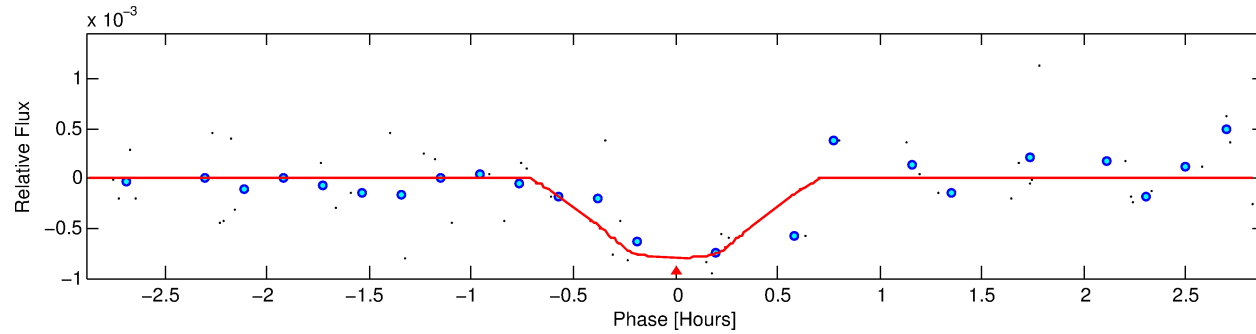
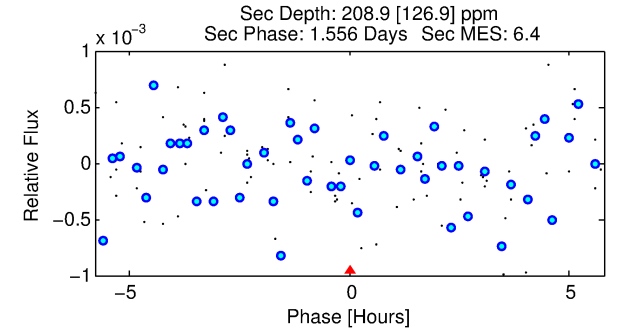
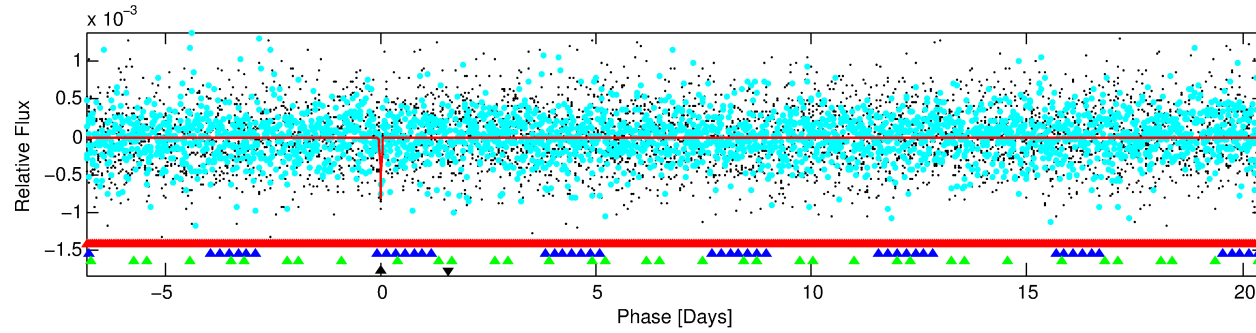
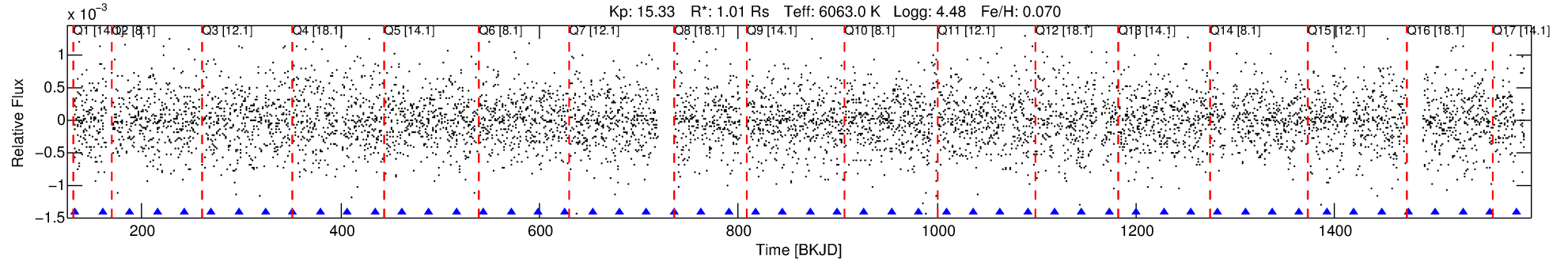
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007031742-04

No Significant Match Found

DV One-Page Summary

KIC: 7031742 Candidate: 4 of 4 Period: 27.361 d
KOI: K07575 Corr: No Ephemeris Match



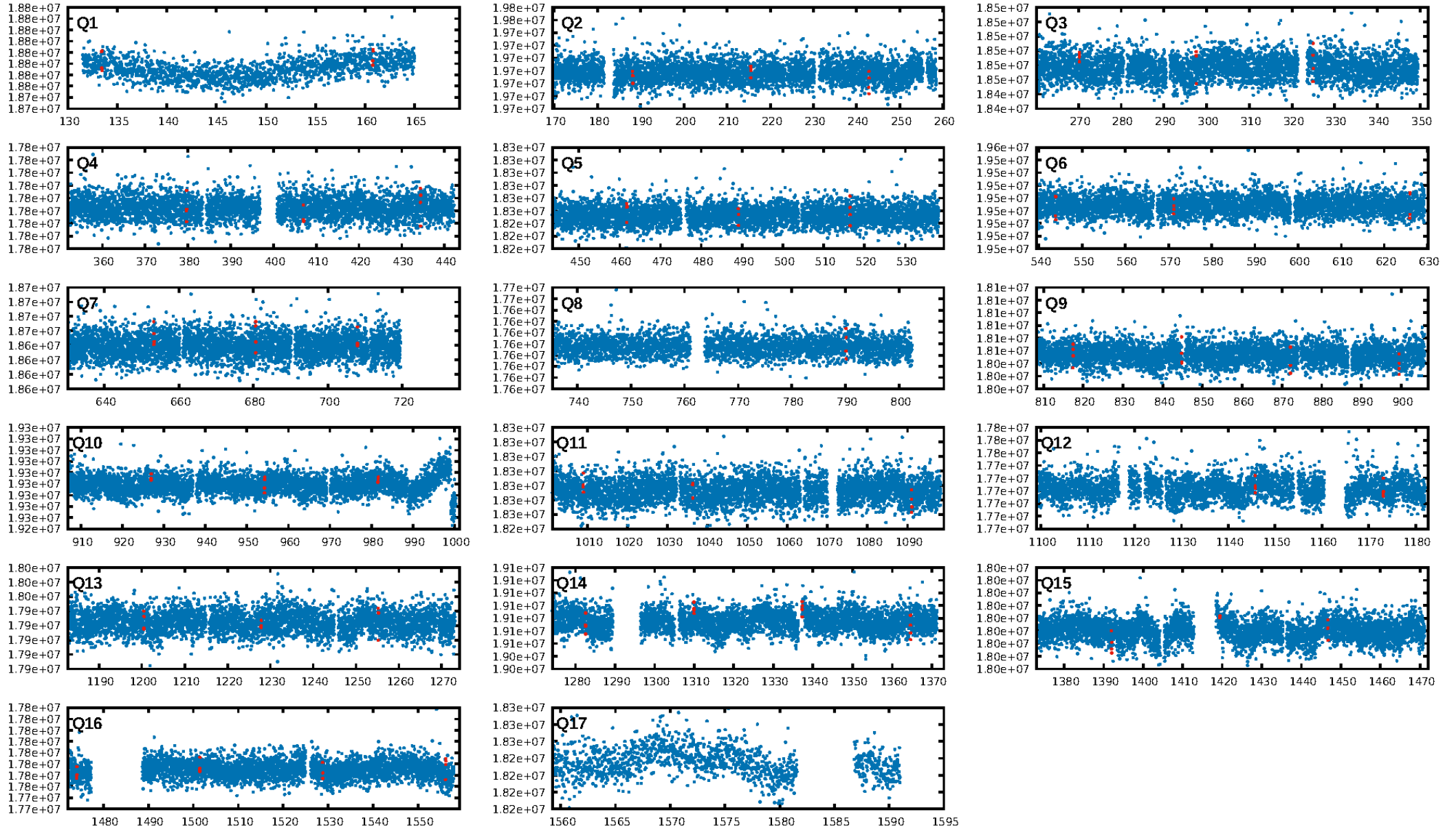
DV Fit Results:

