

KIC 007696284

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})
007696284-01	OBS	No	0.783185	132.022574	13.5	4.892	8.0	4.1	0.98	5680	0.39	3747.41
007696284-02	OBS	No	187.230177	255.038931	1856.0	3.285	10.7	5.9	0.98	5680	4.57	2.53
007696284-03	OBS	No	86.489864	166.039309	1815.3	2.691	11.1	7.0	0.98	5680	4.34	7.07
007696284-04	OBS	No	82.574528	201.115790	1627.2	16.942	8.4	7.0	0.98	5680	7.53	7.52

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007696284-01	OBS	FP	0.00	1	0	0	0	LPP_DV
007696284-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT— MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007696284-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES
007696284-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT— MOD_POS_ALT

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

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

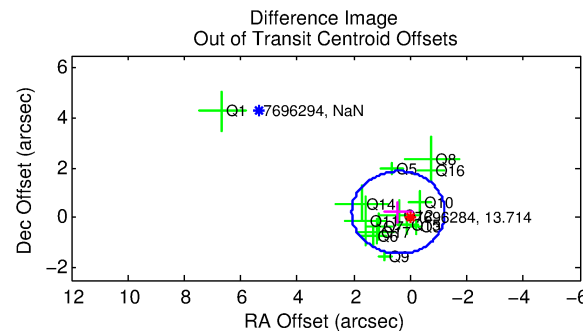
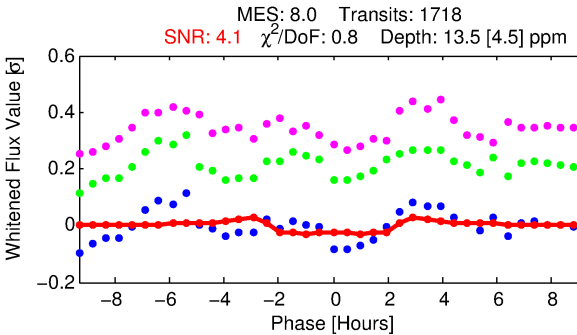
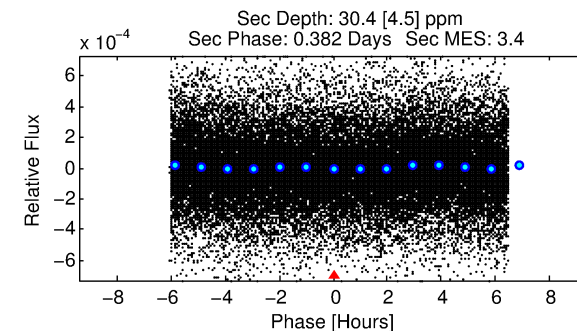
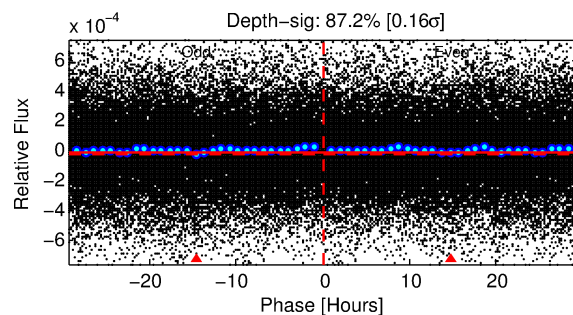
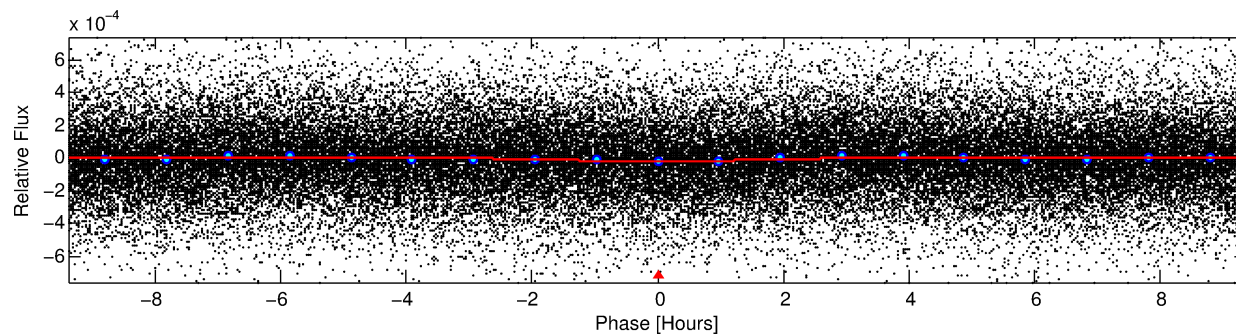
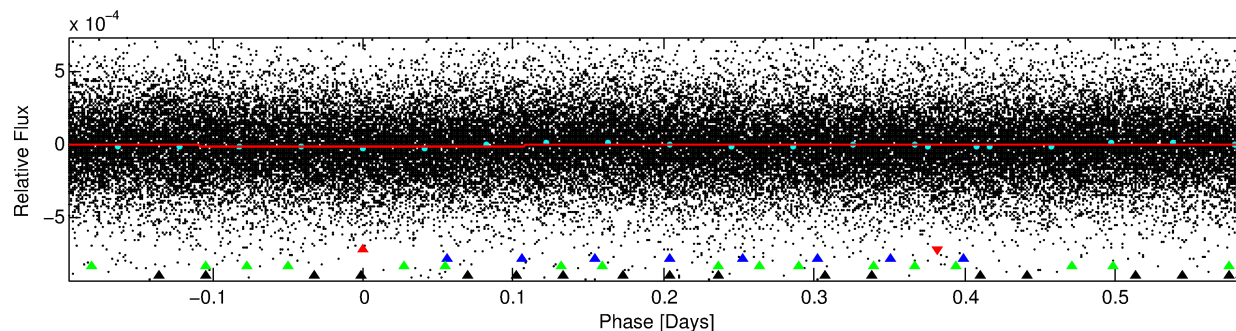
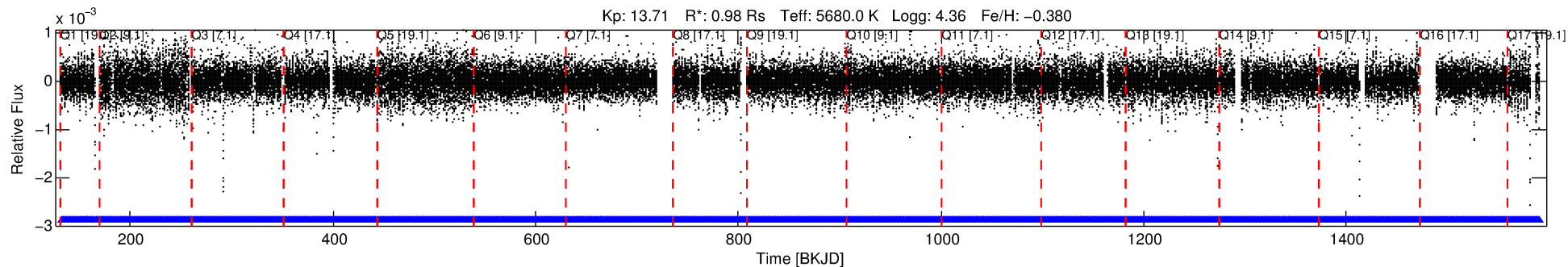
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007696284-01

No Significant Match Found

DV One-Page Summary

KIC: 7696284 Candidate: 1 of 4 Period: 0.783 d



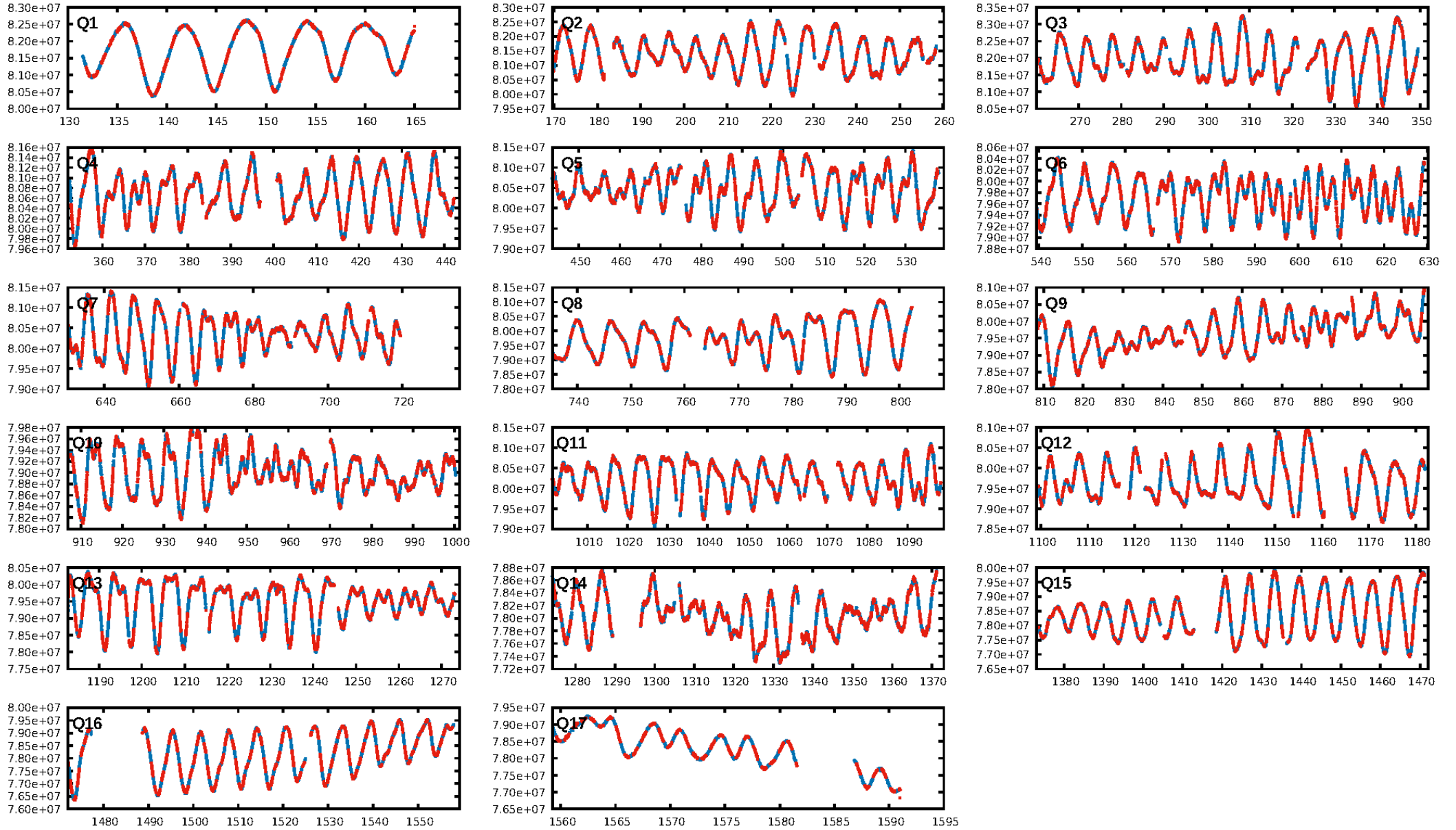
DV Fit Results:

Period = 0.78318 [0.00002] d
Epoch = 132.0226 [0.0071] BKJD
Rp/R* = 0.0036 [0.0027]
a/R* = 1.20 [1.29]
b = 0.71 [2.44]
Seff = 3747.42 [1492.06]
Teff = 1995 [199] K
Rp = 0.38 [0.31] Re
a = 0.0154 [0.0040] AU
Ag = 26.81 [42.14] [0.61 σ]
Teffp = 7019 [2682] K [1.87 σ]

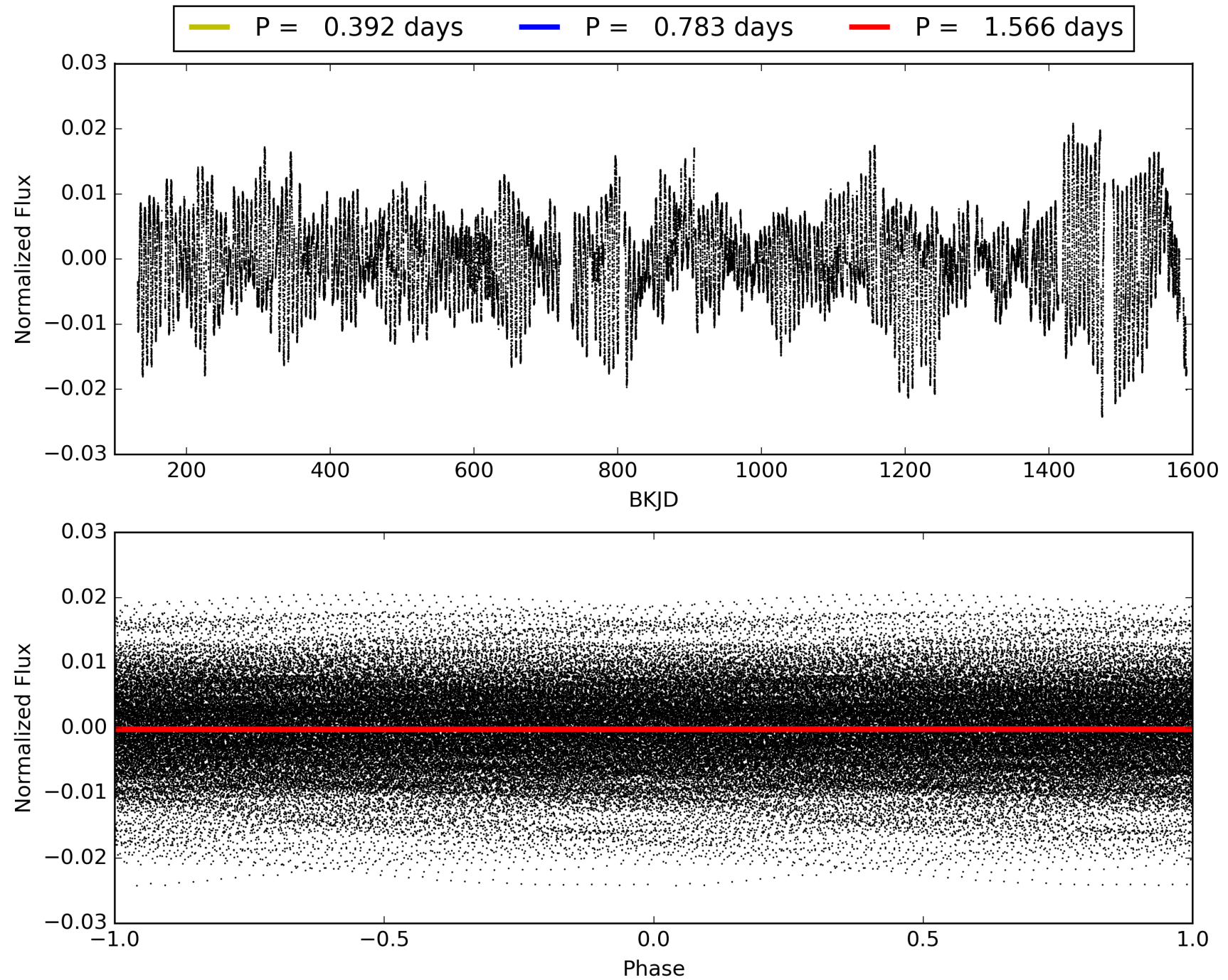
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [111.32 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 9.99e-16
RollingBand-fgt: 1.00 [1641/1641]
GhostDiagnostic-chr: 0.7361
Centroid-sig: 2.8 σ
Centroid-so: 2.356 arcsec [1.59 σ]
OotOffset-rm: 0.472 arcsec [0.86 σ]
KicOffset-rm: 0.501 arcsec [0.98 σ]
OotOffset-st: 3/4/3/4 [14]
KicOffset-st: 3/4/3/4 [14]
DiffImageQuality-fgm: 0.57 [8/14]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 007696284-01, PDC Light Curves

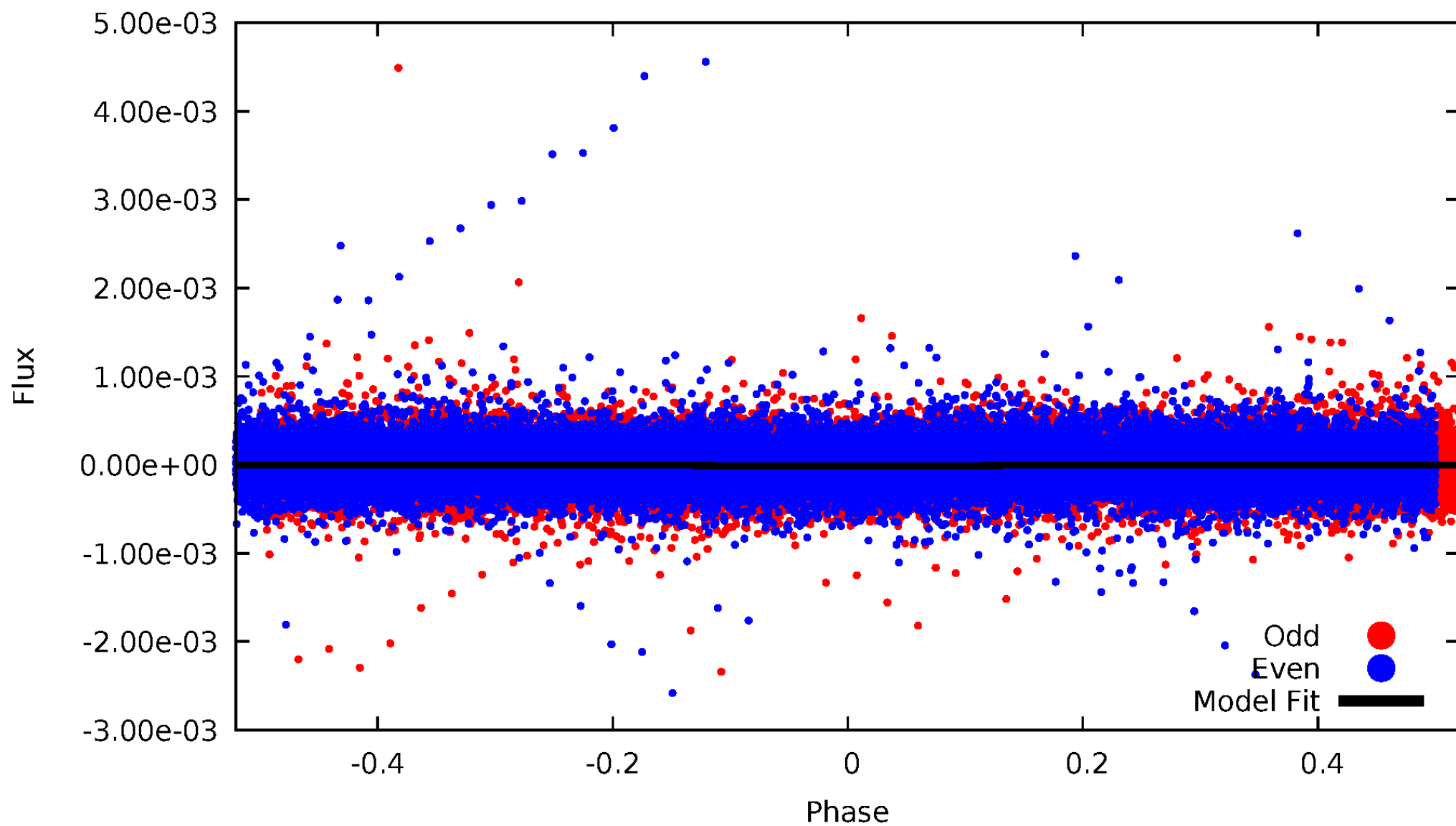


TCE 007696284-01



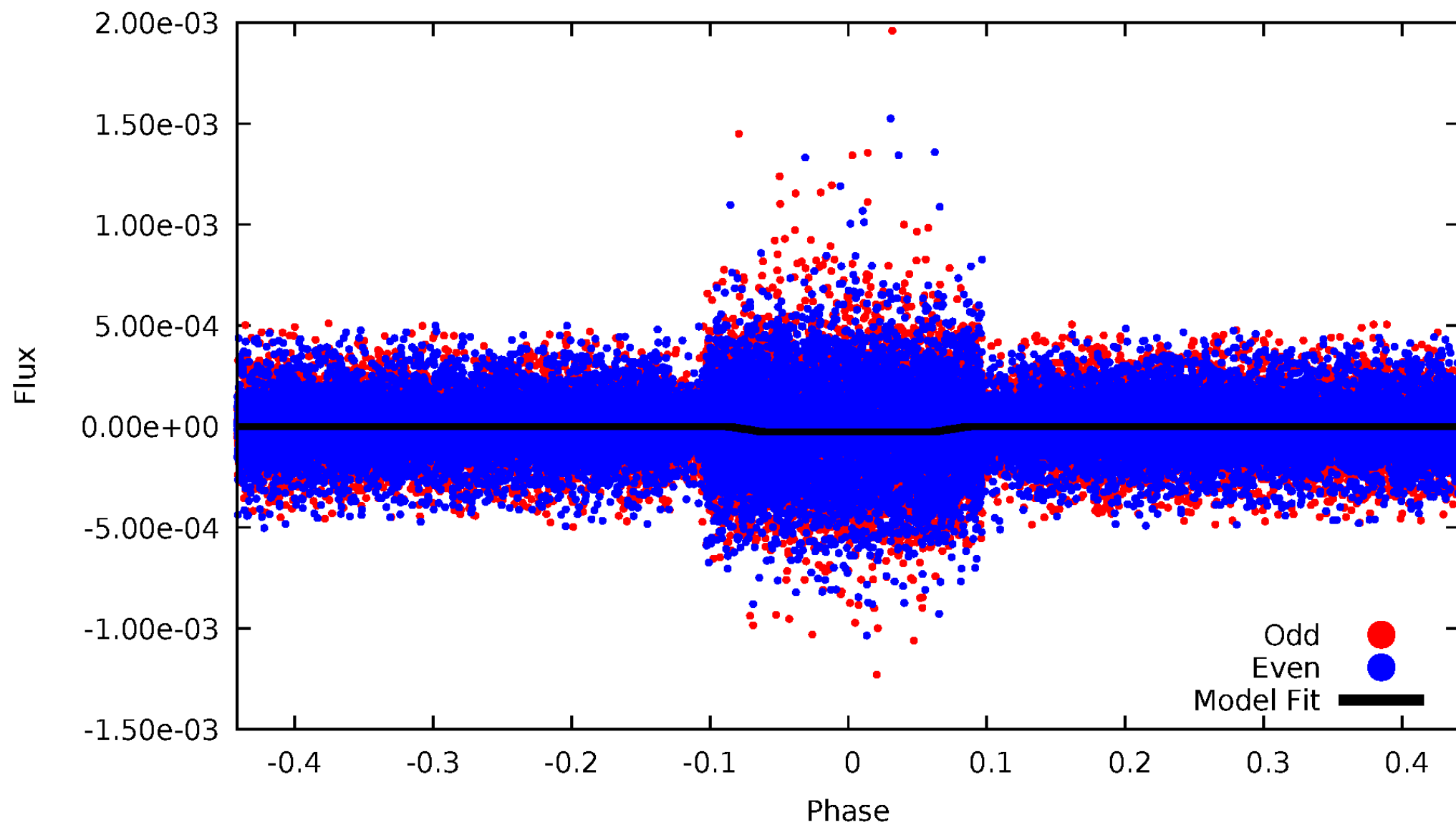
DV Odd/Even

TCE 007696284-01

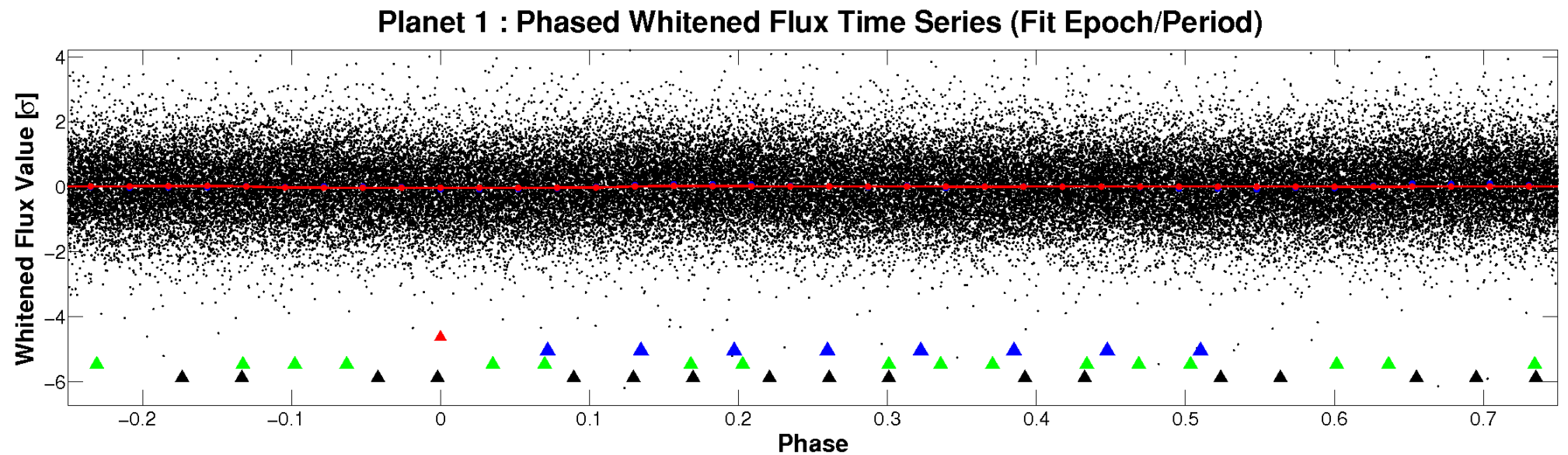
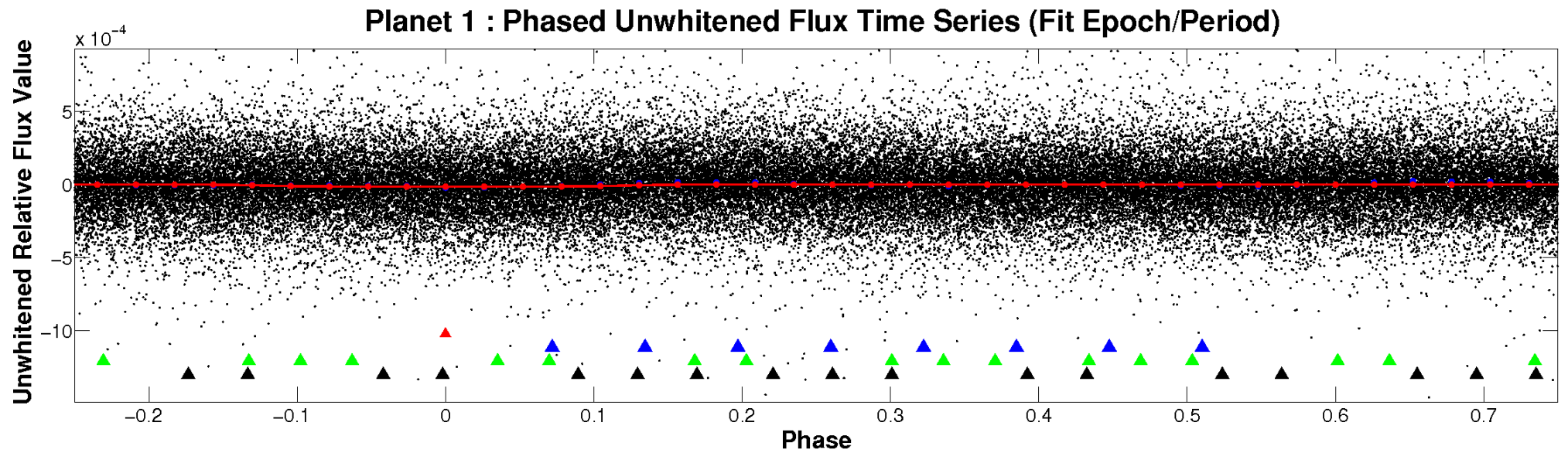


ALT Odd/Even

TCE 007696284-01

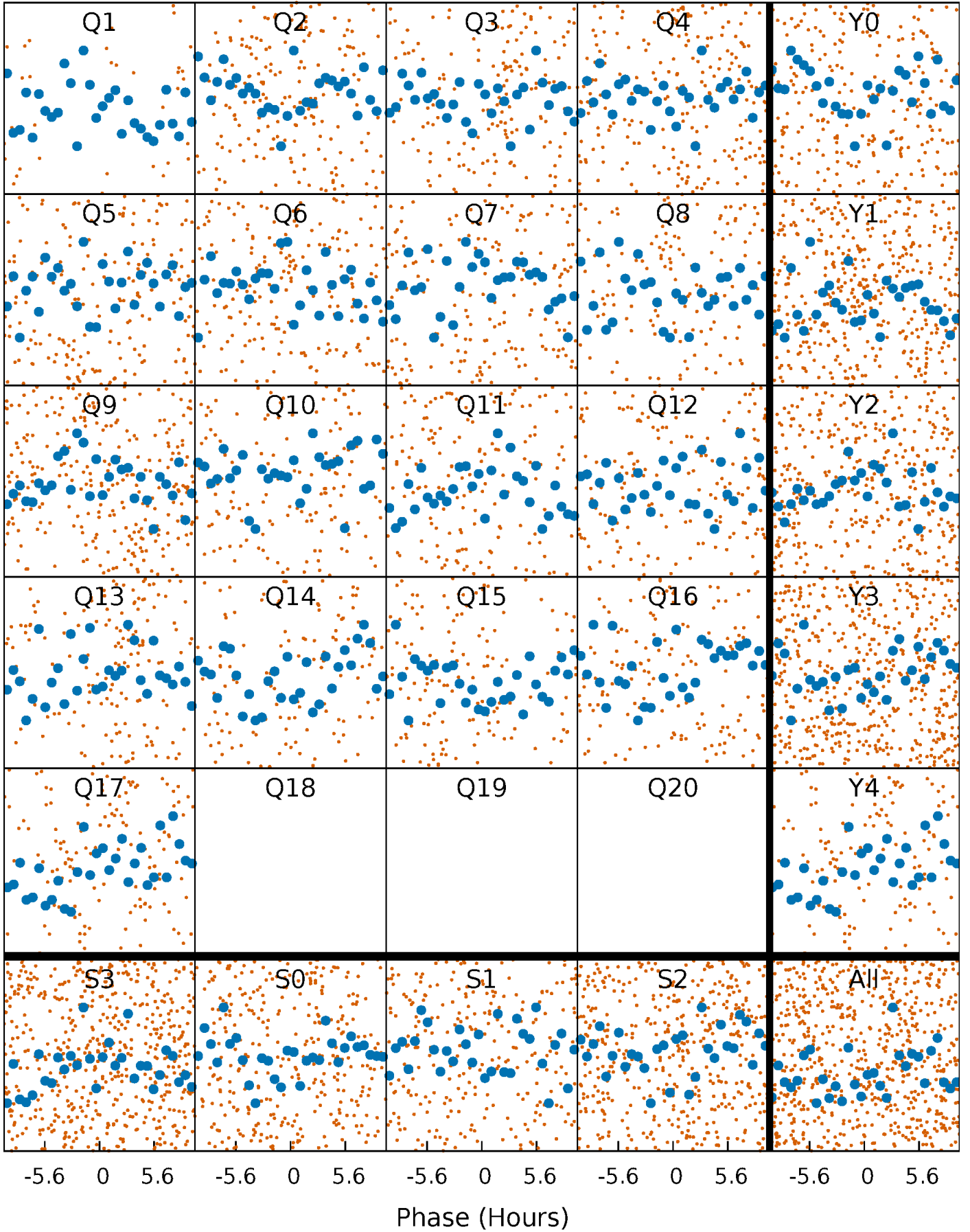


Non-Whitened Vs. Whitened Light Curve



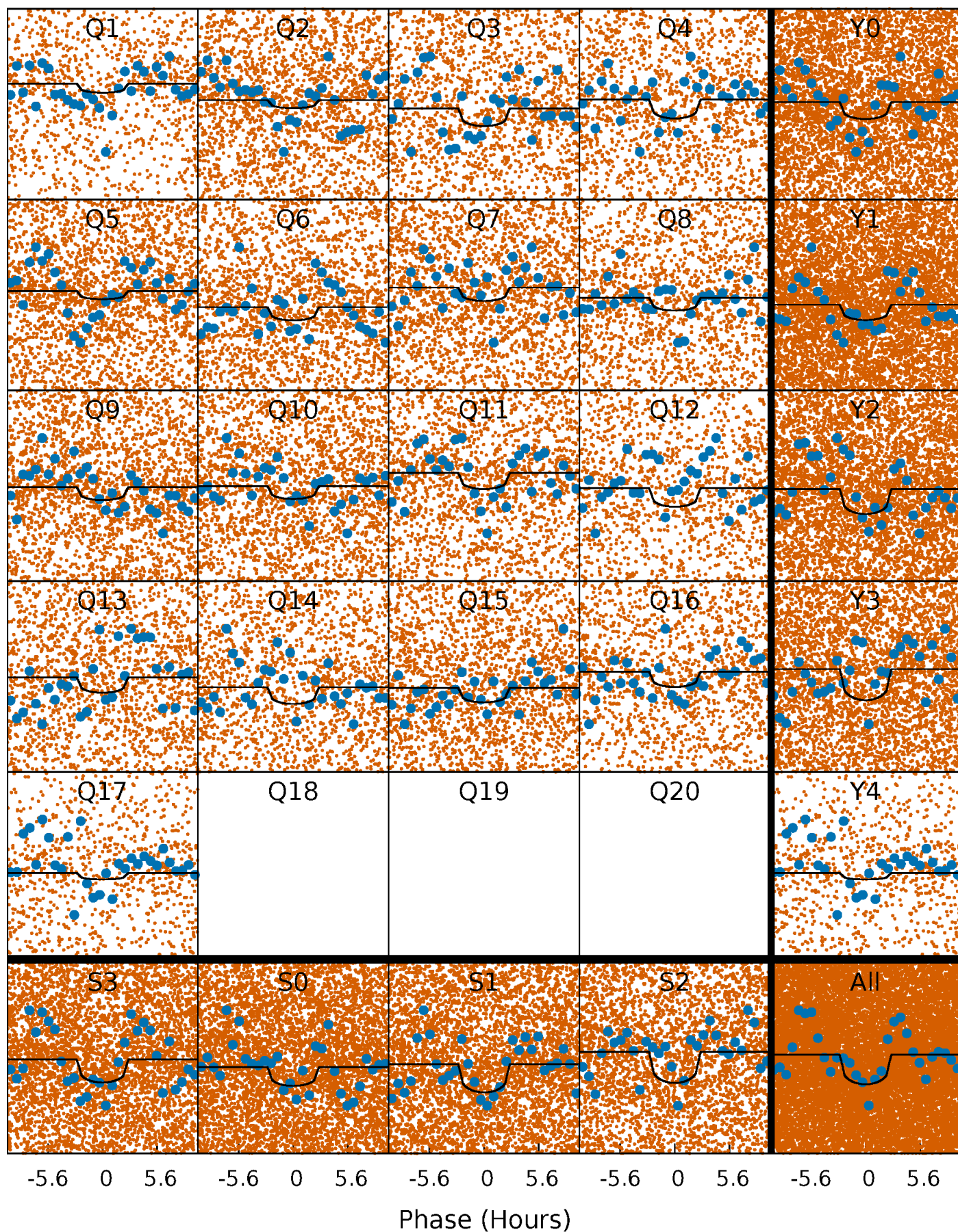
PDC Quarter-Phased Transit Curves

TCE 007696284-01 P= 0.783185 Days $T_0=132.022574$ (BKJD)



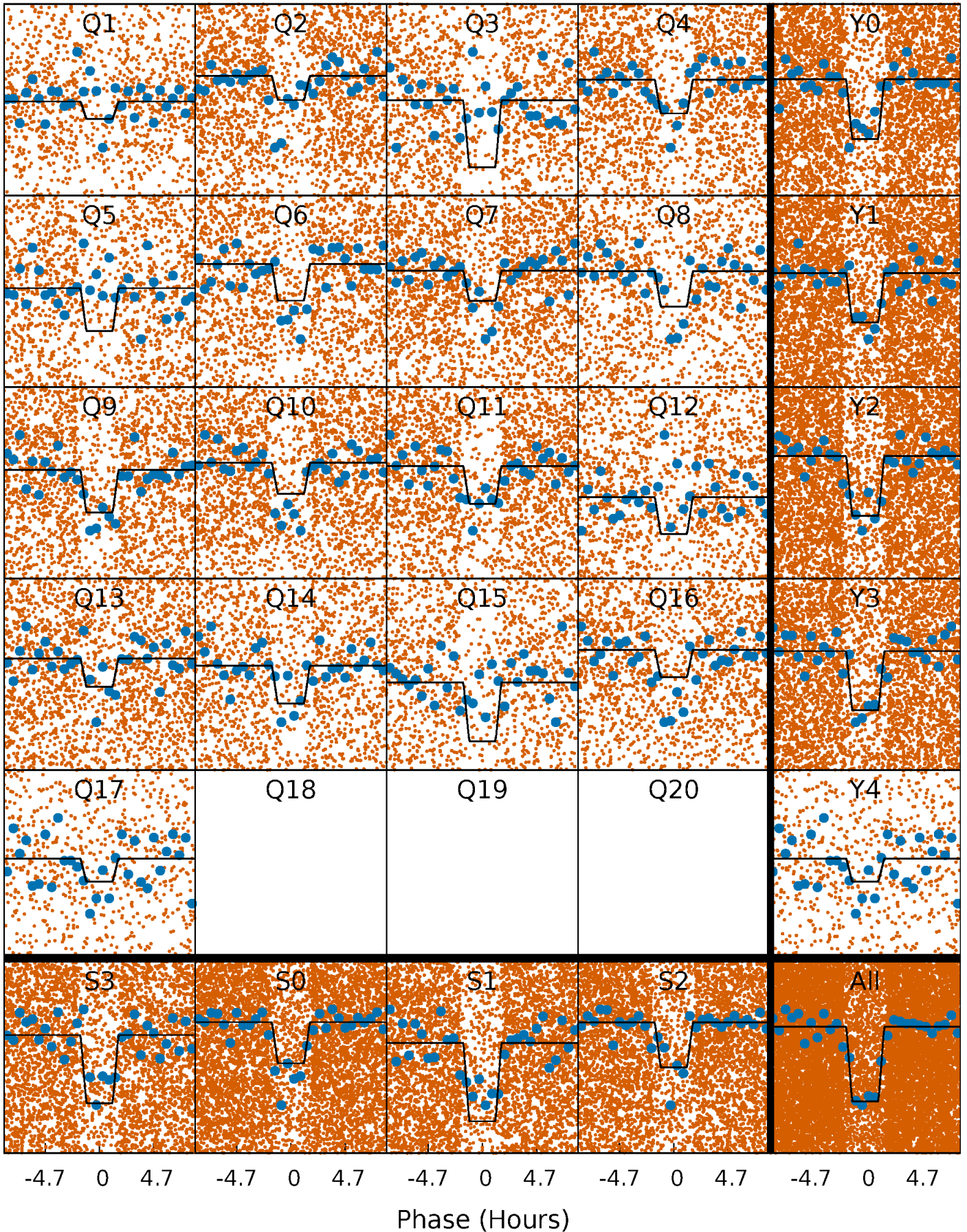
DV Quarter-Phased Transit Curves

TCE 007696284-01 P= 0.783185 Days $T_0=132.022574$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

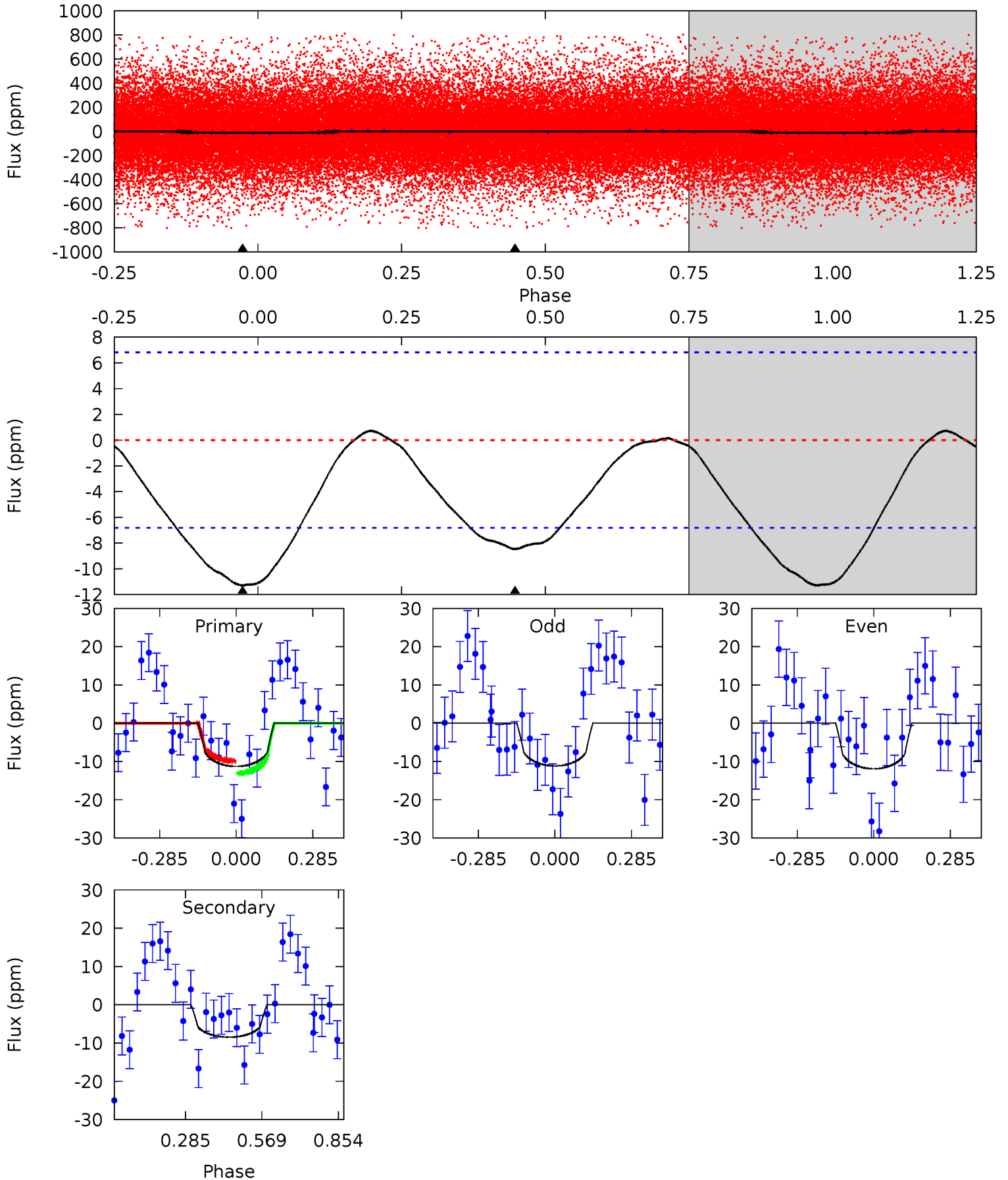
TCE 007696284-01 P= 0.783215 Days $T_0=132.025268$ (BKJD)



