

KIC 011454563

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})
011454563-01	OBS	No	476.771310	313.910196	2242.8	20.640	13.2	13.6	0.74	5496	5.28	0.36
011454563-02	OBS	No	0.767403	131.927391	37.1	5.093	7.8	5.0	0.74	5496	0.45	1921.81
011454563-04	OBS	No	29.451478	140.602669	788.1	1.807	8.7	10.4	0.74	5496	2.30	14.85
011454563-07	OBS	No	12.588847	132.485563	339.3	3.614	8.7	8.3	0.74	5496	1.81	46.11
011454563-08	OBS	No	70.081000	184.990253	711.7	6.221	8.9	8.0	0.74	5496	2.31	4.67

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011454563-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
011454563-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
011454563-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV
011454563-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
011454563-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

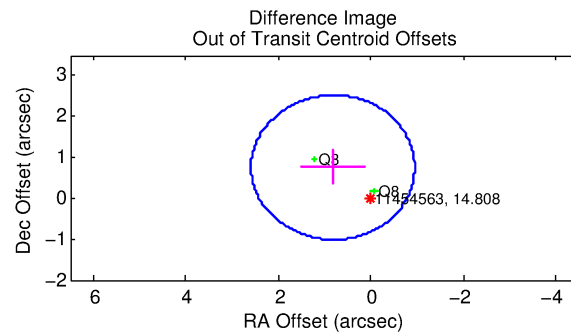
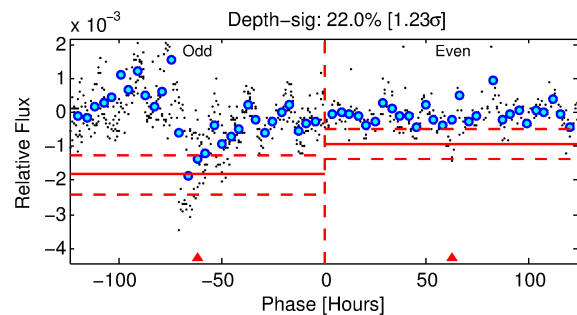
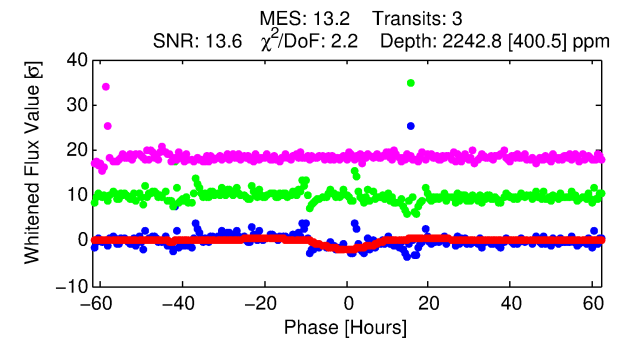
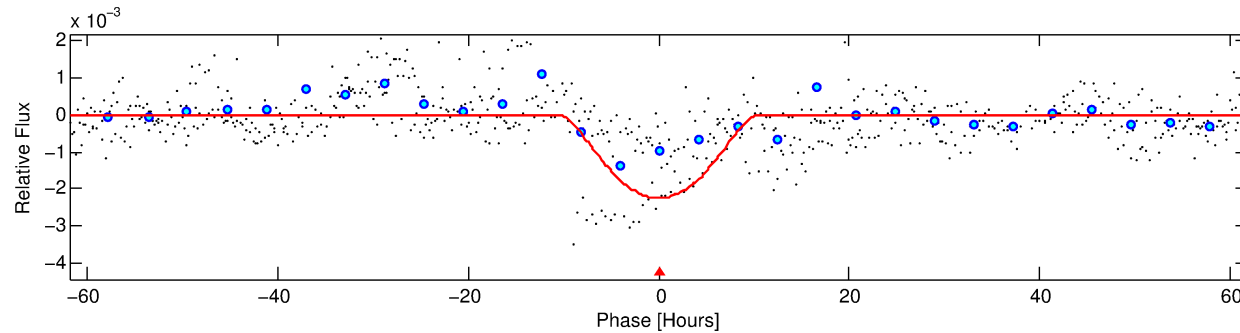
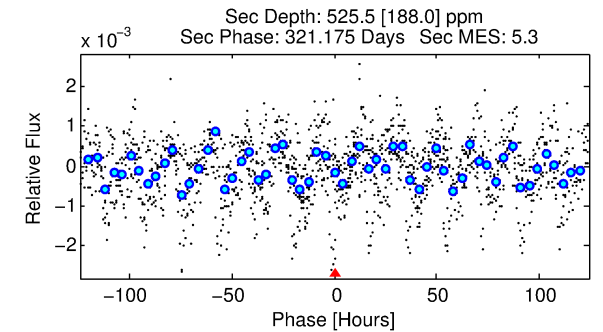
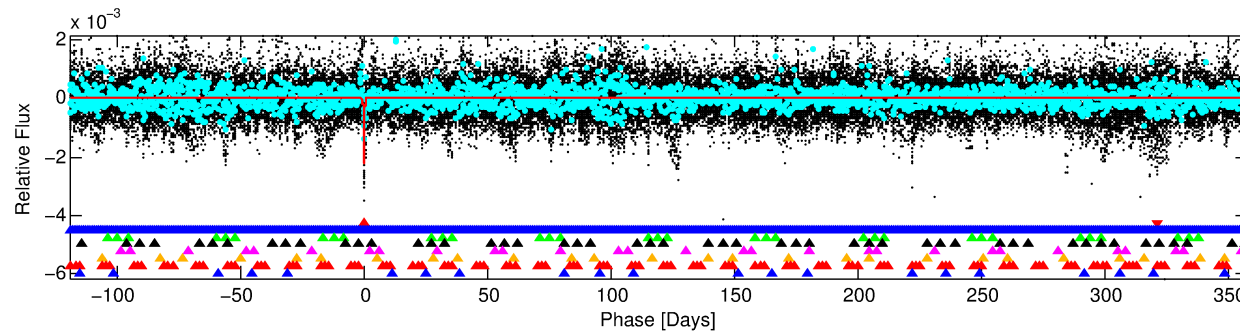
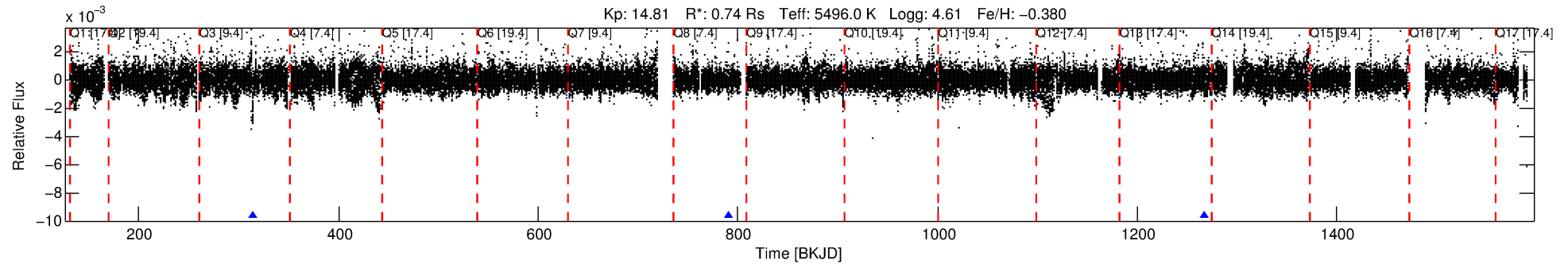
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011454563-01

No Significant Match Found

DV One-Page Summary

KIC: 11454563 Candidate: 1 of 8 Period: 476.771 d



DV Fit Results:

Period = 476.77131 [0.04160] d
Epoch = 313.9102 [0.0519] BKJD
Rp/R* = 0.0651 [0.0823]
a/R* = 77.26 [32.44]
b = 0.97 [0.15]
Seff = 0.36 [0.09]
Teq = 198 [12] K
Rp = 5.28 [6.74] Re
a = 1.1157 [0.1609] AU
Ag = 12910.03 [33082.69] [0.39 σ]
Teffp = 3261 [2084] K [1.47 σ]

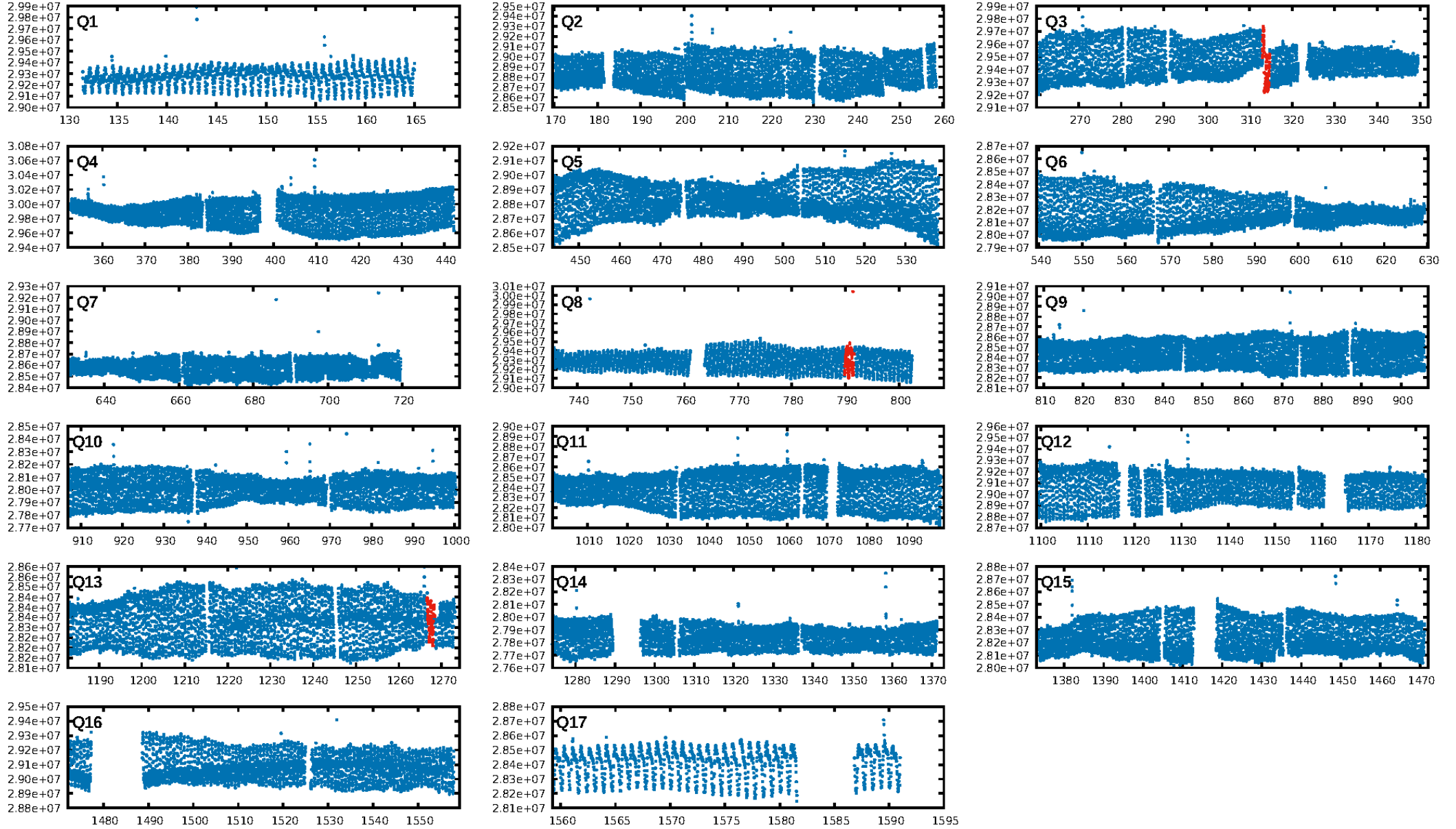
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [452.77 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.6818
Centroid-sig: 0.1%
Centroid-so: 0.307 arcsec [1.23 σ]
OotOffset-rm: 1.115 arcsec [1.89 σ]
OotOffset-st: 0/1/1/0 [2]
KicOffset-rm: 1.021 arcsec [1.45 σ]
KicOffset-st: 0/1/1/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 0.00 [0/2]

