

KIC 010096019

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})
010096019-01	OBS	No	6.871484	138.362231	134.3	10.534	17.2	18.8	2.27	7040	5.20	1565.29
010096019-02	OBS	No	6.871547	137.603890	87.7	4.844	12.5	13.5	2.27	7040	2.65	1565.27
010096019-03	OBS	No	6.871487	135.319303	37.6	27.895	10.3	8.7	2.27	7040	1.59	1565.29

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010096019-01	OBS	FP	0.00	1	0	0	0	LPP_DV
010096019-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—SAME_NTL_PERIOD
010096019-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—SAME_NTL_PERIOD

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

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

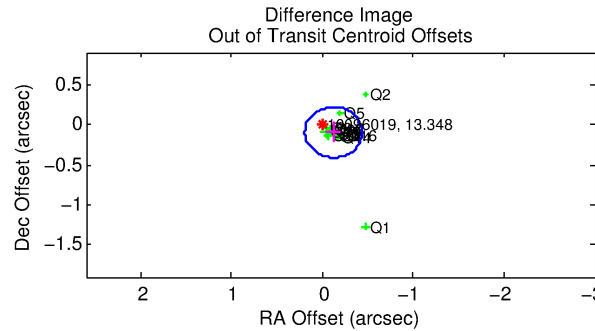
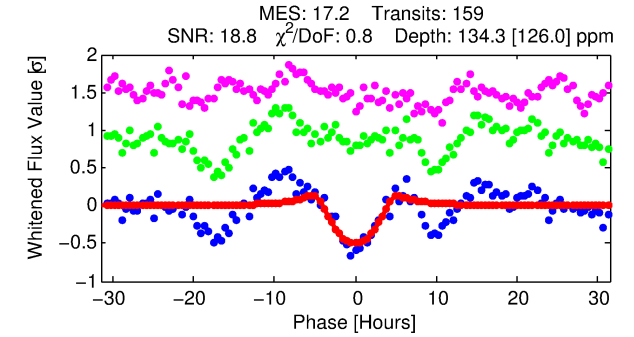
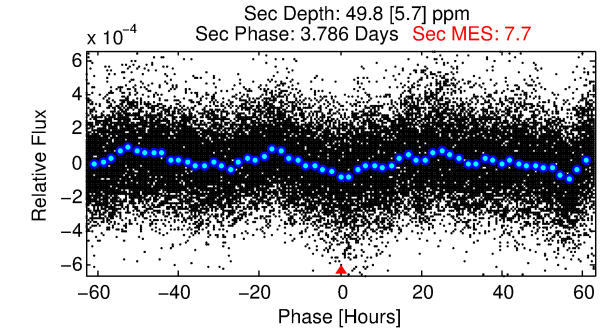
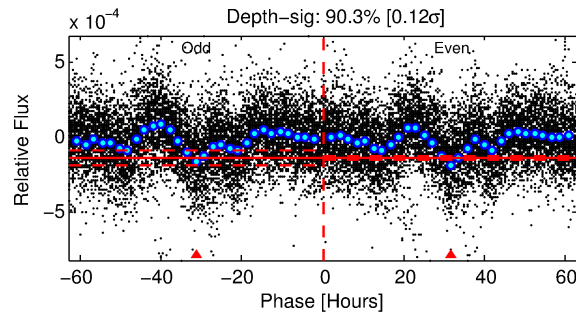
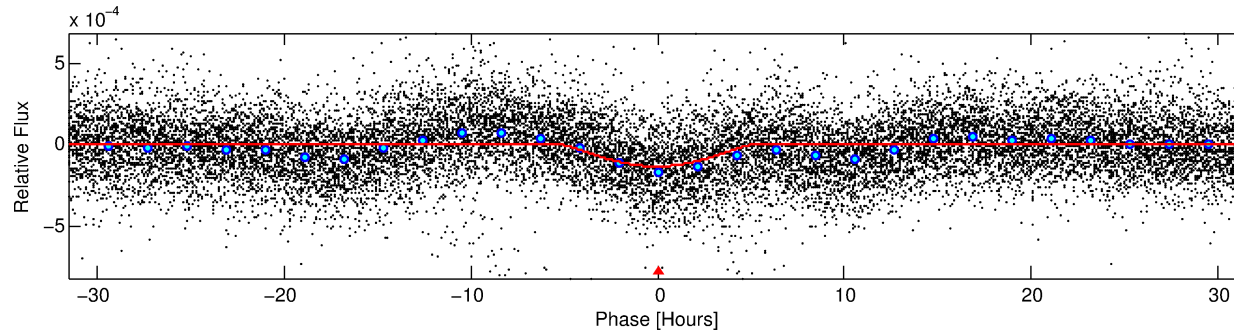
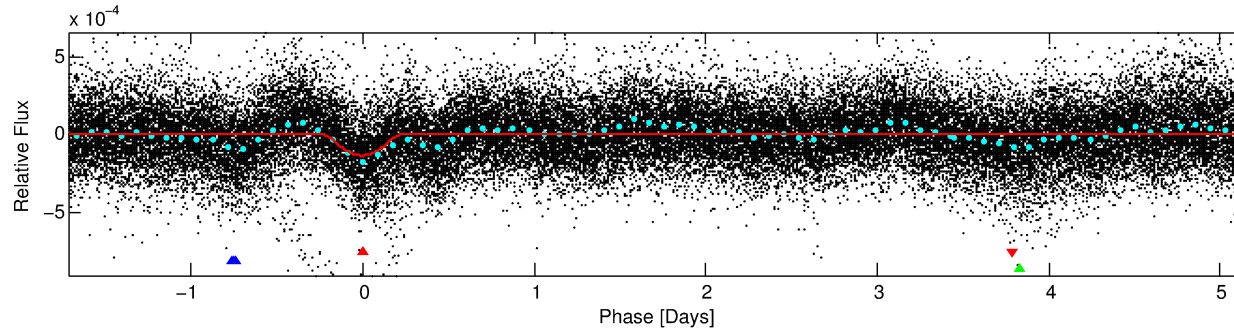
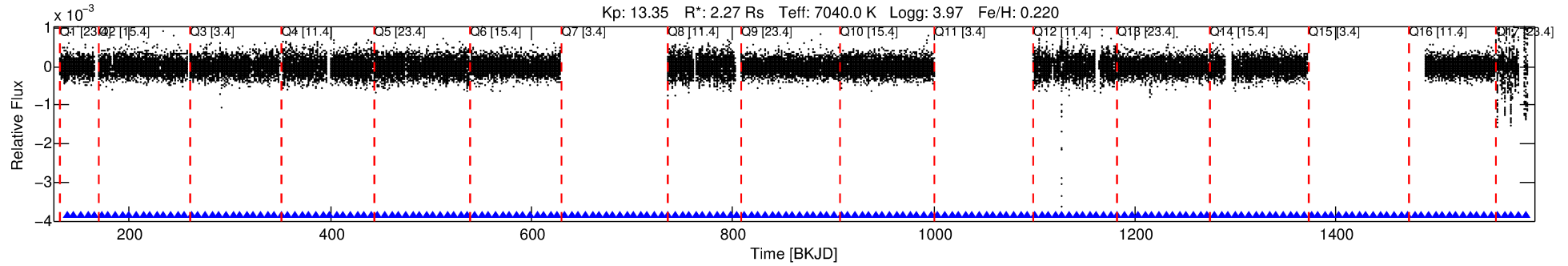
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010096019-01

No Significant Match Found

DV One-Page Summary

KIC: 10096019 Candidate: 1 of 3 Period: 6.871 d



DV Fit Results:

Period = 6.87148 [0.00008] d
Epoch = 138.3622 [0.0098] BKJD
Rp/R* = 0.0210 [0.0254]
a/R* = 1.44 [0.22]
b = 1.00 [0.02]
Seff = 1565.29 [607.82]
Teq = 1604 [156] K
Rp = 5.20 [6.43] Re
a = 0.0852 [0.0192] AU
Ag = 7.35 [17.96] [0.35σ]
Teff = 4083 [2478] K [1.00σ]

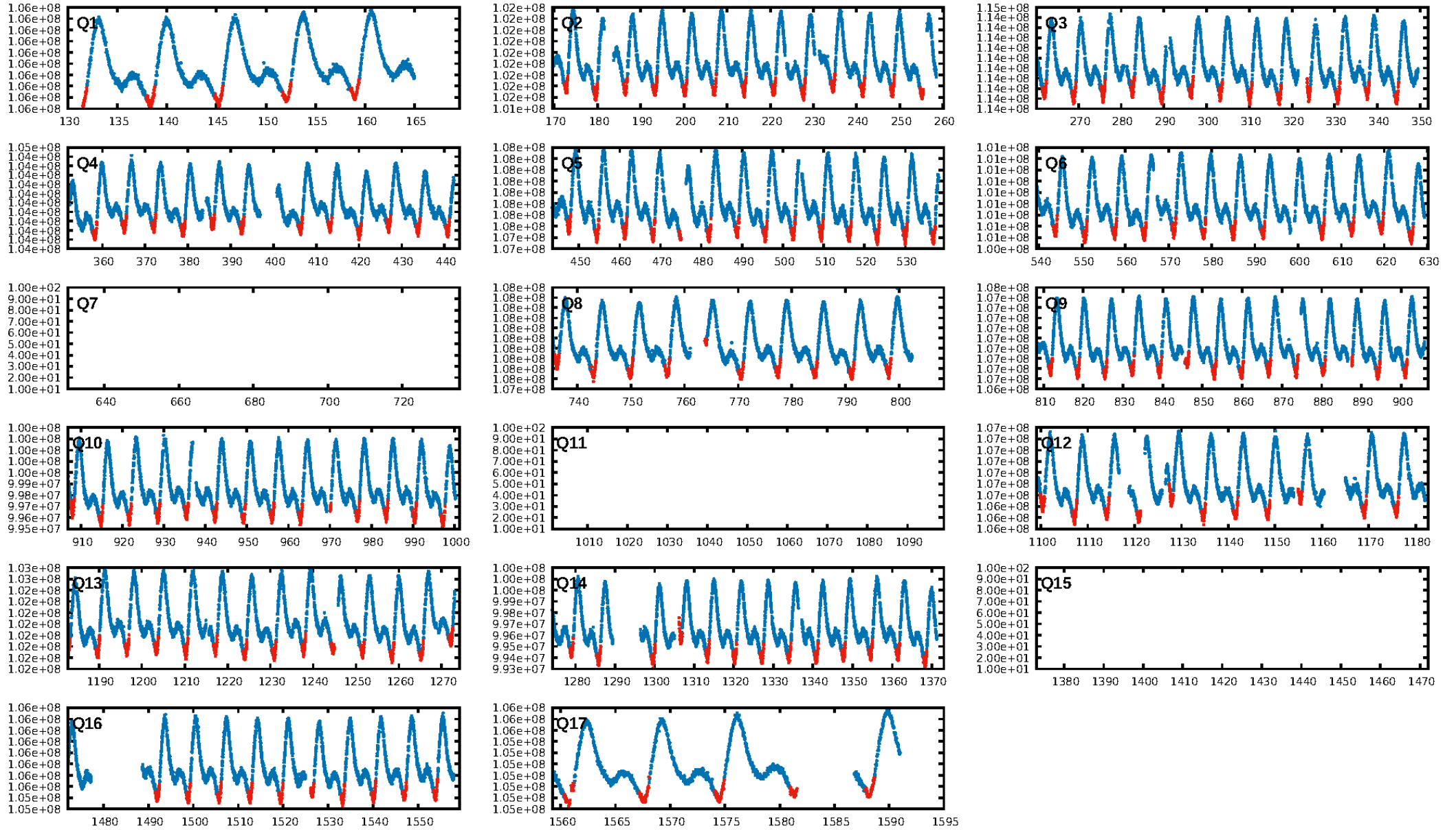
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 93.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.71e-64
RollingBand-fgt: 1.00 [149/149]
GhostDiagnostic-chr: 1.747
Centroid-sig: 0.1%
Centroid-so: 0.755 arcsec [1.38σ]
OotOffset-rm: 0.156 arcsec [1.49σ]
KicOffset-rm: 0.094 arcsec [1.23σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 0.00 [0/14]

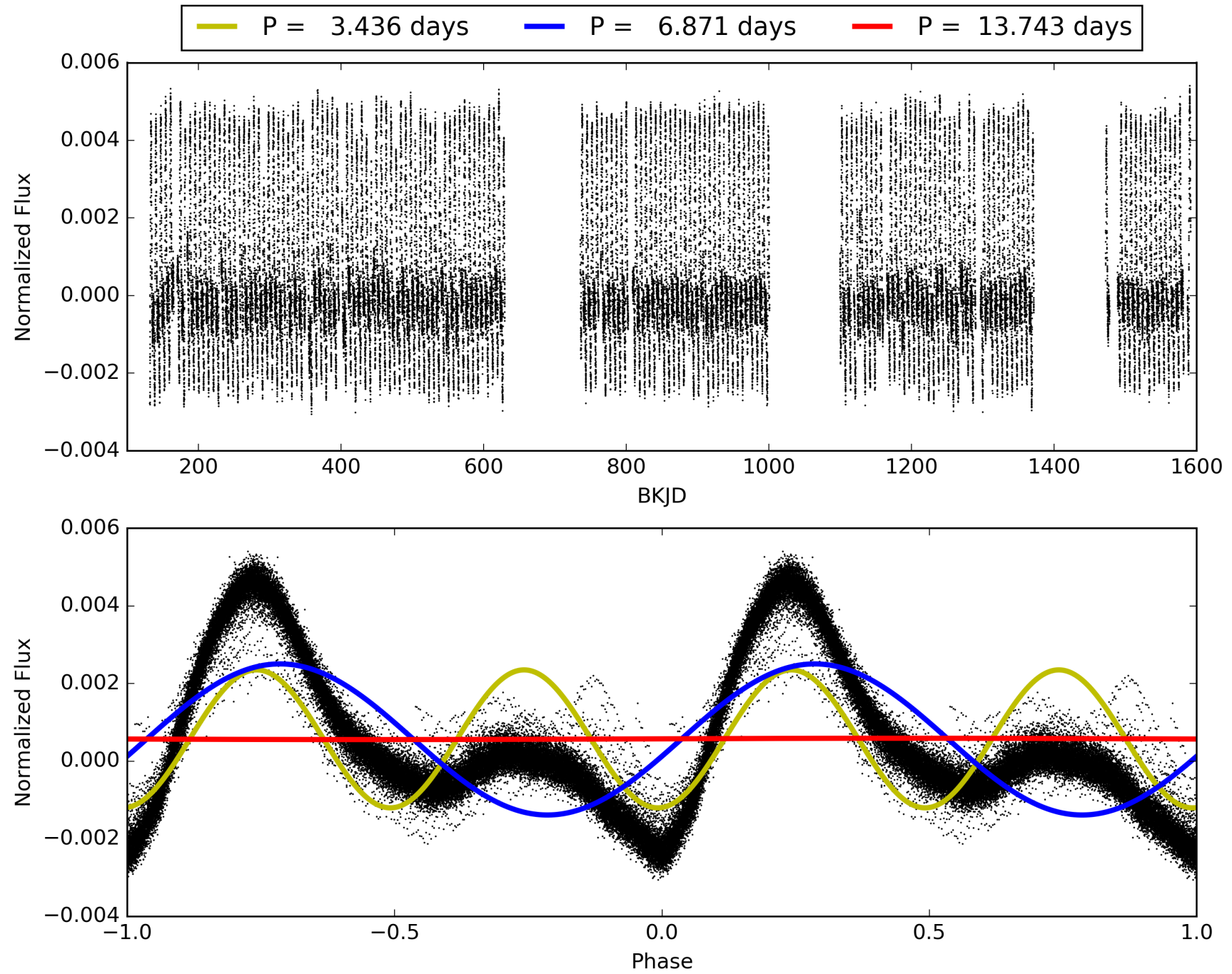
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:06:09 Z

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

TCE 010096019-01, PDC Light Curves

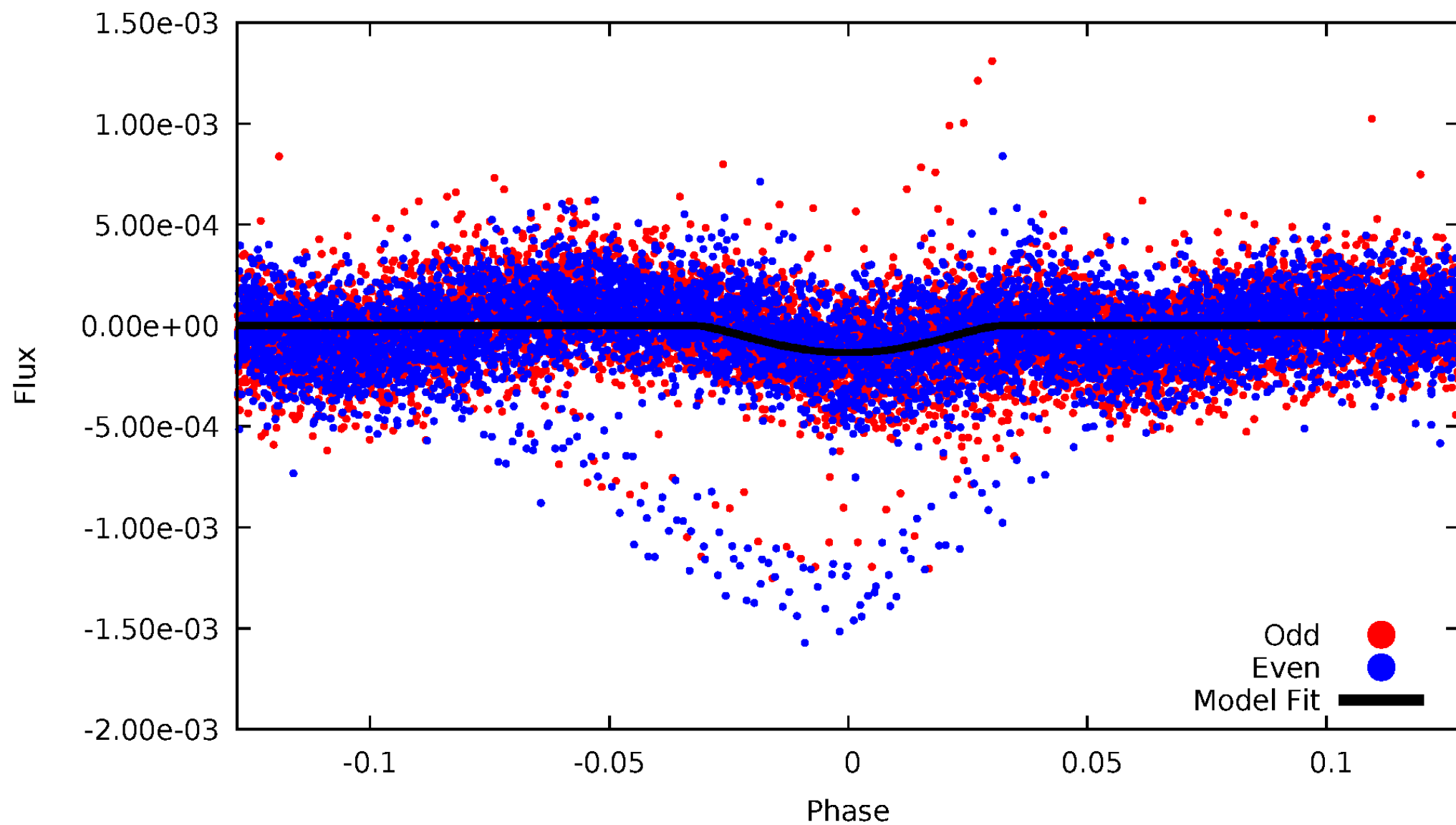


TCE 010096019-01



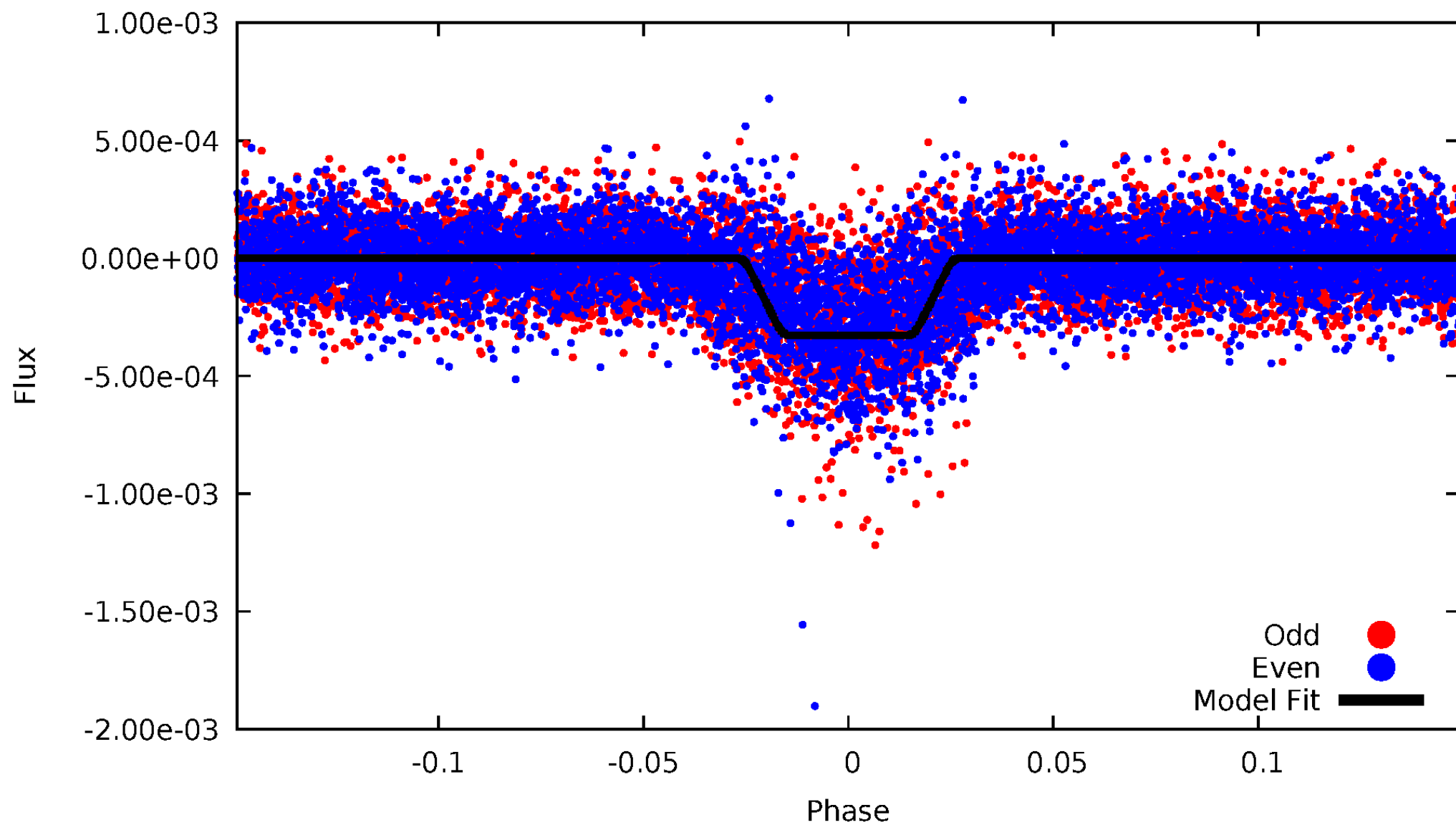
DV Odd/Even

TCE 010096019-01

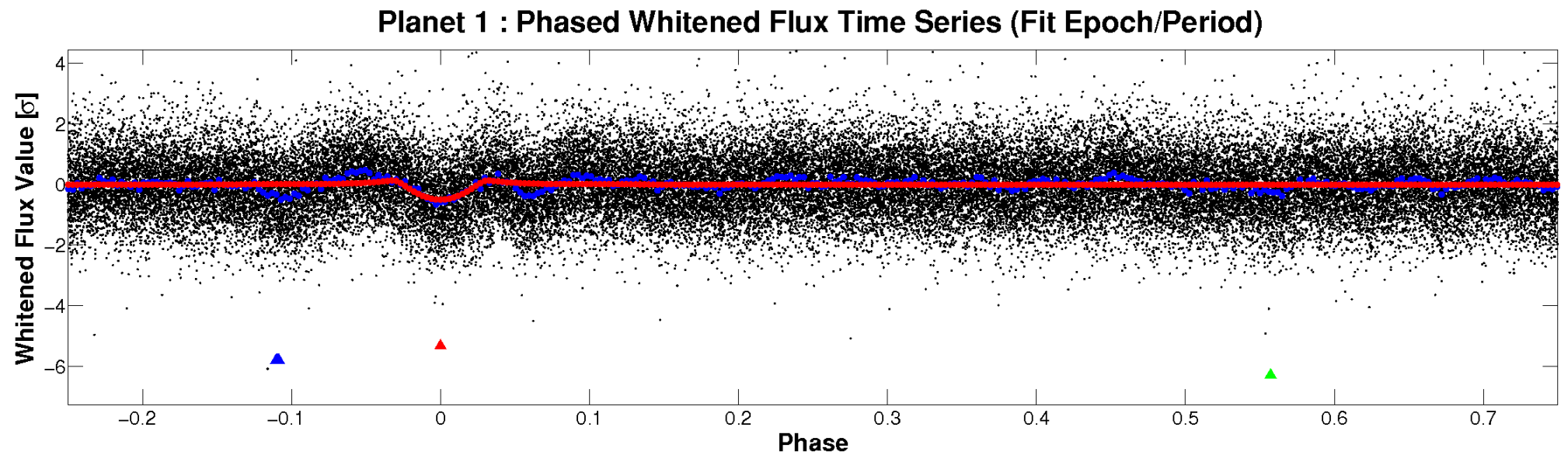
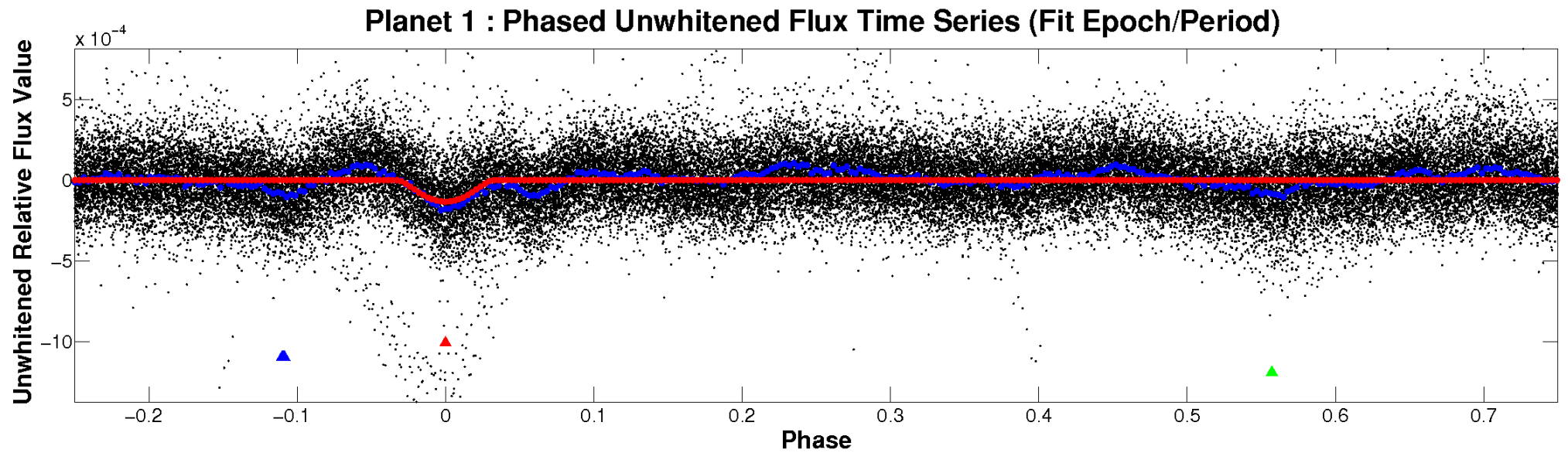


ALT Odd/Even

TCE 010096019-01

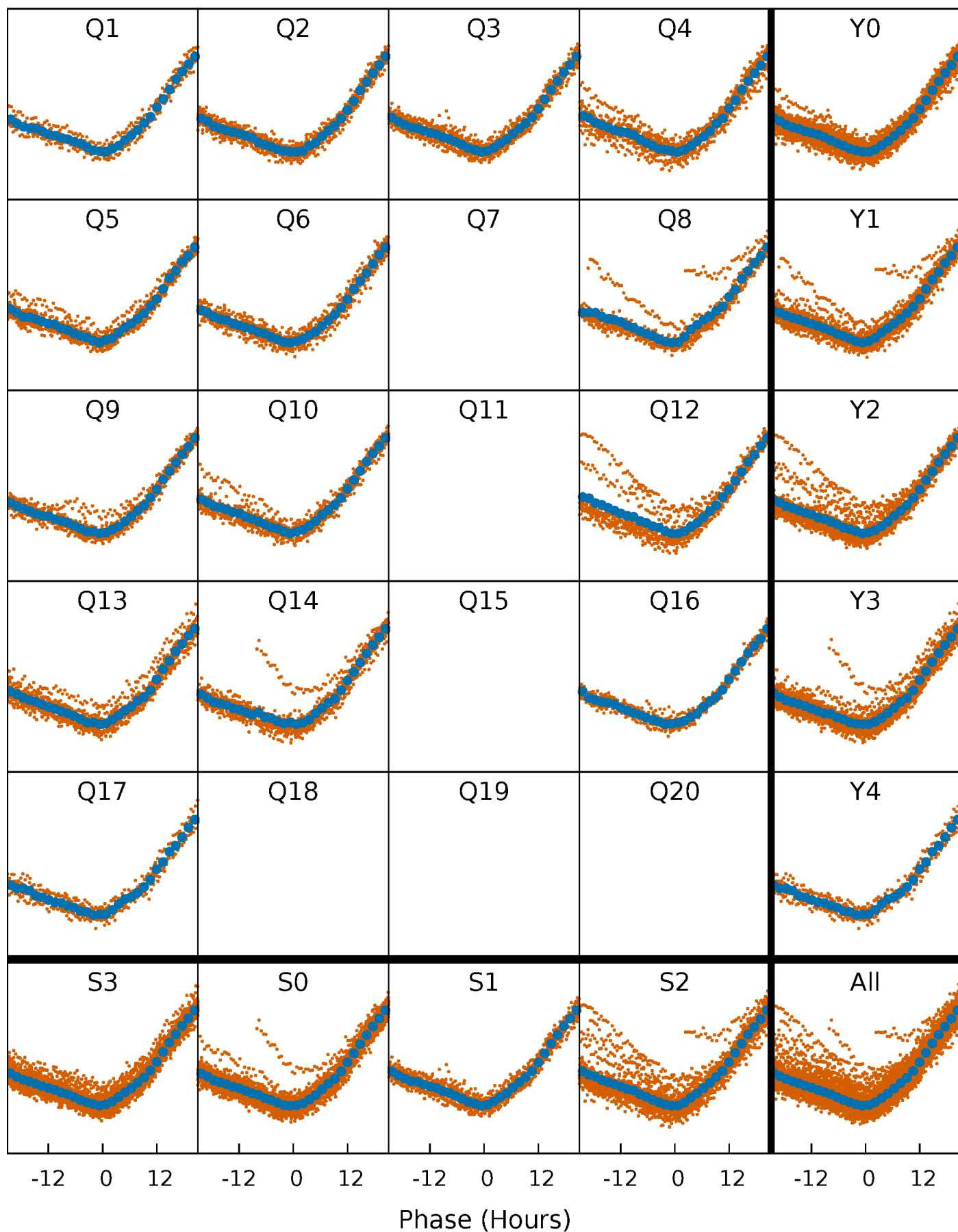


Non-Whitened Vs. Whitened Light Curve



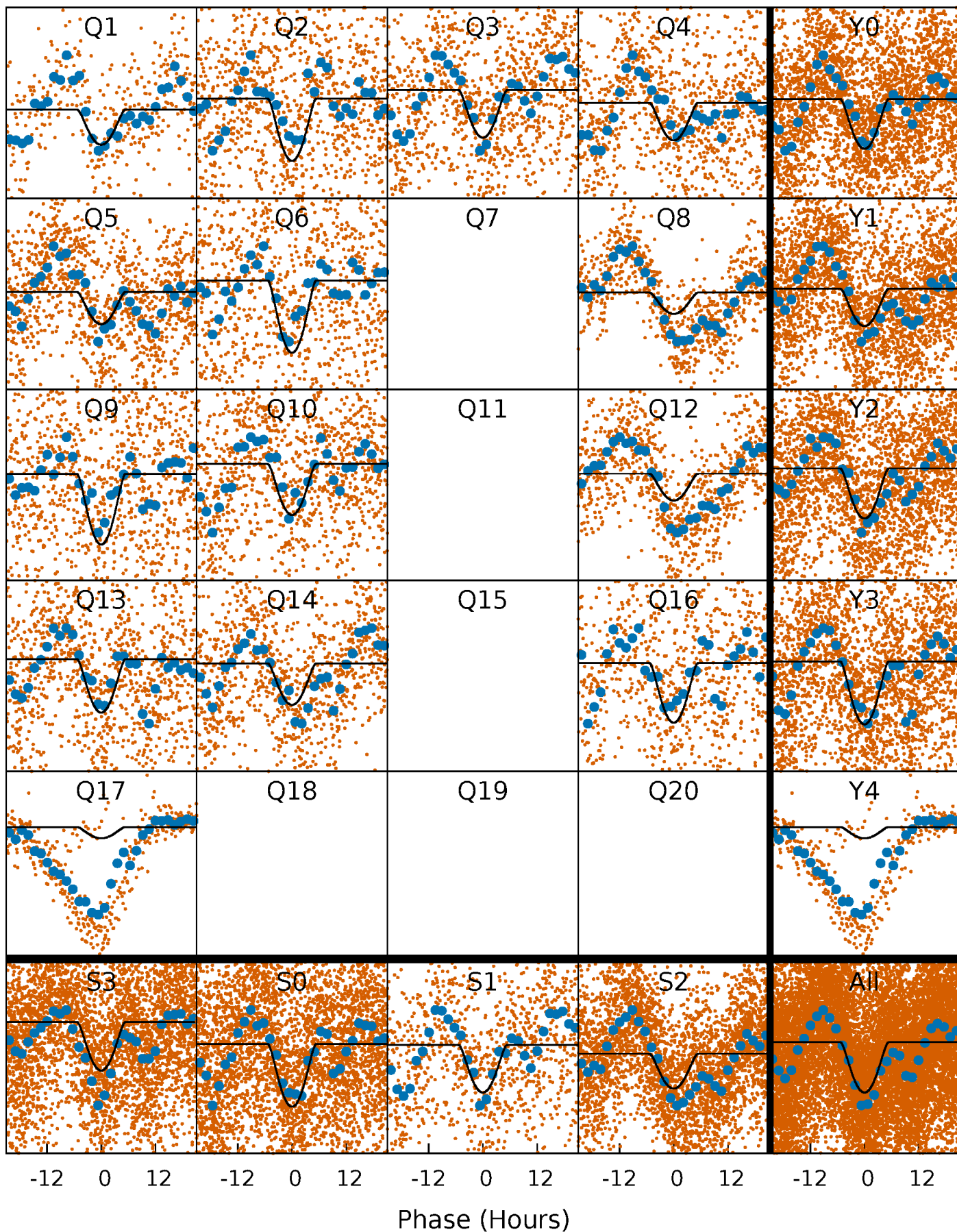
PDC Quarter-Phased Transit Curves

TCE 010096019-01 P= 6.871484 Days $T_0=138.362231$ (BKJD)



