

KIC 011700370

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})
011700370-01	OBS	No	0.613034	132.056373	10.4	2.535	10.8	11.6	2.05	8517	0.77	77863.06
011700370-02	OBS	No	0.613055	131.641214	14.3	1.896	11.5	16.5	2.05	8517	0.90	77859.66
011700370-03	OBS	No	1.680863	132.188275	26.4	2.228	9.6	9.3	2.05	8517	1.22	20289.36
011700370-04	OBS	No	23.021550	151.031243	89.7	2.118	7.3	9.3	2.05	8517	2.19	619.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011700370-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
011700370-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
011700370-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
011700370-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

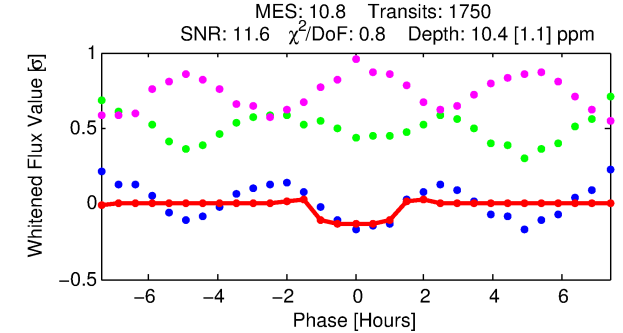
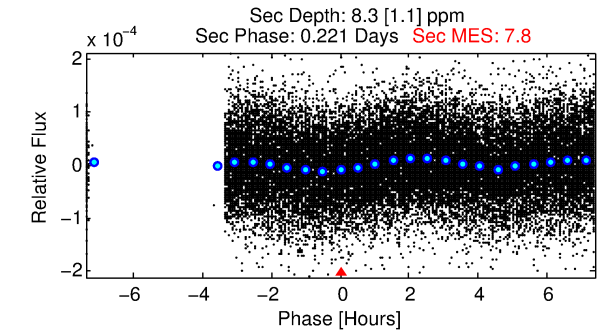
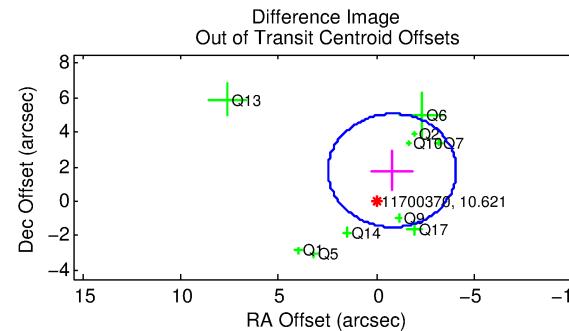
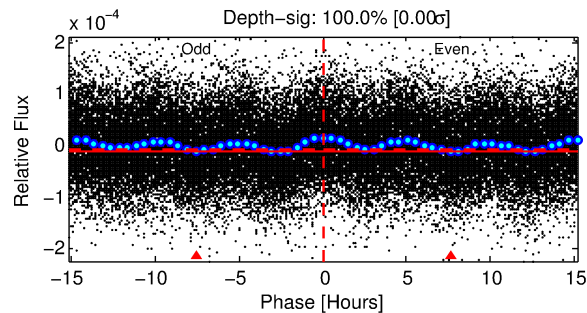
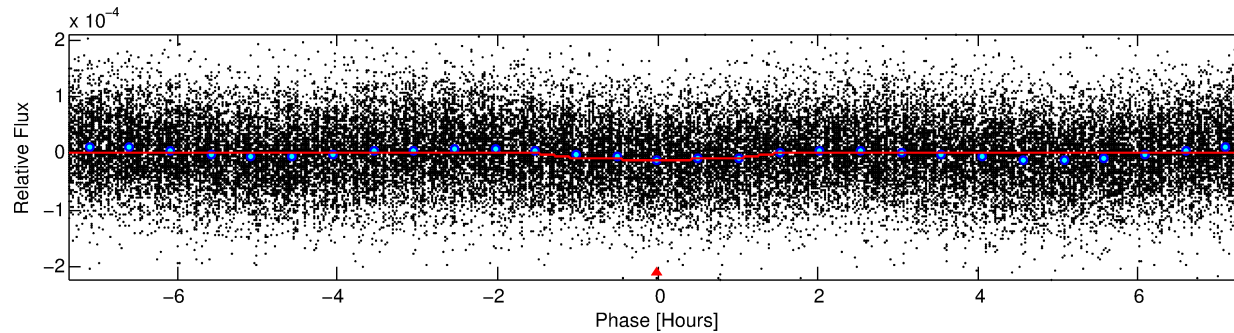
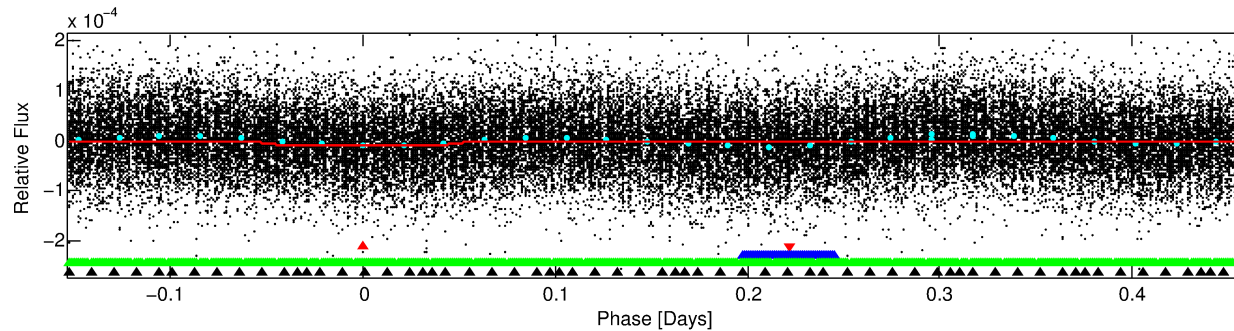
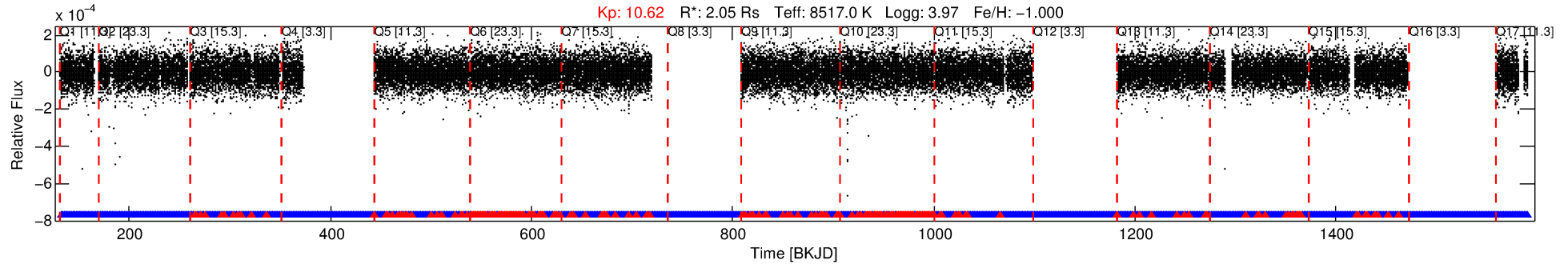
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011700370-01

No Significant Match Found

DV One-Page Summary

KIC: 11700370 Candidate: 1 of 4 Period: 0.613 d



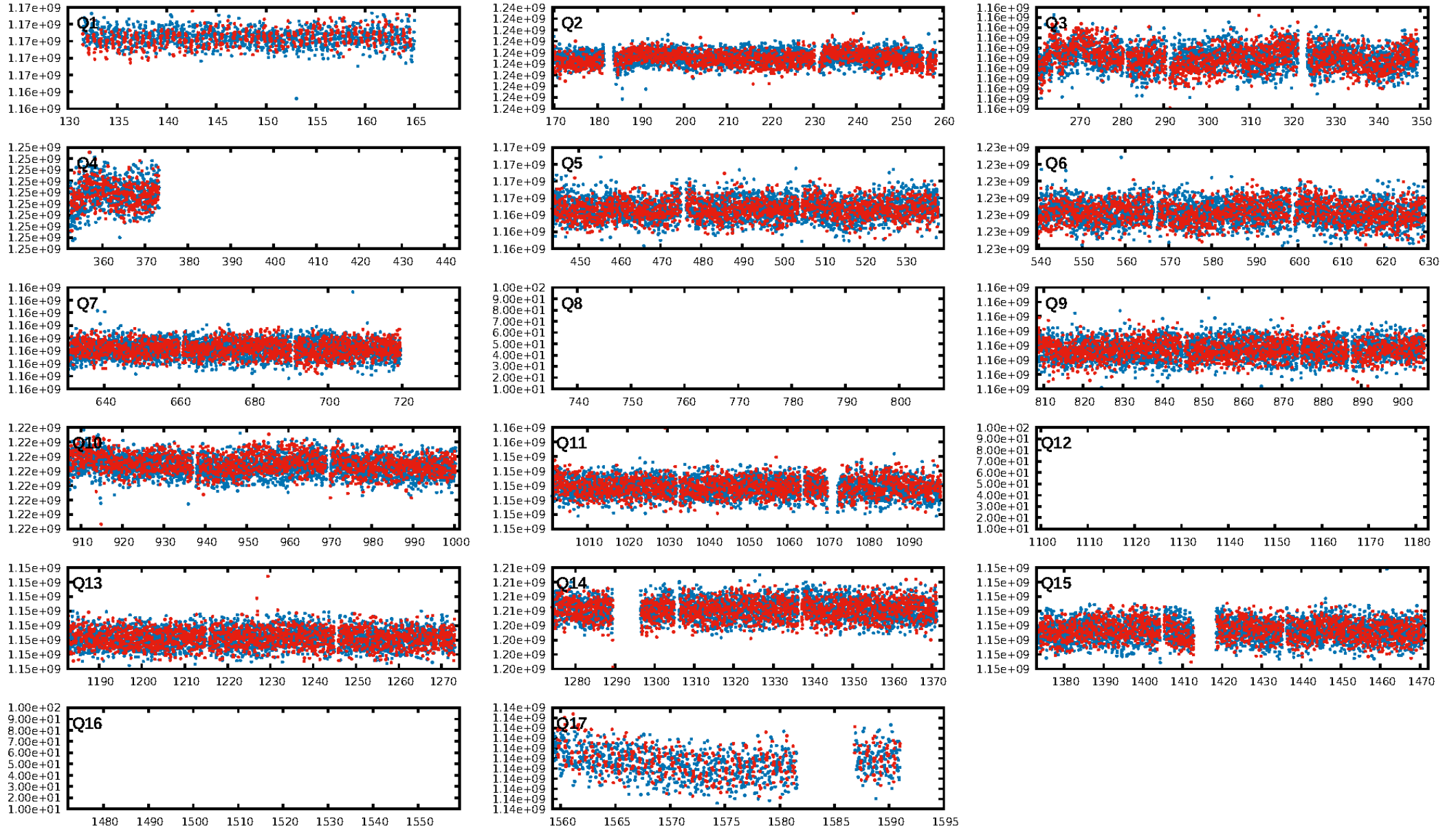
DV Fit Results:

Period = 0.61303 [0.00001] d
Epoch = 132.0564 [0.0020] BKJD
Rp/R* = 0.0034 [0.0005]
a/R* = 1.25 [0.44]
b = 0.90 [0.21]
Seff = 77863.06 [51761.50]
Teq = 4260 [708] K
Rp = 0.77 [0.33] Re
a = 0.0159 [0.0063] AU
Ag = 1.96 [1.44] [0.67σ]
Teffp = 7796 [737] K [3.46σ]

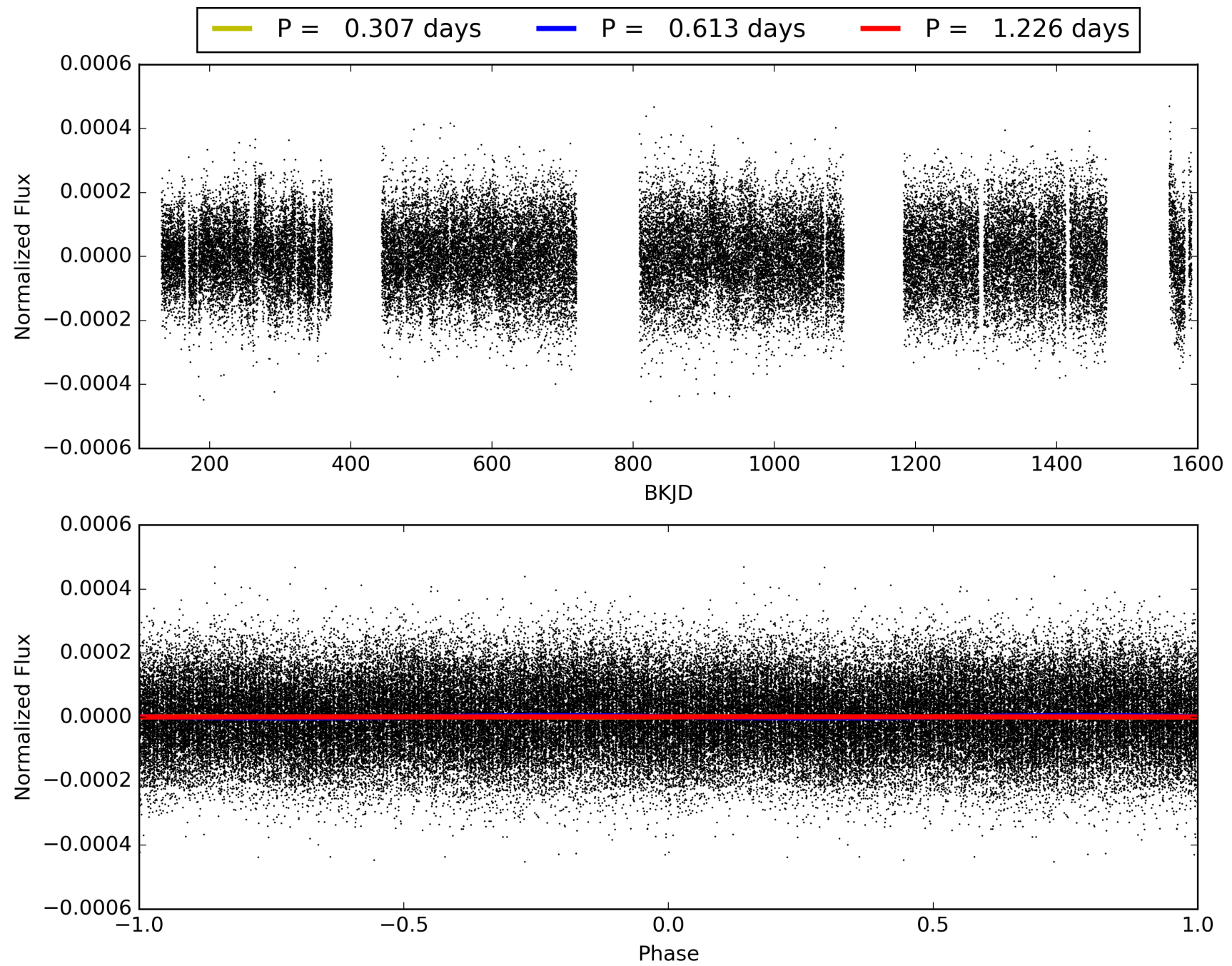
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 9.66e-19
RollingBand-fgt: 0.84 [1366/1618]
GhostDiagnostic-chr: 2.377
Centroid-sig: N/A
Centroid-so: 0.278 arcsec [0.25σ]
OotOffset-rm: 1.952 arcsec [1.79σ]
OotOffset-st: 4/1/0/5 [10]
KicOffset-rm: 1.897 arcsec [1.91σ]
KicOffset-st: 4/1/0/5 [10]
DiffImageQuality-fgm: 0.40 [4/10]
DiffImageOverlap-fno: 0.00 [0/14]

TCE 011700370-01, PDC Light Curves

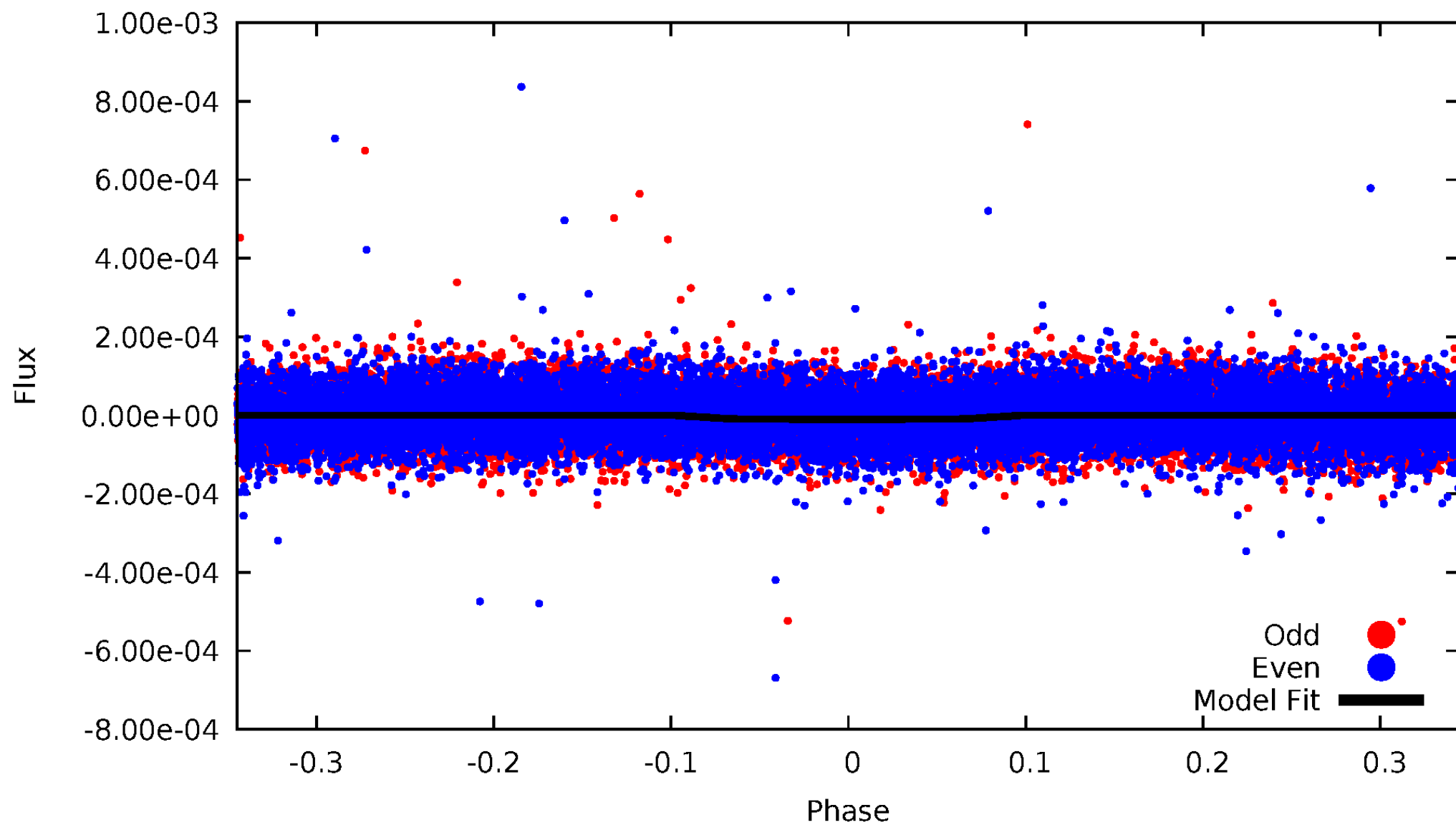


TCE 011700370-01



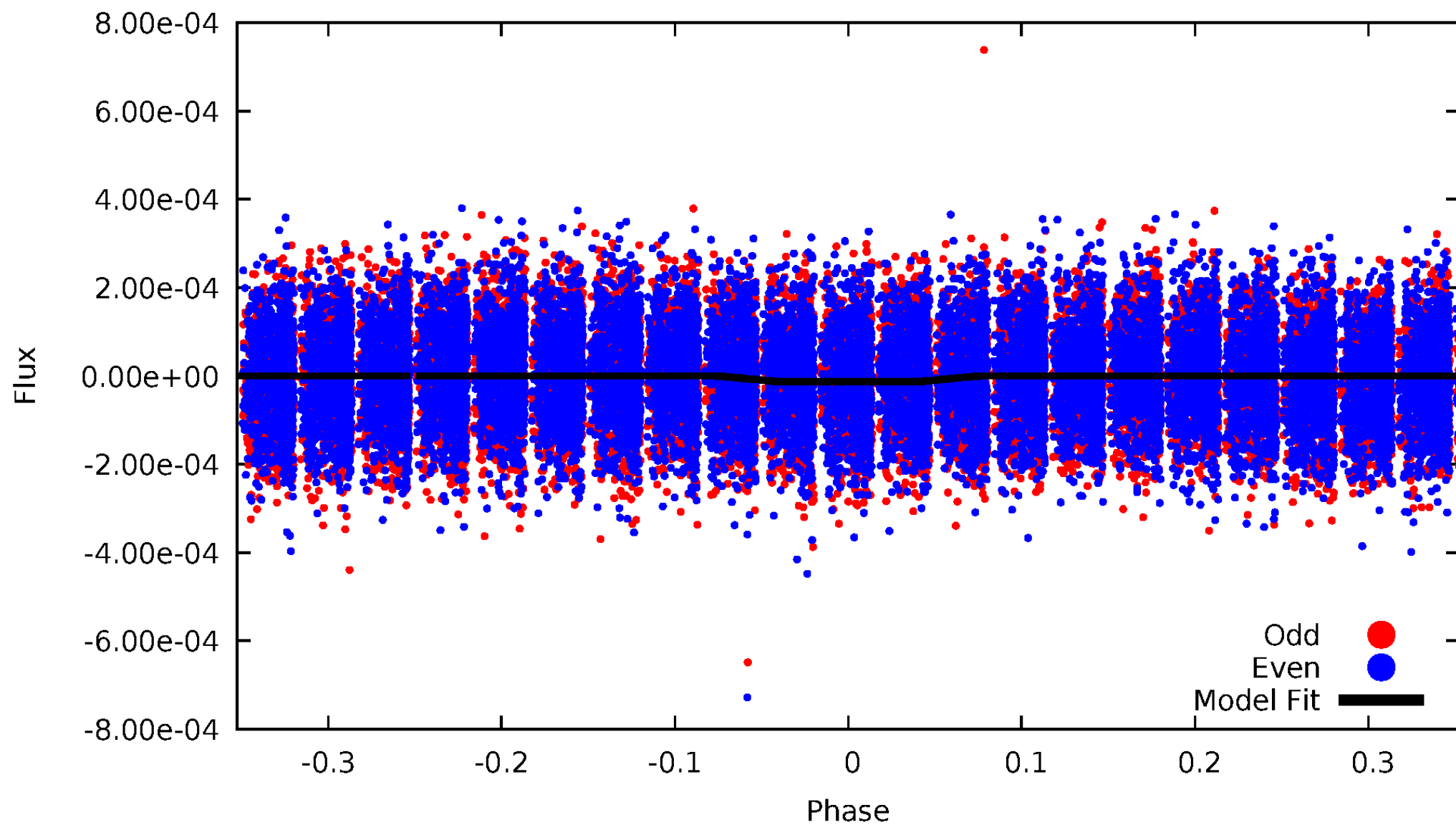
DV Odd/Even

TCE 011700370-01



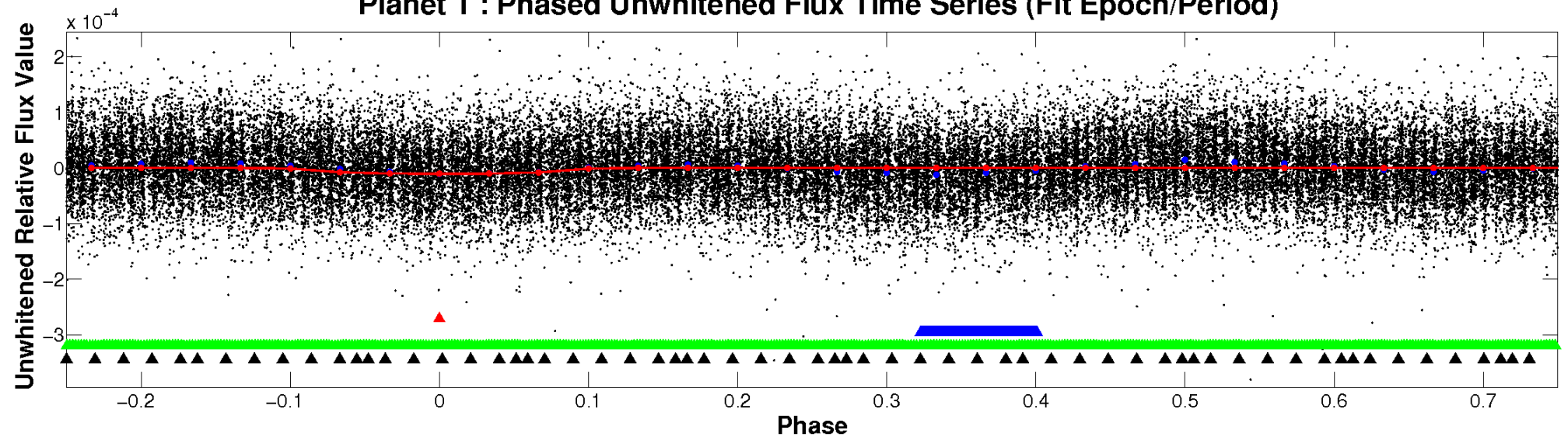
ALT Odd/Even

TCE 011700370-01

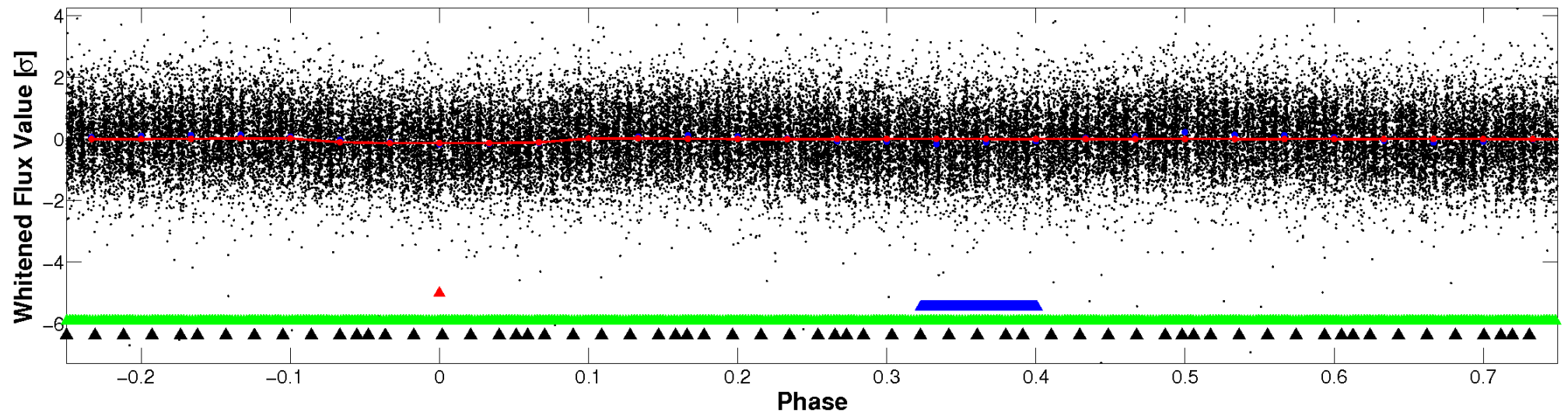


Non-Whitened Vs. Whitened Light Curve

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

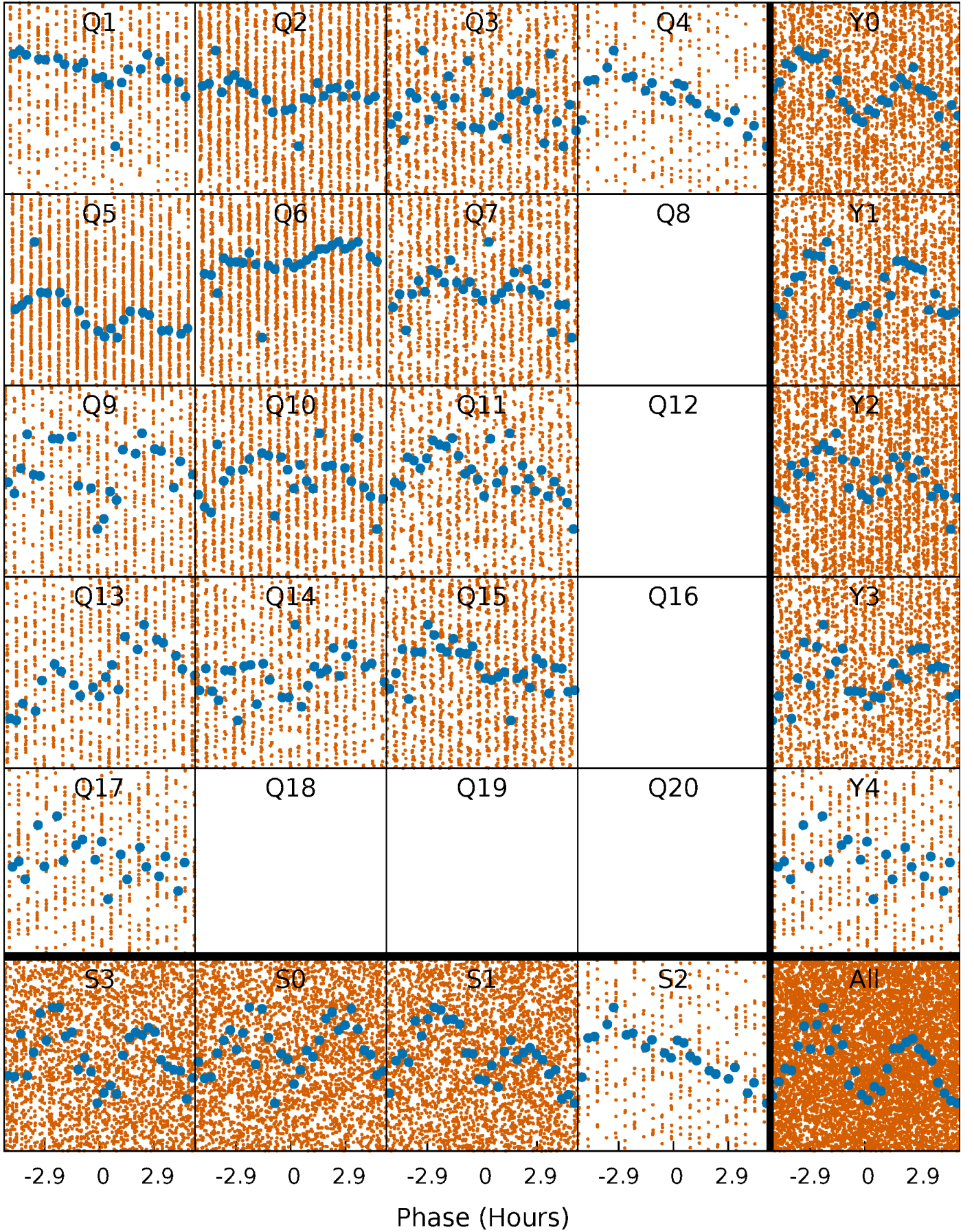


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



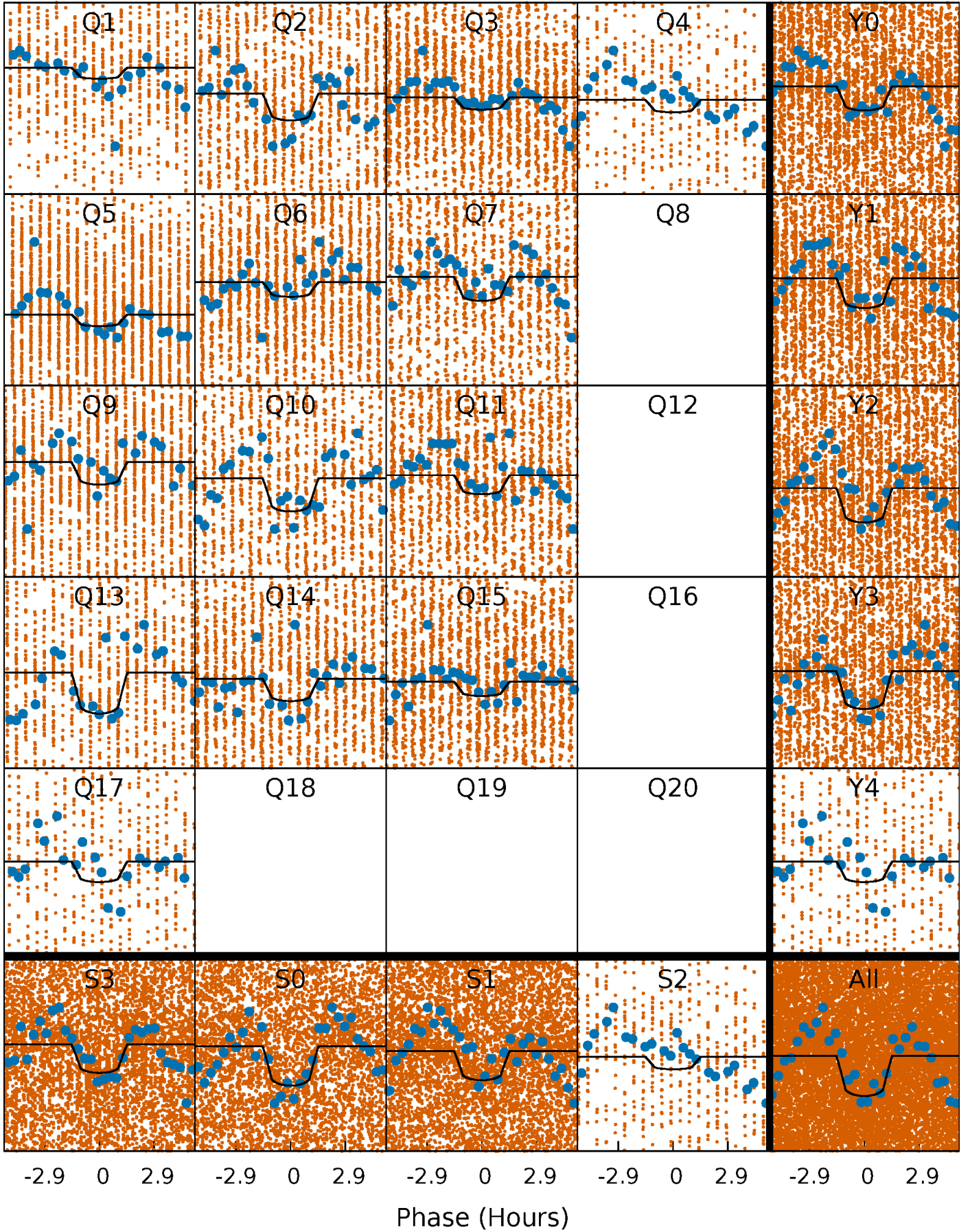
PDC Quarter-Phased Transit Curves

TCE 011700370-01 P= 0.613034 Days $T_0=132.056373$ (BKJD)



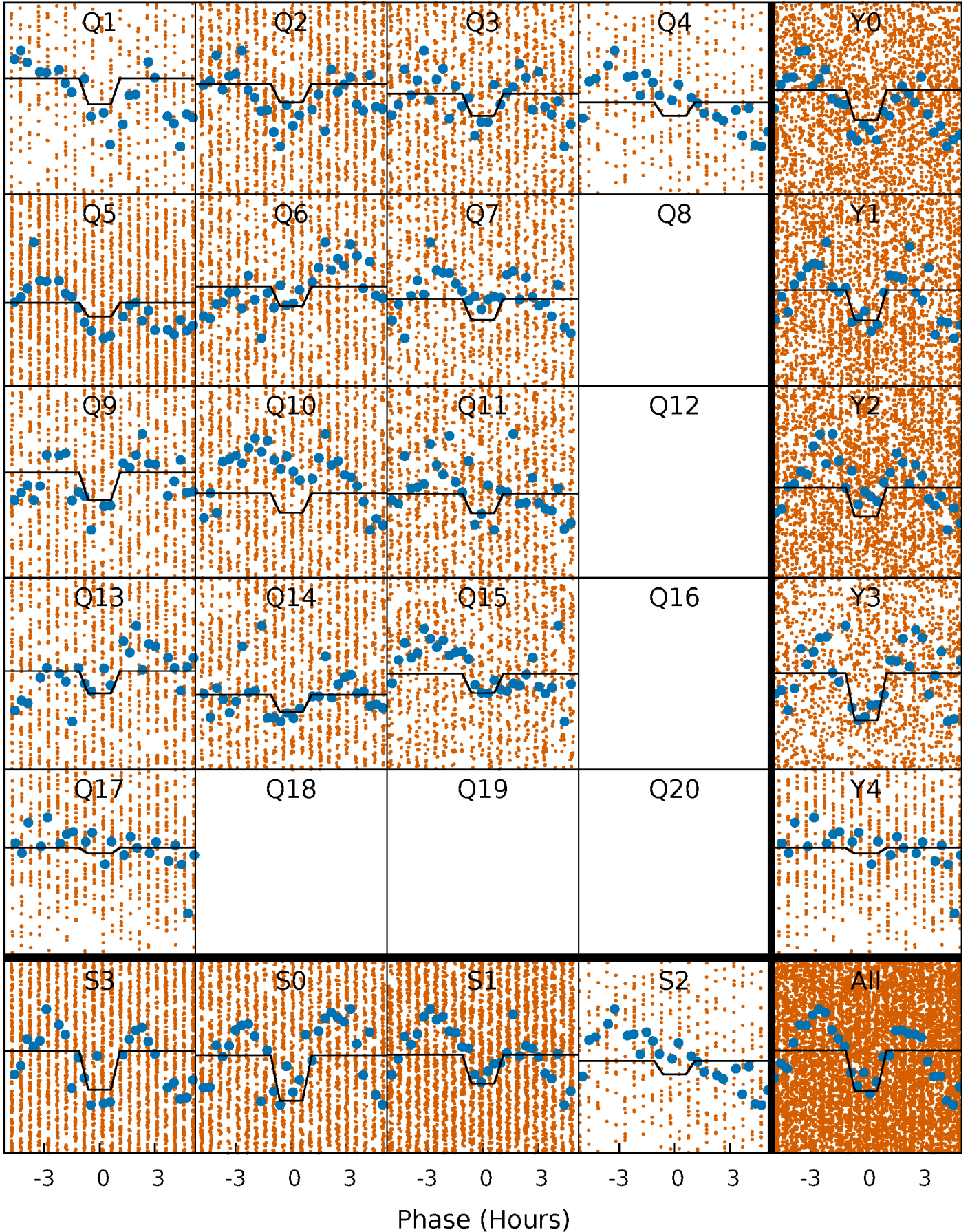
DV Quarter-Phased Transit Curves

TCE 011700370-01 P= 0.613034 Days $T_0=132.056373$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

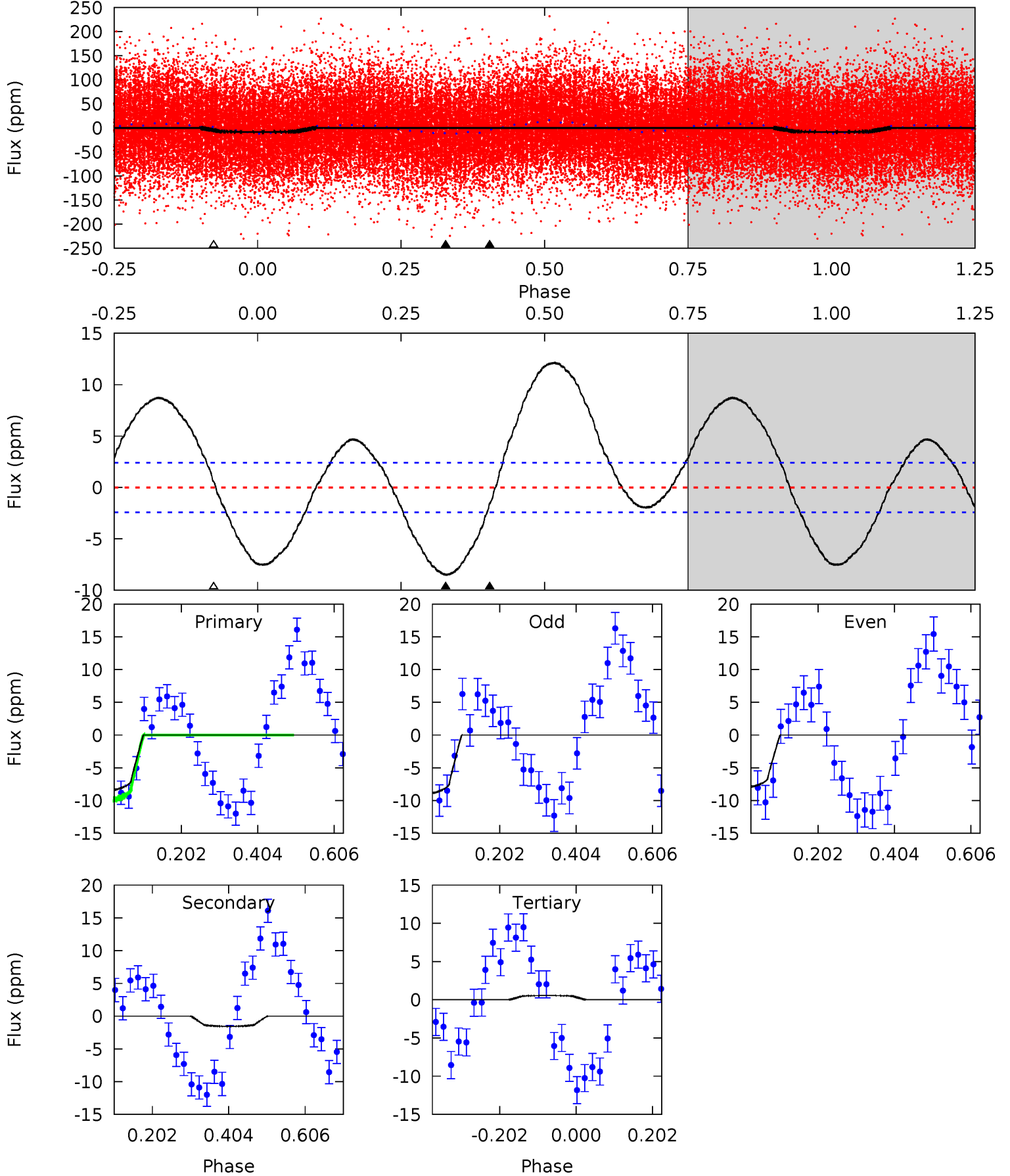
TCE 011700370-01 P= 0.613041 Days $T_0=132.058454$ (BKJD)



DV Model-Shift Uniqueness Test

011700370-01, P = 0.613034 Days, E = 131.443339 Days

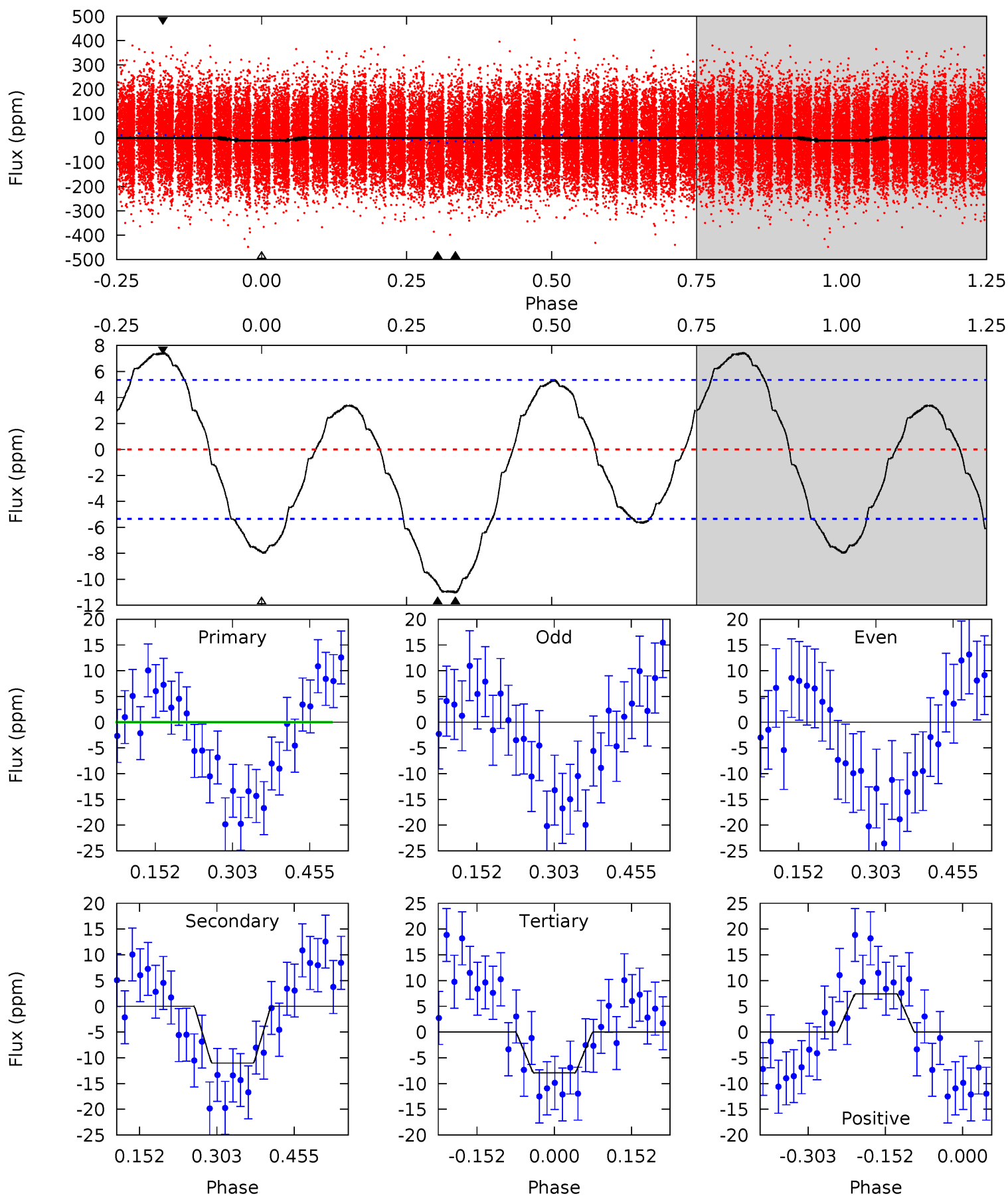
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.6	2.86	-1.01	0	4.41	1.28	9.02	16.6	15.6	3.88	2.86	0.89	1.14	0.59	2.77