Period = 27.36074 [0.00023] d
Epoch = 133.4192 [0.0088] BKJD
Rp/R* = 0.0260 [0.0612]
a/R* = 222.98 [2454.11]
b = 0.02 [493.26]
Seff = 36.44 [15.19]
Teff = 627 [65] K
Rp = 2.87 [6.82] Re
a = 0.1845 [0.0486] AU
Ag = 473.27 [2250.88] [0.21 σ]
Teffp = 4518 [5358] K [0.73 σ]

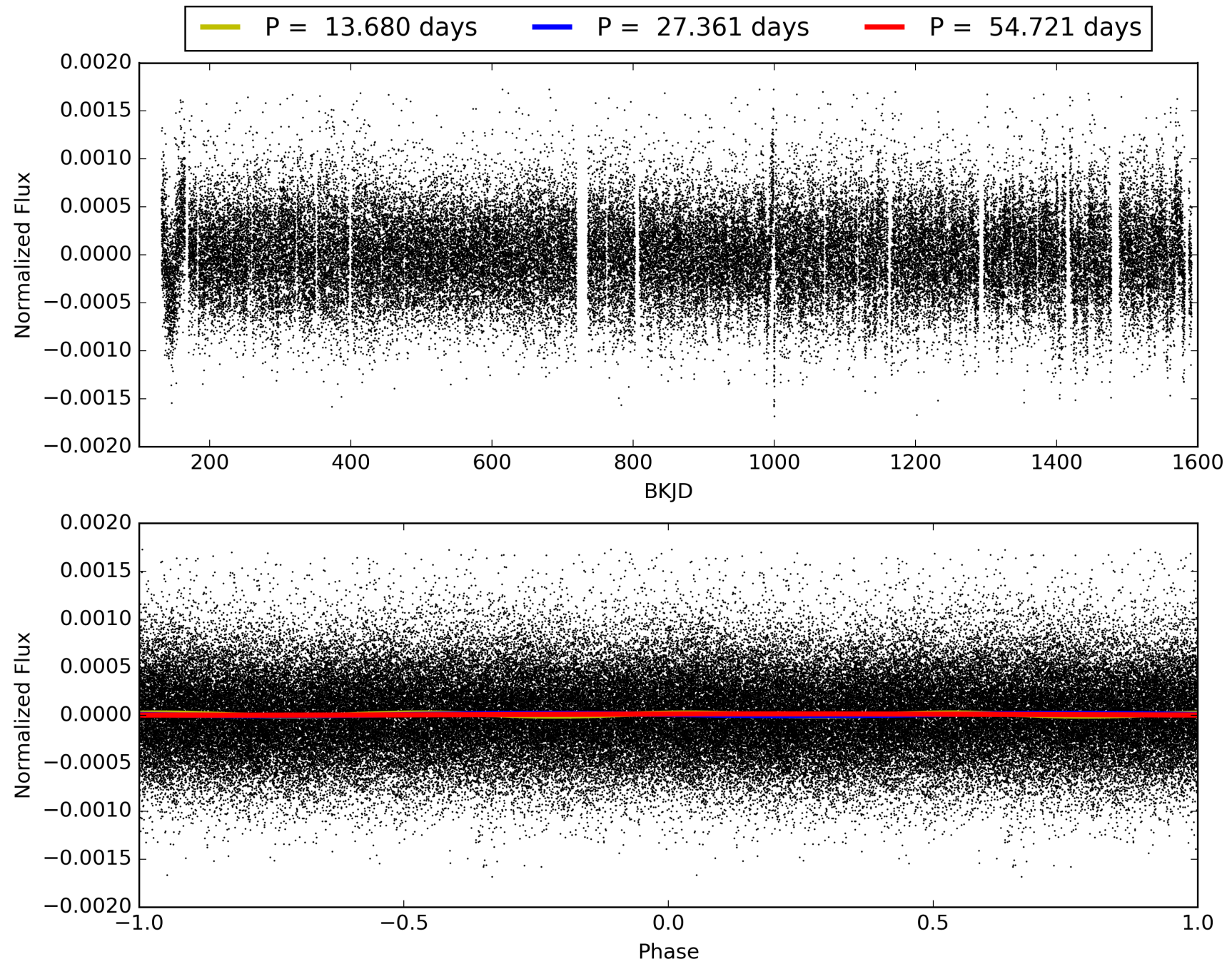
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [158.81 σ]
LongPeriod-sig: 100.0% [55.29 σ]
ModelChiSquare2-sig: 3.0%
ModelChiSquareGof-sig: 85.9%
Bootstrap-pfa: 3.00e-09
RollingBand-fgt: 1.00 [9/9]
GhostDiagnostic-chr: 2.892
Centroid-sig: 47.7%
Centroid-so: 0.680 arcsec [0.81 σ]
OotOffset-rm: 3.797 arcsec [3.33 σ]
KicOffset-rm: 3.745 arcsec [3.28 σ]
OotOffset-st: 2/1/3/0 [6]
KicOffset-st: 2/1/3/0 [6]
DiffImageQuality-fgm: 0.00 [0/6]
DiffImageOverlap-fno: 0.00 [0/16]