DV Model-Shift Uniqueness Test

007696284-01, P = 0.783185 Days, E = 131.239389 Days

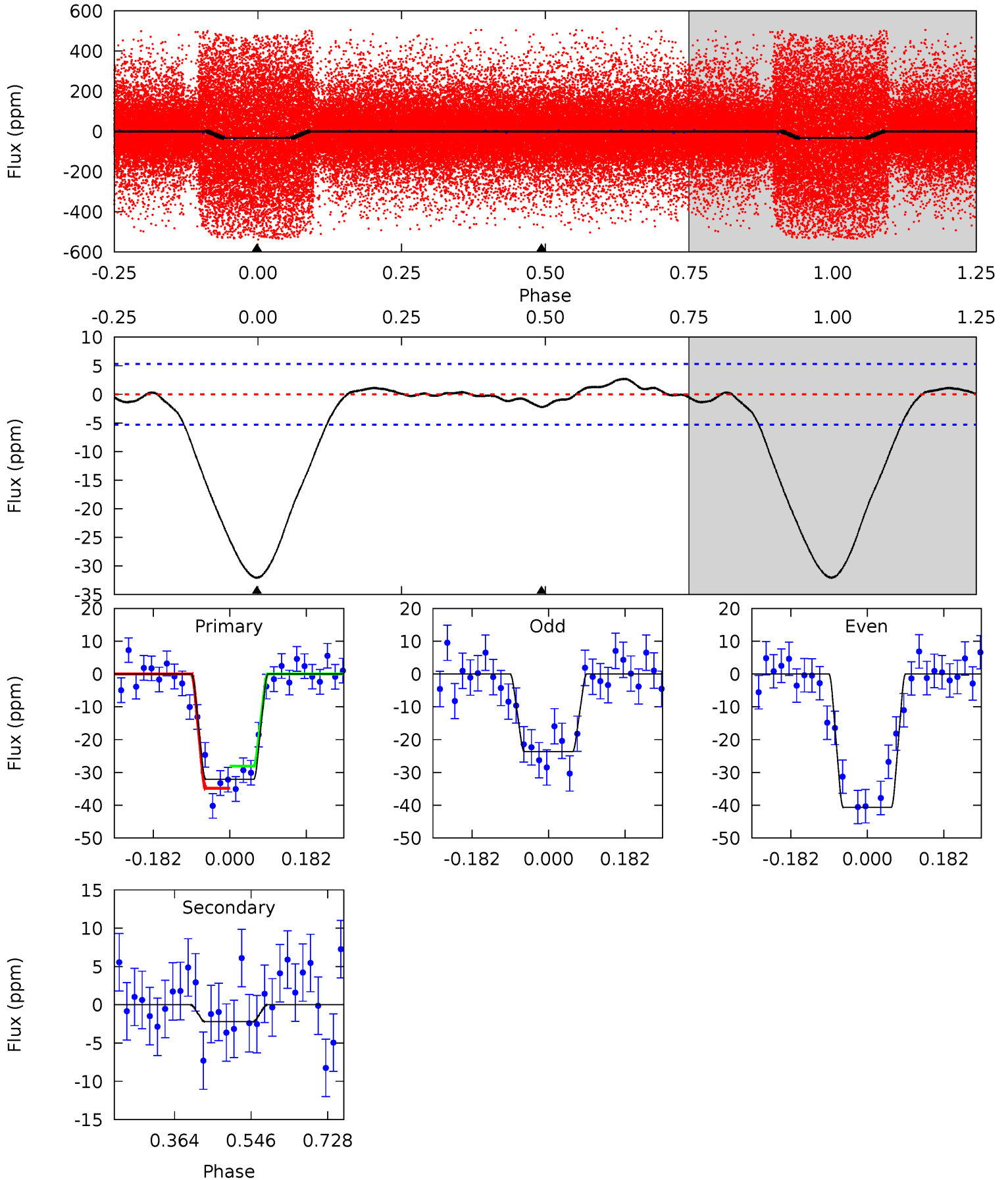
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.19	5.39	0	0	4.34	1.07	0.19	7.19	7.19	5.39	5.39	0.24	1.61	0.06	1.02



Alt Model-Shift Uniqueness Test

007696284-01, P = 0.783215 Days, E = 131.242053 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.8	1.85	0	0	4.44	1.33	0.59	26.8	26.8	1.85	1.85	7.08	1.23	0.08	0



Stellar Parameters For KIC 007696284

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5680^{+152}_{-152}	$4.359^{+0.195}_{-0.214}$	$-0.380^{+0.300}_{-0.250}$	$0.977^{+0.290}_{-0.194}$	$0.795^{+0.124}_{-0.053}$	$1.202^{+1.139}_{-0.616}$
	+3%/-3%	+4%/-5%	+79%/-66%	+30%/-20%	+16%/-7%	+95%/-51%
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 007696284-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-8 ± 2	$0.42^{+0.29}_{-0.23}$	2782^{+240}_{-185}	4907^{+2491}_{-940}	$6.191^{+27.602}_{-3.953}$
Alt.	-2 ± 1	$0.57^{+0.33}_{-0.27}$	2780^{+211}_{-177}	3256^{+1074}_{-5600}	$0.861^{+2.768}_{-0.604}$

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

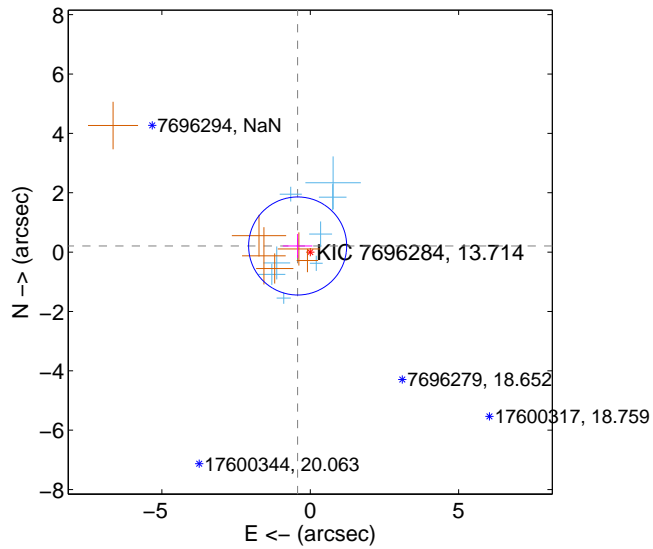
Supplemental centroid analysis for 007696284-01. Kepler magnitude: 13.71. Transit SNR 4.10

There are 8 quarters with good PRF difference image offsets

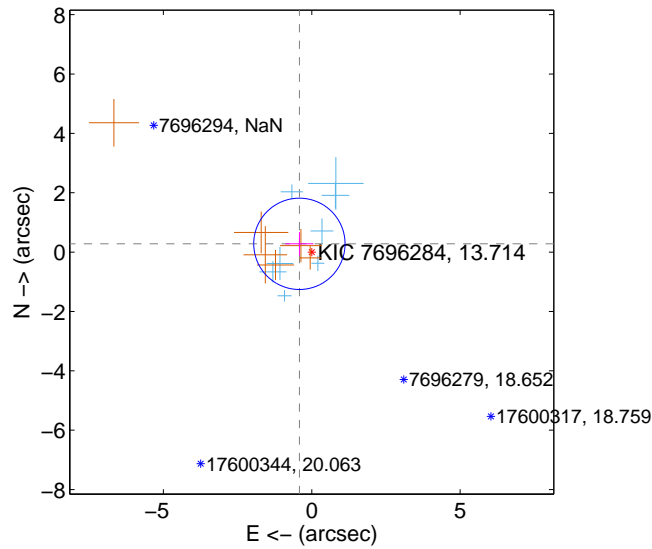
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.472 ± 0.551	0.86	0.425 ± 0.498	0.206 ± 0.404
PRF-fit source offset from KIC position	0.501 ± 0.513	0.98	0.416 ± 0.473	0.279 ± 0.394
photometric centroid source offset	2.36 ± 1.48	1.59	1.27 ± 1.46	1.99 ± 1.49

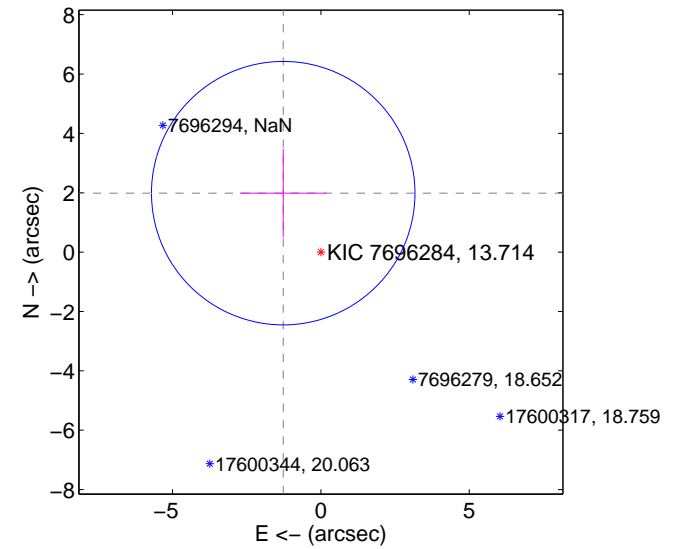
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

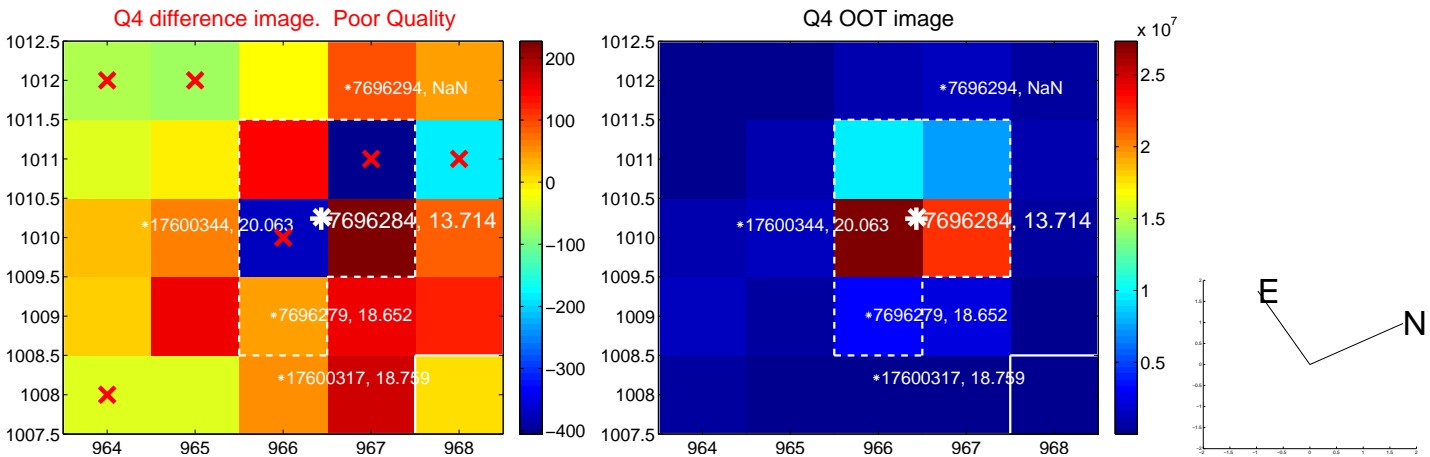
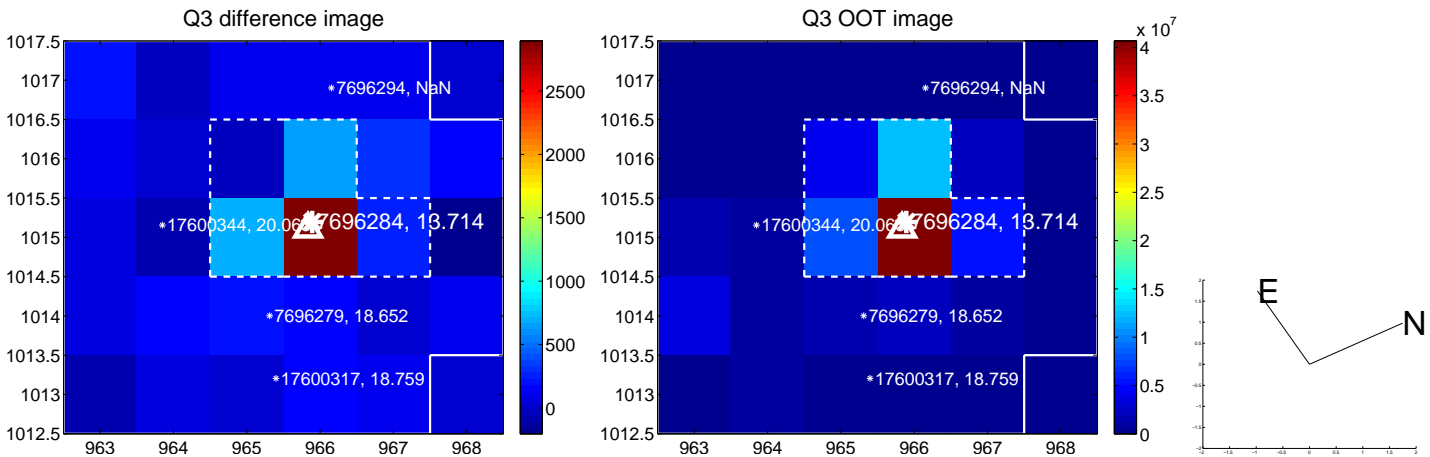
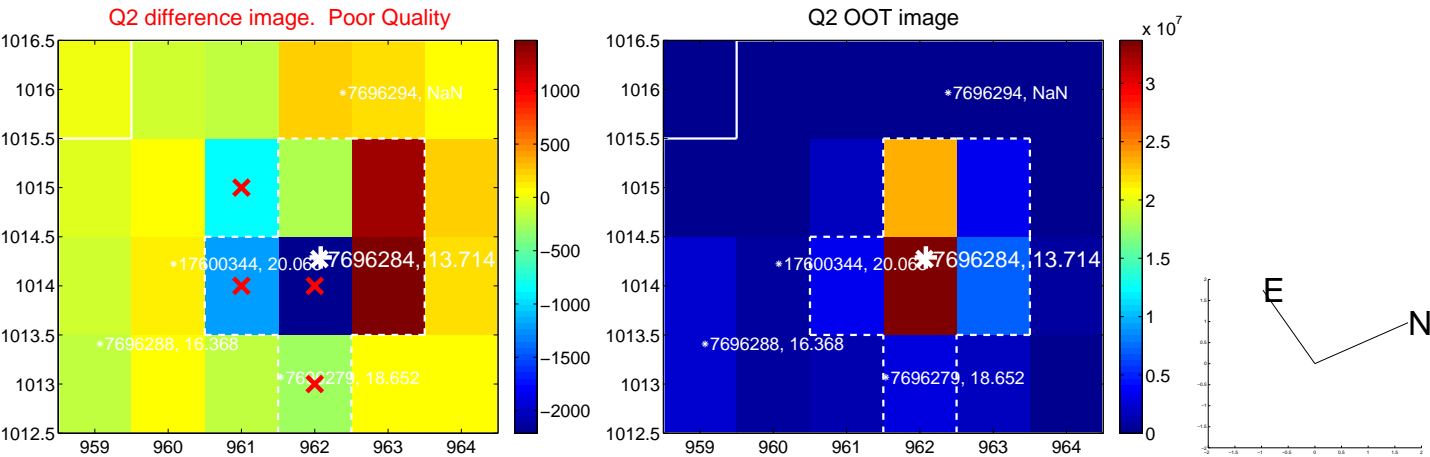
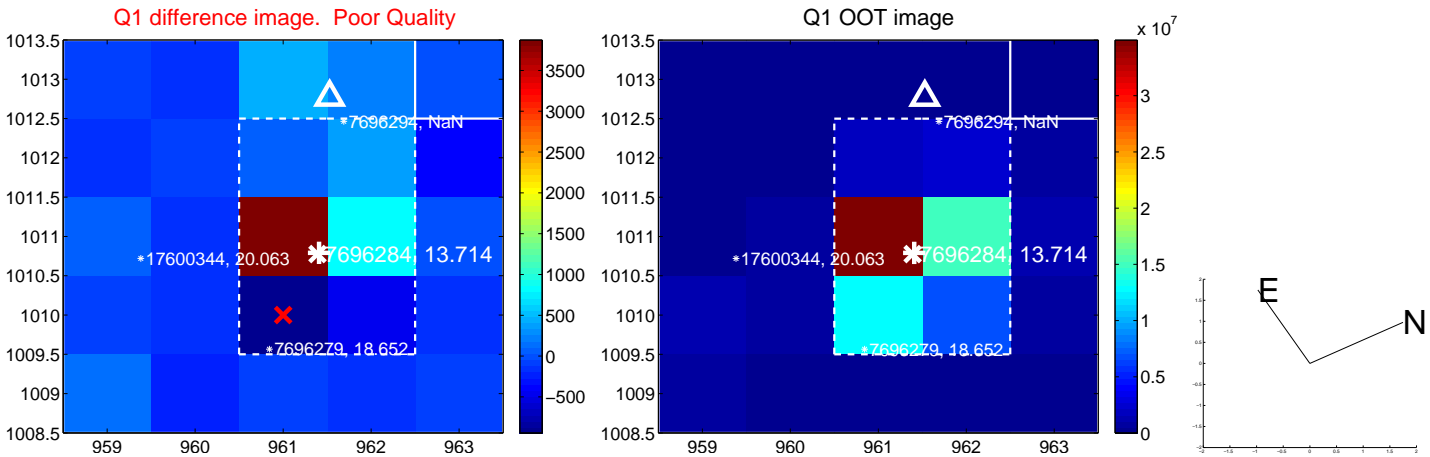


offset from photometric centroids

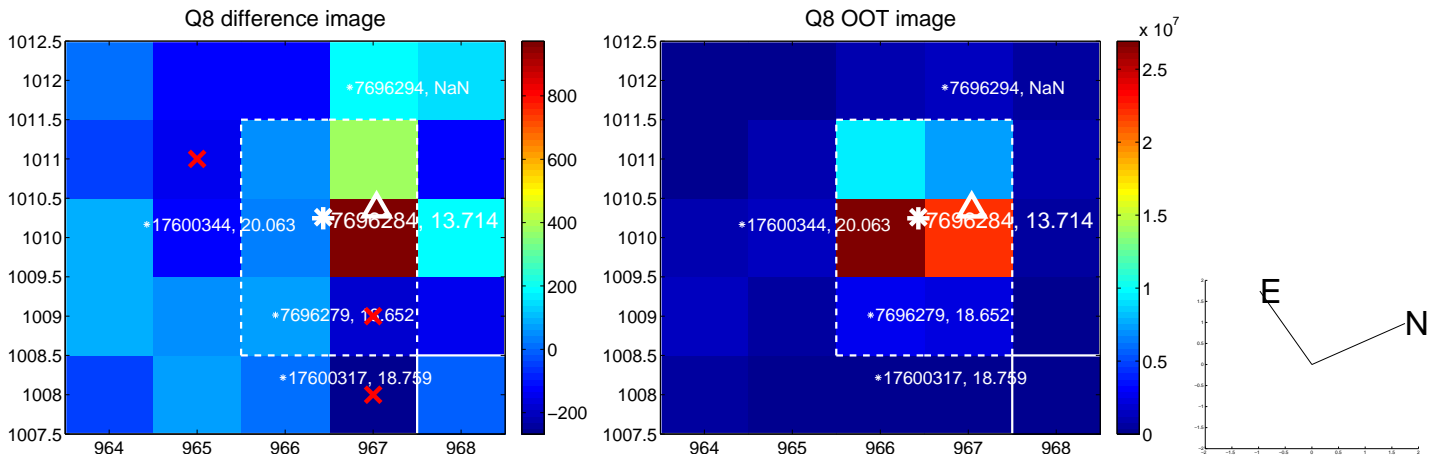
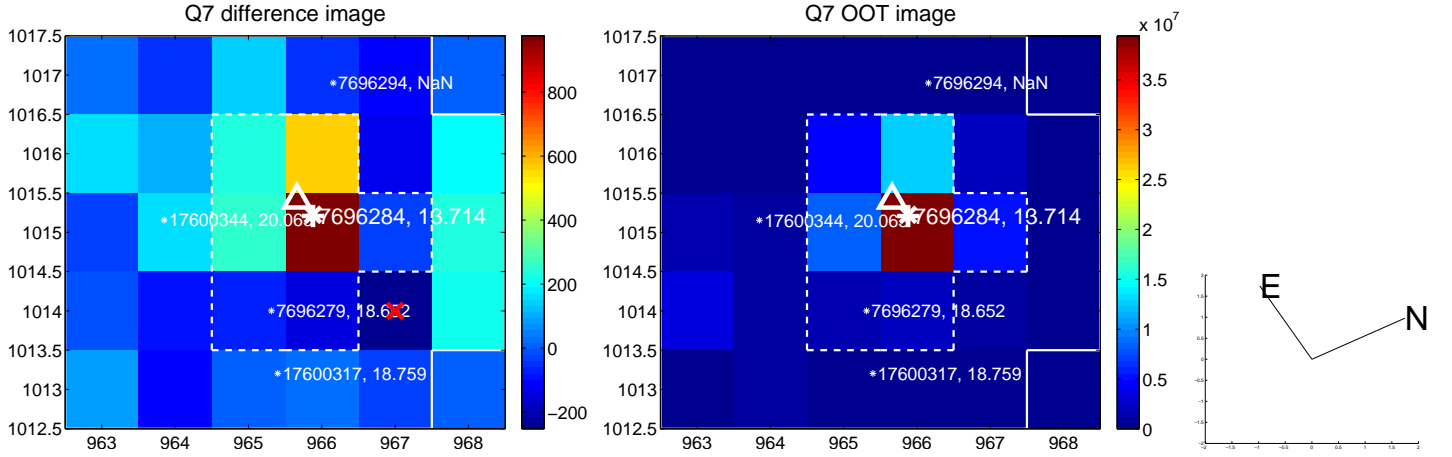
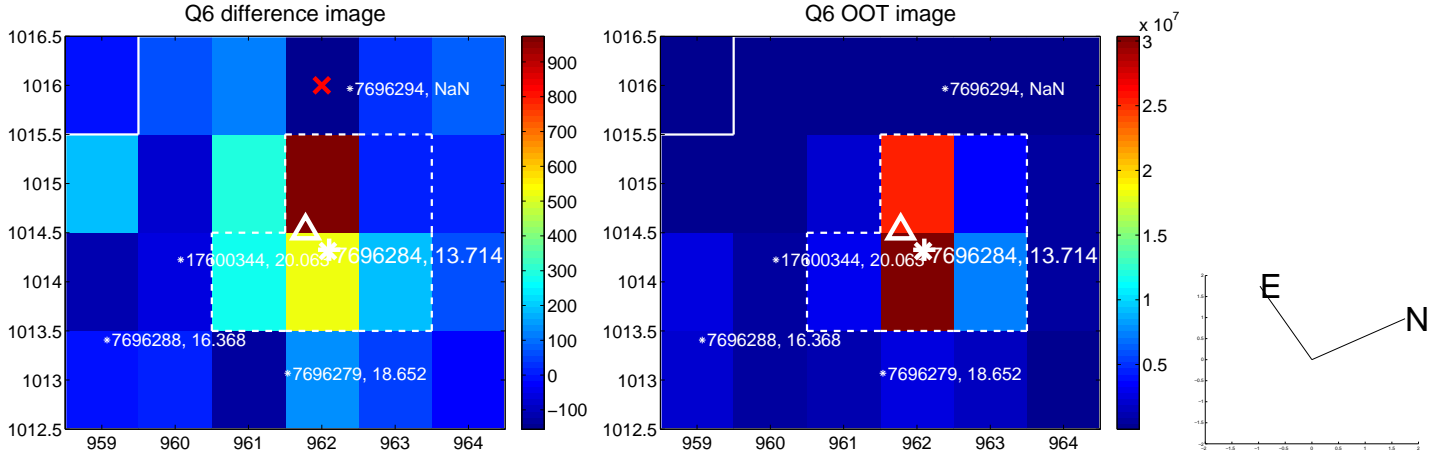
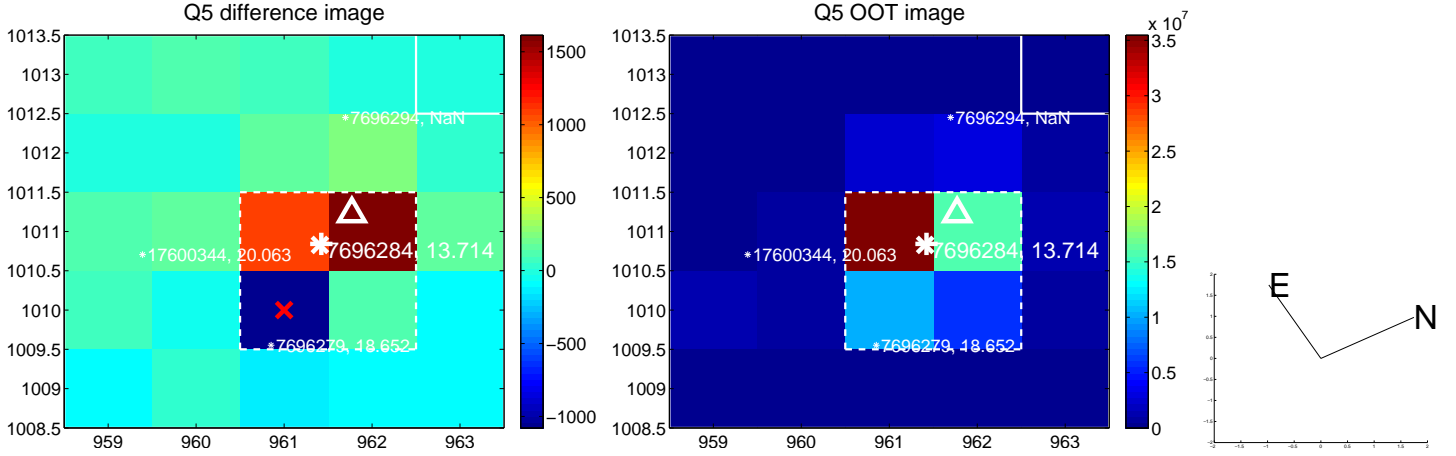


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

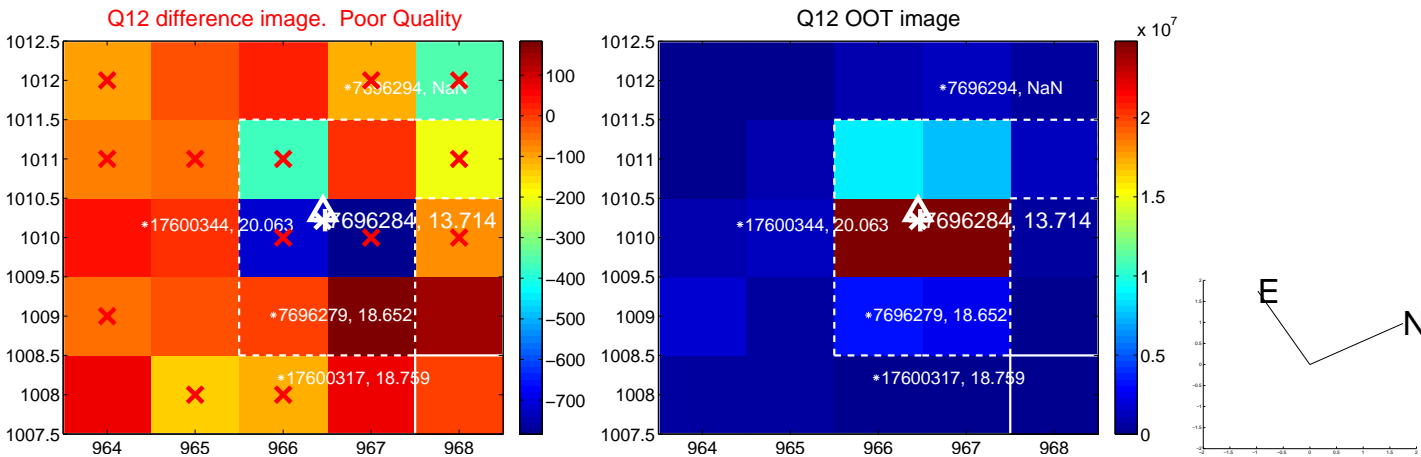
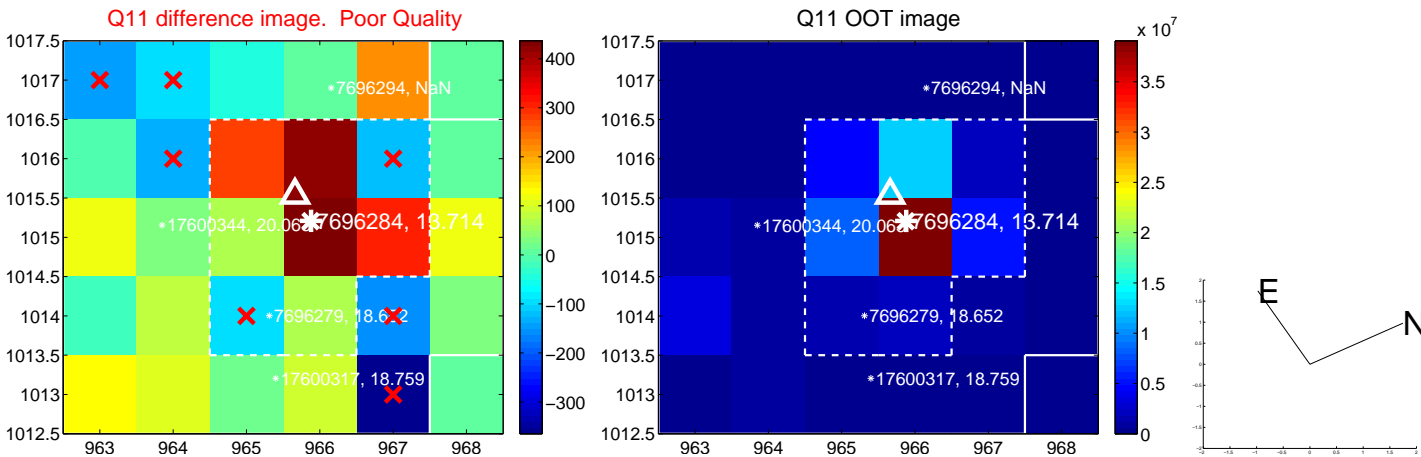
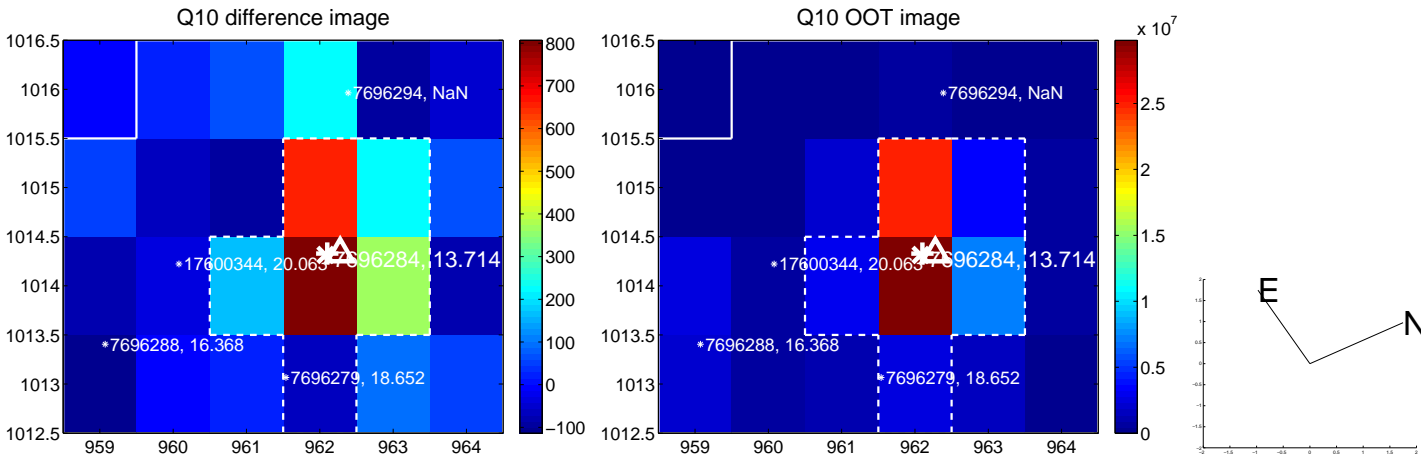
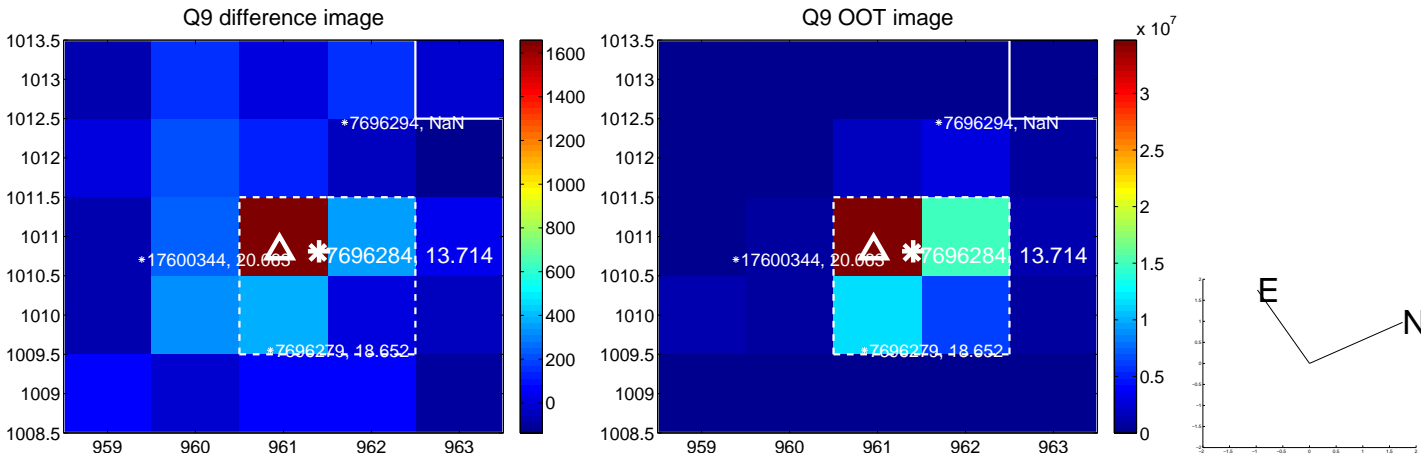
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



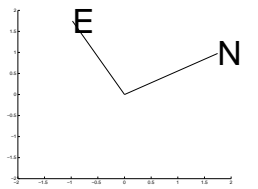
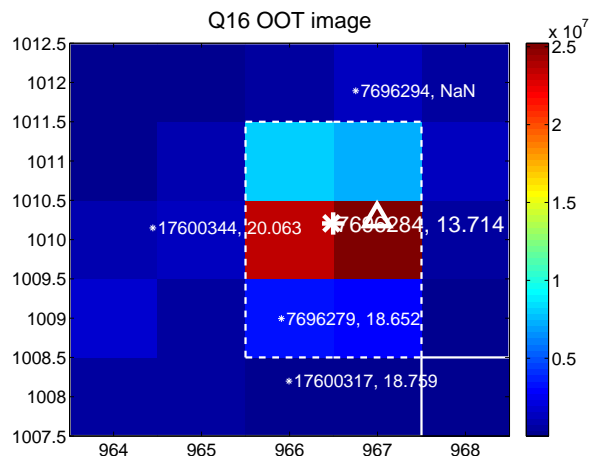
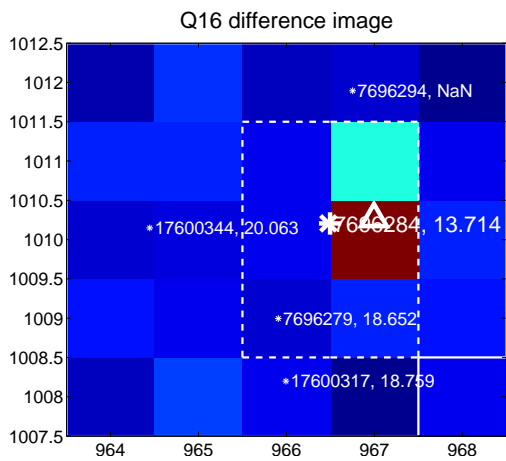
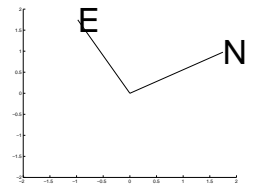
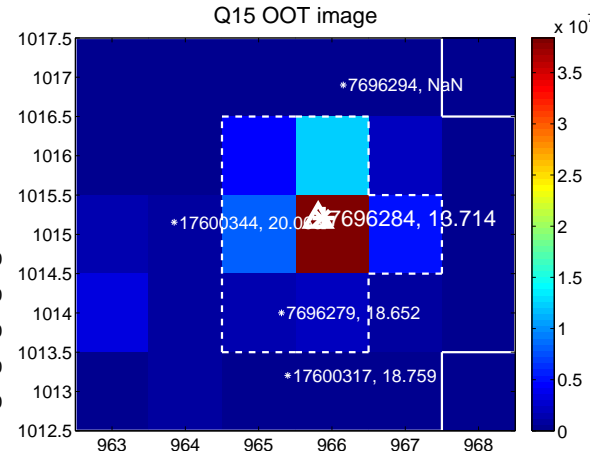
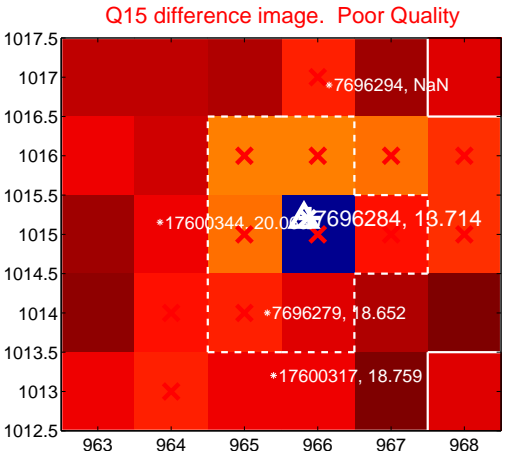
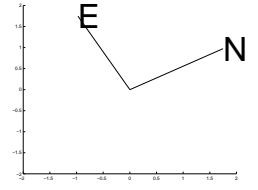
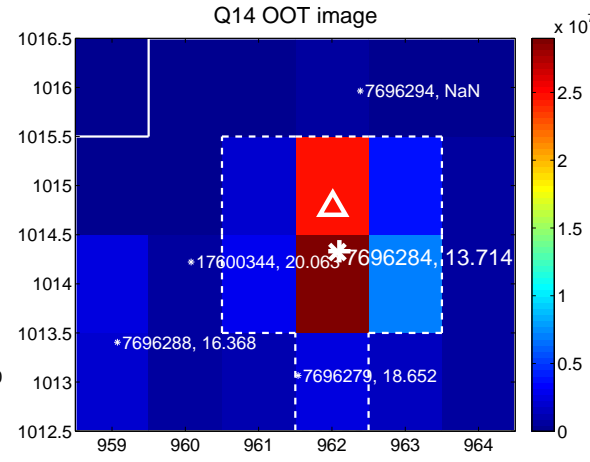
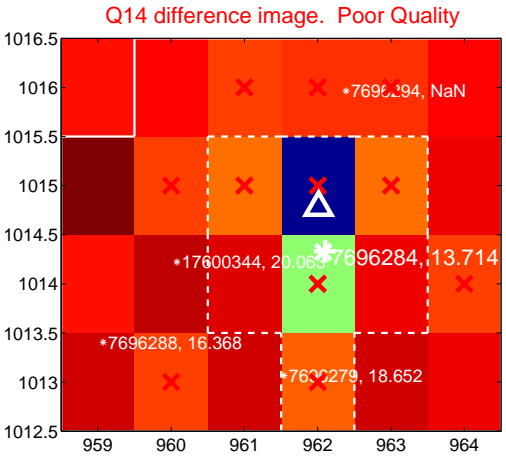
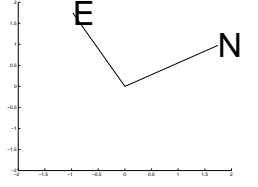
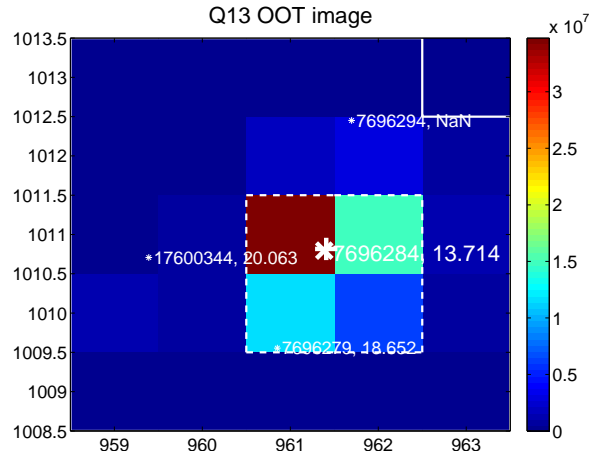
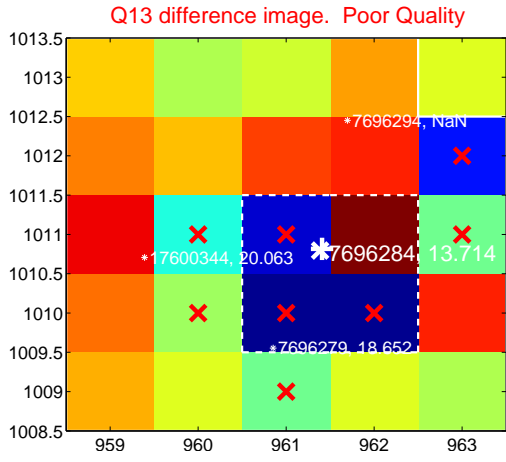
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