Alt Model-Shift Uniqueness Test

011700370-01, P = 0.613041 Days, E = 131.445413 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.69	9.22	6.63	6.22	4.48	1.43	3.92	2.07	2.47	2.59	3.00	0.11	1.04	0.40	0.16



Stellar Parameters For KIC 011700370

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8517^{+272}_{-333}	$3.972^{+0.384}_{-0.096}$	$-1.000^{+0.250}_{-0.300}$	$2.046^{+0.348}_{-0.812}$	$1.431^{+0.173}_{-0.231}$	$0.235^{+0.747}_{-0.071}$
	+3%/-4%	+10%/-2%	+25%/-30%	+17%/-40%	+12%/-16%	+317%/-30%
Source	KIC0	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 011700370-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-2 ± 1	$0.72^{+0.19}_{-0.17}$	5797^{+401}_{-621}	3886^{+1007}_{-7567}	$0.421^{+0.336}_{-0.189}$
Alt.	-11 ± 1	$0.74^{+0.18}_{-0.16}$	5812^{+406}_{-580}	7893^{+1209}_{-898}	$2.810^{+1.905}_{-1.017}$

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

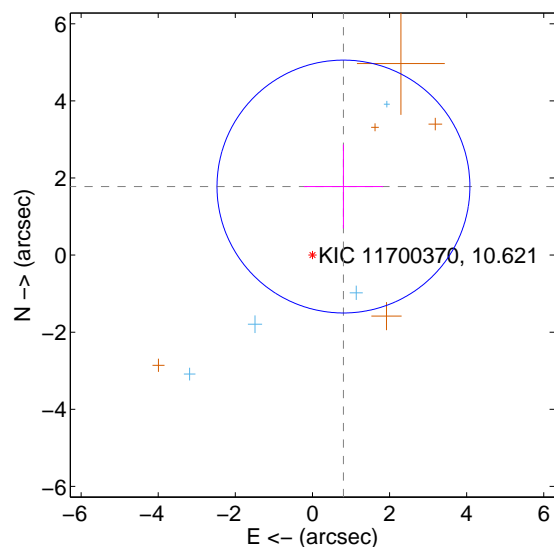
Supplemental centroid analysis for 011700370-01. **Kepler magnitude: 10.62.** Transit SNR 11.57

There are 4 quarters with good PRF difference image offsets

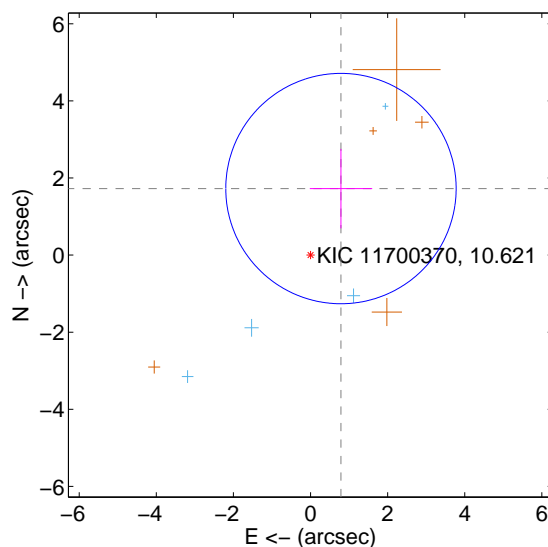
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.952 ± 1.093	1.79	-0.804 ± 1.029	1.778 ± 1.090
PRF-fit source offset from KIC position	1.897 ± 0.996	1.91	-0.789 ± 0.810	1.725 ± 1.030
photometric centroid source offset	0.28 ± 1.11	0.25	0.26 ± 1.09	0.10 ± 1.21

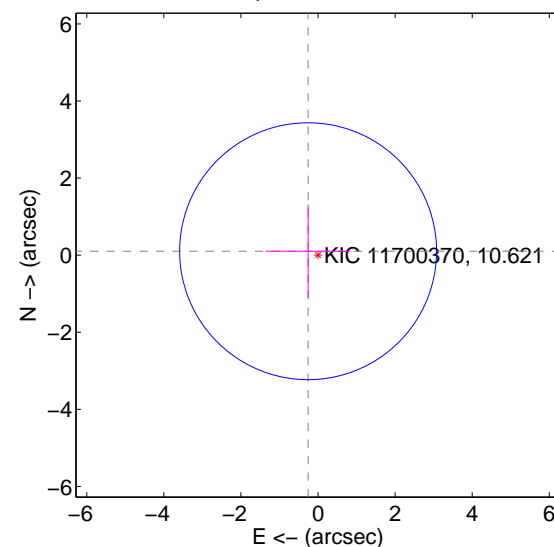
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

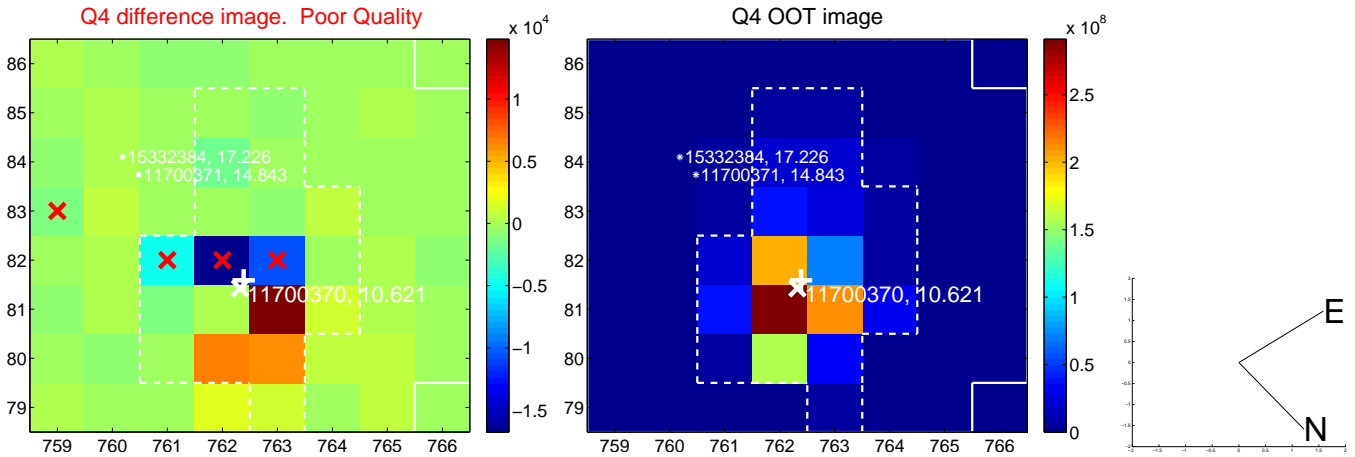
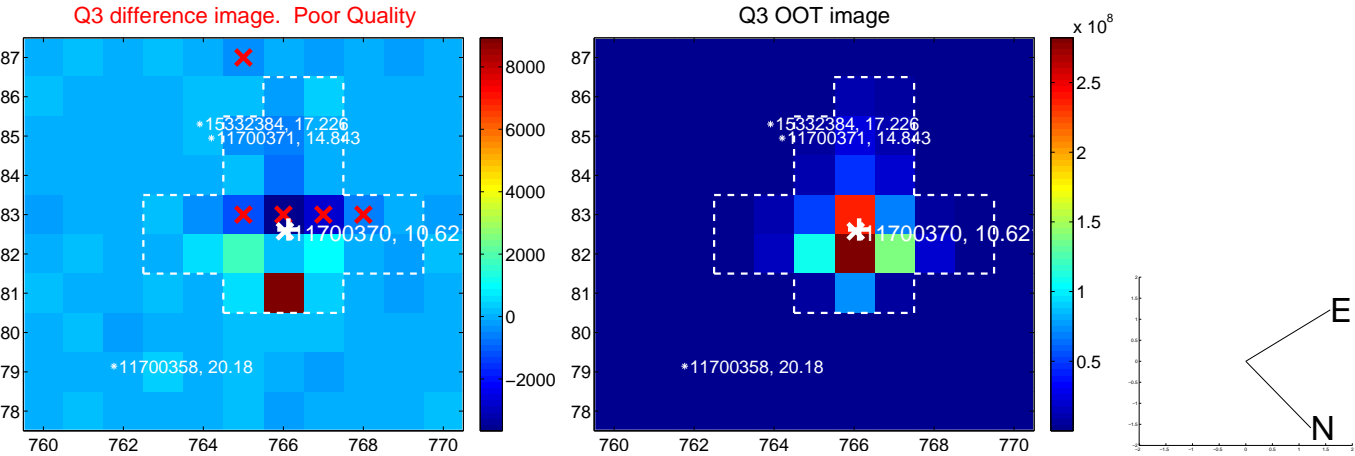
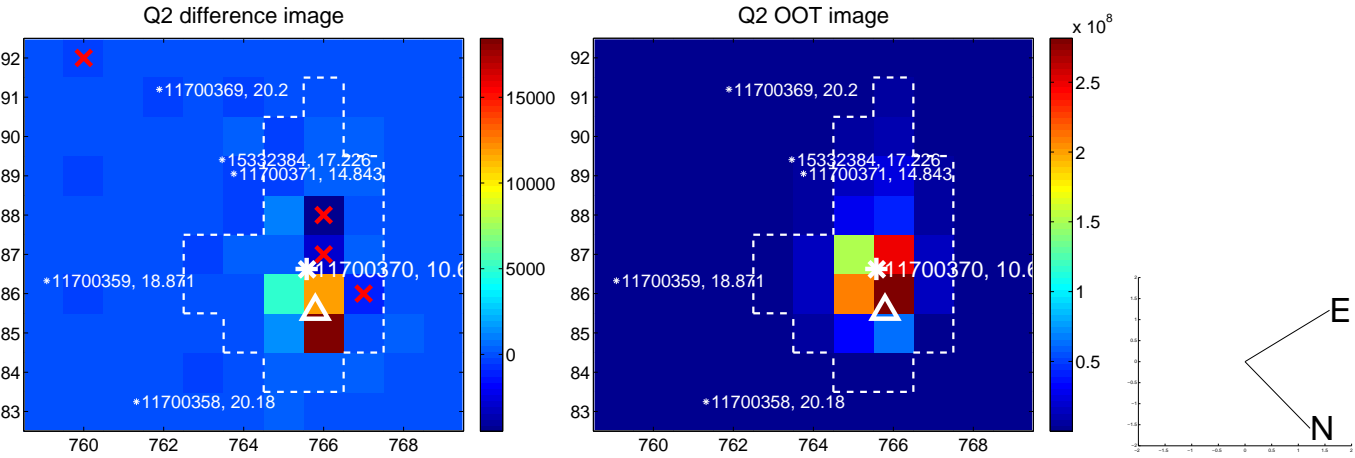
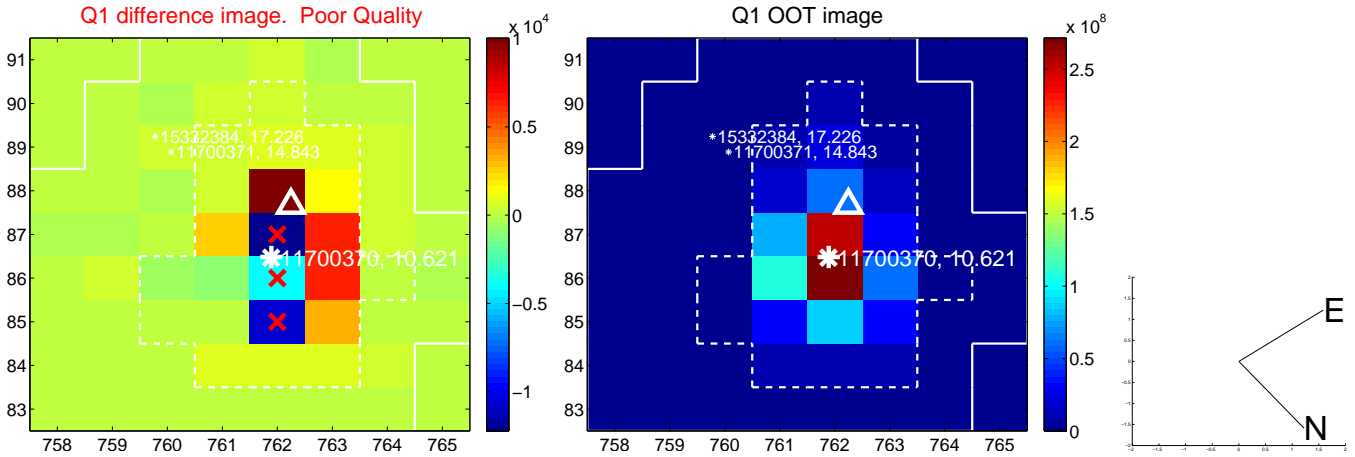


offset from photometric centroids

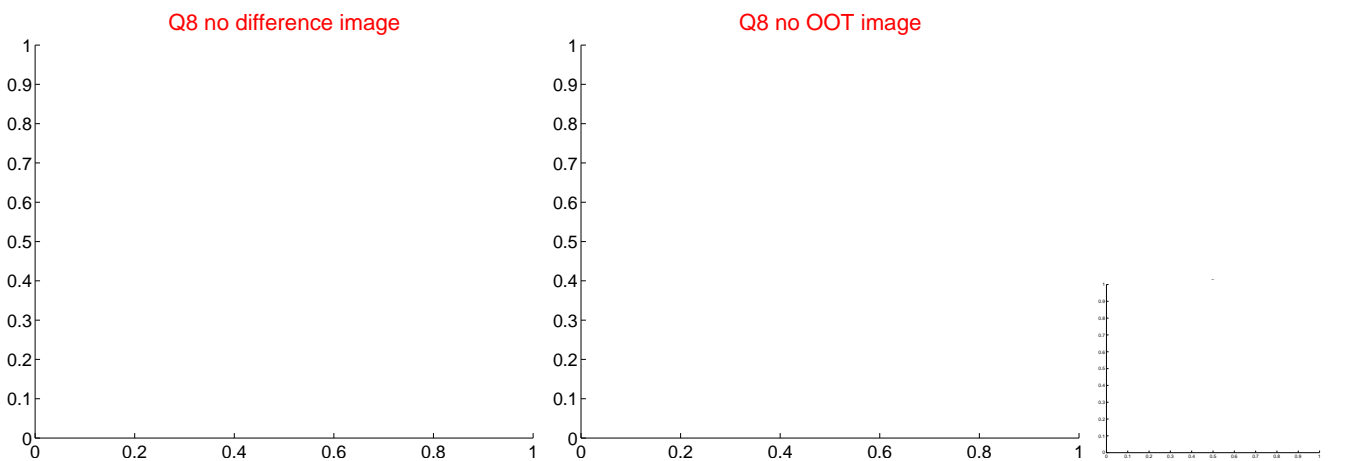
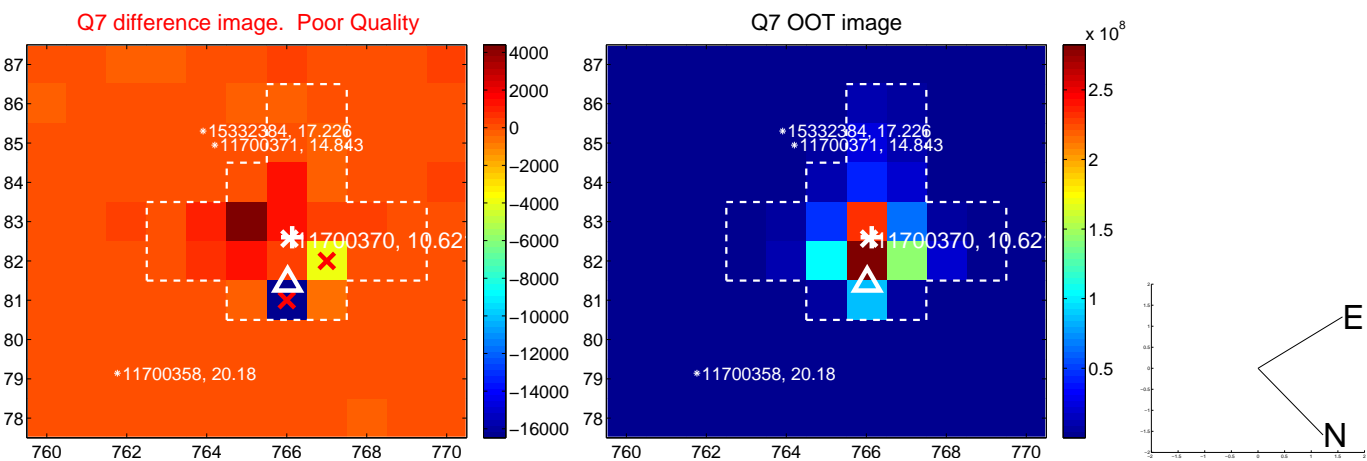
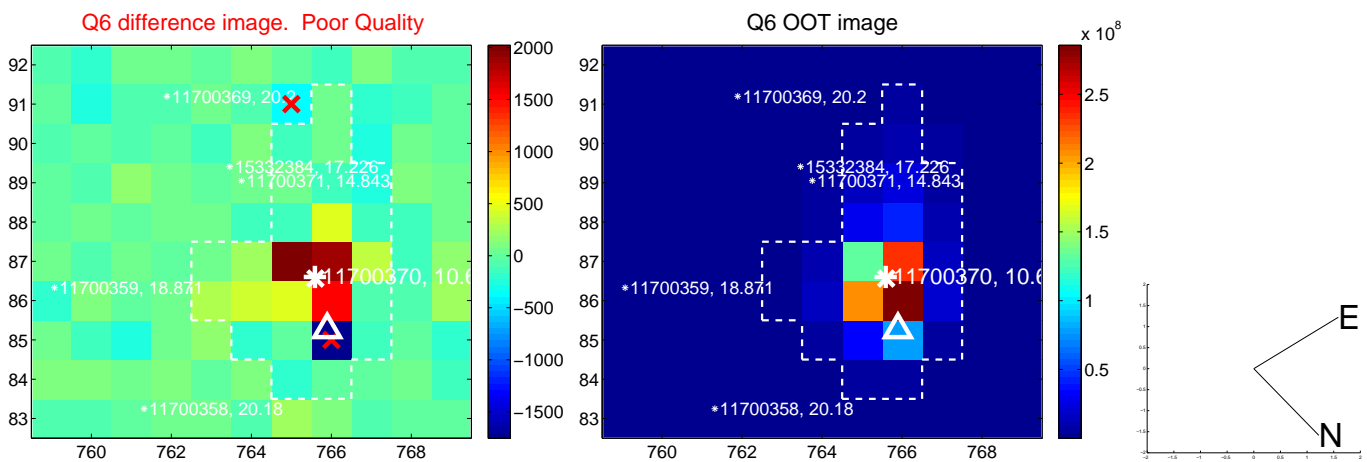
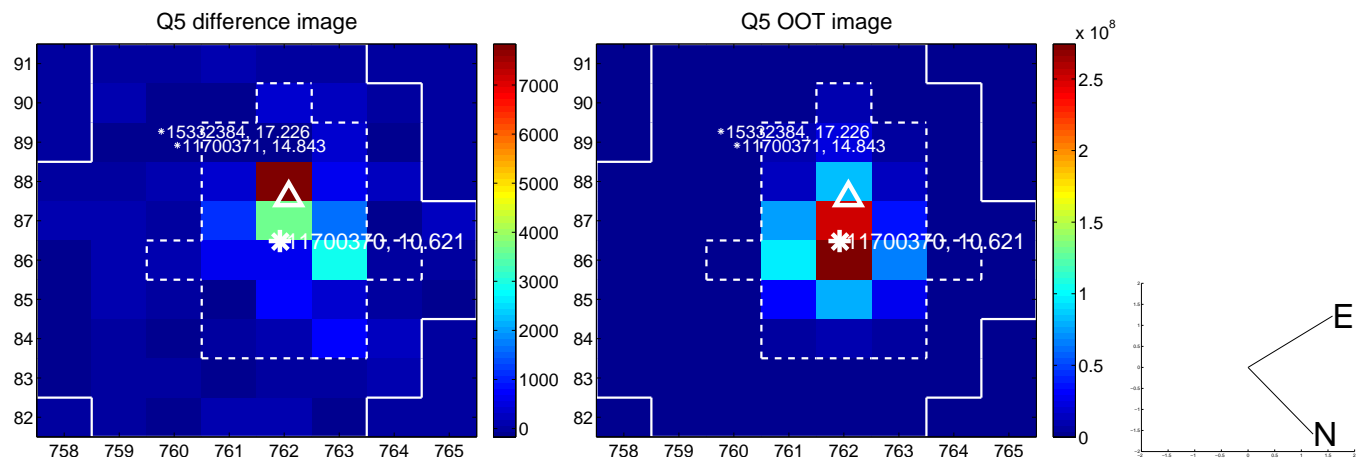


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

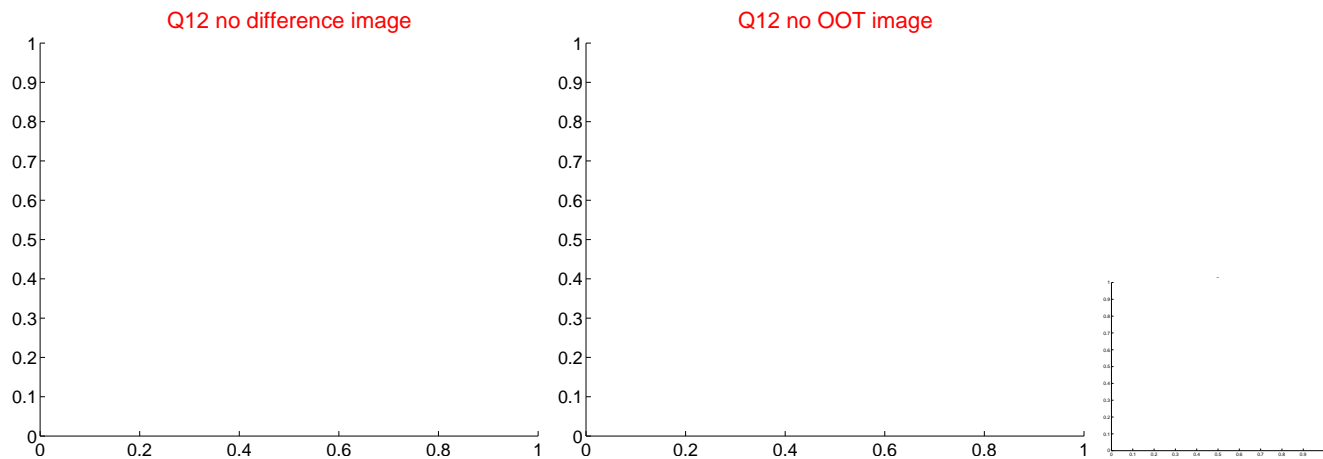
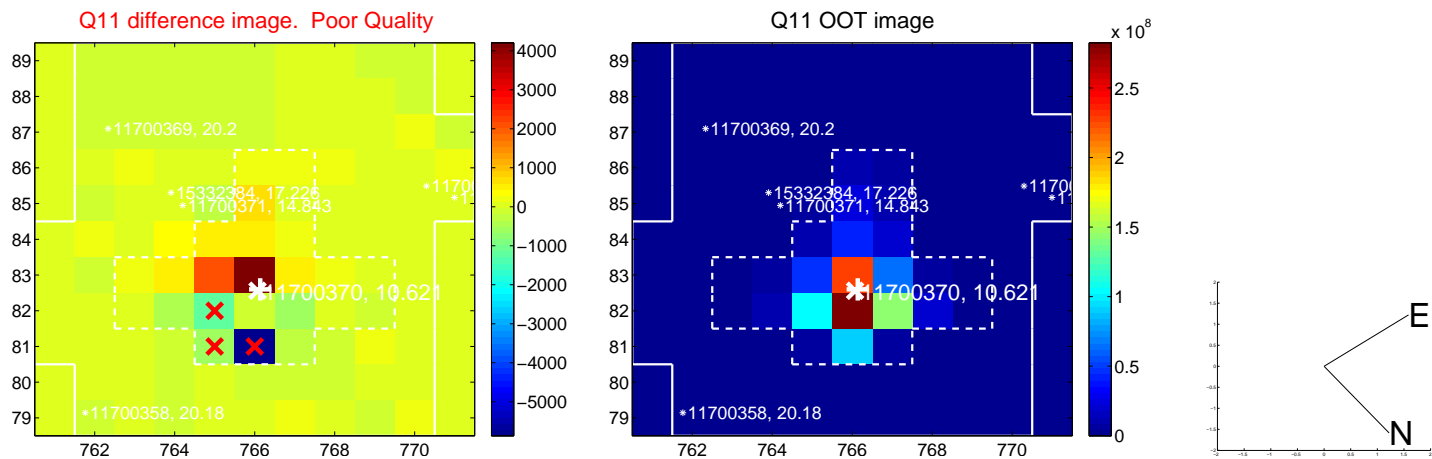
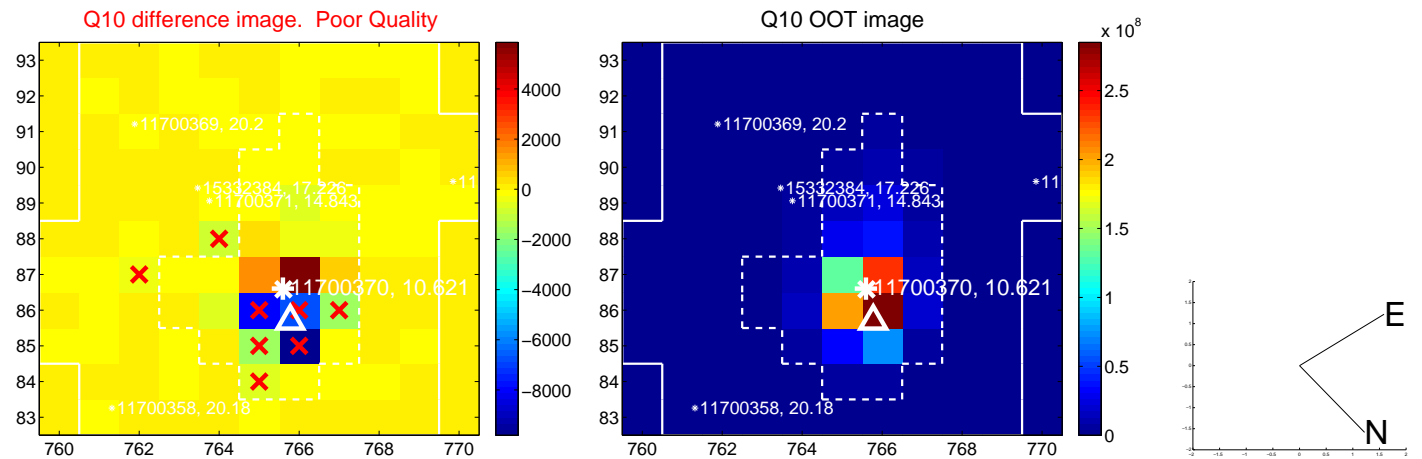
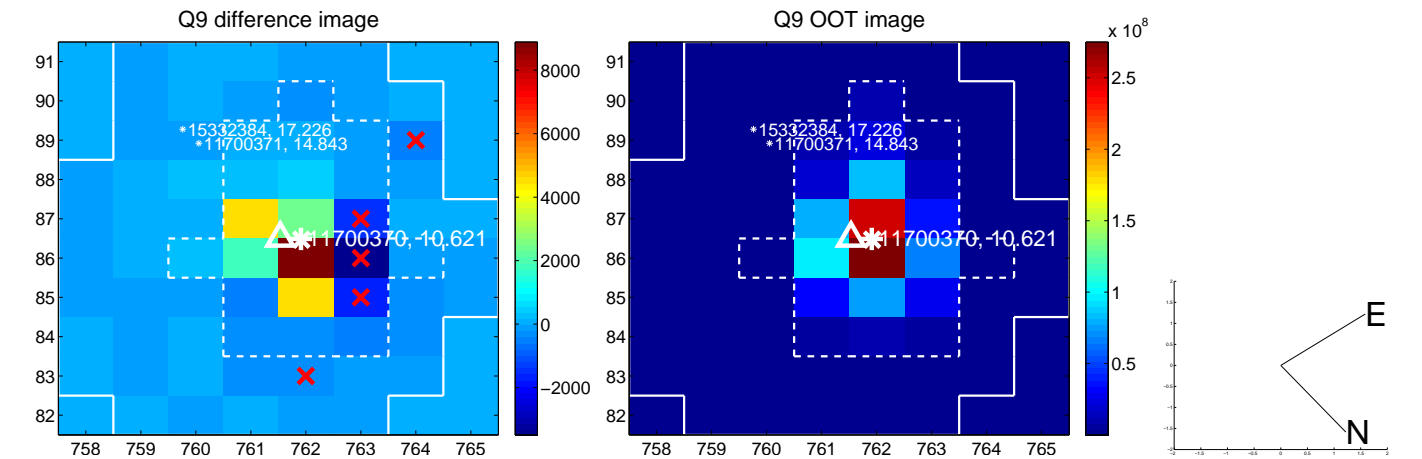
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



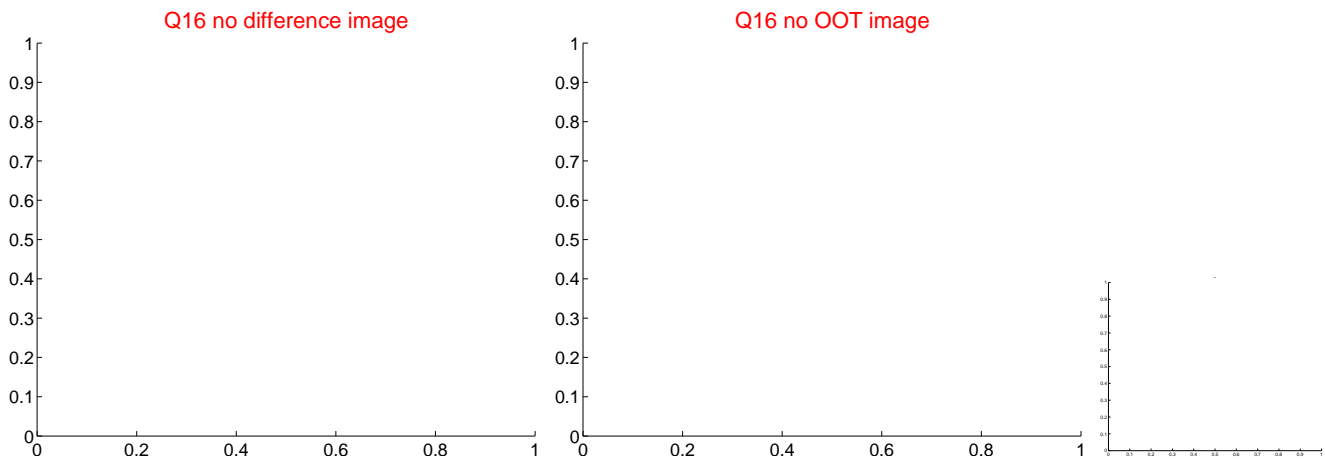
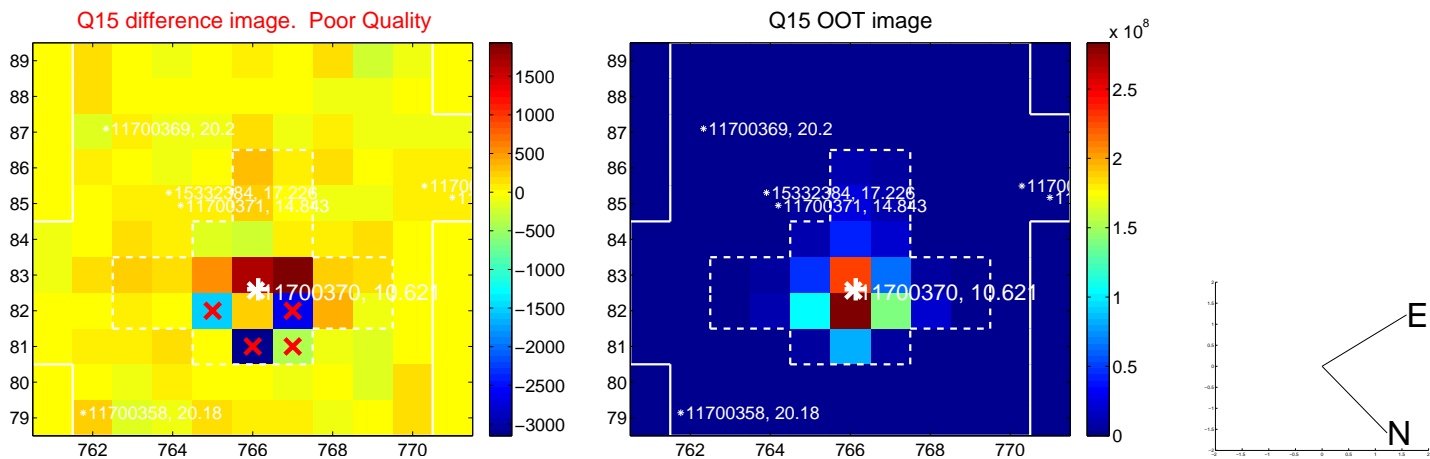
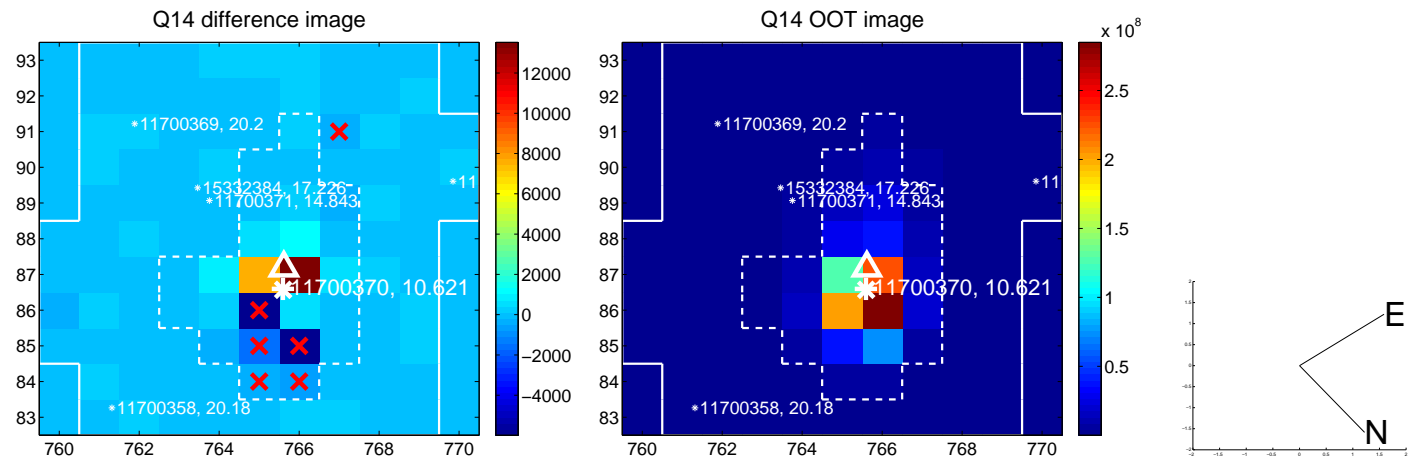
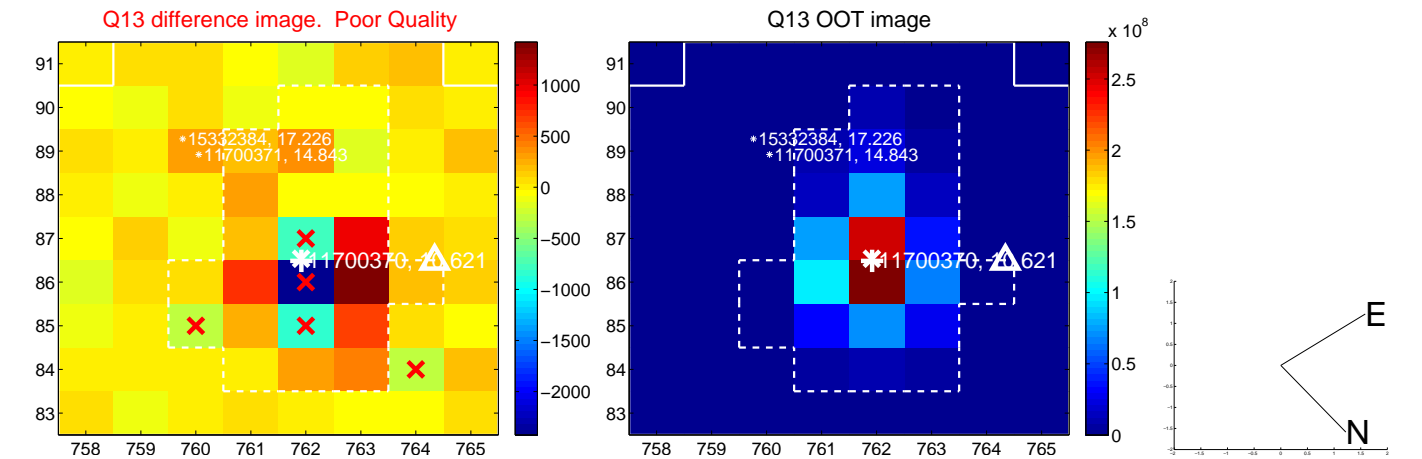
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



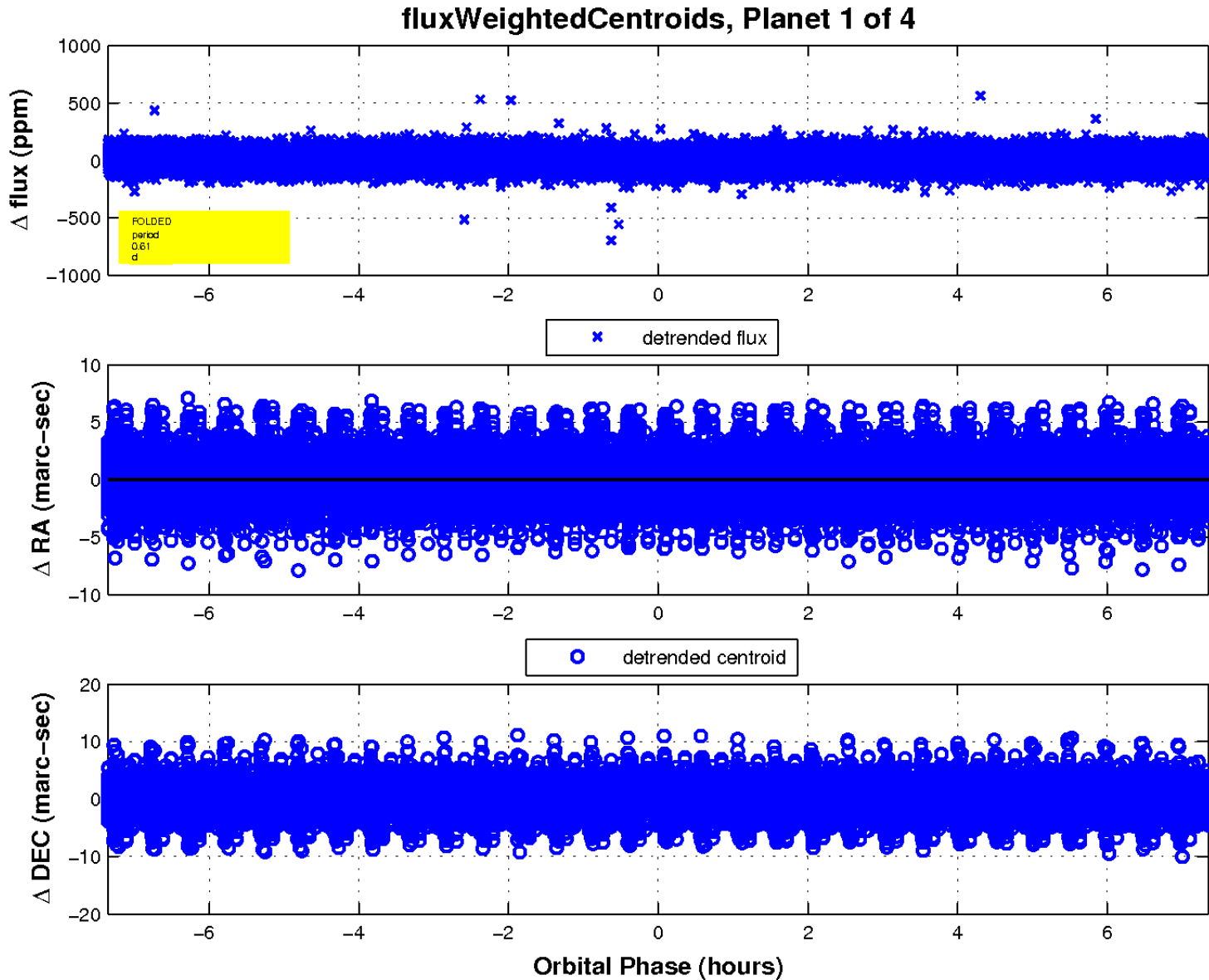
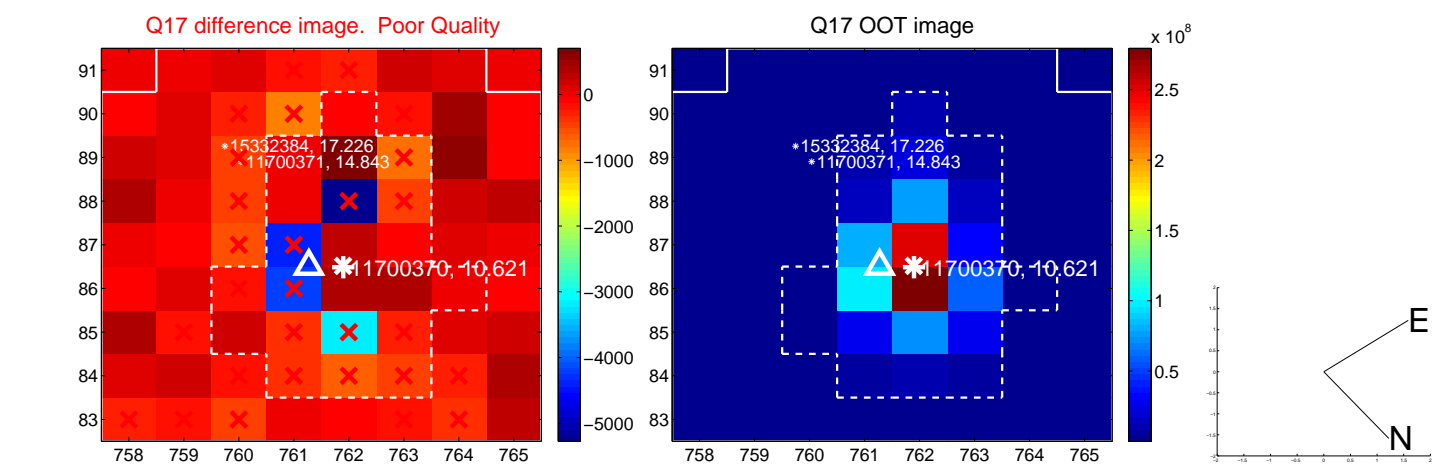
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