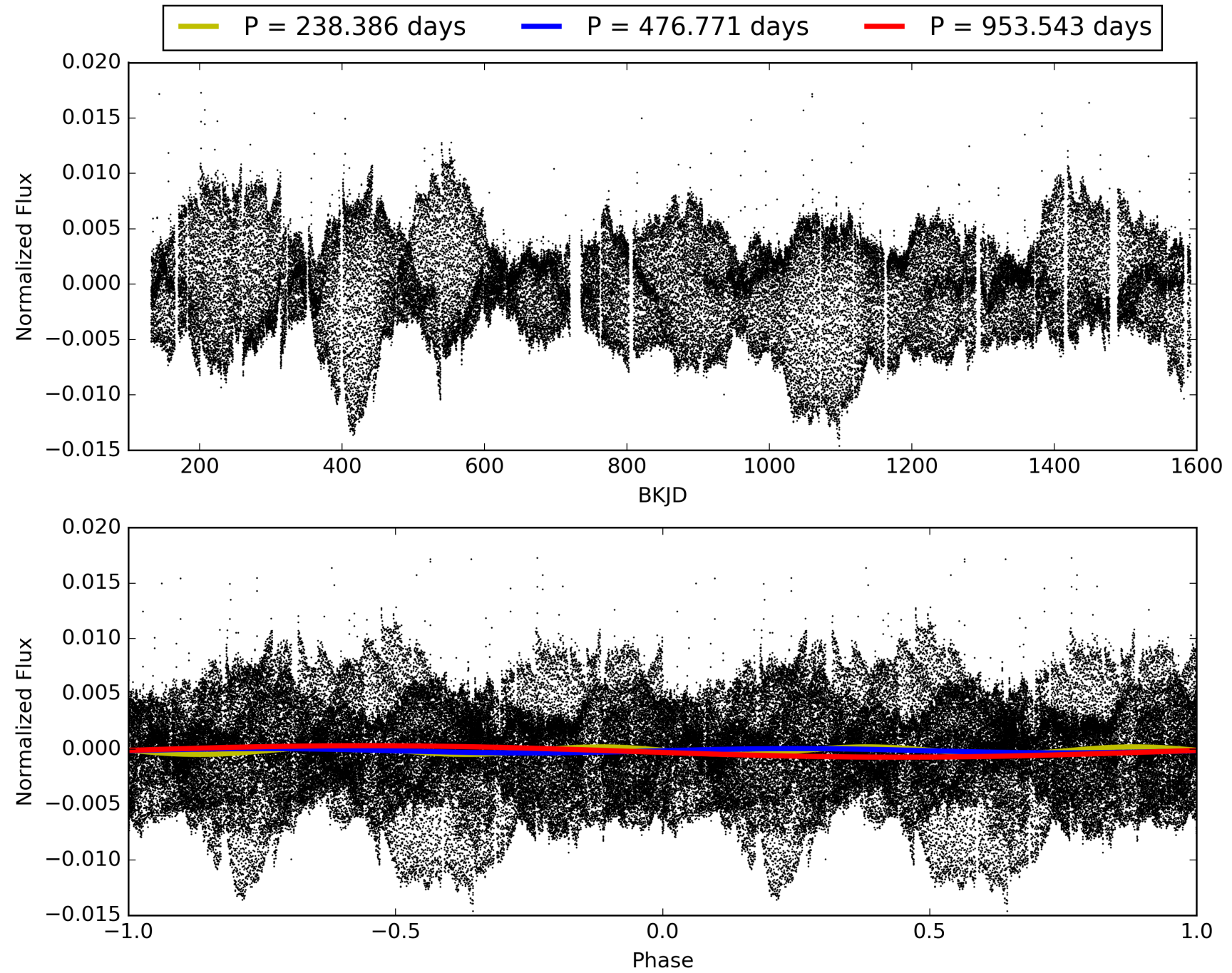
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:15:30 Z