TCE 007031742-04, PDC Light Curves

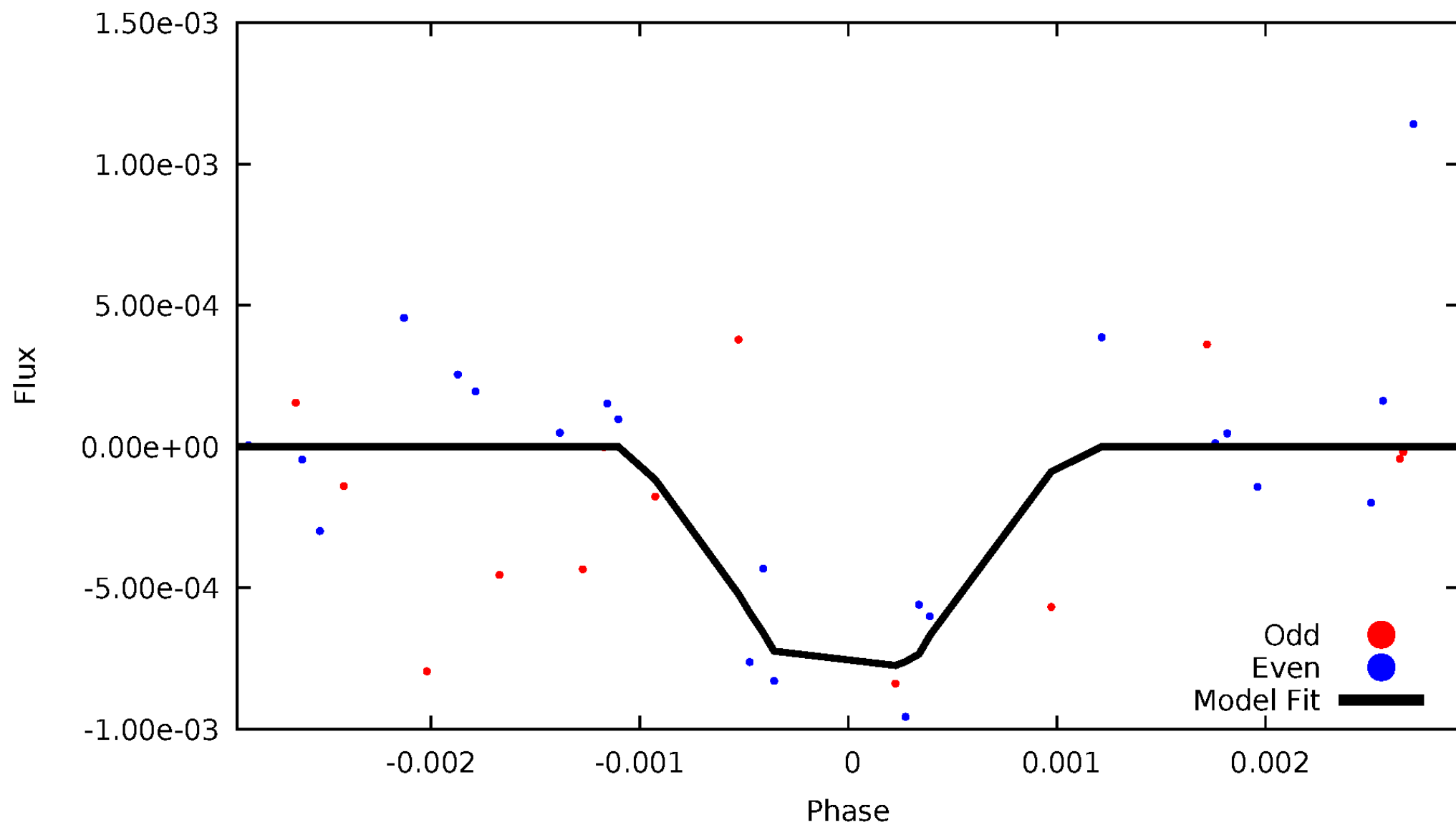


TCE 007031742-04



DV Odd/Even

TCE 007031742-04

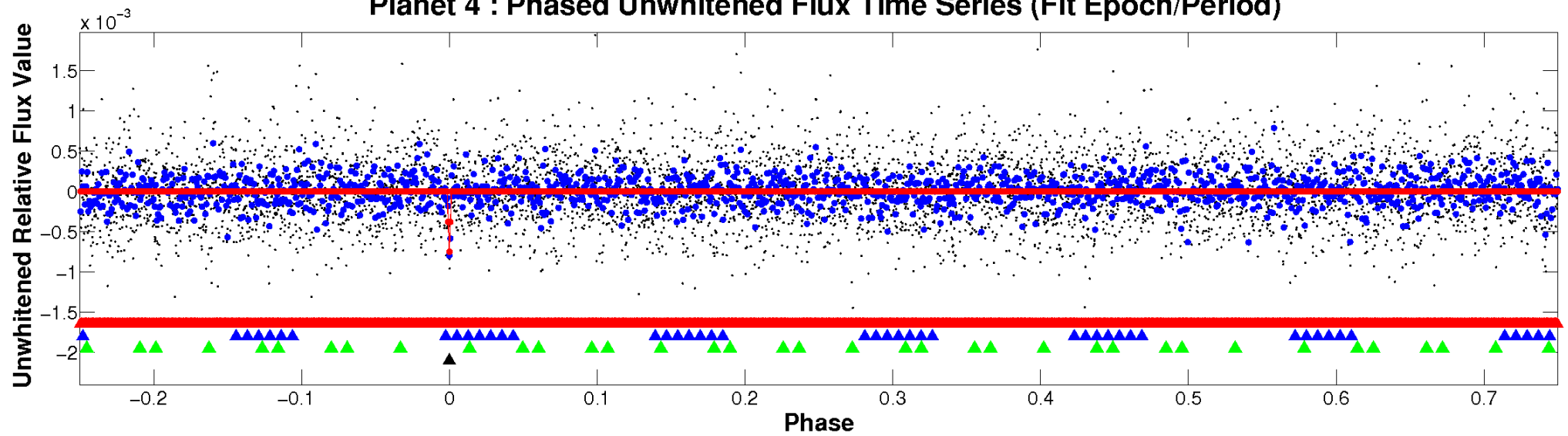


ALT Odd/Even

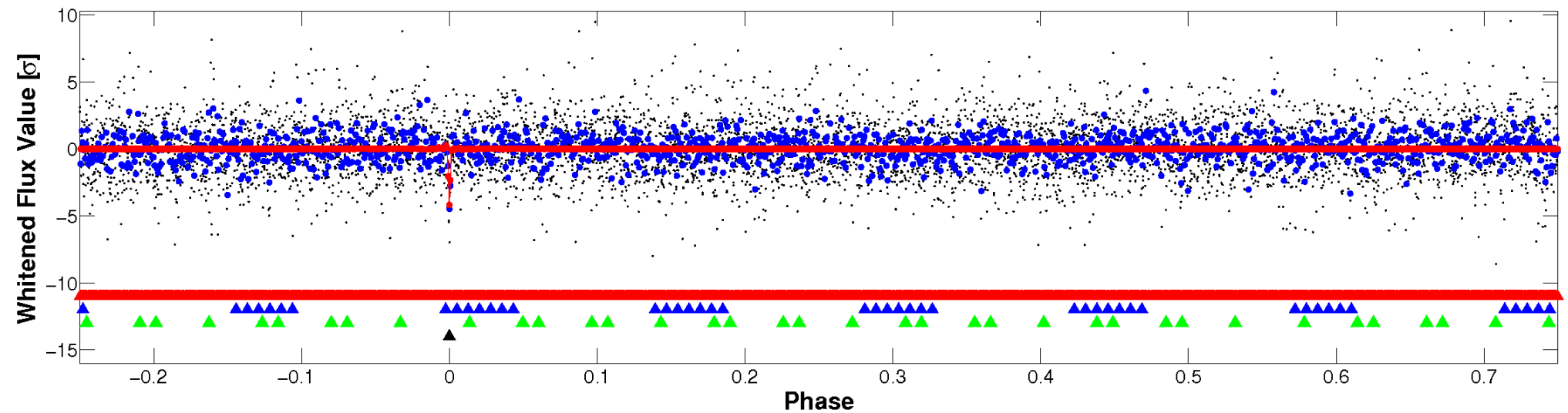
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