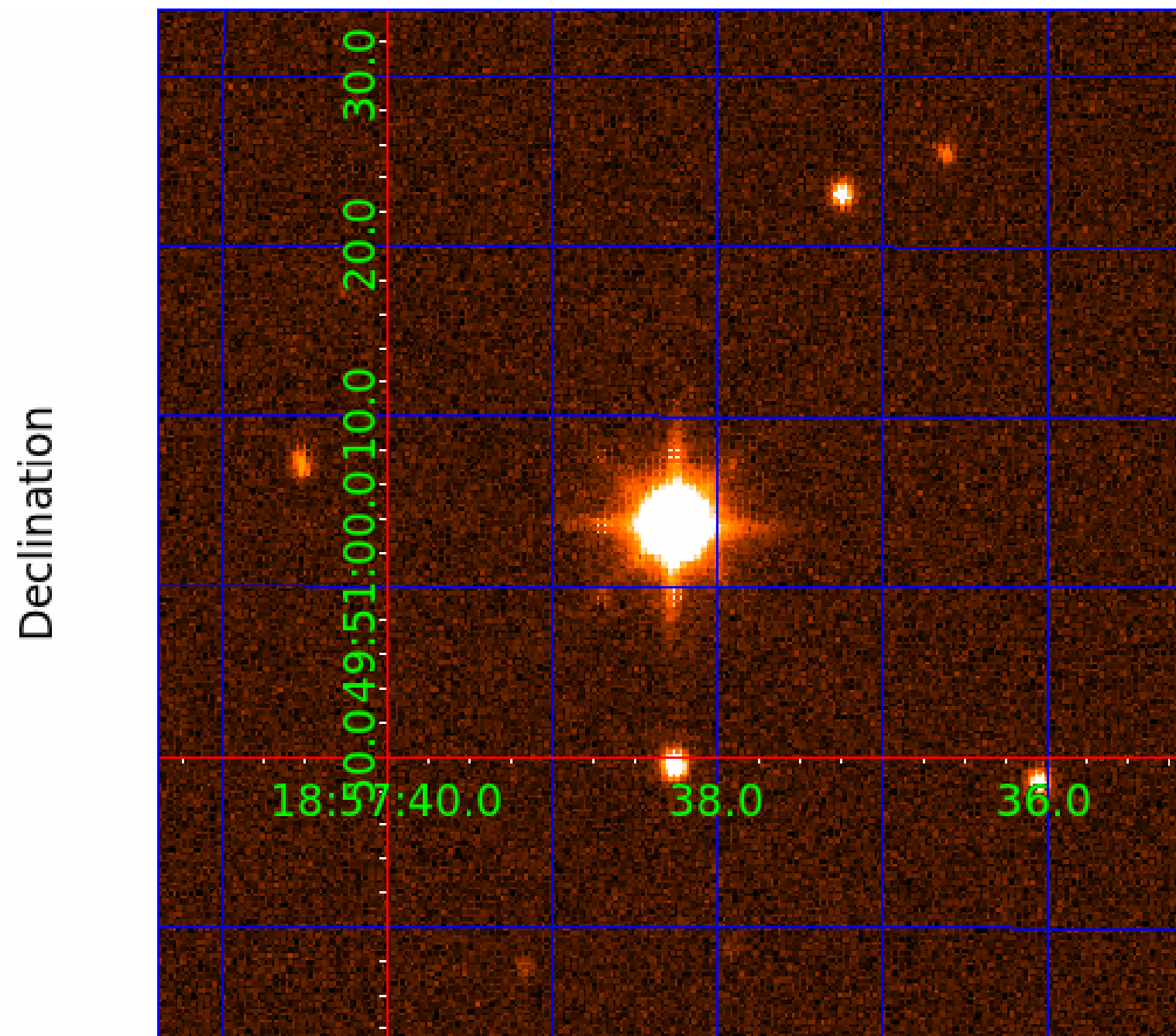
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 011700370

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})
011700370-01	OBS	No	0.613034	132.056373	10.4	2.535	10.8	11.6	2.05	8517	0.77	77863.06
011700370-02	OBS	No	0.613055	131.641214	14.3	1.896	11.5	16.5	2.05	8517	0.90	77859.66
011700370-03	OBS	No	1.680863	132.188275	26.4	2.228	9.6	9.3	2.05	8517	1.22	20289.36
011700370-04	OBS	No	23.021550	151.031243	89.7	2.118	7.3	9.3	2.05	8517	2.19	619.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011700370-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
011700370-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
011700370-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
011700370-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

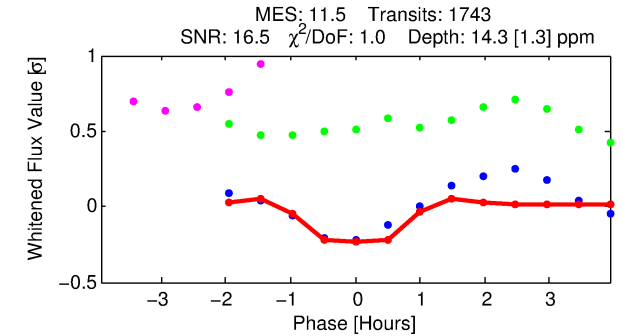
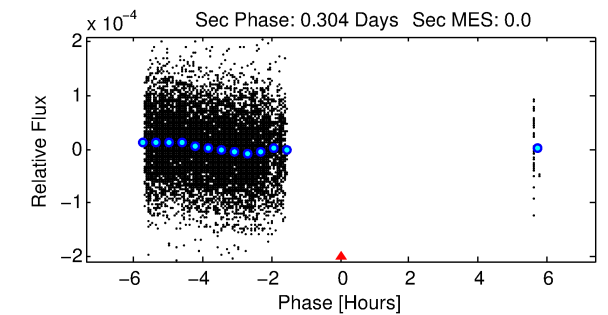
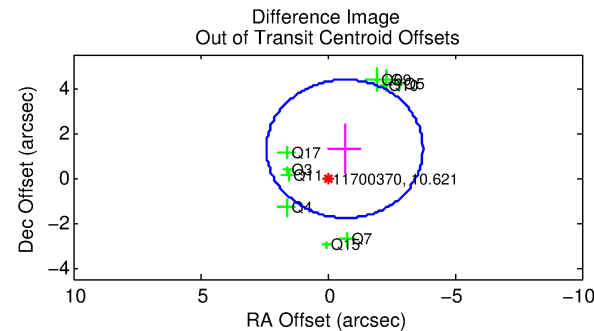
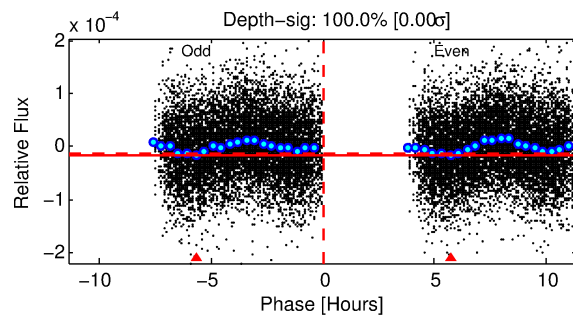
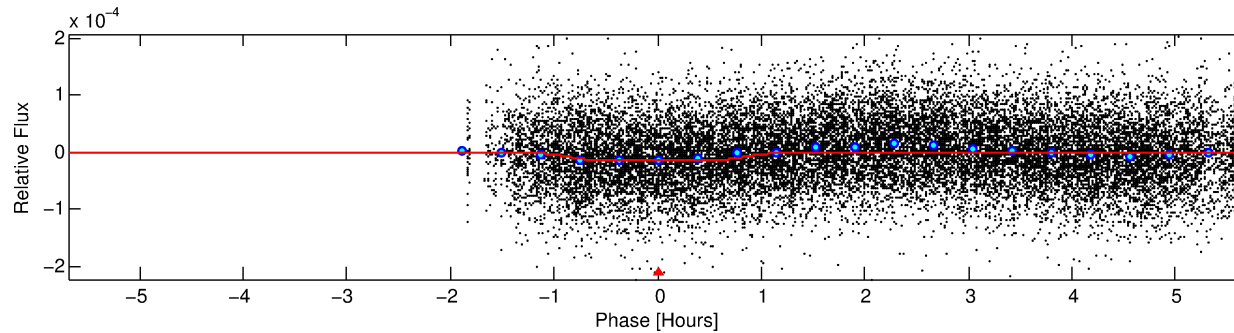
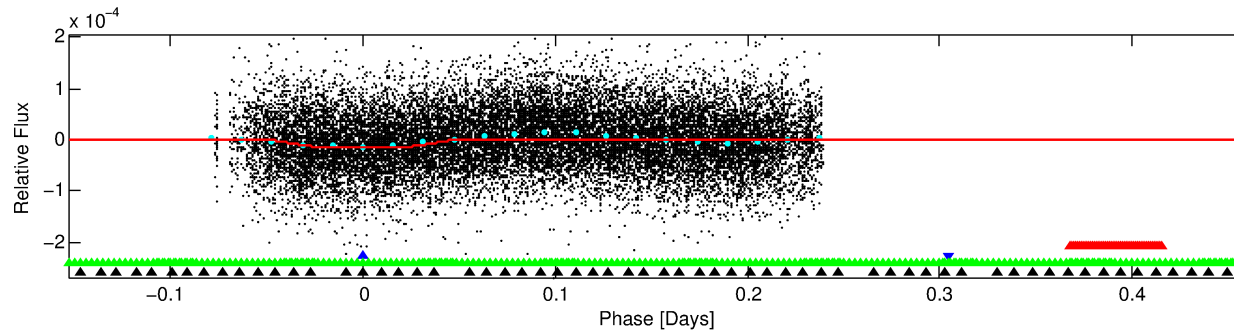
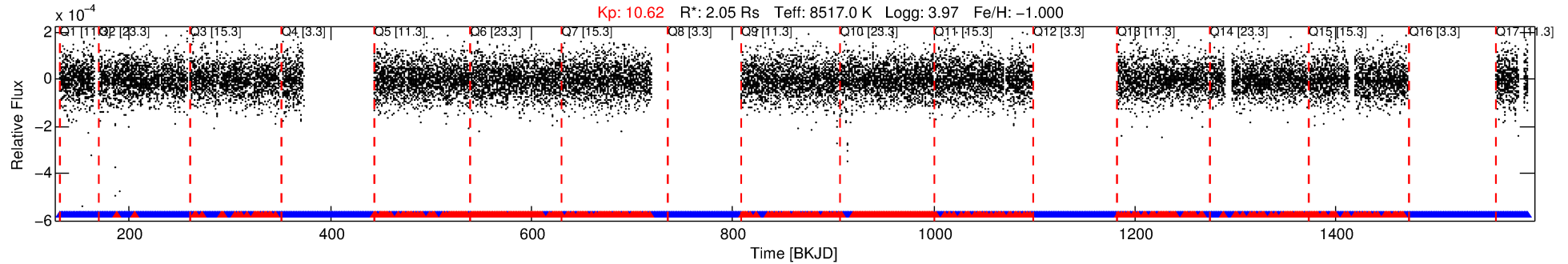
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011700370-02

No Significant Match Found

DV One-Page Summary

KIC: 11700370 Candidate: 2 of 4 Period: 0.613 d



DV Fit Results:

Period = 0.61305 [0.00001] d
Epoch = 131.6412 [0.0015] BKJD
Rp/R* = 0.0040 [0.0004]
a/R* = 1.44 [0.45]
b = 0.90 [0.13]
Seff = 77859.67 [51759.24]
Teq = 4259 [708] K
Rp = 0.90 [0.37] Re
a = 0.0159 [0.0063] AU
Ag = N/A
Teffp = N/A

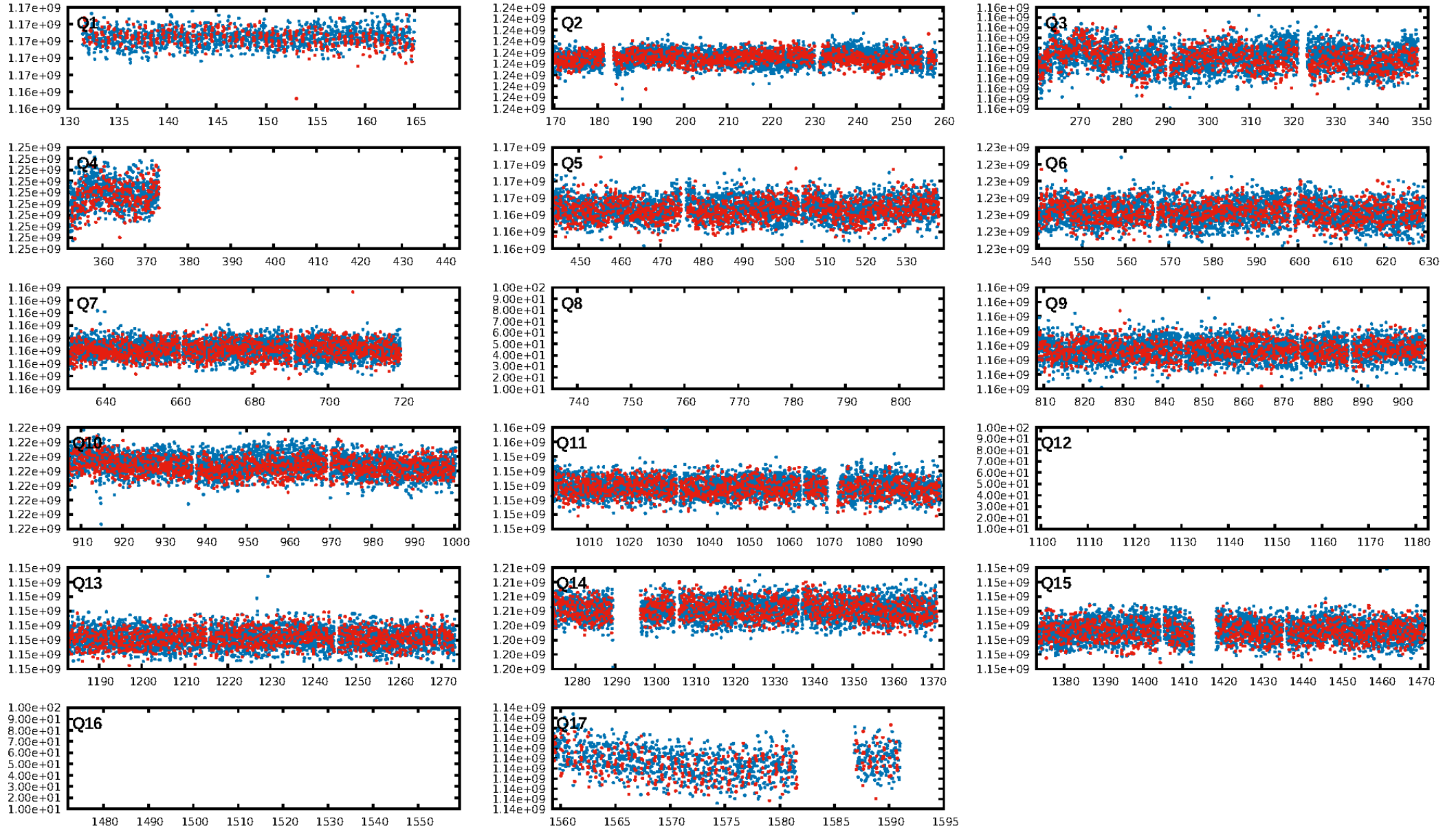
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: 100.0% [8.76σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 9.03e-21
RollingBand-fgt: 0.65 [1054/1610]
GhostDiagnostic-chr: 5.163
Centroid-sig: N/A
Centroid-so: 0.177 arcsec [0.18σ]
OotOffset-rm: 1.463 arcsec [1.43σ]
KicOffset-rm: 1.396 arcsec [1.36σ]
OotOffset-st: 2/4/1/3 [10]
KicOffset-st: 2/4/1/3 [10]
DiffImageQuality-fgm: 0.50 [5/10]
DiffImageOverlap-fno: 0.00 [0/14]

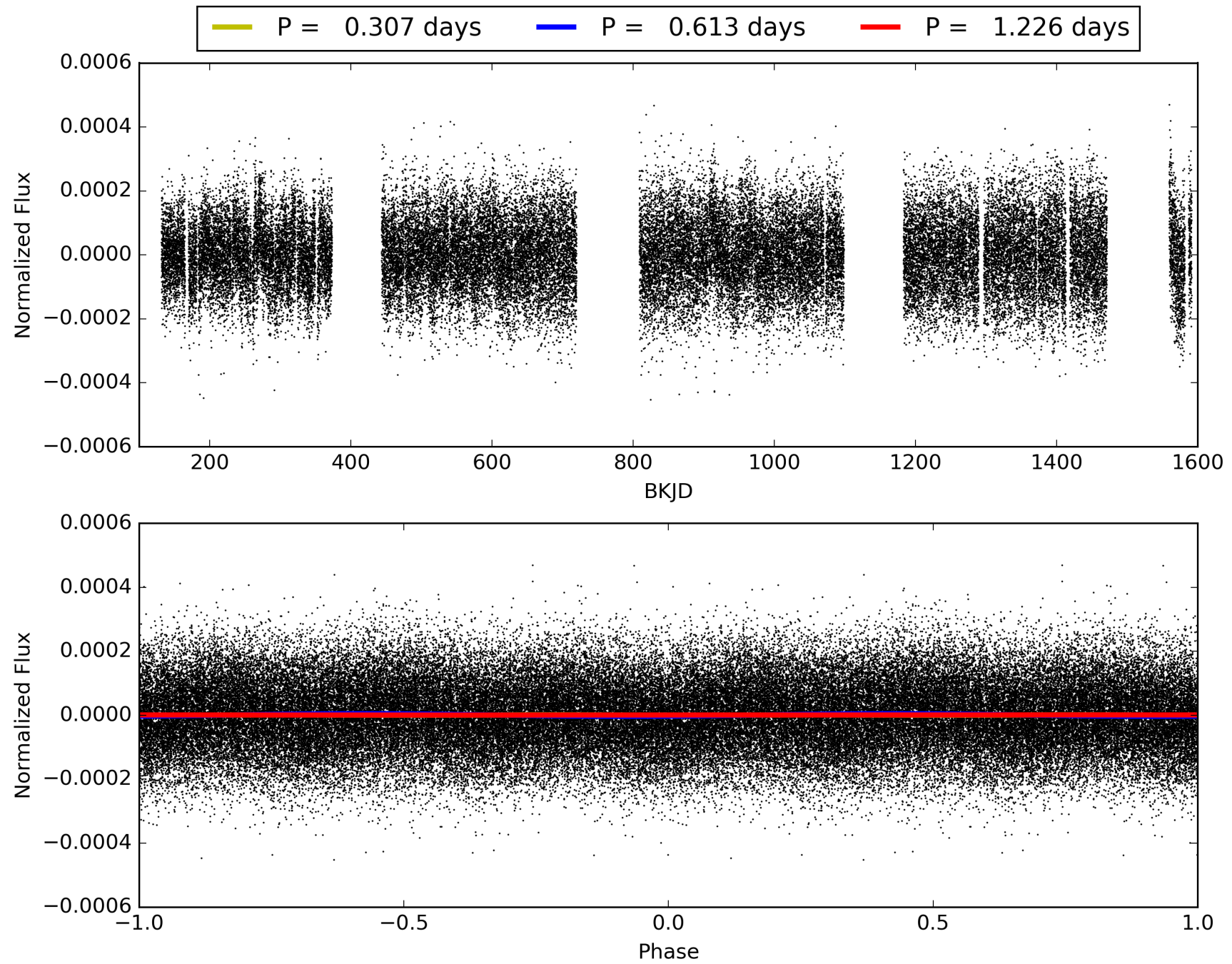
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 21:37:41 Z

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

TCE 011700370-02, PDC Light Curves

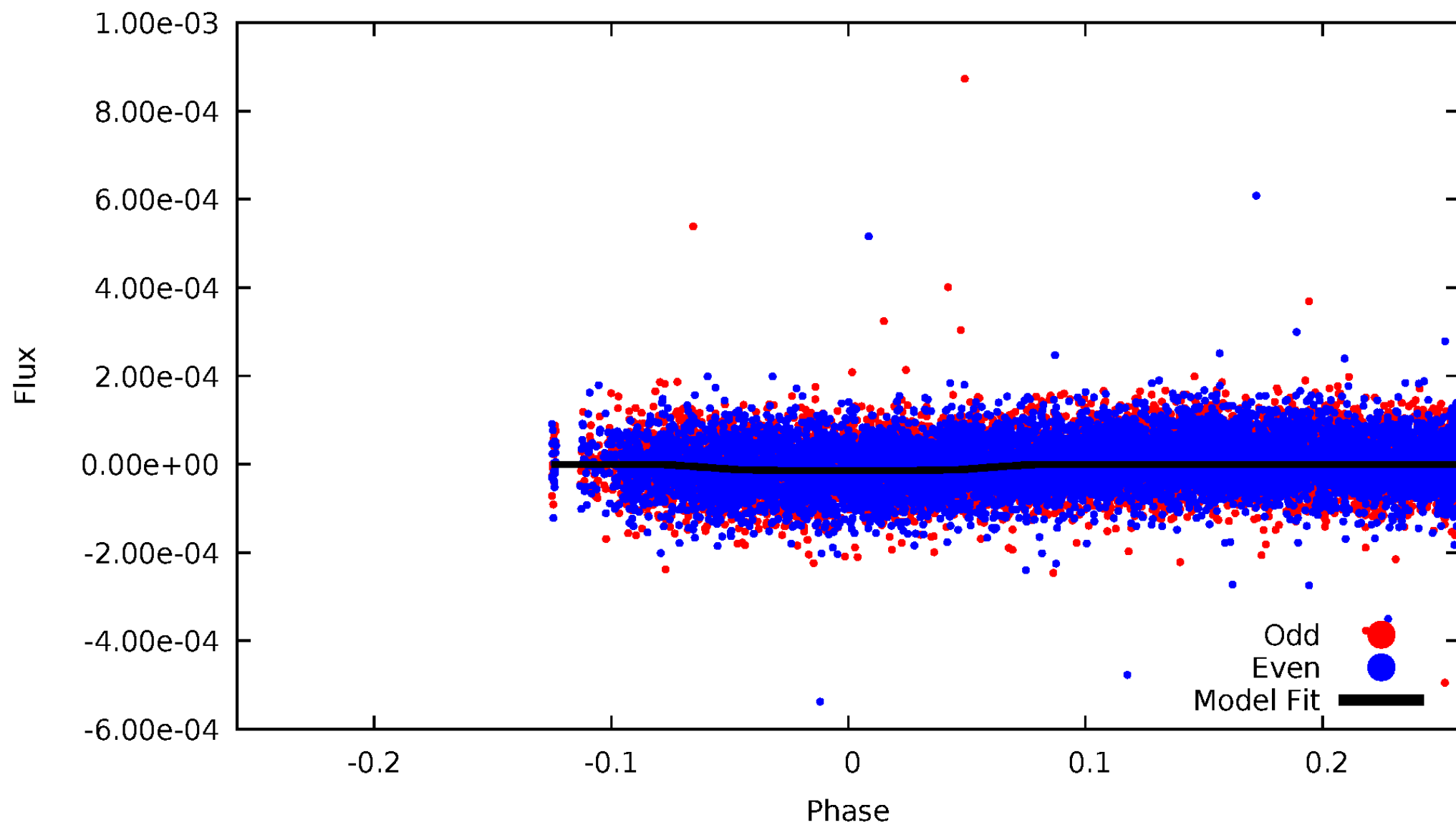


TCE 011700370-02



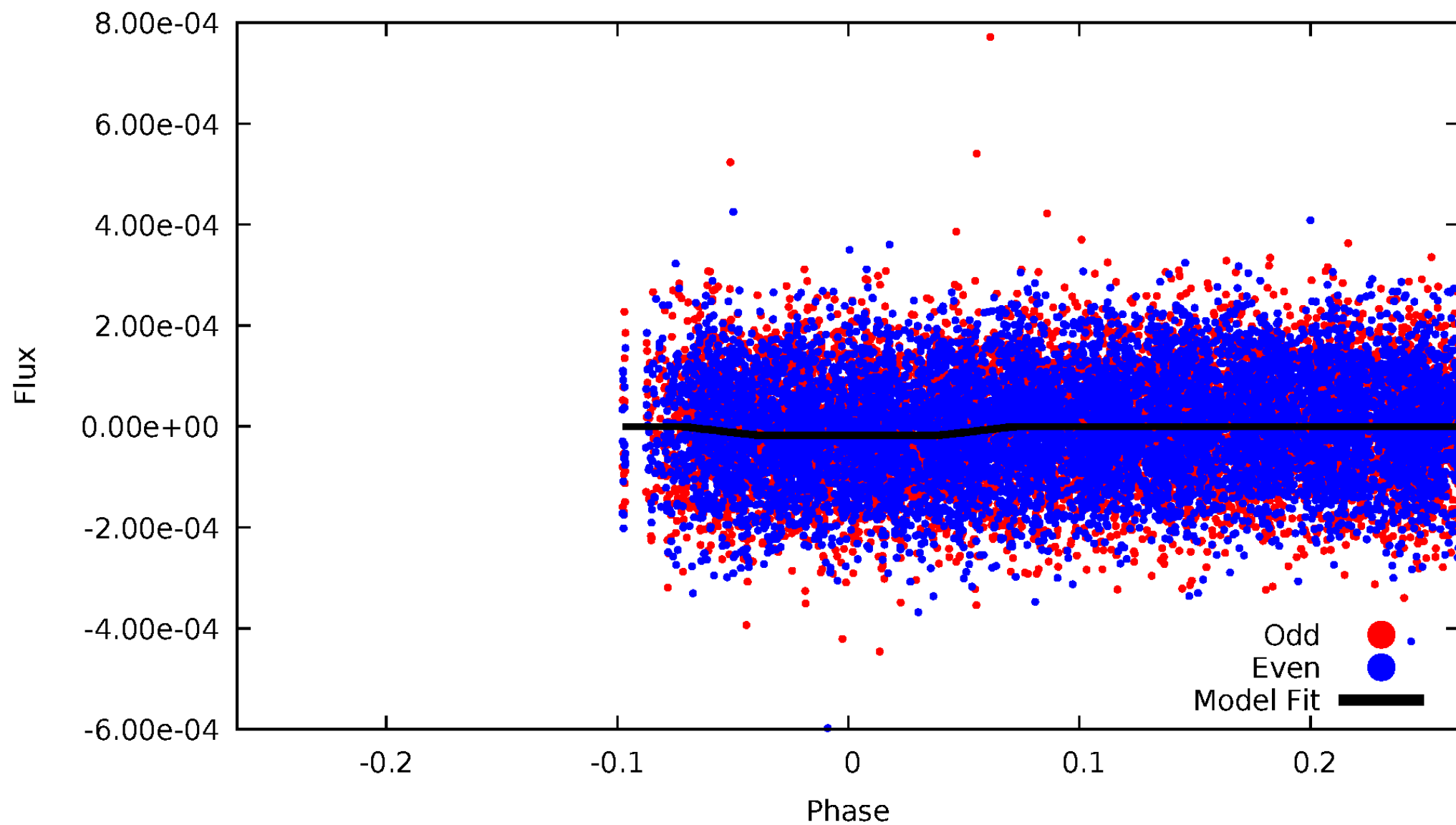
DV Odd/Even

TCE 011700370-02



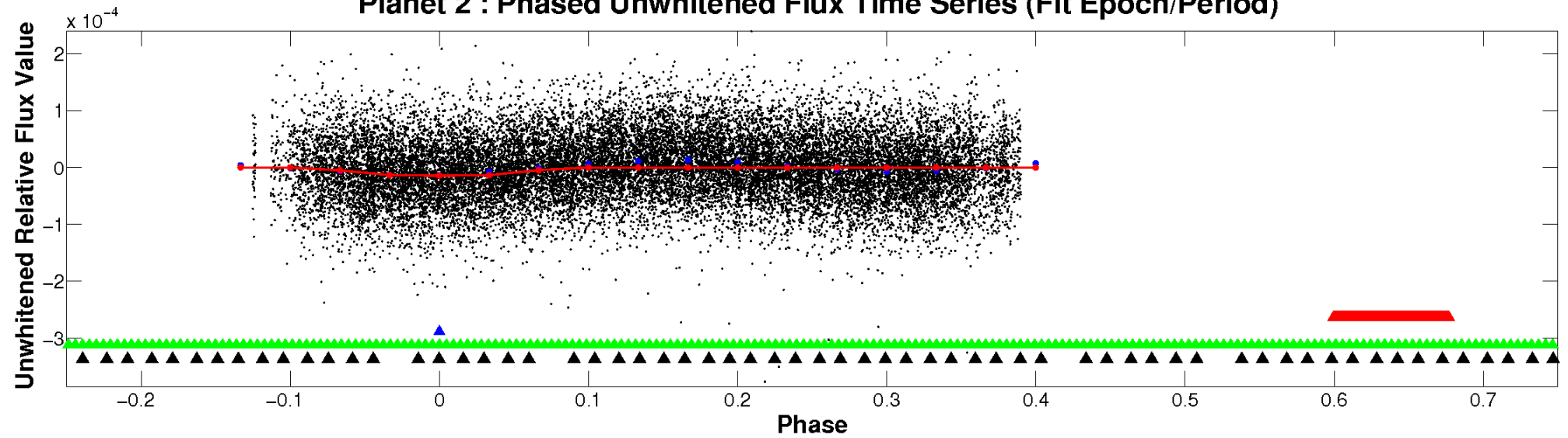
ALT Odd/Even

TCE 011700370-02

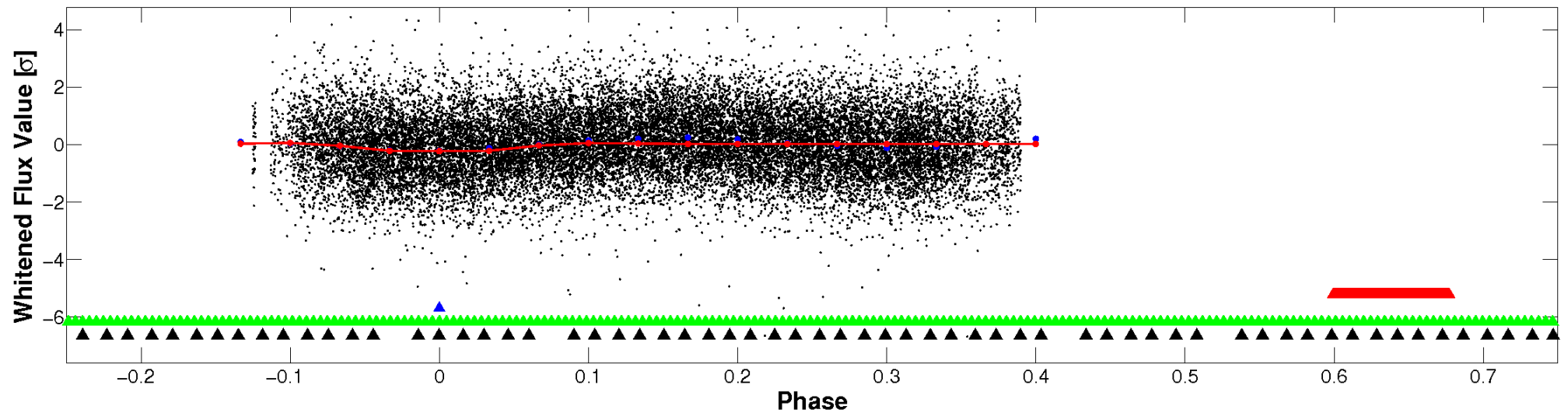


Non-Whitened Vs. Whitened Light Curve

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

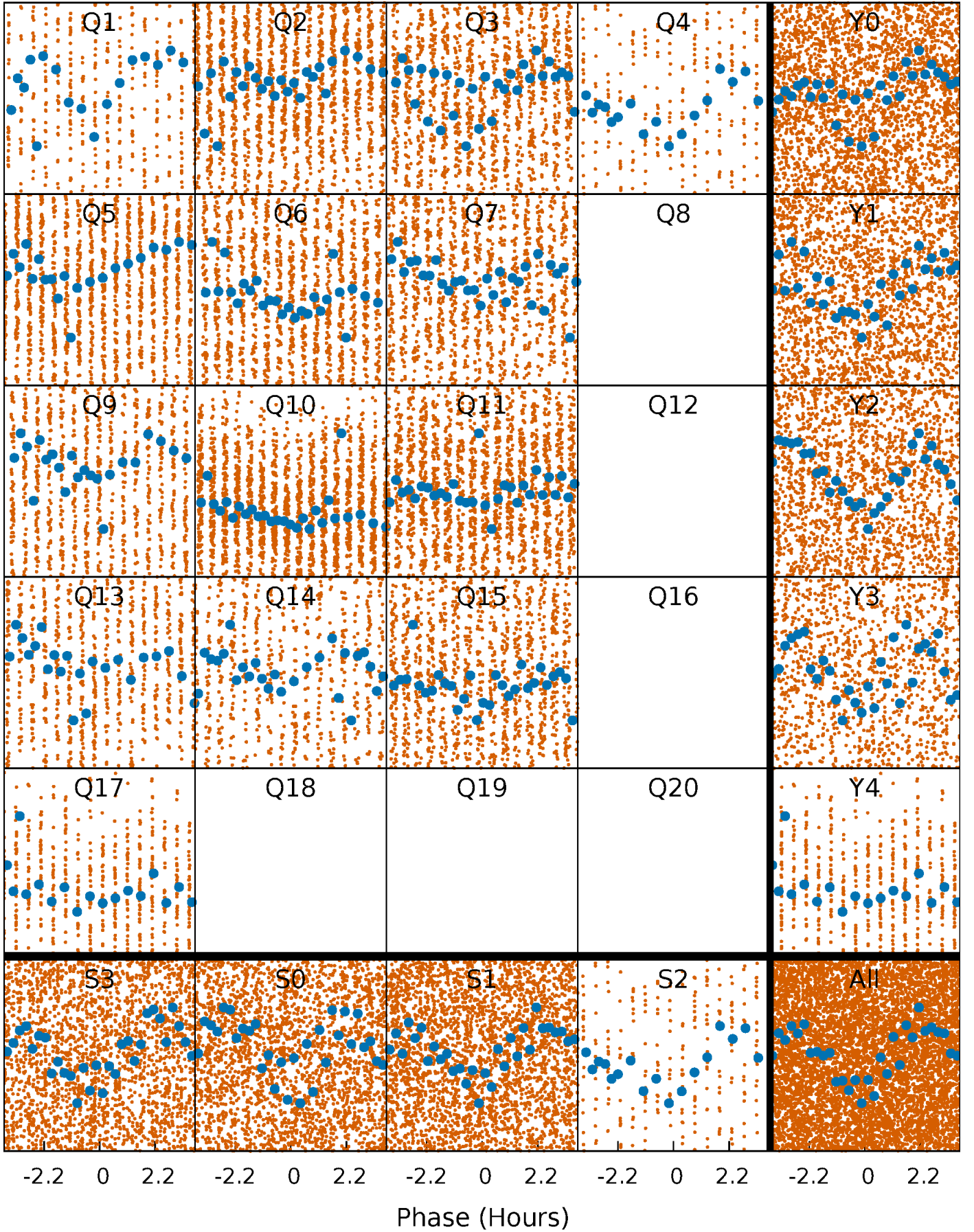


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



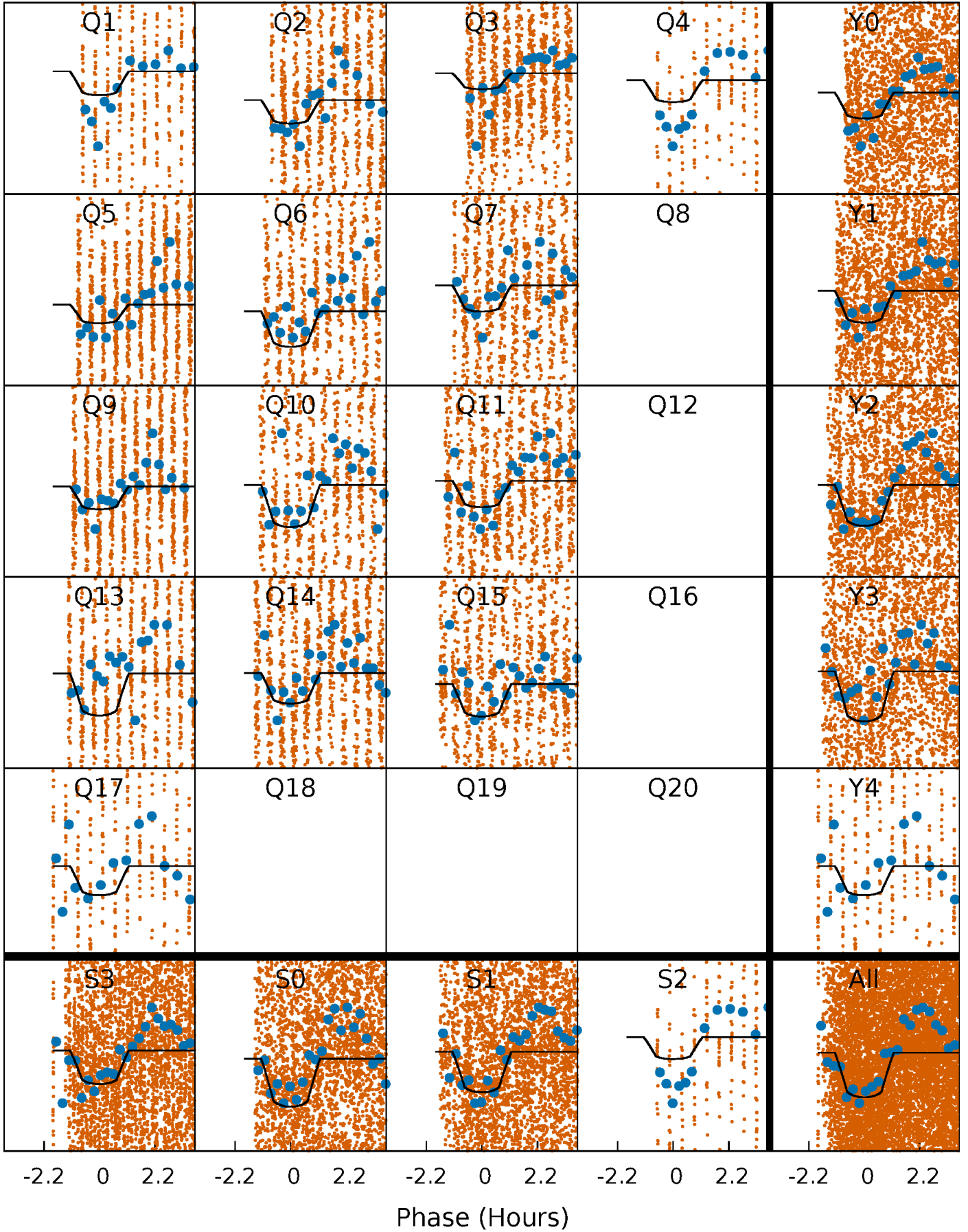
PDC Quarter-Phased Transit Curves

TCE 011700370-02 P= 0.613055 Days $T_0=131.641214$ (BKJD)



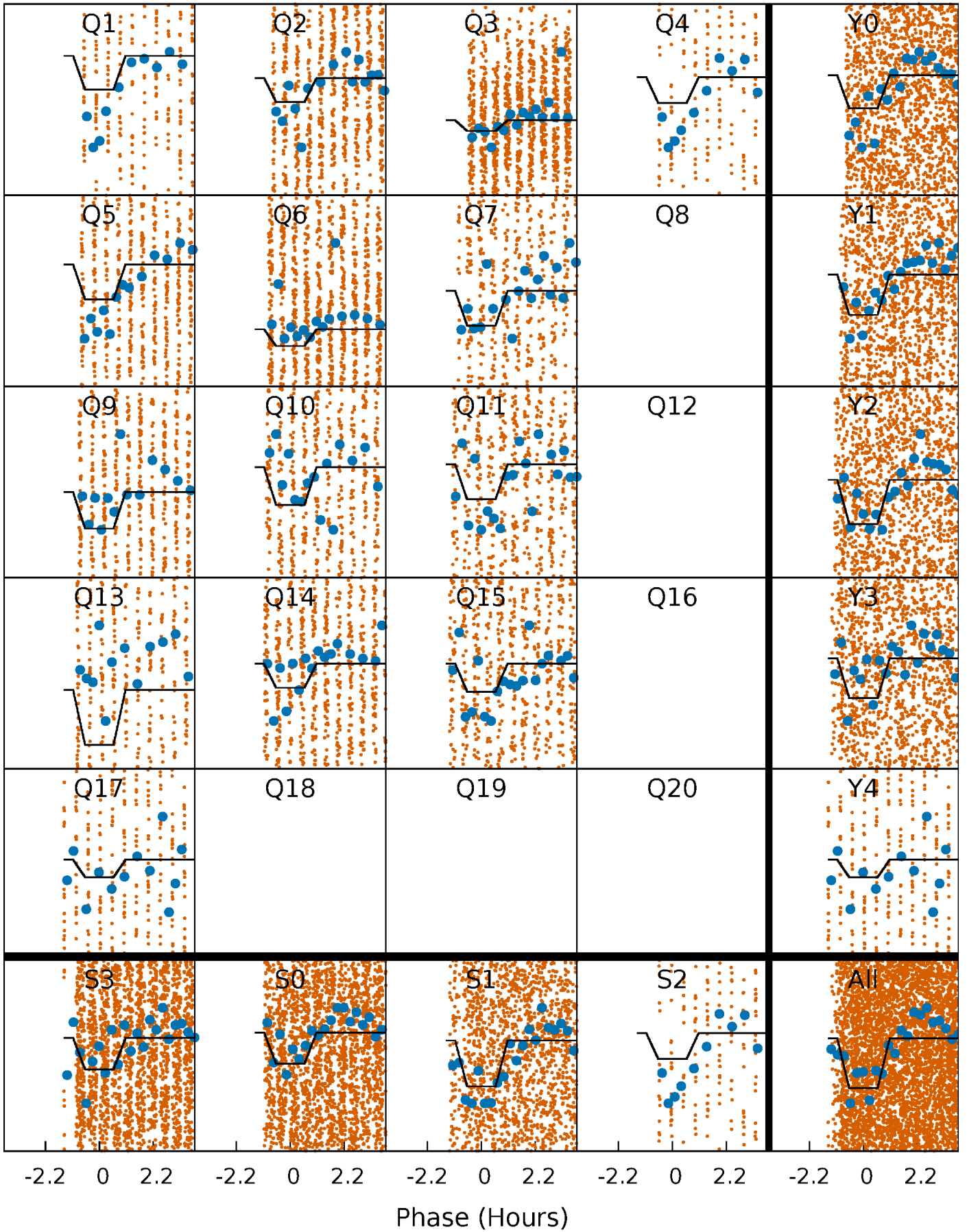
DV Quarter-Phased Transit Curves

TCE 011700370-02 P= 0.613055 Days $T_0=131.641214$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

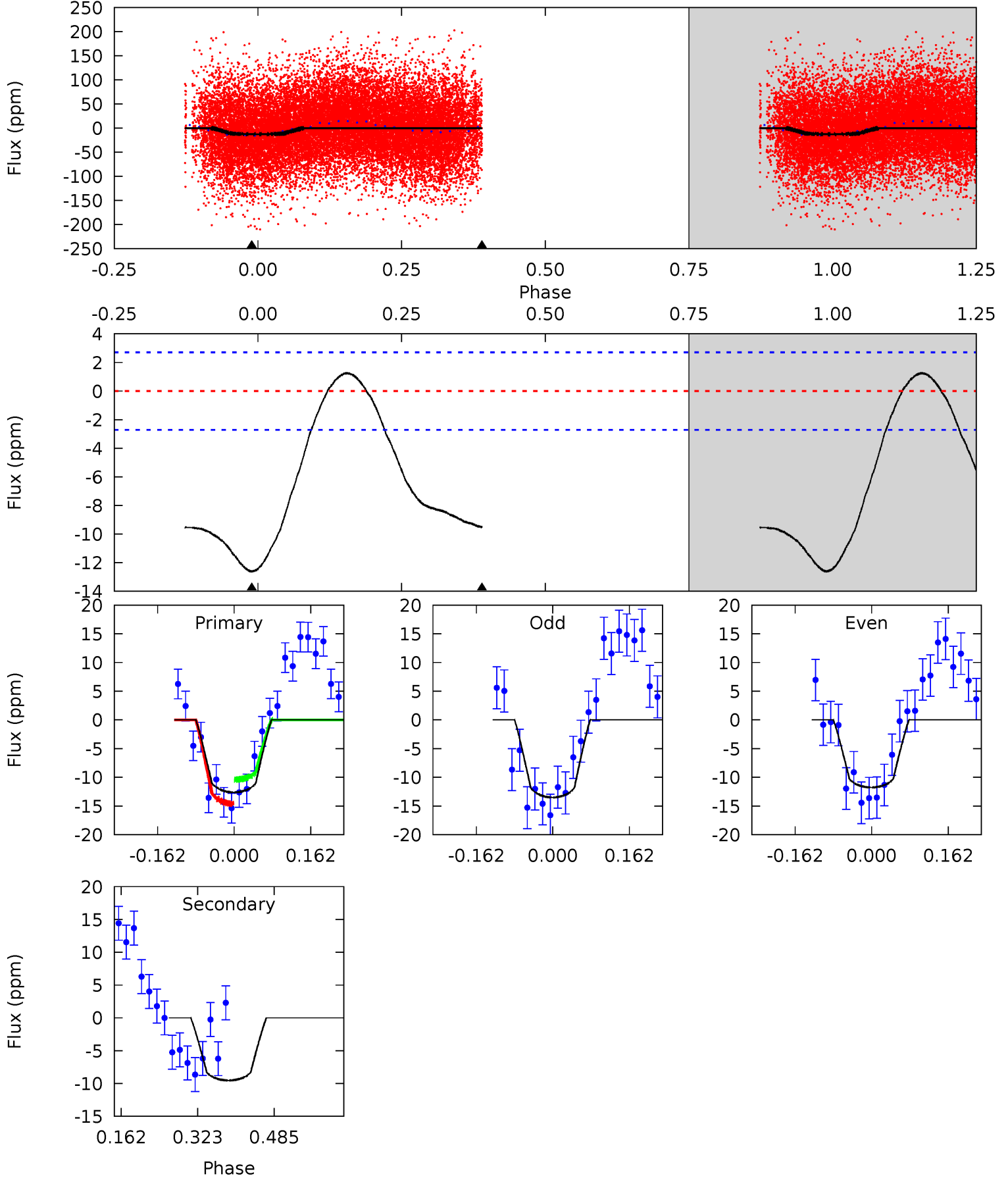
TCE 011700370-02 P= 0.613048 Days $T_0=131.639656$ (BKJD)