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

TCE 011454563-01, PDC Light Curves

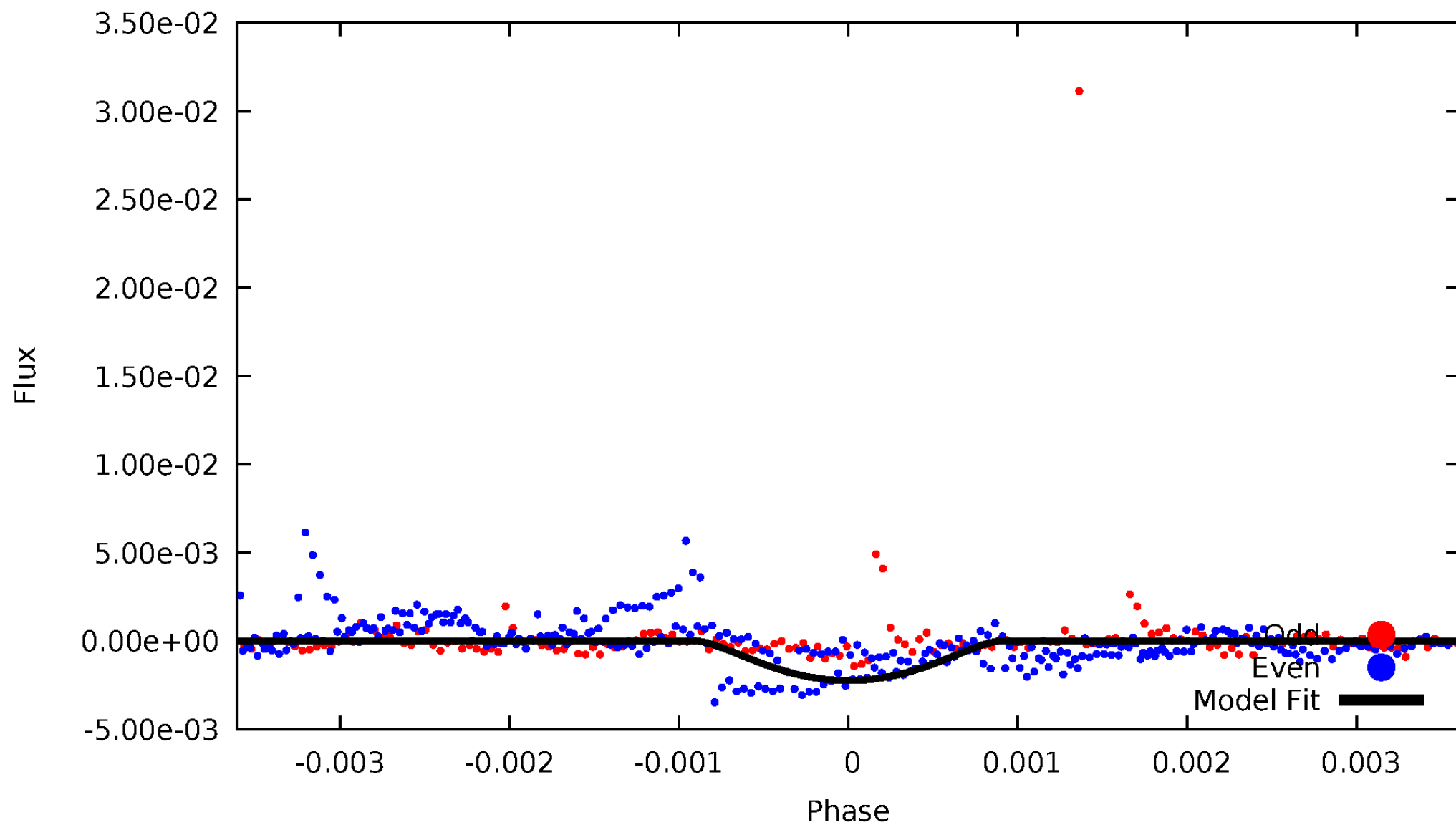


TCE 011454563-01



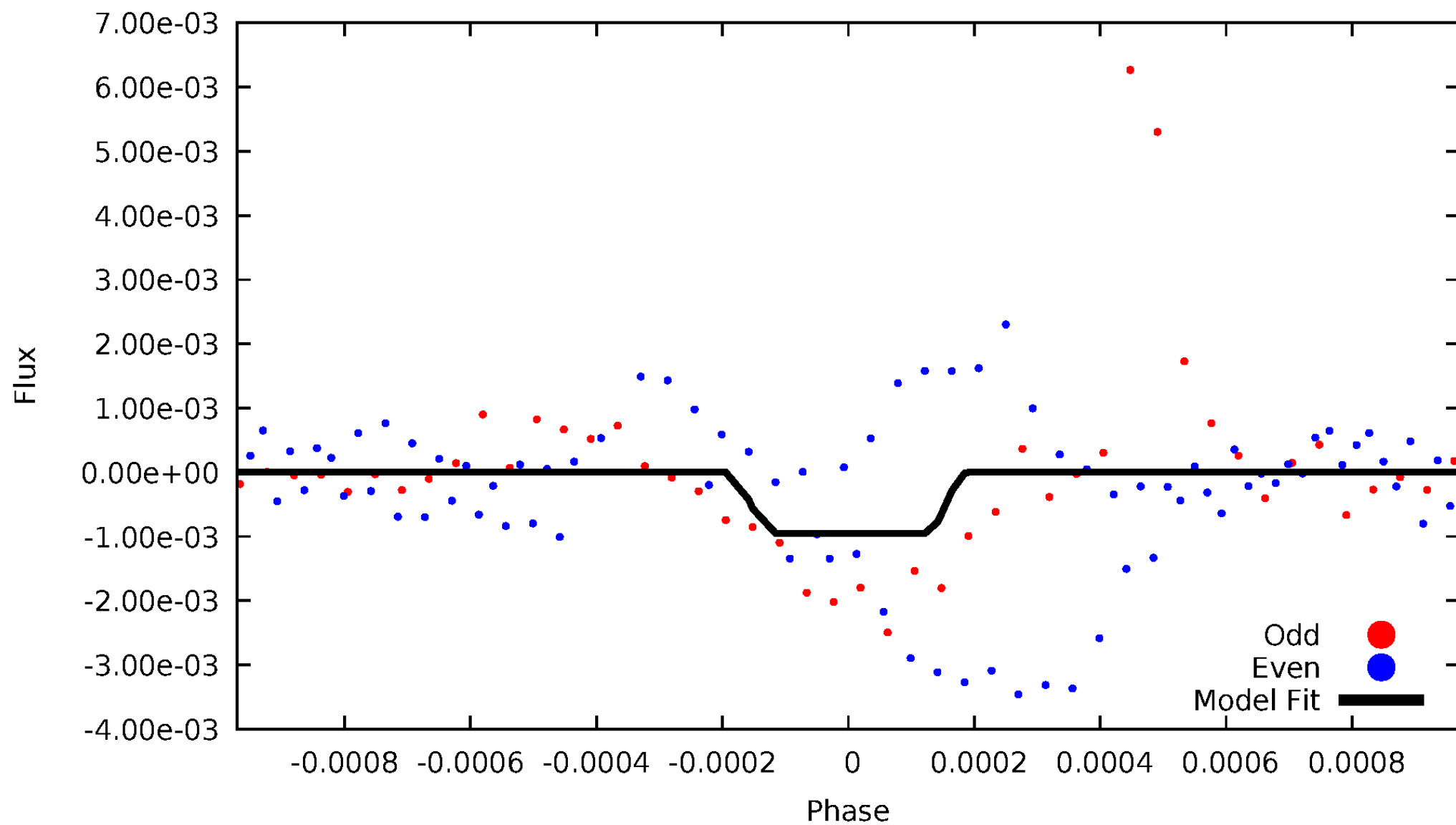
DV Odd/Even

TCE 011454563-01



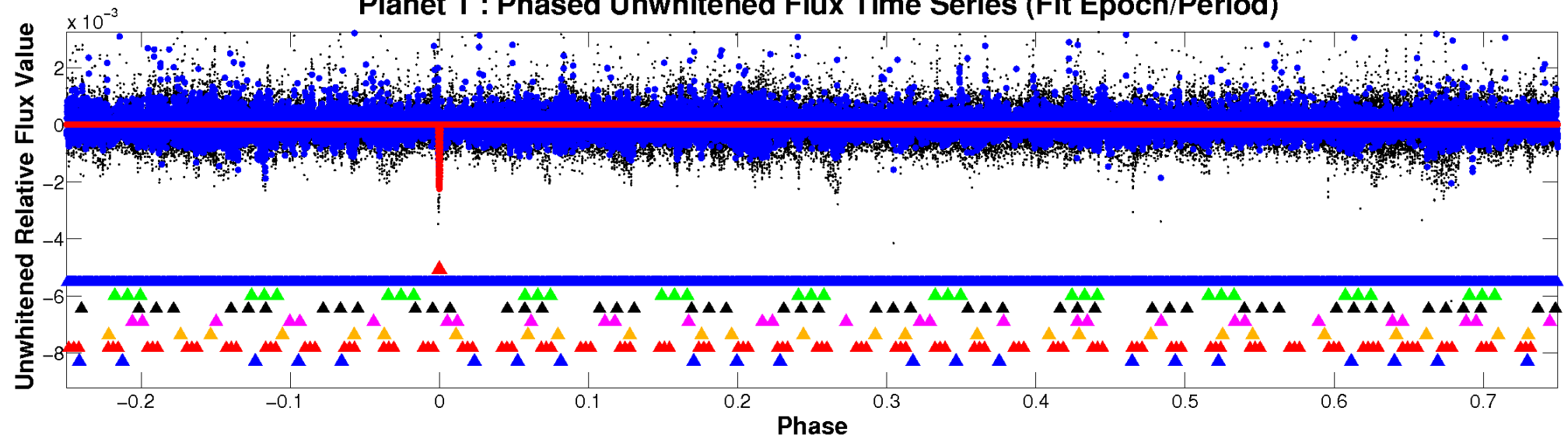
ALT Odd/Even

TCE 011454563-01

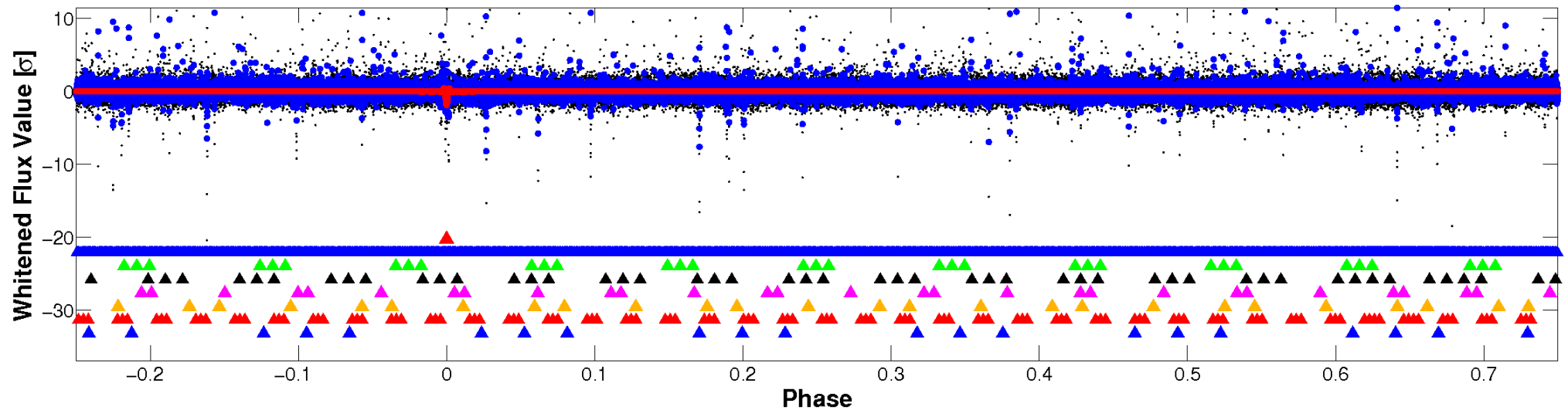


Non-Whitened Vs. Whitened Light Curve

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

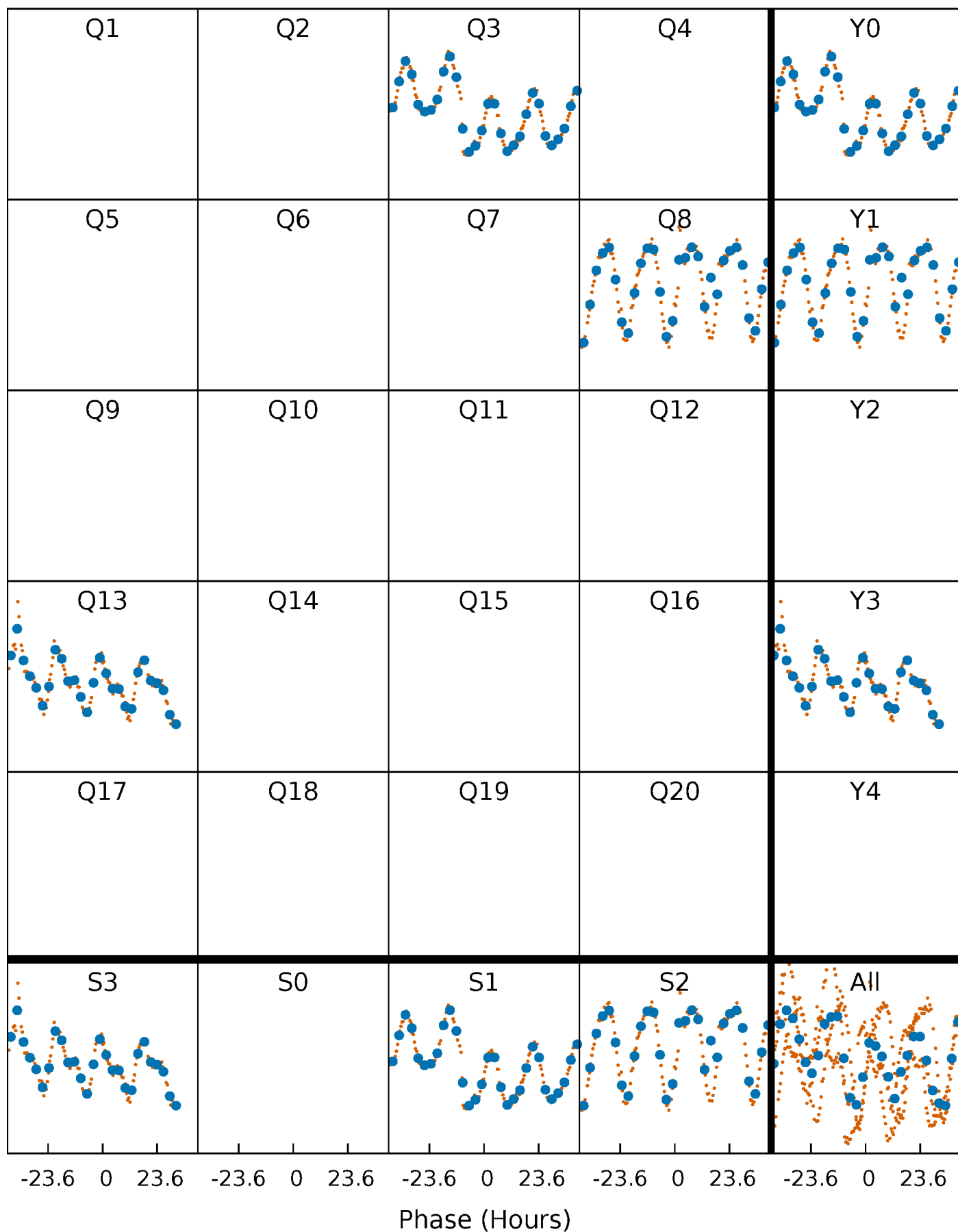


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



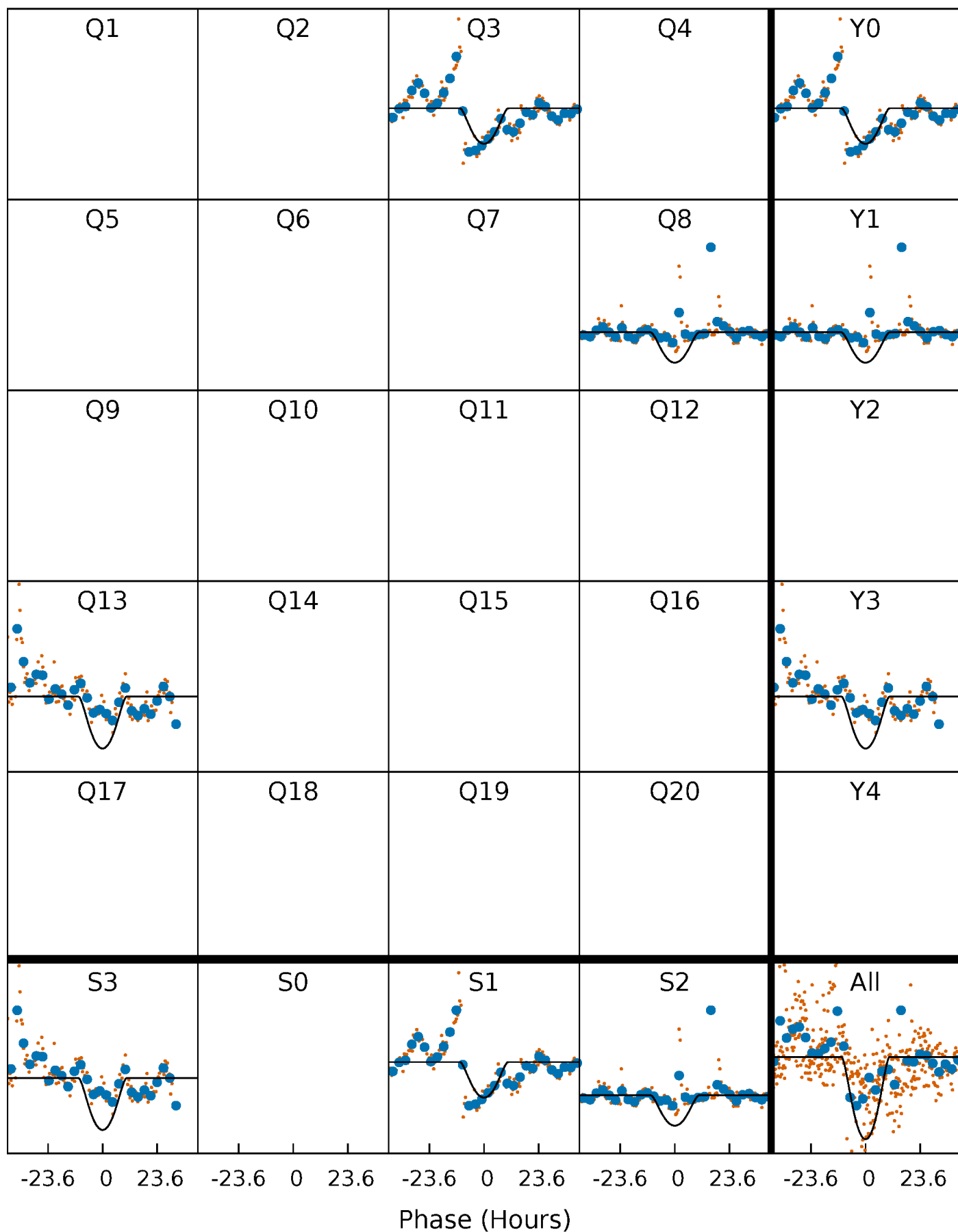
PDC Quarter-Phased Transit Curves

TCE 011454563-01 P=476.771310 Days $T_0=313.910196$ (BKJD)



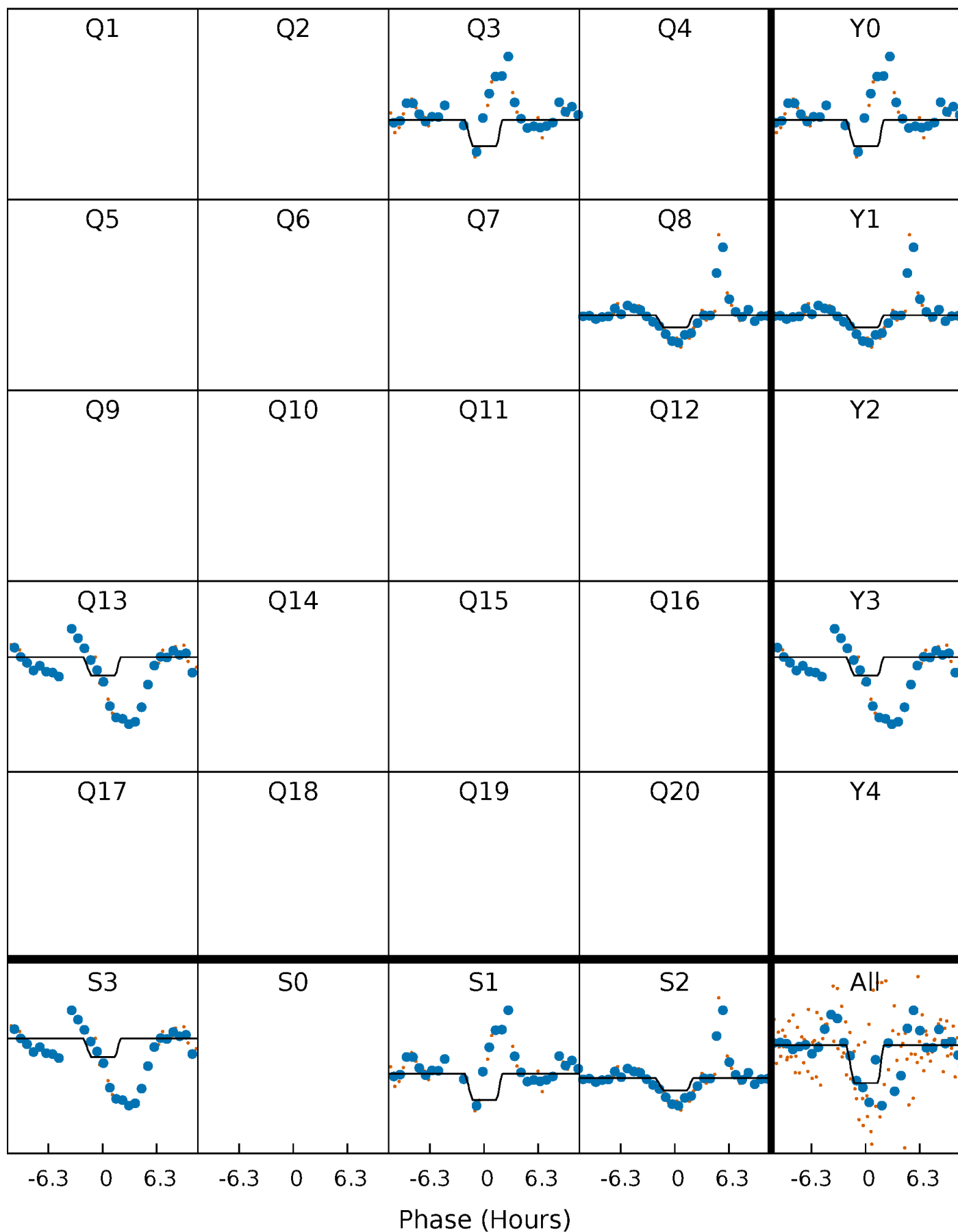
DV Quarter-Phased Transit Curves

TCE 011454563-01 P=476.771310 Days $T_0=313.910196$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