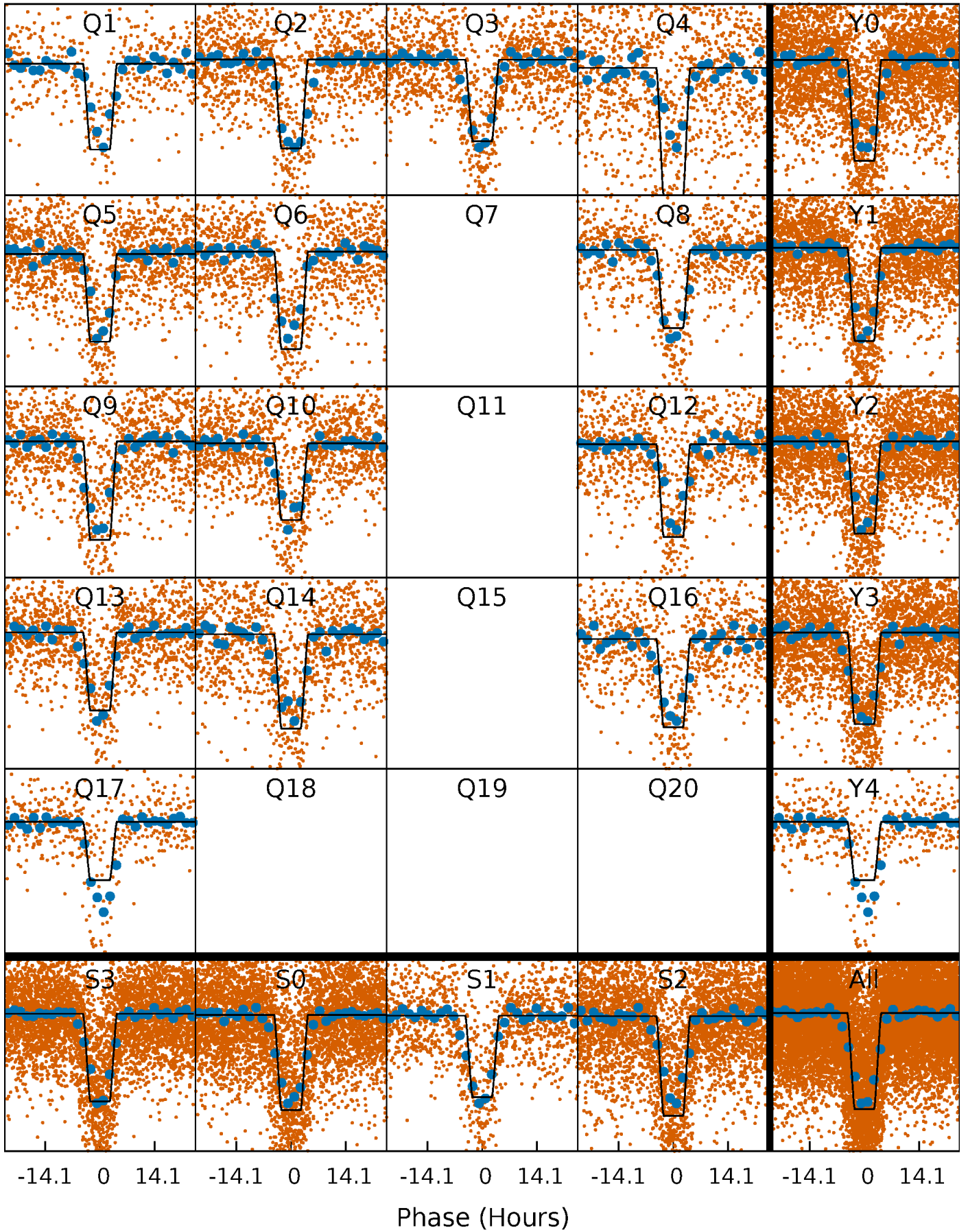
DV Quarter-Phased Transit Curves

TCE 010096019-01 P= 6.871484 Days $T_0=138.362231$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

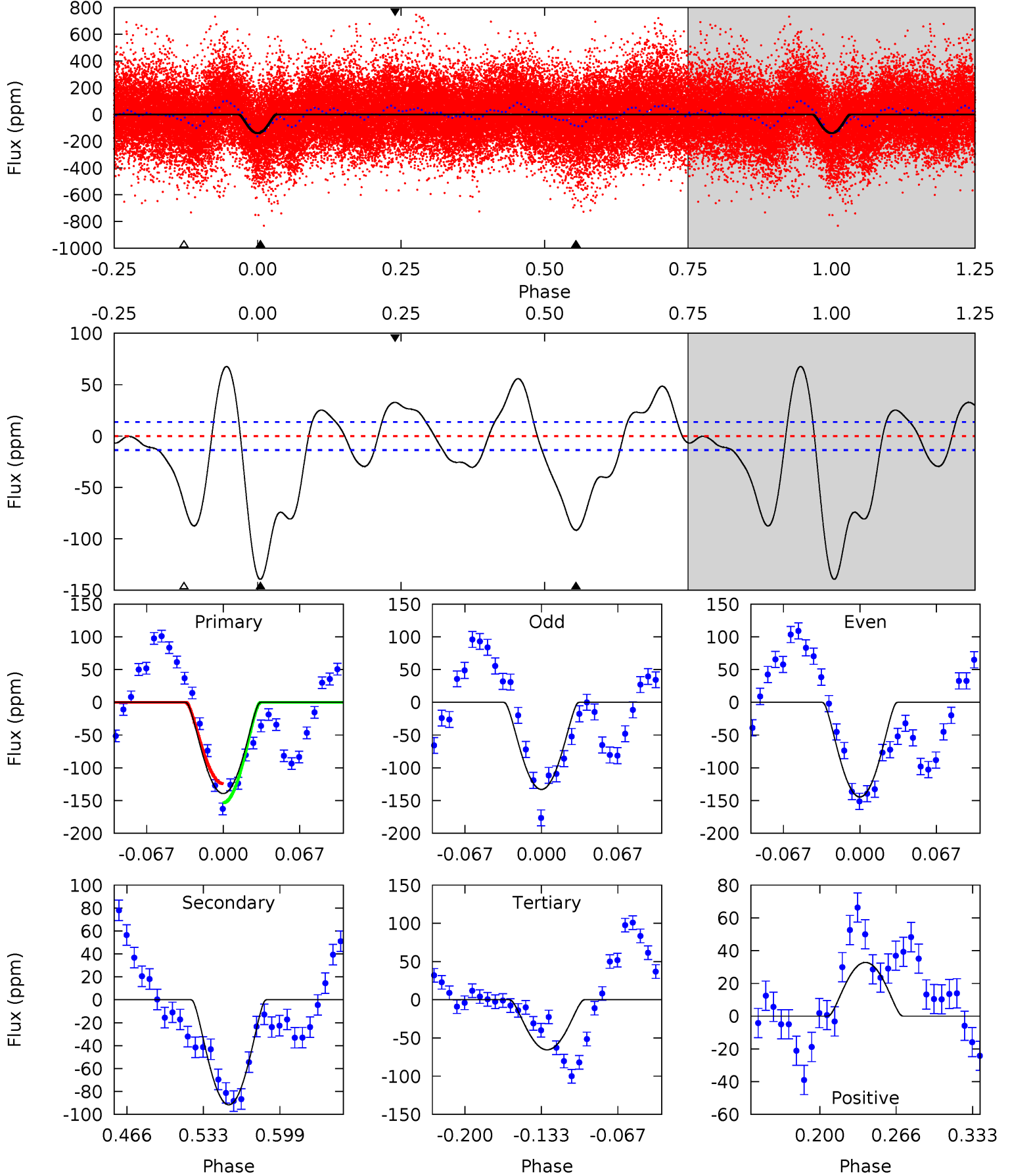
TCE 010096019-01 P= 6.871568 Days $T_0=138.356202$ (BKJD)



DV Model-Shift Uniqueness Test

010096019-01, P = 6.871484 Days, E = 131.490747 Days

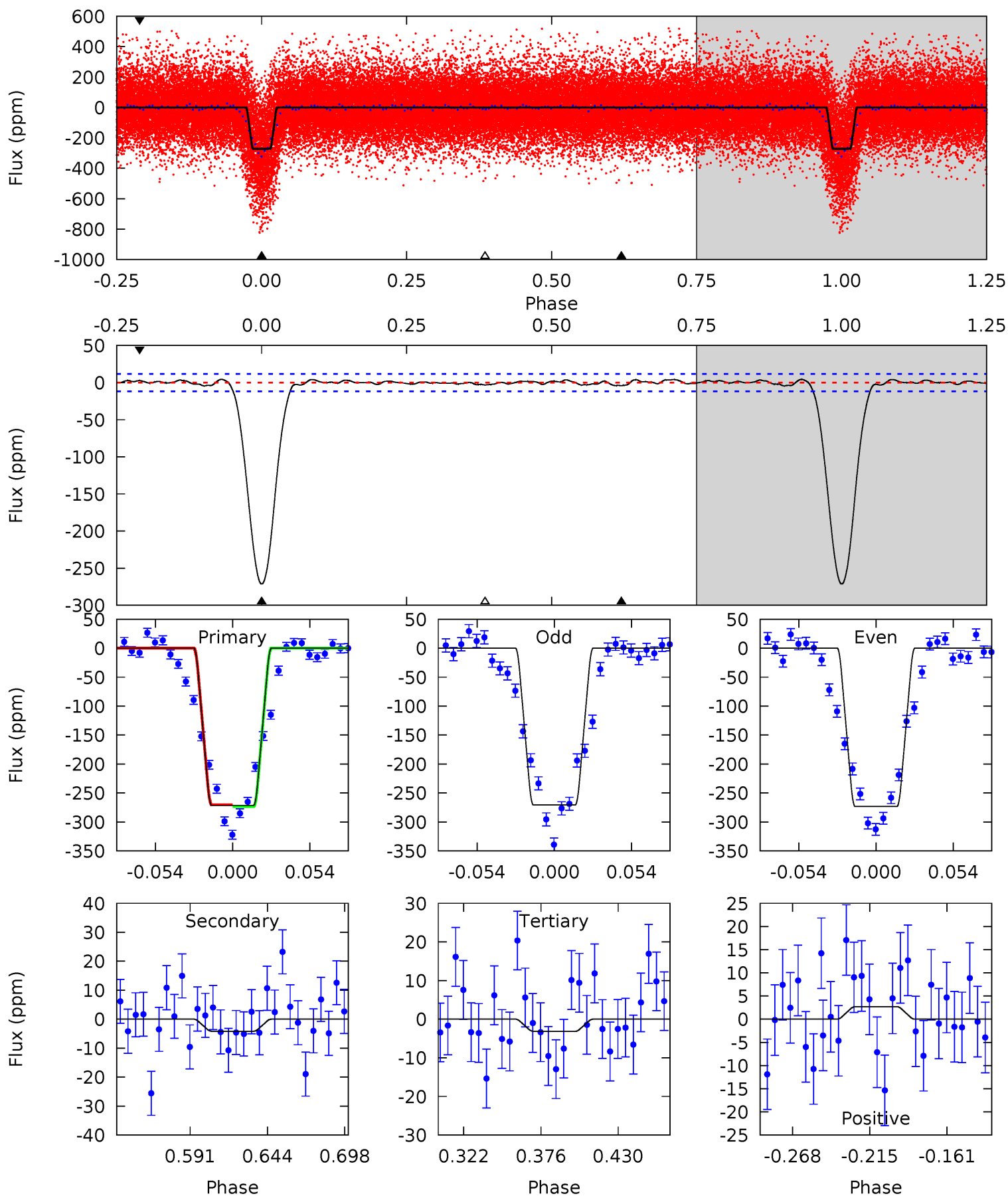
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
47.5	31.2	22.3	11.2	4.65	1.83	10.5	25.2	36.3	8.90	20.0	1.95	1.28	0.33	4.97



Alt Model-Shift Uniqueness Test

010096019-01, P = 6.871568 Days, E = 131.484634 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
109.3	1.68	1.27	1.08	4.69	1.93	0.78	108.0	108.2	0.41	0.59	0.54	0.99	0.02	0.62



Stellar Parameters For KIC 010096019

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7040^{+219}_{-328}	$3.967^{+0.192}_{-0.128}$	$0.220^{+0.150}_{-0.300}$	$2.271^{+0.476}_{-0.582}$	$1.743^{+0.152}_{-0.282}$	$0.209^{+0.227}_{-0.081}$
	+3%/-5%	+5%/-3%	+68%/-136%	+21%/-26%	+9%/-16%	+109%/-39%
Source	PHO1	FLK73	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 010096019-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-92 ± 3	$6.67^{+5.25}_{-4.57}$	2218^{+149}_{-166}	4325^{+2925}_{-880}	$8.101^{+71.927}_{-5.609}$
Alt.	-4 ± 2	$6.13^{+5.40}_{-4.01}$	2210^{+155}_{-160}	2239^{+1338}_{-4787}	$0.383^{+2.611}_{-0.308}$

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

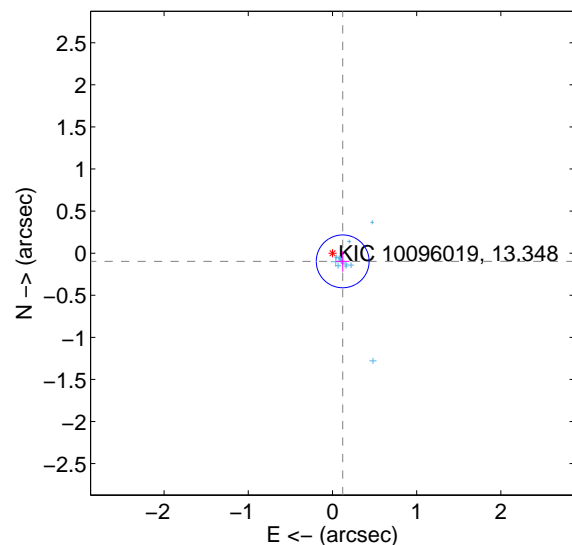
Supplemental centroid analysis for 010096019-01. Kepler magnitude: 13.35. Transit SNR 18.79

There are 14 quarters with good PRF difference image offsets

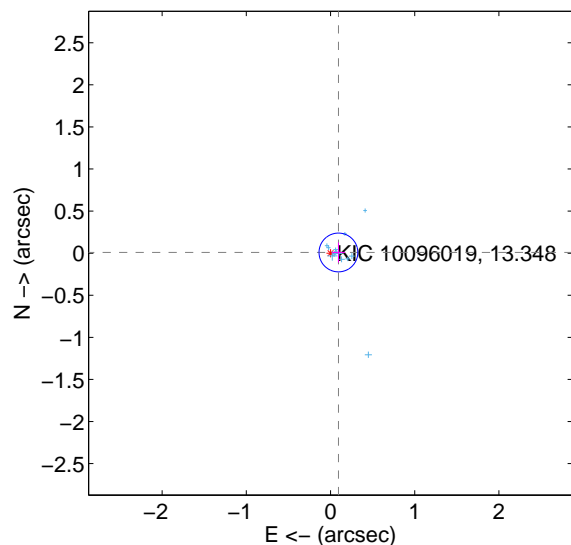
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.156 ± 0.105	1.49	-0.121 ± 0.077	-0.097 ± 0.121
PRF-fit source offset from KIC position	0.094 ± 0.077	1.23	-0.094 ± 0.078	0.008 ± 0.119
photometric centroid source offset	0.76 ± 0.55	1.38	-0.46 ± 0.52	-0.60 ± 0.56

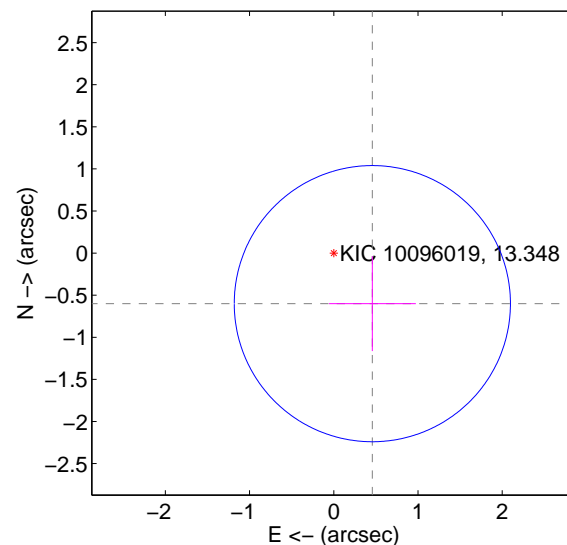
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

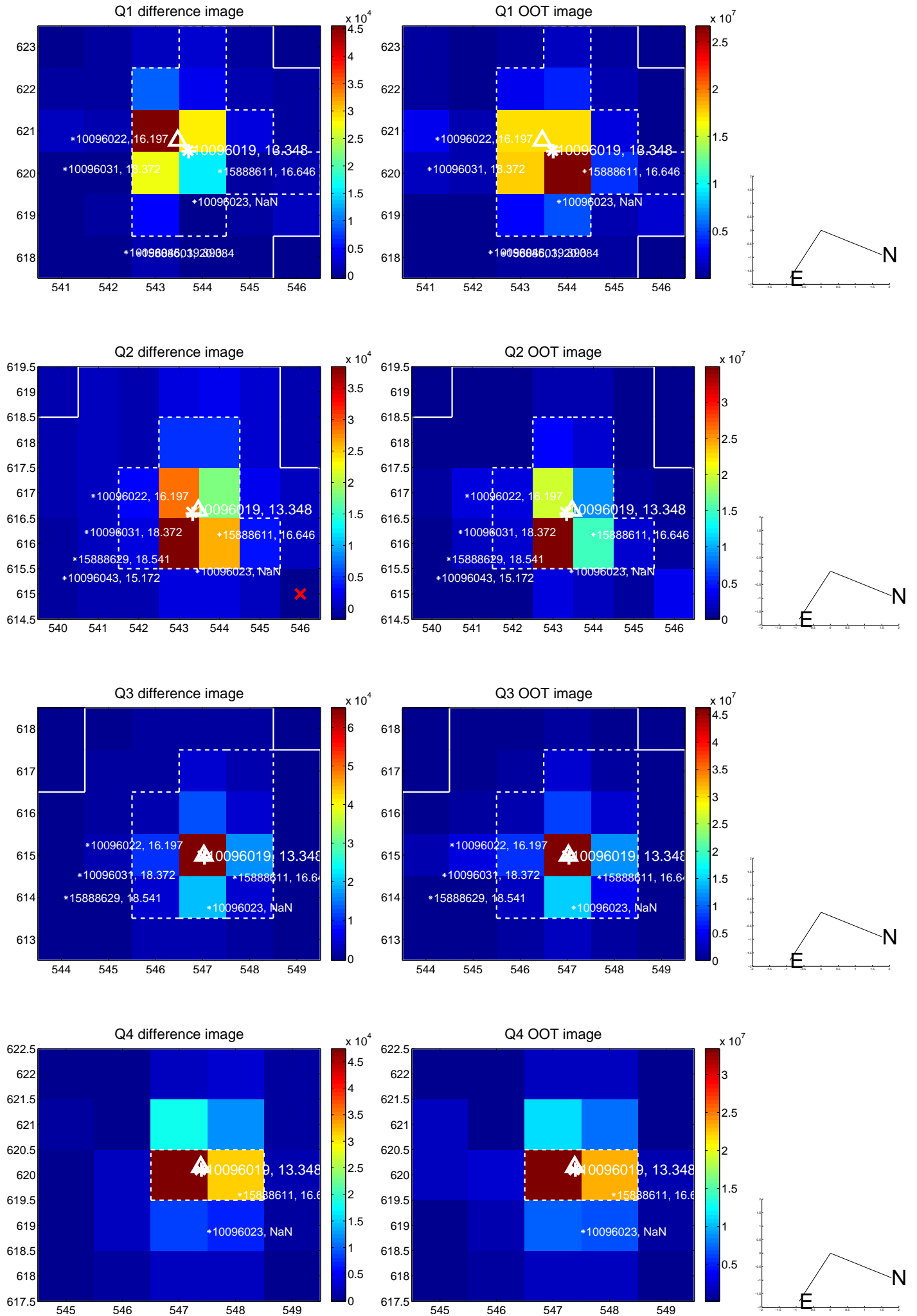


offset from photometric centroids

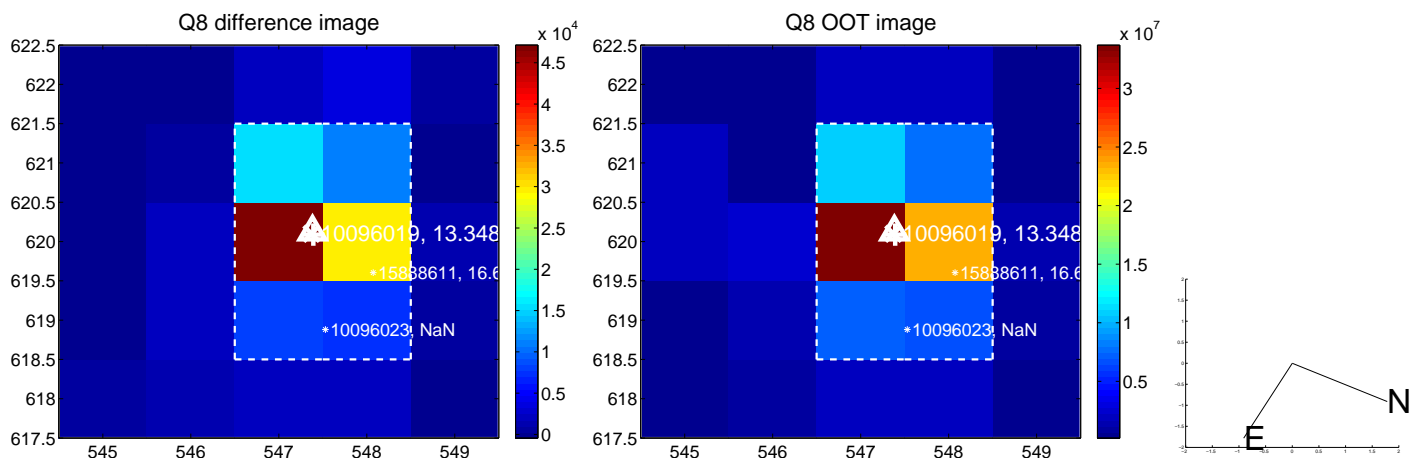
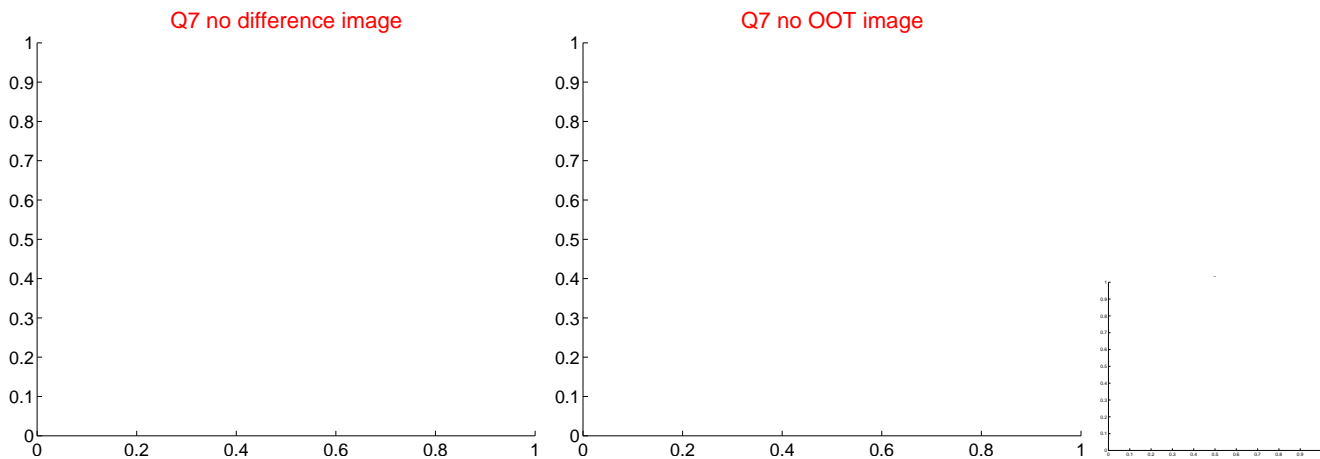
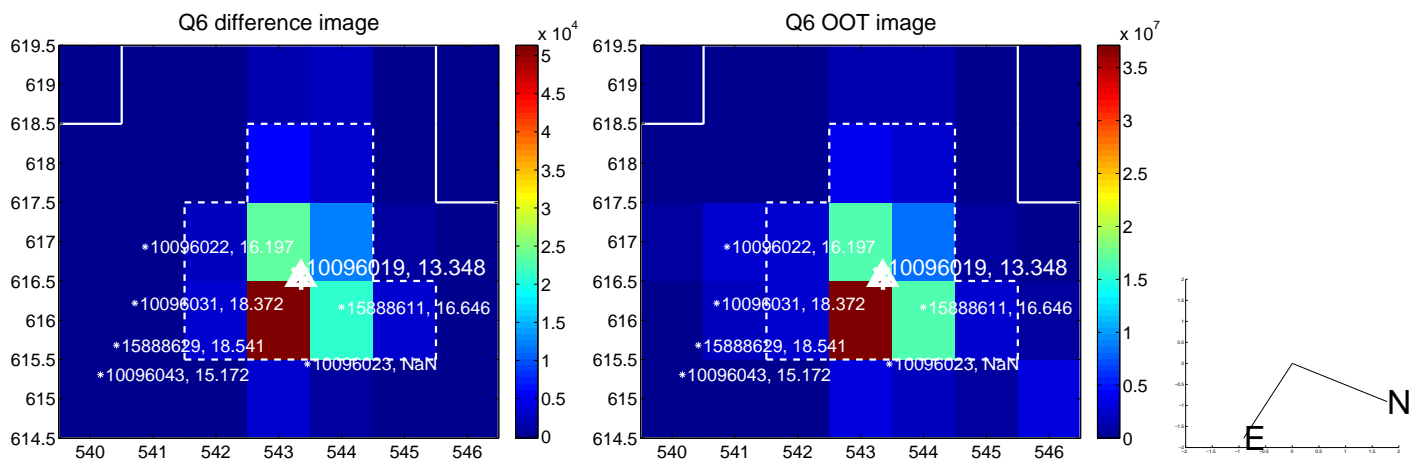
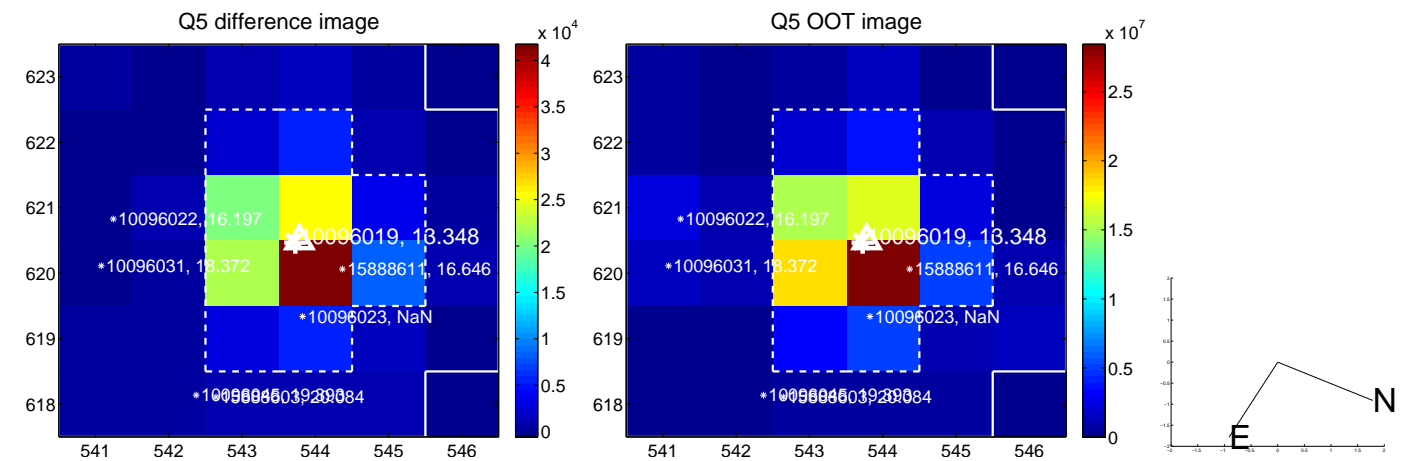


