

KIC 011099031

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})
011099031-01	OBS	No	0.928695	131.941079	5.7	4.862	8.1	1.3	1.39	6606	0.39	7945.45
011099031-02	OBS	No	5.262780	135.678566	191.2	4.335	9.3	9.9	1.39	6606	2.25	786.43
011099031-04	OBS	No	75.659901	151.086344	649.6	5.813	8.0	8.4	1.39	6606	6.80	22.50
011099031-05	OBS	No	137.285146	175.519949	530.1	9.189	8.5	6.8	1.39	6606	3.71	10.16
011099031-06	OBS	No	102.933229	195.373869	721.9	6.548	7.9	6.4	1.39	6606	4.73	14.92
011099031-07	OBS	No	34.775566	139.703564	337.1	2.433	7.4	6.8	1.39	6606	2.99	63.42
011099031-08	OBS	No	54.129085	138.869797	164.0	3.787	7.6	3.1	1.39	6606	2.06	35.16

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011099031-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
011099031-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
011099031-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
011099031-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED
011099031-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
011099031-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
011099031-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

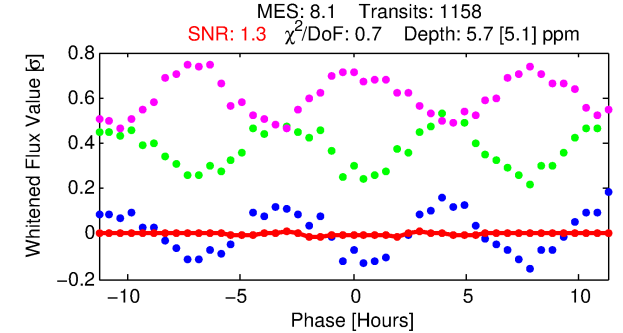
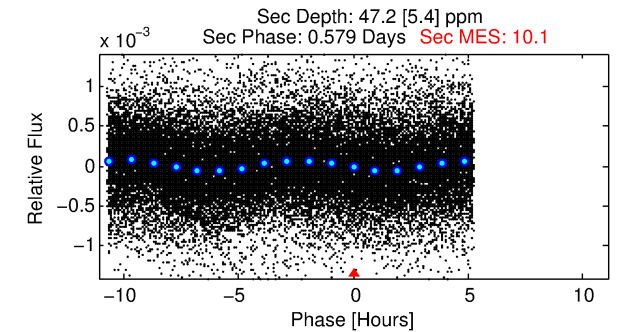
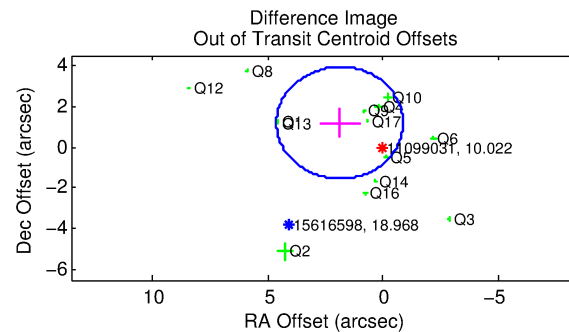
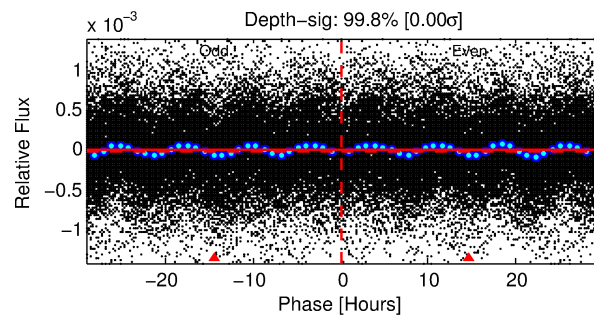
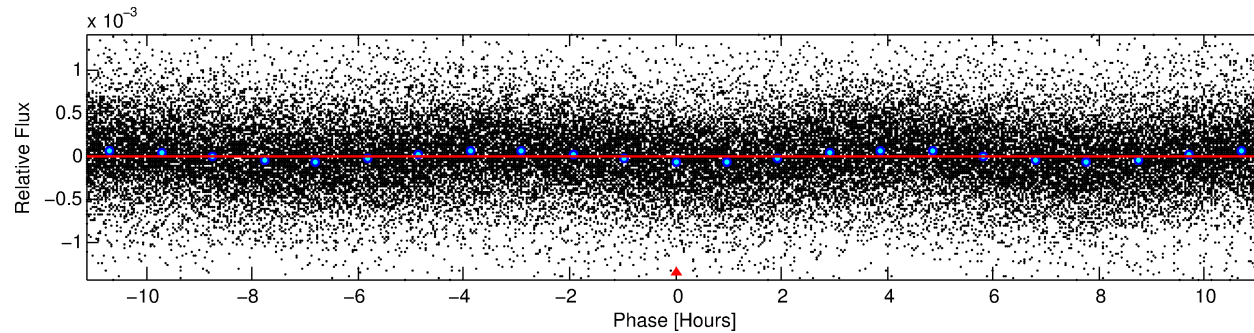
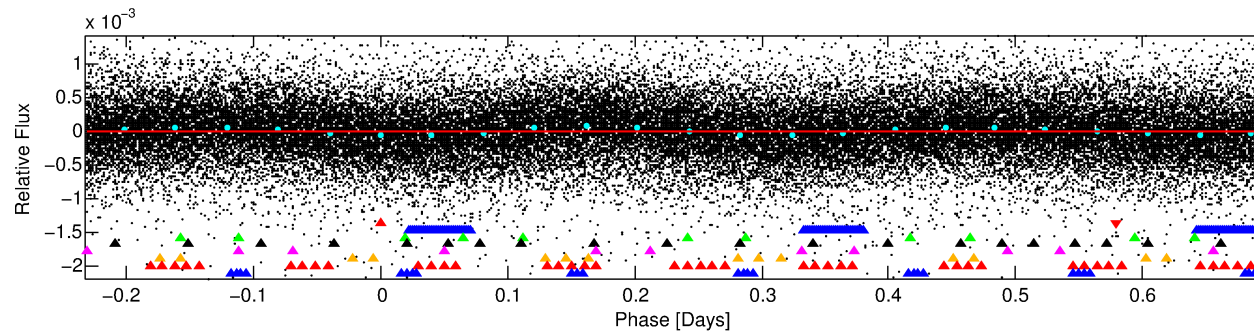
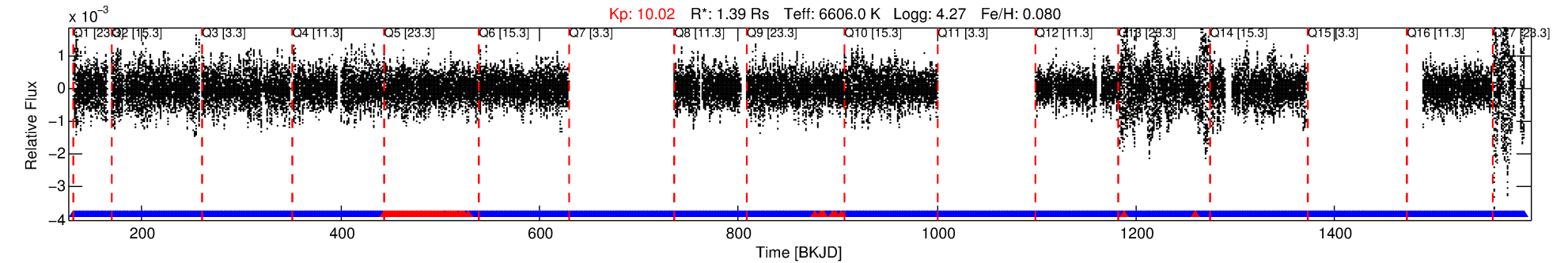
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011099031-01

No Significant Match Found

DV One-Page Summary

KIC: 11099031 Candidate: 1 of 8 Period: 0.929 d



DV Fit Results:

Period = 0.92870 [0.00007] d
Epoch = 131.9411 [0.0100] BKJD
 $R_p/R^* = 0.0026$ [0.0017]
 $a/R^* = 1.14$ [0.76]
 $b = 0.90$ [0.62]
 $\text{Seff} = 7945.45$ [3327.90]
 $T_{\text{eq}} = 2407$ [252] K
 $R_p = 0.39$ [0.29] R_e
 $a = 0.0204$ [0.0056] AU
 $\text{Ag} = 71.36$ [98.54] [0.71 σ]
 $T_{\text{eff}} = 10818$ [3607] K [2.33 σ]

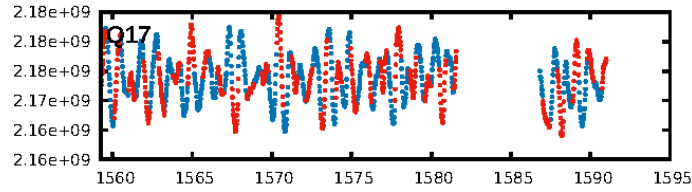
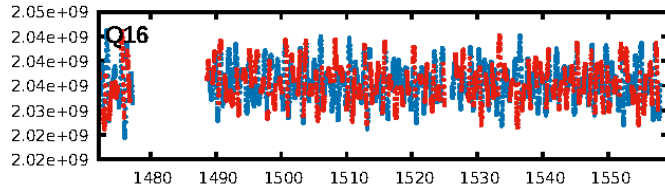
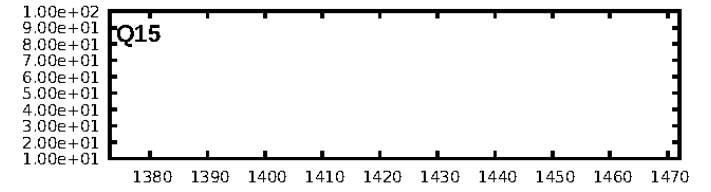
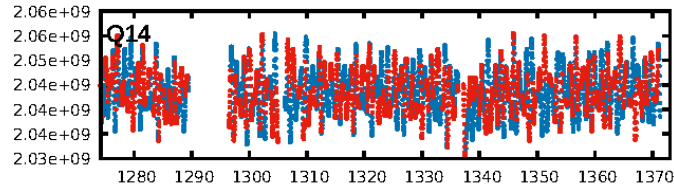
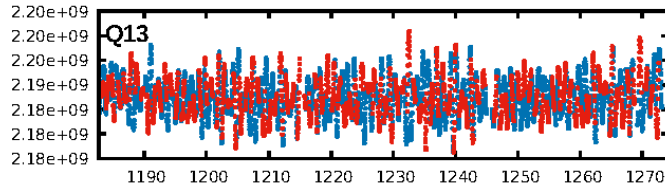
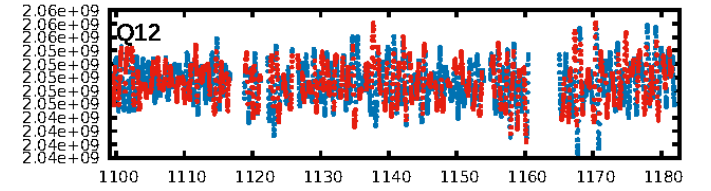
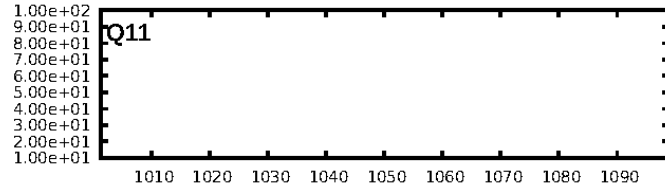
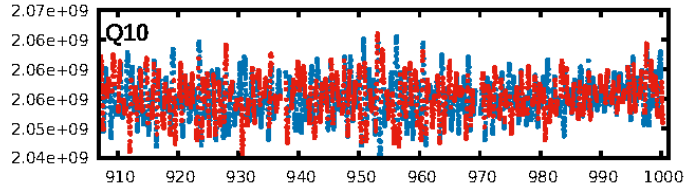
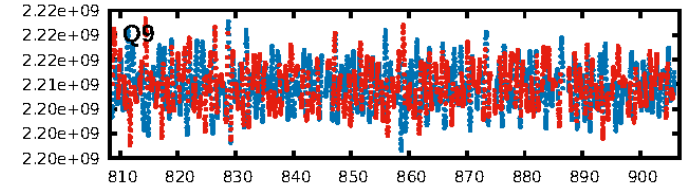
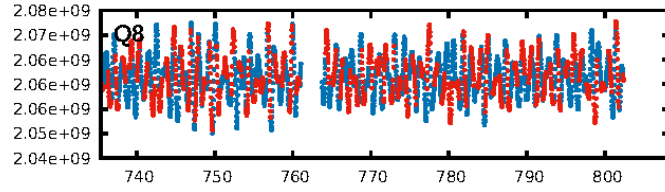
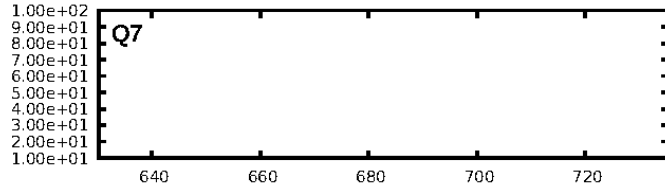
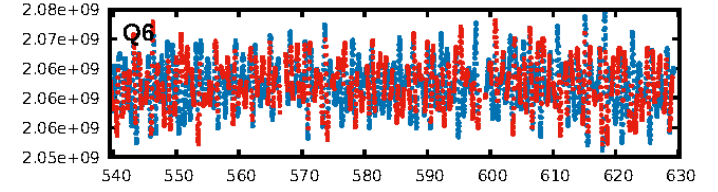
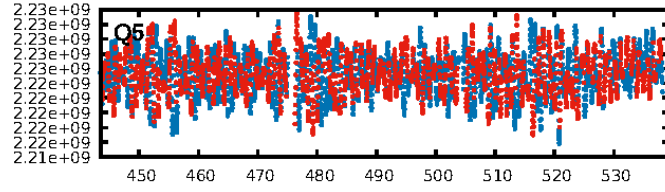
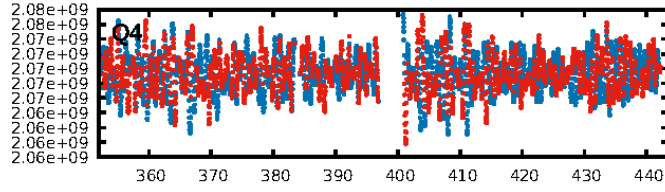
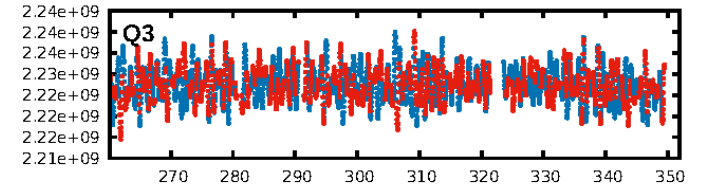
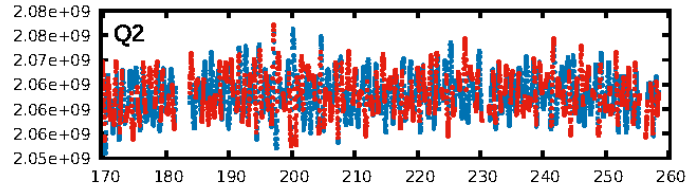
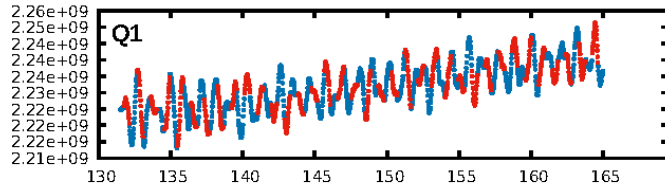
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [15.97 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.54e-11
RollingBand-fgt: 0.92 [1000/1092]
GhostDiagnostic-chr: N/A
Centroid-sig: 0.1%
Centroid-so: 7.125 arcsec [2.06 σ]
OotOffset-rm: 2.232 arcsec [2.45 σ]
KicOffset-rm: 3.549 arcsec [4.13 σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 0.00 [0/14]
DiffImageOverlap-fno: 1.00 [14/14]

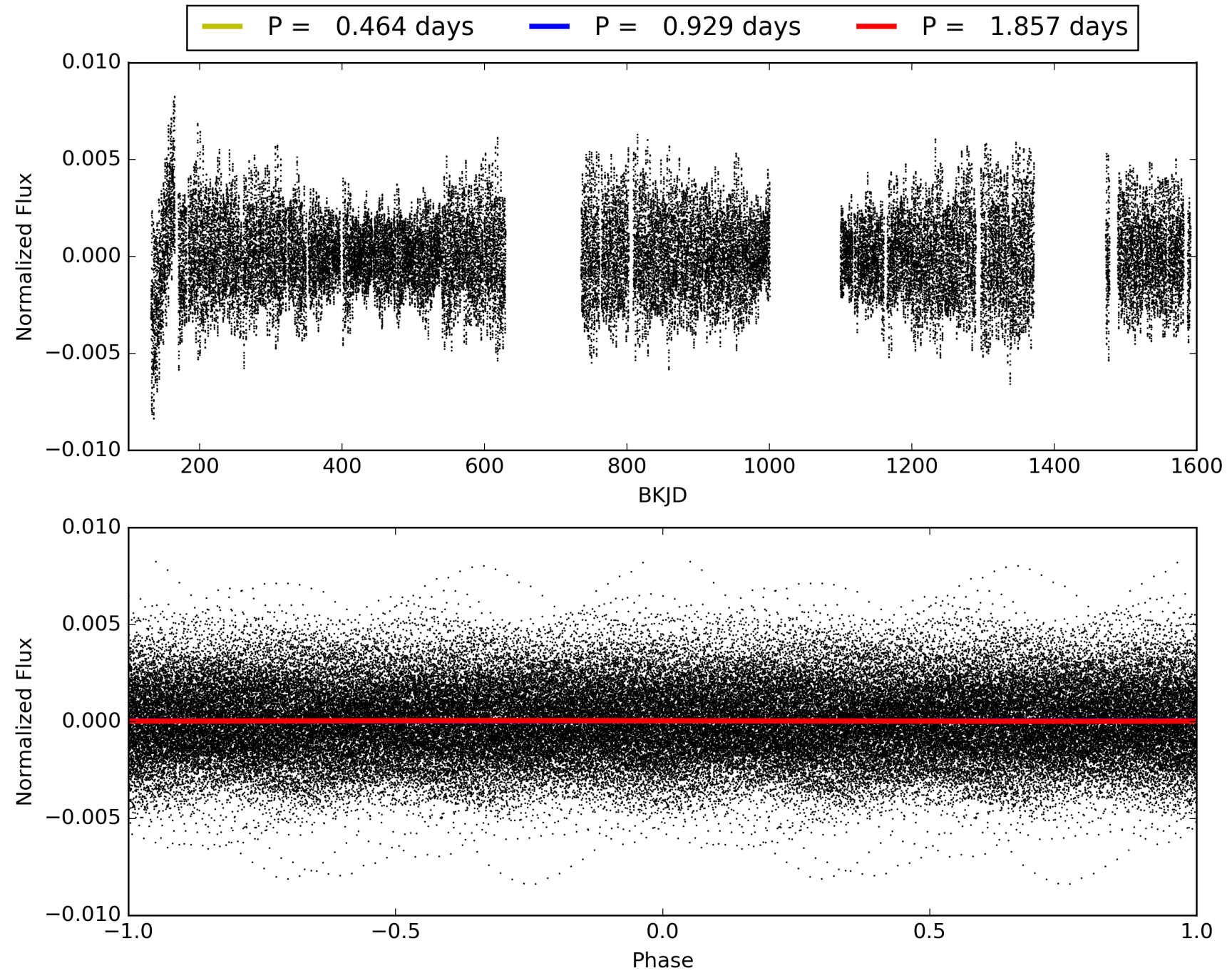
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 10:15:13 Z

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

TCE 011099031-01, PDC Light Curves

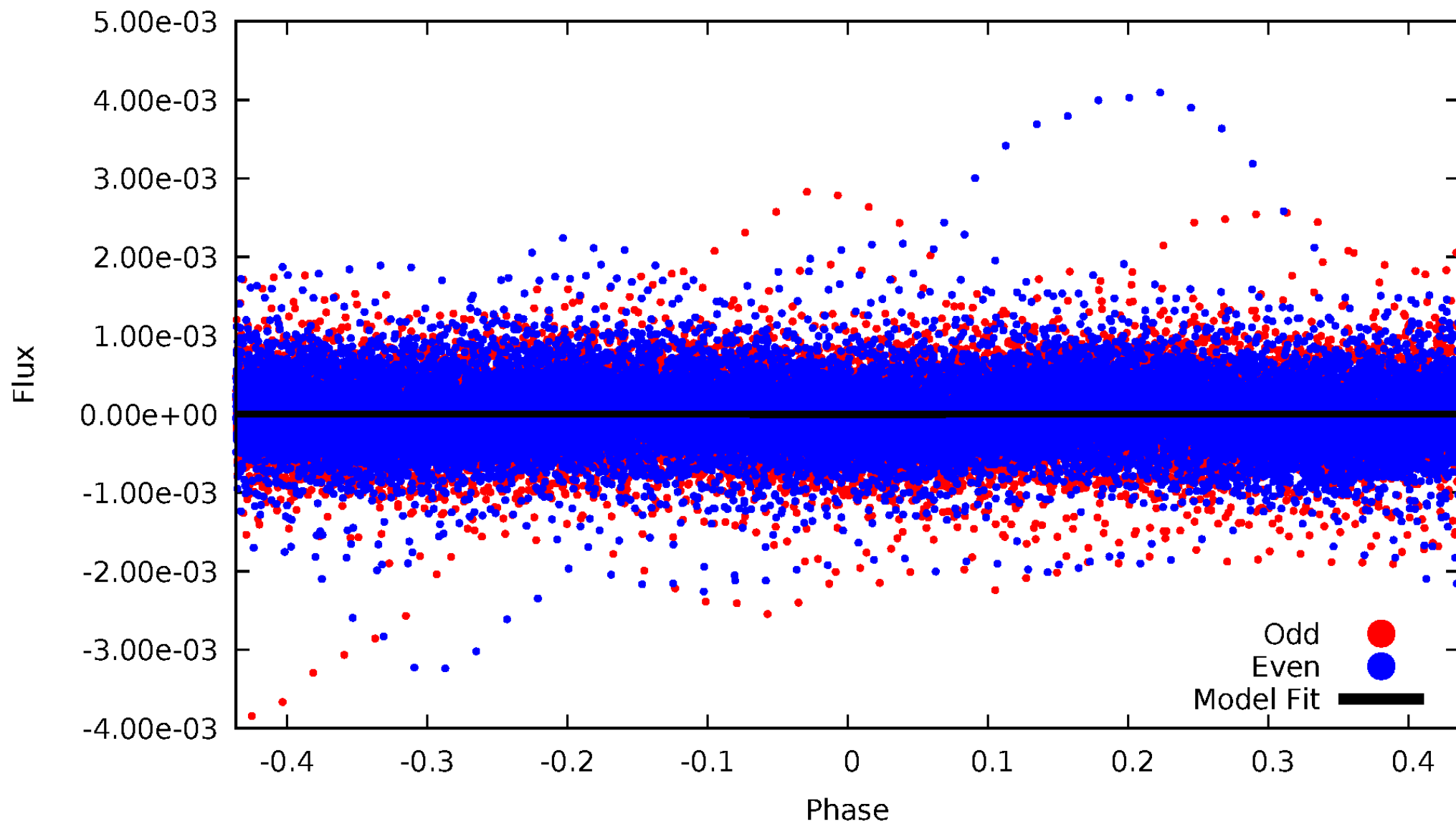


TCE 011099031-01



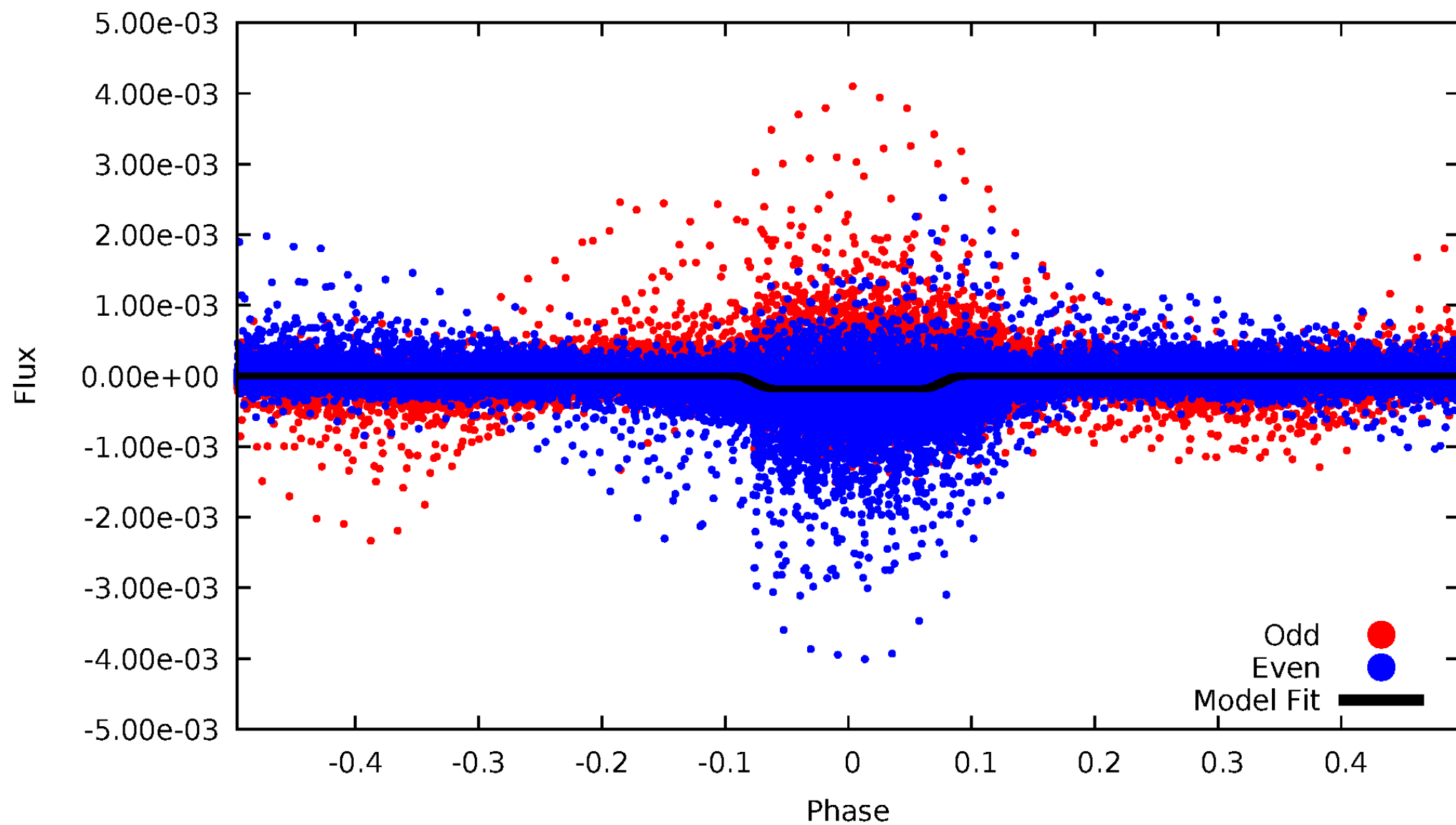
DV Odd/Even

TCE 011099031-01



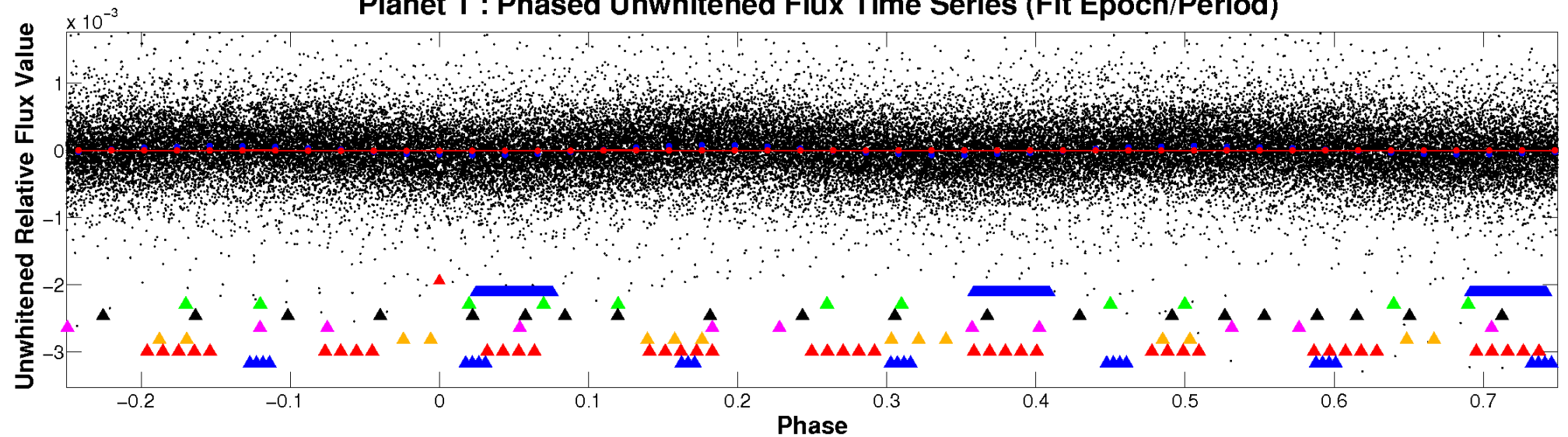
ALT Odd/Even

TCE 011099031-01

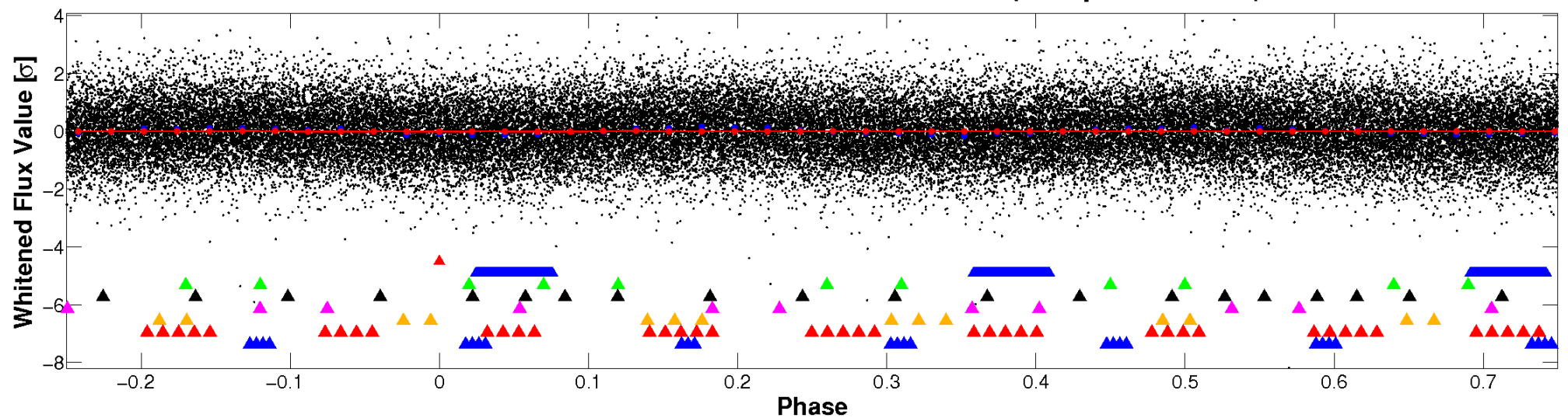


Non-Whitened Vs. Whitened Light Curve

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

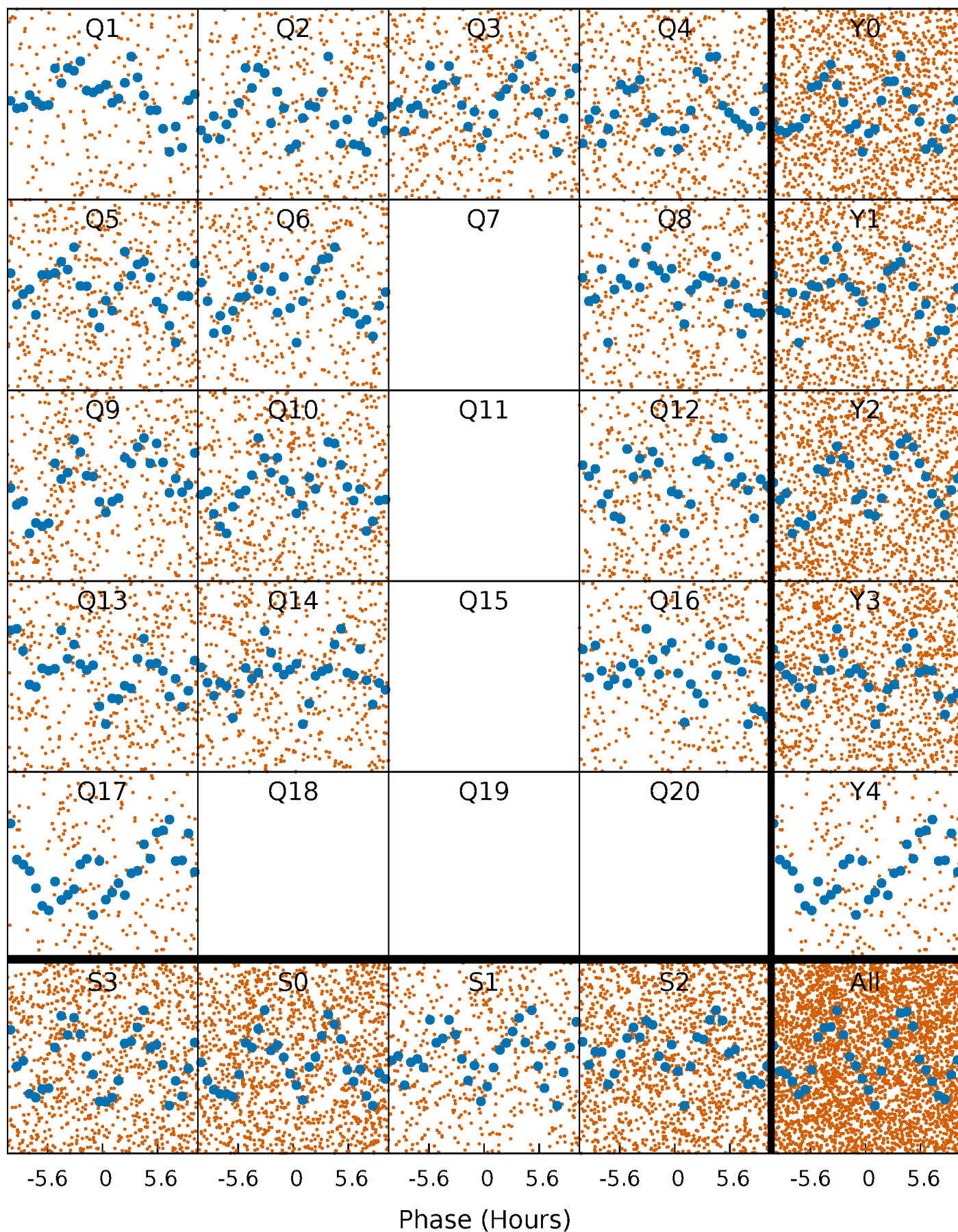


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



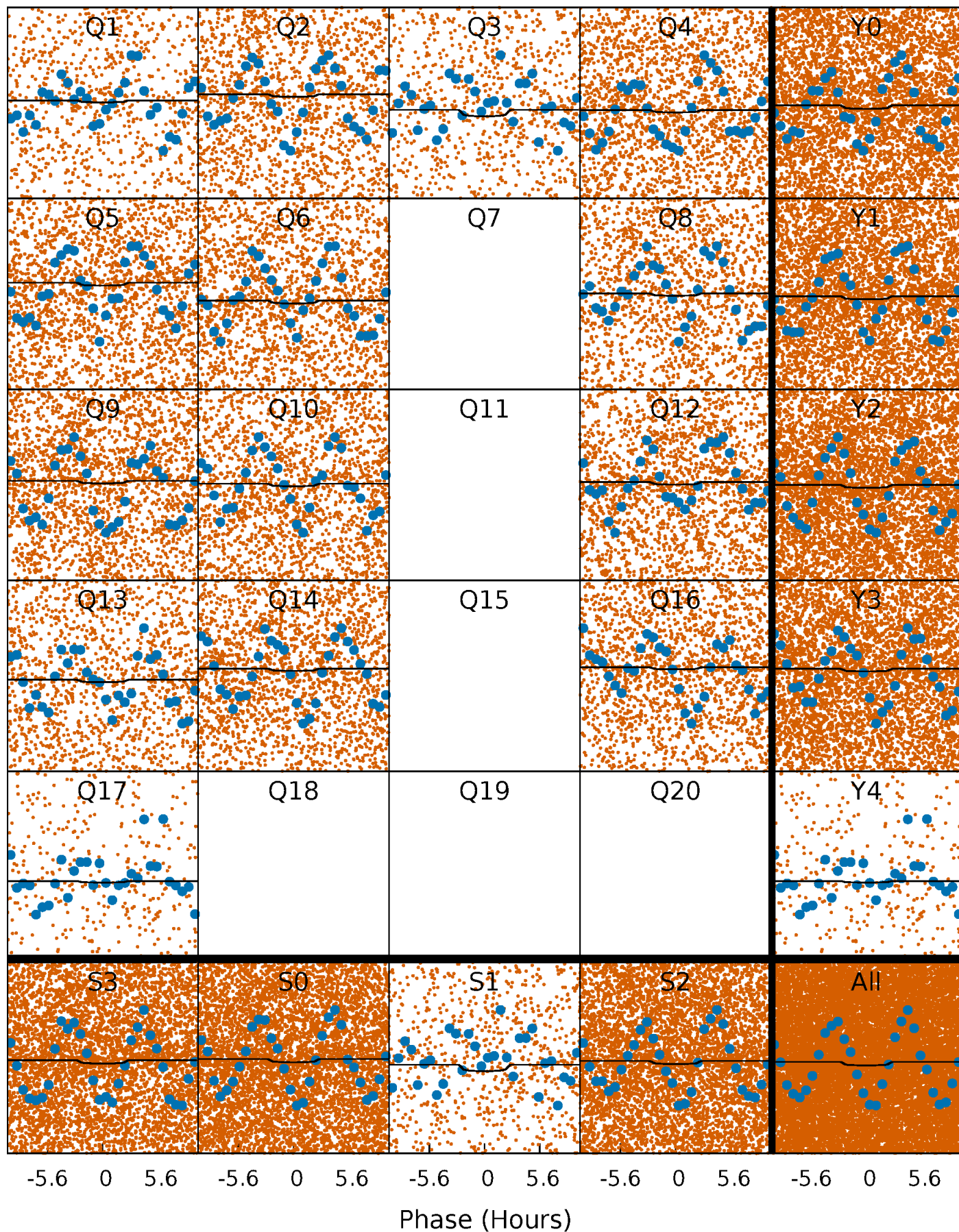
PDC Quarter-Phased Transit Curves

TCE 011099031-01 P= 0.928695 Days $T_0=131.941079$ (BKJD)



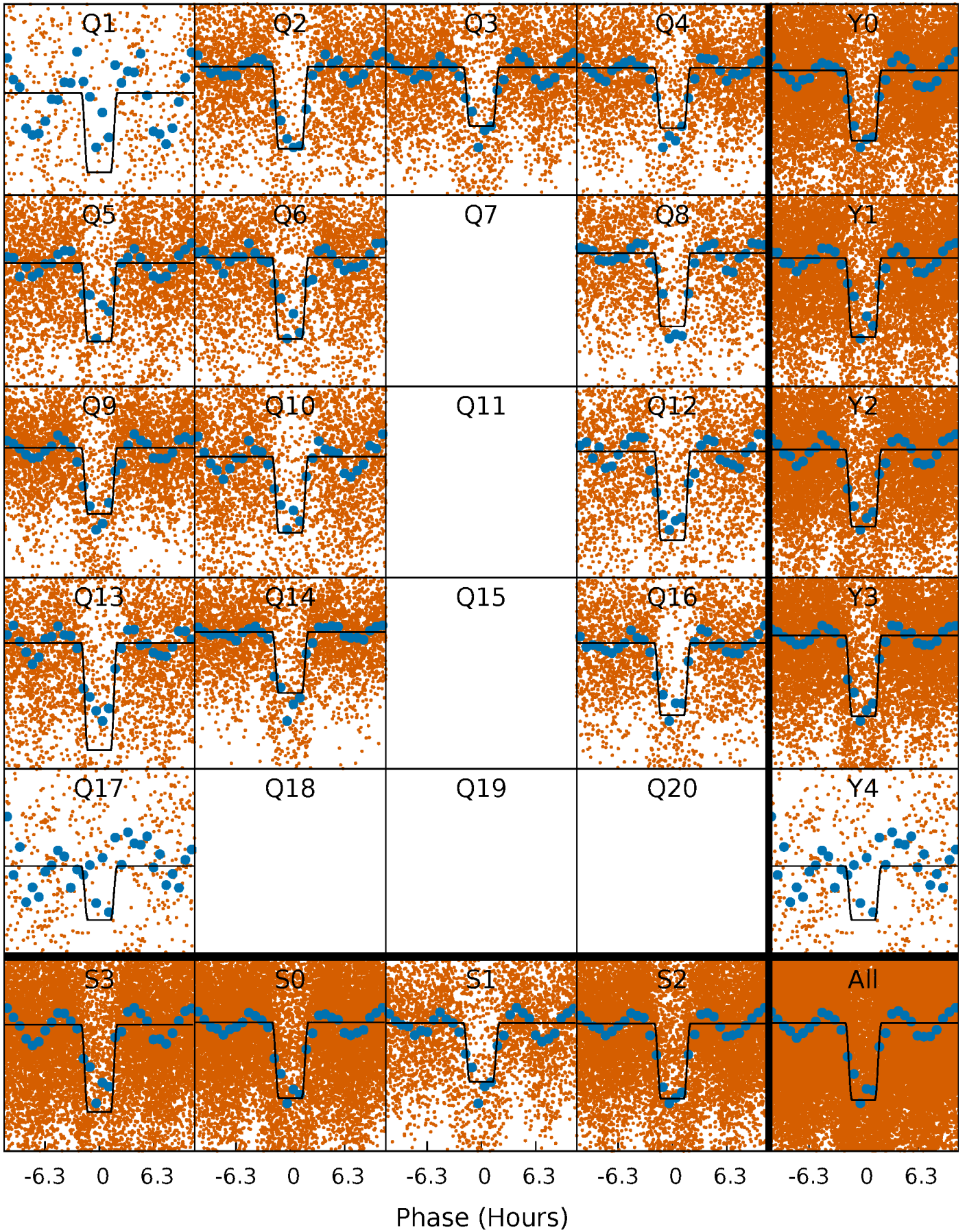
DV Quarter-Phased Transit Curves

TCE 011099031-01 P= 0.928695 Days $T_0=131.941079$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

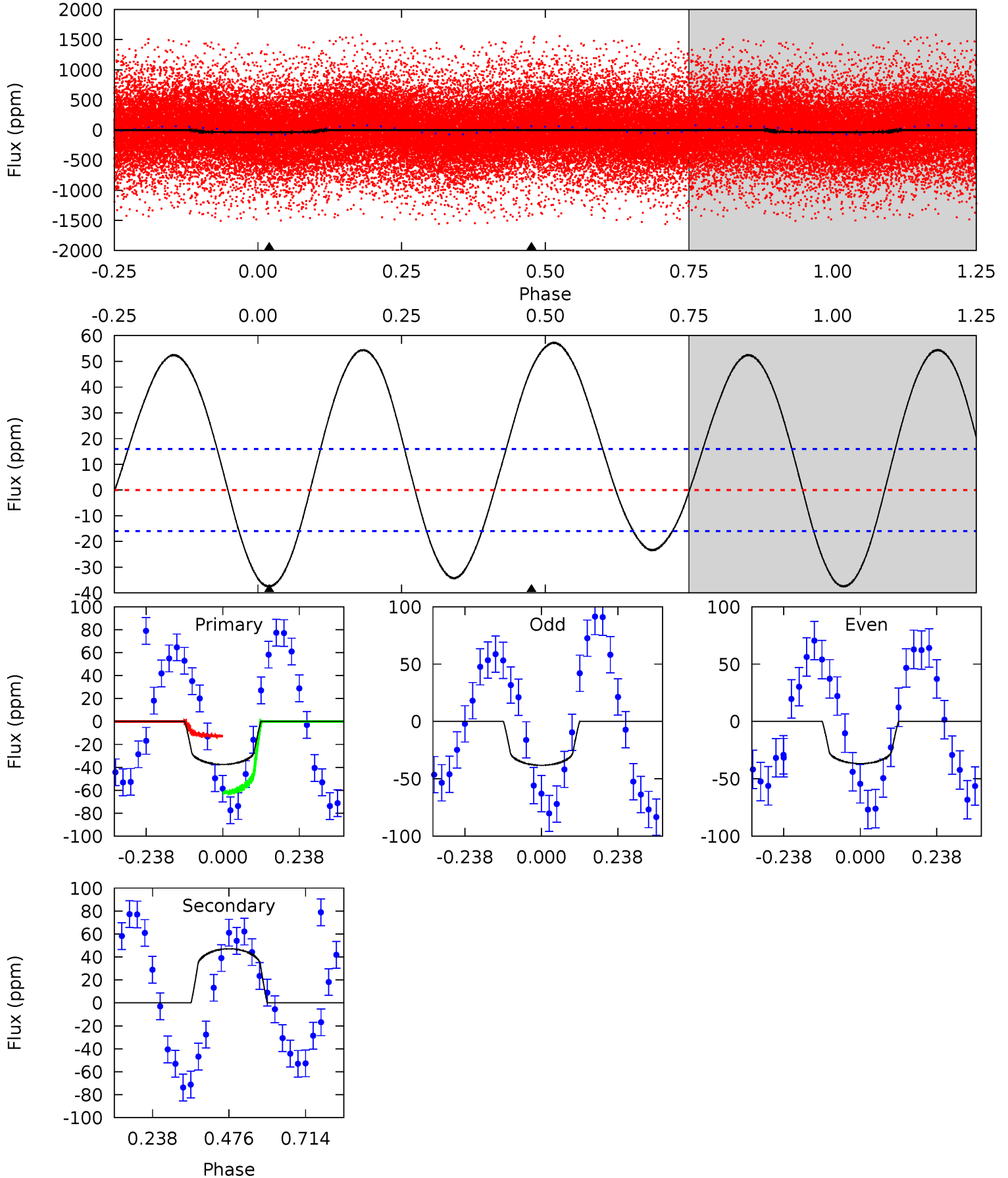
TCE 011099031-01 P= 0.928757 Days $T_0=131.918703$ (BKJD)



DV Model-Shift Uniqueness Test

011099031-01, P = 0.928695 Days, E = 131.012384 Days

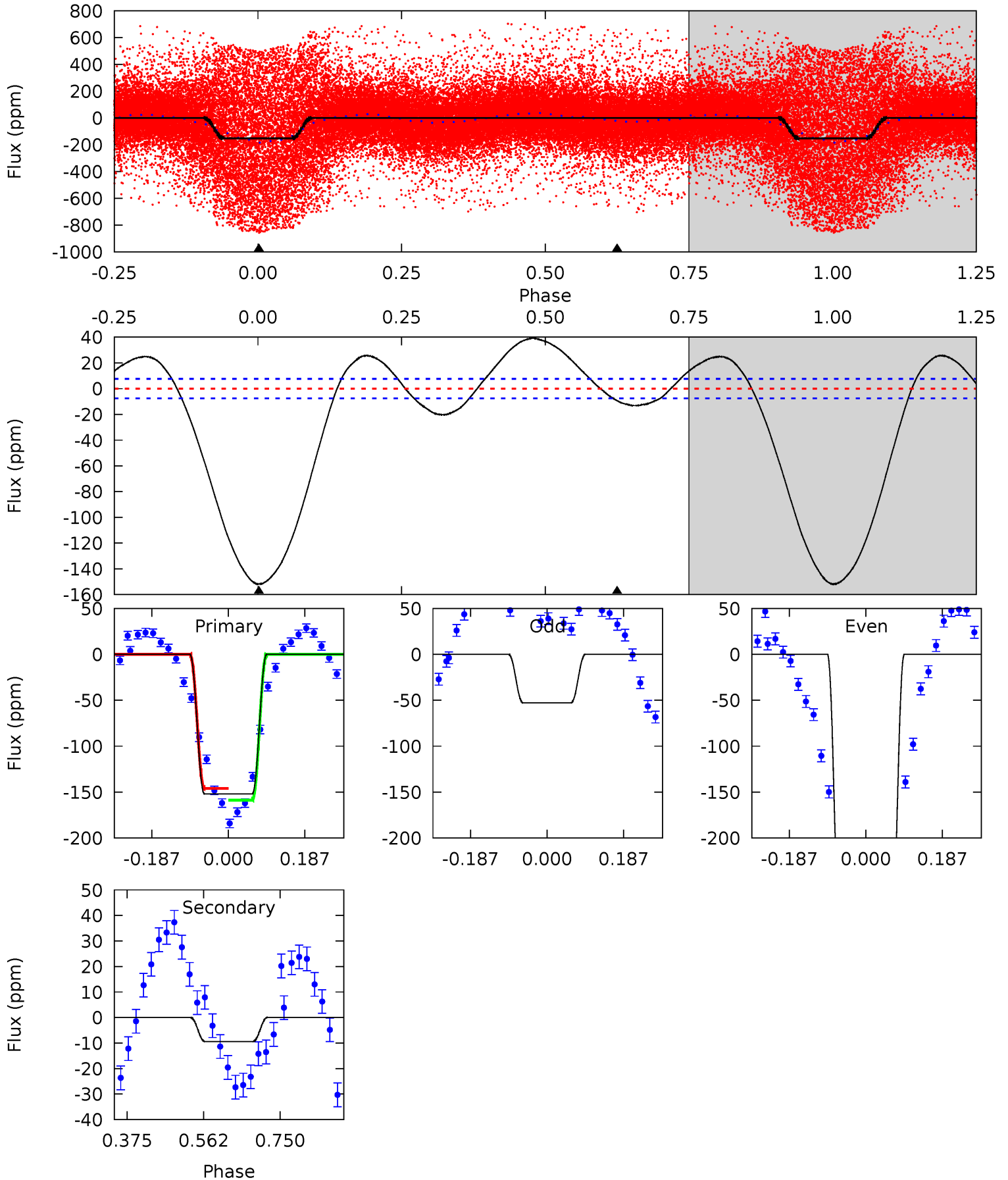
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.3	-12.9	0	0	4.38	1.18	4.49	10.3	10.3	-12.9	-12.9	0.21	0.98	0.60	7.00



Alt Model-Shift Uniqueness Test

011099031-01, P = 0.928757 Days, E = 130.989946 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
88.7	5.48	0	0	4.43	1.32	9.43	88.7	88.7	5.48	5.48	84.0	1.04	0.20	3.77



Stellar Parameters For KIC 011099031

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6606^{+184}_{-253}	$4.269^{+0.090}_{-0.210}$	$0.080^{+0.250}_{-0.350}$	$1.393^{+0.458}_{-0.212}$	$1.320^{+0.195}_{-0.195}$	$0.688^{+0.348}_{-0.370}$
	+3%/-4%	+2%/-5%	+312%/-438%	+33%/-15%	+15%/-15%	+51%/-54%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 011099031-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	47 ± 4	$0.41^{+0.27}_{-0.22}$	3407^{+284}_{-185}	-12650^{+3876}_{-19306}	$-62.756^{+39.735}_{-249.273}$
Alt.	-9 ± 2	$2.14^{+0.47}_{-0.34}$	3427^{+246}_{-193}	3012^{+388}_{-928}	$0.457^{+0.203}_{-0.151}$

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

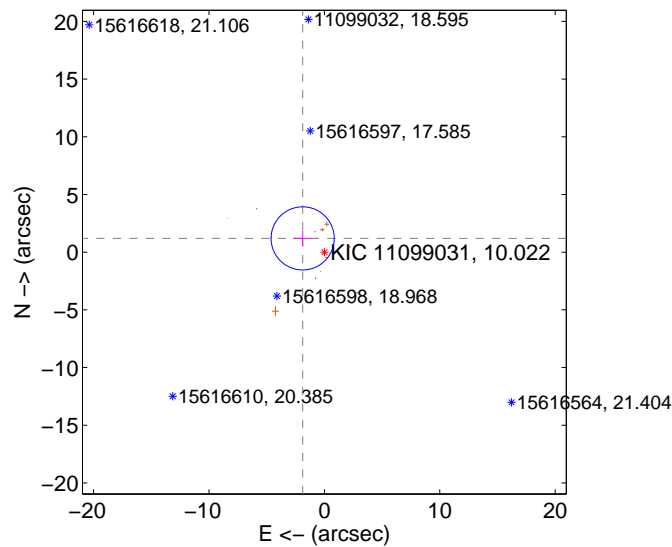
Supplemental centroid analysis for 011099031-01. **Kepler magnitude: 10.02.** Transit SNR 1.28

There are 0 quarters with good PRF difference image offsets

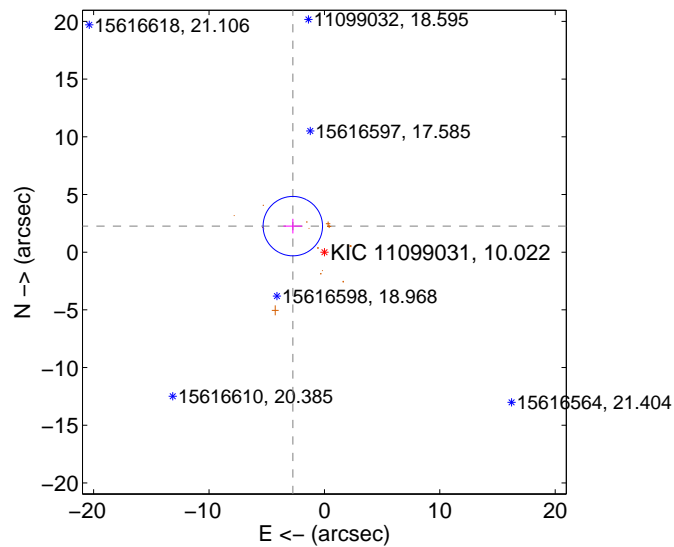
The direct PRF centroid is offset from the target star catalog position by about 1.00 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.232 ± 0.912	2.45	1.885 ± 0.847	1.194 ± 0.668
PRF-fit source offset from KIC position	3.549 ± 0.858	4.13	2.739 ± 0.808	2.257 ± 0.633
photometric centroid source offset	7.13 ± 3.45	2.06	-5.08 ± 4.14	5.00 ± 2.55

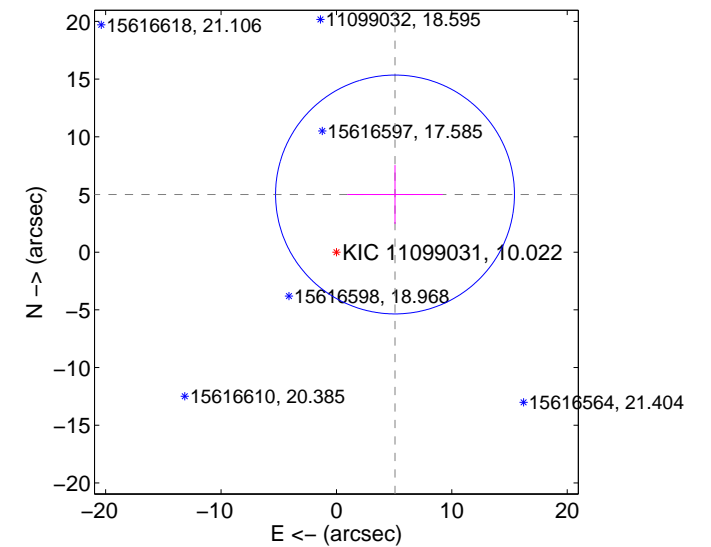
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

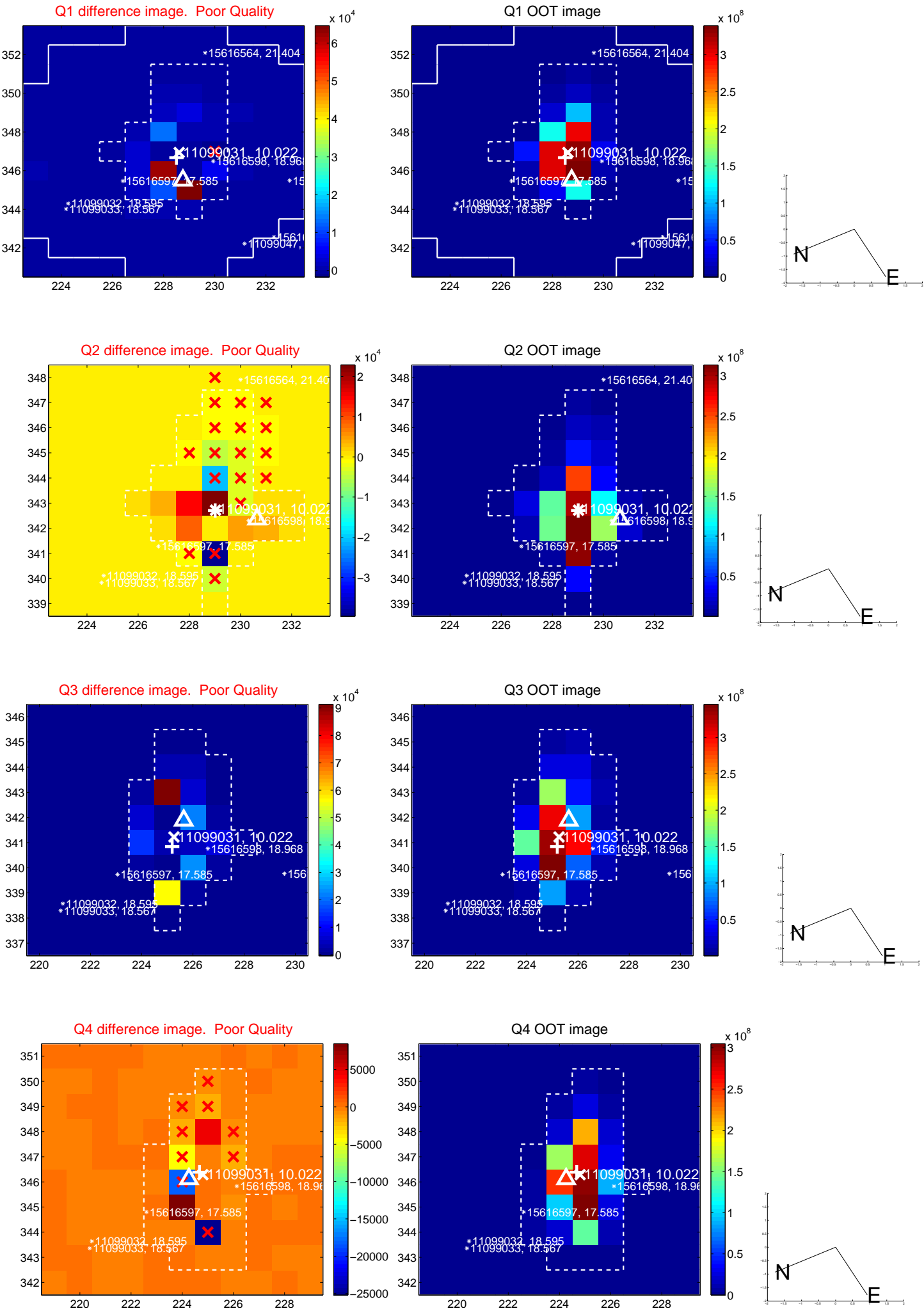


offset from photometric centroids

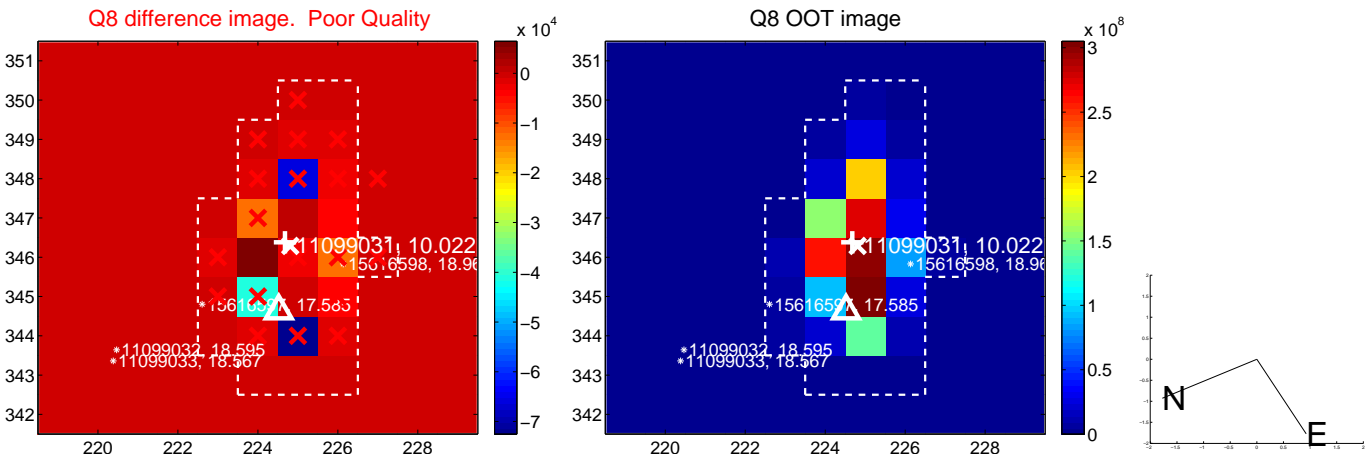
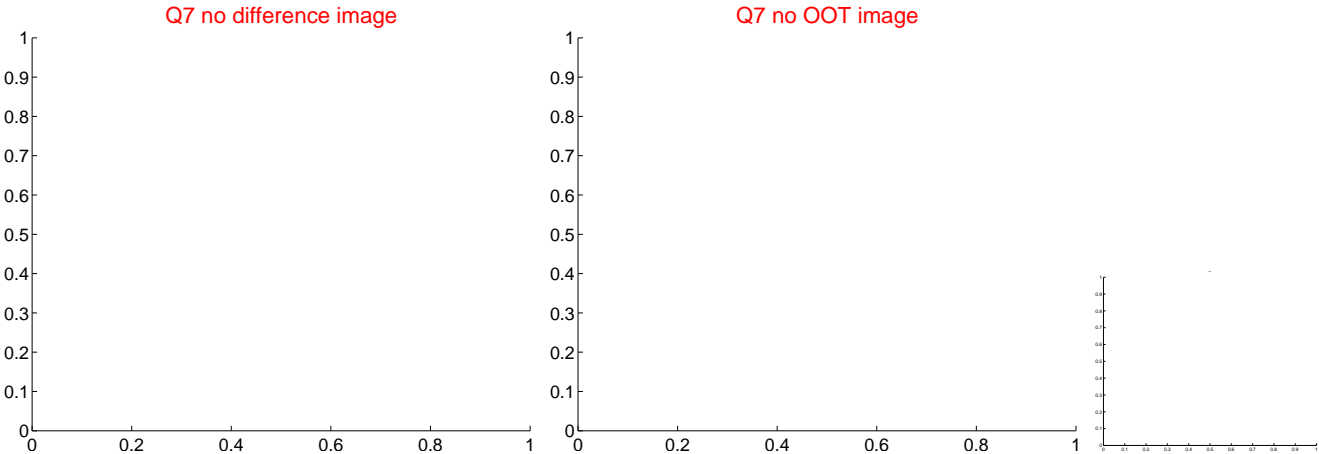
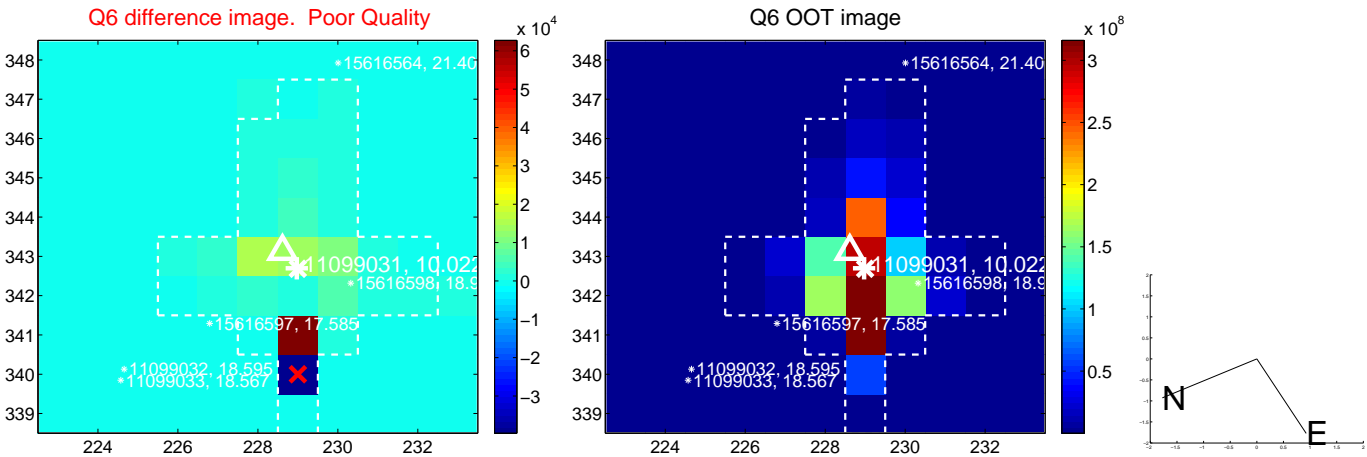
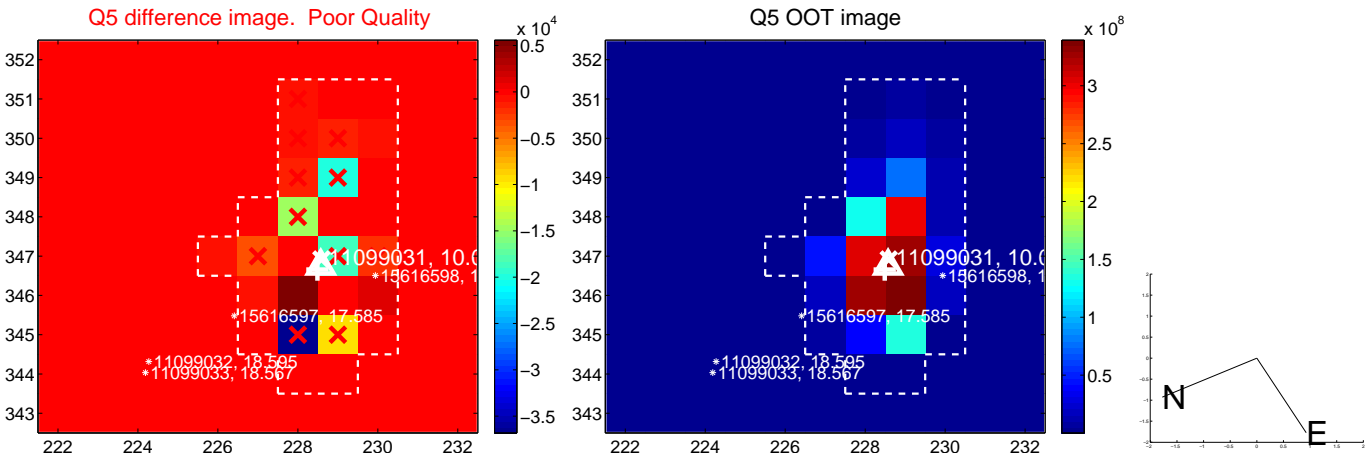


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

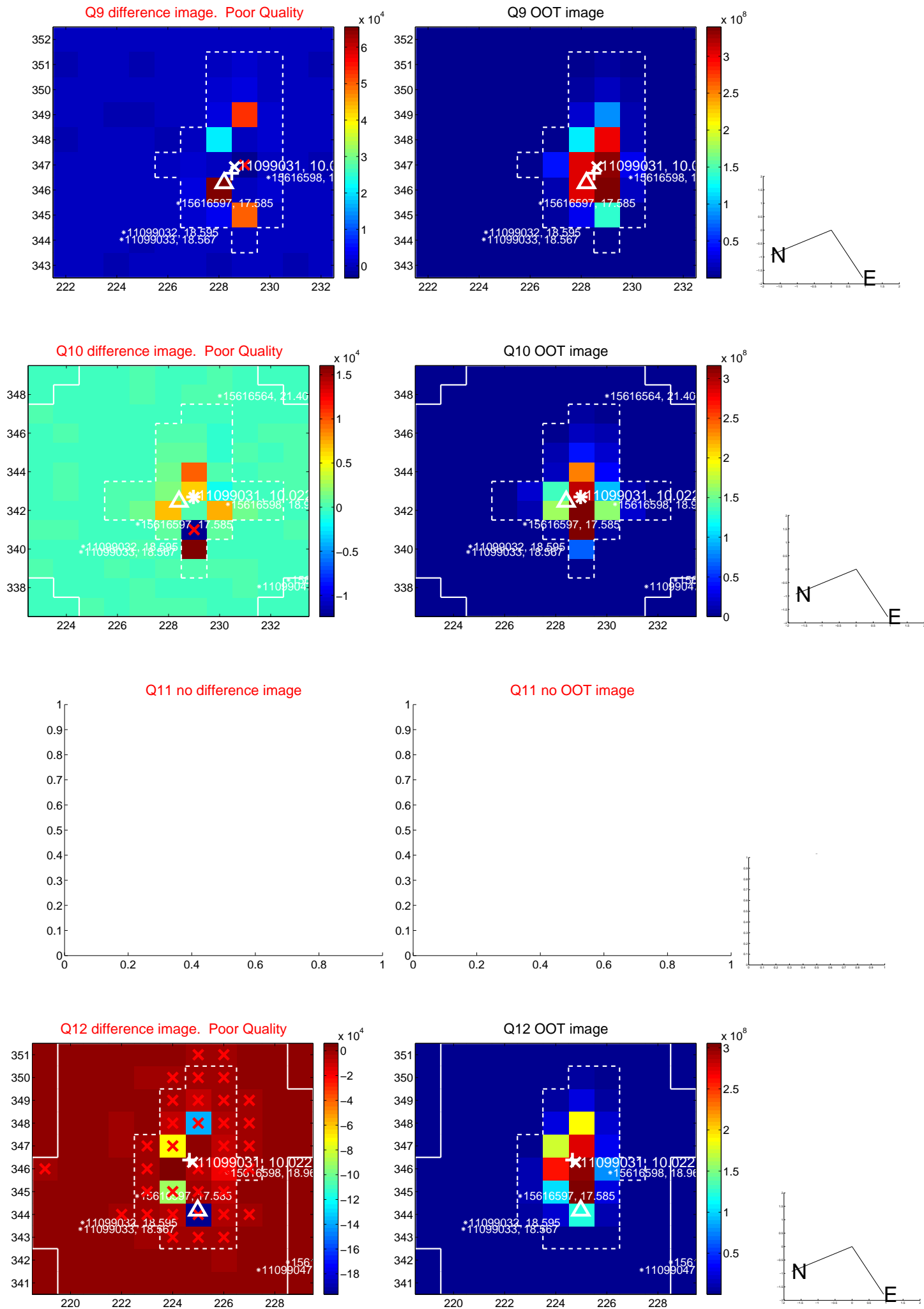
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