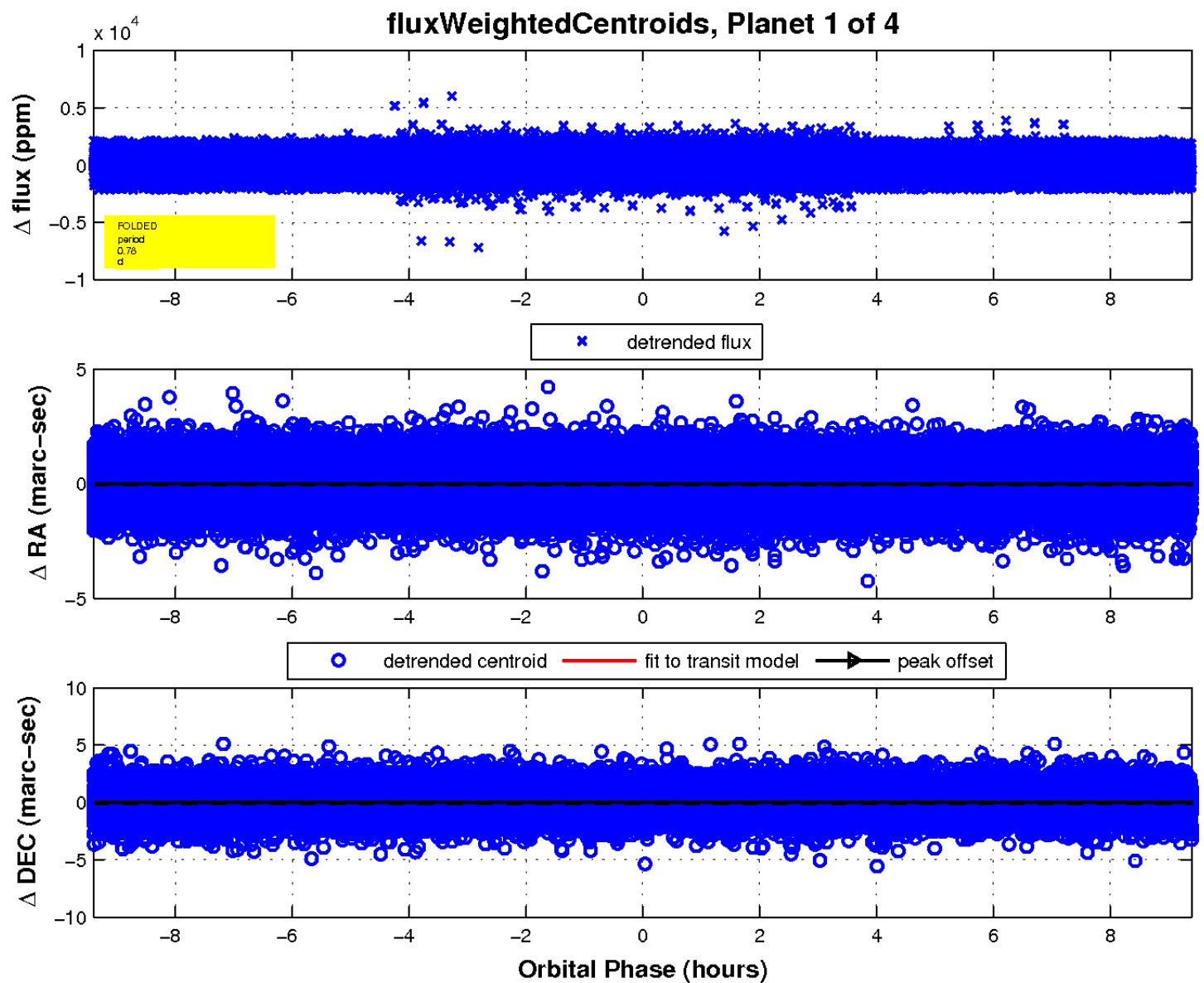
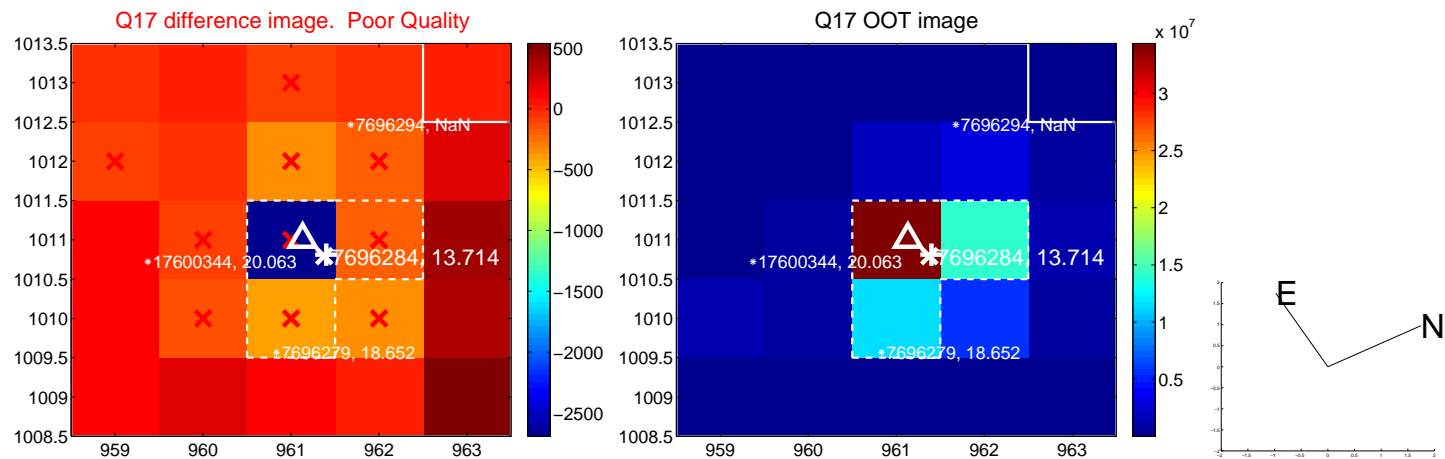
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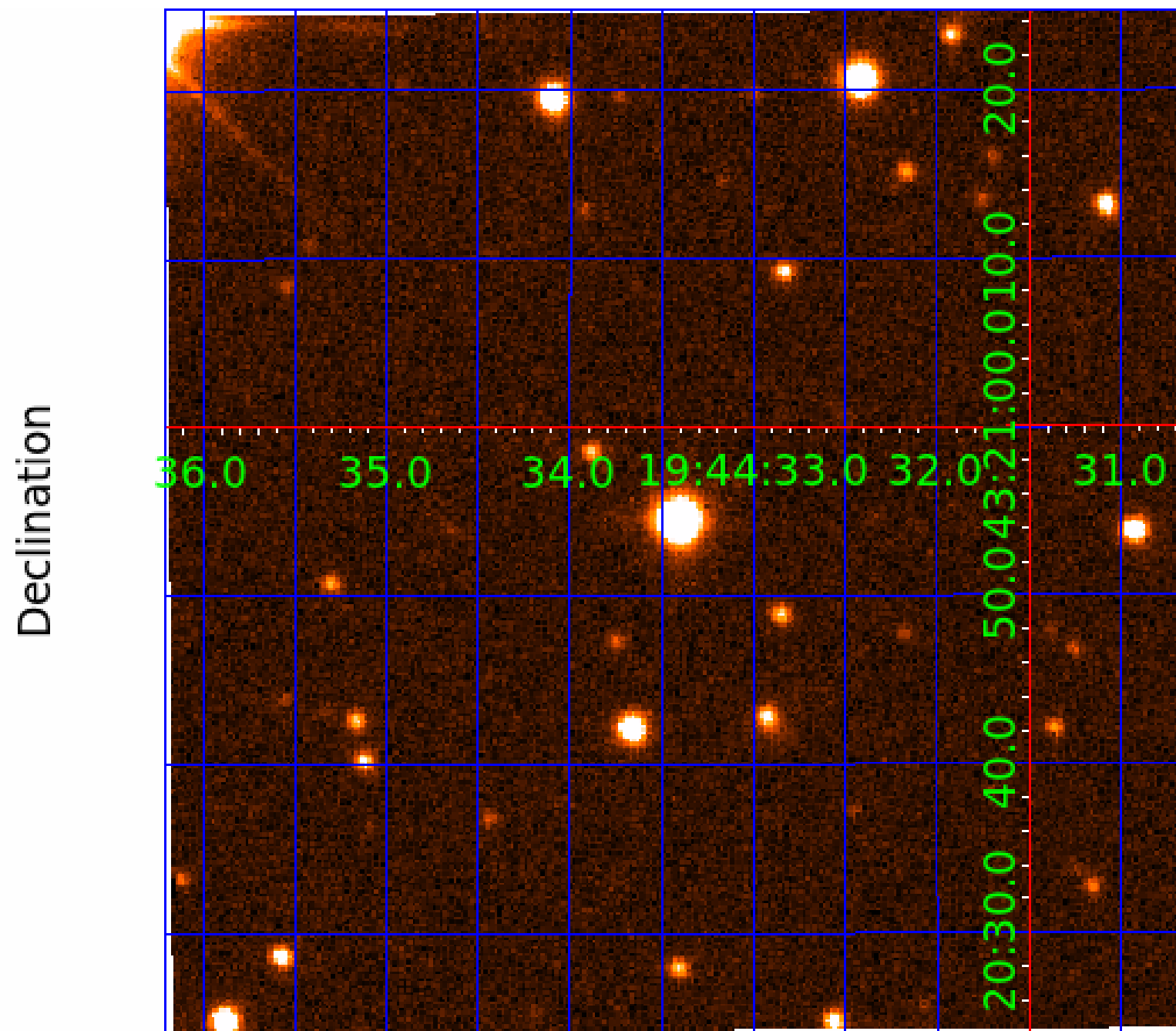
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UKIRT Image



KIC 007696284

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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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007696284-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES
007696284-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT— MOD_POS_ALT

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

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

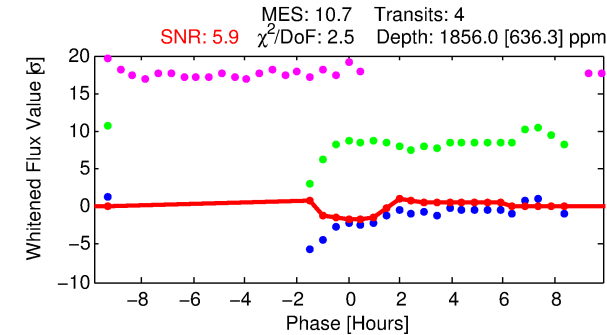
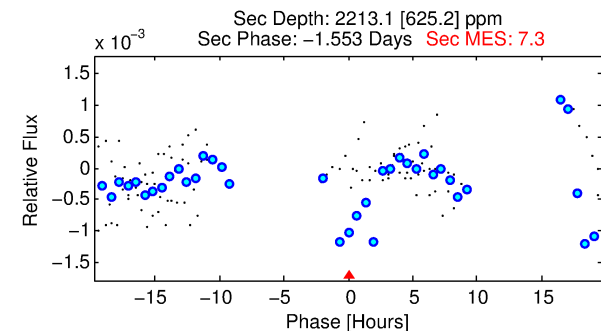
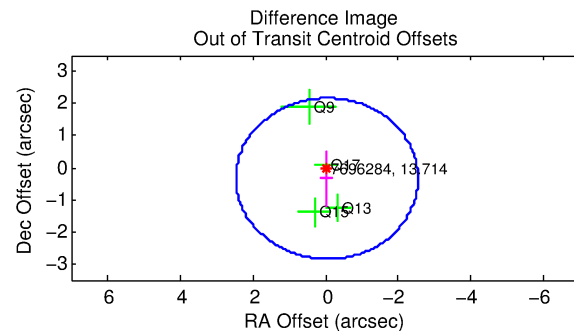
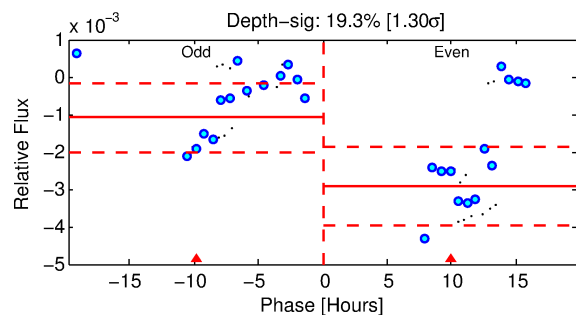
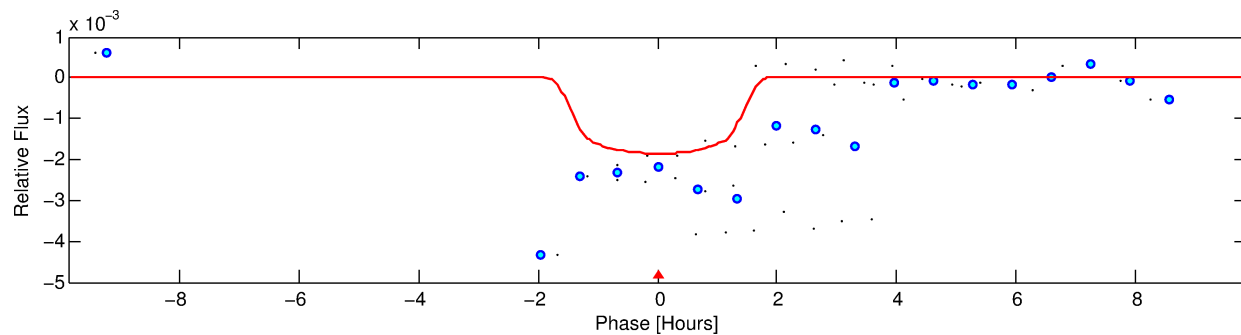
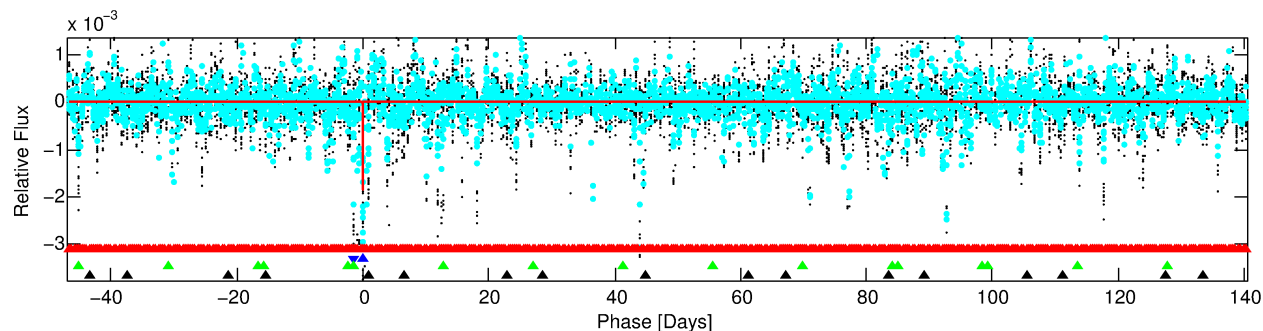
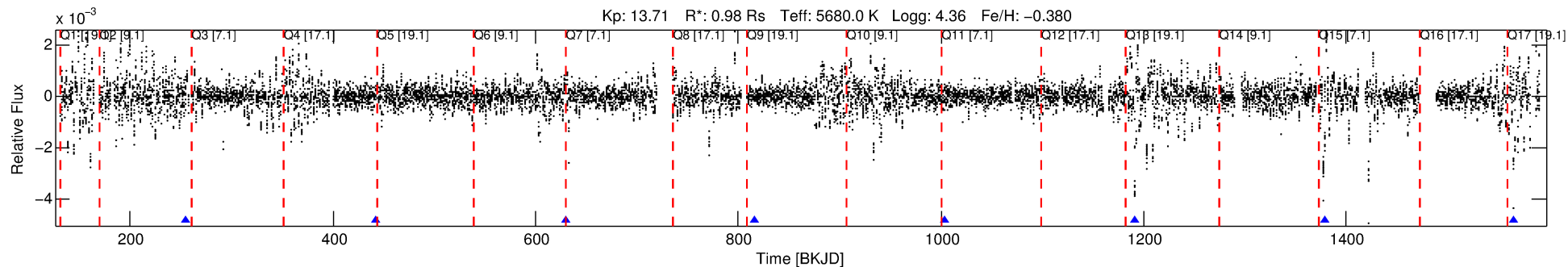
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007696284-02

No Significant Match Found

DV One-Page Summary

KIC: 7696284 Candidate: 2 of 4 Period: 187.230 d



DV Fit Results:

Period = 187.23018 [0.01055] d
Epoch = 255.0389 [0.0631] BKJD
Rp/R* = 0.0429 [0.0892]
a/R* = 316.07 [2951.79]
b = 0.75 [5.48]
Seff = 2.53 [1.01]
Teq = 321 [32] K
Rp = 4.57 [9.61] Re
a = 0.5937 [0.1527] AU
Ag = 20523.76 [85944.57] [0.24 σ]
Teffp = 5949 [6204] K [0.91 σ]

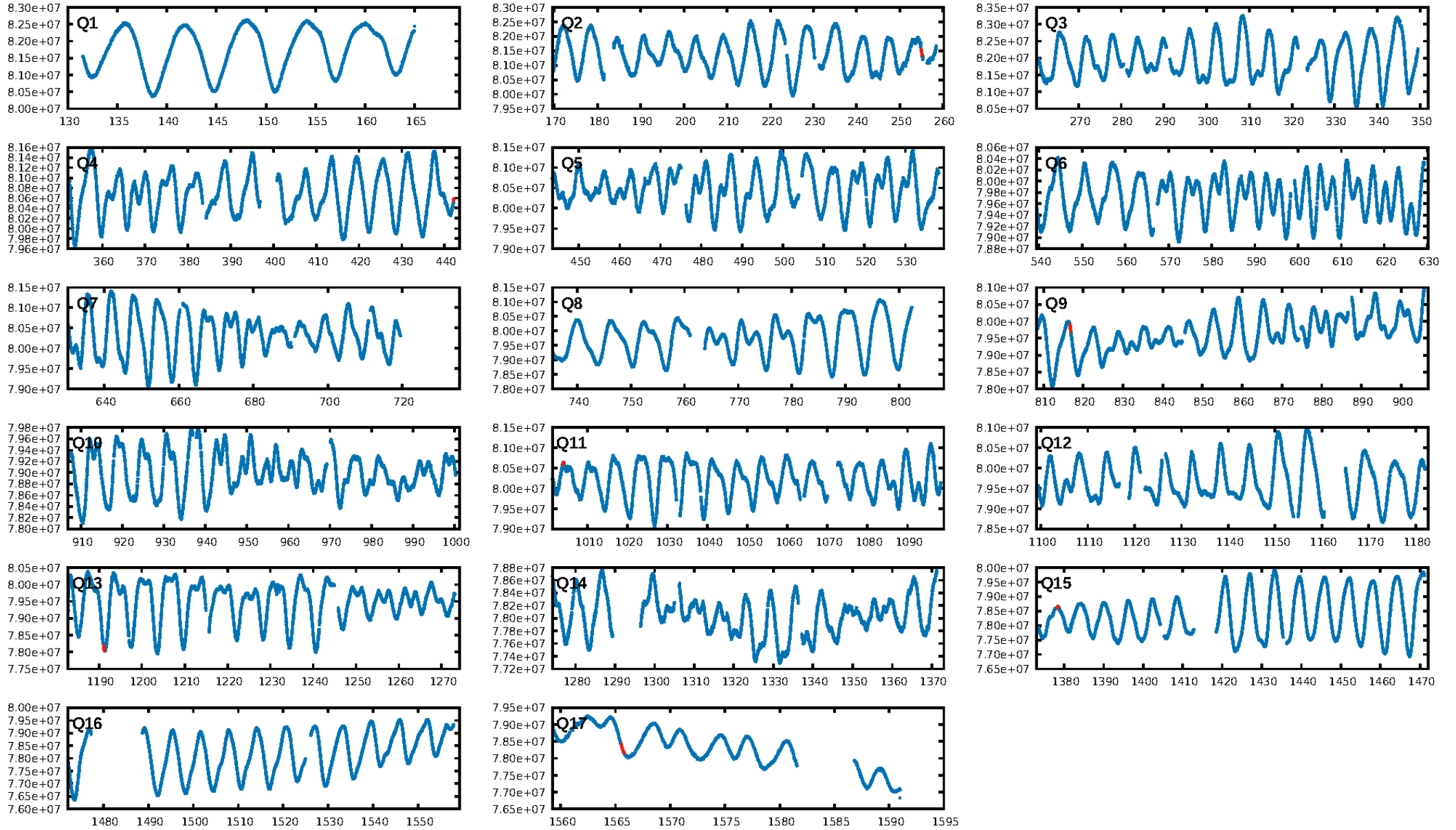
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [569.37 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 1.5%
ModelChiSquareGof-sig: 95.6%
Bootstrap-pfa: 8.69e-15
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.918
Centroid-sig: 19.0%
Centroid-so: 0.252 arcsec [1.16 σ]
OotOffset-rm: 0.343 arcsec [0.41 σ]
OotOffset-st: 0/1/0/3 [4]
KicOffset-rm: 0.254 arcsec [0.33 σ]
KicOffset-st: 0/1/0/3 [4]
DiffImageQuality-fgm: 0.50 [2/4]
DiffImageOverlap-fno: 0.00 [0/5]

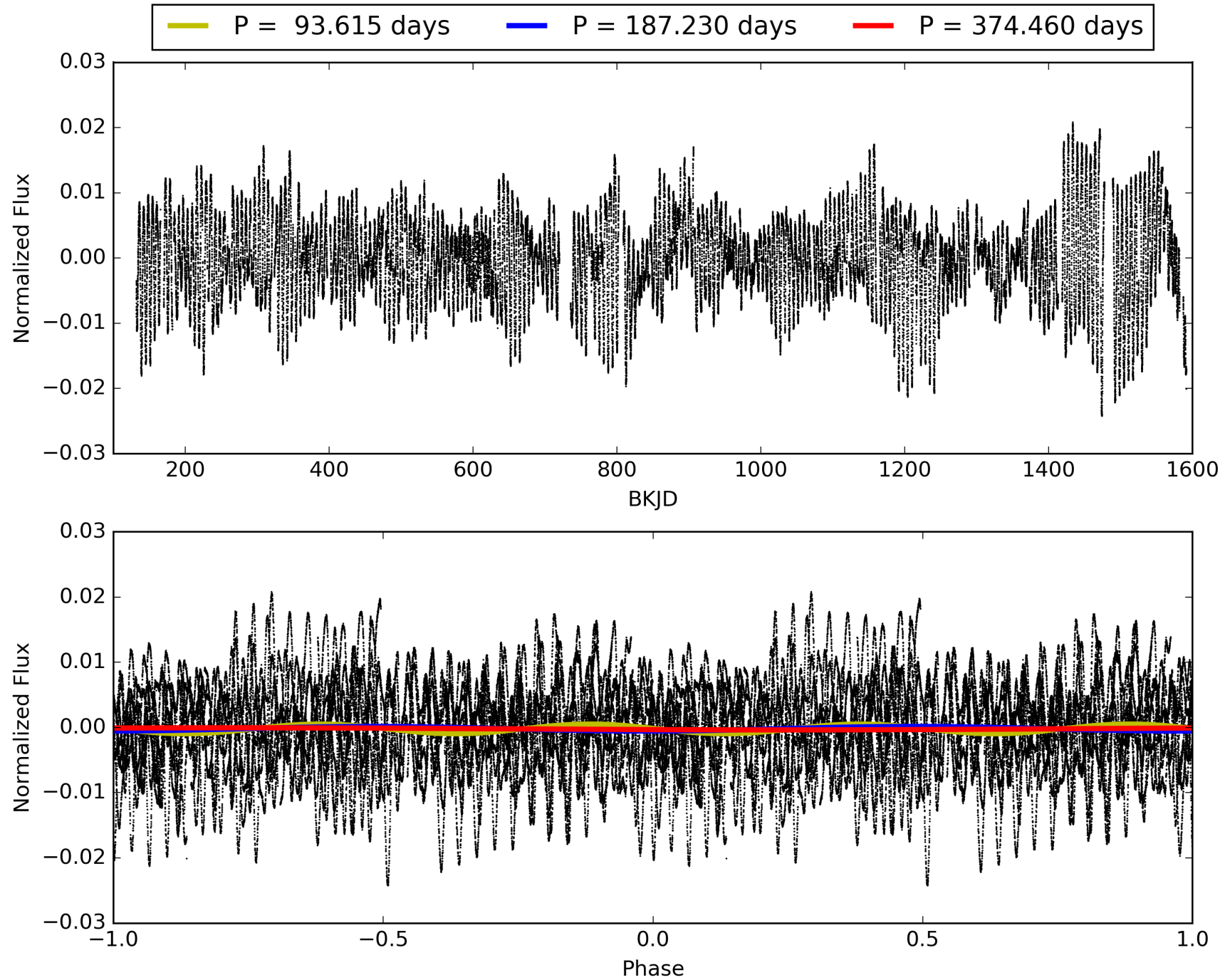
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 11:31:47 Z

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

TCE 007696284-02, PDC Light Curves

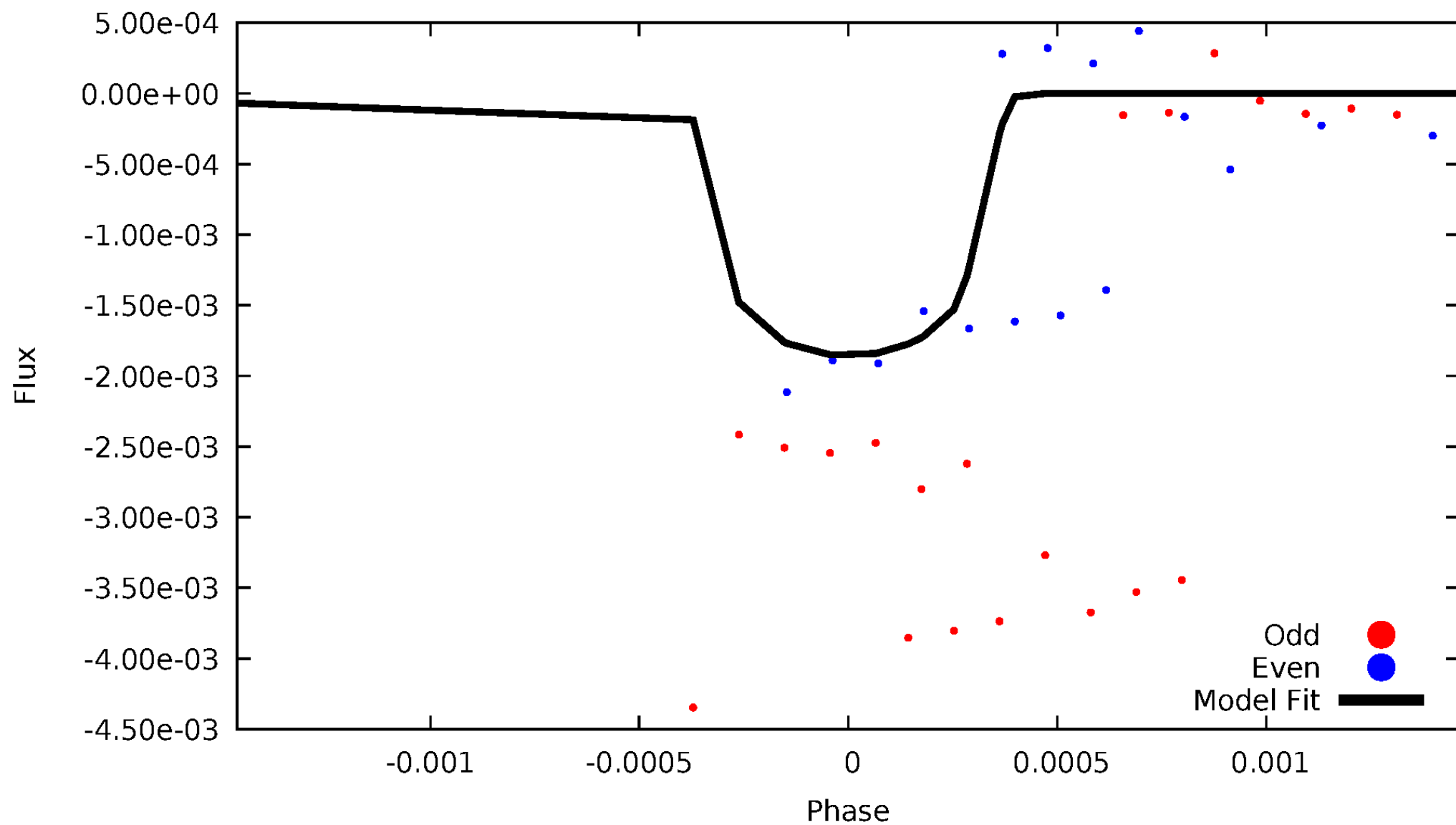


TCE 007696284-02



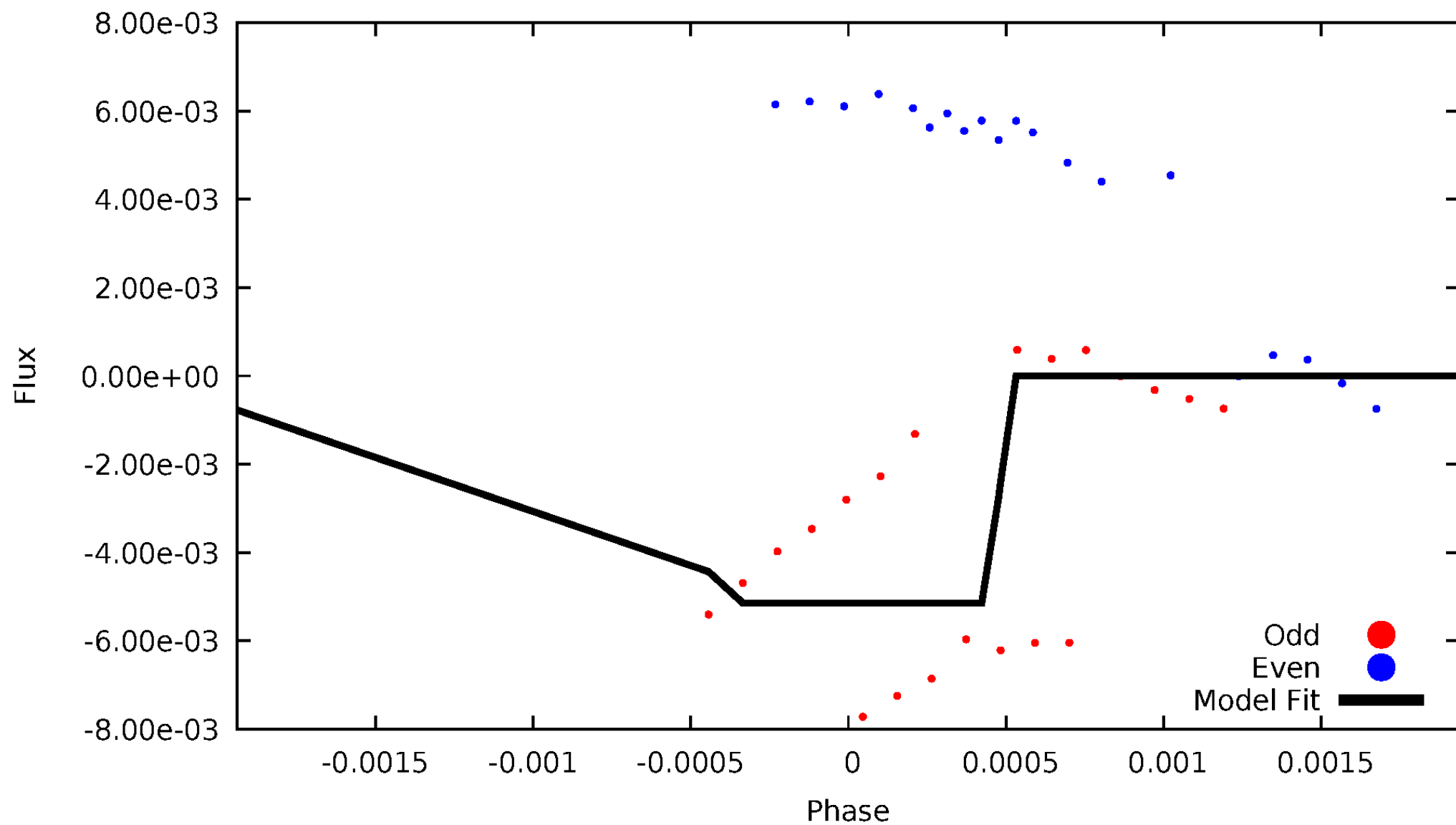
DV Odd/Even

TCE 007696284-02



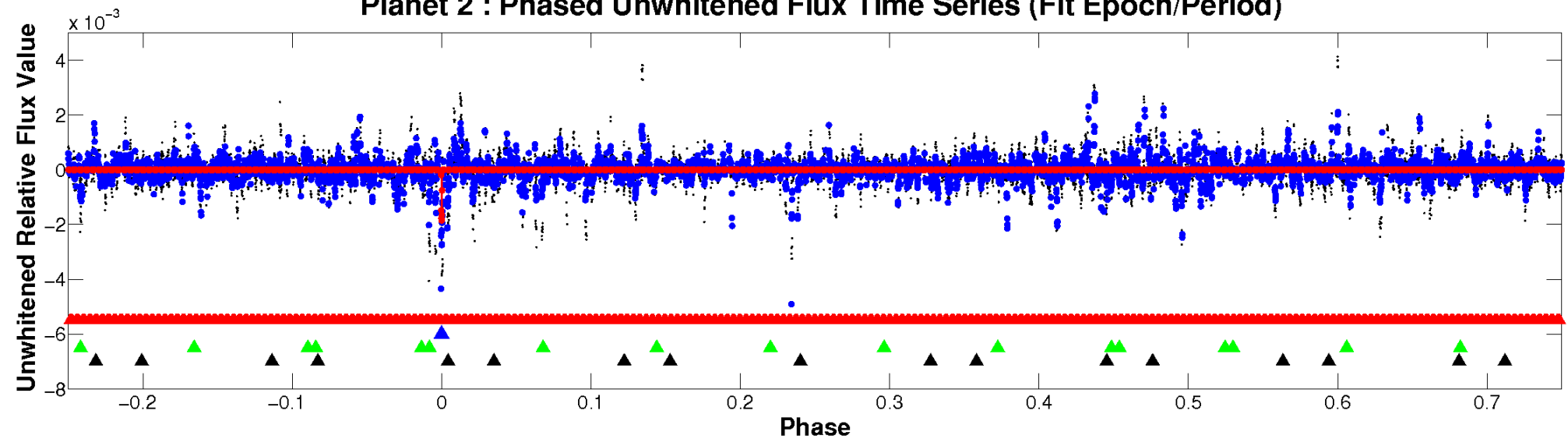
ALT Odd/Even

TCE 007696284-02

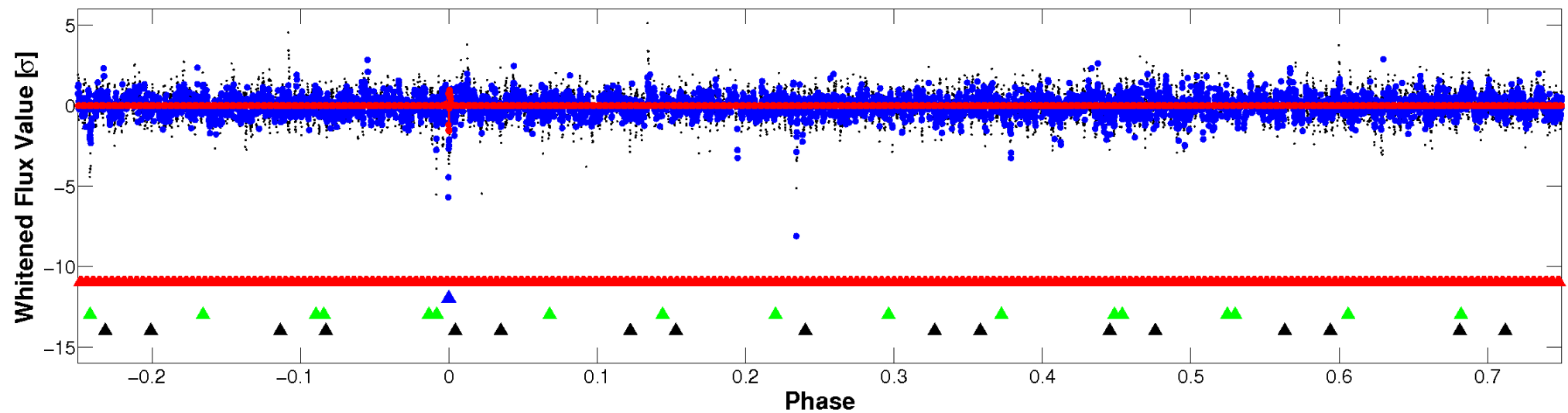


Non-Whitened Vs. Whitened Light Curve

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

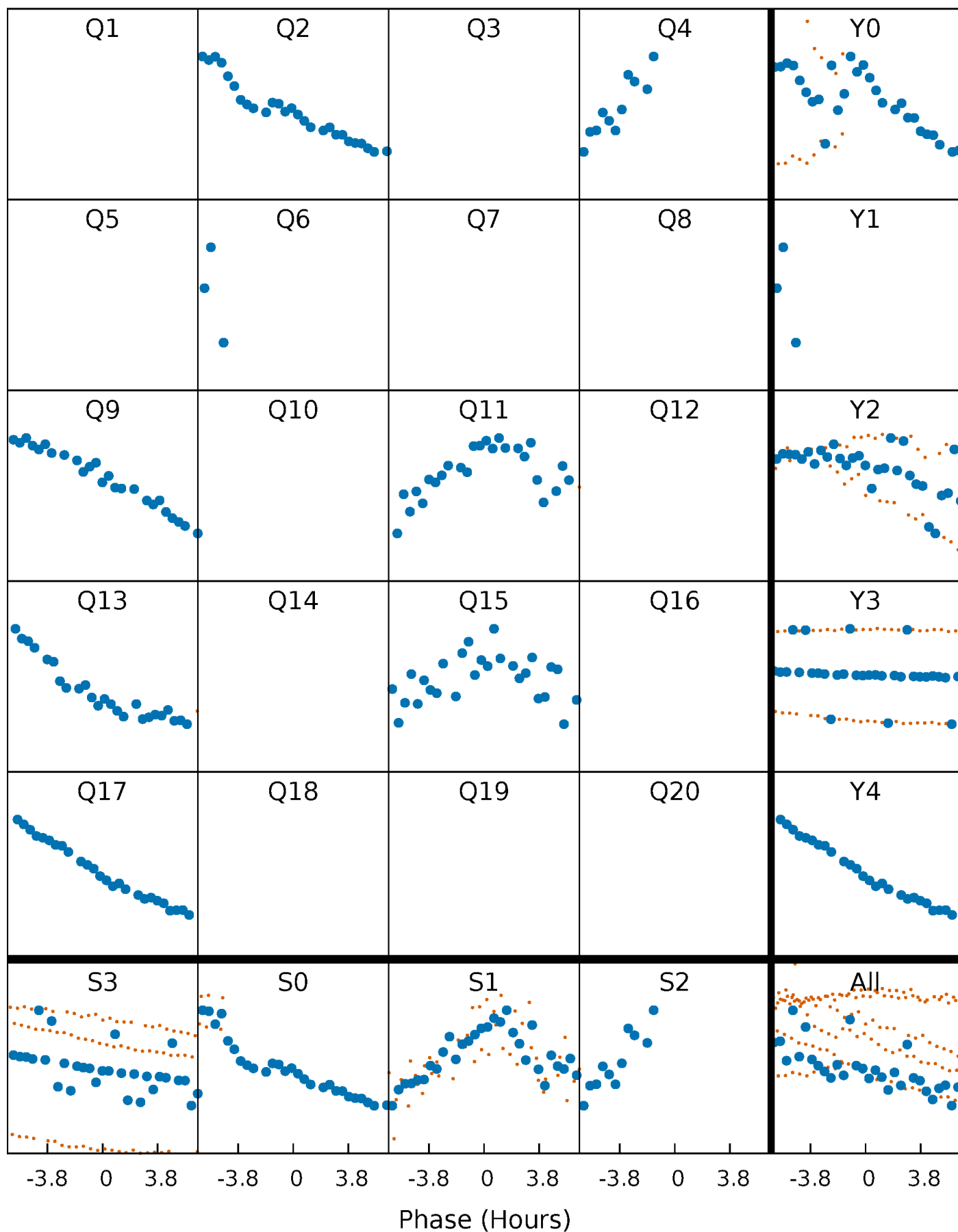


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



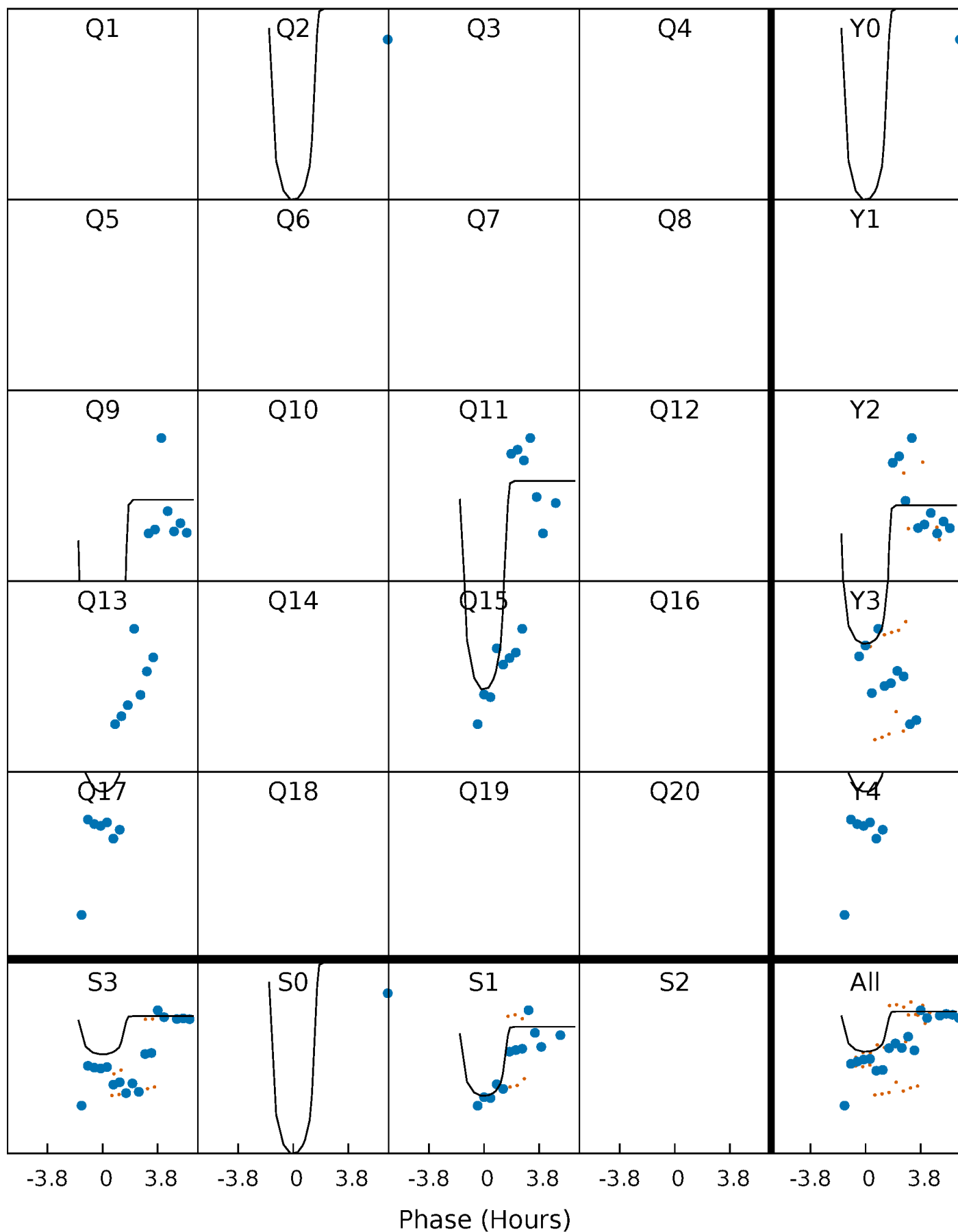
PDC Quarter-Phased Transit Curves

TCE 007696284-02 P=187.230177 Days $T_0=255.038931$ (BKJD)



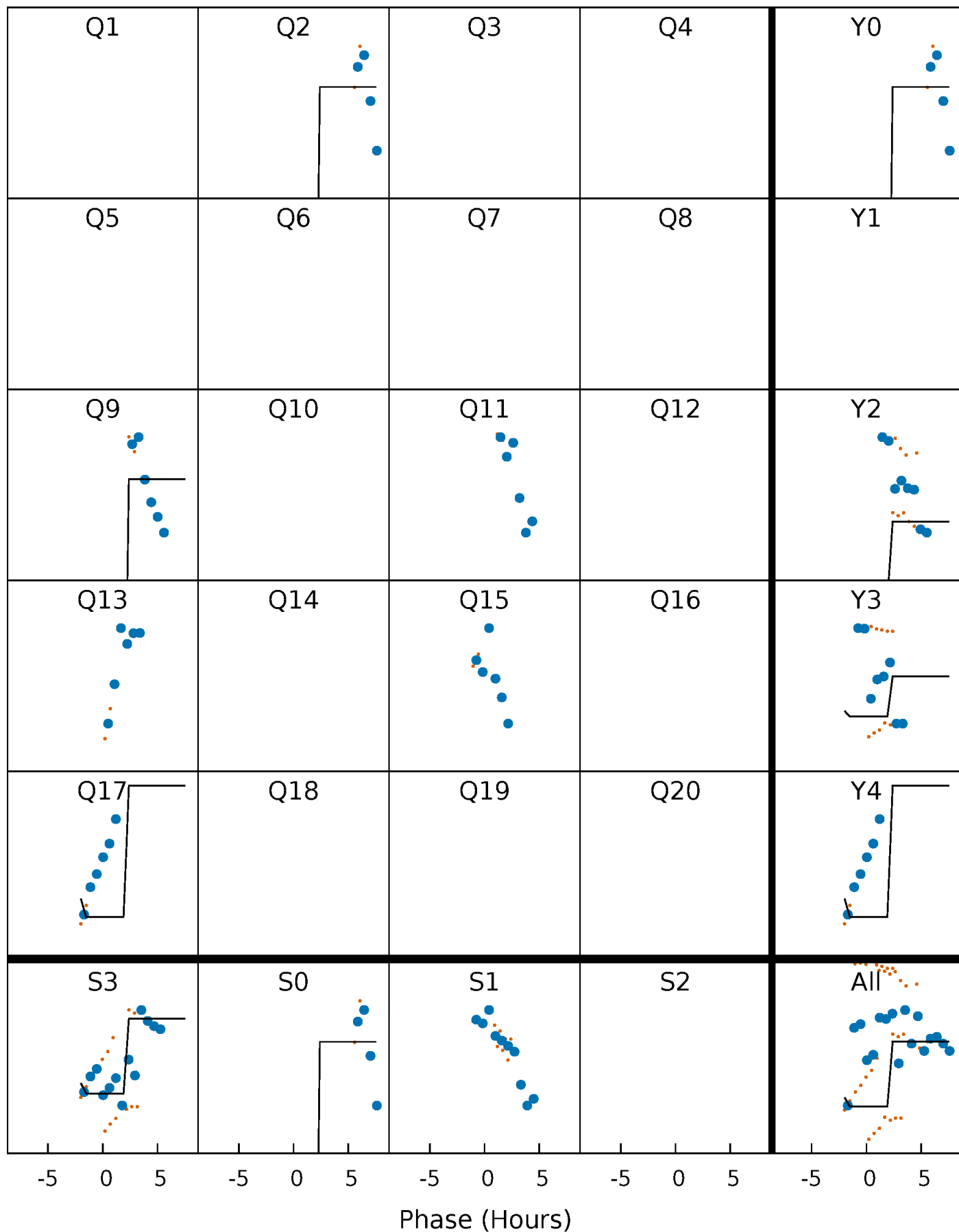
DV Quarter-Phased Transit Curves

TCE 007696284-02 P=187.230177 Days $T_0=255.038931$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