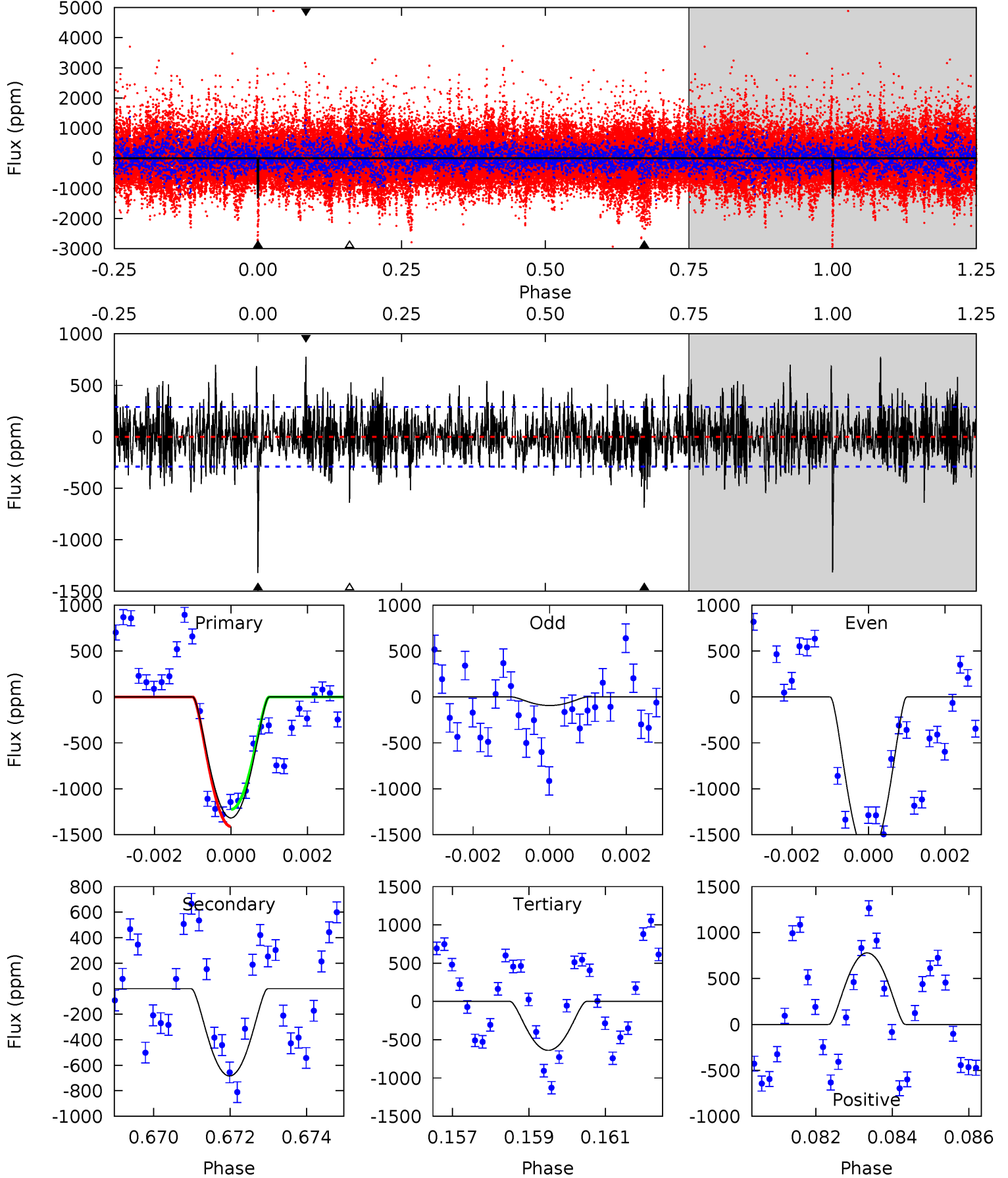
TCE 011454563-01 P=476.926102 Days $T_0=313.619302$ (BKJD)



DV Model-Shift Uniqueness Test

011454563-01, P = 476.771310 Days, E = 313.910196 Days

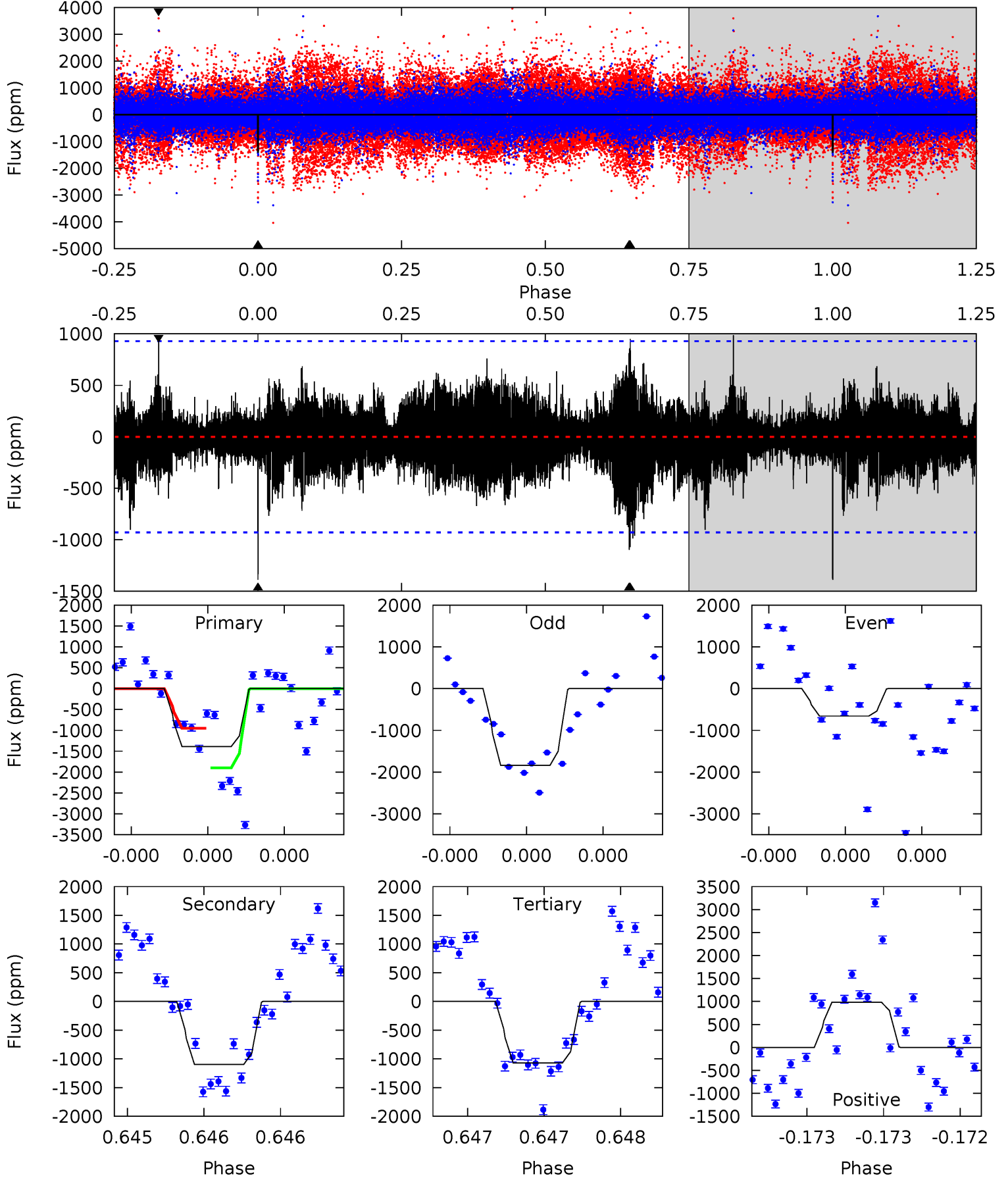
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.3	12.6	11.8	14.4	5.34	3.12	3.17	12.5	9.95	0.84	-1.74	14.3	1.51	0.37	1.71



Alt Model-Shift Uniqueness Test

011454563-01, P = 476.926102 Days, E = 313.619302 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.42	6.66	6.50	5.99	5.64	3.58	1.38	1.93	2.43	0.16	0.67	3.63	0.68	0.42	2.87



Stellar Parameters For KIC 011454563

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5496^{+148}_{-164}	$4.607^{+0.037}_{-0.112}$	$-0.380^{+0.300}_{-0.300}$	$0.743^{+0.129}_{-0.059}$	$0.825^{+0.080}_{-0.088}$	$2.831^{+0.532}_{-0.989}$
	+3%/-3%	+1%/-2%	+79%/-79%	+17%/-8%	+10%/-11%	+19%/-35%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 011454563-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-684 ± 54	$7.23^{+6.01}_{-4.58}$	280^{+14}_{-11}	3476^{+1592}_{-545}	8830^{+59666}_{-6088}
Alt.	-1097 ± 165	$5.91^{+5.47}_{-4.12}$	279^{+13}_{-11}	4020^{+2797}_{-766}	$21001^{+215349}_{-15353}$

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 $A_{obs} \gg 1.0$

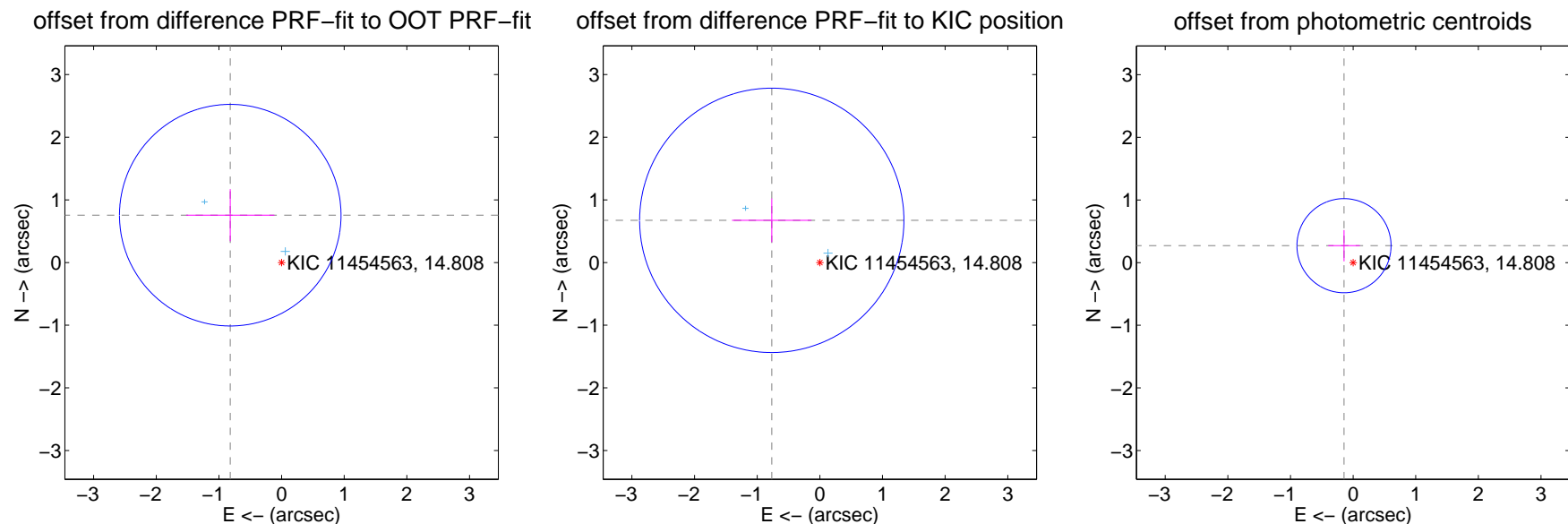
DV Centroid Data

Supplemental centroid analysis for 011454563-01. Kepler magnitude: 14.81. Transit SNR 13.61