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

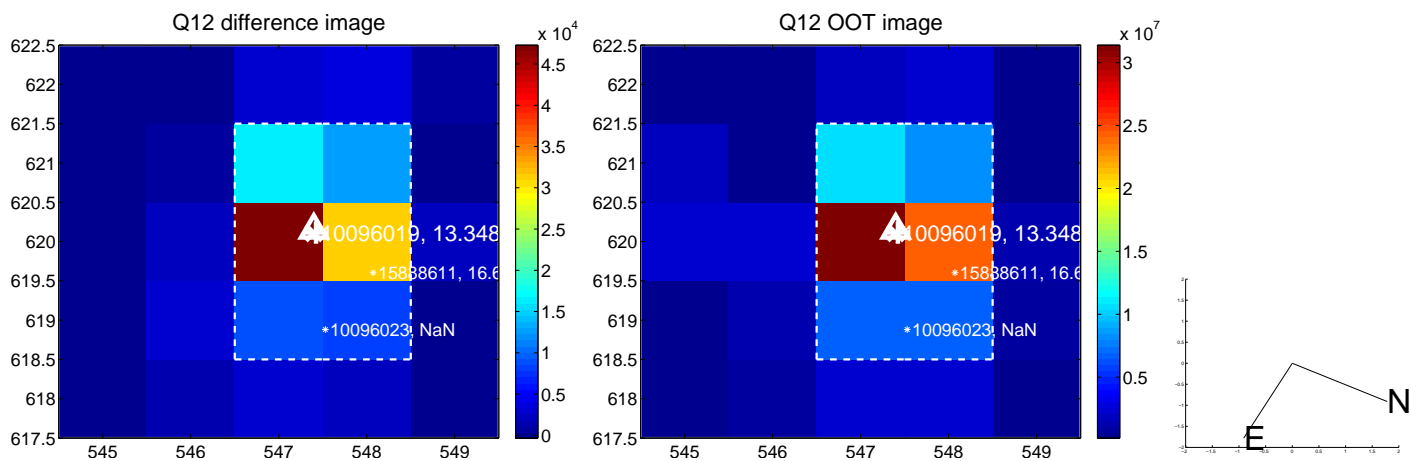
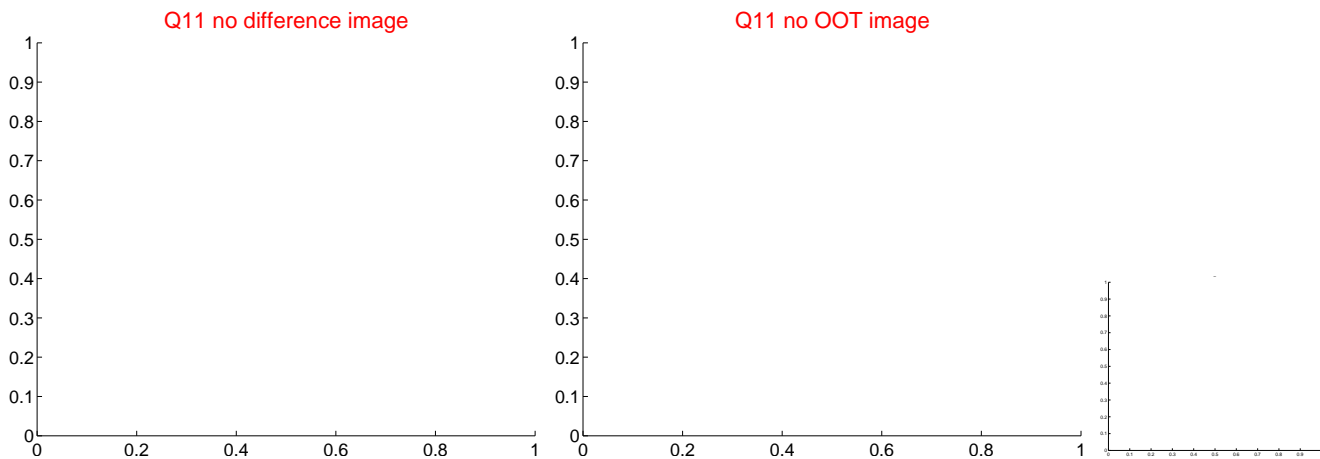
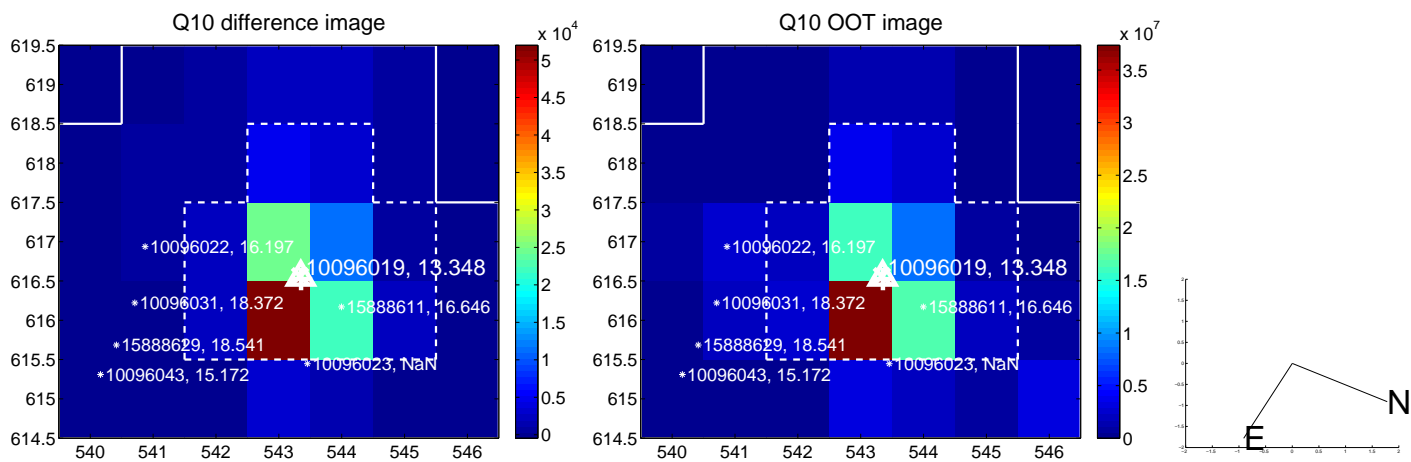
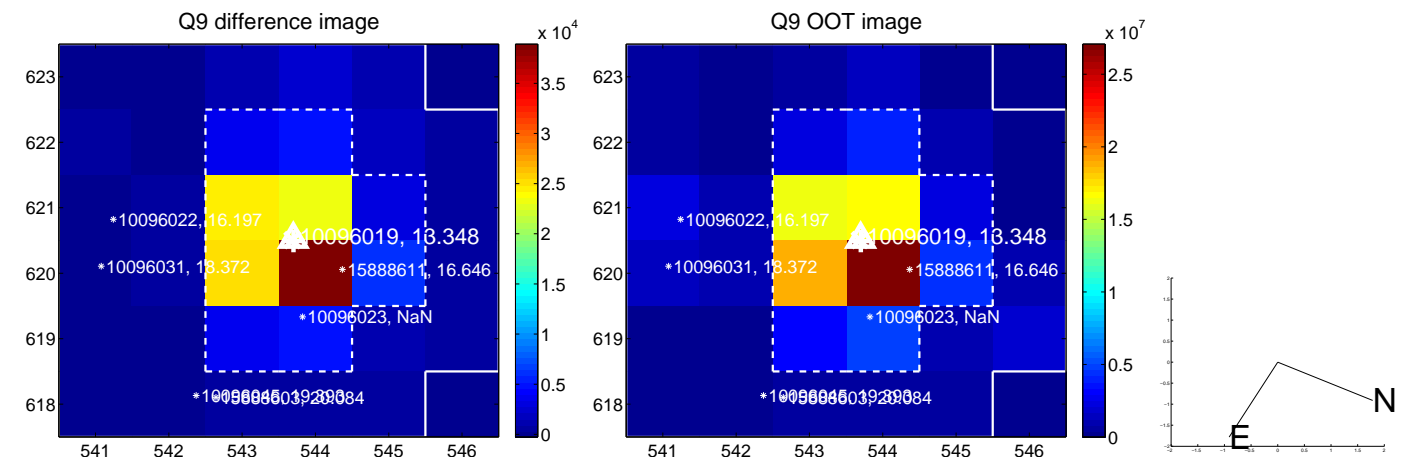
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



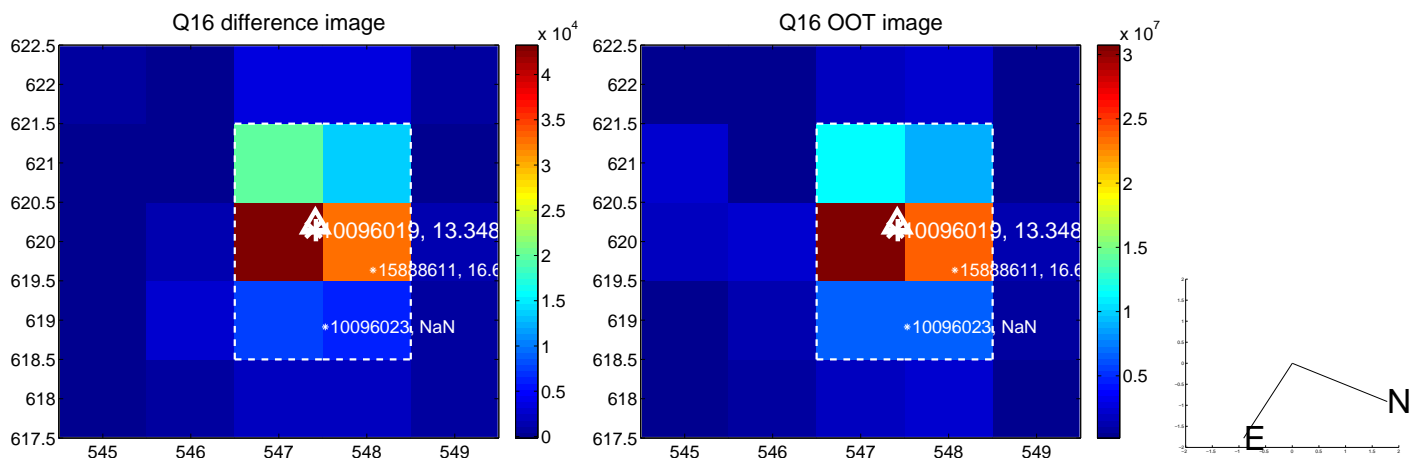
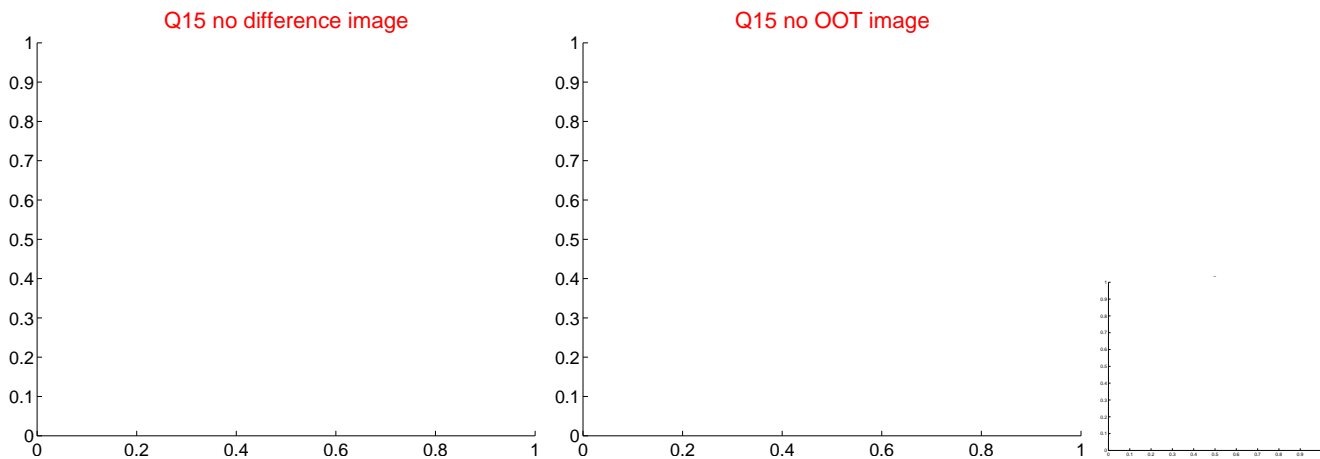
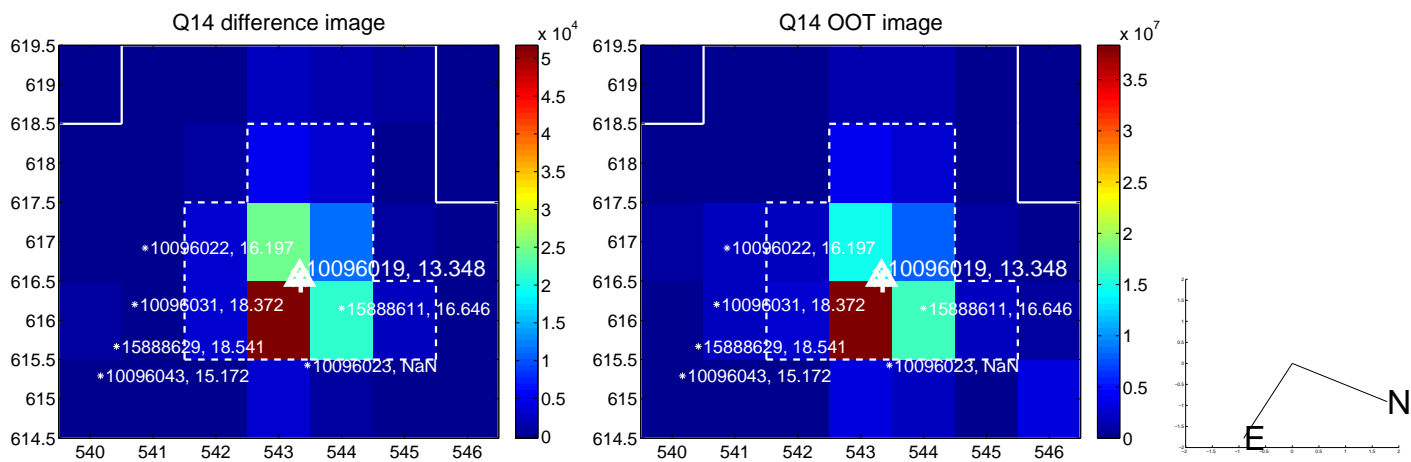
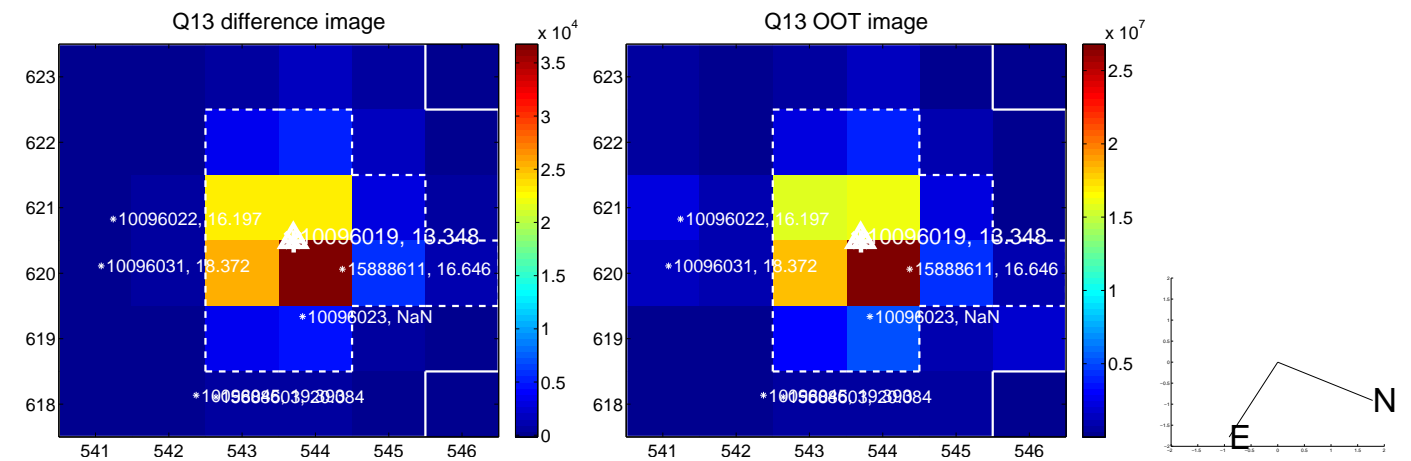
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



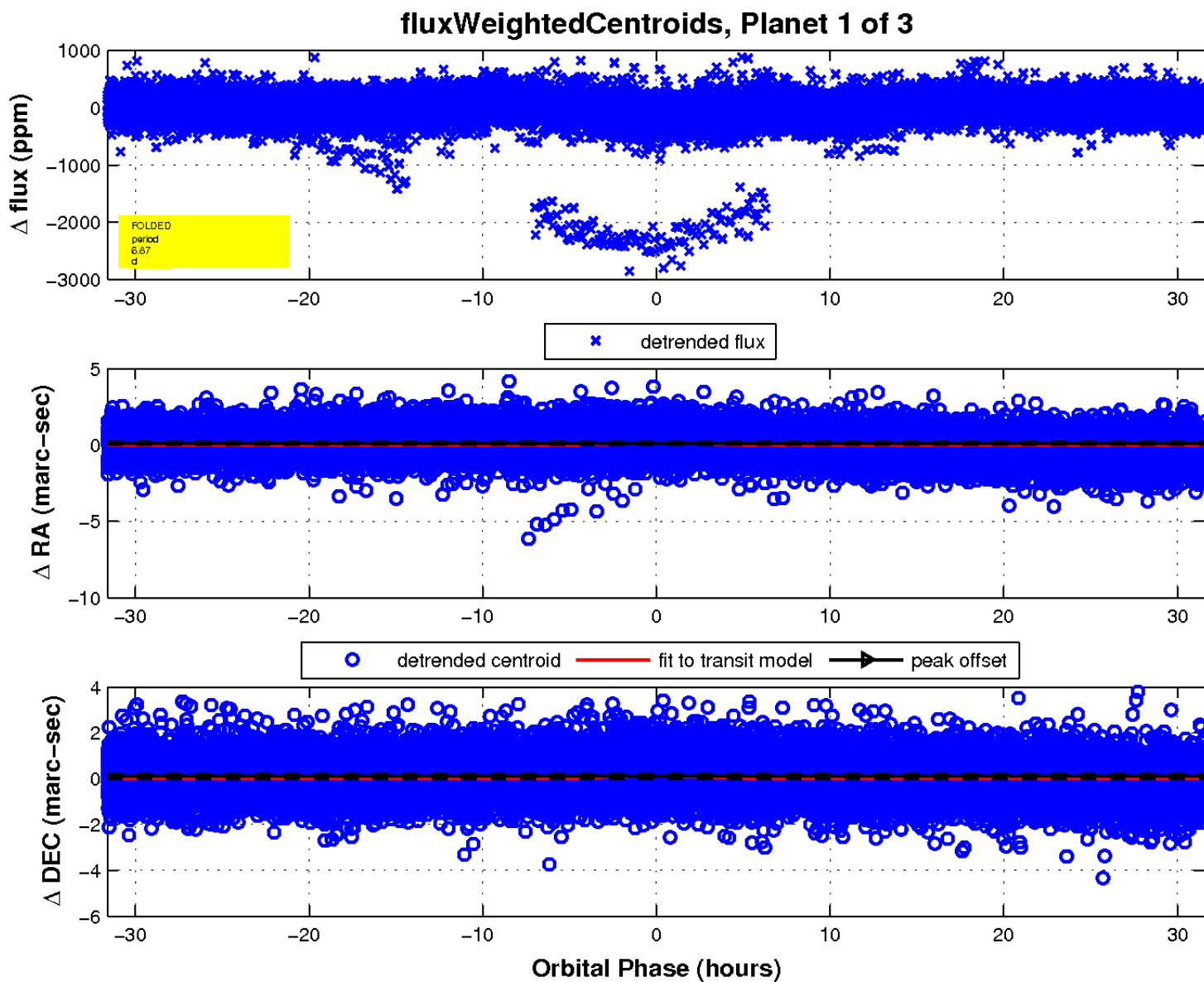
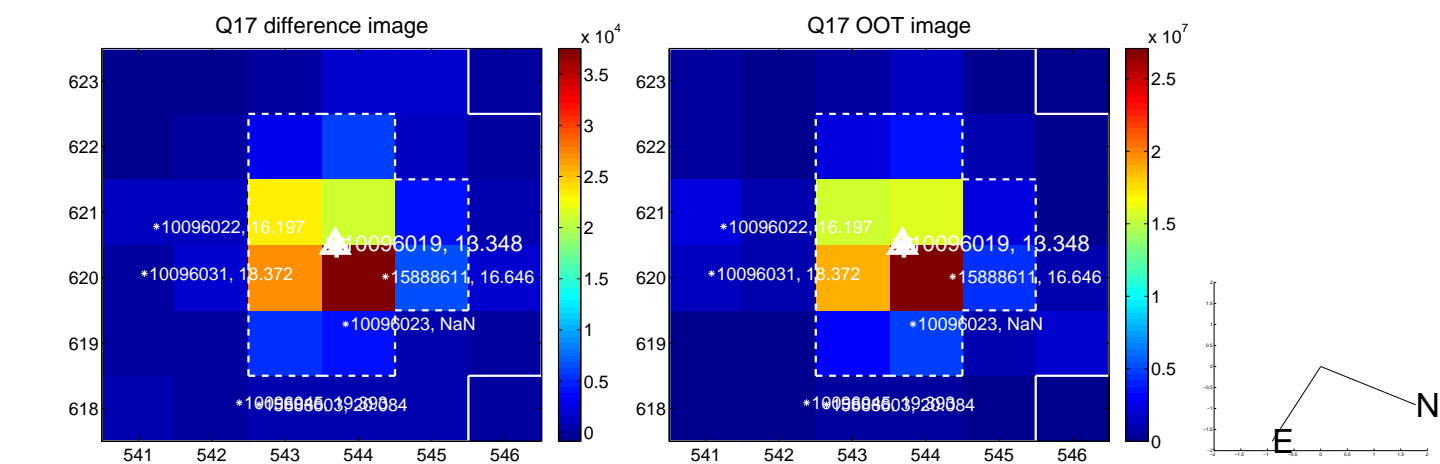
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

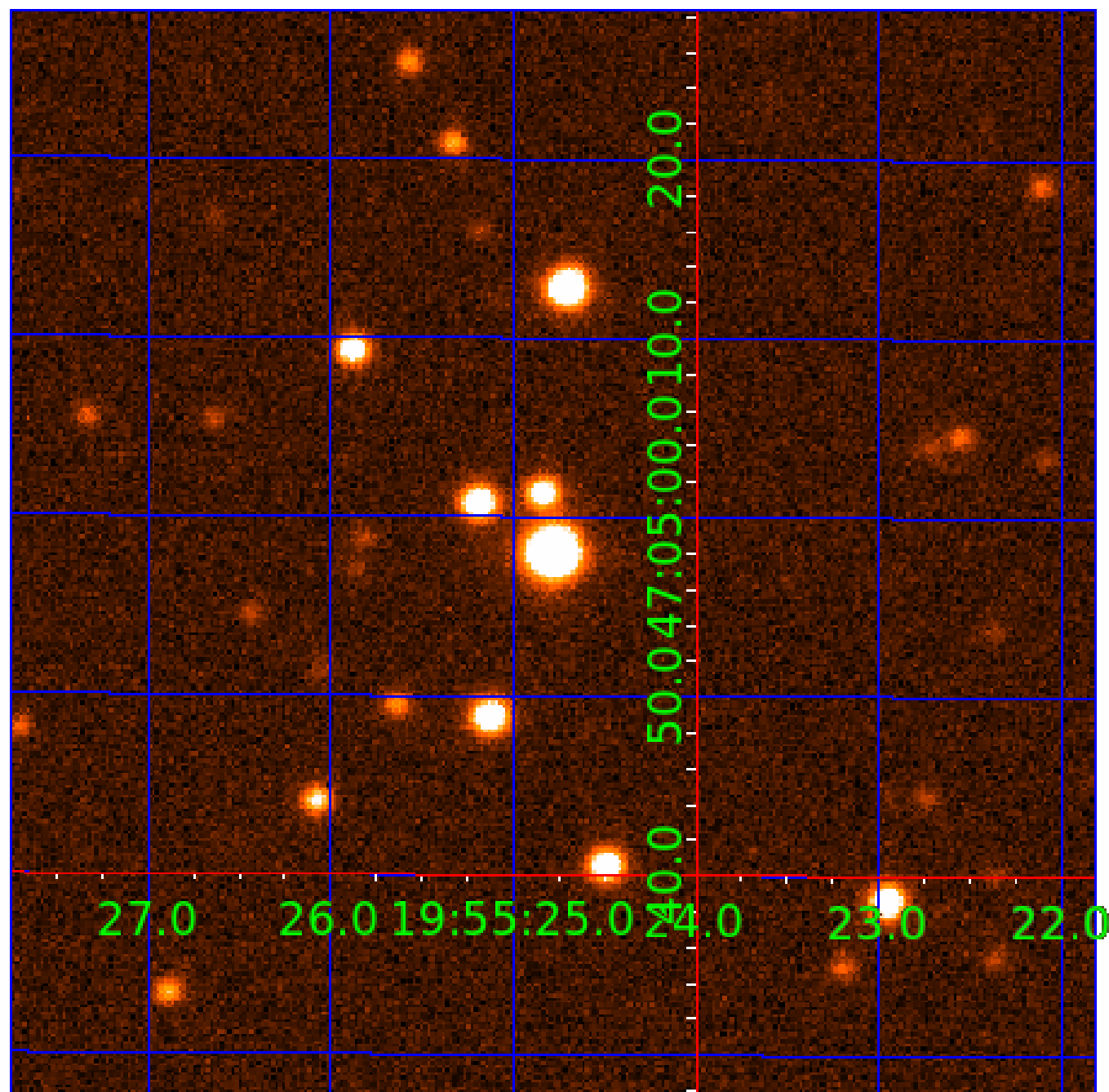


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010096019

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})
010096019-01	OBS	No	6.871484	138.362231	134.3	10.534	17.2	18.8	2.27	7040	5.20	1565.29
010096019-02	OBS	No	6.871547	137.603890	87.7	4.844	12.5	13.5	2.27	7040	2.65	1565.27
010096019-03	OBS	No	6.871487	135.319303	37.6	27.895	10.3	8.7	2.27	7040	1.59	1565.29

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010096019-01	OBS	FP	0.00	1	0	0	0	LPP_DV
010096019-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—SAME_NTL_PERIOD
010096019-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—SAME_NTL_PERIOD

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

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

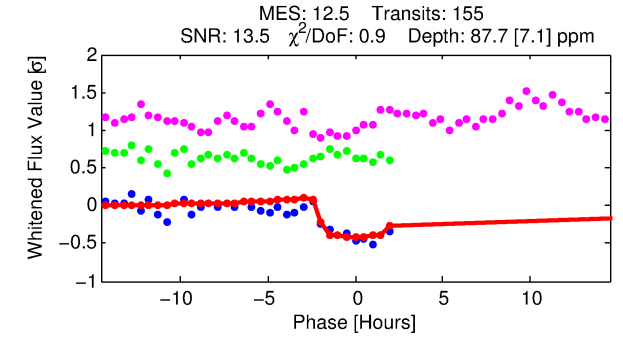
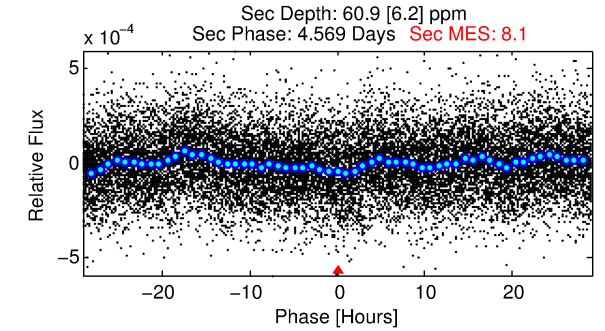
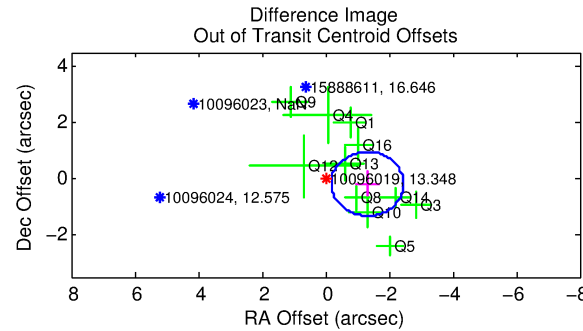
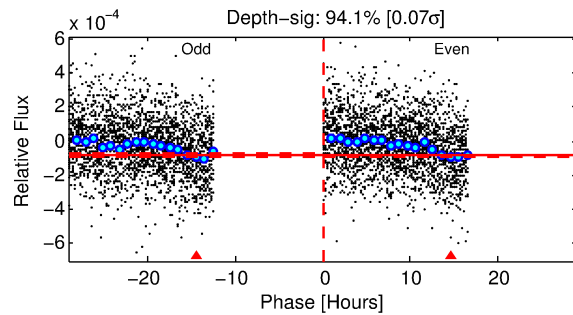
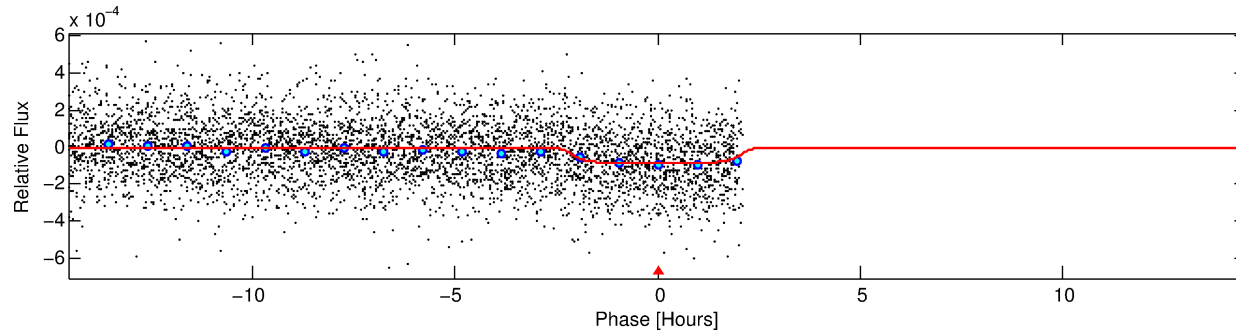
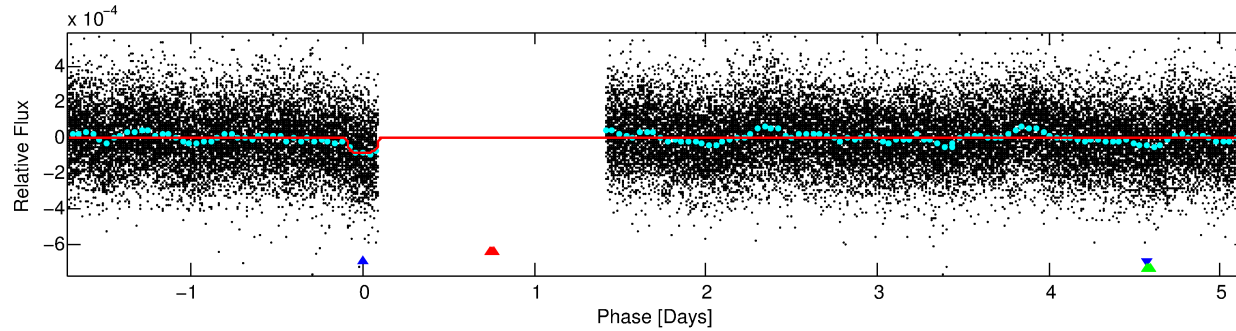
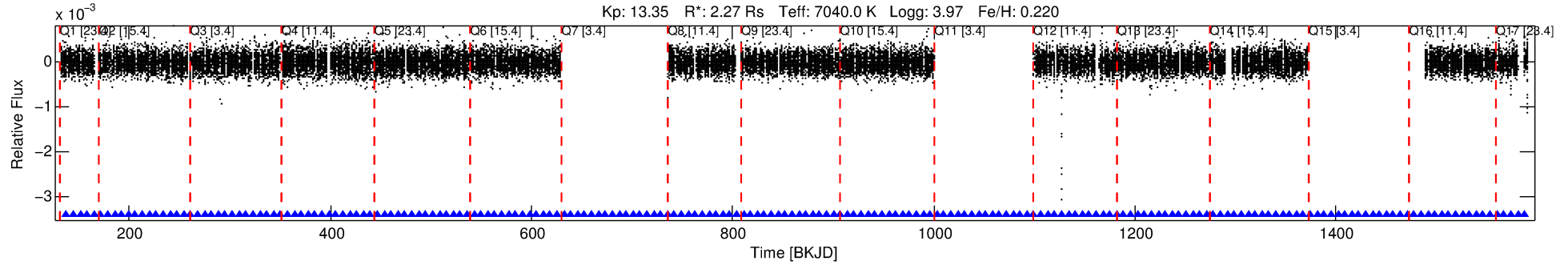
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010096019-02