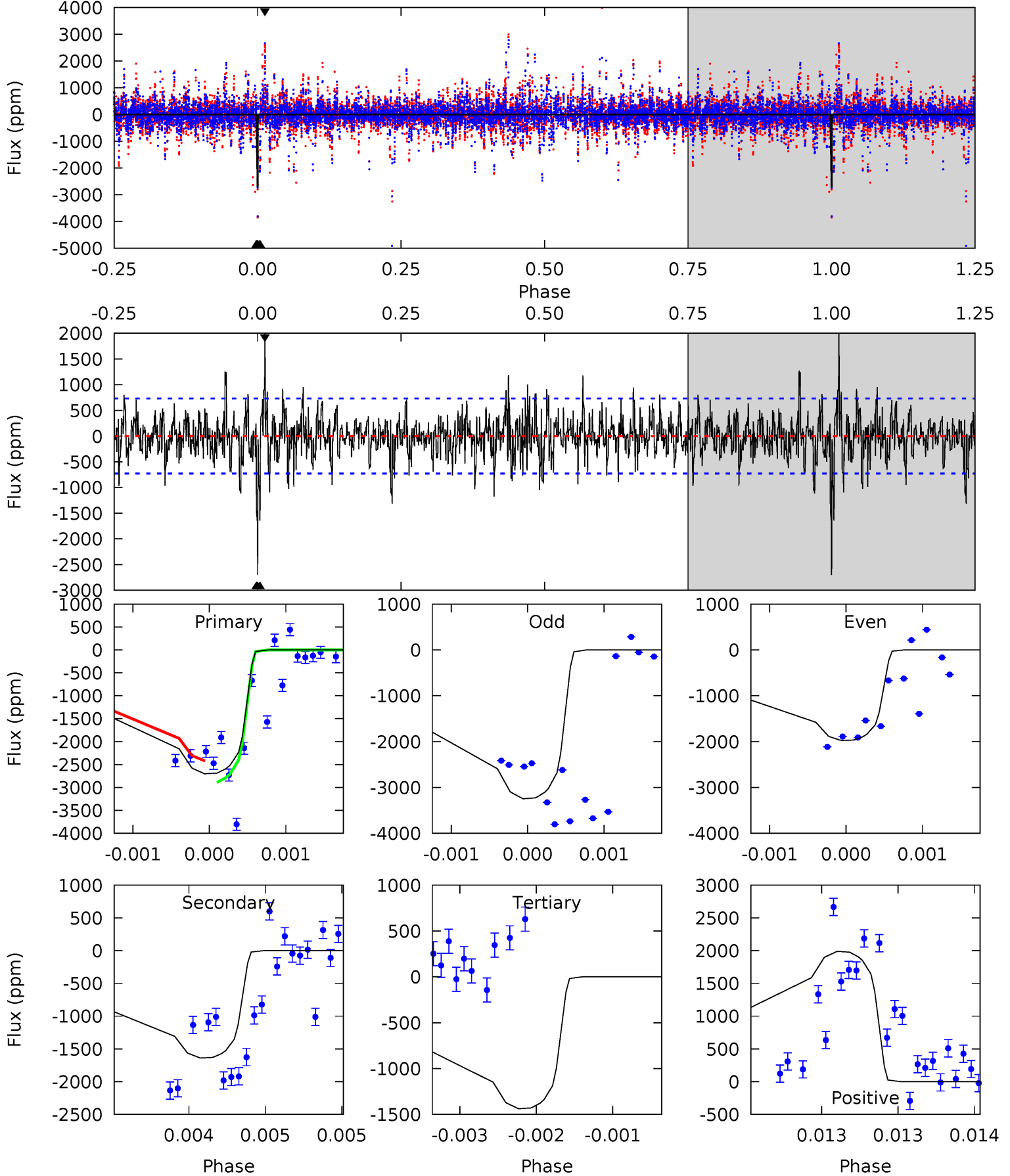
TCE 007696284-02 P=187.227818 Days $T_0=255.068933$ (BKJD)



DV Model-Shift Uniqueness Test

007696284-02, P = 187.230177 Days, E = 67.808754 Days

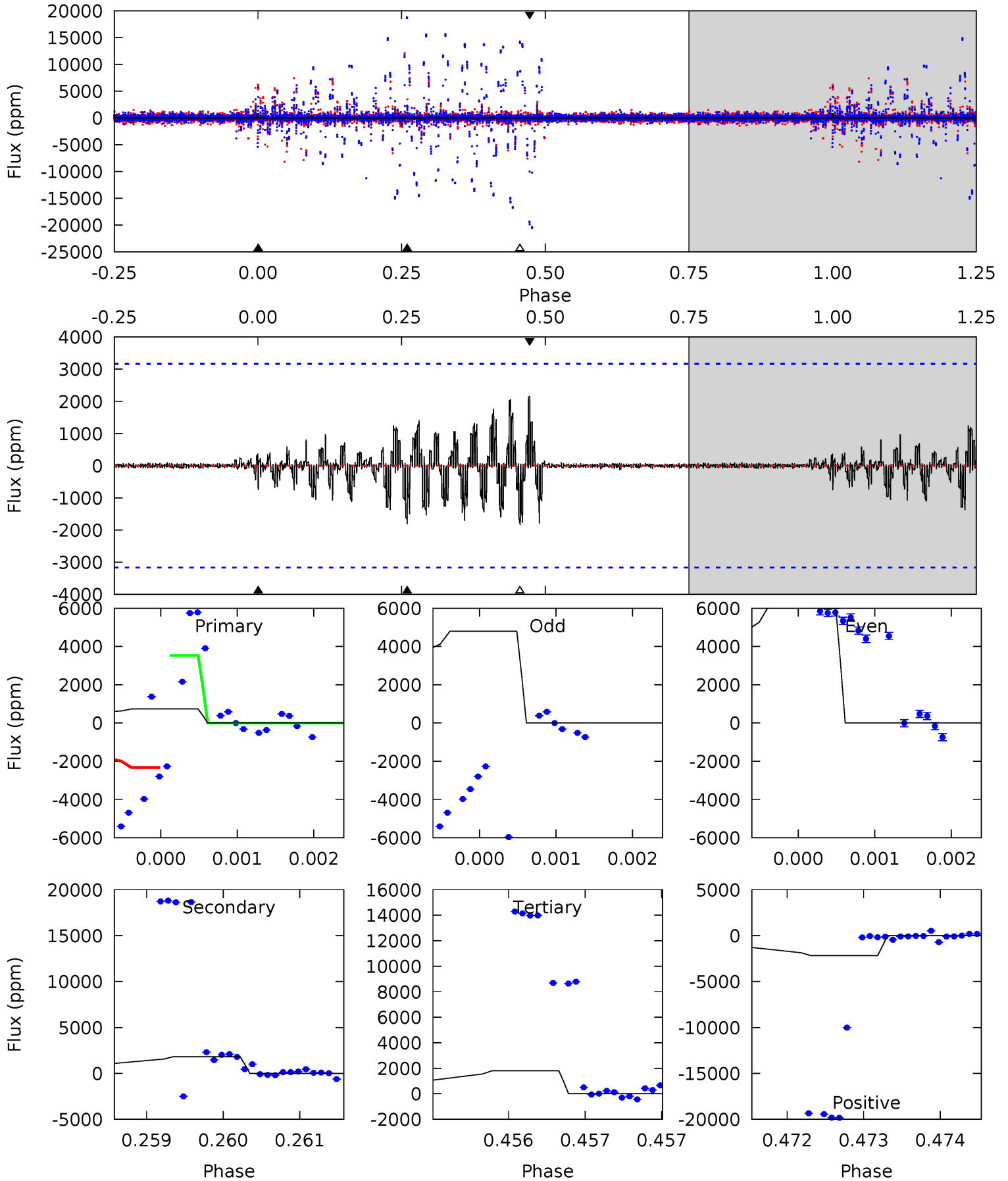
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.5	12.4	10.9	15.0	5.52	3.41	2.21	9.57	5.41	1.52	-2.64	4.77	1.09	0.42	1.67



Alt Model-Shift Uniqueness Test

007696284-02, P = 187.227818 Days, E = 67.841115 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.27	3.14	3.12	3.75	5.48	3.33	0.50	-1.85	-2.48	0.02	-0.61	1.20	0.29	0.54	1.12



Stellar Parameters For KIC 007696284

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5680^{+152}_{-152}	$4.359^{+0.195}_{-0.214}$	$-0.380^{+0.300}_{-0.250}$	$0.977^{+0.290}_{-0.194}$	$0.795^{+0.124}_{-0.053}$	$1.202^{+1.139}_{-0.616}$
	+3%/-3%	+4%/-5%	+79%/-66%	+30%/-20%	+16%/-7%	+95%/-51%
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 007696284-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1639 ± 132	$8.42^{+8.55}_{-5.65}$	450^{+39}_{-30}	4294^{+3027}_{-890}	4634^{+36616}_{-3488}
Alt.	-1815 ± 578	$10.81^{+9.02}_{-6.97}$	449^{+37}_{-31}	3998^{+2253}_{-769}	3066^{+23145}_{-2250}

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

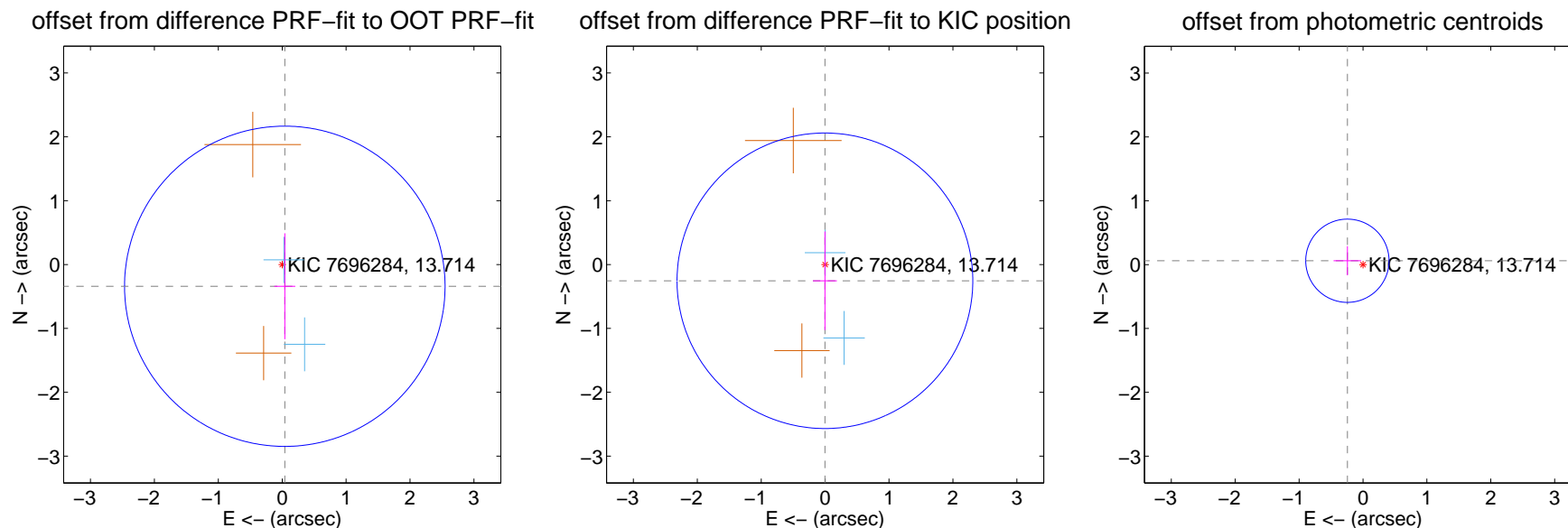
DV Centroid Data

Supplemental centroid analysis for 007696284-02. Kepler magnitude: 13.71. Transit SNR 5.92

There are 2 quarters with good PRF difference image offsets

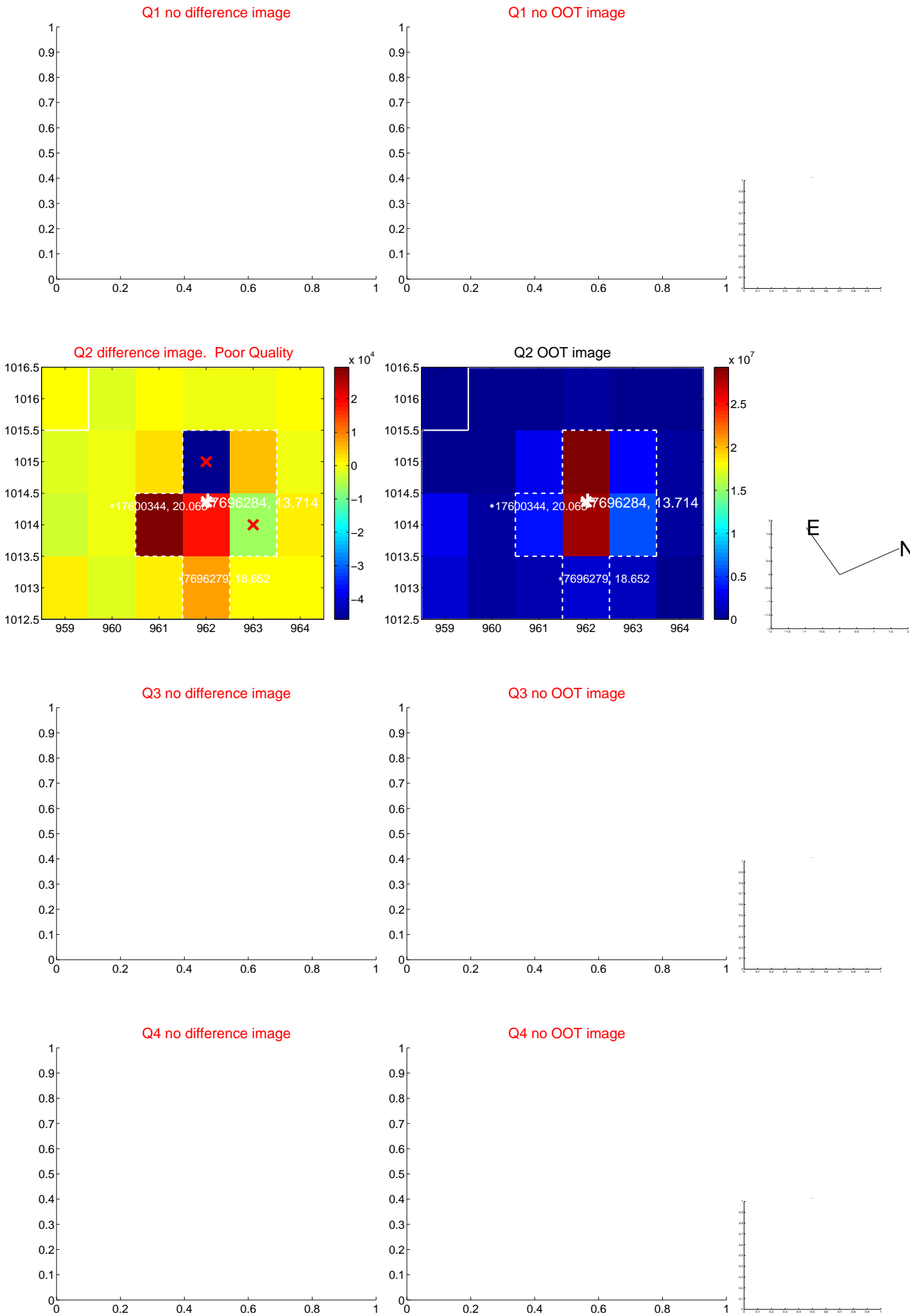
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.343 ± 0.836	0.41	-0.041 ± 0.164	-0.340 ± 0.829
PRF-fit source offset from KIC position	0.254 ± 0.771	0.33	0.003 ± 0.187	-0.254 ± 0.771
photometric centroid source offset	0.25 ± 0.22	1.16	0.24 ± 0.22	0.06 ± 0.23

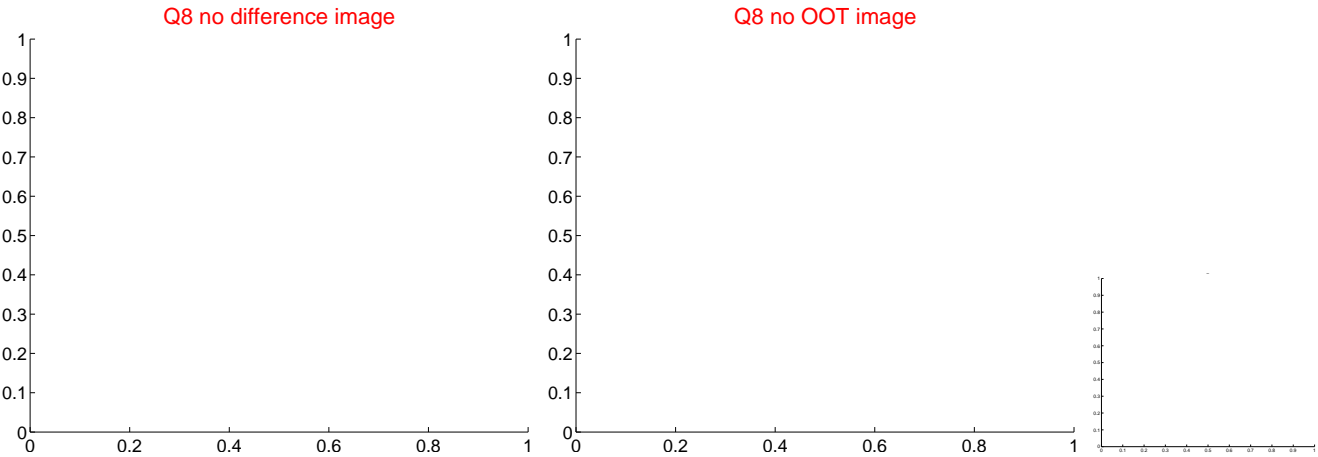
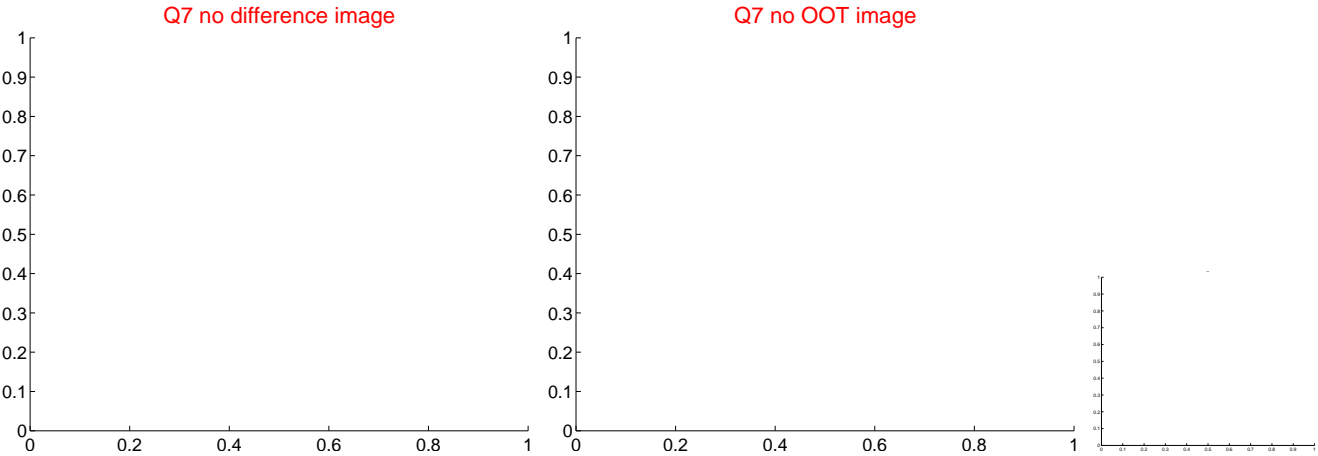
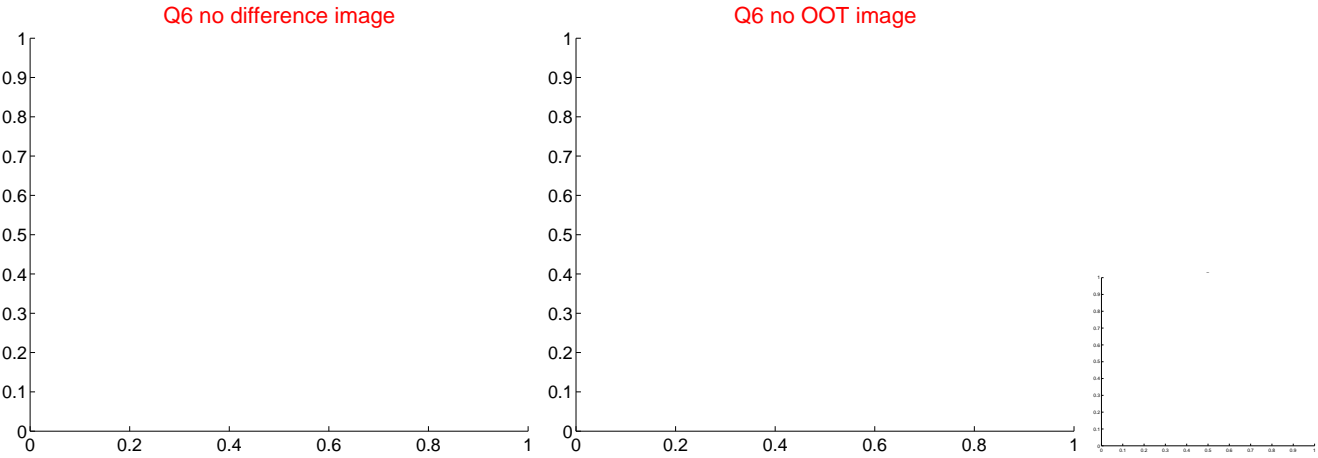
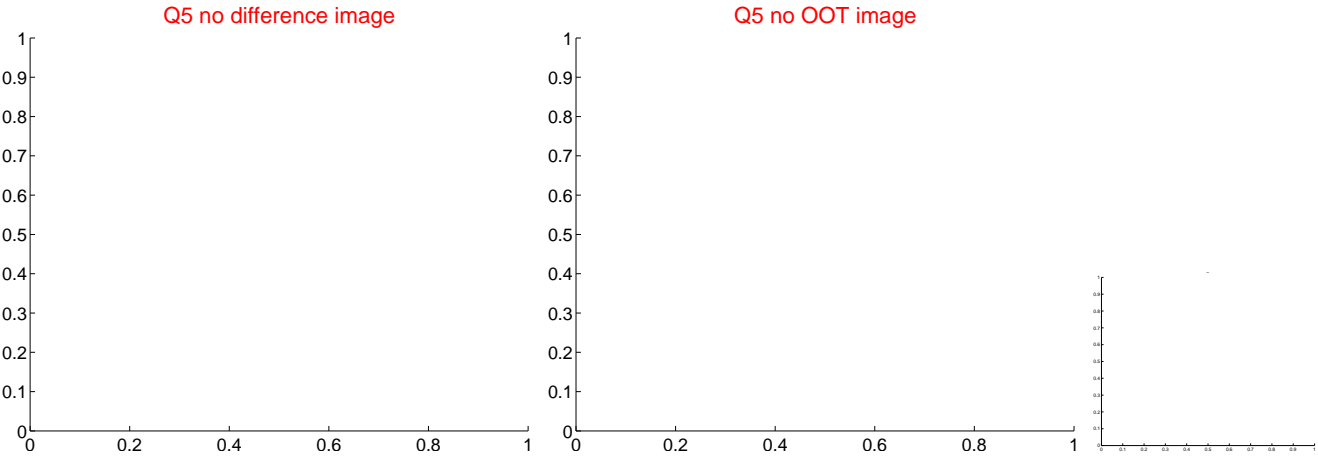


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

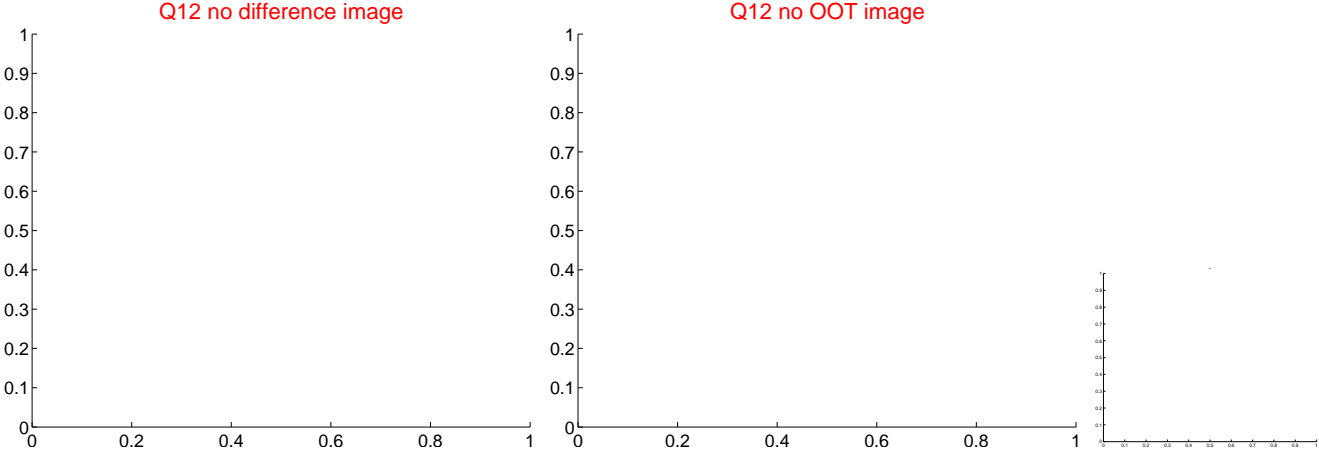
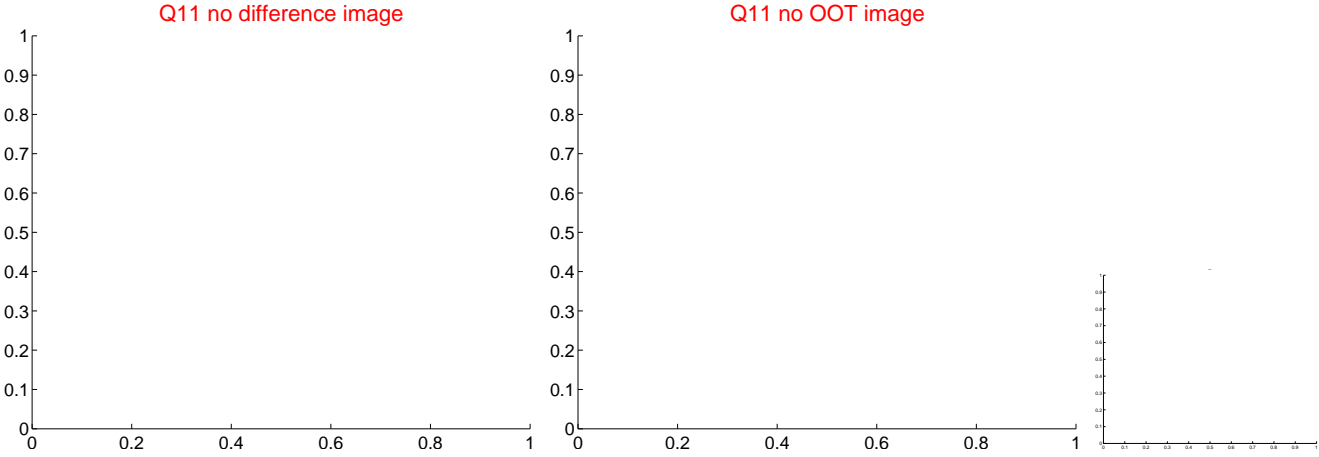
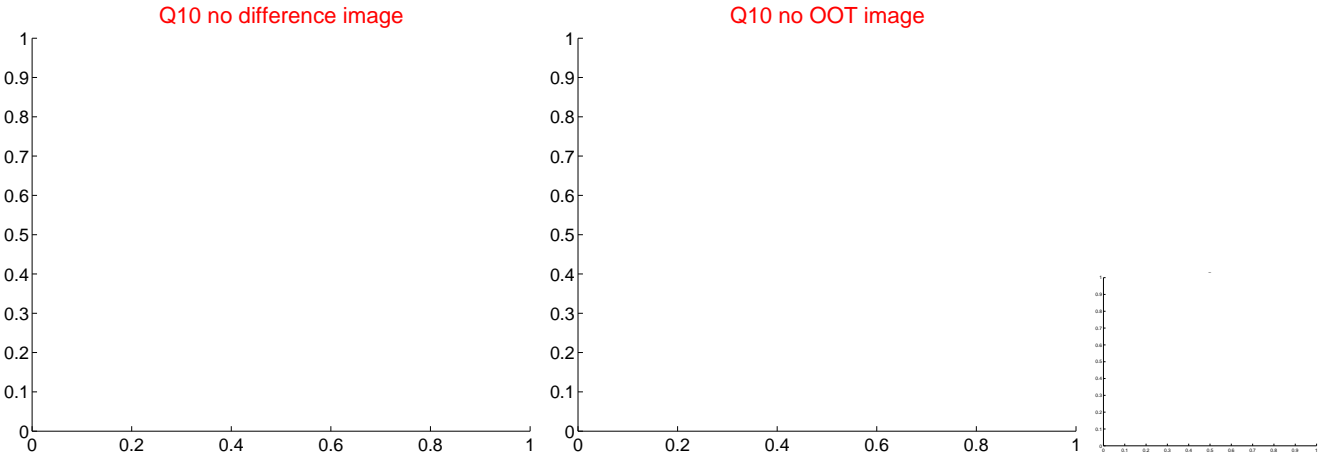
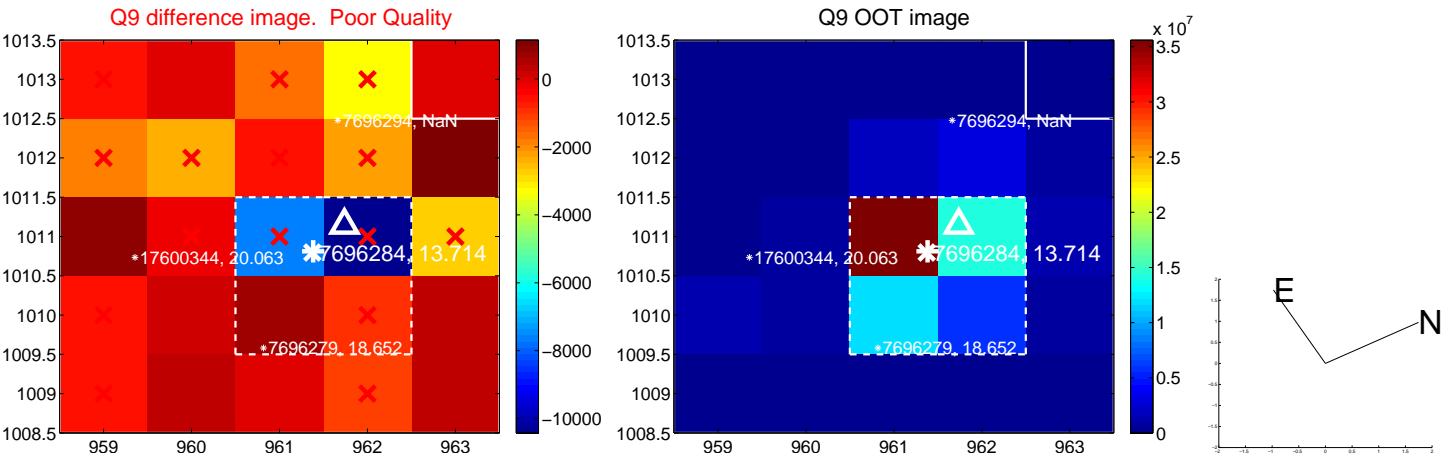
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



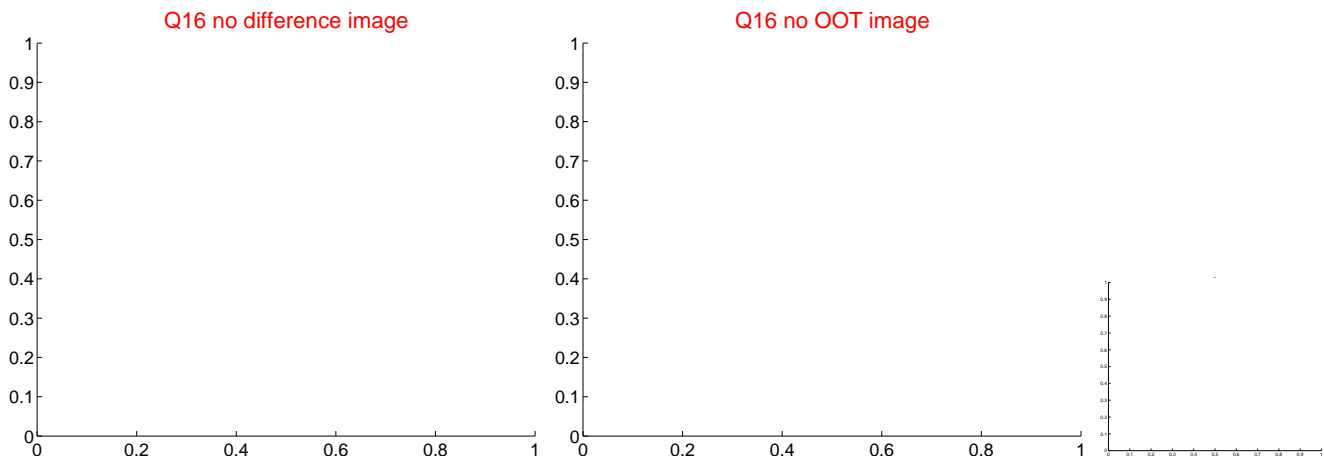
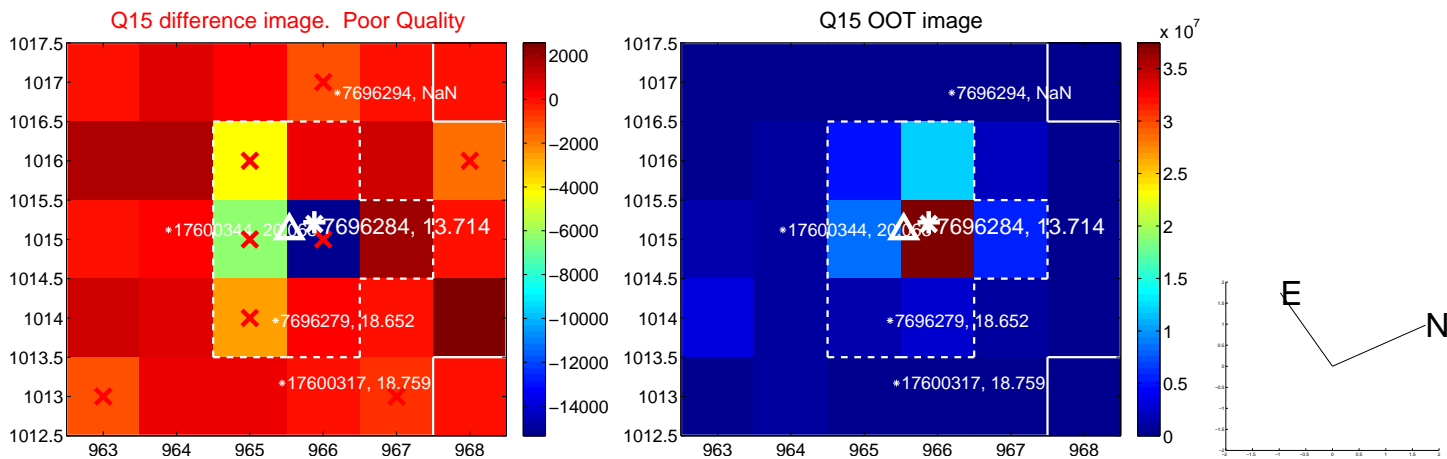
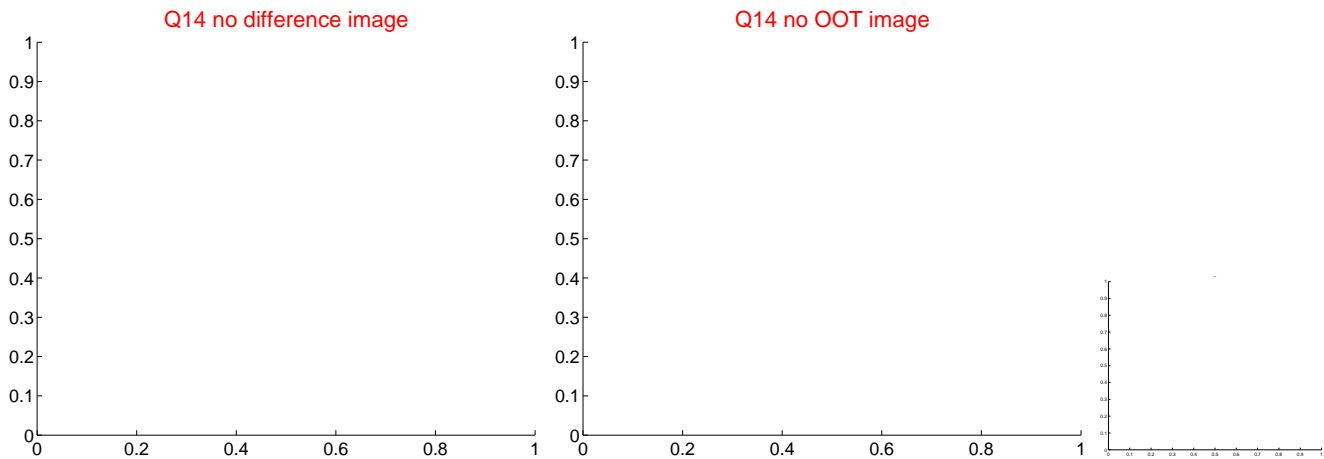
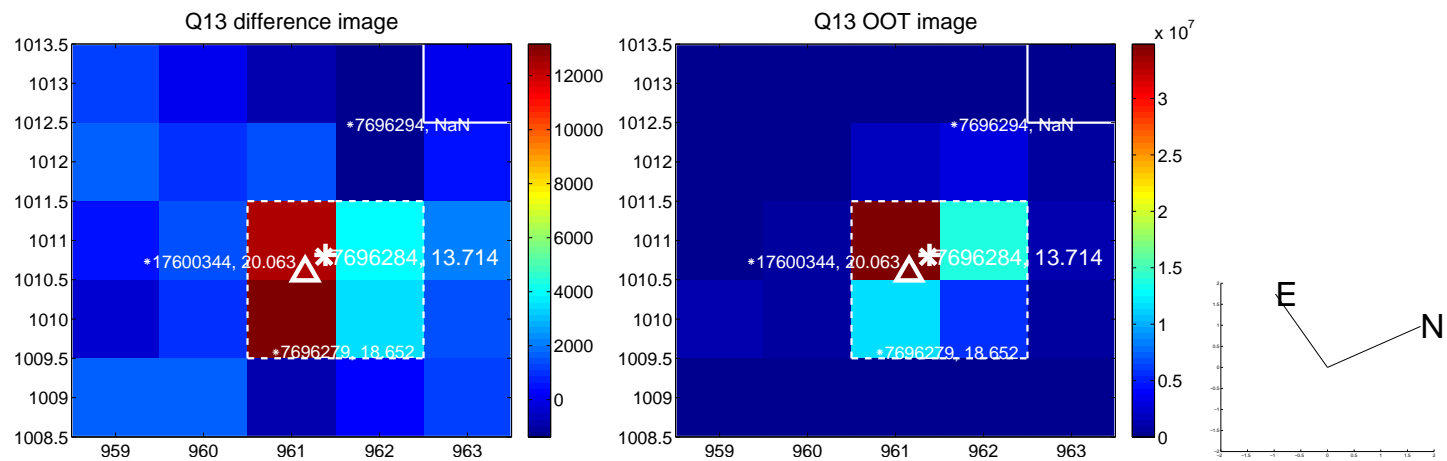
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



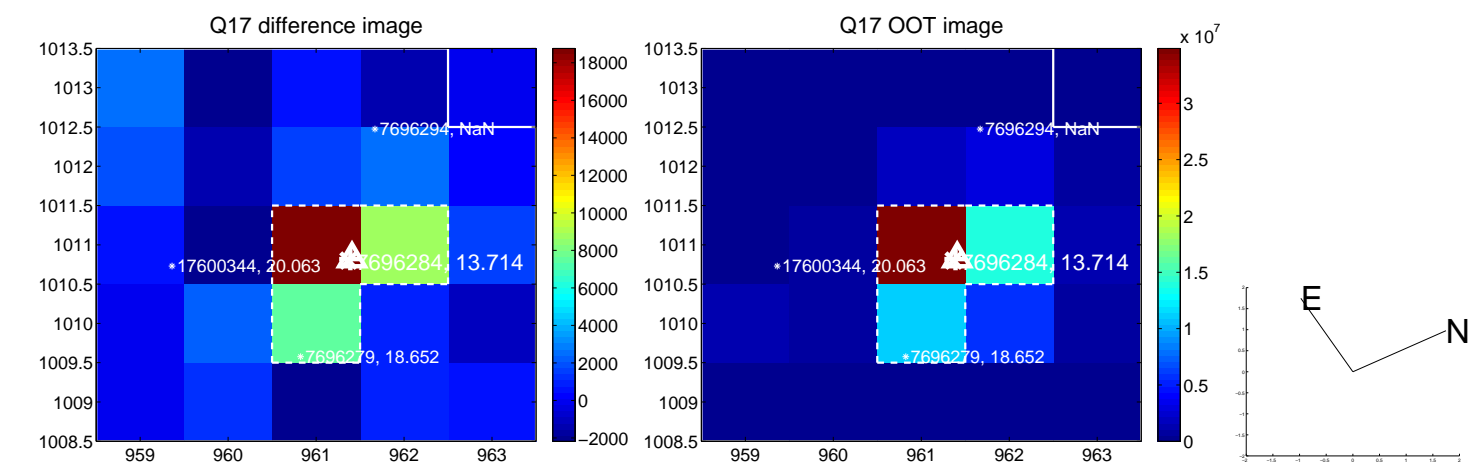
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



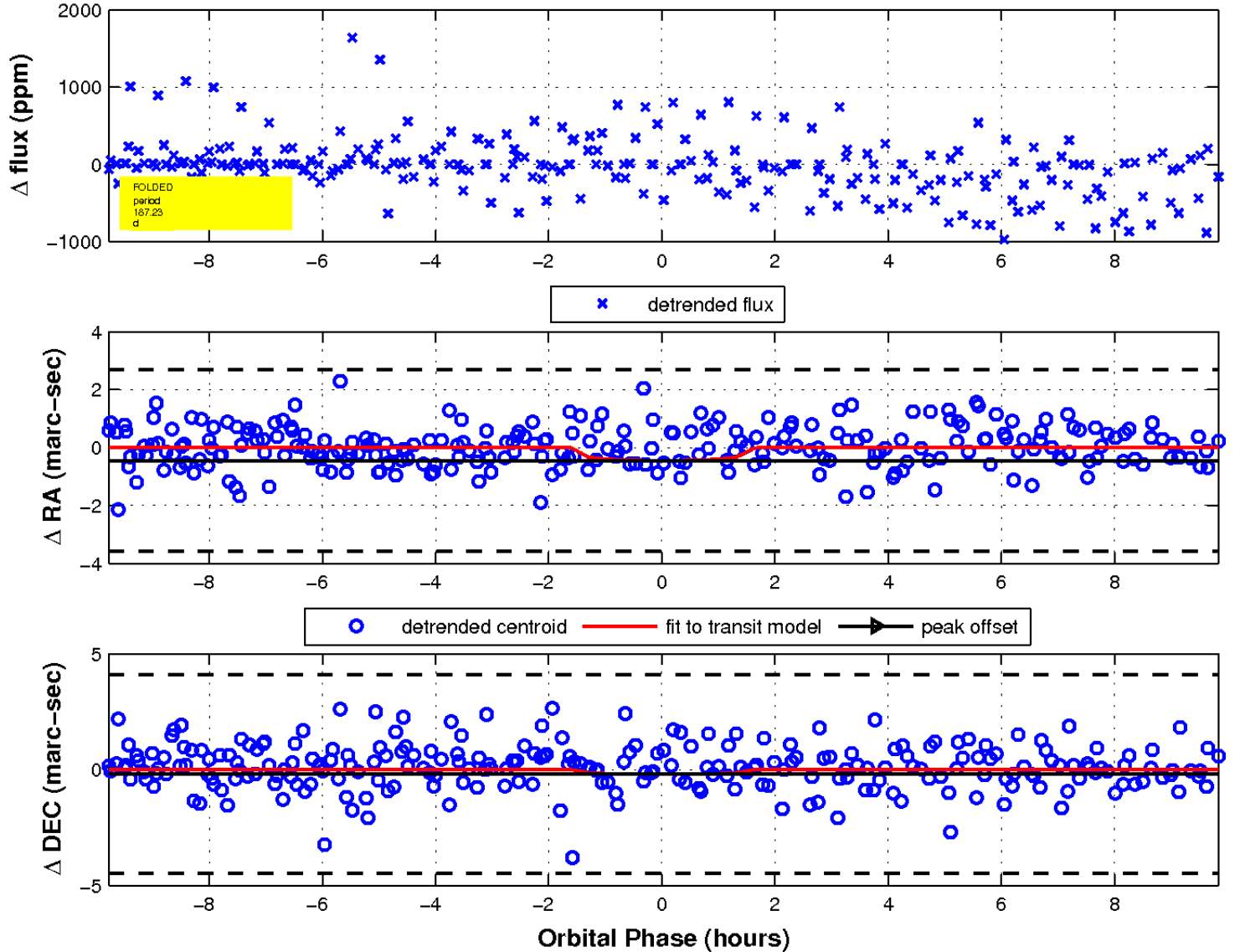
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