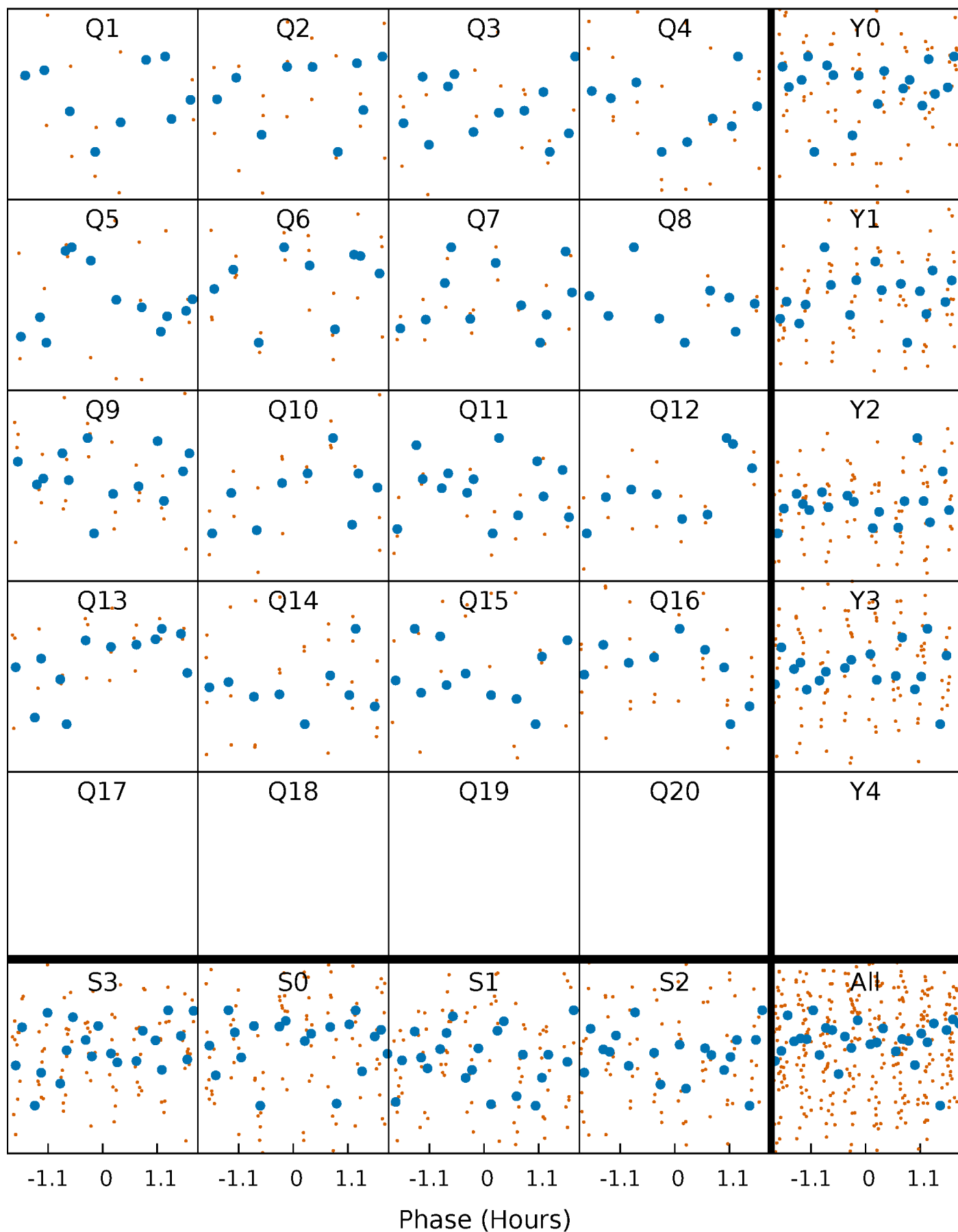


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



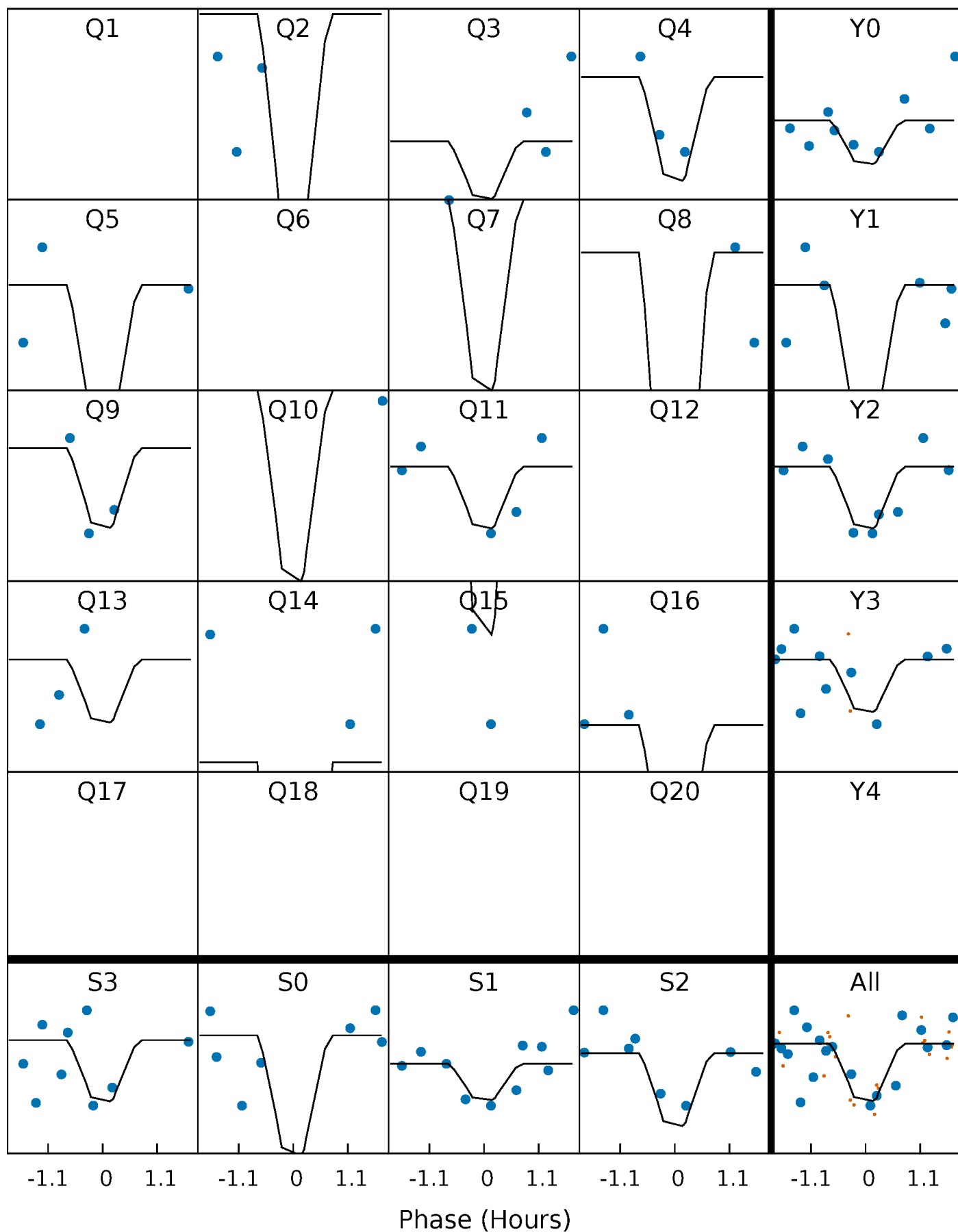
PDC Quarter-Phased Transit Curves

TCE 007031742-04 P= 27.360744 Days $T_0=133.419153$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 007031742-04 P= 27.360744 Days $T_0=133.419153$ (BKJD)

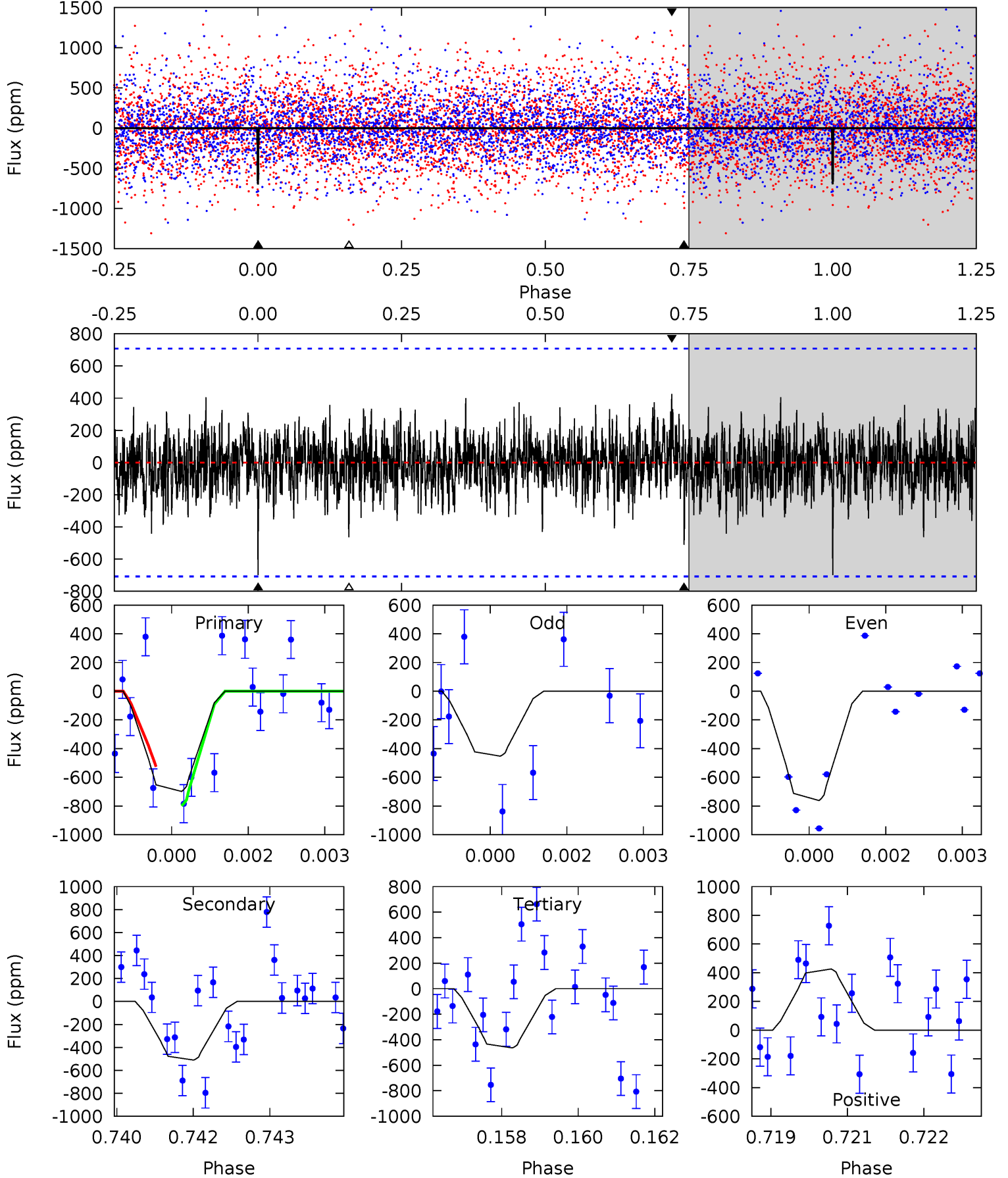


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

007031742-04, $P = 27.360744$ Days, $E = 106.058409$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.28	3.86	3.51	3.22	5.35	3.13	0.97	1.77	2.06	0.35	0.64	1.02	0.95	0.38	1.00