There are 2 quarters with good PRF difference image offsets

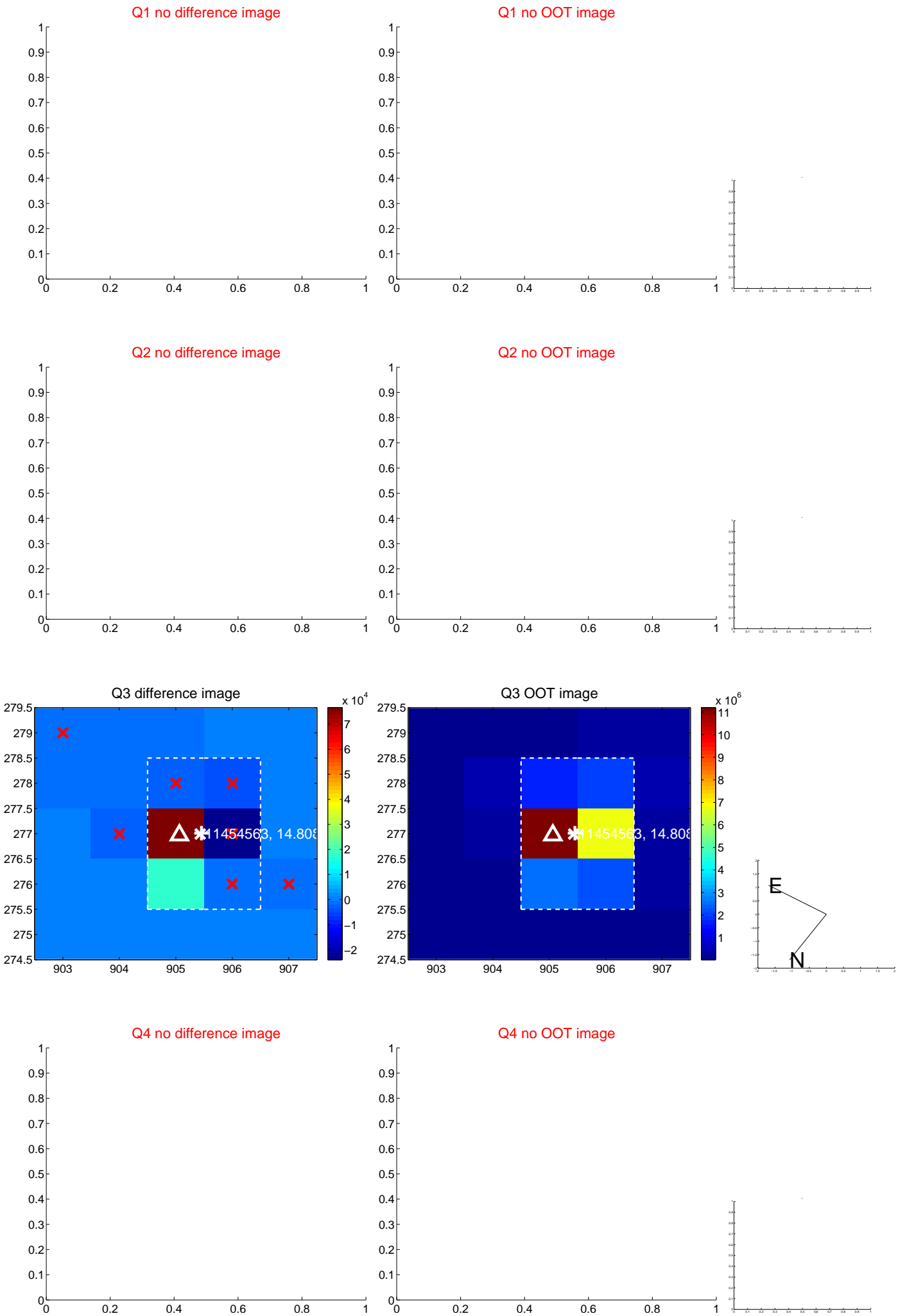
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.115 ± 0.589	1.89	0.819 ± 0.704	0.756 ± 0.415
PRF-fit source offset from KIC position	1.021 ± 0.703	1.45	0.767 ± 0.634	0.673 ± 0.349
photometric centroid source offset	0.31 ± 0.25	1.23	0.15 ± 0.25	0.27 ± 0.25

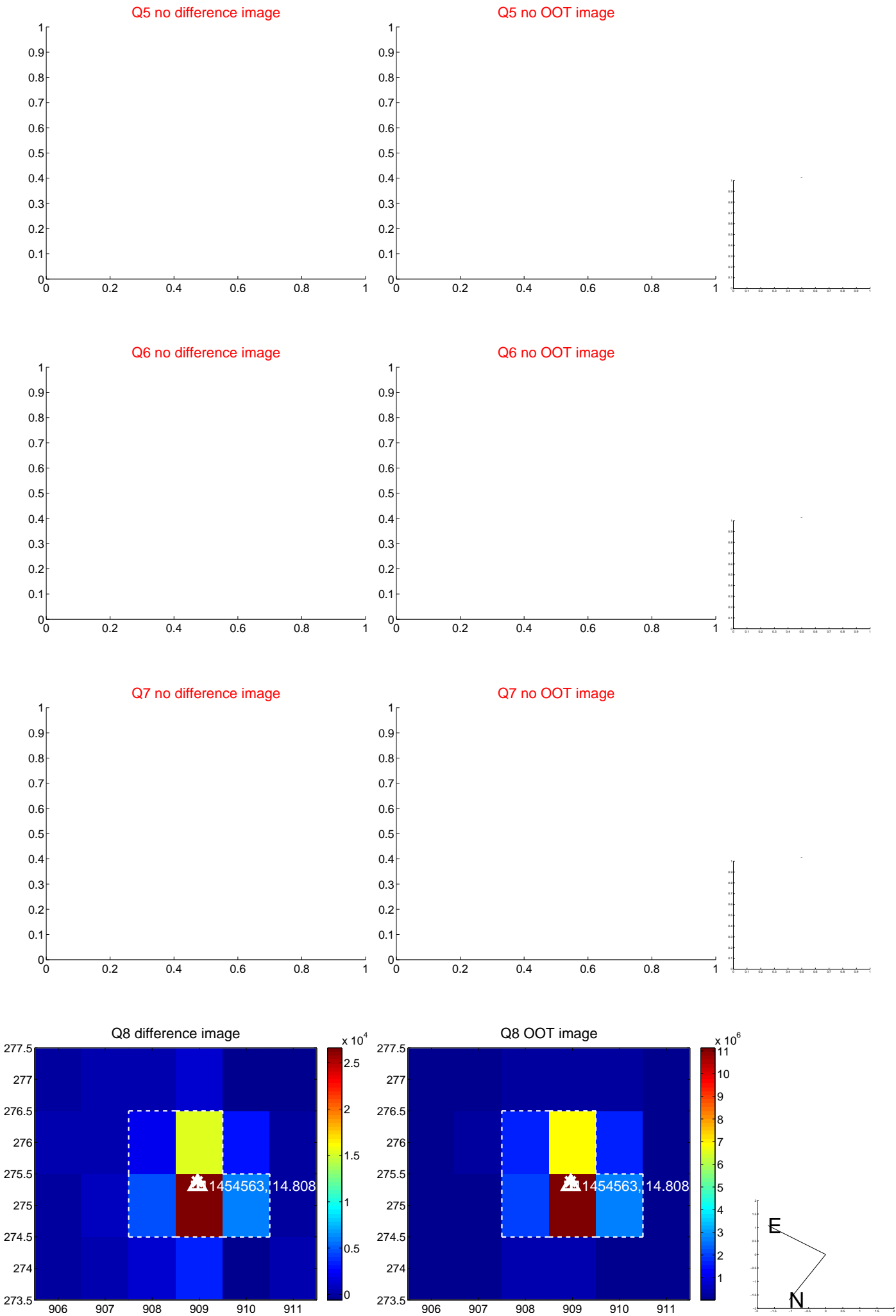


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . 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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



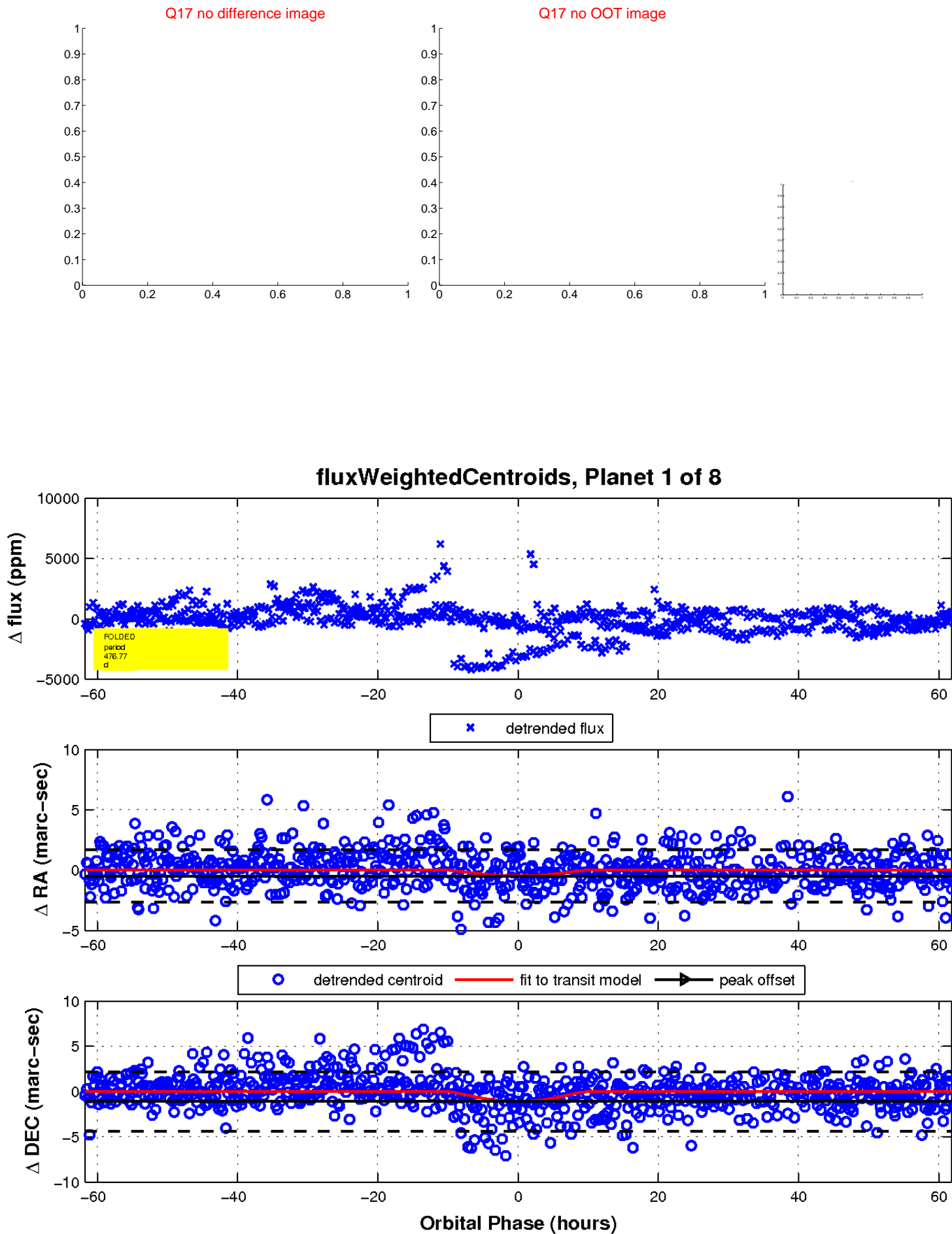
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

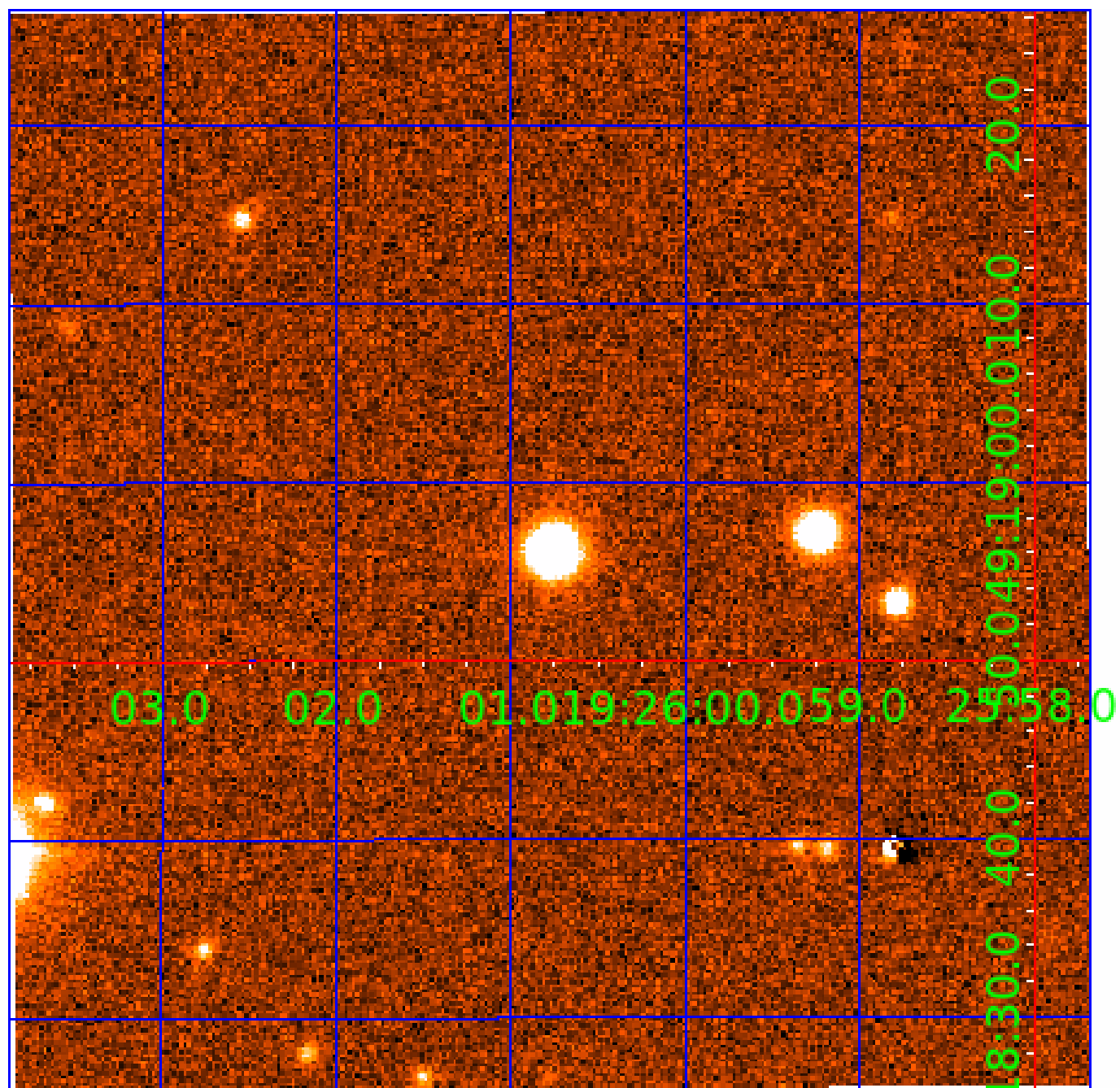


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011454563

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})
011454563-01	OBS	No	476.771310	313.910196	2242.8	20.640	13.2	13.6	0.74	5496	5.28	0.36
011454563-02	OBS	No	0.767403	131.927391	37.1	5.093	7.8	5.0	0.74	5496	0.45	1921.81
011454563-04	OBS	No	29.451478	140.602669	788.1	1.807	8.7	10.4	0.74	5496	2.30	14.85
011454563-07	OBS	No	12.588847	132.485563	339.3	3.614	8.7	8.3	0.74	5496	1.81	46.11
011454563-08	OBS	No	70.081000	184.990253	711.7	6.221	8.9	8.0	0.74	5496	2.31	4.67