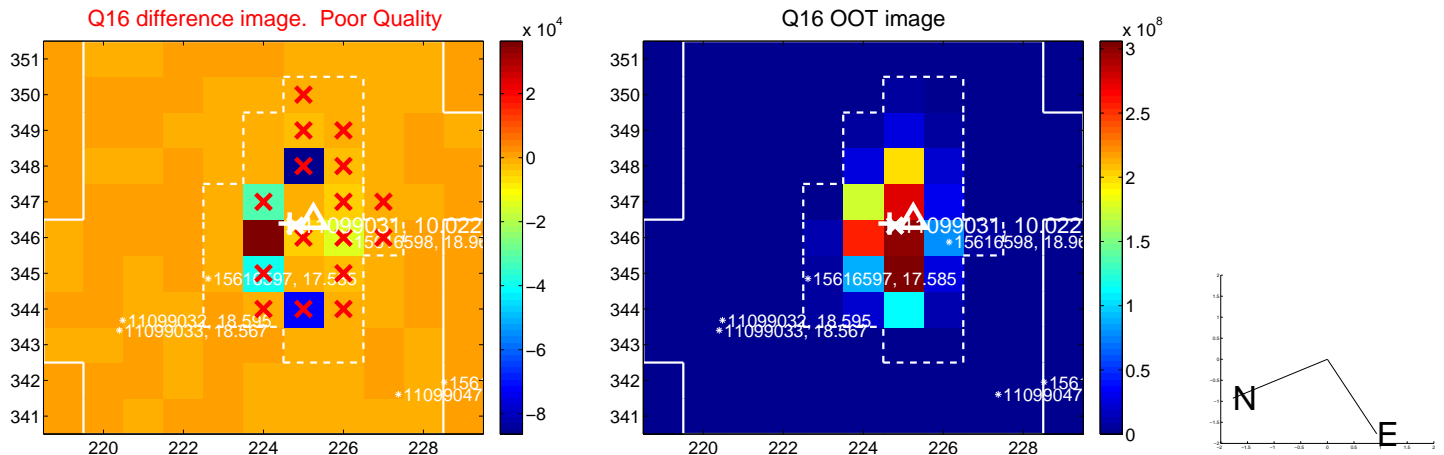
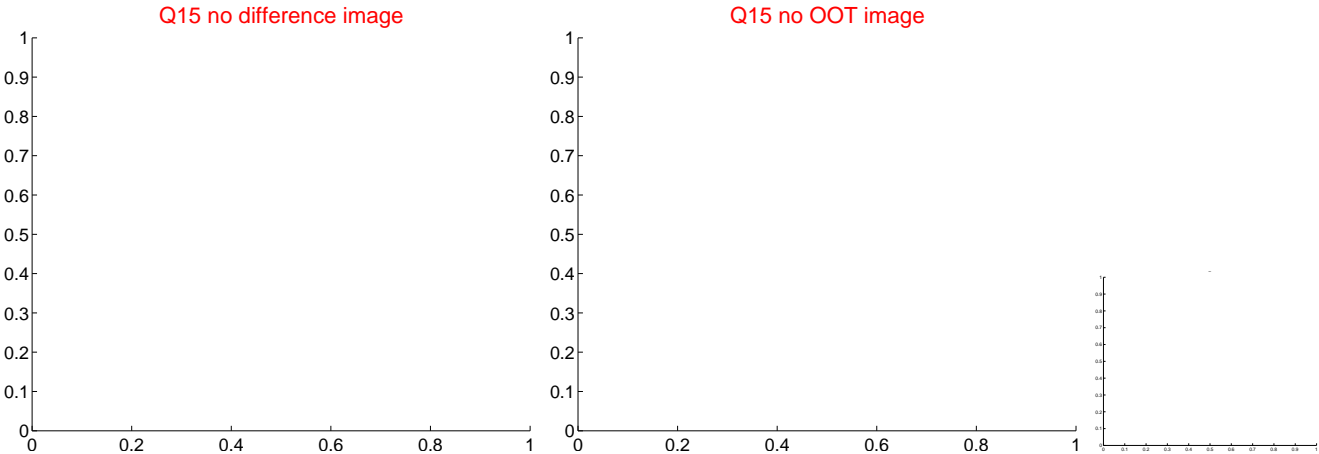
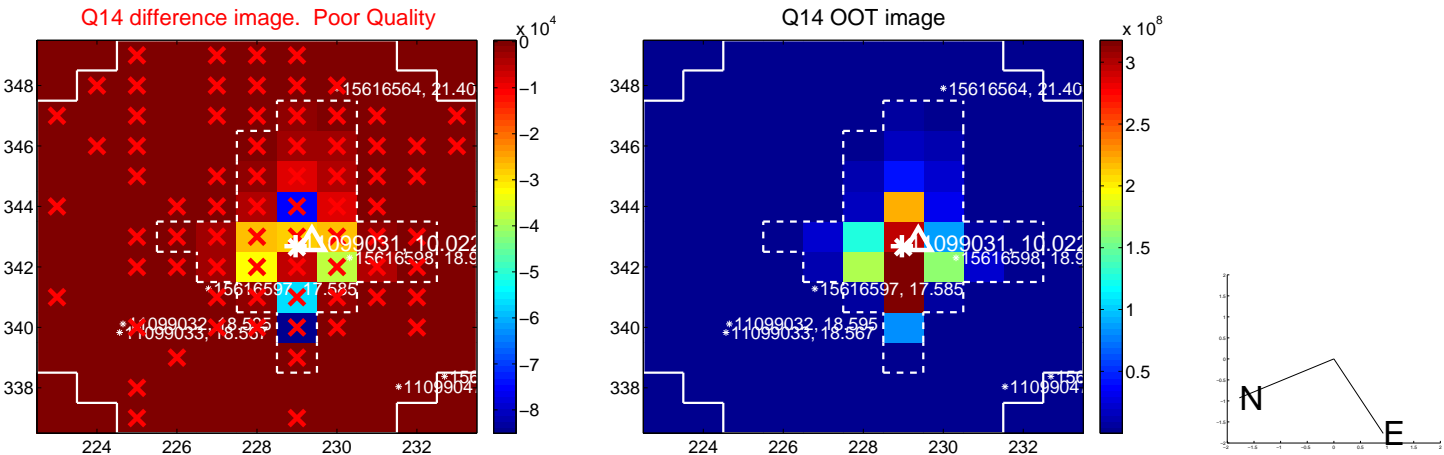
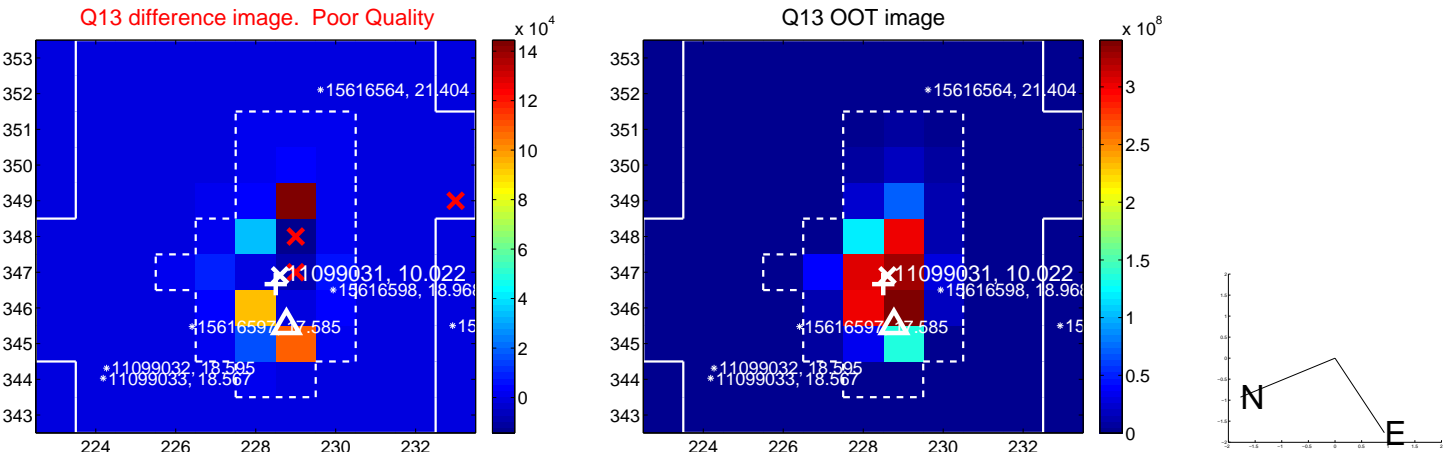
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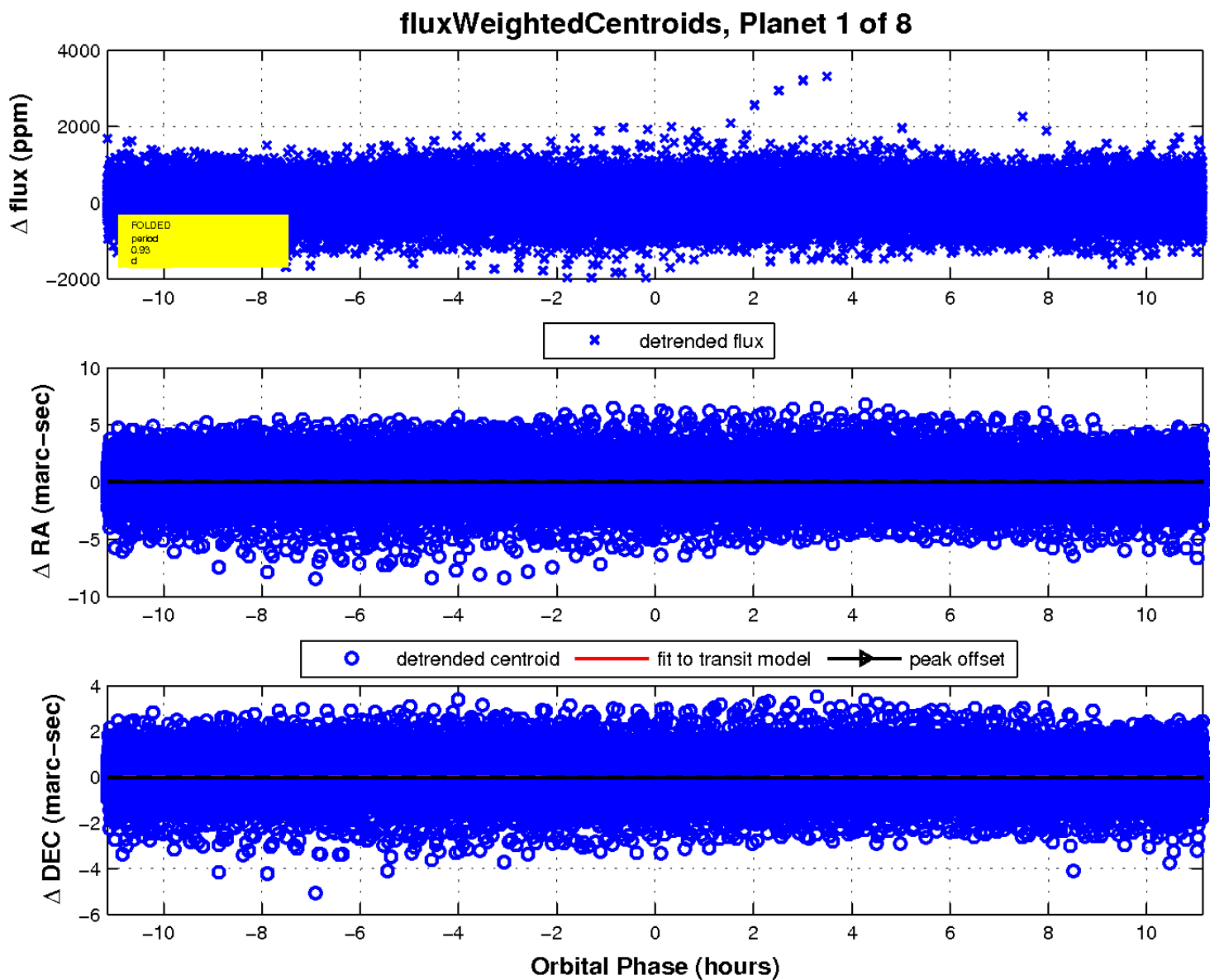
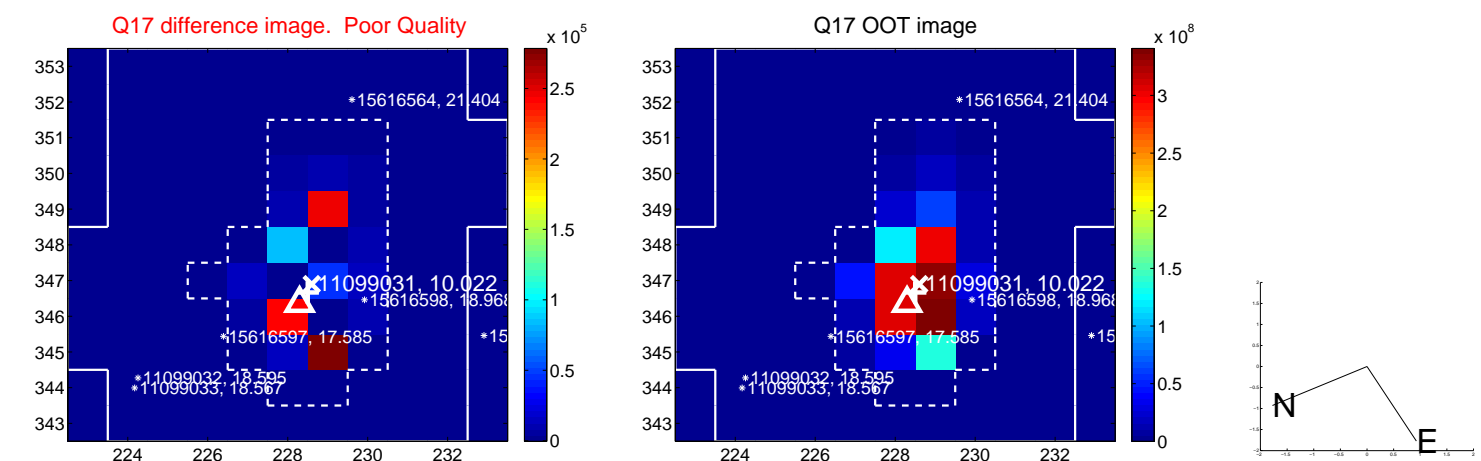
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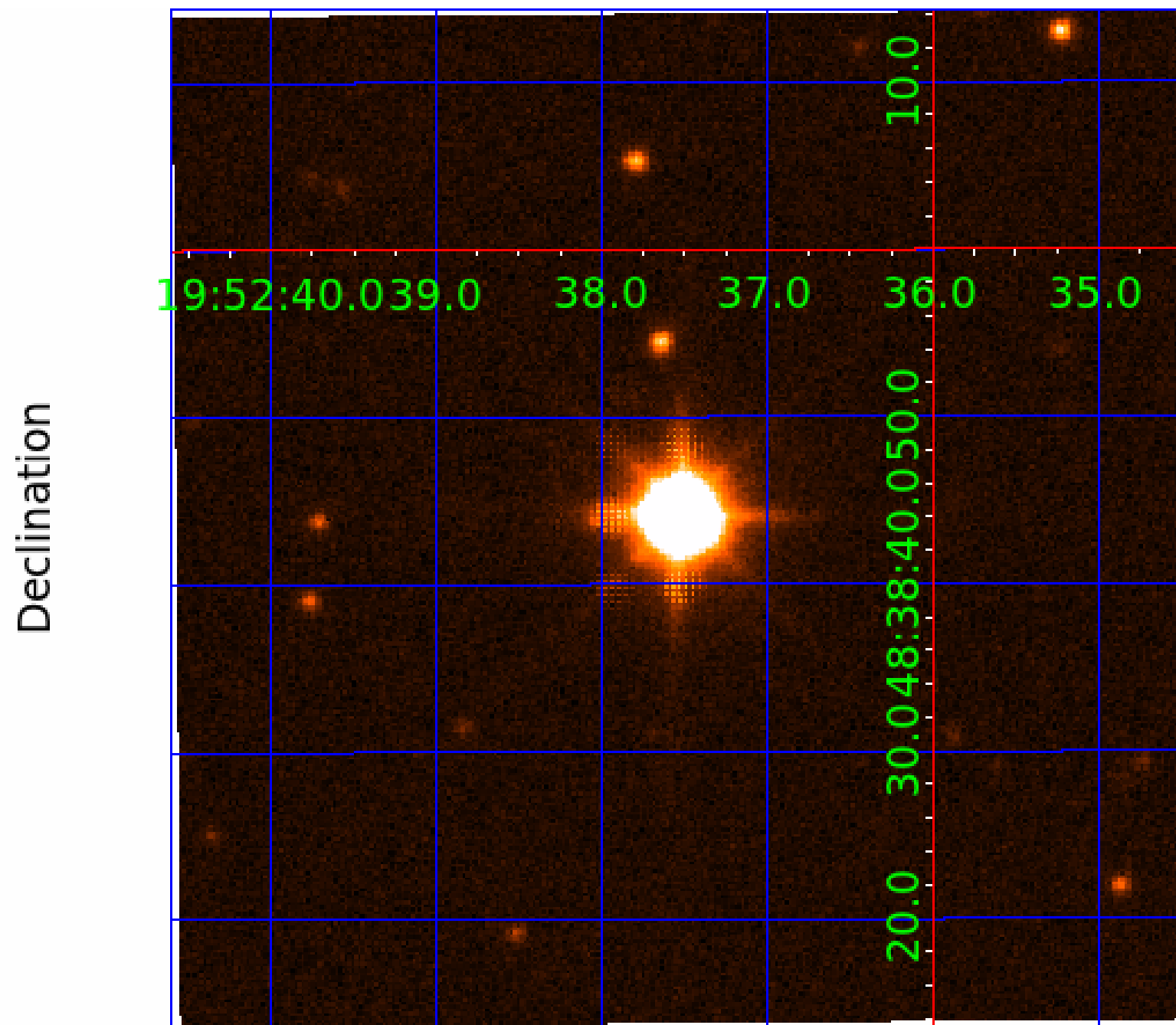
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UKIRT Image



KIC 011099031

Q1-17 DR25 TCE Parameters

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011099031-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
011099031-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
011099031-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED
011099031-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
011099031-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
011099031-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

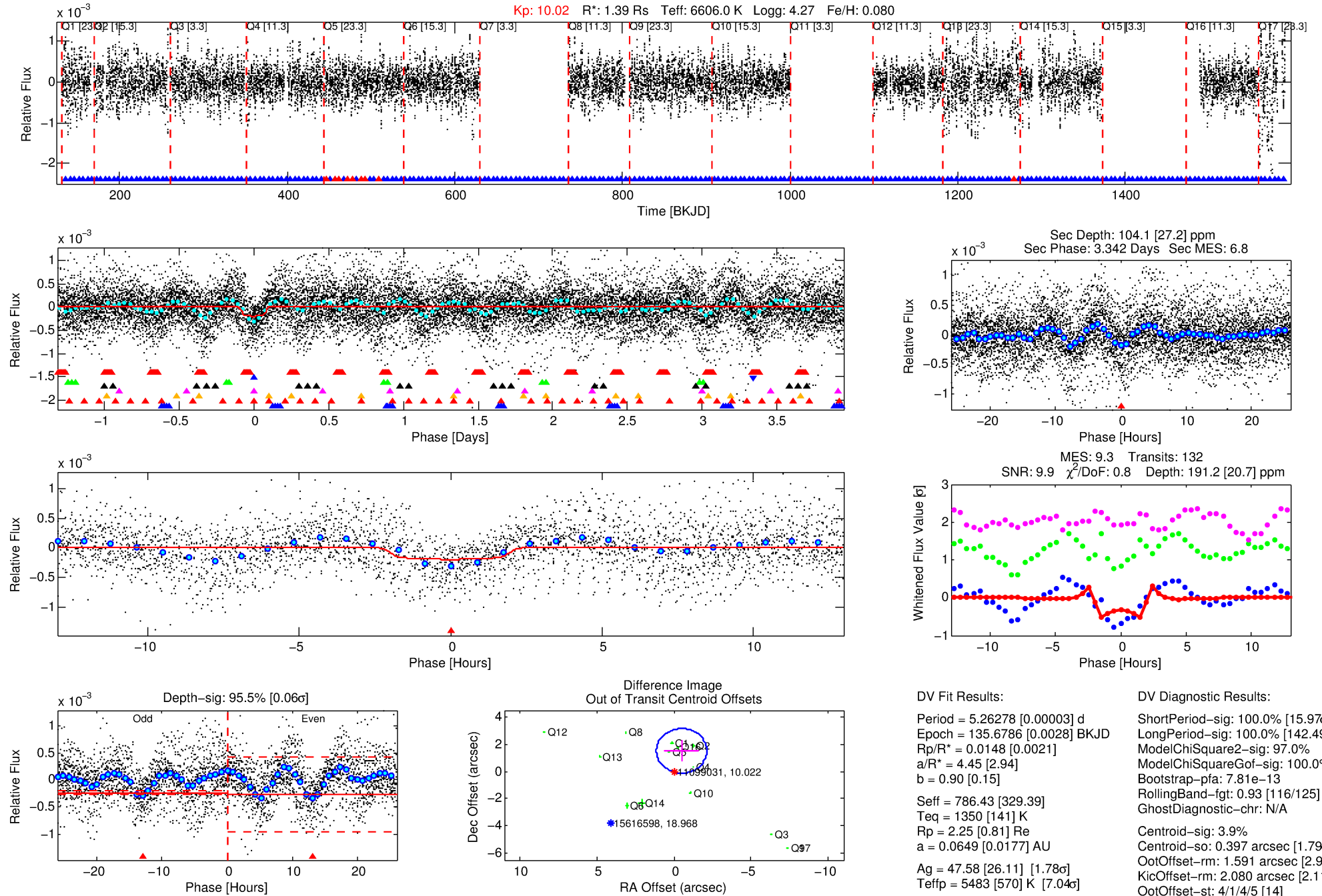
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011099031-02

No Significant Match Found

DV One-Page Summary

KIC: 11099031 Candidate: 2 of 8 Period: 5.263 d



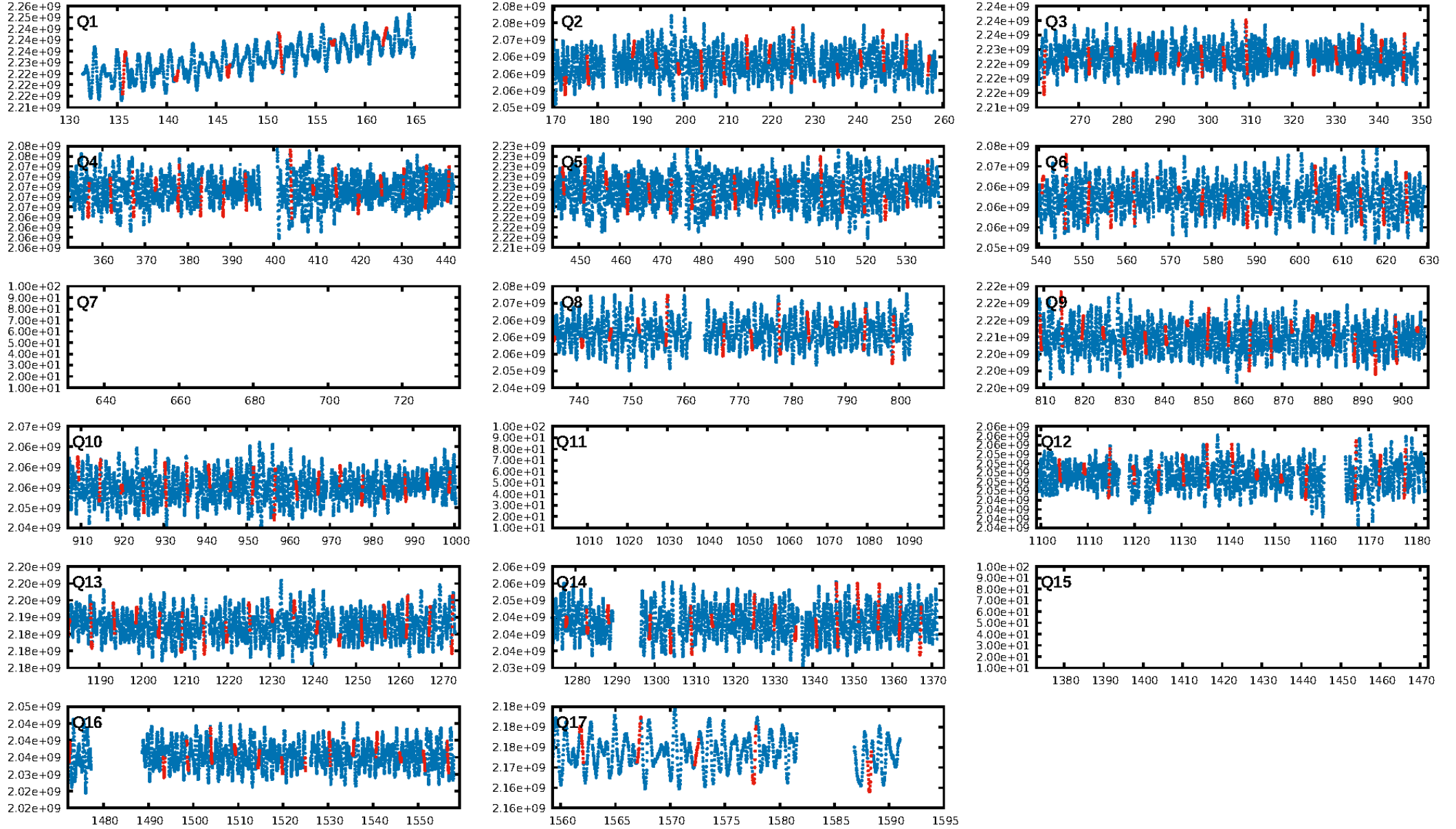
DV Fit Results:

Period = 5.26278 [0.00003] d
Epoch = 135.6786 [0.0028] BKJD
Rp/R* = 0.0148 [0.0021]
a/R* = 4.45 [2.94]
b = 0.90 [0.15]
Seff = 786.43 [329.39]
Teq = 1350 [141] K
Rp = 2.25 [0.81] Re
a = 0.0649 [0.0177] AU
Ag = 47.58 [26.11] [1.78 σ]
Teffp = 5483 [570] K [7.04 σ]

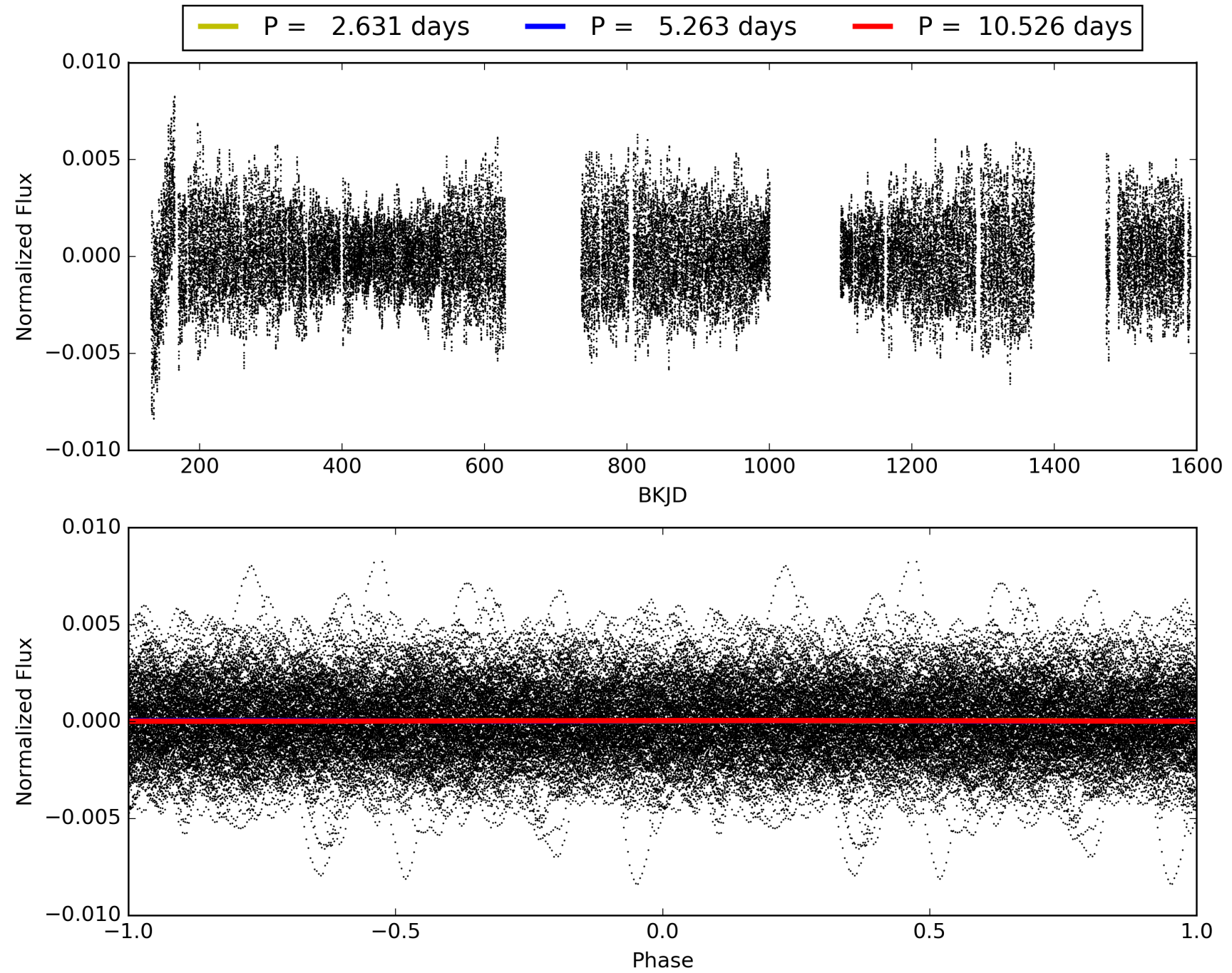
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [15.97 σ]
LongPeriod-sig: 100.0% [142.49 σ]
ModelChiSquare2-sig: 97.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.81e-13
RollingBand-fgt: 0.93 [116/125]
GhostDiagnostic-chr: N/A
Centroid-sig: 3.9%
Centroid-so: 0.397 arcsec [1.79 σ]
OotOffset-rm: 1.591 arcsec [2.92 σ]
KicOffset-rm: 2.080 arcsec [2.11 σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 0.14 [2/14]
DiffImageOverlap-fno: 0.00 [0/14]

TCE 011099031-02, PDC Light Curves

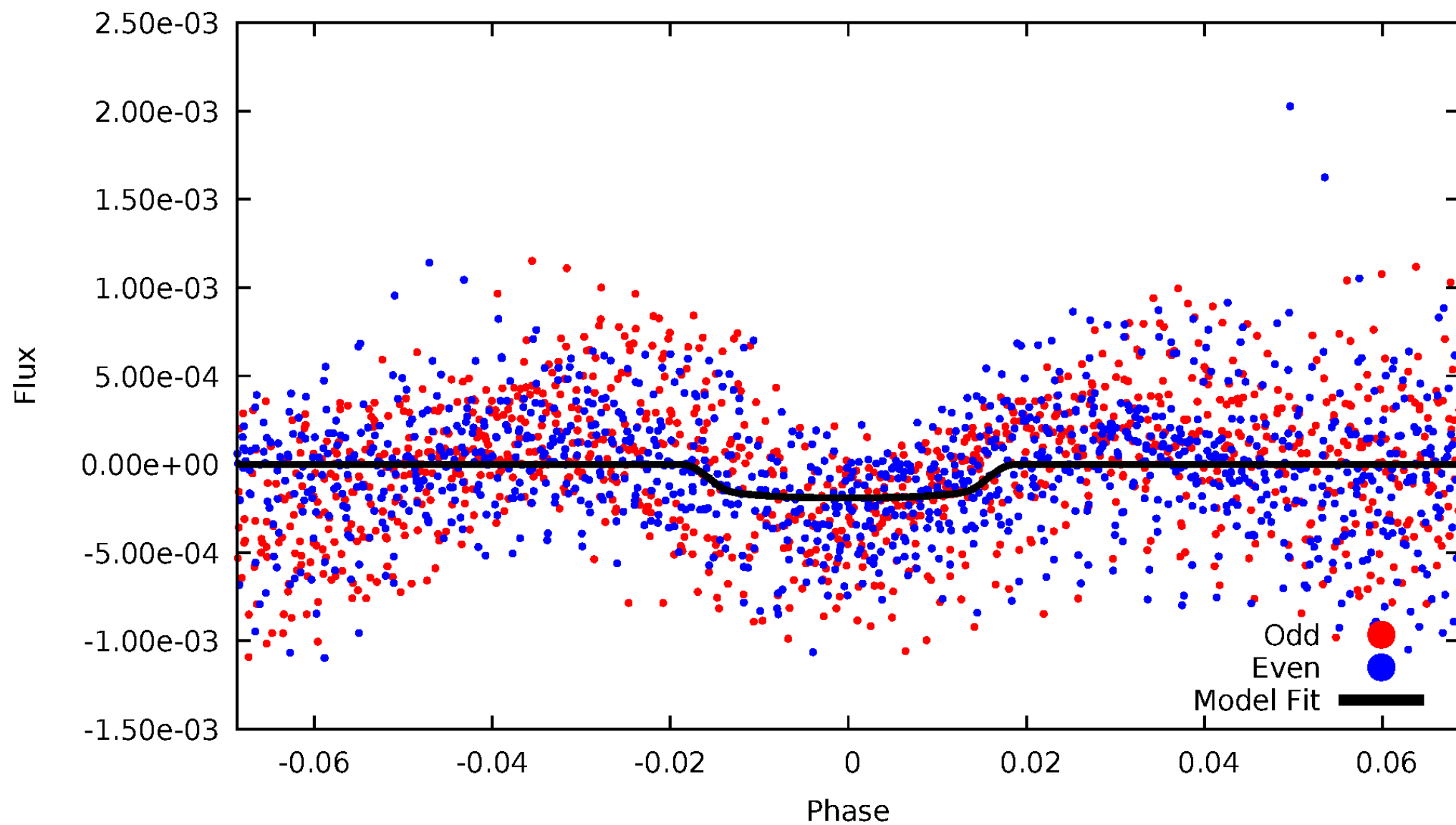


TCE 011099031-02



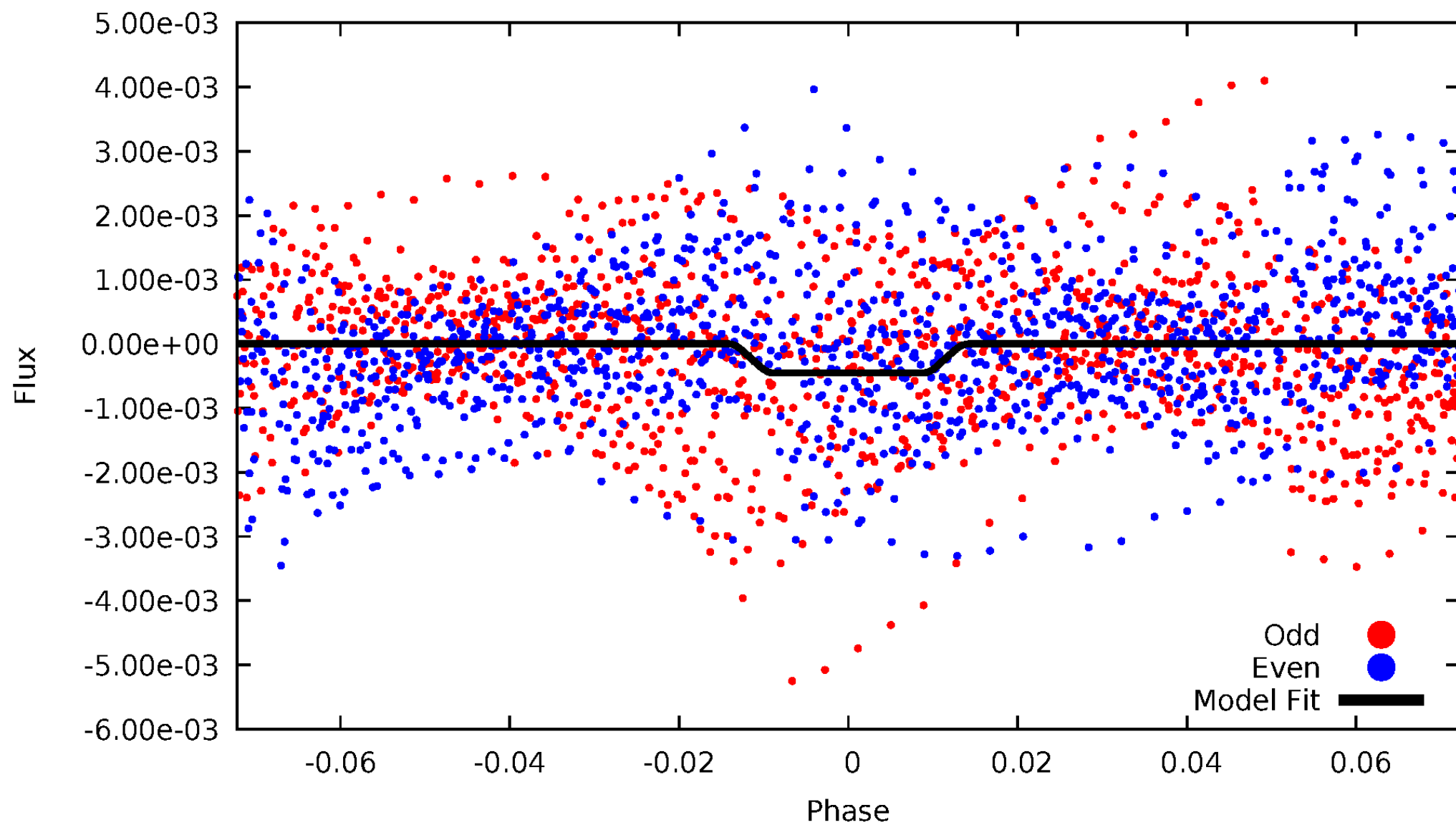
DV Odd/Even

TCE 011099031-02



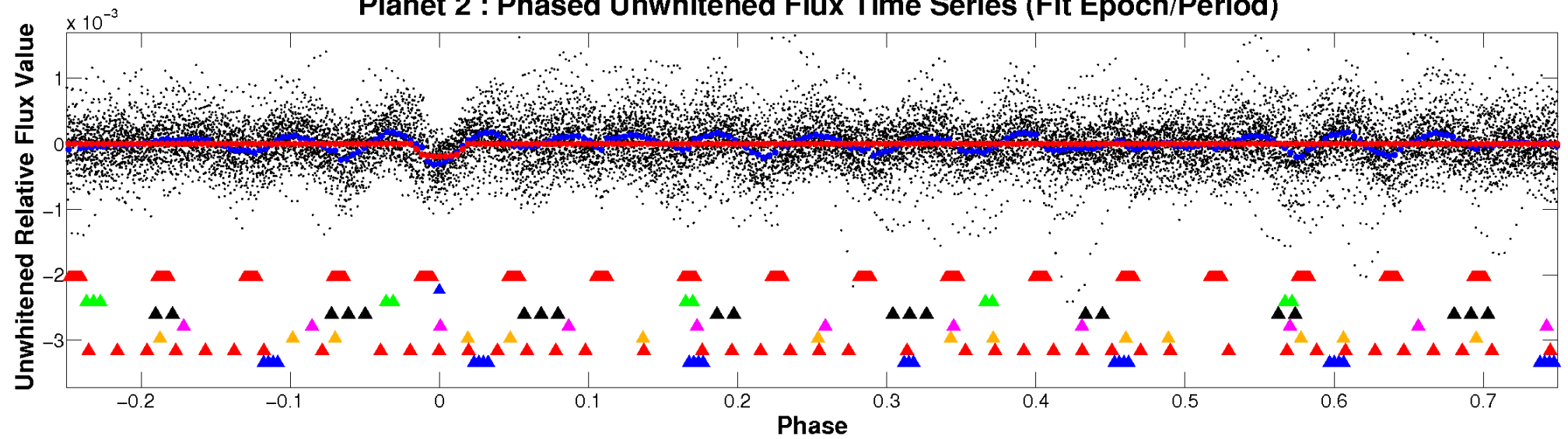
ALT Odd/Even

TCE 011099031-02

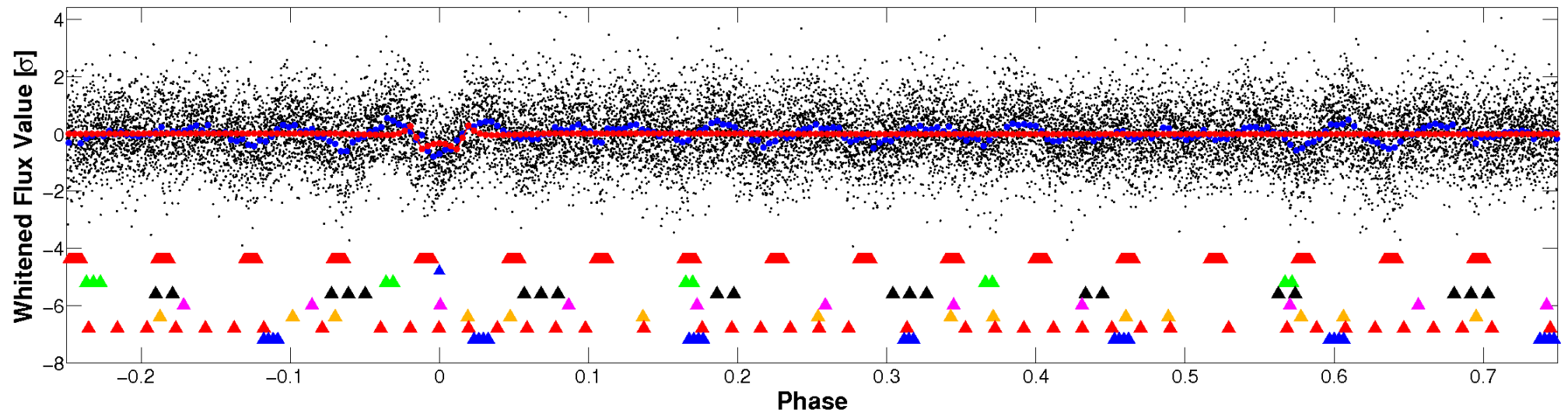


Non-Whitened Vs. Whitened Light Curve

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

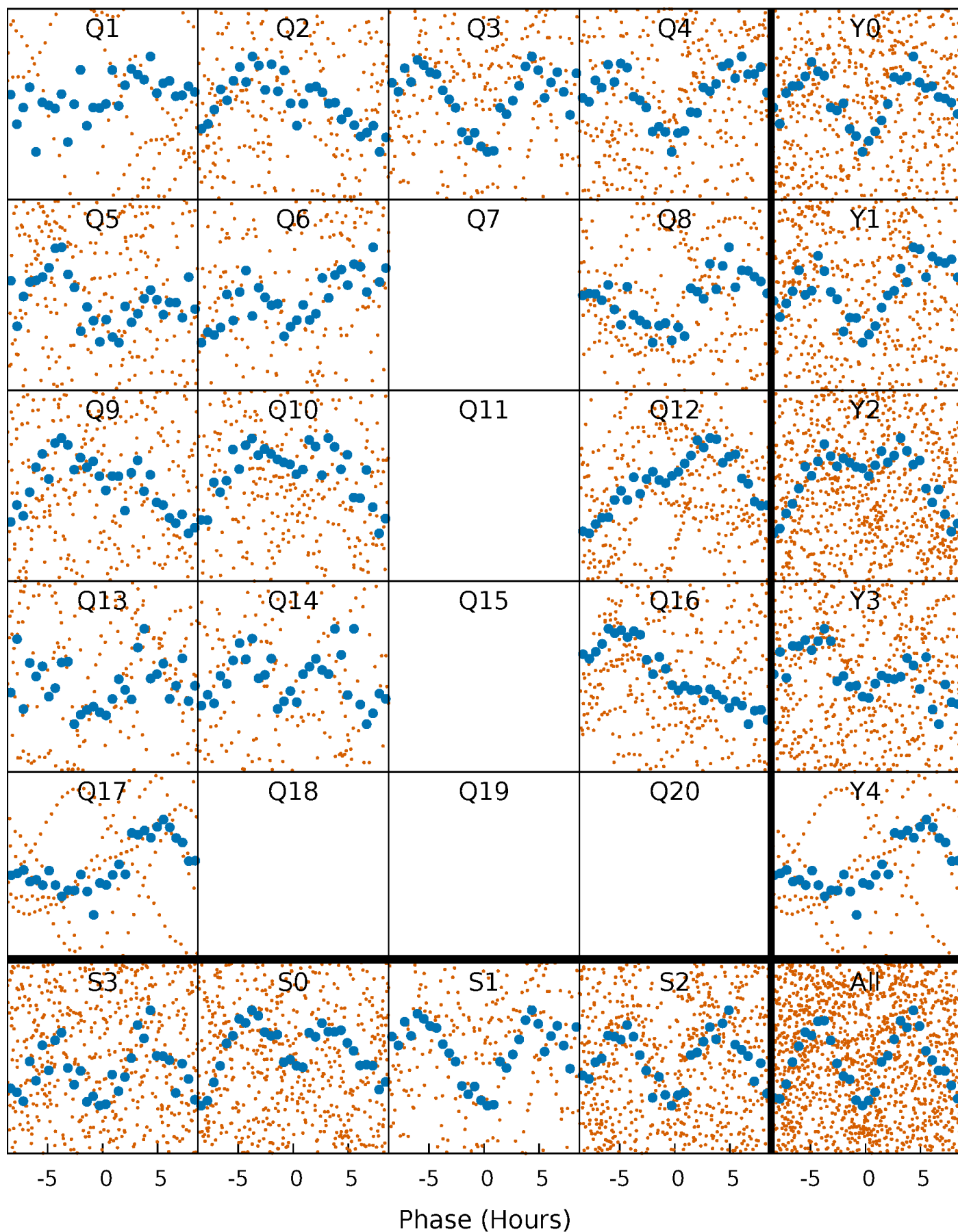


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



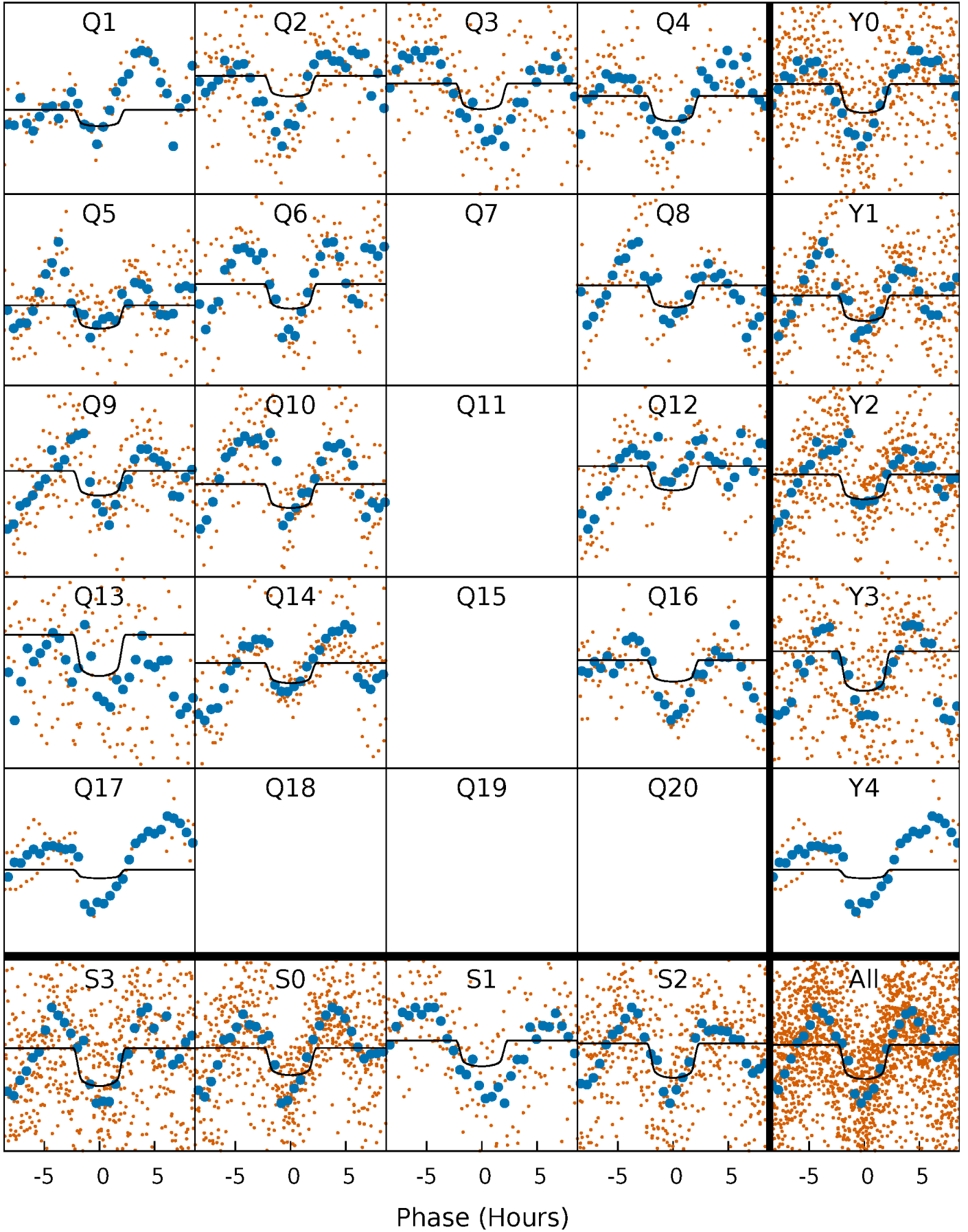
PDC Quarter-Phased Transit Curves

TCE 011099031-02 P= 5.262780 Days $T_0=135.678566$ (BKJD)



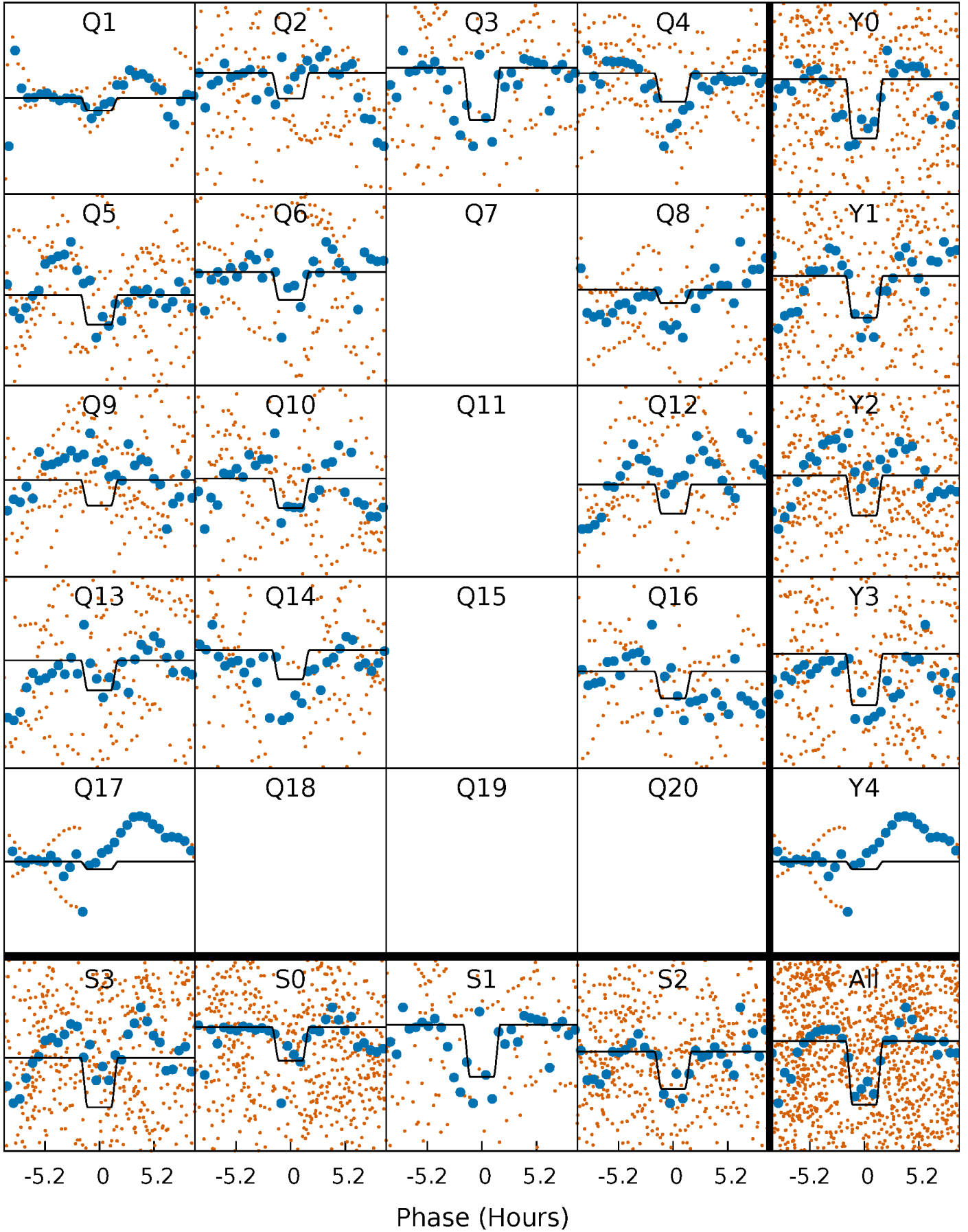
DV Quarter-Phased Transit Curves

TCE 011099031-02 P= 5.262780 Days $T_0=135.678566$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

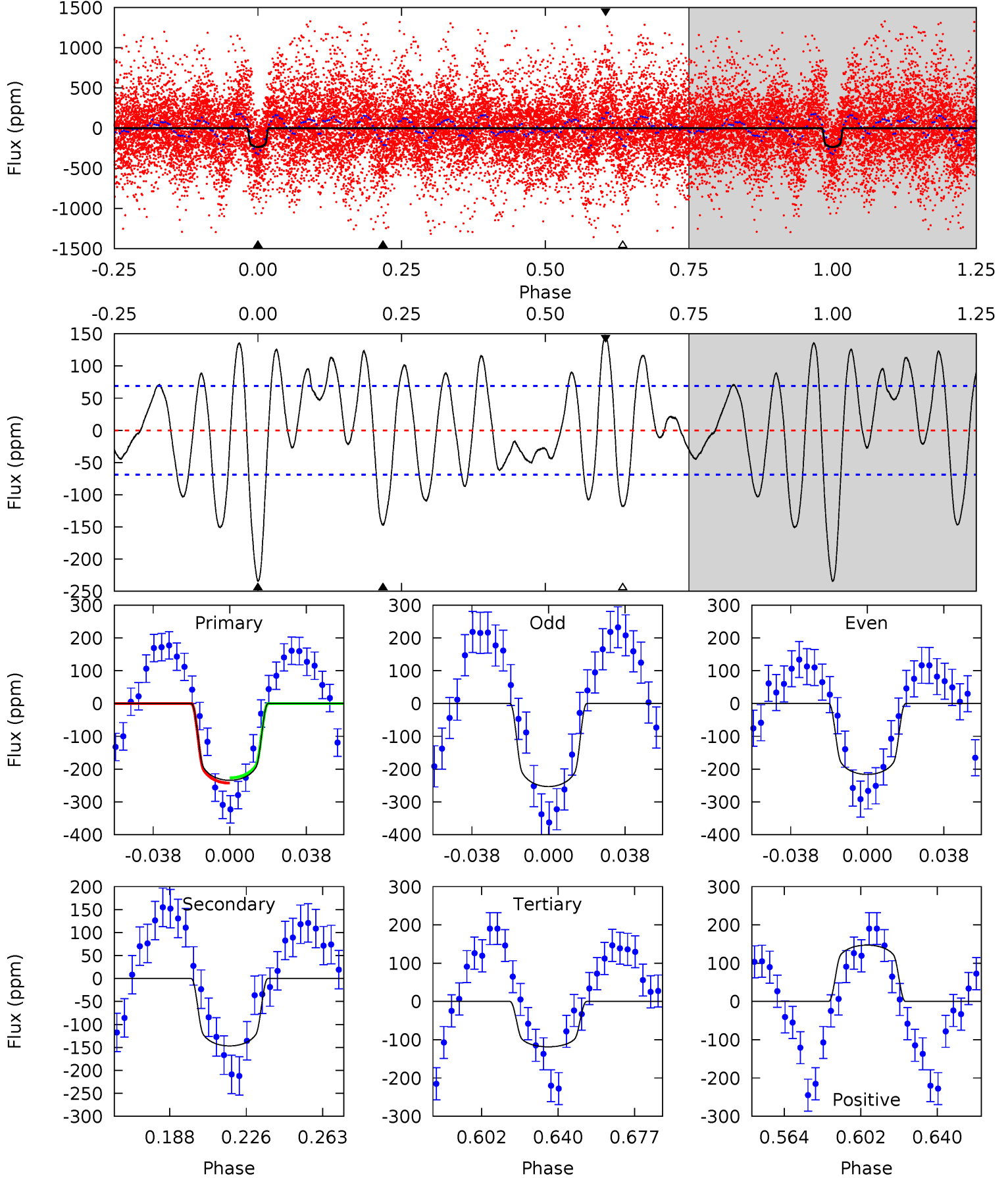
TCE 011099031-02 P= 5.262709 Days $T_0=135.685559$ (BKJD)



DV Model-Shift Uniqueness Test

011099031-02, P = 5.262780 Days, E = 130.415786 Days

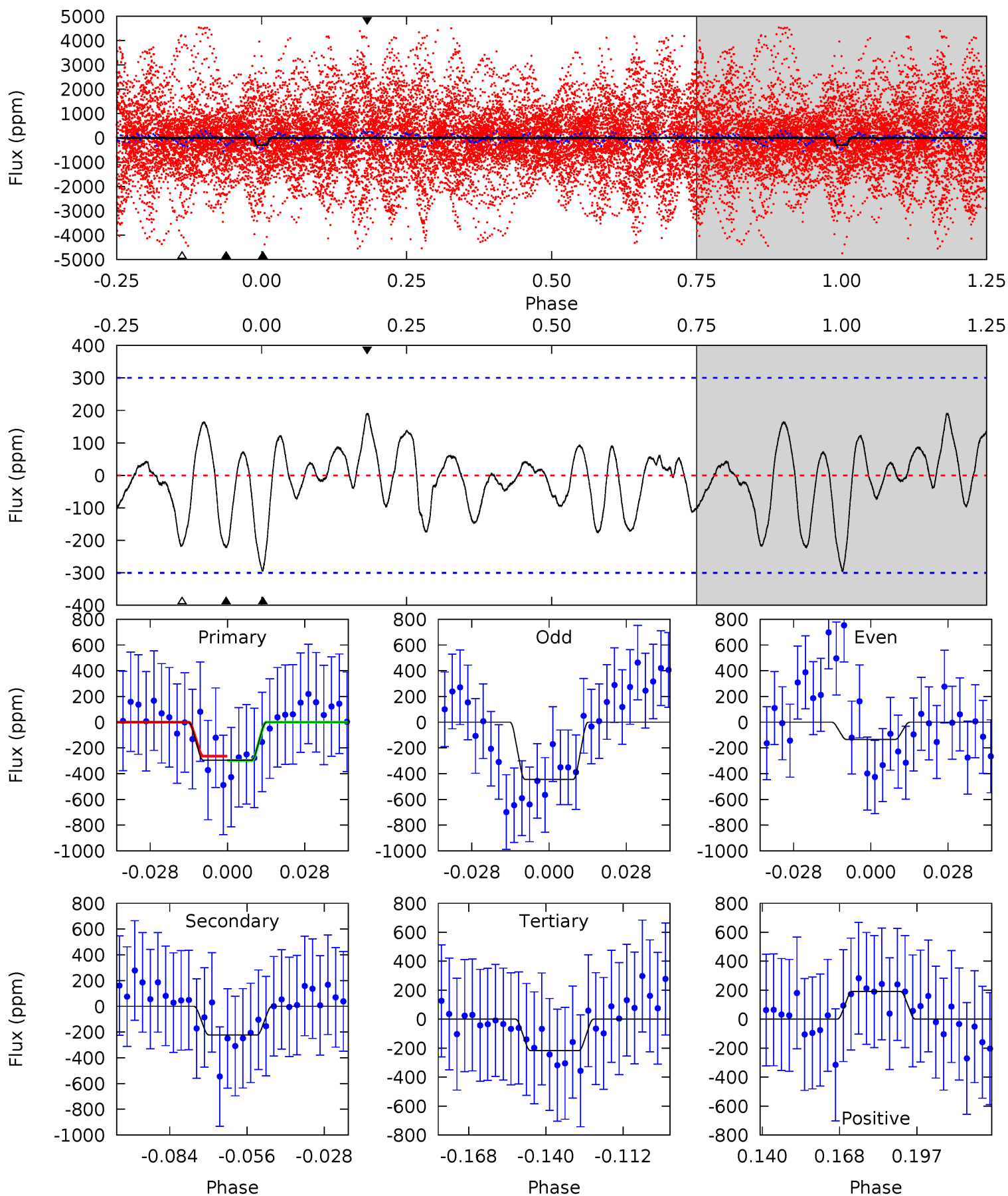
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.2	10.2	8.20	10.2	4.77	2.08	4.47	8.00	6.02	1.96	-0.03	1.28	0.85	0.39	0.55



Alt Model-Shift Uniqueness Test

011099031-02, P = 5.262709 Days, E = 130.422850 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.74	3.57	3.49	3.07	4.82	2.20	1.29	1.25	1.66	0.08	0.50	2.50	1.27	0.39	0.26



Stellar Parameters For KIC 011099031

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6606^{+184}_{-253}	$4.269^{+0.090}_{-0.210}$	$0.080^{+0.250}_{-0.350}$	$1.393^{+0.458}_{-0.212}$	$1.320^{+0.195}_{-0.195}$	$0.688^{+0.348}_{-0.370}$
	+3%/-4%	+2%/-5%	+312%/-438%	+33%/-15%	+15%/-15%	+51%/-54%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 011099031-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-147 ± 14	$2.35^{+0.51}_{-0.40}$	1916^{+146}_{-113}	5910^{+555}_{-398}	61^{+26}_{-20}
Alt.	-222 ± 62	$3.33^{+0.61}_{-0.46}$	1911^{+151}_{-112}	5495^{+495}_{-435}	44^{+22}_{-16}

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 $A_{obs} \gg 1.0$

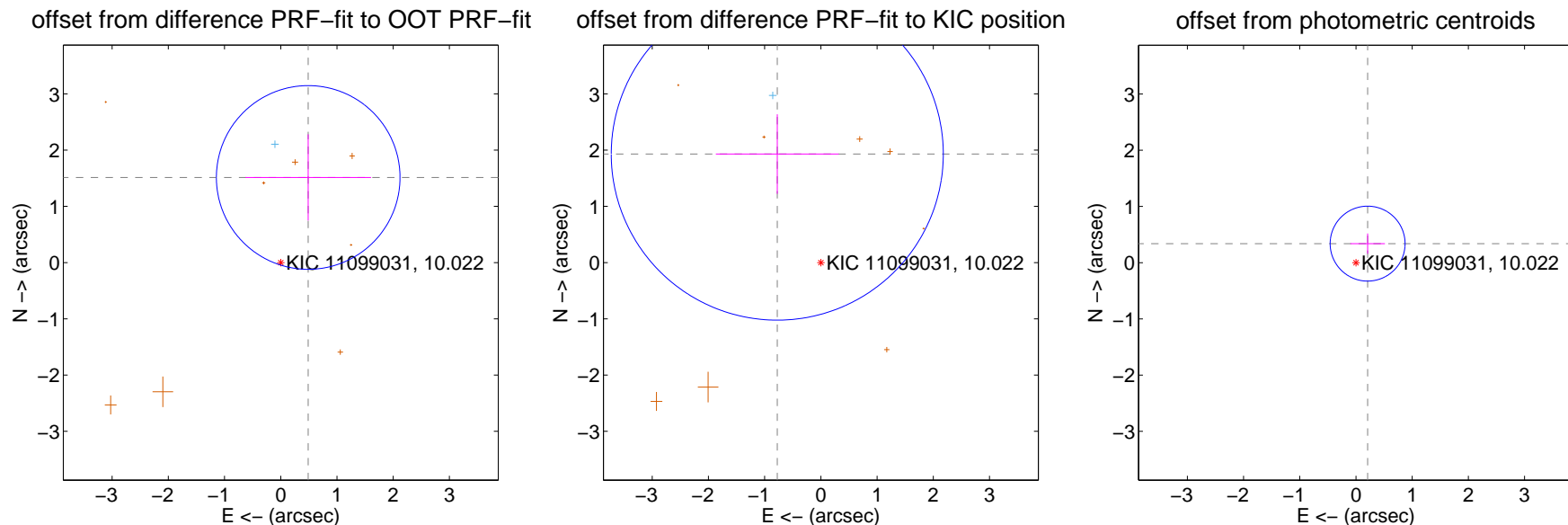
DV Centroid Data

Supplemental centroid analysis for 011099031-02. **Kepler magnitude: 10.02.** Transit SNR 9.90

There are 2 quarters with good PRF difference image offsets

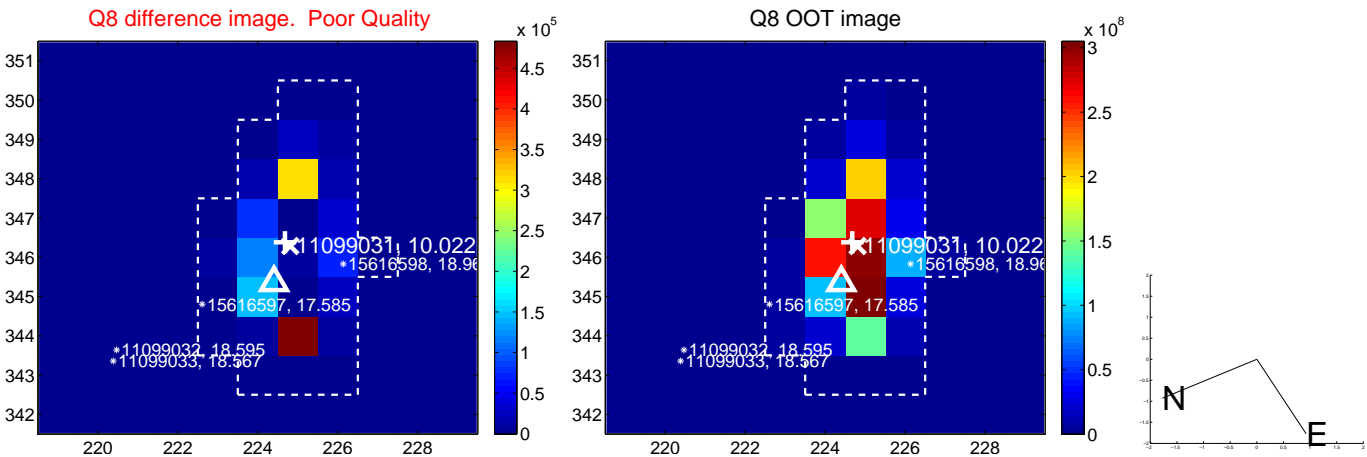
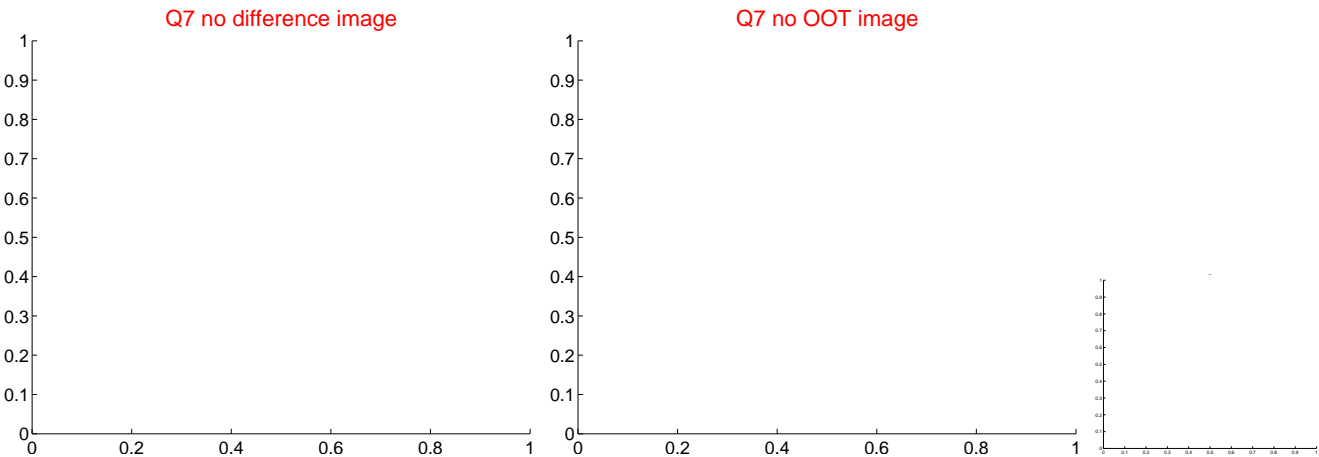
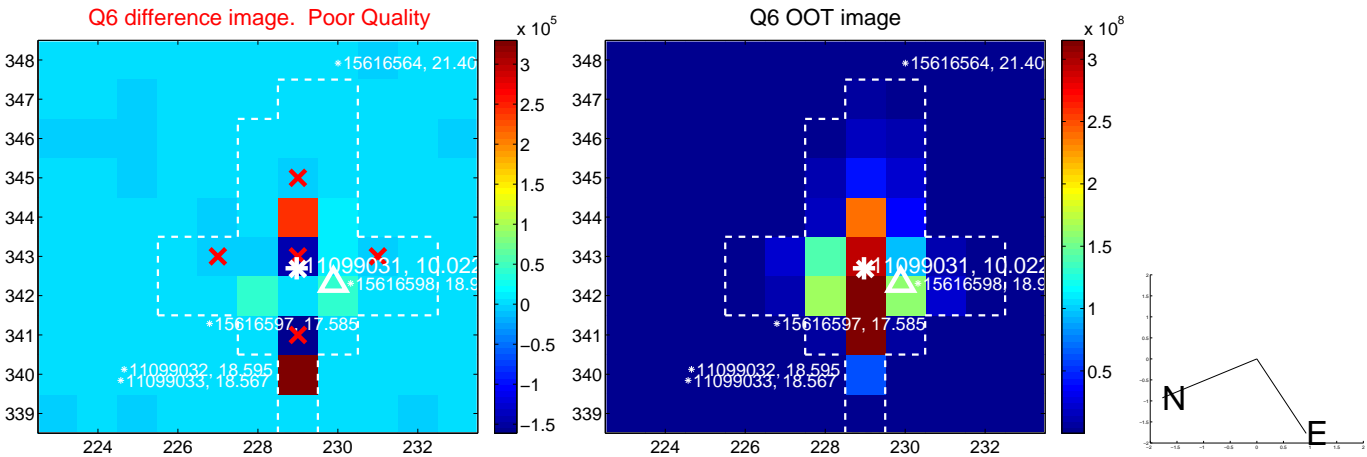
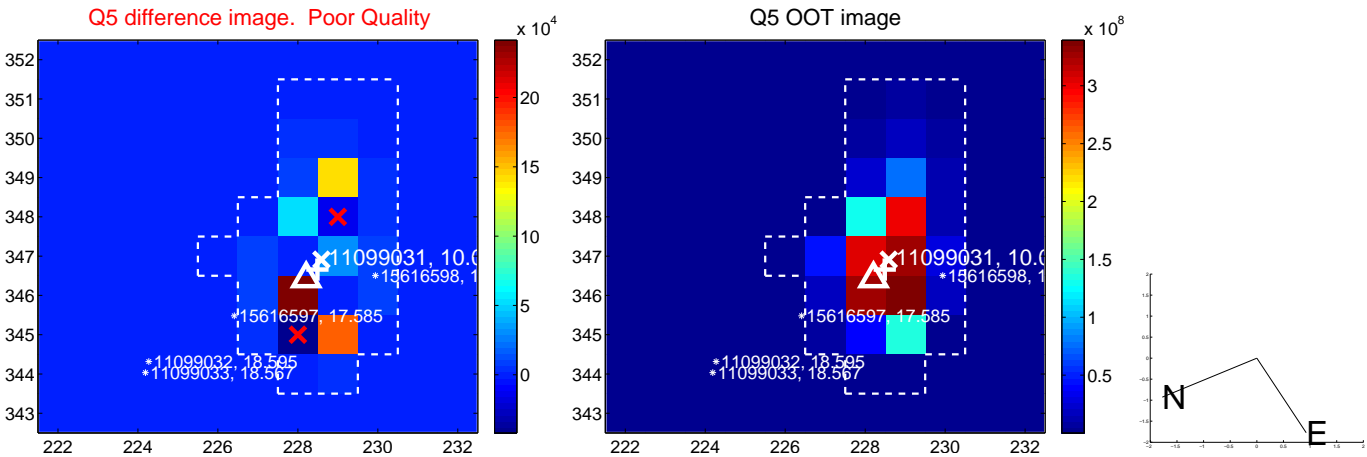
The direct PRF centroid is offset from the target star catalog position by about 1.01 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.591 ± 0.544	2.92	-0.489 ± 1.118	1.514 ± 0.766
PRF-fit source offset from KIC position	2.080 ± 0.984	2.11	0.776 ± 1.093	1.930 ± 0.707
photometric centroid source offset	0.40 ± 0.22	1.79	-0.21 ± 0.31	0.34 ± 0.18

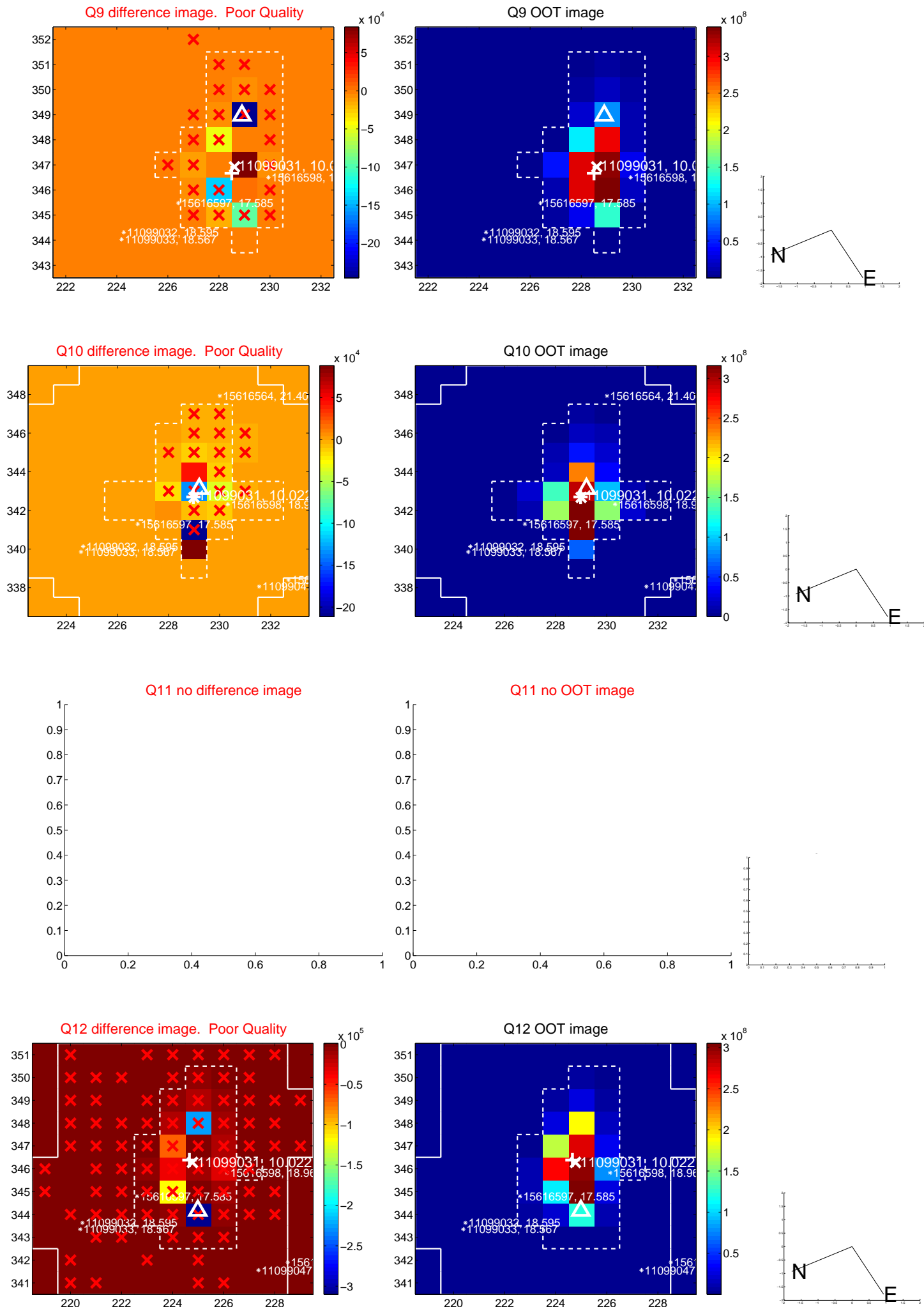


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

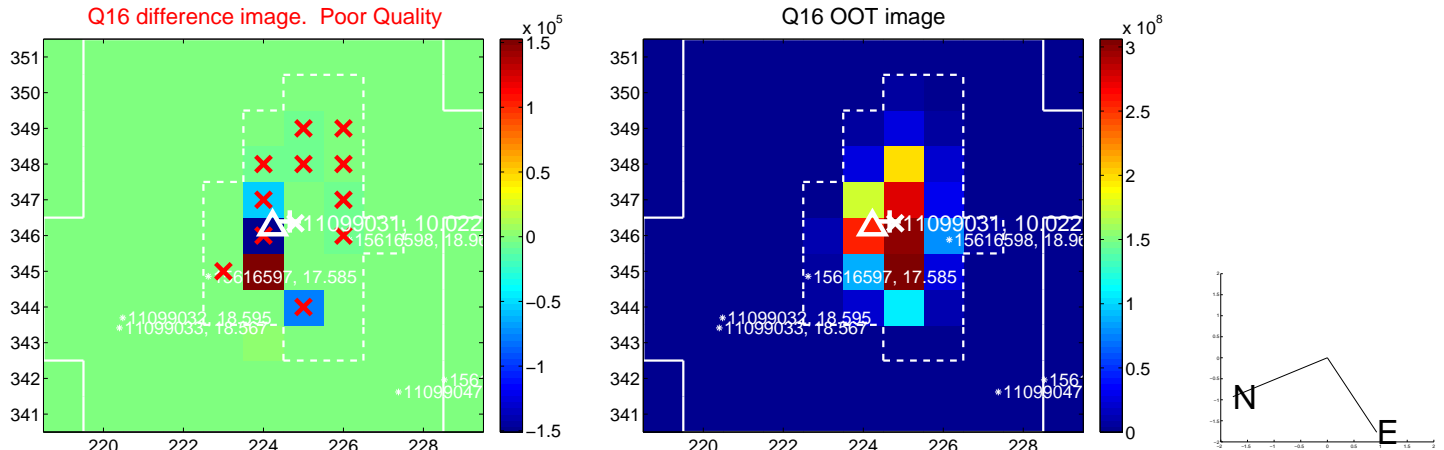
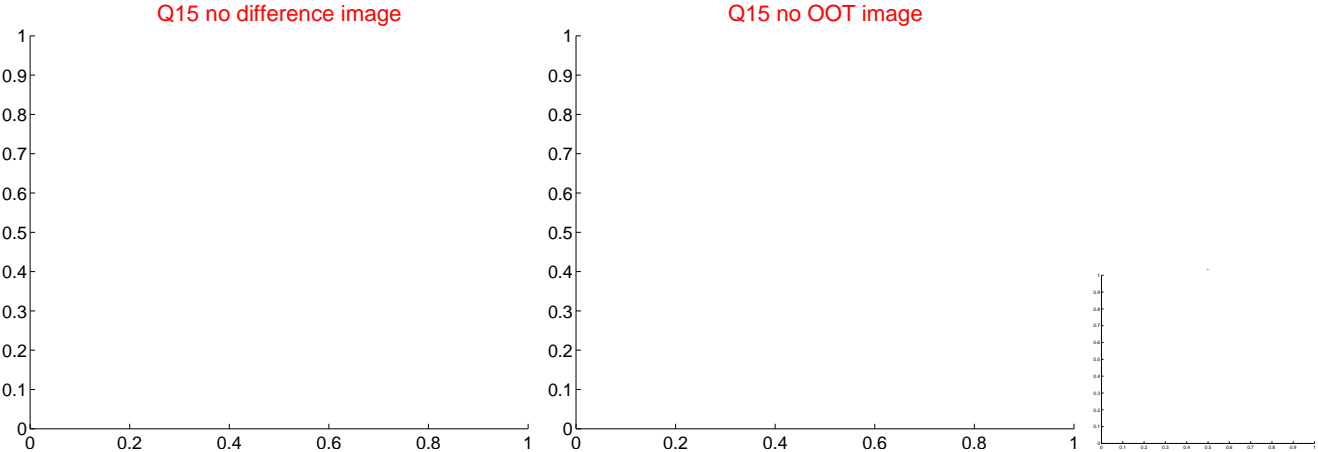
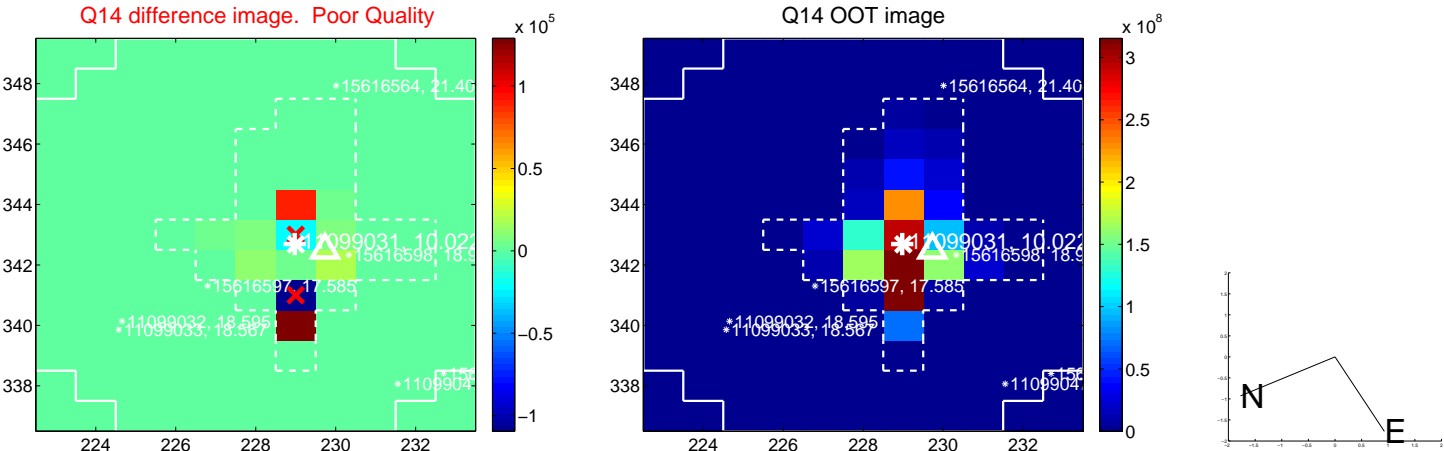
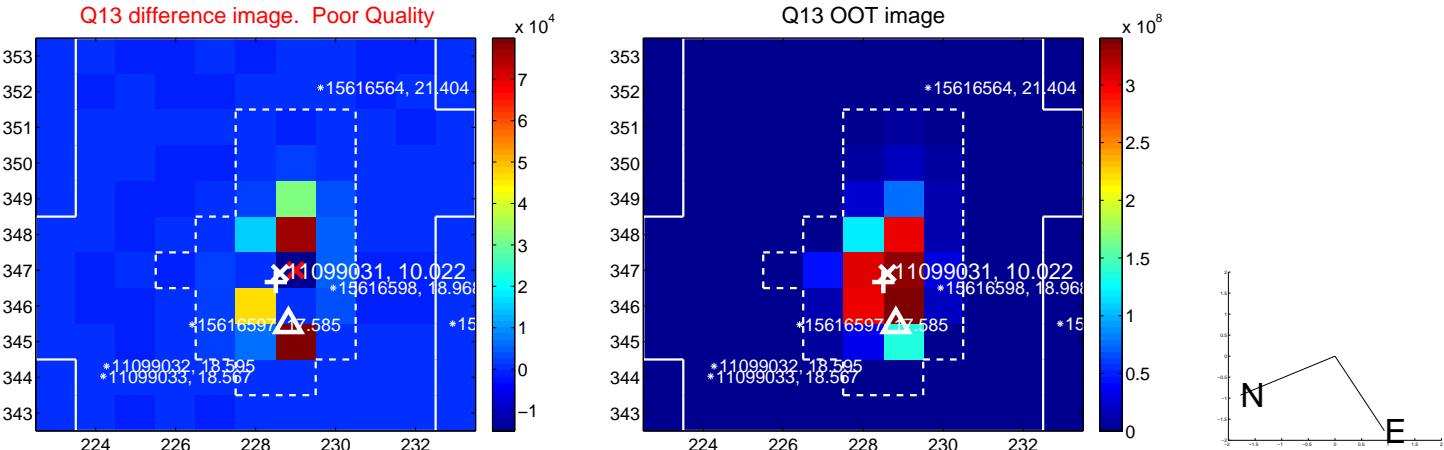
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