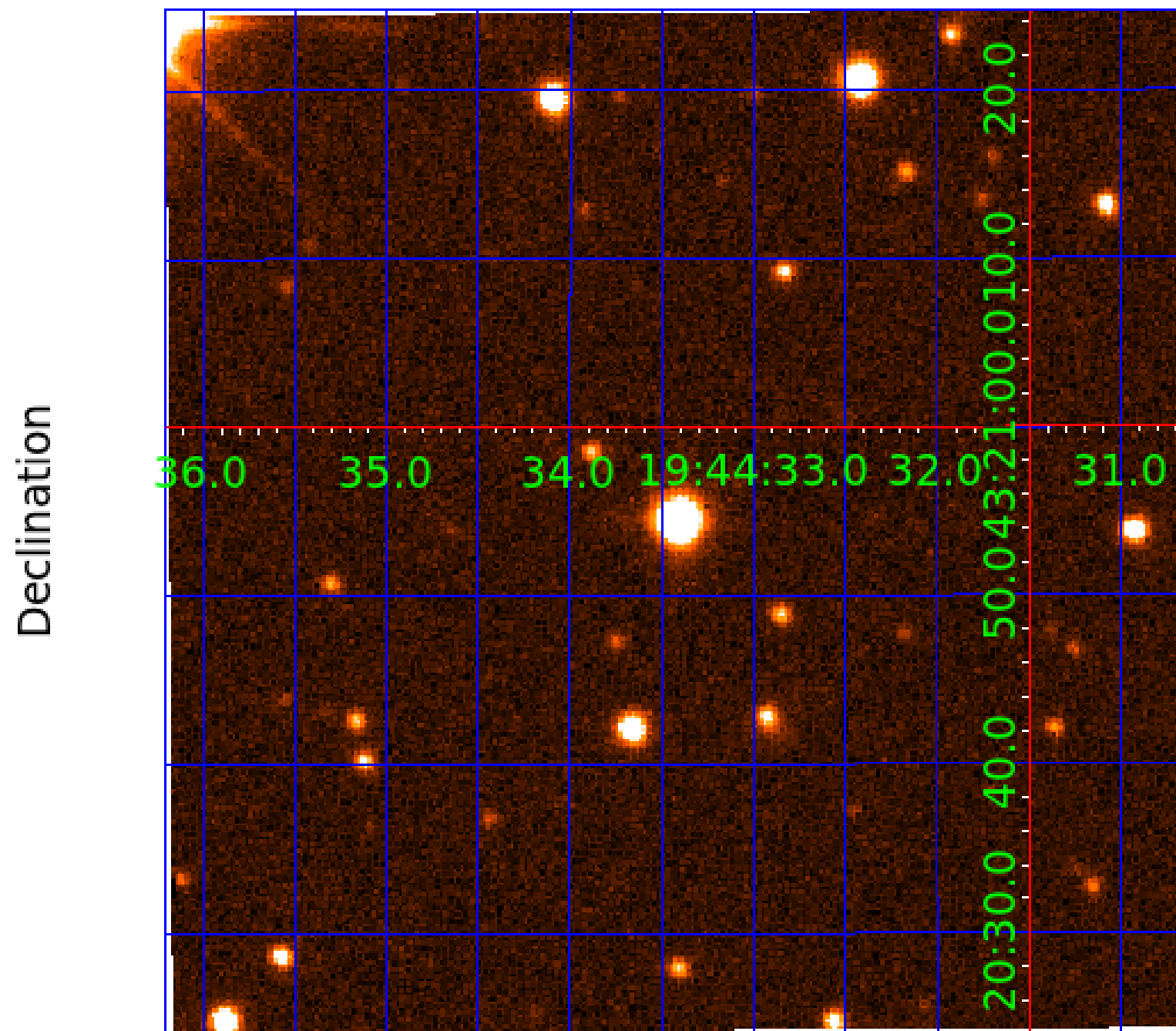
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 2 of 4



UKIRT Image



KIC 007696284

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})
007696284-01	OBS	No	0.783185	132.022574	13.5	4.892	8.0	4.1	0.98	5680	0.39	3747.41
007696284-02	OBS	No	187.230177	255.038931	1856.0	3.285	10.7	5.9	0.98	5680	4.57	2.53
007696284-03	OBS	No	86.489864	166.039309	1815.3	2.691	11.1	7.0	0.98	5680	4.34	7.07
007696284-04	OBS	No	82.574528	201.115790	1627.2	16.942	8.4	7.0	0.98	5680	7.53	7.52

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007696284-01	OBS	FP	0.00	1	0	0	0	LPP_DV
007696284-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT— MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007696284-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES
007696284-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT— MOD_POS_ALT

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

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

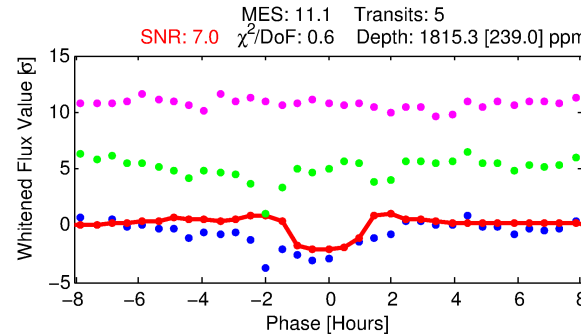
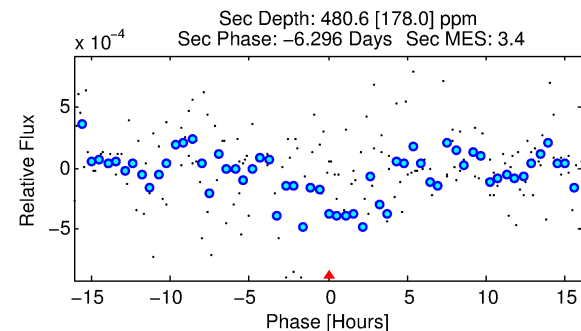
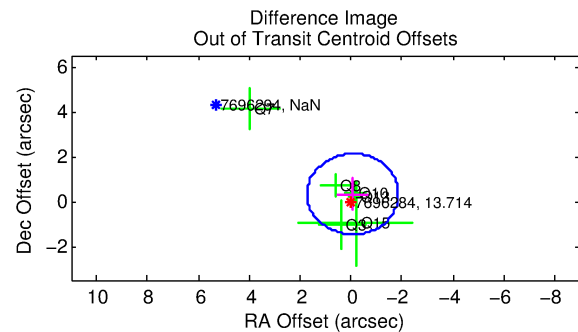
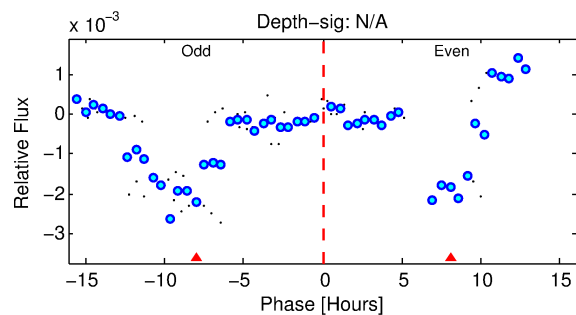
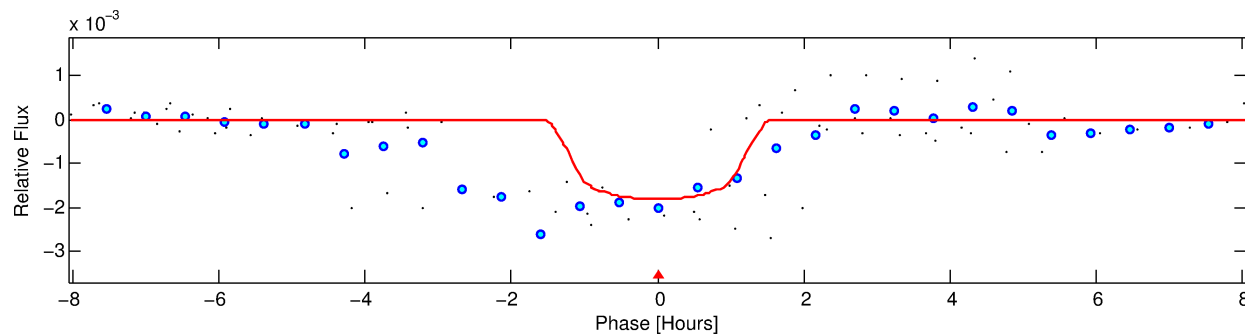
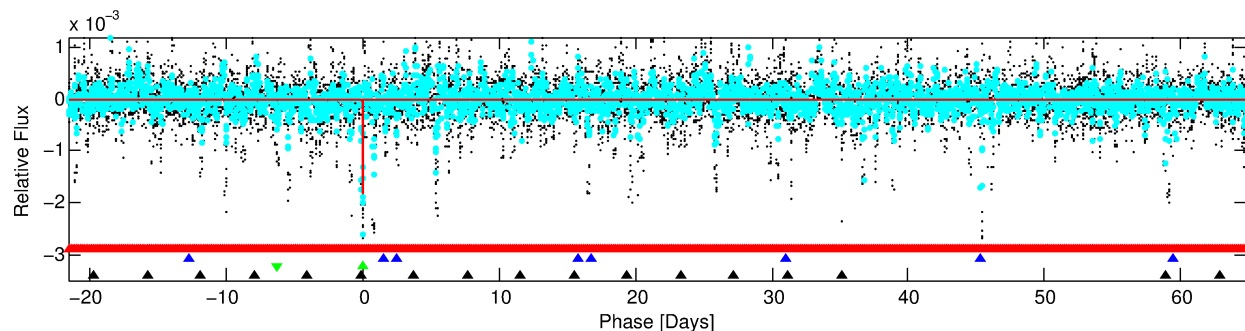
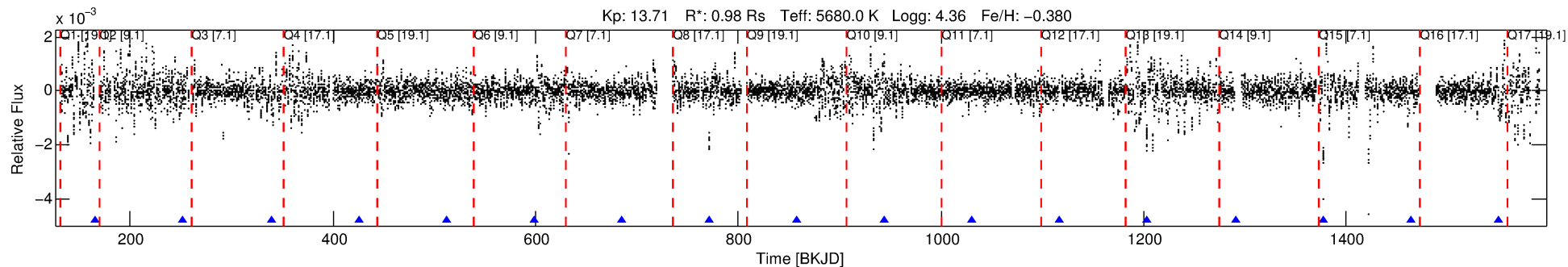
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007696284-03

No Significant Match Found

DV One-Page Summary

KIC: 7696284 Candidate: 3 of 4 Period: 86.490 d



DV Fit Results:

Period = 86.48986 [0.00089] d
Epoch = 166.0393 [0.0101] BKJD
Rp/R* = 0.0407 [0.0518]
a/R* = 209.37 [1189.24]
b = 0.60 [6.18]
Seff = 7.07 [2.82]
Teq = 416 [41] K
Rp = 4.34 [5.67] Re
a = 0.3548 [0.0912] AU
Ag = 1767.76 [4598.40] [0.38σ]
Teff = 4169 [2684] K [1.40σ]

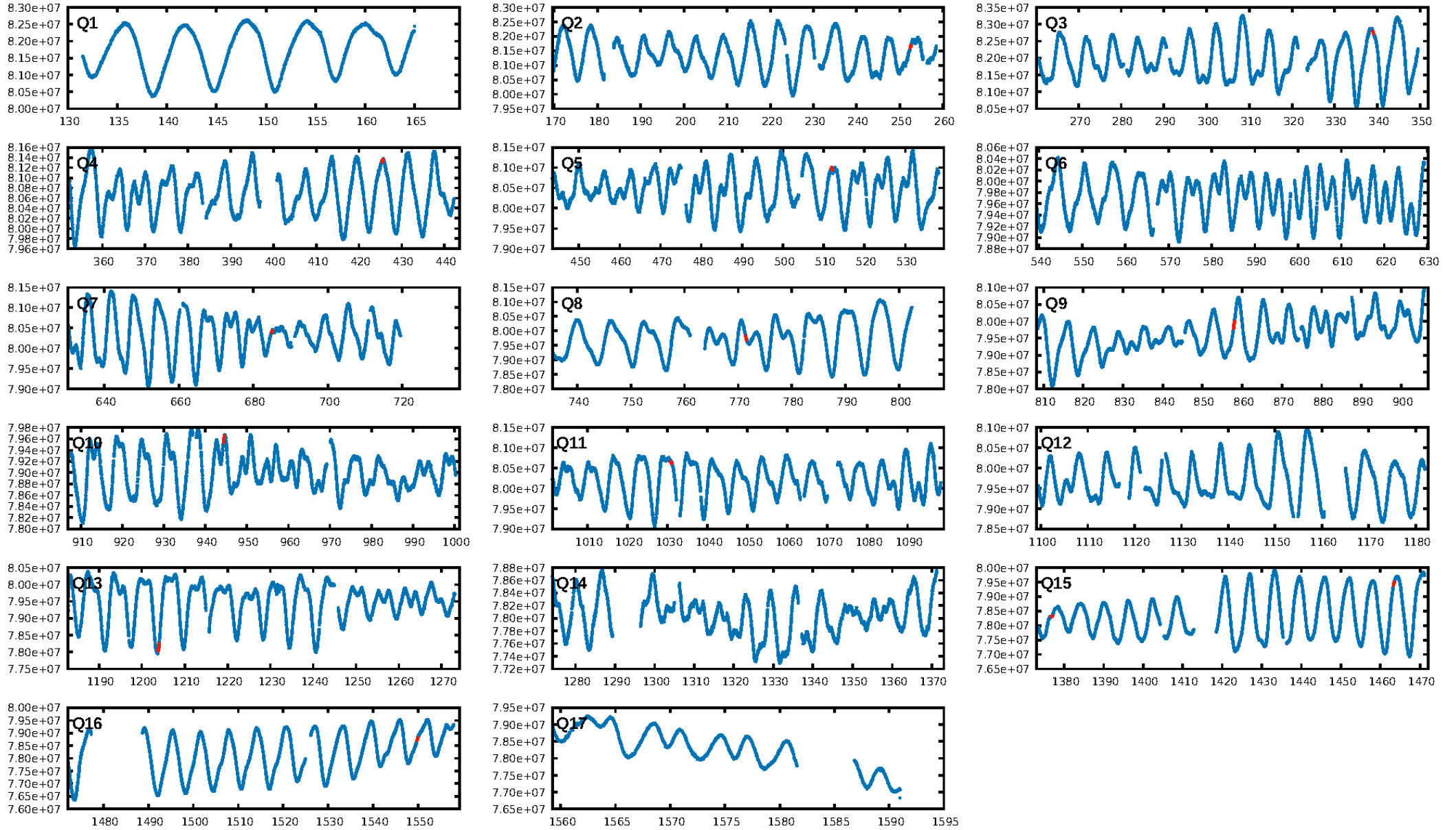
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [5.48σ]
LongPeriod-sig: 100.0% [569.37σ]
ModelChiSquare2-sig: 42.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.63e-31
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 4.099
Centroid-sig: 21.7%
Centroid-so: 0.227 arcsec [1.25σ]
OotOffset-rm: 0.332 arcsec [0.55σ]
OotOffset-st: 1/3/1/1 [6]
KicOffset-rm: 0.391 arcsec [0.66σ]
KicOffset-st: 1/3/1/1 [6]
DiffImageQuality-fgm: 0.50 [3/6]
DiffImageOverlap-fno: 0.00 [0/12]

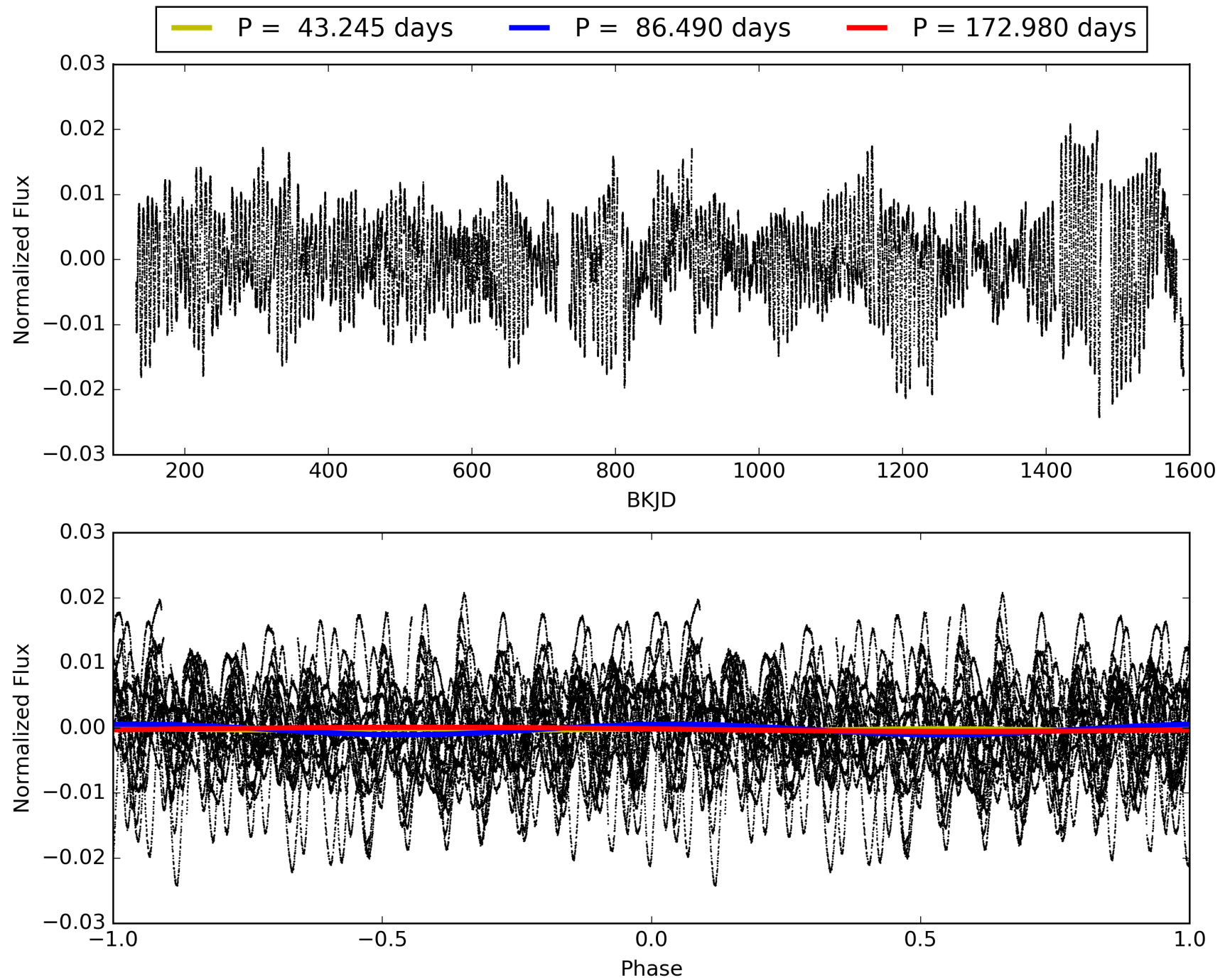
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 11:31:50 Z

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

TCE 007696284-03, PDC Light Curves

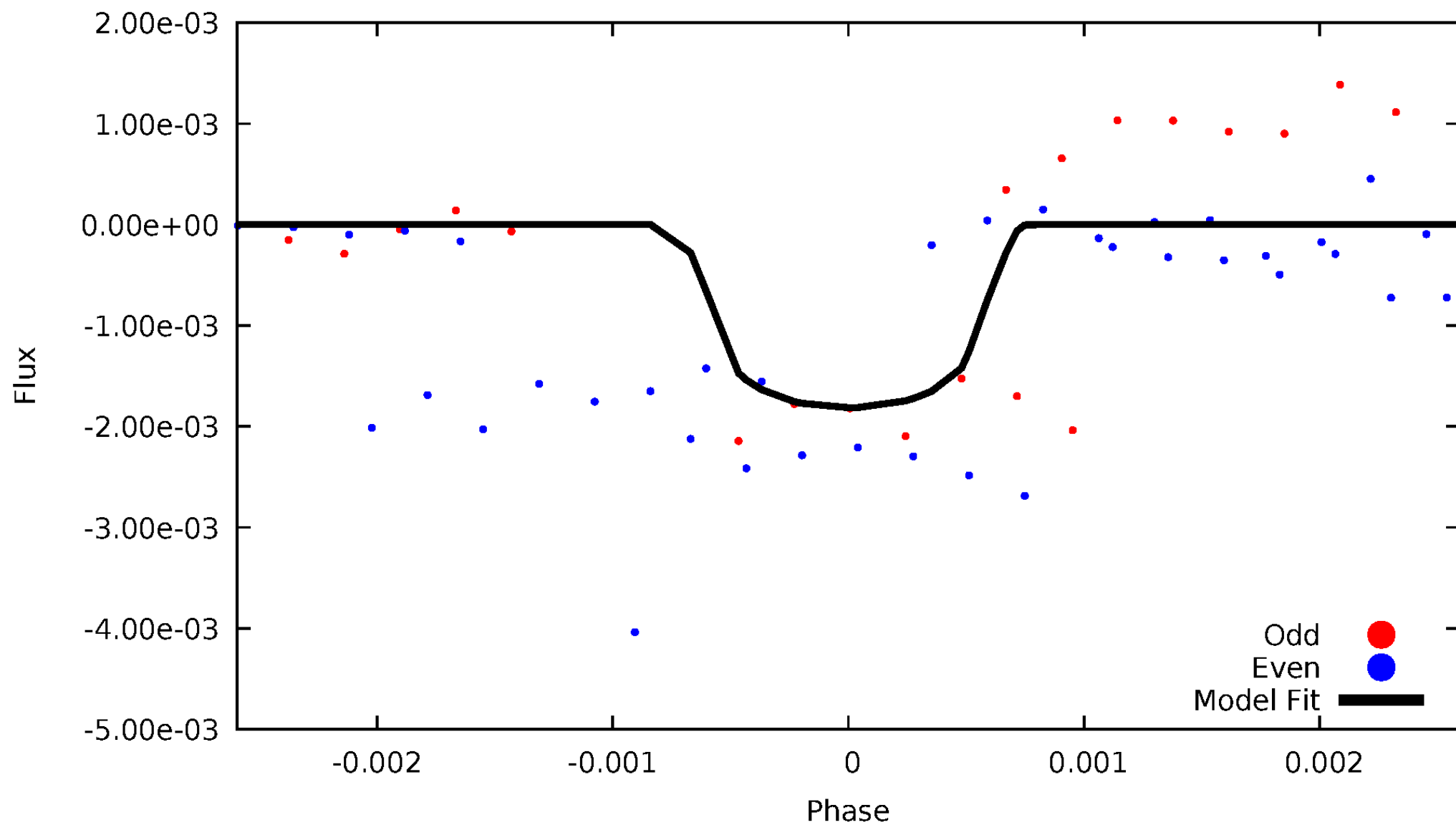


TCE 007696284-03



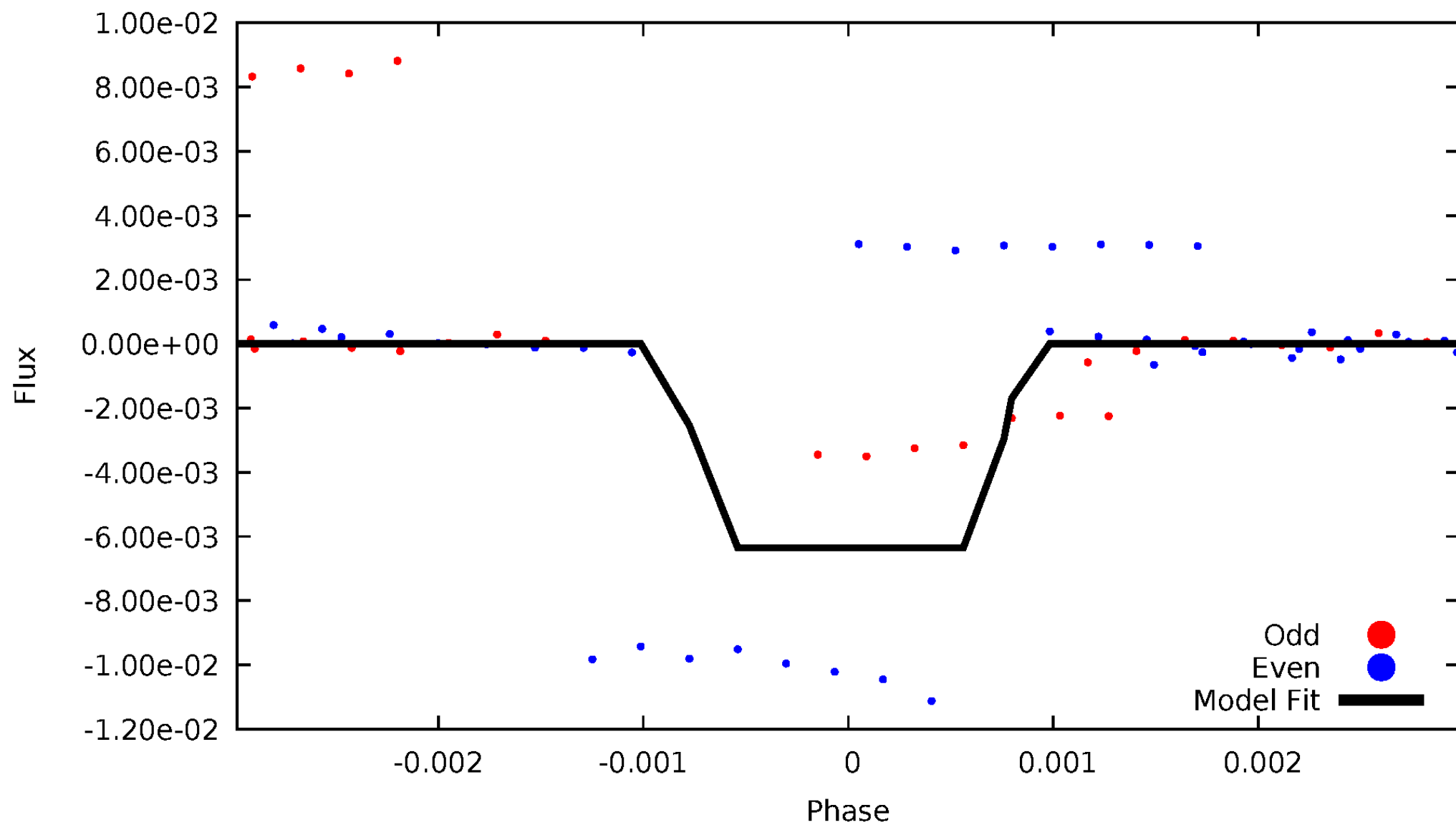
DV Odd/Even

TCE 007696284-03



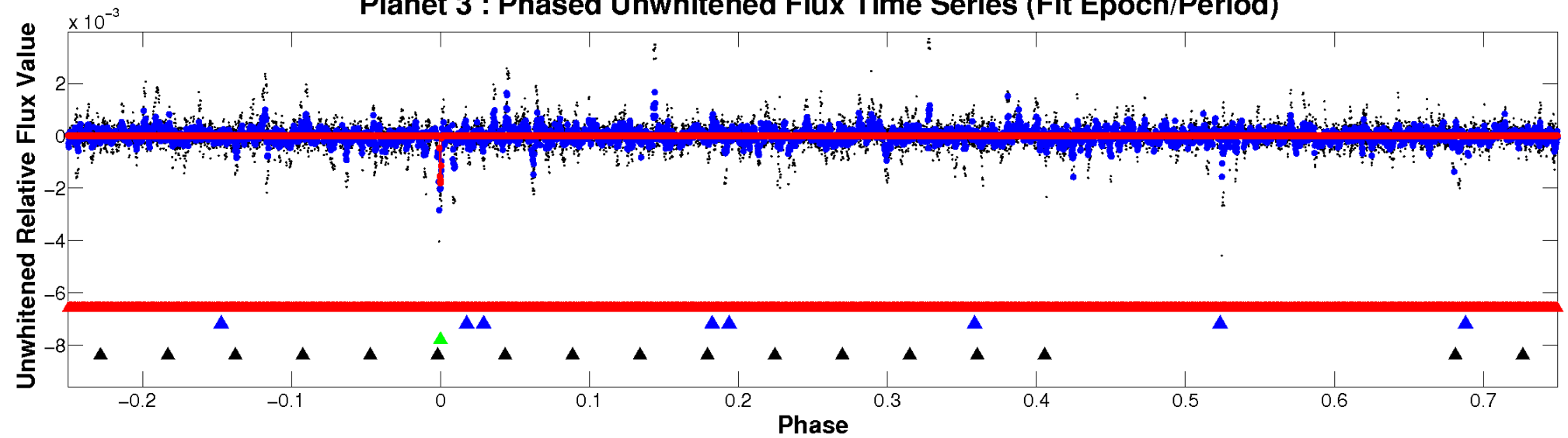
ALT Odd/Even

TCE 007696284-03

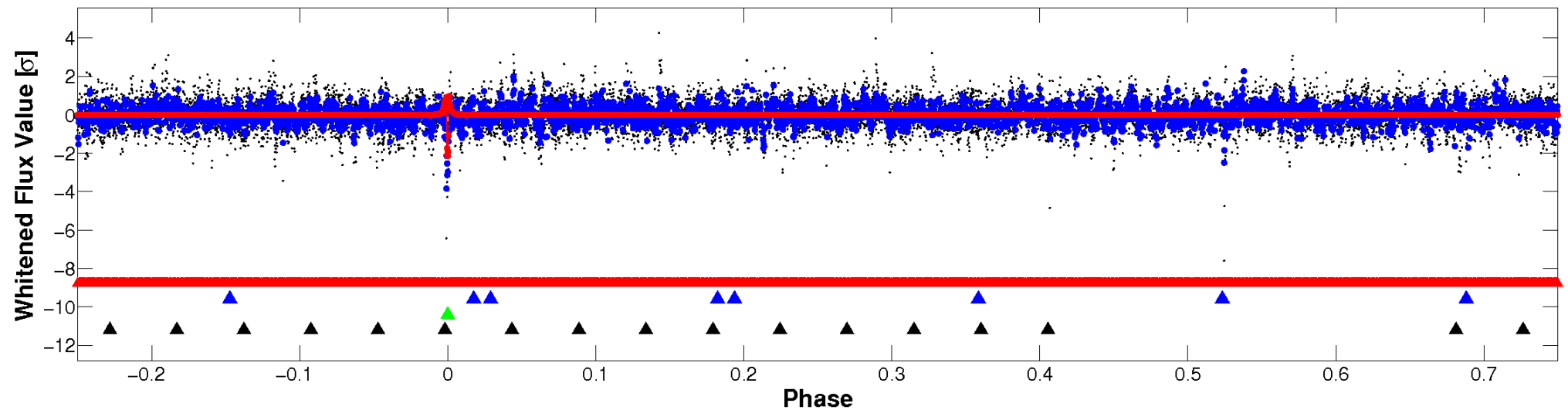


Non-Whitened Vs. Whitened Light Curve

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

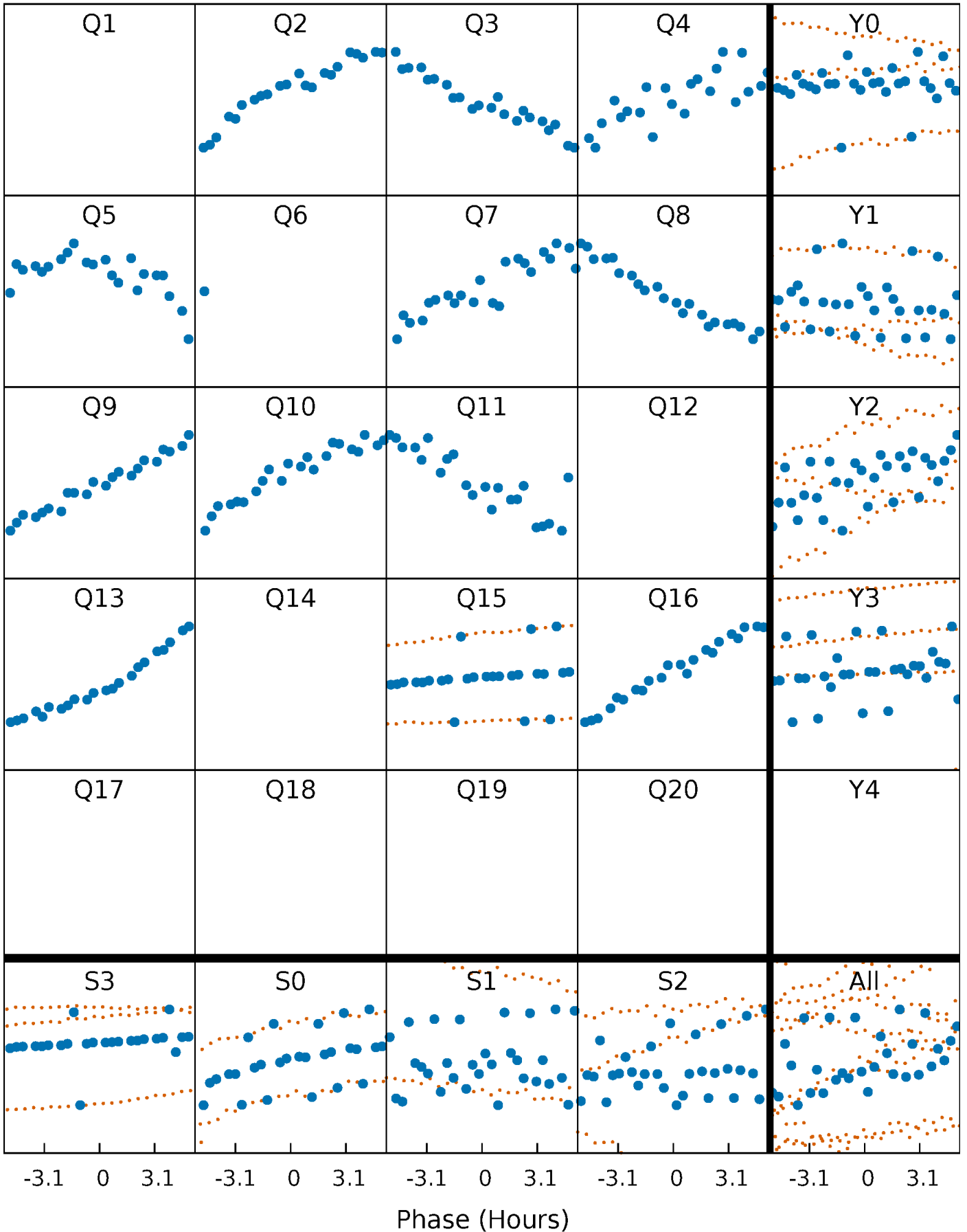


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



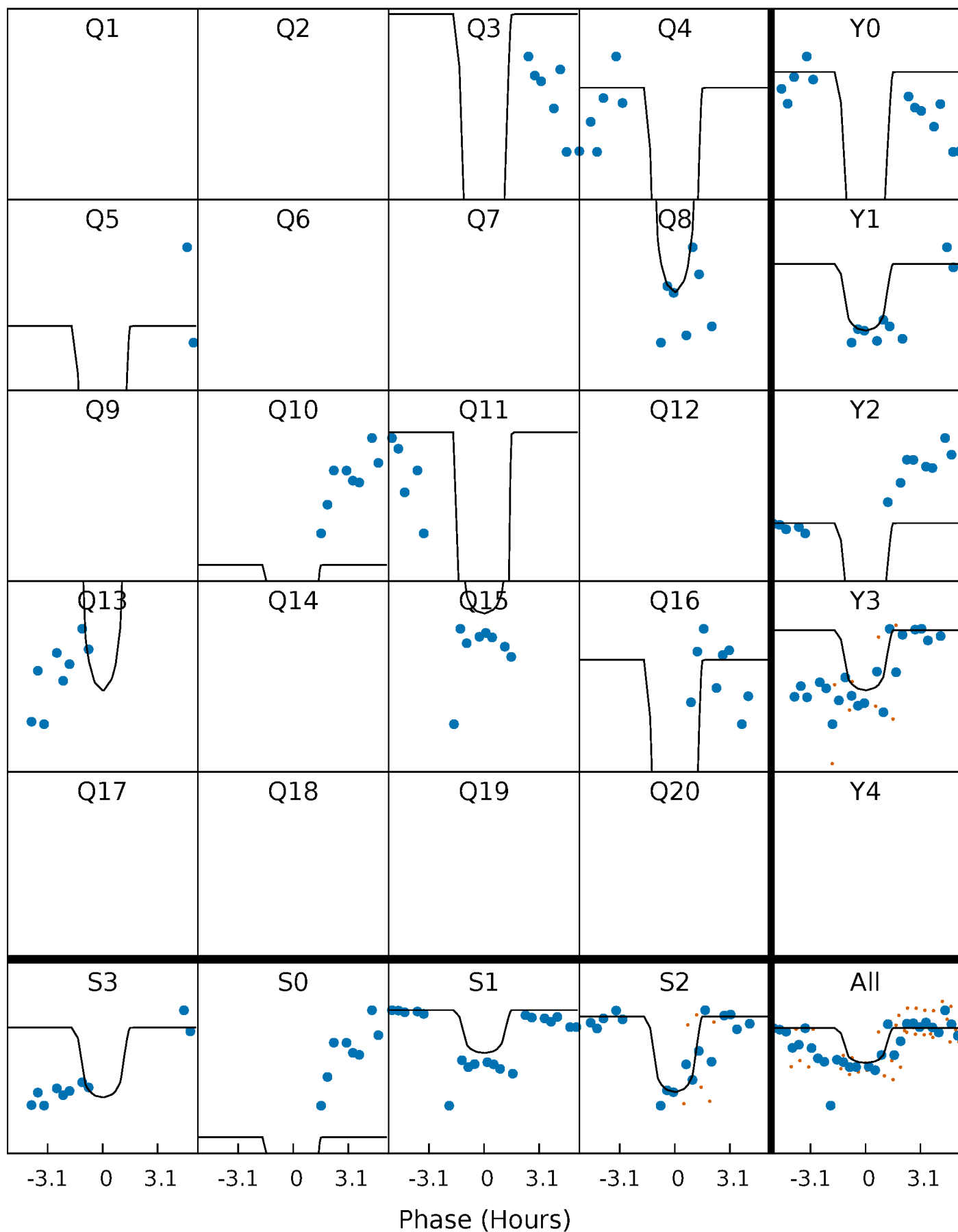
PDC Quarter-Phased Transit Curves

TCE 007696284-03 P= 86.489864 Days $T_0=166.039309$ (BKJD)



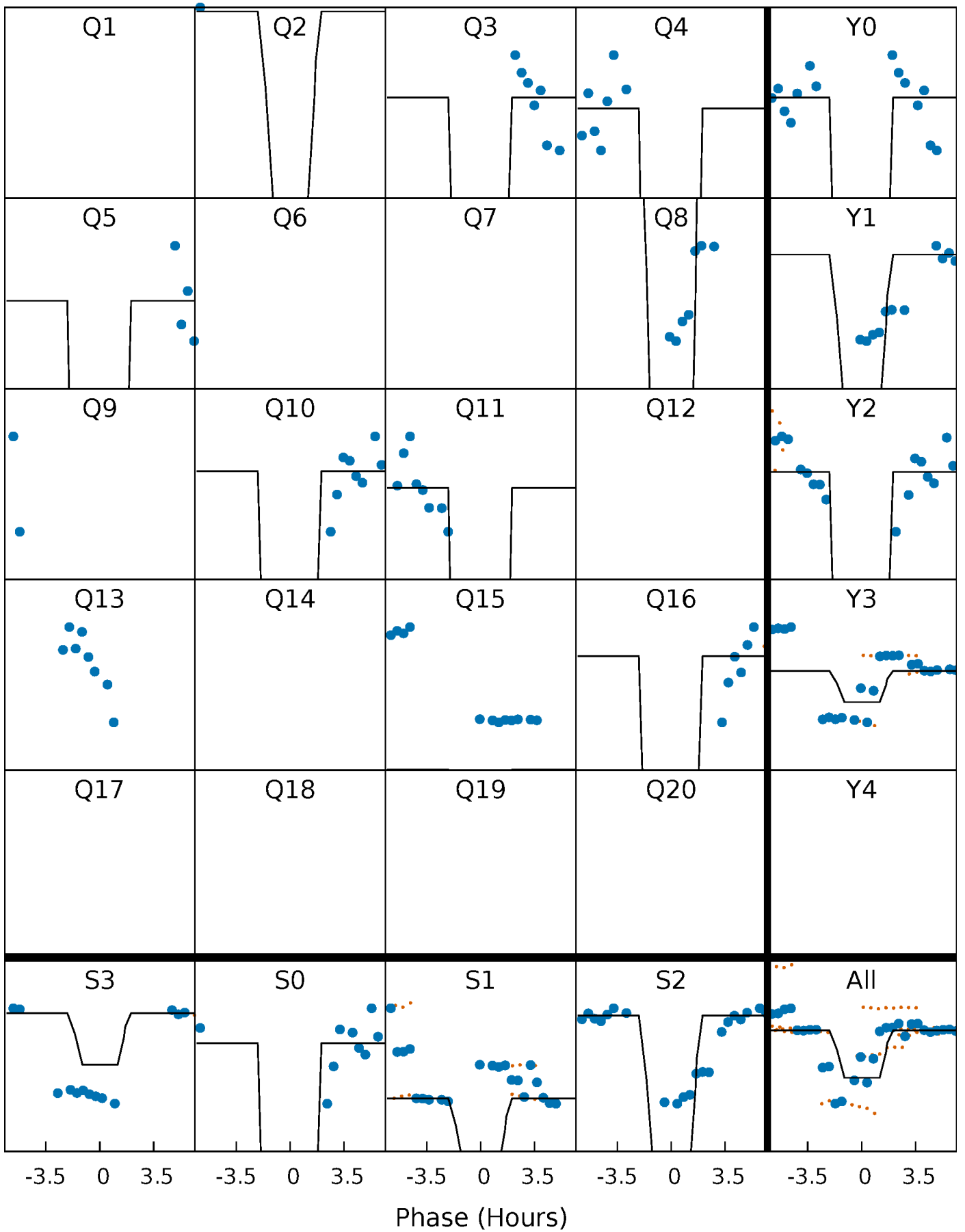
DV Quarter-Phased Transit Curves

TCE 007696284-03 P= 86.489864 Days $T_0=166.039309$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