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011454563-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
011454563-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
011454563-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV
011454563-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
011454563-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

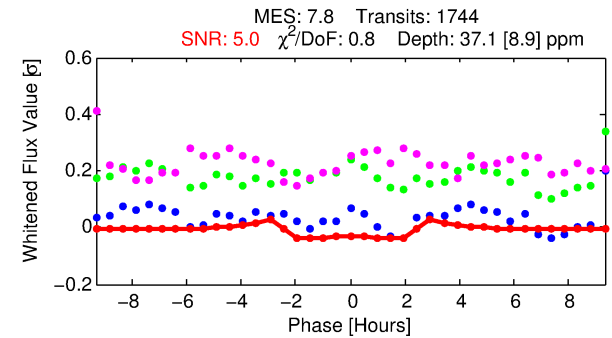
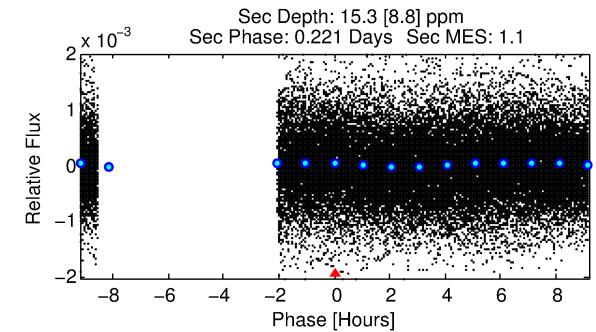
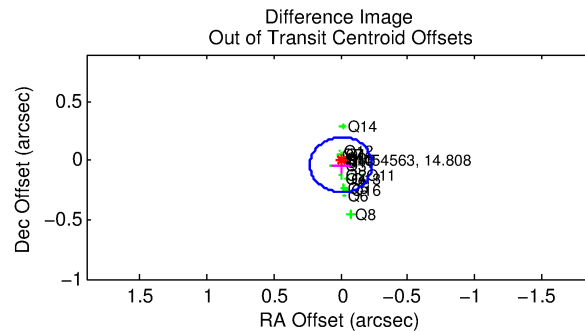
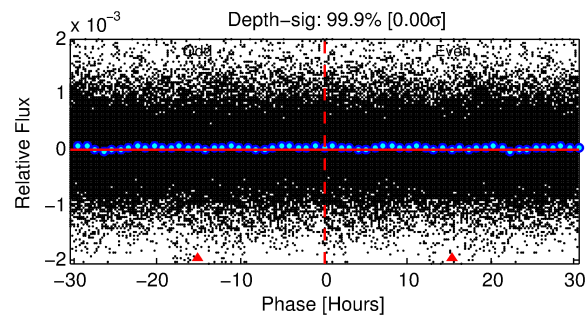
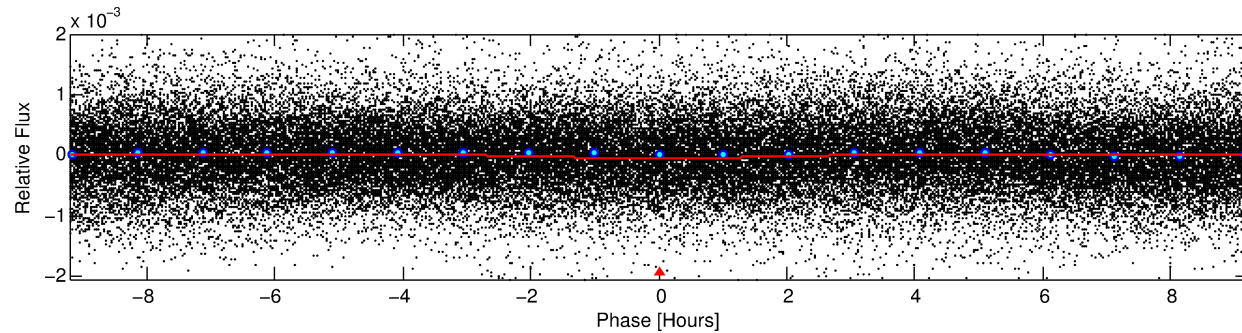
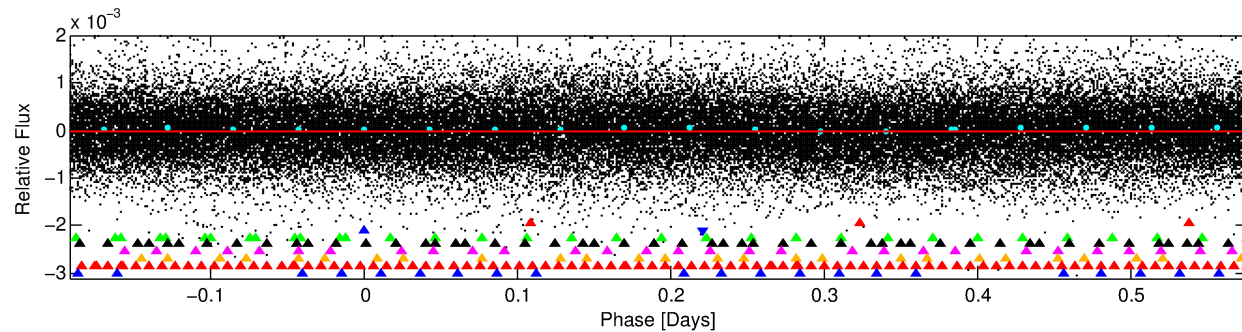
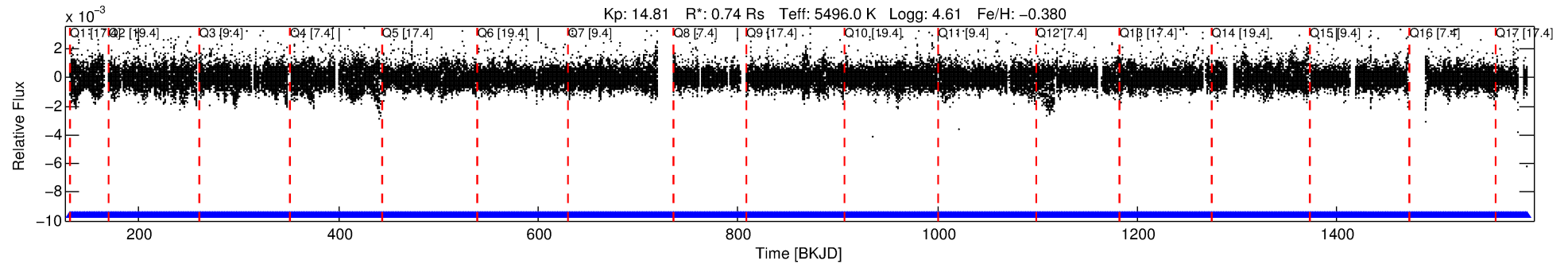
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011454563-02

No Significant Match Found

DV One-Page Summary

KIC: 11454563 Candidate: 2 of 8 Period: 0.767 d



DV Fit Results:

Period = 0.76740 [0.00002] d
Epoch = 131.9274 [0.0051] BKJD
Rp/R* = 0.0055 [0.0076]
a/R* = 1.31 [3.23]
b = 0.17 [33.52]
Seff = 1921.81 [459.64]
Teq = 1688 [101] K
Rp = 0.45 [0.62] Re
a = 0.0153 [0.0022] AU
Ag = 9.82 [27.74] [0.32 σ]
Teffp = 4621 [3257] K [0.90 σ]

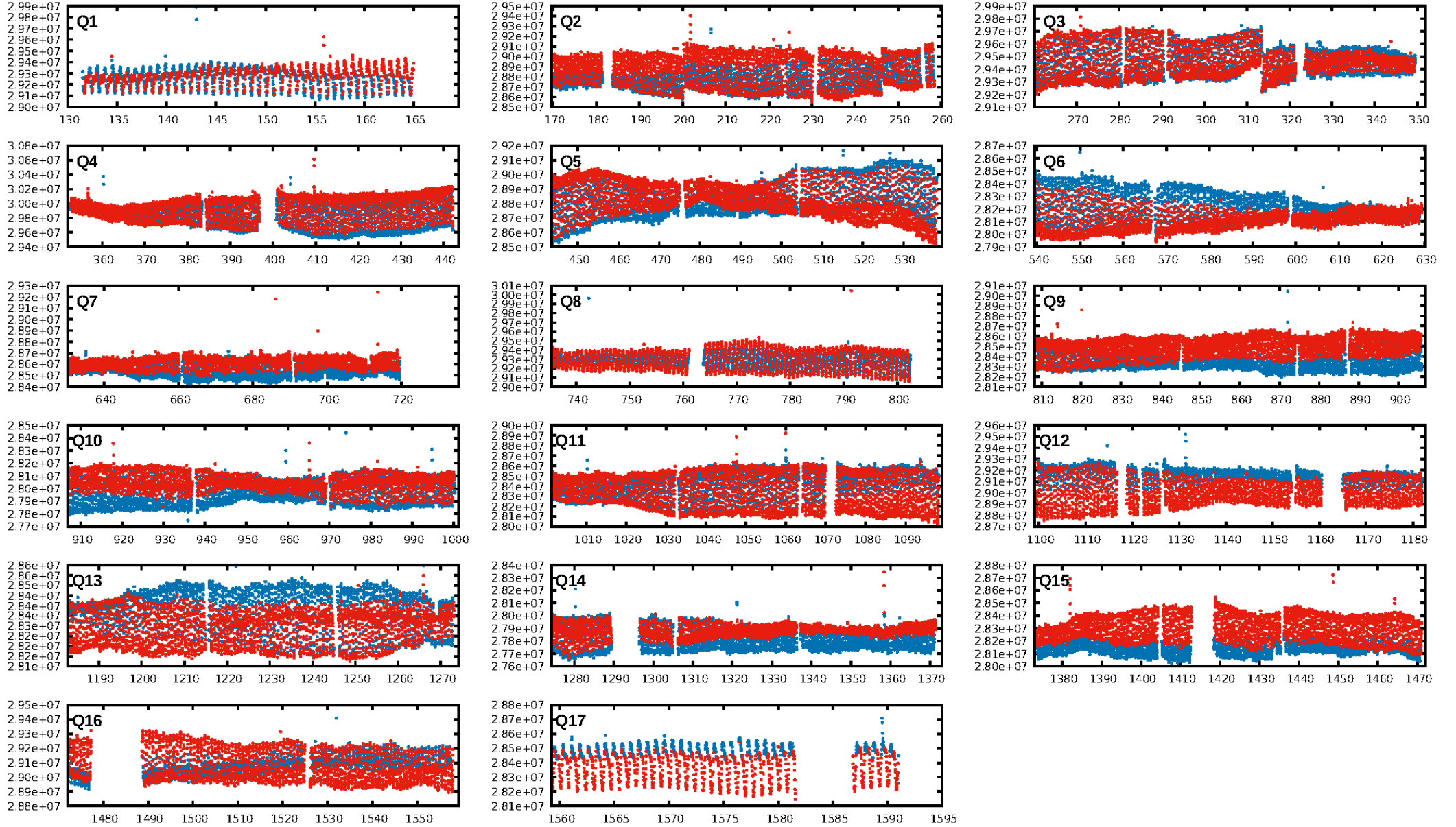
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [45.43 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1664/1664]
GhostDiagnostic-chr: 1.07
Centroid-sig: 12.9%
Centroid-so: 1.308 arcsec [1.35 σ]
OotOffset-rm: 0.034 arcsec [0.44 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 0.159 arcsec [2.13 σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.47 [8/17]
DiffImageOverlap-fno: 1.00 [17/17]