No Significant Match Found

DV One-Page Summary

KIC: 10096019 Candidate: 2 of 3 Period: 6.872 d



DV Fit Results:

Period = 6.87155 [0.00006] d
Epoch = 137.6039 [0.0070] BKJD
Rp/R* = 0.0107 [0.0010]
a/R* = 3.50 [1.62]
b = 0.96 [0.04]
Seff = 1565.27 [607.82]
Teq = 1604 [156] K
Rp = 2.66 [0.72] Re
a = 0.0852 [0.0192] AU
Ag = 34.47 [13.74] [2.44σ]
Teffp = 6009 [419] K [9.86σ]

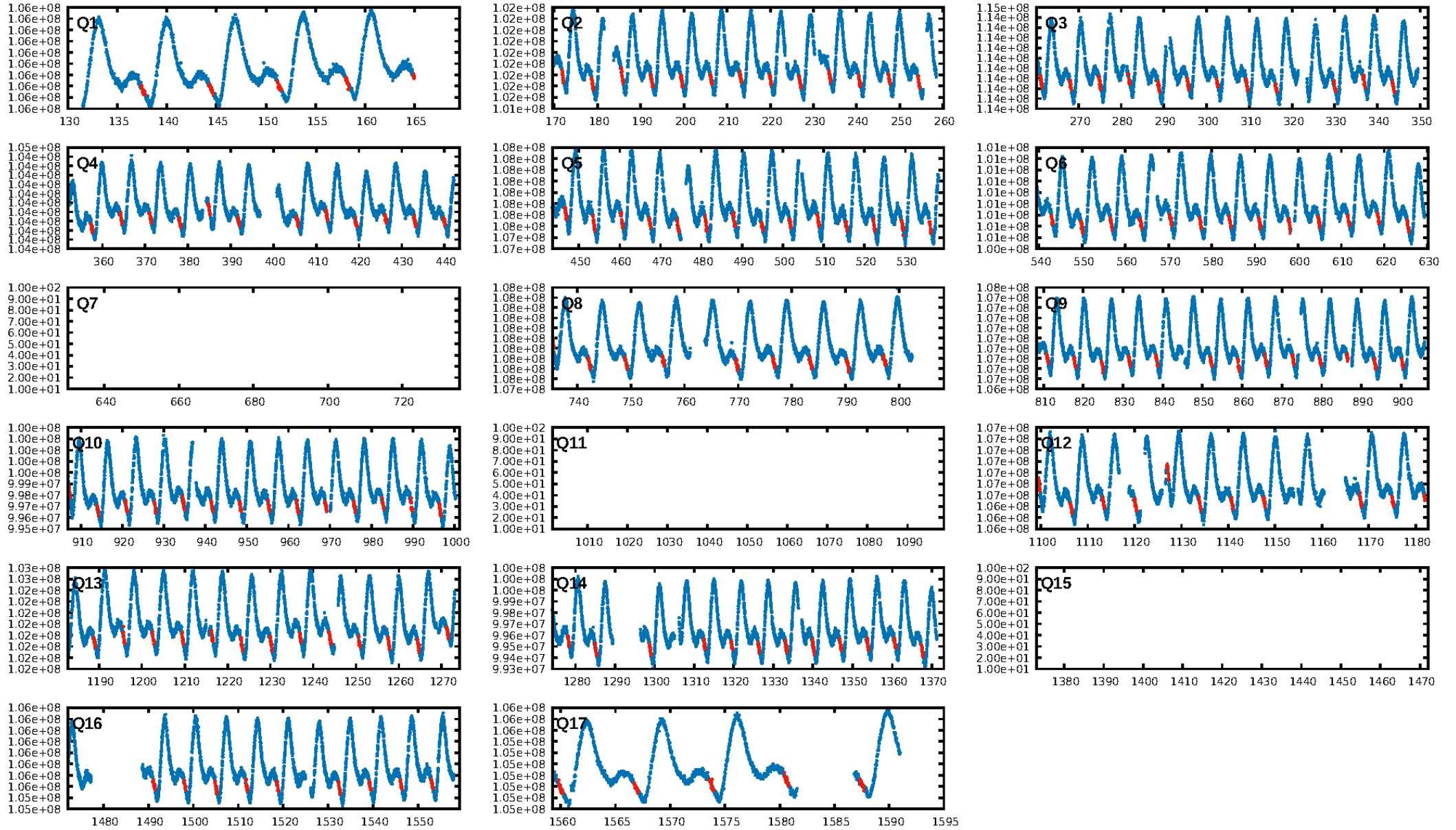
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 25.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 6.68e-35
RollingBand-fgt: 1.00 [145/145]
GhostDiagnostic-chr: 210.5
Centroid-sig: 35.4%
Centroid-so: 0.371 arcsec [0.44σ]
OotOffset-rm: 1.328 arcsec [3.50σ]
KicOffset-rm: 1.282 arcsec [3.60σ]
OotOffset-st: 2/1/4/4 [11]
KicOffset-st: 2/1/4/4 [11]
DiffImageQuality-fgm: 0.91 [10/11]
DiffImageOverlap-fno: 1.00 [14/14]

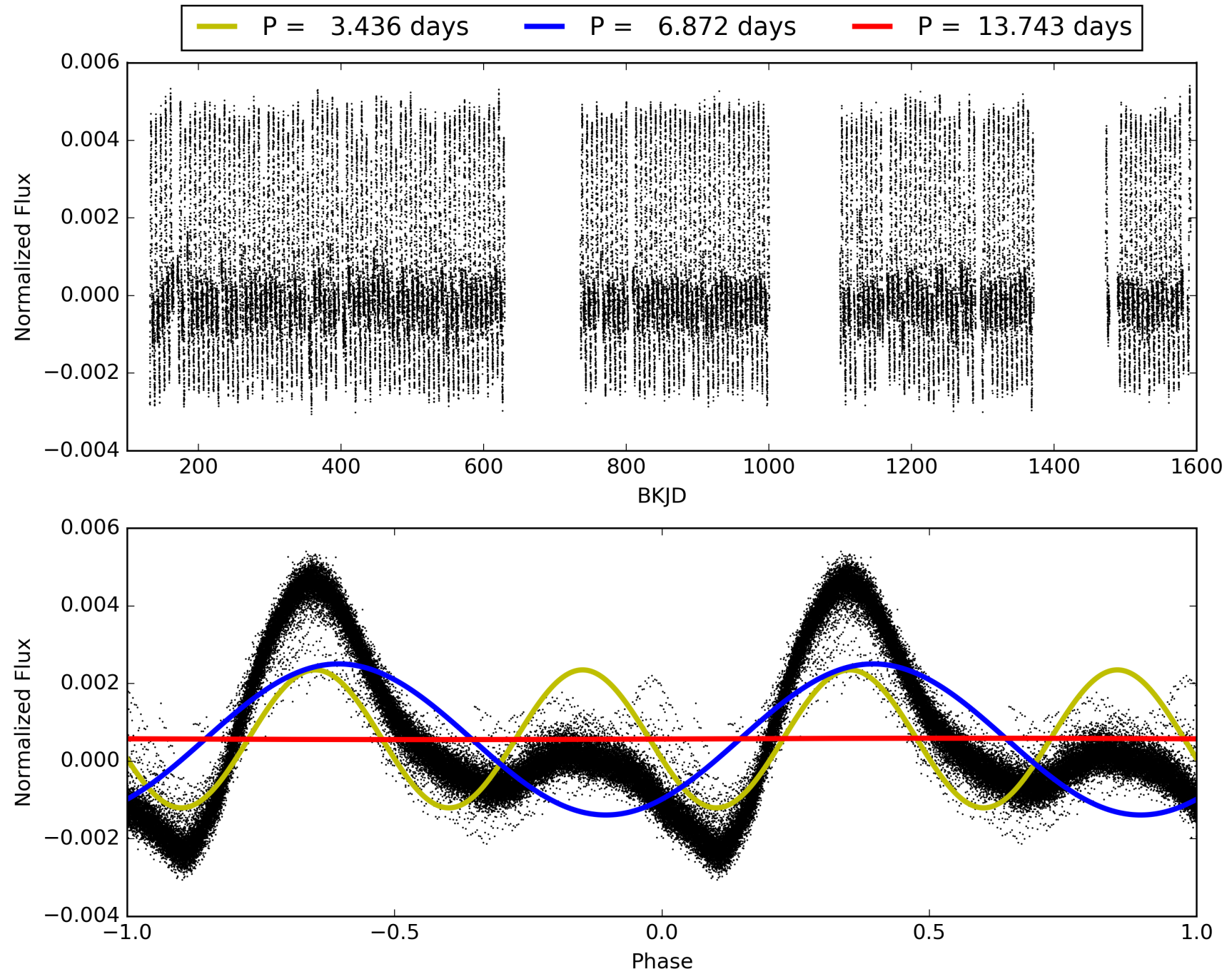
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:06:17 Z

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

TCE 010096019-02, PDC Light Curves

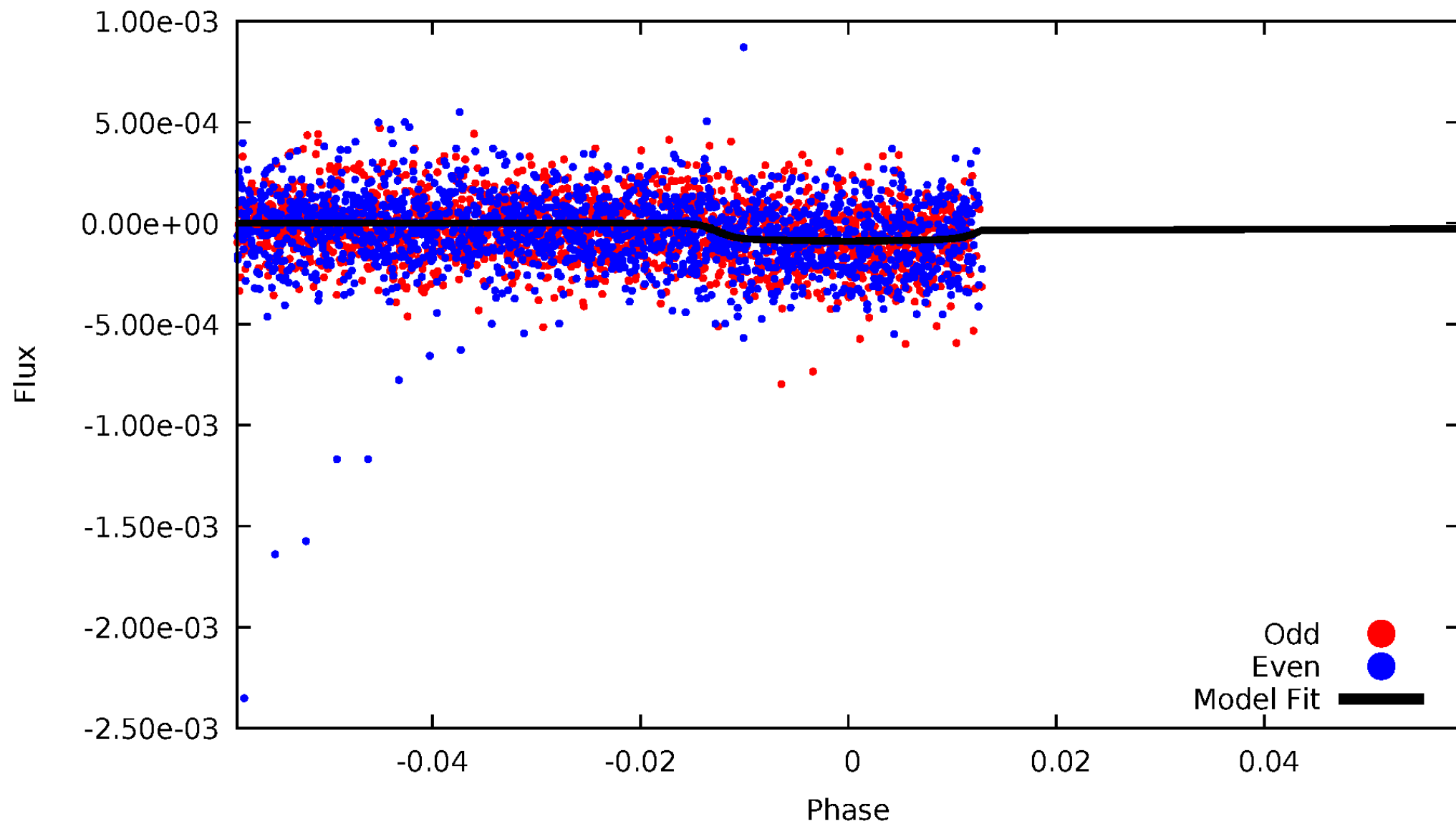


TCE 010096019-02



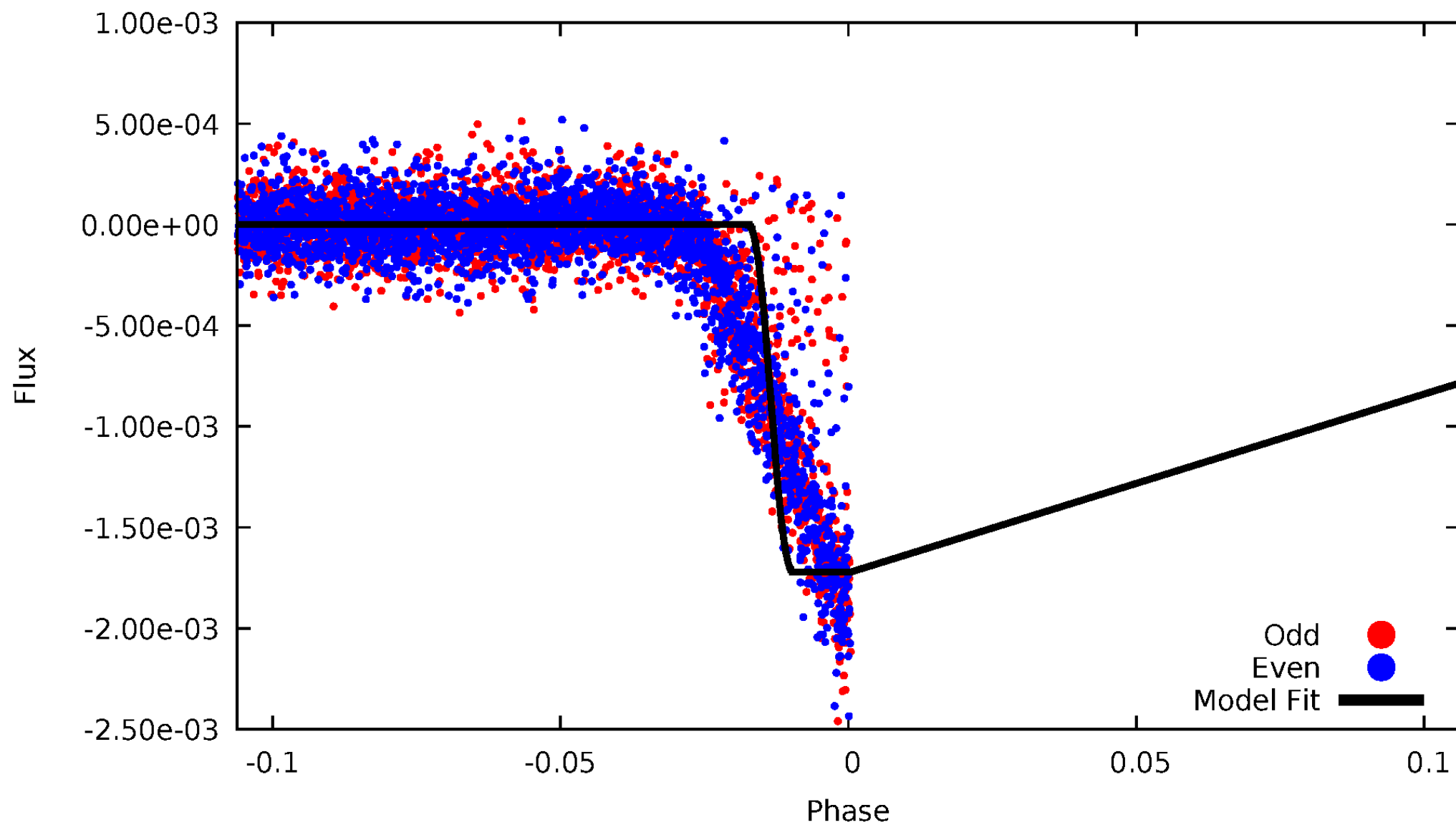
DV Odd/Even

TCE 010096019-02



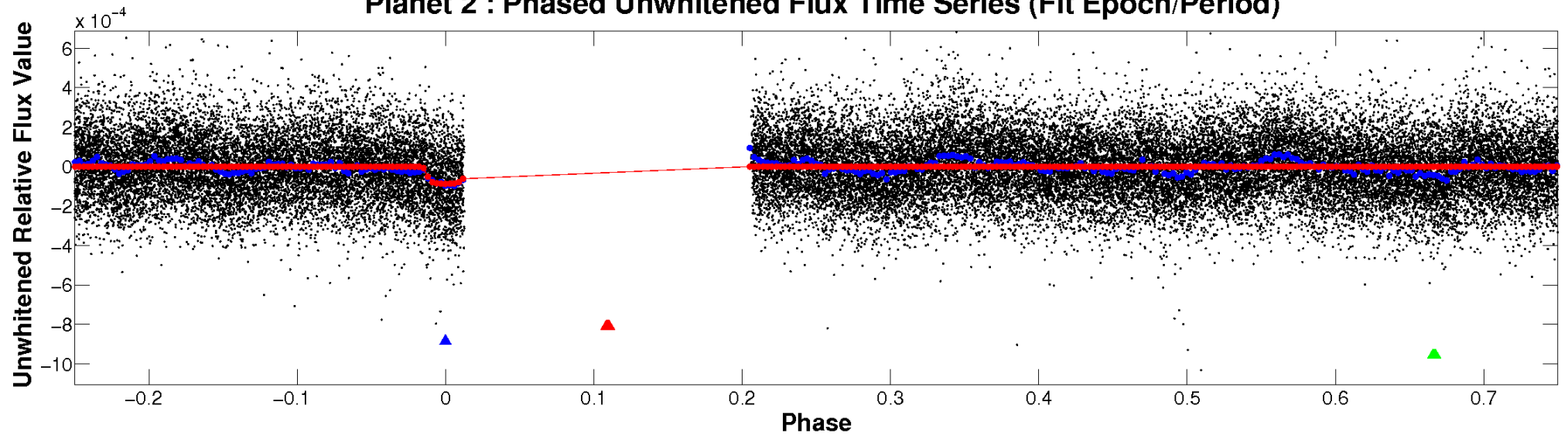
ALT Odd/Even

TCE 010096019-02

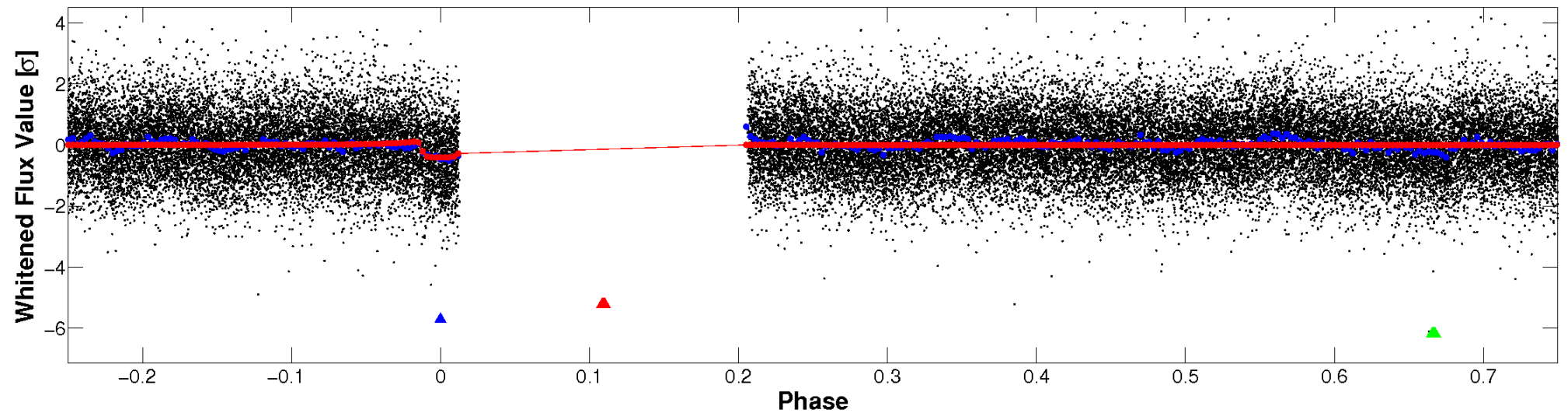


Non-Whitened Vs. Whitened Light Curve

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

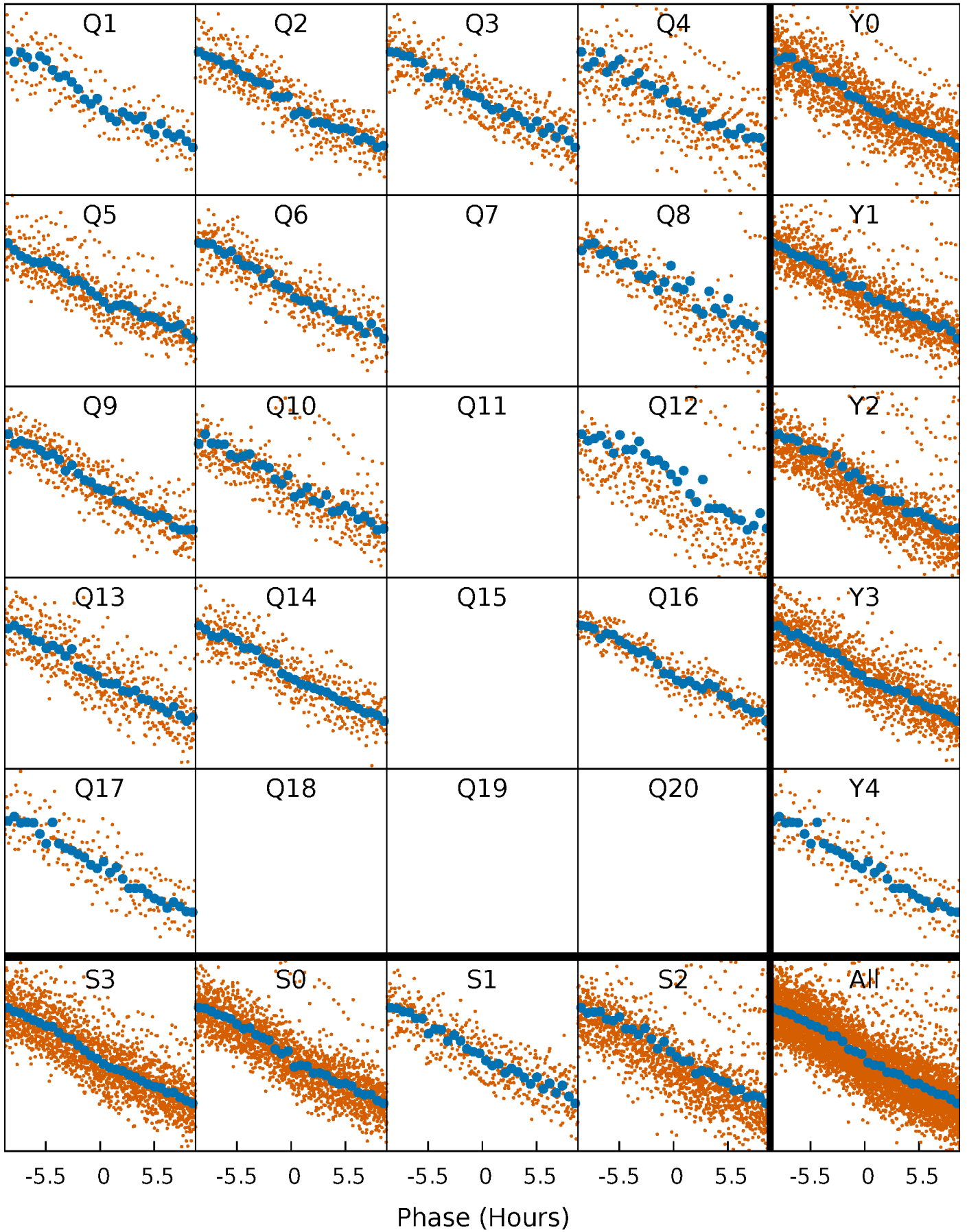


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



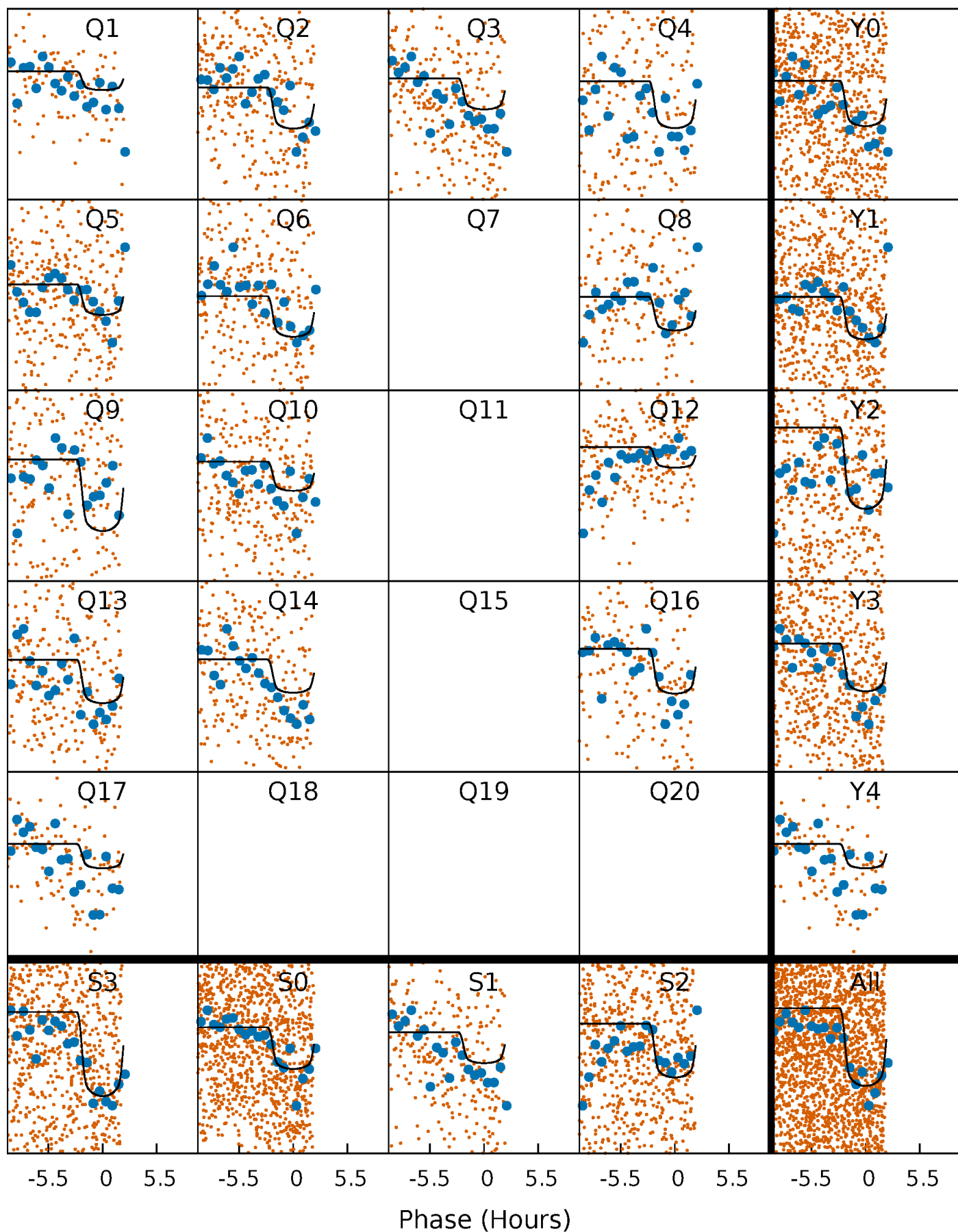
PDC Quarter-Phased Transit Curves

TCE 010096019-02 P= 6.871547 Days $T_0=137.603890$ (BKJD)



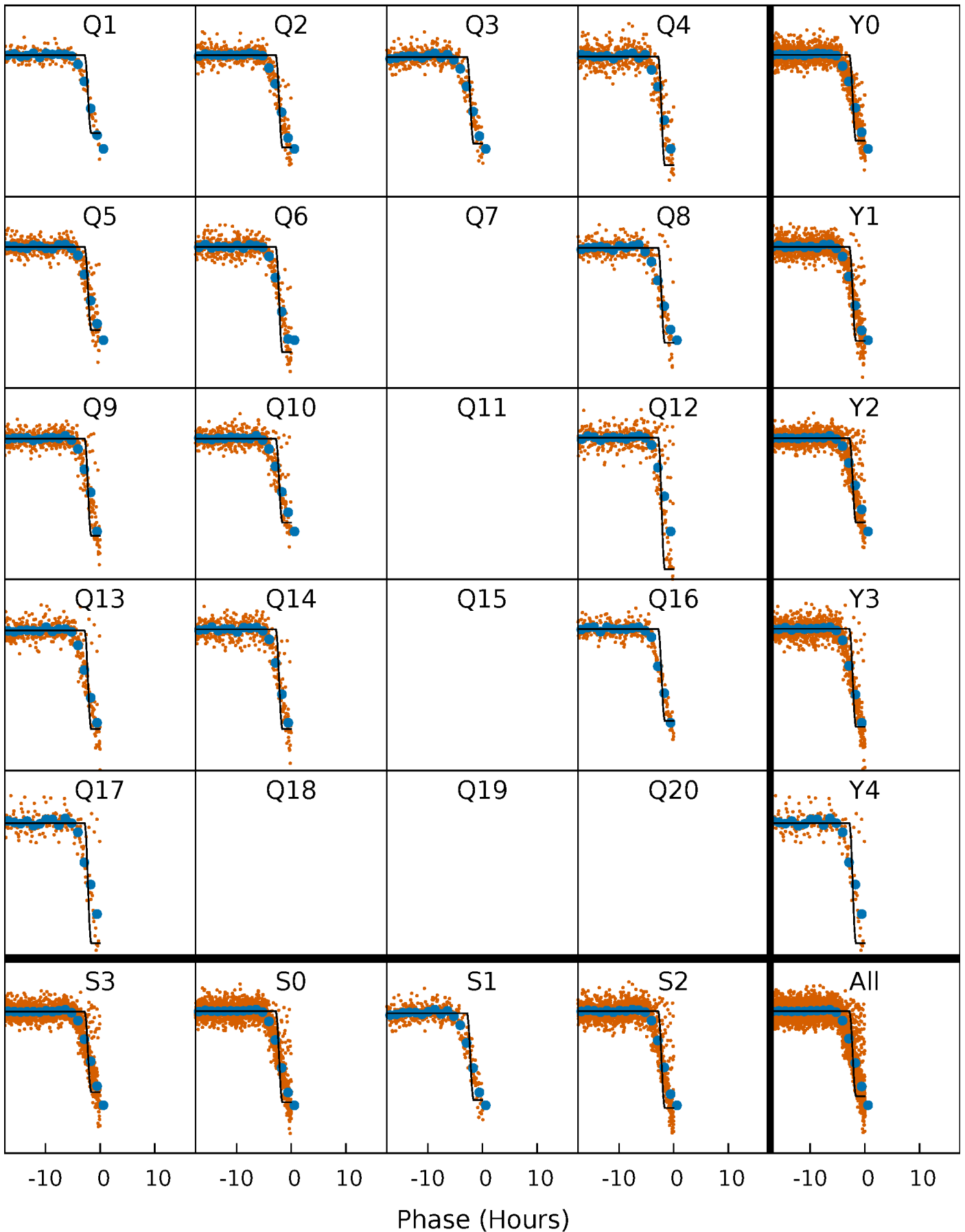
DV Quarter-Phased Transit Curves

TCE 010096019-02 P= 6.871547 Days $T_0=137.603890$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