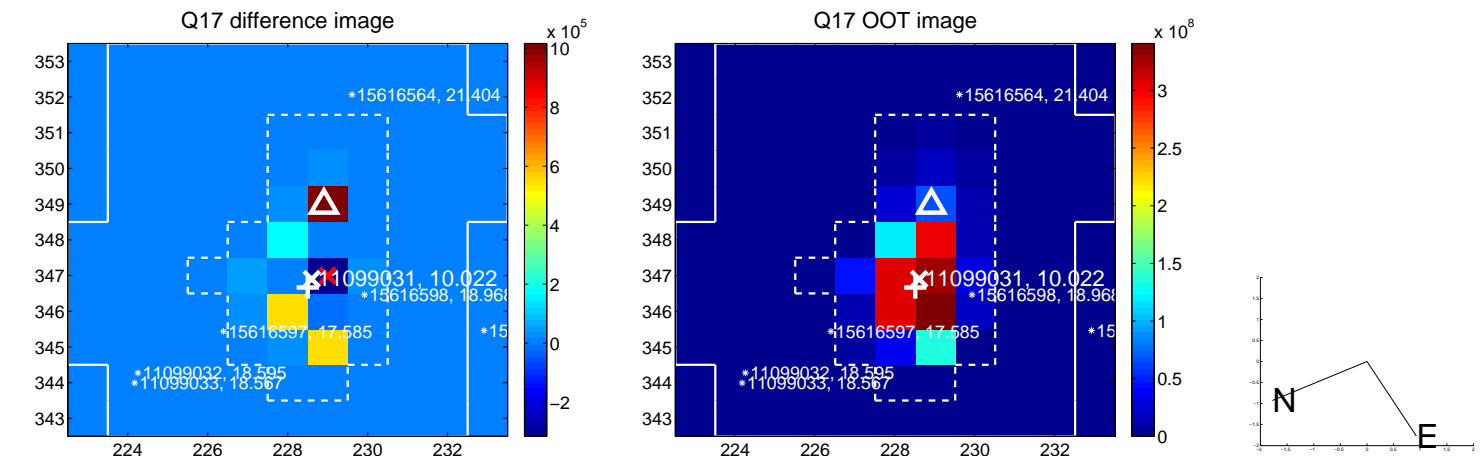
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



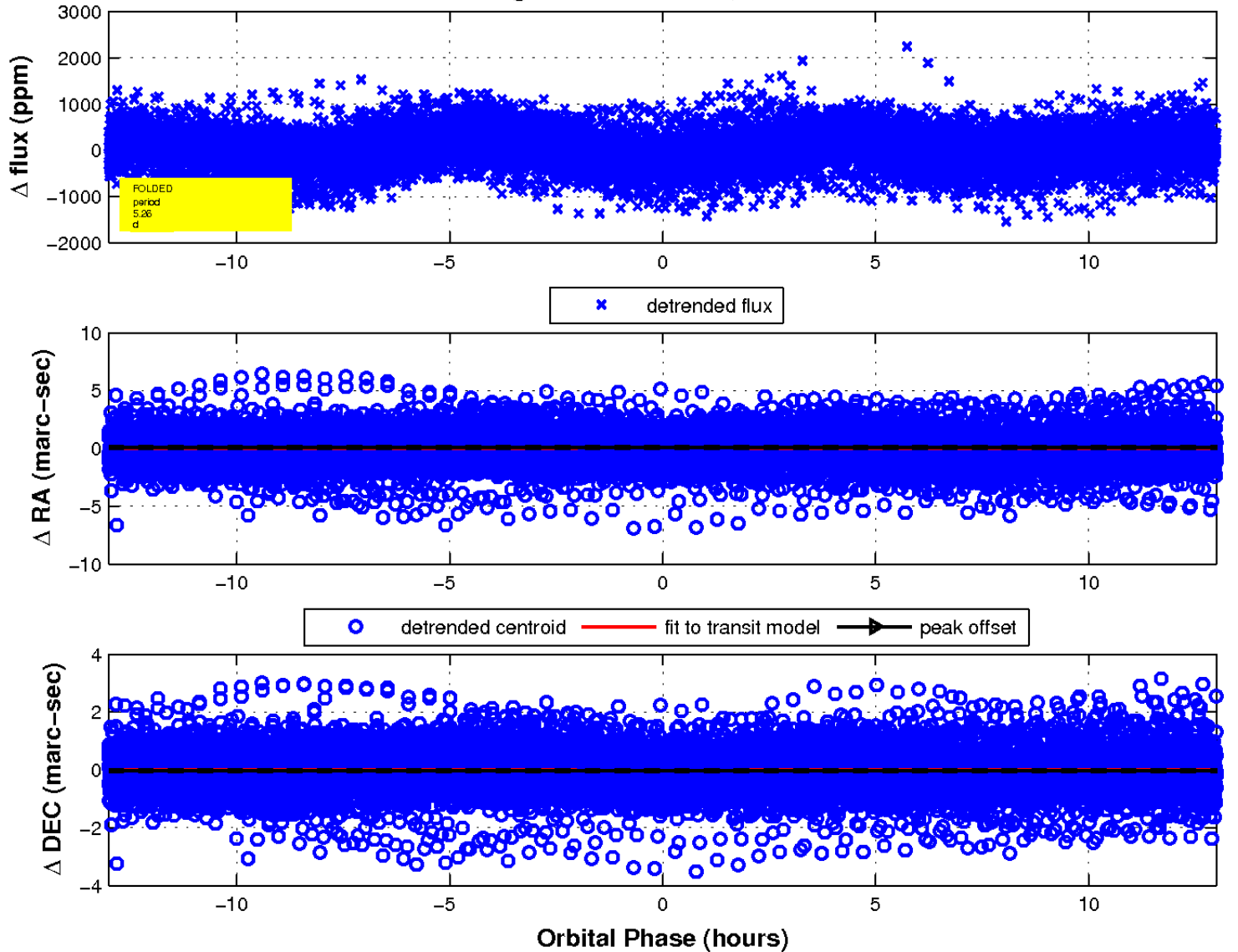
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

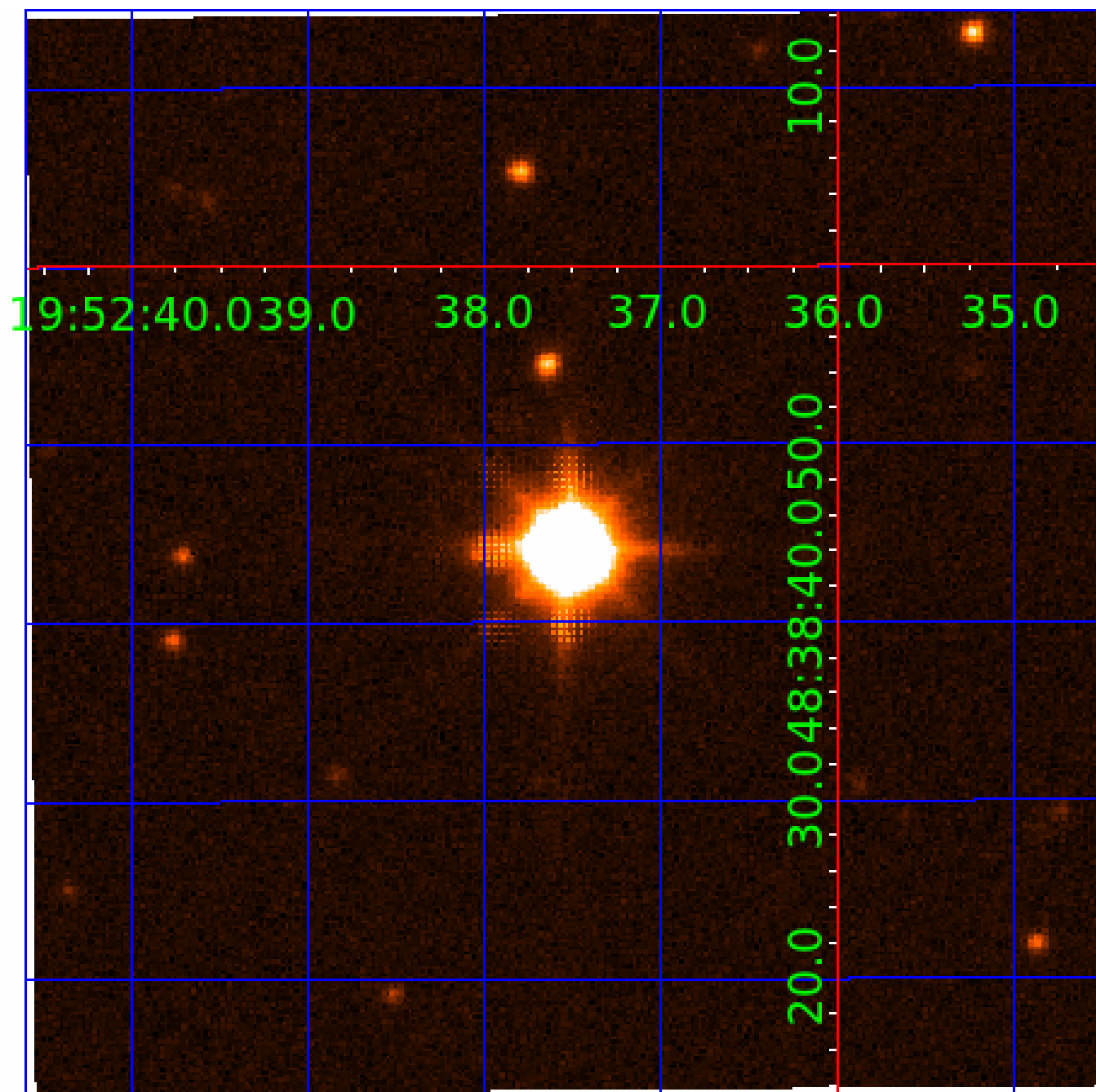


fluxWeightedCentroids, Planet 2 of 8



UKIRT Image

Declination



KIC 011099031

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})
011099031-01	OBS	No	0.928695	131.941079	5.7	4.862	8.1	1.3	1.39	6606	0.39	7945.45
011099031-02	OBS	No	5.262780	135.678566	191.2	4.335	9.3	9.9	1.39	6606	2.25	786.43
011099031-04	OBS	No	75.659901	151.086344	649.6	5.813	8.0	8.4	1.39	6606	6.80	22.50
011099031-05	OBS	No	137.285146	175.519949	530.1	9.189	8.5	6.8	1.39	6606	3.71	10.16
011099031-06	OBS	No	102.933229	195.373869	721.9	6.548	7.9	6.4	1.39	6606	4.73	14.92
011099031-07	OBS	No	34.775566	139.703564	337.1	2.433	7.4	6.8	1.39	6606	2.99	63.42
011099031-08	OBS	No	54.129085	138.869797	164.0	3.787	7.6	3.1	1.39	6606	2.06	35.16

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011099031-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
011099031-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
011099031-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
011099031-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED
011099031-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
011099031-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
011099031-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

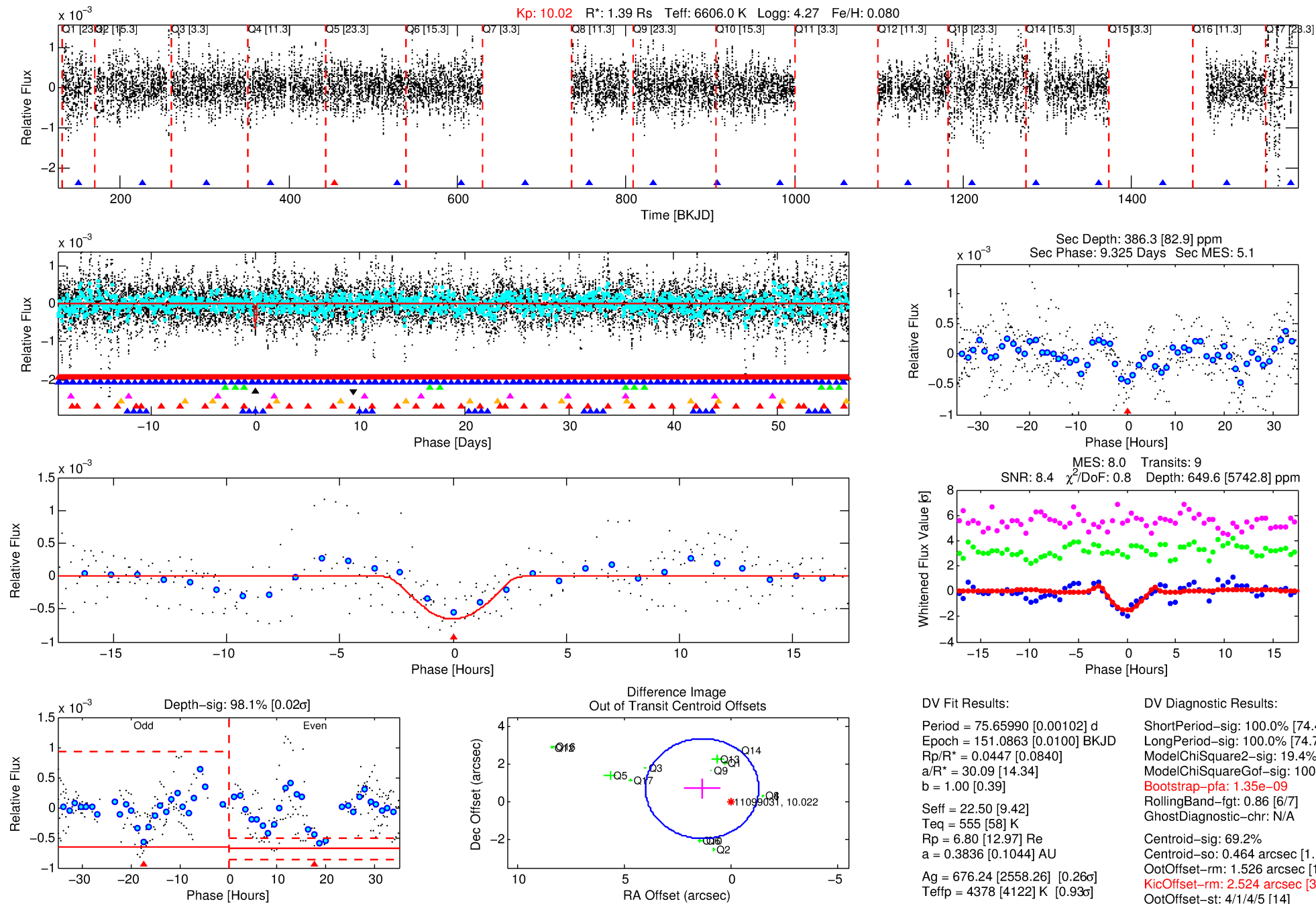
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011099031-04

No Significant Match Found

DV One-Page Summary

KIC: 11099031 Candidate: 4 of 8 Period: 75.660 d



DV Fit Results:

Period = 75.65990 [0.00102] d
Epoch = 151.0863 [0.0100] BKJD
Rp/R* = 0.0447 [0.0840]
a/R* = 30.09 [14.34]
b = 1.00 [0.39]
Seff = 22.50 [9.42]
Teff = 555 [58] K
Rp = 6.80 [12.97] Re
a = 0.3836 [0.1044] AU
Ag = 676.24 [2558.26] [0.26 σ]
Teffp = 4378 [4122] K [0.93 σ]

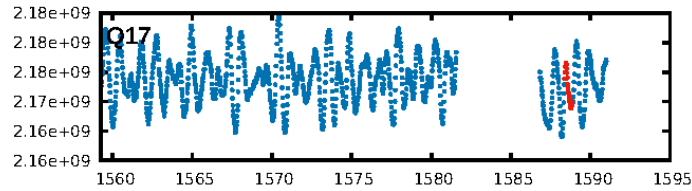
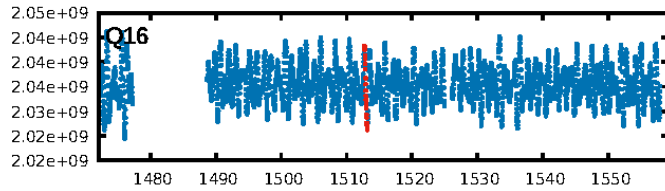
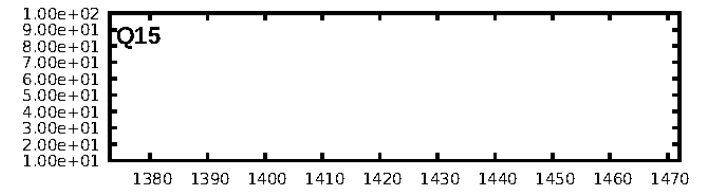
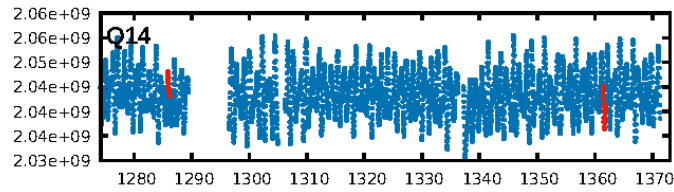
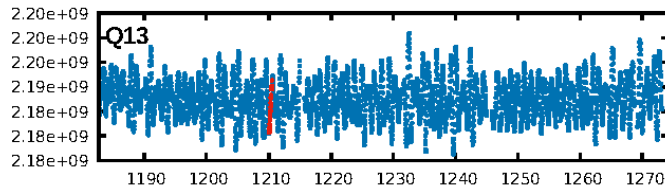
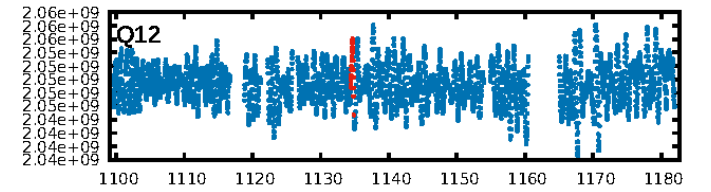
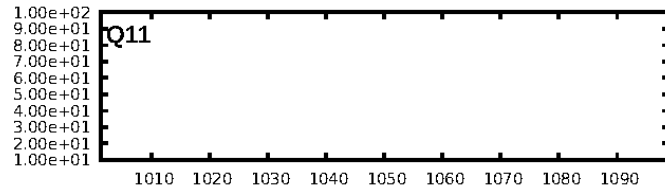
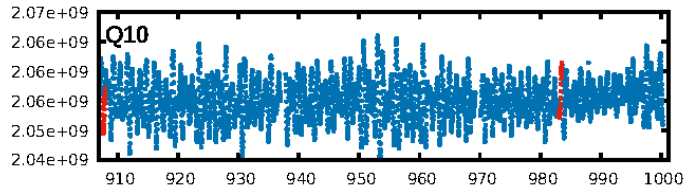
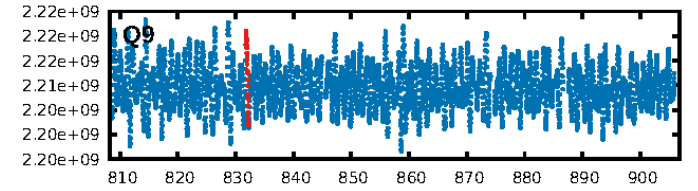
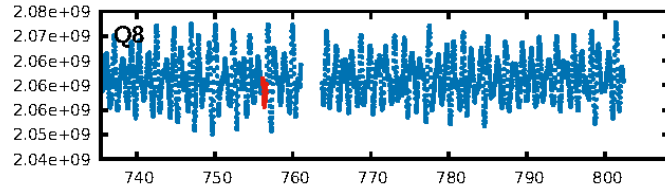
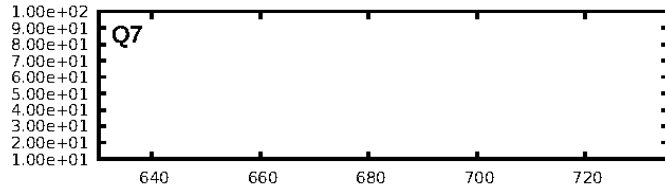
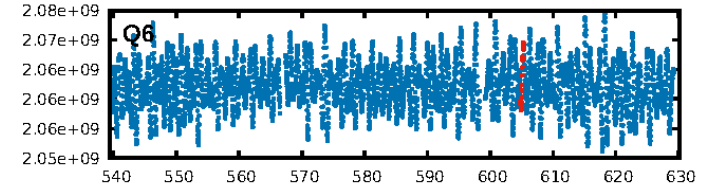
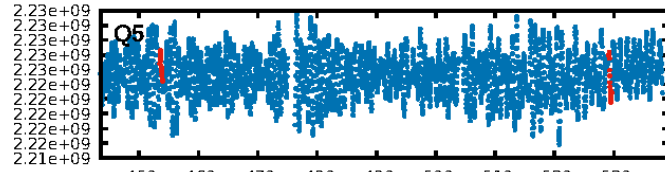
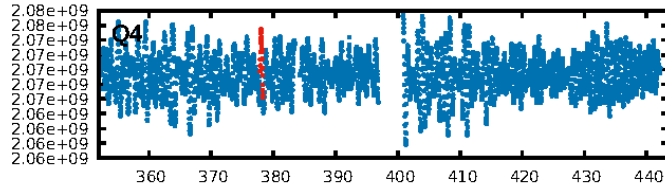
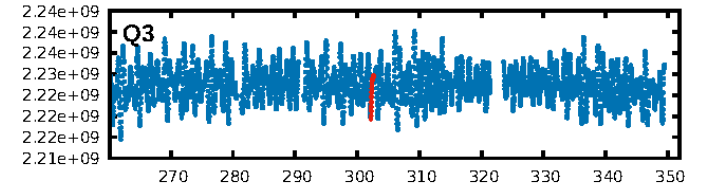
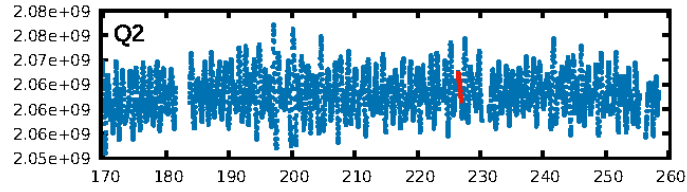
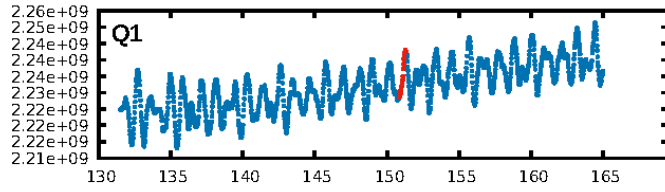
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [74.48 σ]
LongPeriod-sig: 100.0% [74.75 σ]
ModelChiSquare2-sig: 19.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.35e-09
RollingBand-fgt: 0.86 [6/7]
GhostDiagnostic-chr: N/A
Centroid-sig: 69.2%
Centroid-so: 0.464 arcsec [1.18 σ]
OotOffset-rm: 1.526 arcsec [1.73 σ]
KicOffset-rm: 2.524 arcsec [3.03 σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 0.07 [1/14]
DiffImageOverlap-fno: 0.00 [0/14]

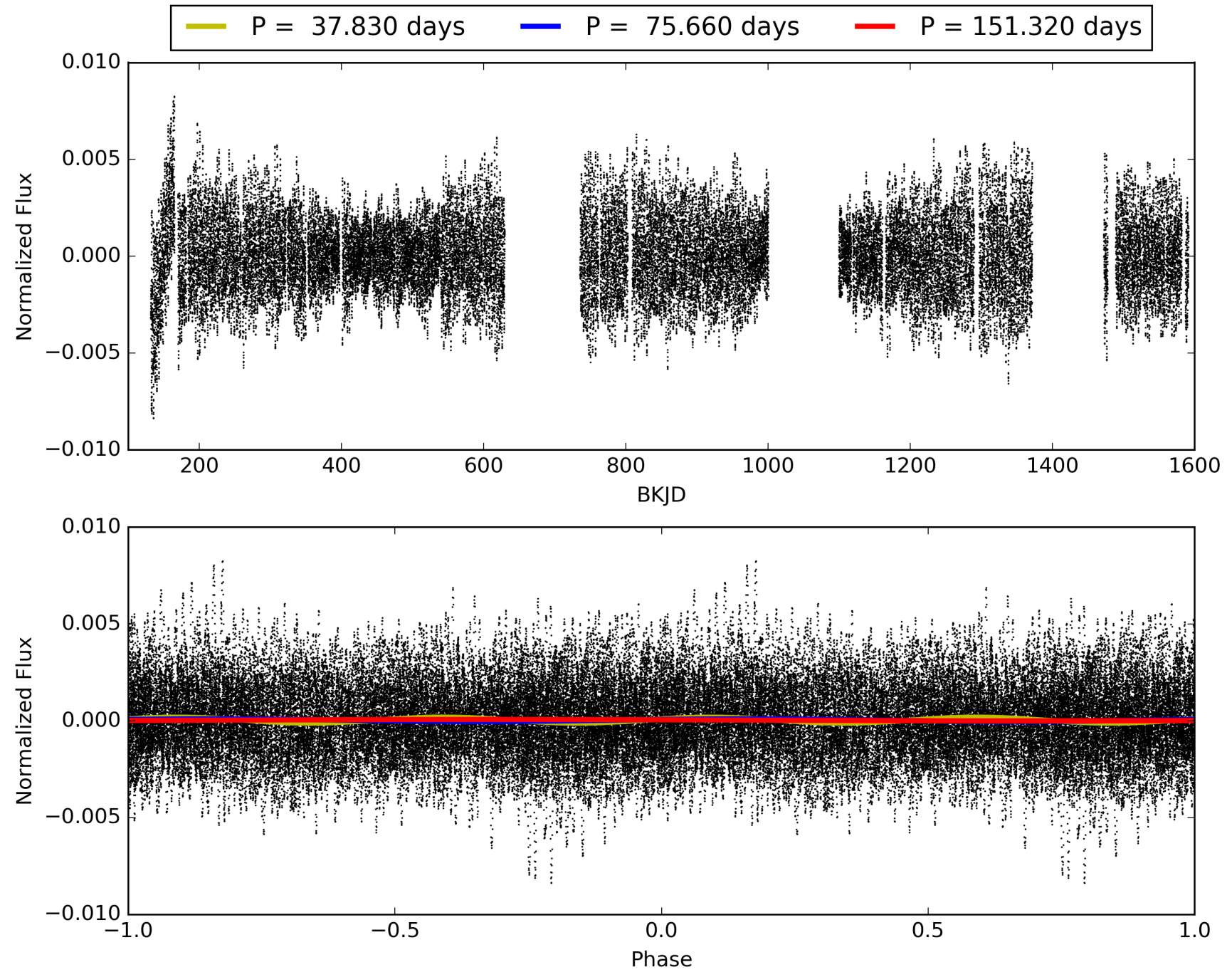
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 011099031-04, PDC Light Curves

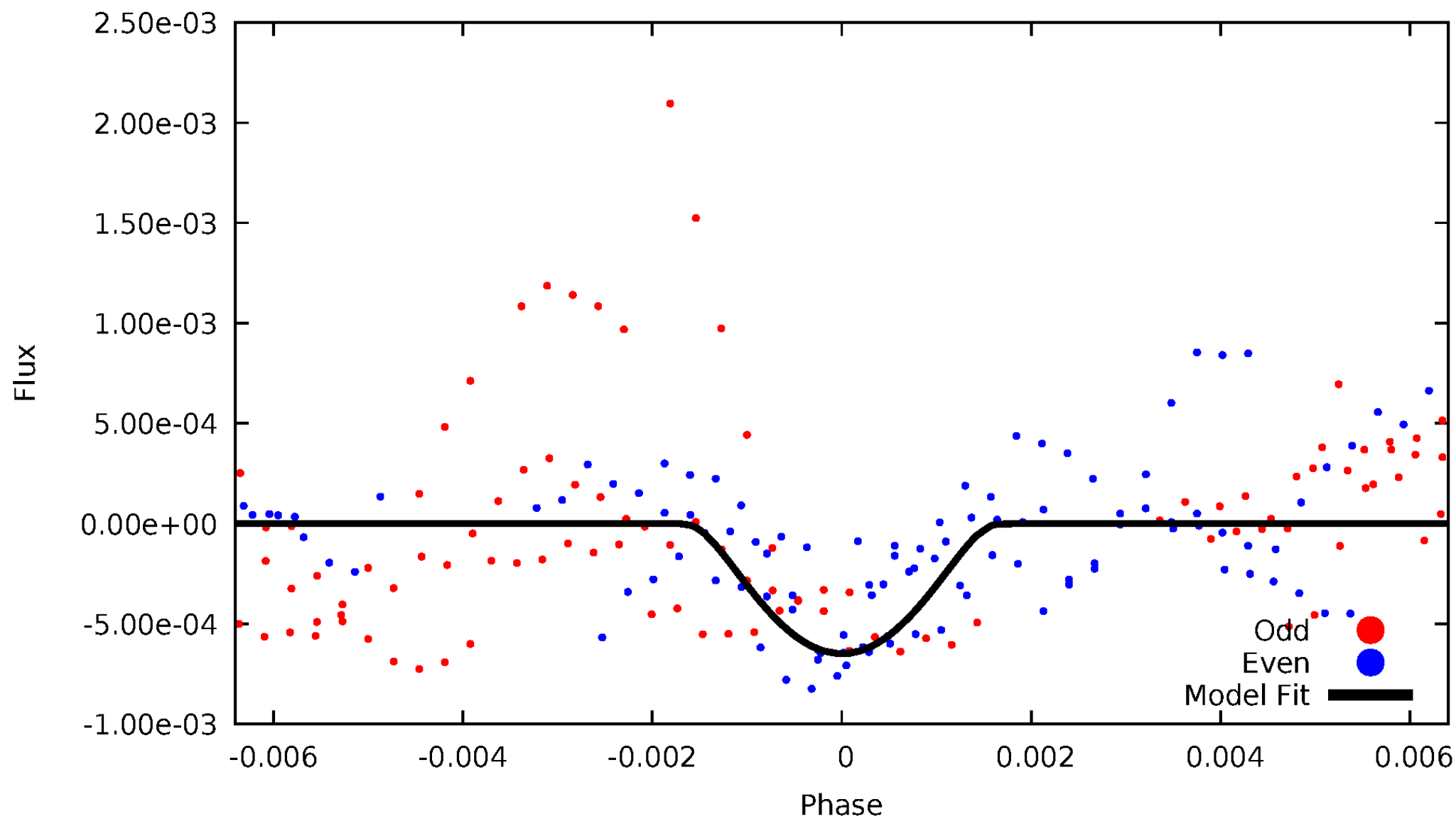


TCE 011099031-04



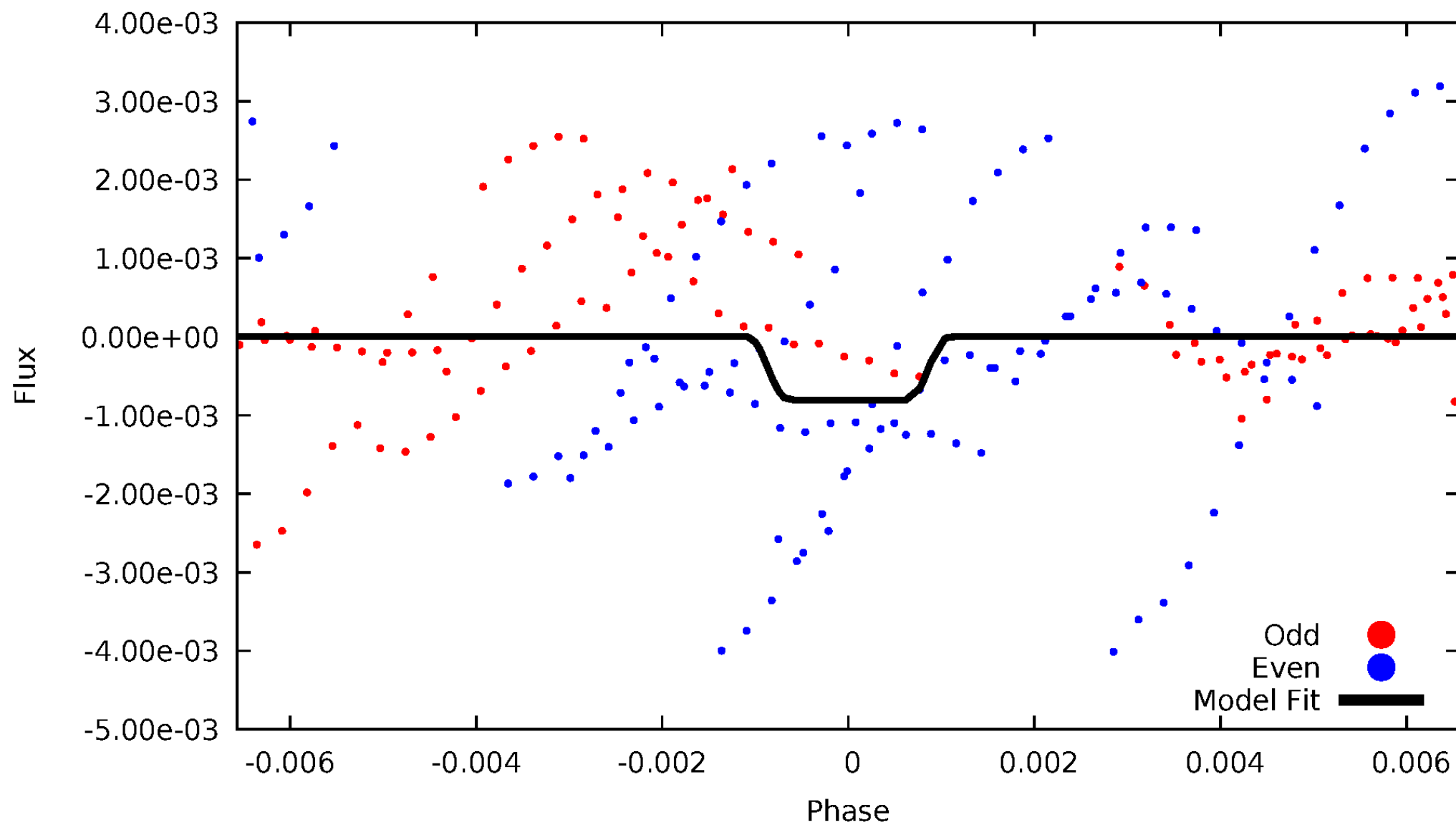
DV Odd/Even

TCE 011099031-04



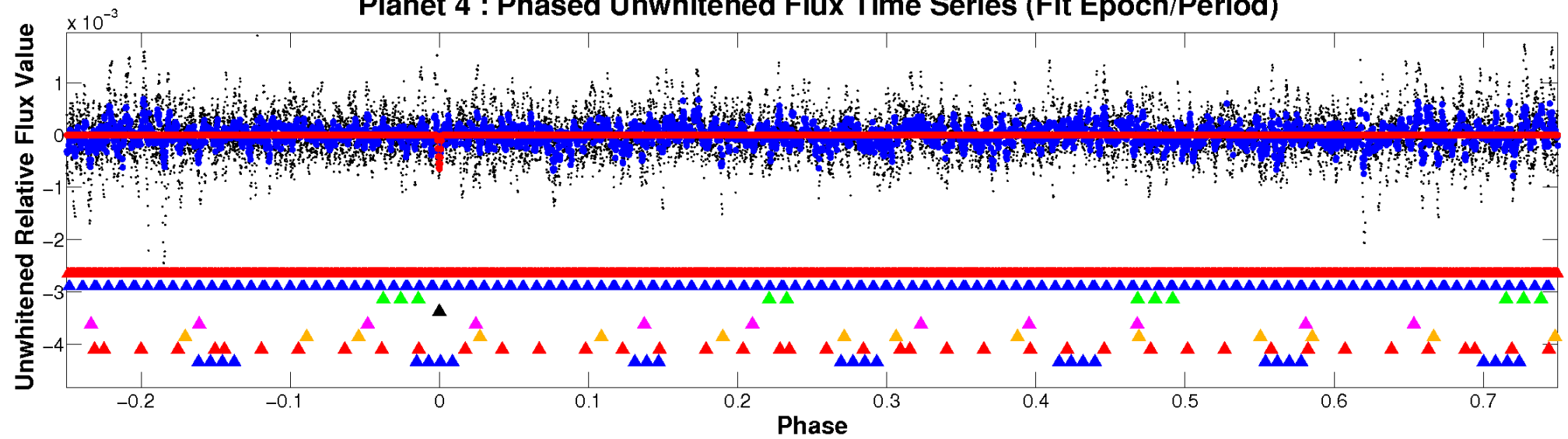
ALT Odd/Even

TCE 011099031-04

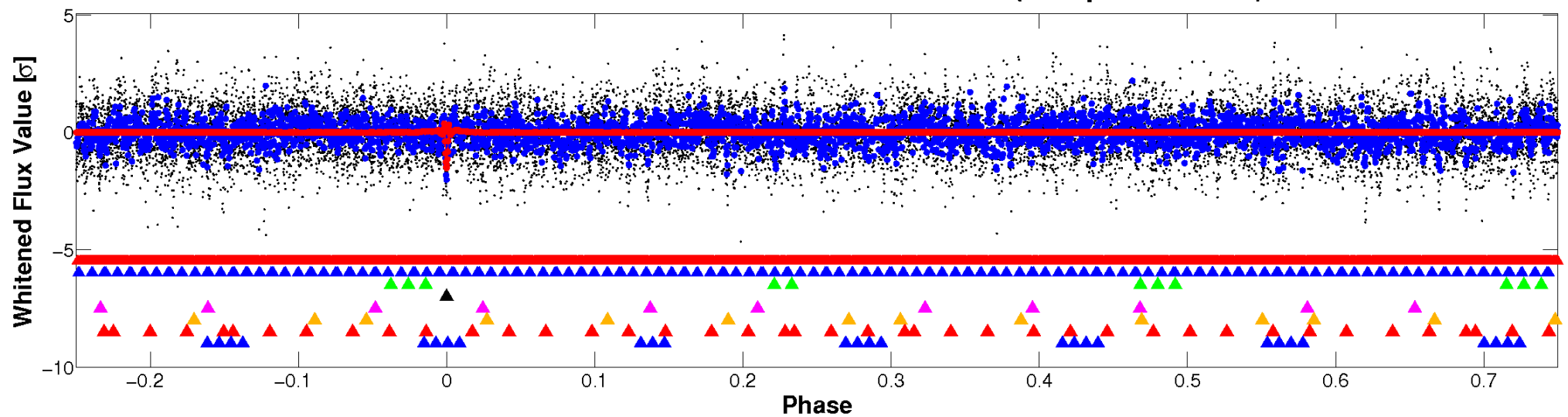


Non-Whitened Vs. Whitened Light Curve

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

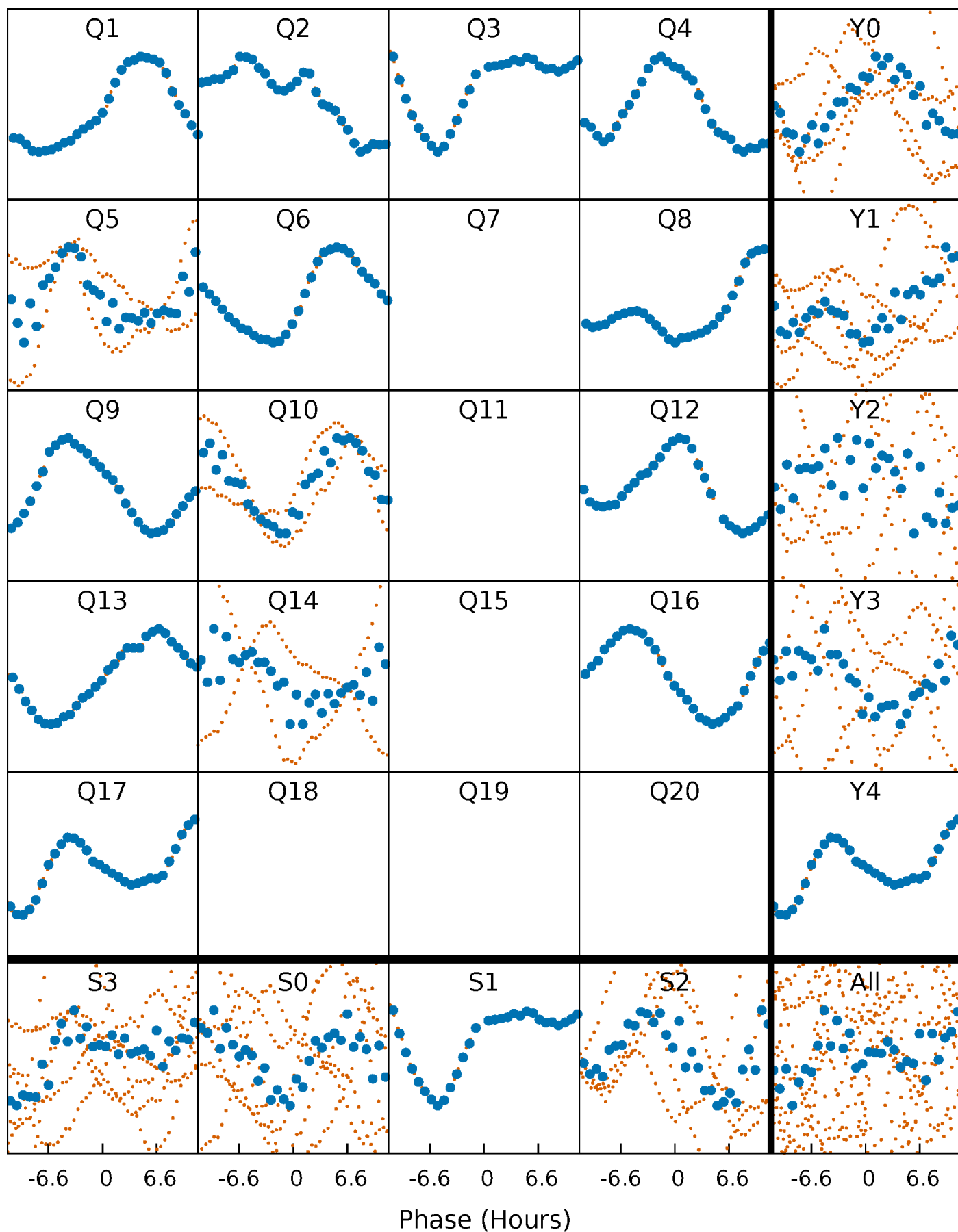


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



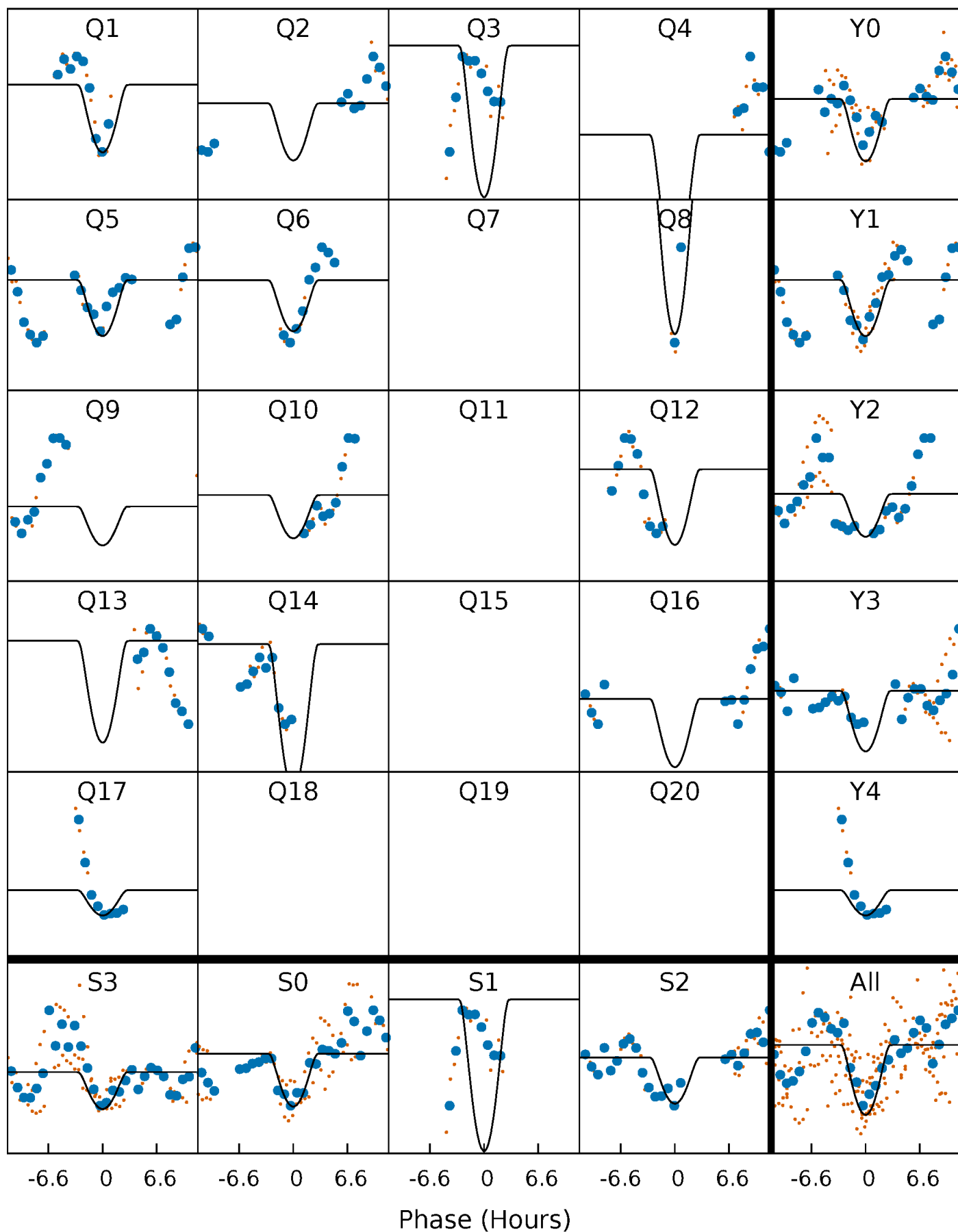
PDC Quarter-Phased Transit Curves

TCE 011099031-04 P= 75.659901 Days $T_0=151.086344$ (BKJD)



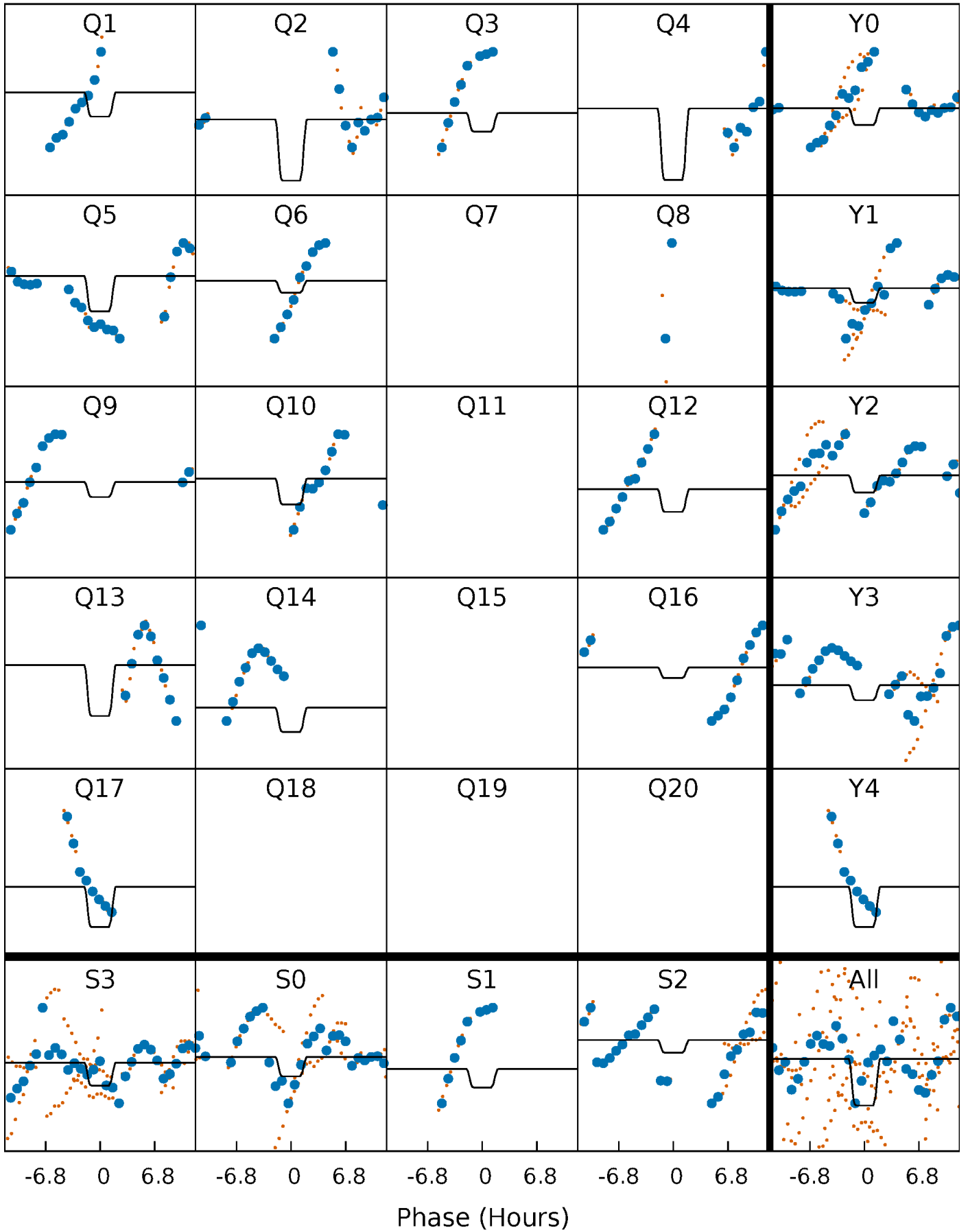
DV Quarter-Phased Transit Curves

TCE 011099031-04 P= 75.659901 Days $T_0=151.086344$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

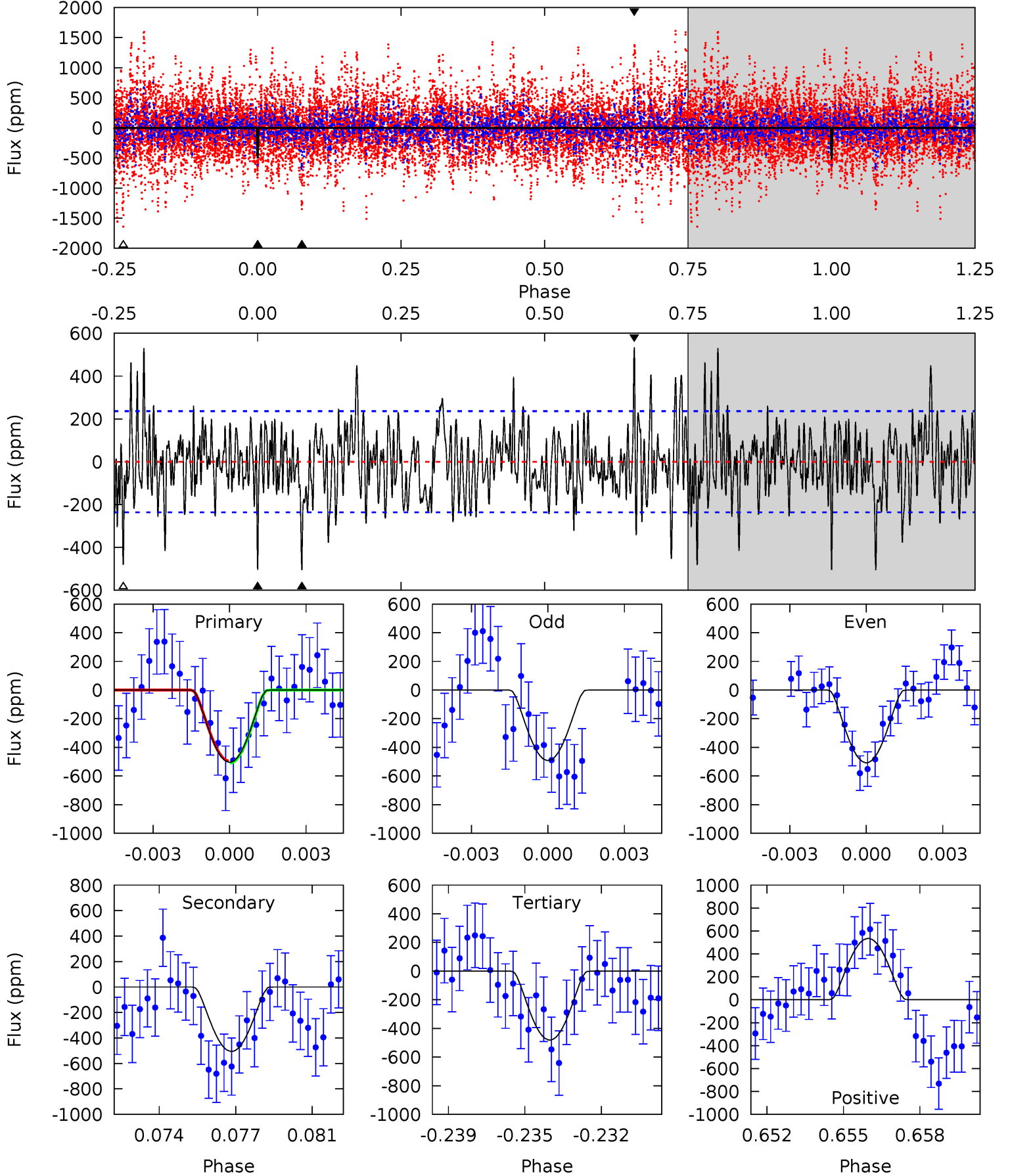
TCE 011099031-04 P= 75.660826 Days $T_0=151.119127$ (BKJD)



DV Model-Shift Uniqueness Test

011099031-04, P = 75.659901 Days, E = 75.426443 Days

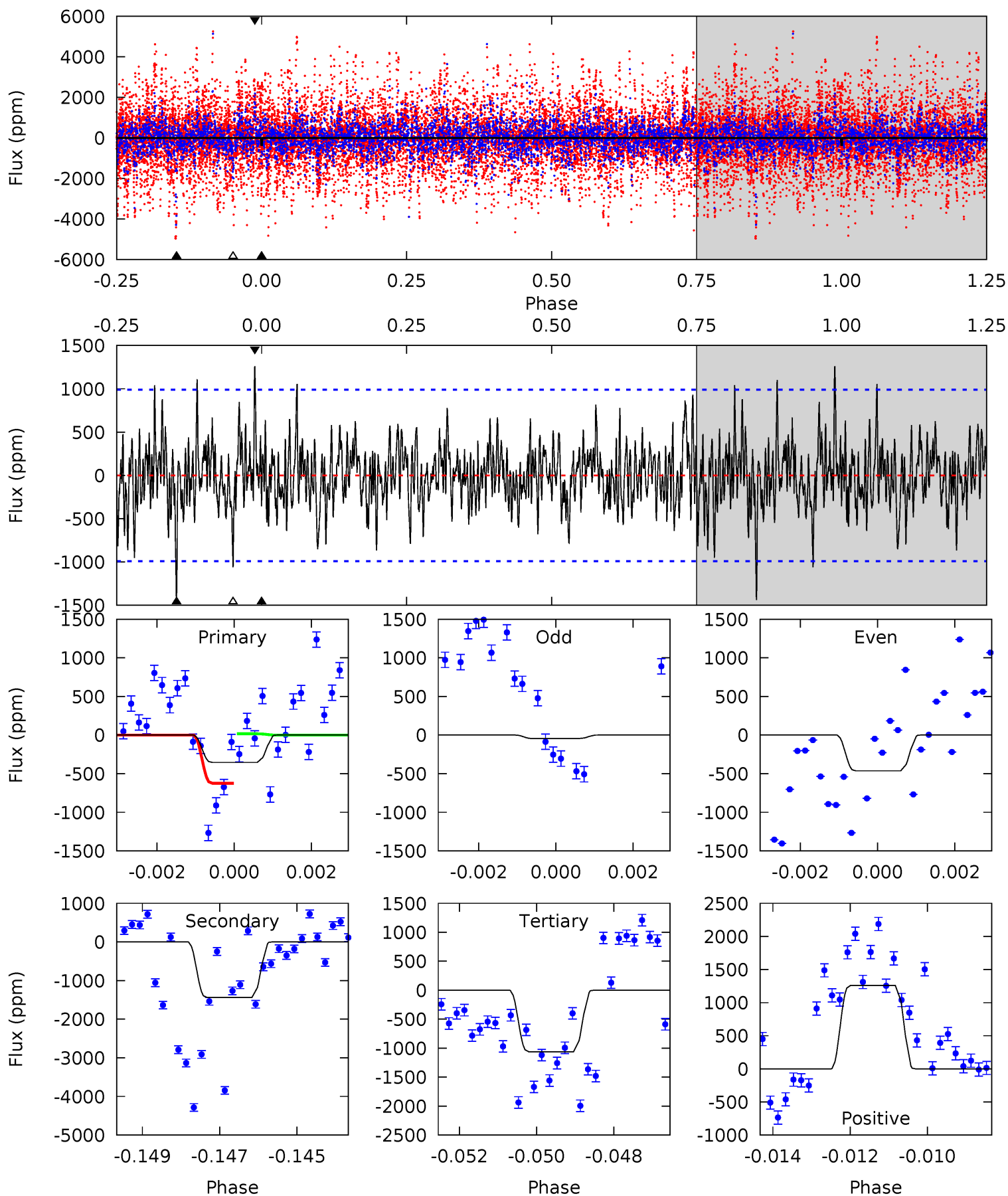
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.2	11.2	10.6	11.8	5.23	2.93	3.11	0.51	-0.68	0.54	-0.65	0.16	1.16	0.51	0.14



Alt Model-Shift Uniqueness Test

011099031-04, P = 75.660826 Days, E = 75.458301 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.90	7.73	5.70	6.76	5.32	3.08	1.68	-3.80	-4.86	2.03	0.96	0.98	0.39	0.47	1.63



Stellar Parameters For KIC 011099031

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6606^{+184}_{-253}	$4.269^{+0.090}_{-0.210}$	$0.080^{+0.250}_{-0.350}$	$1.393^{+0.458}_{-0.212}$	$1.320^{+0.195}_{-0.195}$	$0.688^{+0.348}_{-0.370}$
	+3%/-4%	+2%/-5%	+312%/-438%	+33%/-15%	+15%/-15%	+51%/-54%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 011099031-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-505 ± 45	$11.32^{+11.27}_{-7.57}$	787^{+59}_{-45}	3973^{+2346}_{-771}	302^{+2557}_{-226}
Alt.	-1438 ± 186	$10.10^{+11.76}_{-6.86}$	788^{+60}_{-48}	5119^{+4109}_{-1305}	1094^{+9023}_{-862}

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

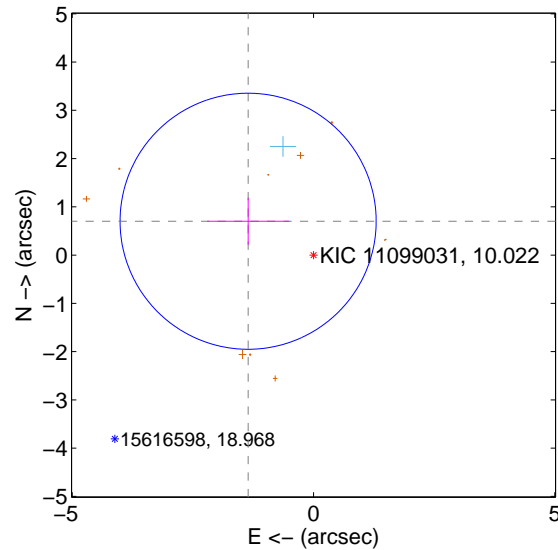
Supplemental centroid analysis for 011099031-04. **Kepler magnitude: 10.02.** Transit SNR 8.44

There are 1 quarters with good PRF difference image offsets

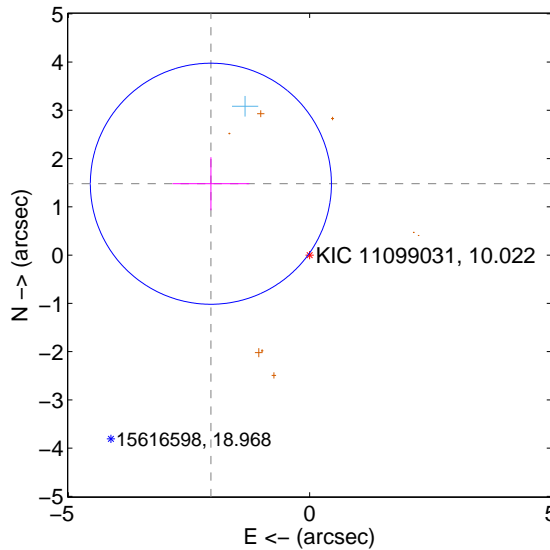
The direct PRF centroid is offset from the target star catalog position by about 1.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.526 ± 0.884	1.73	1.355 ± 0.850	0.701 ± 0.487
PRF-fit source offset from KIC position	2.524 ± 0.833	3.03	2.045 ± 0.795	1.479 ± 0.550
photometric centroid source offset	0.46 ± 0.40	1.18	0.46 ± 0.40	0.07 ± 0.23

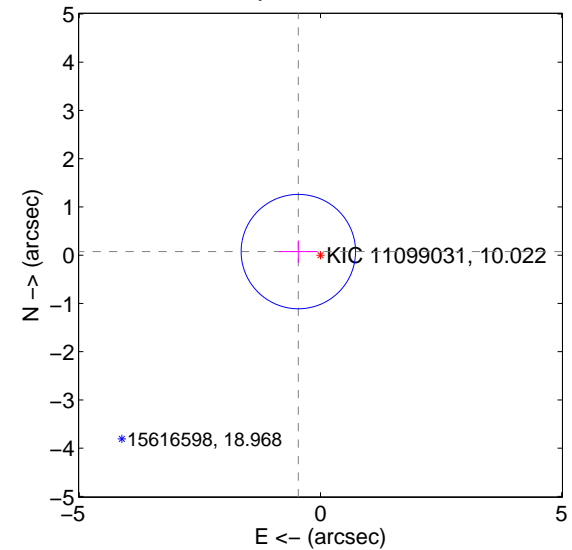
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

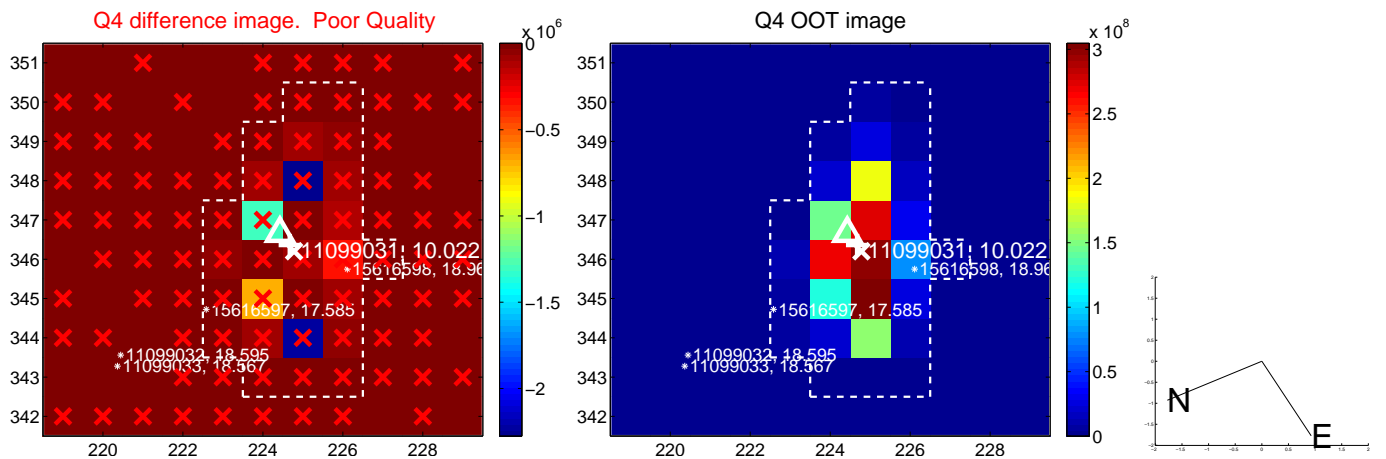
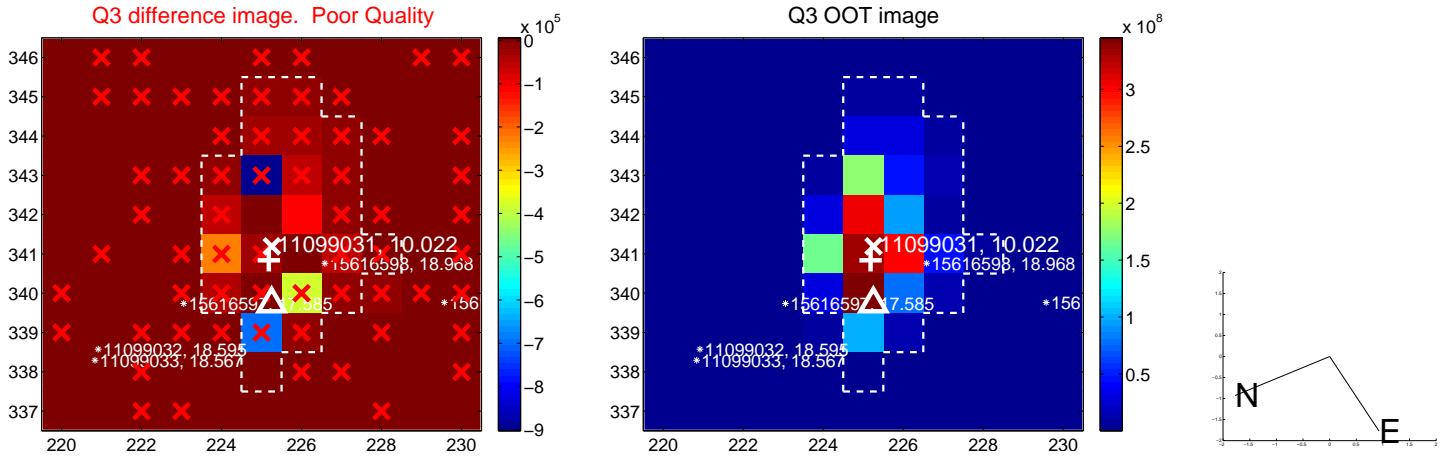
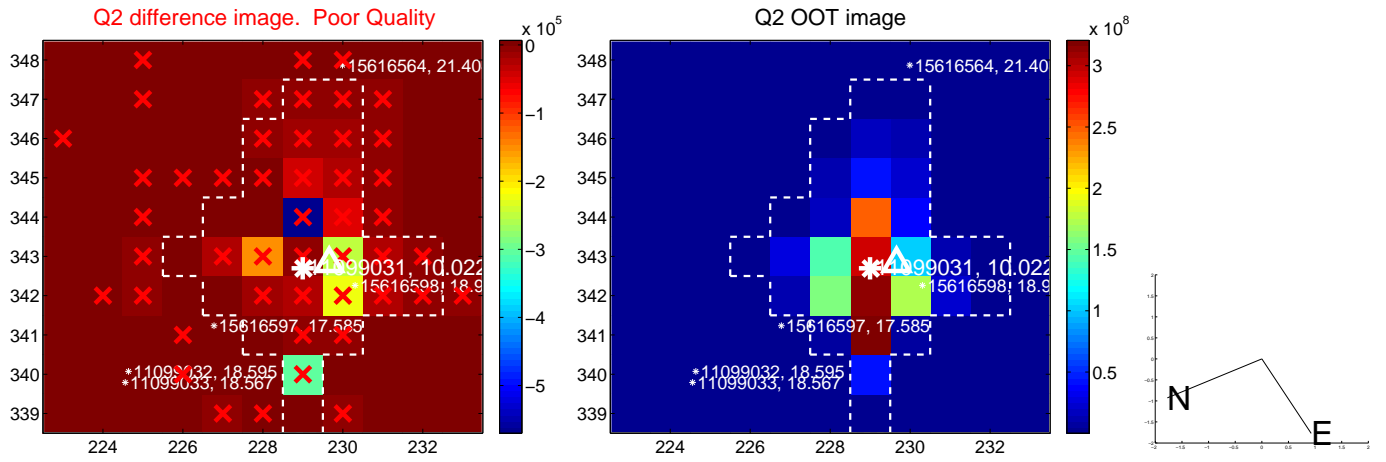
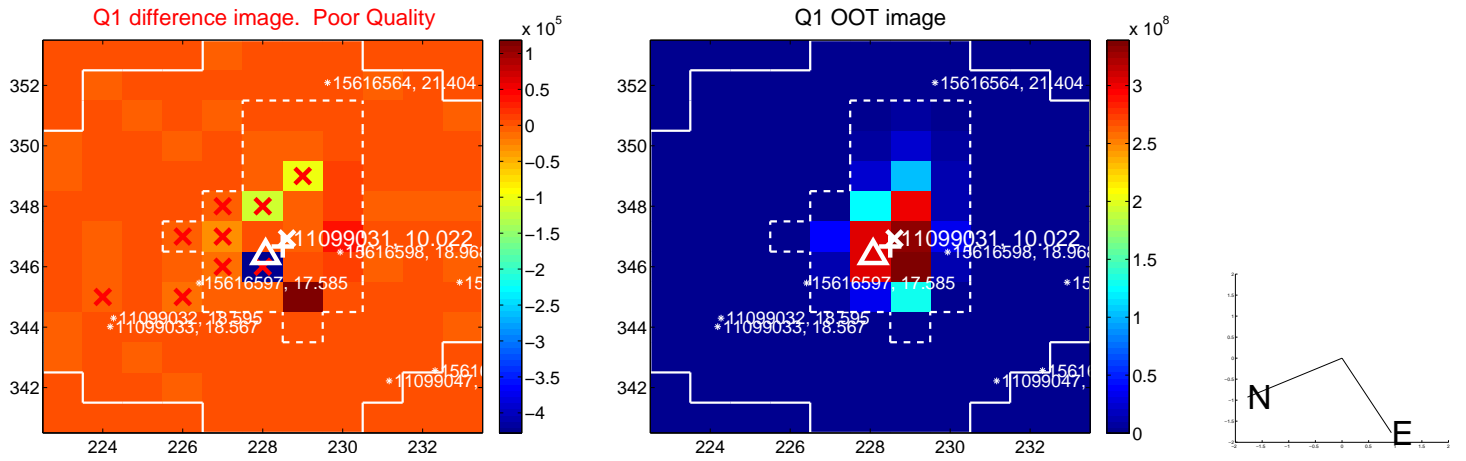


offset from photometric centroids

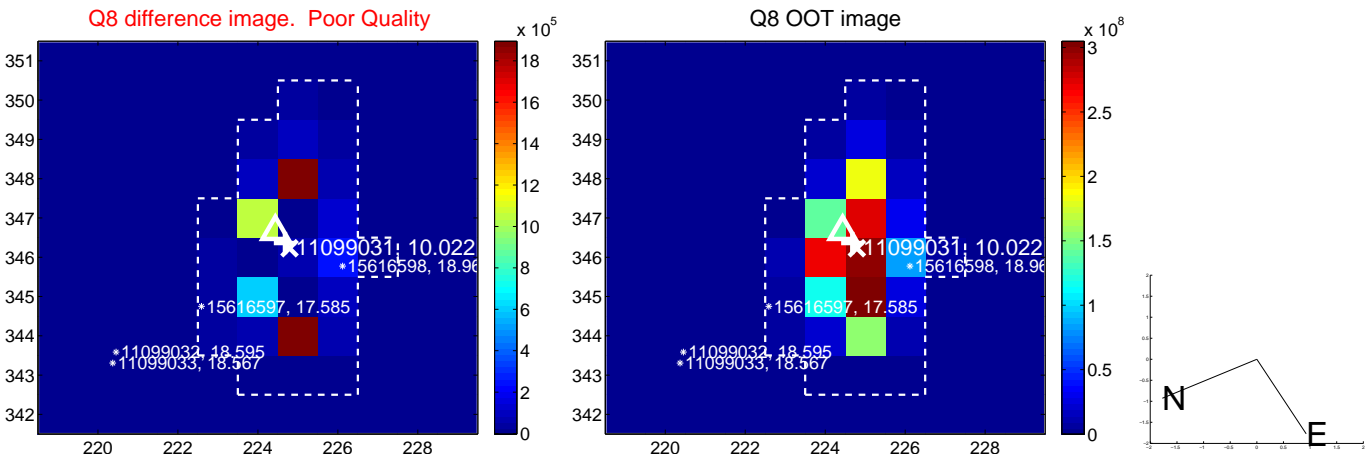
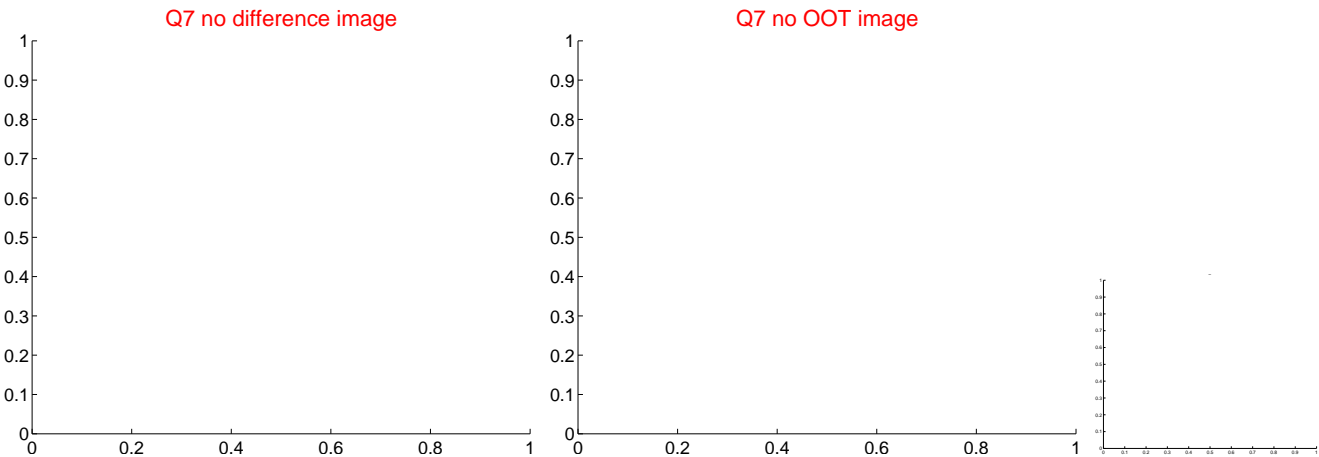
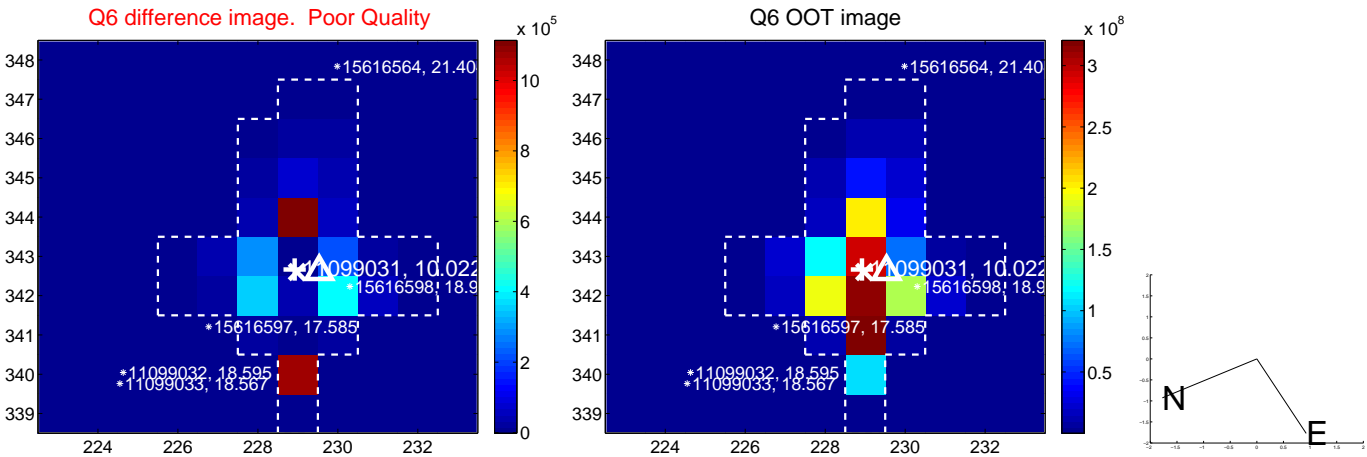
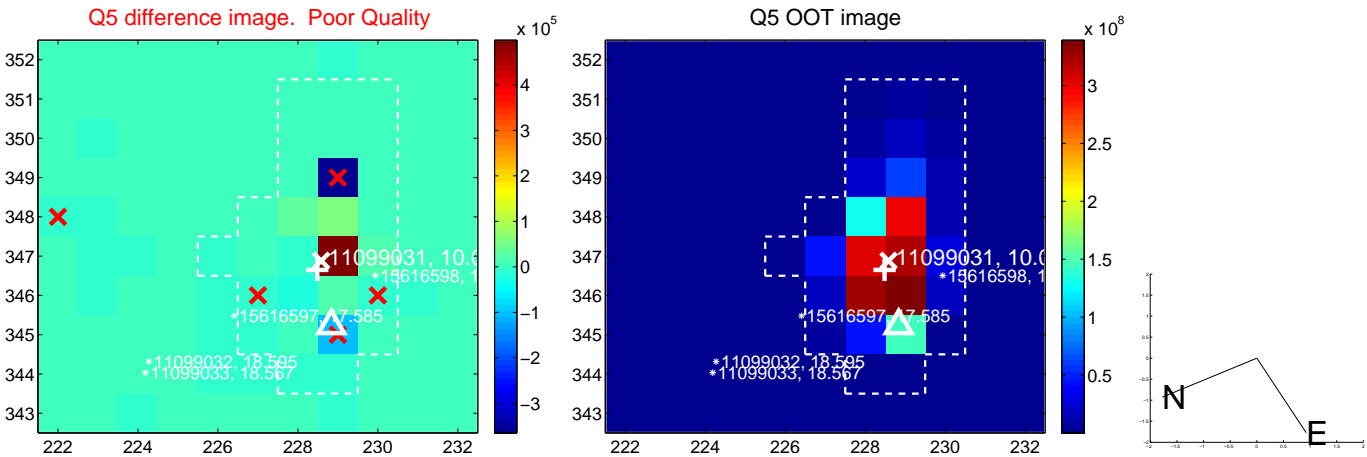