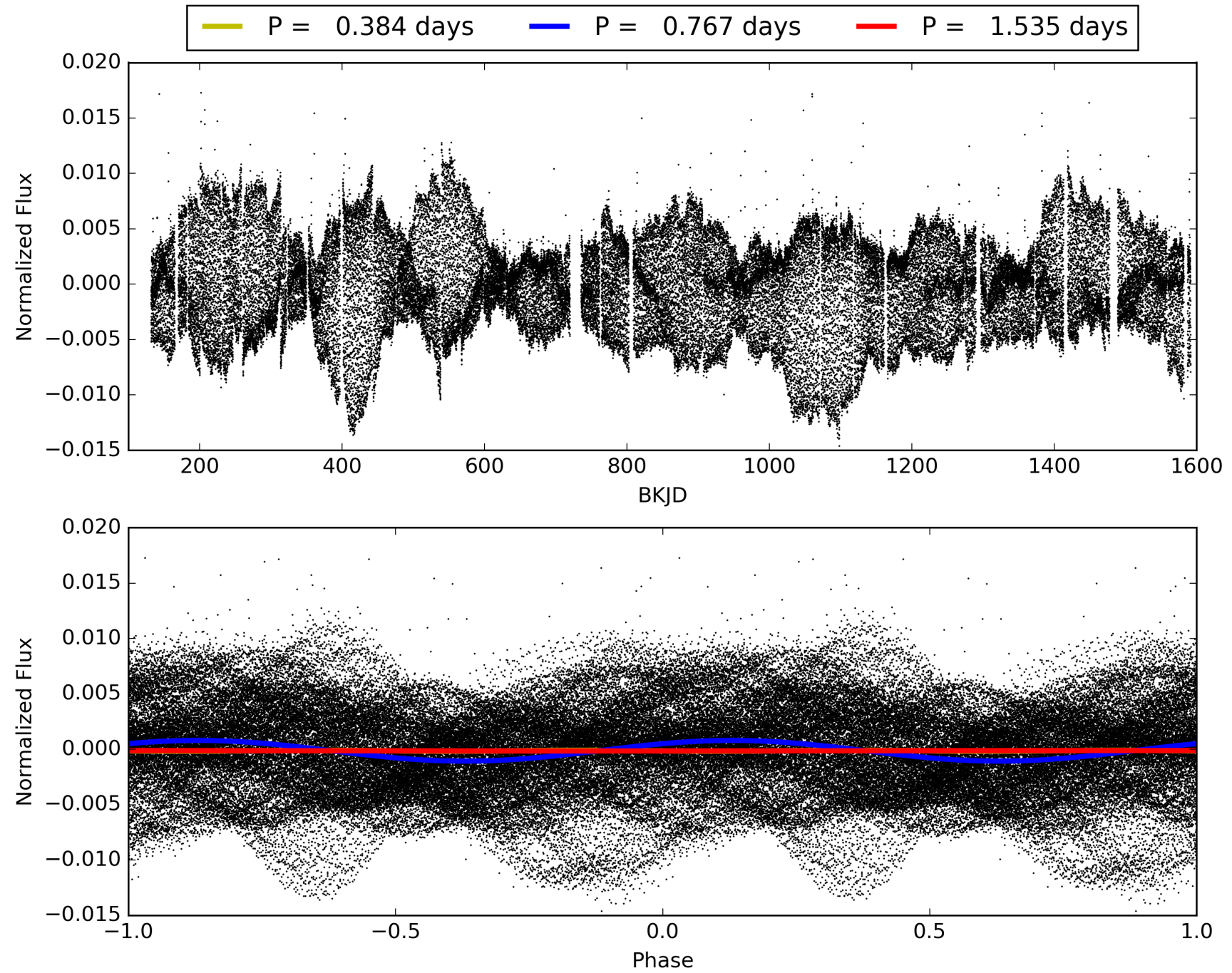
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:15:40 Z