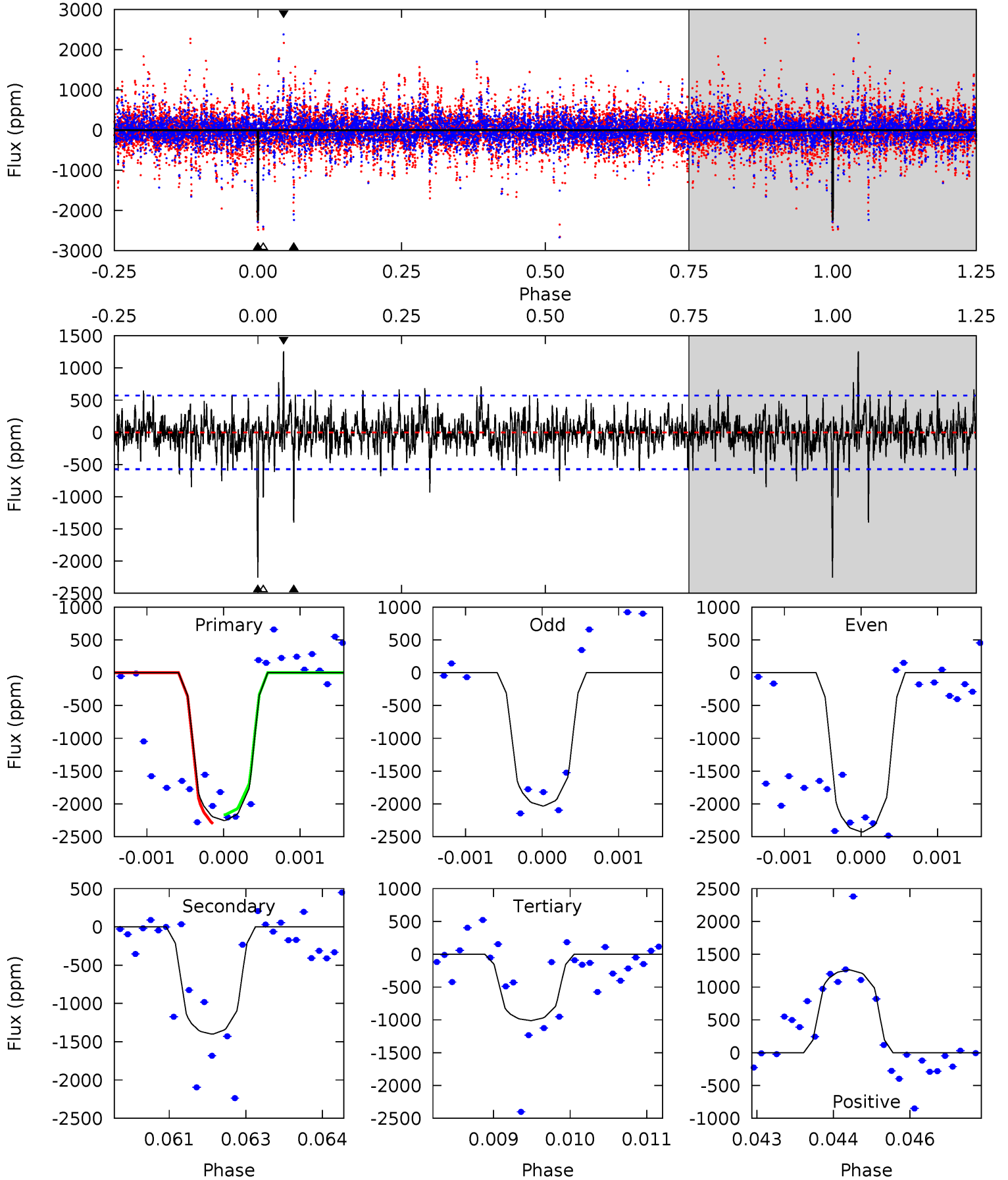
TCE 007696284-03 P= 86.481982 Days $T_0=166.067056$ (BKJD)



DV Model-Shift Uniqueness Test

007696284-03, P = 86.489864 Days, E = 79.549445 Days

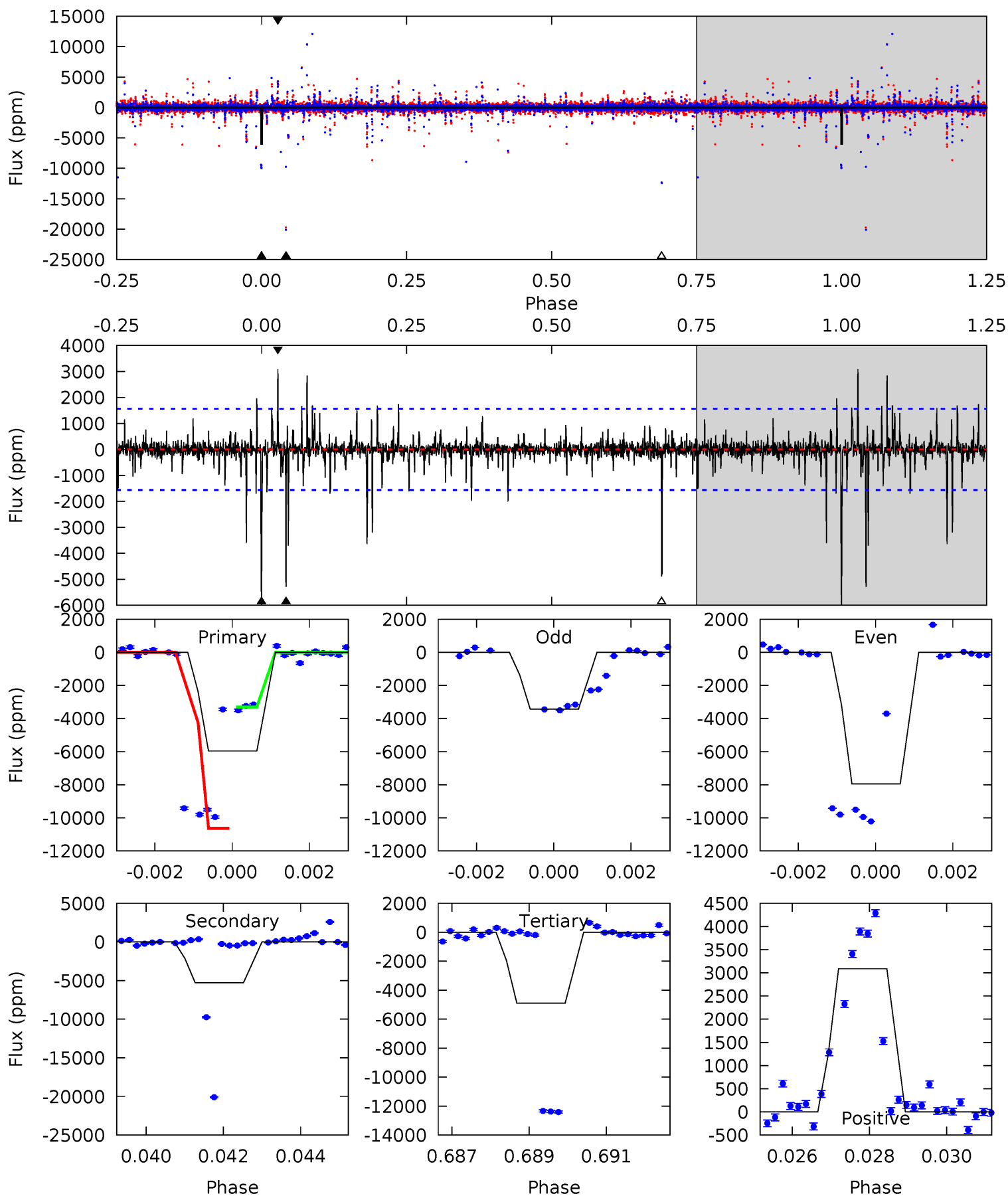
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.2	13.2	9.53	11.9	5.39	3.19	1.97	11.7	9.37	3.67	1.33	1.79	0.84	0.36	0.63



Alt Model-Shift Uniqueness Test

007696284-03, P = 86.481982 Days, E = 79.585074 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.4	18.1	16.8	10.6	5.35	3.13	1.17	3.67	9.86	1.32	7.51	3.94	1.06	0.34	13.2



Stellar Parameters For KIC 007696284

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5680^{+152}_{-152}	$4.359^{+0.195}_{-0.214}$	$-0.380^{+0.300}_{-0.250}$	$0.977^{+0.290}_{-0.194}$	$0.795^{+0.124}_{-0.053}$	$1.202^{+1.139}_{-0.616}$
	+3%/-3%	+4%/-5%	+79%/-66%	+30%/-20%	+16%/-7%	+95%/-51%
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 007696284-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1400 ± 106	$5.89^{+5.30}_{-3.72}$	584^{+47}_{-39}	4824^{+3163}_{-1004}	2836^{+18320}_{-2030}
Alt.	-5281 ± 292	$8.96^{+5.54}_{-4.92}$	579^{+47}_{-39}	5299^{+2809}_{-930}	4588^{+18025}_{-2808}

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

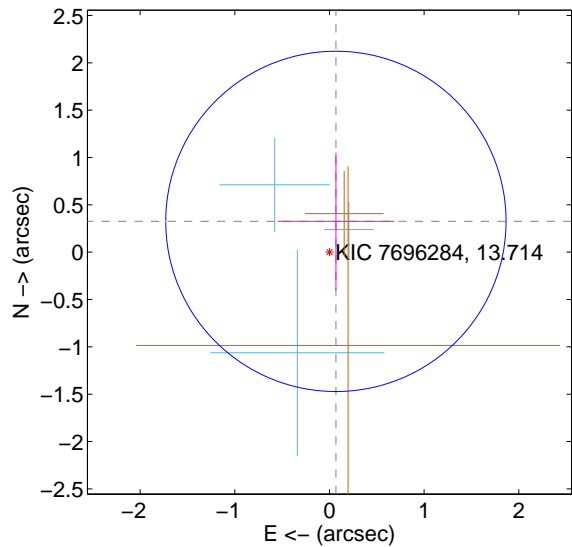
Supplemental centroid analysis for 007696284-03. Kepler magnitude: 13.71. Transit SNR 7.02

There are 3 quarters with good PRF difference image offsets

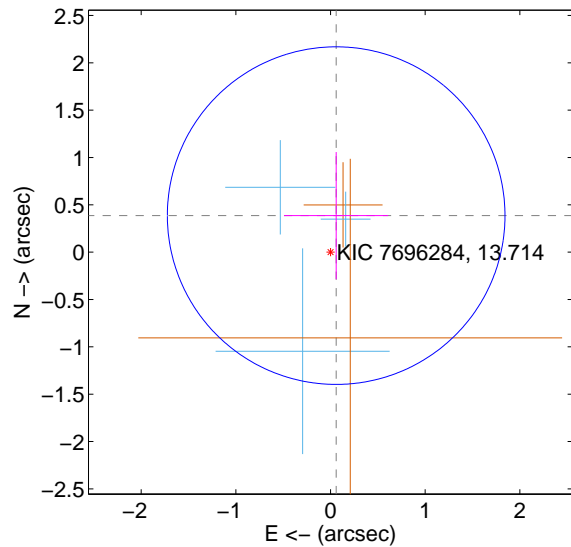
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.332 ± 0.599	0.55	-0.068 ± 0.617	0.325 ± 0.725
PRF-fit source offset from KIC position	0.391 ± 0.594	0.66	-0.060 ± 0.550	0.386 ± 0.672
photometric centroid source offset	0.23 ± 0.18	1.25	0.02 ± 0.17	-0.23 ± 0.18

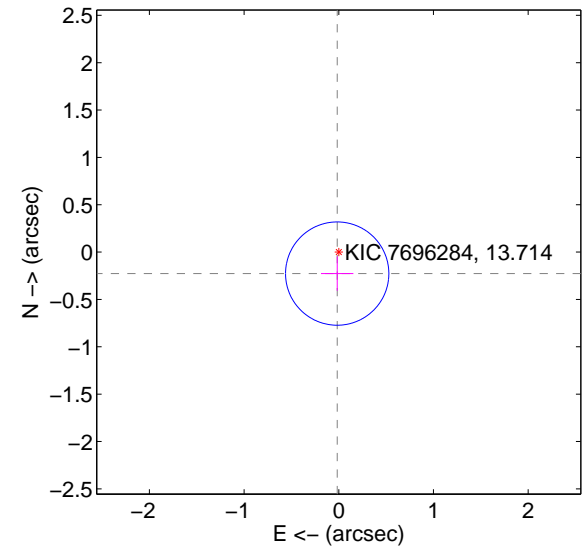
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

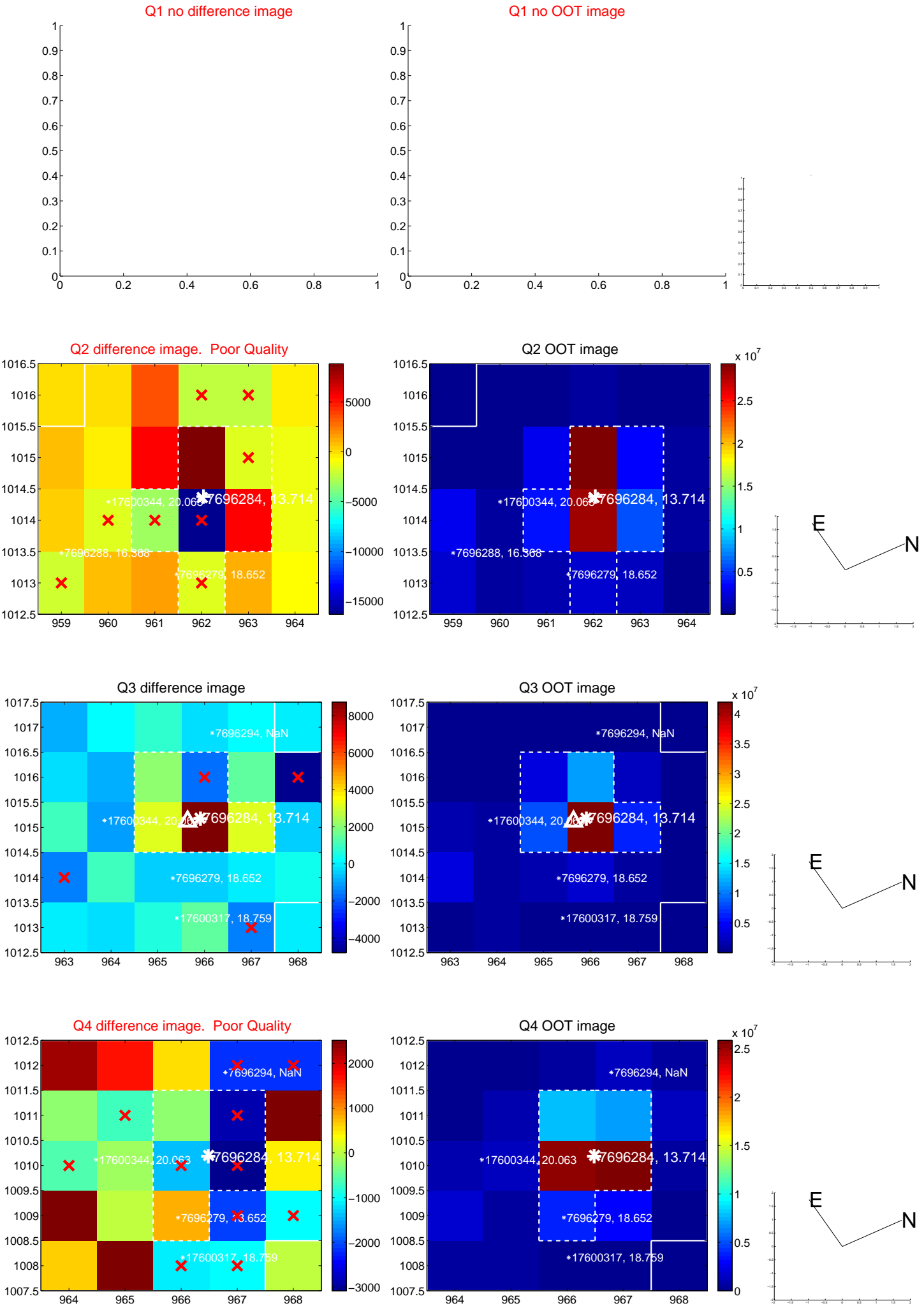


offset from photometric centroids

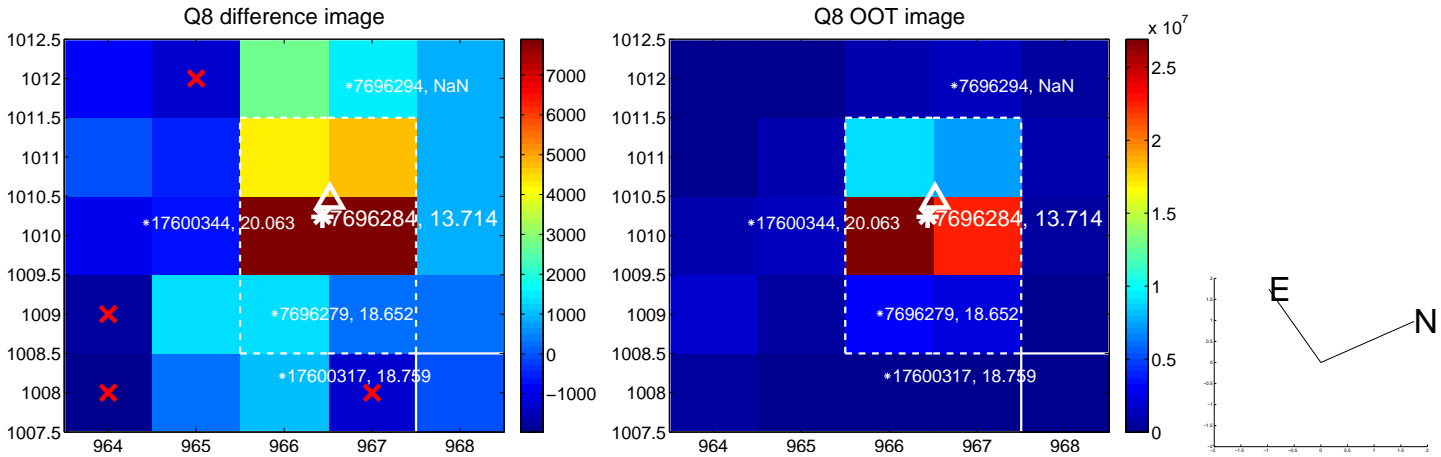
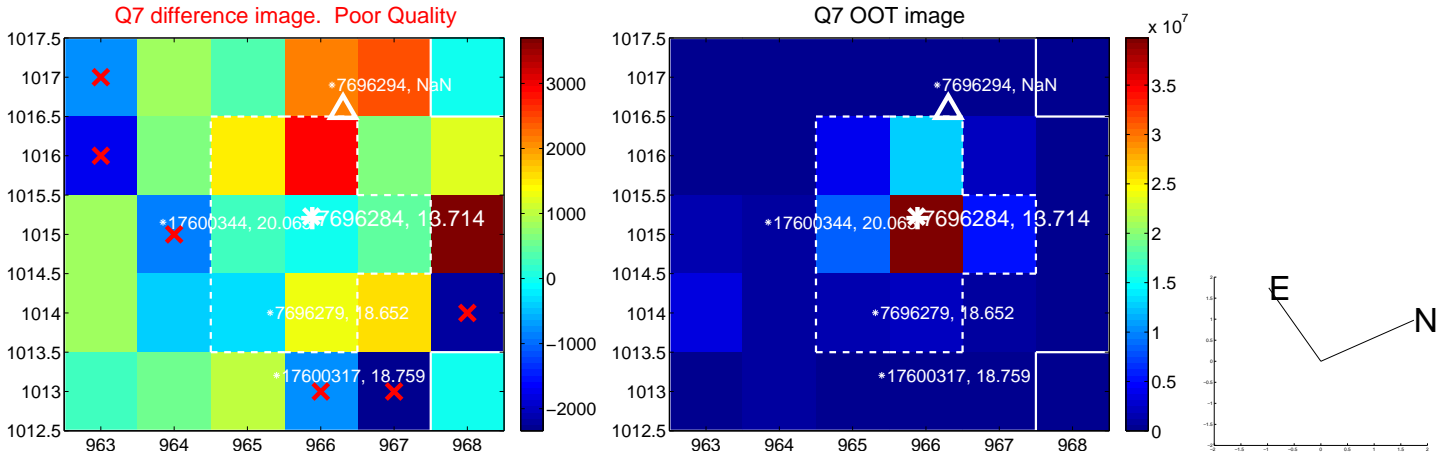
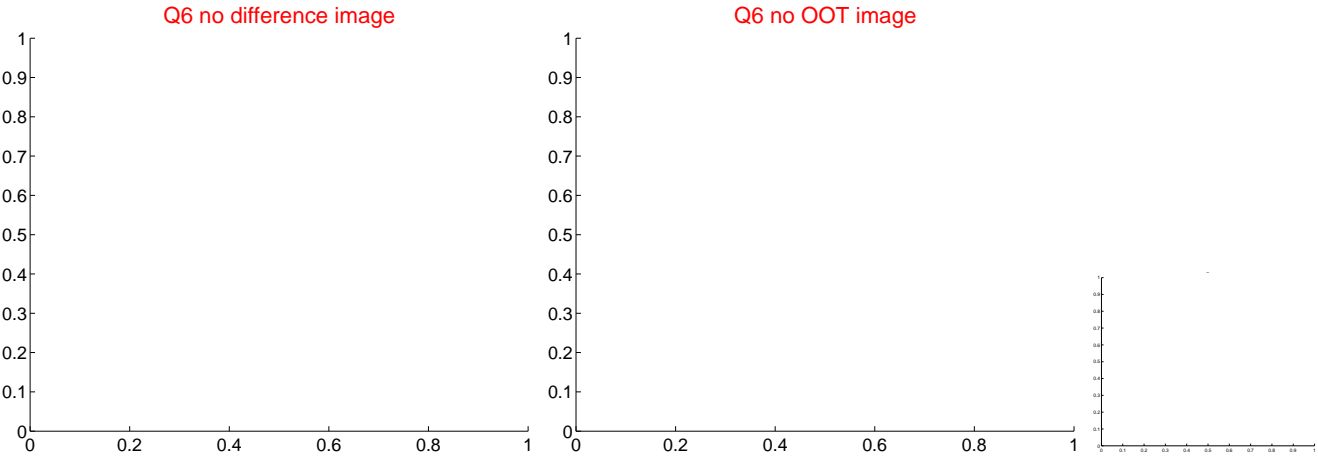
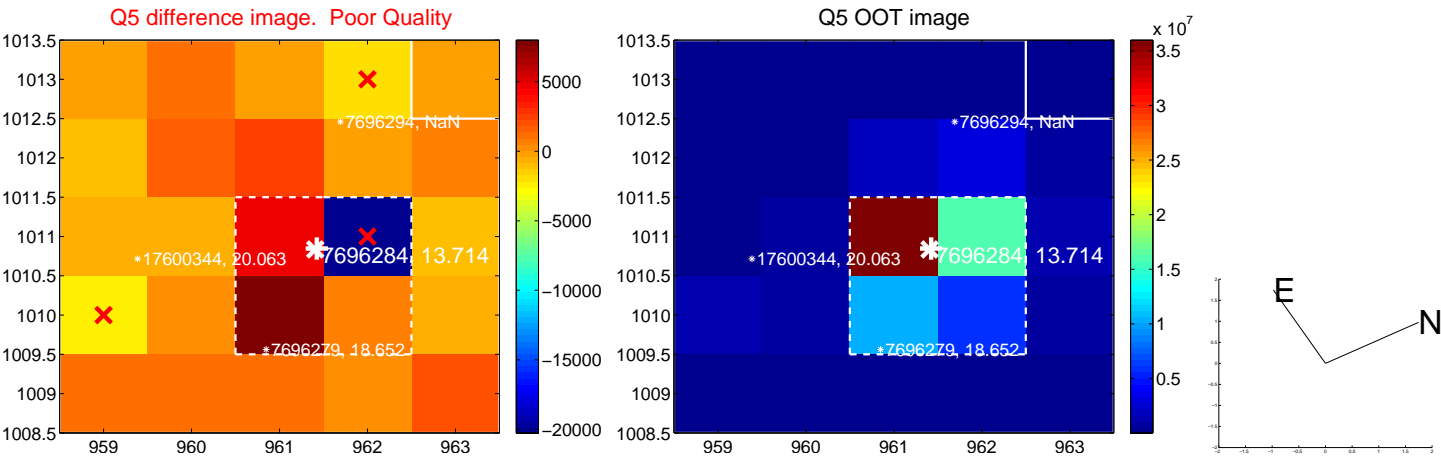


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

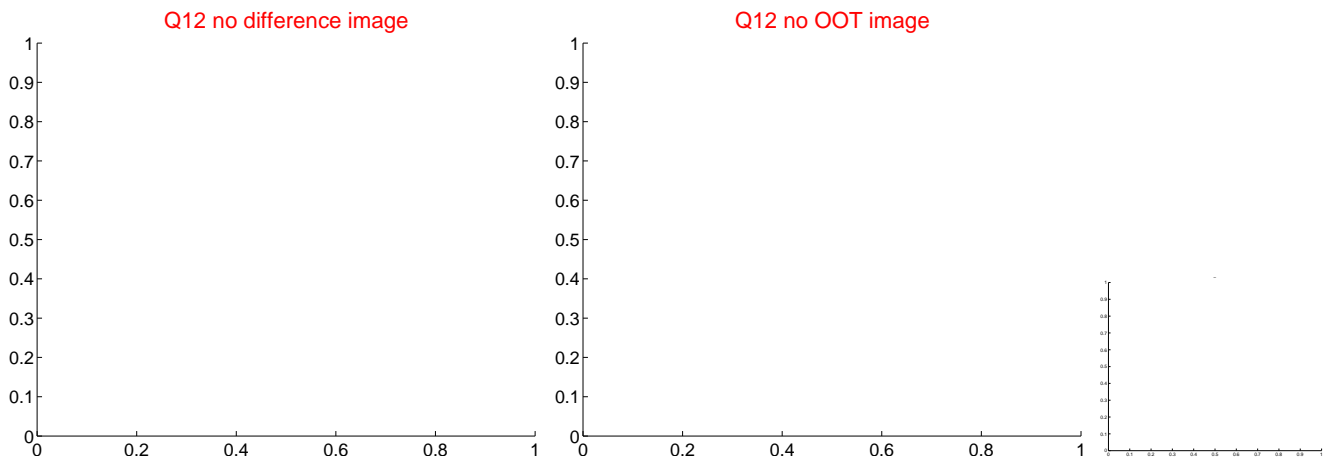
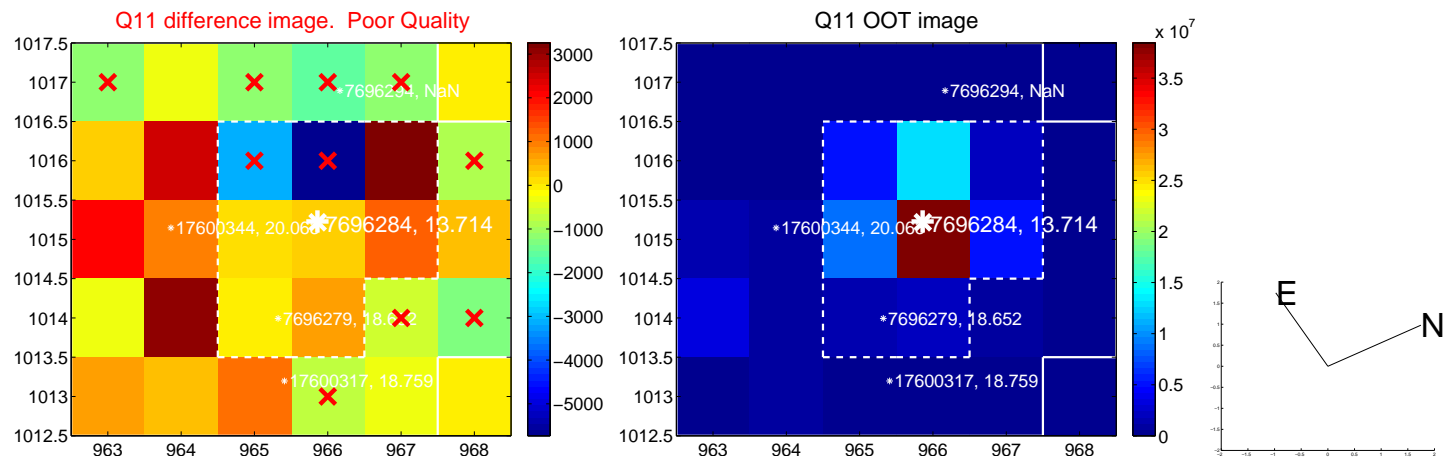
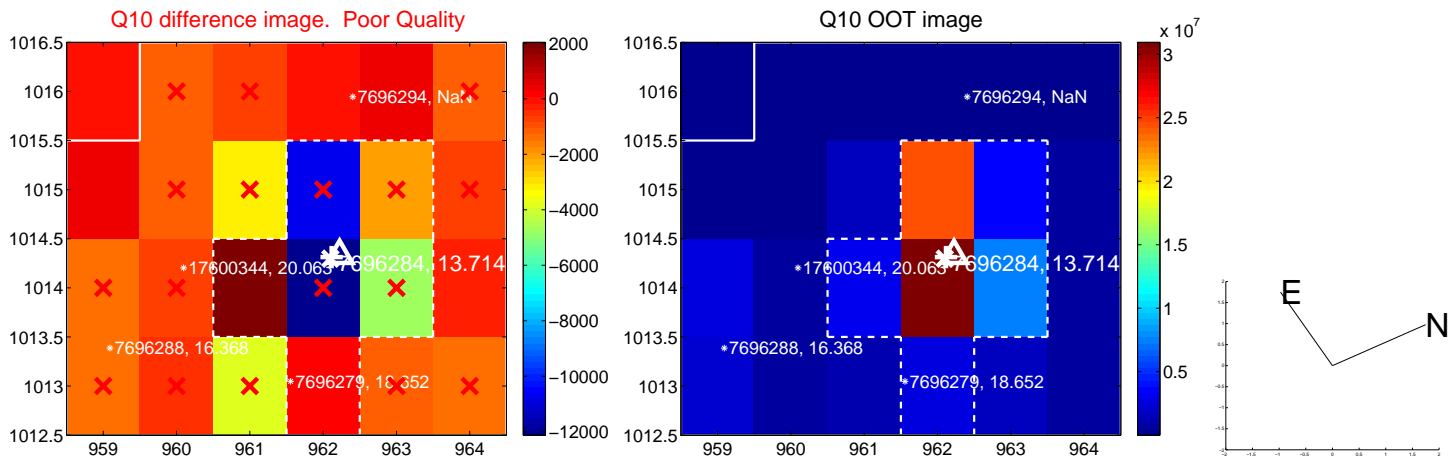
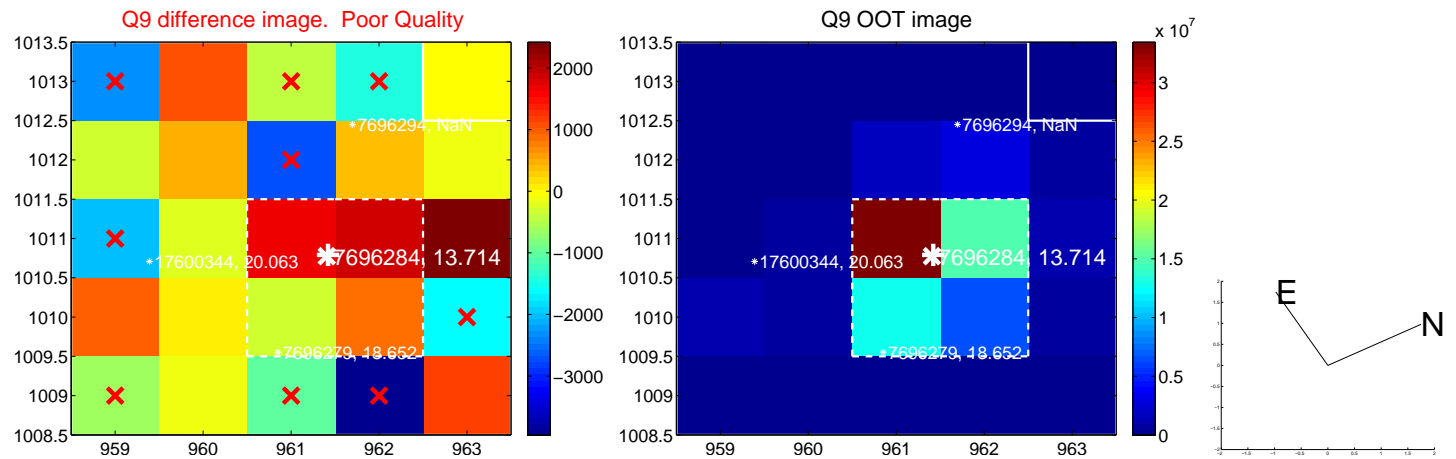
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



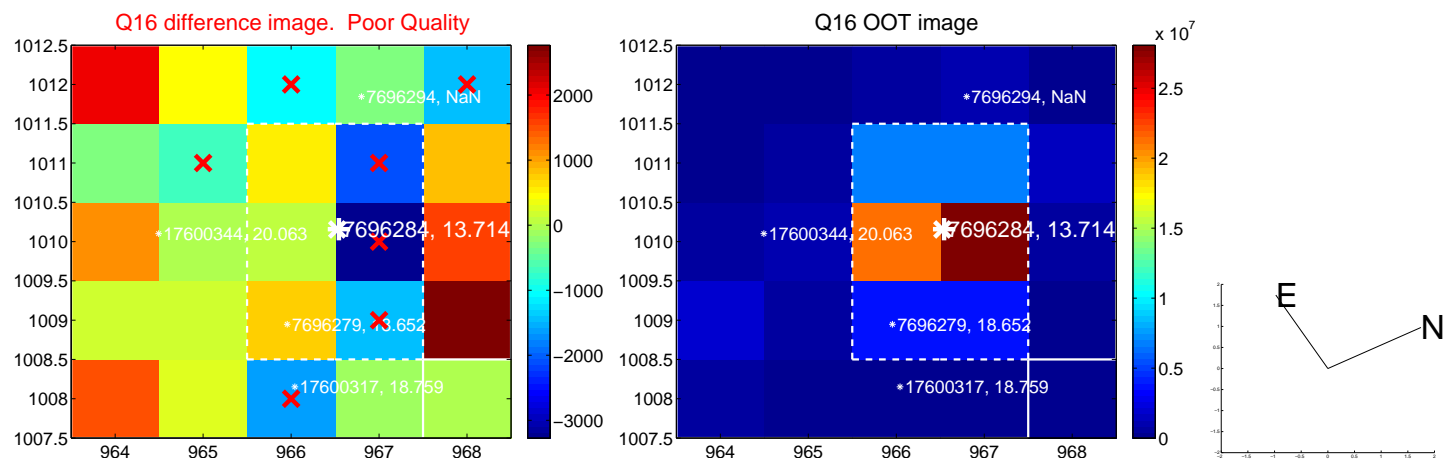
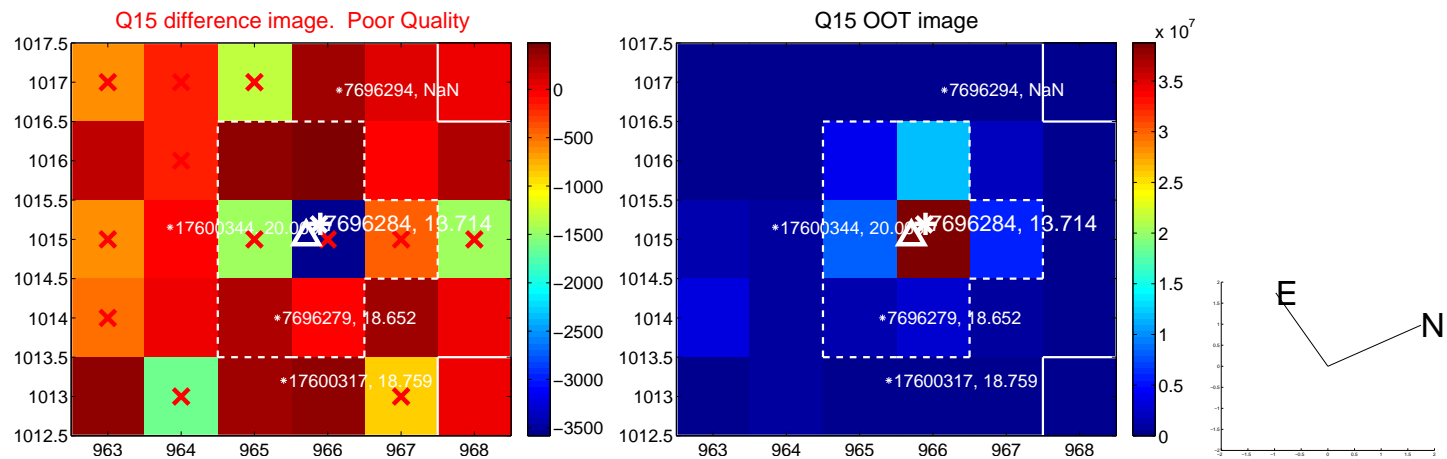
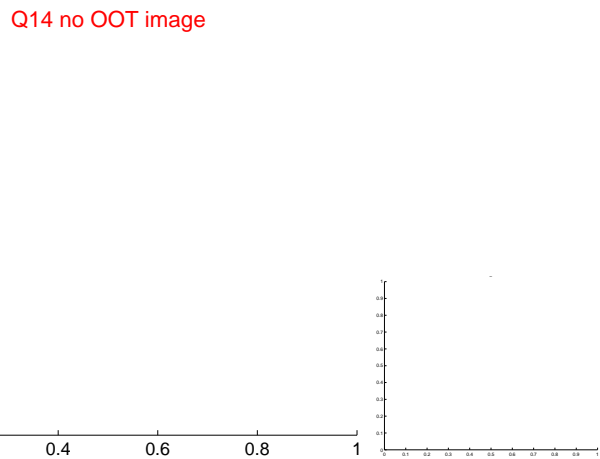
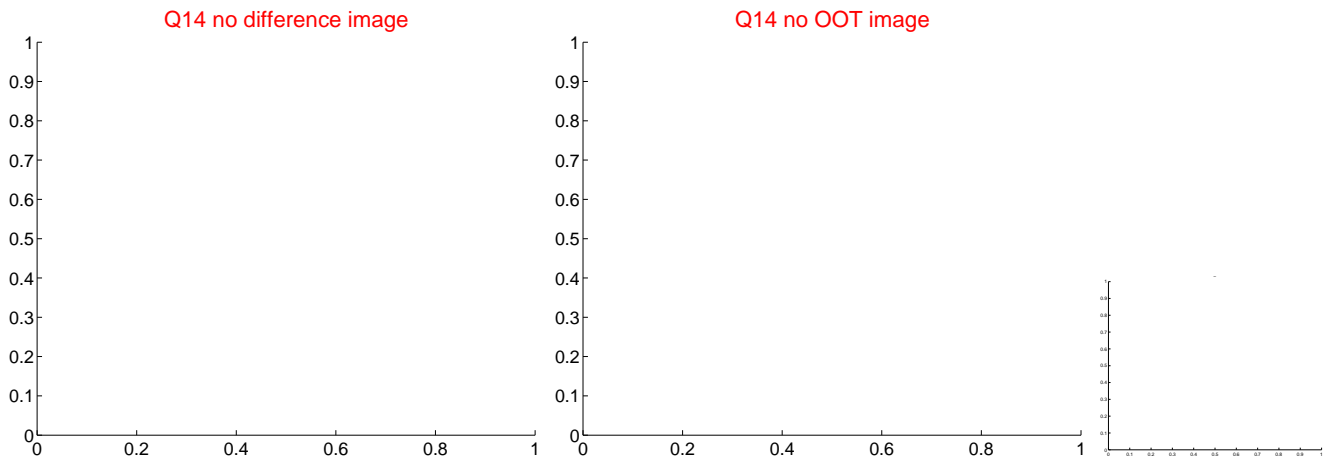
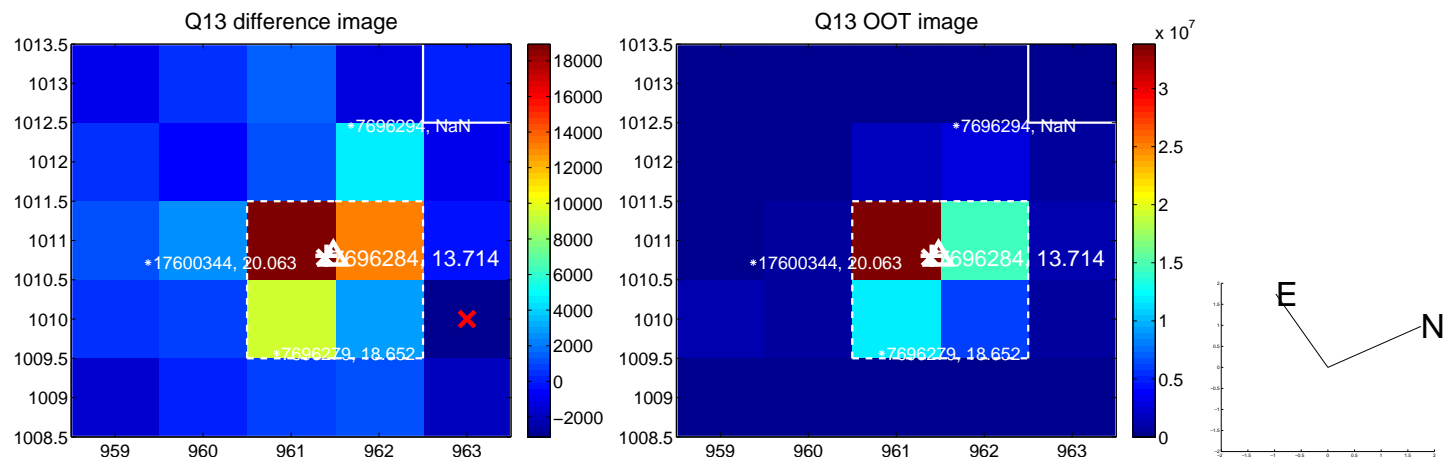
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