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

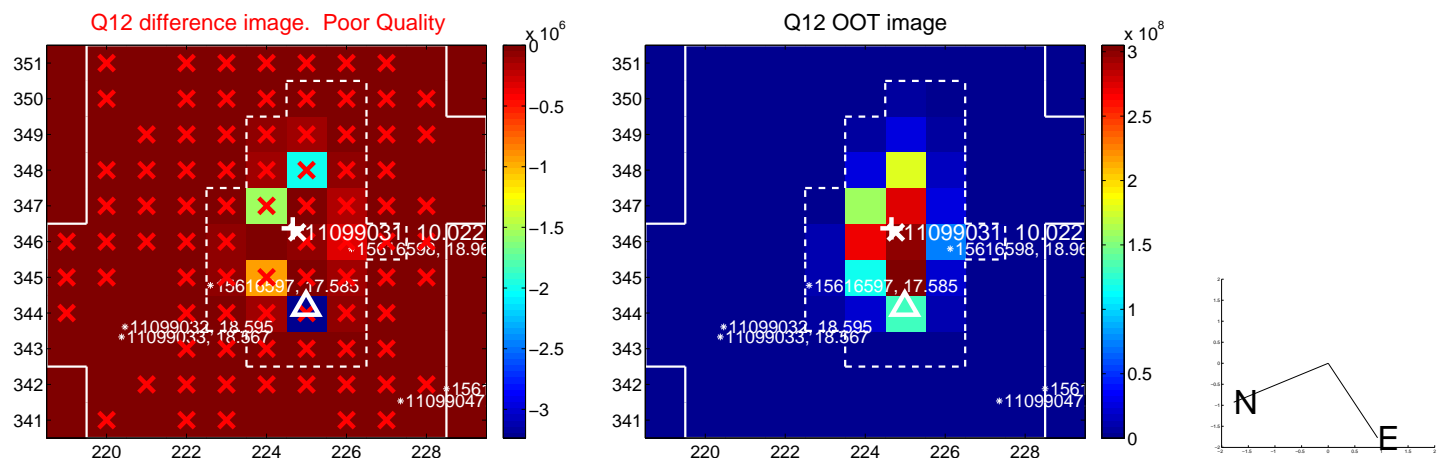
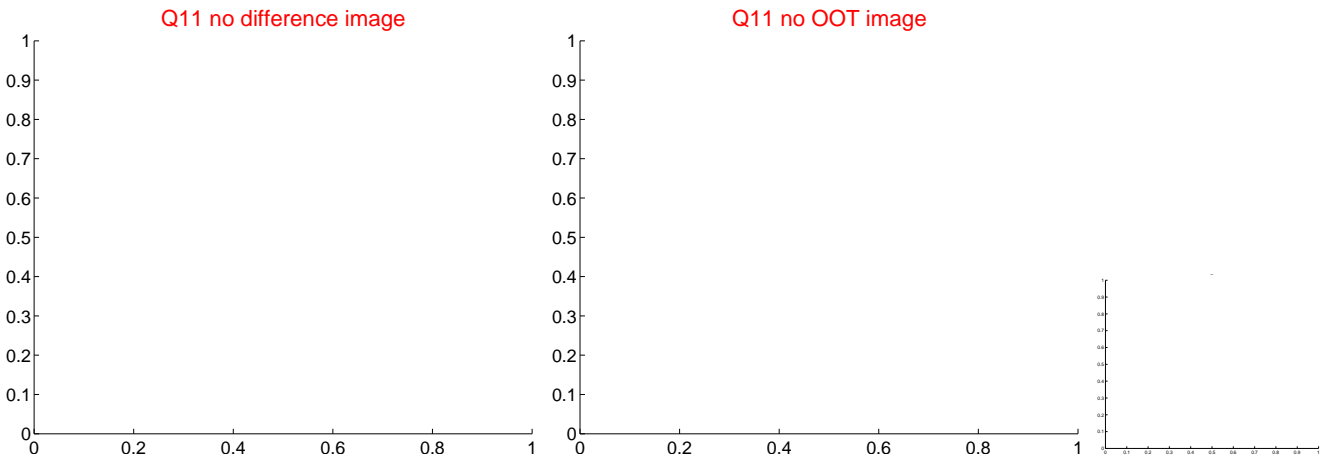
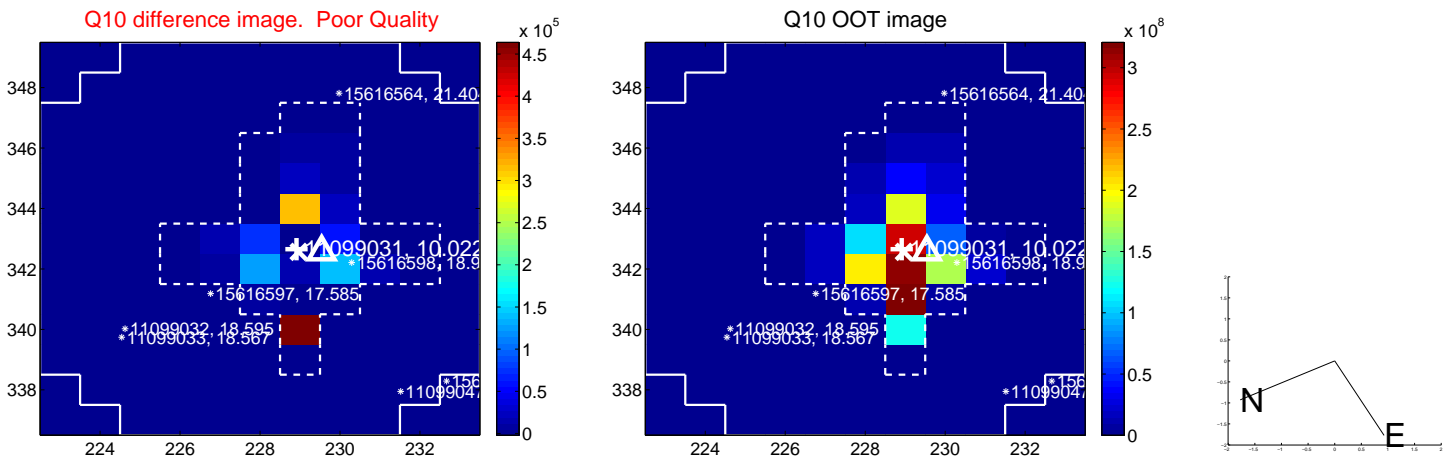
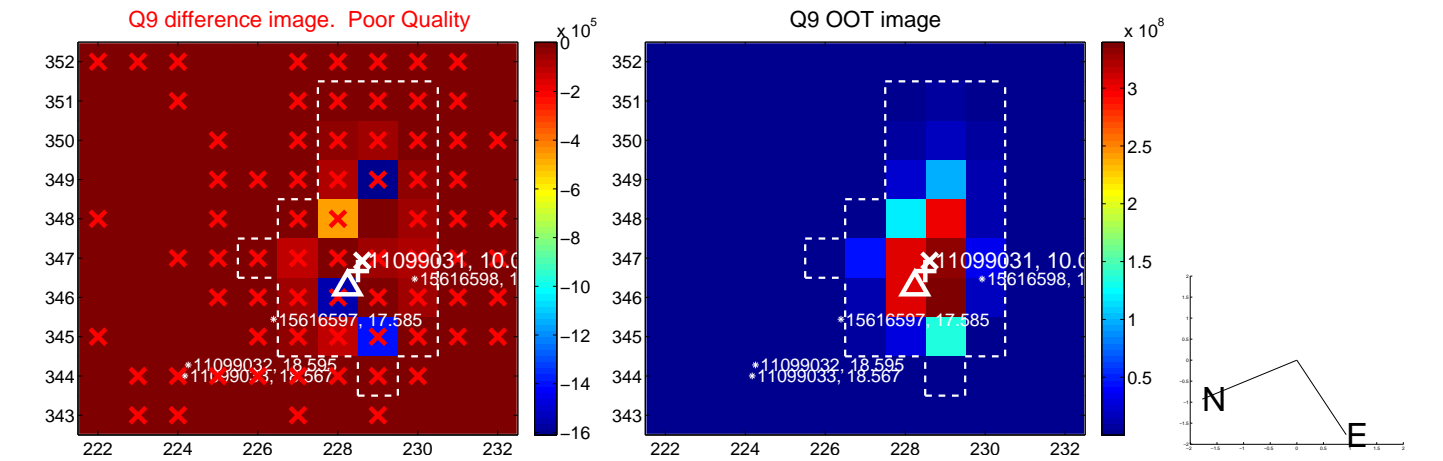
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



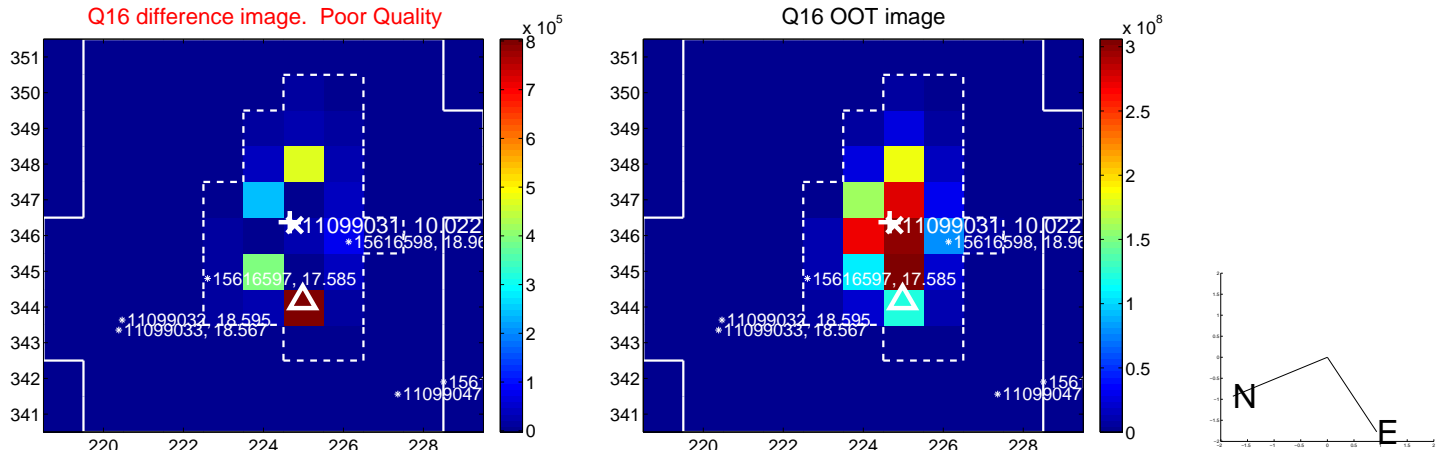
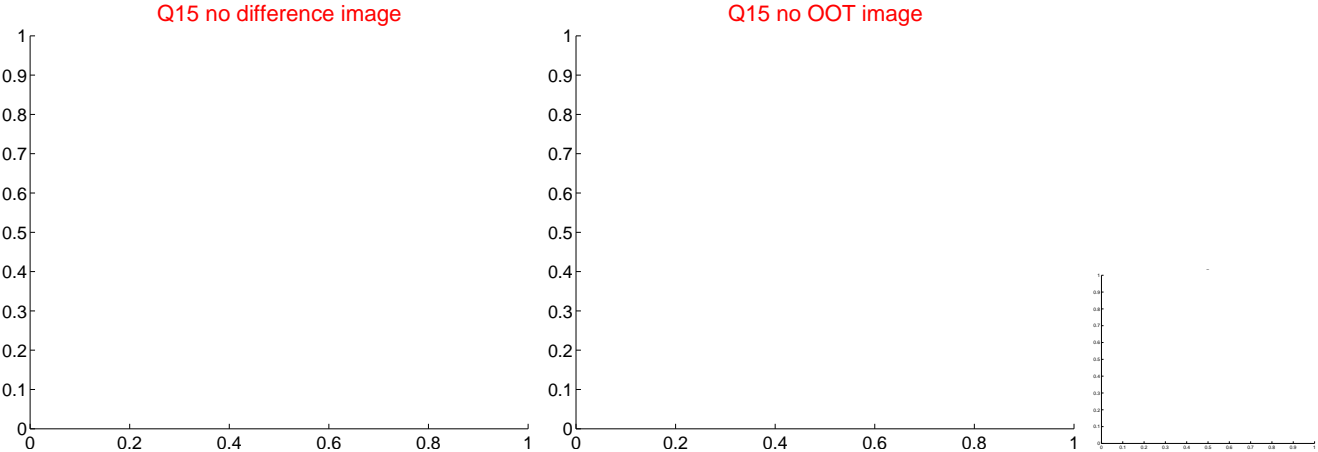
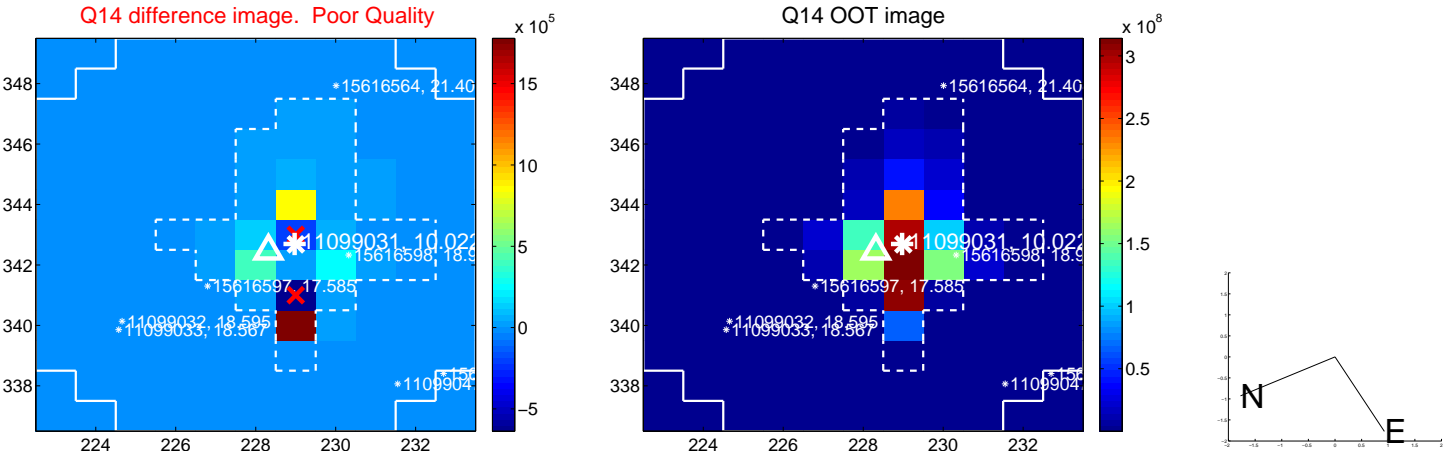
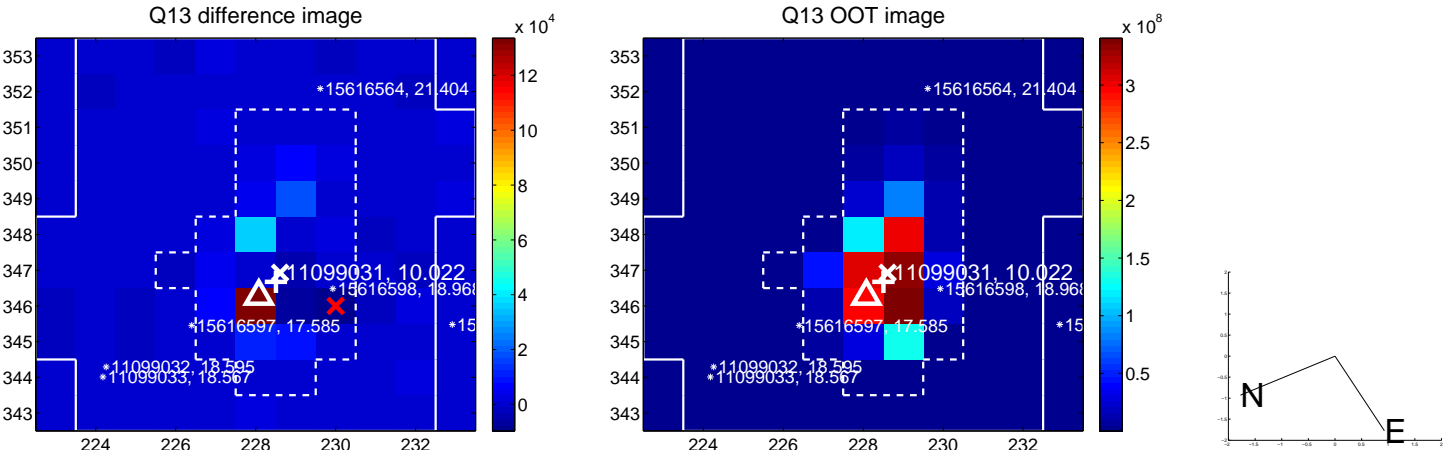
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



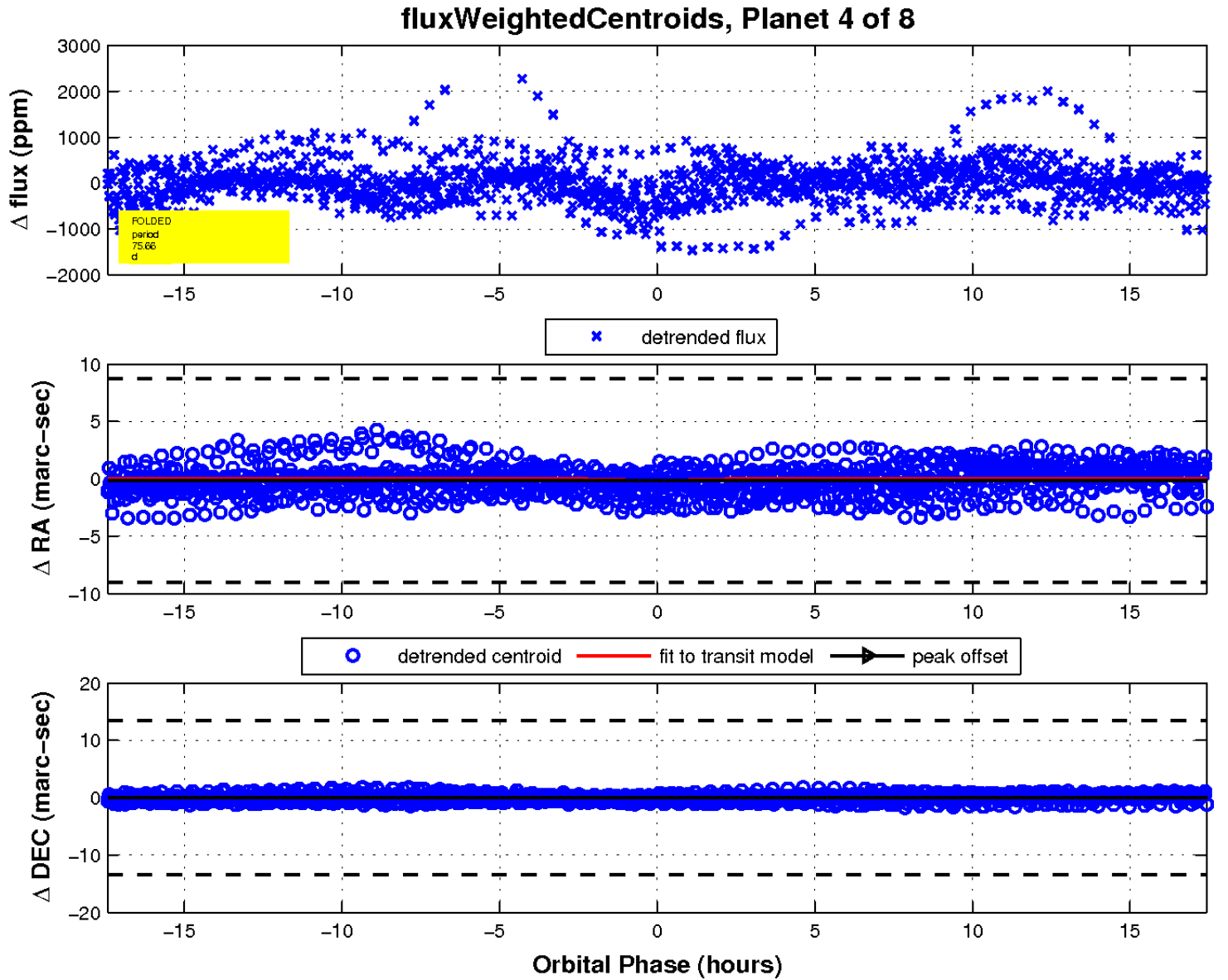
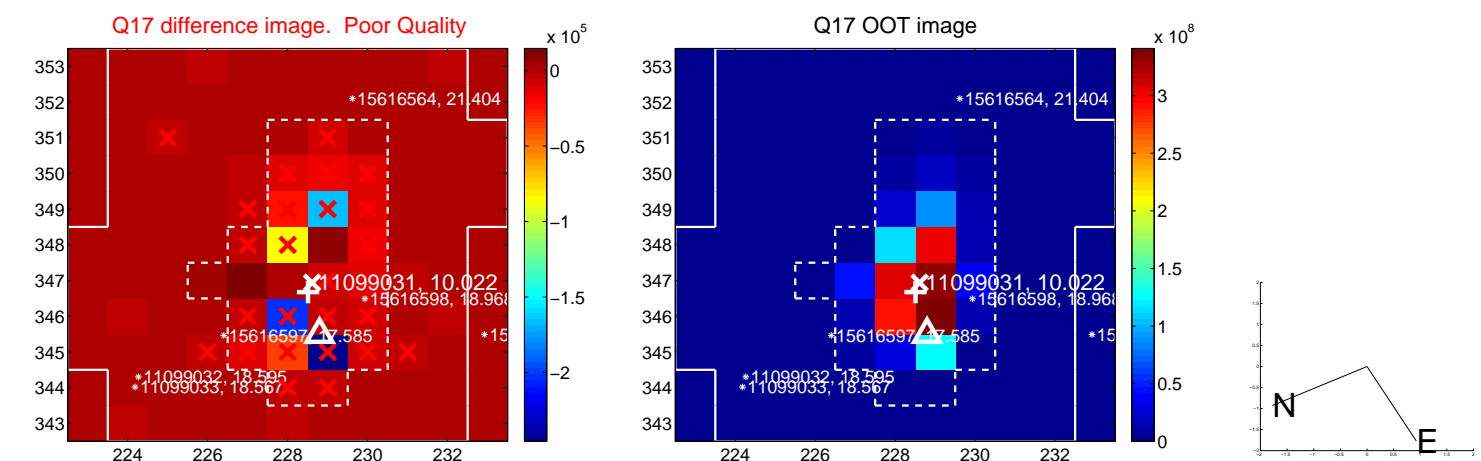
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



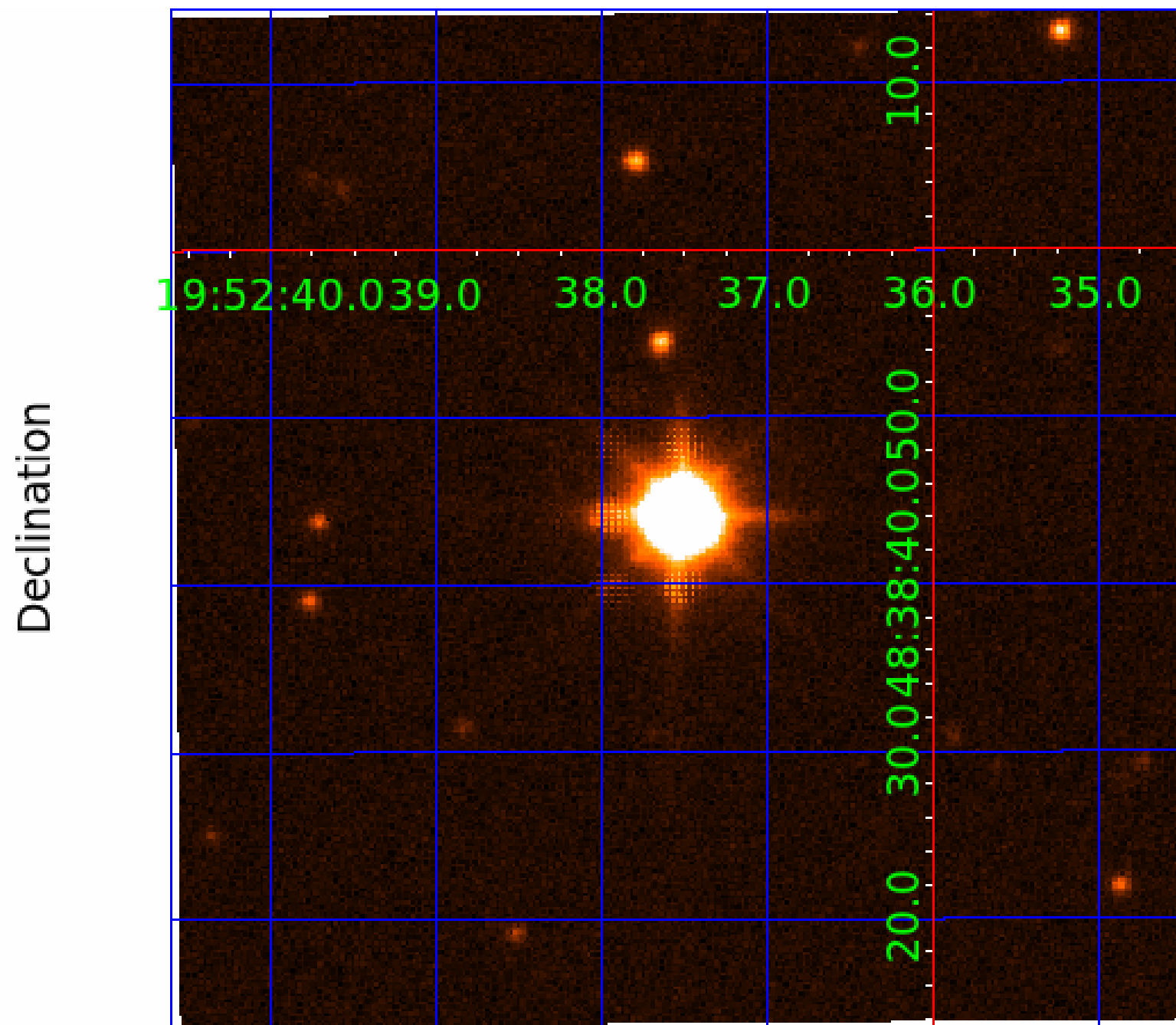
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 011099031

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})
011099031-01	OBS	No	0.928695	131.941079	5.7	4.862	8.1	1.3	1.39	6606	0.39	7945.45
011099031-02	OBS	No	5.262780	135.678566	191.2	4.335	9.3	9.9	1.39	6606	2.25	786.43
011099031-04	OBS	No	75.659901	151.086344	649.6	5.813	8.0	8.4	1.39	6606	6.80	22.50
011099031-05	OBS	No	137.285146	175.519949	530.1	9.189	8.5	6.8	1.39	6606	3.71	10.16
011099031-06	OBS	No	102.933229	195.373869	721.9	6.548	7.9	6.4	1.39	6606	4.73	14.92
011099031-07	OBS	No	34.775566	139.703564	337.1	2.433	7.4	6.8	1.39	6606	2.99	63.42
011099031-08	OBS	No	54.129085	138.869797	164.0	3.787	7.6	3.1	1.39	6606	2.06	35.16

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011099031-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
011099031-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
011099031-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
011099031-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED
011099031-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
011099031-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
011099031-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

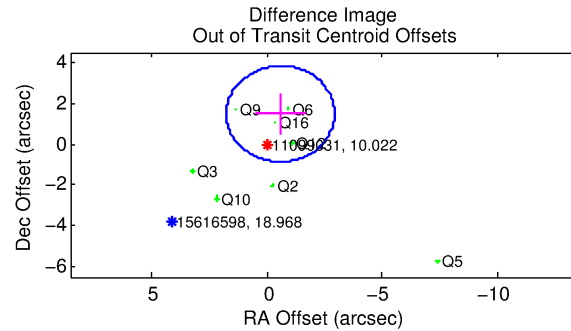
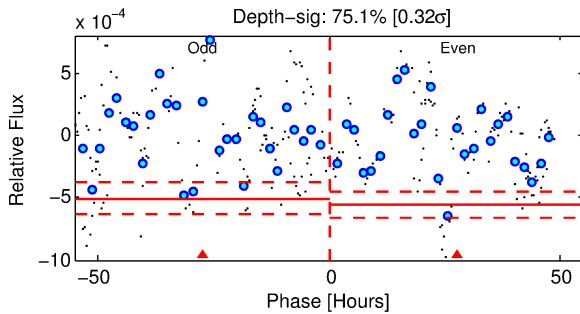
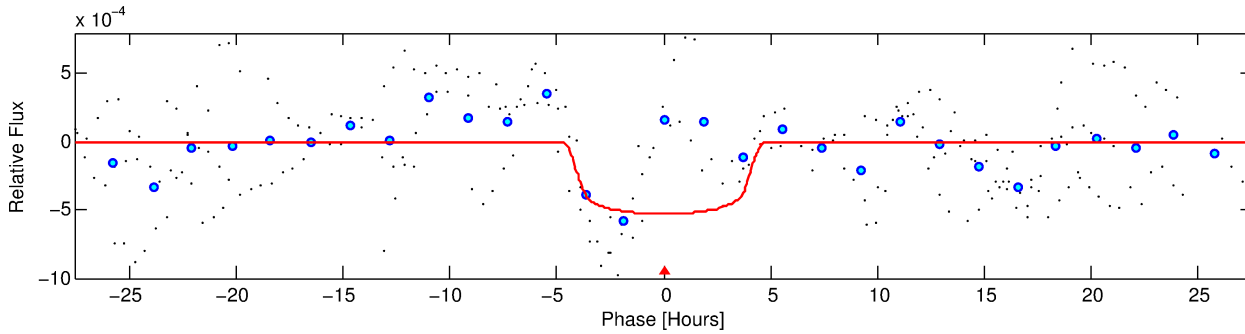
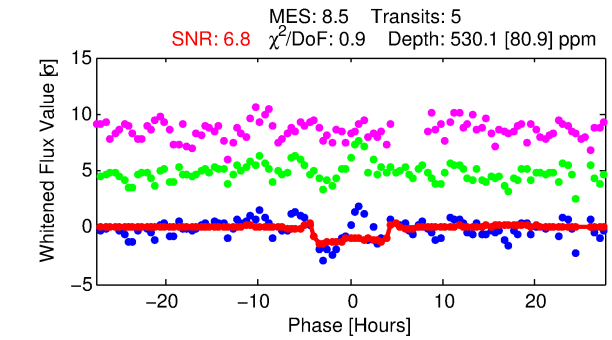
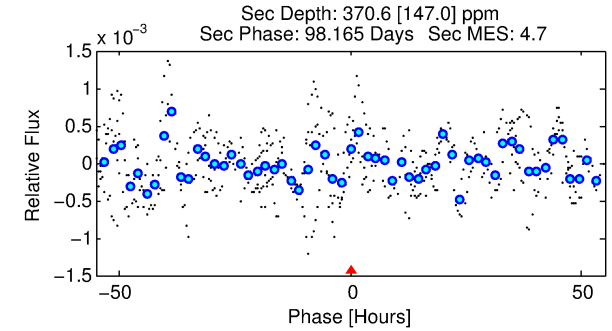
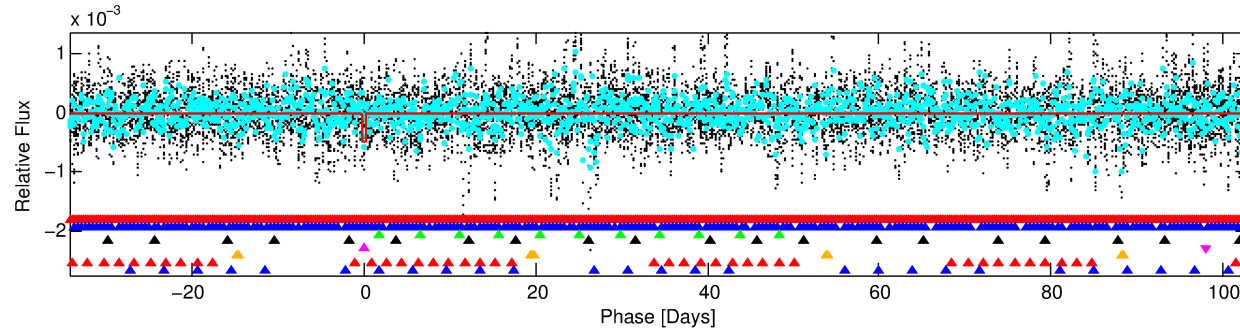
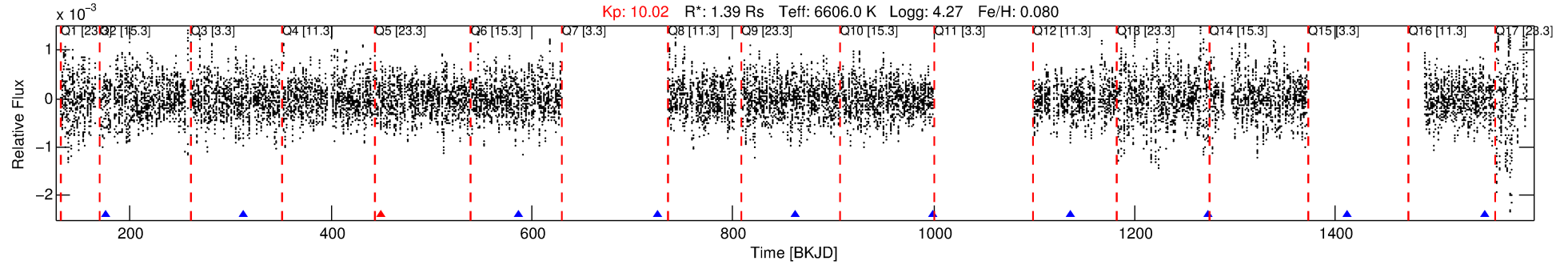
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011099031-05

No Significant Match Found

DV One-Page Summary

KIC: 11099031 Candidate: 5 of 8 Period: 137.285 d



DV Fit Results:

Period = 137.28515 [0.00211] d
Epoch = 175.5199 [0.0125] BKJD
Rp/R* = 0.0244 [0.0025]
a/R* = 58.49 [18.90]
b = 0.89 [0.08]
Seff = 10.17 [4.26]
Teq = 455 [48] K
Rp = 3.71 [1.28] Re
a = 0.5707 [0.1553] AU
Ag = 4822.50 [2862.10] [1.68σ]
Teffp = 5866 [694] K [7.78σ]

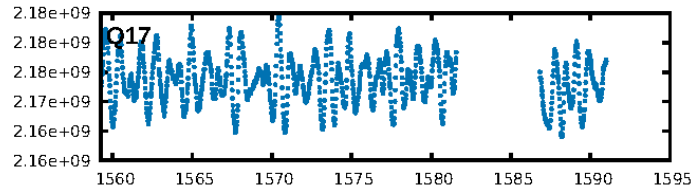
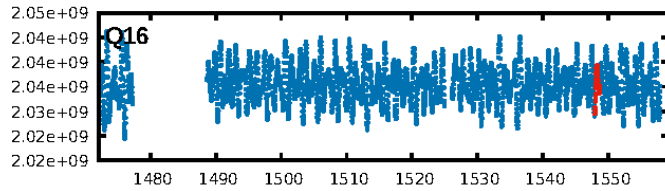
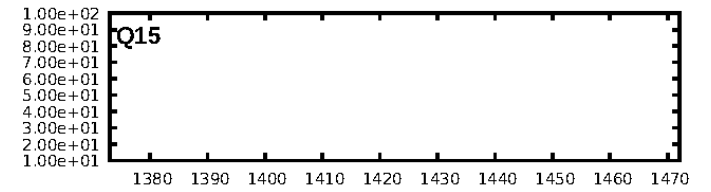
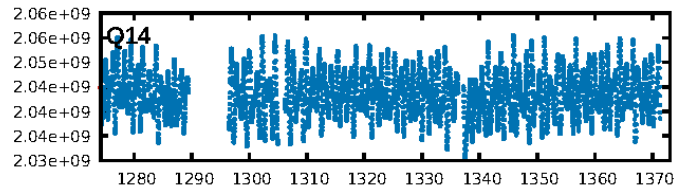
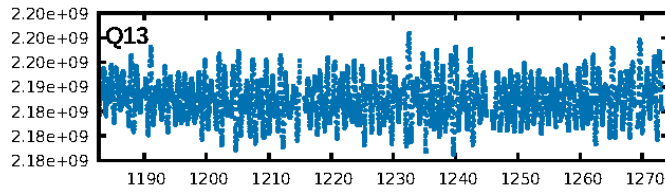
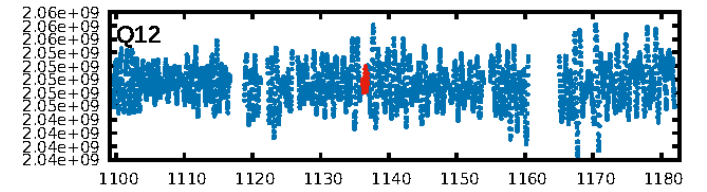
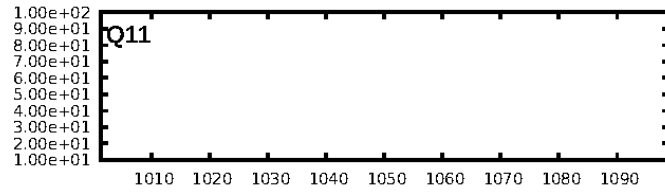
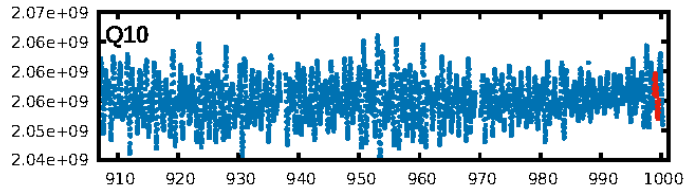
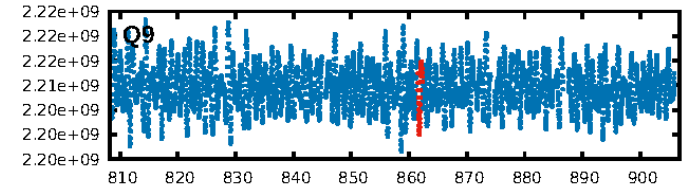
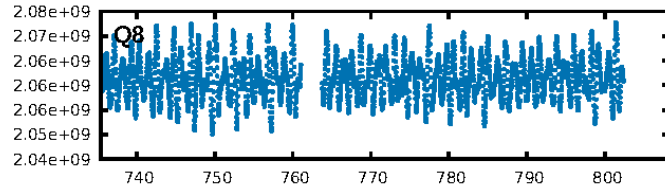
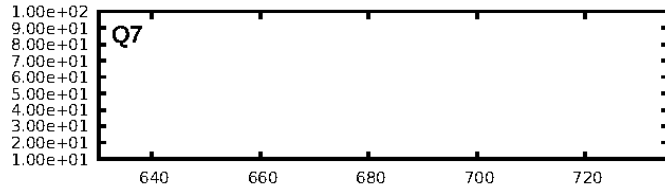
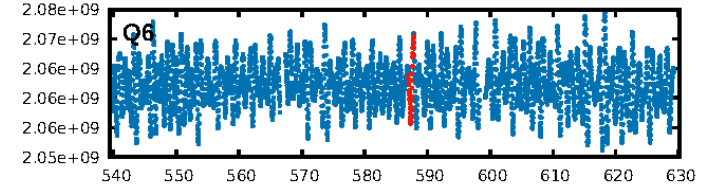
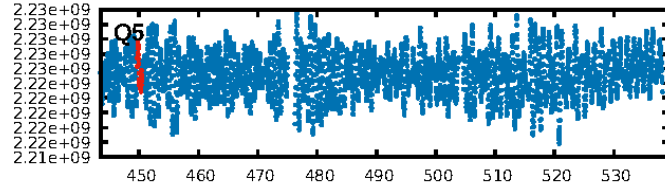
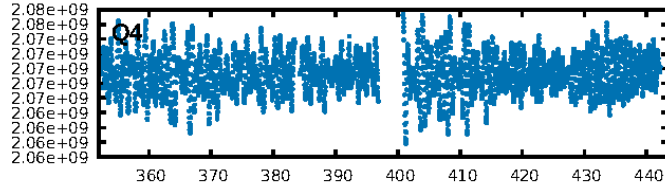
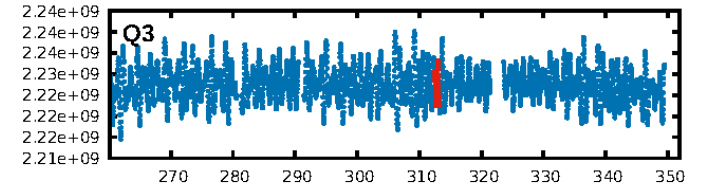
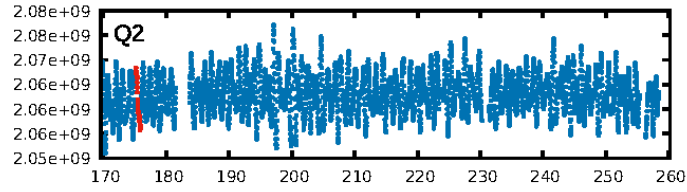
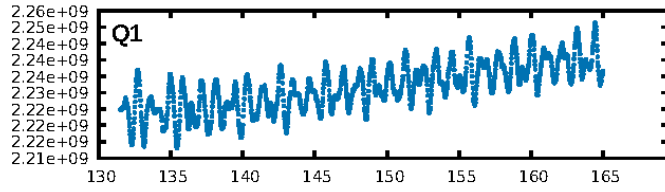
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [9.50σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 3.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.08e-09
RollingBand-fgt: 0.80 [4/5]
GhostDiagnostic-chr: N/A
Centroid-sig: 1.4%
Centroid-so: 1.721 arcsec [2.98σ]
OotOffset-rm: 1.596 arcsec [2.04σ]
KicOffset-rm: 2.021 arcsec [2.85σ]
OotOffset-st: 3/1/2/2 [8]
KicOffset-st: 3/1/2/2 [8]
DiffImageQuality-fgm: 0.12 [1/8]
DiffImageOverlap-fno: 0.00 [0/8]

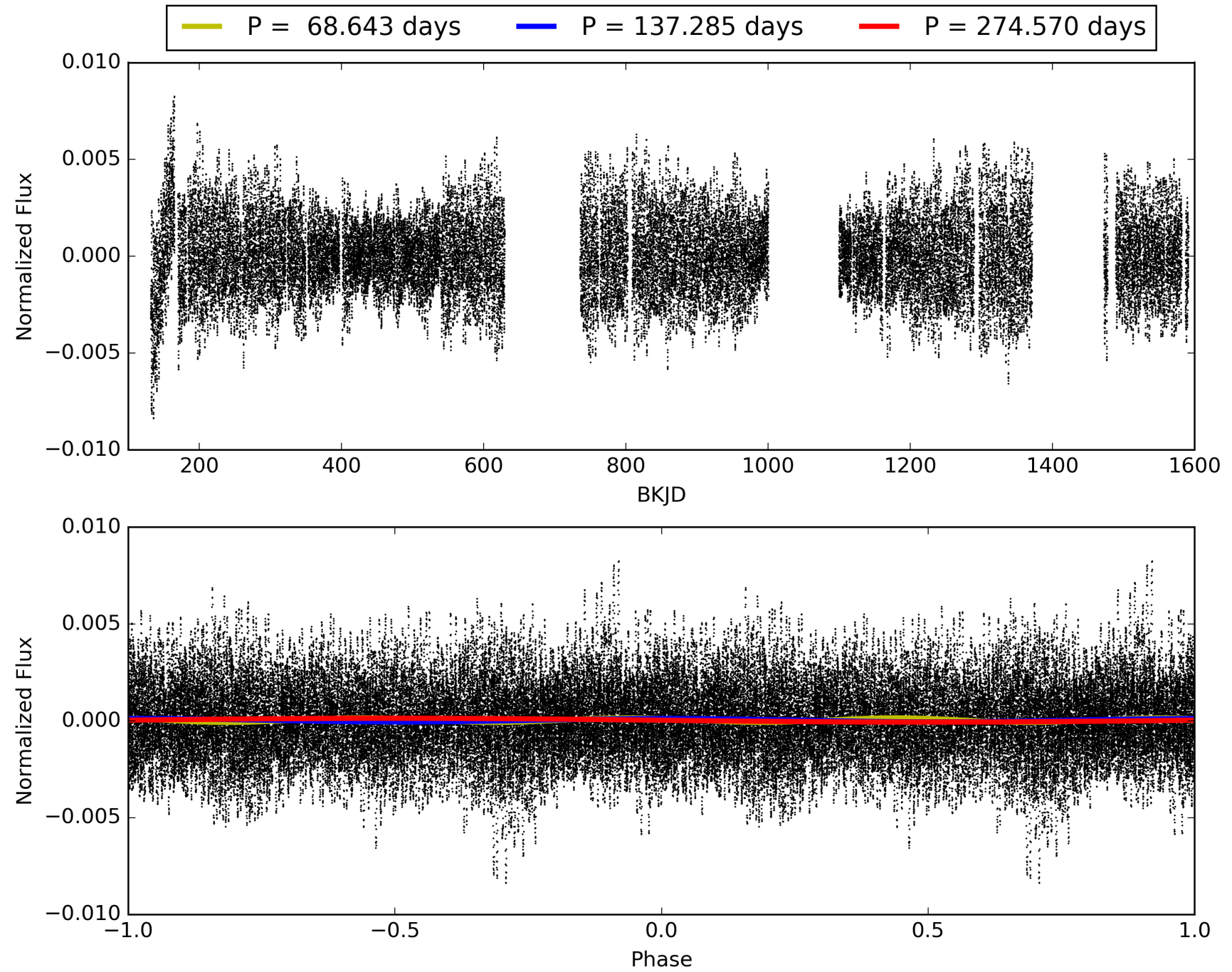
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 10:15:35 Z

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

TCE 011099031-05, PDC Light Curves

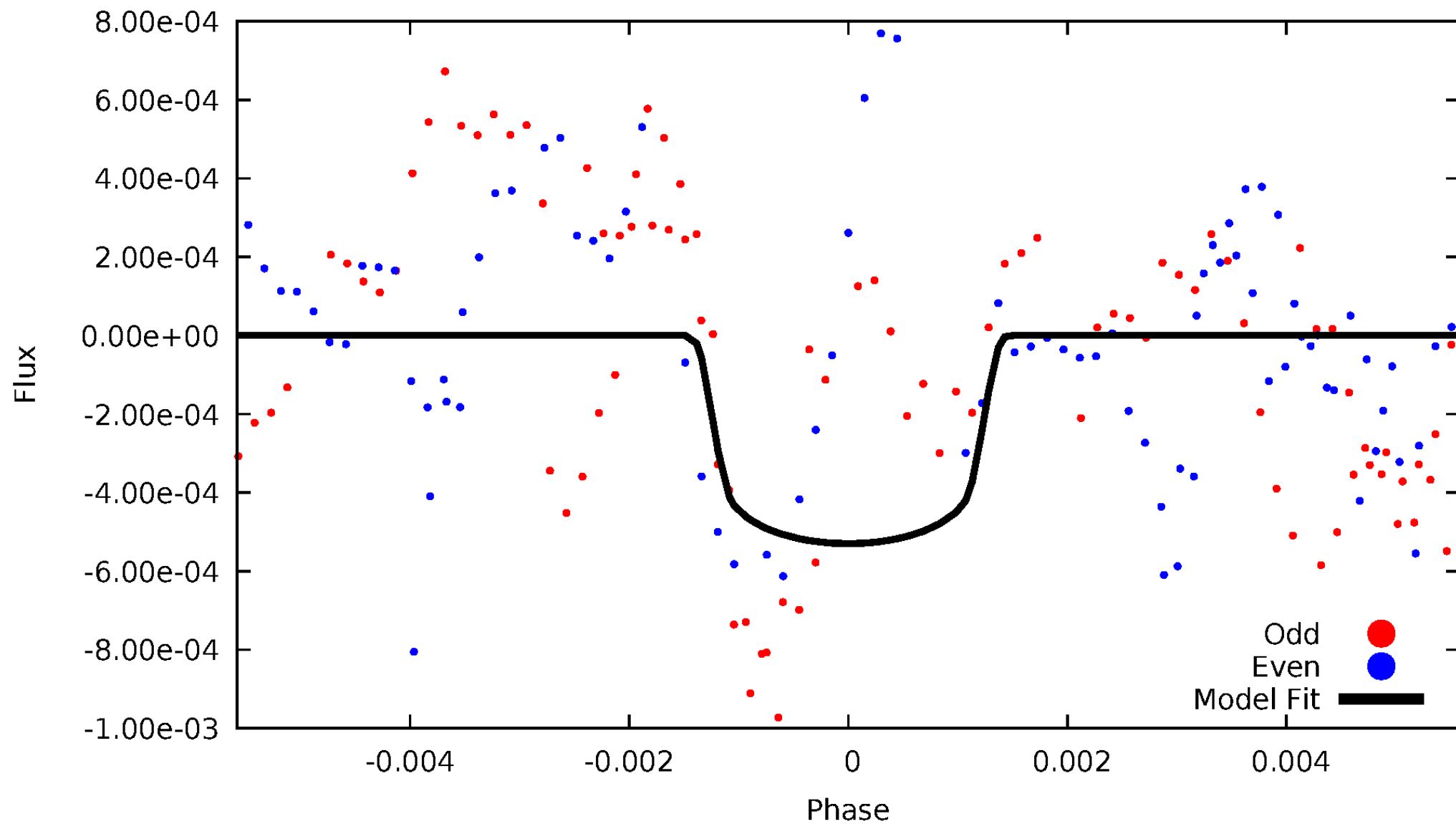


TCE 011099031-05



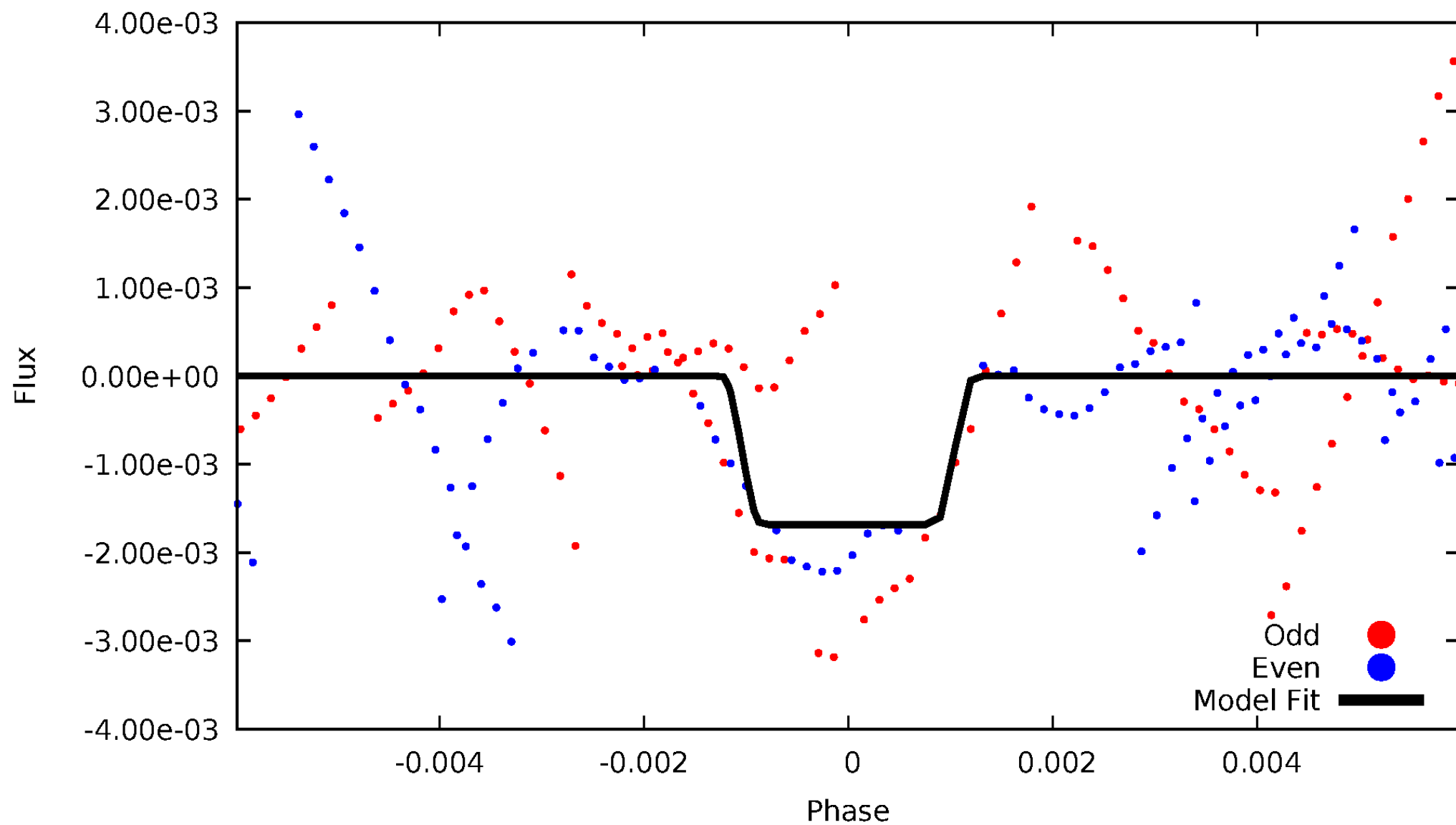
DV Odd/Even

TCE 011099031-05



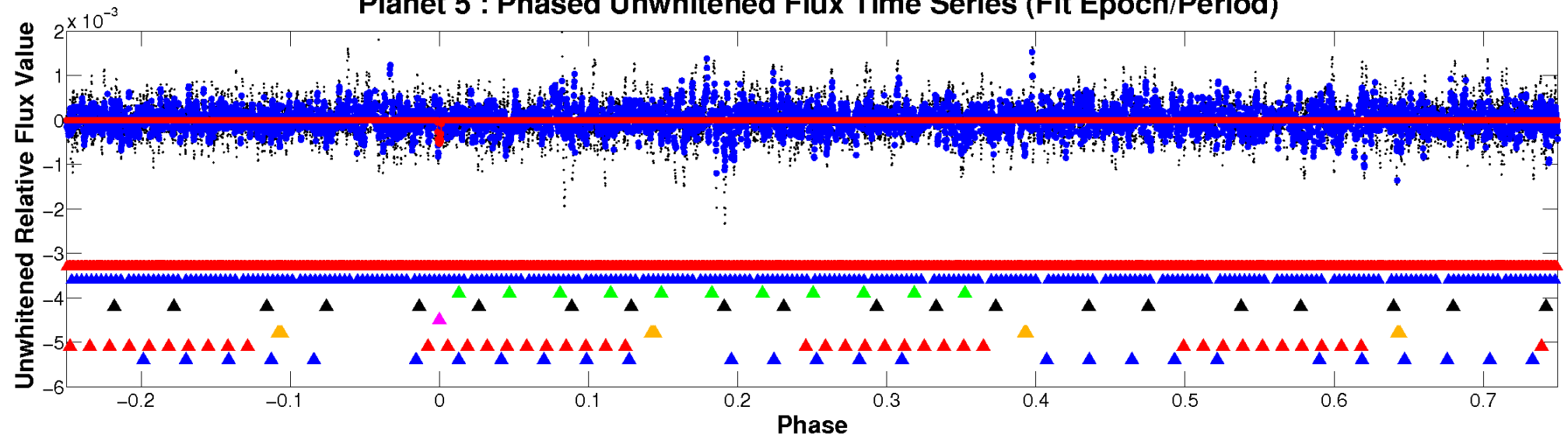
ALT Odd/Even

TCE 011099031-05

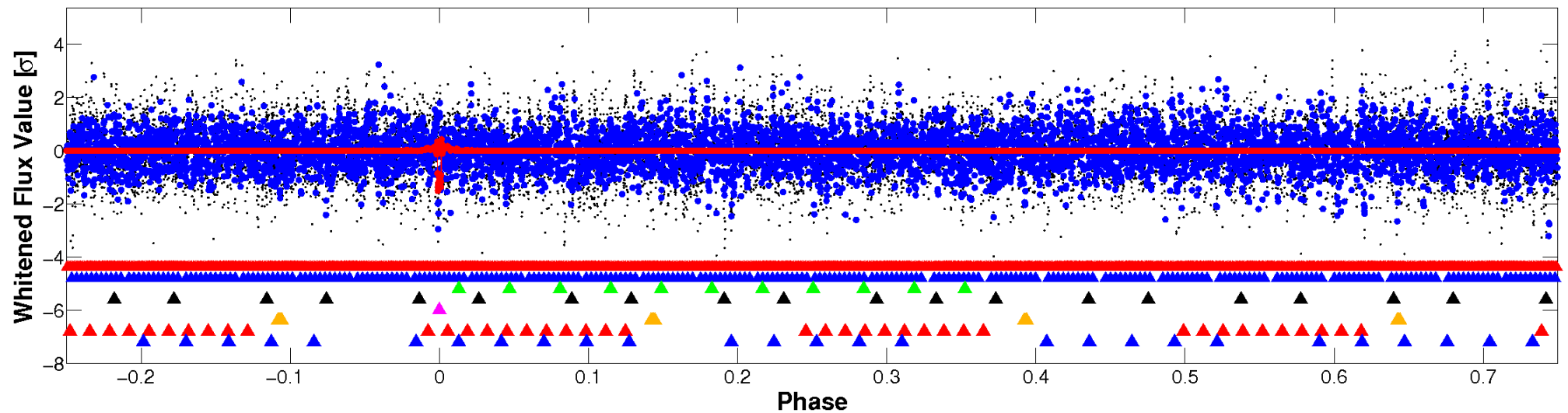


Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

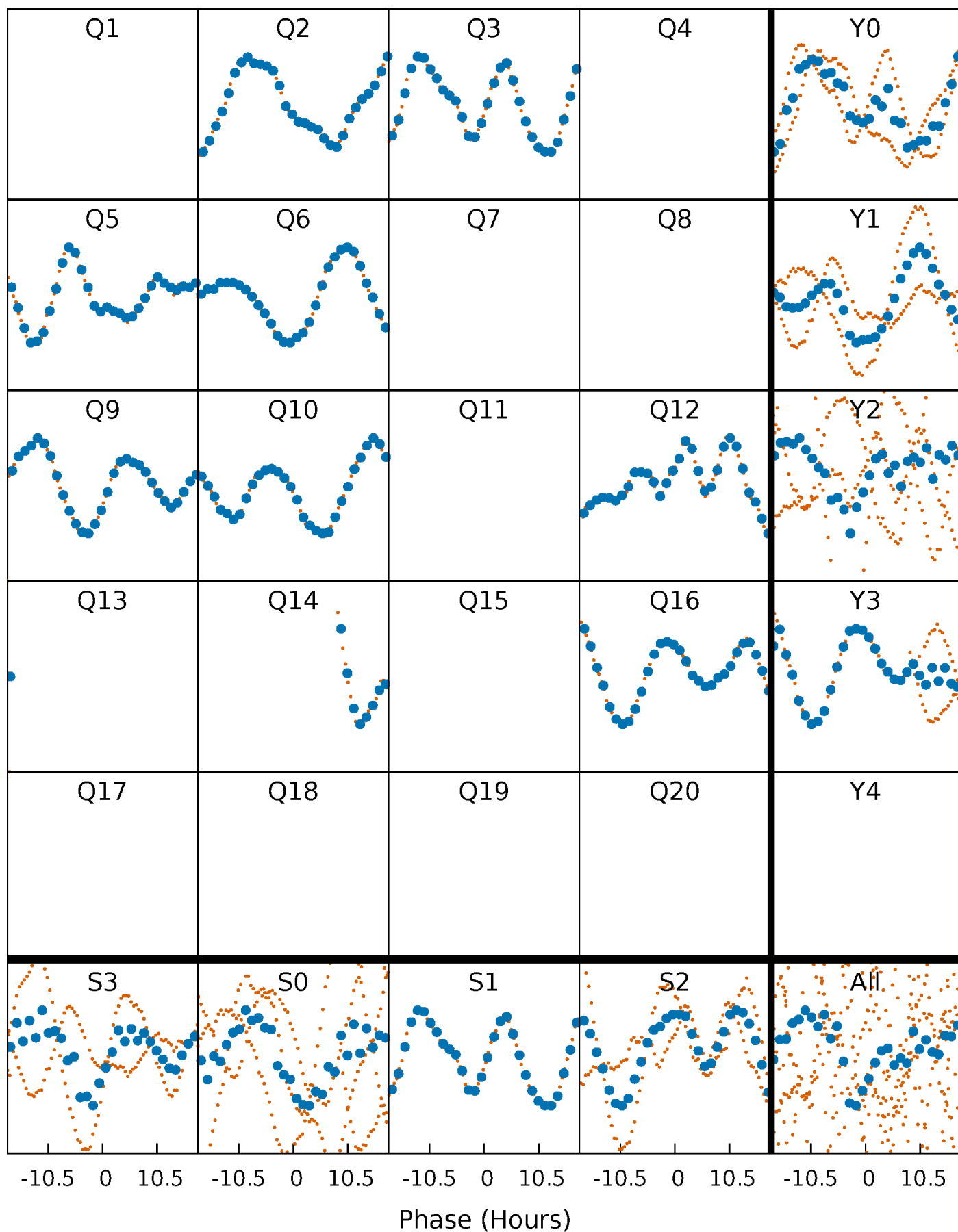


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



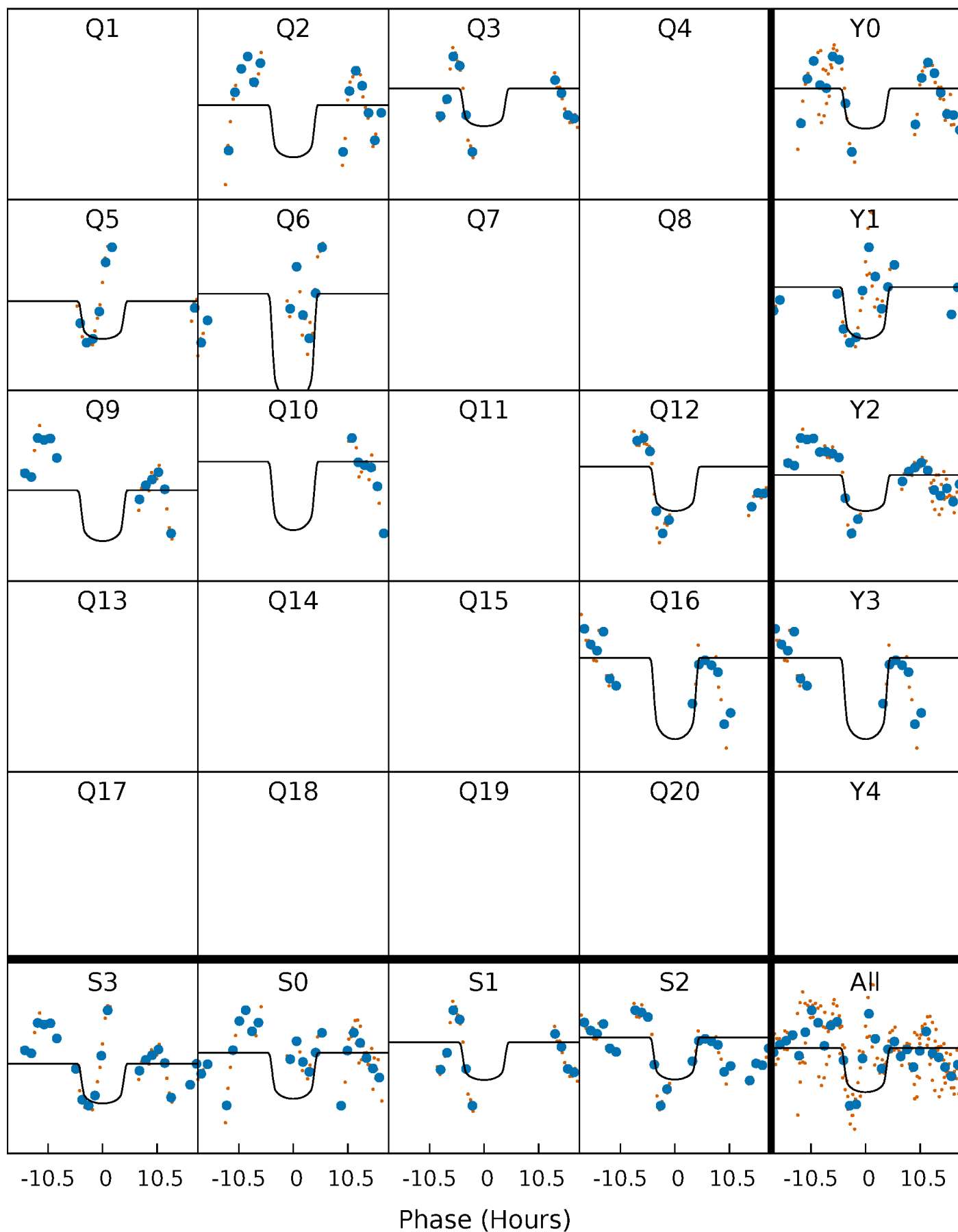
PDC Quarter-Phased Transit Curves

TCE 011099031-05 $P=137.285146$ Days $T_0=175.519949$ (BKJD)



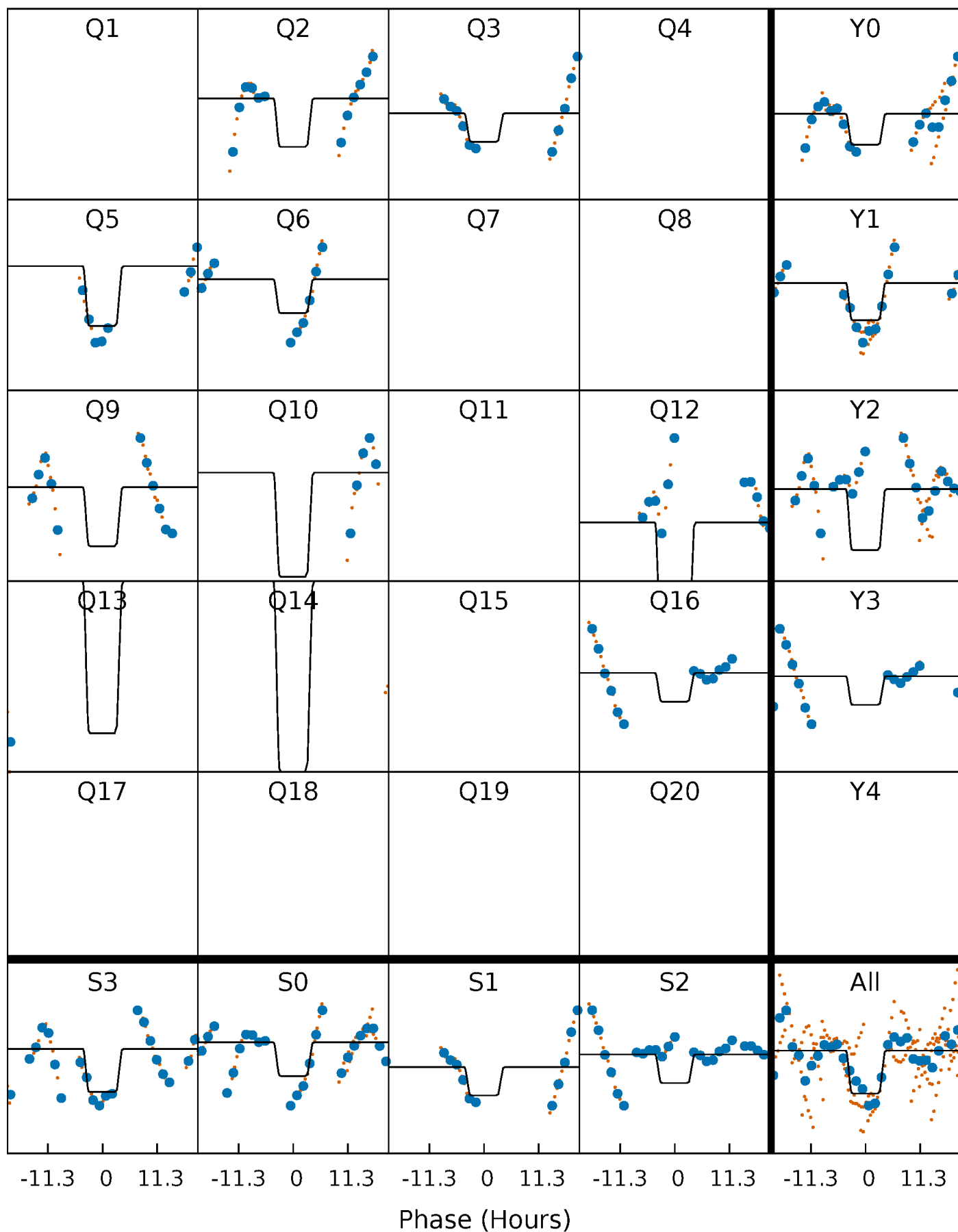
DV Quarter-Phased Transit Curves

TCE 011099031-05 $P=137.285146$ Days $T_0=175.519949$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