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 007031742

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6063^{+190}_{-253}	$4.476^{+0.052}_{-0.208}$	$0.070^{+0.250}_{-0.300}$	$1.012^{+0.318}_{-0.106}$	$1.117^{+0.130}_{-0.159}$	$1.519^{+0.404}_{-0.804}$
	+3%/-4%	+1%/-5%	+357%/-429%	+31%/-10%	+12%/-14%	+27%/-53%
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 007031742-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-511 ± 132	$6.33^{+6.68}_{-4.42}$	893^{+70}_{-48}	4141^{+2978}_{-857}	220^{+2431}_{-165}
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 $A_{\text{obs}} \gg 1.0$

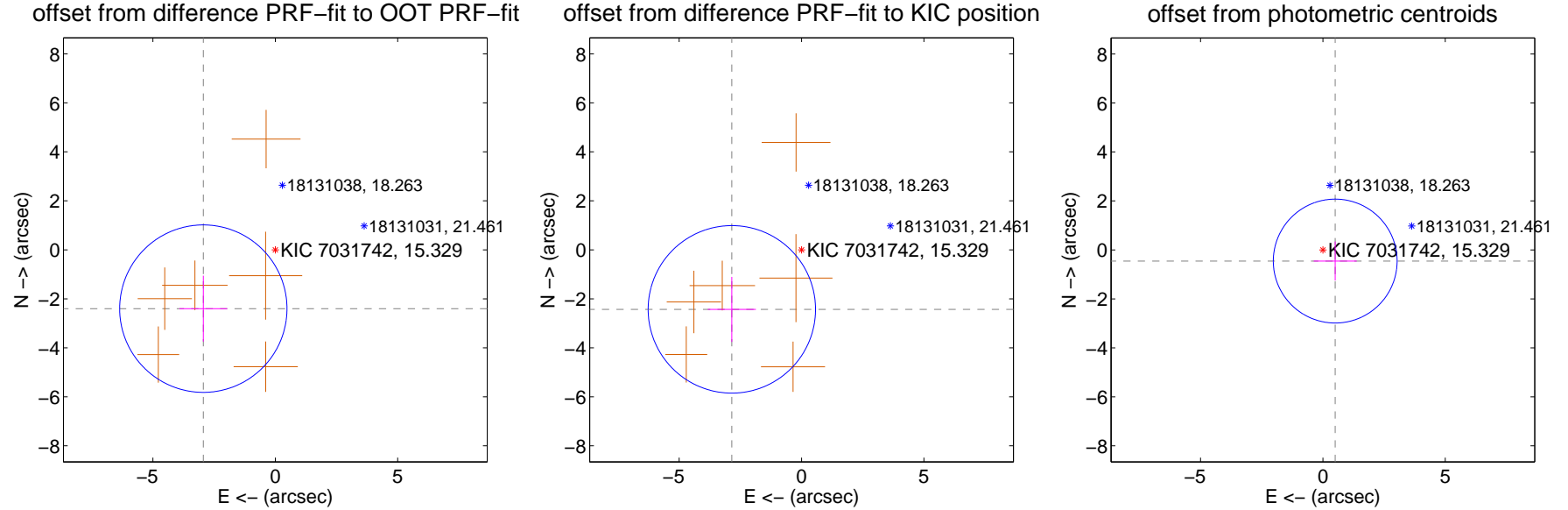
DV Centroid Data

Supplemental centroid analysis for 007031742-04. Kepler magnitude: 15.33. Transit SNR 10.44

There are 0 quarters with good PRF difference image offsets

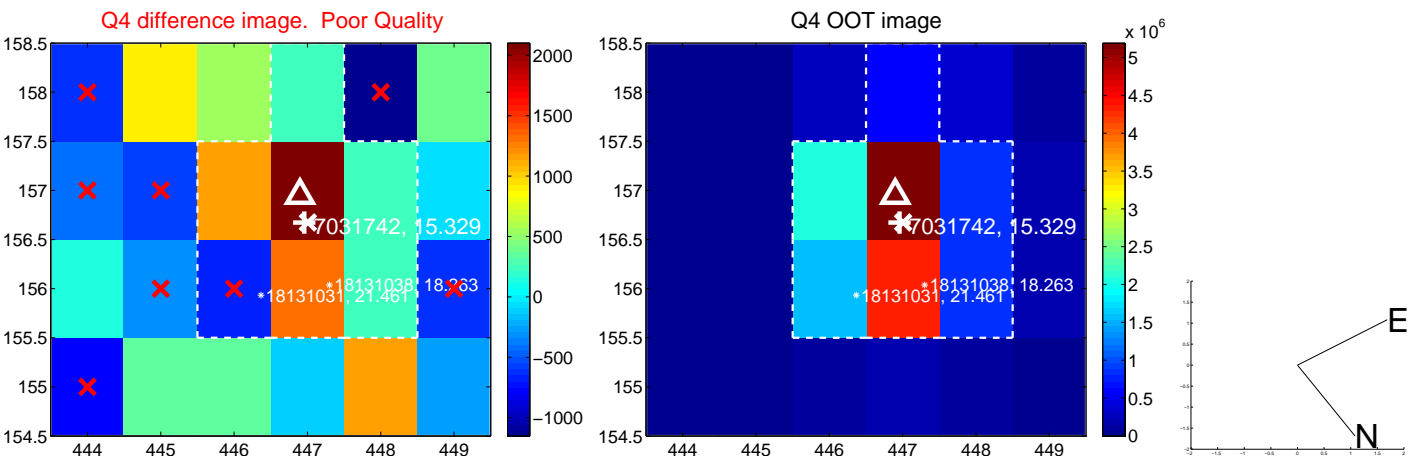
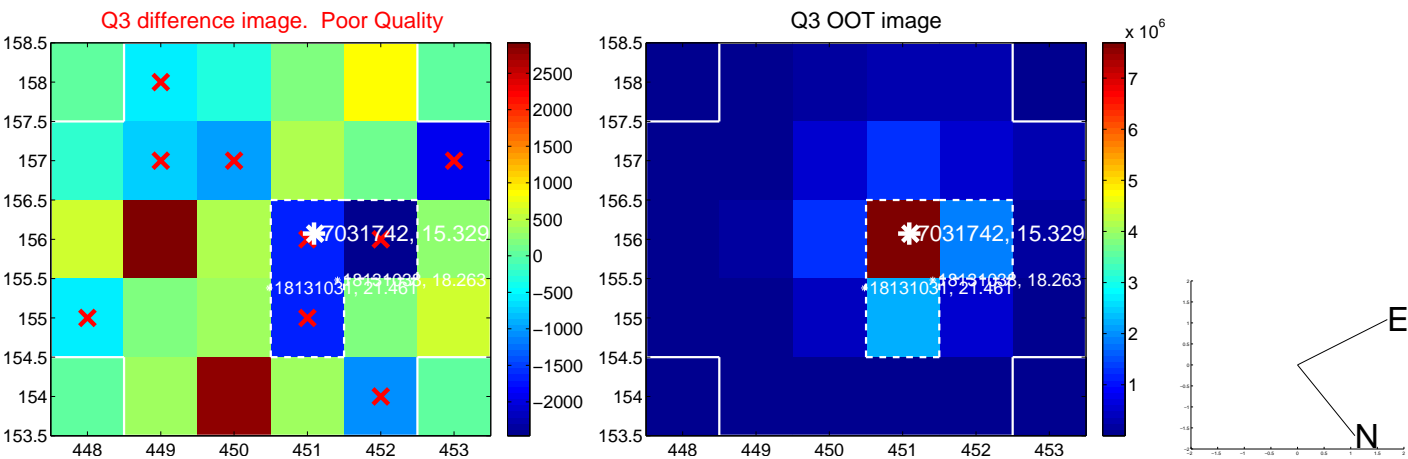
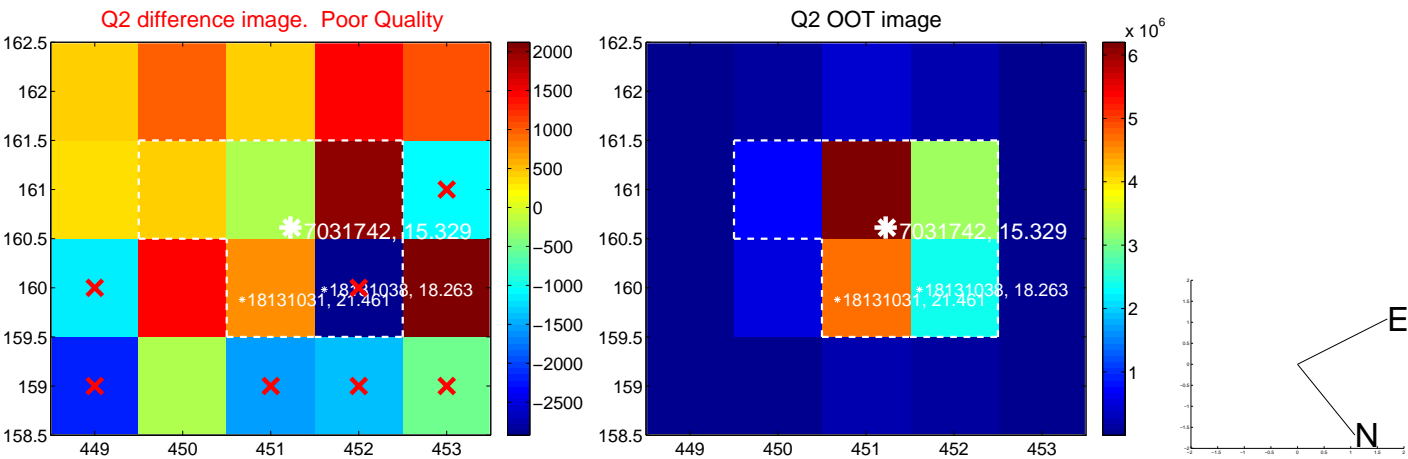
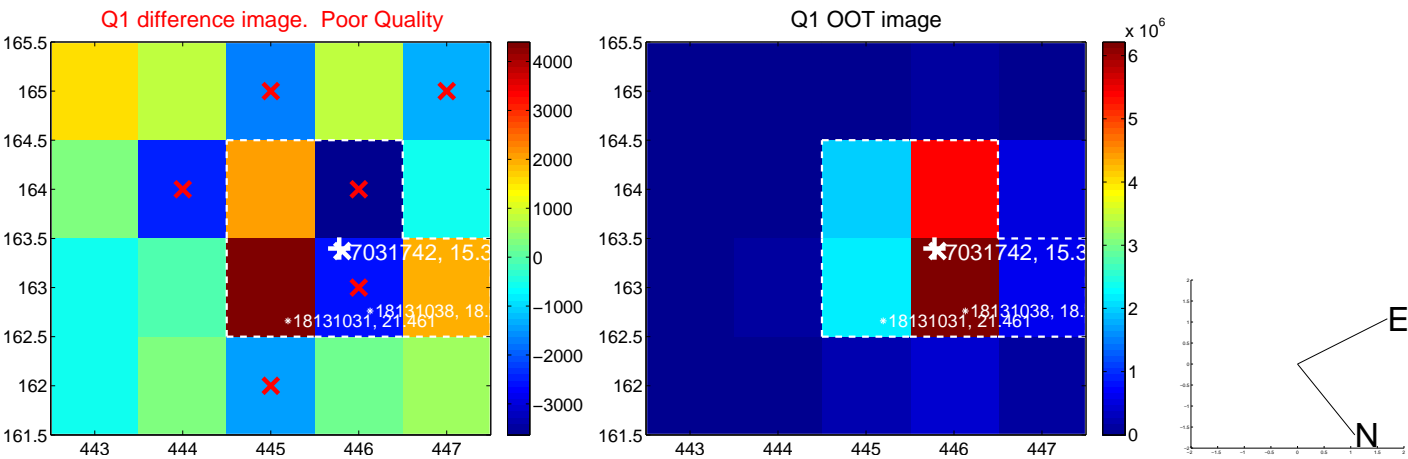
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.797 ± 1.140	3.33	2.941 ± 0.977	-2.402 ± 1.347
PRF-fit source offset from KIC position	3.745 ± 1.140	3.28	2.848 ± 0.981	-2.431 ± 1.328
photometric centroid source offset	0.68 ± 0.84	0.81	-0.50 ± 0.88	-0.46 ± 0.80