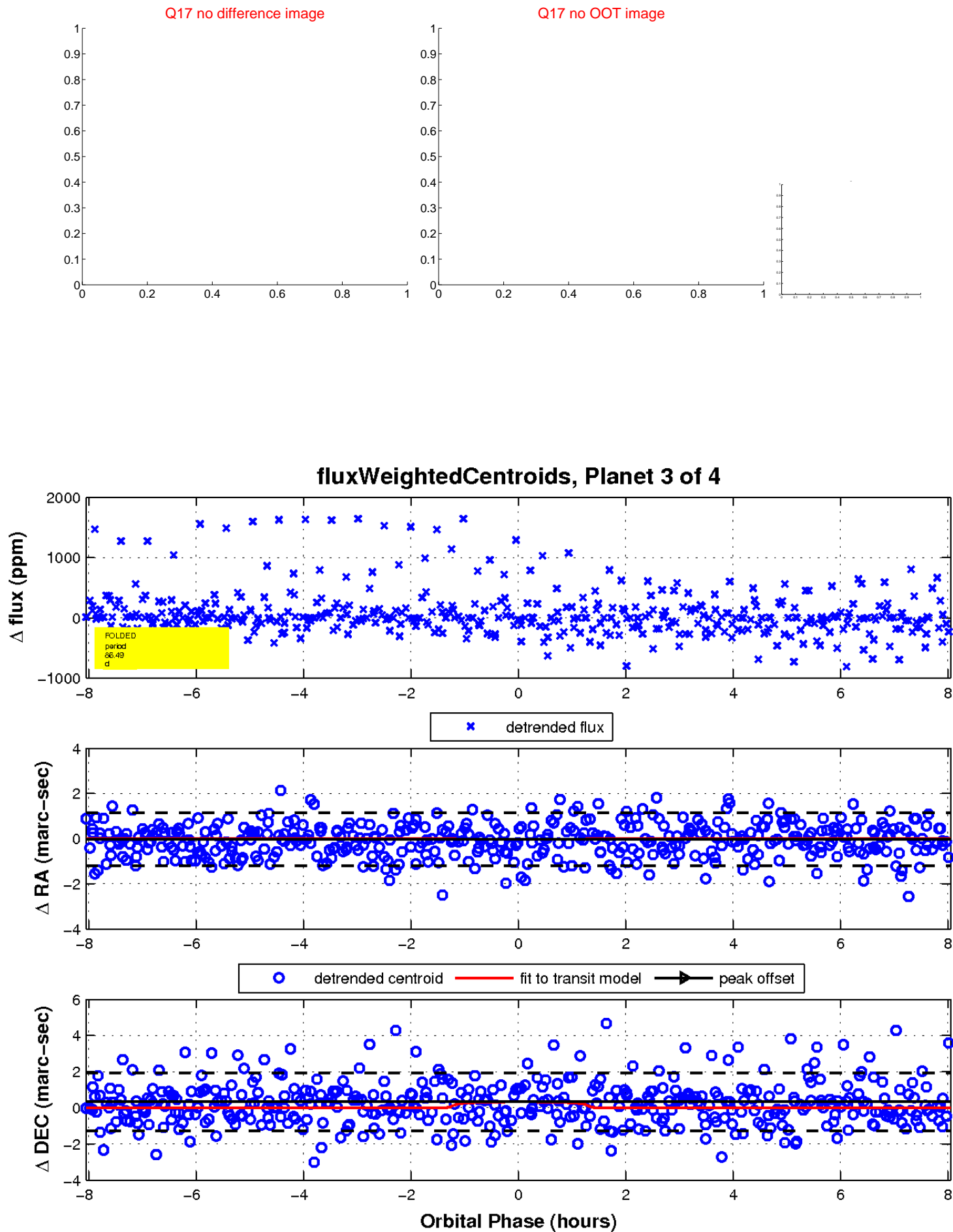
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



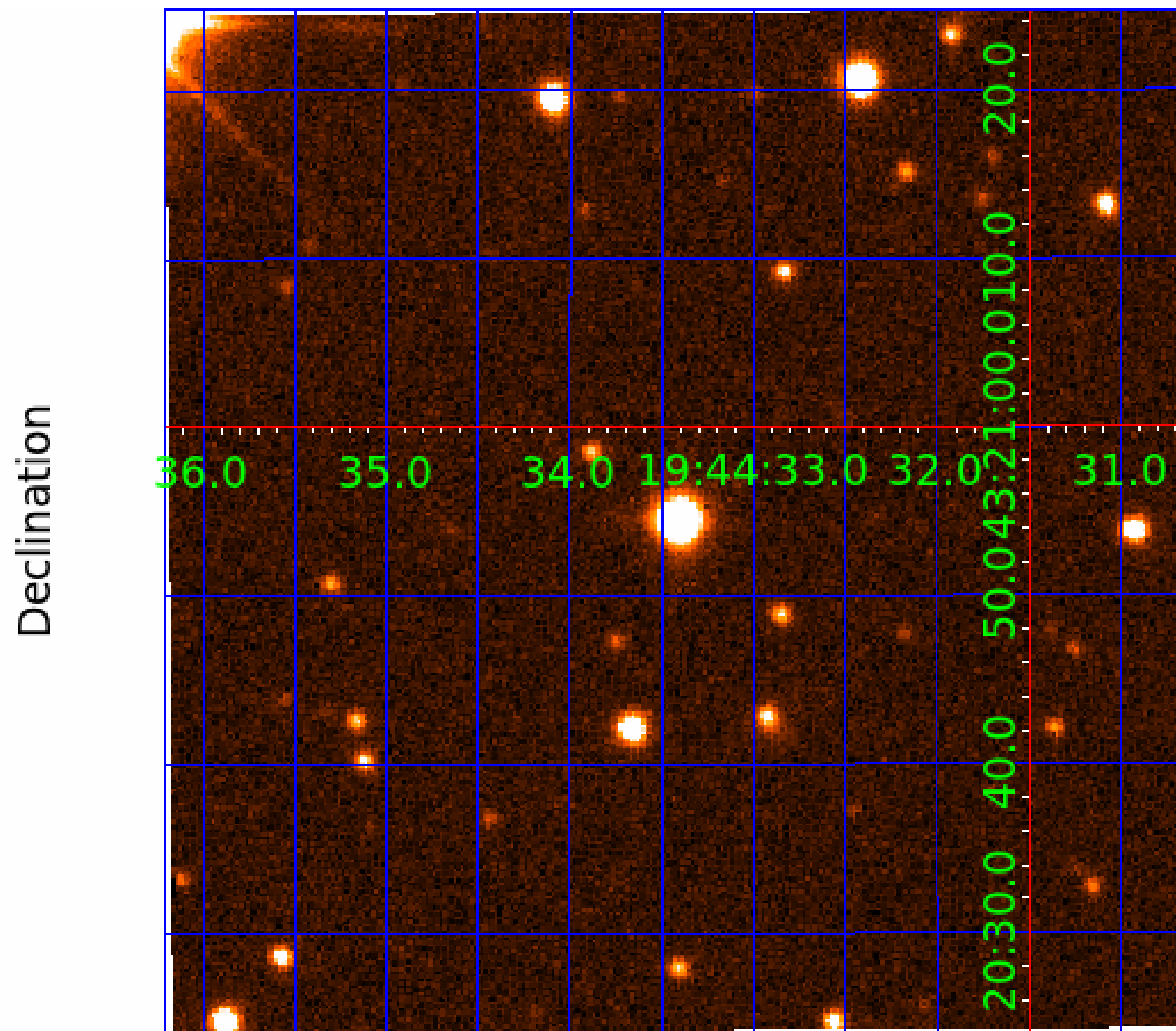
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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



UKIRT Image



KIC 007696284

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})
007696284-01	OBS	No	0.783185	132.022574	13.5	4.892	8.0	4.1	0.98	5680	0.39	3747.41
007696284-02	OBS	No	187.230177	255.038931	1856.0	3.285	10.7	5.9	0.98	5680	4.57	2.53
007696284-03	OBS	No	86.489864	166.039309	1815.3	2.691	11.1	7.0	0.98	5680	4.34	7.07
007696284-04	OBS	No	82.574528	201.115790	1627.2	16.942	8.4	7.0	0.98	5680	7.53	7.52

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007696284-01	OBS	FP	0.00	1	0	0	0	LPP_DV
007696284-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT— MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007696284-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES
007696284-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT— MOD_POS_ALT

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

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

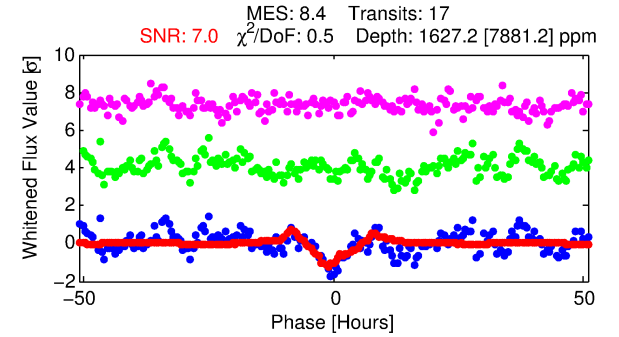
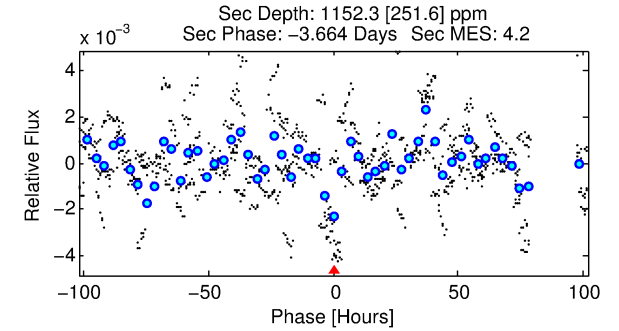
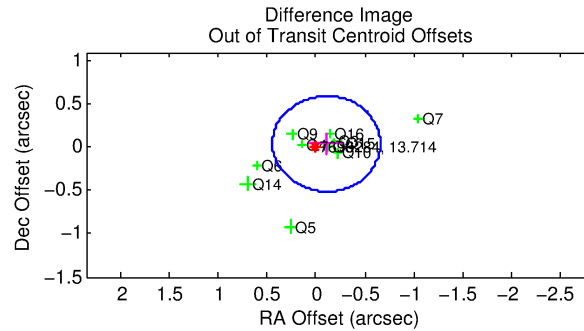
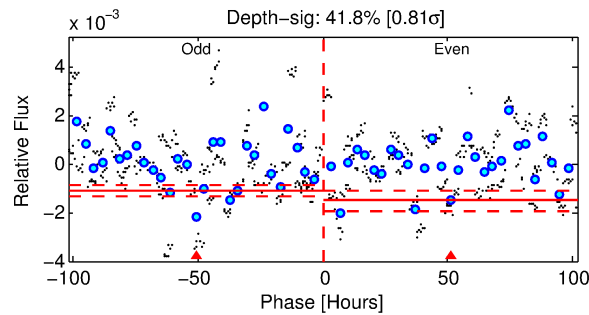
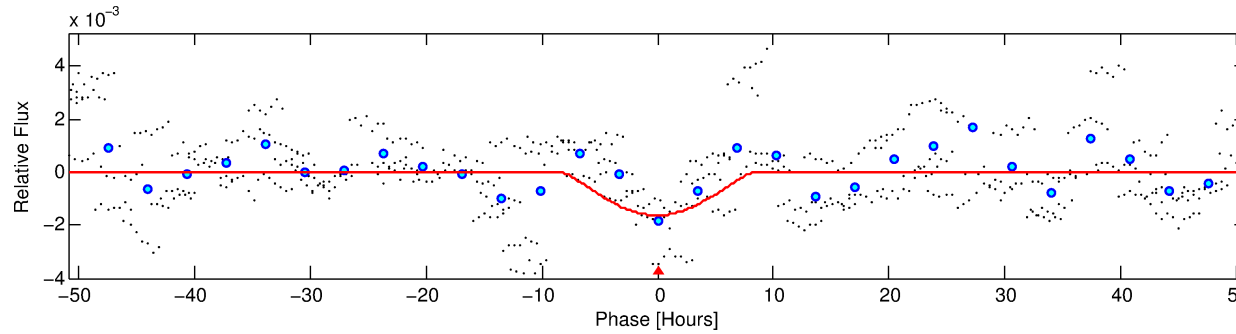
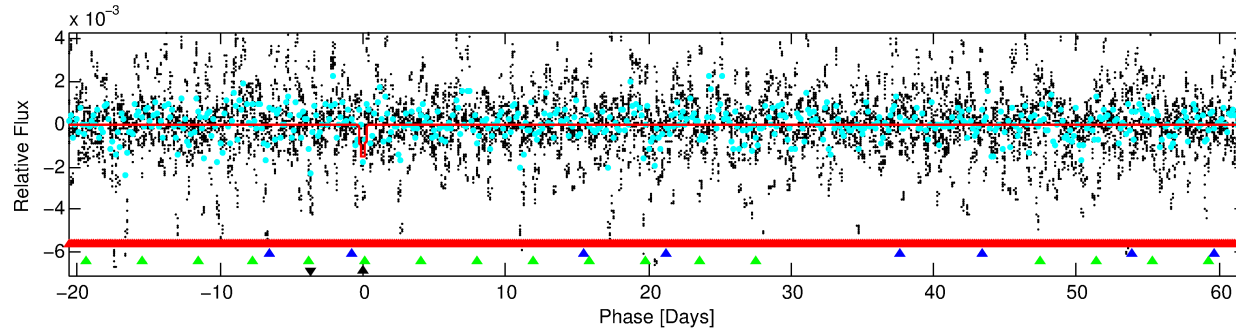
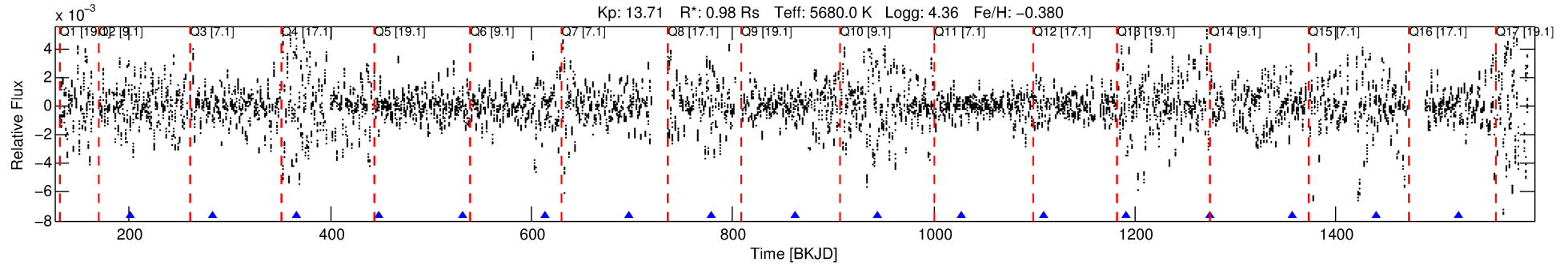
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007696284-04

No Significant Match Found

DV One-Page Summary

KIC: 7696284 Candidate: 4 of 4 Period: 82.575 d



DV Fit Results:

Period = 82.57453 [0.00282] d
Epoch = 201.1158 [0.0274] BKJD
Rp/R* = 0.0706 [0.1036]
a/R* = 14.28 [4.61]
b = 1.00 [0.08]
Seff = 7.52 [3.00]
Teq = 422 [42] K
Rp = 7.53 [11.27] Re
a = 0.3440 [0.0885] AU
Ag = 1322.61 [3923.52] [0.34 σ]
Teffp = 3938 [2898] K [1.21 σ]

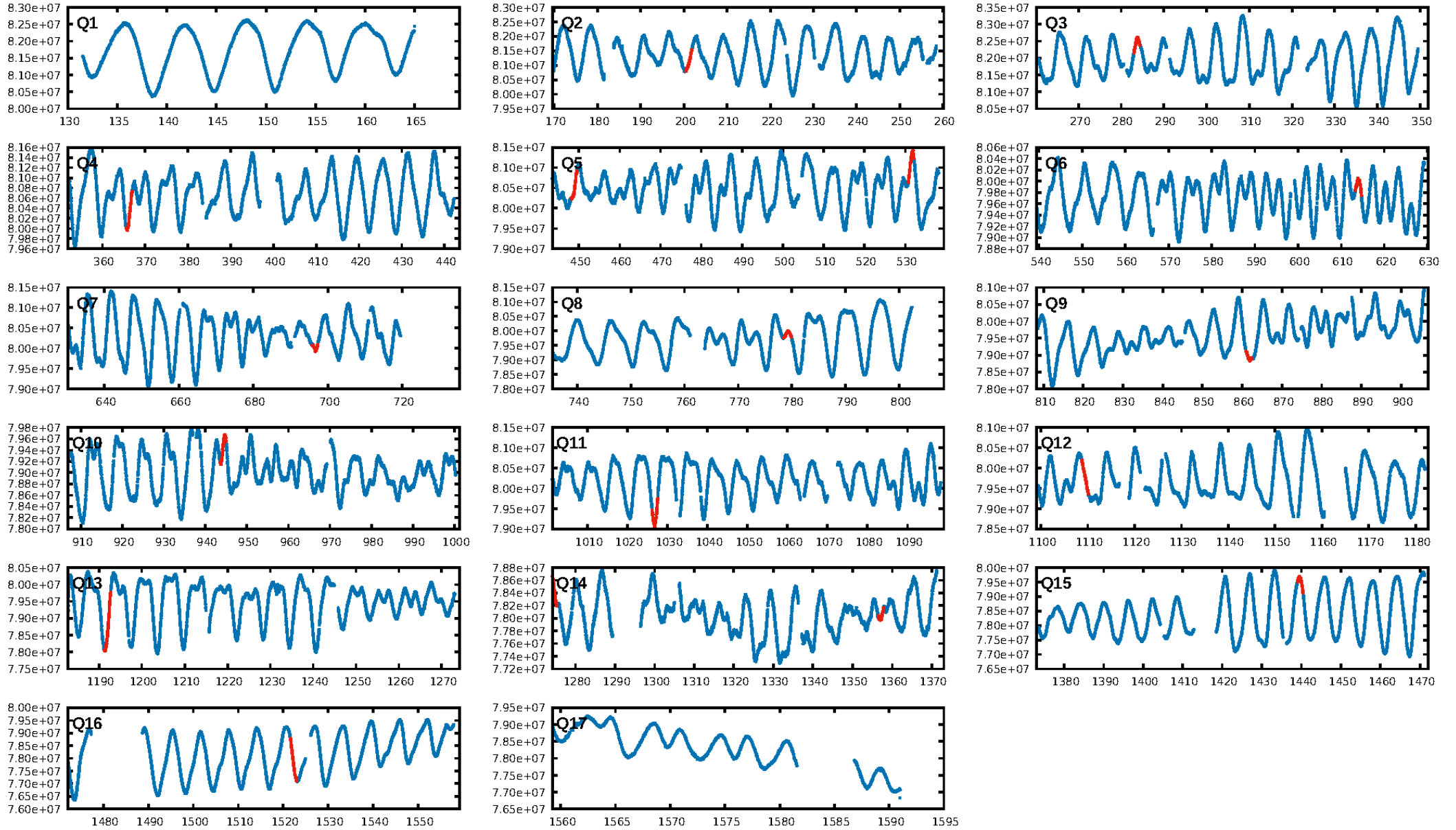
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [111.32 σ]
LongPeriod-sig: 100.0% [5.48 σ]
ModelChiSquare2-sig: 25.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.02e-10
RollingBand-fgt: 1.00 [17/17]
GhostDiagnostic-chr: -1.576
Centroid-sig: 11.1%
Centroid-so: 0.100 arcsec [0.84 σ]
OotOffset-rm: 0.113 arcsec [0.61 σ]
KicOffset-rm: 0.145 arcsec [0.83 σ]
OotOffset-st: 3/3/3/2 [11]
KicOffset-st: 3/3/3/2 [11]
DiffImageQuality-fgm: 0.45 [5/11]
DiffImageOverlap-fno: 0.00 [0/11]

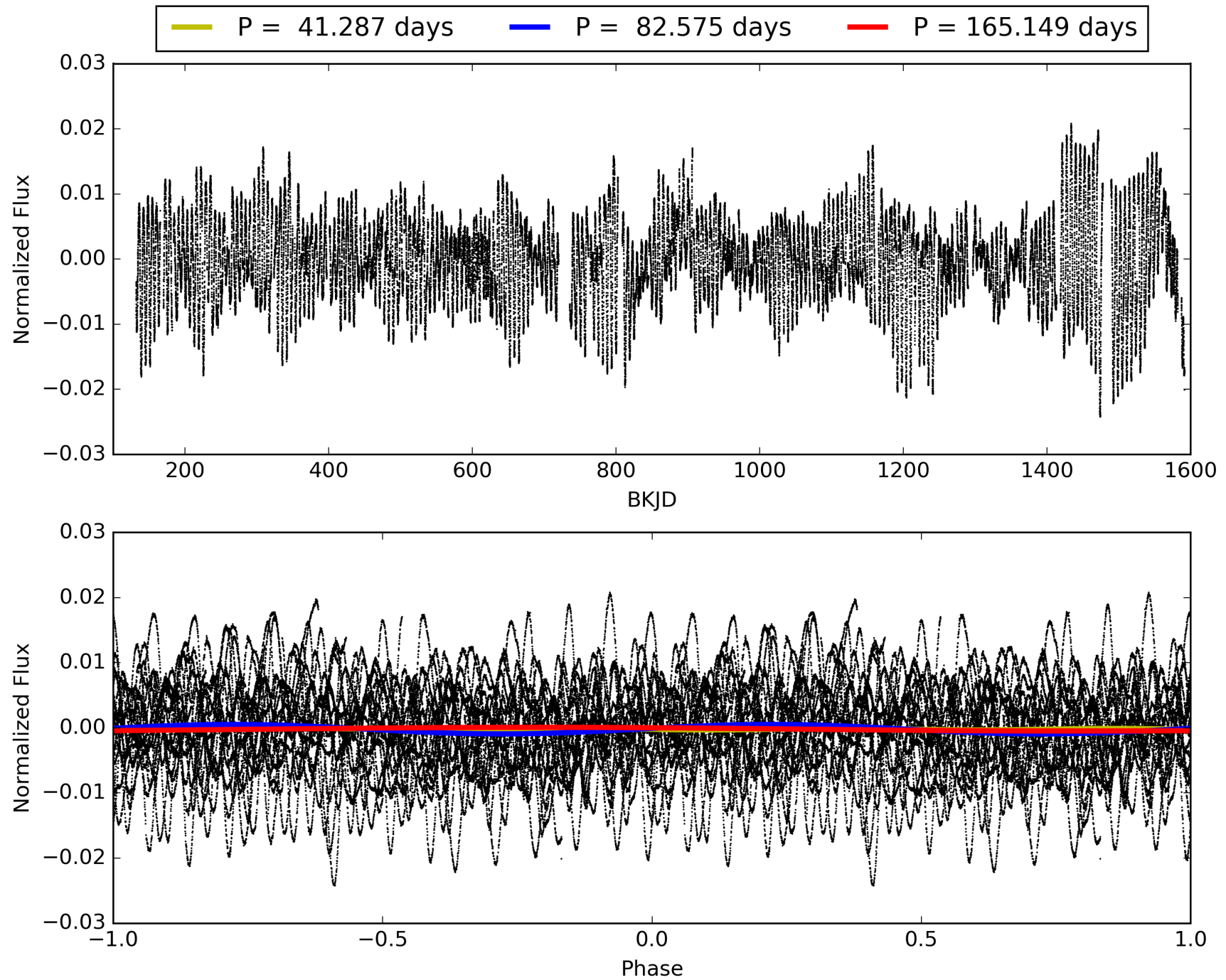
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 11:31:54 Z

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

TCE 007696284-04, PDC Light Curves

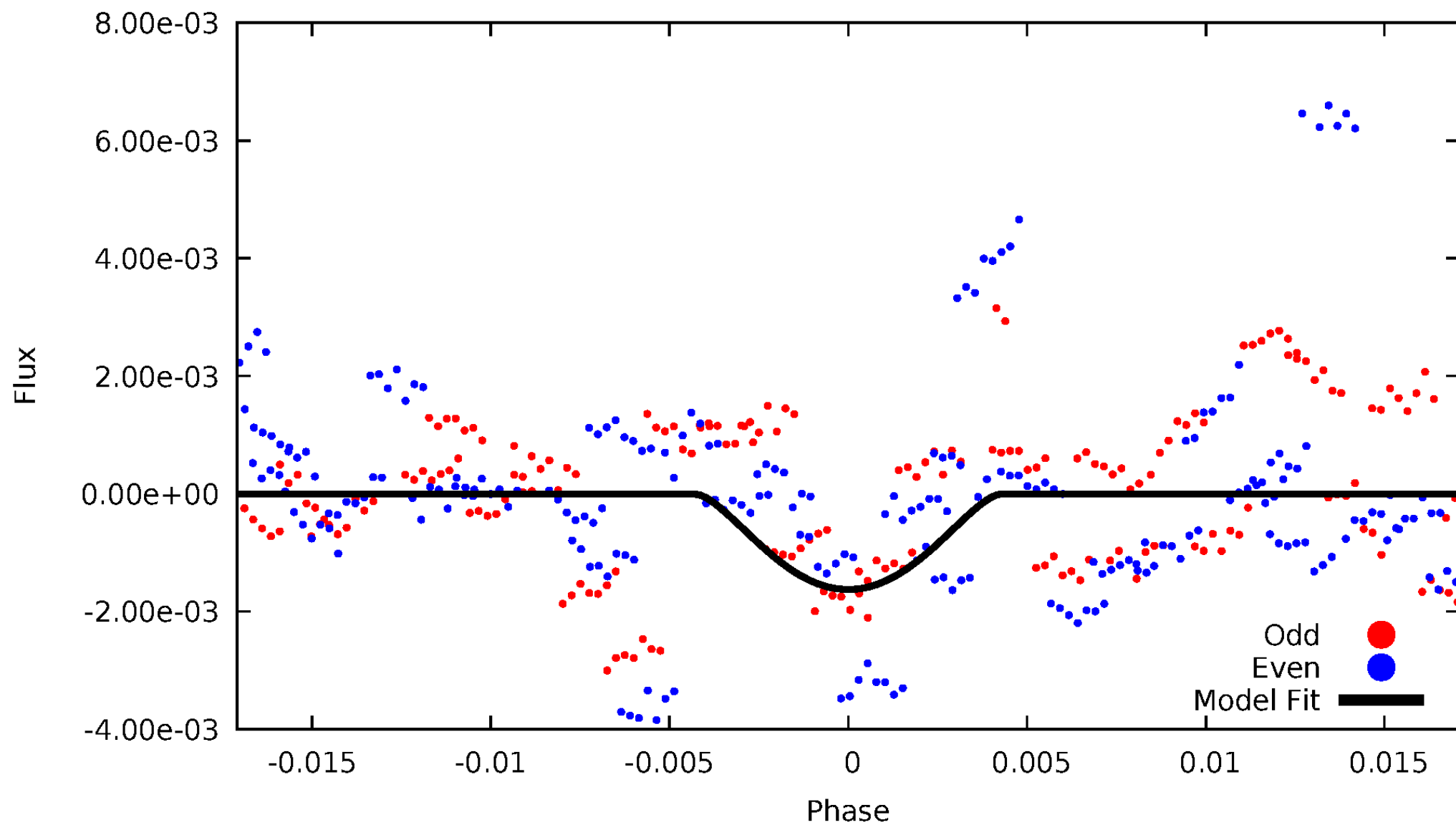


TCE 007696284-04



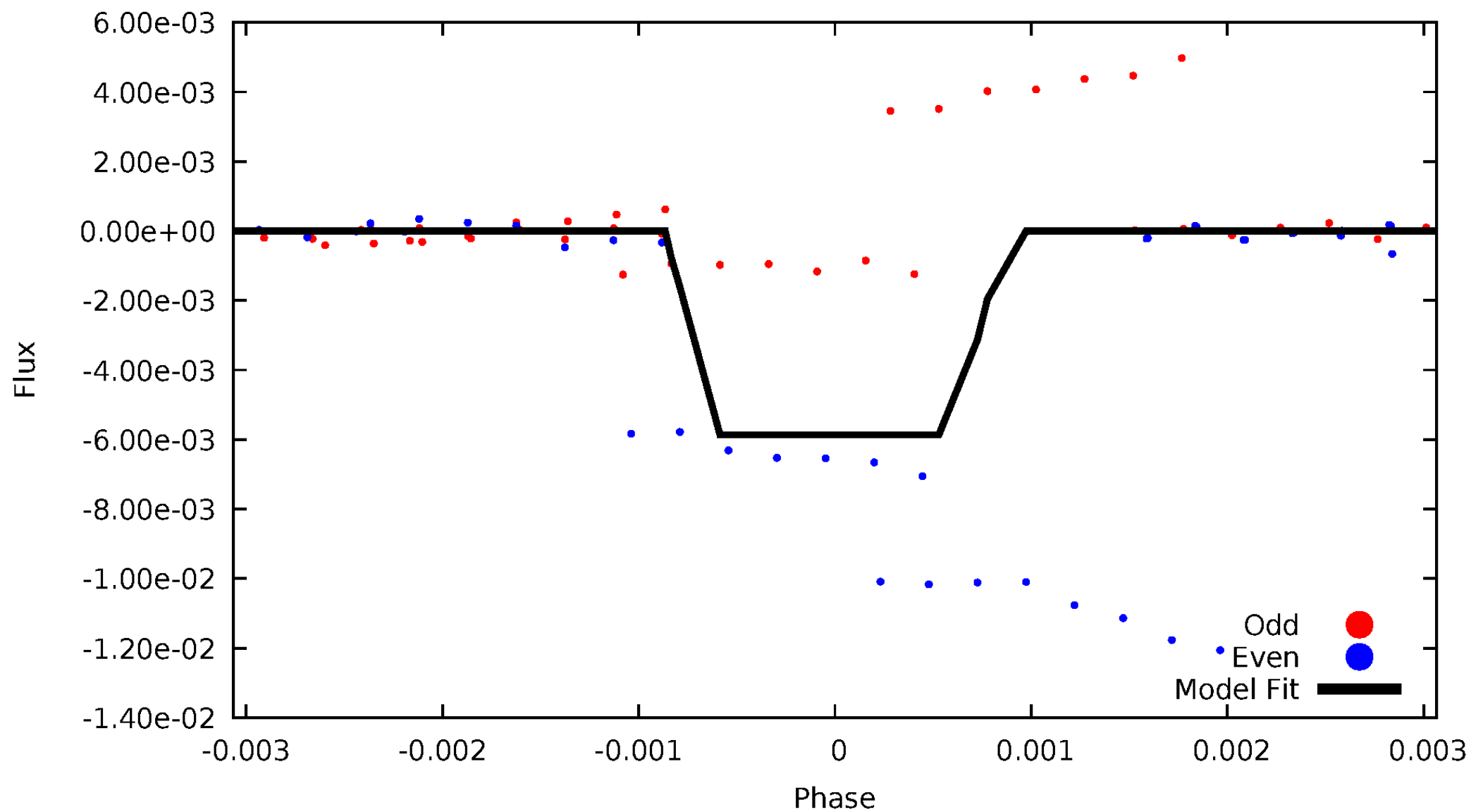
DV Odd/Even

TCE 007696284-04



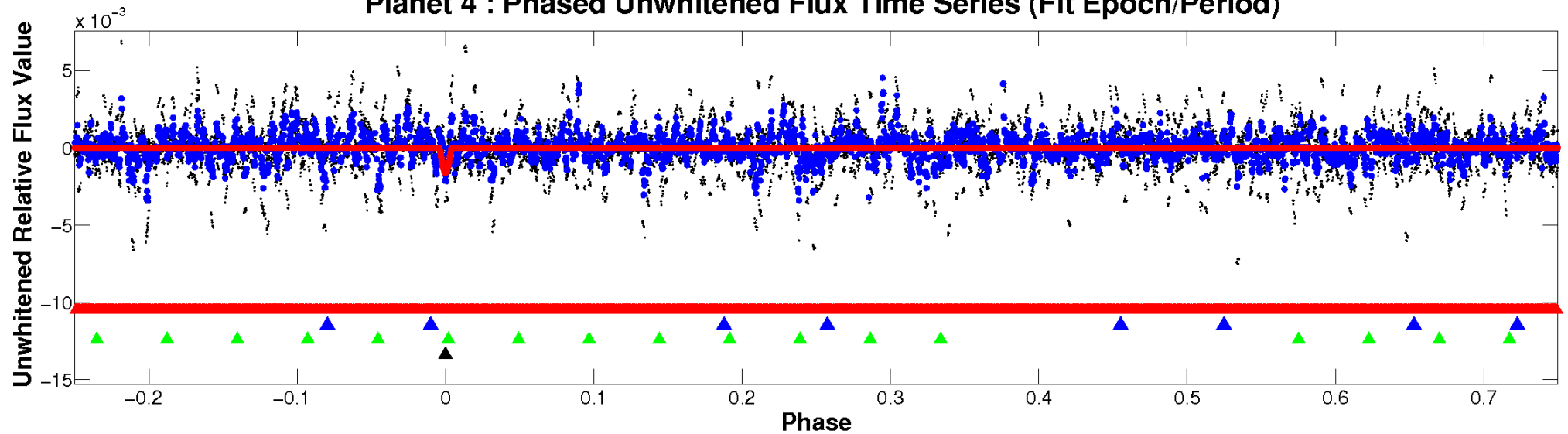
ALT Odd/Even

TCE 007696284-04

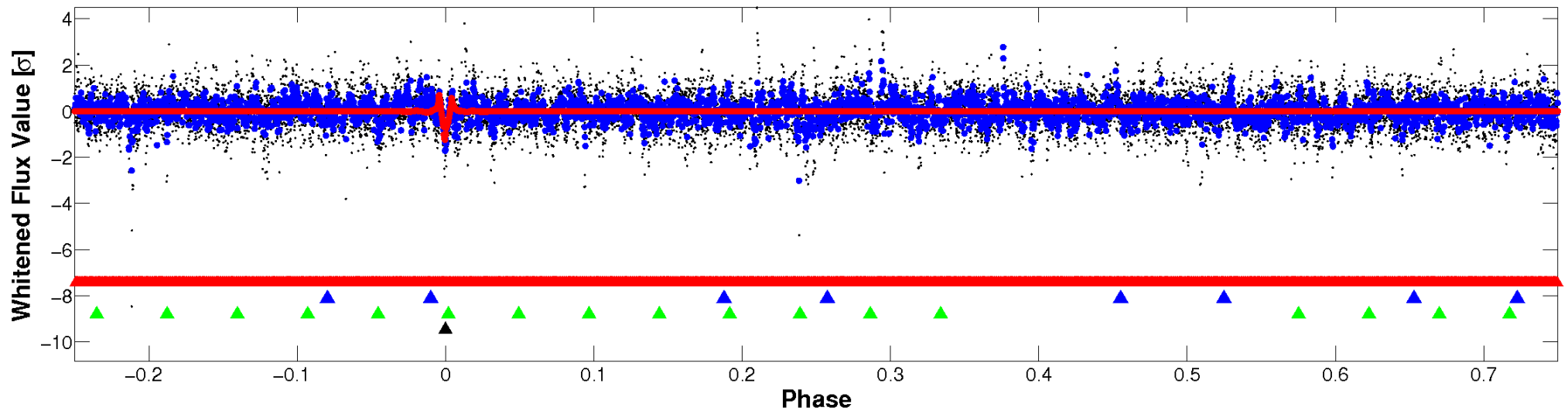


Non-Whitened Vs. Whitened Light Curve

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

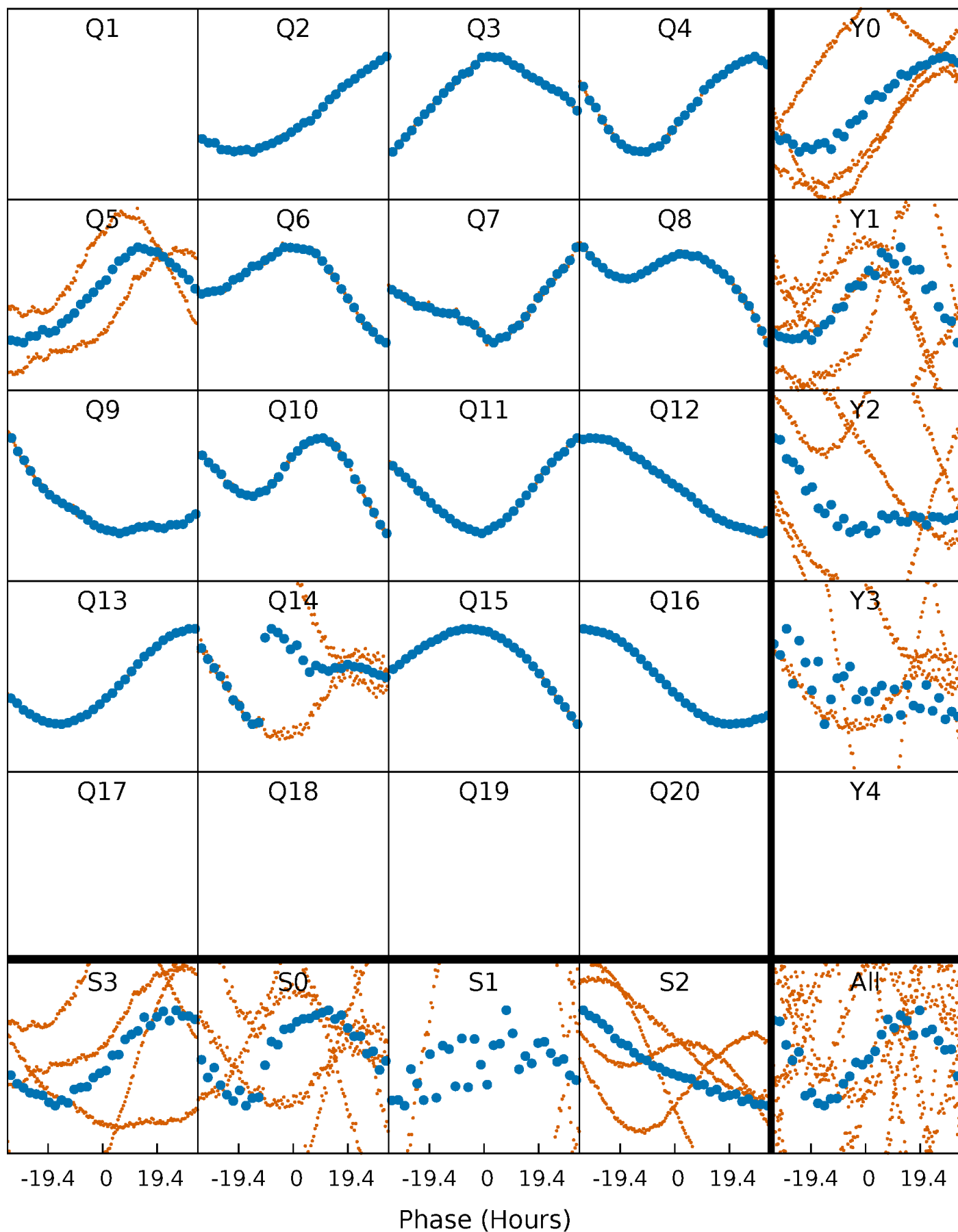


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



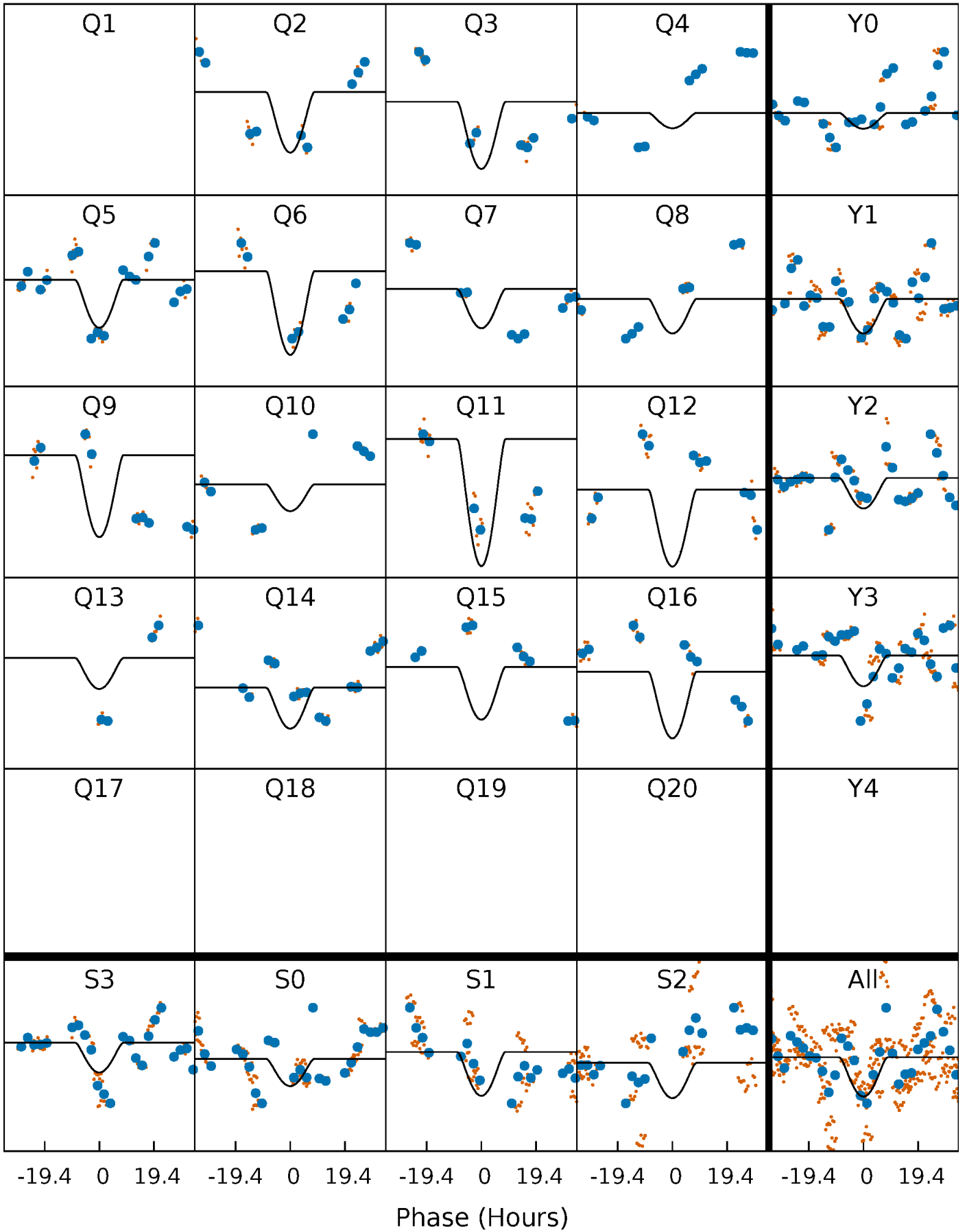
PDC Quarter-Phased Transit Curves

TCE 007696284-04 P= 82.574528 Days $T_0=201.115790$ (BKJD)



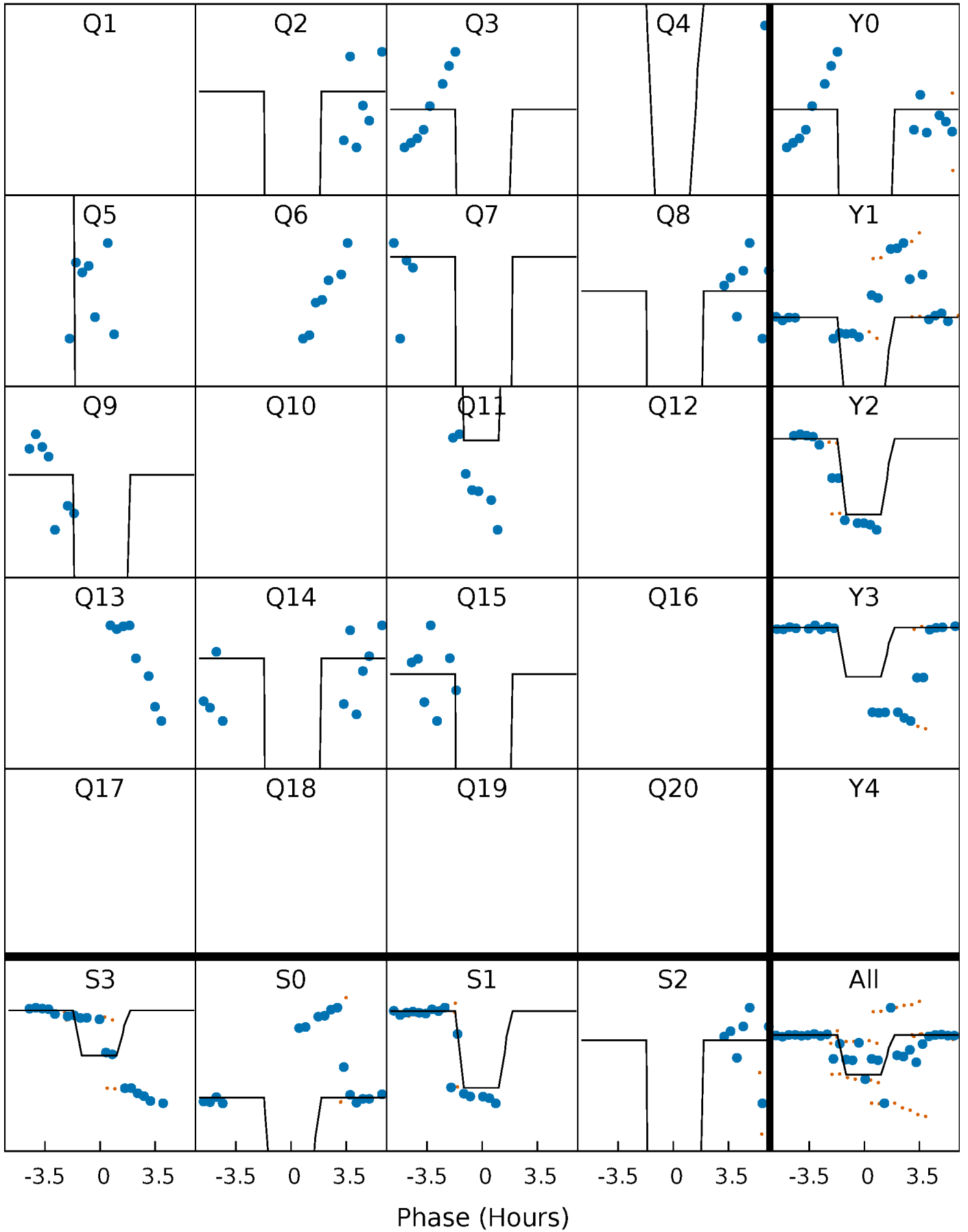
DV Quarter-Phased Transit Curves

TCE 007696284-04 P= 82.574528 Days $T_0=201.115790$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