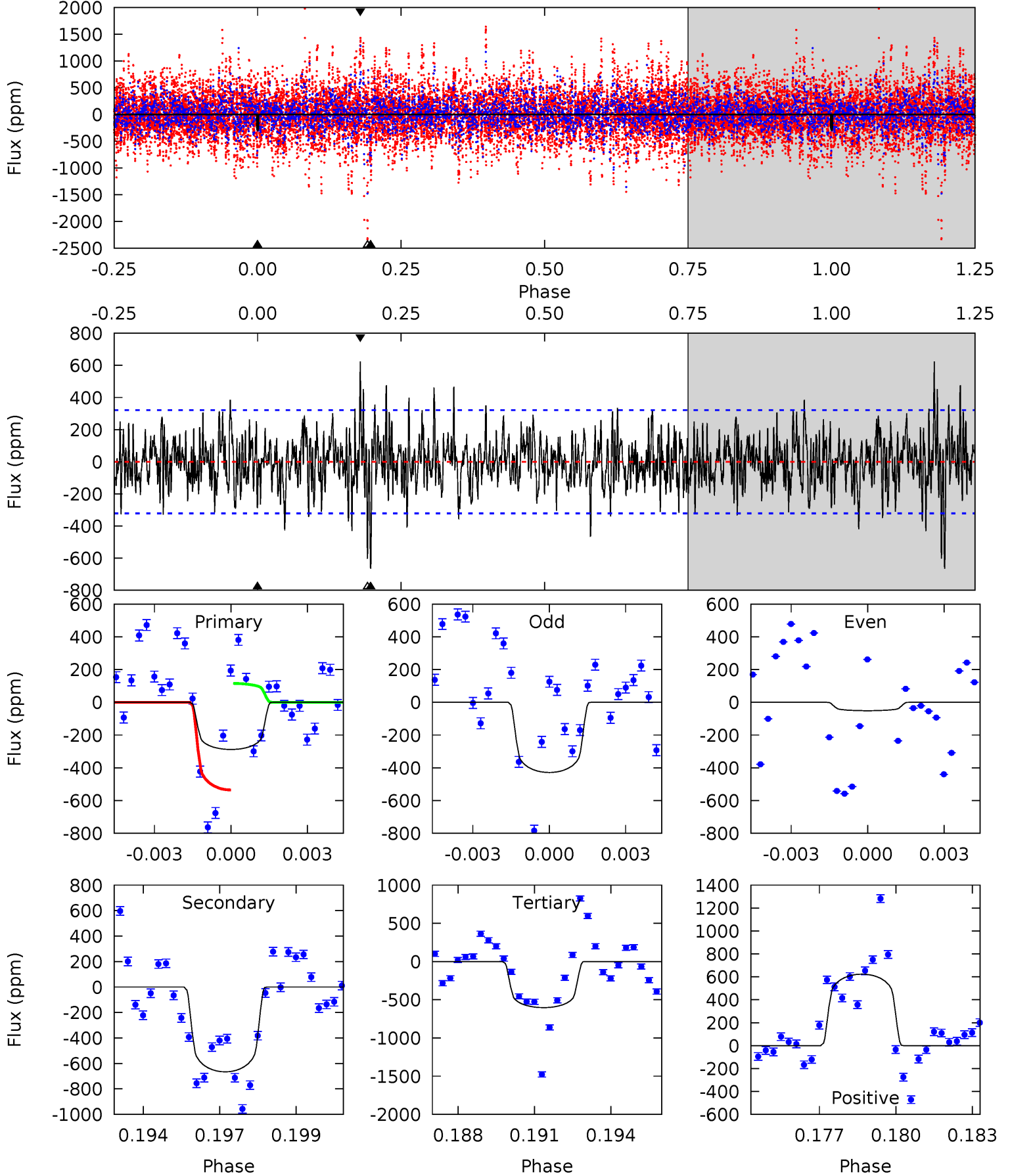
TCE 011099031-05 $P=137.281581$ Days $T_0=175.521533$ (BKJD)



DV Model-Shift Uniqueness Test

011099031-05, $P = 137.285146$ Days, $E = 38.234803$ Days

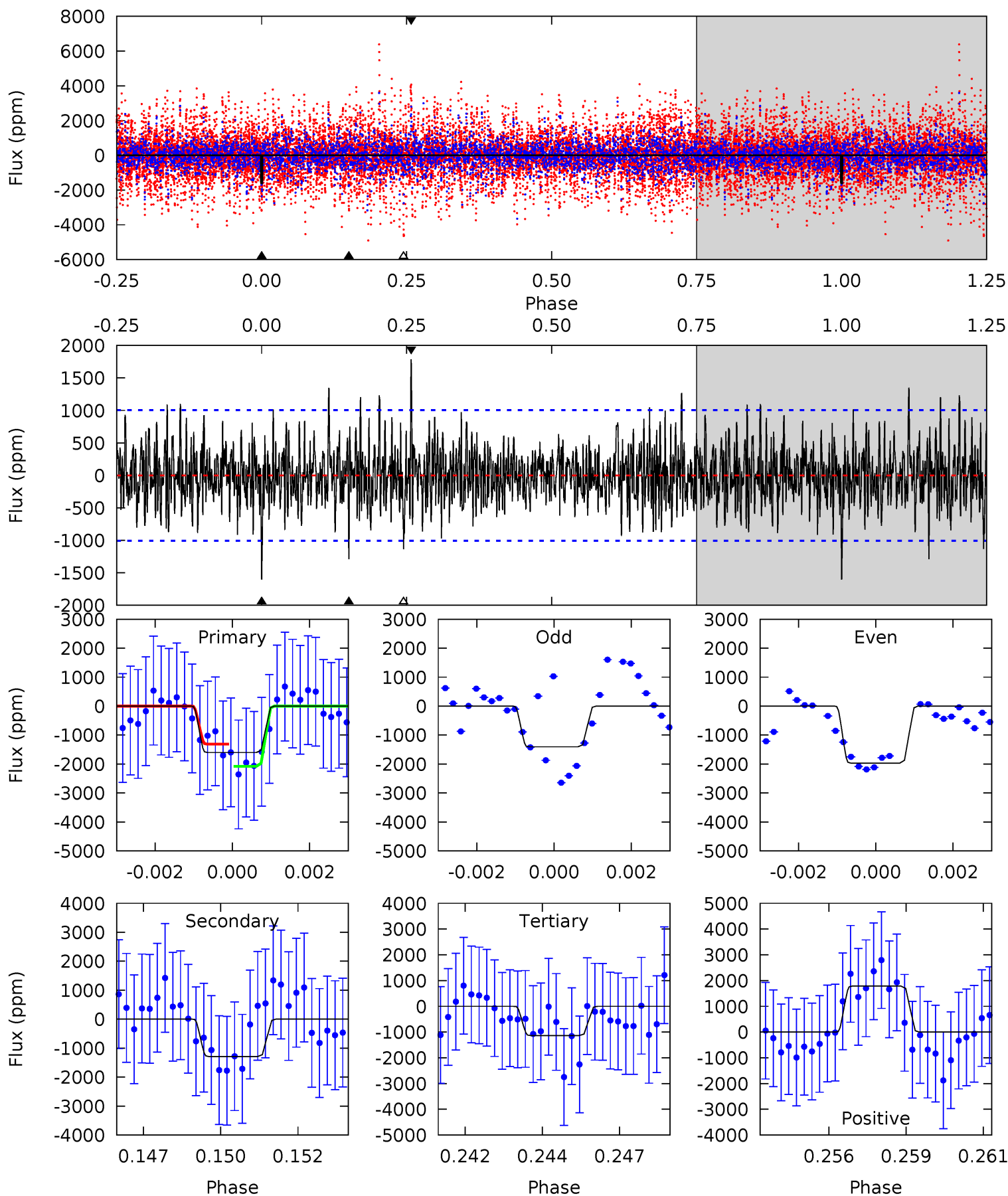
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.71	10.9	9.86	10.2	5.27	2.99	2.20	-5.15	-5.48	1.03	0.70	2.97	1.11	0.48	3.34



Alt Model-Shift Uniqueness Test

011099031-05, $P = 137.281581$ Days, $E = 38.239952$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.44	6.78	5.96	9.40	5.29	3.03	1.91	2.48	-0.96	0.82	-2.61	1.40	0.75	0.53	1.91



Stellar Parameters For KIC 011099031

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6606^{+184}_{-253}	$4.269^{+0.090}_{-0.210}$	$0.080^{+0.250}_{-0.350}$	$1.393^{+0.458}_{-0.212}$	$1.320^{+0.195}_{-0.195}$	$0.688^{+0.348}_{-0.370}$
	+3%/-4%	+2%/-5%	+312%/-438%	+33%/-15%	+15%/-15%	+51%/-54%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 011099031-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-666 ± 61	$3.80^{+0.63}_{-0.55}$	643^{+45}_{-37}	6805^{+491}_{-476}	8135^{+2686}_{-2180}
Alt.	-1289 ± 190	$6.38^{+1.26}_{-0.75}$	645^{+50}_{-40}	6138^{+376}_{-348}	5600^{+1829}_{-1670}

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 $A_{obs} \gg 1.0$

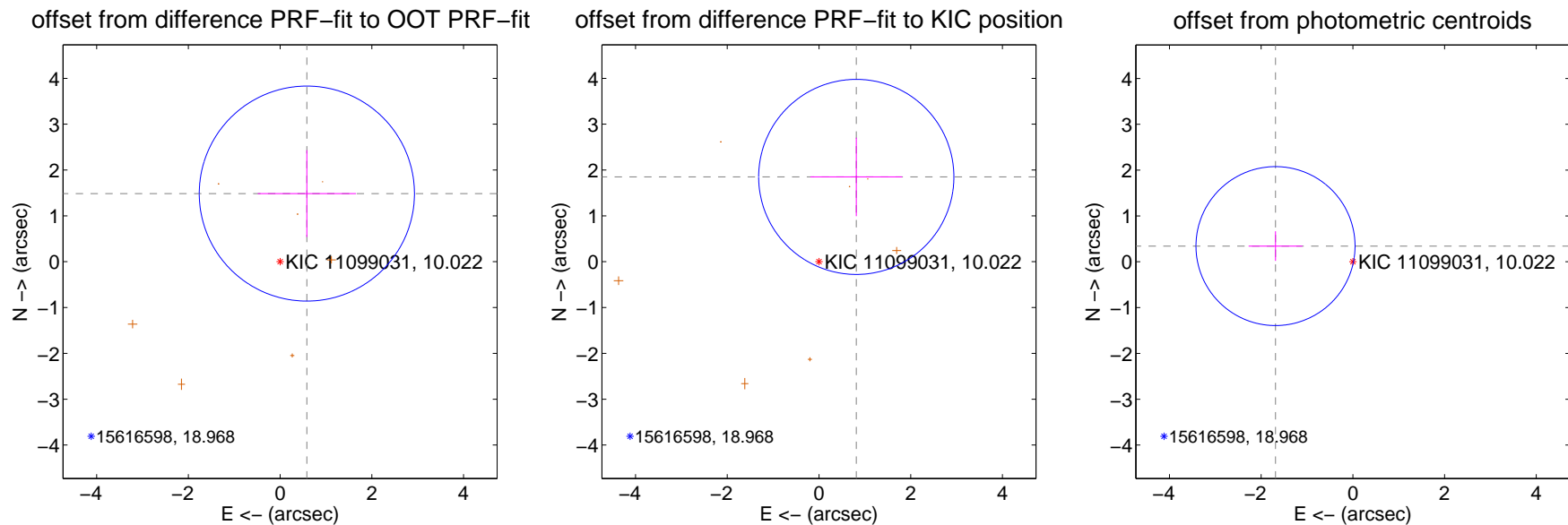
DV Centroid Data

Supplemental centroid analysis for 011099031-05. **Kepler magnitude: 10.02.** Transit SNR 6.79

There are 1 quarters with good PRF difference image offsets

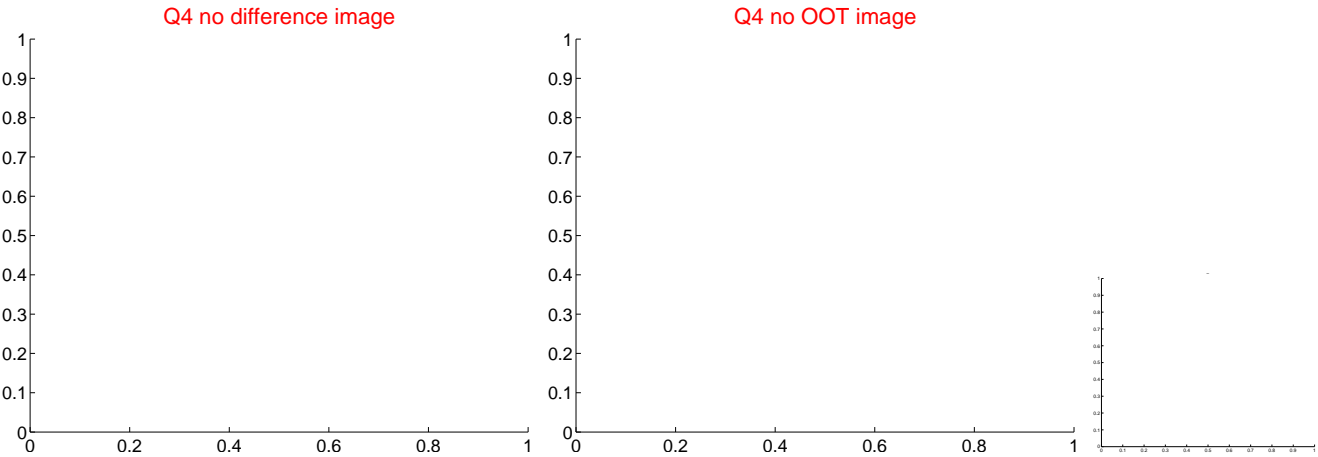
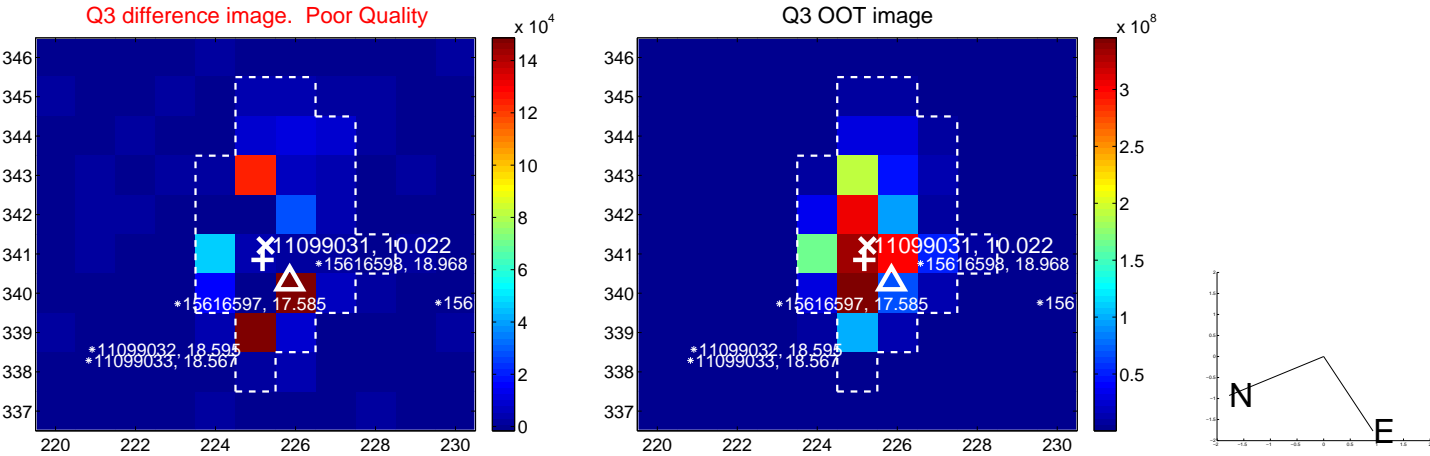
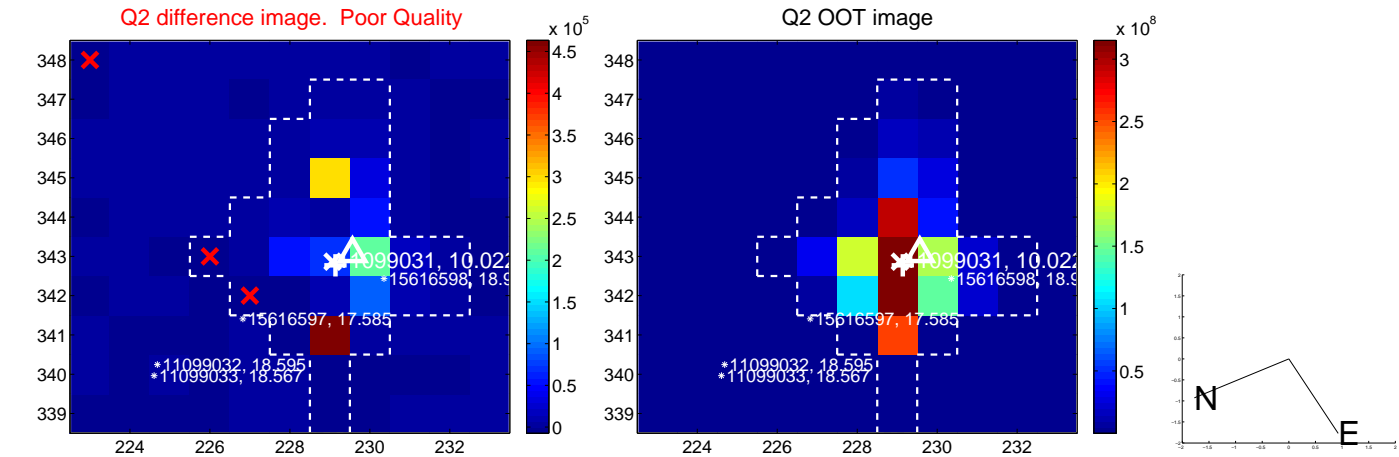
The direct PRF centroid is offset from the target star catalog position by about 0.66 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.596 ± 0.782	2.04	-0.583 ± 1.069	1.486 ± 0.947
PRF-fit source offset from KIC position	2.021 ± 0.709	2.85	-0.813 ± 1.000	1.850 ± 0.856
photometric centroid source offset	1.72 ± 0.58	2.98	1.69 ± 0.59	0.34 ± 0.32

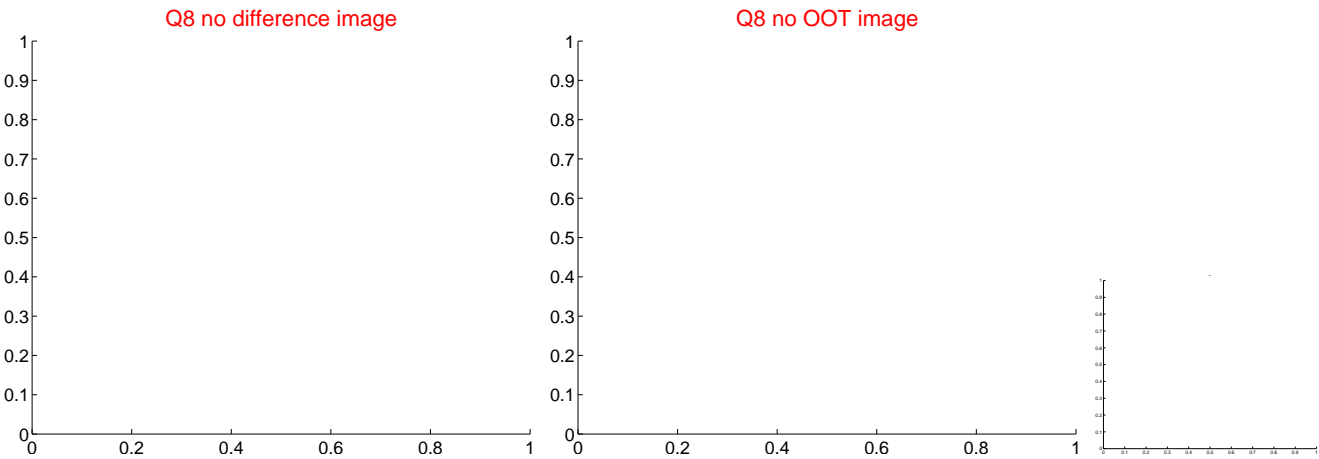
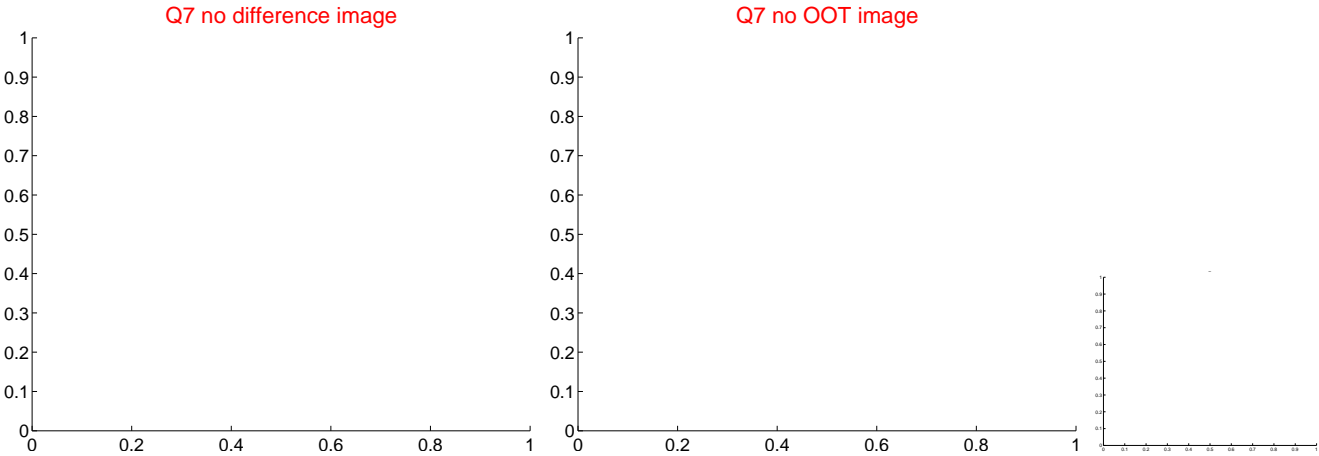
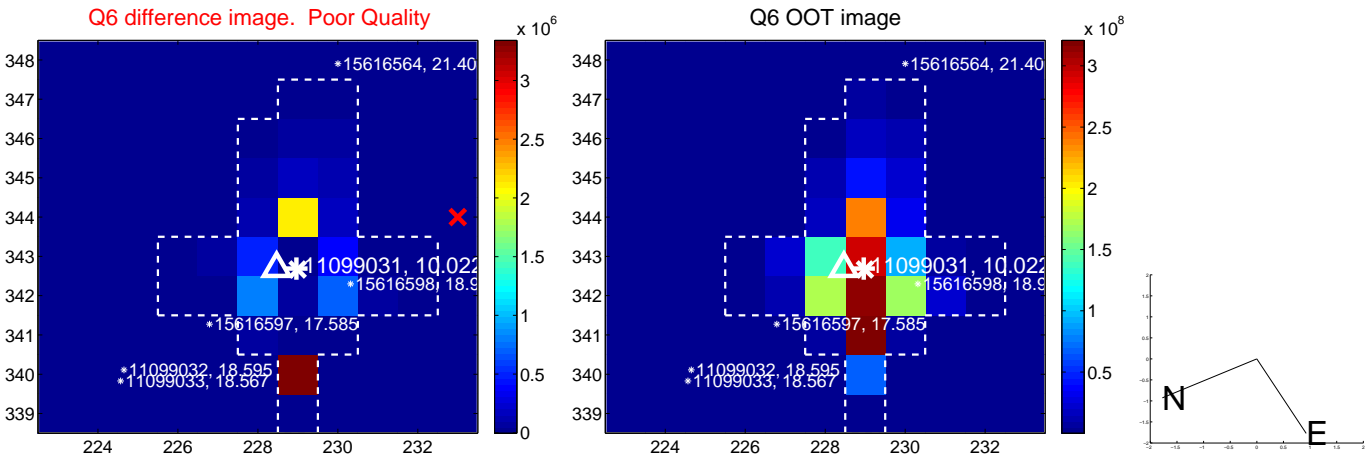
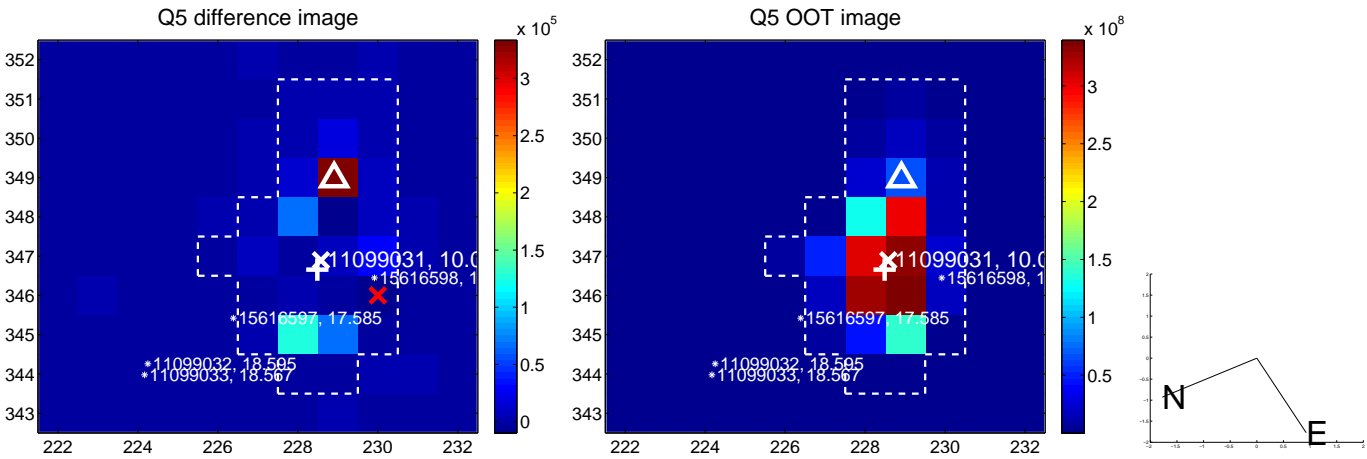


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

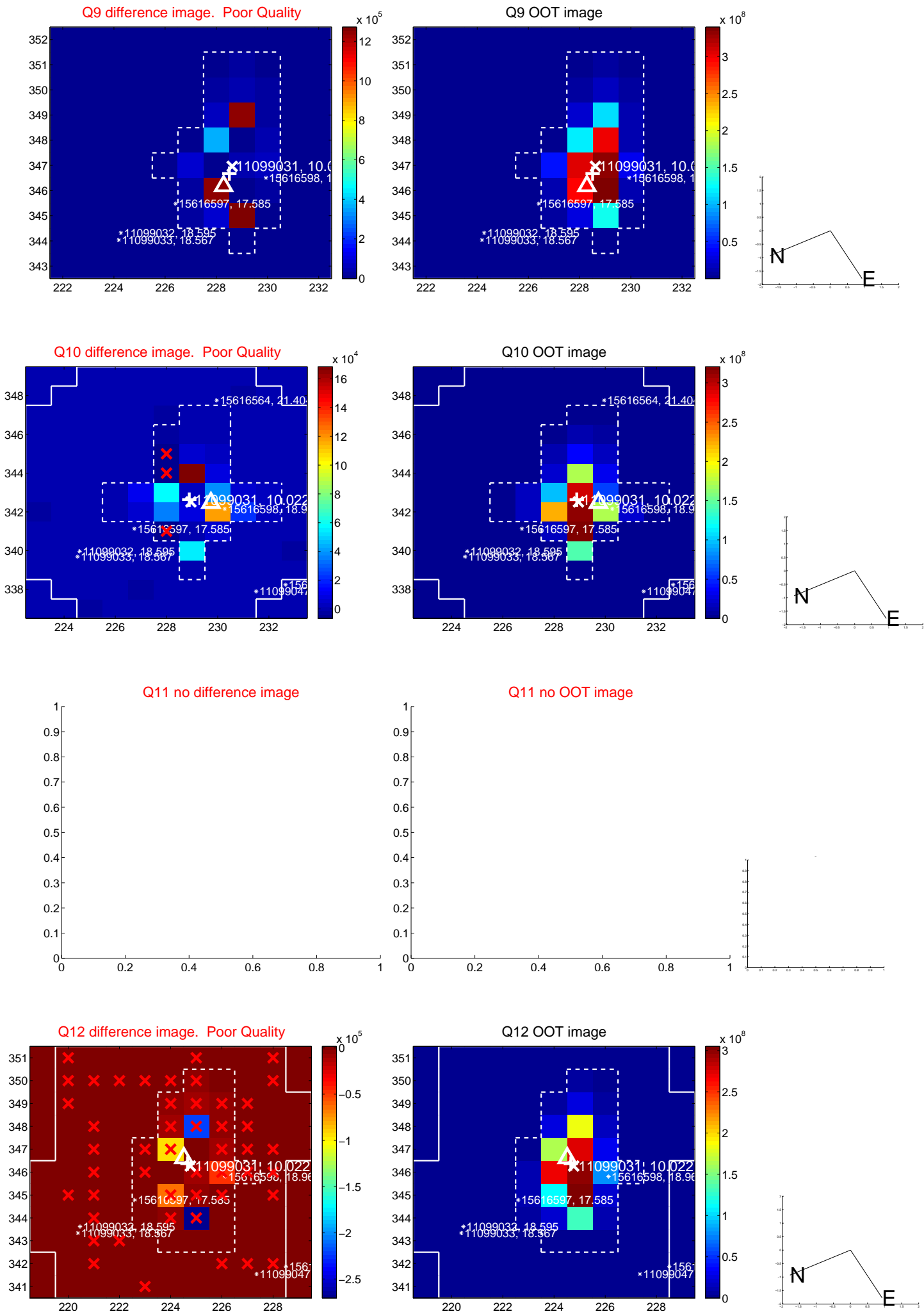
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



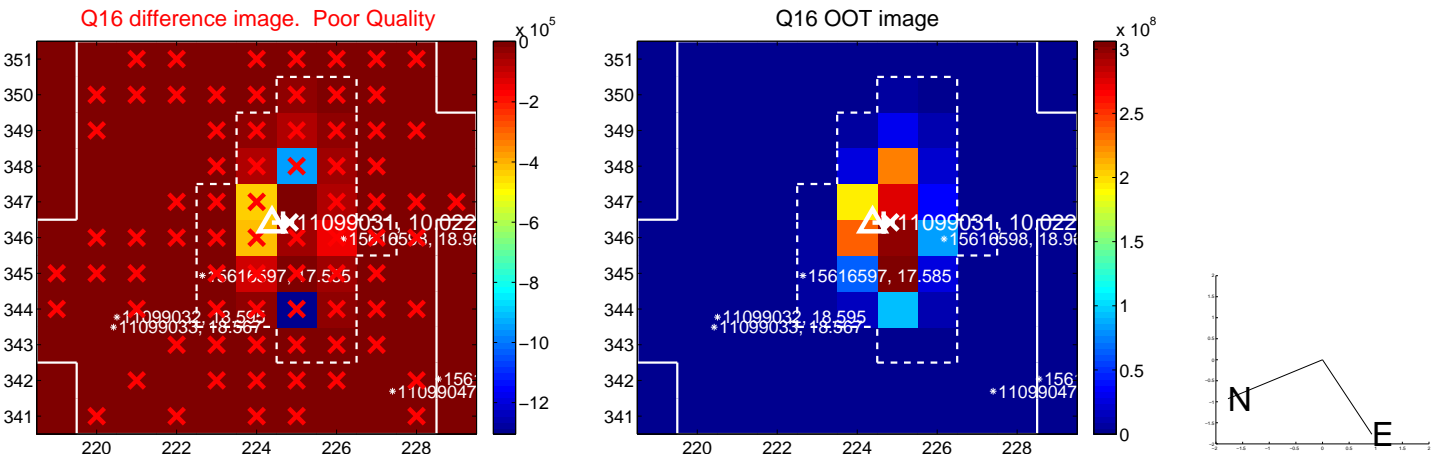
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



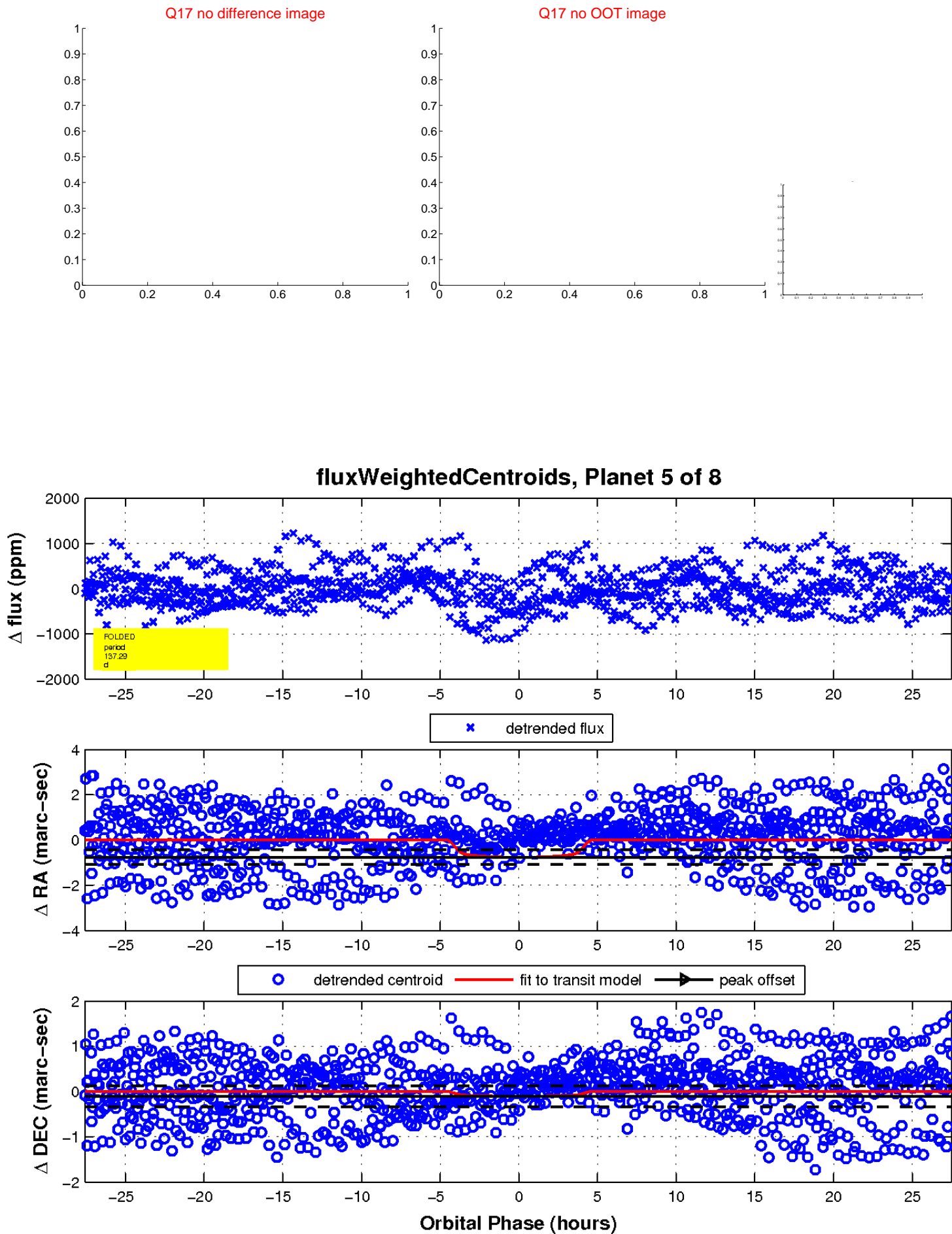
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



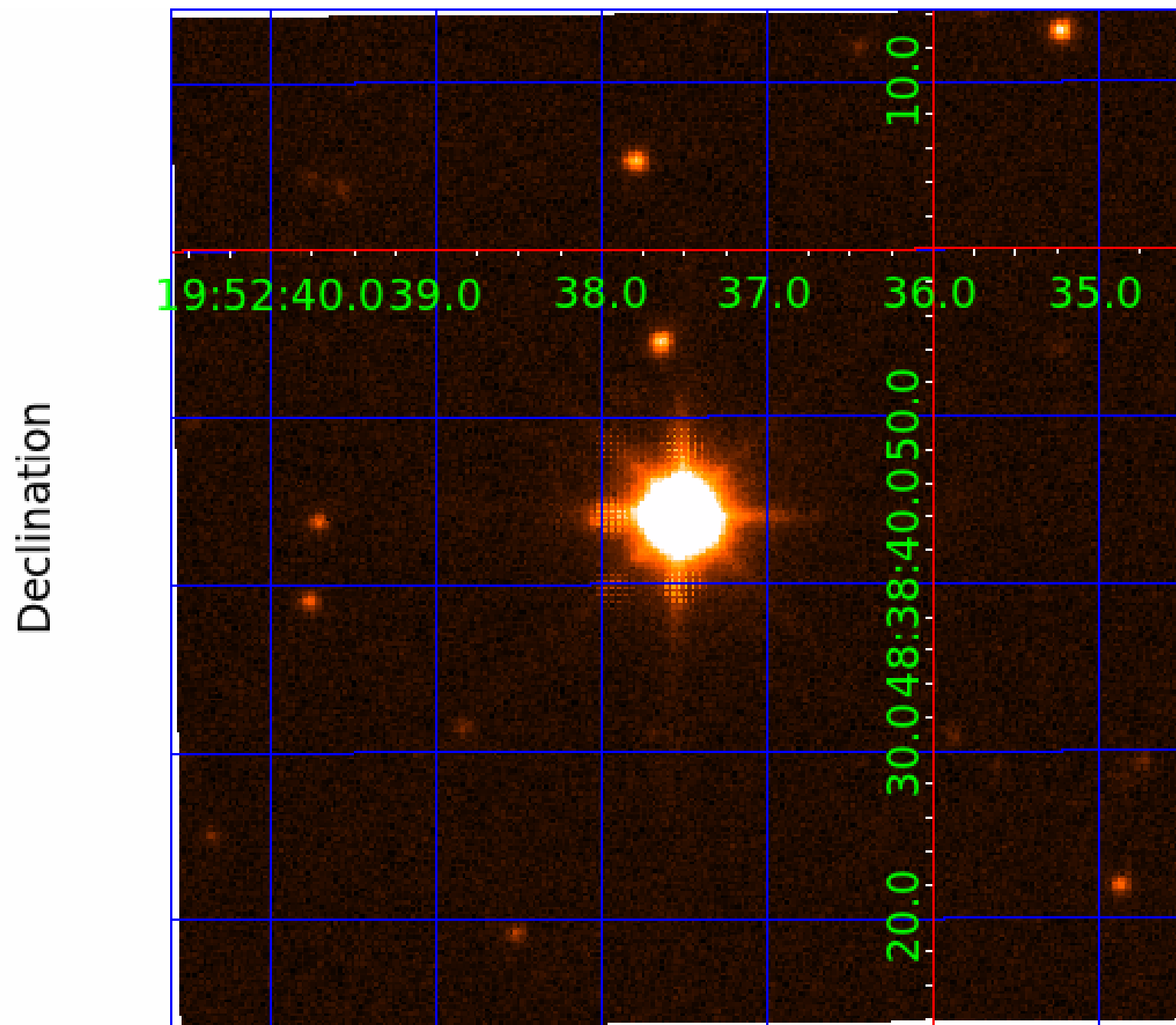
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 011099031

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})
011099031-01	OBS	No	0.928695	131.941079	5.7	4.862	8.1	1.3	1.39	6606	0.39	7945.45
011099031-02	OBS	No	5.262780	135.678566	191.2	4.335	9.3	9.9	1.39	6606	2.25	786.43
011099031-04	OBS	No	75.659901	151.086344	649.6	5.813	8.0	8.4	1.39	6606	6.80	22.50
011099031-05	OBS	No	137.285146	175.519949	530.1	9.189	8.5	6.8	1.39	6606	3.71	10.16
011099031-06	OBS	No	102.933229	195.373869	721.9	6.548	7.9	6.4	1.39	6606	4.73	14.92
011099031-07	OBS	No	34.775566	139.703564	337.1	2.433	7.4	6.8	1.39	6606	2.99	63.42
011099031-08	OBS	No	54.129085	138.869797	164.0	3.787	7.6	3.1	1.39	6606	2.06	35.16

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011099031-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
011099031-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
011099031-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
011099031-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED
011099031-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
011099031-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
011099031-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

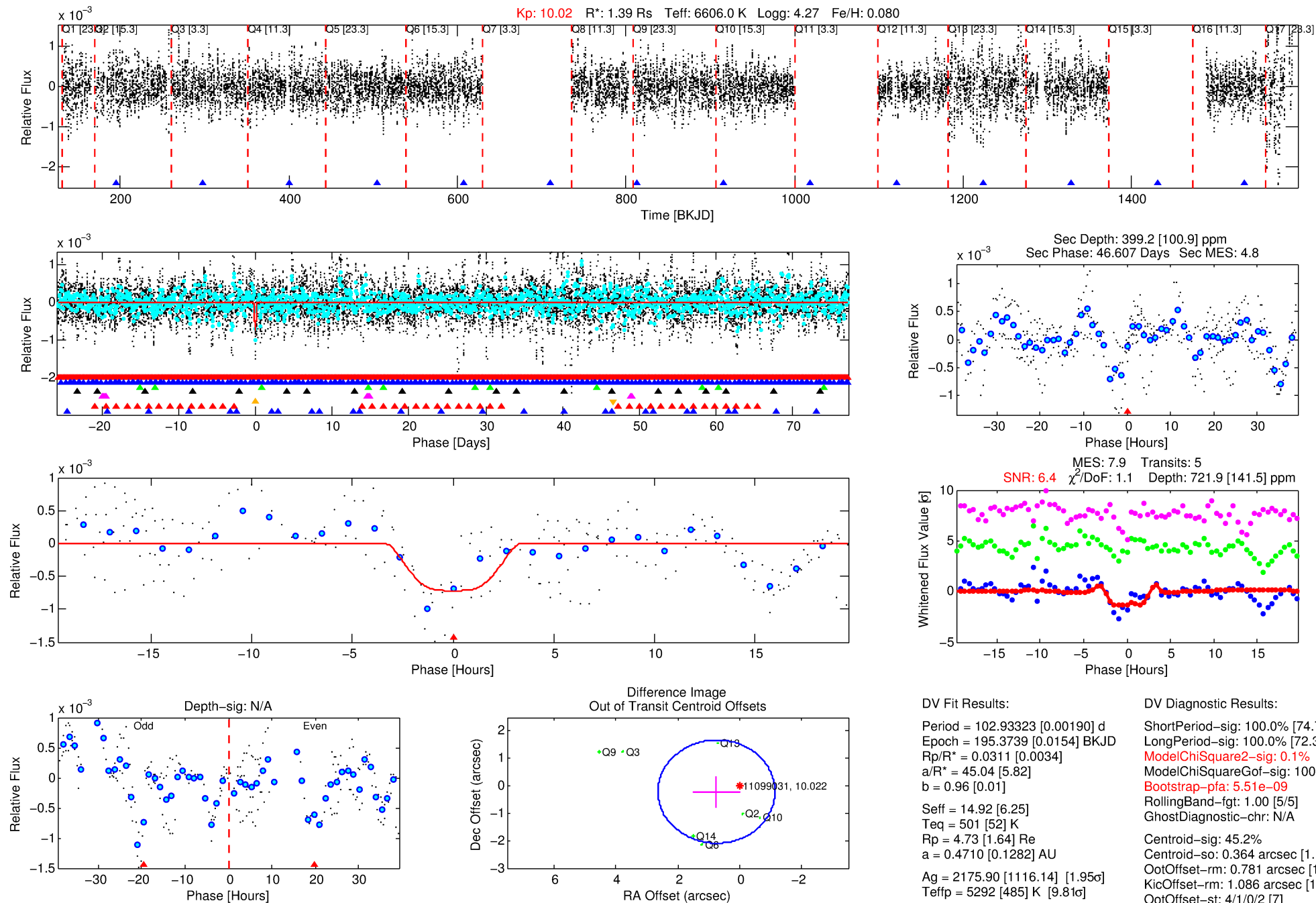
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011099031-06

No Significant Match Found

DV One-Page Summary

KIC: 11099031 Candidate: 6 of 8 Period: 102.933 d



DV Fit Results:

Period = 102.93323 [0.00190] d
Epoch = 195.3739 [0.0154] BKJD
Rp/R* = 0.0311 [0.0034]
a/R* = 45.04 [5.82]
b = 0.96 [0.01]
Seff = 14.92 [6.25]
Teq = 501 [52] K
Rp = 4.73 [1.64] Re
a = 0.4710 [0.1282] AU
Ag = 2175.90 [1116.14] [1.95] σ
Teff = 5292 [485] K [9.81] σ

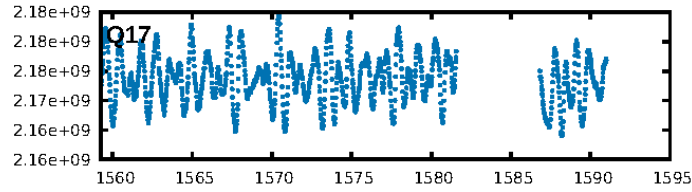
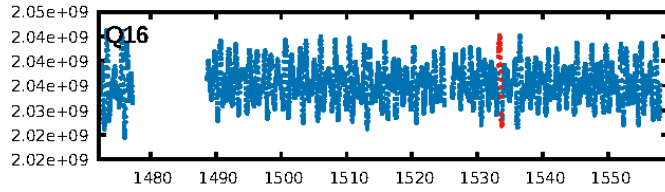
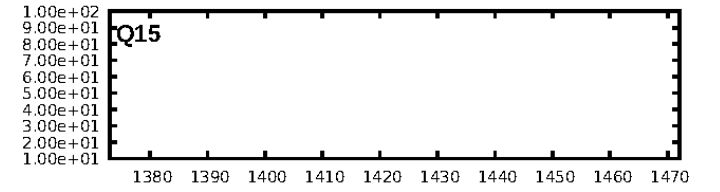
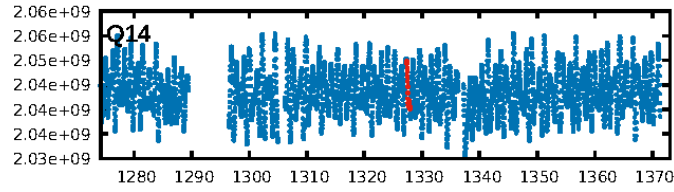
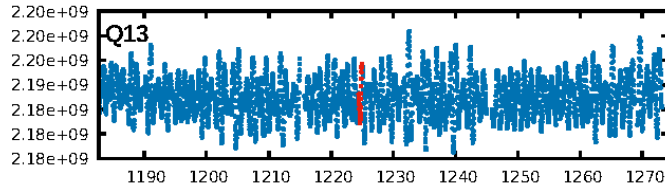
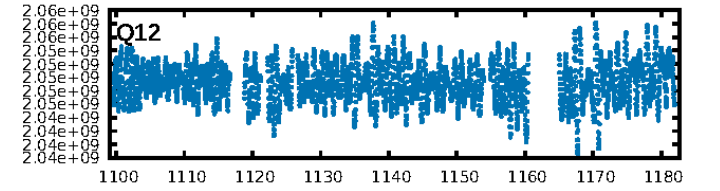
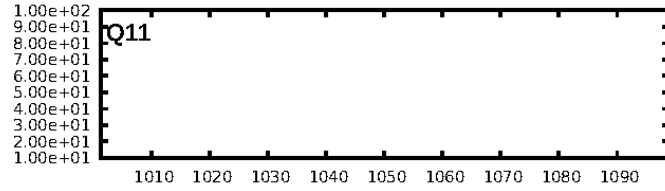
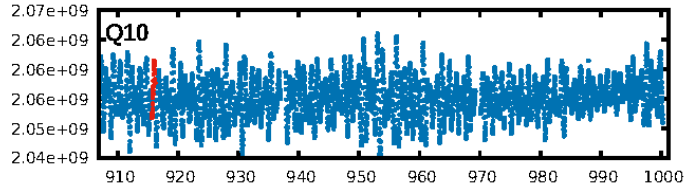
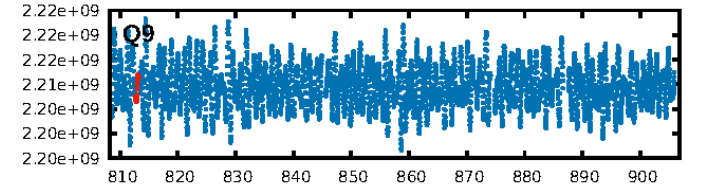
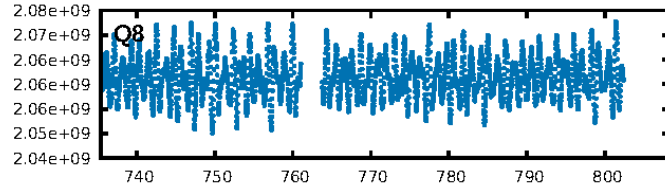
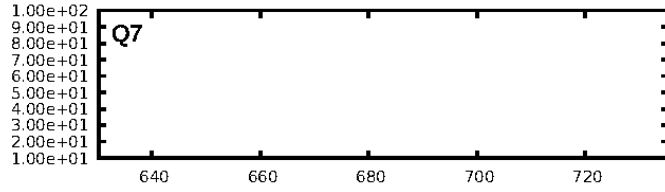
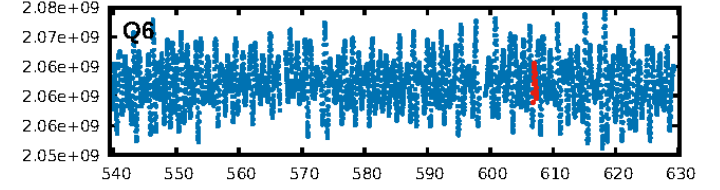
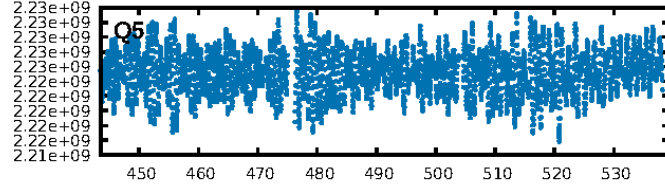
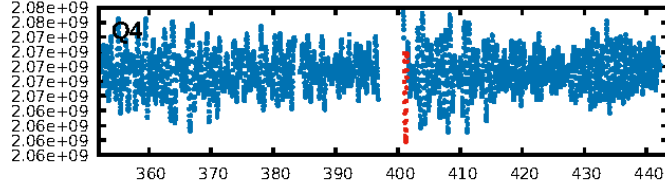
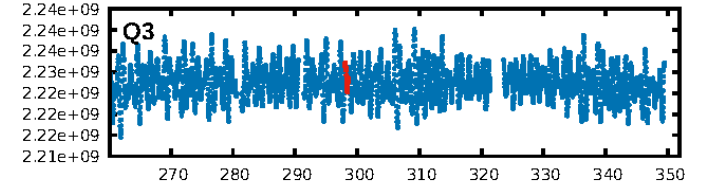
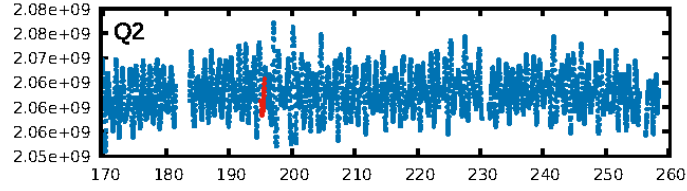
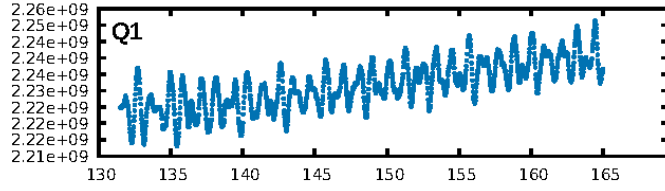
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [74.75] σ
LongPeriod-sig: 100.0% [72.37] σ
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.51e-09
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: N/A
Centroid-sig: 45.2%
Centroid-so: 0.364 arcsec [1.15] σ
OotOffset-rm: 0.781 arcsec [1.24] σ
KicOffset-rm: 1.086 arcsec [1.55] σ
OotOffset-st: 4/1/0/2 [7]
KicOffset-st: 4/1/0/2 [7]
DiffImageQuality-fgm: 0.00 [0/7]
DiffImageOverlap-fno: 0.00 [0/7]

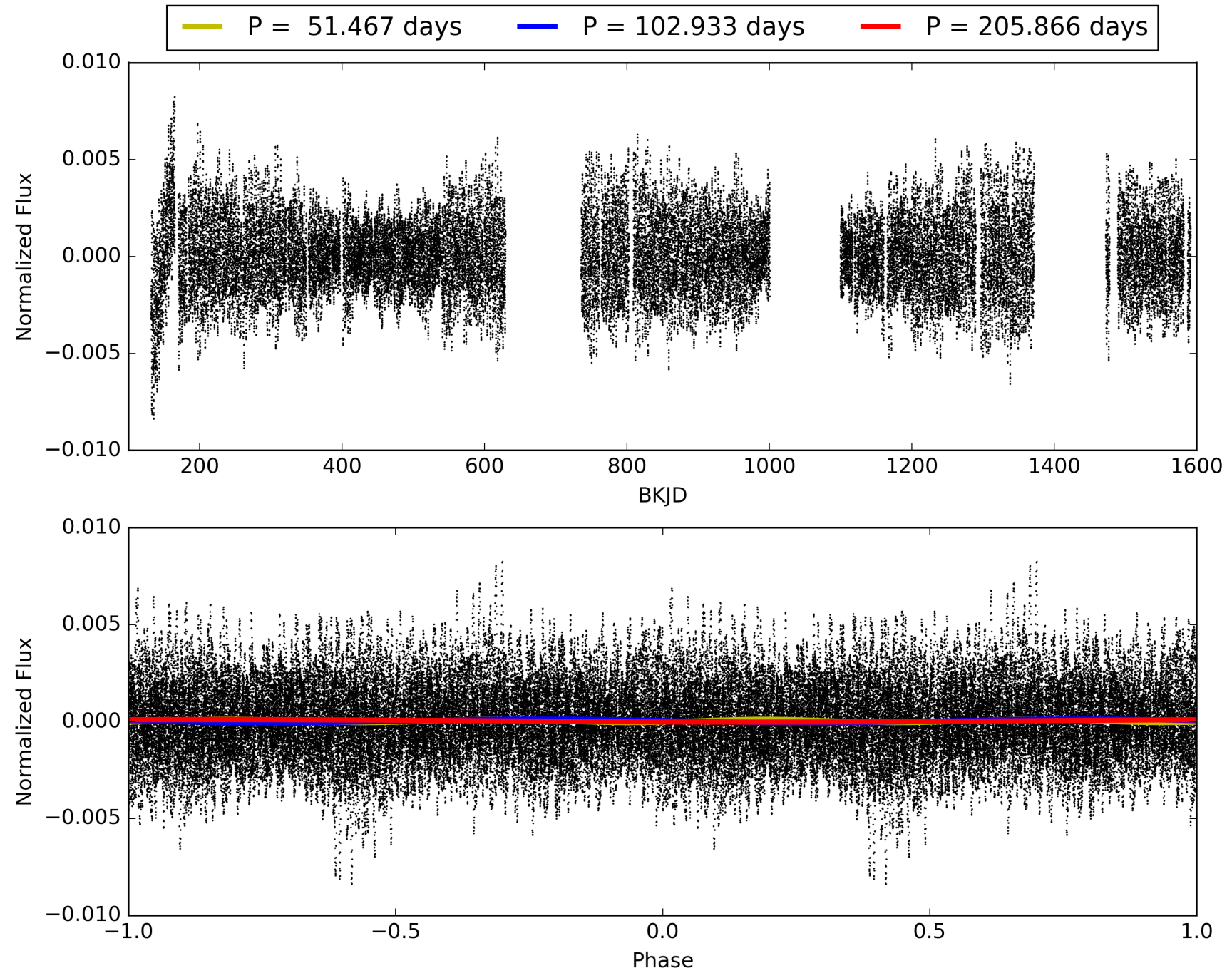
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 10:15:39 Z

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

TCE 011099031-06, PDC Light Curves

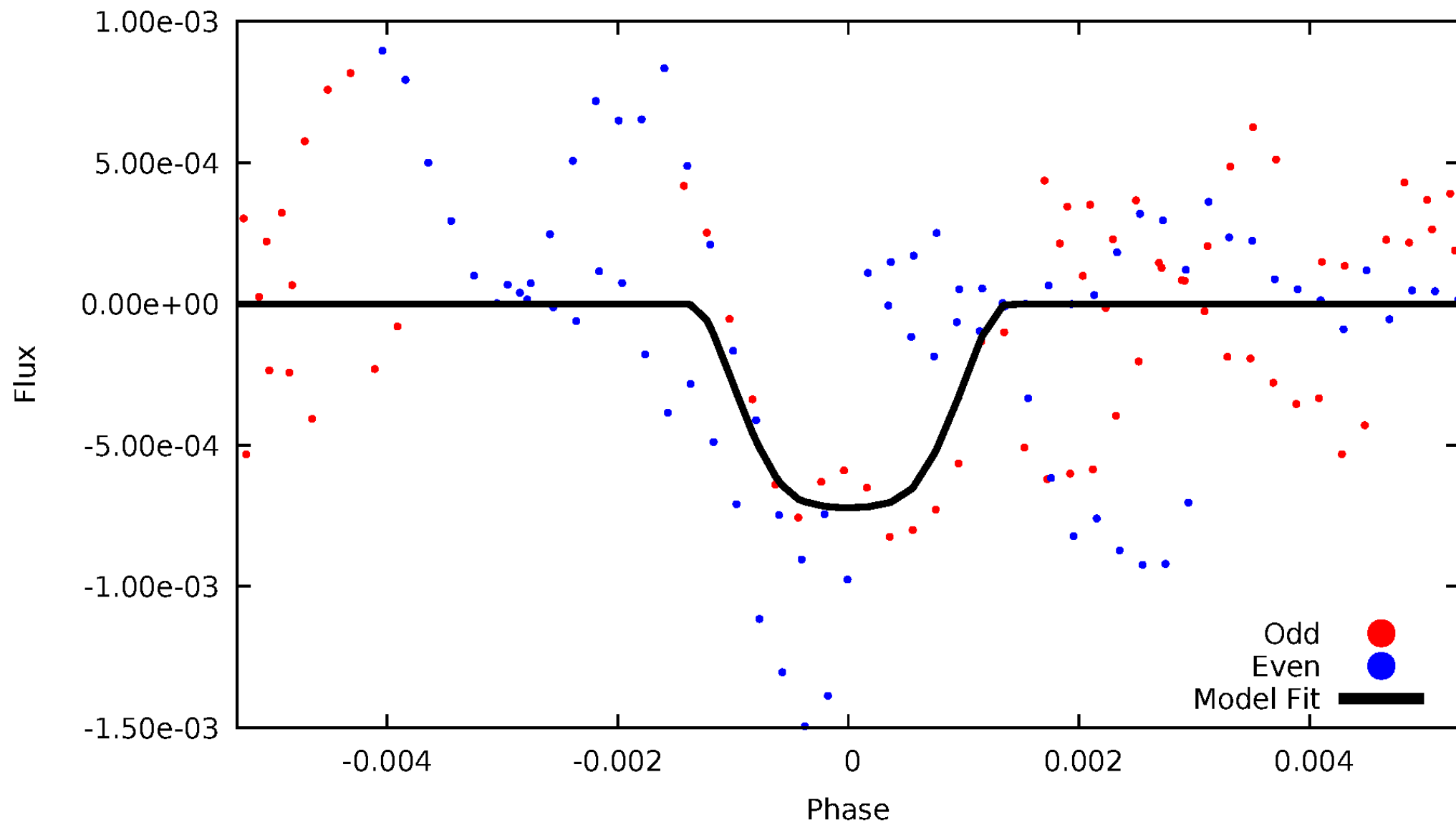


TCE 011099031-06



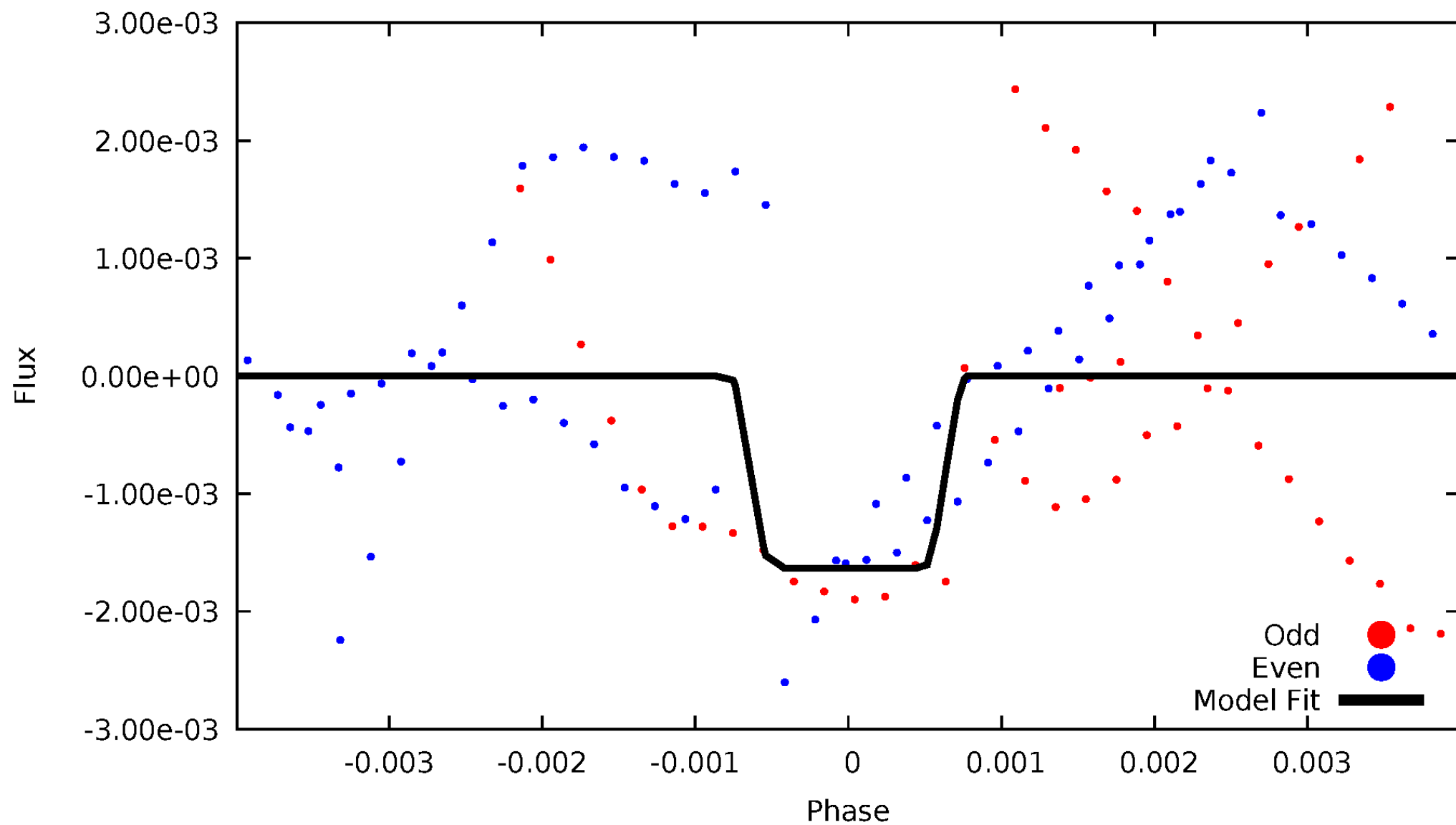
DV Odd/Even

TCE 011099031-06



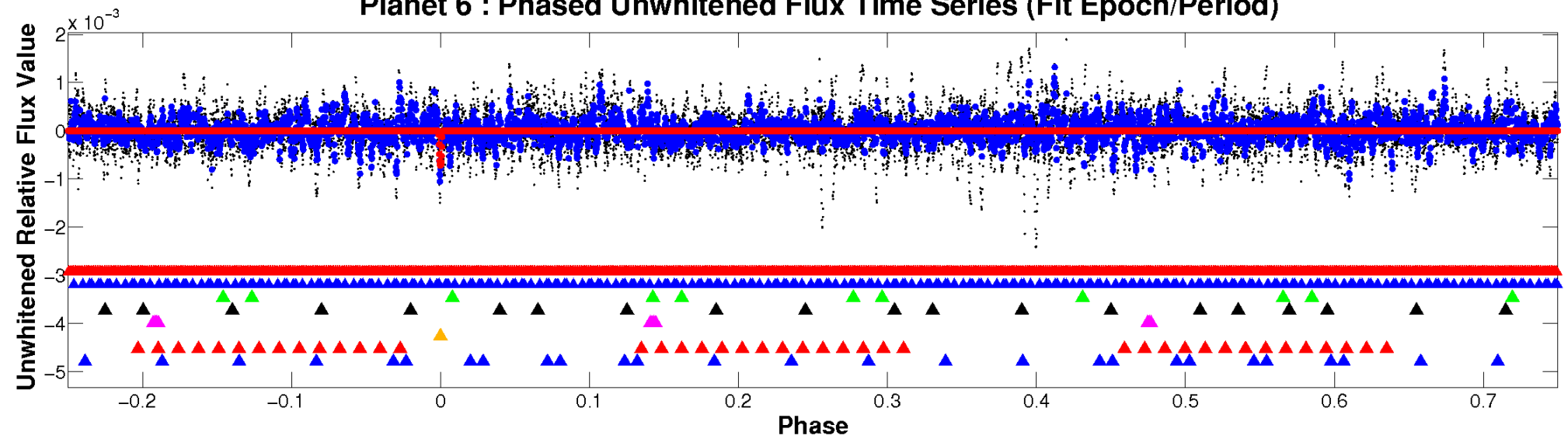
ALT Odd/Even

TCE 011099031-06

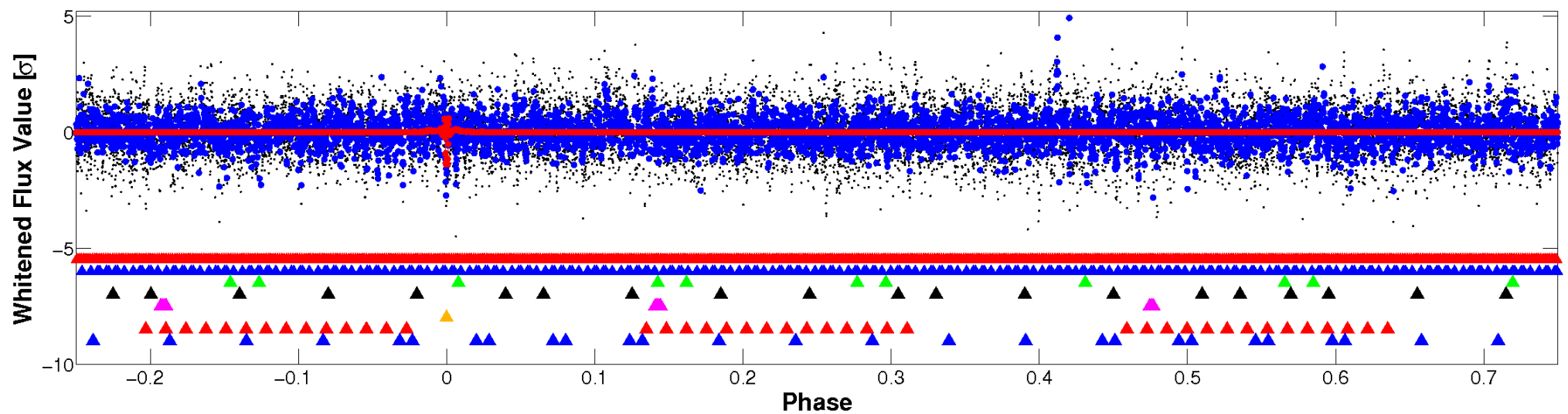


Non-Whitened Vs. Whitened Light Curve

Planet 6 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

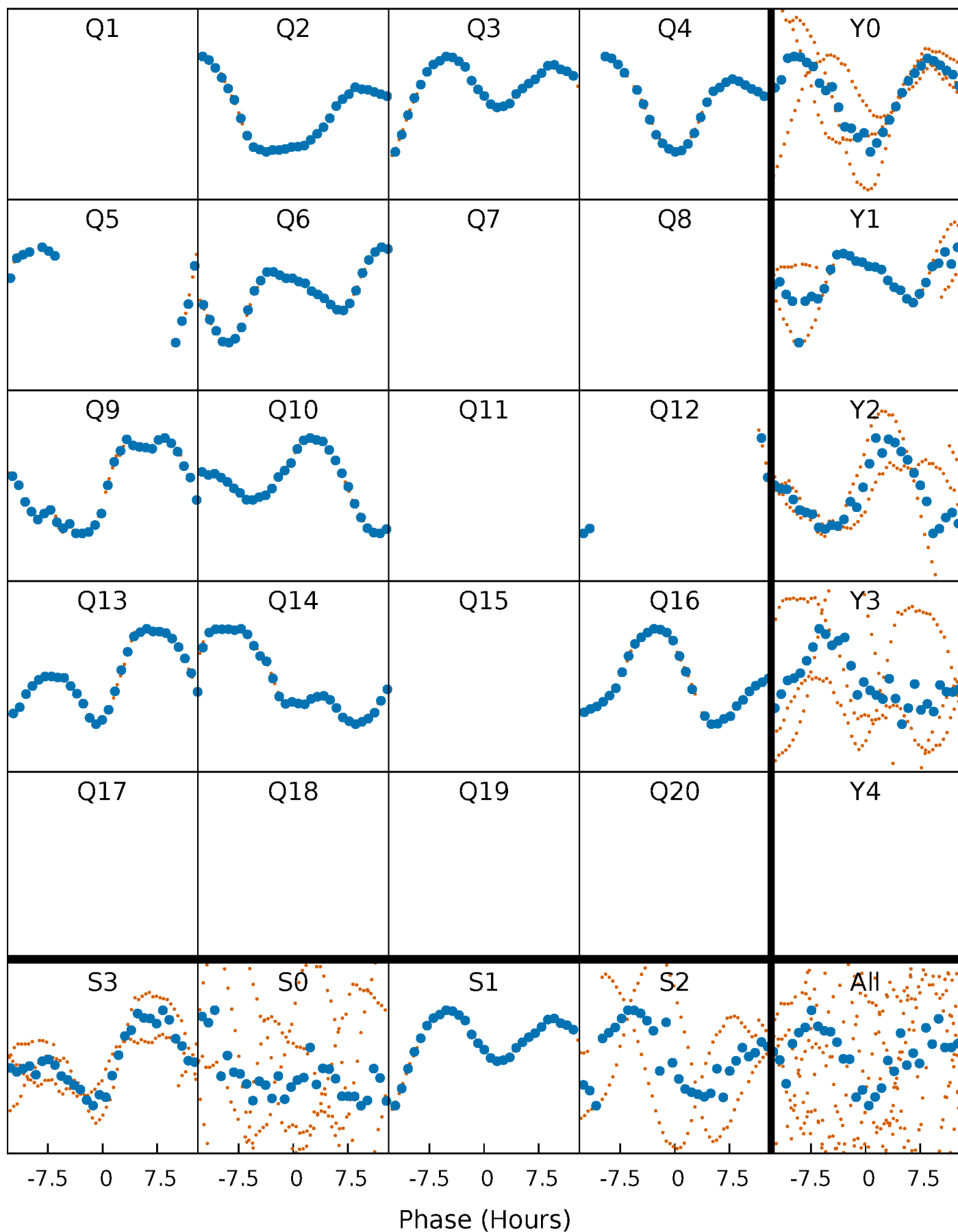


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



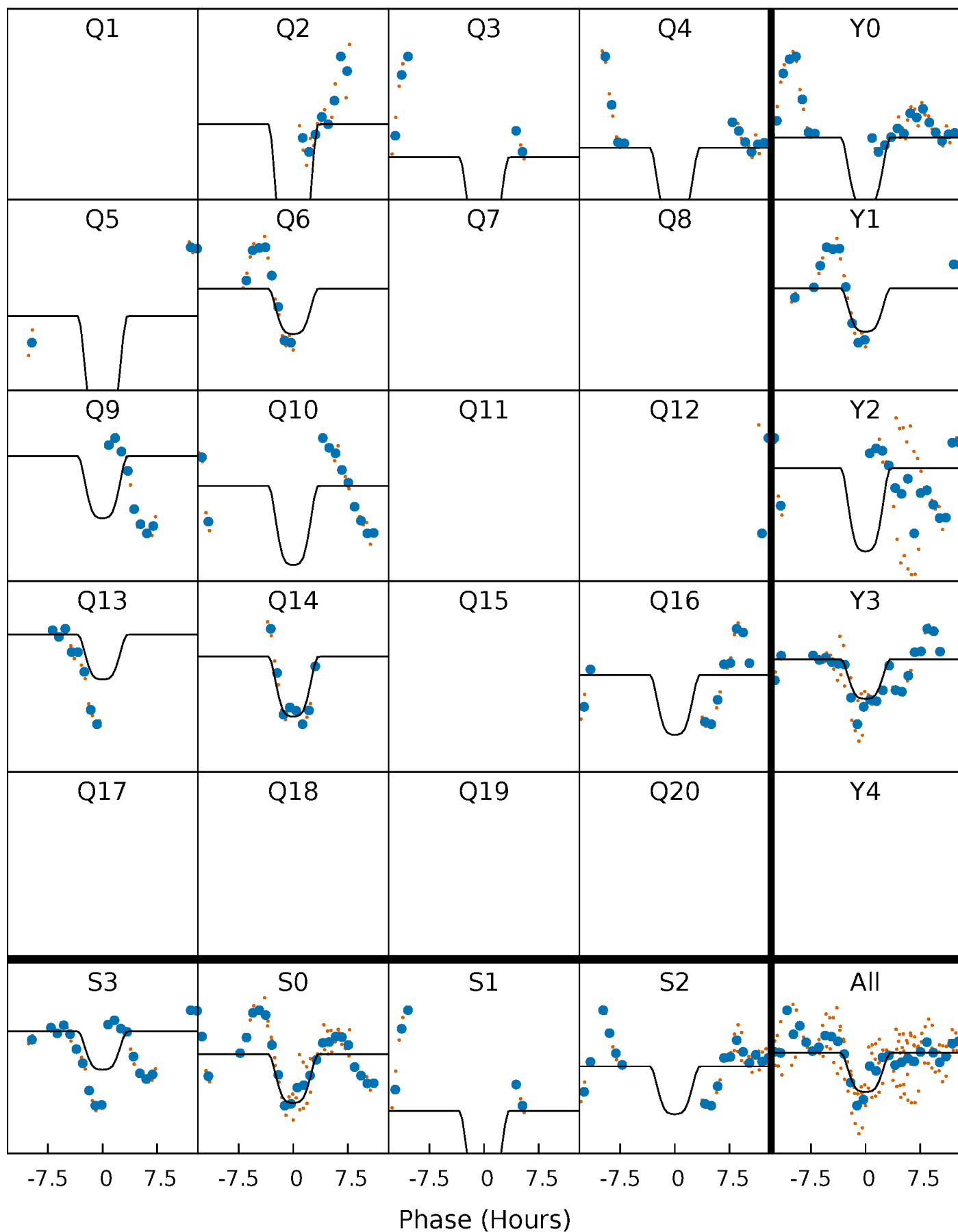
PDC Quarter-Phased Transit Curves

TCE 011099031-06 P=102.933229 Days $T_0=195.373869$ (BKJD)