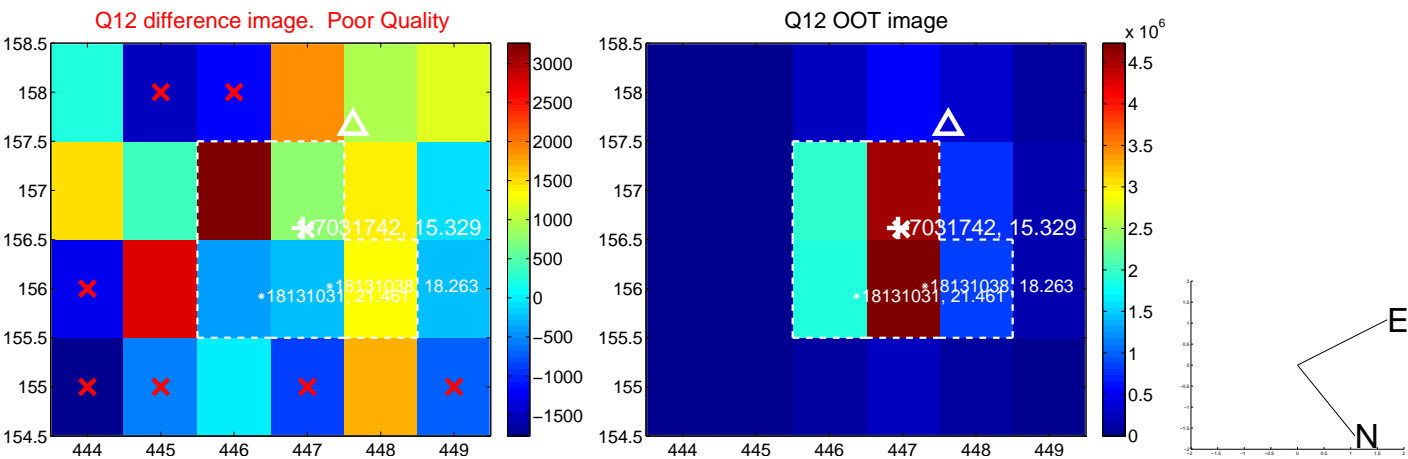
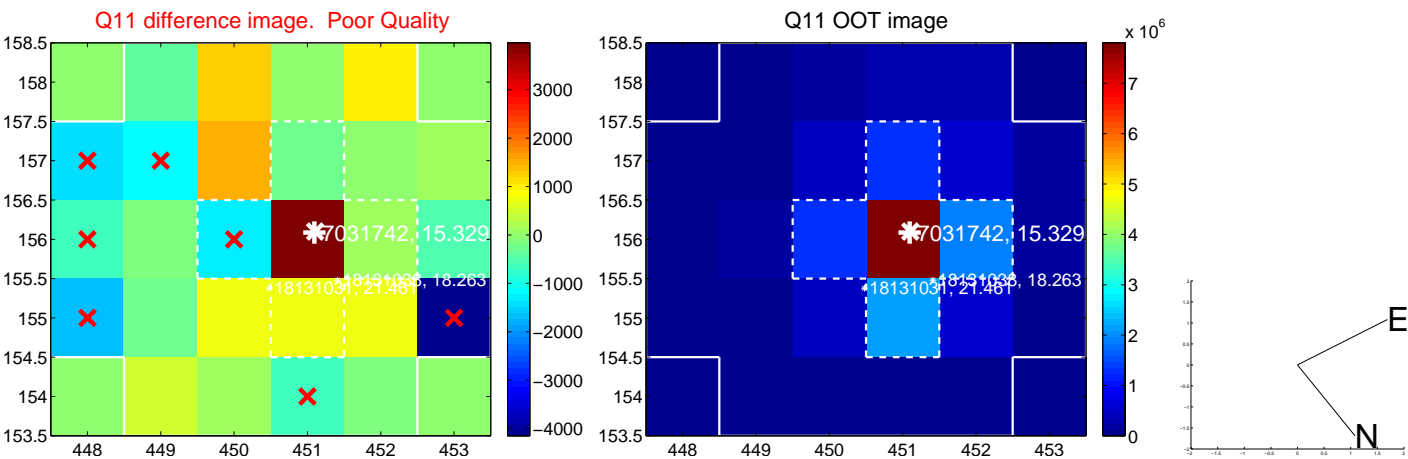
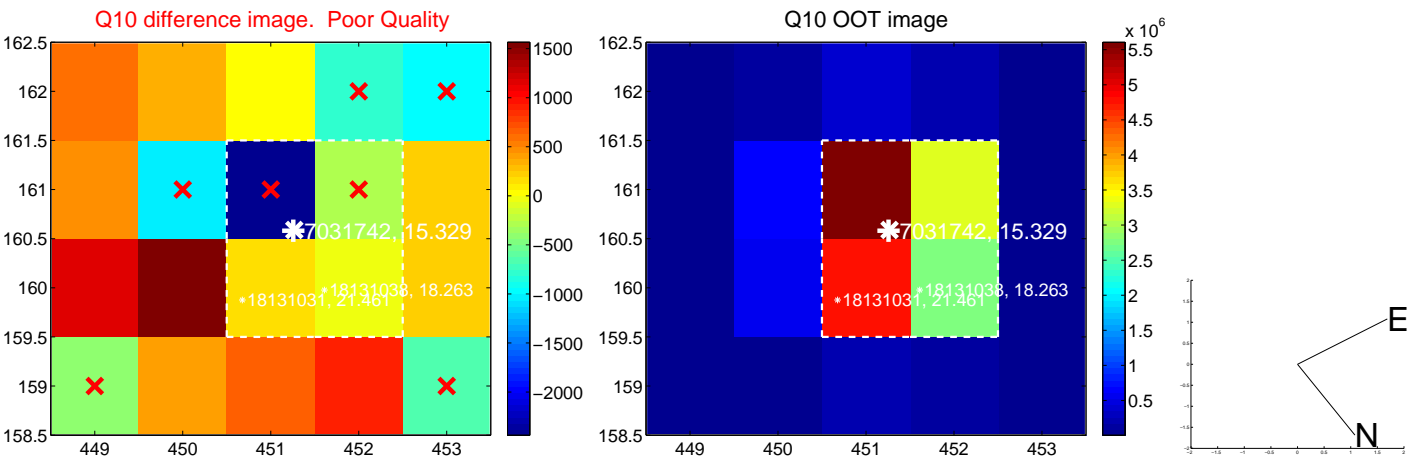
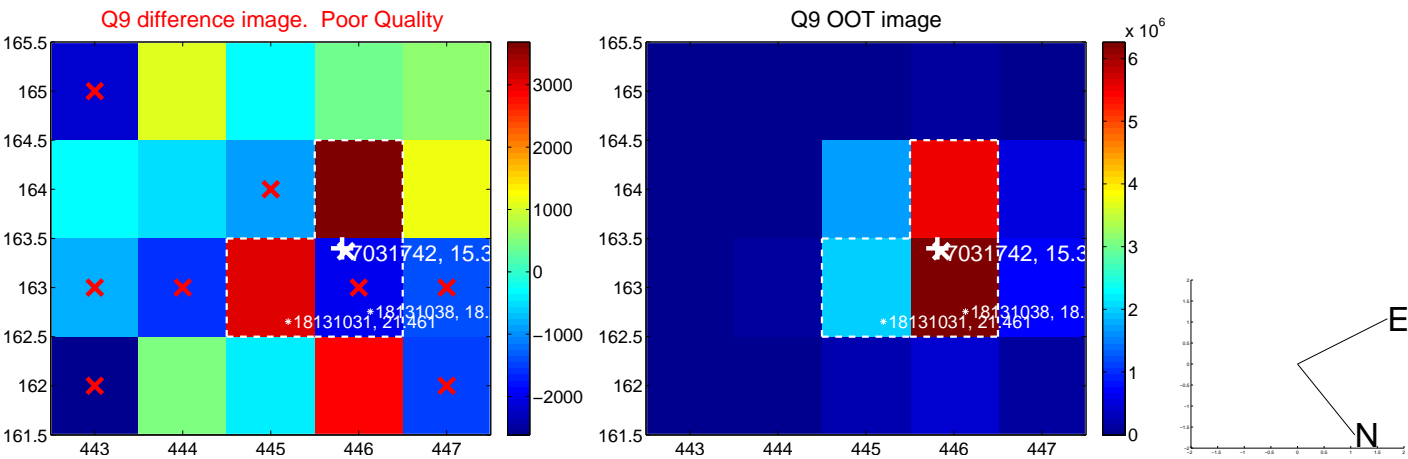