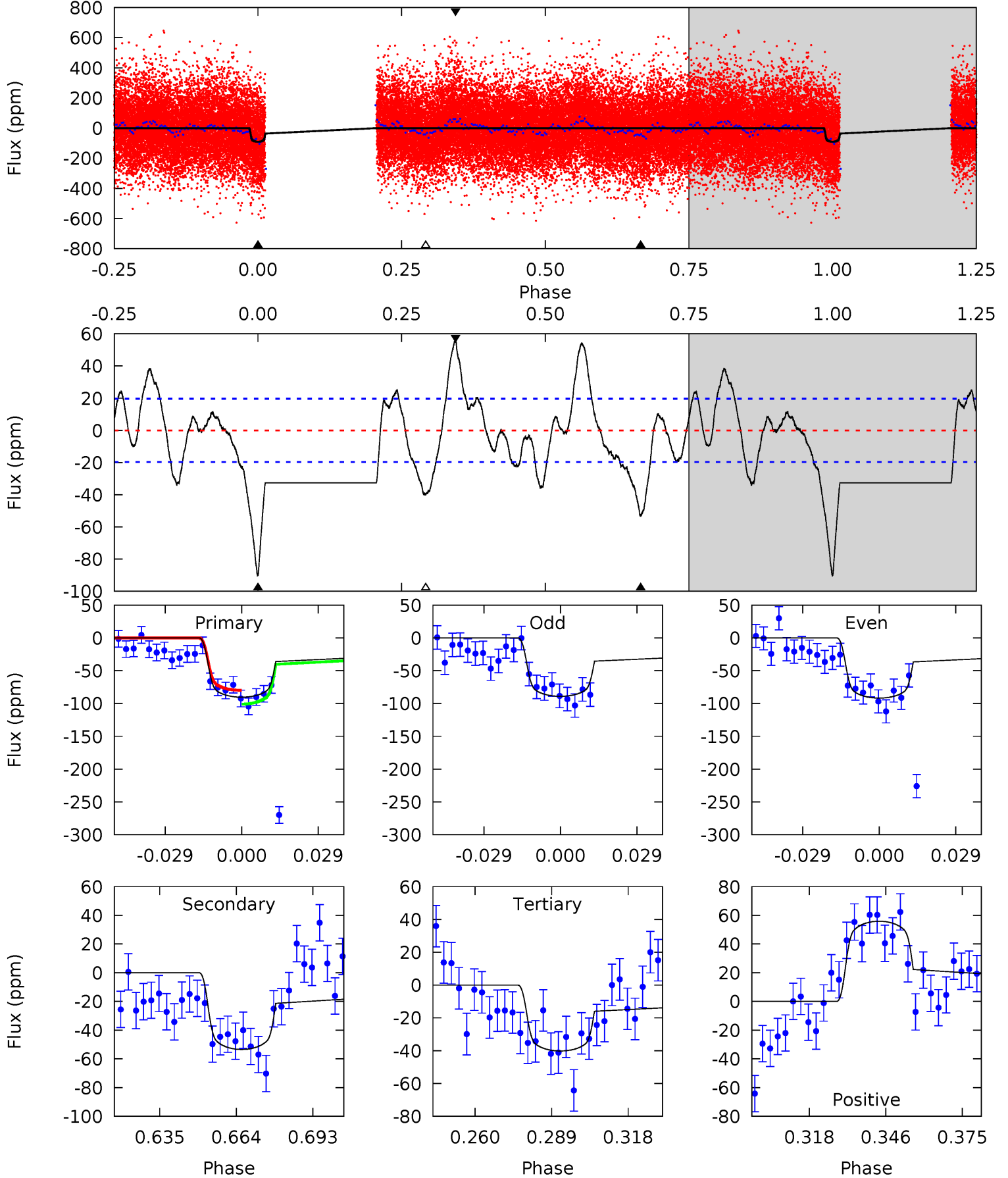
TCE 010096019-02 $P = 6.871498$ Days $T_0 = 137.690289$ (BKJD)



DV Model-Shift Uniqueness Test

010096019-02, P = 6.871547 Days, E = 130.732343 Days

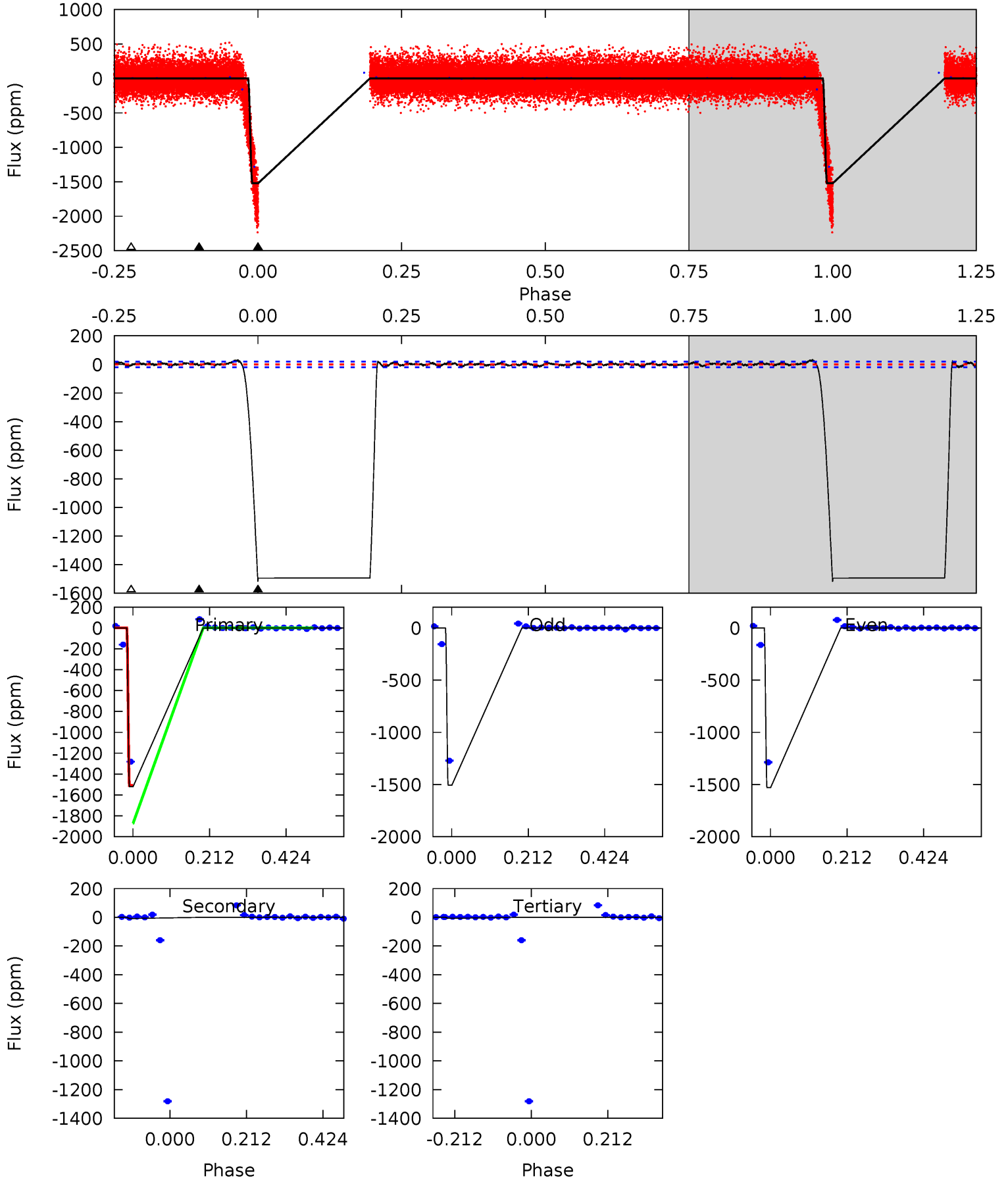
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.2	13.1	9.87	13.7	4.82	2.19	5.04	12.3	8.47	3.26	-0.60	0.33	1.04	0.38	2.56



Alt Model-Shift Uniqueness Test

010096019-02, P = 6.871498 Days, E = 130.818791 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
339.4	1.74	1.57	0	4.40	1.25	1.17	337.8	339.4	0.17	1.74	2.45	0.93	0.02	11.2



Stellar Parameters For KIC 010096019

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	7040^{+219}_{-328}	$3.967^{+0.192}_{-0.128}$	$0.220^{+0.150}_{-0.300}$	$2.271^{+0.476}_{-0.582}$	$1.743^{+0.152}_{-0.282}$	$0.209^{+0.227}_{-0.081}$
	+3%/-5%	+5%/-3%	+68%/-136%	+21%/-26%	+9%/-16%	+109%/-39%
Source	PHO1	FLK73	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 010096019-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-53 ± 4	$2.62^{+0.39}_{-0.43}$	2218^{+159}_{-179}	5745^{+366}_{-330}	31^{+12}_{-7}
Alt.	-8 ± 4	$10.10^{+1.27}_{-1.41}$	2215^{+157}_{-185}	-1897^{+4368}_{-599}	$0.286^{+0.235}_{-0.174}$

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 $A_{obs} \gg 1.0$

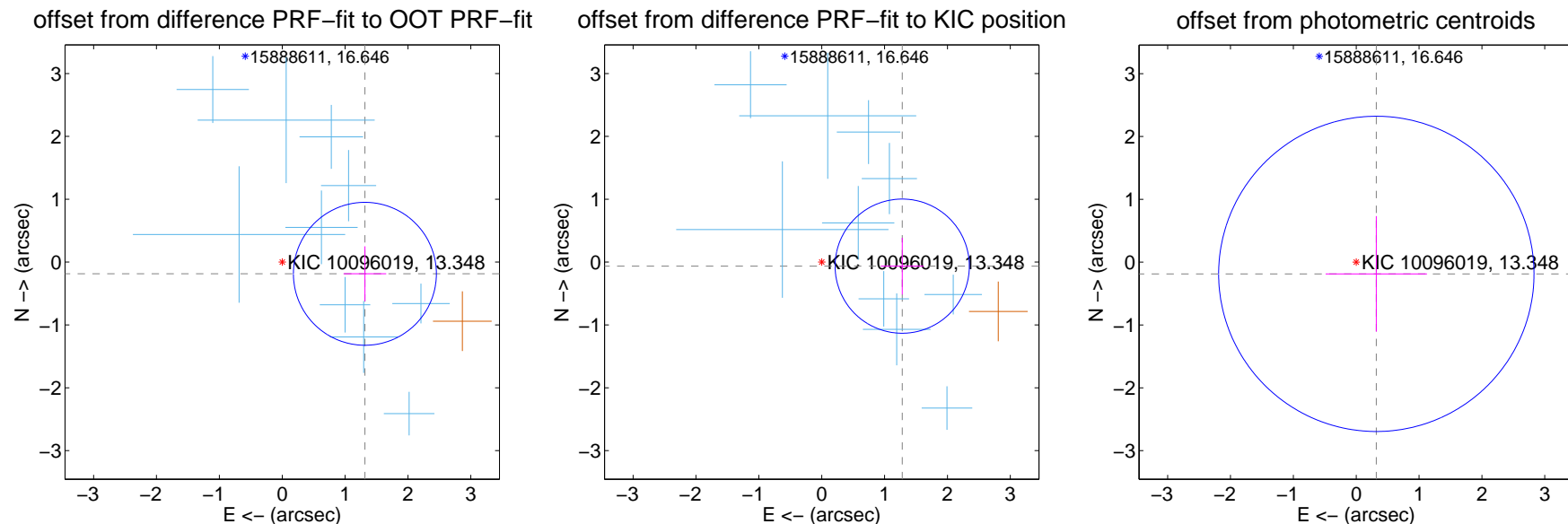
DV Centroid Data

Supplemental centroid analysis for 010096019-02. Kepler magnitude: 13.35. Transit SNR 13.53

There are 10 quarters with good PRF difference image offsets

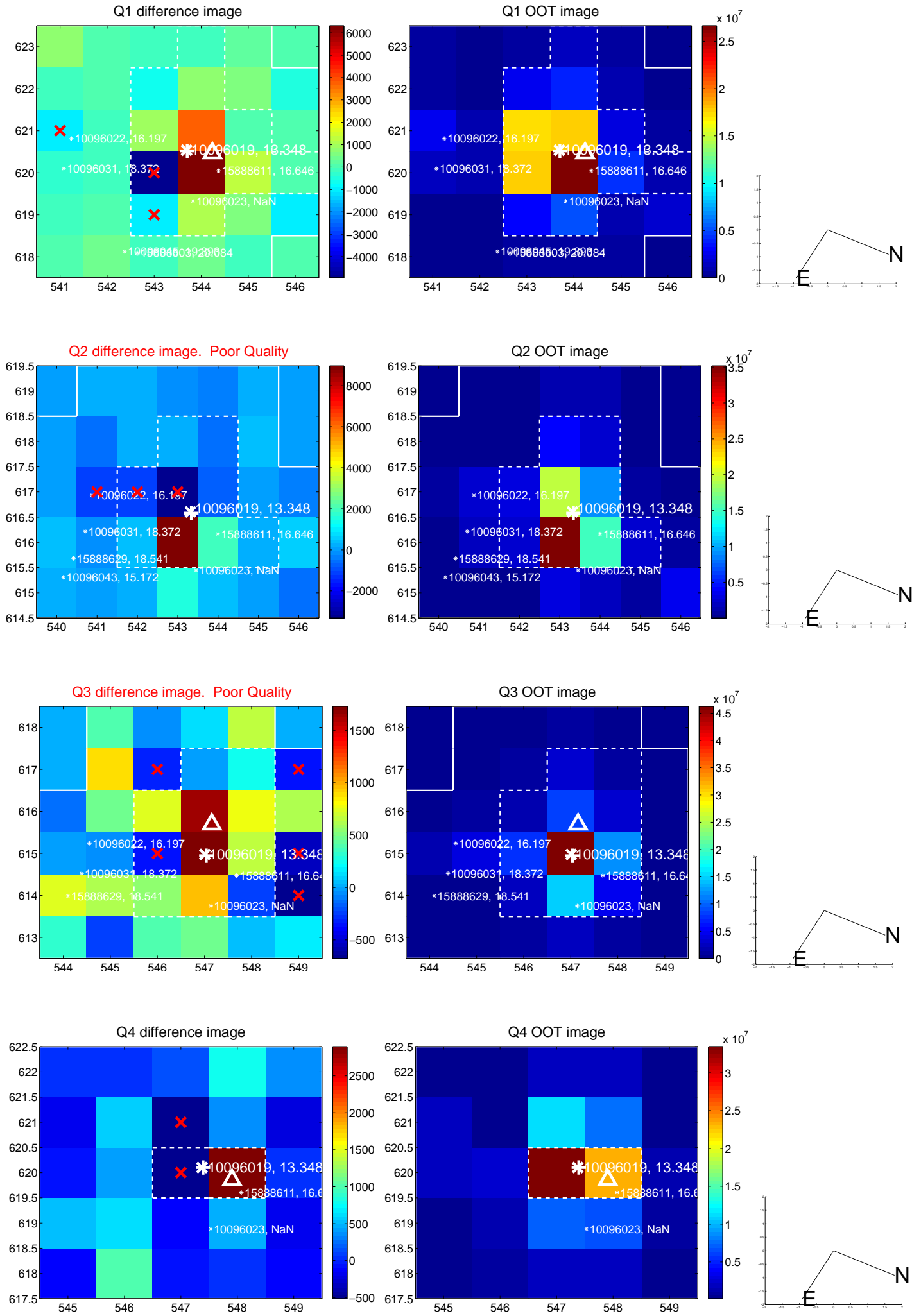
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.328 ± 0.379	3.50	-1.315 ± 0.339	-0.186 ± 0.437
PRF-fit source offset from KIC position	1.282 ± 0.356	3.60	-1.280 ± 0.340	-0.065 ± 0.451
photometric centroid source offset	0.37 ± 0.84	0.44	-0.32 ± 0.81	-0.19 ± 0.92

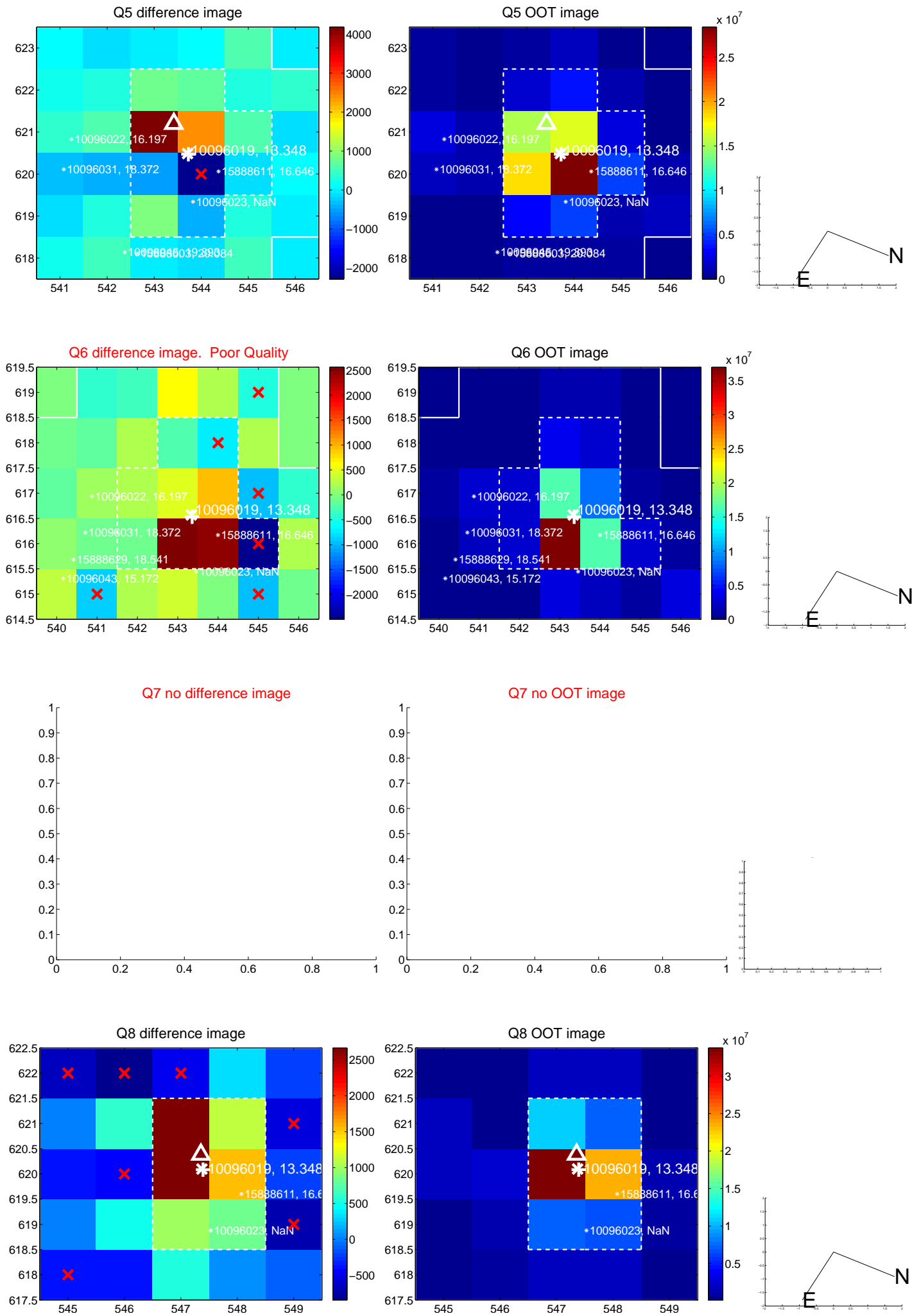


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

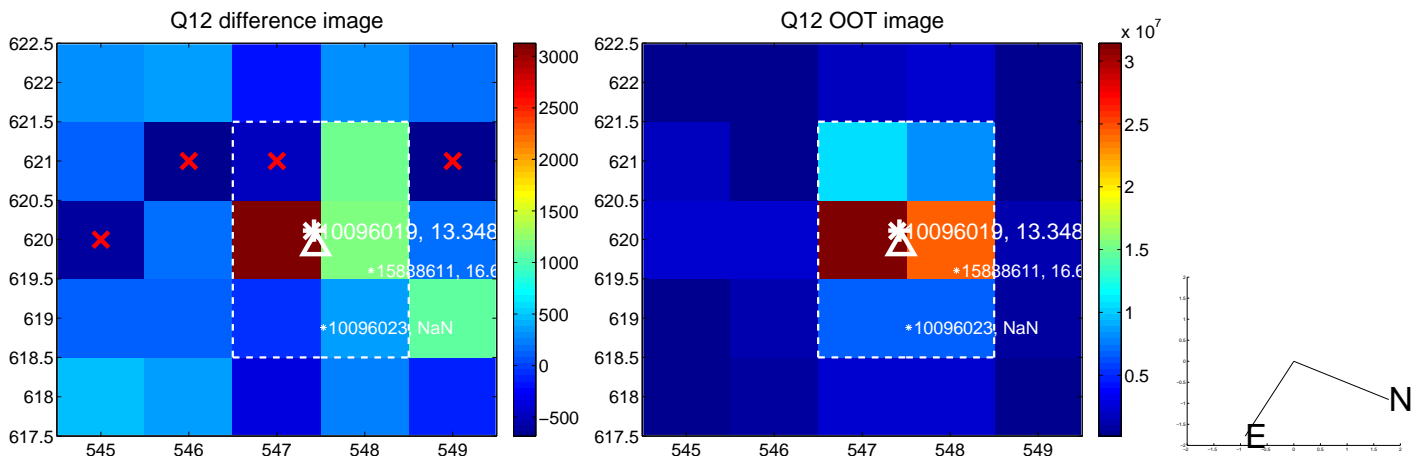
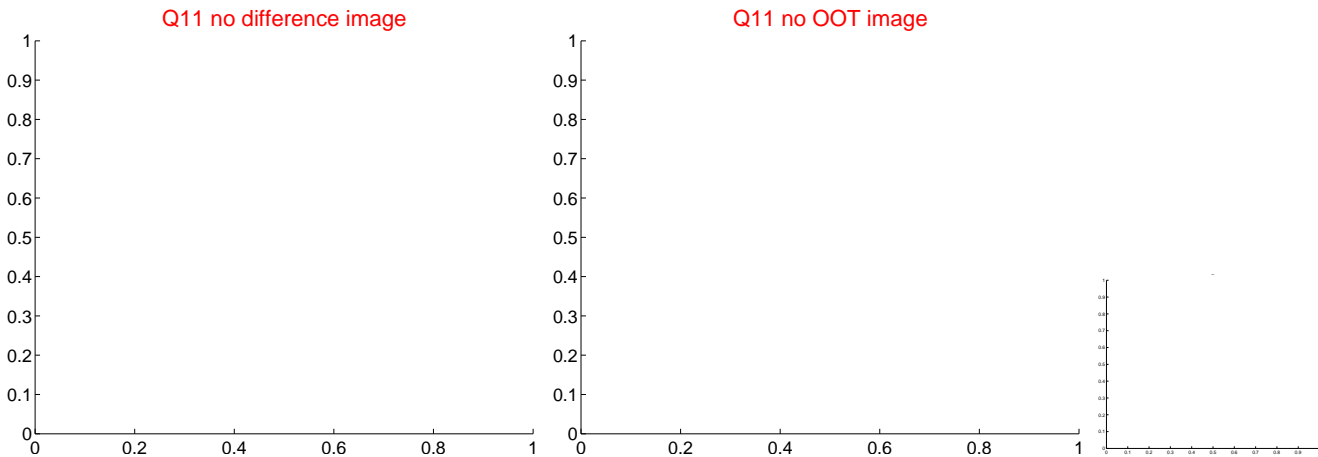
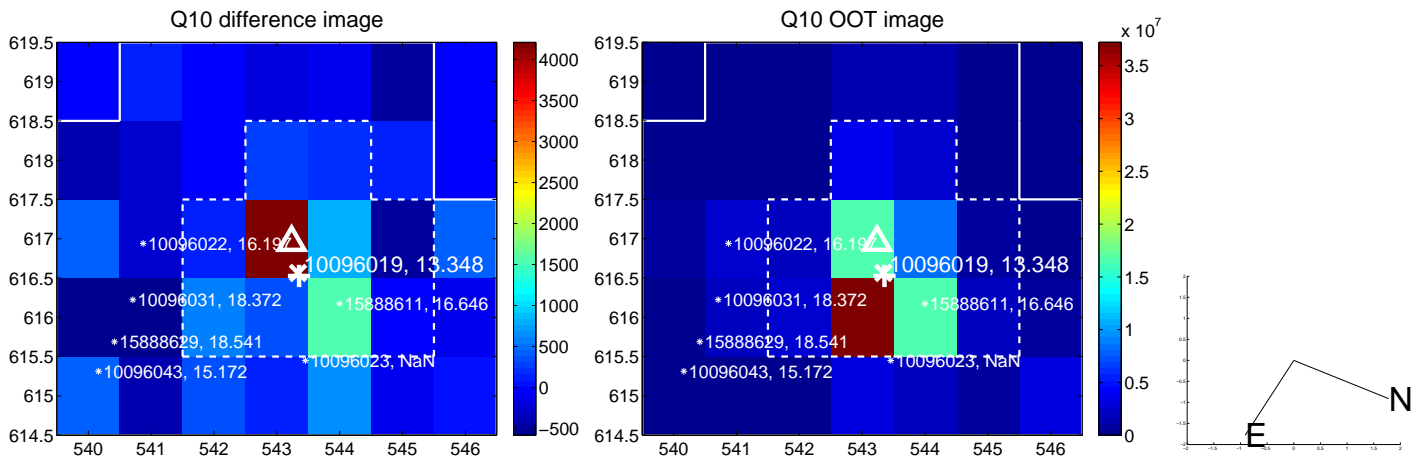
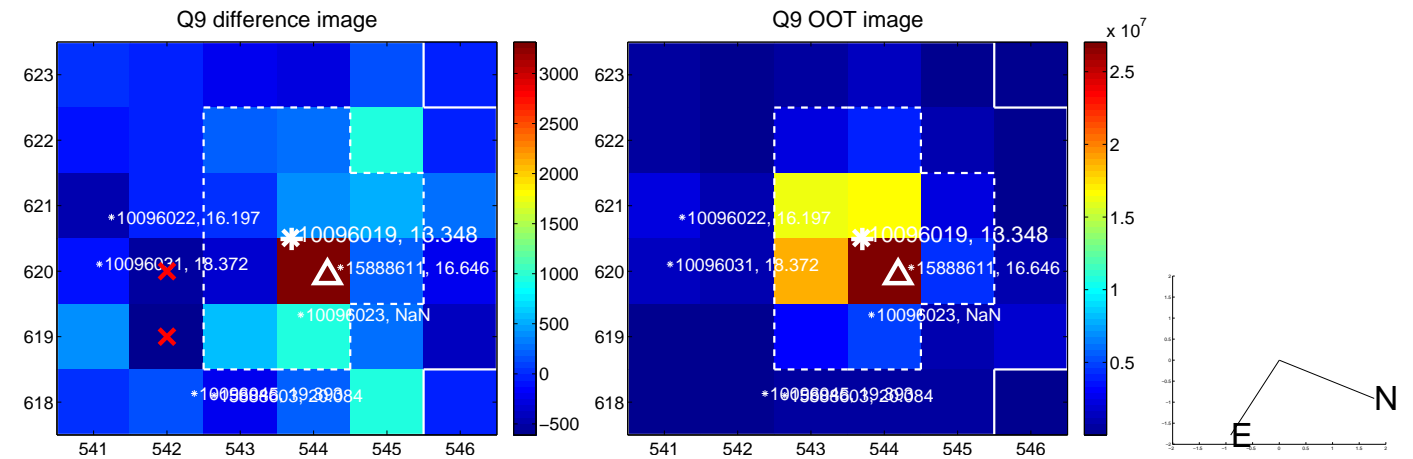
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



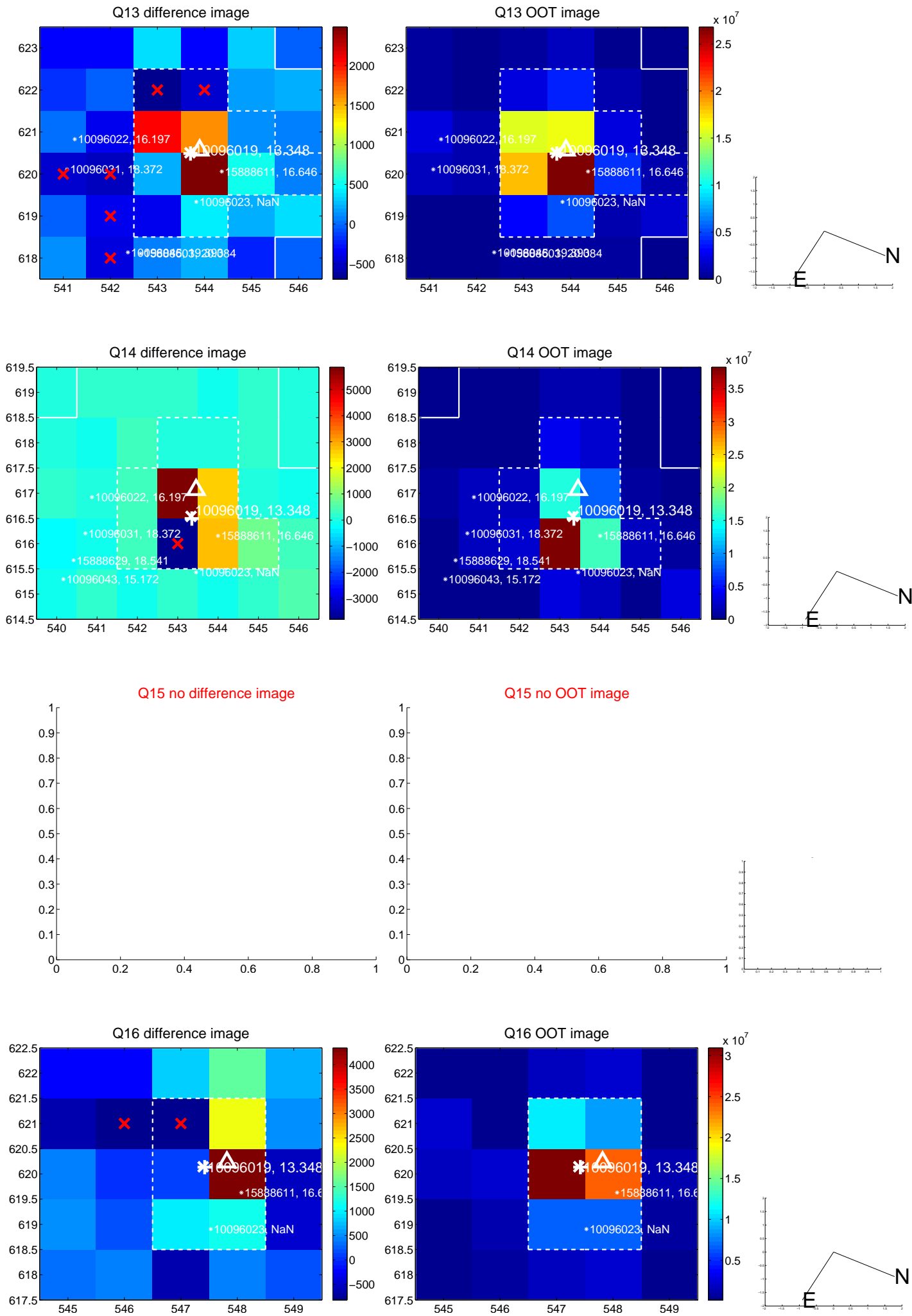
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