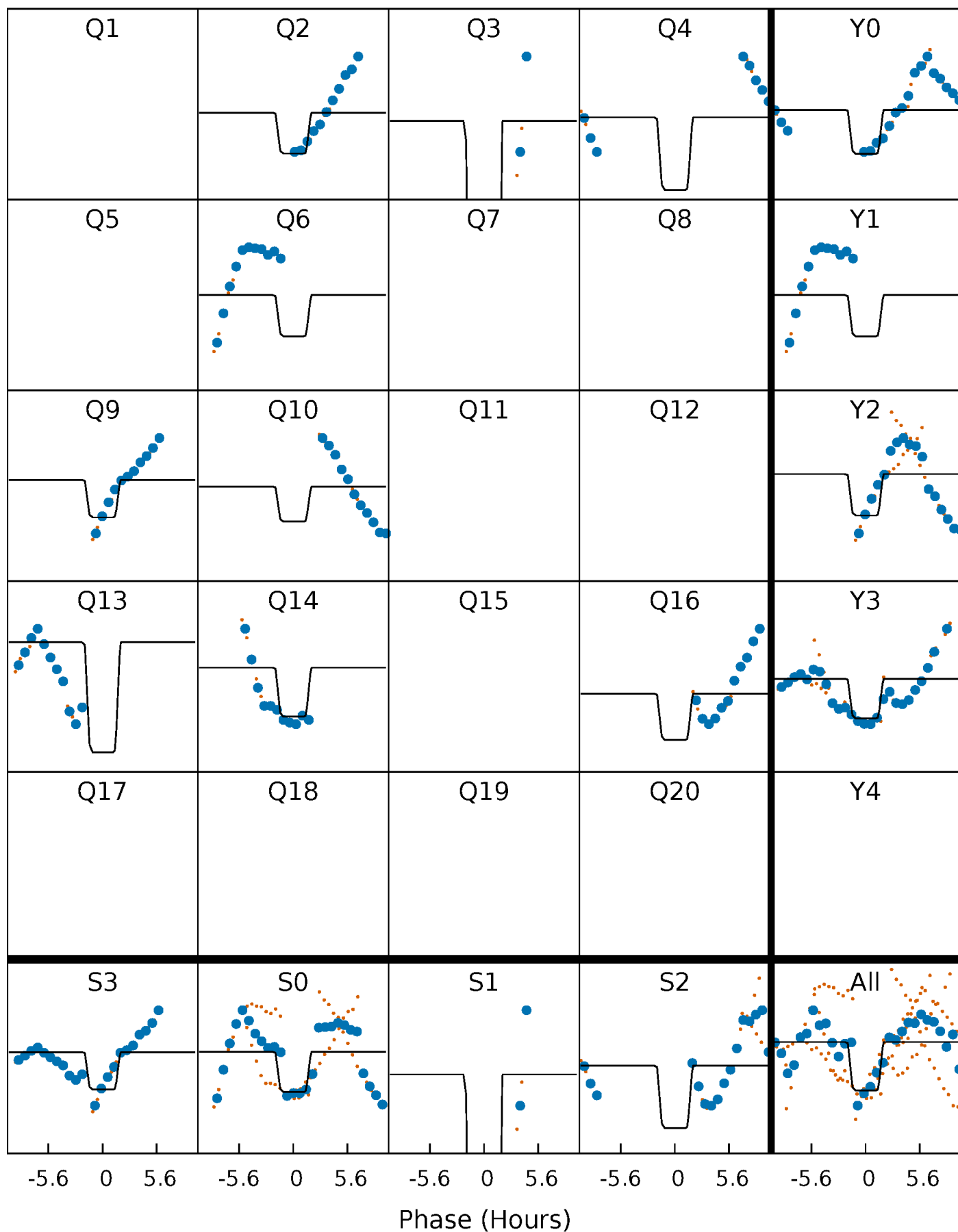
DV Quarter-Phased Transit Curves

TCE 011099031-06 P=102.933229 Days $T_0=195.373869$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

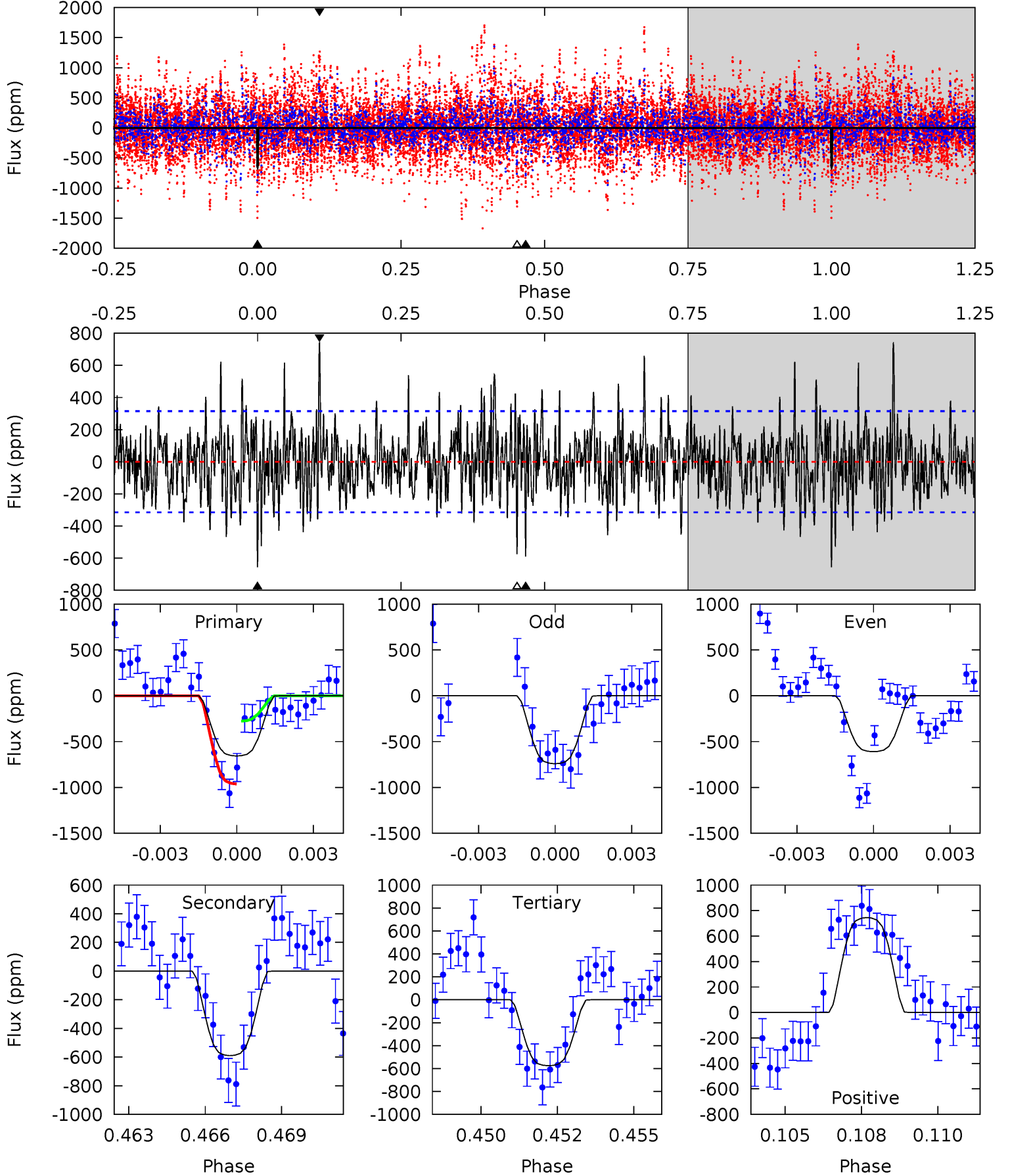
TCE 011099031-06 P=102.935935 Days $T_0=195.417785$ (BKJD)



DV Model-Shift Uniqueness Test

011099031-06, P = 102.933229 Days, E = 92.440640 Days

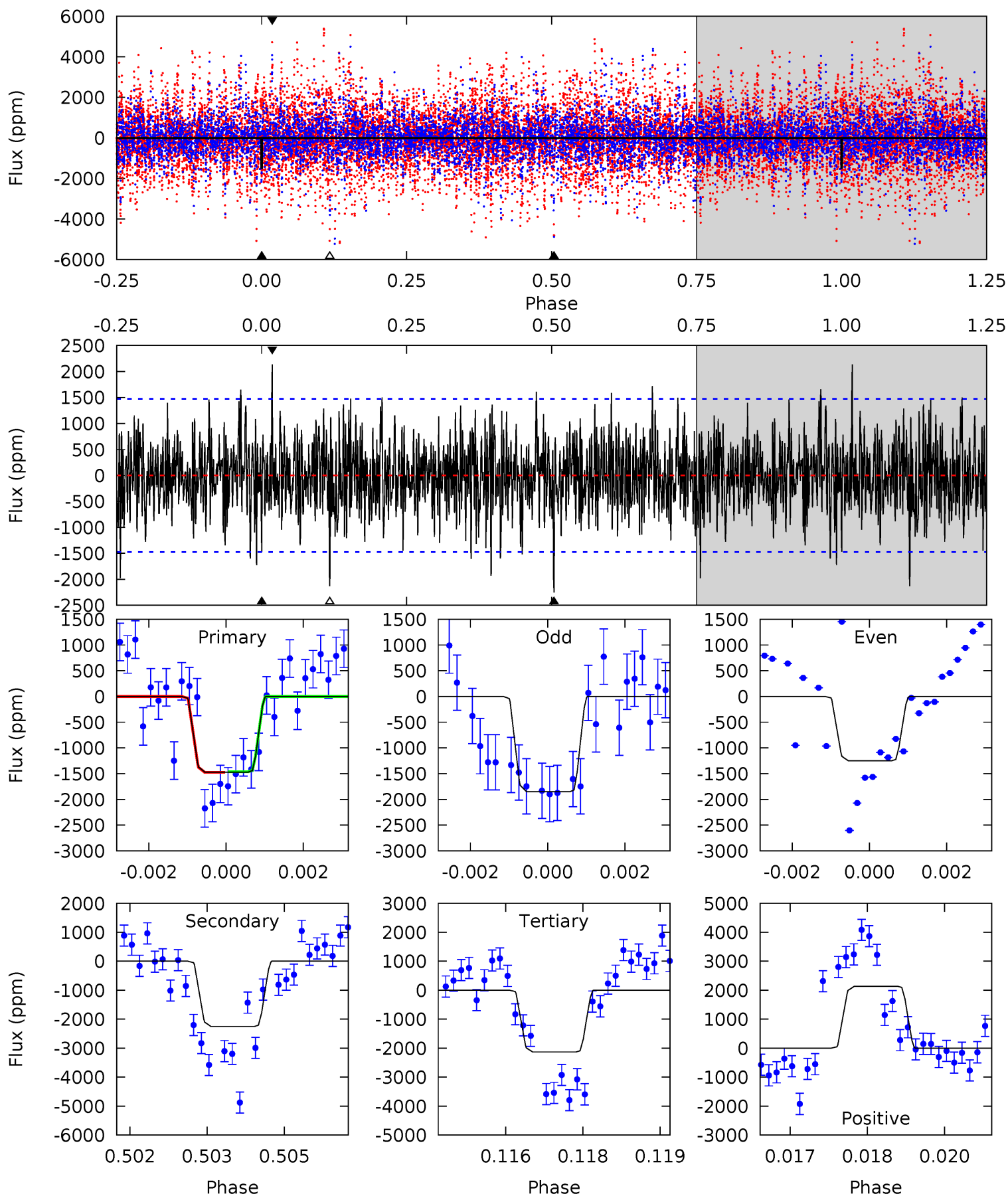
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.0	9.87	9.63	12.5	5.27	2.99	2.79	1.36	-1.48	0.24	-2.60	1.05	0.81	0.53	5.74



Alt Model-Shift Uniqueness Test

011099031-06, P = 102.935935 Days, E = 92.481850 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.35	8.21	7.78	7.79	5.38	3.17	1.94	-2.42	-2.44	0.44	0.42	1.04	0.53	0.49	0.03



Stellar Parameters For KIC 011099031

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6606^{+184}_{-253}	$4.269^{+0.090}_{-0.210}$	$0.080^{+0.250}_{-0.350}$	$1.393^{+0.458}_{-0.212}$	$1.320^{+0.195}_{-0.195}$	$0.688^{+0.348}_{-0.370}$
	+3%/-4%	+2%/-5%	+312%/-438%	+33%/-15%	+15%/-15%	+51%/-54%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 011099031-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-590 ± 60	$4.85^{+1.01}_{-0.75}$	707^{+54}_{-39}	5812^{+437}_{-370}	3083^{+1089}_{-1002}
Alt.	-2251 ± 274	$6.34^{+1.21}_{-0.86}$	709^{+55}_{-43}	7185^{+455}_{-451}	6740^{+2342}_{-2025}

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 $A_{obs} \gg 1.0$

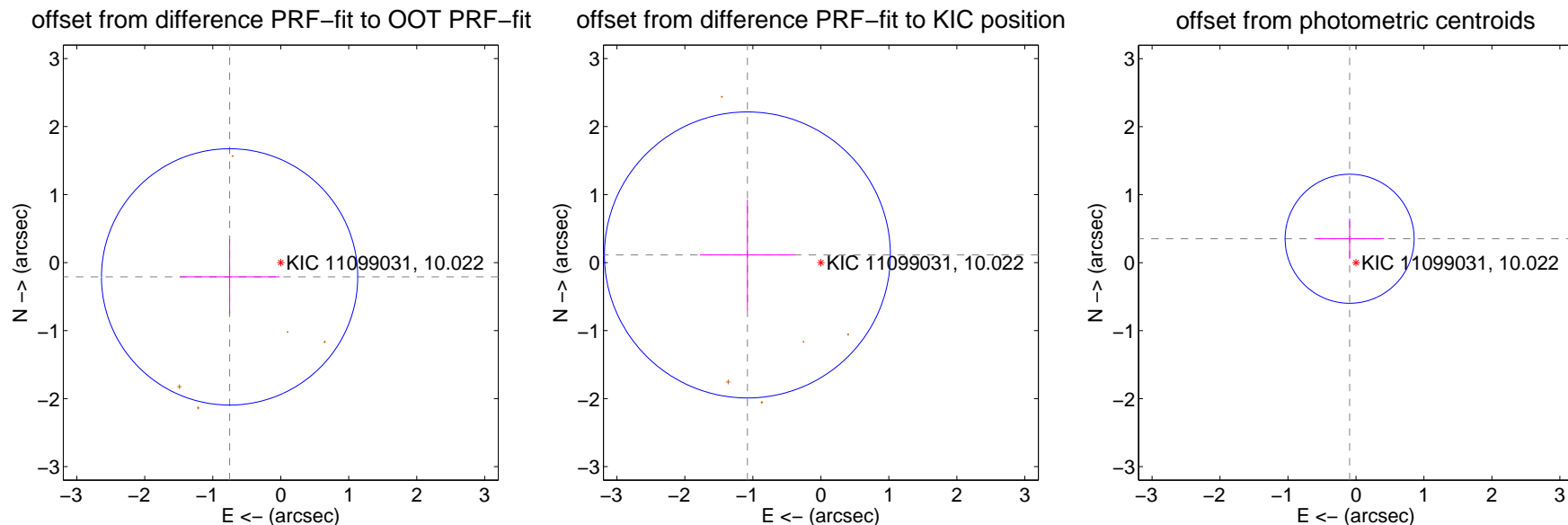
DV Centroid Data

Supplemental centroid analysis for 011099031-06. **Kepler magnitude: 10.02.** Transit SNR 6.38

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

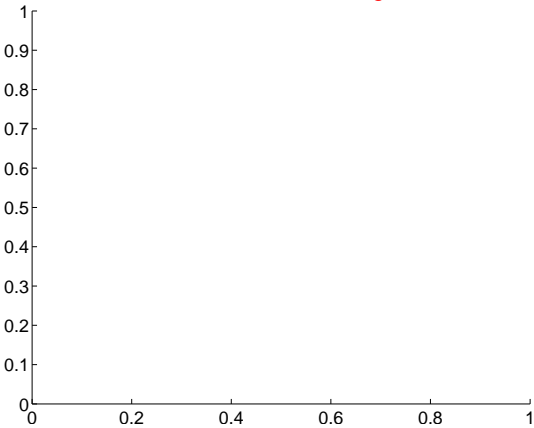
	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.781 ± 0.628	1.24	0.752 ± 0.735	-0.210 ± 0.552
PRF-fit source offset from KIC position	1.086 ± 0.701	1.55	1.080 ± 0.700	0.112 ± 0.814
photometric centroid source offset	0.36 ± 0.32	1.15	0.09 ± 0.51	0.35 ± 0.30



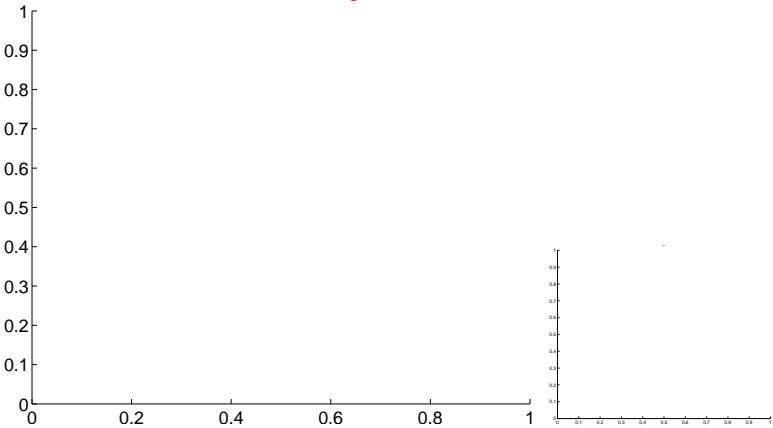
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

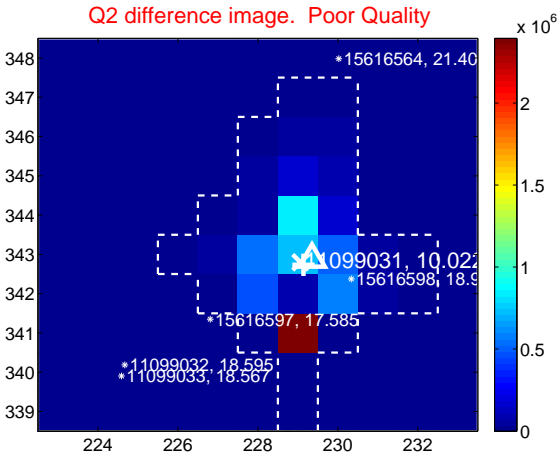
Q1 no difference image



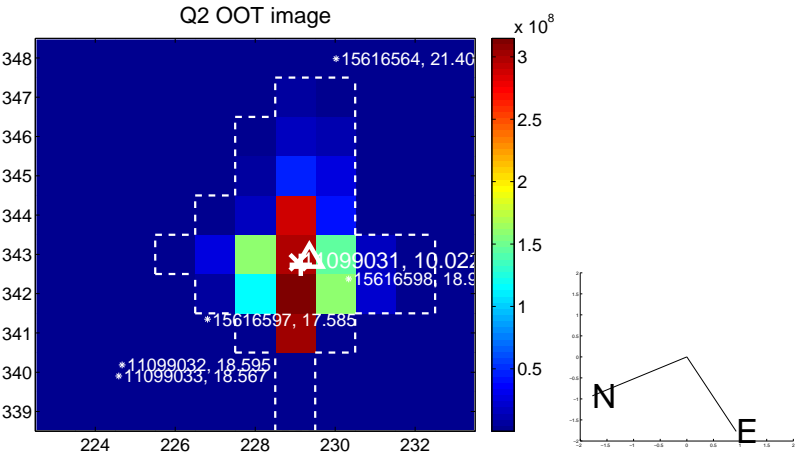
Q1 no OOT image



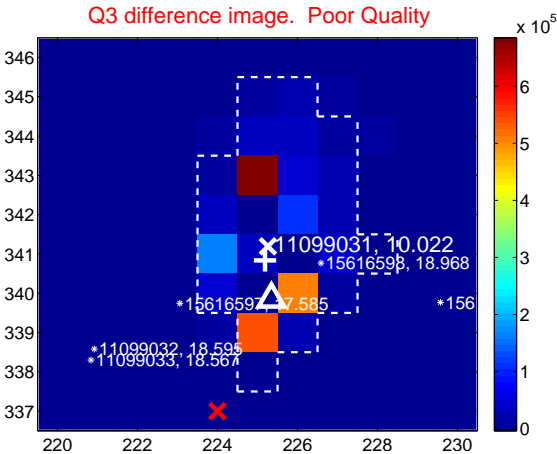
Q2 difference image. Poor Quality



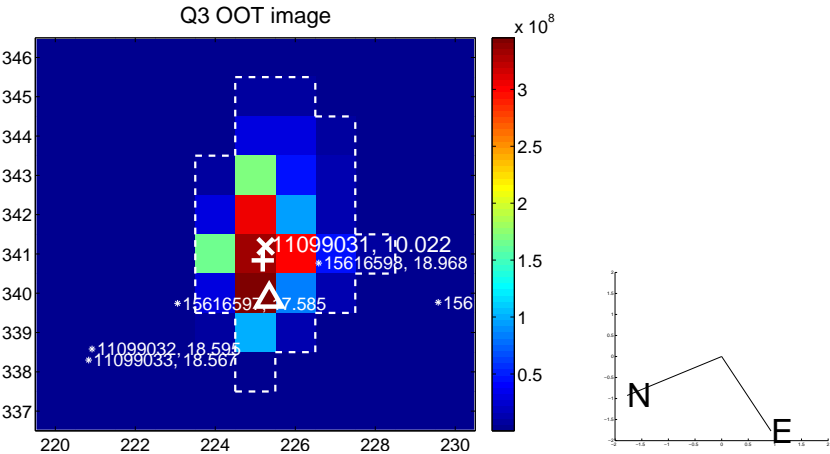
Q2 OOT image



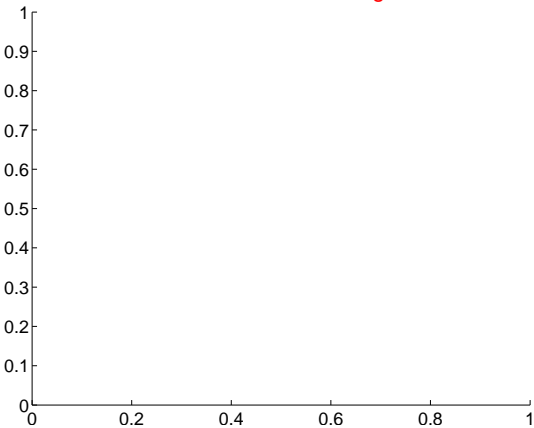
Q3 difference image. Poor Quality



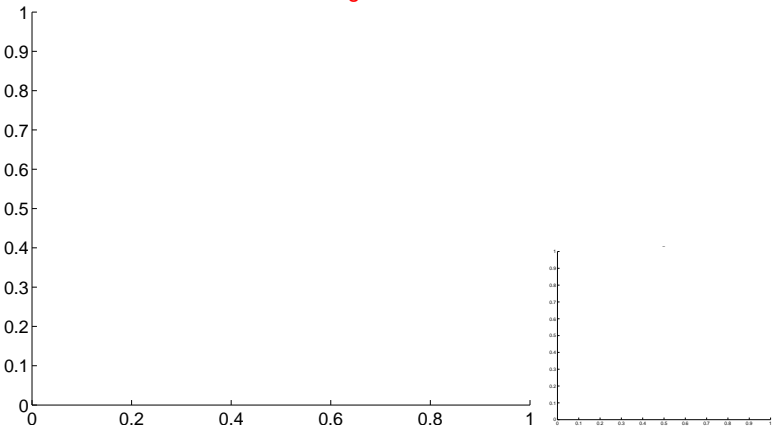
Q3 OOT image



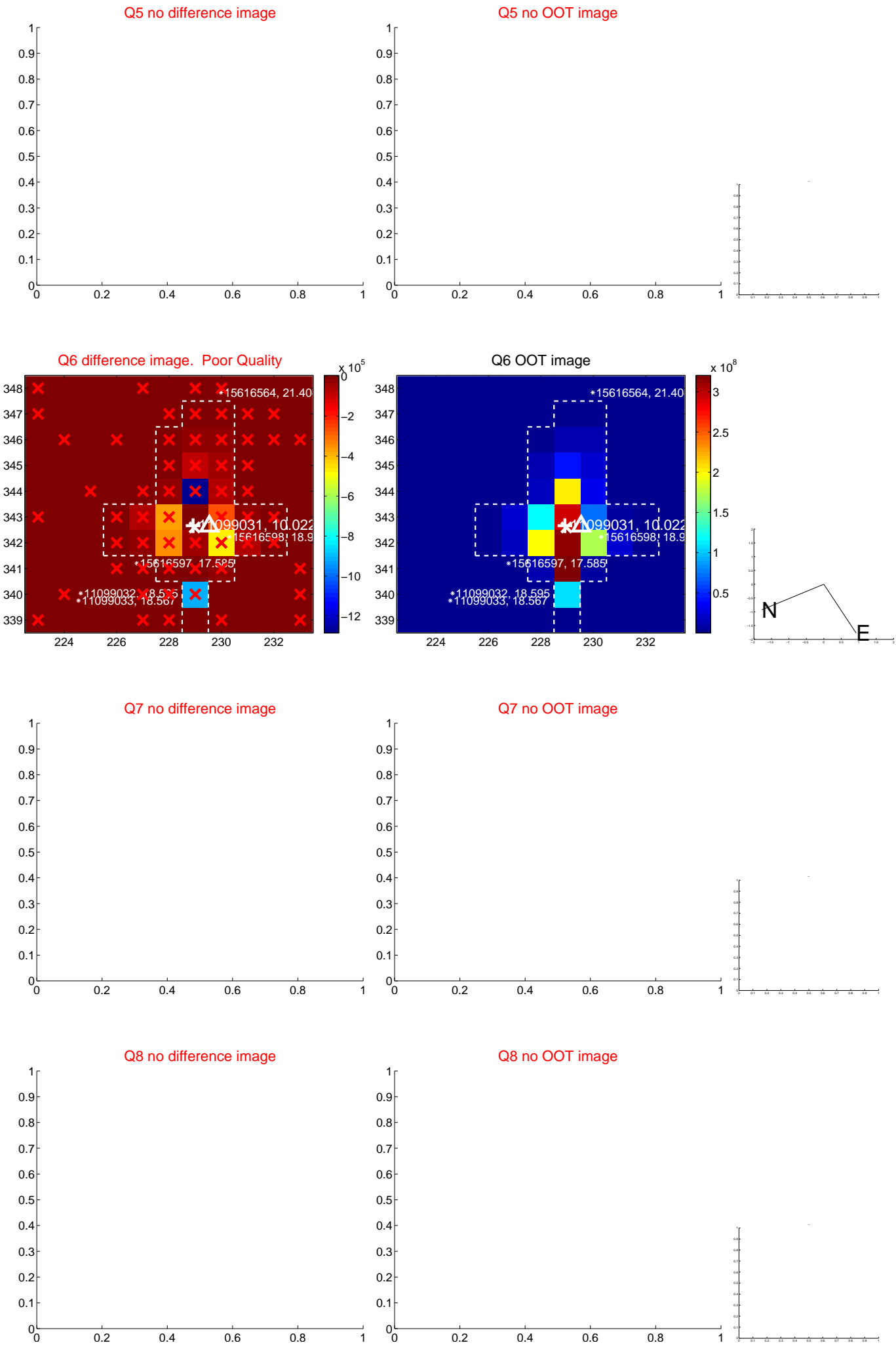
Q4 no difference image



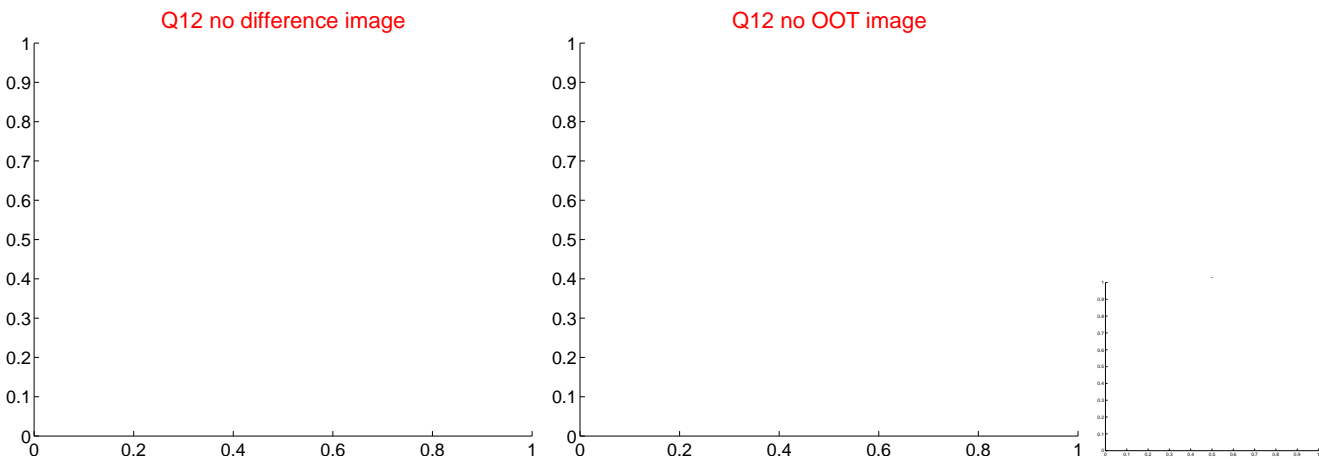
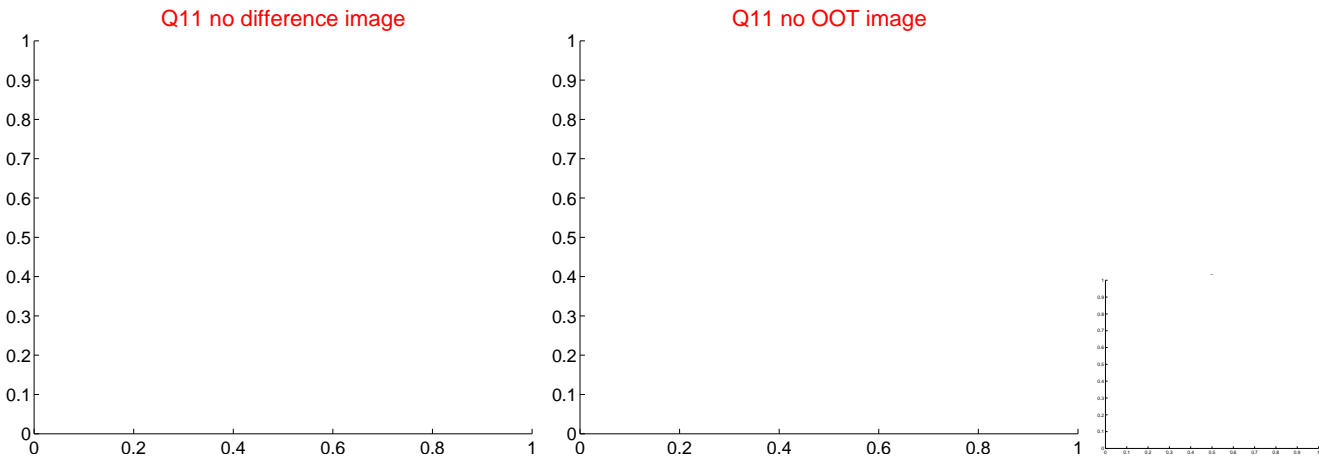
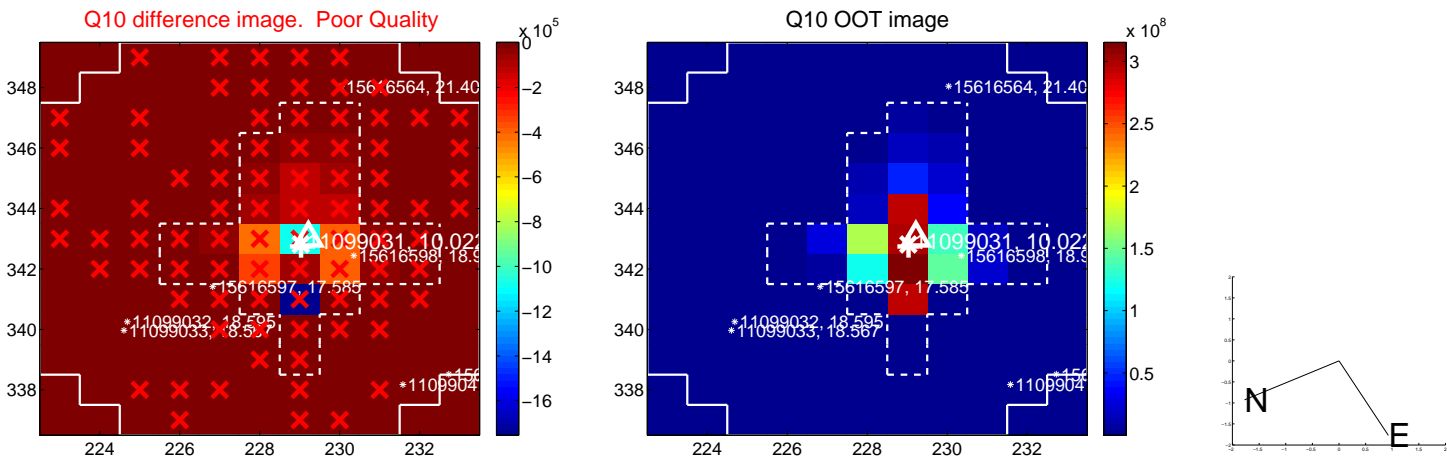
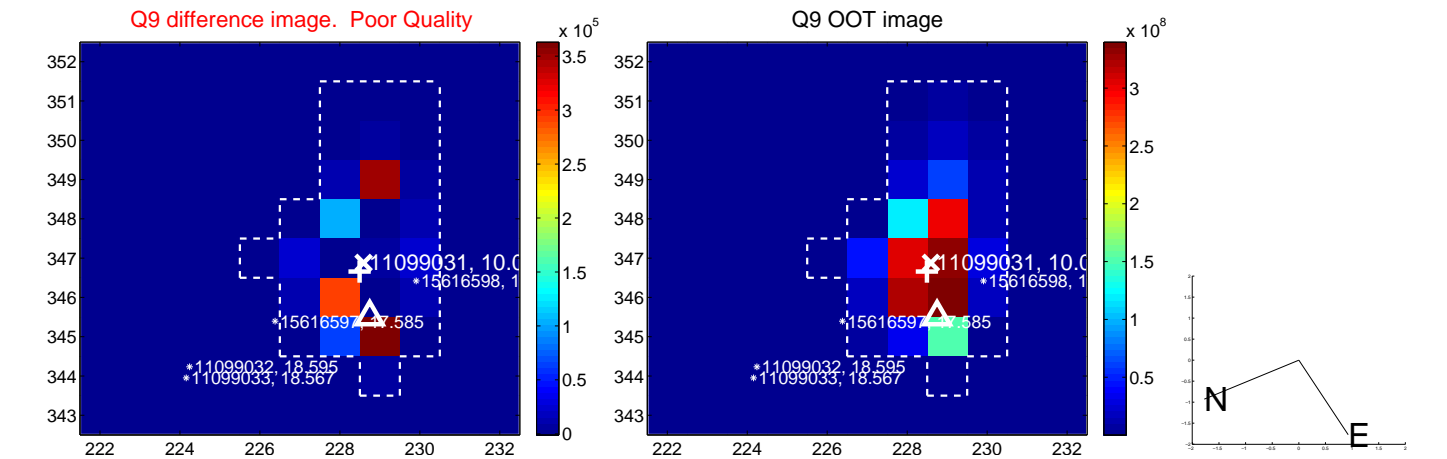
Q4 no OOT image



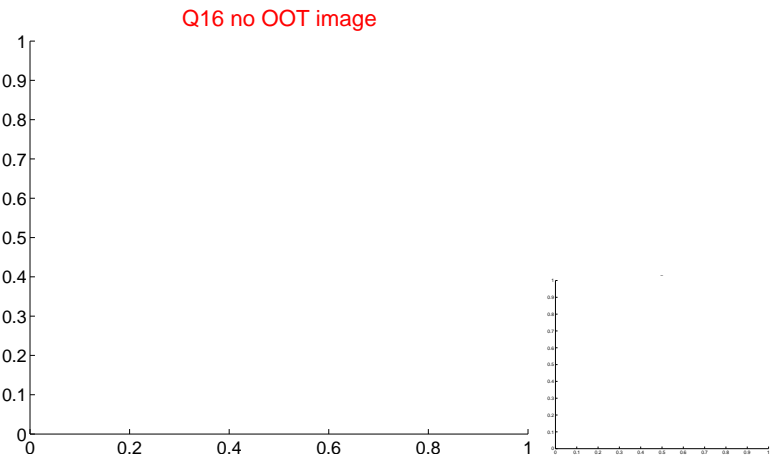
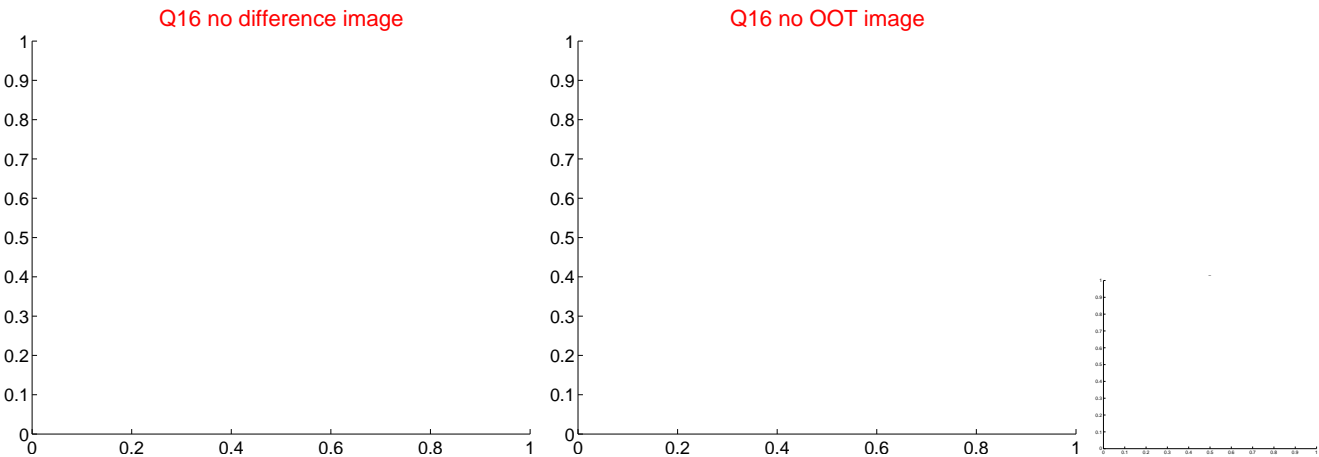
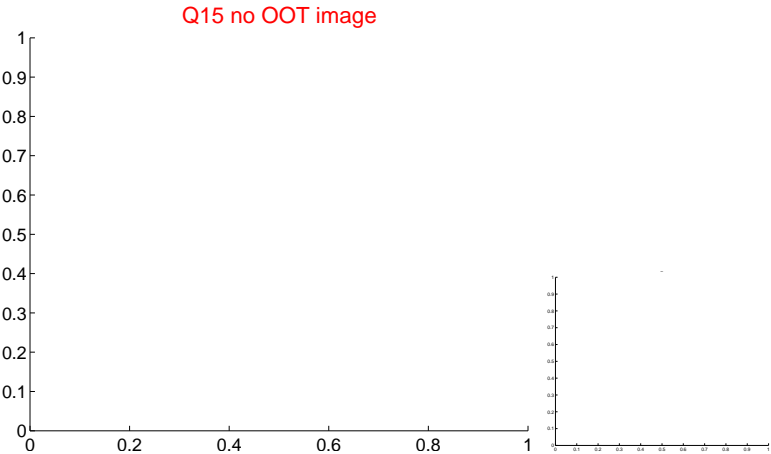
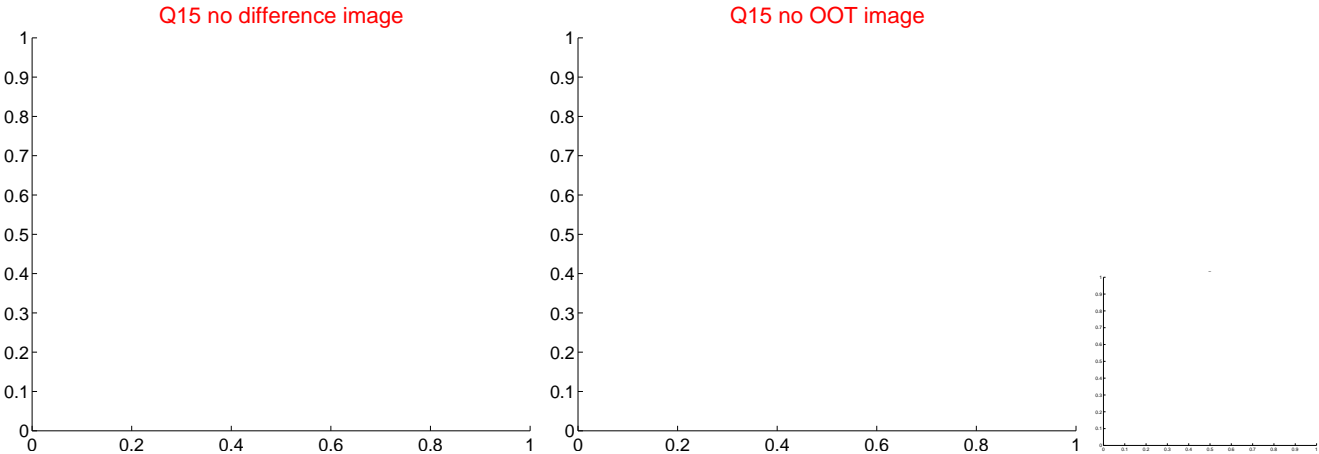
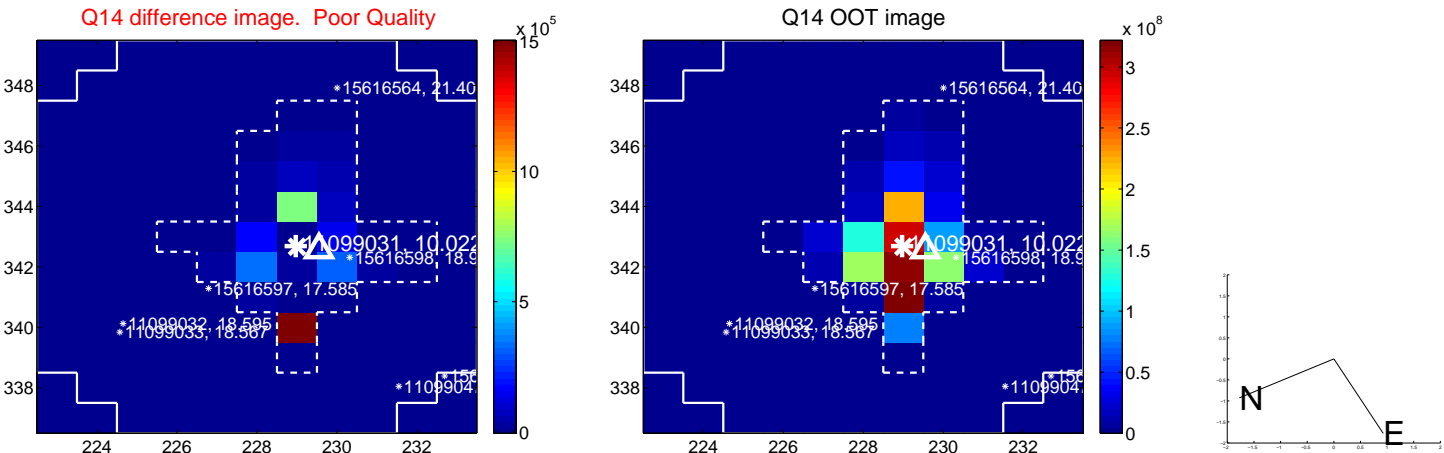
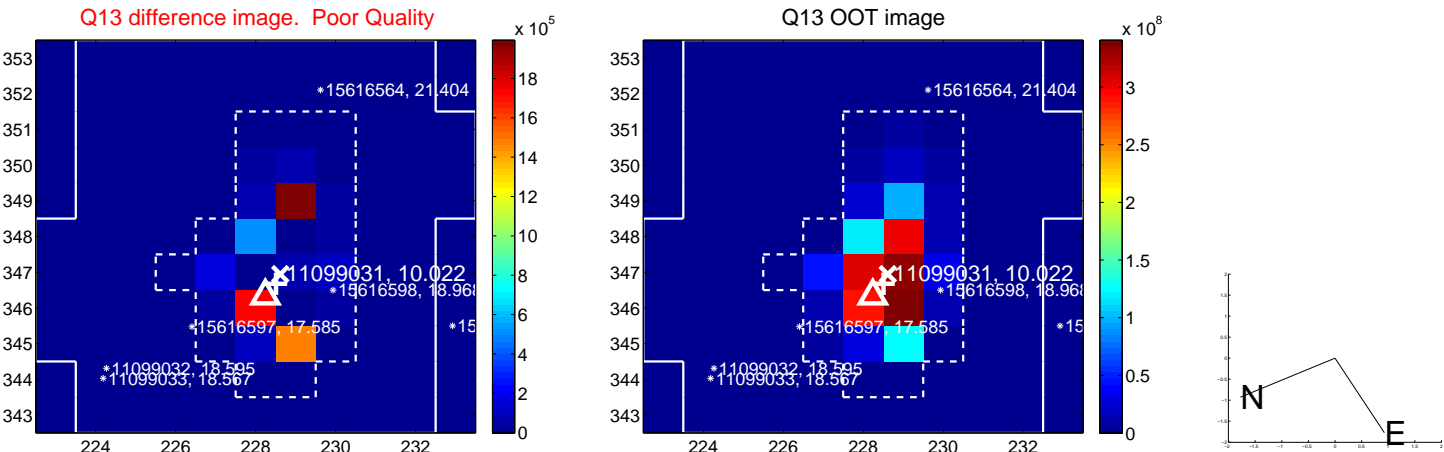
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



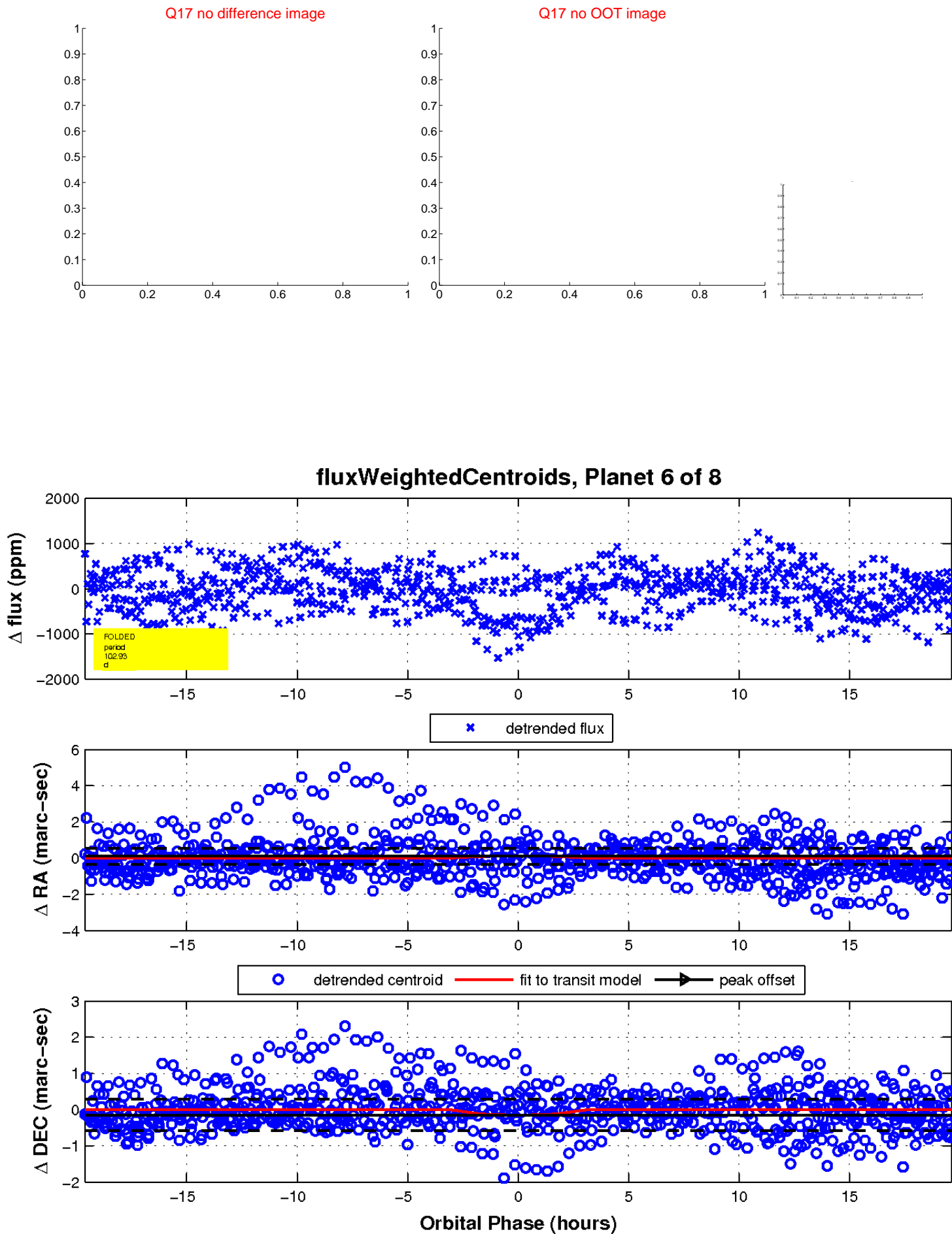
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



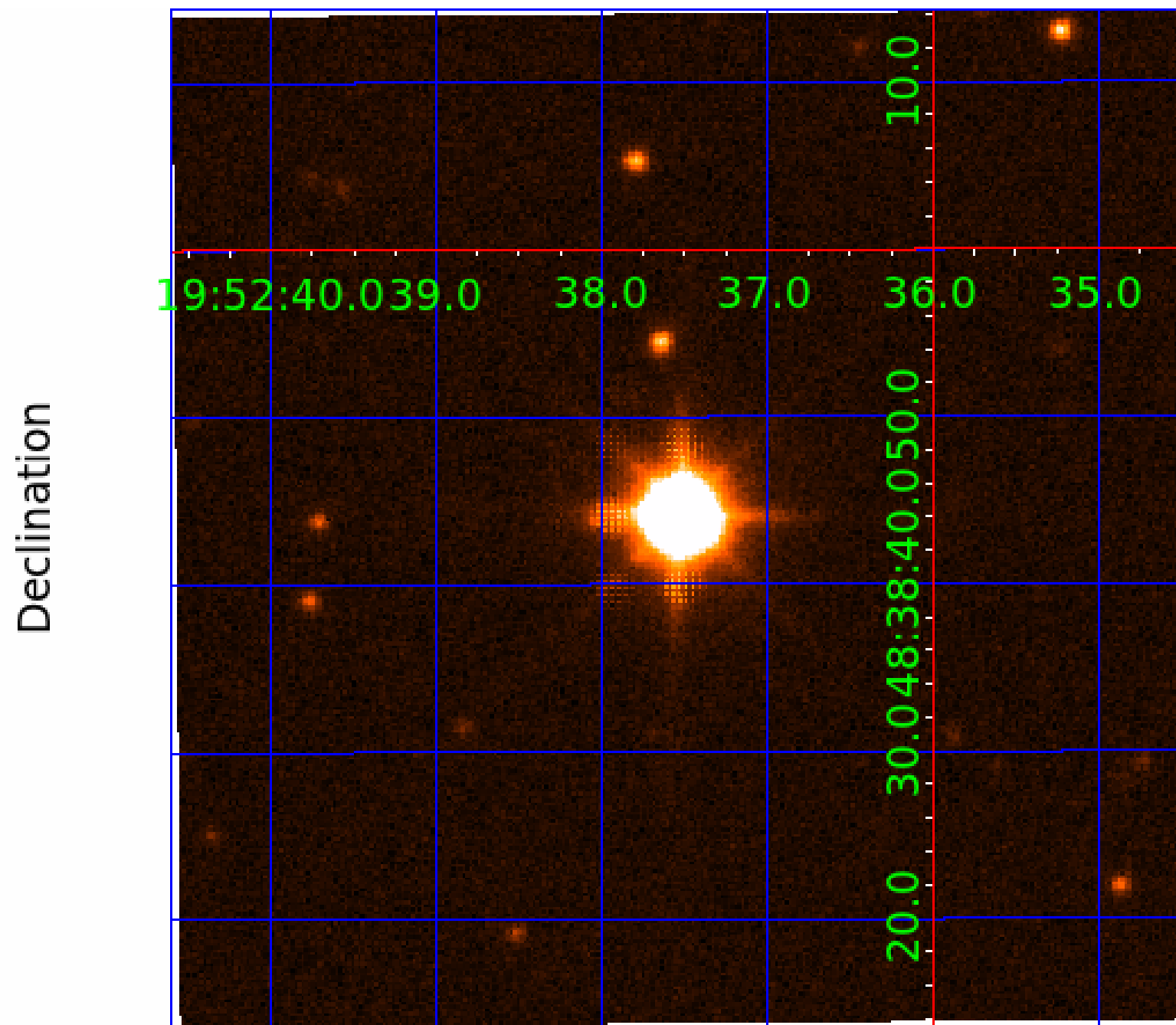
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 011099031

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})
011099031-01	OBS	No	0.928695	131.941079	5.7	4.862	8.1	1.3	1.39	6606	0.39	7945.45
011099031-02	OBS	No	5.262780	135.678566	191.2	4.335	9.3	9.9	1.39	6606	2.25	786.43
011099031-04	OBS	No	75.659901	151.086344	649.6	5.813	8.0	8.4	1.39	6606	6.80	22.50
011099031-05	OBS	No	137.285146	175.519949	530.1	9.189	8.5	6.8	1.39	6606	3.71	10.16
011099031-06	OBS	No	102.933229	195.373869	721.9	6.548	7.9	6.4	1.39	6606	4.73	14.92
011099031-07	OBS	No	34.775566	139.703564	337.1	2.433	7.4	6.8	1.39	6606	2.99	63.42
011099031-08	OBS	No	54.129085	138.869797	164.0	3.787	7.6	3.1	1.39	6606	2.06	35.16

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011099031-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
011099031-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
011099031-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
011099031-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED
011099031-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
011099031-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
011099031-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

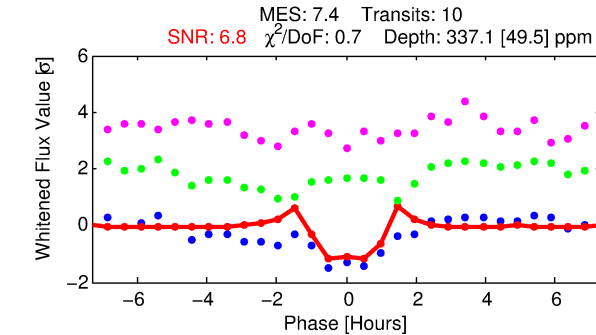
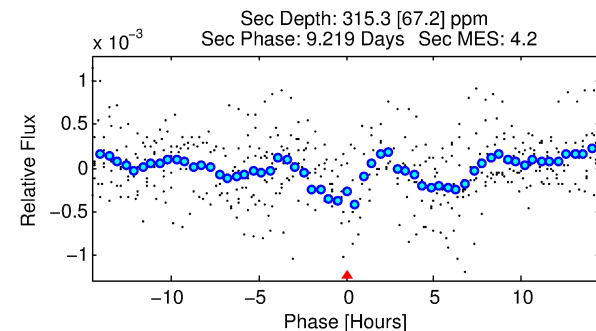
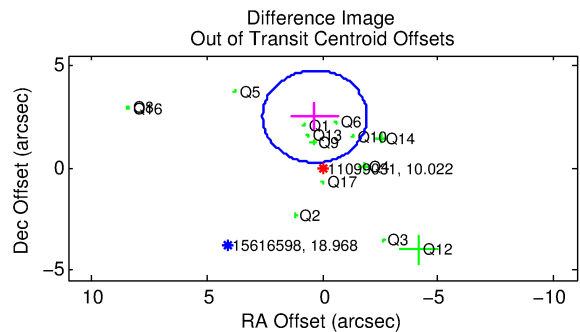
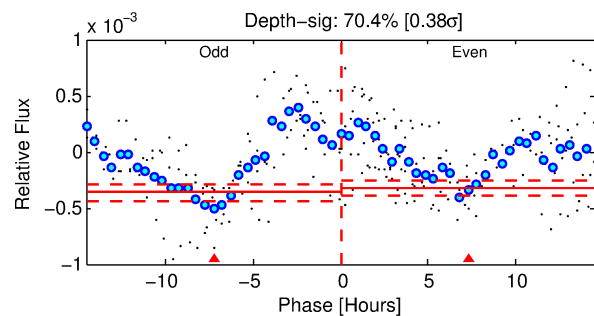
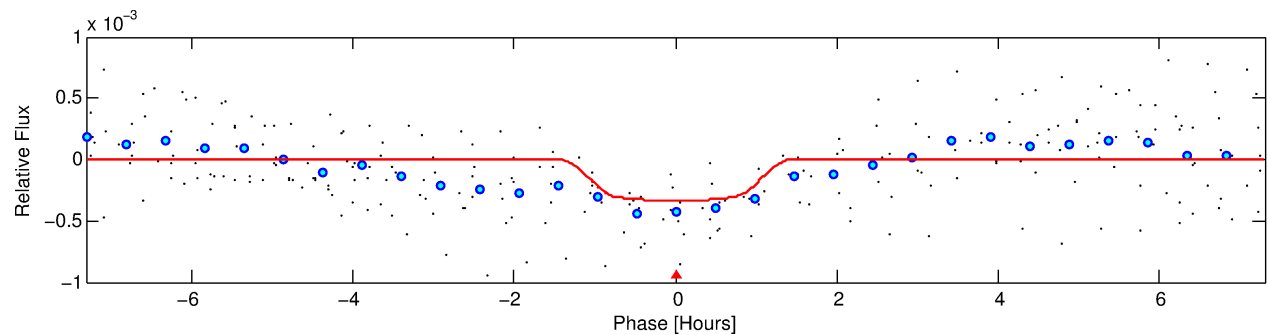
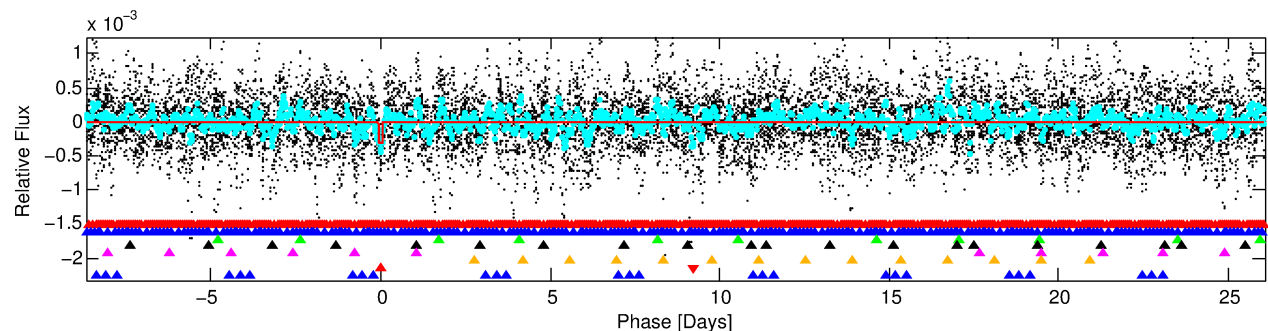
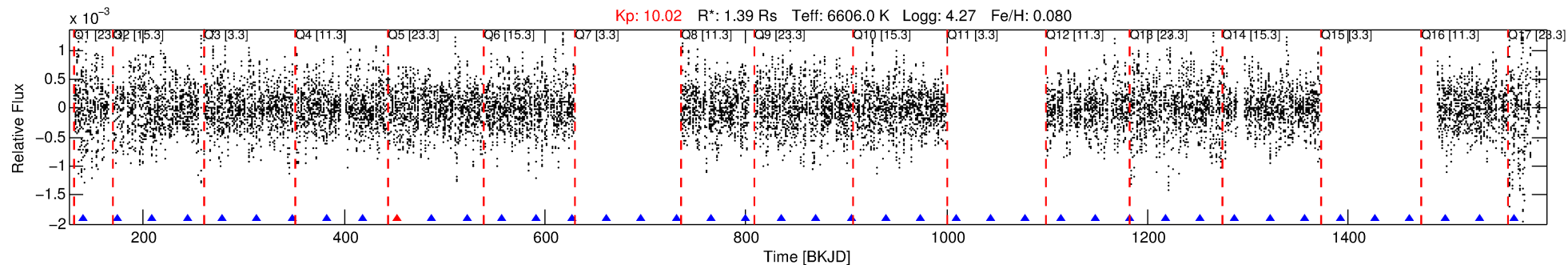
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011099031-07

No Significant Match Found

DV One-Page Summary

KIC: 11099031 Candidate: 7 of 8 Period: 34.776 d



DV Fit Results:

Period = 34.77557 [0.00021] d
Epoch = 139.7036 [0.0045] BKJD
 $R_p/R^* = 0.0196$ [0.0068]
 $a/R^* = 52.80$ [97.07]
 $b = 0.90$ [0.40]
 $T_{\text{eff}} = 63.42$ [26.56]
 $T_{\text{eq}} = 720$ [75] K
 $R_p = 2.99$ [1.42] R_{e}
 $a = 0.2285$ [0.0622] AU
 $A_g = 1015.09$ [832.38] [1.22 σ]
 $T_{\text{eff}} = 6280$ [1158] K [4.79 σ]

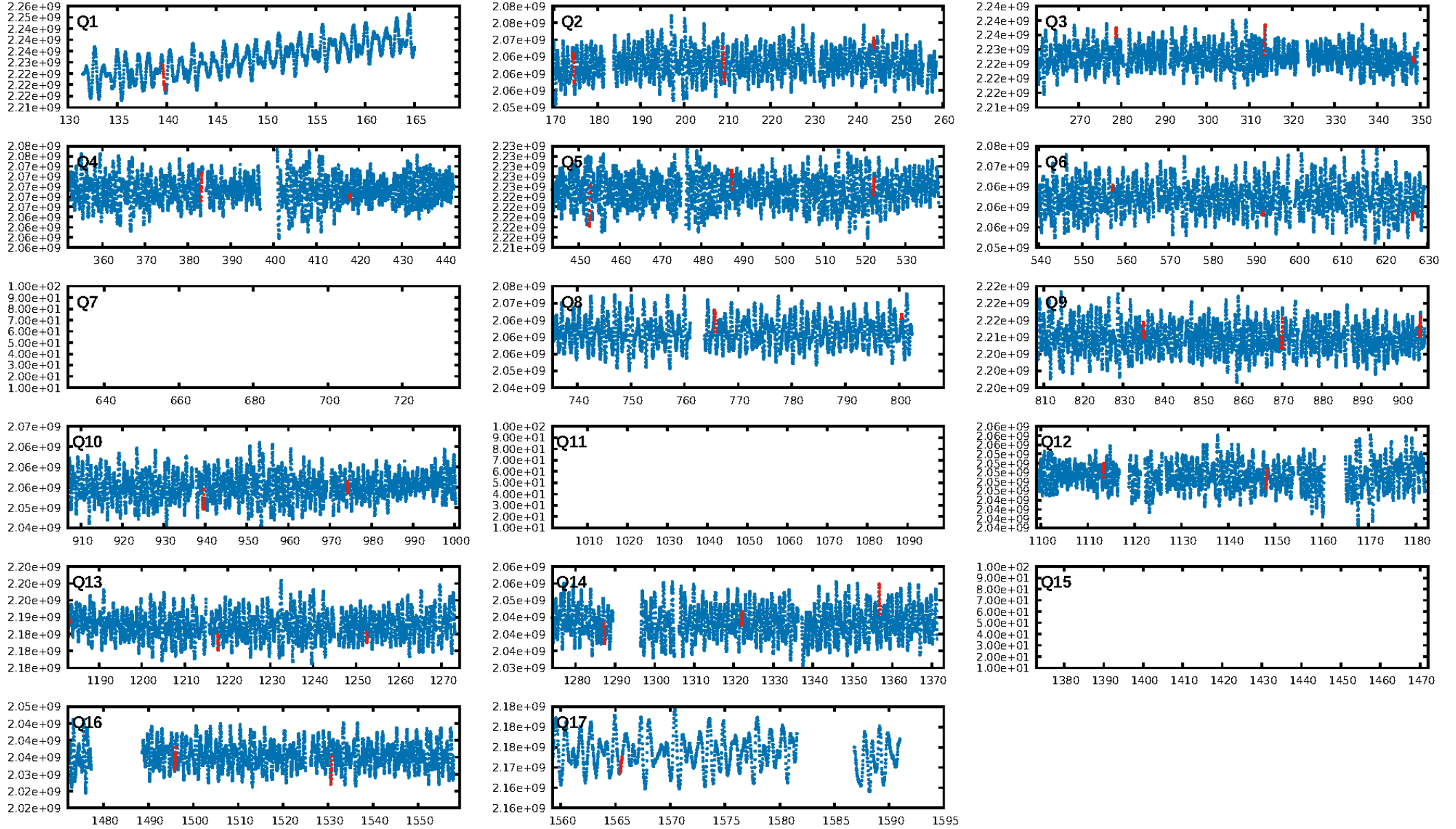
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [142.49 σ]
LongPeriod-sig: 100.0% [103.19 σ]
ModelChiSquare2-sig: 89.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.22e-09
RollingBand-fgt: 0.88 [7/8]
GhostDiagnostic-chr: N/A
Centroid-sig: 45.2%
Centroid-so: 0.263 arcsec [0.74 σ]
OotOffset-rm: 2.527 arcsec [3.36 σ]
KicOffset-rm: 3.177 arcsec [4.04 σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 0.07 [1/14]
DiffImageOverlap-fno: 0.07 [1/14]

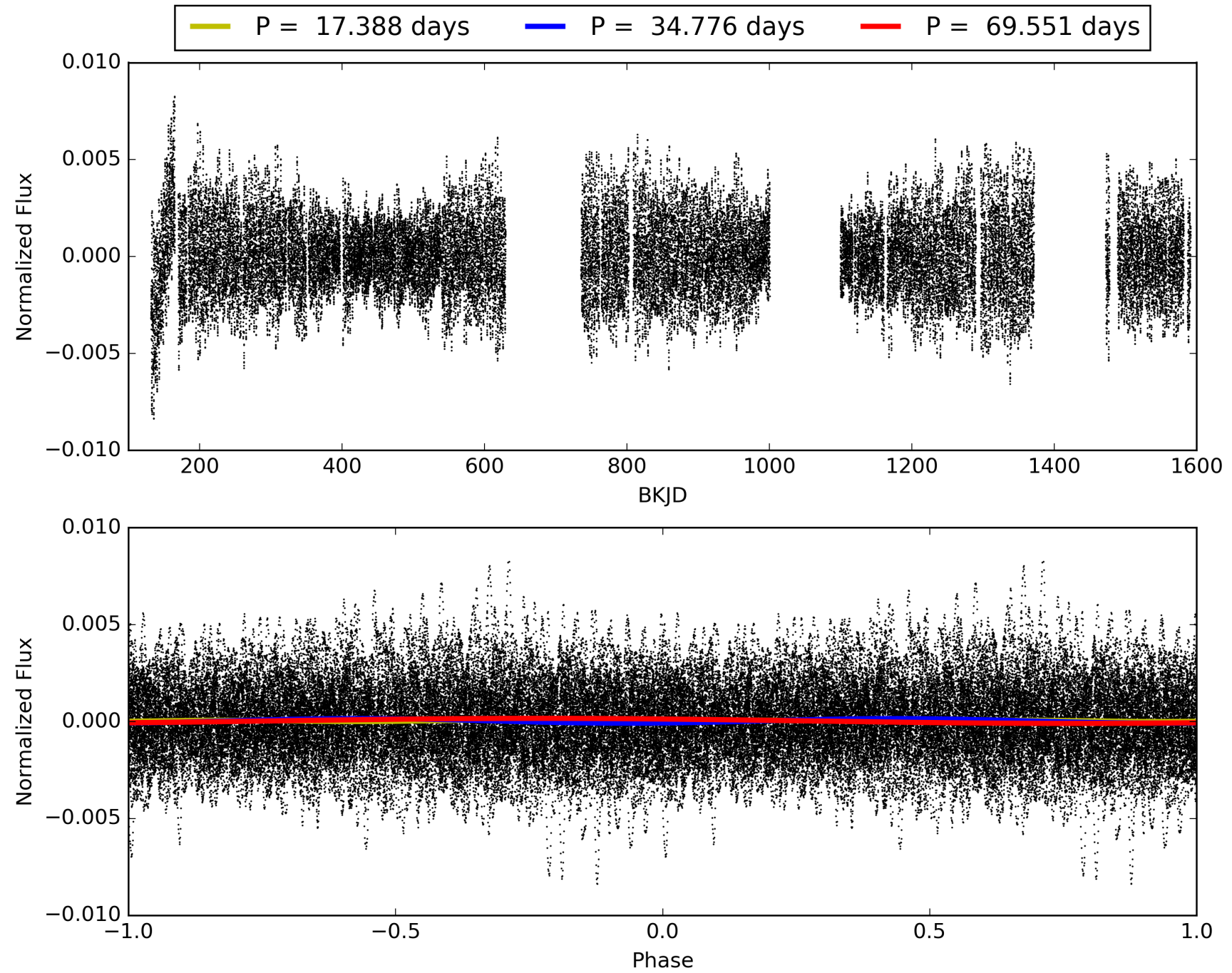
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 10:15:42 Z