DV Model-Shift Uniqueness Test

011700370-02, P = 0.613055 Days, E = 131.028159 Days

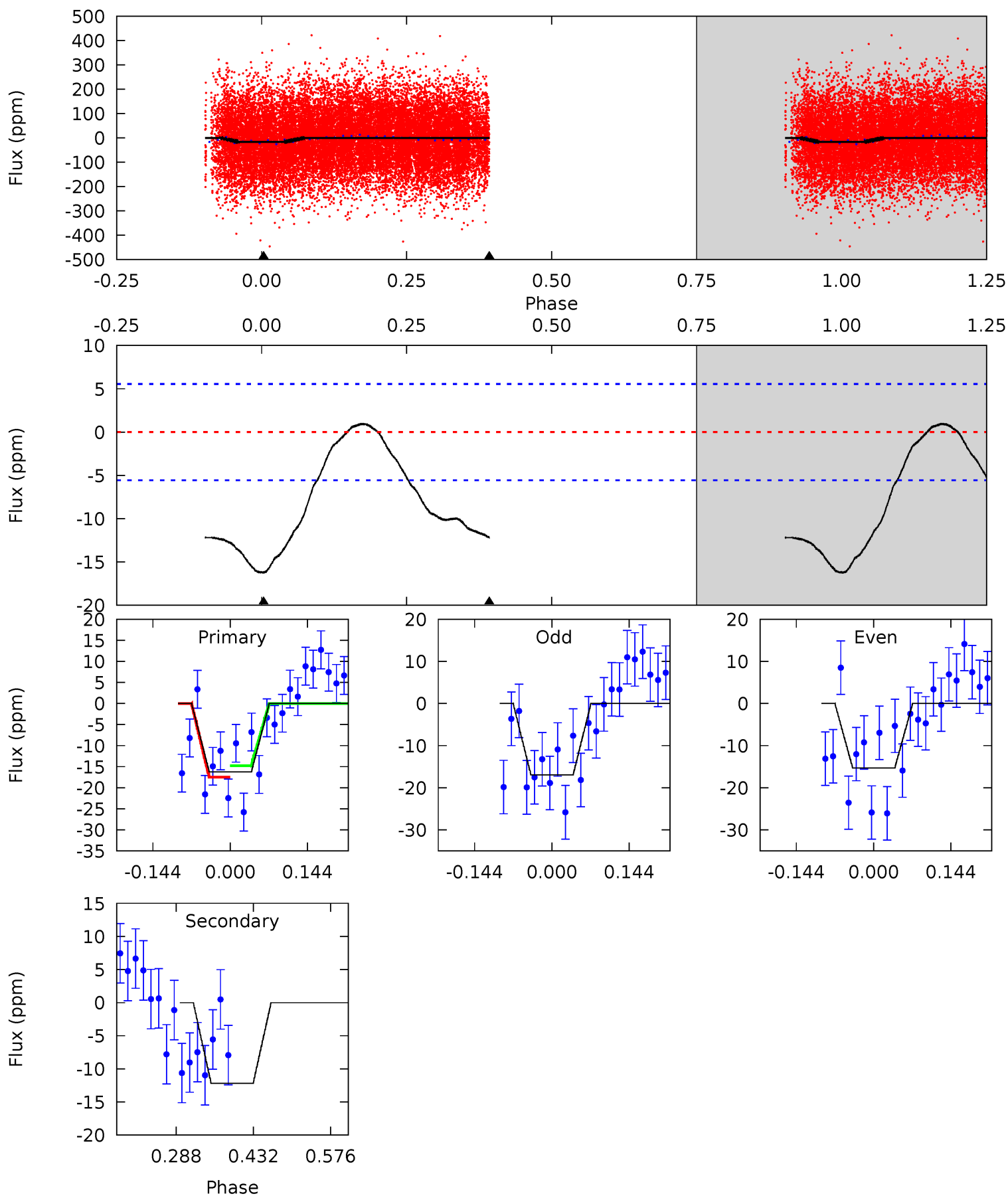
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.8	15.7	0	0	4.46	1.40	2.37	20.8	20.8	15.7	15.7	1.43	1.03	0.09	3.48



Alt Model-Shift Uniqueness Test

011700370-02, P = 0.613048 Days, E = 131.026608 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.1	9.83	0	0	4.49	1.46	1.54	13.1	13.1	9.83	9.83	0.68	1.27	0.05	1.03



Stellar Parameters For KIC 011700370

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	8517^{+272}_{-333}	$3.972^{+0.384}_{-0.096}$	$-1.000^{+0.250}_{-0.300}$	$2.046^{+0.348}_{-0.812}$	$1.431^{+0.173}_{-0.231}$	$0.235^{+0.747}_{-0.071}$
	+3%/-4%	+10%/-2%	+25%/-30%	+17%/-40%	+12%/-16%	+317%/-30%
Source	KIC0	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 011700370-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-10 ± 1	$0.85^{+0.16}_{-0.17}$	5782^{+396}_{-549}	6855^{+586}_{-474}	$1.829^{+1.056}_{-0.495}$
Alt.	-12 ± 1	$0.88^{+0.17}_{-0.20}$	5775^{+417}_{-589}	7307^{+578}_{-611}	$2.222^{+1.321}_{-0.649}$

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 $A_{obs} \gg 1.0$

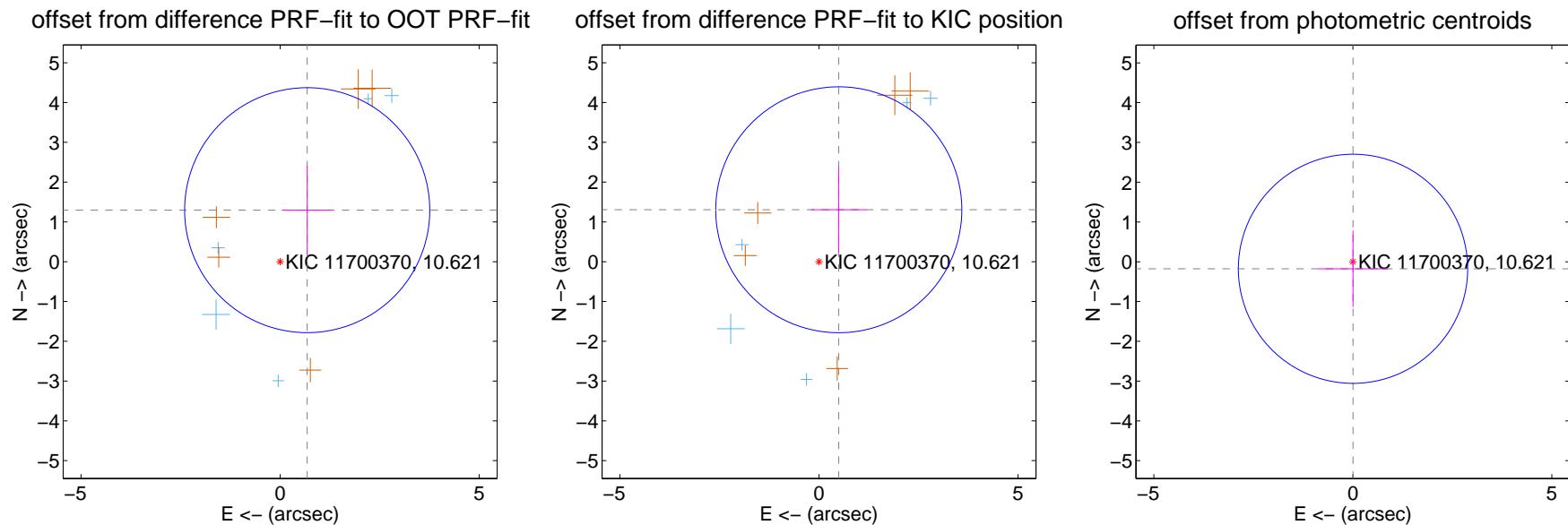
DV Centroid Data

Supplemental centroid analysis for 011700370-02. **Kepler magnitude: 10.62.** Transit SNR 16.54

There are 5 quarters with good PRF difference image offsets

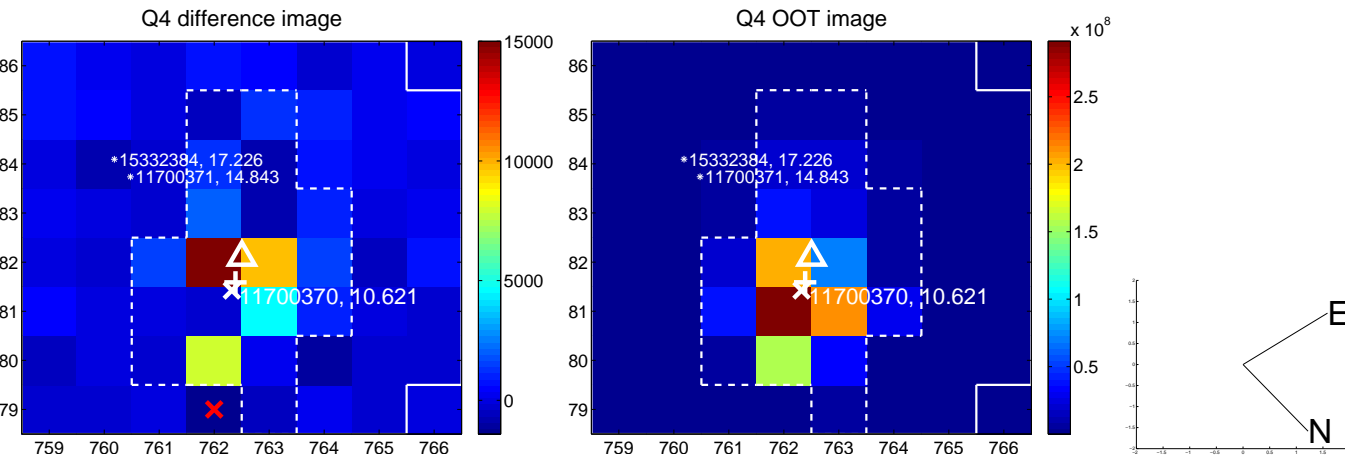
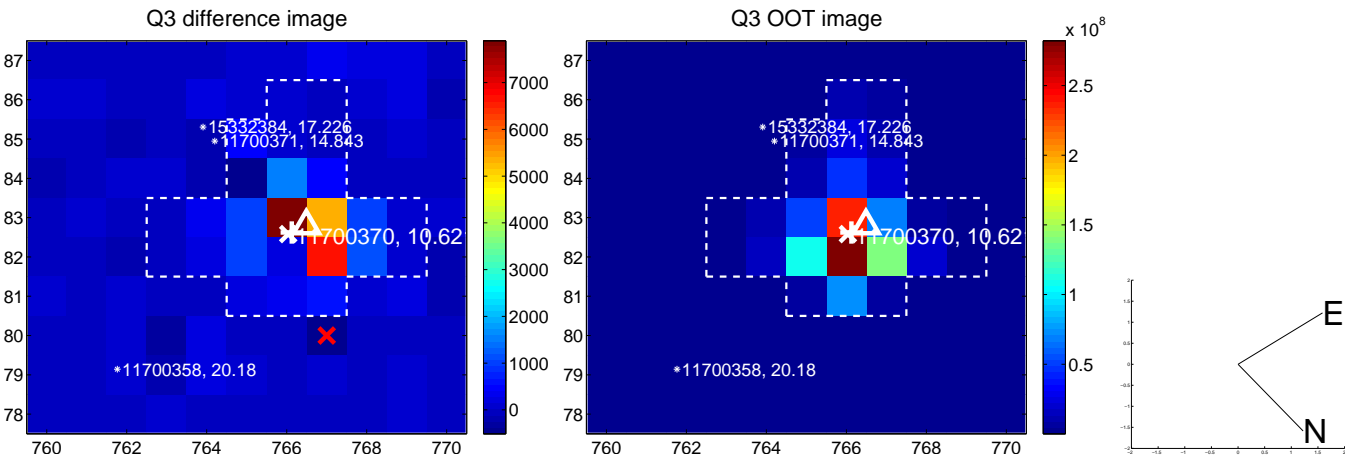
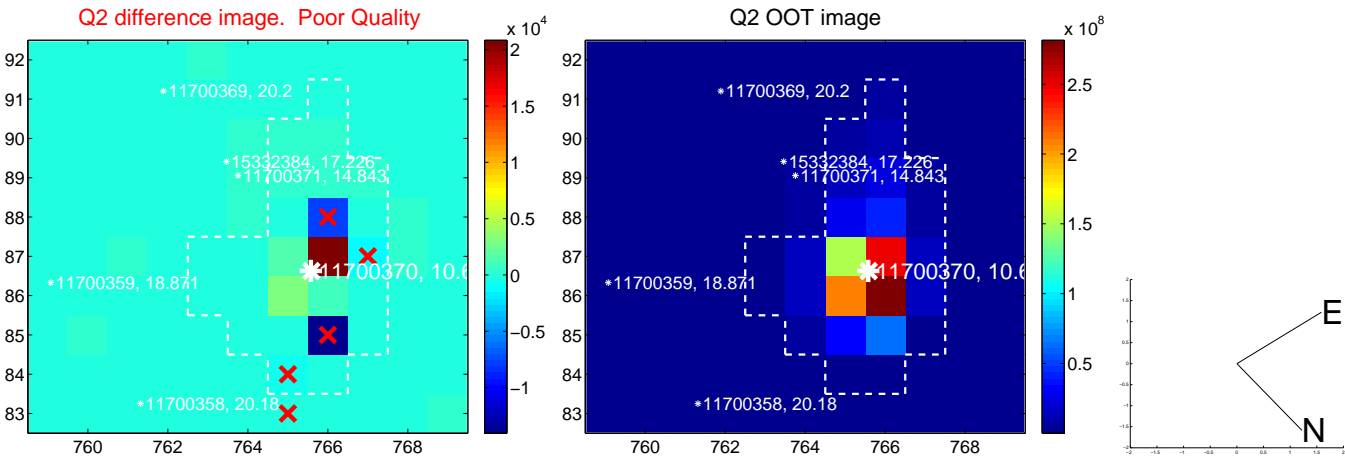
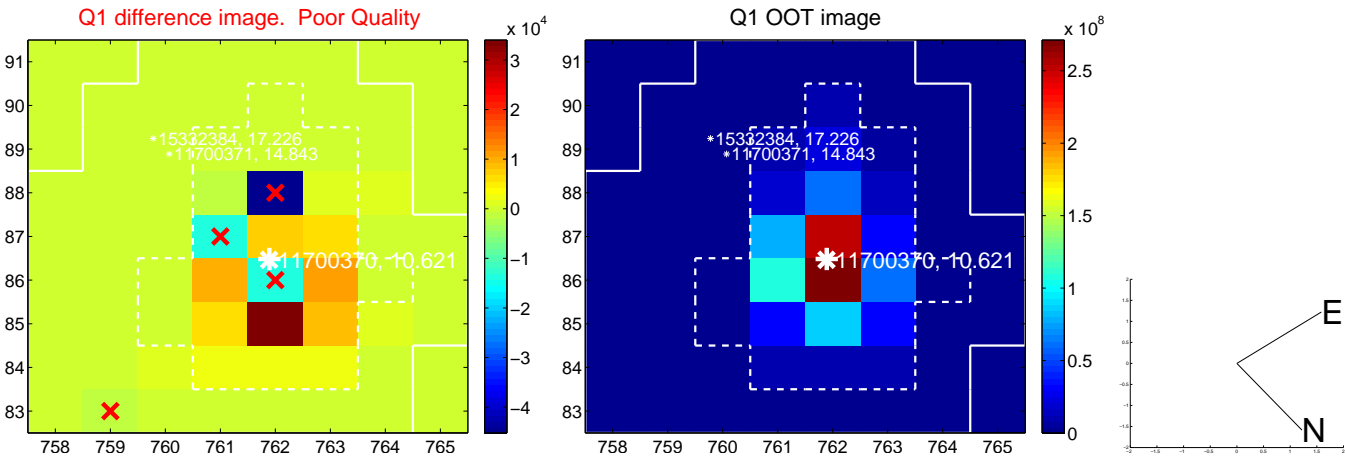
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.463 ± 1.026	1.43	-0.680 ± 0.635	1.295 ± 1.110
PRF-fit source offset from KIC position	1.396 ± 1.030	1.36	-0.497 ± 0.694	1.305 ± 1.070
photometric centroid source offset	0.18 ± 0.96	0.18	-0.00 ± 0.88	-0.18 ± 0.96

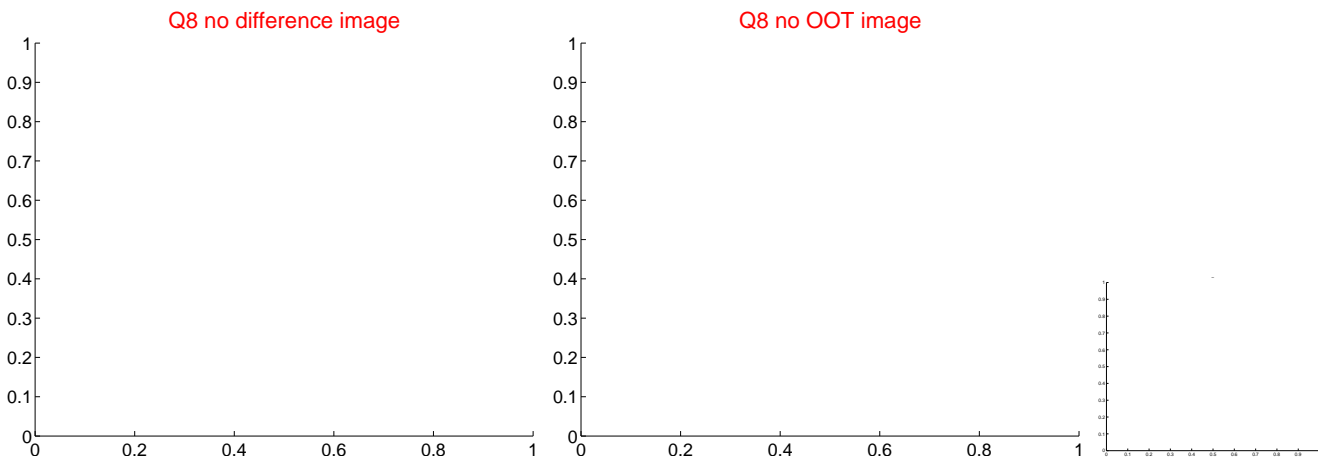
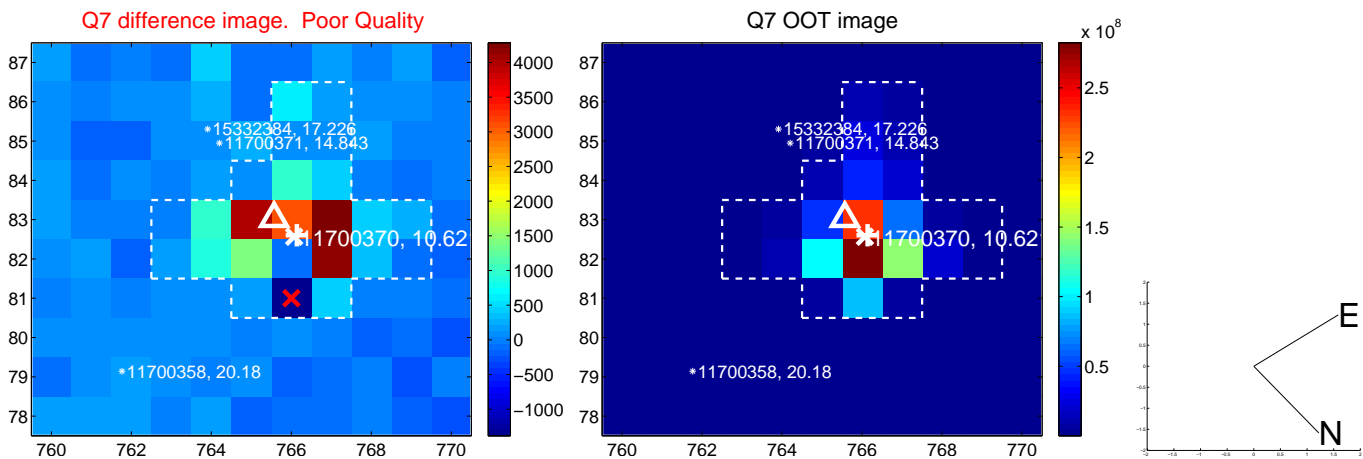
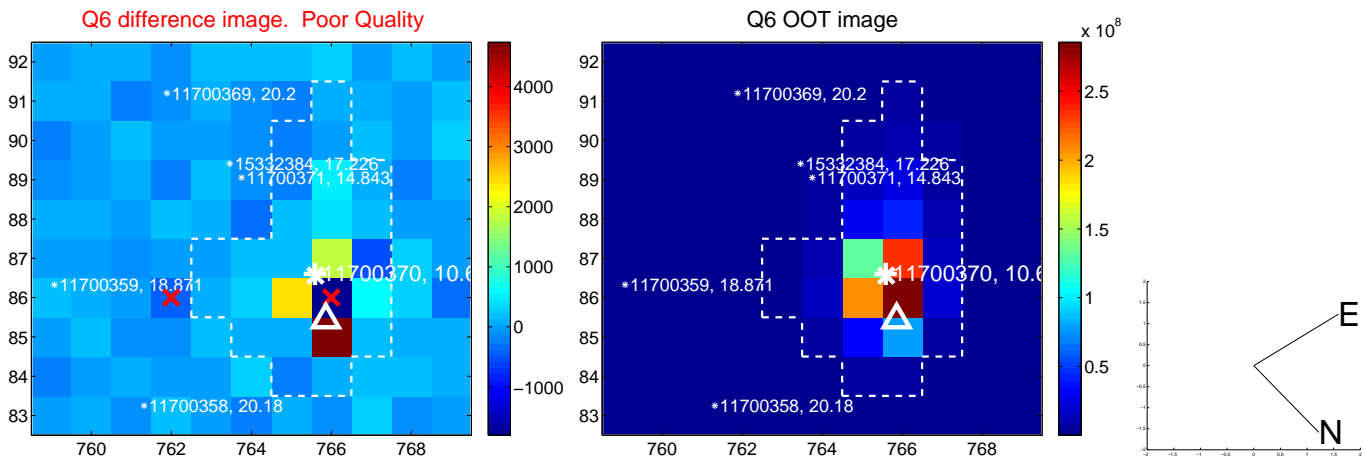
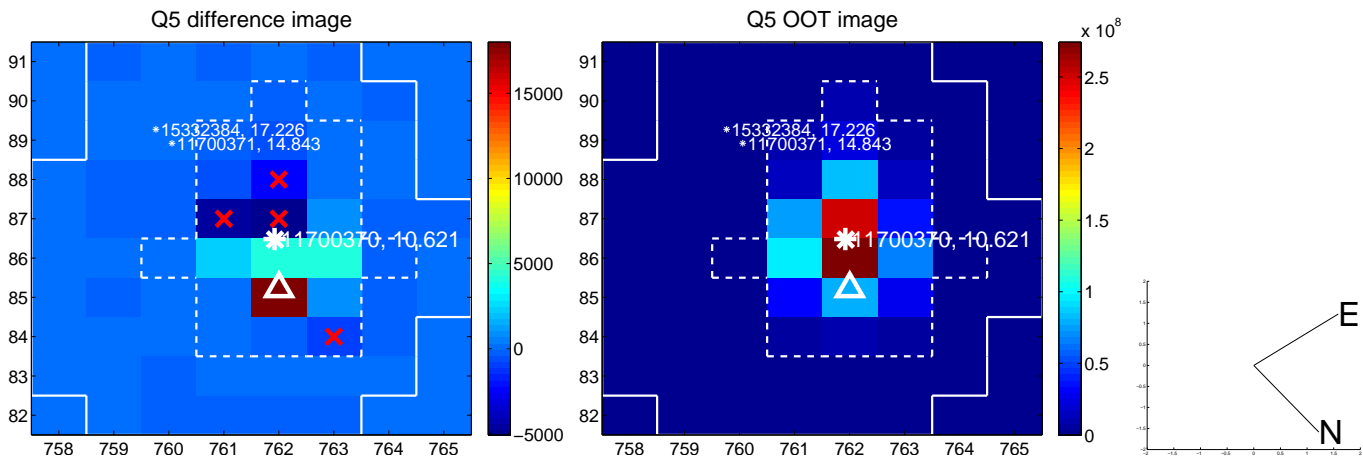


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

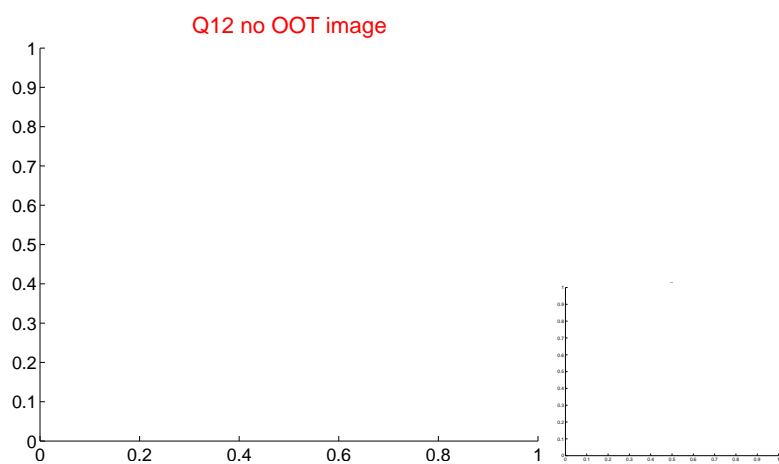
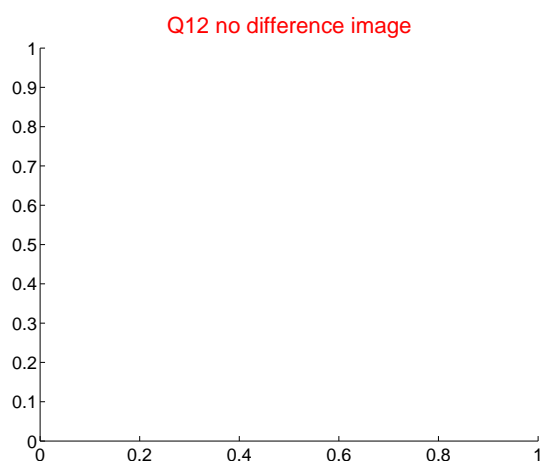
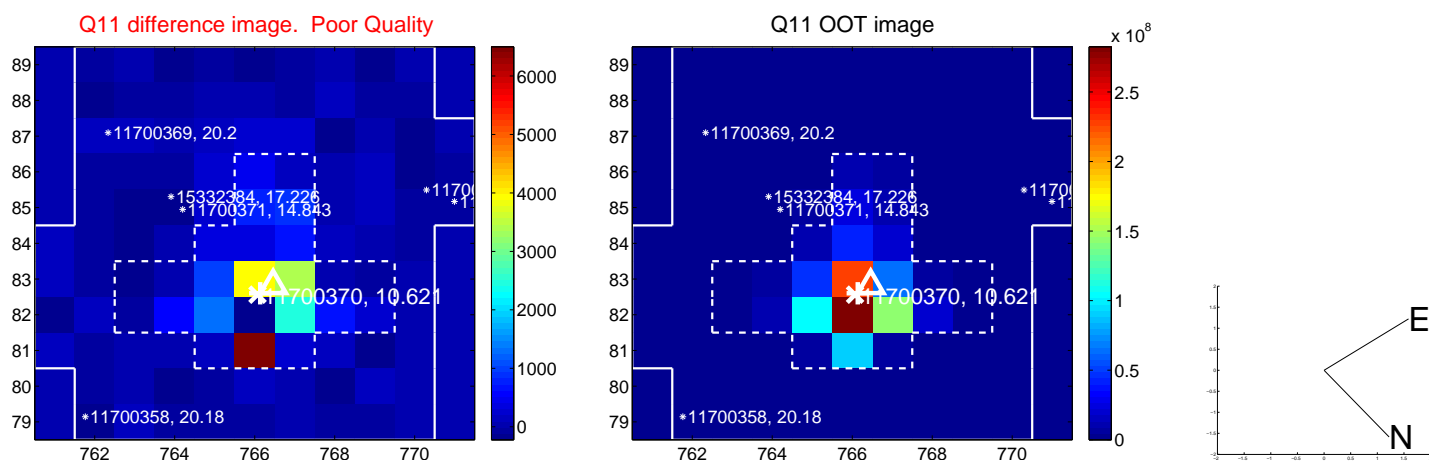
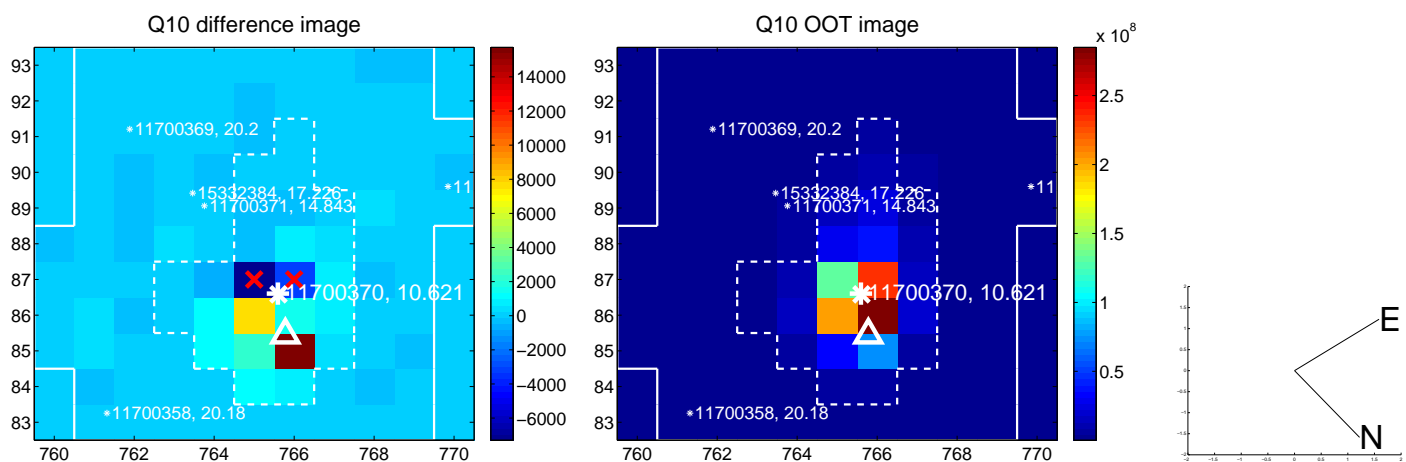
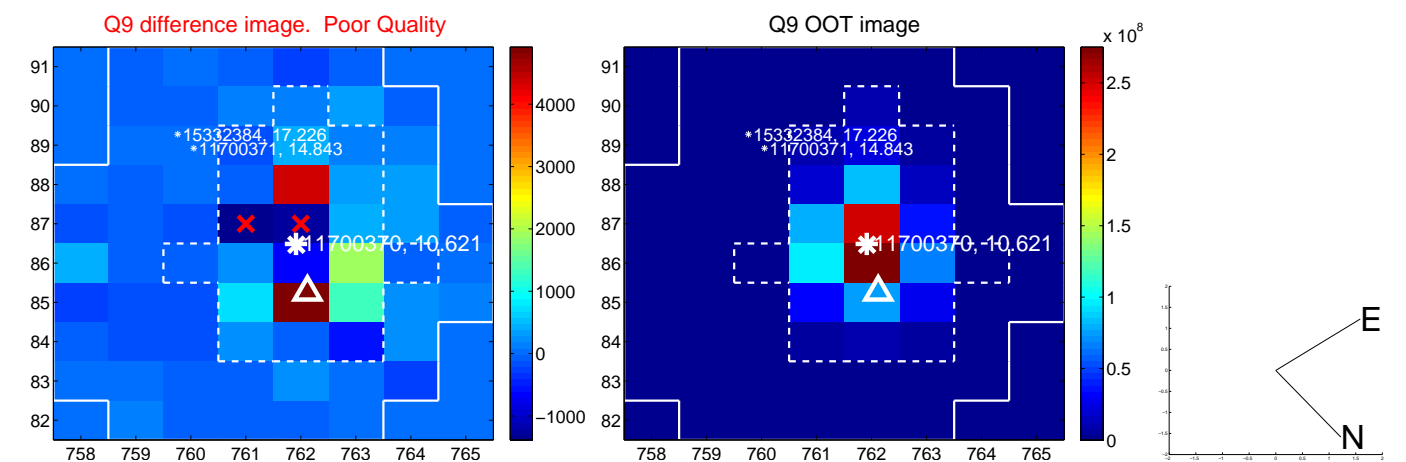
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



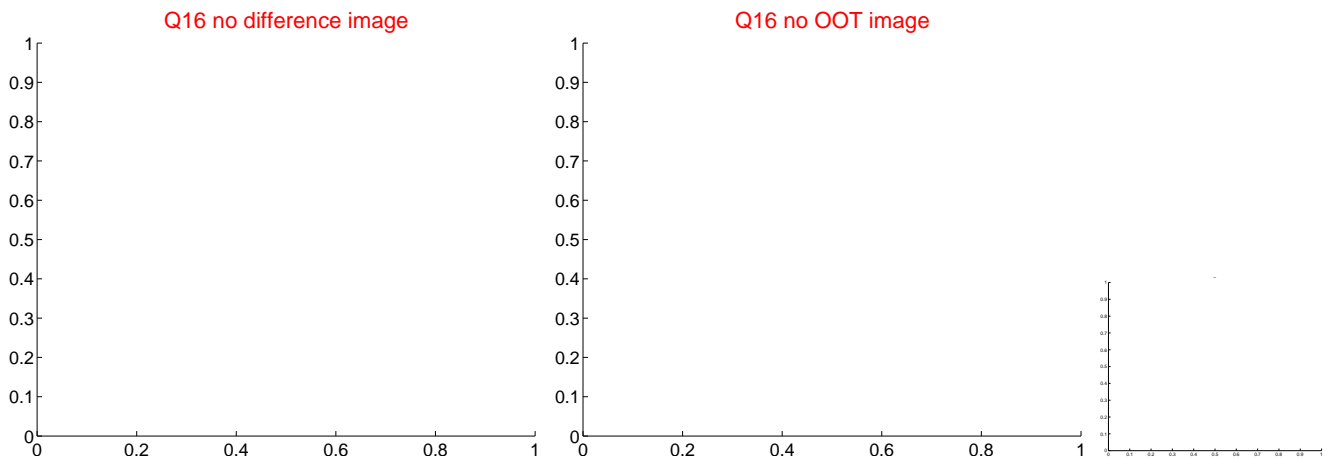
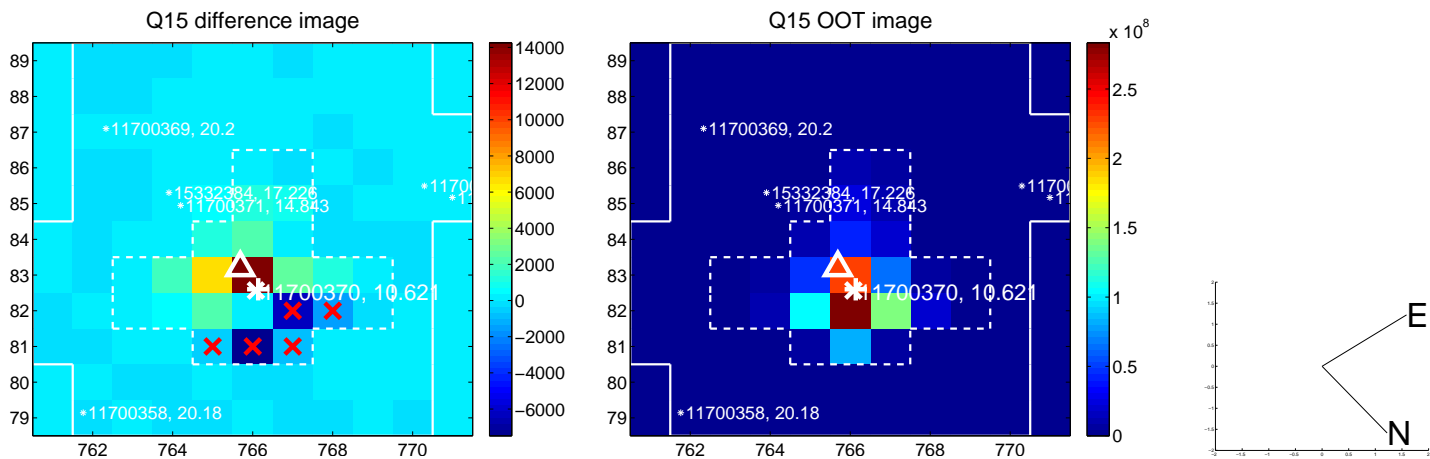
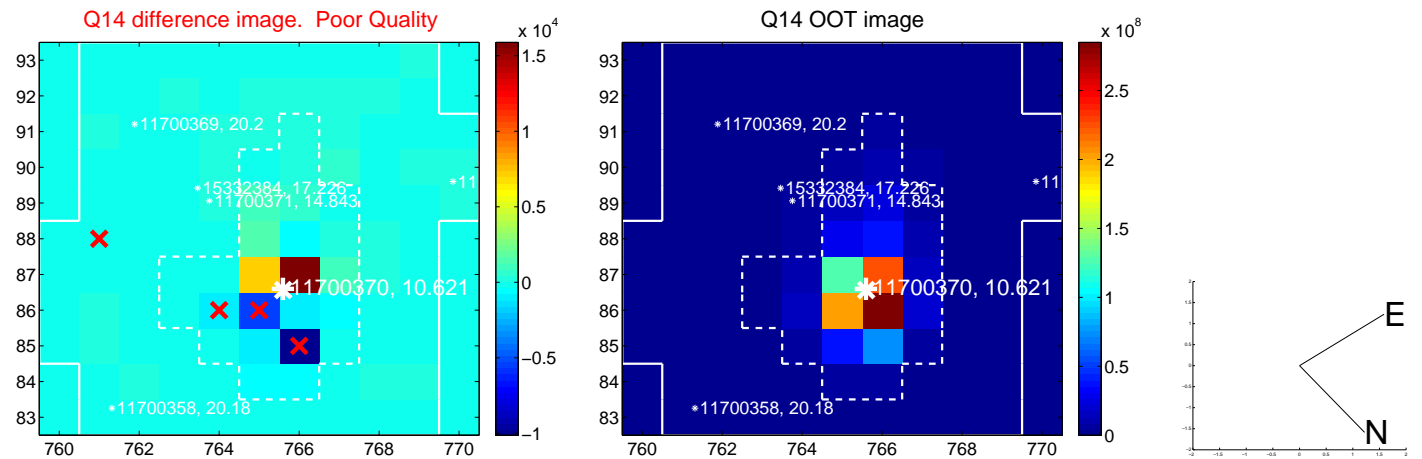
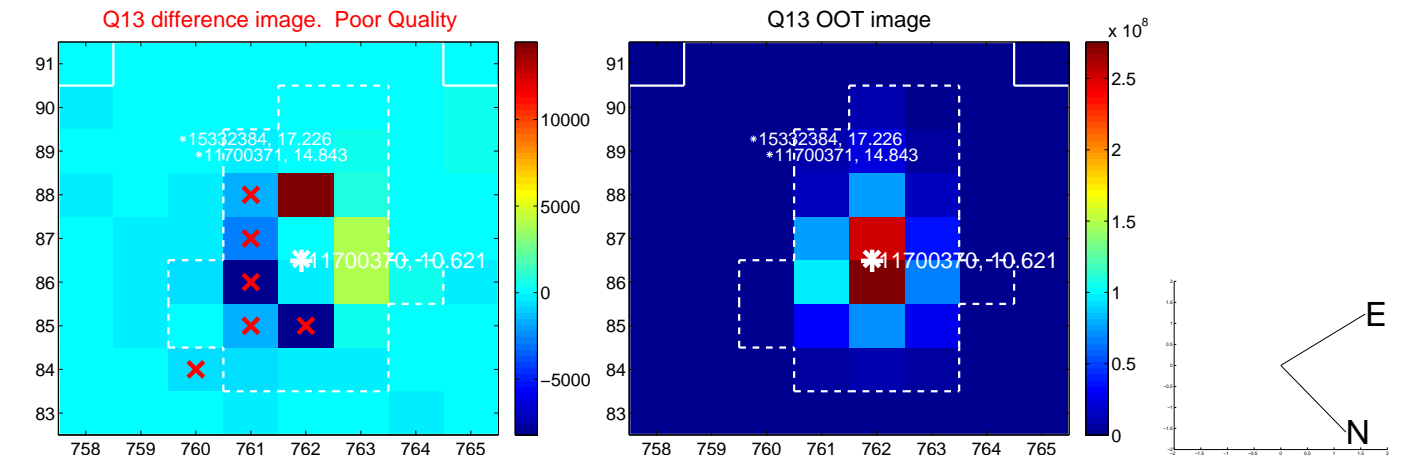
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



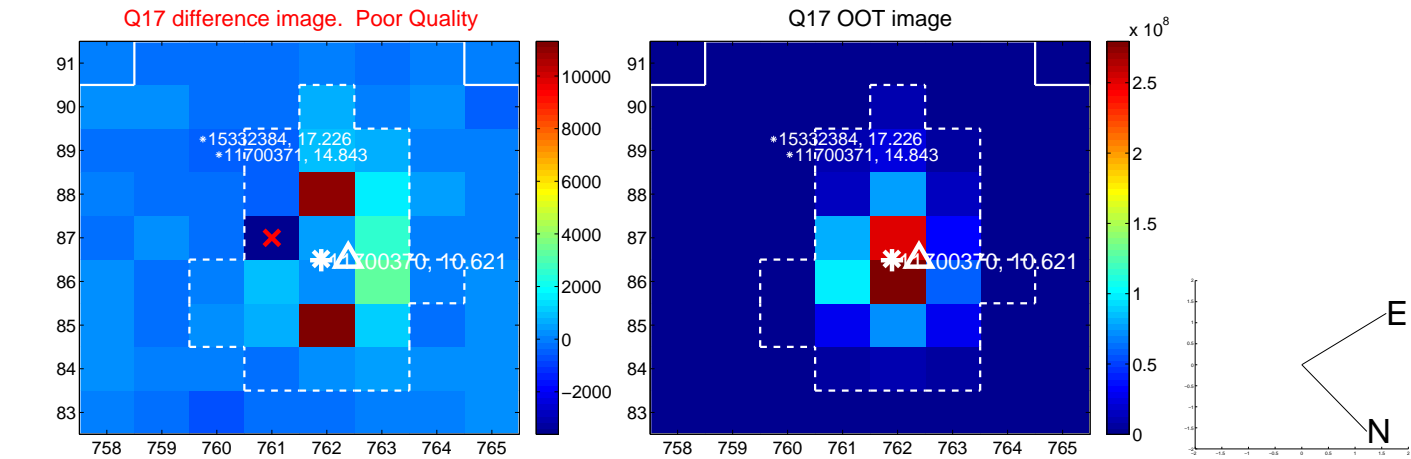
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



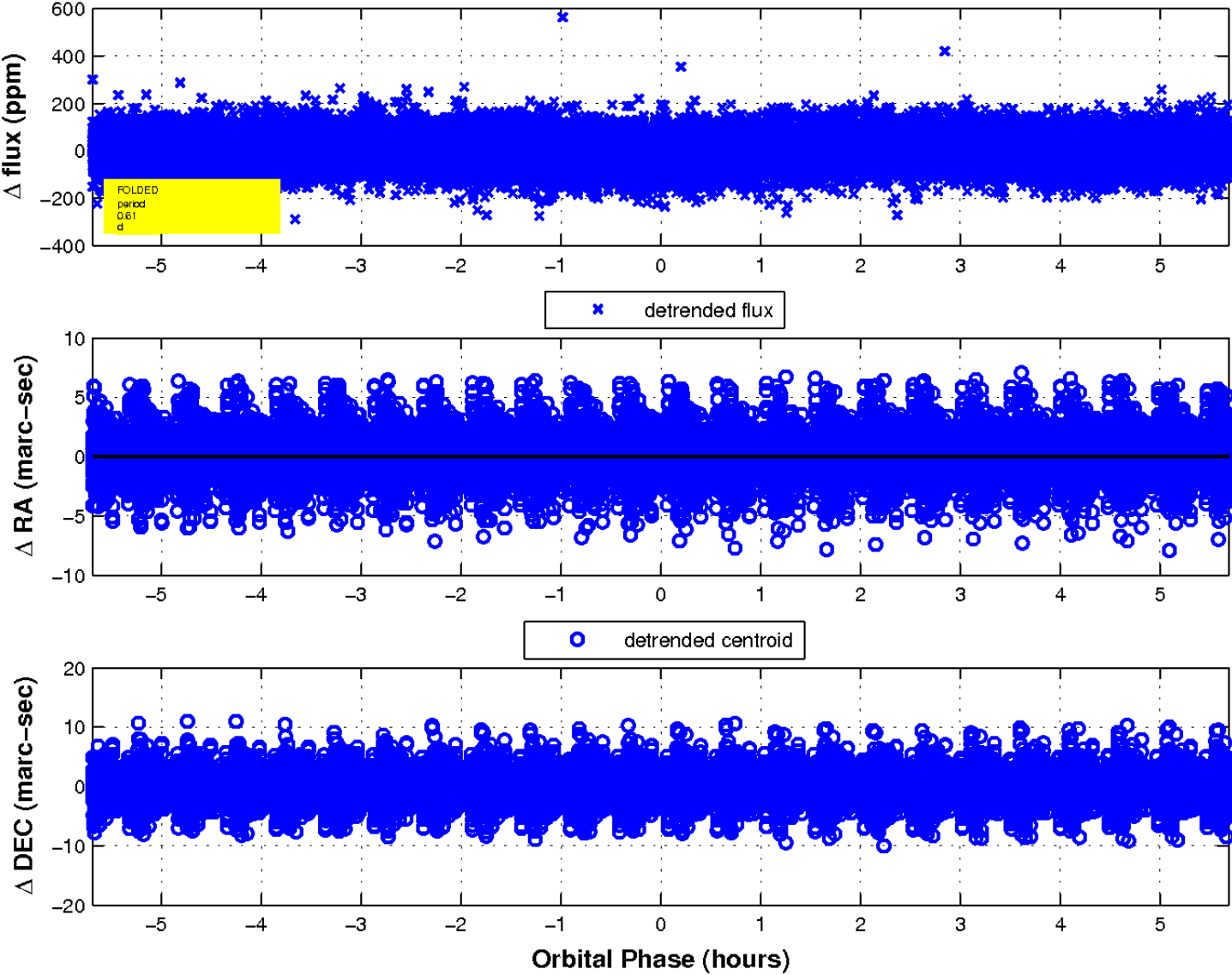
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