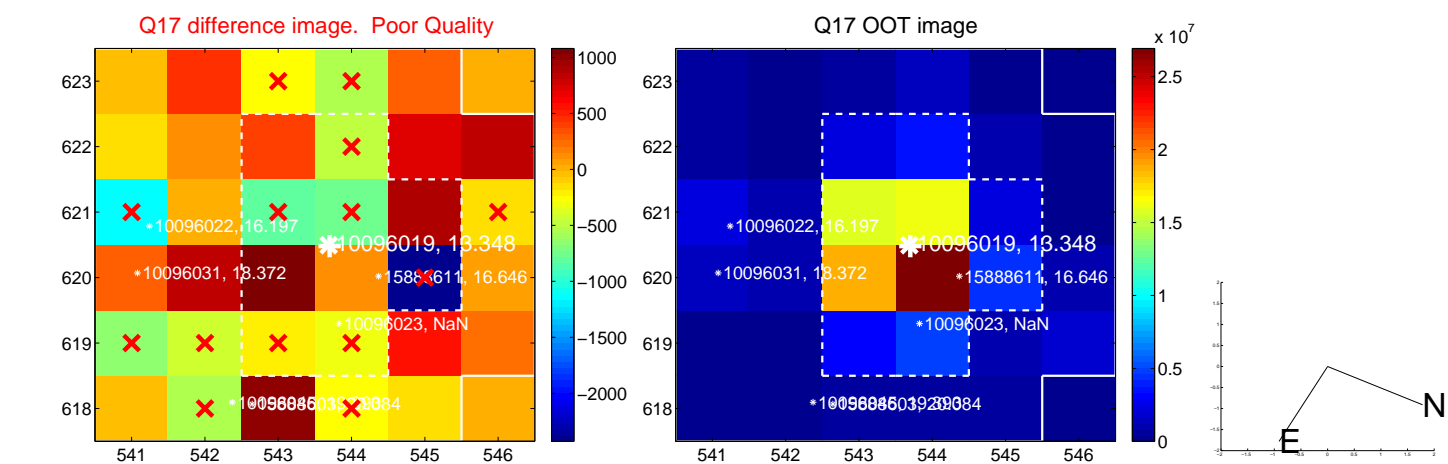
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



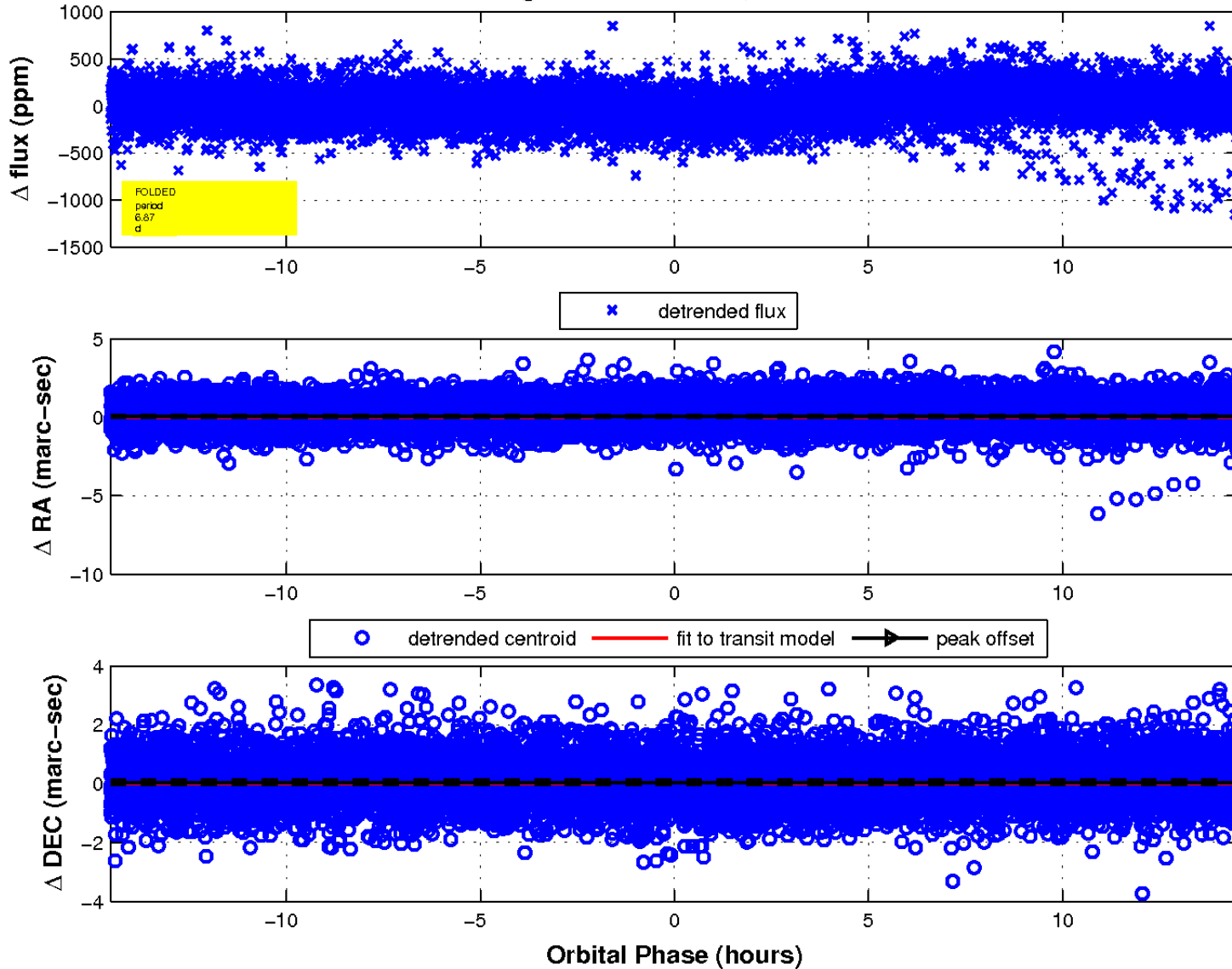
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

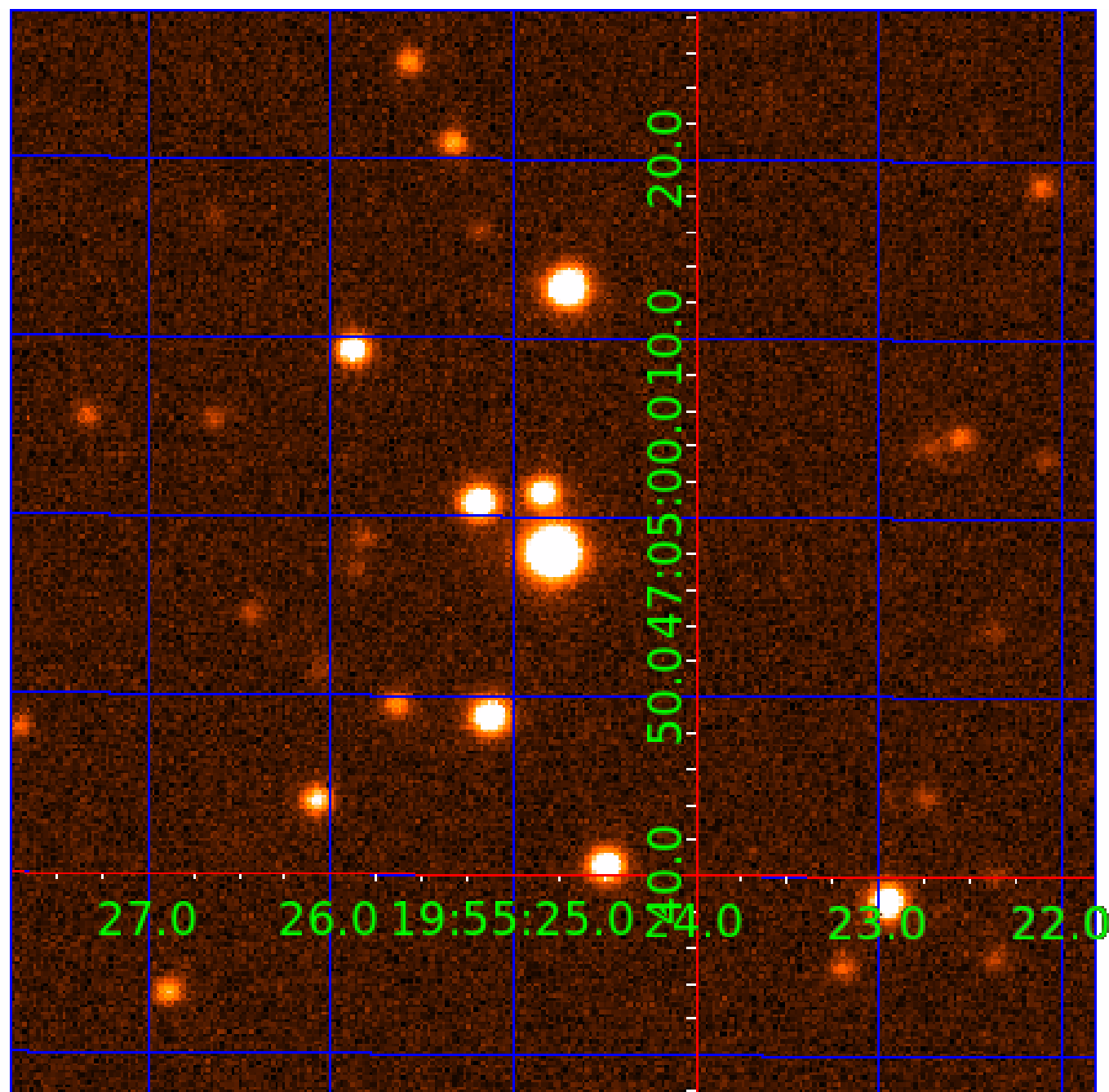


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



KIC 010096019

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})
010096019-01	OBS	No	6.871484	138.362231	134.3	10.534	17.2	18.8	2.27	7040	5.20	1565.29
010096019-02	OBS	No	6.871547	137.603890	87.7	4.844	12.5	13.5	2.27	7040	2.65	1565.27
010096019-03	OBS	No	6.871487	135.319303	37.6	27.895	10.3	8.7	2.27	7040	1.59	1565.29

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010096019-01	OBS	FP	0.00	1	0	0	0	LPP_DV
010096019-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—SAME_NTL_PERIOD
010096019-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—SAME_NTL_PERIOD

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

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

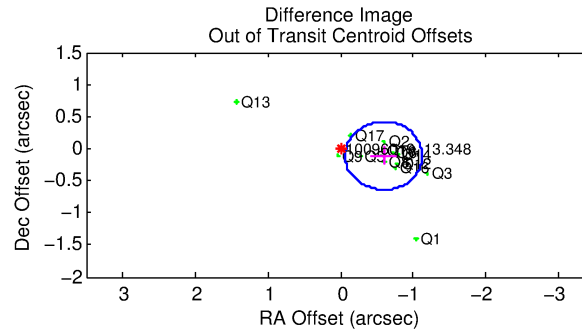
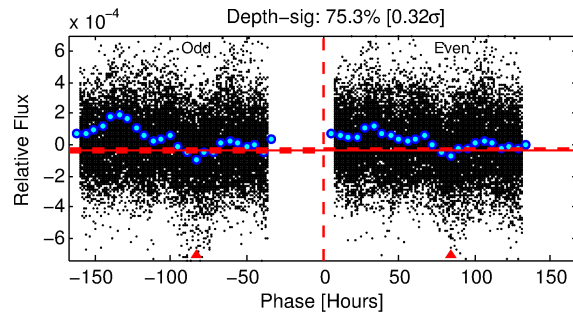
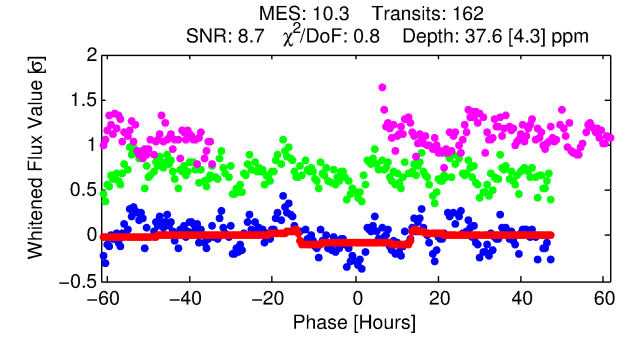
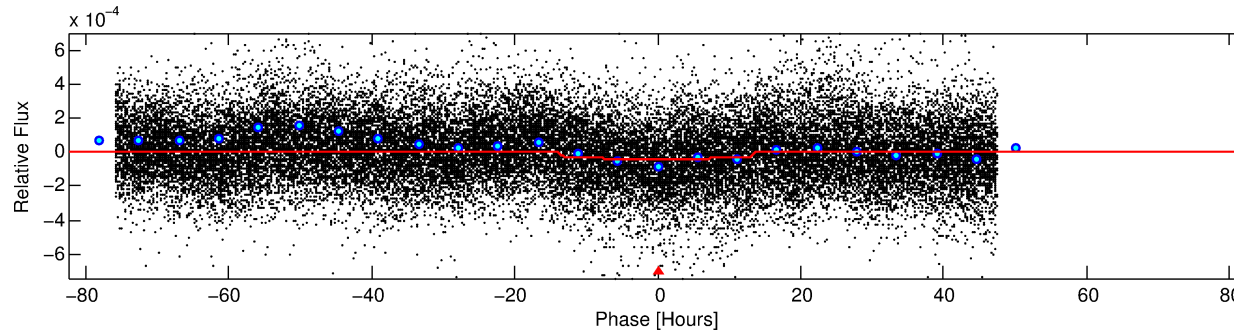
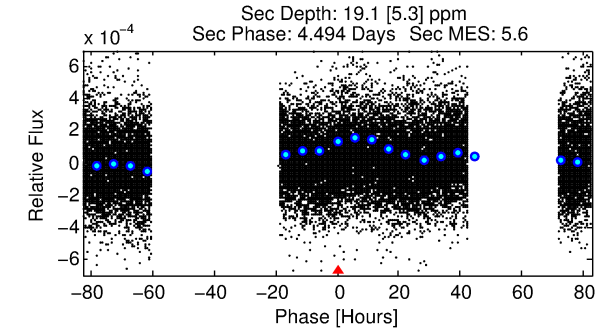
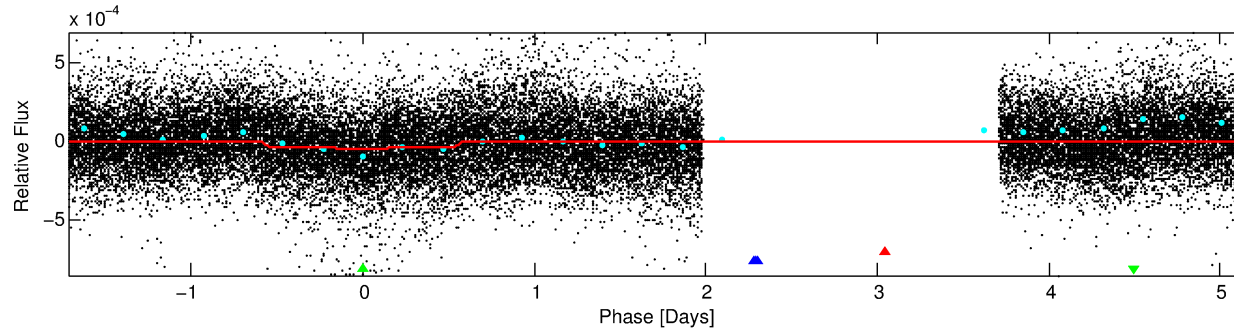
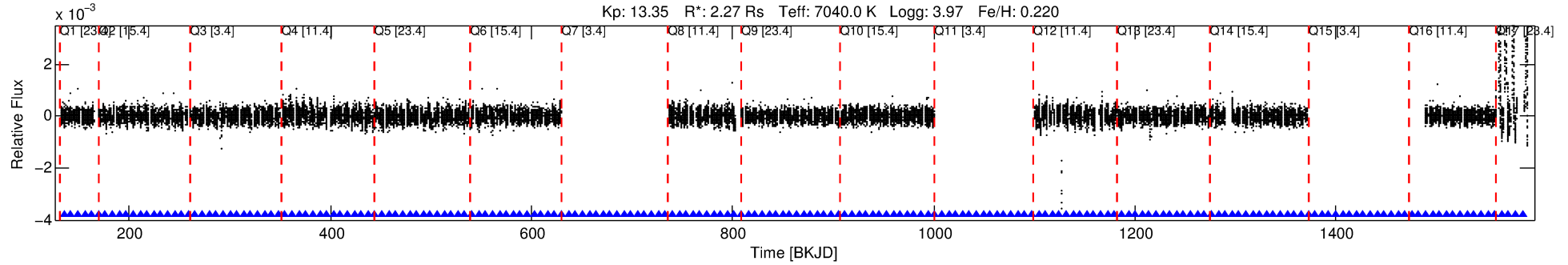
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010096019-03

No Significant Match Found

DV One-Page Summary

KIC: 10096019 Candidate: 3 of 3 Period: 6.871 d



DV Fit Results:

Period = 6.87149 [0.00017] d
Epoch = 135.3193 [0.0178] BKJD
Rp/R* = 0.0064 [0.0006]
a/R* = 1.32 [0.26]
b = 0.87 [0.13]
Seff = 1565.29 [607.82]
Teq = 1604 [156] K
Rp = 1.59 [0.44] Re
a = 0.0852 [0.0192] AU
Ag = 30.21 [14.50] [2.01σ]
Teffp = 5814 [561] K [7.23σ]

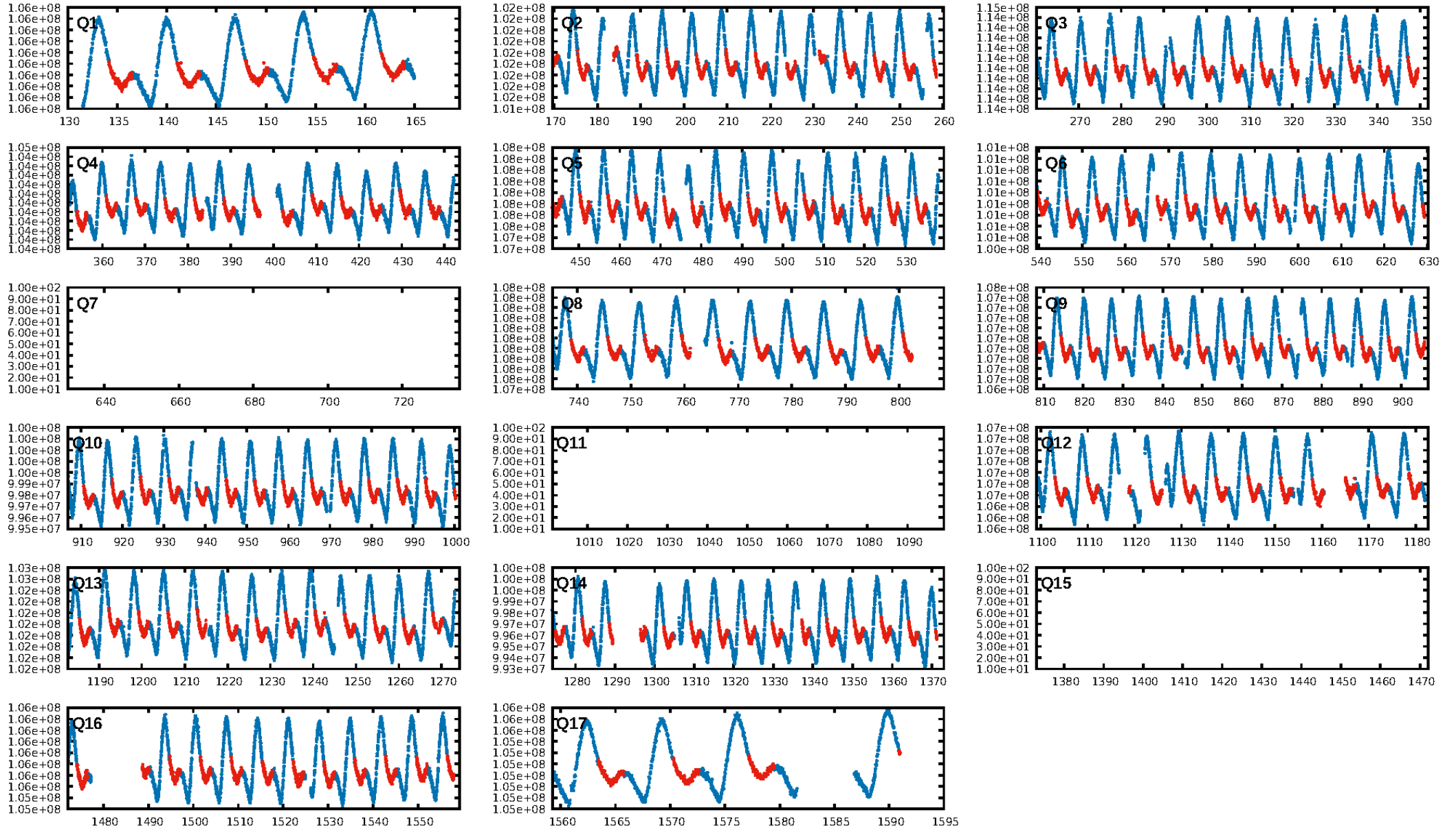
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 95.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.05e-29
RollingBand-fgt: 1.00 [154/154]
GhostDiagnostic-chr: 0.6211
Centroid-sig: 0.0%
Centroid-so: 5.815 arcsec [4.36σ]
OotOffset-rm: 0.603 arcsec [3.42σ]
KicOffset-rm: 0.545 arcsec [3.20σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

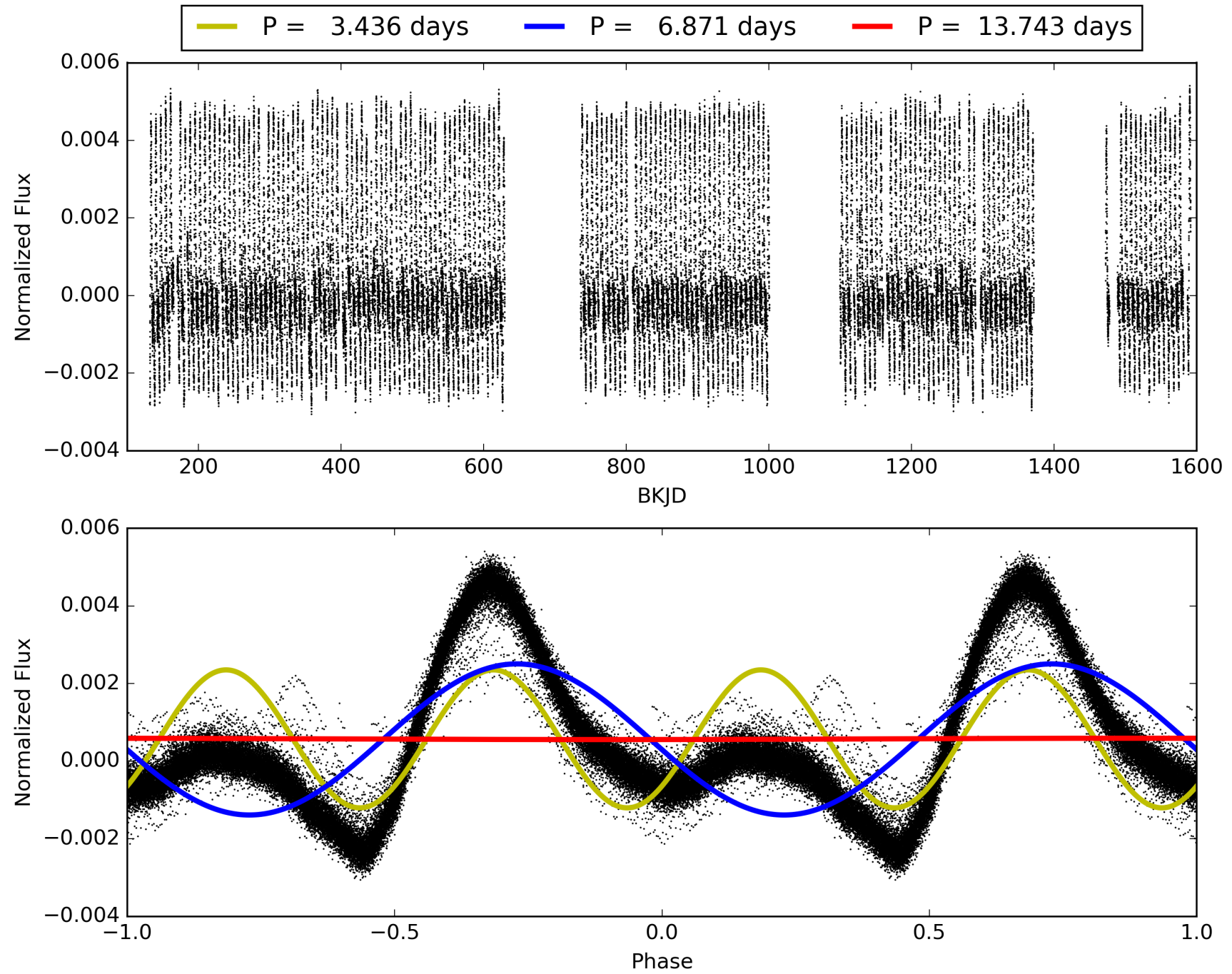
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:06:26 Z