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

TCE 011099031-07, PDC Light Curves

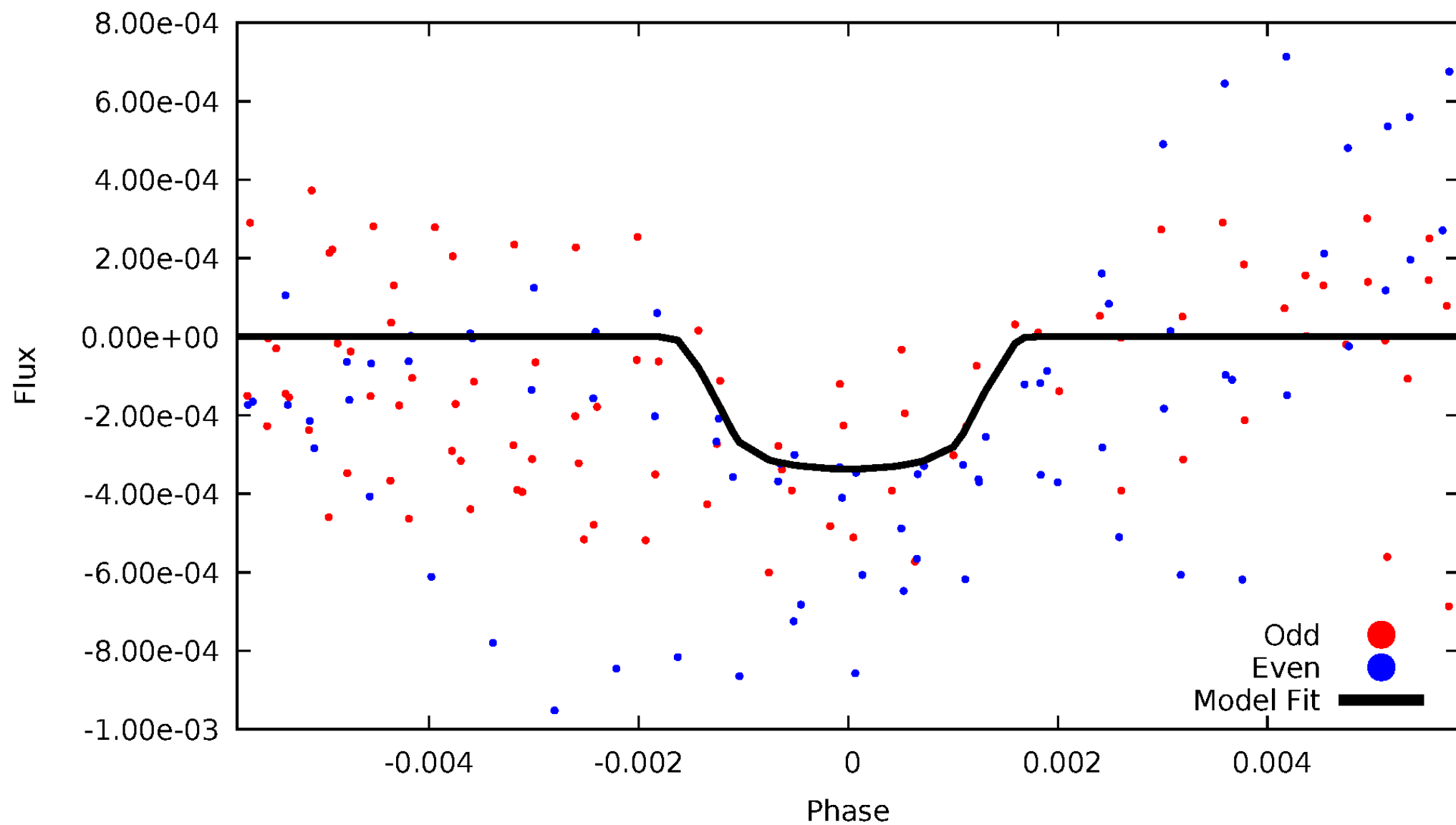


TCE 011099031-07



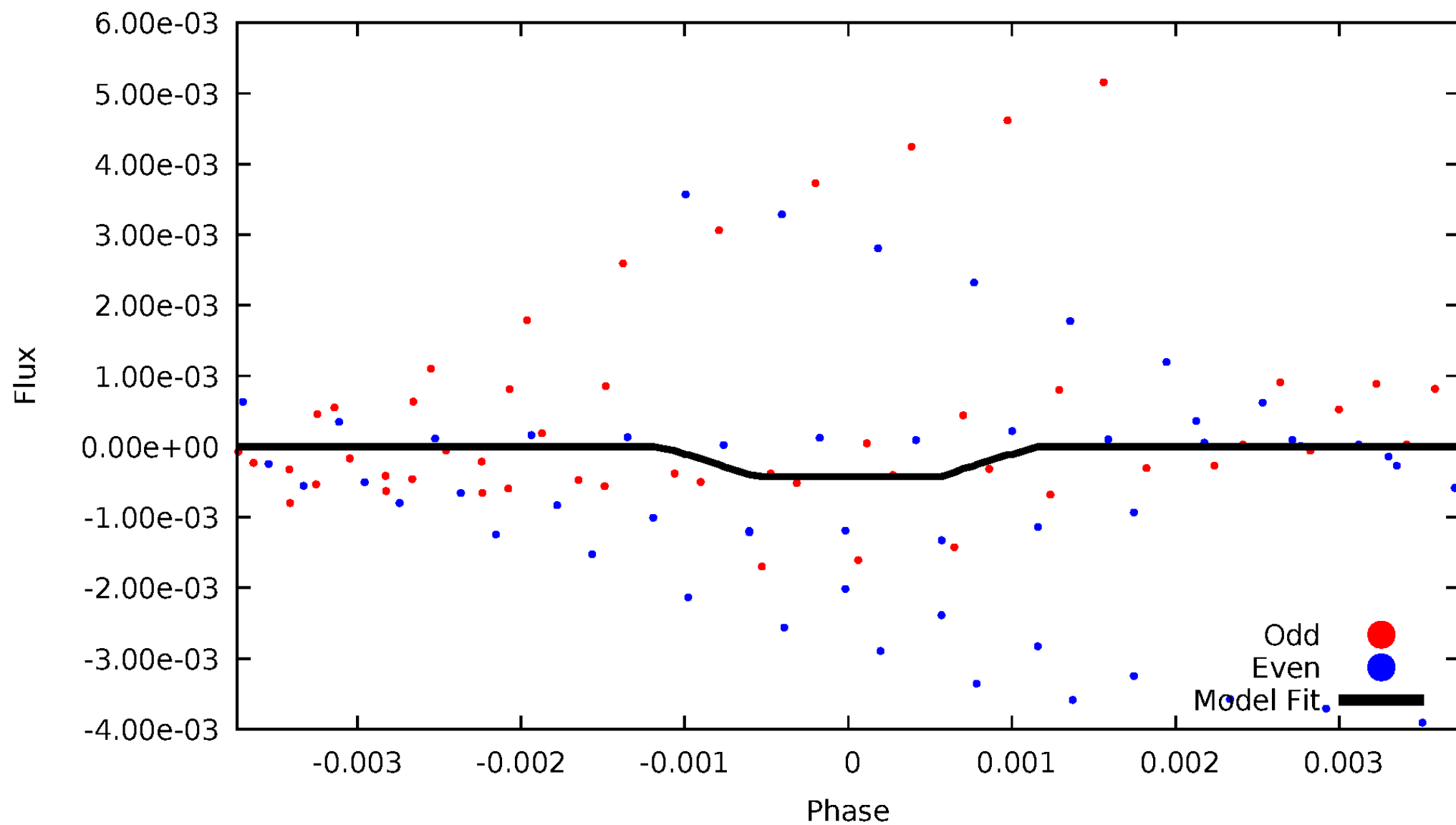
DV Odd/Even

TCE 011099031-07



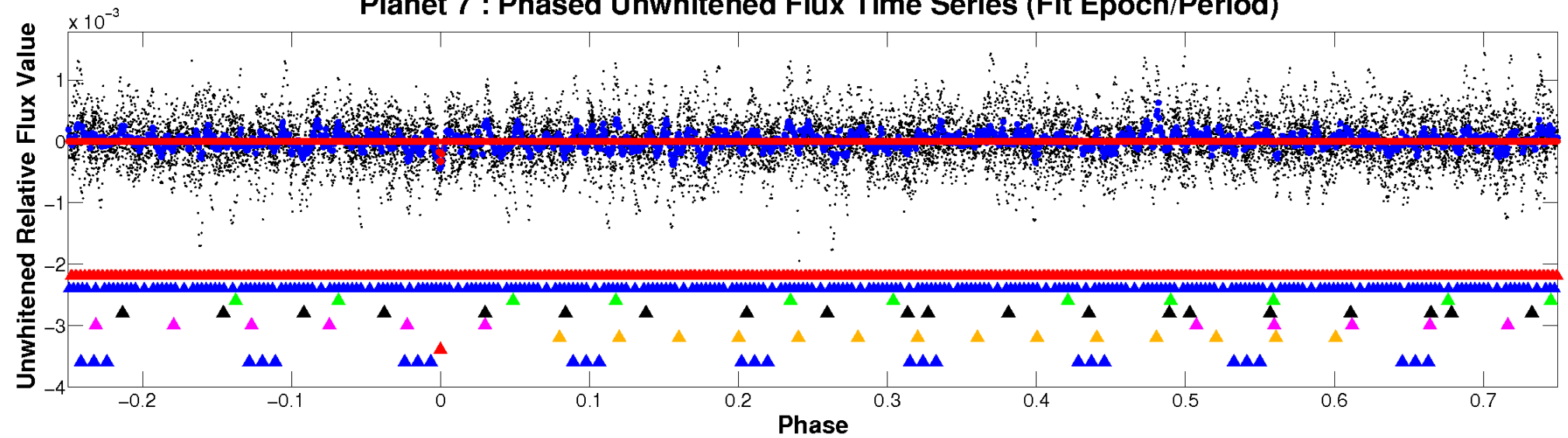
ALT Odd/Even

TCE 011099031-07

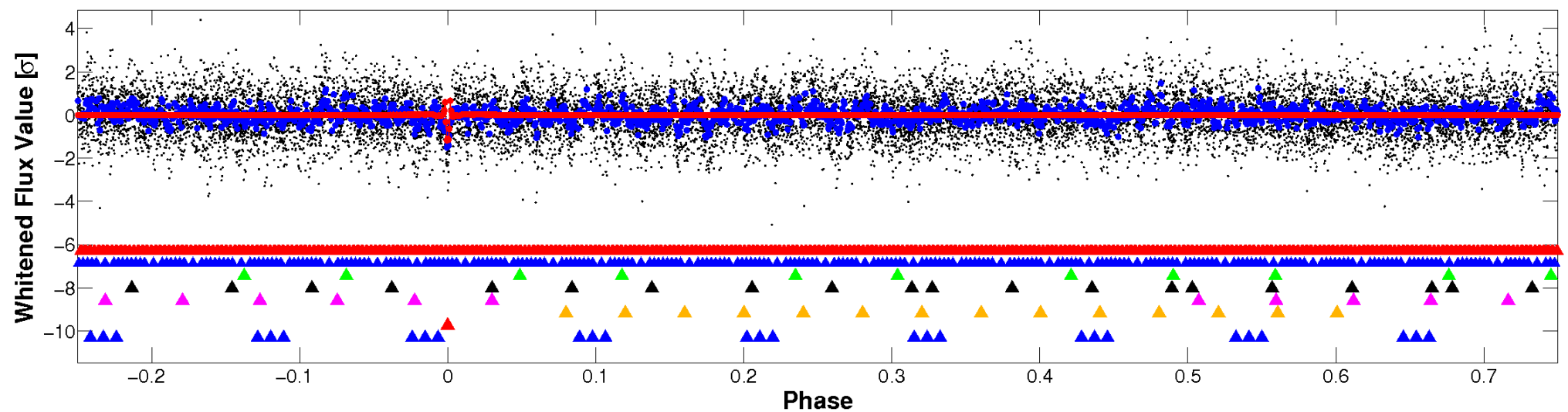


Non-Whitened Vs. Whitened Light Curve

Planet 7 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

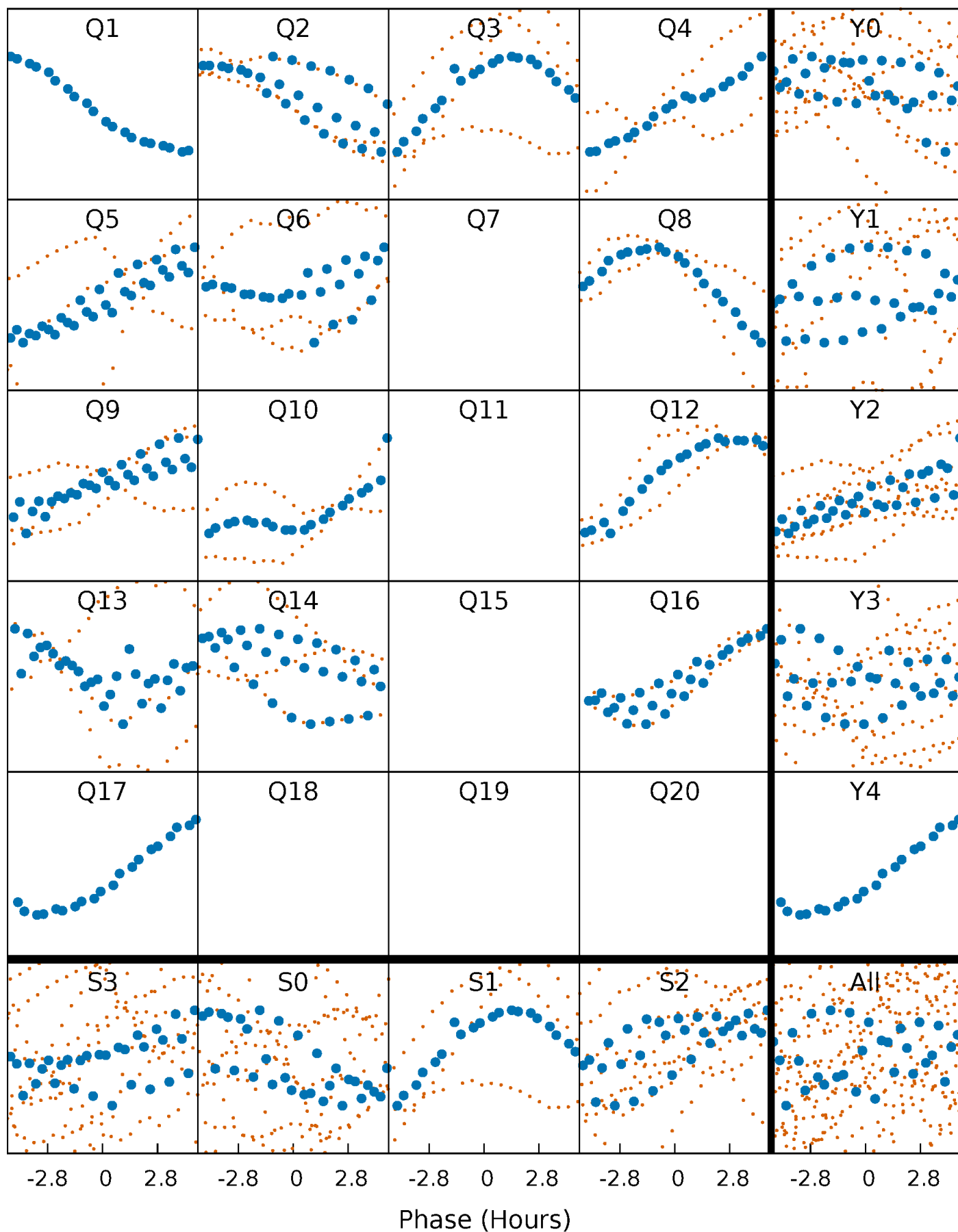


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



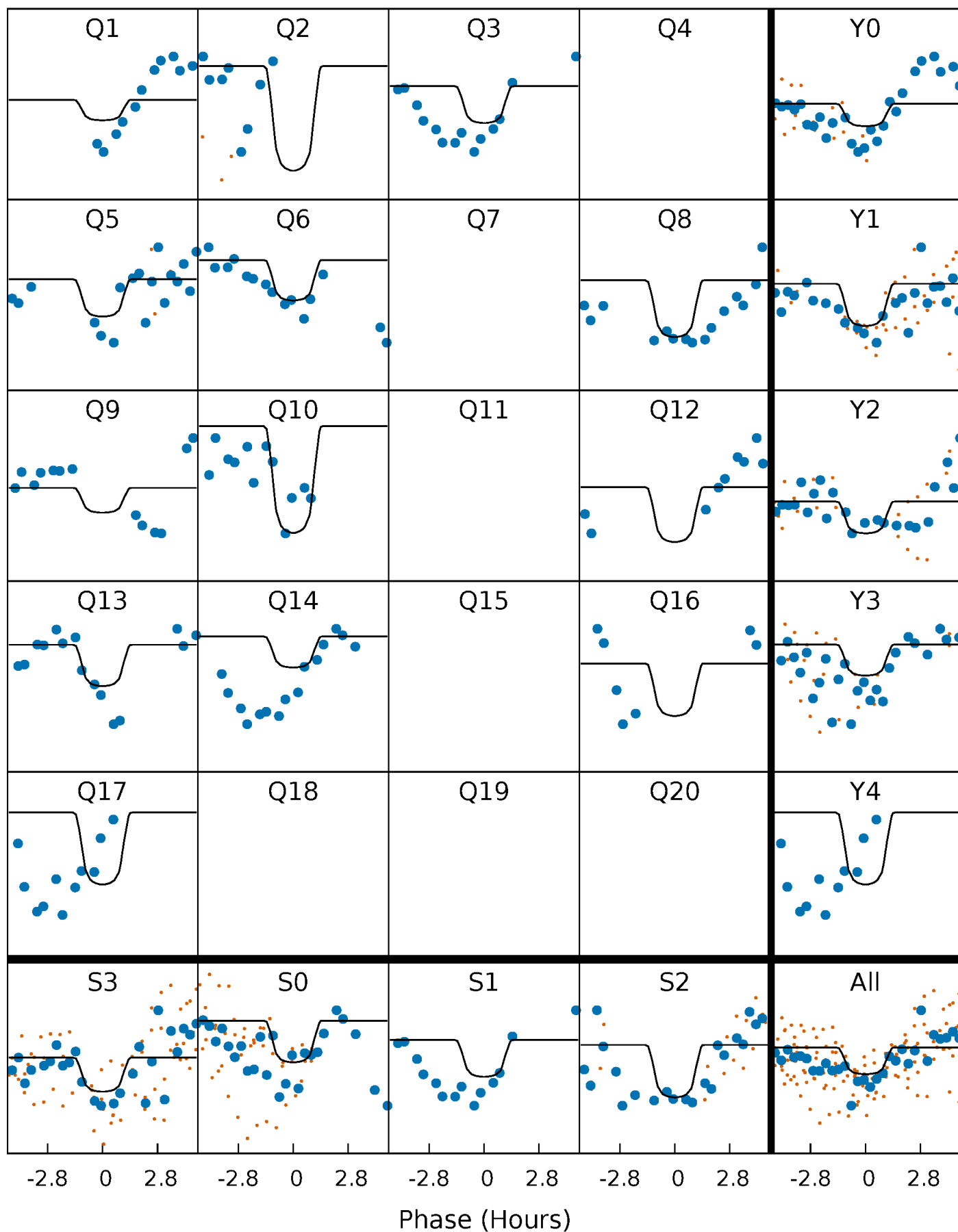
PDC Quarter-Phased Transit Curves

TCE 011099031-07 $P = 34.775566$ Days $T_0 = 139.703564$ (BKJD)



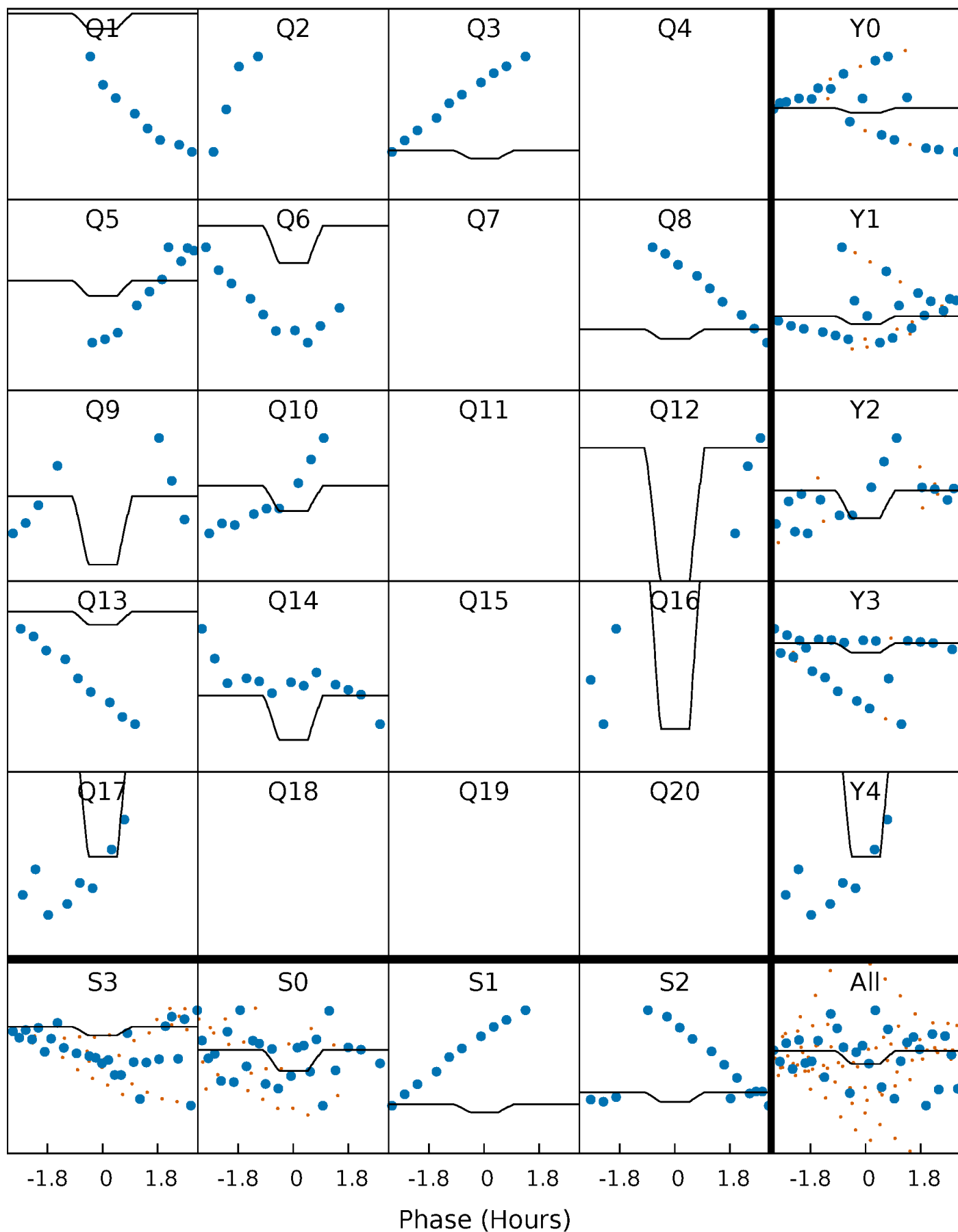
DV Quarter-Phased Transit Curves

TCE 011099031-07 $P = 34.775566$ Days $T_0 = 139.703564$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

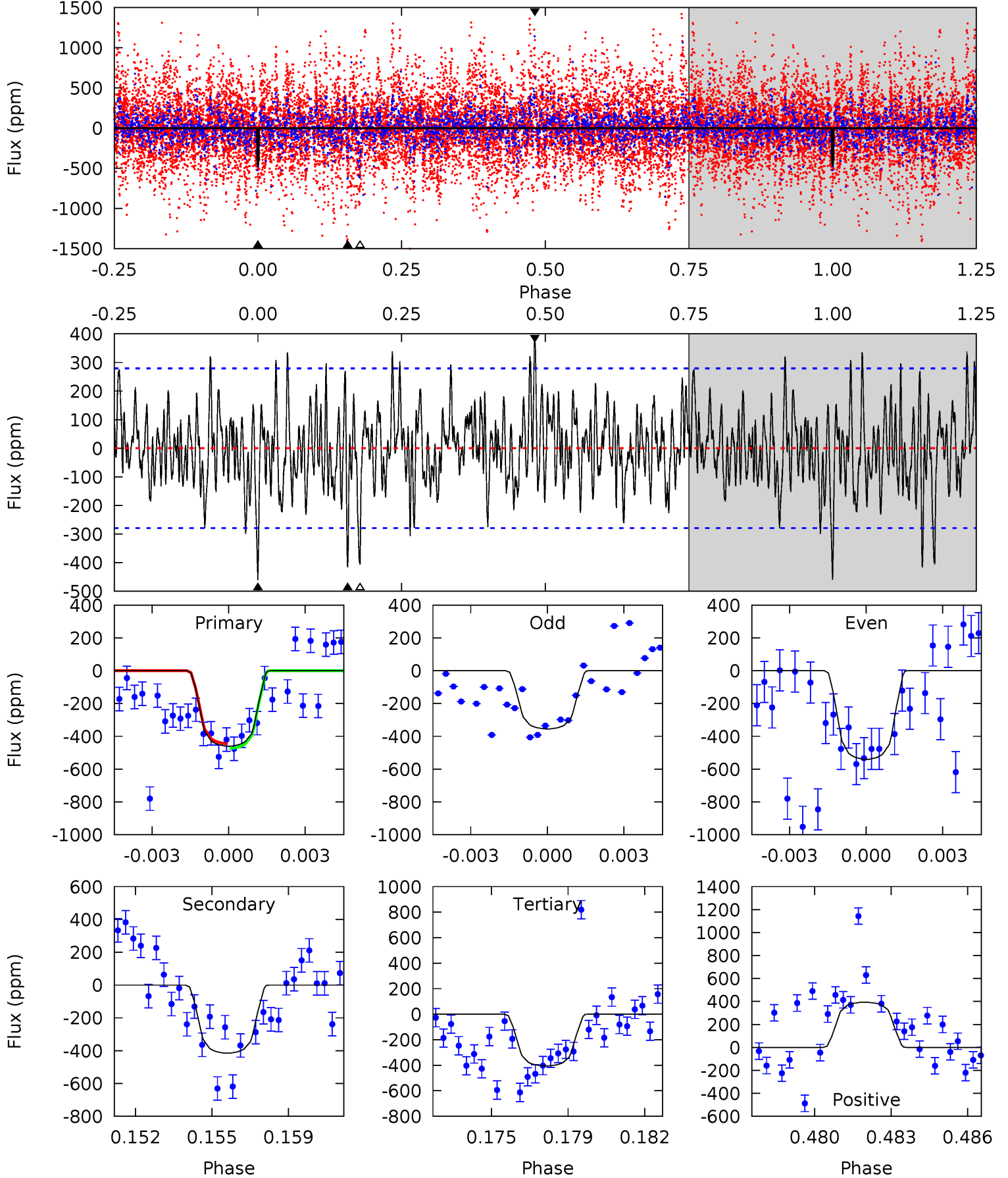
TCE 011099031-07 P= 34.775196 Days $T_0=139.706484$ (BKJD)



DV Model-Shift Uniqueness Test

011099031-07, P = 34.775566 Days, E = 104.927998 Days

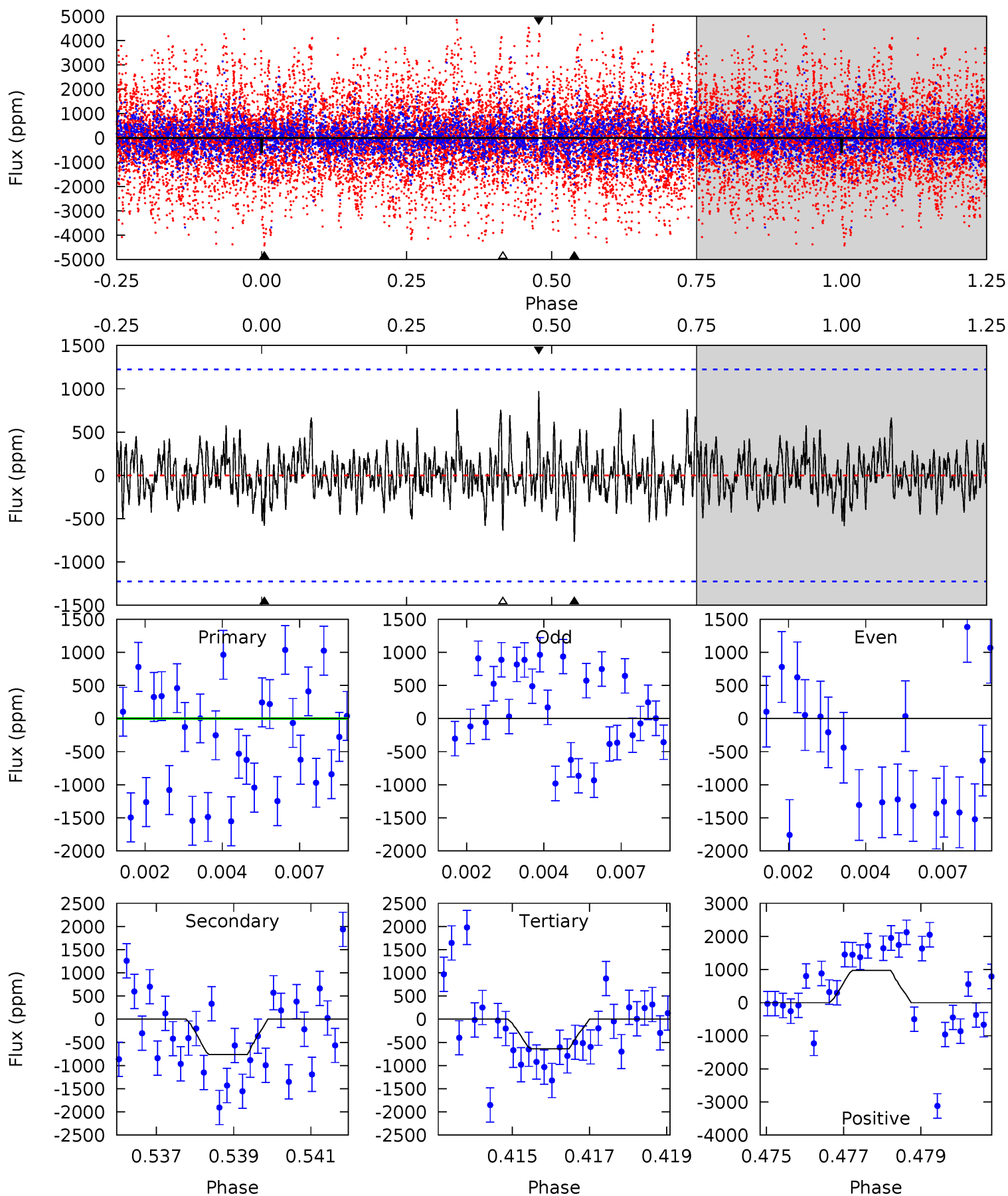
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.63	7.80	7.61	7.39	5.23	2.94	2.12	1.02	1.25	0.19	0.41	1.73	0.98	0.46	0.27



Alt Model-Shift Uniqueness Test

011099031-07, $P = 34.775196$ Days, $E = 104.931288$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.53	3.31	2.77	4.21	5.31	3.06	0.94	-0.24	-1.68	0.54	-0.90	1.14	0.13	0.56	0.47



Stellar Parameters For KIC 011099031

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6606^{+184}_{-253}	$4.269^{+0.090}_{-0.210}$	$0.080^{+0.250}_{-0.350}$	$1.393^{+0.458}_{-0.212}$	$1.320^{+0.195}_{-0.195}$	$0.688^{+0.348}_{-0.370}$
	+3%/-4%	+2%/-5%	+312%/-438%	+33%/-15%	+15%/-15%	+51%/-54%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 011099031-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-416 ± 53	$3.06^{+1.22}_{-1.10}$	1014^{+74}_{-58}	6716^{+2021}_{-1033}	1288^{+1654}_{-648}
Alt.	-764 ± 231	$3.21^{+1.18}_{-1.05}$	1018^{+80}_{-58}	7875^{+2299}_{-1453}	2046^{+2535}_{-1022}

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 $A_{obs} \gg 1.0$

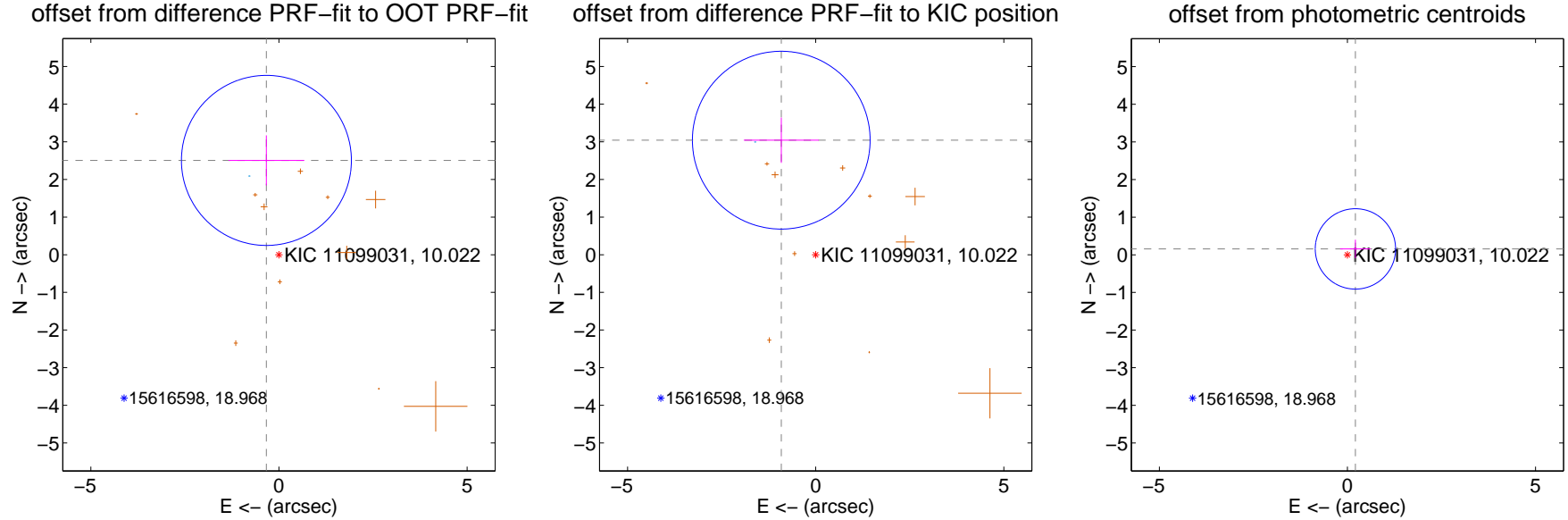
DV Centroid Data

Supplemental centroid analysis for 011099031-07. **Kepler magnitude: 10.02.** Transit SNR 6.84

There are 1 quarters with good PRF difference image offsets

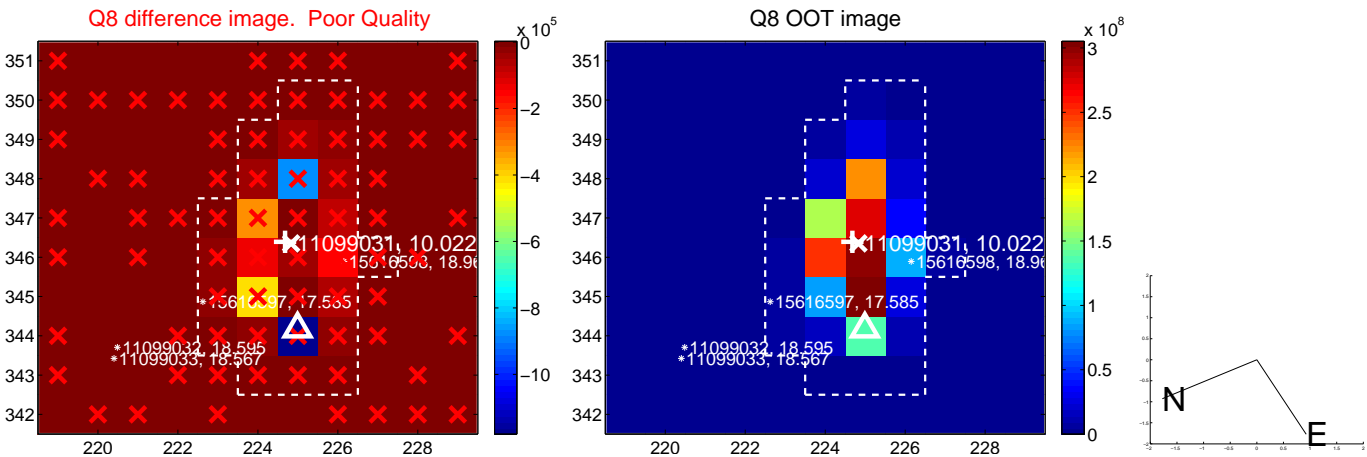
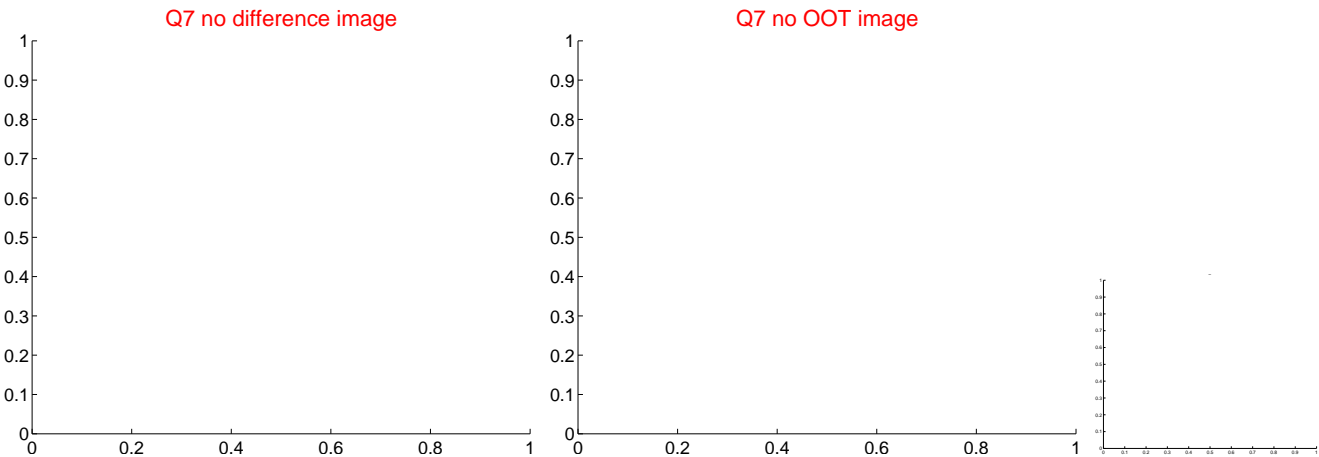
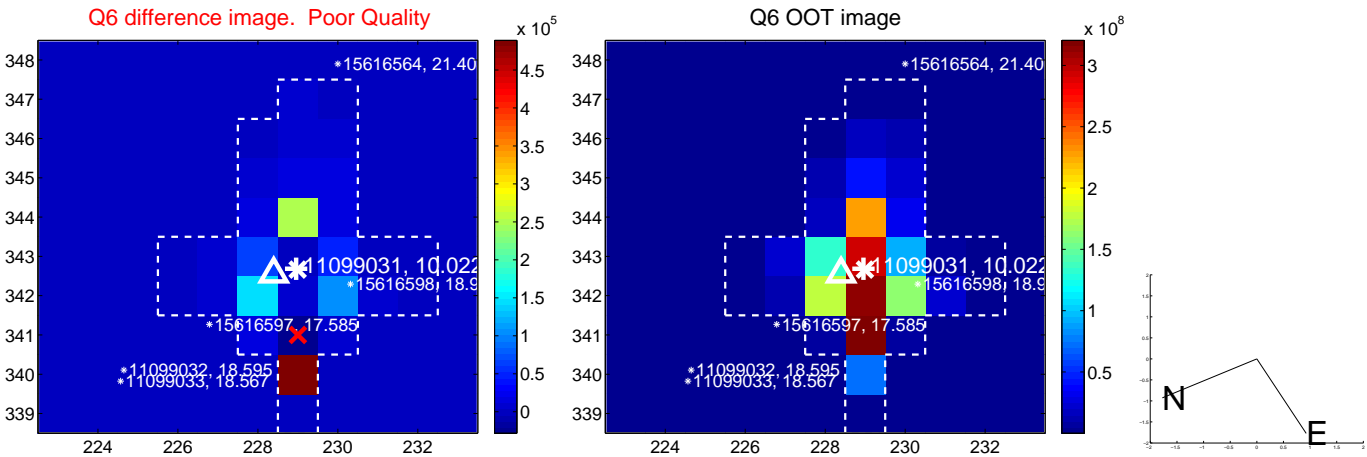
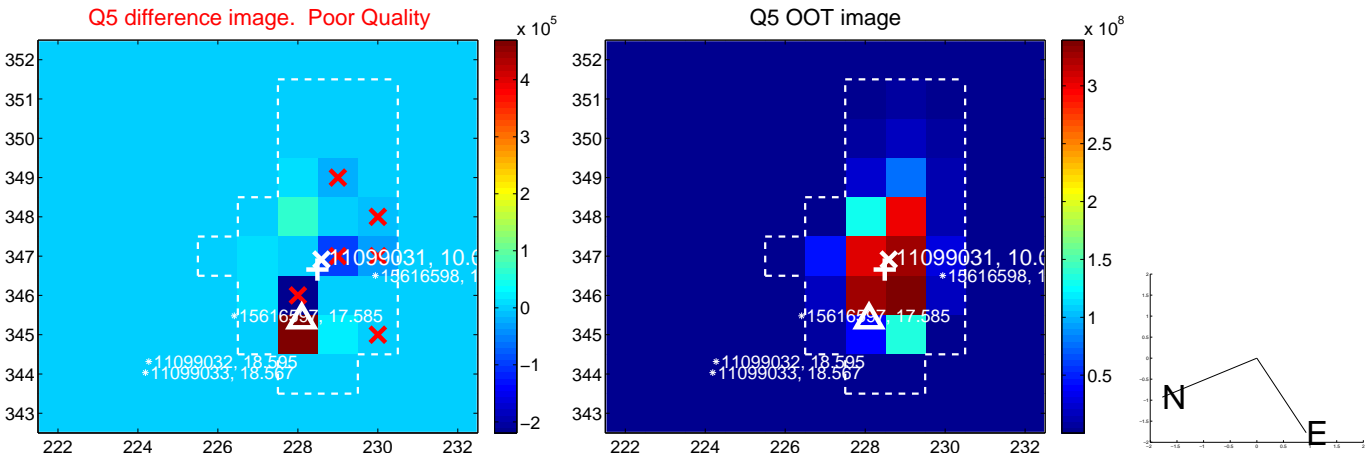
The direct PRF centroid is offset from the target star catalog position by about 0.95 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.527 ± 0.753	3.36	0.334 ± 1.007	2.505 ± 0.664
PRF-fit source offset from KIC position	3.177 ± 0.787	4.04	0.915 ± 0.998	3.042 ± 0.602
photometric centroid source offset	0.26 ± 0.36	0.74	-0.21 ± 0.40	0.16 ± 0.24

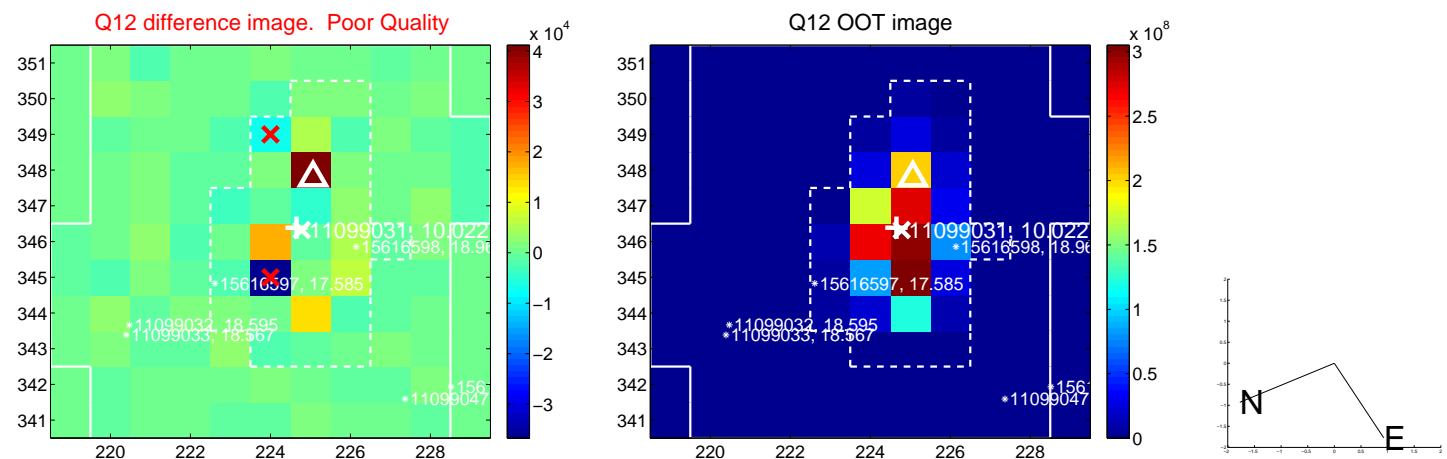
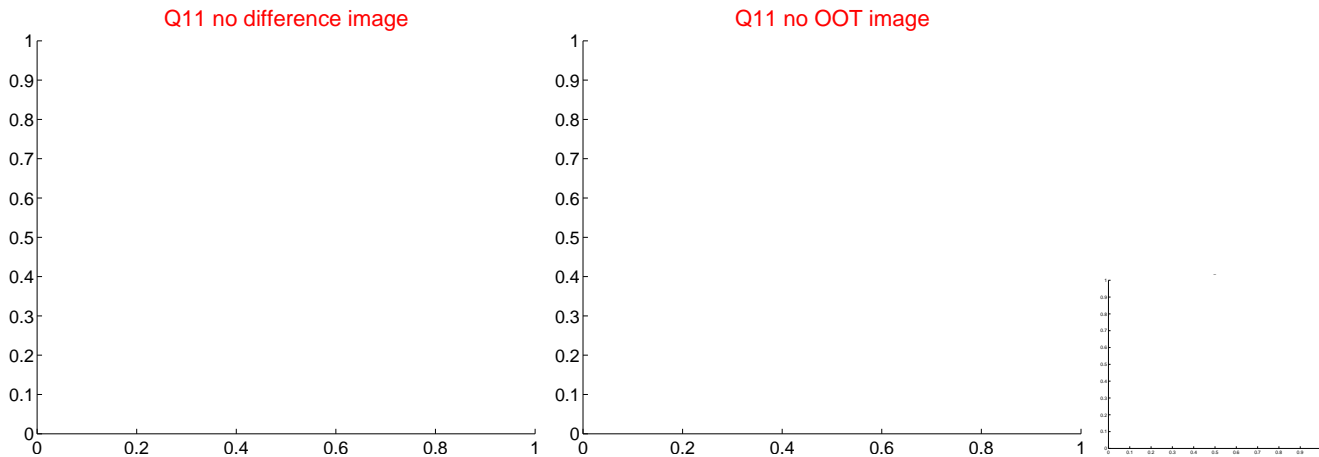
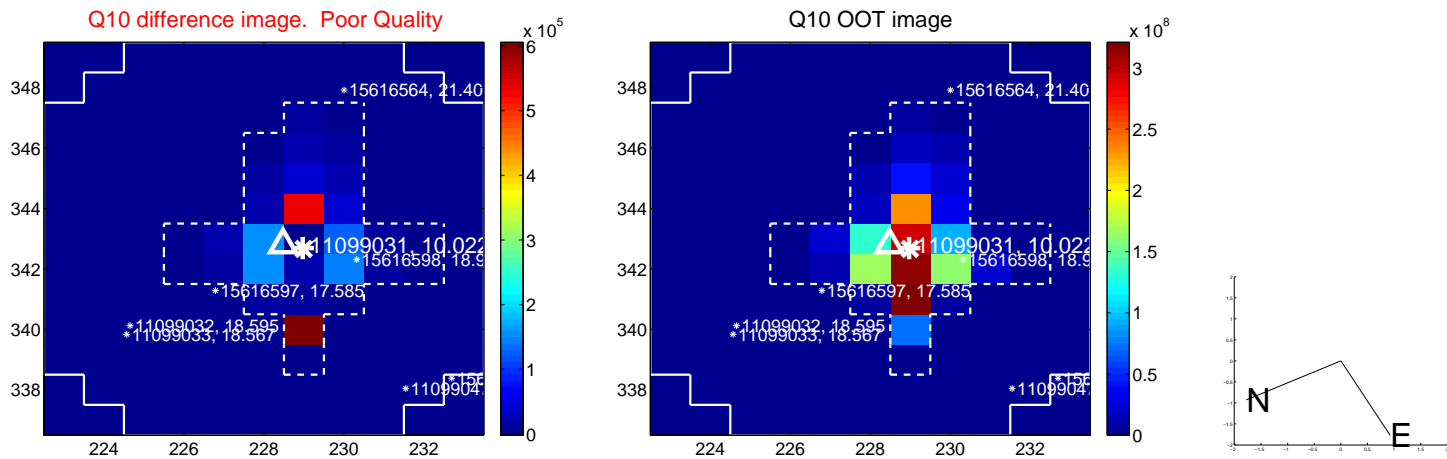
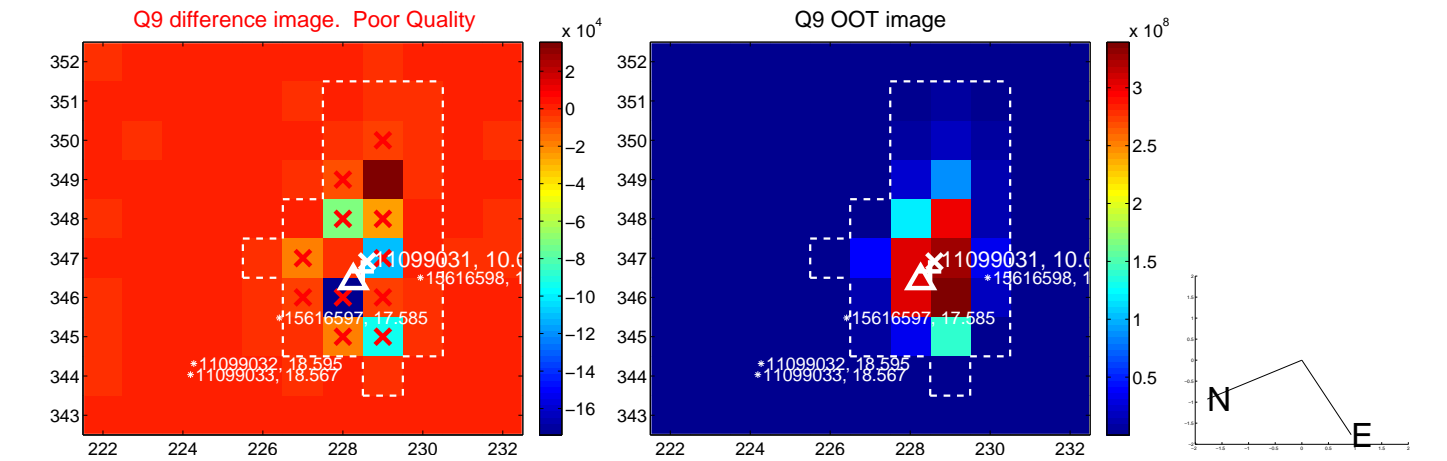


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

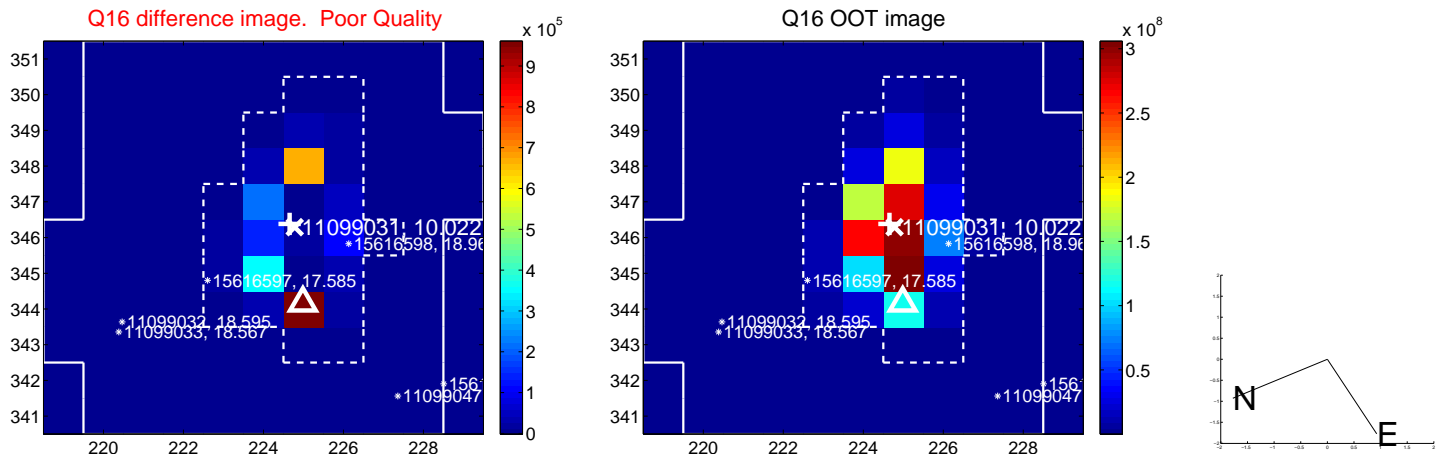
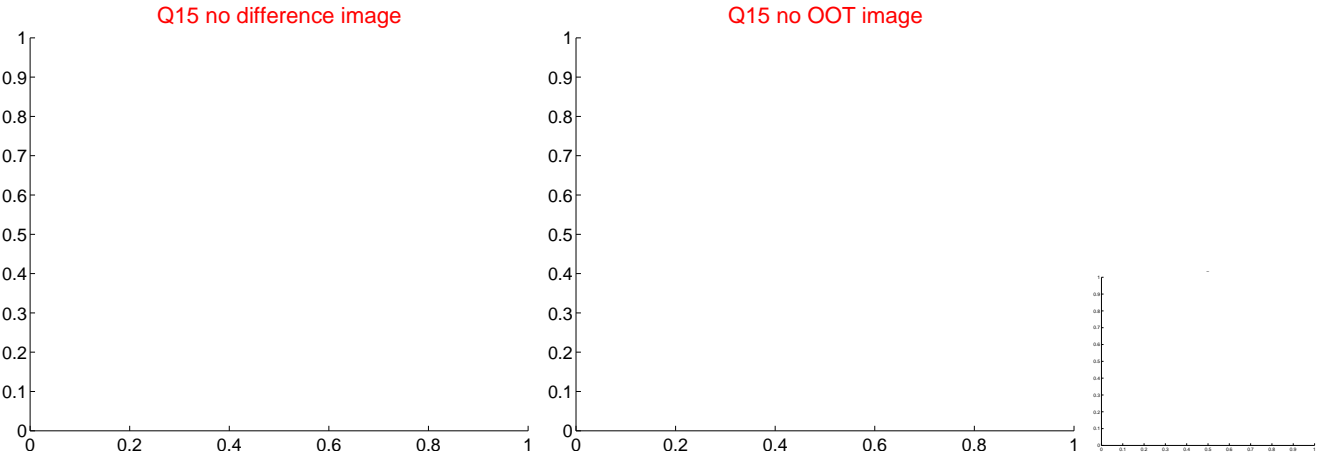
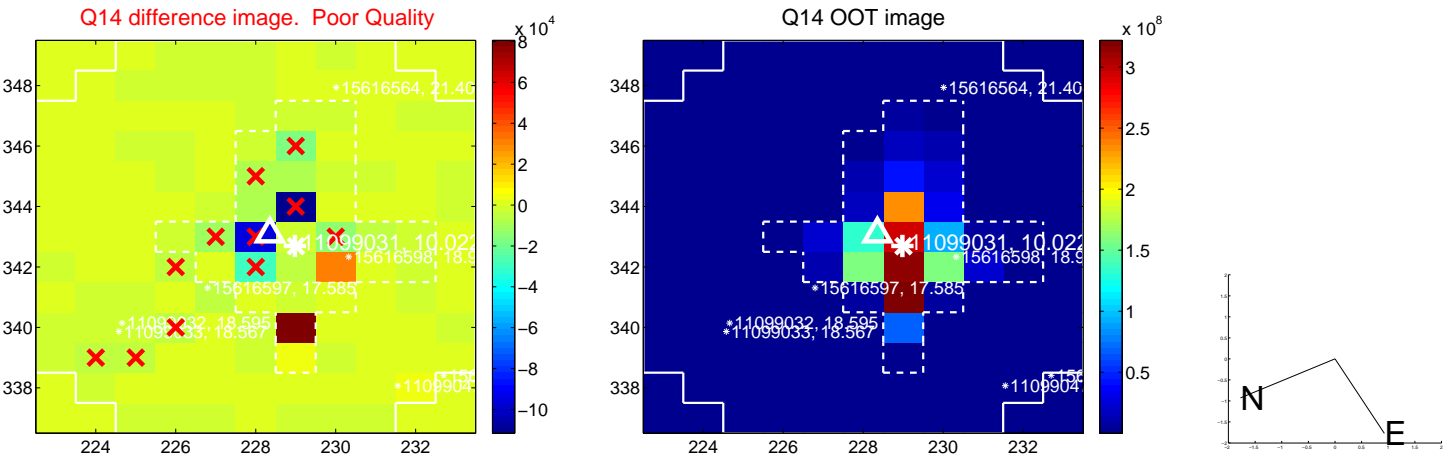
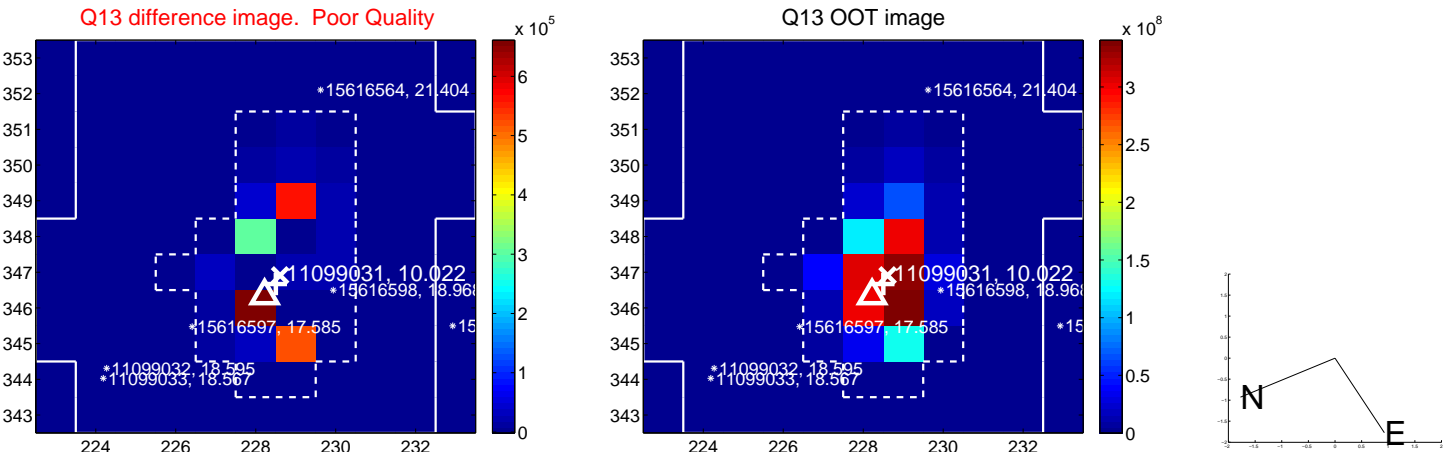
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



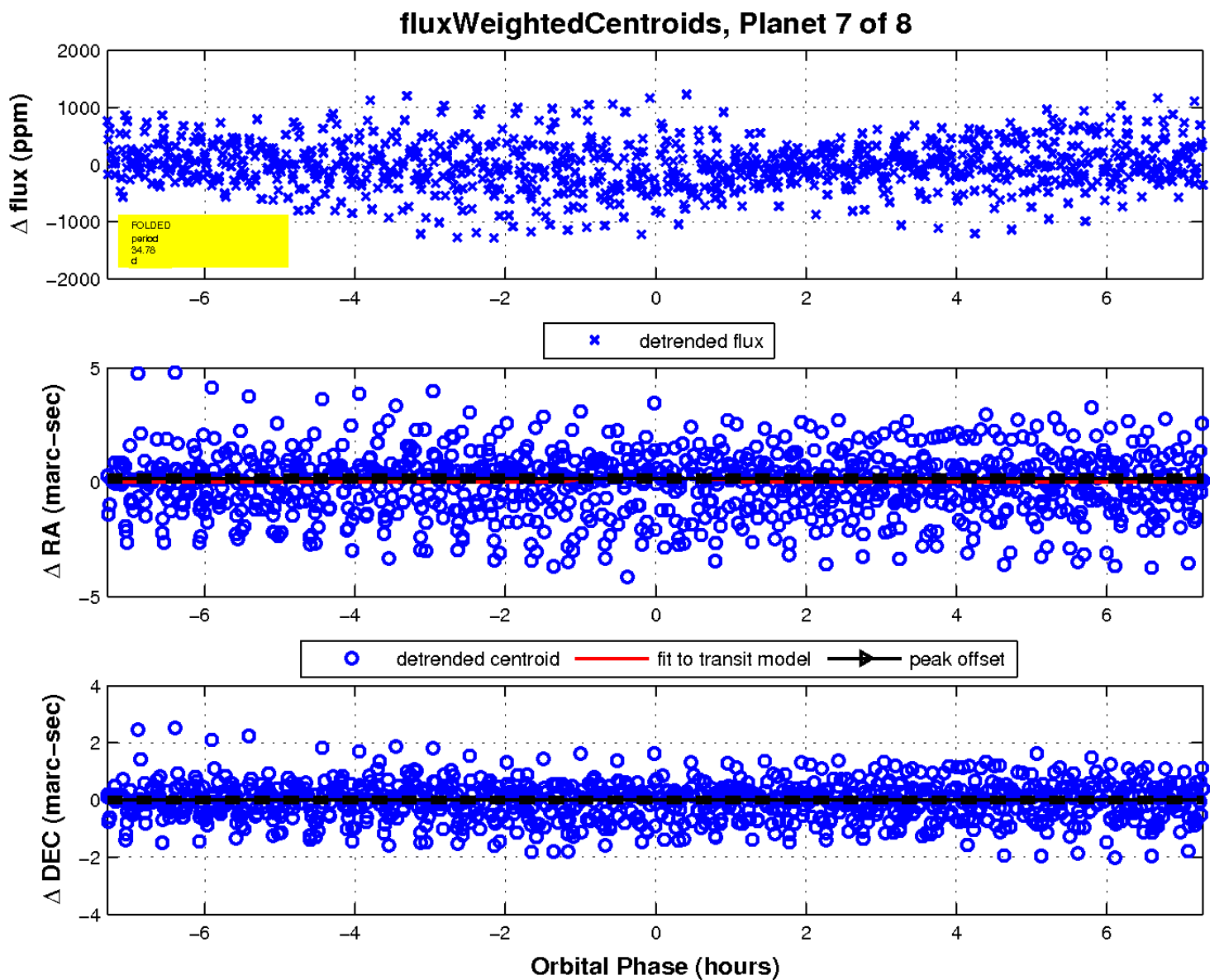
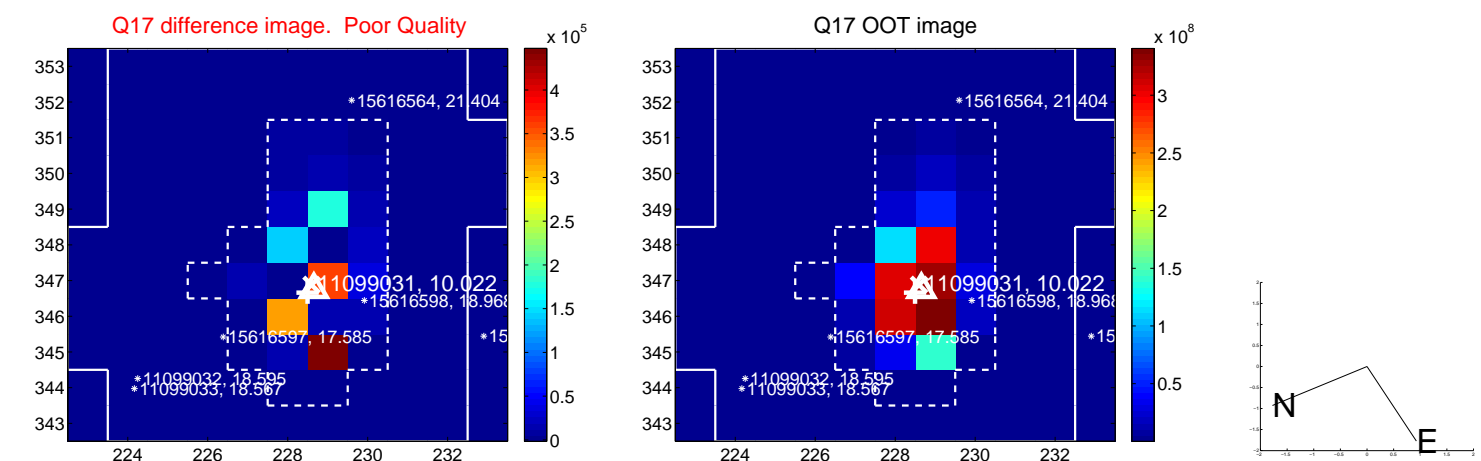
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



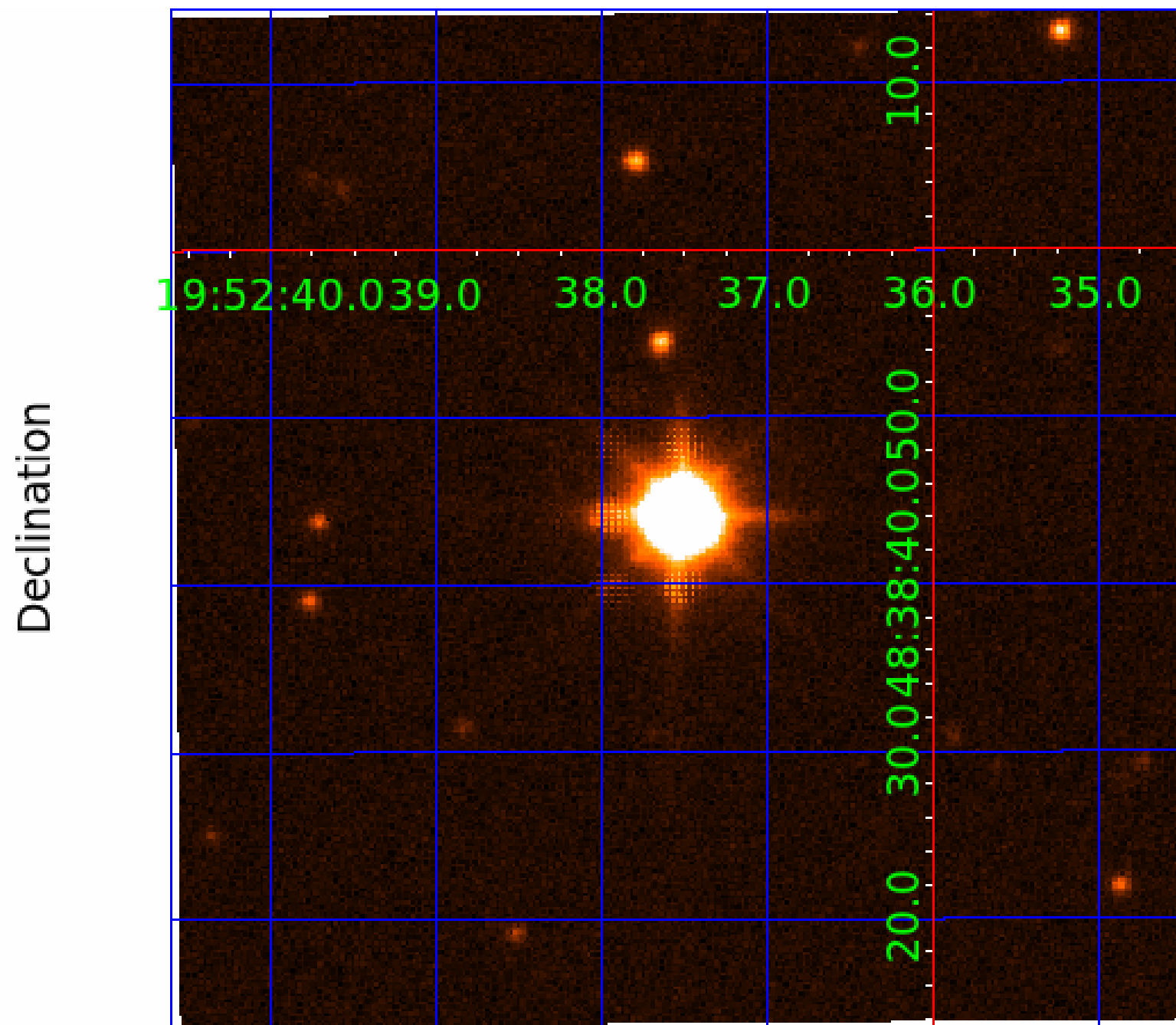
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 011099031

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})
011099031-01	OBS	No	0.928695	131.941079	5.7	4.862	8.1	1.3	1.39	6606	0.39	7945.45
011099031-02	OBS	No	5.262780	135.678566	191.2	4.335	9.3	9.9	1.39	6606	2.25	786.43
011099031-04	OBS	No	75.659901	151.086344	649.6	5.813	8.0	8.4	1.39	6606	6.80	22.50
011099031-05	OBS	No	137.285146	175.519949	530.1	9.189	8.5	6.8	1.39	6606	3.71	10.16
011099031-06	OBS	No	102.933229	195.373869	721.9	6.548	7.9	6.4	1.39	6606	4.73	14.92
011099031-07	OBS	No	34.775566	139.703564	337.1	2.433	7.4	6.8	1.39	6606	2.99	63.42
011099031-08	OBS	No	54.129085	138.869797	164.0	3.787	7.6	3.1	1.39	6606	2.06	35.16

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011099031-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
011099031-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
011099031-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
011099031-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED
011099031-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
011099031-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
011099031-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

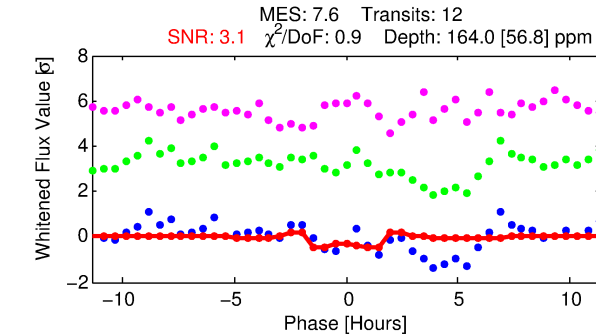
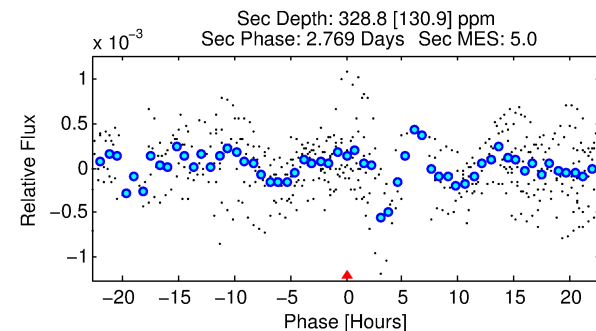
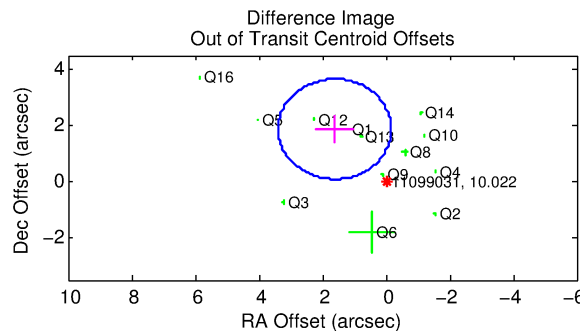
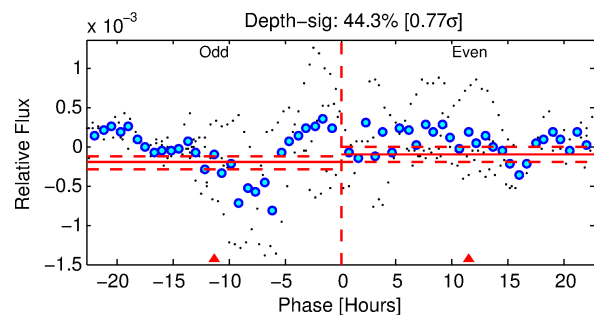
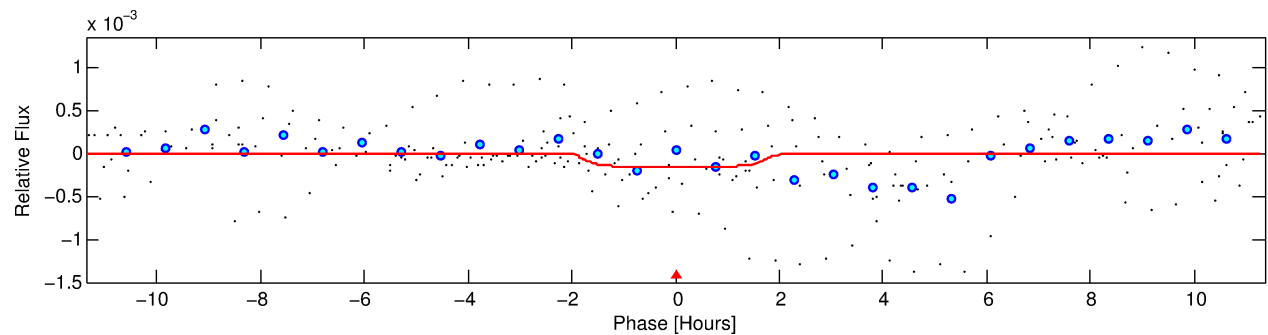
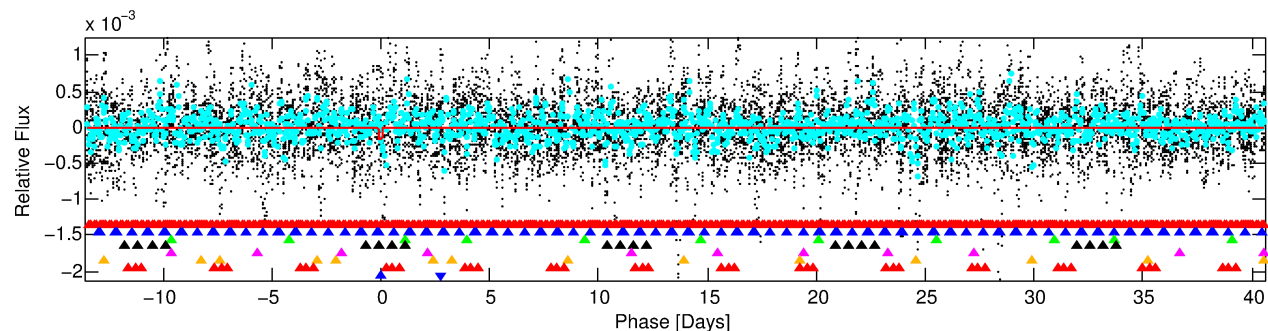
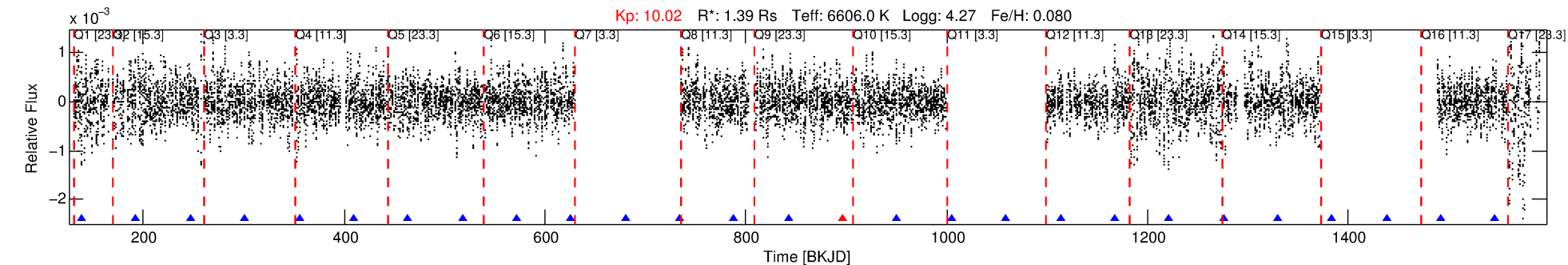
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011099031-08

No Significant Match Found

DV One-Page Summary

KIC: 11099031 Candidate: 8 of 8 Period: 54.129 d



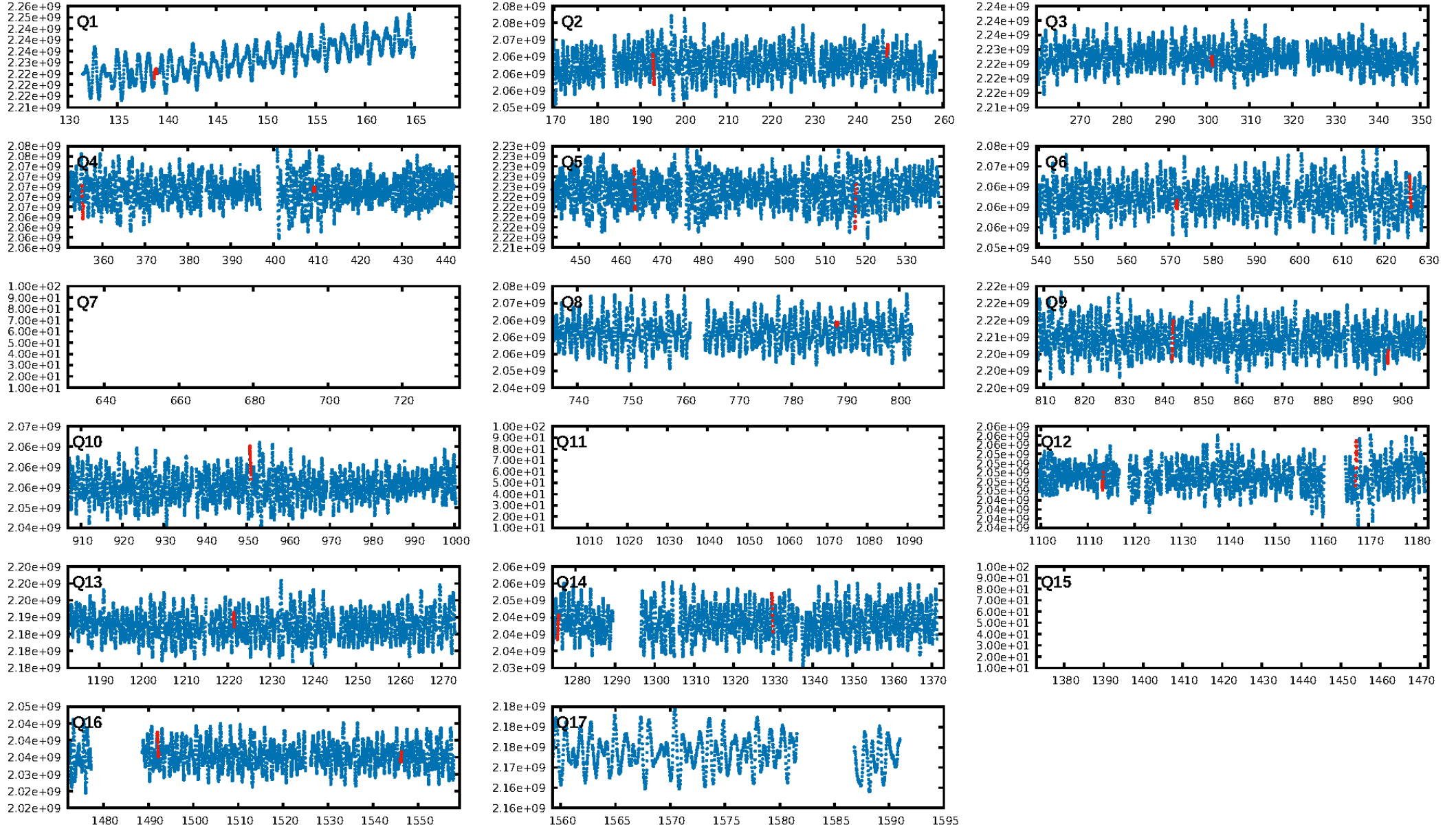
DV Fit Results:

Period = 54.12908 [0.00073] d
Epoch = 138.8698 [0.0119] BKJD
 $R_p/R^* = 0.0135$ [0.0087]
 $a/R^* = 54.71$ [186.66]
 $b = 0.88$ [0.87]
 $\text{Seff} = 35.16$ [14.73]
 $T_{\text{eq}} = 621$ [65] K
 $R_p = 2.06$ [1.48] R_e
 $a = 0.3069$ [0.0835] AU
 $A_g = 4031.28$ [5634.19] [0.72 σ]
 $T_{\text{eff}} = 7650$ [2583] K [2.72 σ]