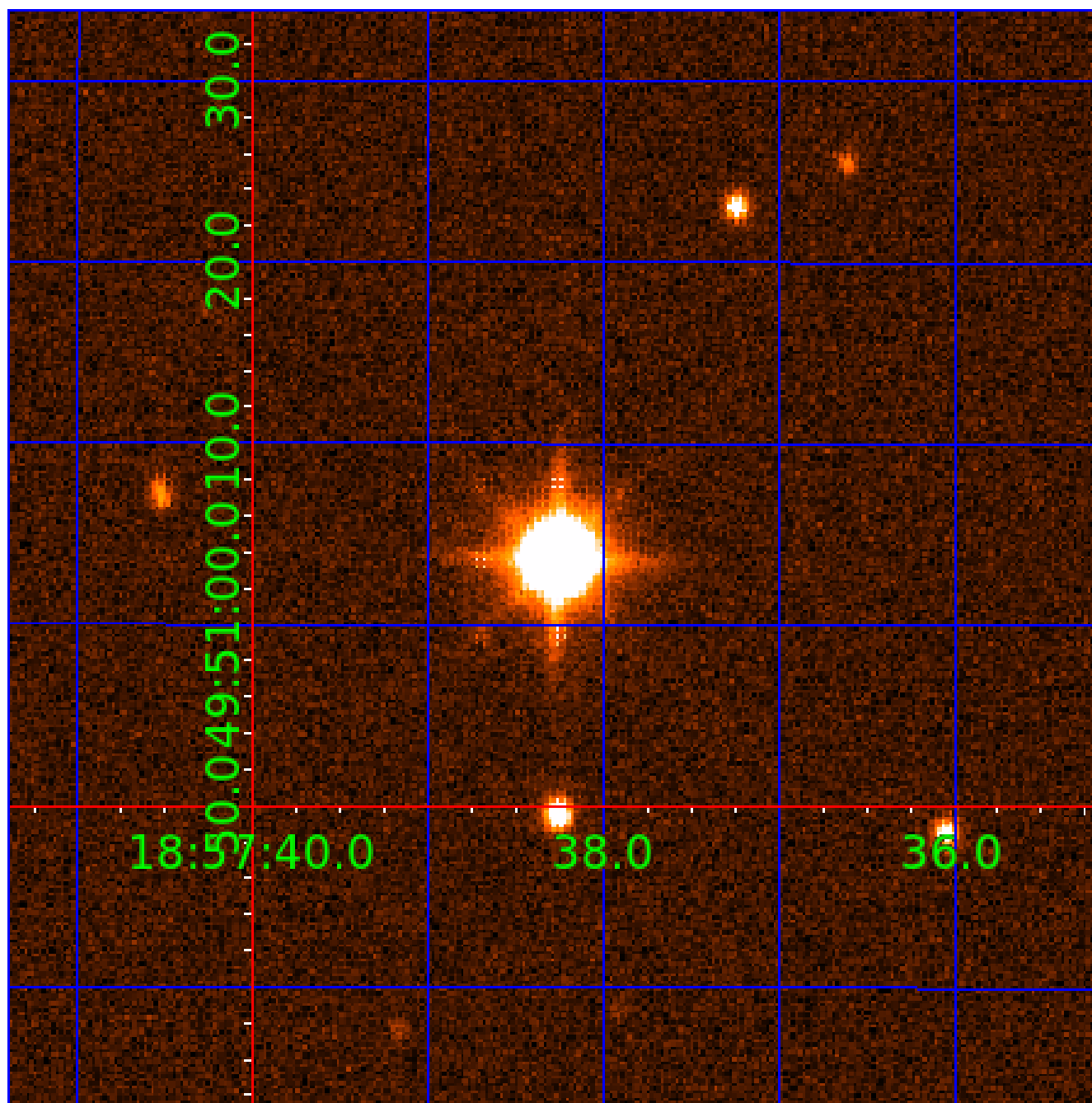


fluxWeightedCentroids, Planet 2 of 4



UKIRT Image

Declination



KIC 011700370

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})
011700370-01	OBS	No	0.613034	132.056373	10.4	2.535	10.8	11.6	2.05	8517	0.77	77863.06
011700370-02	OBS	No	0.613055	131.641214	14.3	1.896	11.5	16.5	2.05	8517	0.90	77859.66
011700370-03	OBS	No	1.680863	132.188275	26.4	2.228	9.6	9.3	2.05	8517	1.22	20289.36
011700370-04	OBS	No	23.021550	151.031243	89.7	2.118	7.3	9.3	2.05	8517	2.19	619.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011700370-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
011700370-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
011700370-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
011700370-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

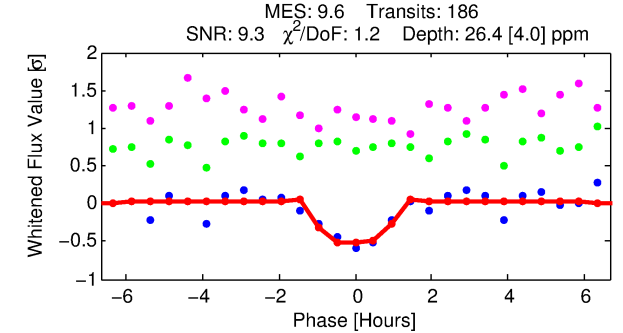
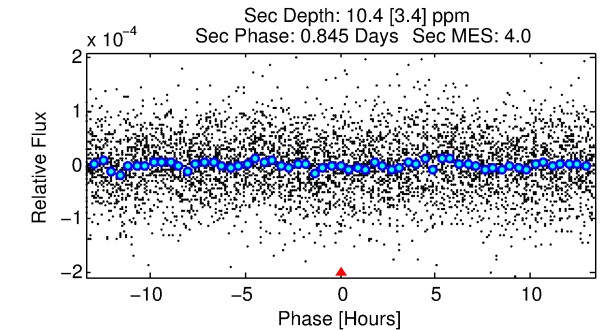
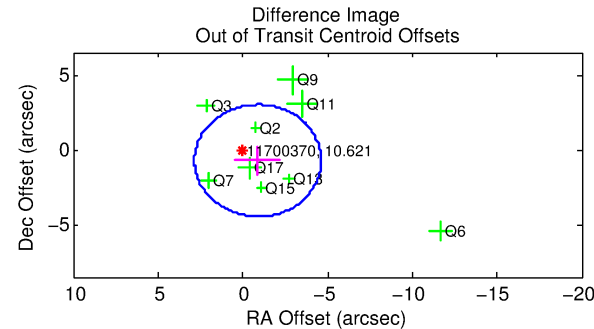
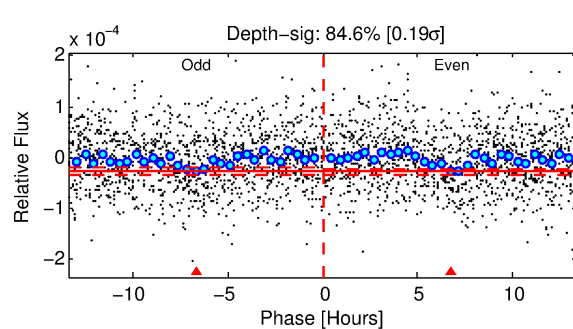
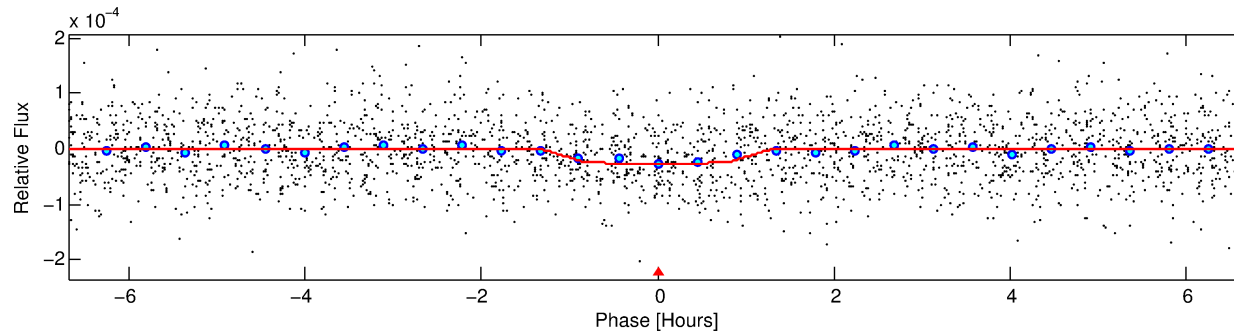
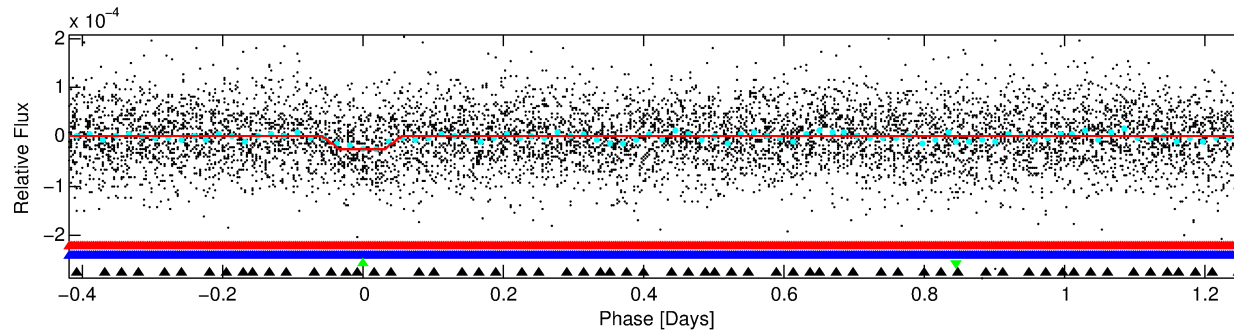
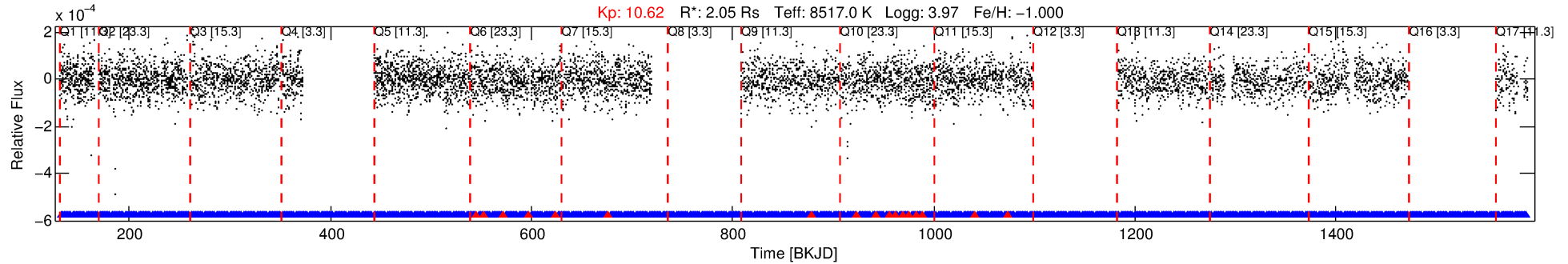
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011700370-03

No Significant Match Found

DV One-Page Summary

KIC: 11700370 Candidate: 3 of 4 Period: 1.681 d



DV Fit Results:

Period = 1.68086 [0.00002] d
Epoch = 132.1883 [0.0039] BKJD
Rp/R* = 0.0055 [0.0021]
a/R* = 2.74 [5.77]
b = 0.90 [0.52]
Seff = 20289.36 [13487.88]
Teq = 3043 [506] K
Rp = 1.22 [0.67] Re
a = 0.0312 [0.0124] AU
Ag = 3.72 [3.88] [0.70 σ]
Teffp = 6535 [1360] K [2.41 σ]

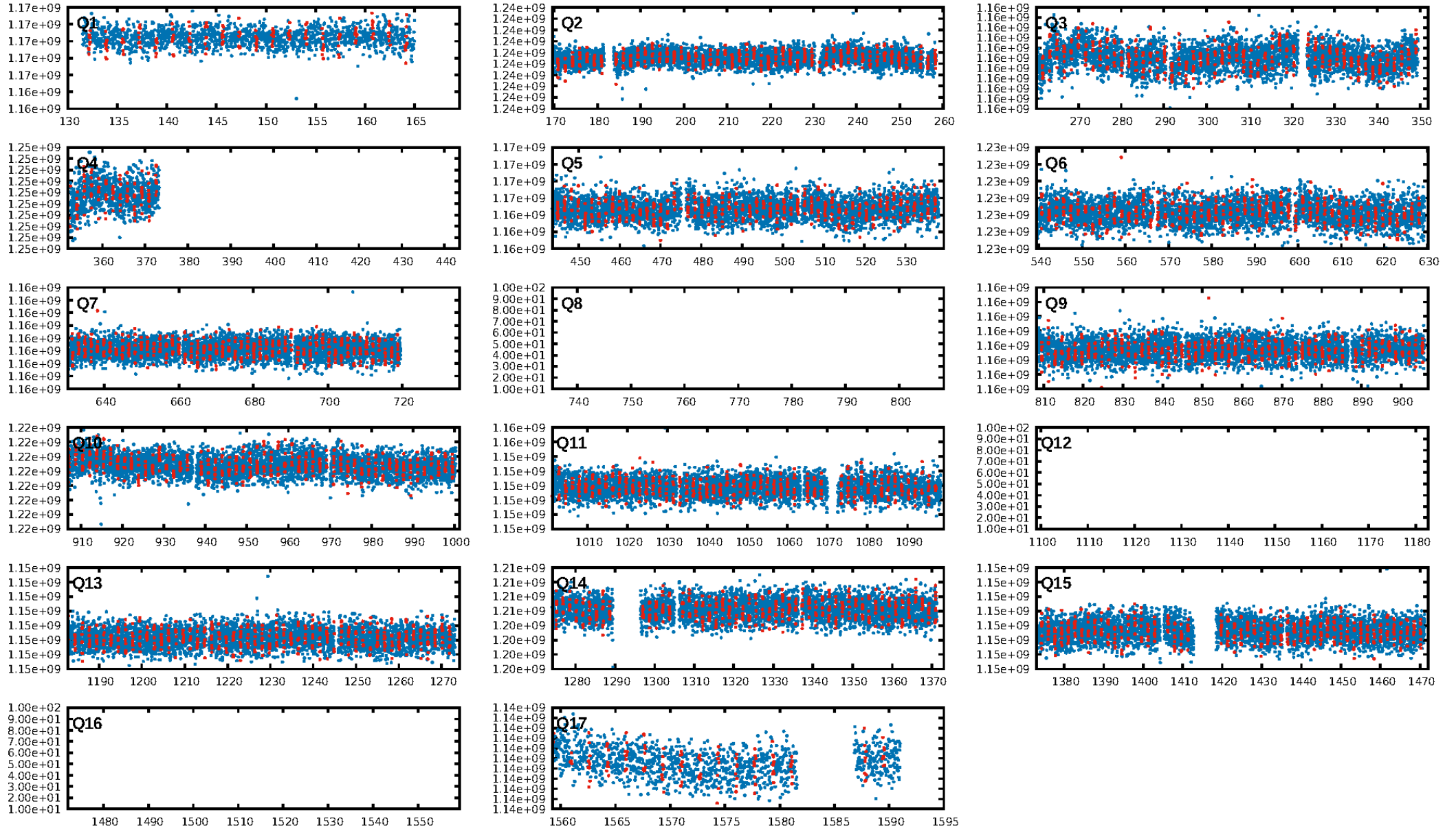
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [8.76 σ]
LongPeriod-sig: 100.0% [166.63 σ]
ModelChiSquare2-sig: 10.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 6.33e-18
RollingBand-fgt: 0.90 [157/174]
GhostDiagnostic-chr: 0.9088
Centroid-sig: N/A
Centroid-so: 1.574 arcsec [1.91 σ]
OotOffset-rm: 1.153 arcsec [0.93 σ]
KicOffset-rm: 1.011 arcsec [0.81 σ]
OotOffset-st: 2/4/0/3 [9]
KicOffset-st: 2/4/0/3 [9]
DiffImageQuality-fgm: 0.33 [3/9]
DiffImageOverlap-fno: 0.00 [0/14]

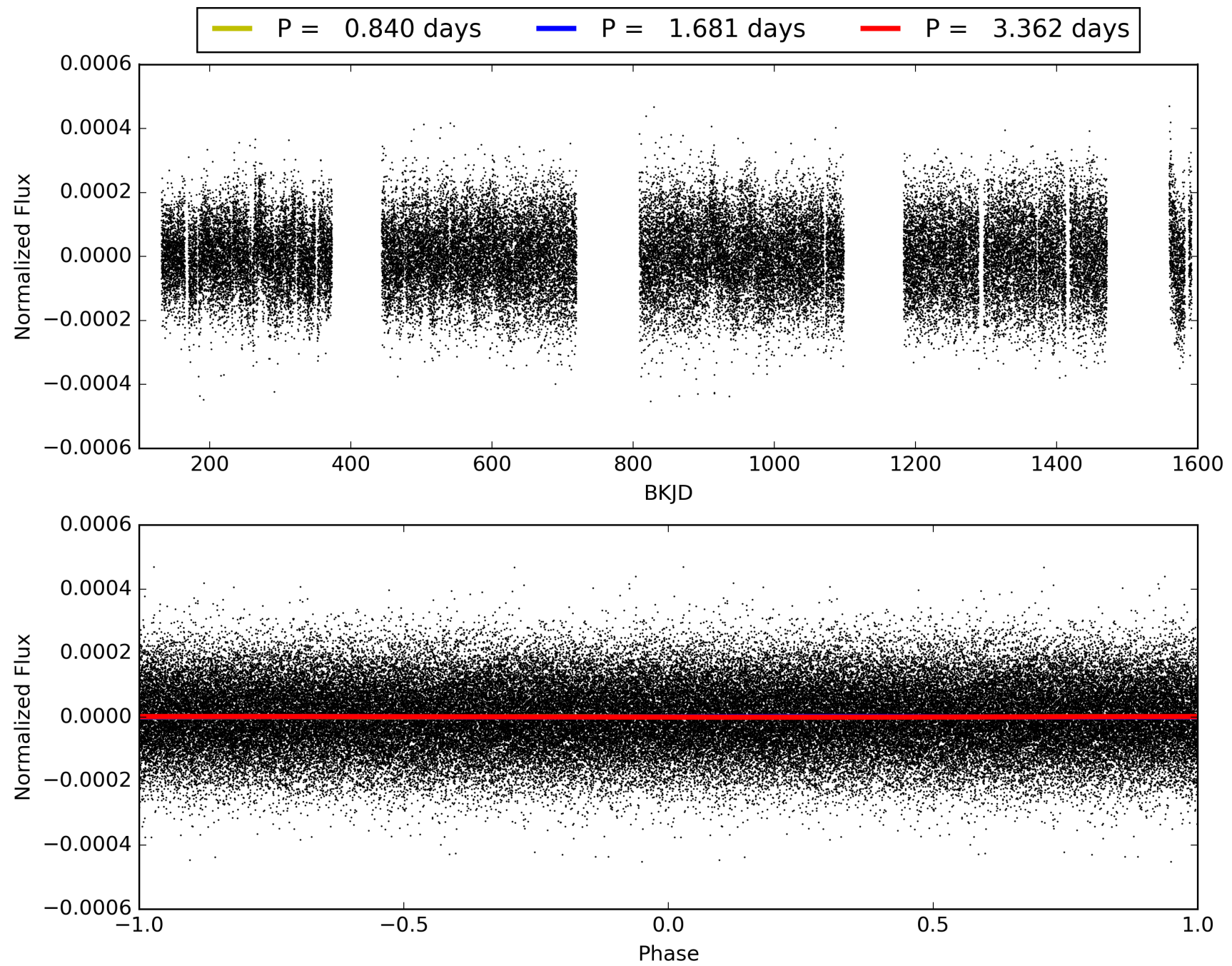
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 21:37:47 Z

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

TCE 011700370-03, PDC Light Curves

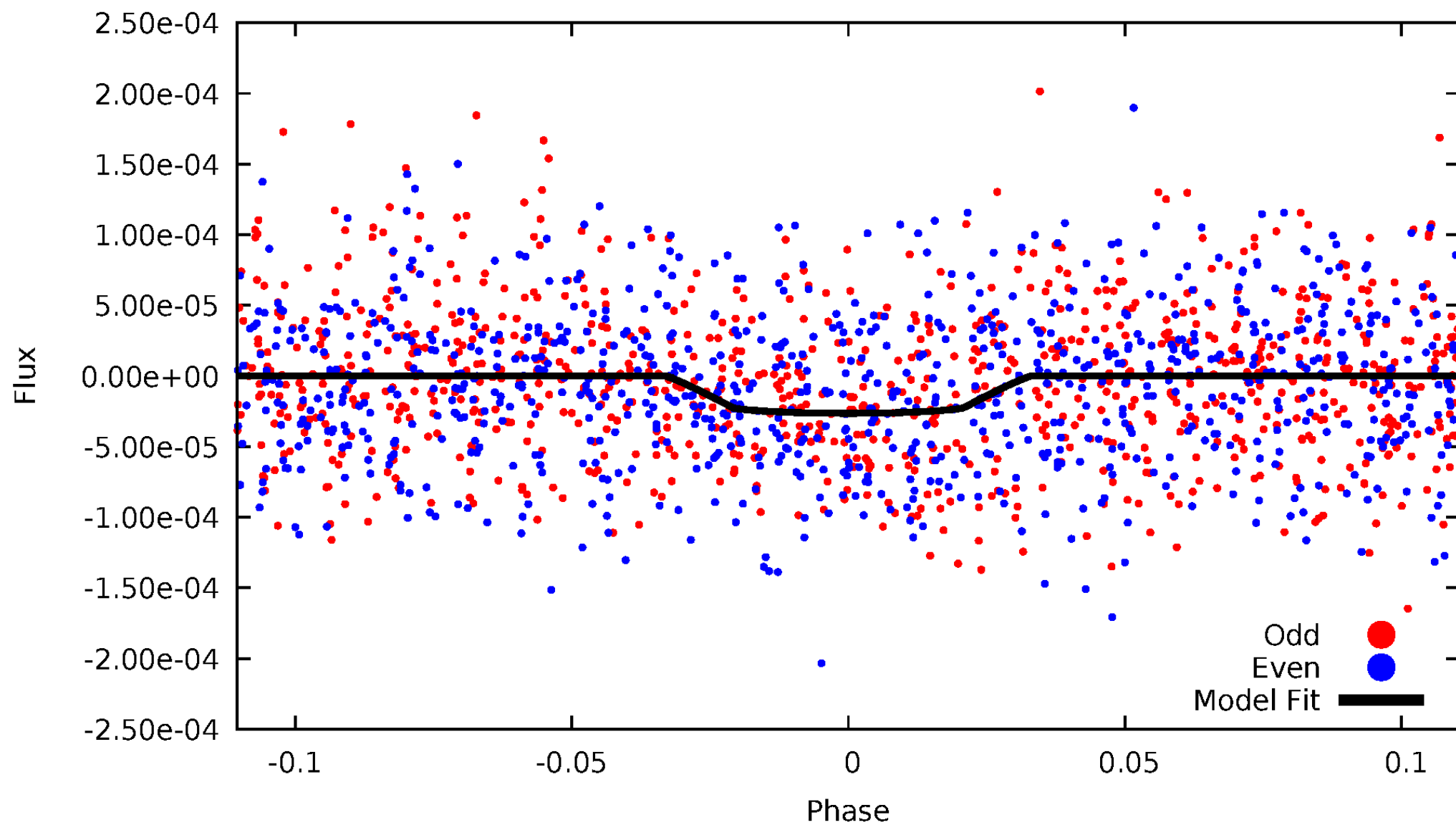


TCE 011700370-03



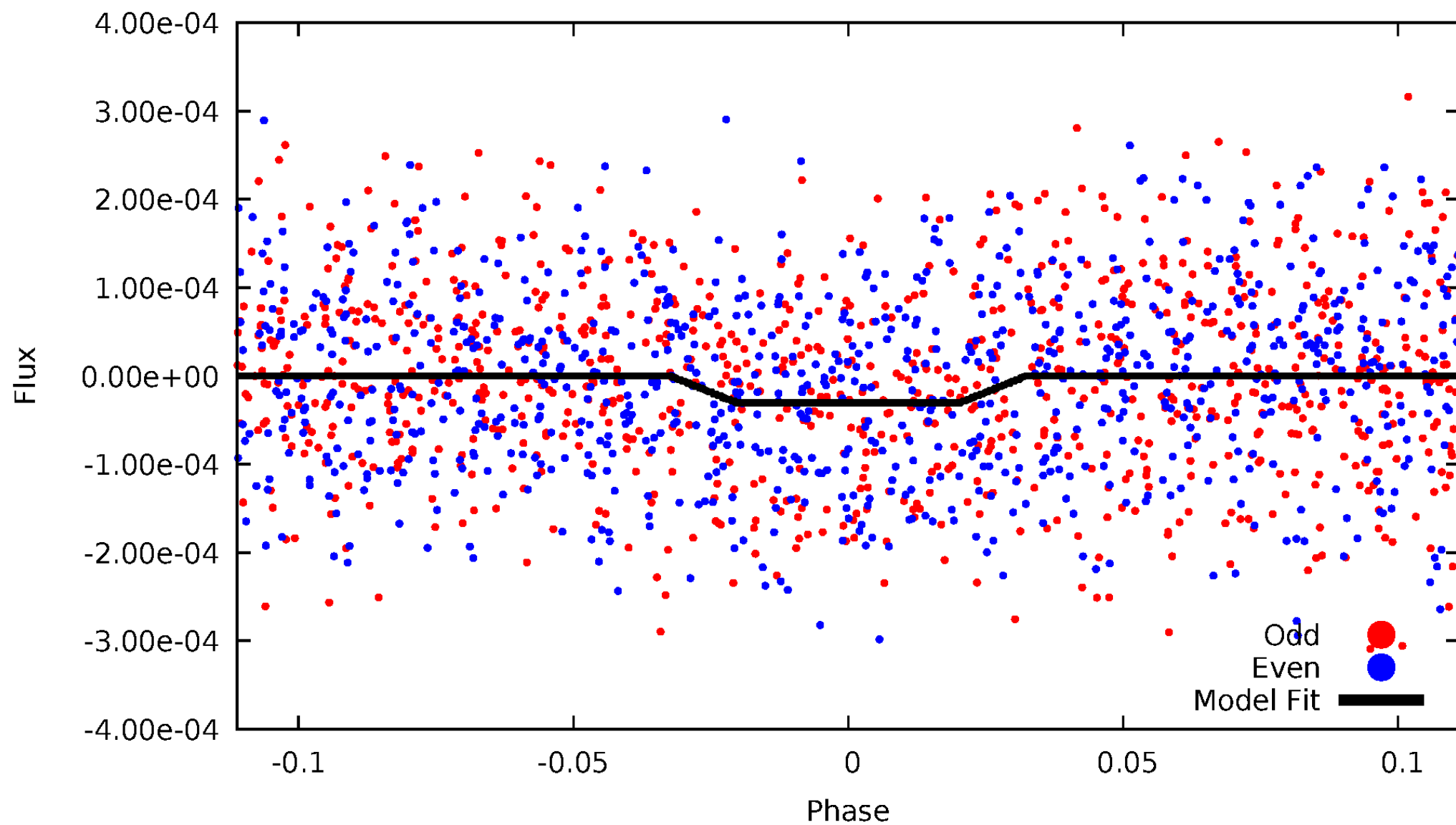
DV Odd/Even

TCE 011700370-03



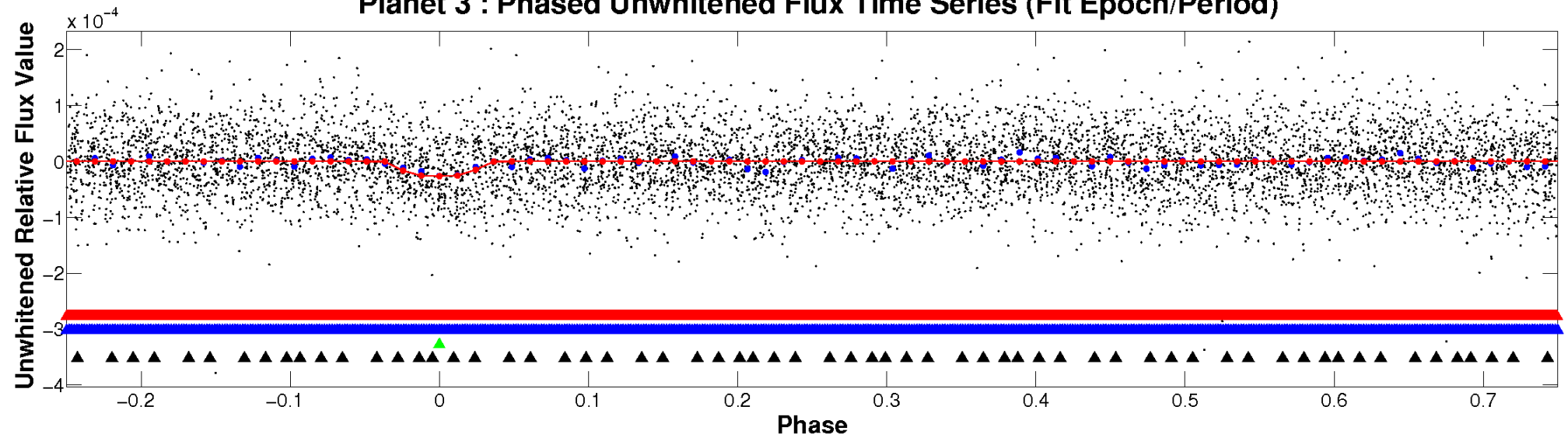
ALT Odd/Even

TCE 011700370-03

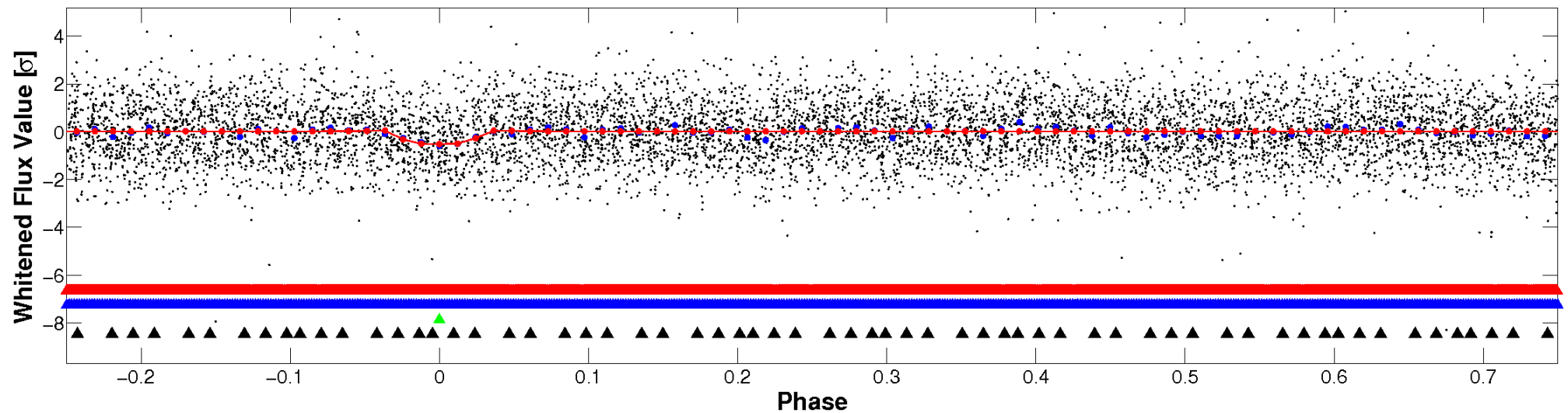


Non-Whitened Vs. Whitened Light Curve

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

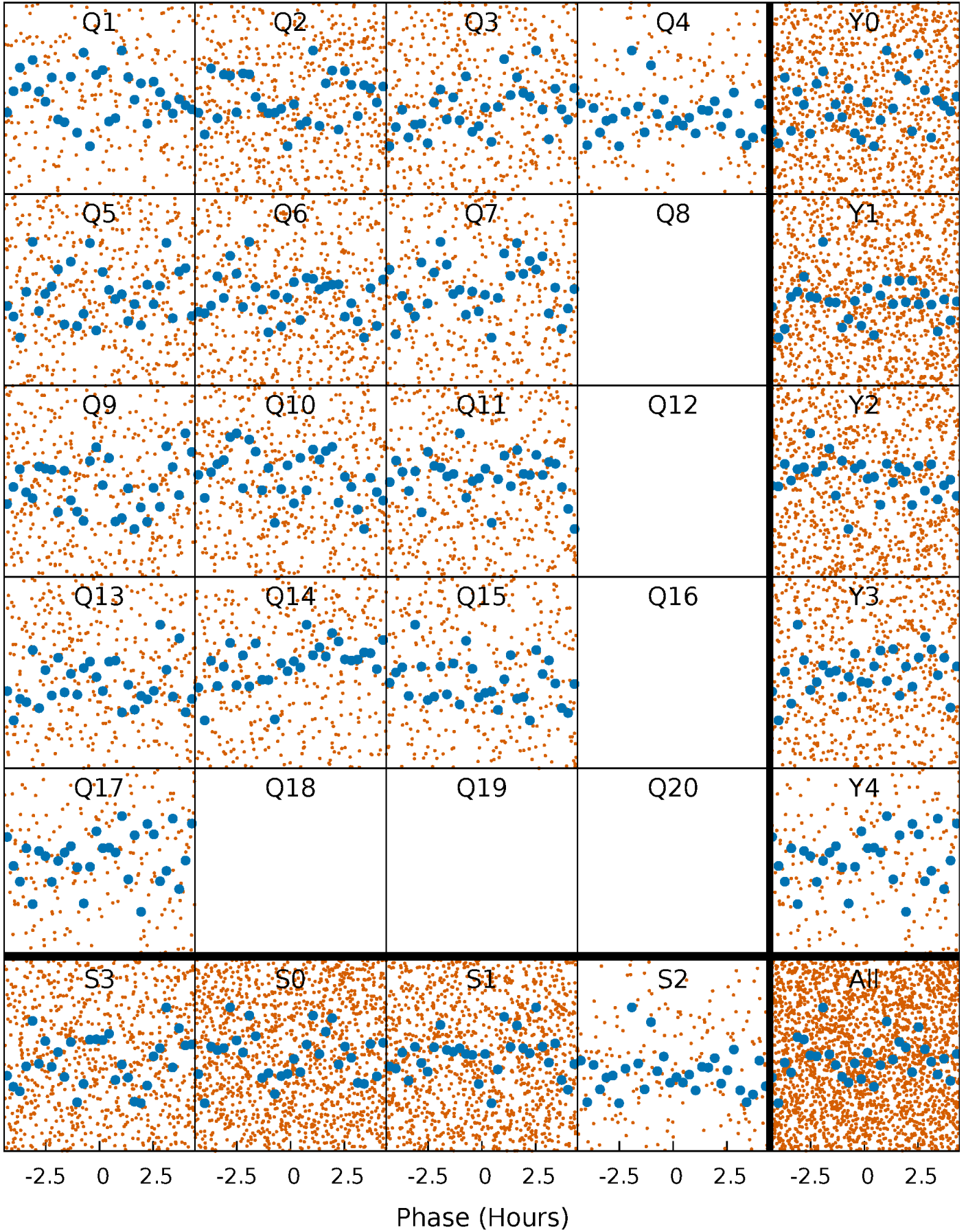


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



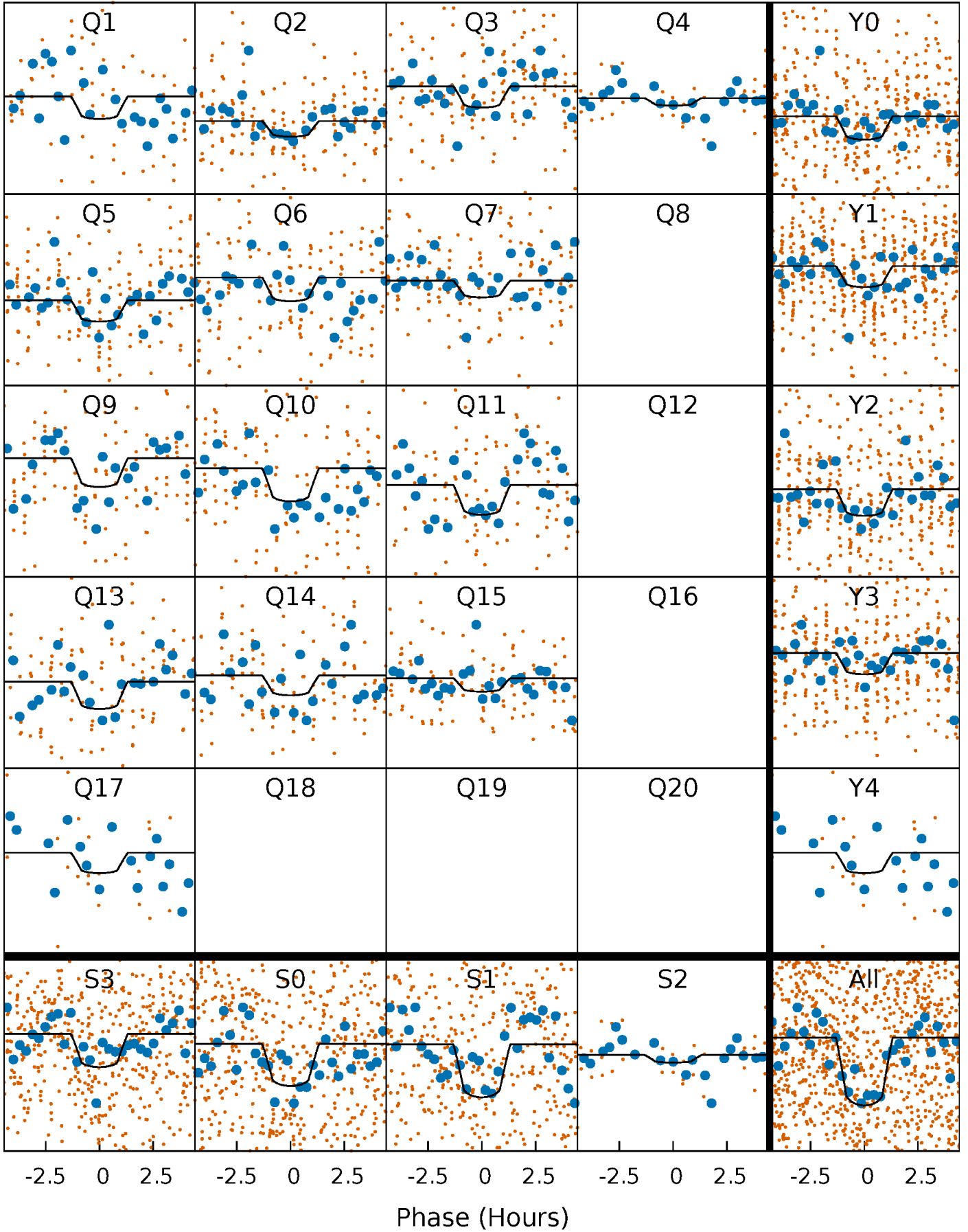
PDC Quarter-Phased Transit Curves

TCE 011700370-03 P= 1.680863 Days $T_0=132.188275$ (BKJD)



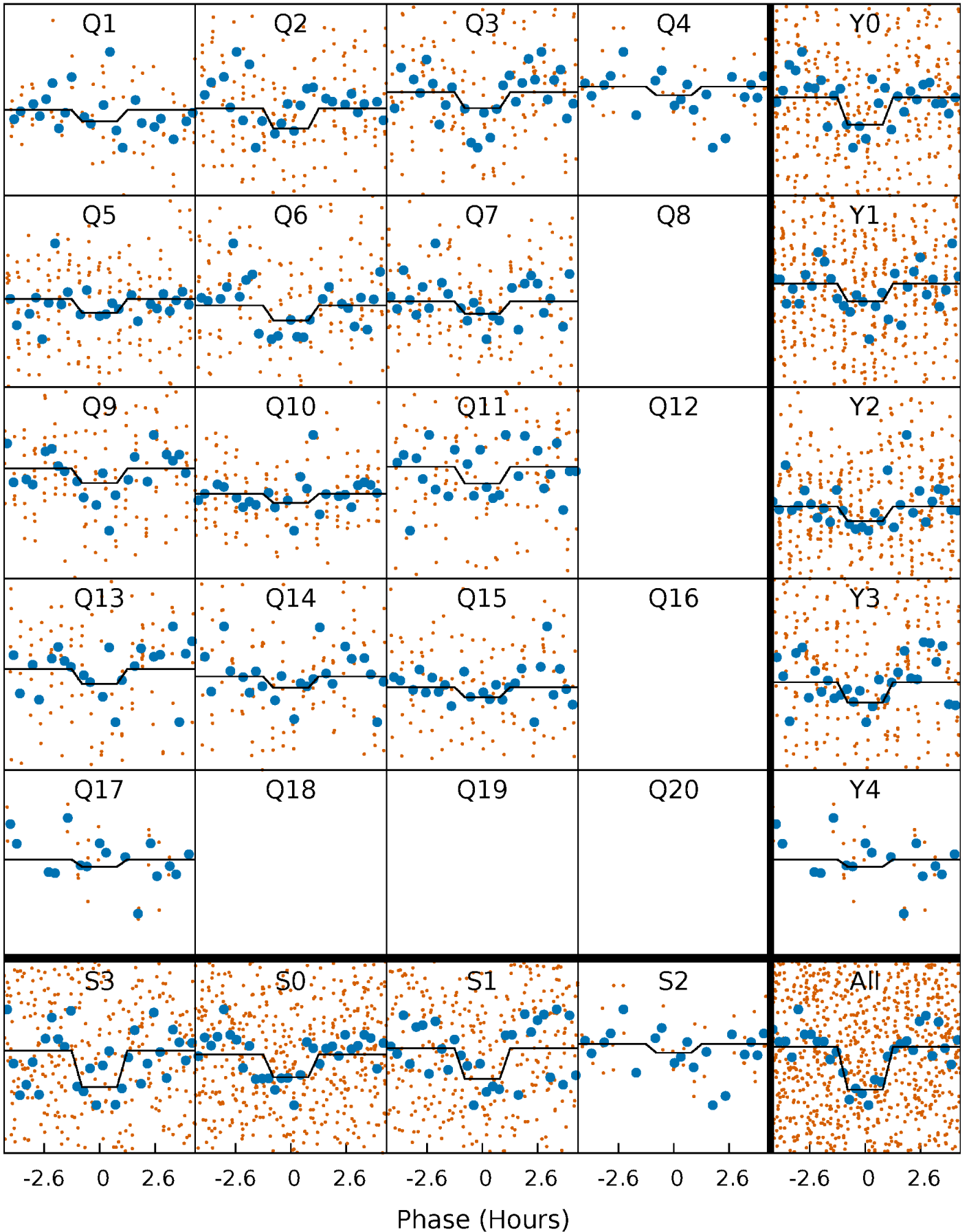
DV Quarter-Phased Transit Curves

TCE 011700370-03 P= 1.680863 Days $T_0=132.188275$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

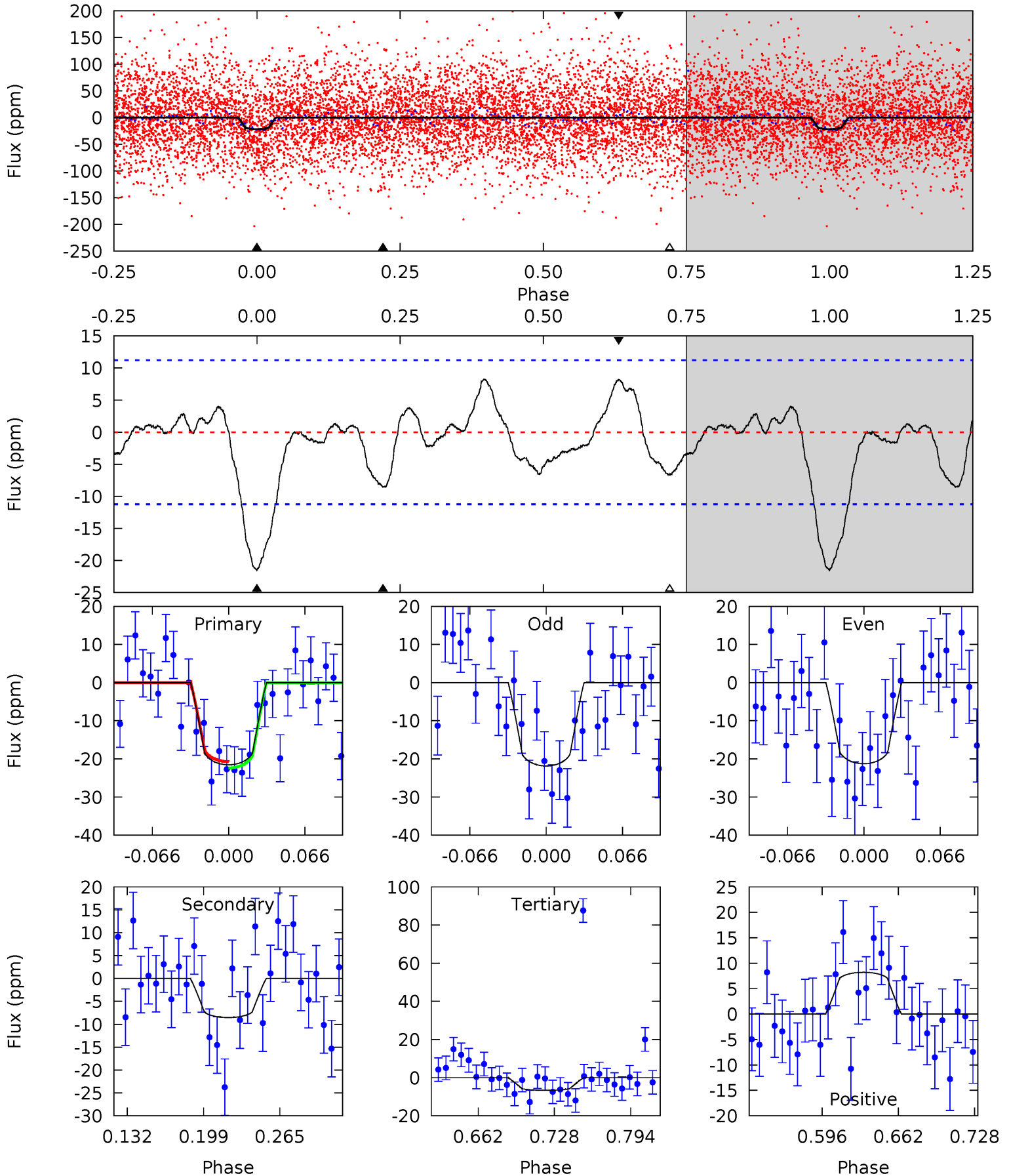
TCE 011700370-03 P= 1.680864 Days $T_0=132.188281$ (BKJD)