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

TCE 010096019-03, PDC Light Curves

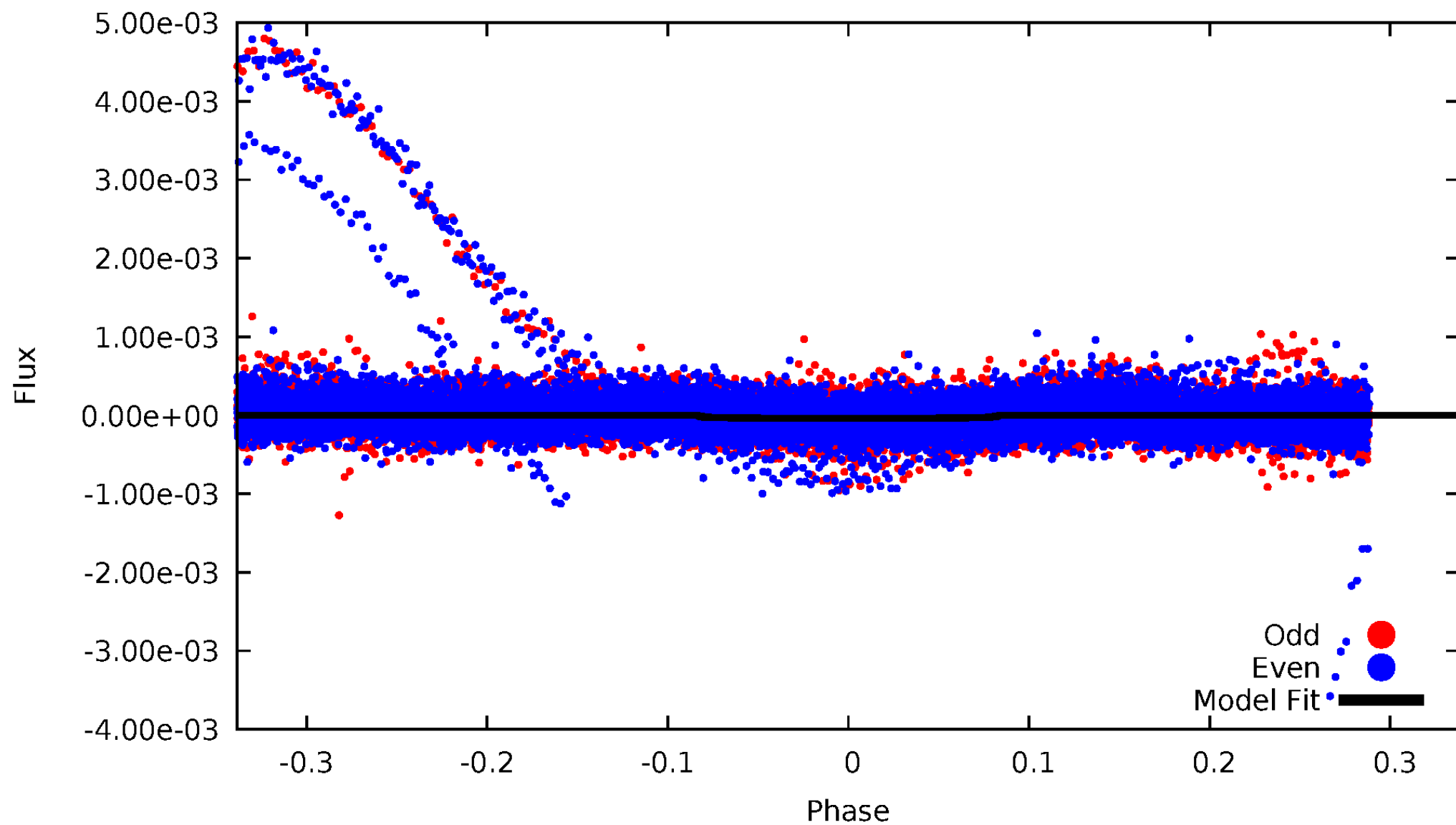


TCE 010096019-03



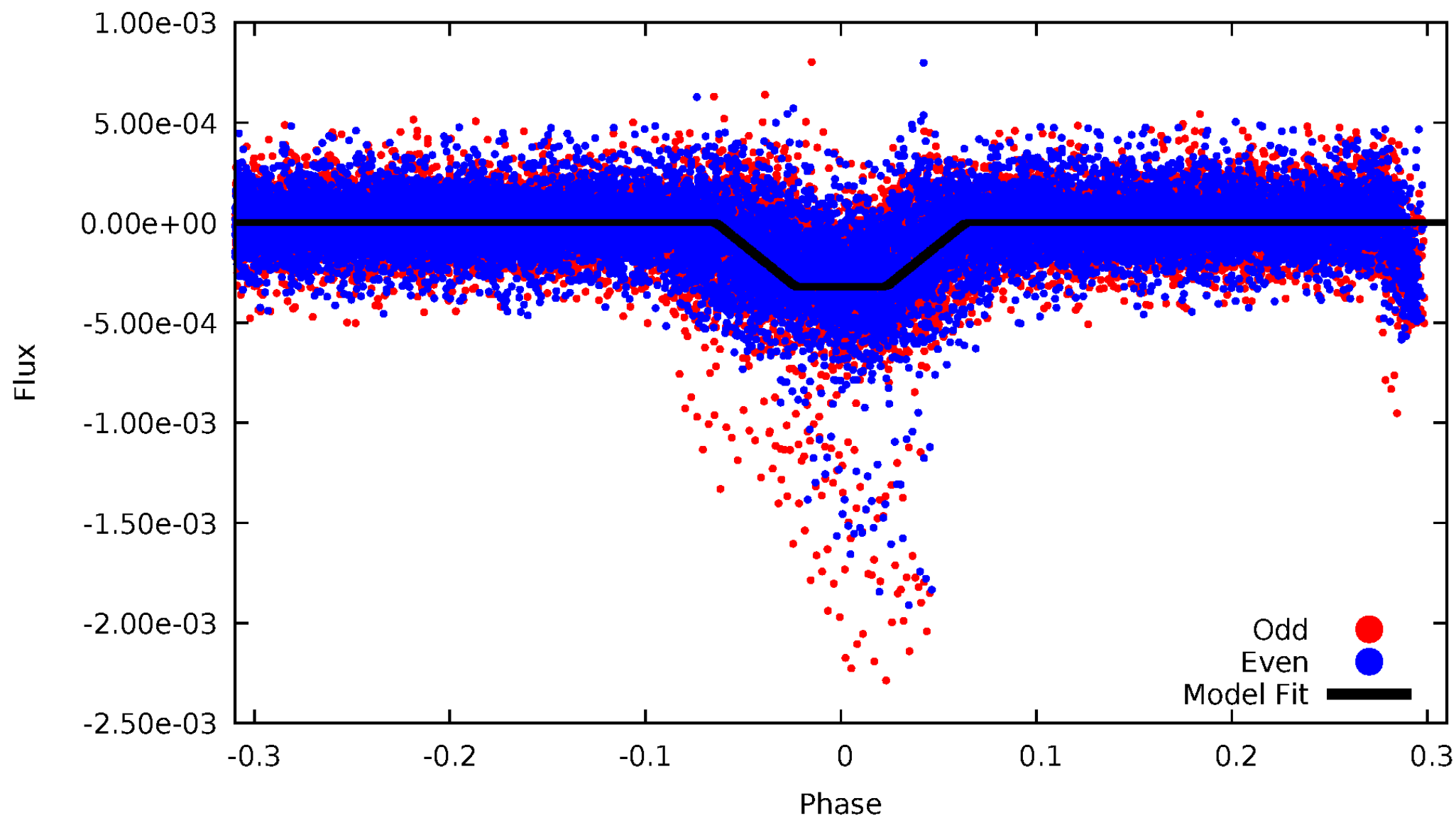
DV Odd/Even

TCE 010096019-03



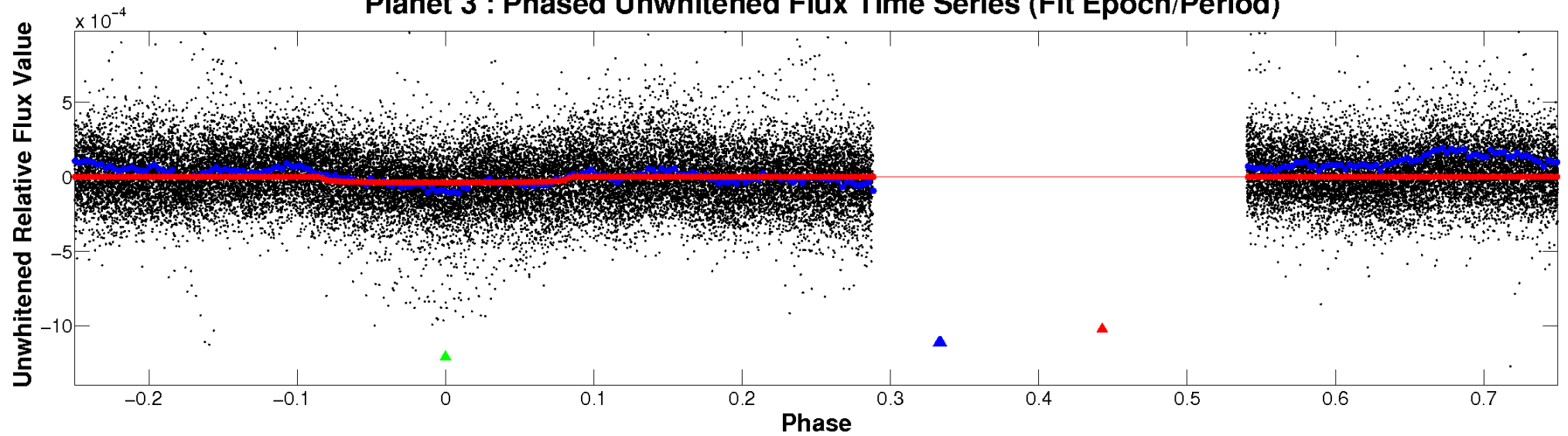
ALT Odd/Even

TCE 010096019-03

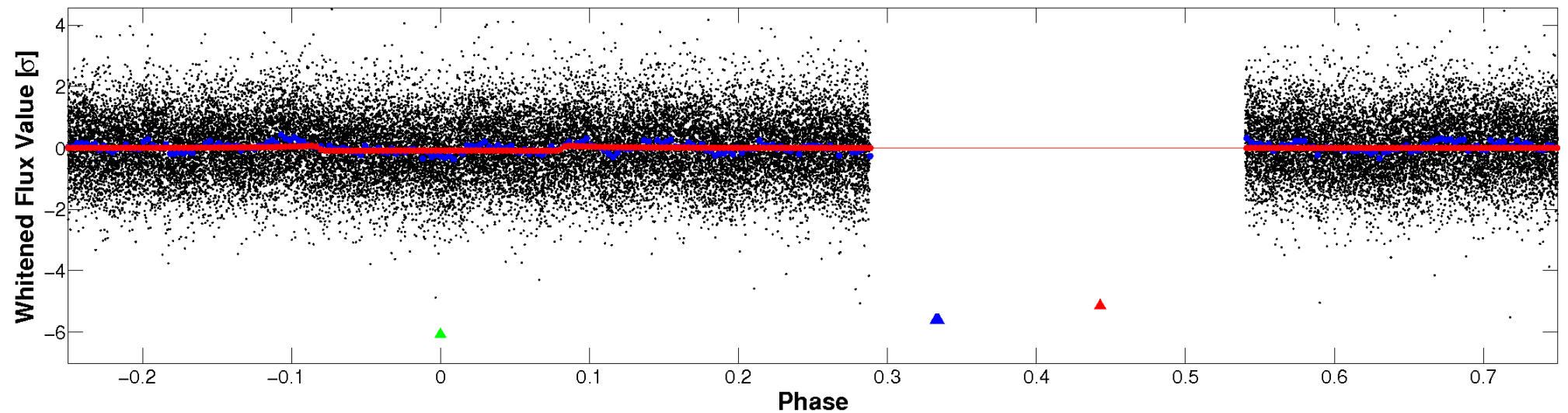


Non-Whitened Vs. Whitened Light Curve

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

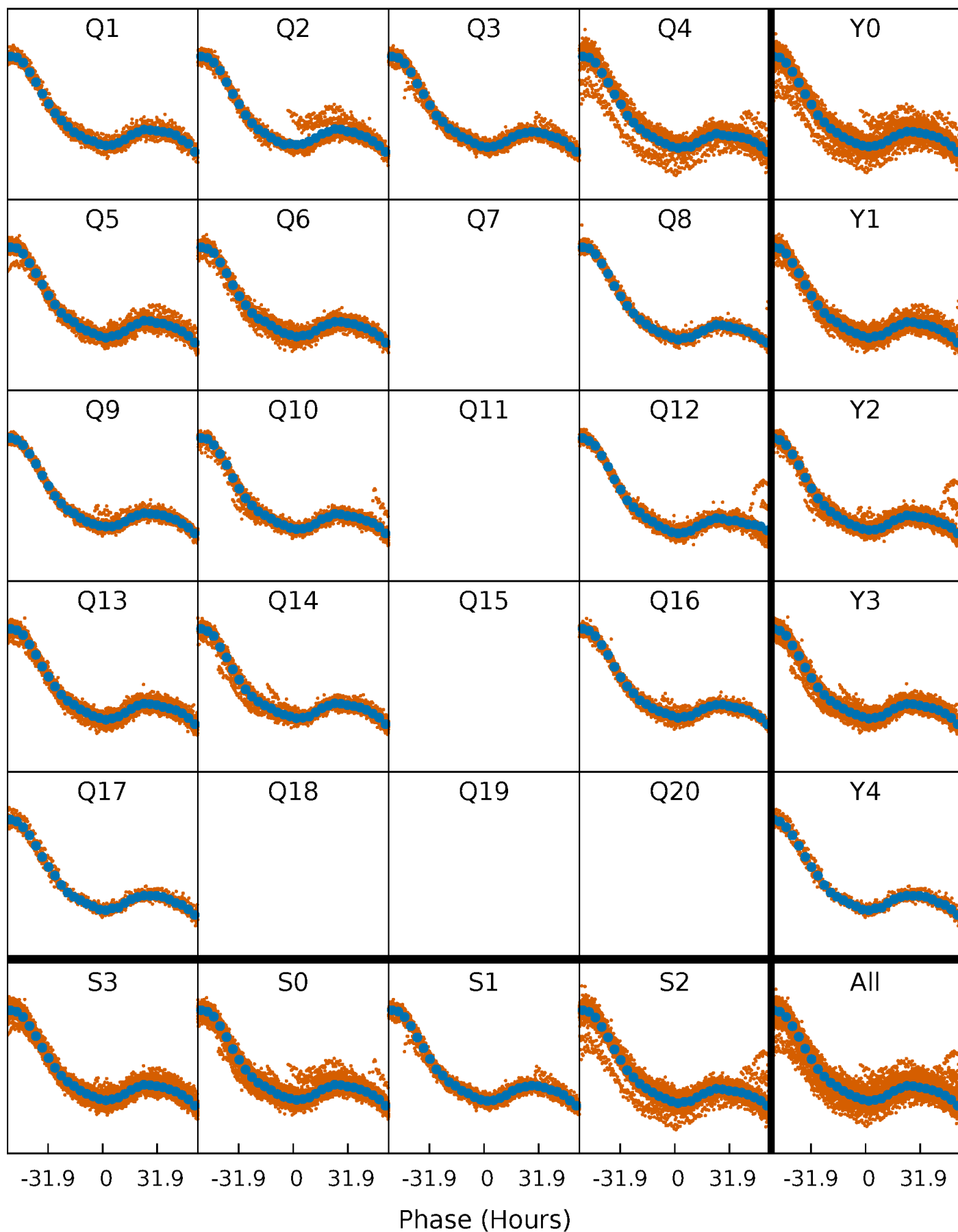


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



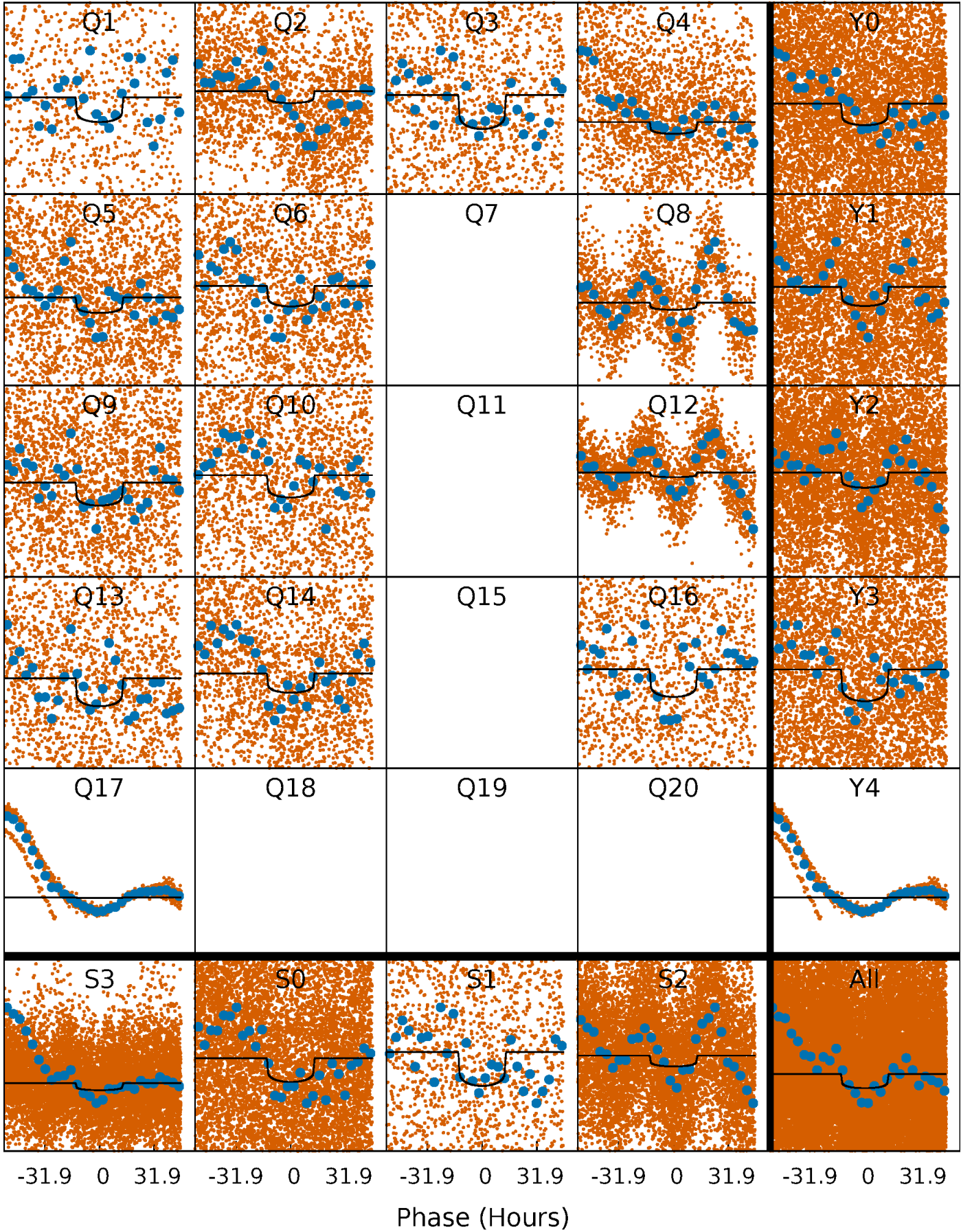
PDC Quarter-Phased Transit Curves

TCE 010096019-03 P= 6.871487 Days $T_0=135.319303$ (BKJD)



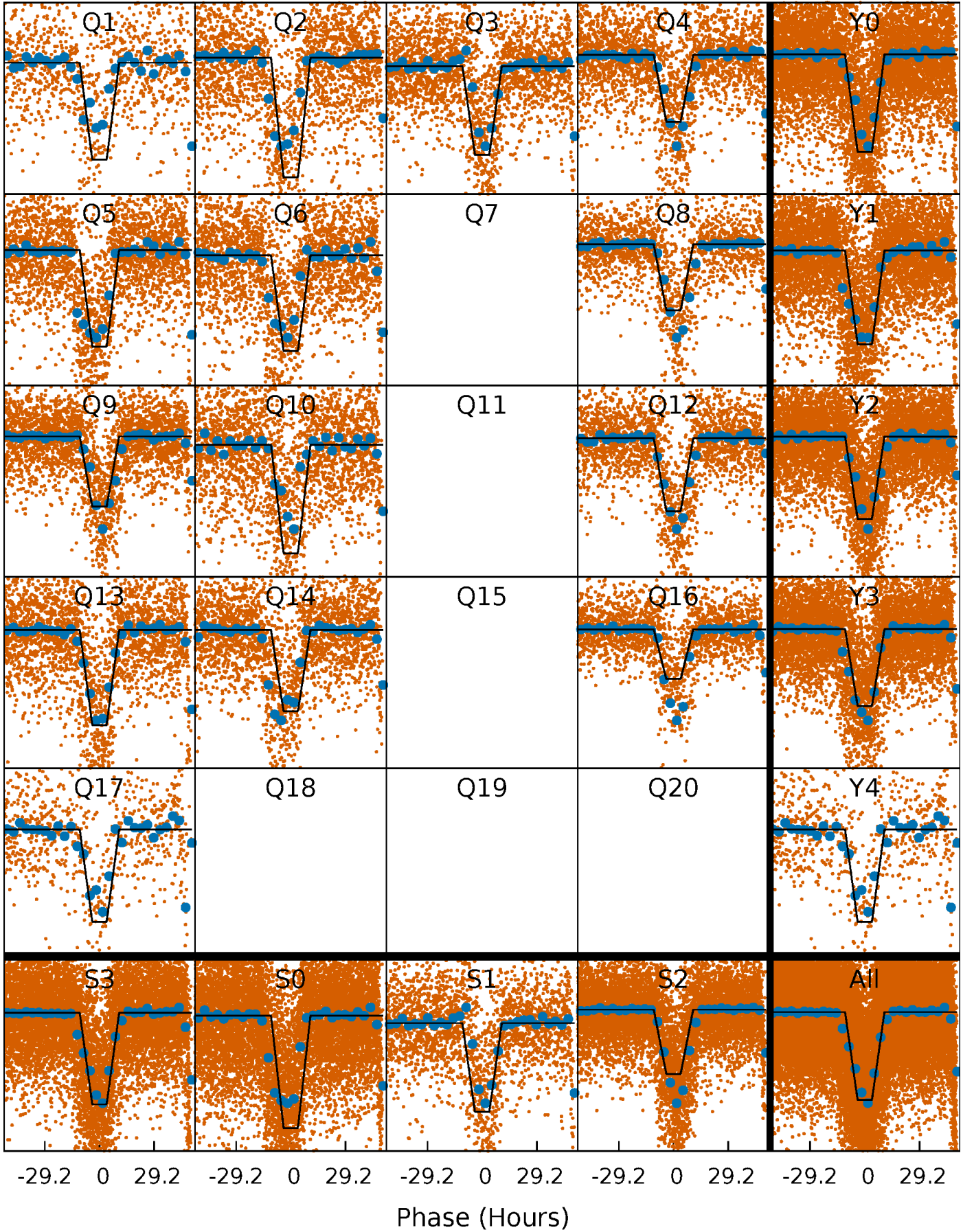
DV Quarter-Phased Transit Curves

TCE 010096019-03 P= 6.871487 Days $T_0=135.319303$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

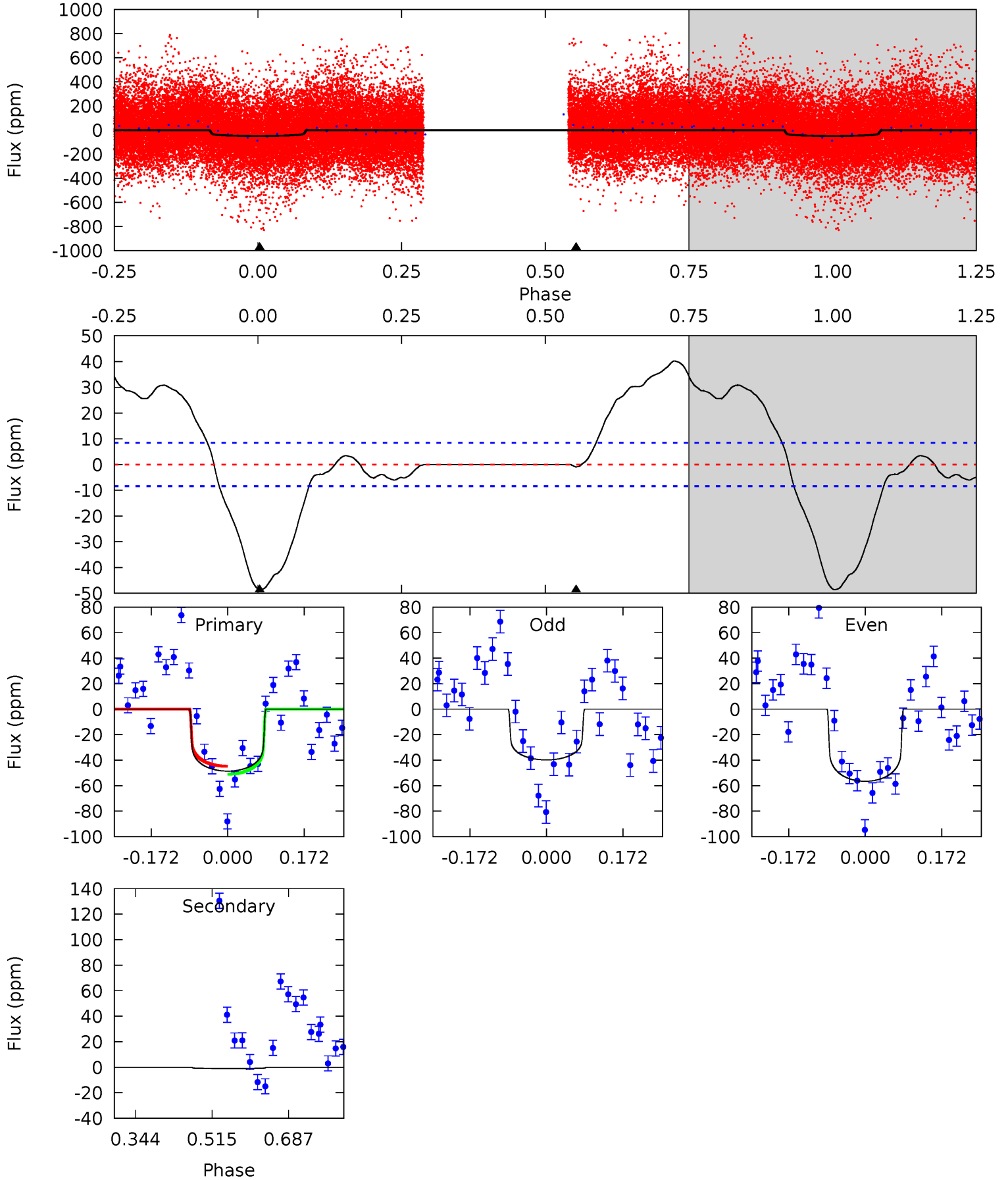
TCE 010096019-03 P= 6.871598 Days $T_0=135.235878$ (BKJD)



DV Model-Shift Uniqueness Test

010096019-03, P = 6.871487 Days, E = 128.447816 Days

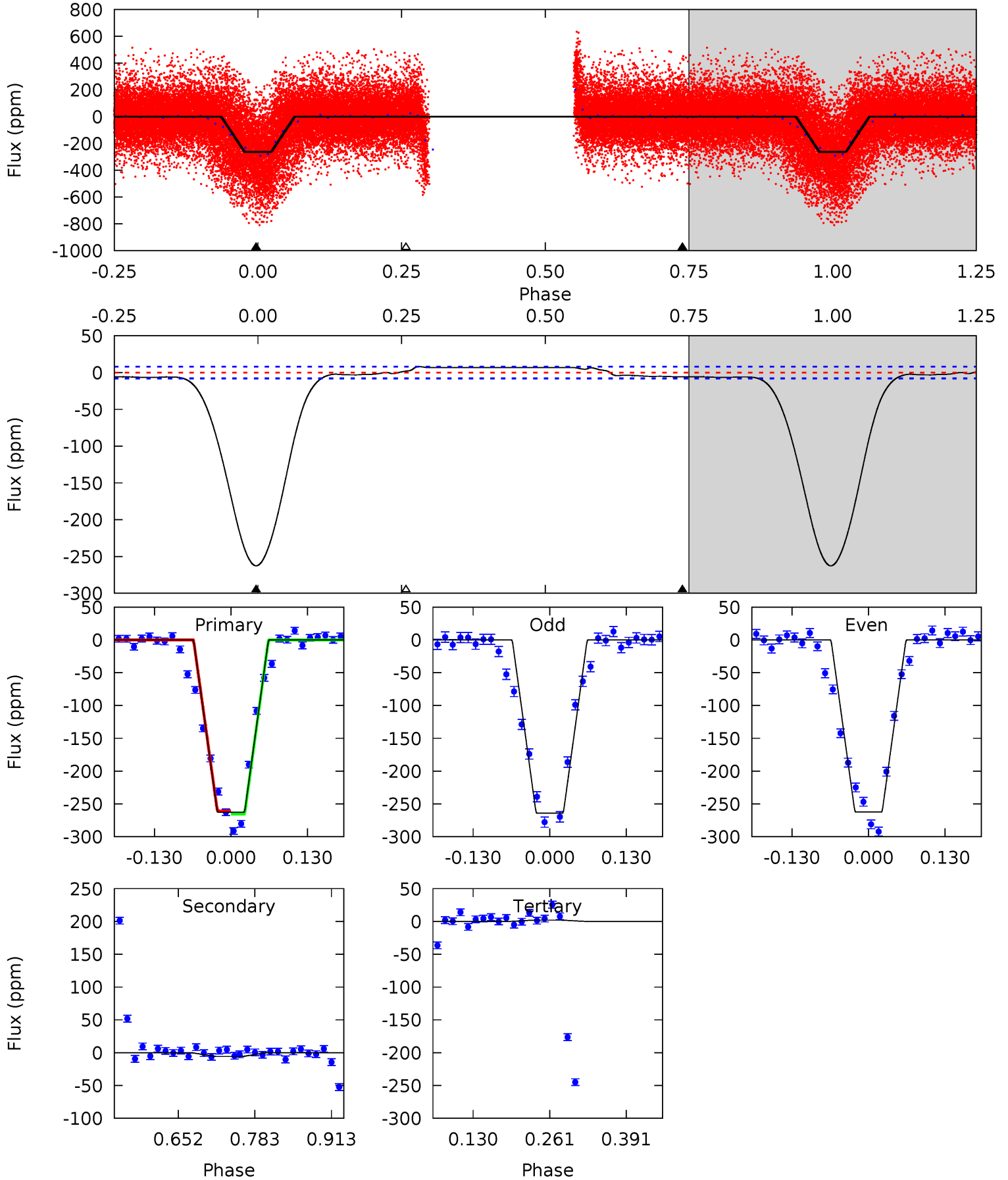
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.7	0.50	0	0	4.45	1.37	9.32	25.7	25.7	0.50	0.50	4.45	1.00	0.45	1.63



Alt Model-Shift Uniqueness Test

010096019-03, P = 6.871598 Days, E = 128.364280 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
148.6	3.27	-1.14	0	4.51	1.51	2.13	149.8	148.6	4.41	3.27	0.46	1.23	0.03	1.42



Stellar Parameters For KIC 010096019

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7040^{+219}_{-328}	$3.967^{+0.192}_{-0.128}$	$0.220^{+0.150}_{-0.300}$	$2.271^{+0.476}_{-0.582}$	$1.743^{+0.152}_{-0.282}$	$0.209^{+0.227}_{-0.081}$
	+3%/-5%	+5%/-3%	+68%/-136%	+21%/-26%	+9%/-16%	+109%/-39%
Source	PHO1	FLK73	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 010096019-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1 ± 2	$1.55^{+0.26}_{-0.24}$	2220^{+153}_{-160}	3144^{+749}_{-652}	$1.433^{+3.417}_{-3.136}$
Alt.	-6 ± 2	$4.34^{+0.60}_{-0.58}$	2212^{+154}_{-173}	3017^{+181}_{-225}	$1.196^{+0.589}_{-0.435}$

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

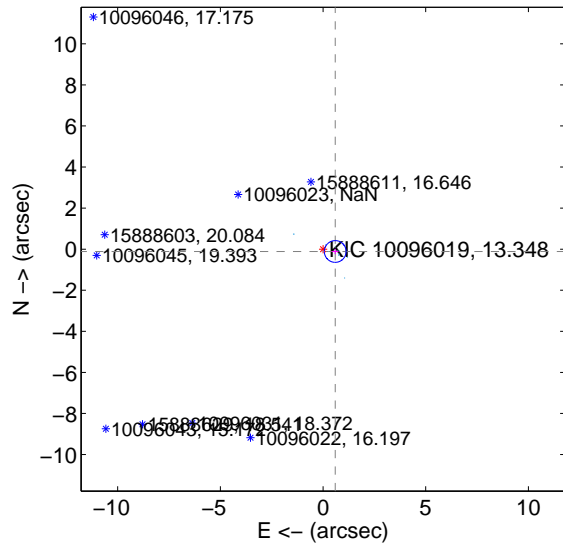
Supplemental centroid analysis for 010096019-03. Kepler magnitude: 13.35. Transit SNR 8.68

There are 14 quarters with good PRF difference image offsets

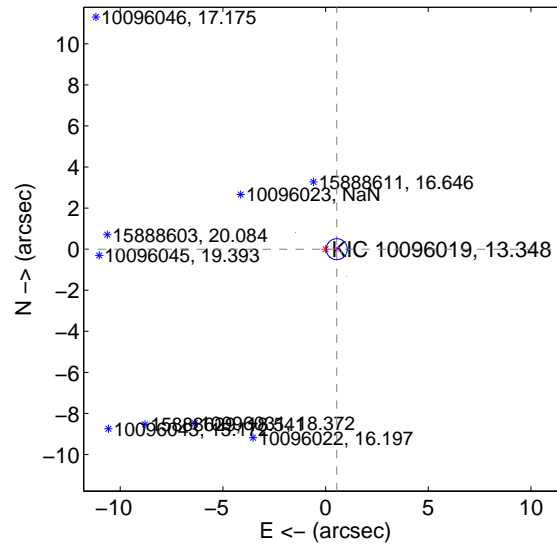
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.603 ± 0.176	3.42	-0.593 ± 0.164	-0.112 ± 0.133
PRF-fit source offset from KIC position	0.545 ± 0.170	3.20	-0.545 ± 0.170	-0.001 ± 0.130
photometric centroid source offset	5.82 ± 1.33	4.36	-5.81 ± 1.33	-0.22 ± 1.26

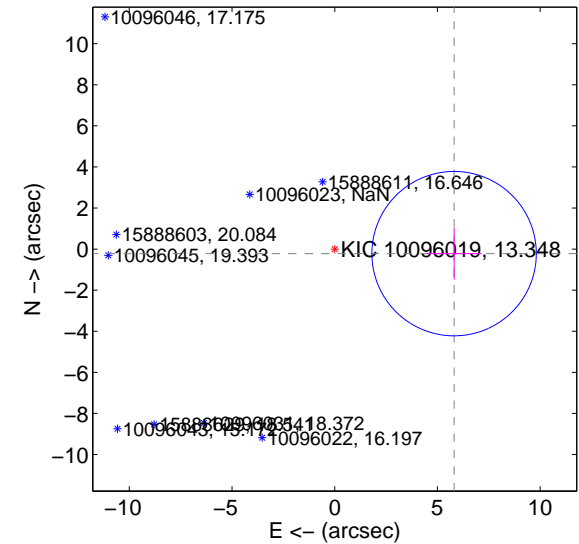
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