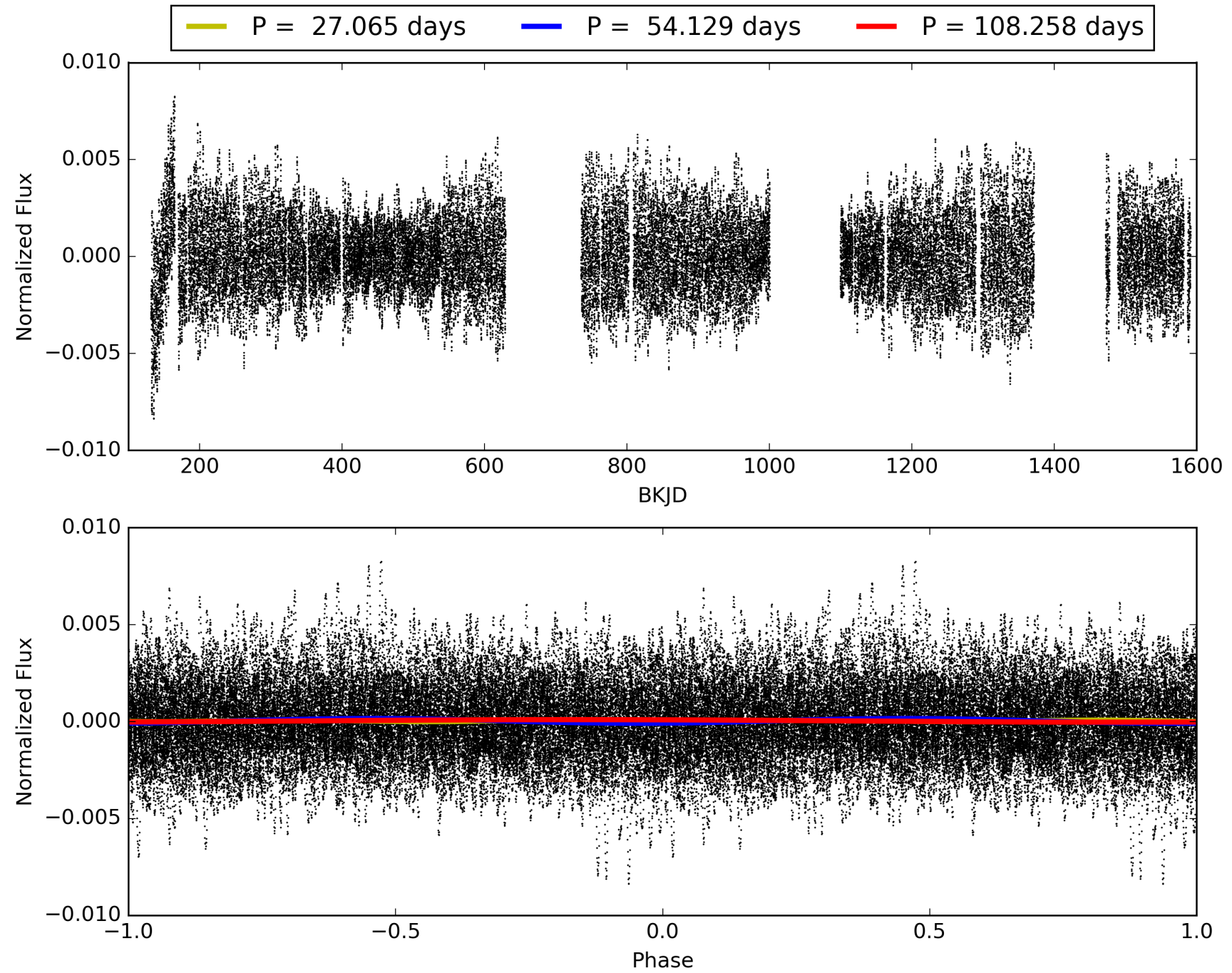
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [103.19 σ]
LongPeriod-sig: 100.0% [74.48 σ]
ModelChiSquare2-sig: 21.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.09e-09
RollingBand-fgt: 0.91 [10/11]
GhostDiagnostic-chr: N/A
Centroid-sig: 61.4%
Centroid-so: 1.134 arcsec [1.04 σ]
OotOffset-rm: 2.476 arcsec [4.17 σ]
KicOffset-rm: 2.820 arcsec [4.51 σ]
OotOffset-st: 4/1/4/4 [13]
KicOffset-st: 4/1/4/4 [13]
DiffImageQuality-fgm: 0.08 [1/13]
DiffImageOverlap-fno: 0.00 [0/13]

TCE 011099031-08, PDC Light Curves

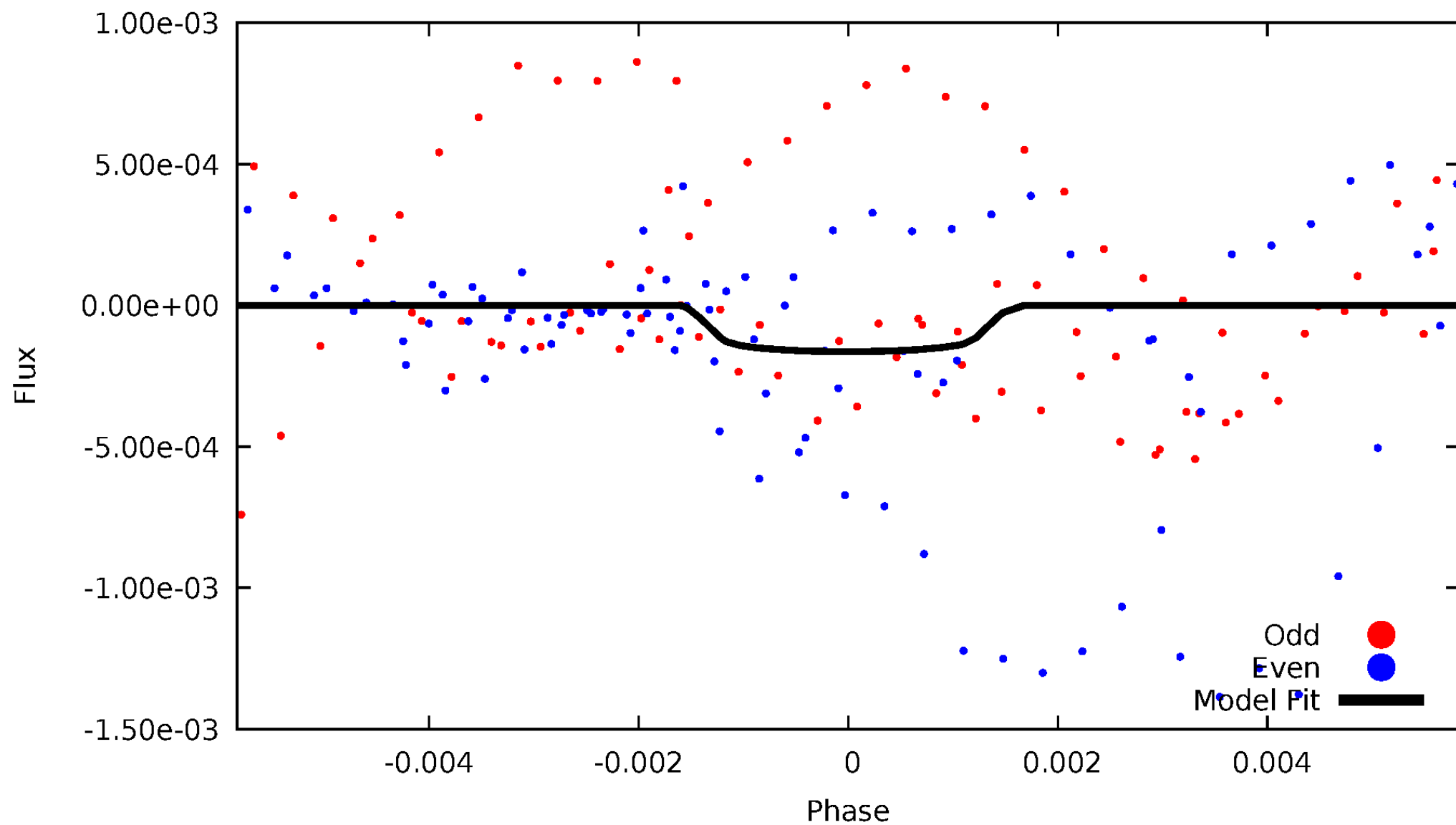


TCE 011099031-08



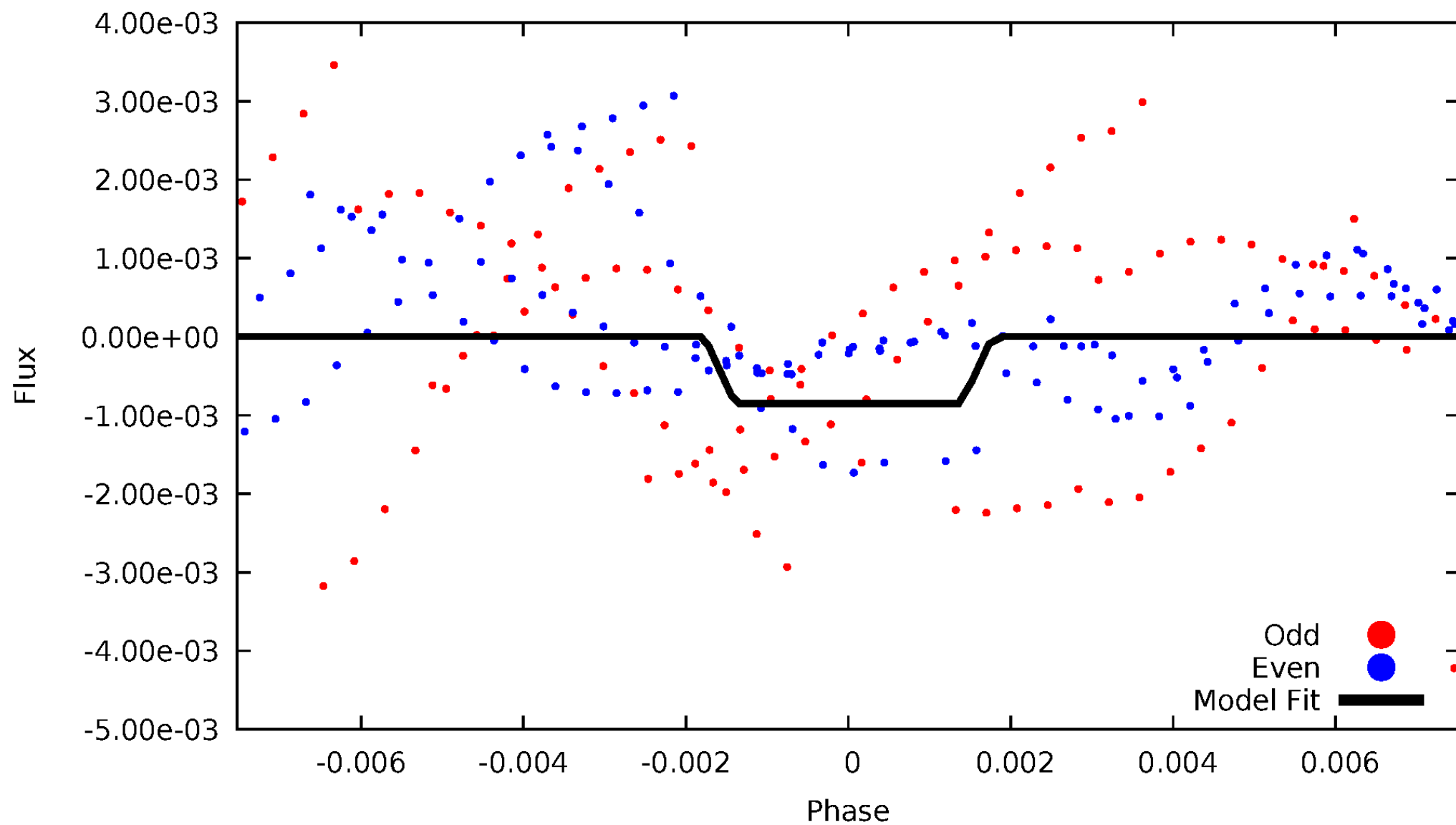
DV Odd/Even

TCE 011099031-08



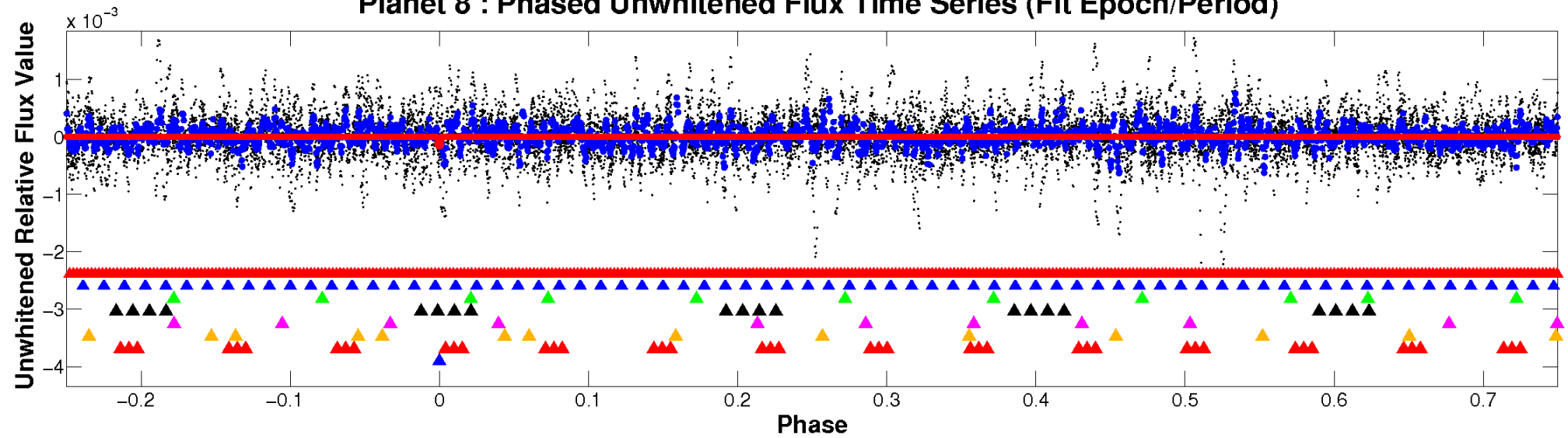
ALT Odd/Even

TCE 011099031-08

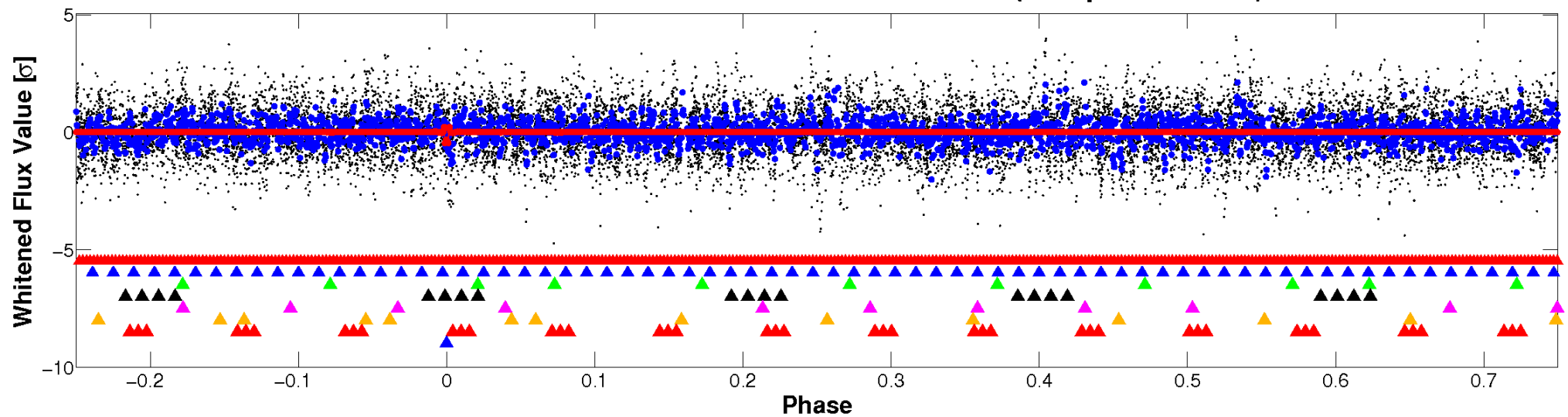


Non-Whitened Vs. Whitened Light Curve

Planet 8 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

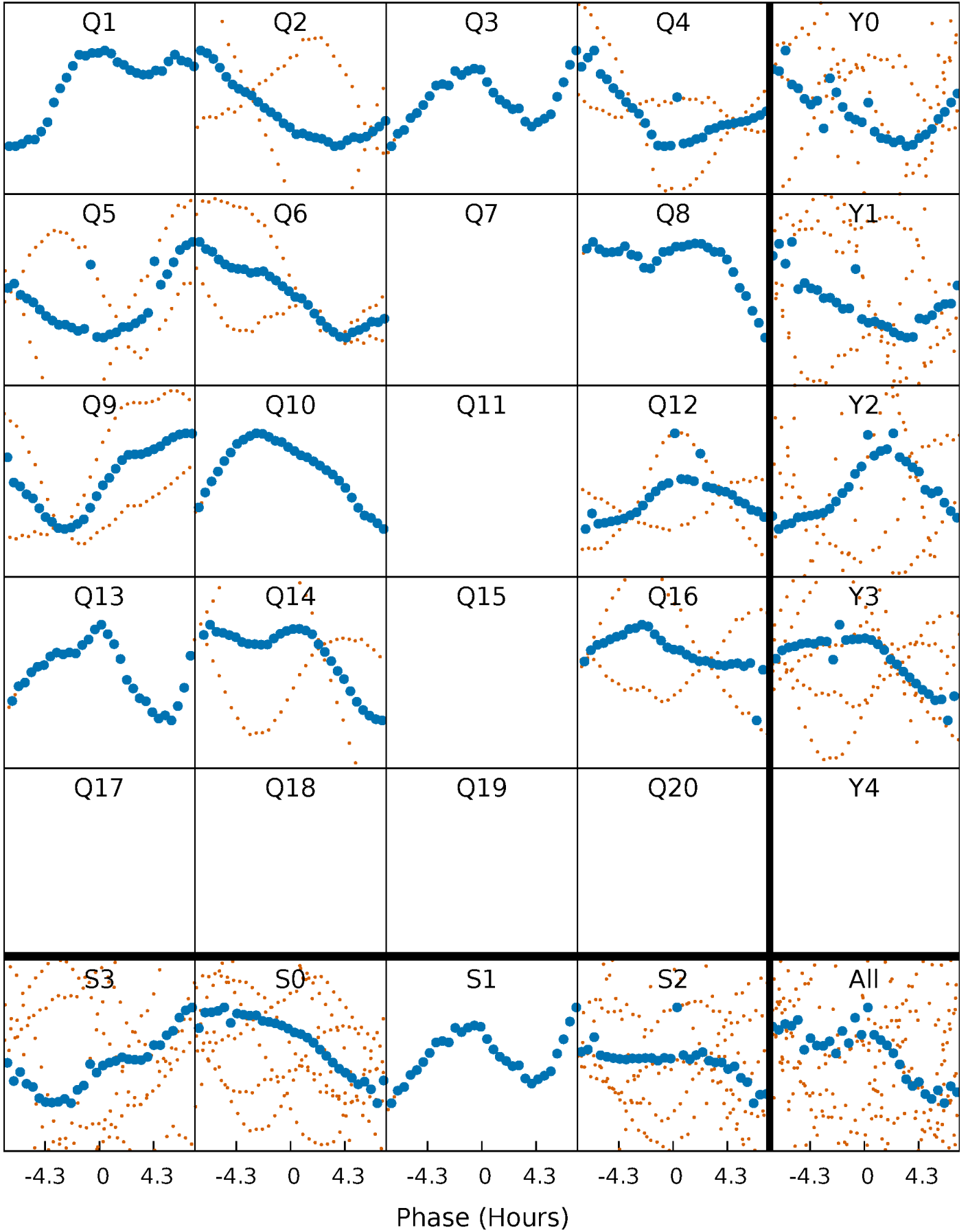


Planet 8 : Phased Whitened Flux Time Series (Fit Epoch/Period)



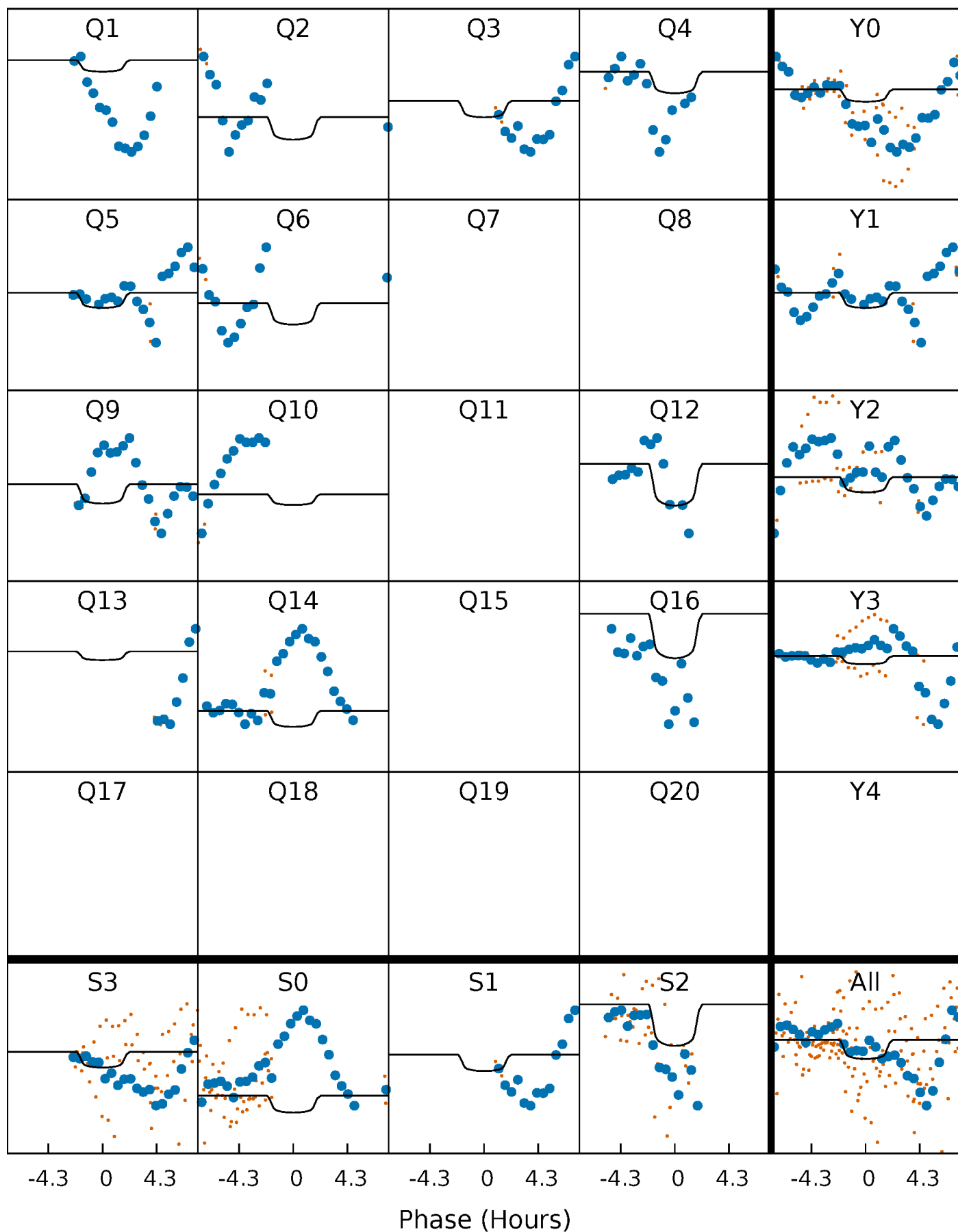
PDC Quarter-Phased Transit Curves

TCE 011099031-08 P= 54.129085 Days $T_0=138.869797$ (BKJD)



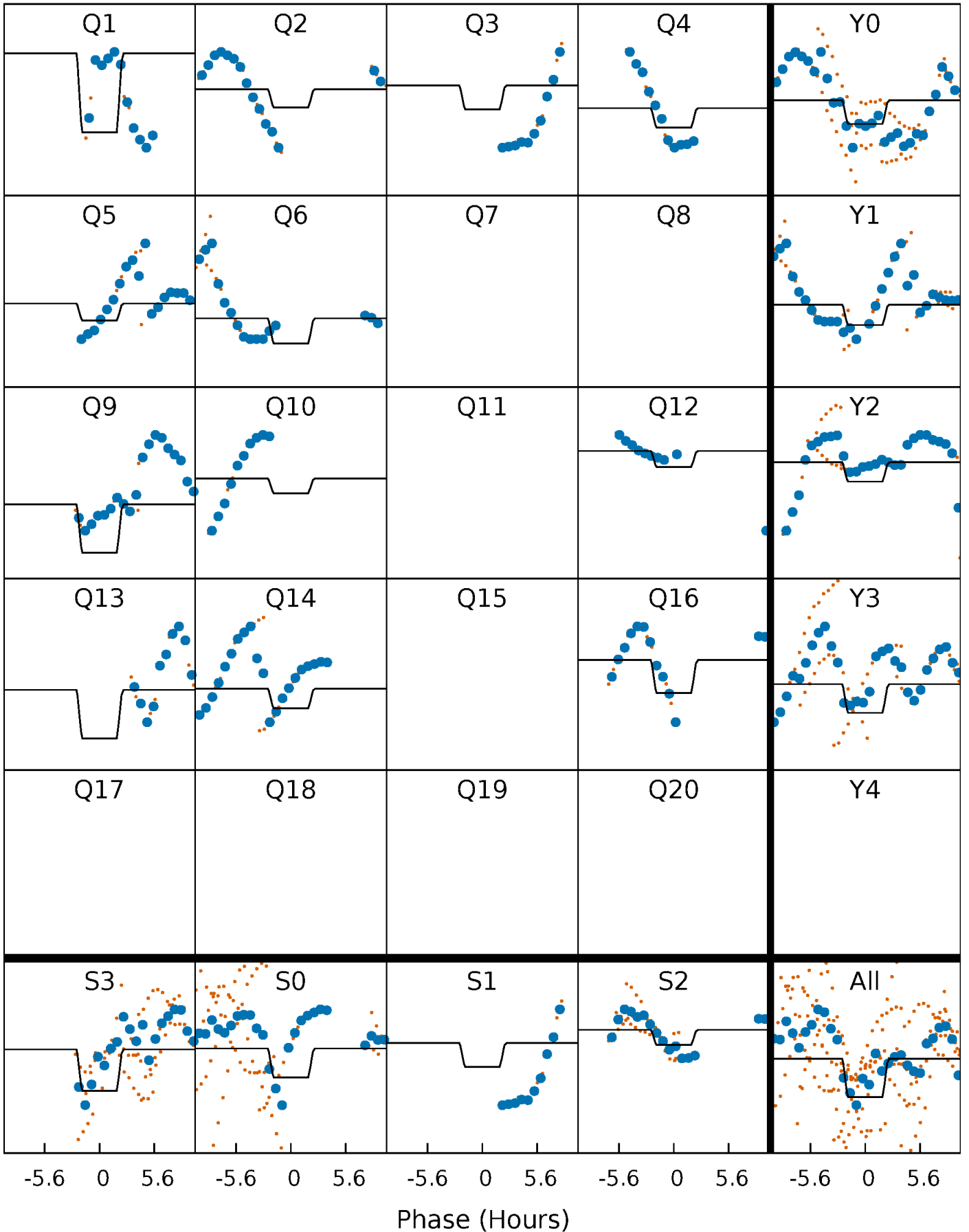
DV Quarter-Phased Transit Curves

TCE 011099031-08 P= 54.129085 Days $T_0=138.869797$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

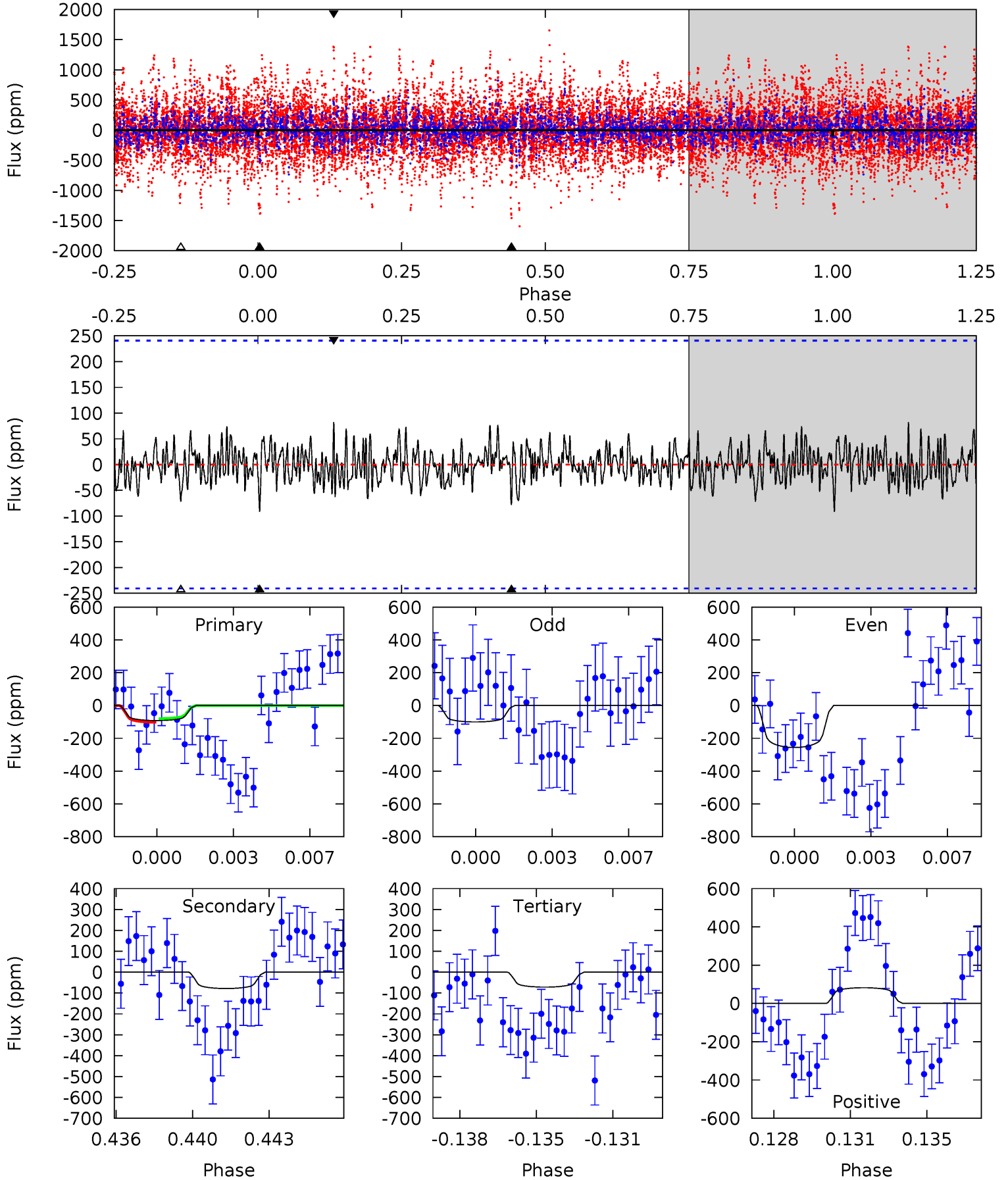
TCE 011099031-08 P= 54.133191 Days $T_0=138.824144$ (BKJD)



DV Model-Shift Uniqueness Test

011099031-08, P = 54.129085 Days, E = 84.740712 Days

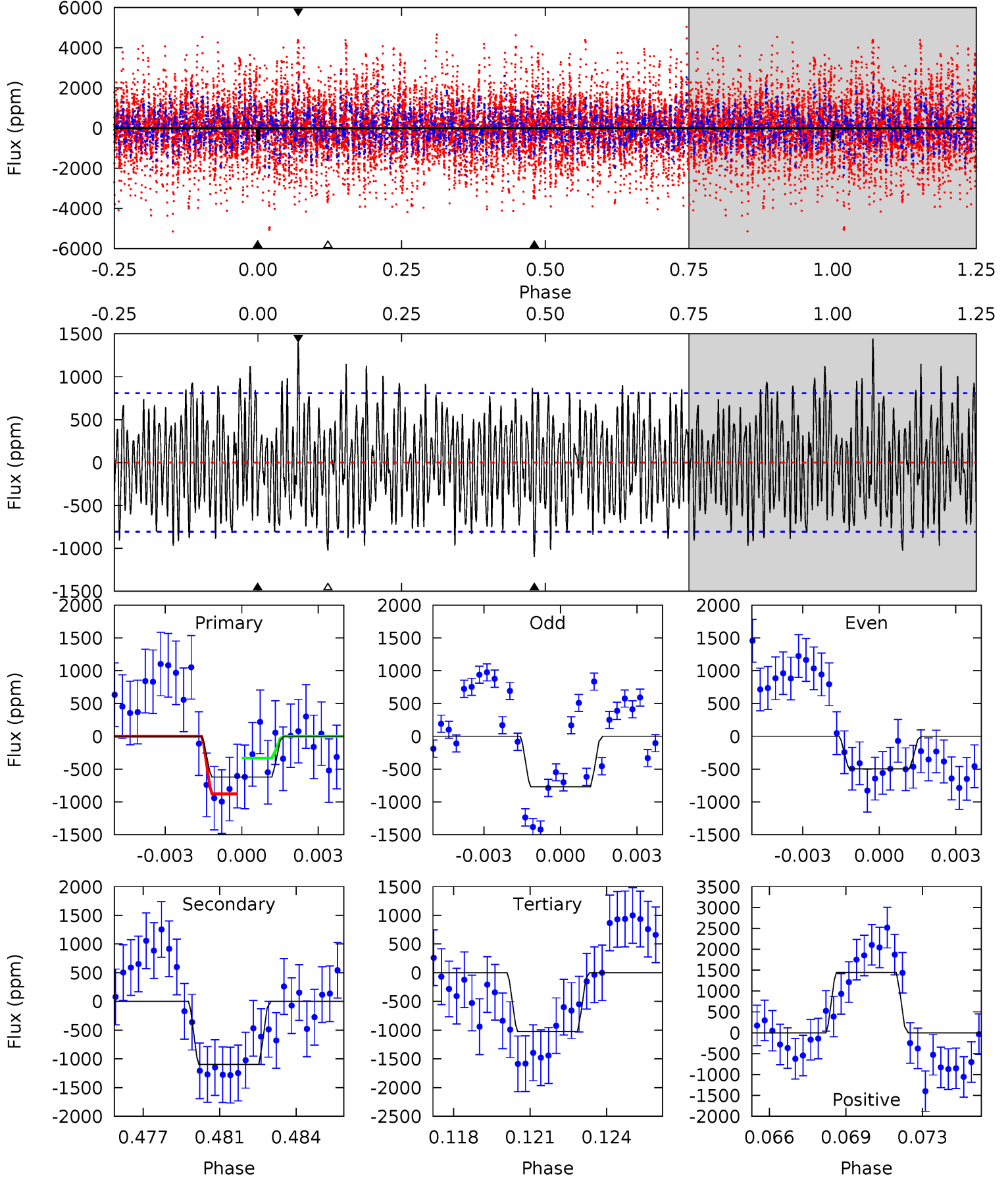
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.00	1.71	1.56	1.79	5.24	2.94	0.58	0.44	0.21	0.15	-0.08	1.69	0.76	0.47	0.24



Alt Model-Shift Uniqueness Test

011099031-08, P = 54.133191 Days, E = 84.690953 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.03	7.11	6.63	9.35	5.23	2.92	2.87	-2.60	-5.32	0.48	-2.24	0.87	1.71	0.57	1.78



Stellar Parameters For KIC 011099031

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6606^{+184}_{-253}	$4.269^{+0.090}_{-0.210}$	$0.080^{+0.250}_{-0.350}$	$1.393^{+0.458}_{-0.212}$	$1.320^{+0.195}_{-0.195}$	$0.688^{+0.348}_{-0.370}$
	+3%/-4%	+2%/-5%	+312%/-438%	+33%/-15%	+15%/-15%	+51%/-54%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 011099031-08 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-78 ± 46	$2.19^{+1.48}_{-1.16}$	879^{+75}_{-53}	5080^{+2858}_{-1135}	713^{+3086}_{-529}
Alt.	-1099 ± 154	$4.66^{+1.51}_{-1.41}$	882^{+70}_{-49}	7034^{+1626}_{-928}	2564^{+2781}_{-1103}

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

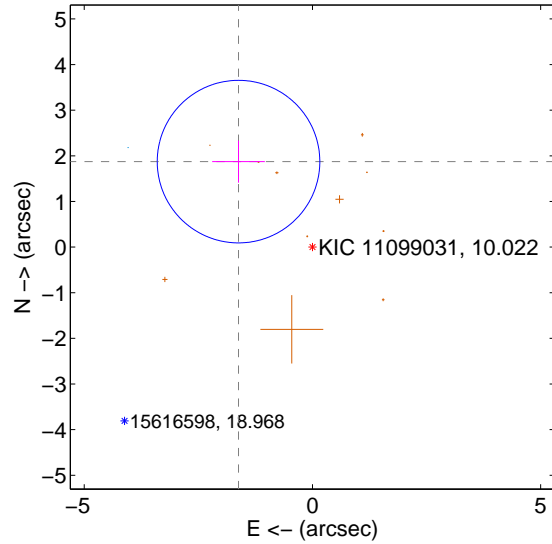
Supplemental centroid analysis for 011099031-08. **Kepler magnitude: 10.02.** Transit SNR 3.14

There are 1 quarters with good PRF difference image offsets

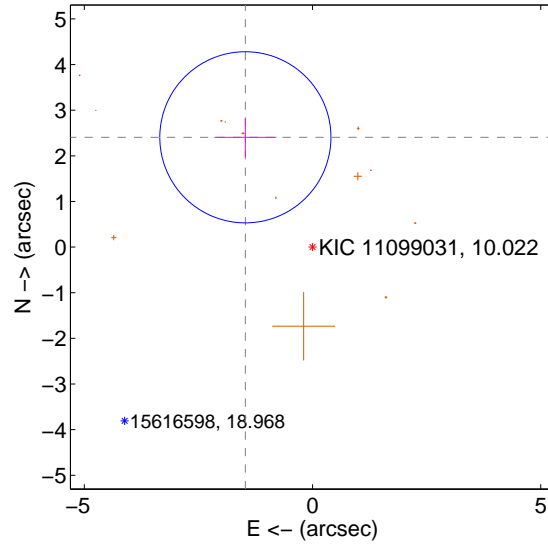
The direct PRF centroid is offset from the target star catalog position by about 0.75 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.476 ± 0.594	4.17	1.620 ± 0.577	1.873 ± 0.461
PRF-fit source offset from KIC position	2.820 ± 0.625	4.51	1.472 ± 0.679	2.406 ± 0.431
photometric centroid source offset	1.13 ± 1.10	1.04	1.08 ± 1.13	0.33 ± 0.66

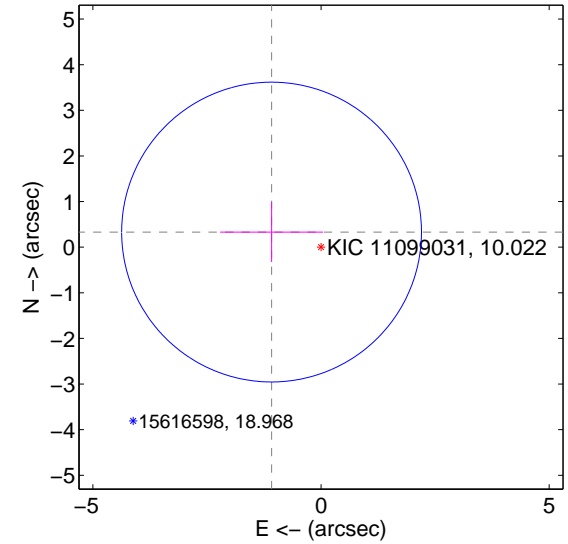
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

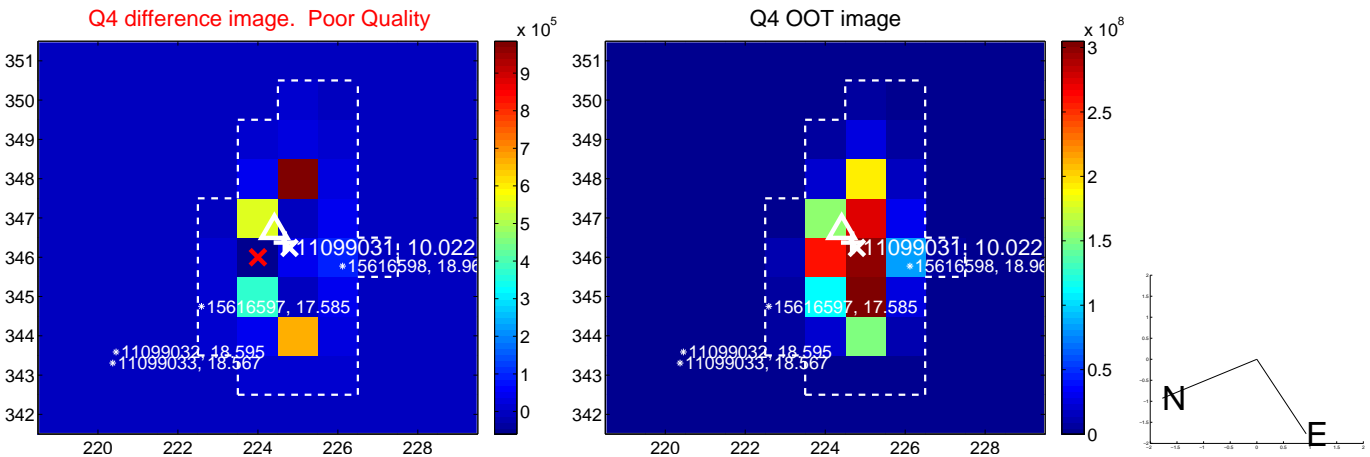
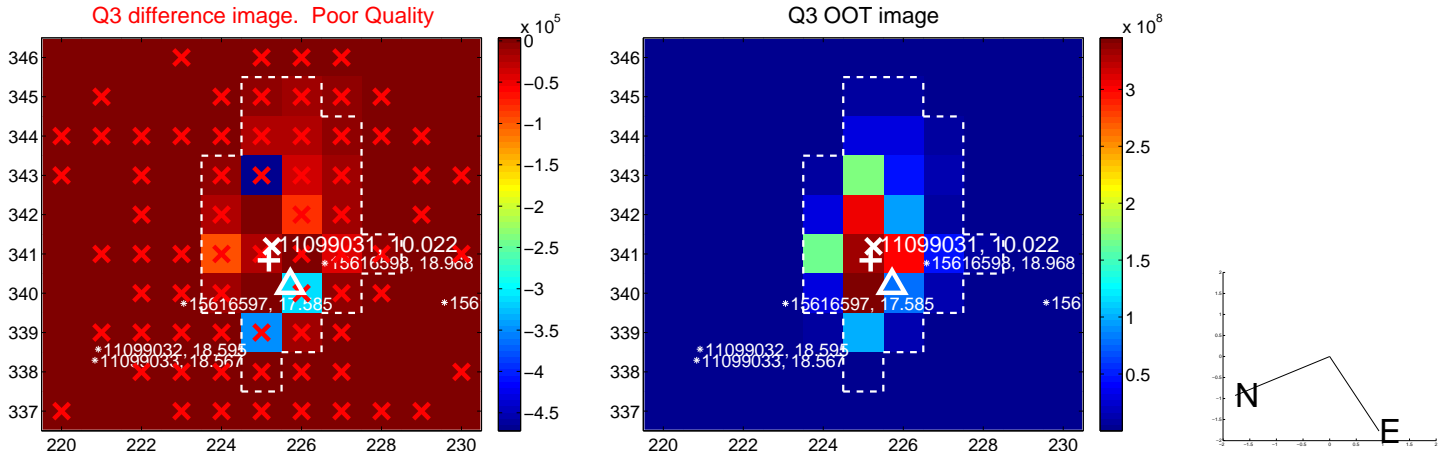
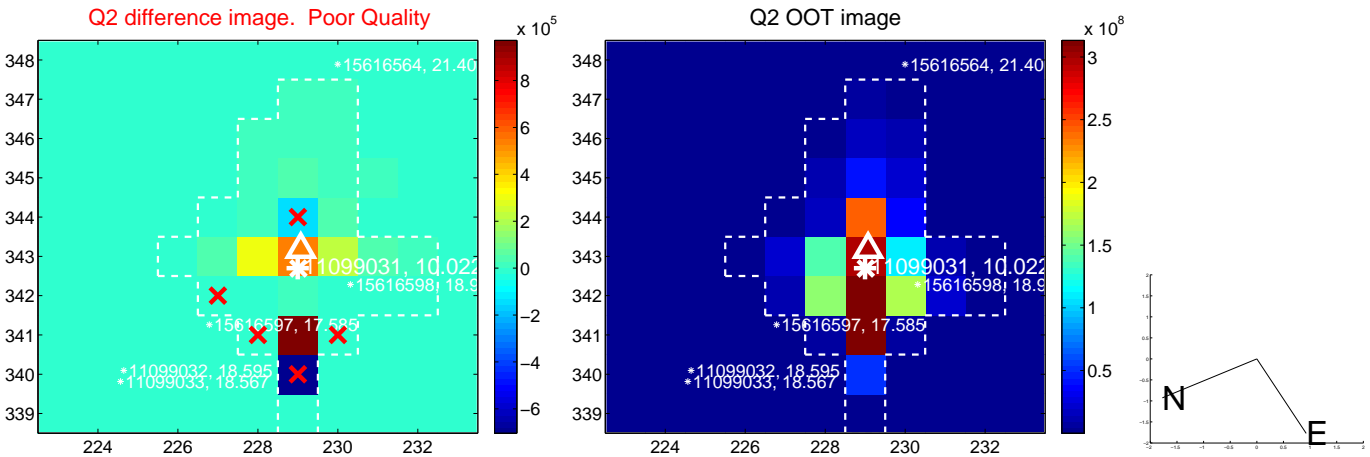
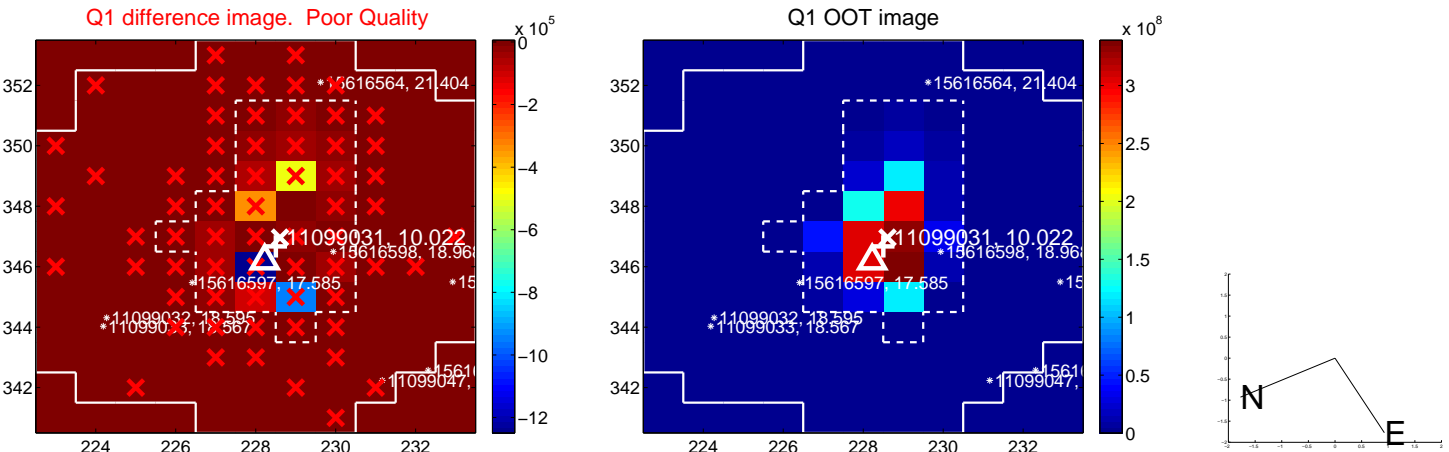


offset from photometric centroids

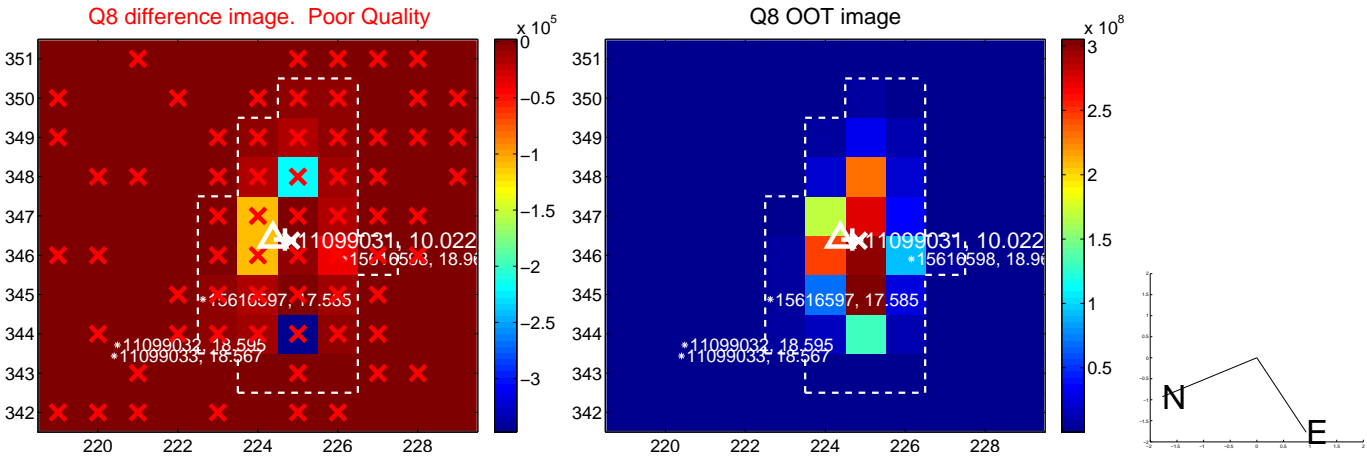
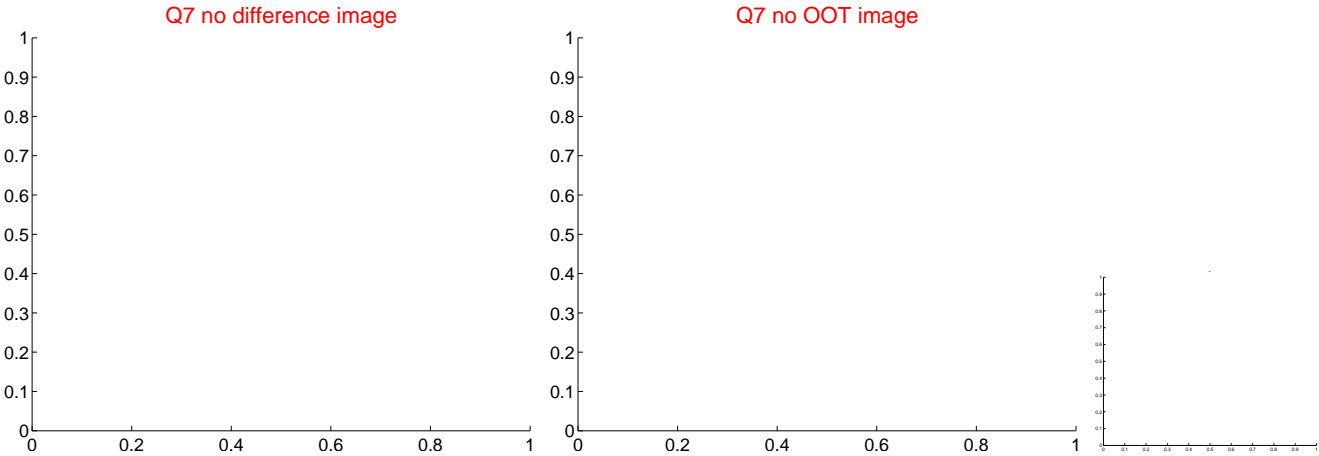
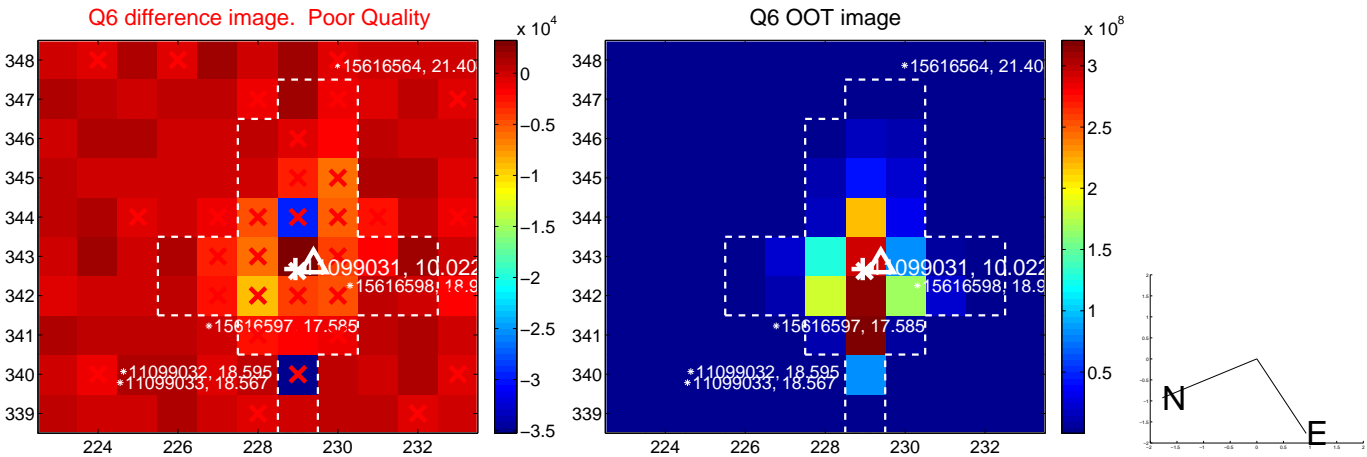
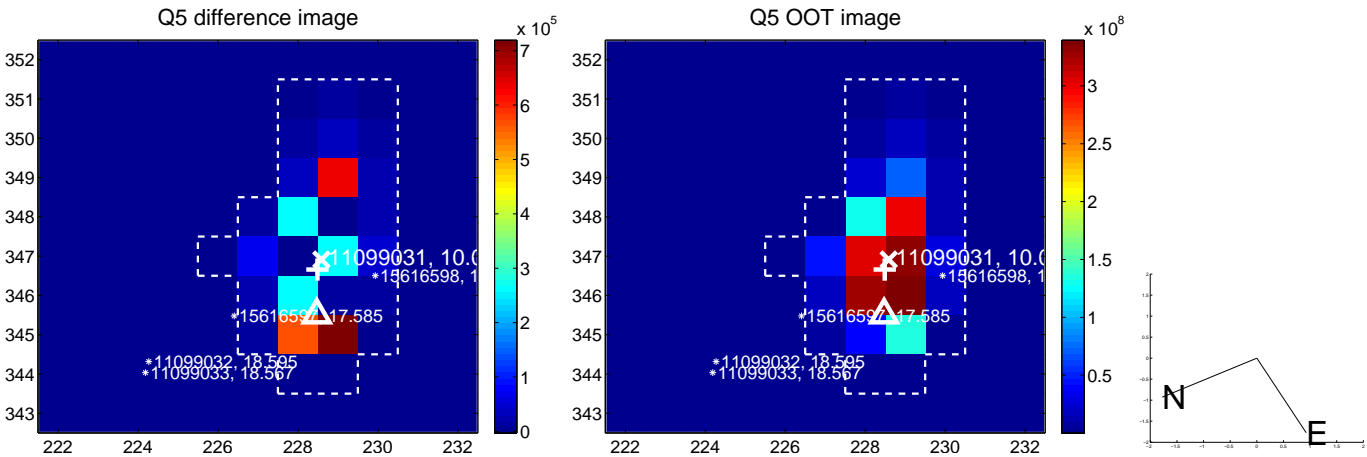


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

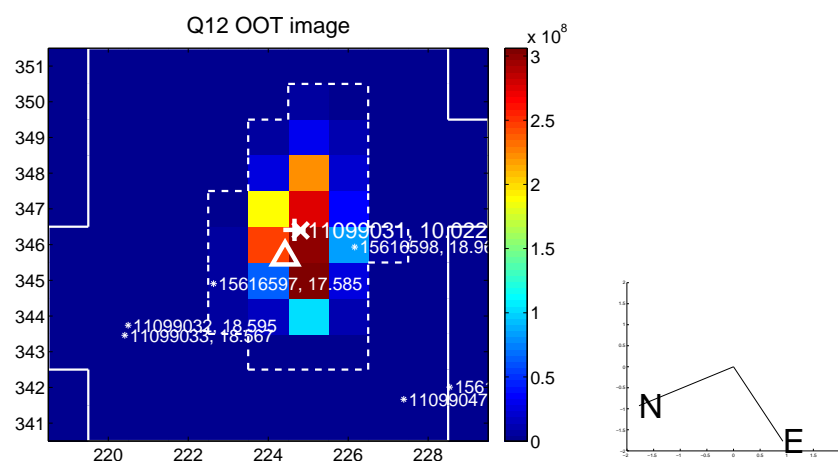
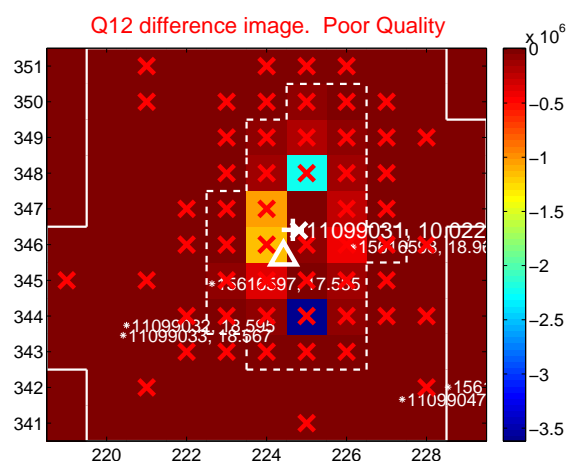
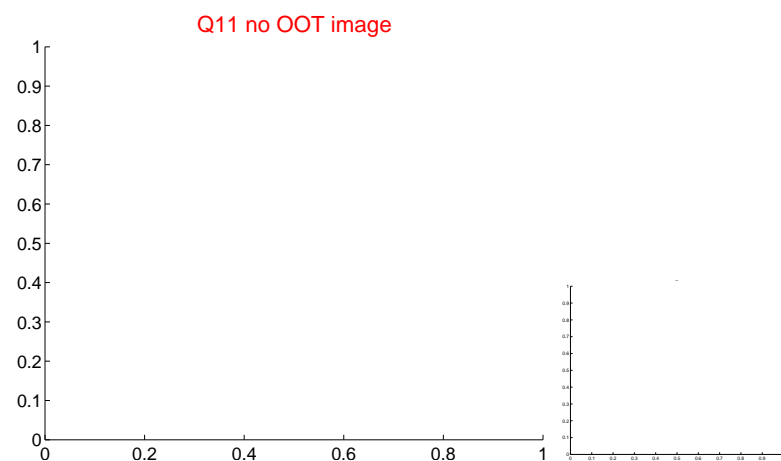
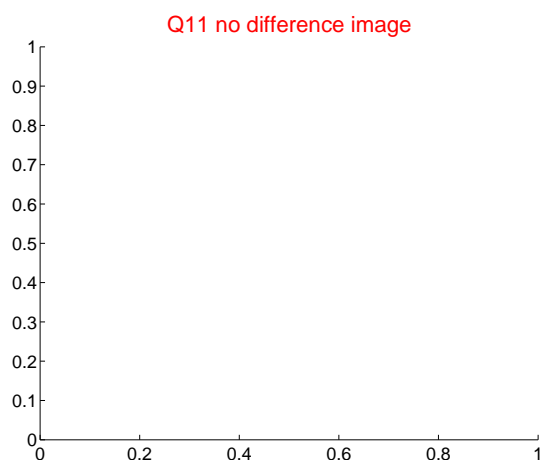
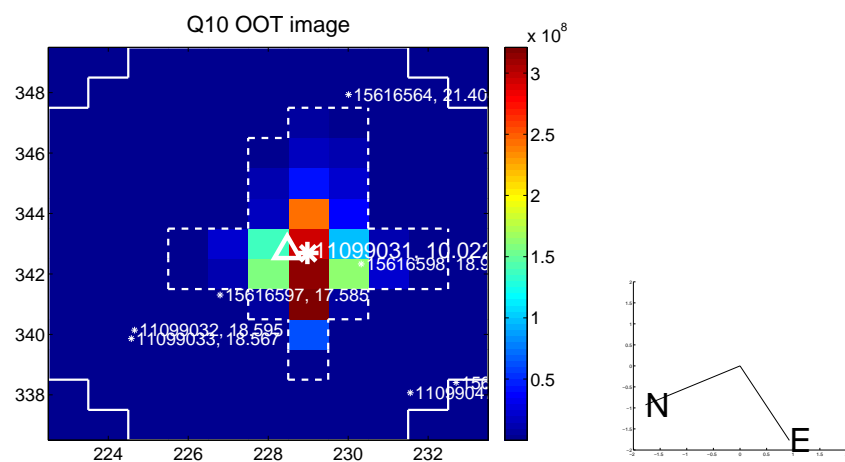
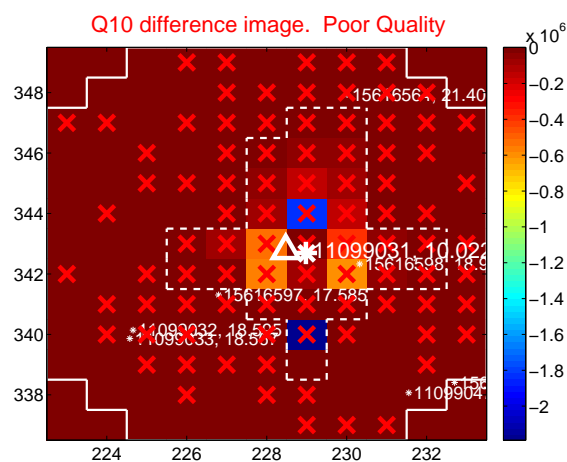
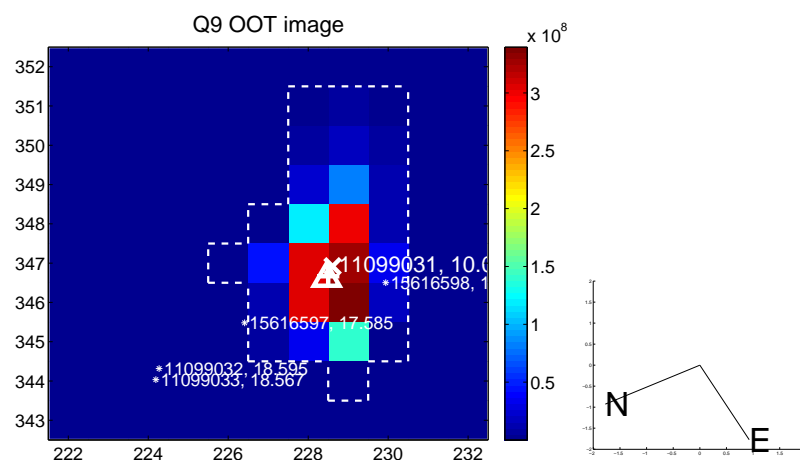
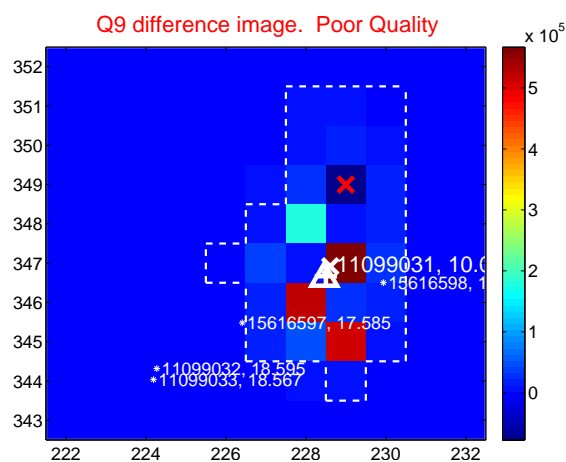
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



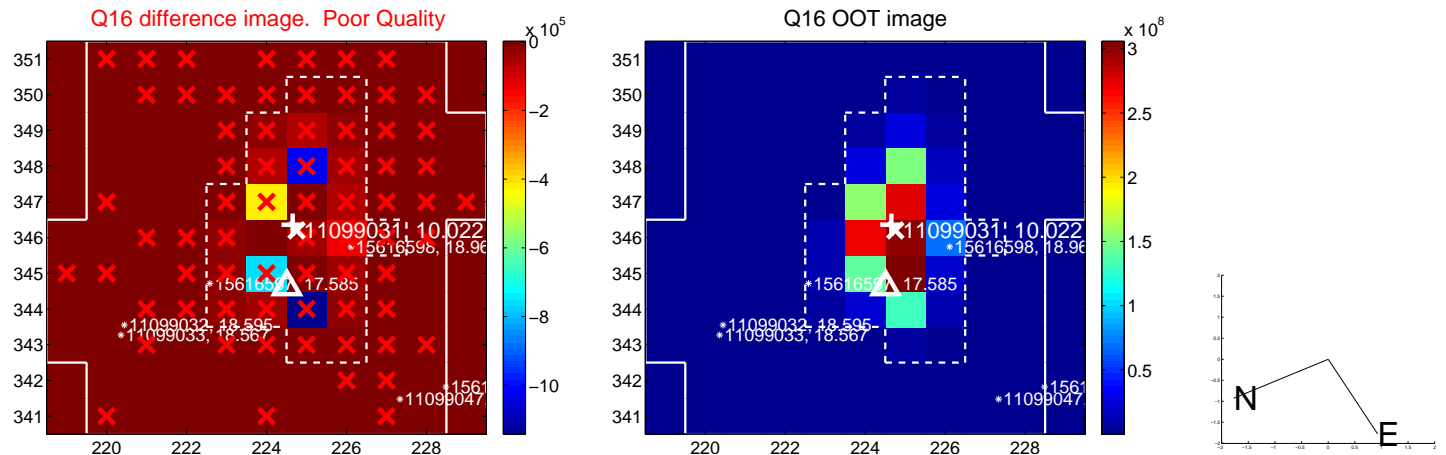
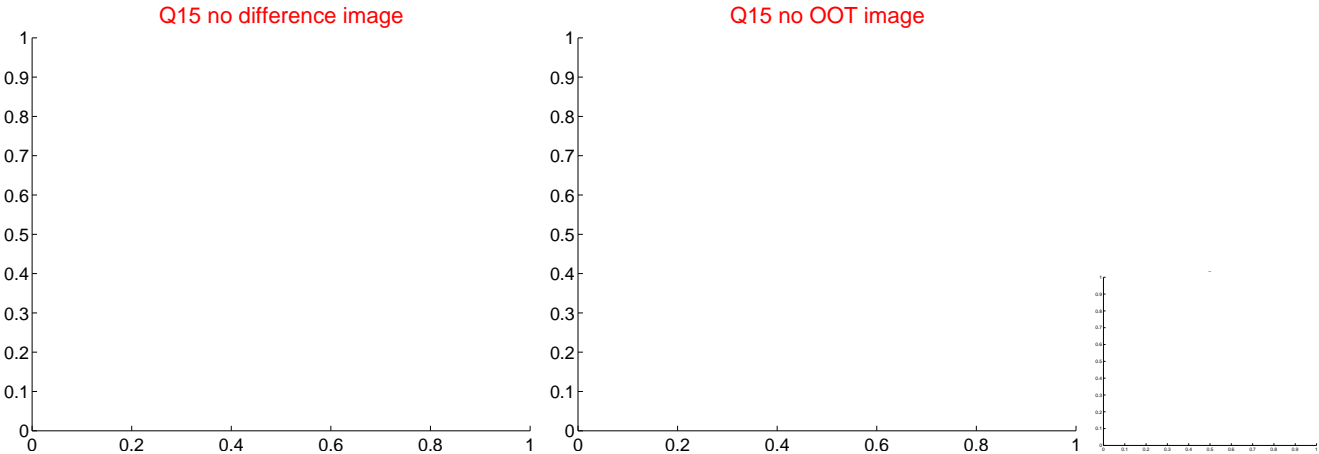
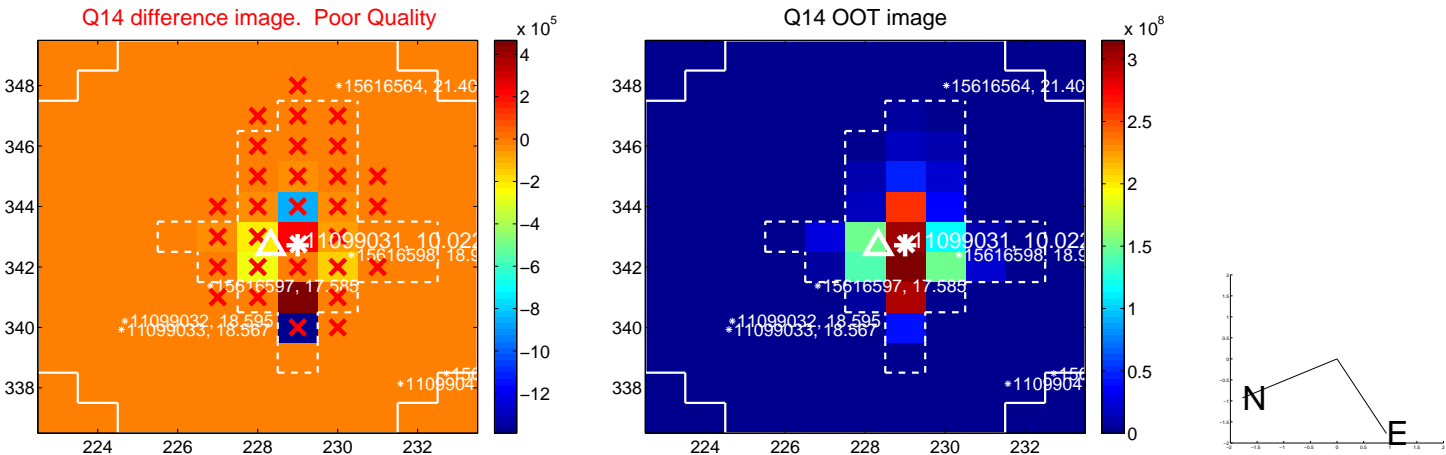
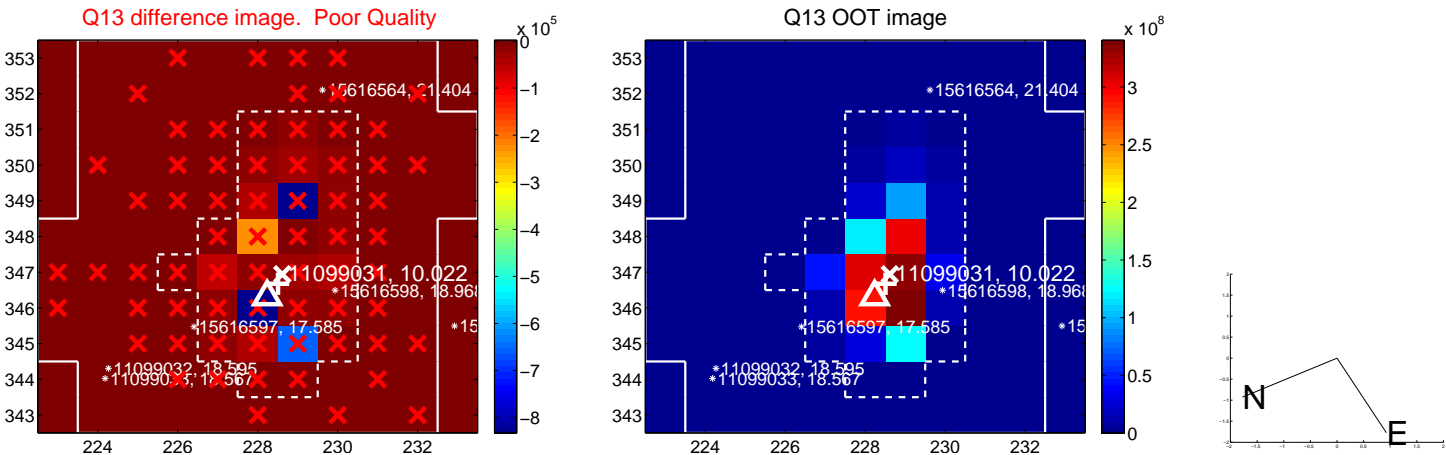
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



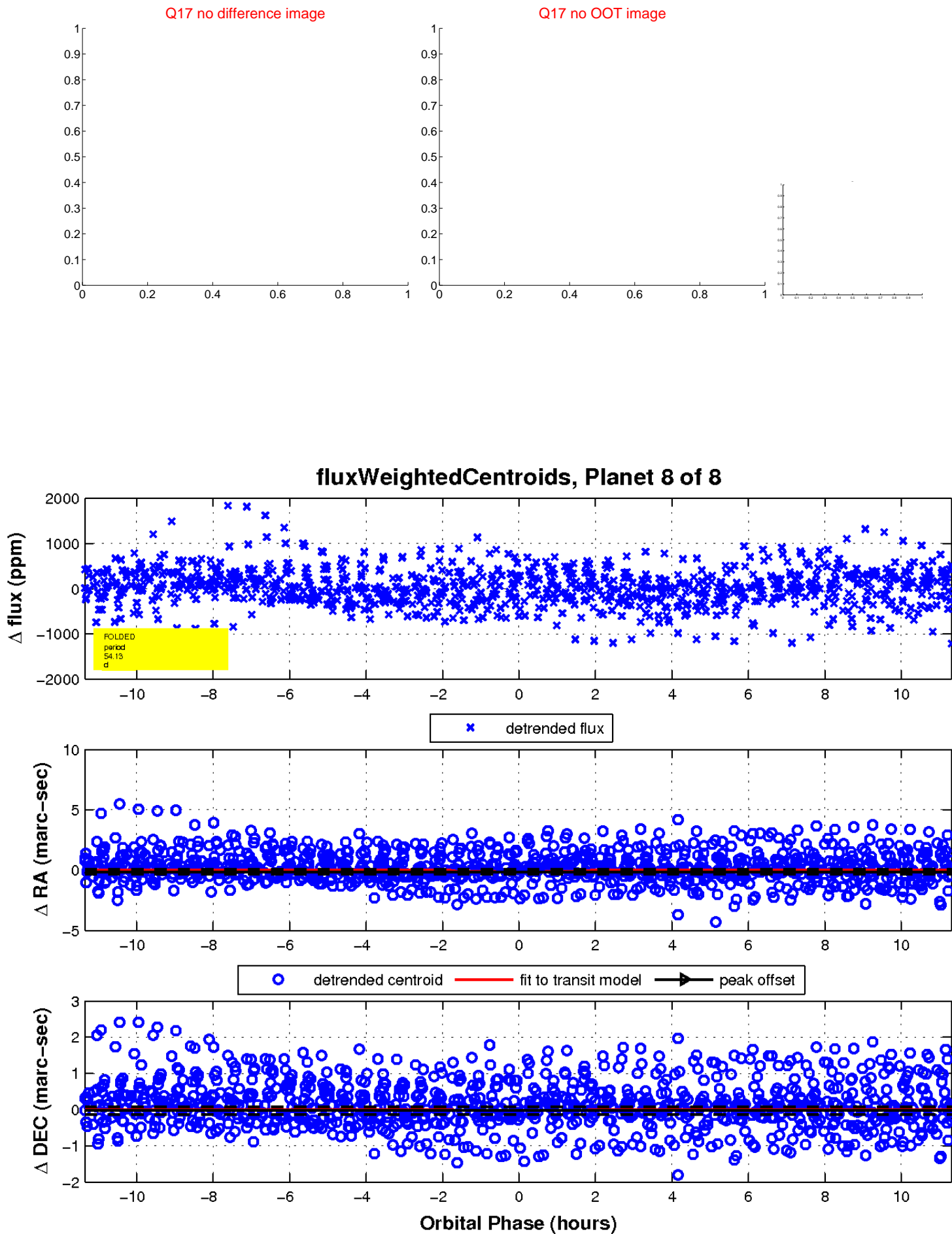
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