DV Model-Shift Uniqueness Test

011700370-03, P = 1.680863 Days, E = 130.507412 Days

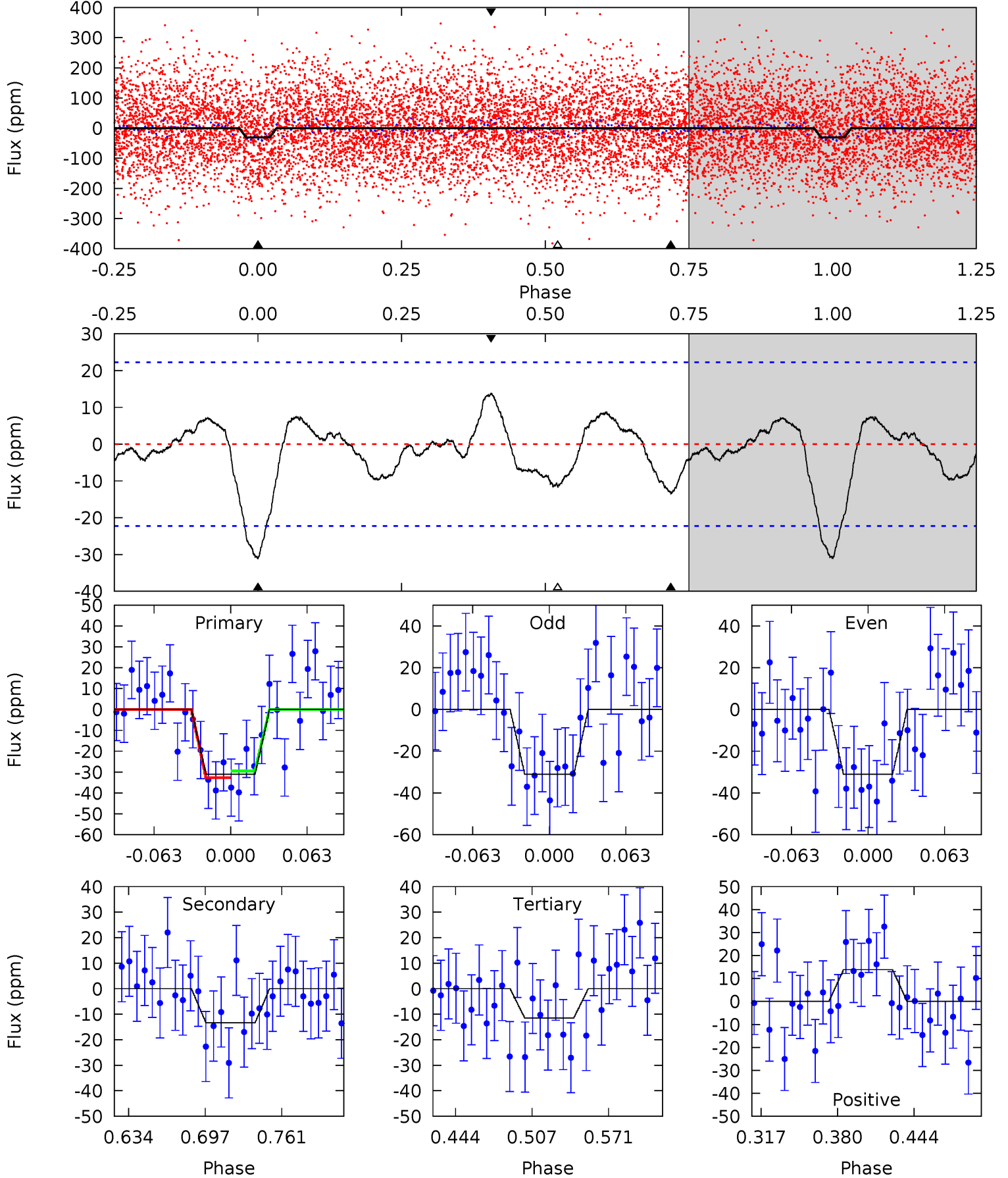
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.93	3.54	2.76	3.40	4.65	1.84	1.47	6.17	5.53	0.78	0.14	0.13	1.03	0.28	0.35



Alt Model-Shift Uniqueness Test

011700370-03, P = 1.680864 Days, E = 130.507417 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.51	2.81	2.40	2.90	4.66	1.86	1.21	4.10	3.61	0.40	-0.09	0.00	0.97	0.31	0.34



Stellar Parameters For KIC 011700370

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	8517^{+272}_{-333}	$3.972^{+0.384}_{-0.096}$	$-1.000^{+0.250}_{-0.300}$	$2.046^{+0.348}_{-0.812}$	$1.431^{+0.173}_{-0.231}$	$0.235^{+0.747}_{-0.071}$
	+3%/-4%	+10%/-2%	+25%/-30%	+17%/-40%	+12%/-16%	+317%/-30%
Source	KIC0	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 011700370-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-9 ± 2	$1.14^{+0.52}_{-0.47}$	4144^{+279}_{-417}	5828^{+1677}_{-996}	$3.572^{+5.926}_{-1.993}$
Alt.	-13 ± 5	$1.13^{+0.51}_{-0.42}$	4121^{+305}_{-434}	6486^{+2195}_{-1202}	$5.397^{+10.199}_{-3.078}$

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 $A_{obs} \gg 1.0$

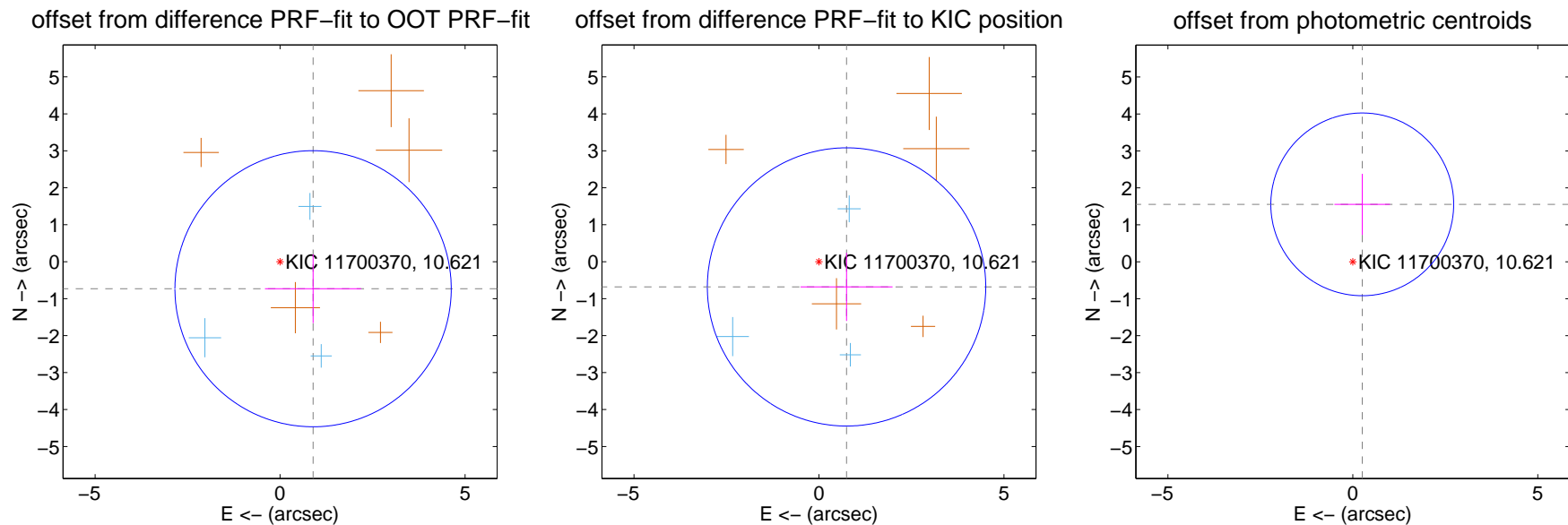
DV Centroid Data

Supplemental centroid analysis for 011700370-03. **Kepler magnitude: 10.62.** Transit SNR 9.34

There are 3 quarters with good PRF difference image offsets

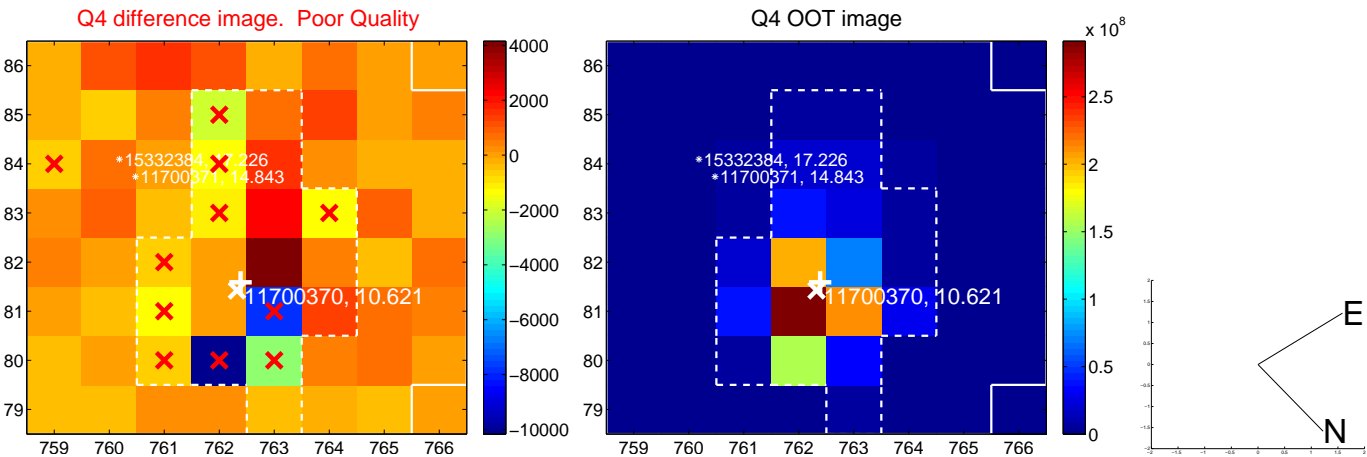
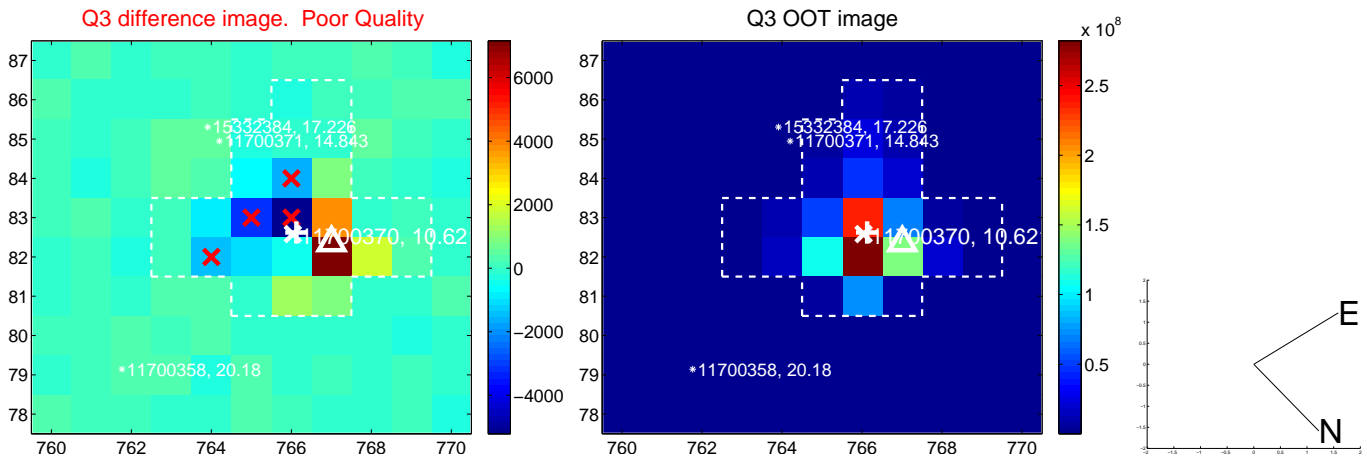
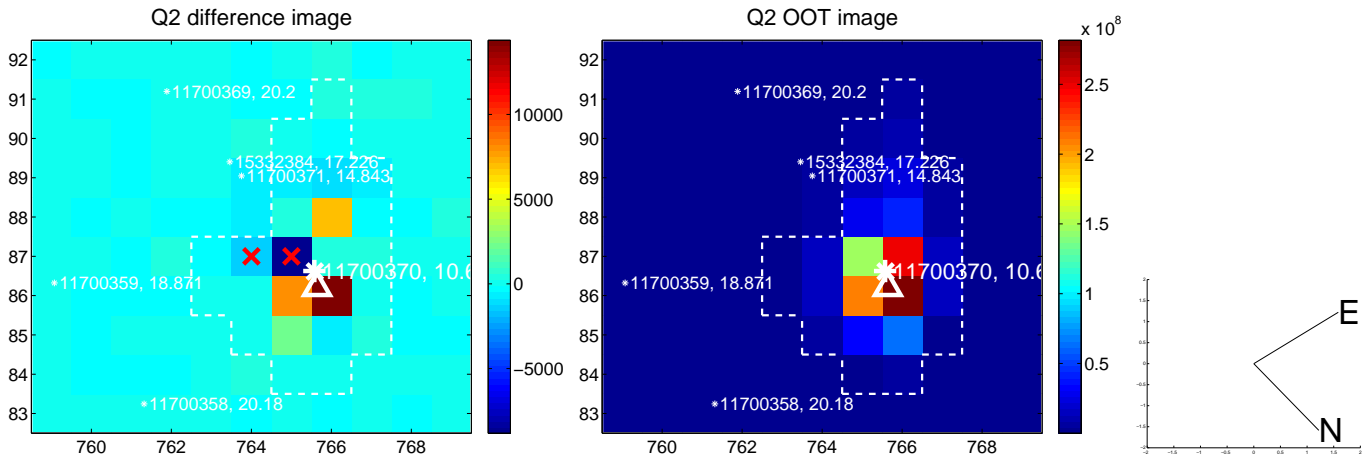
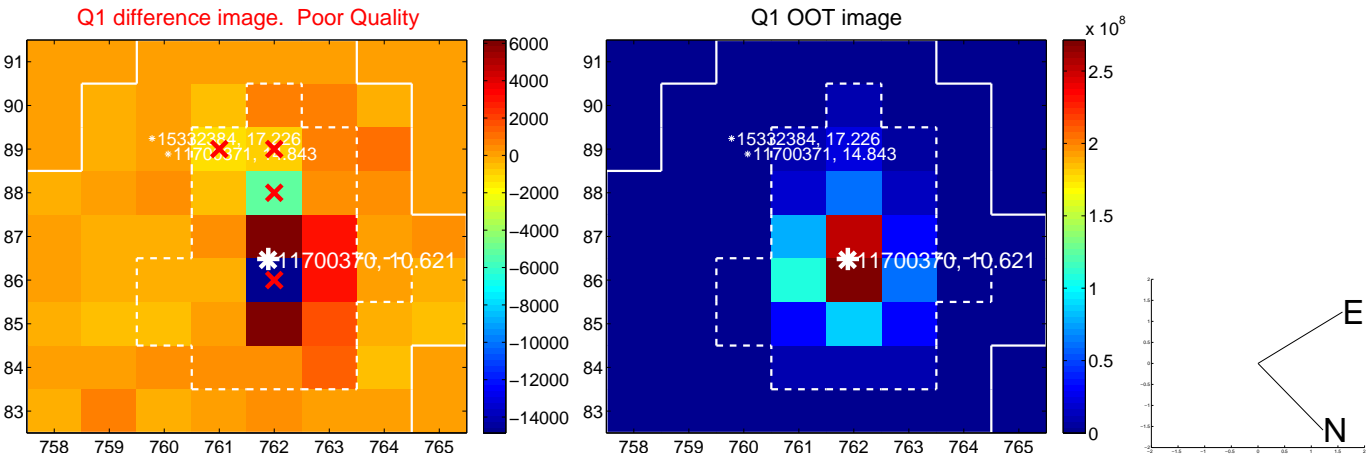
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.153 ± 1.245	0.93	-0.892 ± 1.300	-0.731 ± 0.931
PRF-fit source offset from KIC position	1.011 ± 1.255	0.81	-0.745 ± 1.243	-0.683 ± 0.921
photometric centroid source offset	1.57 ± 0.82	1.91	-0.25 ± 0.75	1.55 ± 0.83

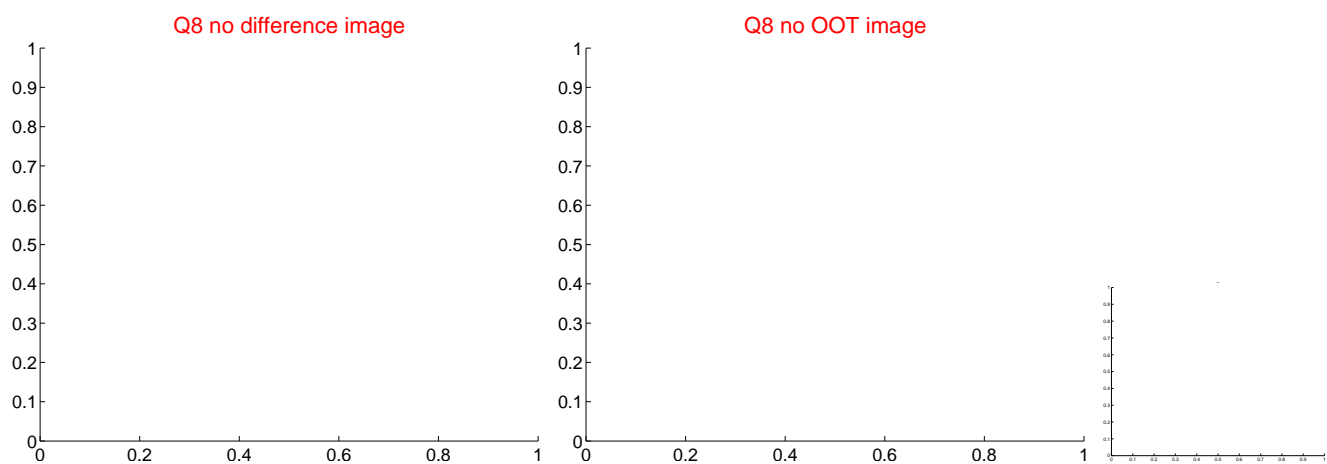
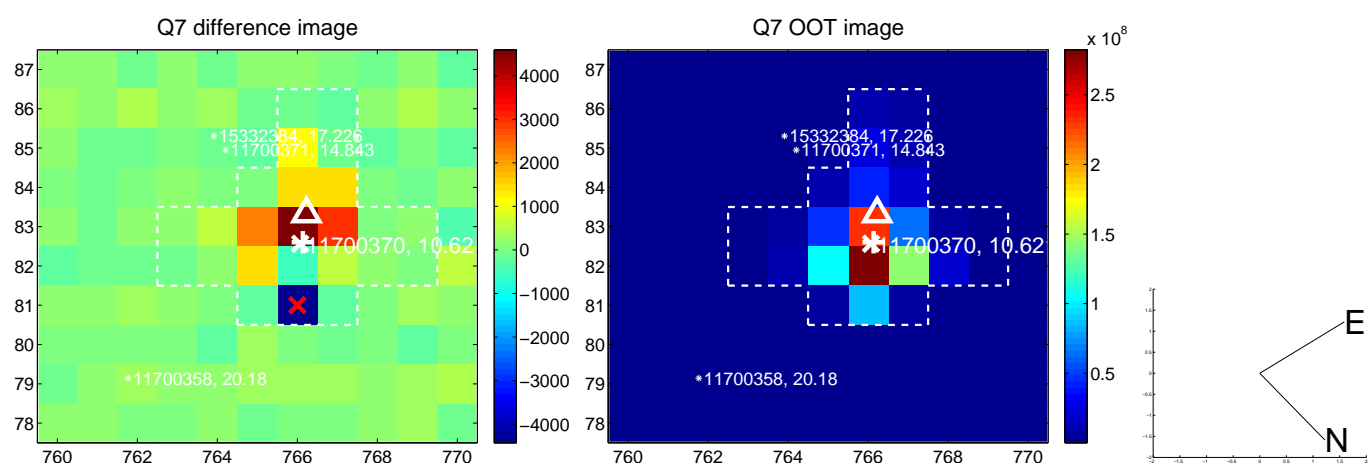
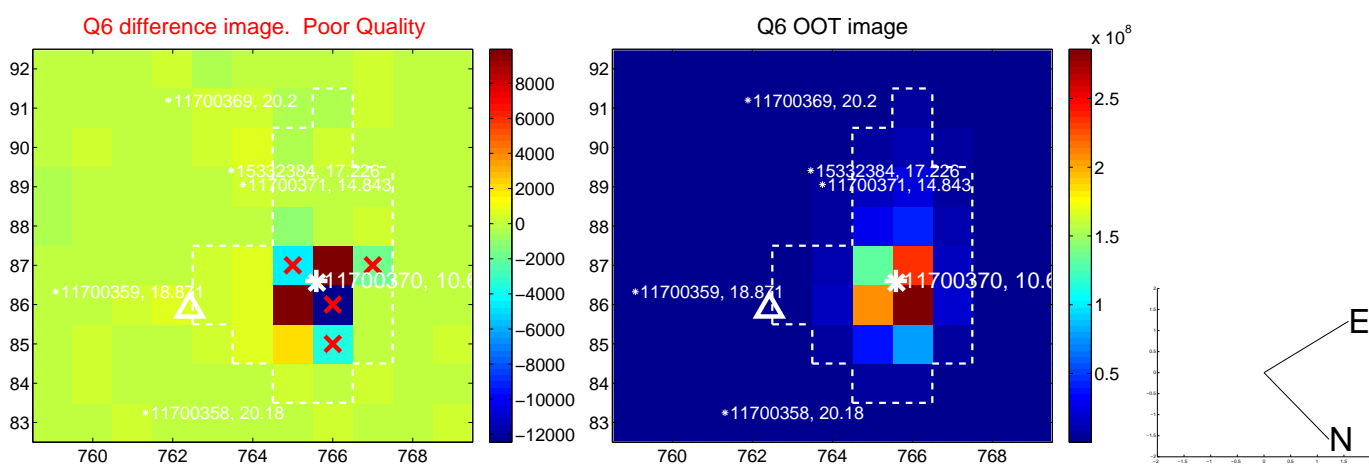
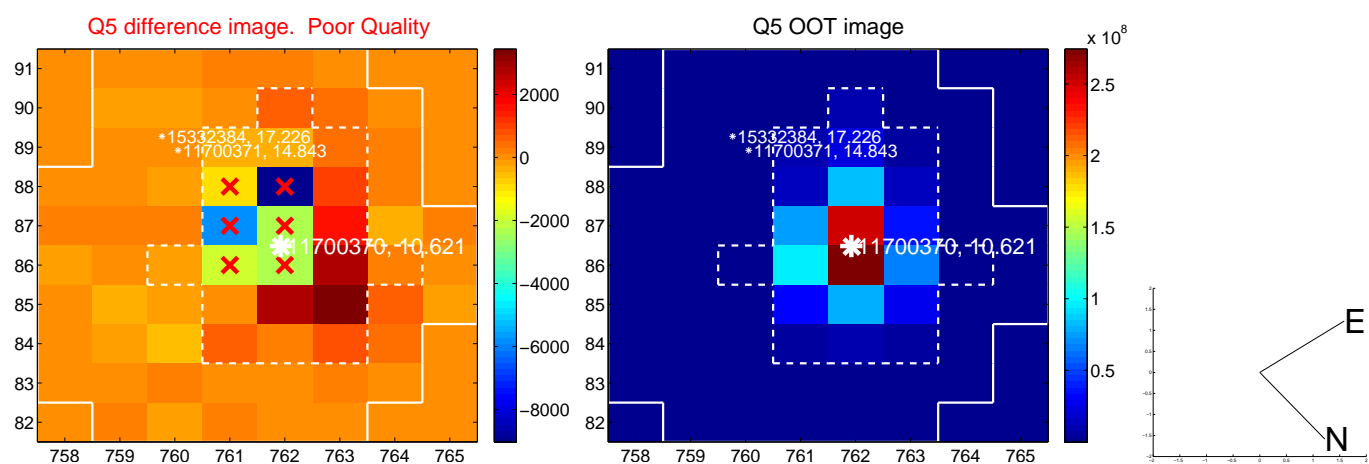


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

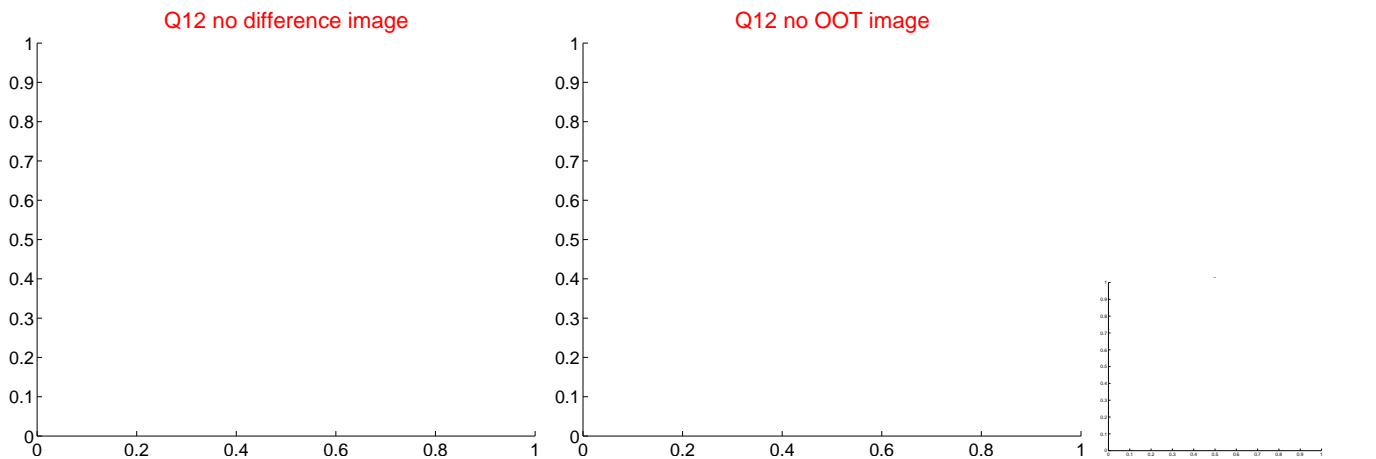
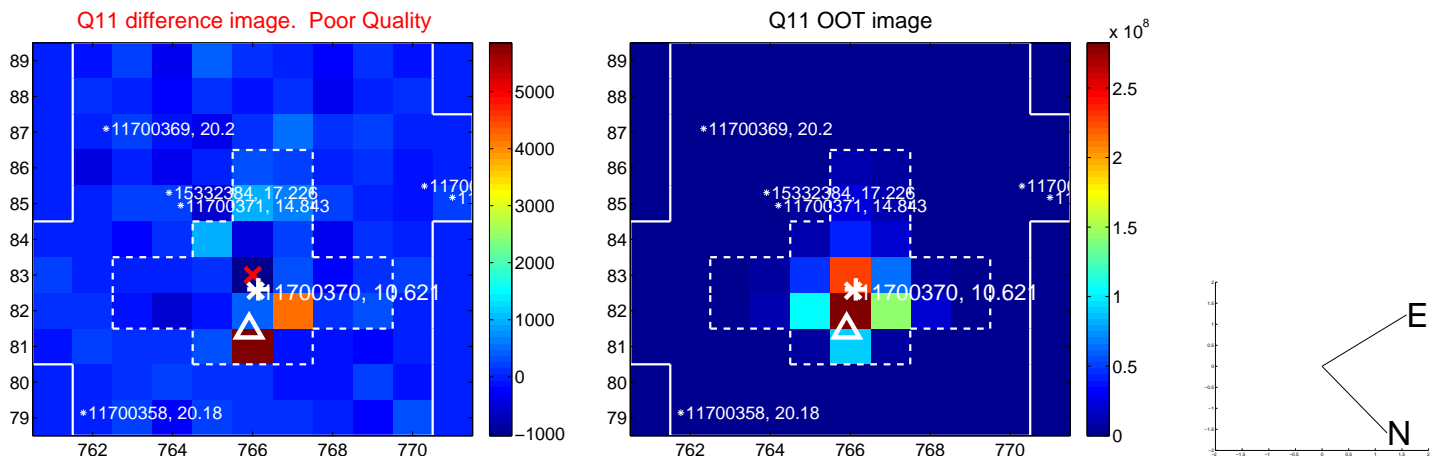
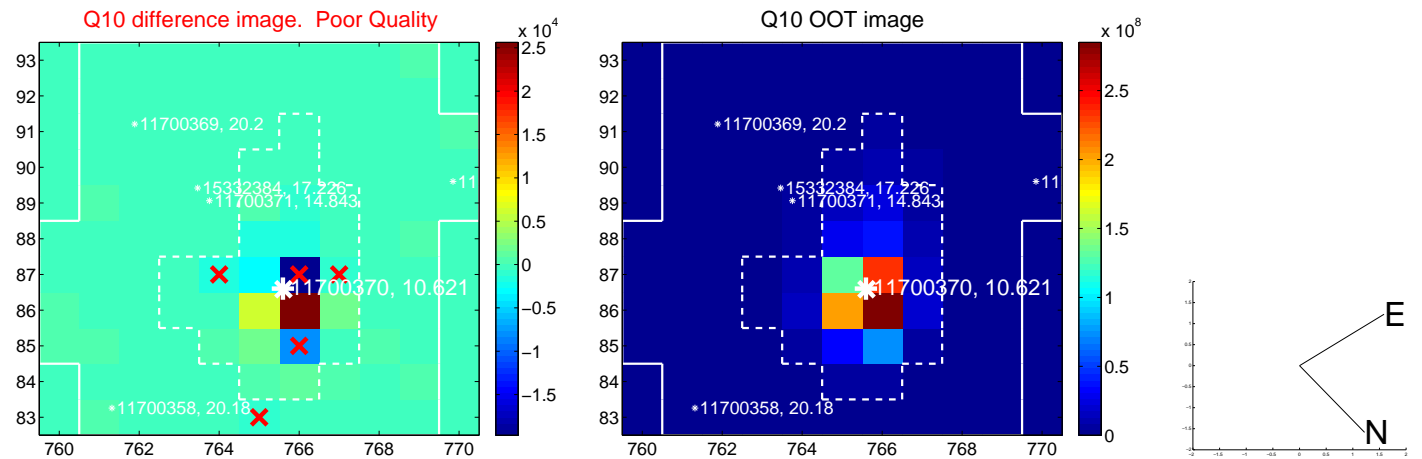
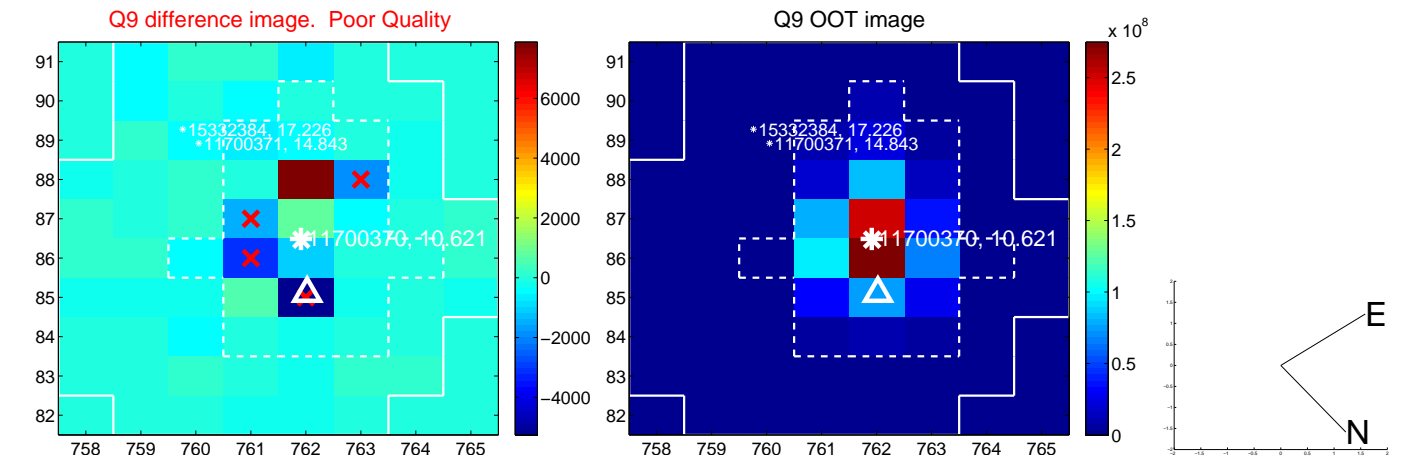
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



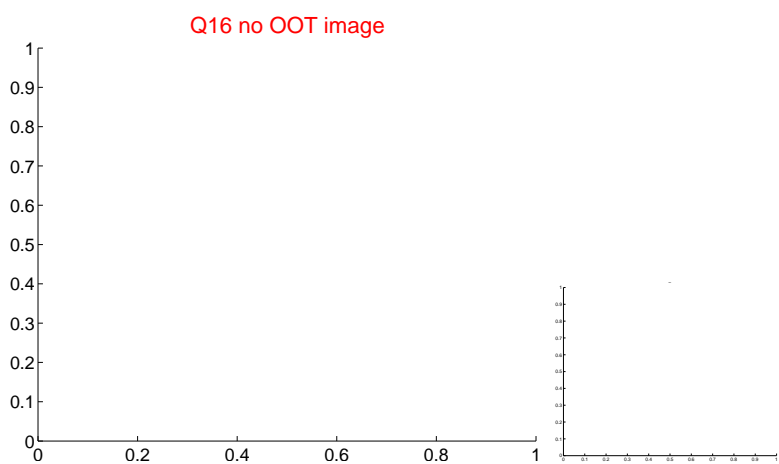
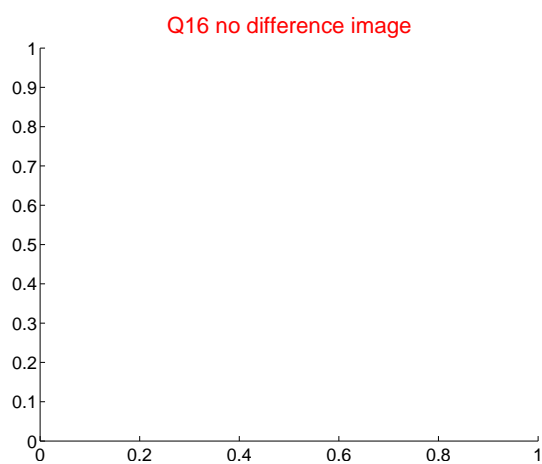
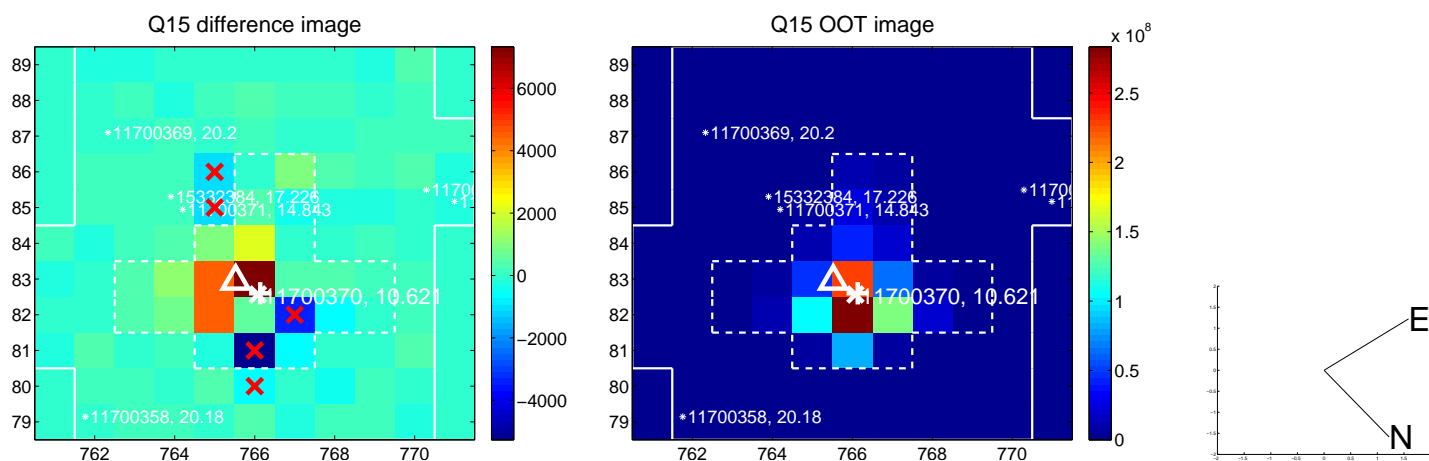
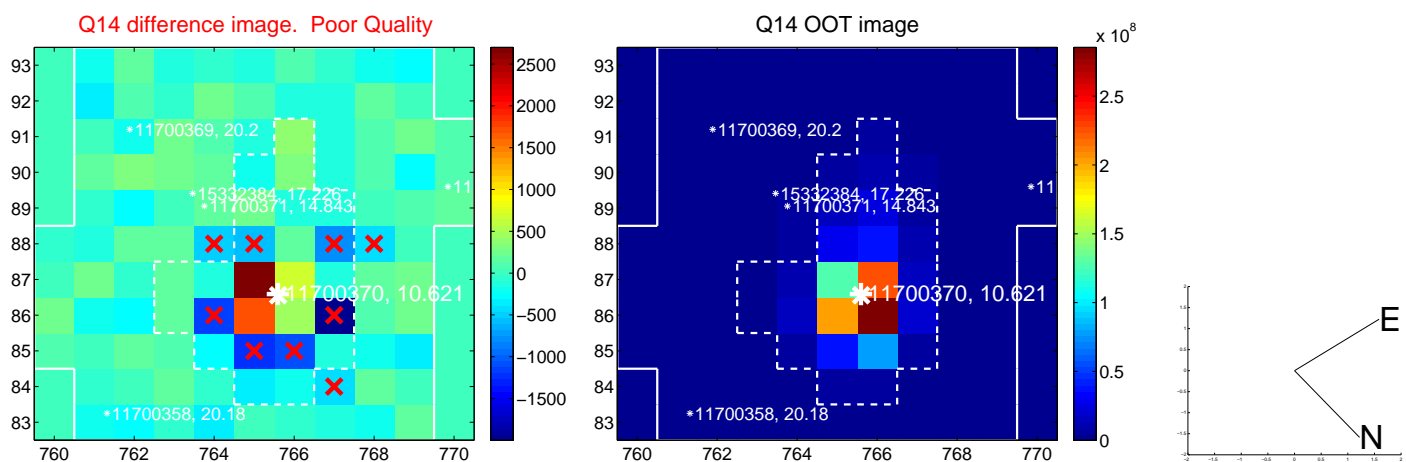
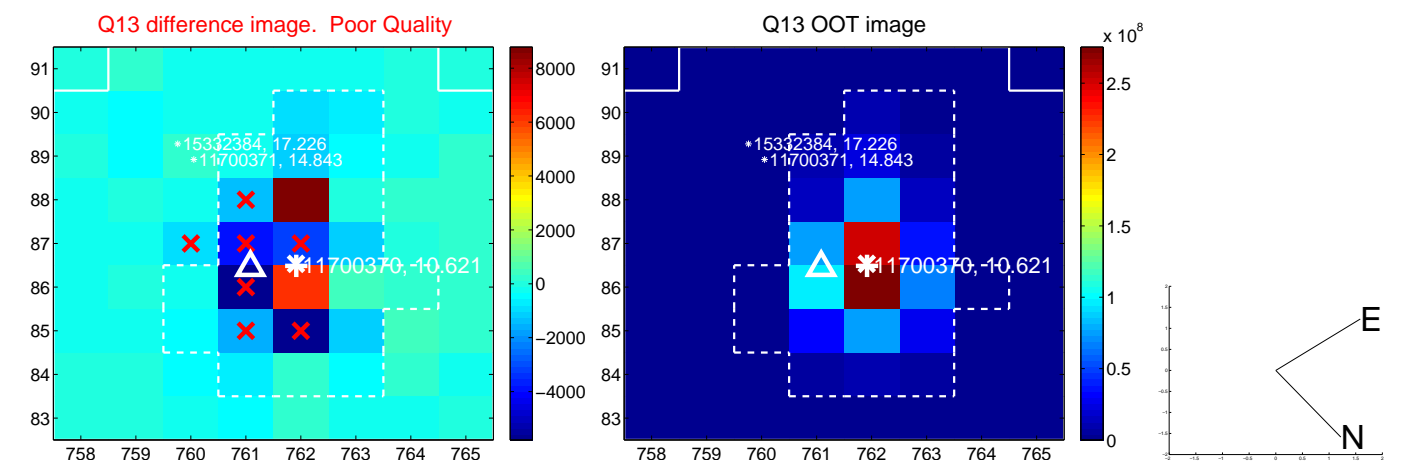
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



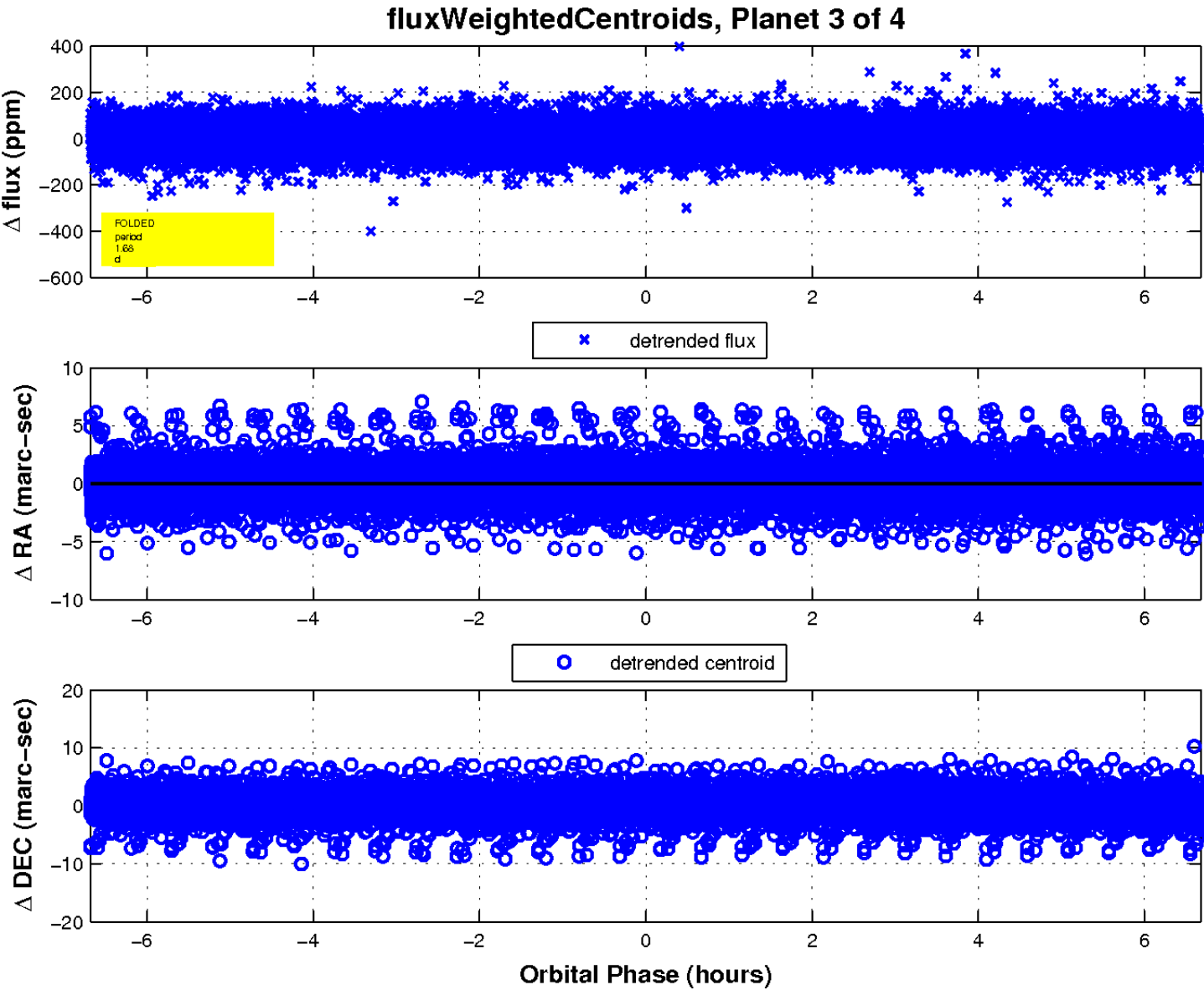
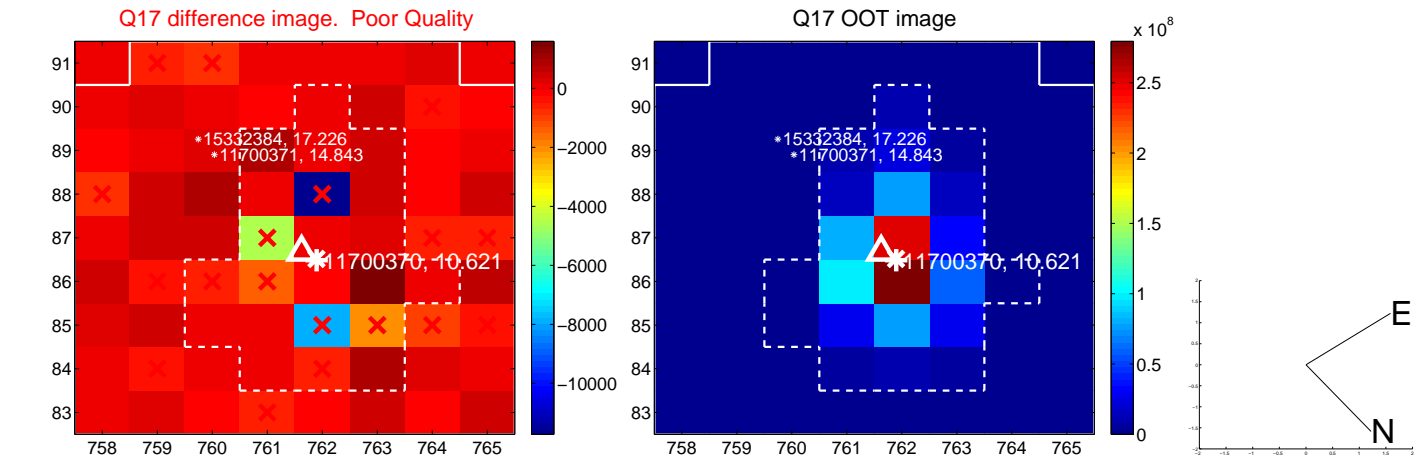
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