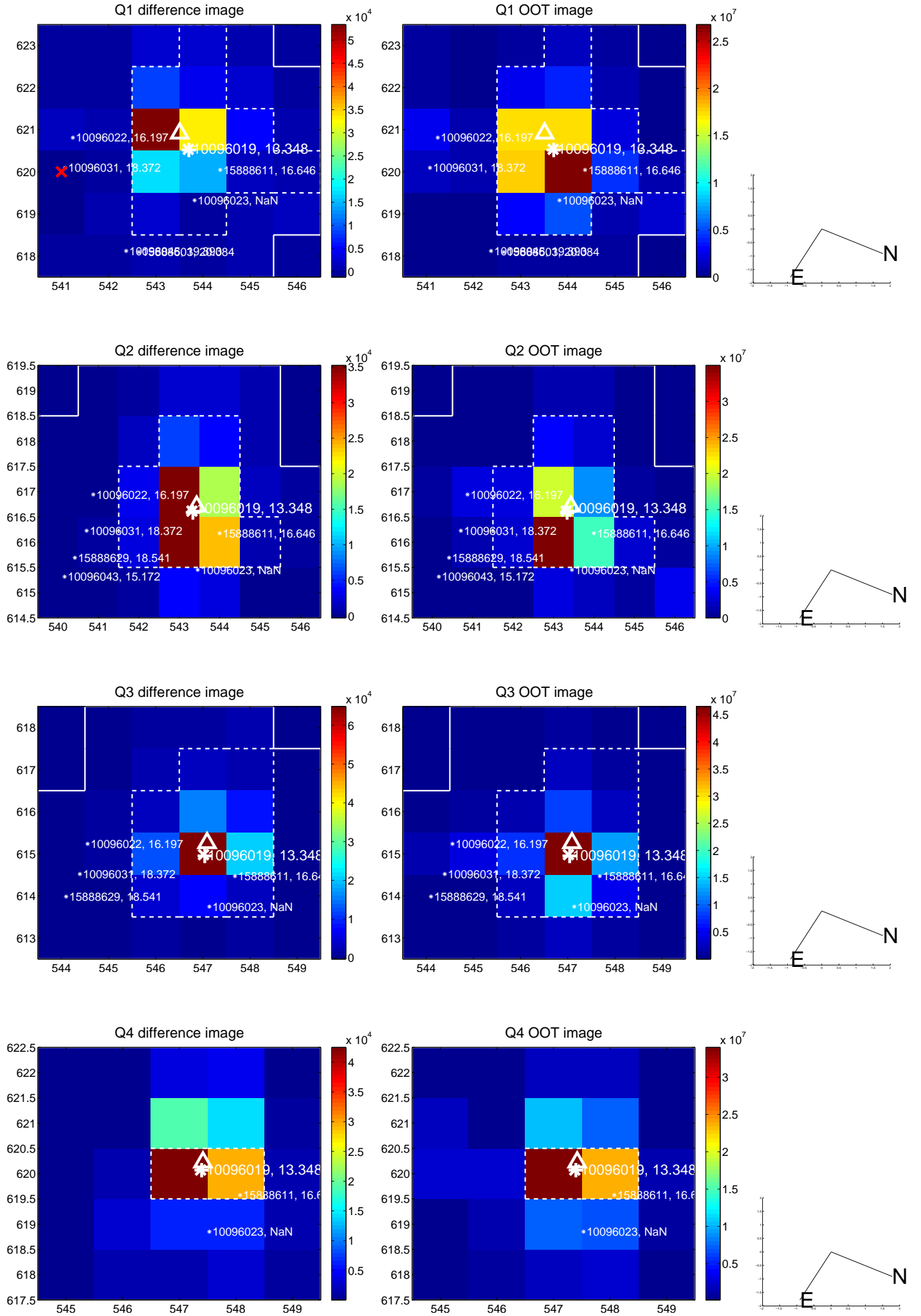


offset from photometric centroids

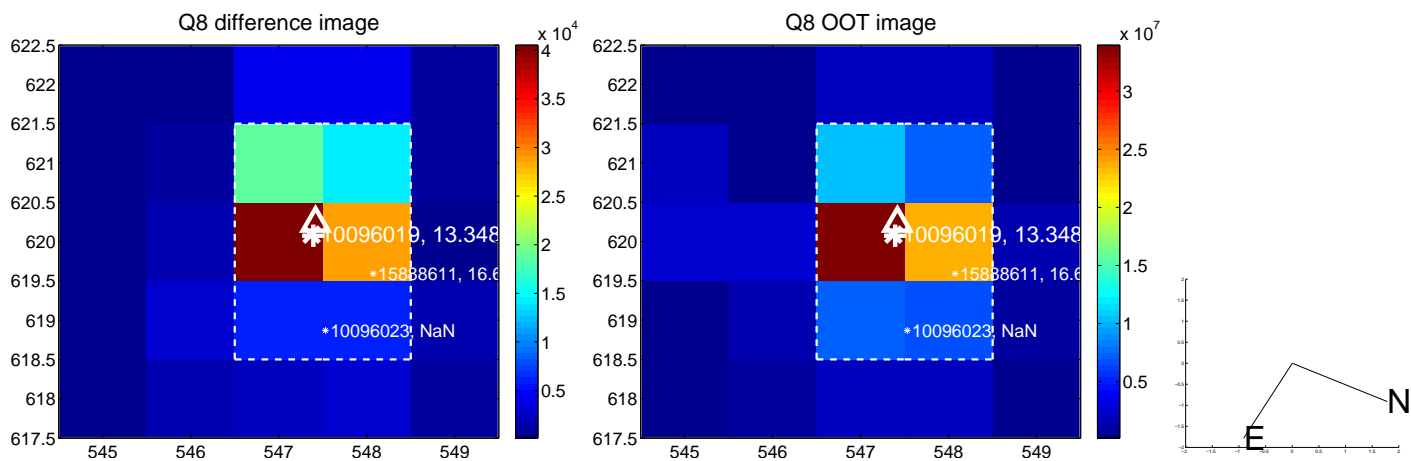
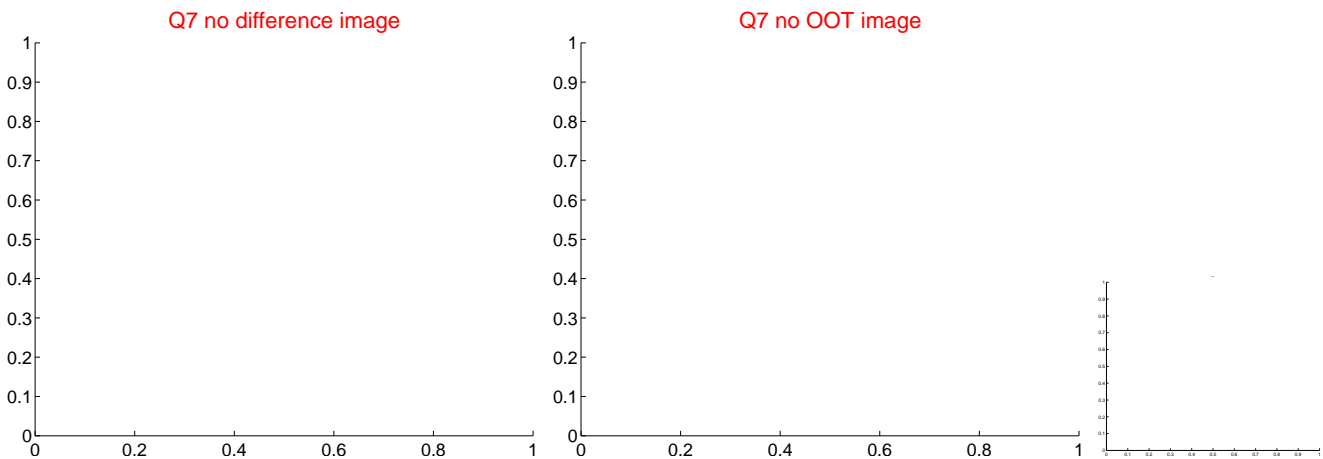
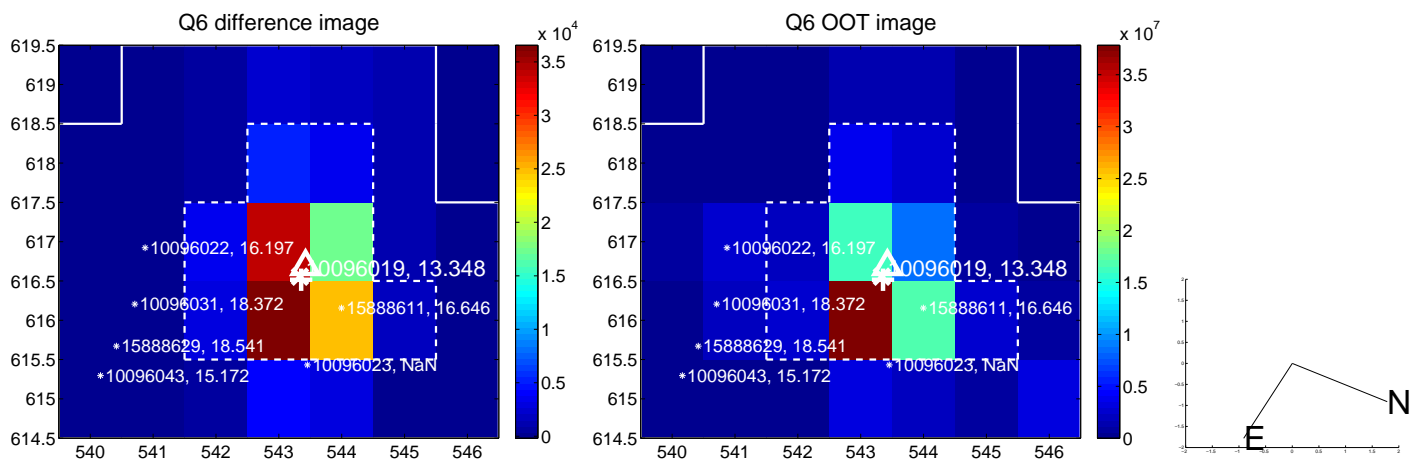
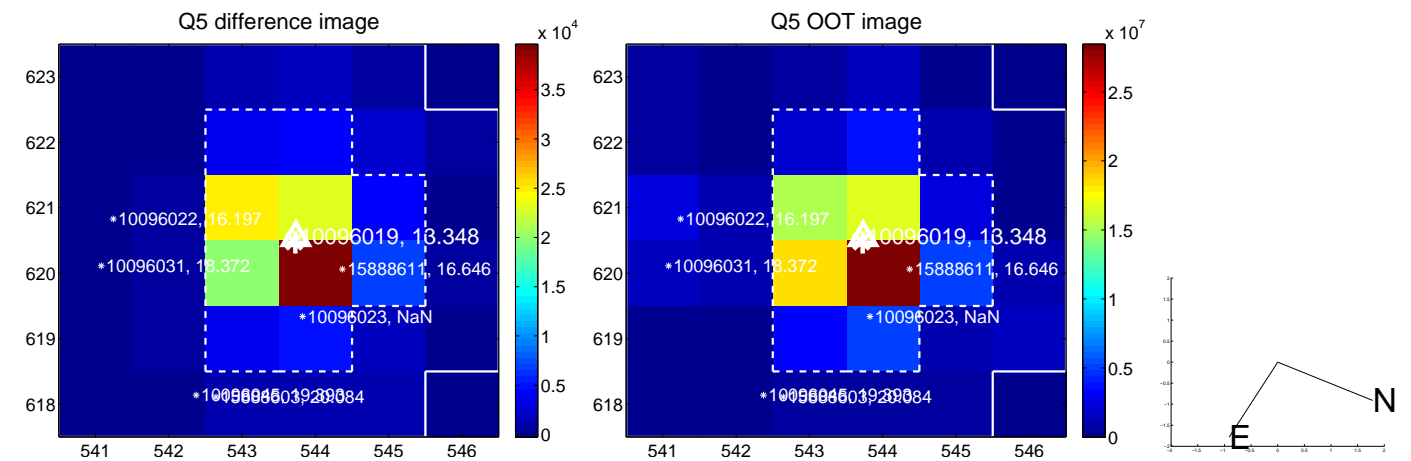


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

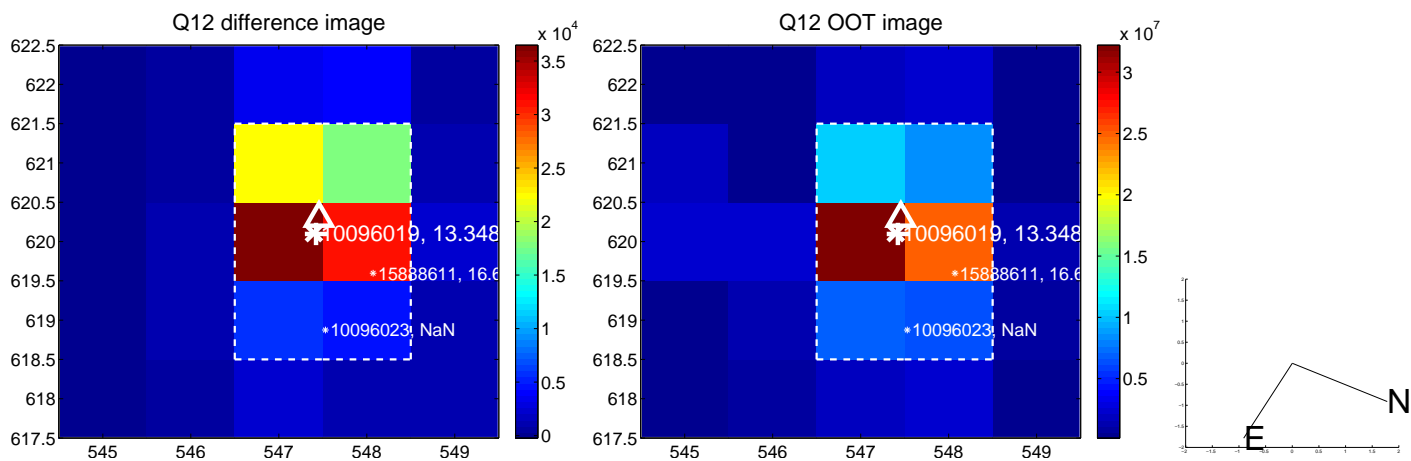
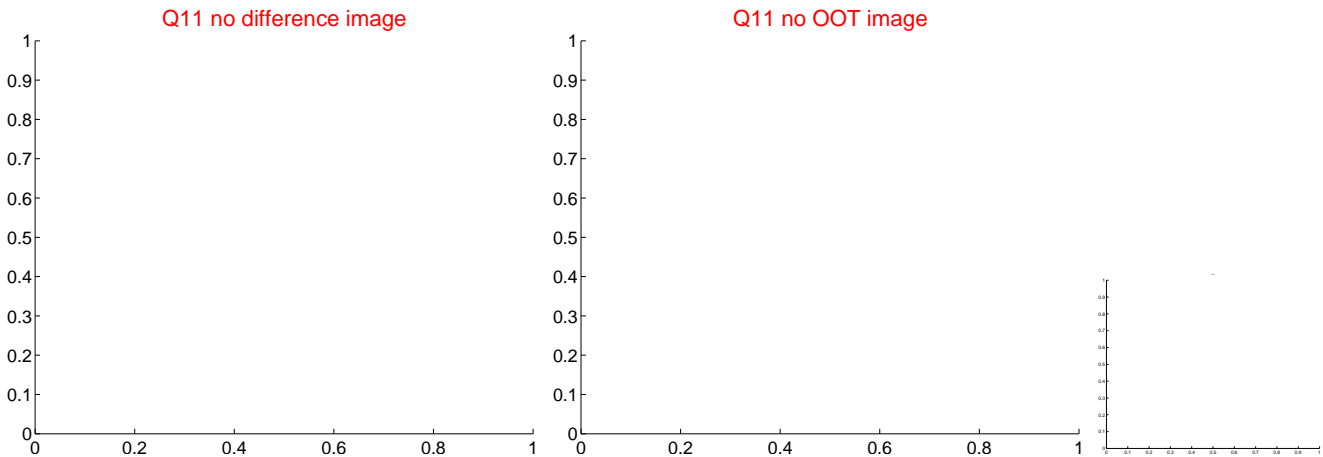
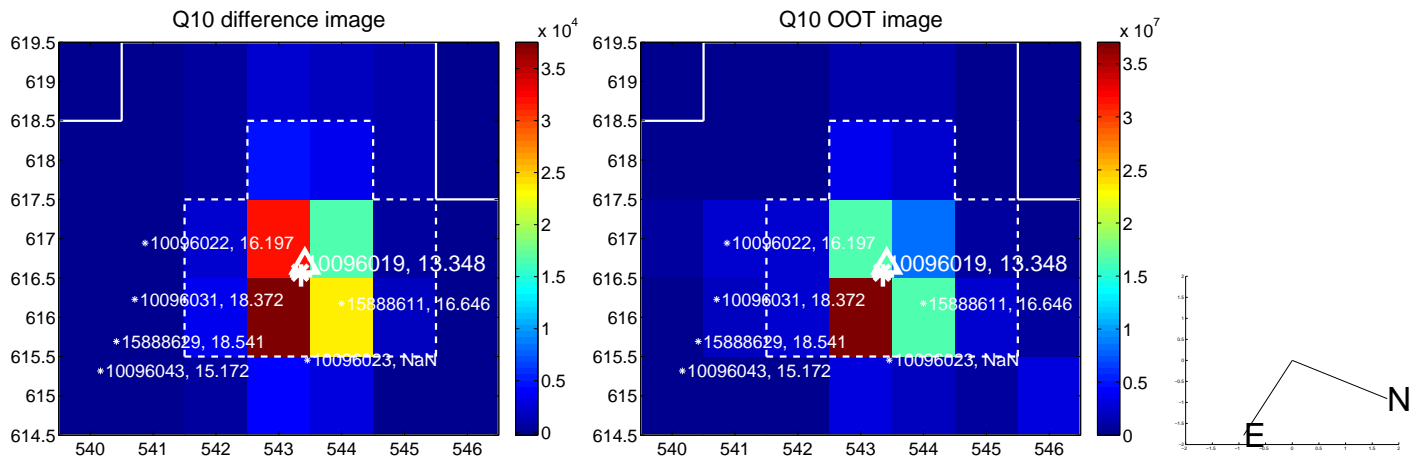
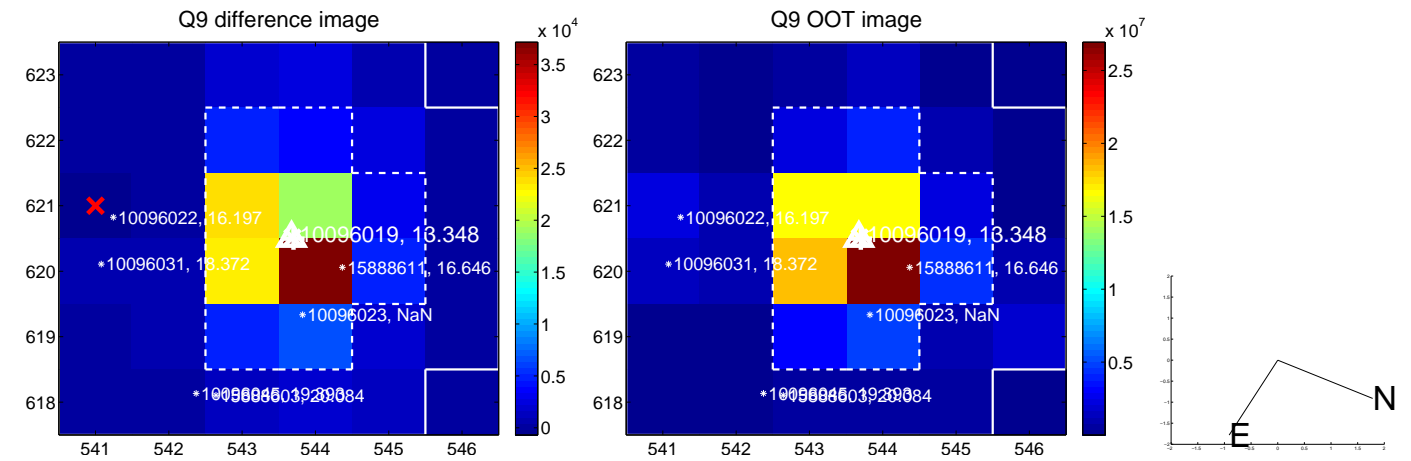
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



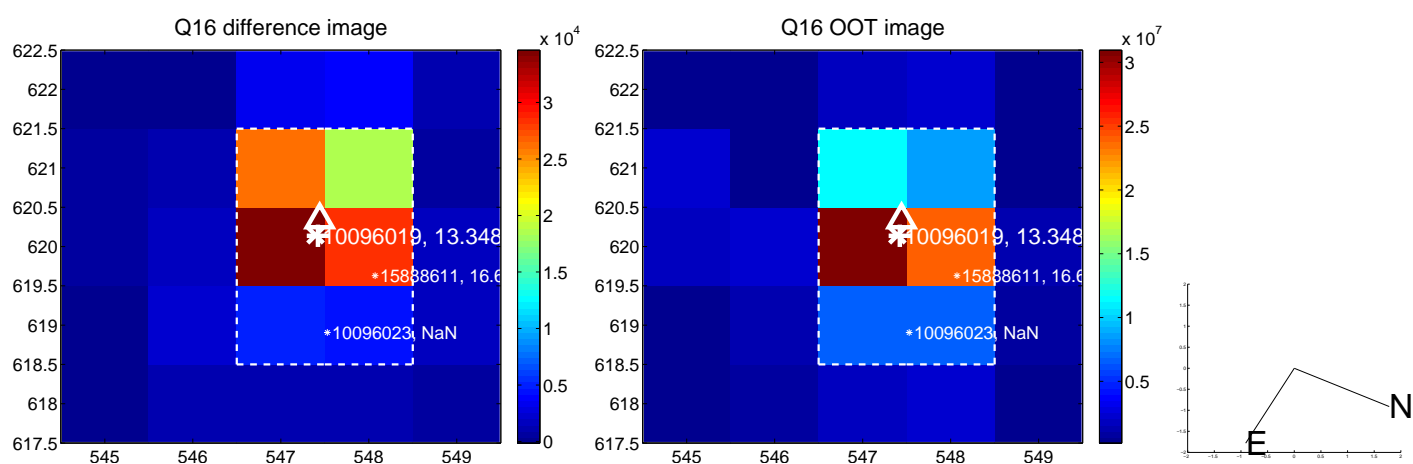
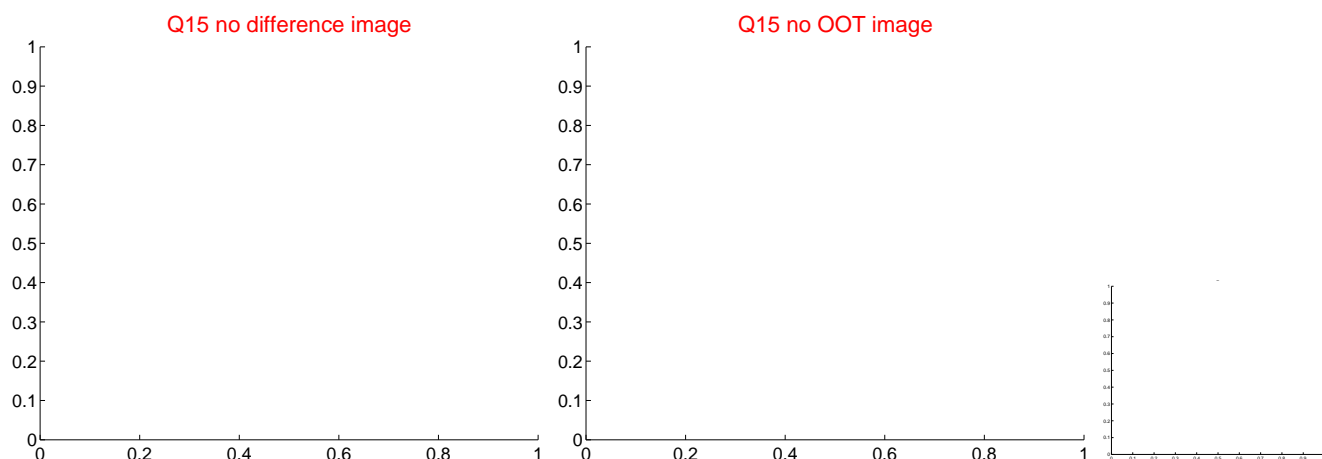
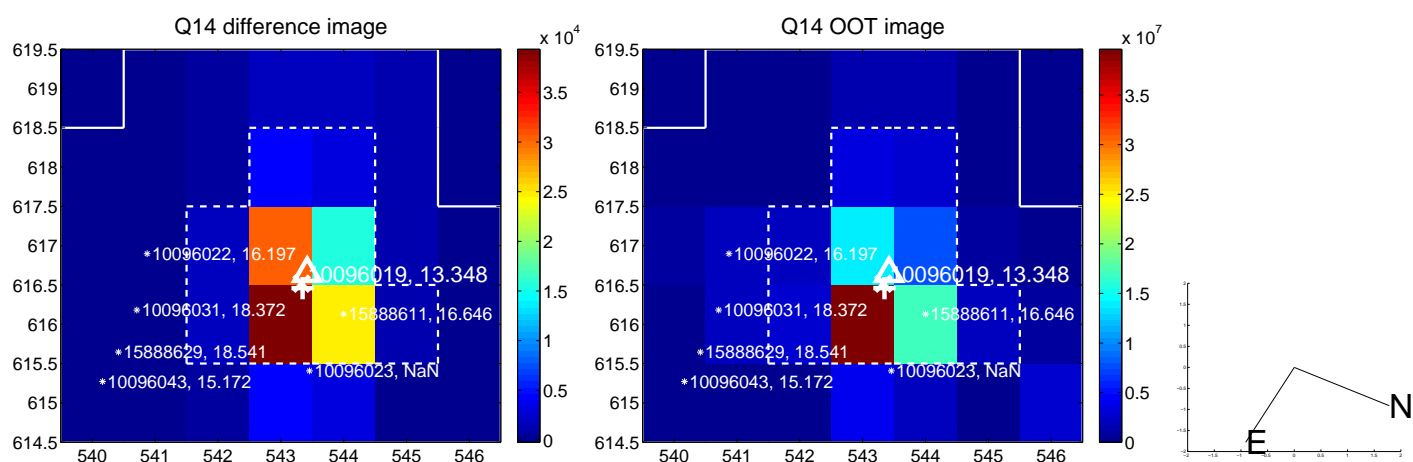
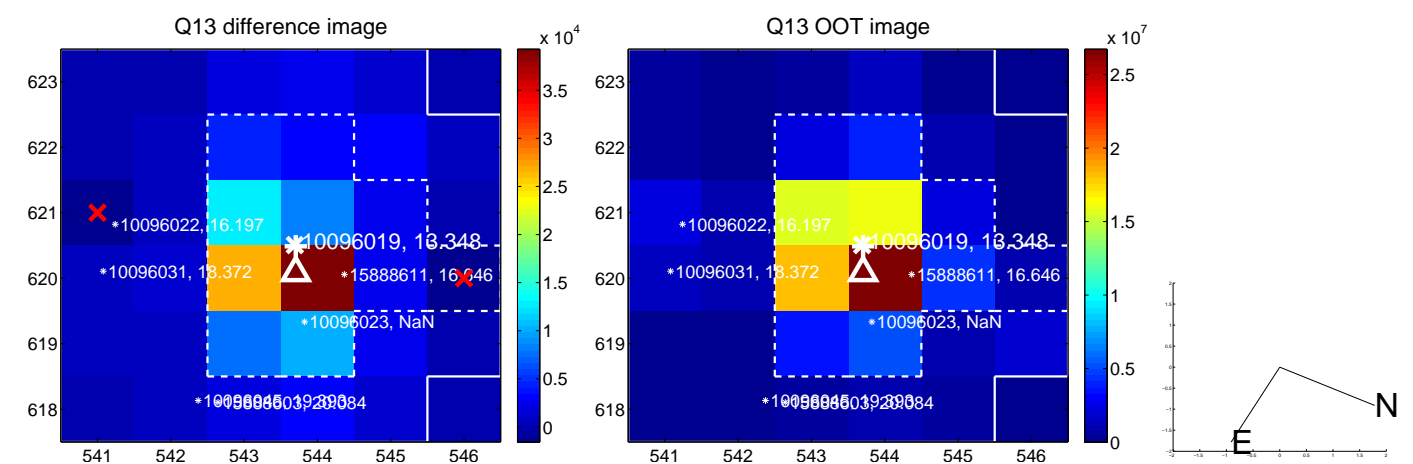
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



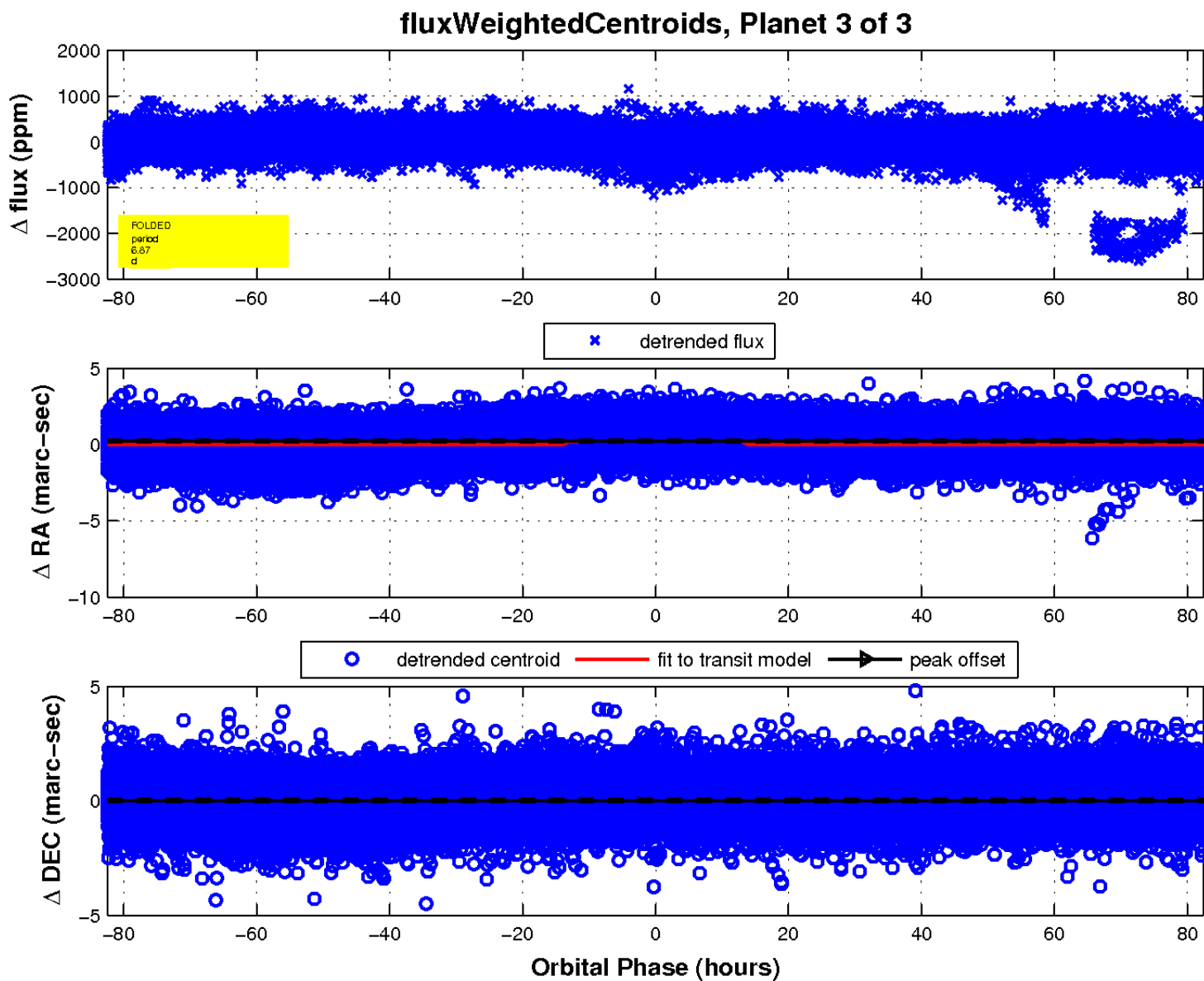
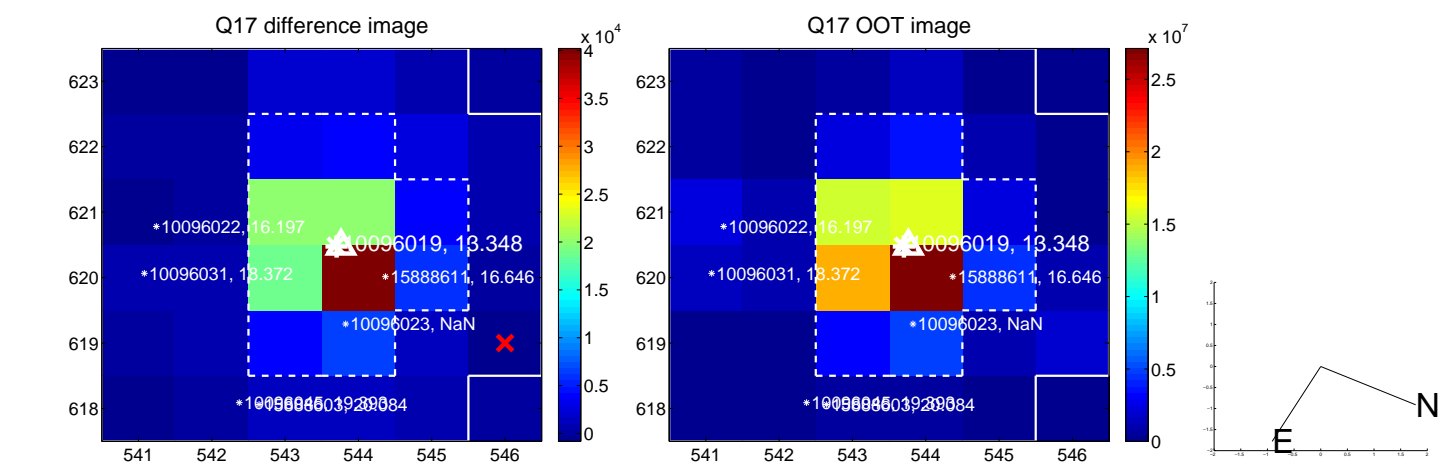
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