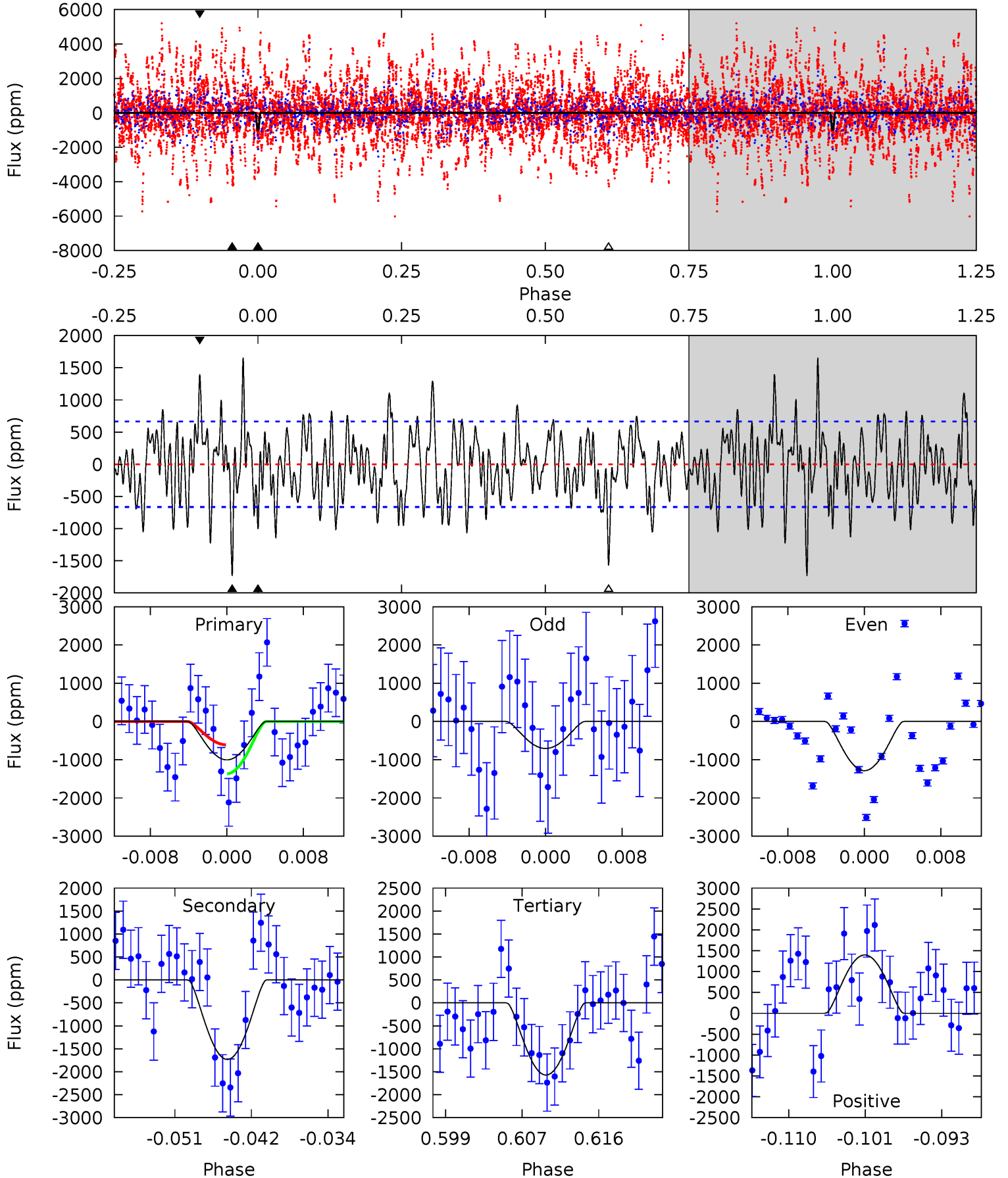
TCE 007696284-04 P= 82.569214 Days $T_0=201.143475$ (BKJD)



DV Model-Shift Uniqueness Test

007696284-04, $P = 82.574528$ Days, $E = 118.541262$ Days

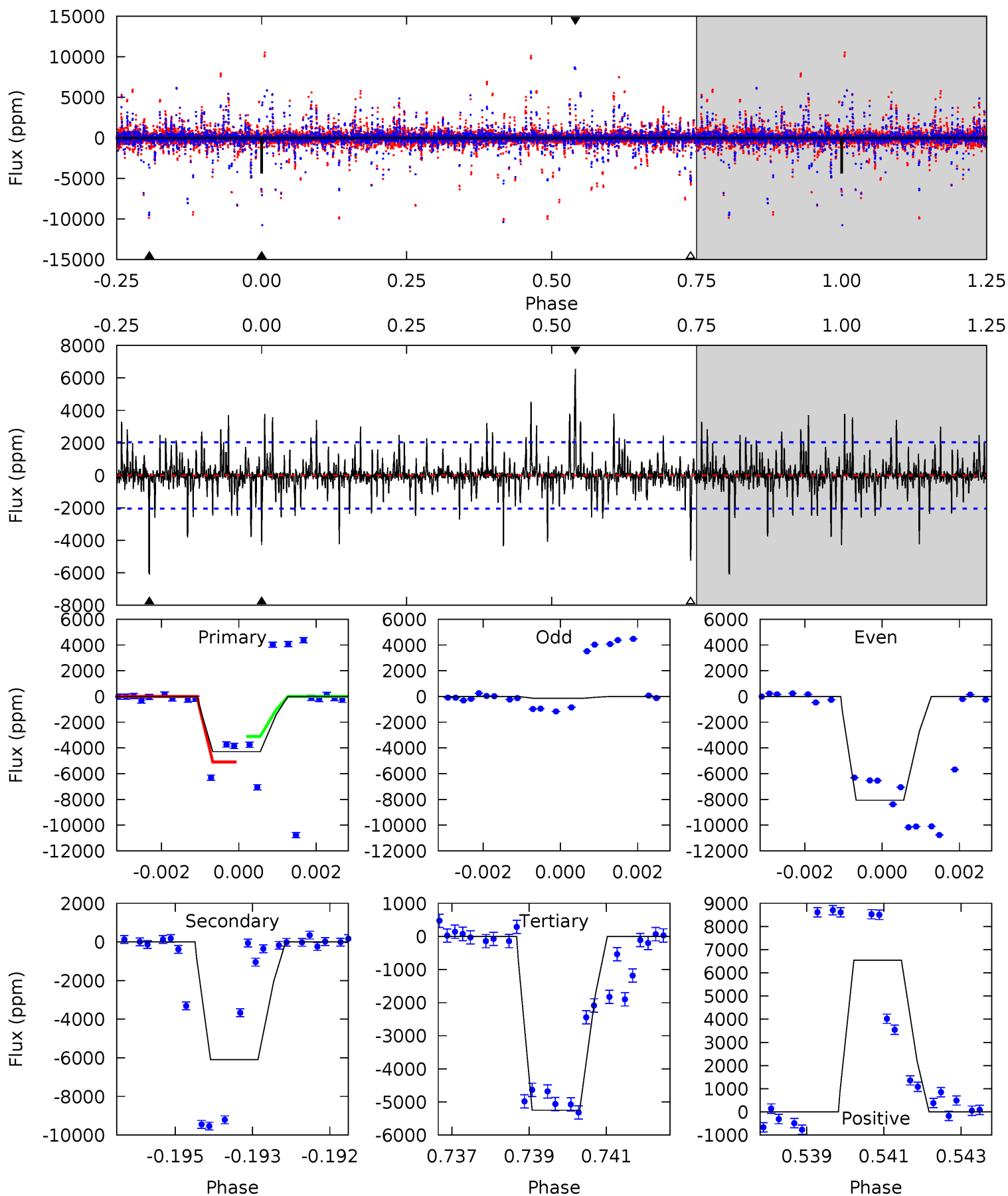
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.64	13.2	12.0	10.6	5.06	2.63	3.53	-4.32	-2.99	1.22	2.55	2.06	-47.3	0.49	2.88



Alt Model-Shift Uniqueness Test

007696284-04, P = 82.569214 Days, E = 118.574261 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.3	16.0	13.8	17.2	5.37	3.15	1.75	-2.53	-5.94	2.21	-1.21	11.1	0.96	0.52	2.18



Stellar Parameters For KIC 007696284

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5680^{+152}_{-152}	$4.359^{+0.195}_{-0.214}$	$-0.380^{+0.300}_{-0.250}$	$0.977^{+0.290}_{-0.194}$	$0.795^{+0.124}_{-0.053}$	$1.202^{+1.139}_{-0.616}$
	+3%/-3%	+4%/-5%	+79%/-66%	+30%/-20%	+16%/-7%	+95%/-51%
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 007696284-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1733 ± 131	$11.03^{+10.66}_{-7.69}$	590^{+49}_{-40}	3932^{+2548}_{-727}	963^{+8758}_{-713}
Alt.	-6089 ± 381	$11.68^{+9.73}_{-7.90}$	593^{+52}_{-40}	4920^{+3679}_{-955}	3041^{+23792}_{-2139}

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

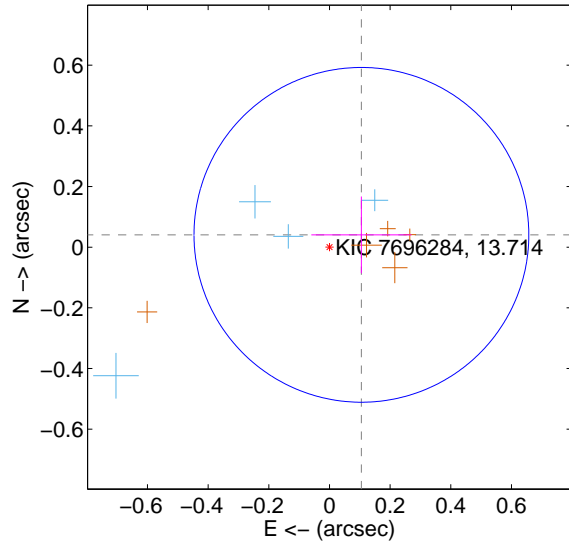
Supplemental centroid analysis for 007696284-04. Kepler magnitude: 13.71. Transit SNR 6.95

There are 5 quarters with good PRF difference image offsets

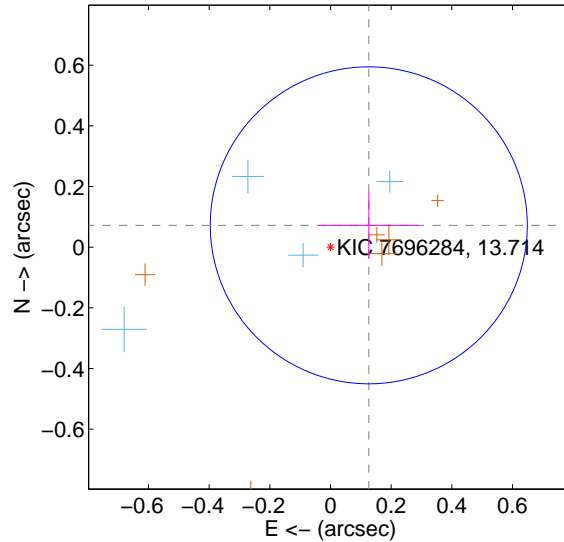
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.113 ± 0.184	0.61	-0.105 ± 0.165	0.041 ± 0.127
PRF-fit source offset from KIC position	0.145 ± 0.174	0.83	-0.126 ± 0.165	0.072 ± 0.110
photometric centroid source offset	0.10 ± 0.12	0.84	0.01 ± 0.09	0.10 ± 0.12

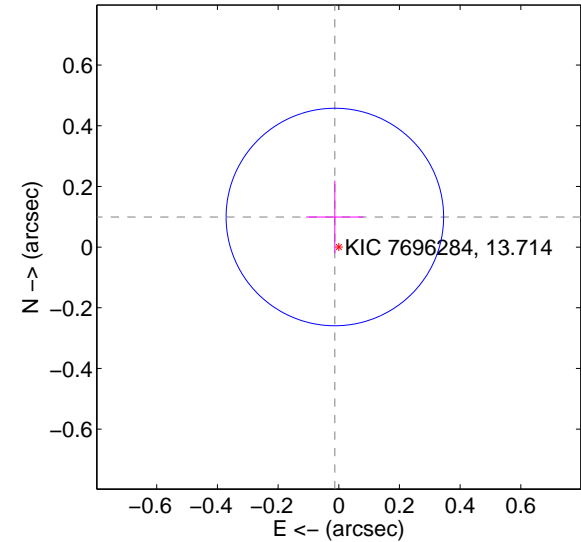
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



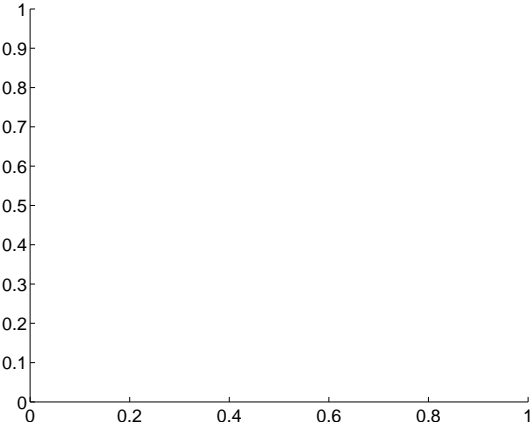
offset from photometric centroids



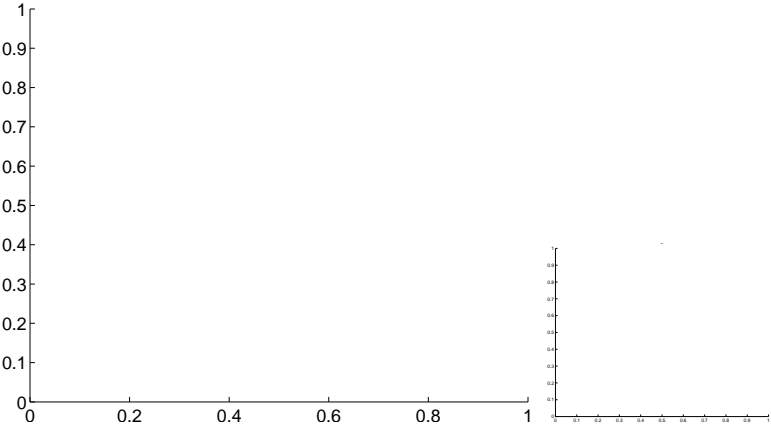
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

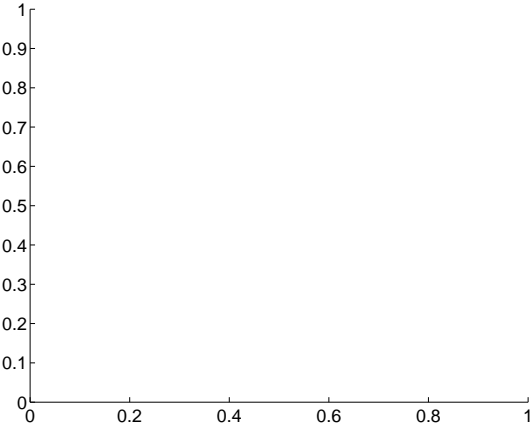
Q1 no difference image



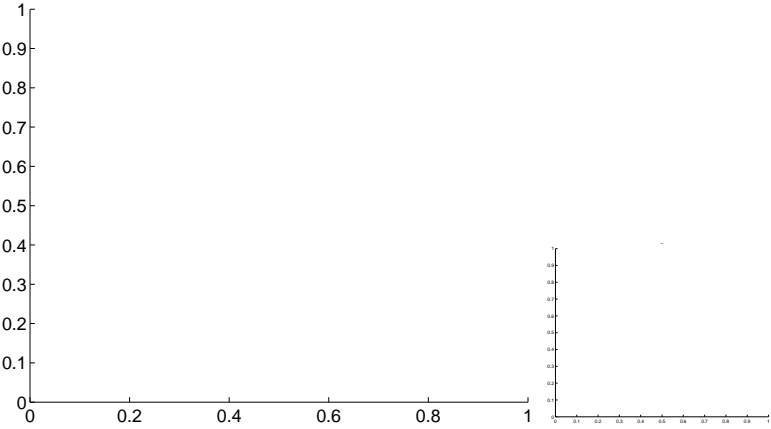
Q1 no OOT image



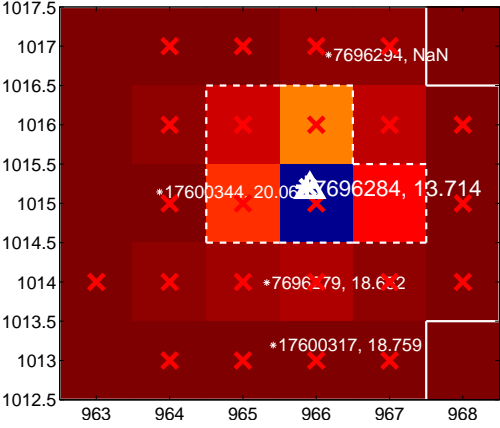
Q2 no difference image



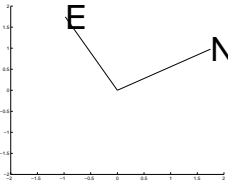
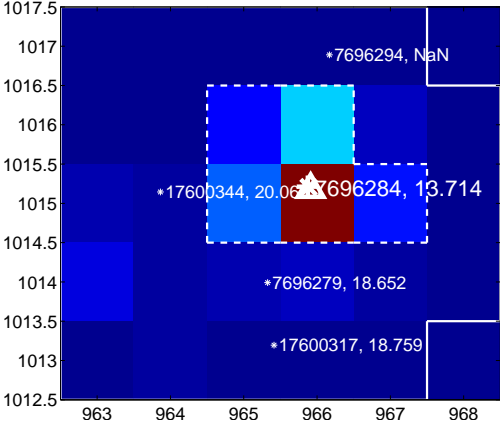
Q2 no OOT image



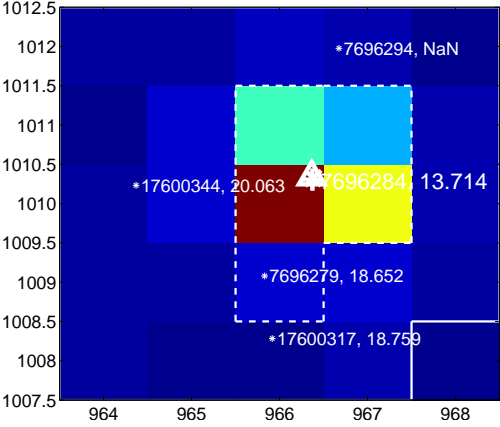
Q3 difference image. Poor Quality



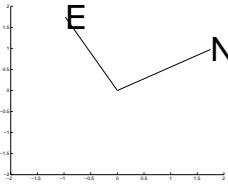
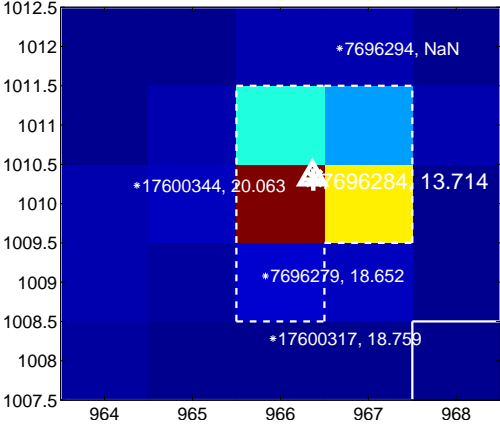
Q3 OOT image



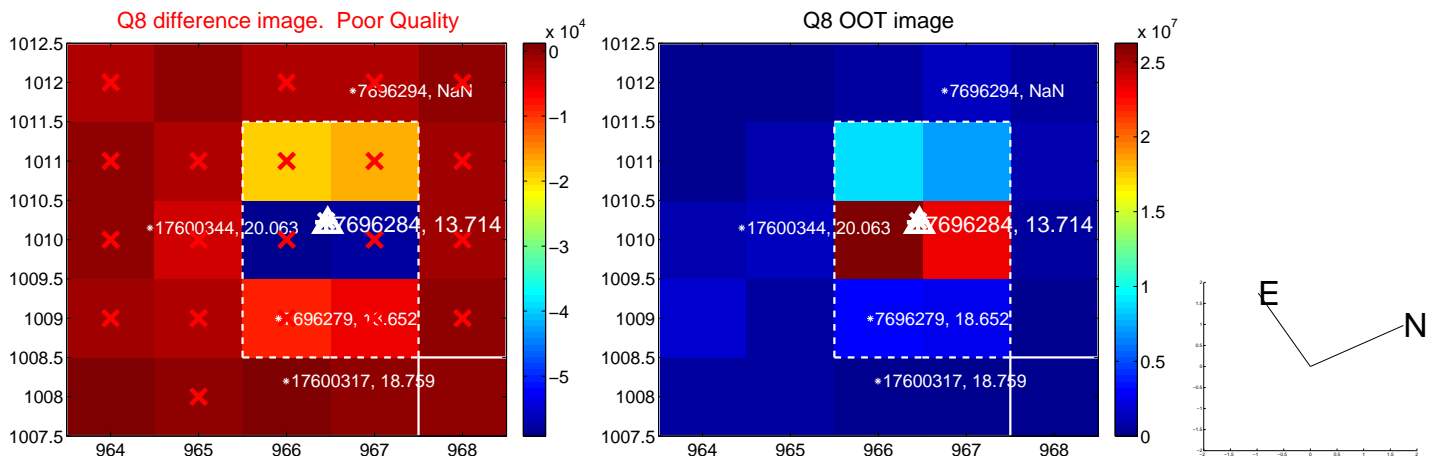
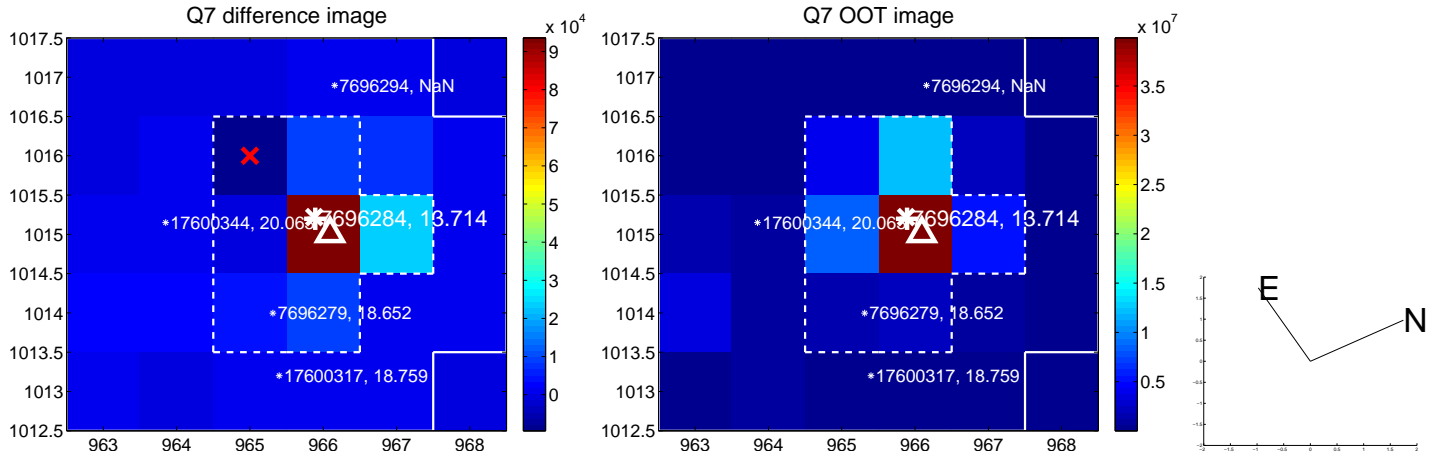
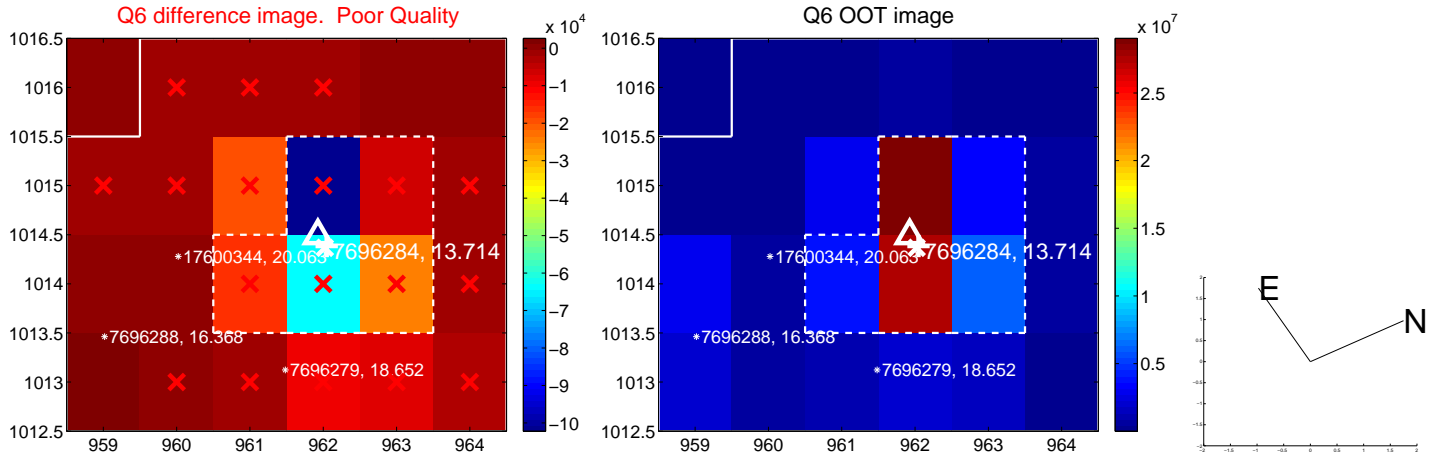
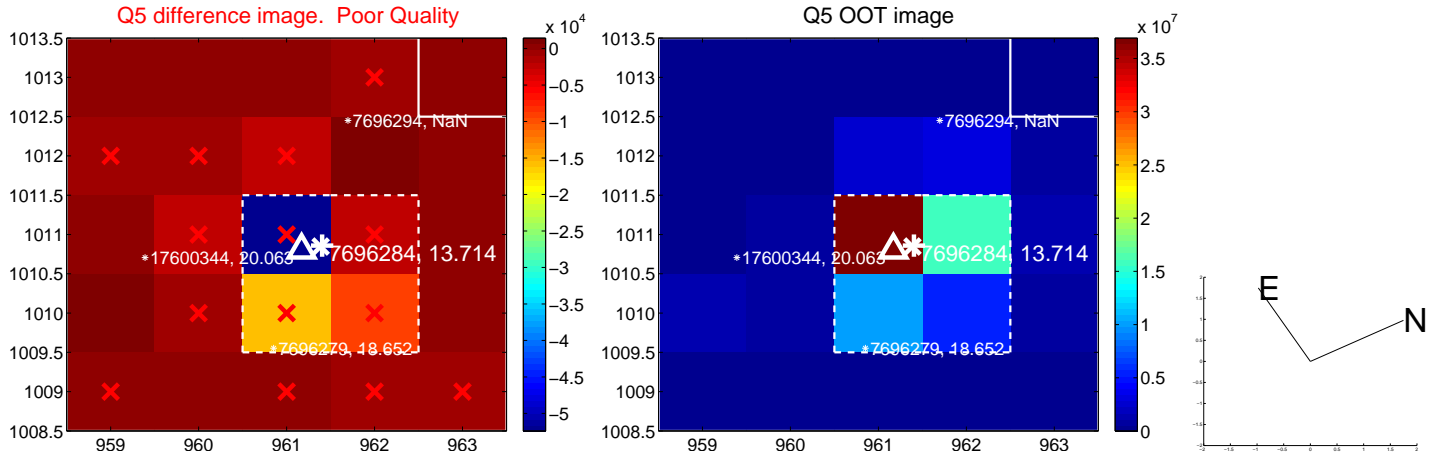
Q4 difference image



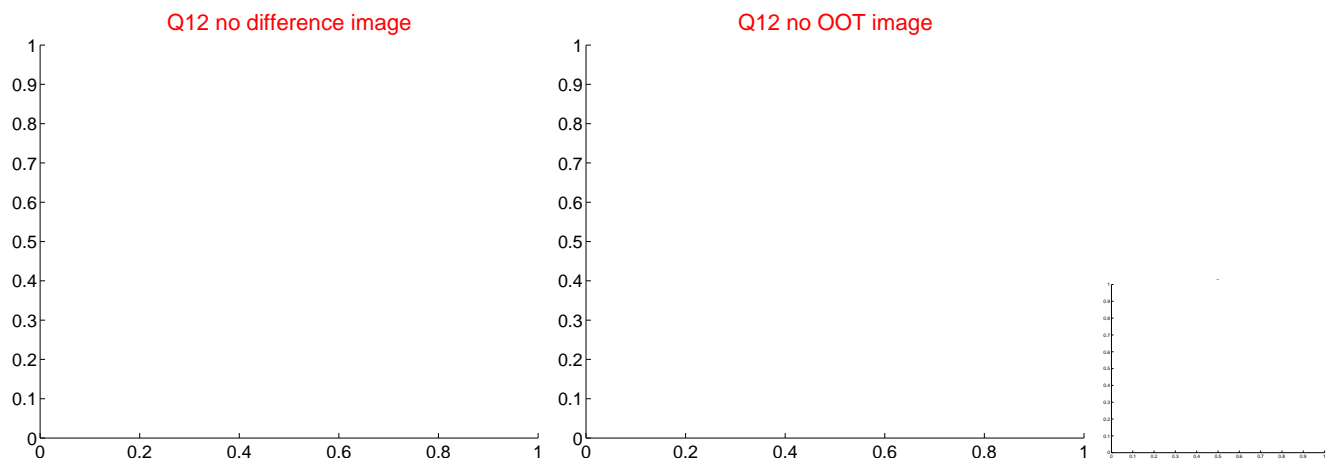
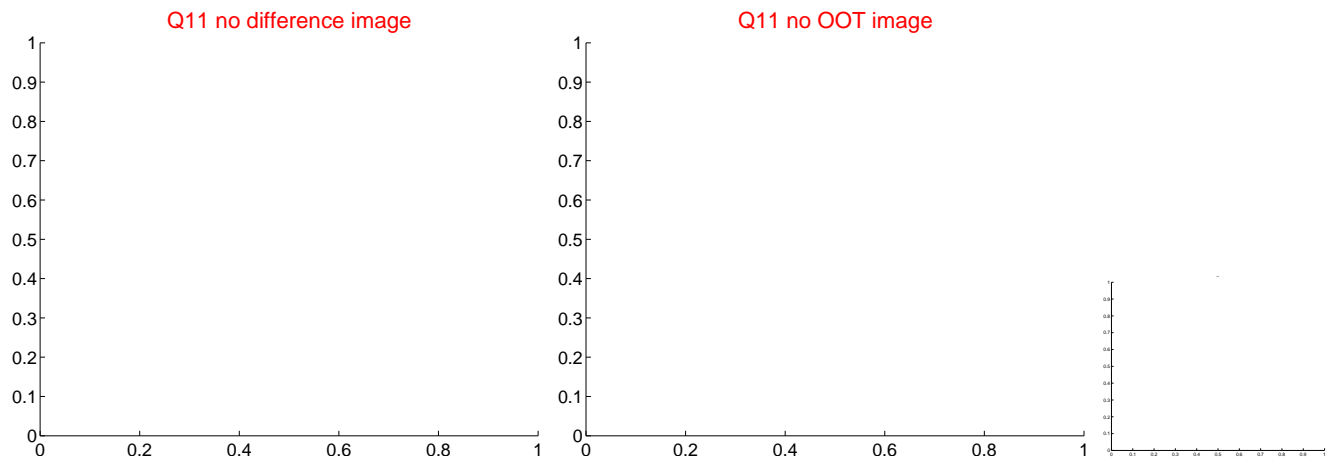
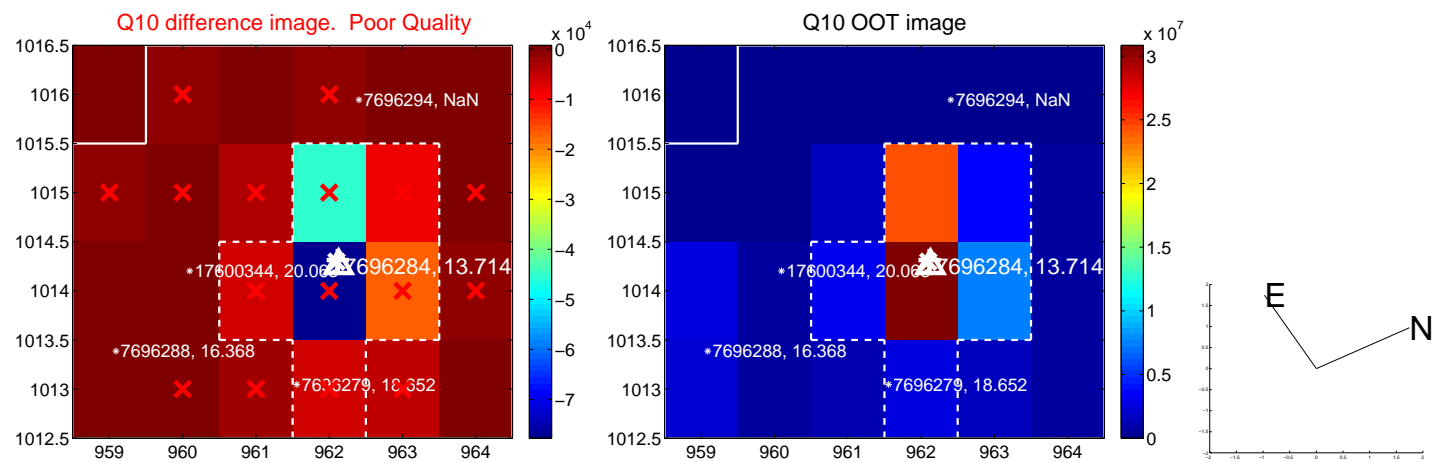
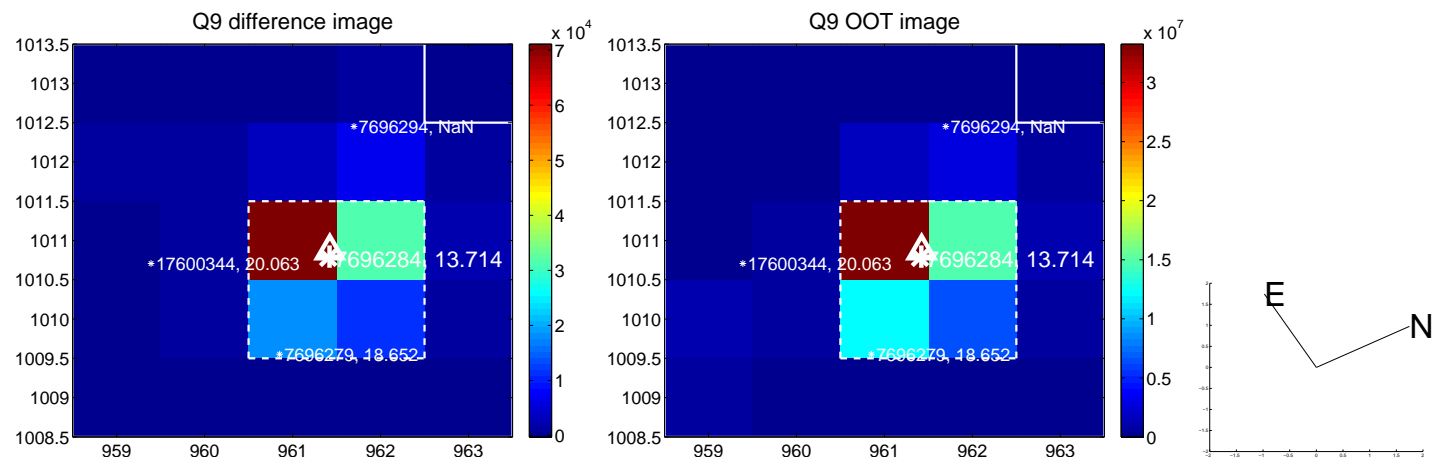
Q4 OOT image



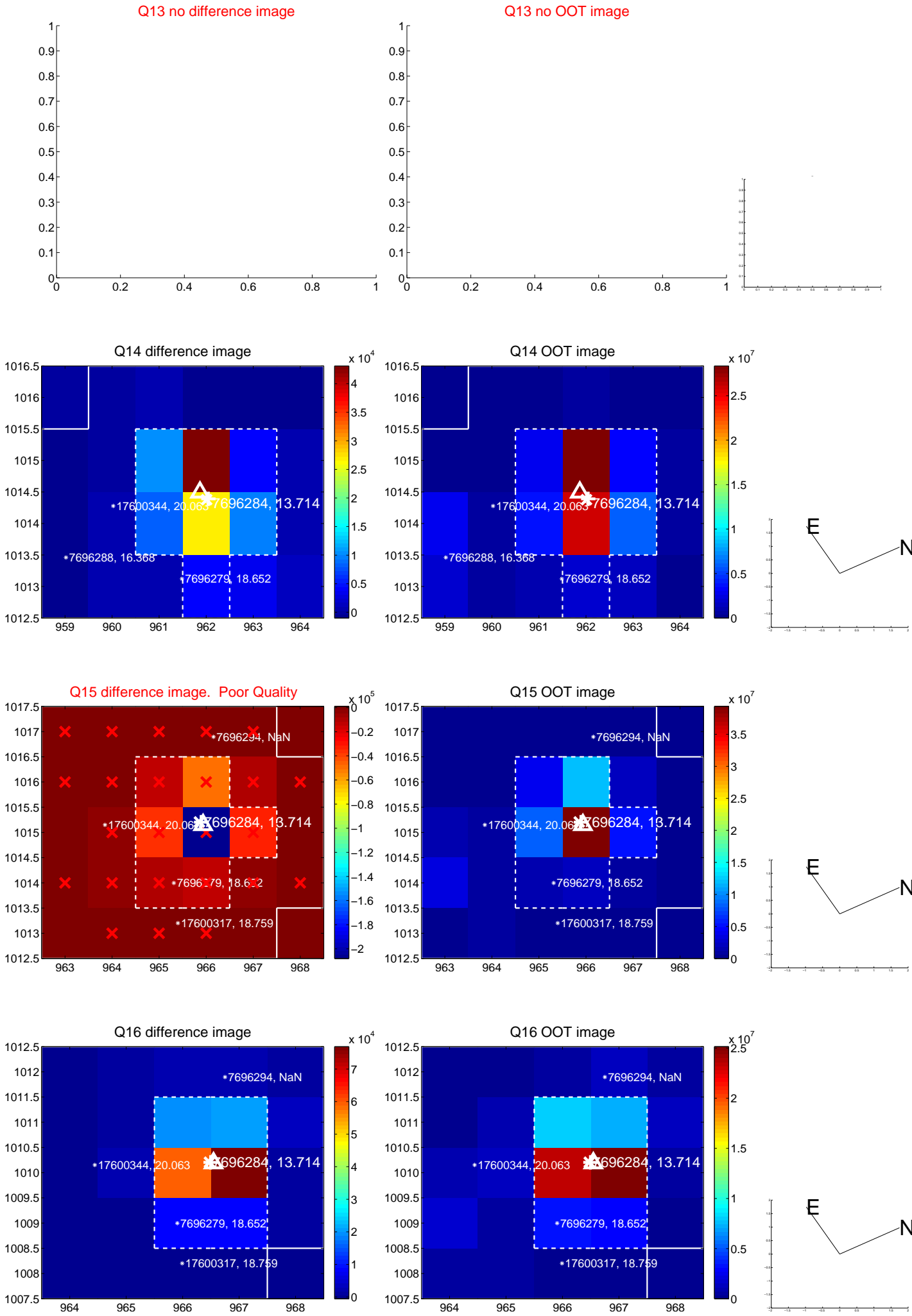
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



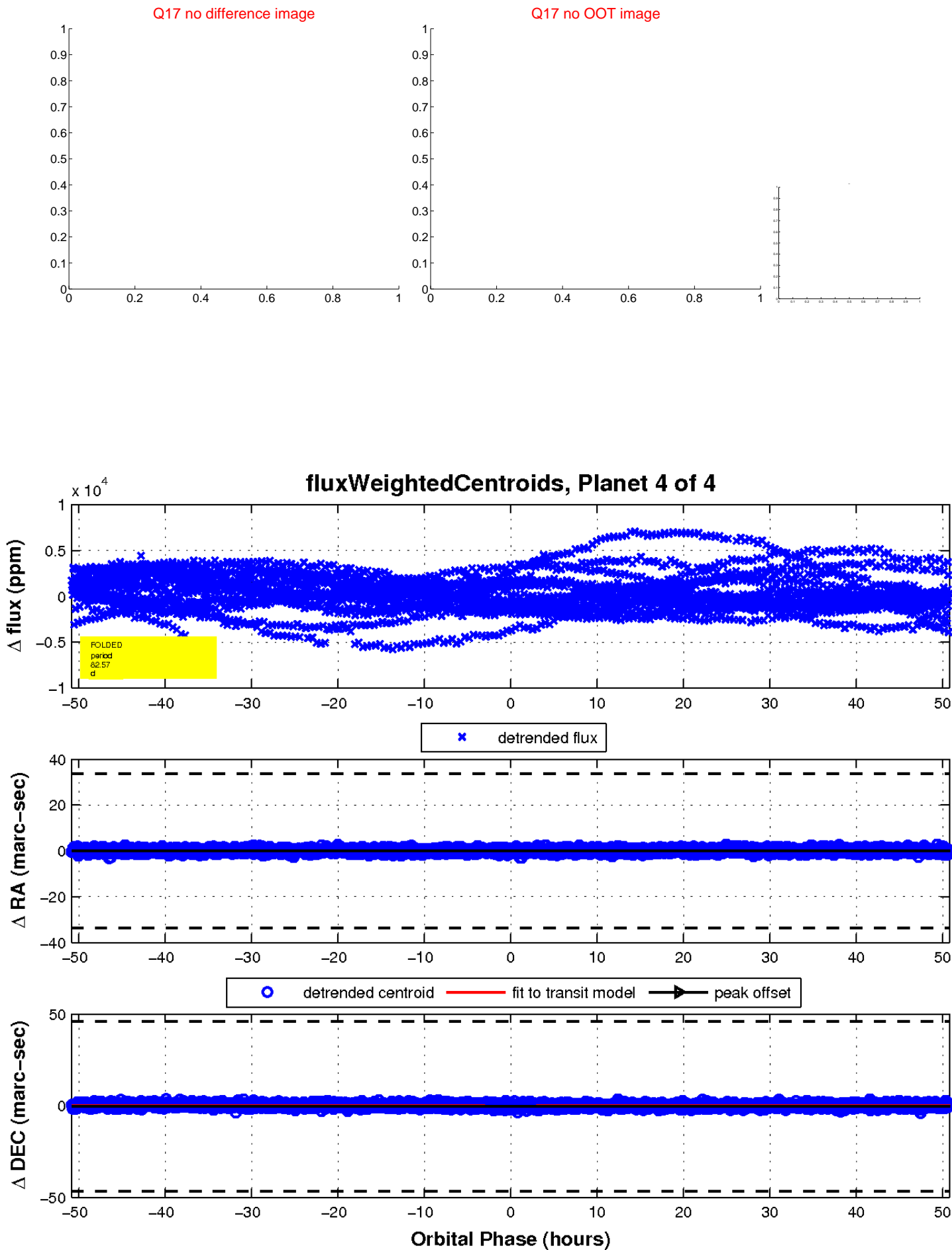
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