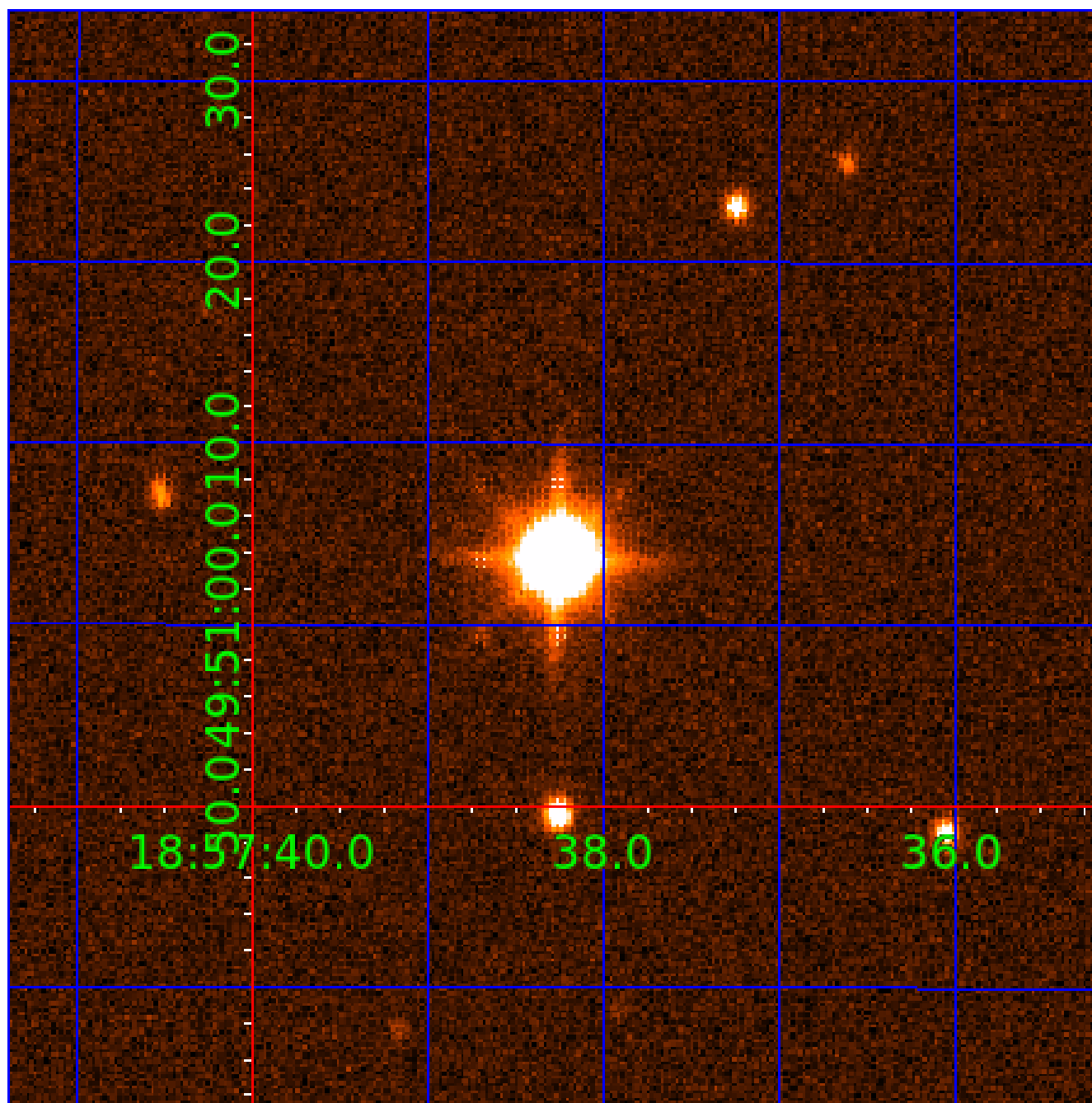


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011700370

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})
011700370-01	OBS	No	0.613034	132.056373	10.4	2.535	10.8	11.6	2.05	8517	0.77	77863.06
011700370-02	OBS	No	0.613055	131.641214	14.3	1.896	11.5	16.5	2.05	8517	0.90	77859.66
011700370-03	OBS	No	1.680863	132.188275	26.4	2.228	9.6	9.3	2.05	8517	1.22	20289.36
011700370-04	OBS	No	23.021550	151.031243	89.7	2.118	7.3	9.3	2.05	8517	2.19	619.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011700370-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
011700370-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
011700370-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
011700370-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

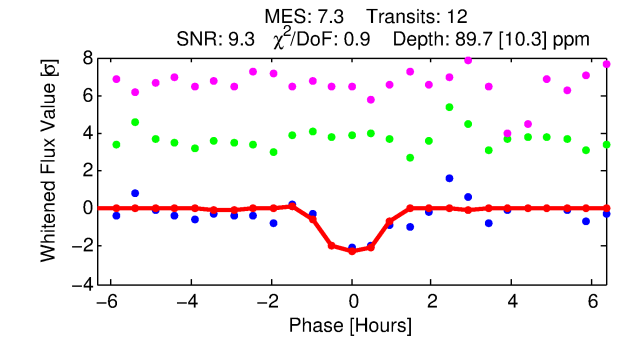
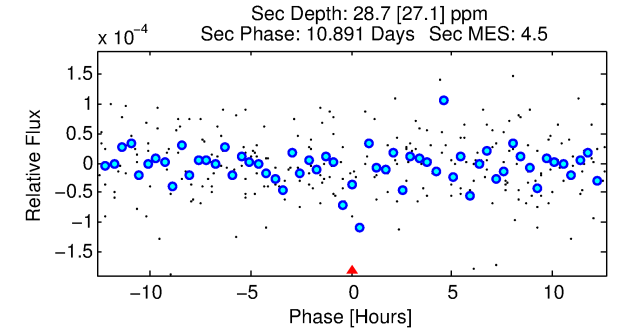
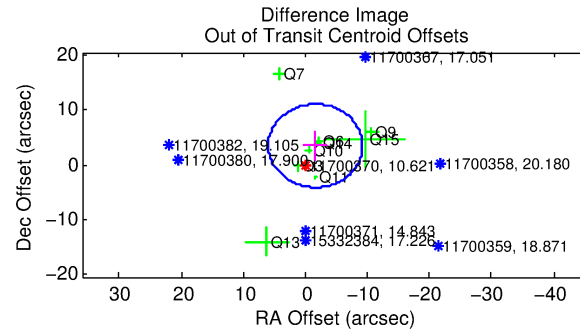
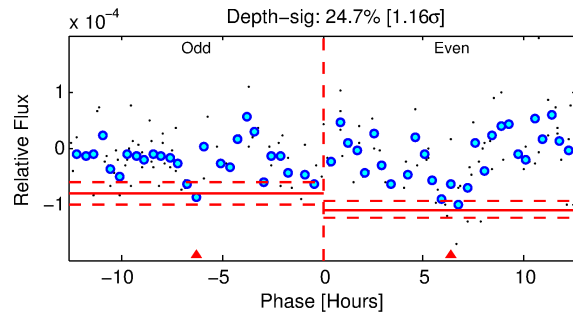
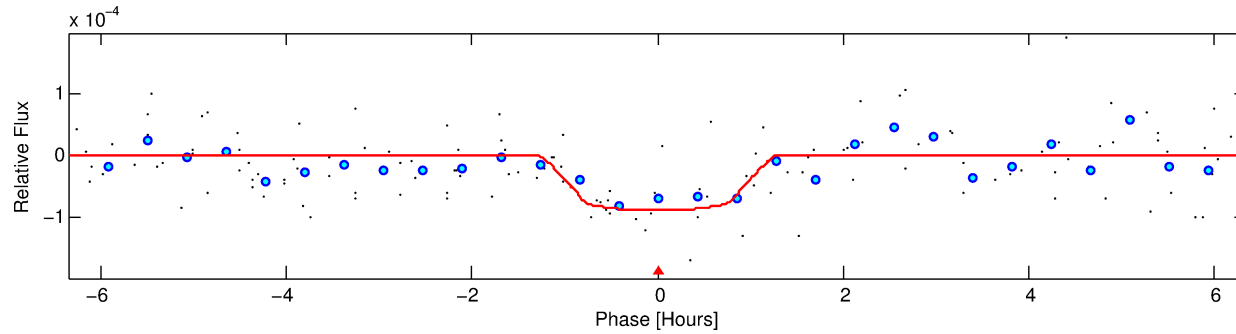
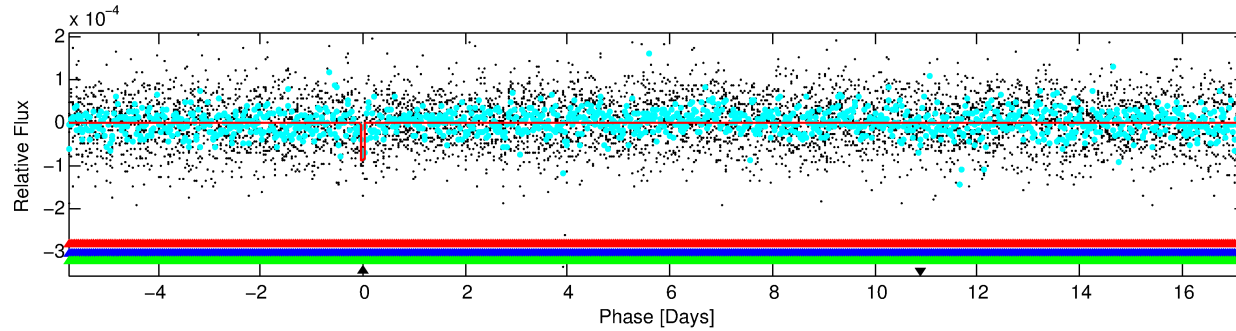
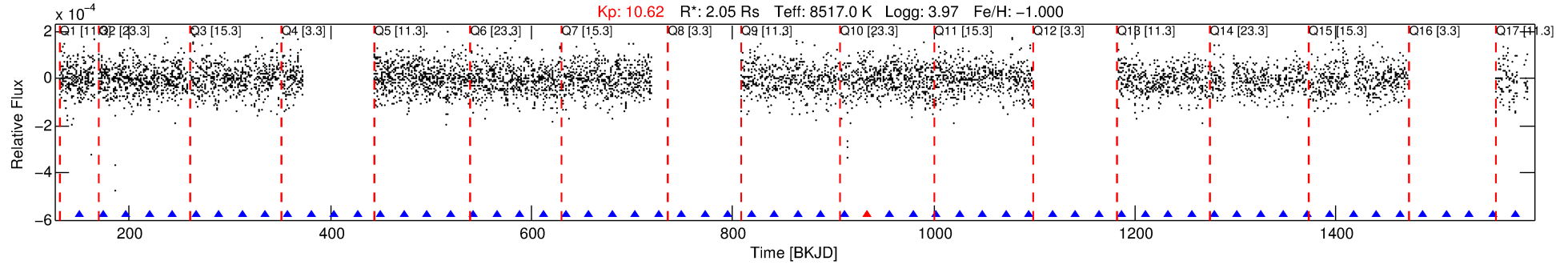
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011700370-04

No Significant Match Found

DV One-Page Summary

KIC: 11700370 Candidate: 4 of 4 Period: 23.022 d



DV Fit Results:

Period = 23.02155 [0.00024] d
Epoch = 151.0312 [0.0077] BKJD
Rp/R* = 0.0098 [0.0065]
a/R* = 45.06 [190.54]
b = 0.85 [1.38]
Seff = 619.15 [411.60]
Teq = 1272 [211] K
Rp = 2.19 [1.69] Re
a = 0.1785 [0.0707] AU
Ag = 104.99 [183.65] [0.57 σ]
Teffp = 6295 [2570] K [1.95 σ]

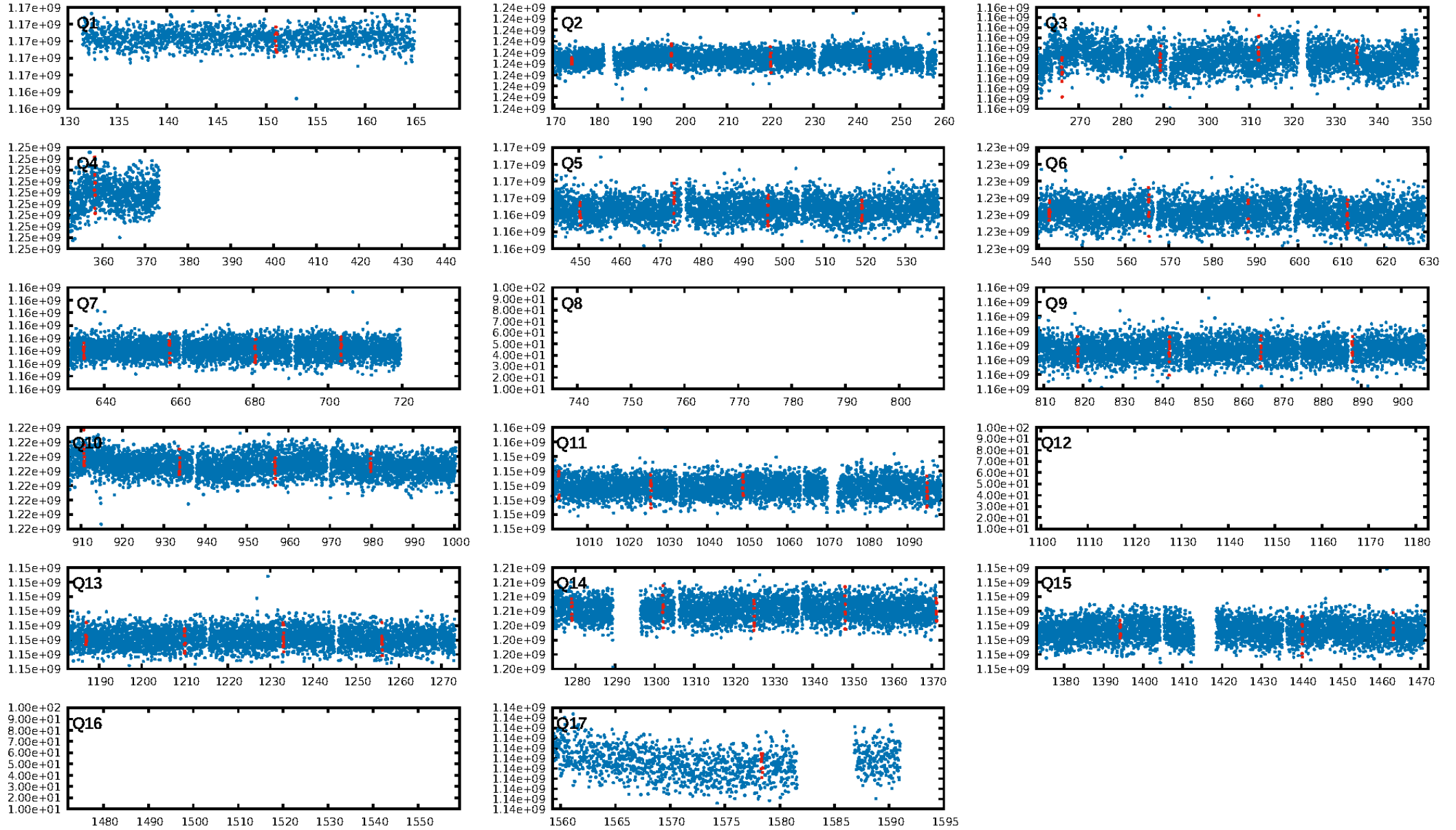
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [166.63 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 10.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.39e-08
RollingBand-fgt: 0.92 [11/12]
GhostDiagnostic-chr: 4.268
Centroid-sig: N/A
Centroid-so: 2.018 arcsec [2.28 σ]
OotOffset-rm: 3.786 arcsec [1.50 σ]
KicOffset-rm: 3.628 arcsec [1.41 σ]
OotOffset-st: 3/4/0/2 [9]
KicOffset-st: 3/4/0/2 [9]
DiffImageQuality-fgm: 0.33 [3/9]
DiffImageOverlap-fno: 0.00 [0/14]

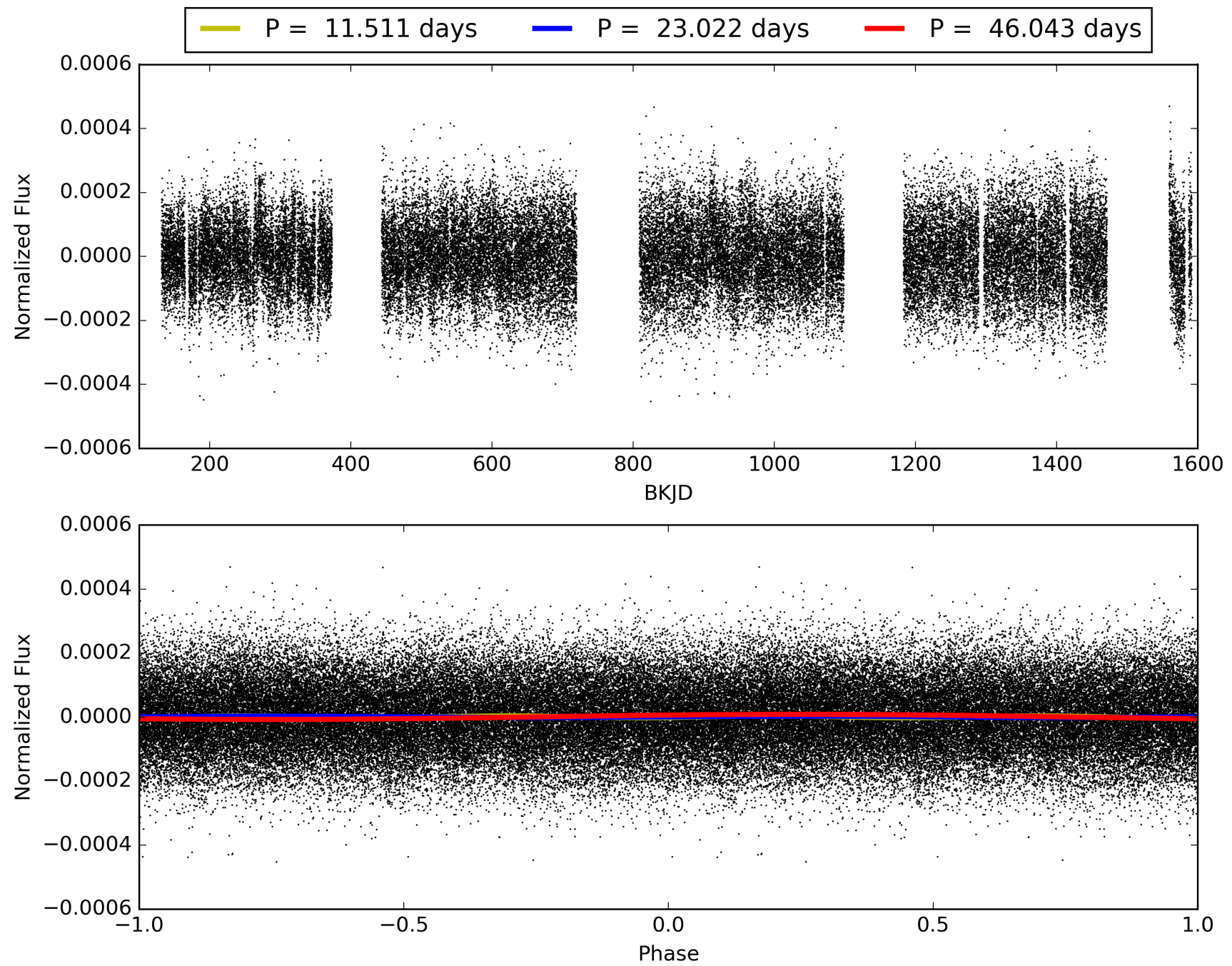
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 21:37:51 Z

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

TCE 011700370-04, PDC Light Curves

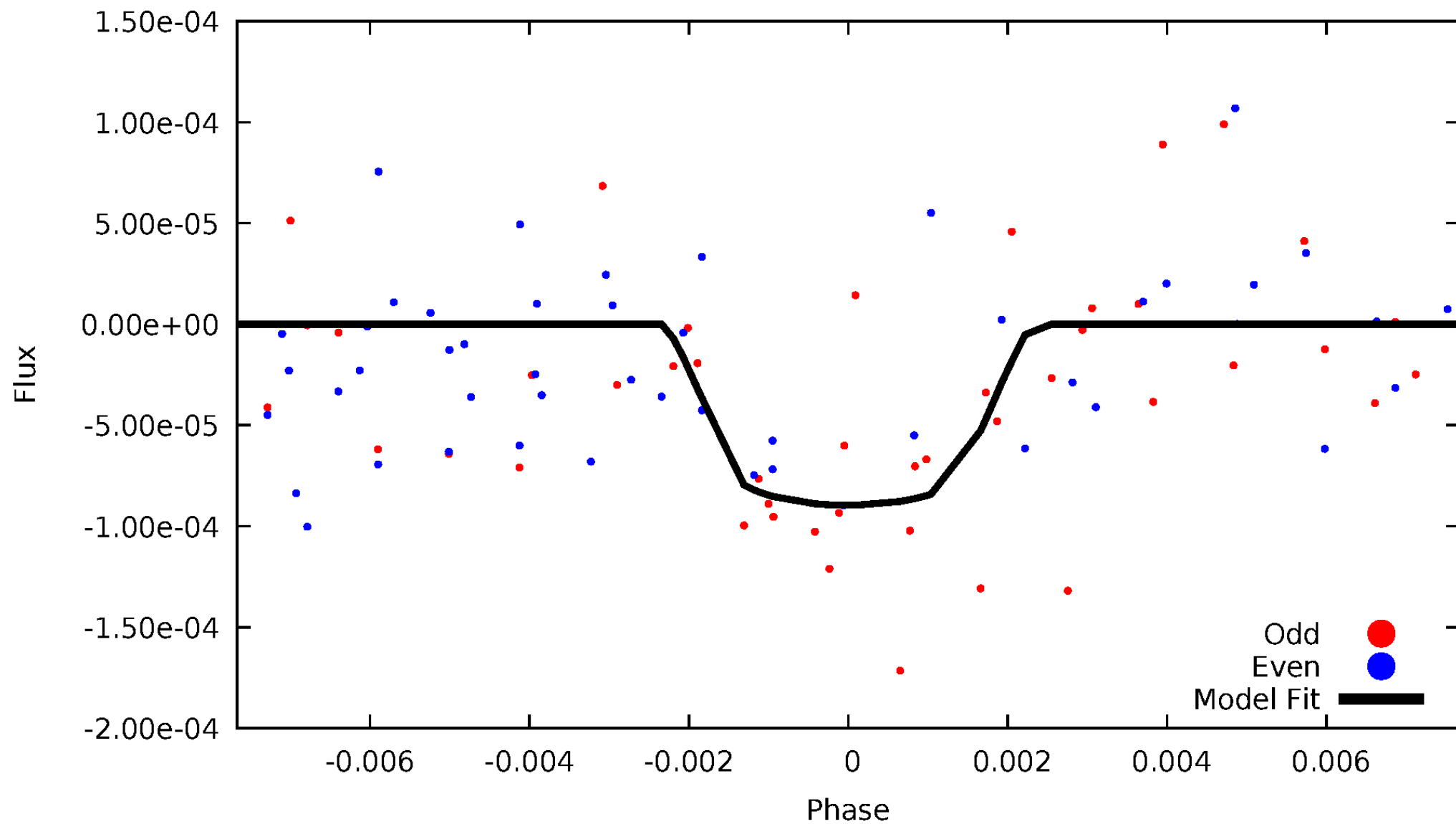


TCE 011700370-04



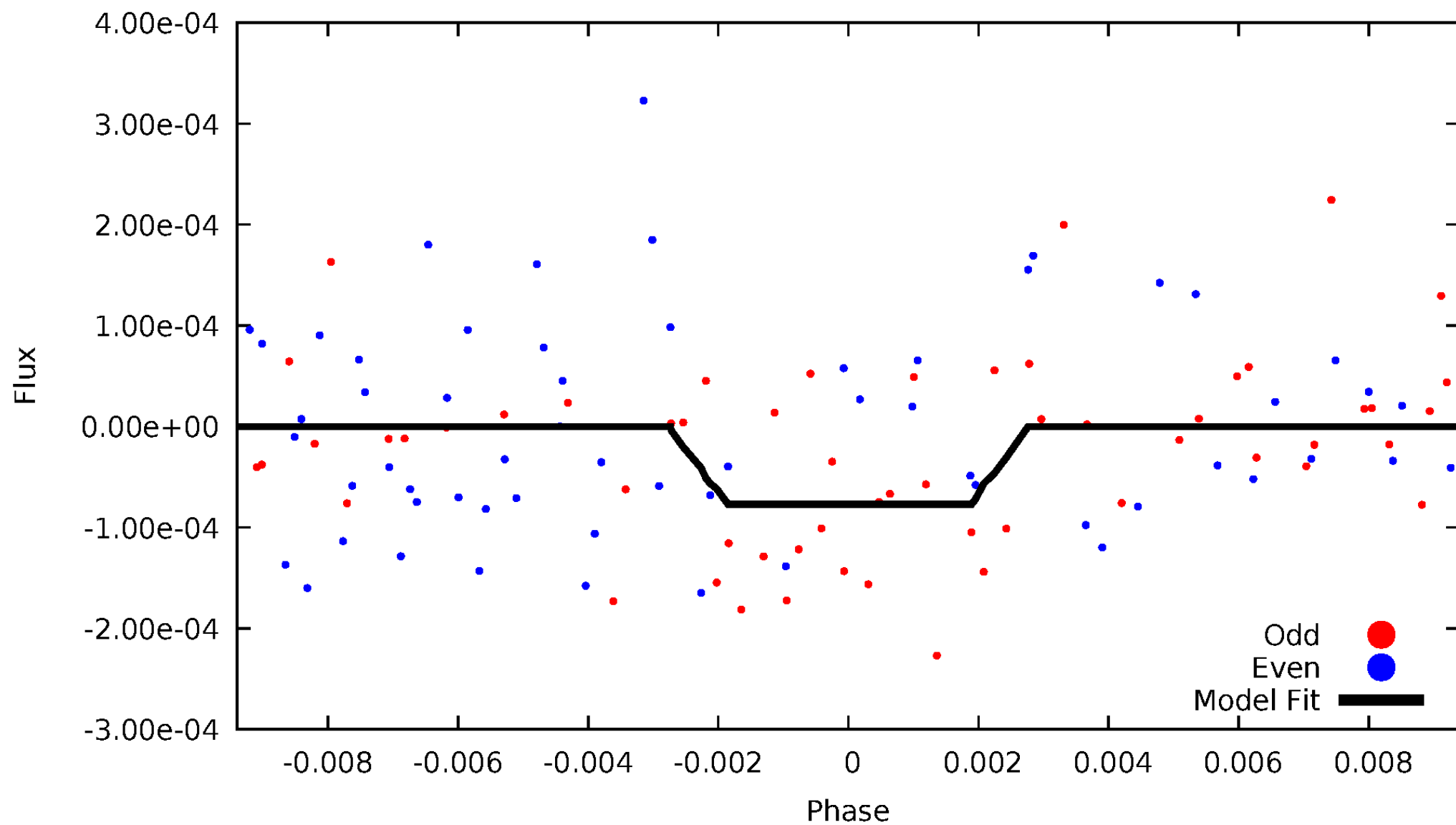
DV Odd/Even

TCE 011700370-04



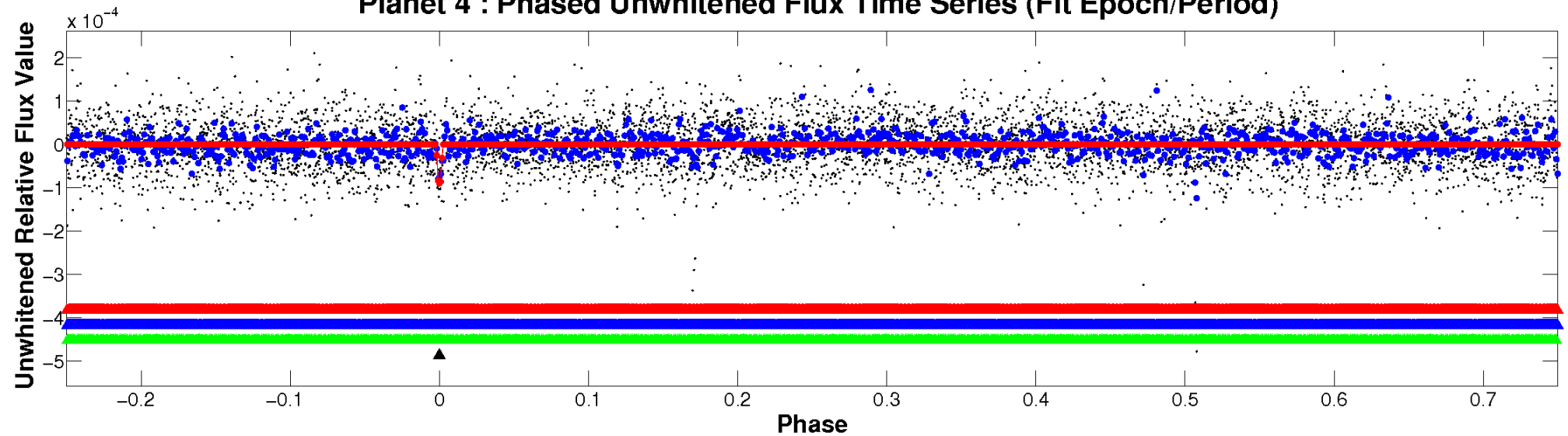
ALT Odd/Even

TCE 011700370-04

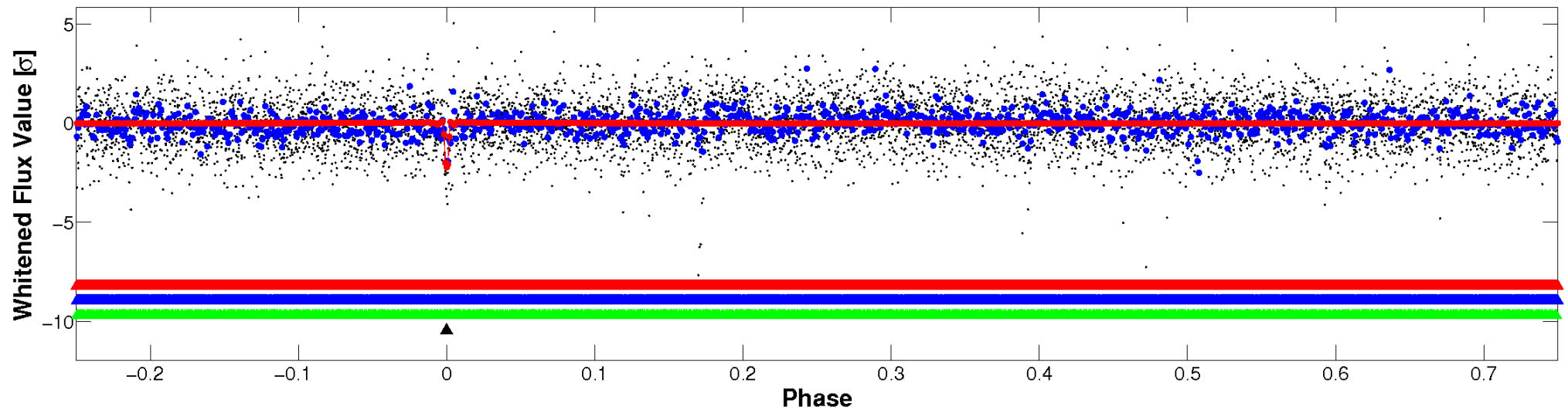


Non-Whitened Vs. Whitened Light Curve

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

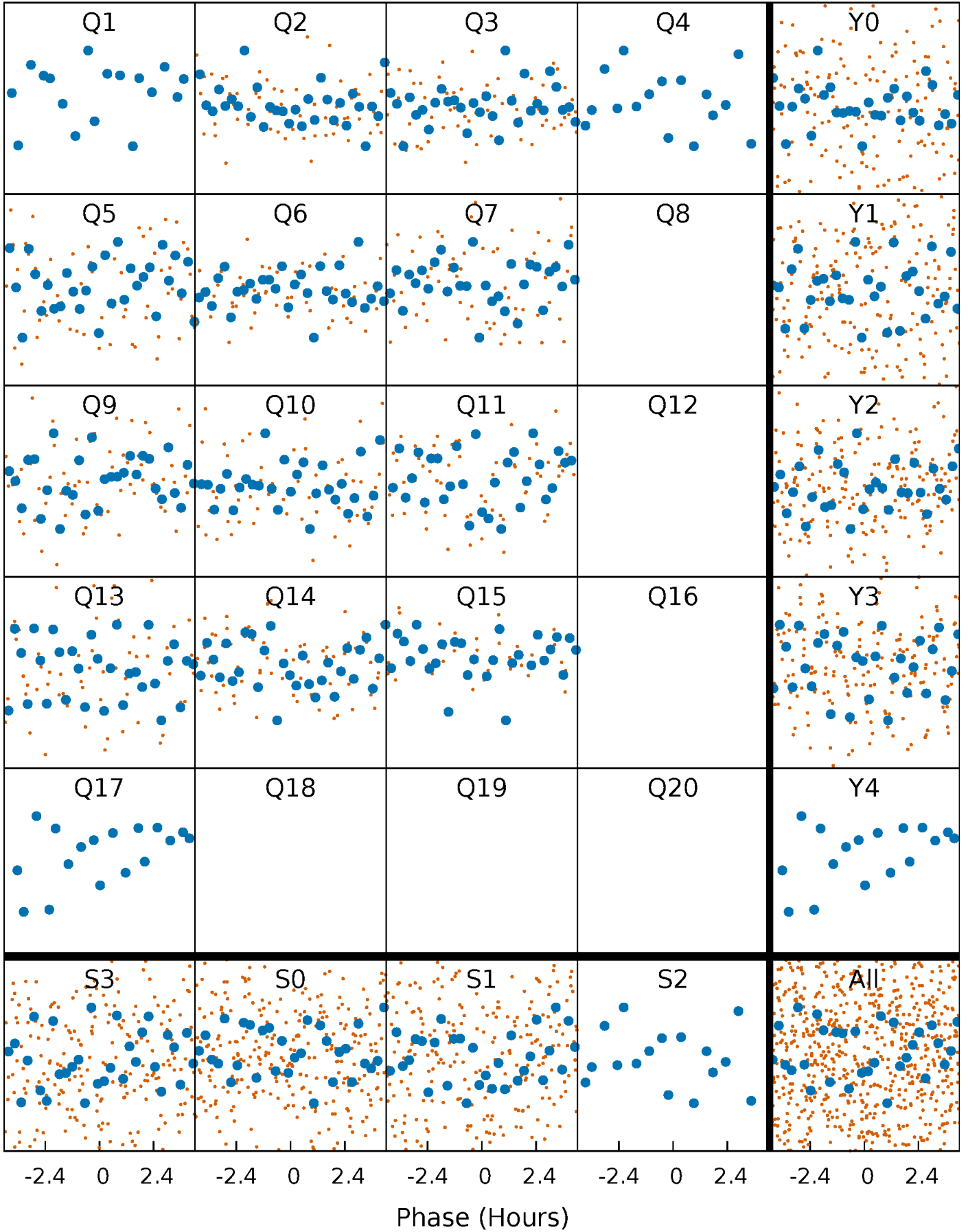


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



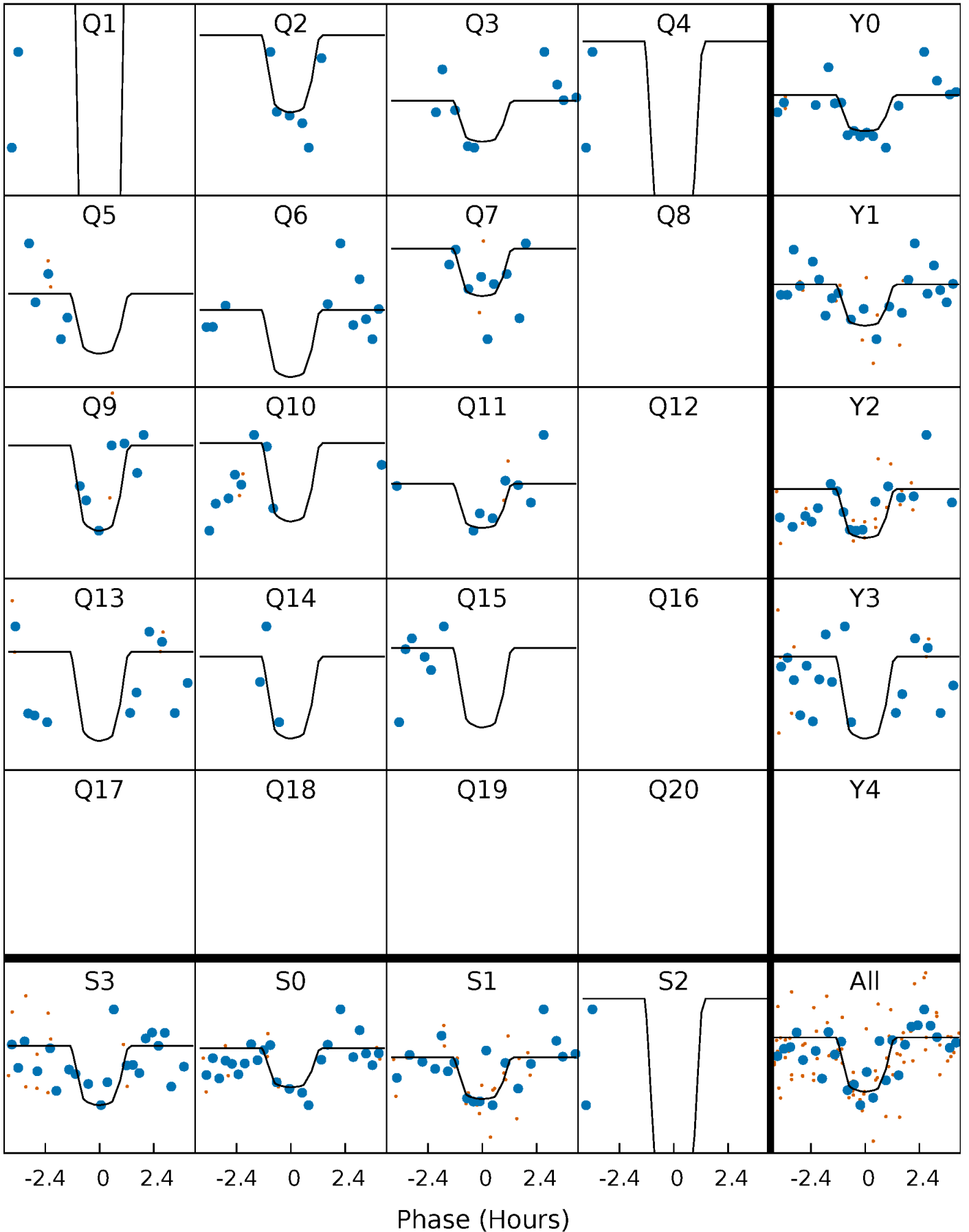
PDC Quarter-Phased Transit Curves

TCE 011700370-04 P= 23.021550 Days $T_0=151.031243$ (BKJD)



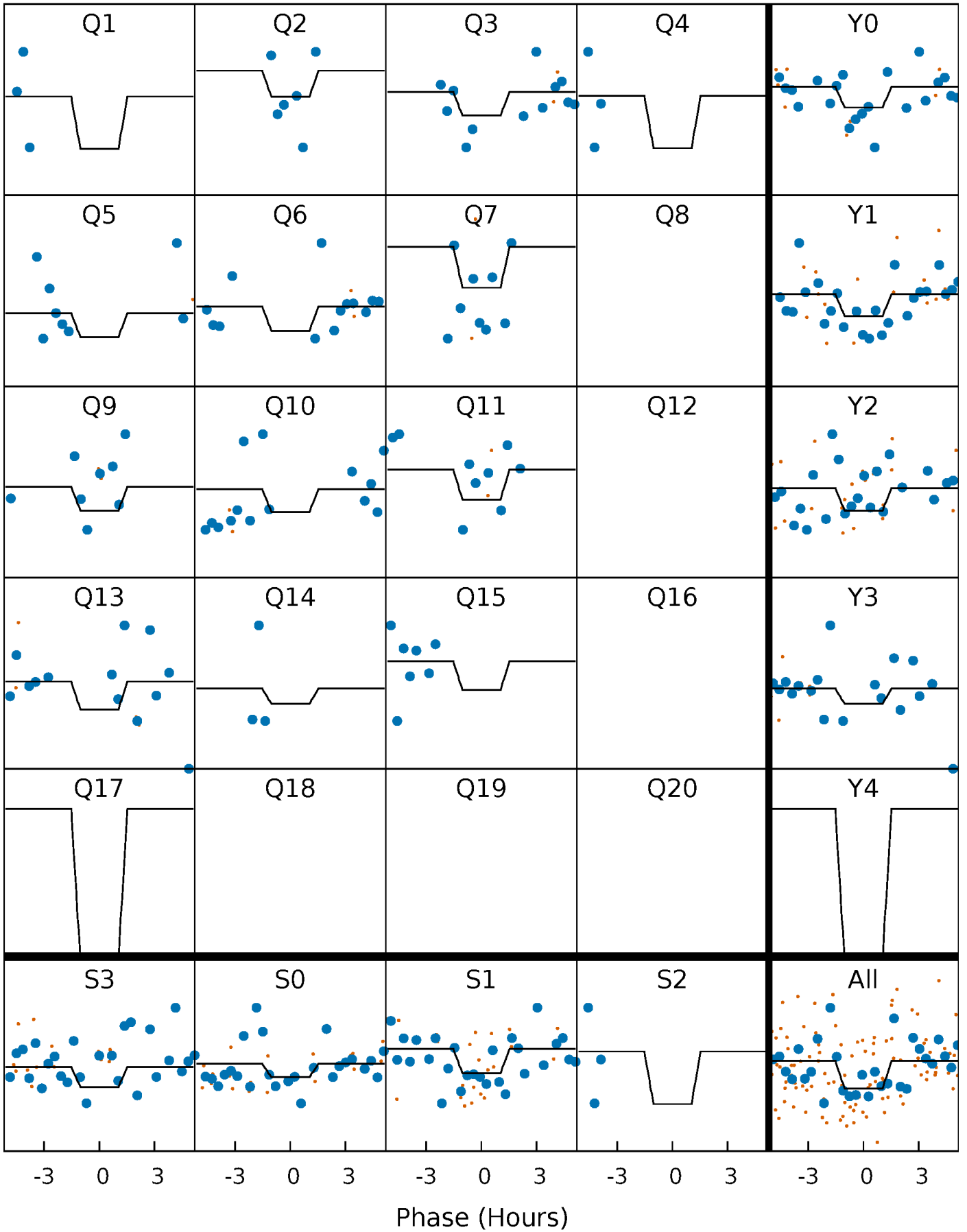
DV Quarter-Phased Transit Curves

TCE 011700370-04 P= 23.021550 Days $T_0=151.031243$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