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

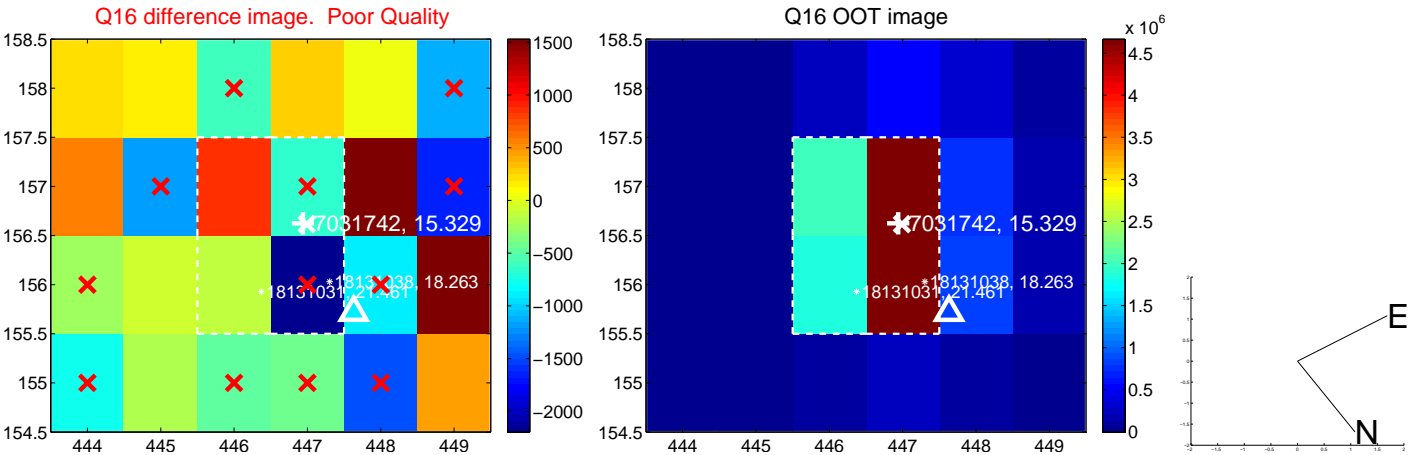
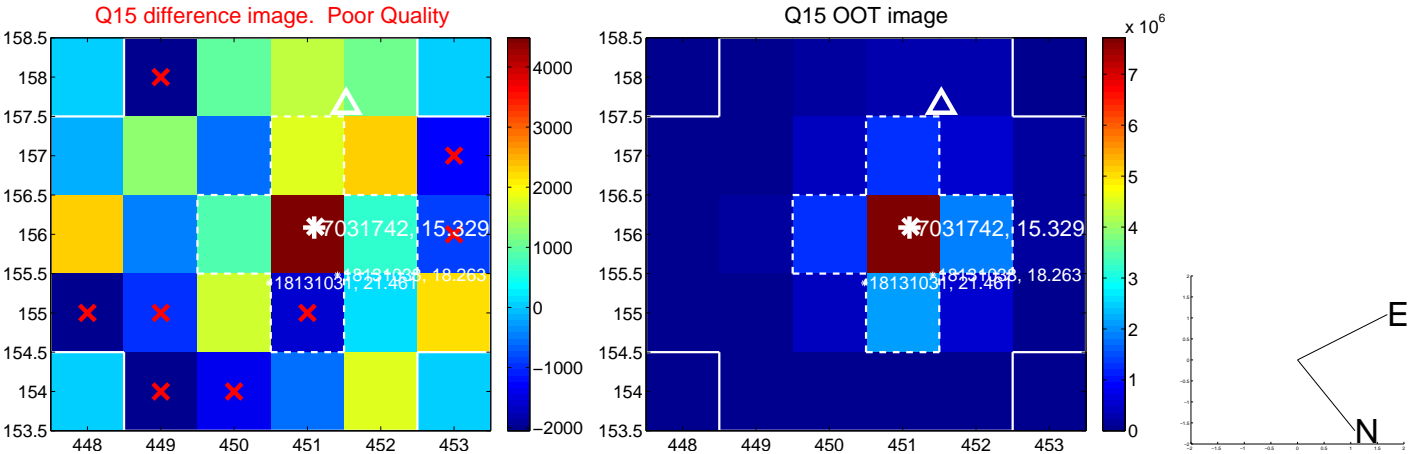
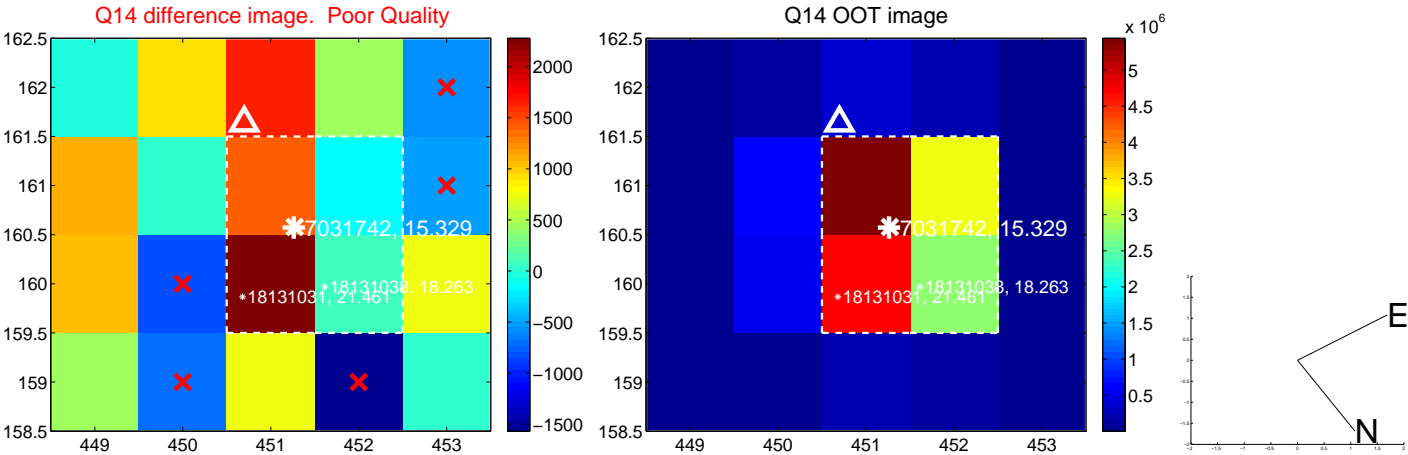
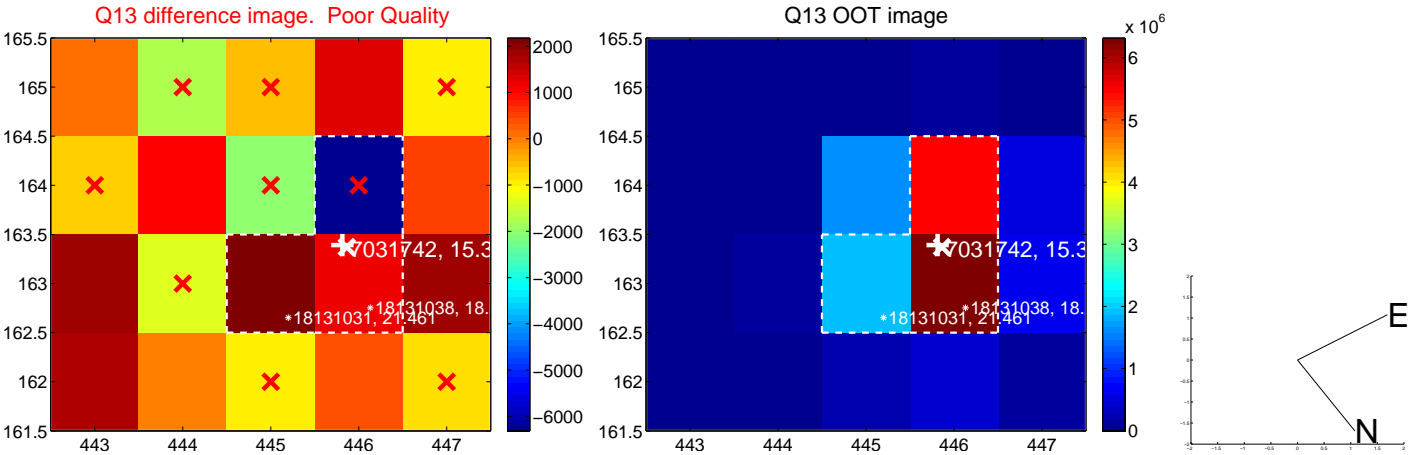
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



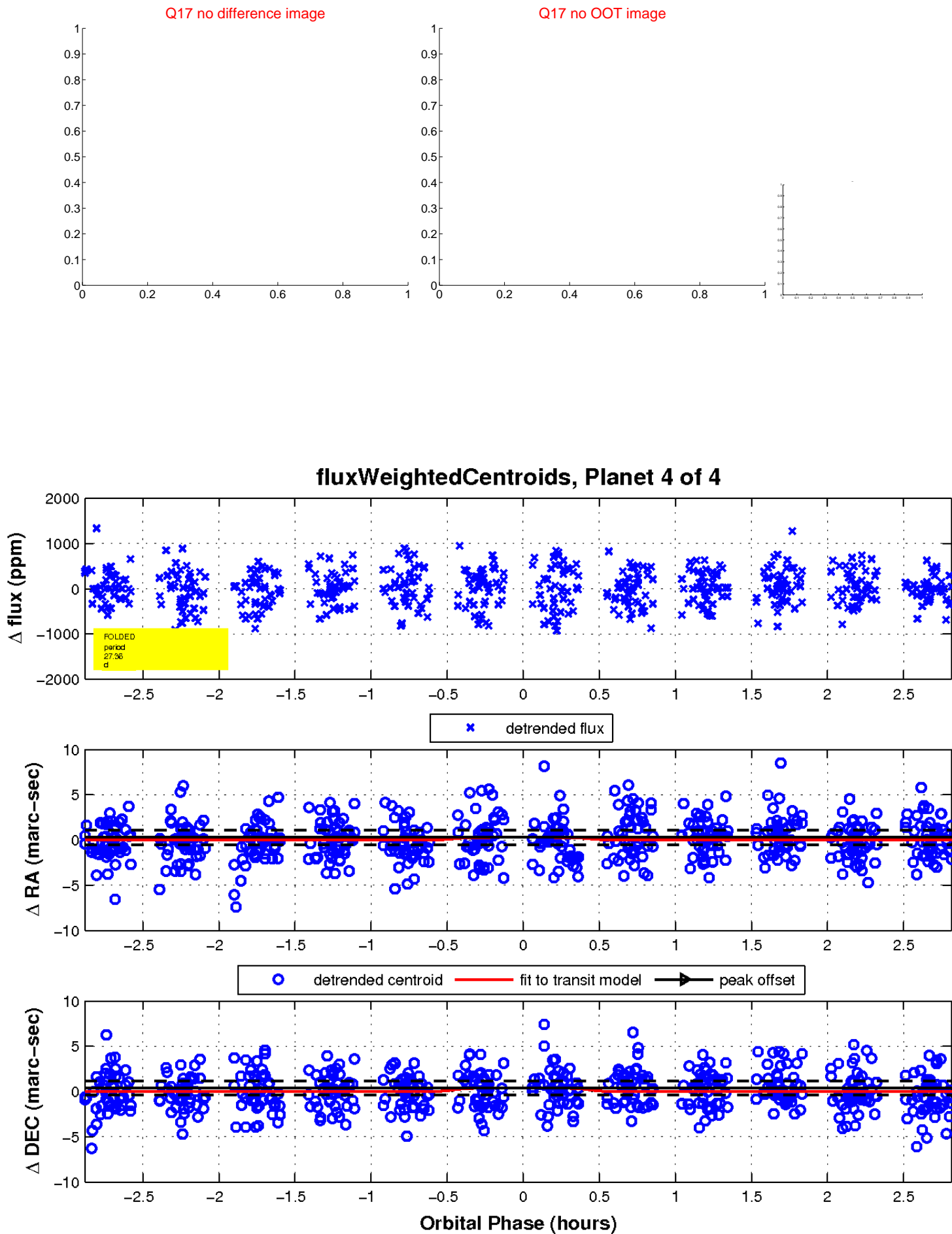
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