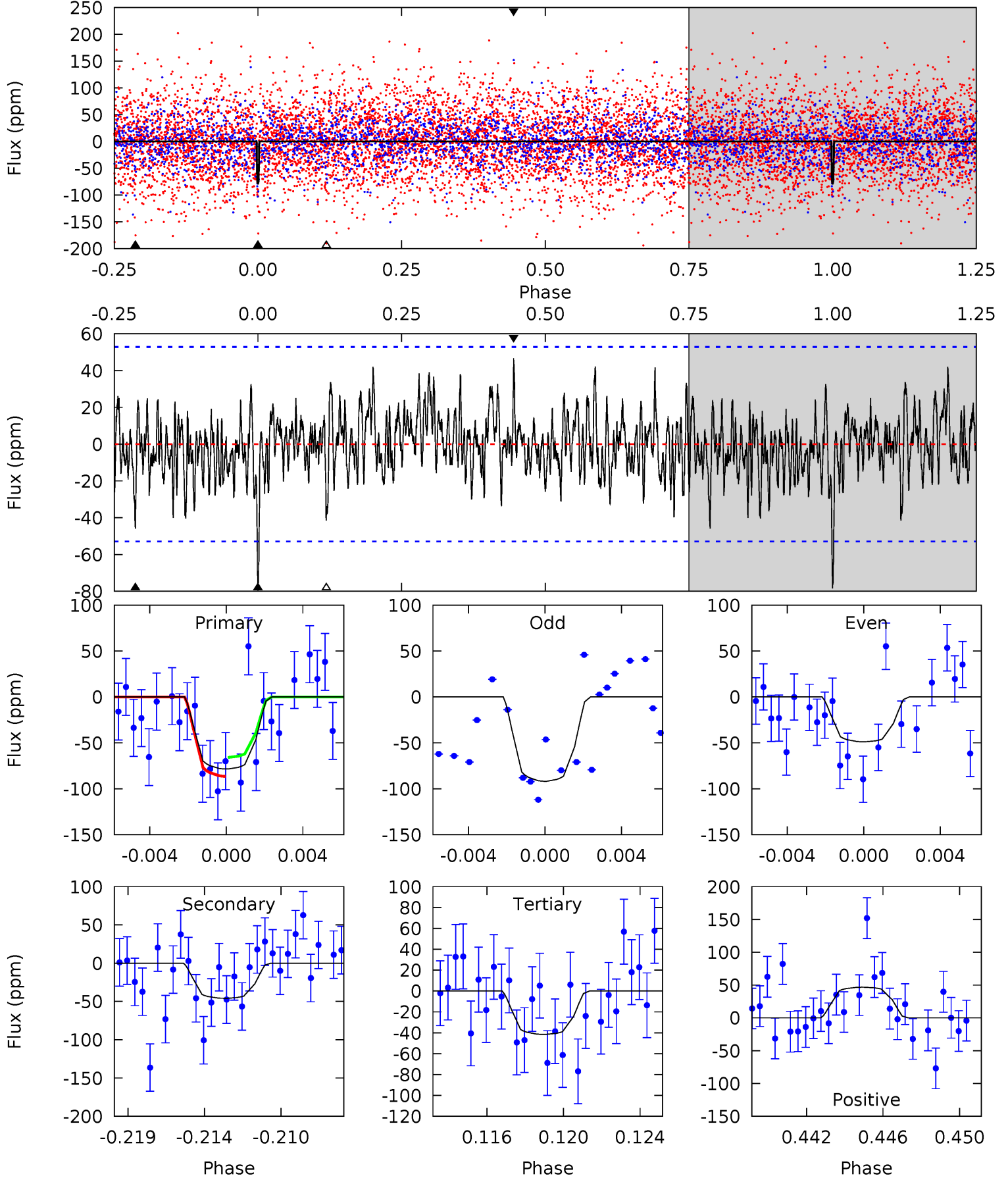
TCE 011700370-04 P= 23.022025 Days $T_0=151.036710$ (BKJD)



DV Model-Shift Uniqueness Test

011700370-04, P = 23.021550 Days, E = 128.009693 Days

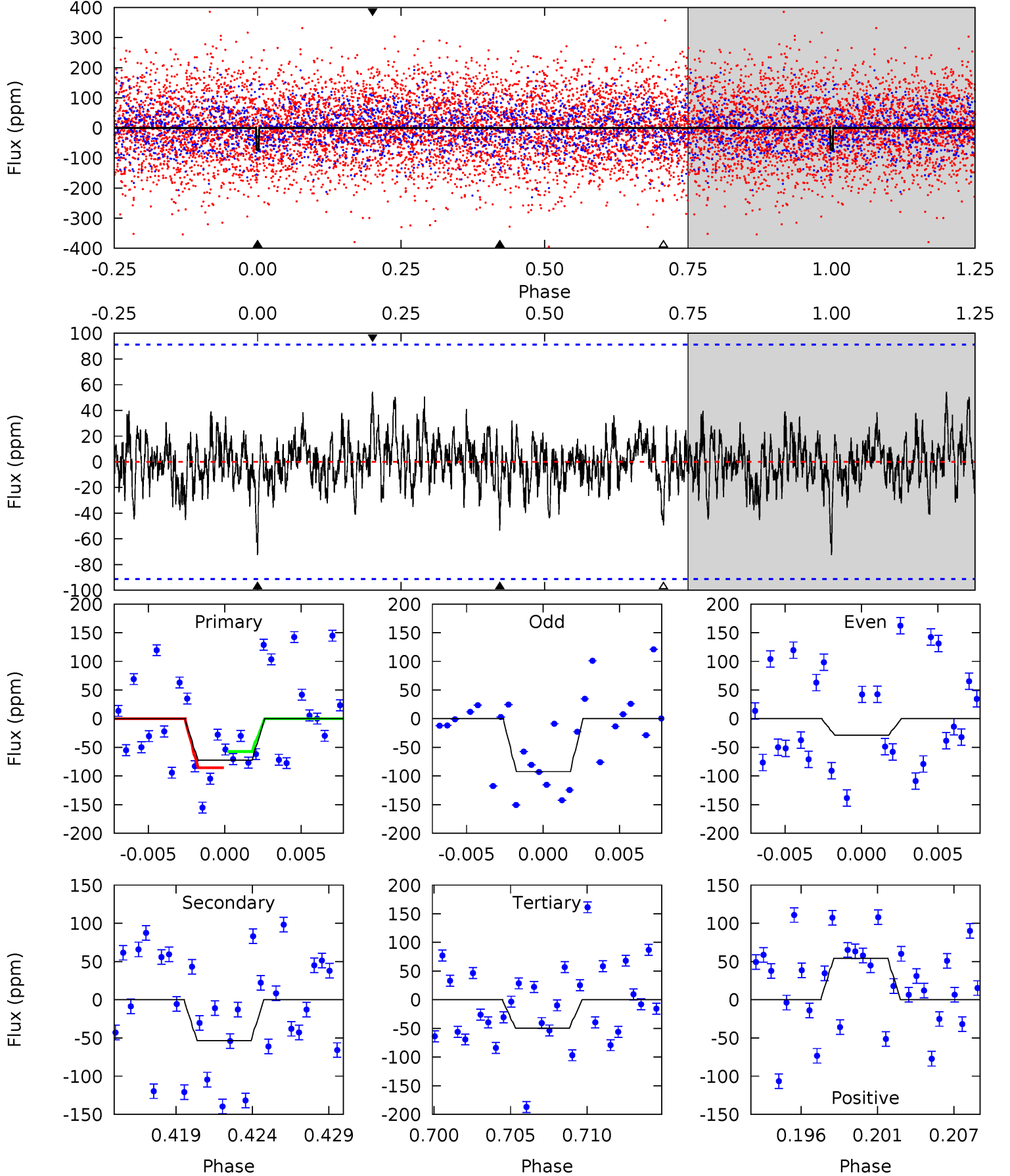
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.69	4.50	4.07	4.58	5.19	2.86	1.39	3.62	3.11	0.42	-0.09	2.04	0.88	0.37	1.00



Alt Model-Shift Uniqueness Test

011700370-04, P = 23.022025 Days, E = 128.014685 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.10	3.02	2.79	3.07	5.15	2.79	0.88	1.31	1.03	0.23	-0.05	1.67	1.13	0.43	0.80



Stellar Parameters For KIC 011700370

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8517^{+272}_{-333}	$3.972^{+0.384}_{-0.096}$	$-1.000^{+0.250}_{-0.300}$	$2.046^{+0.348}_{-0.812}$	$1.431^{+0.173}_{-0.231}$	$0.235^{+0.747}_{-0.071}$
	+3%/-4%	+10%/-2%	+25%/-30%	+17%/-40%	+12%/-16%	+317%/-30%
Source	KIC0	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 011700370-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-46 ± 10	$2.06^{+1.39}_{-1.11}$	1728^{+124}_{-175}	6718^{+4145}_{-1506}	190^{+680}_{-128}
Alt.	-53 ± 18	$1.91^{+1.42}_{-1.14}$	1727^{+125}_{-180}	7203^{+7313}_{-1699}	253^{+1483}_{-176}

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

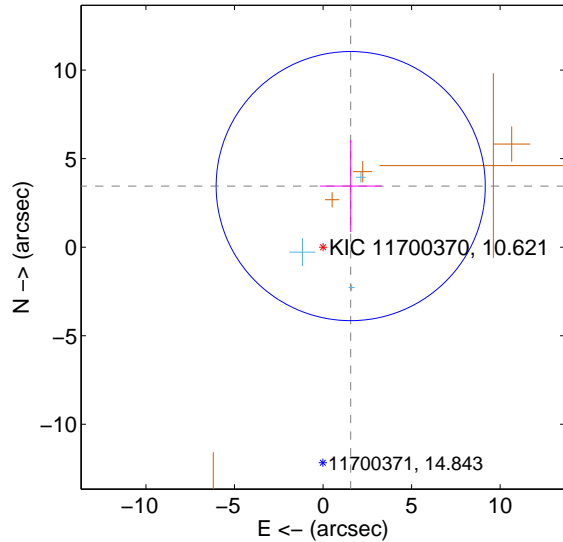
Supplemental centroid analysis for 011700370-04. **Kepler magnitude: 10.62.** Transit SNR 9.33

There are 3 quarters with good PRF difference image offsets

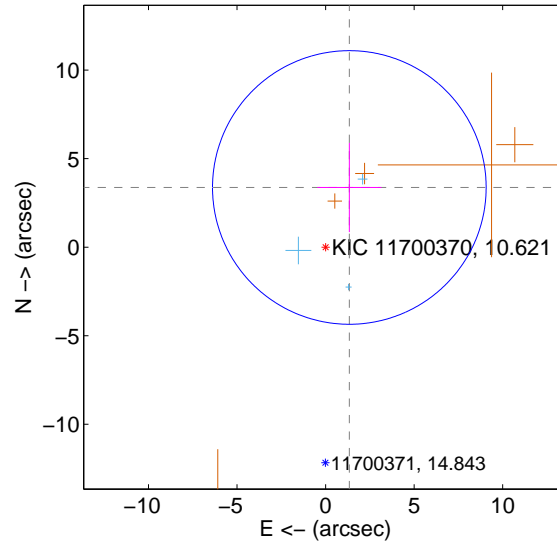
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.786 ± 2.533	1.50	-1.563 ± 1.742	3.449 ± 2.601
PRF-fit source offset from KIC position	3.628 ± 2.575	1.41	-1.341 ± 1.808	3.371 ± 2.519
photometric centroid source offset	2.02 ± 0.88	2.28	-1.89 ± 0.88	0.72 ± 0.92

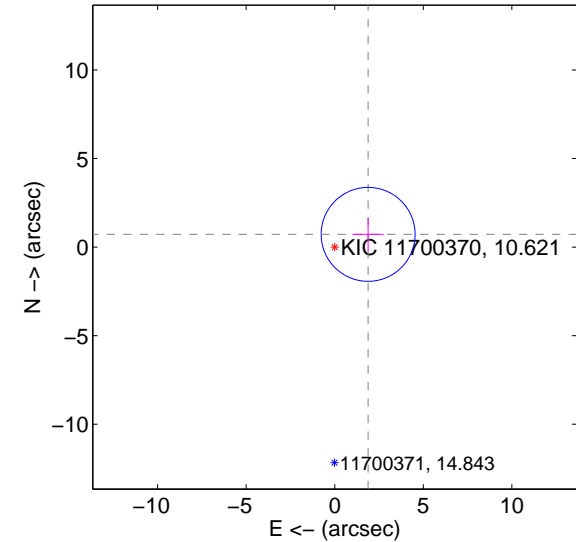
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

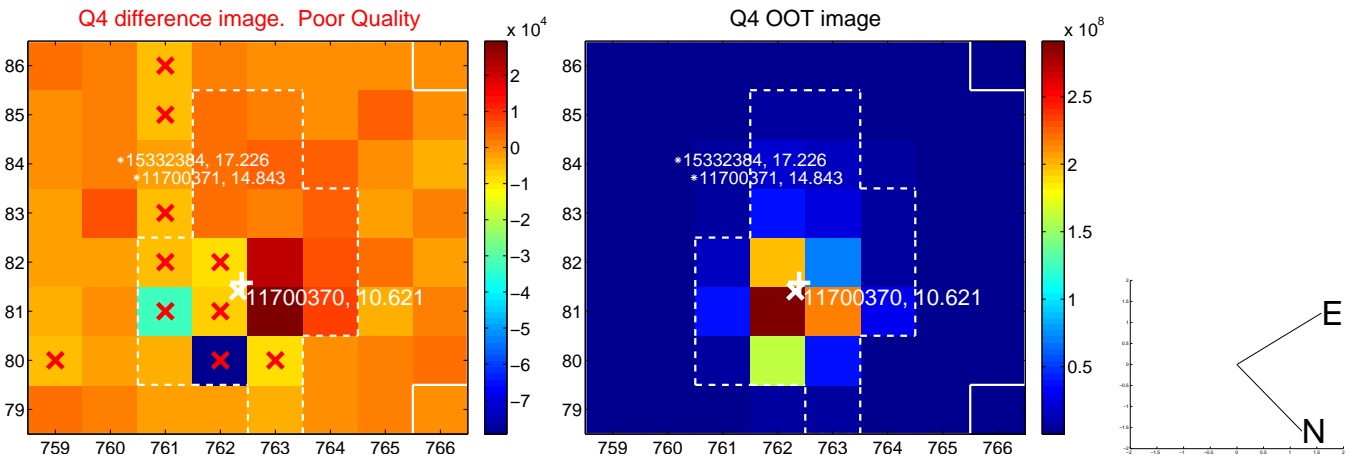
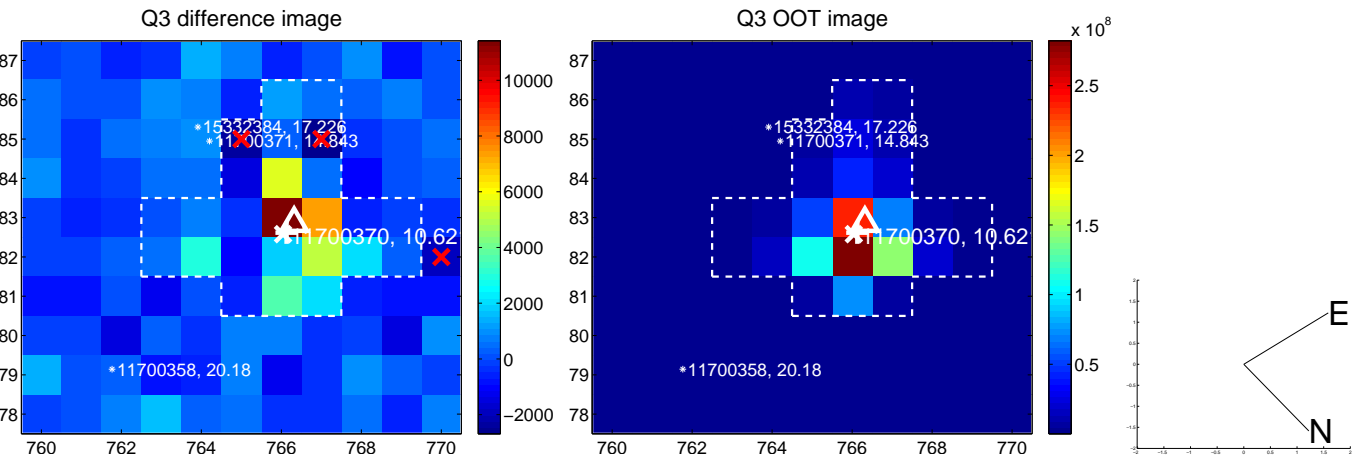
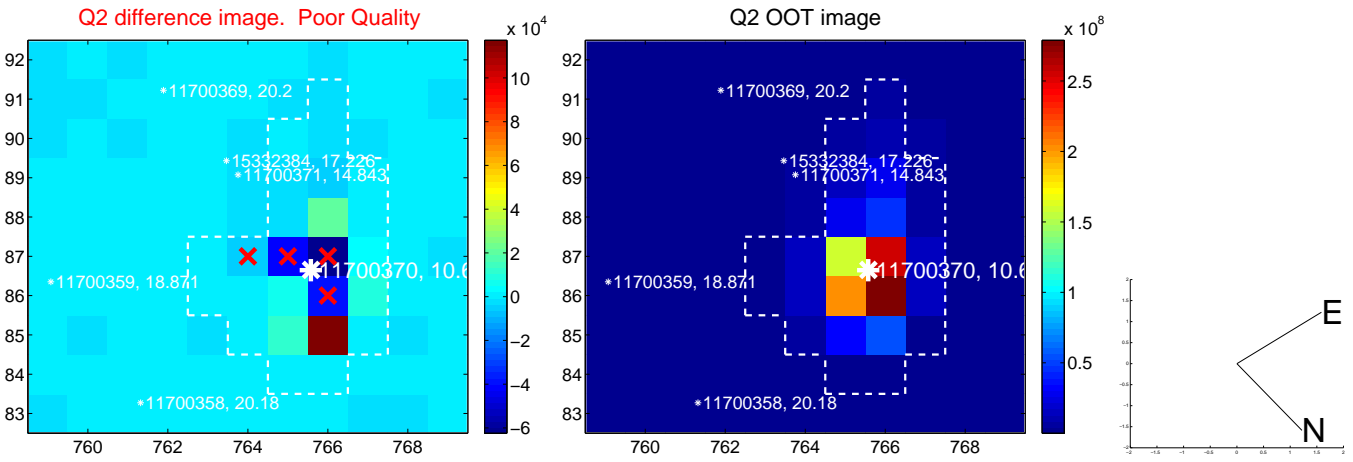
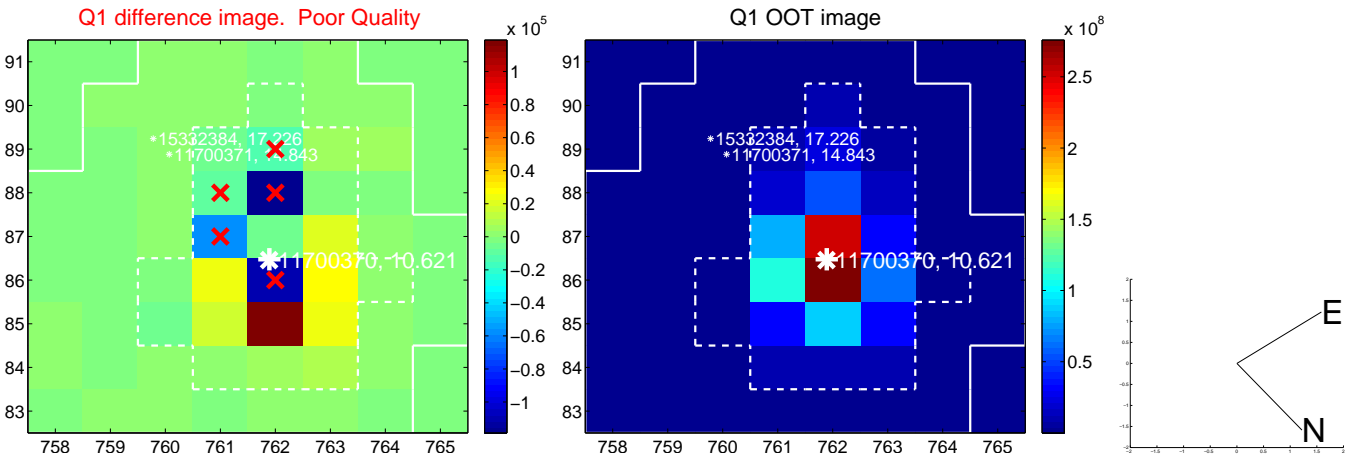


offset from photometric centroids

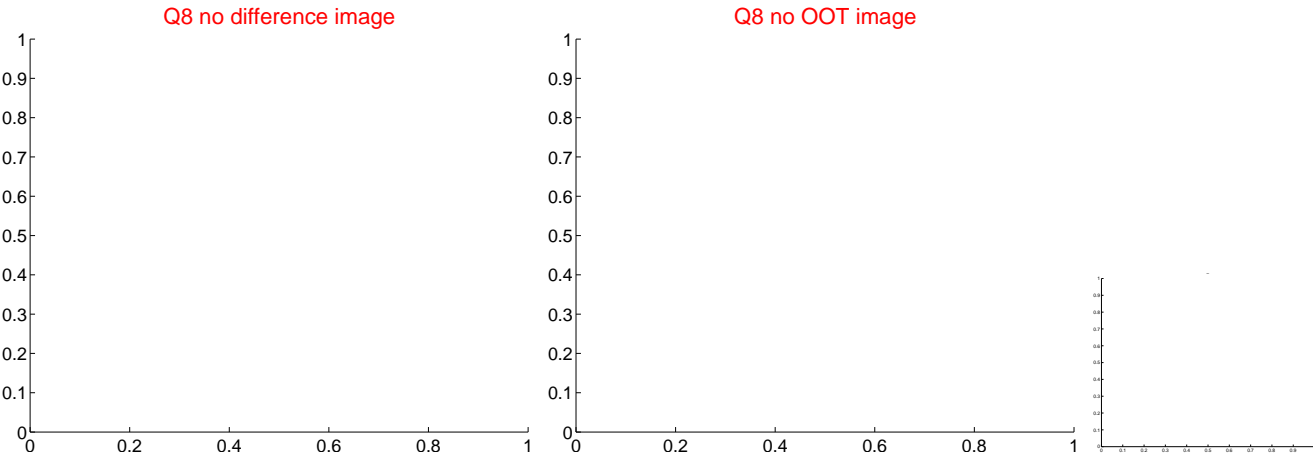
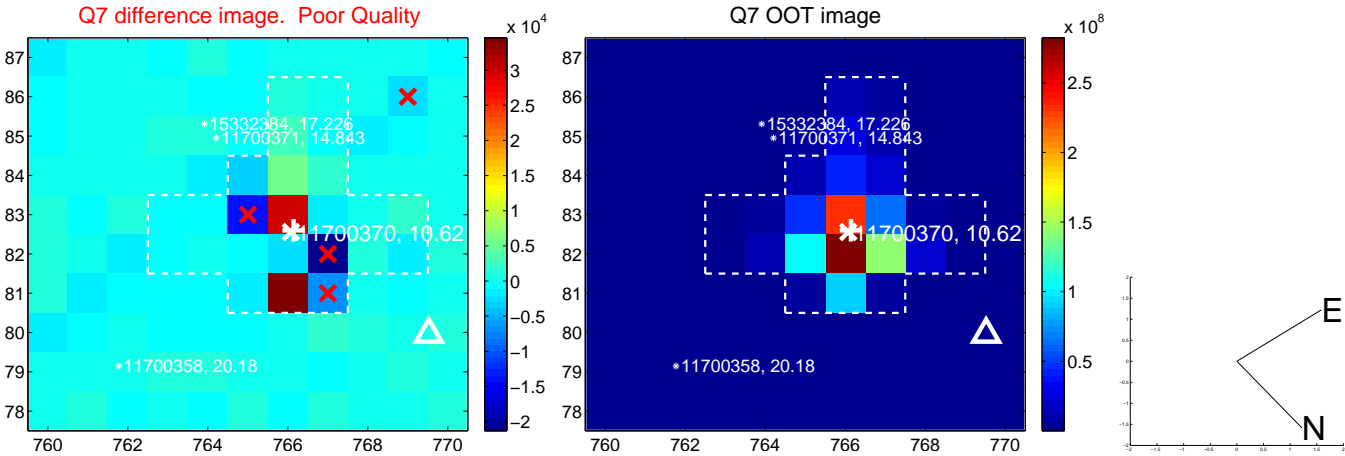
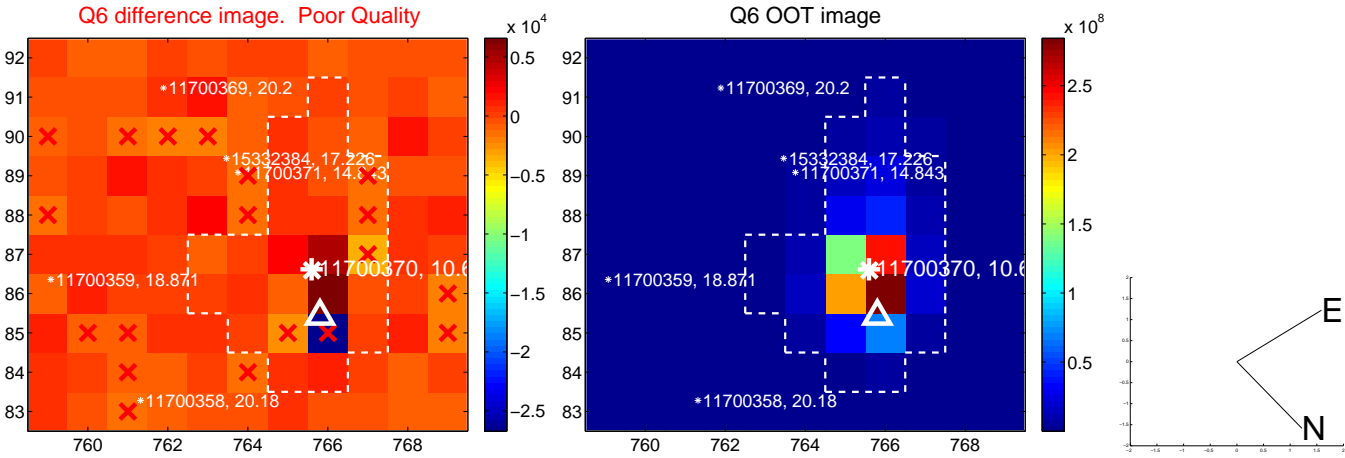
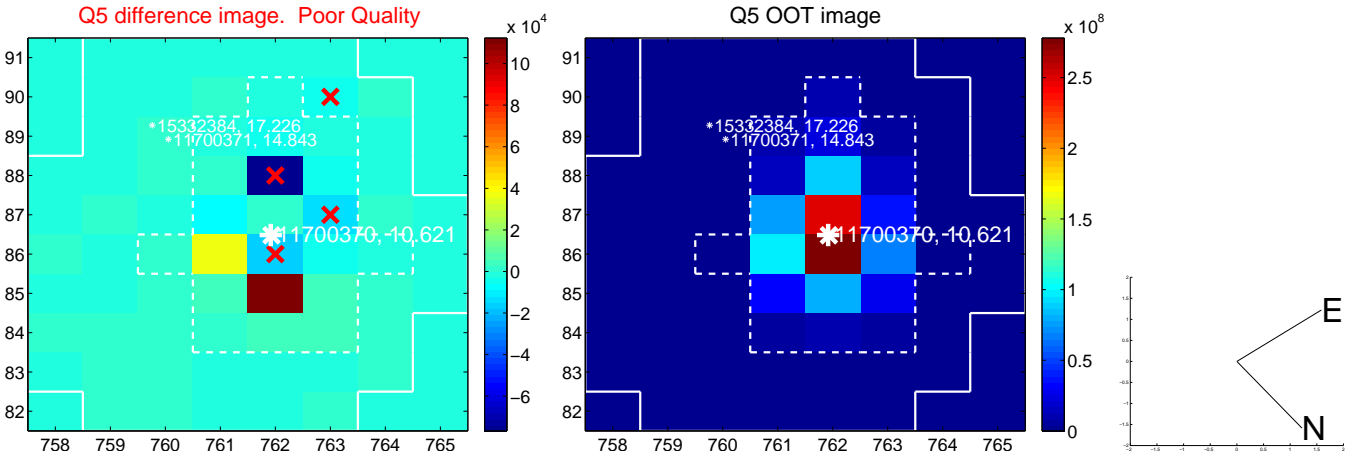


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

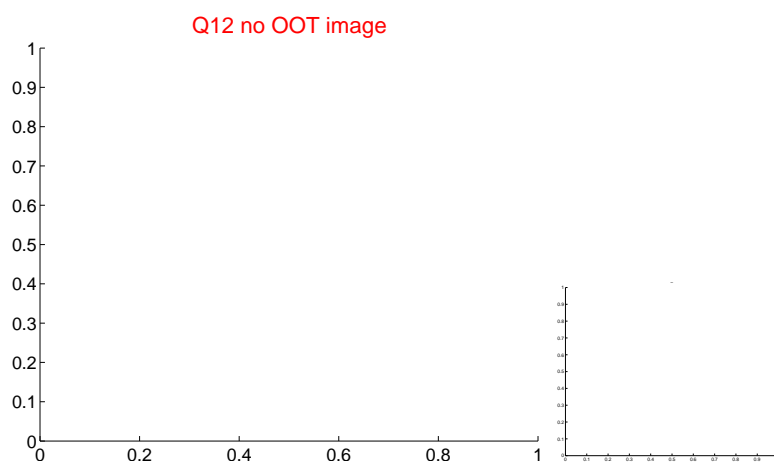
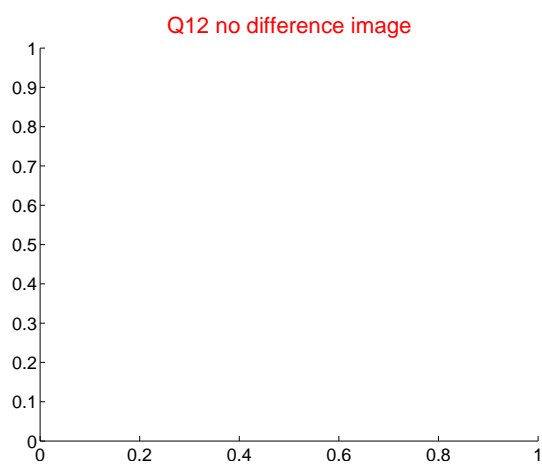
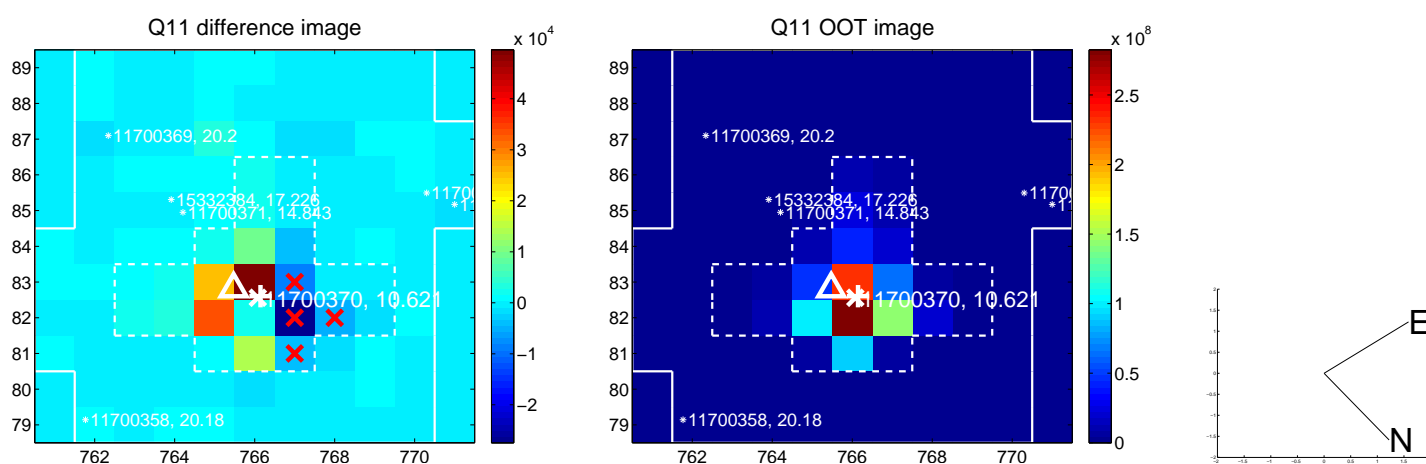
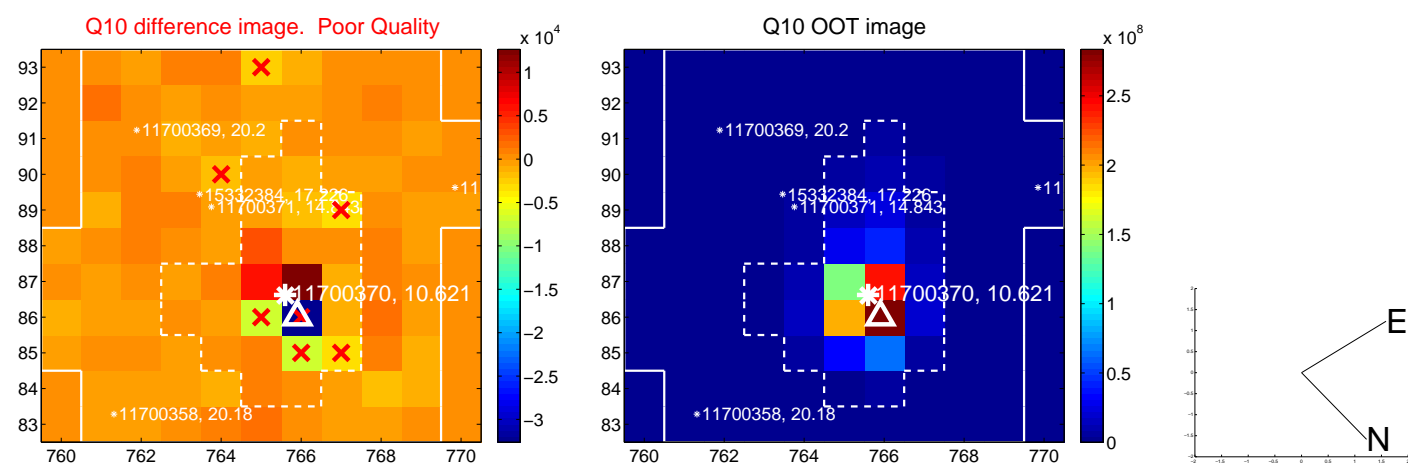
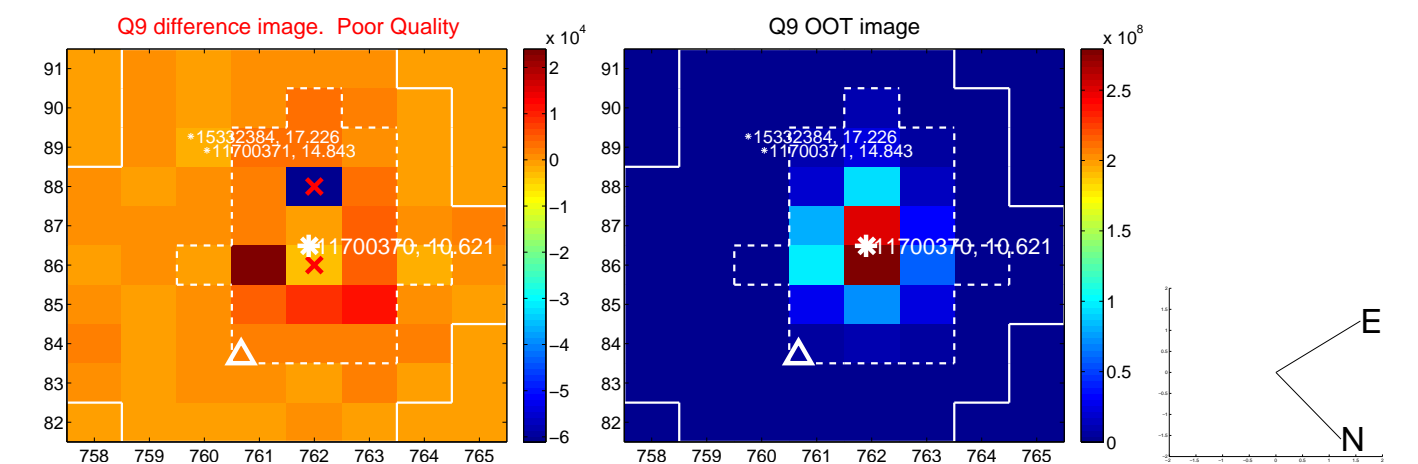
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



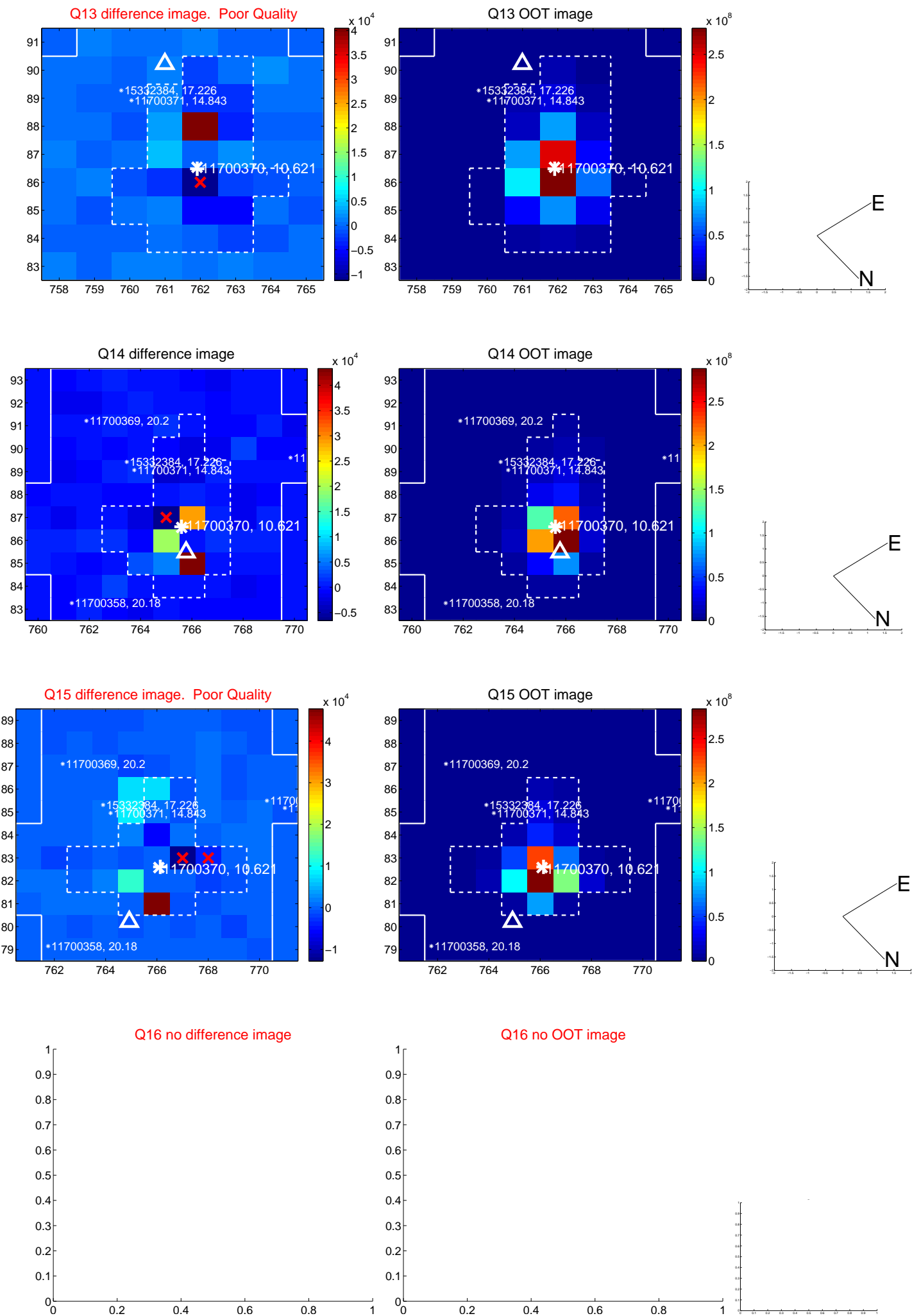
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



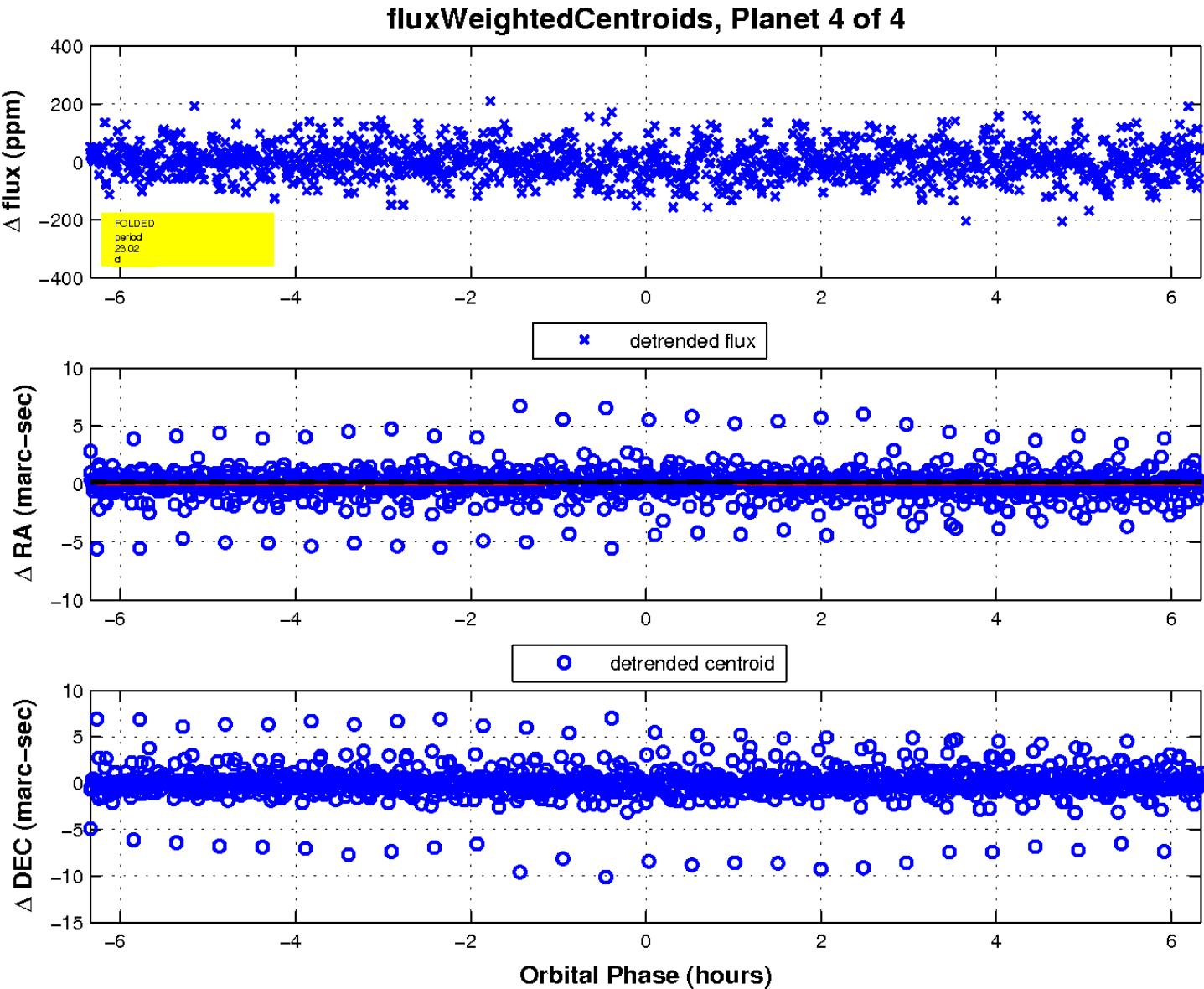
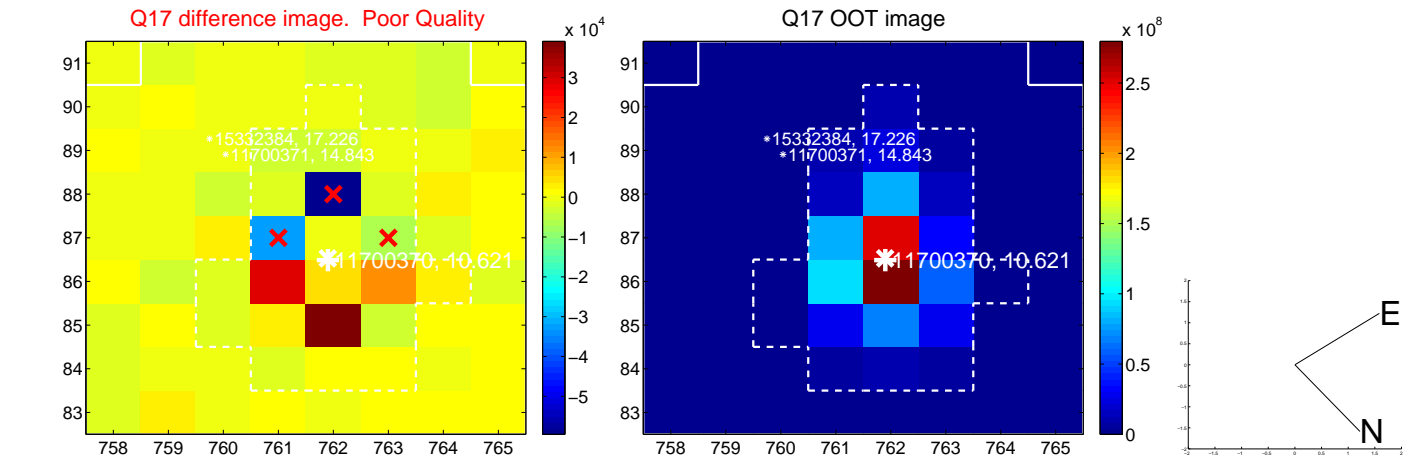
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