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

TCE 011454563-02, PDC Light Curves

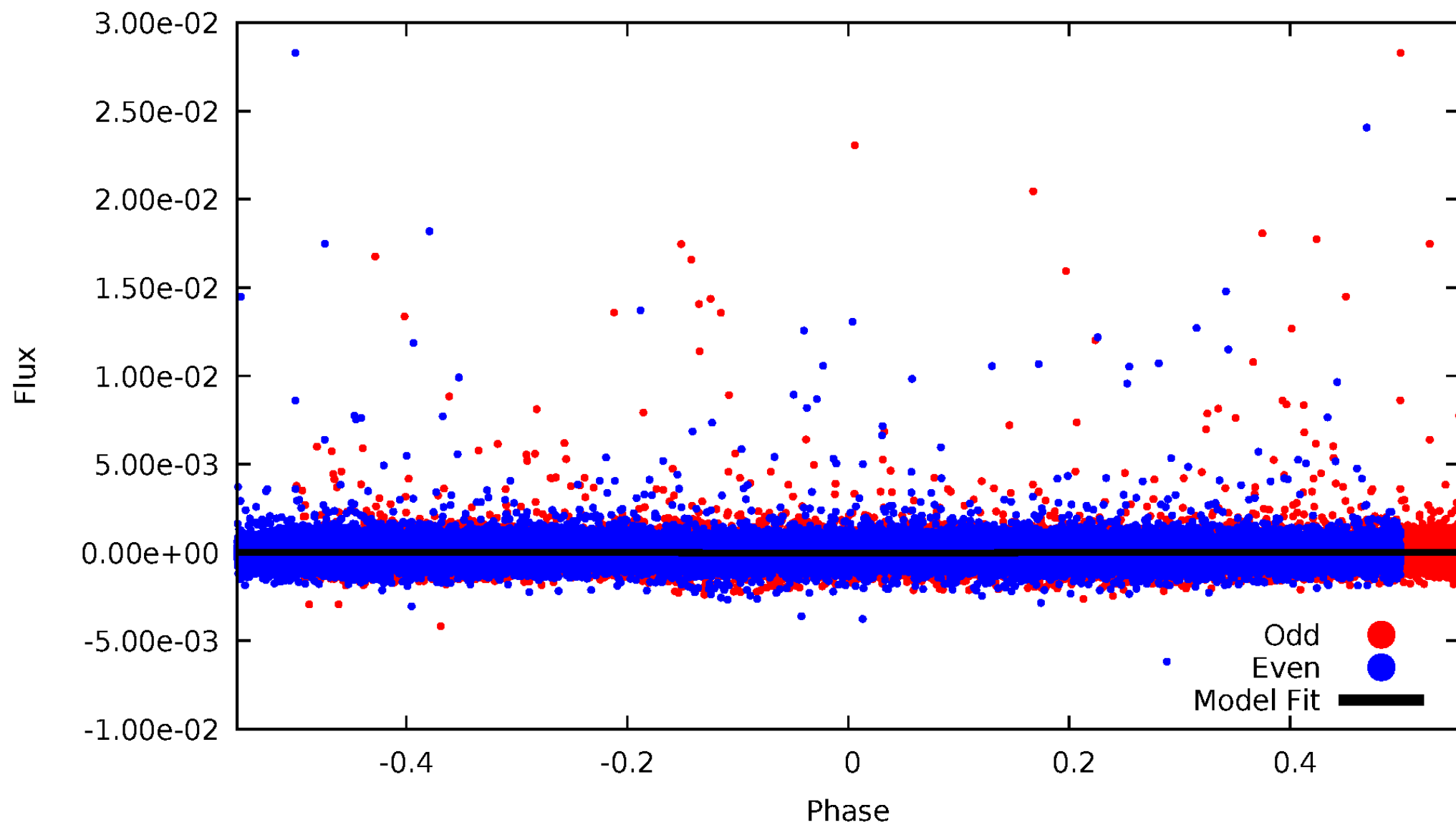


TCE 011454563-02



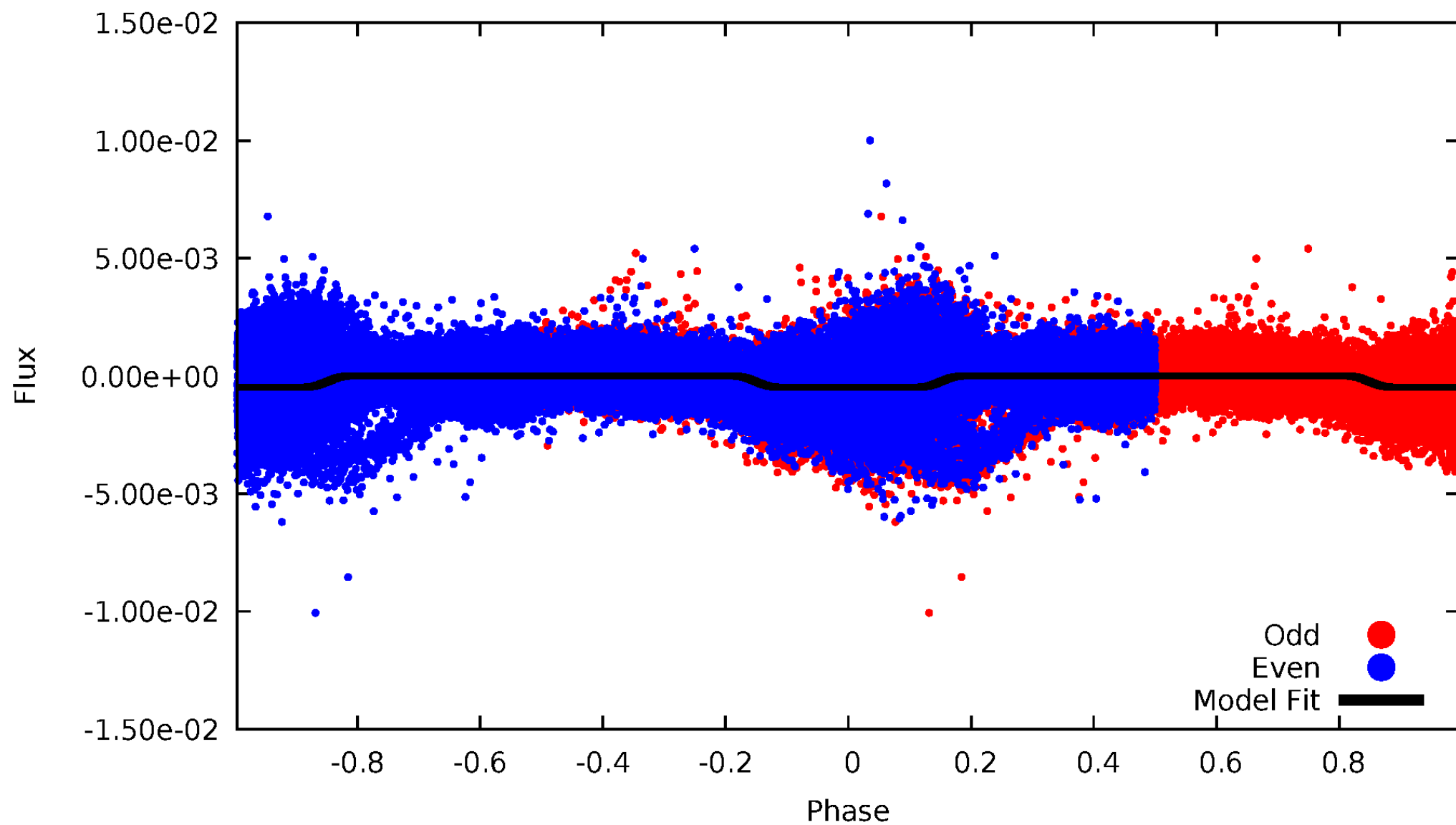
DV Odd/Even

TCE 011454563-02



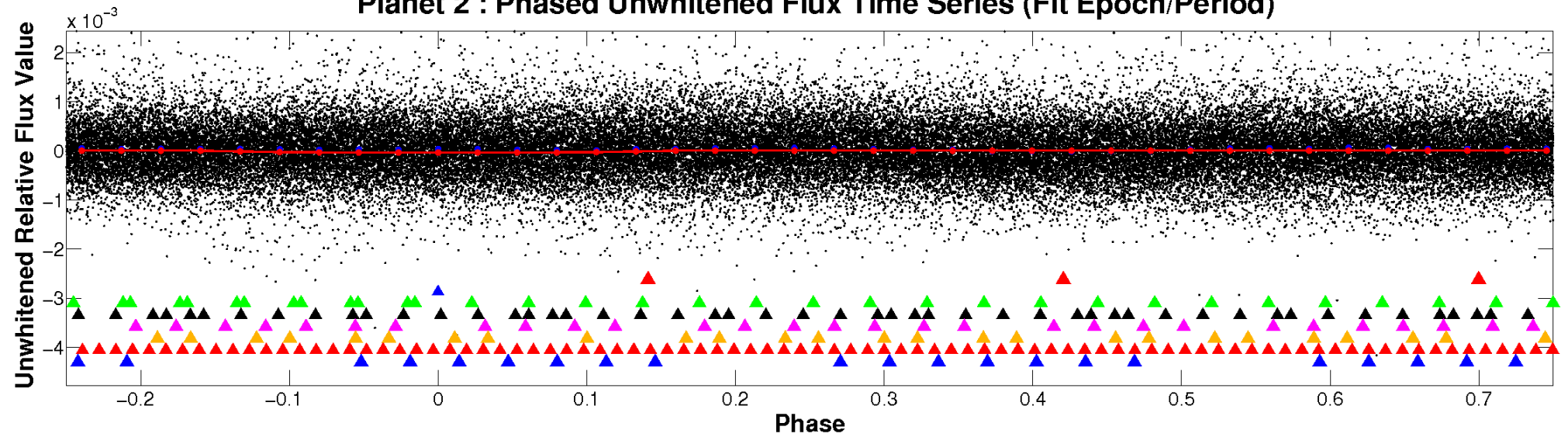
ALT Odd/Even

TCE 011454563-02

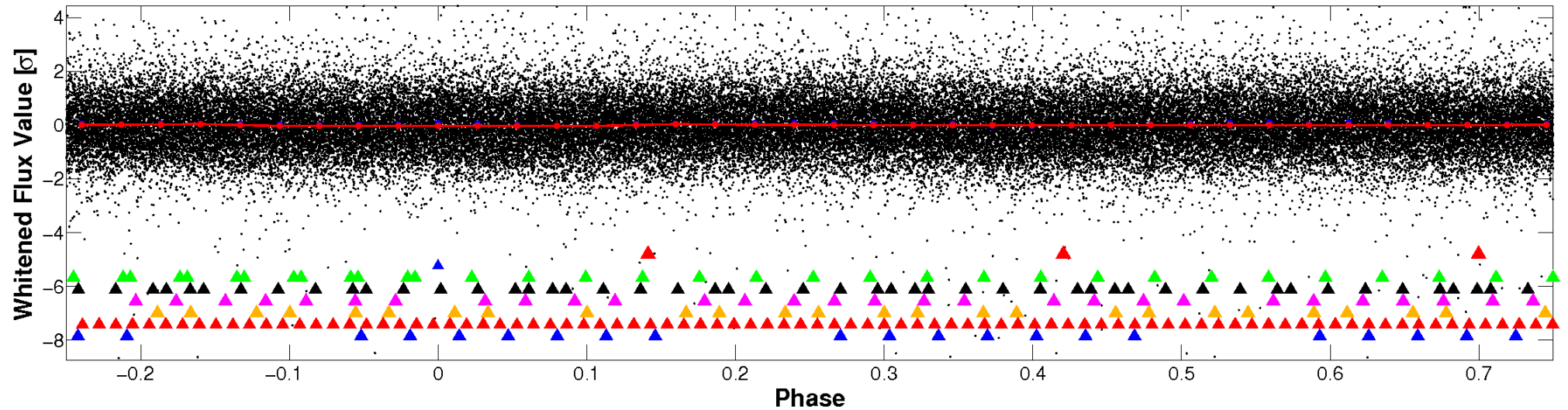


Non-Whitened Vs. Whitened Light Curve

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

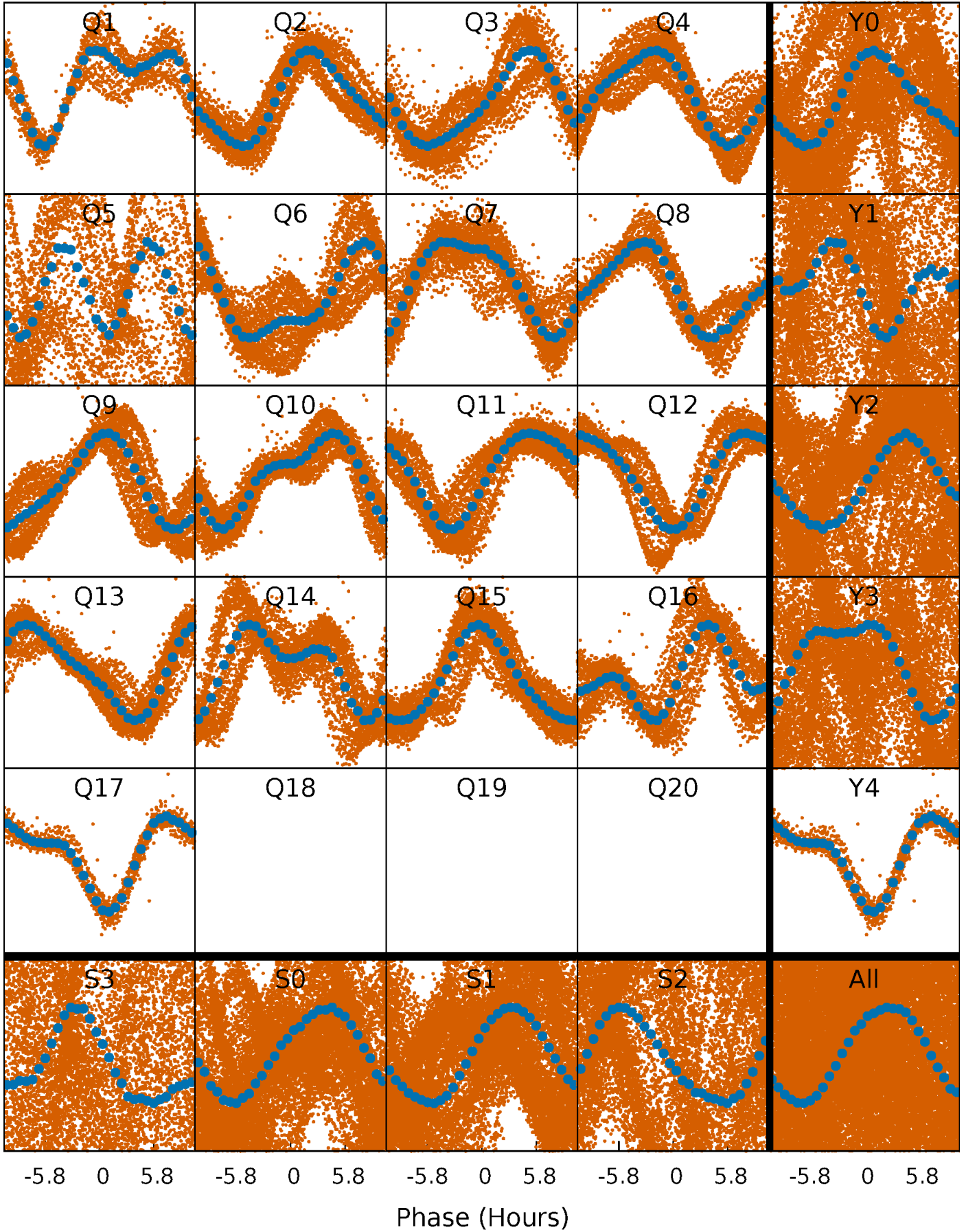


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



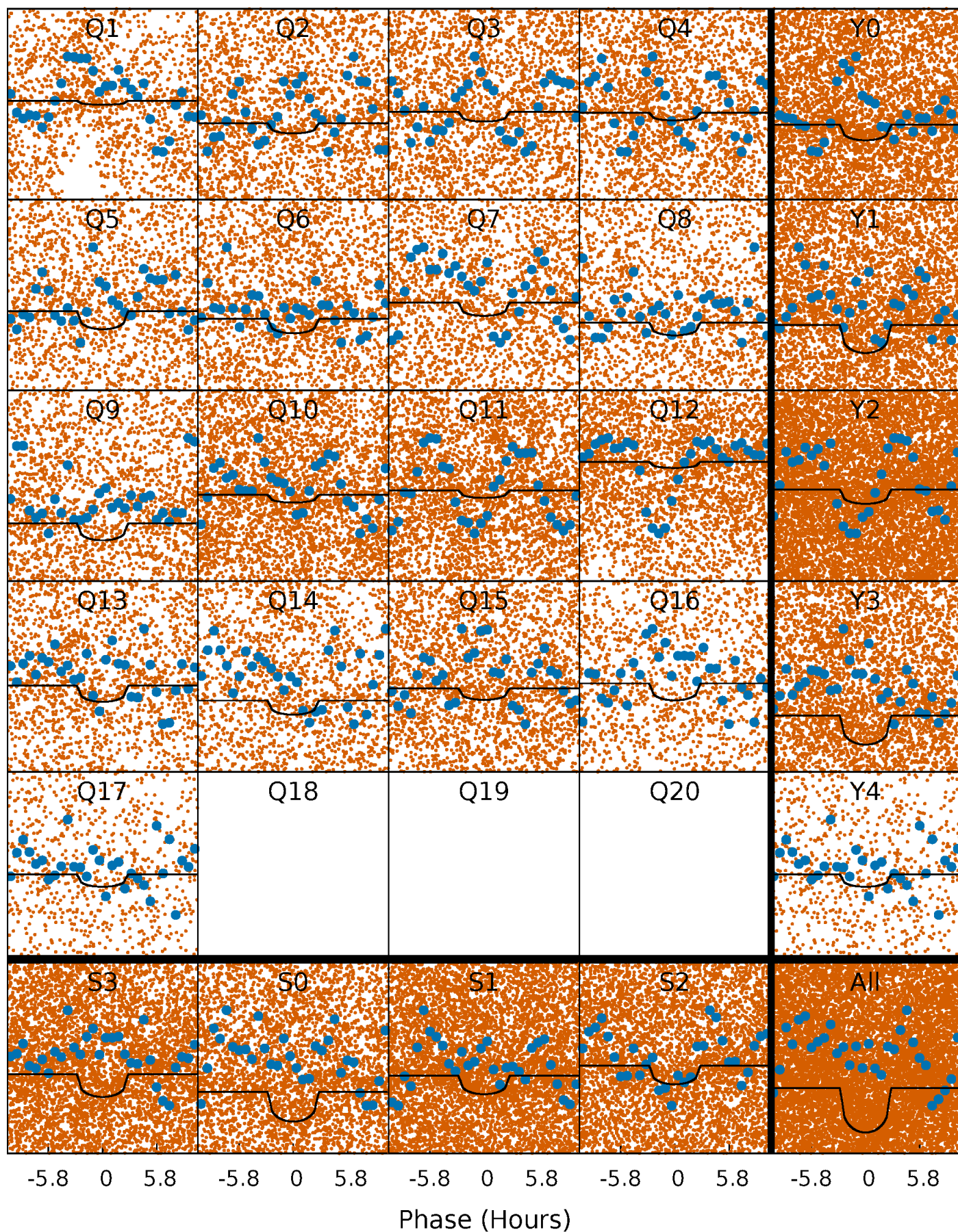
PDC Quarter-Phased Transit Curves

TCE 011454563-02 P= 0.767403 Days $T_0=131.927391$ (BKJD)



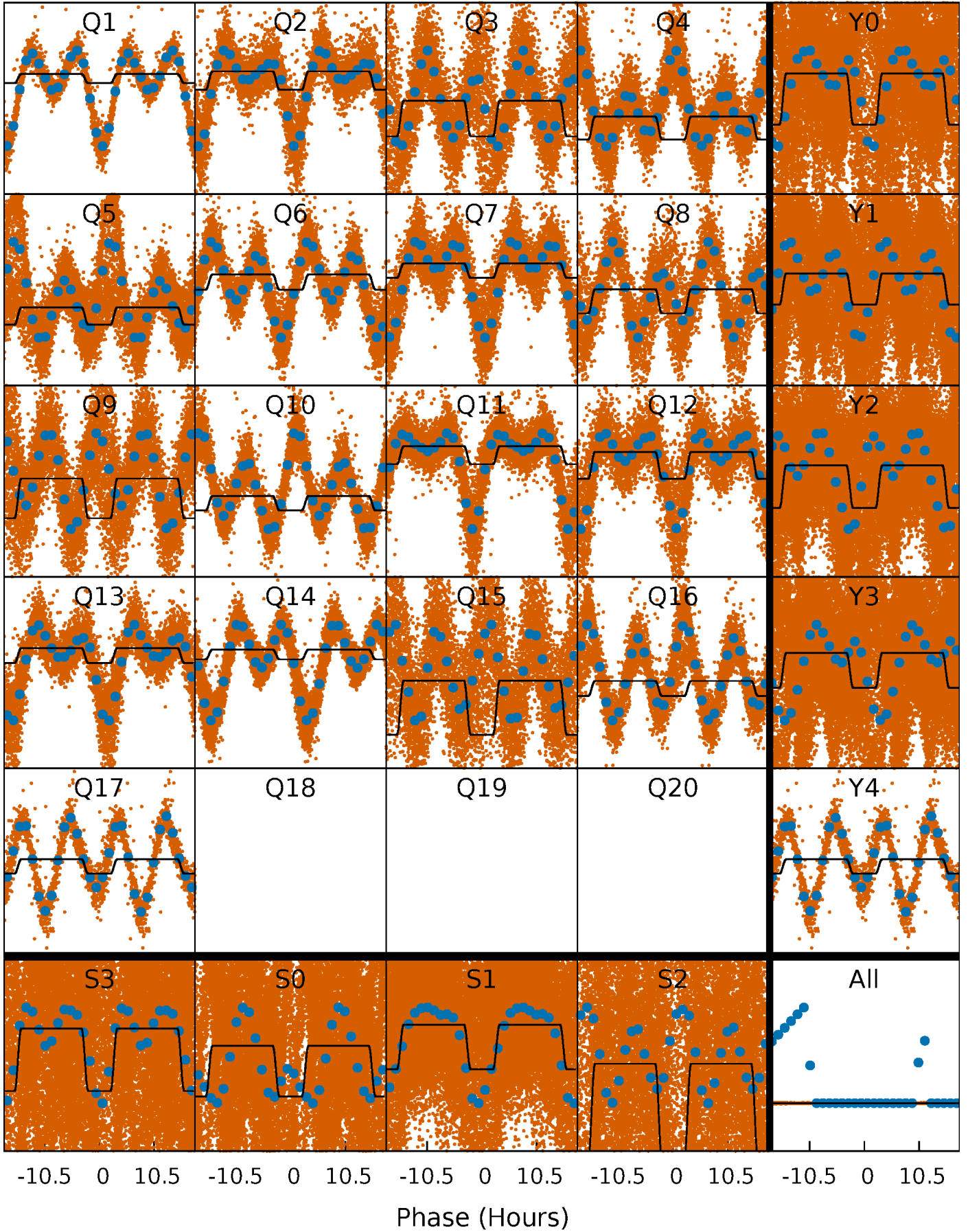
DV Quarter-Phased Transit Curves

TCE 011454563-02 P= 0.767403 Days $T_0=131.927391$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

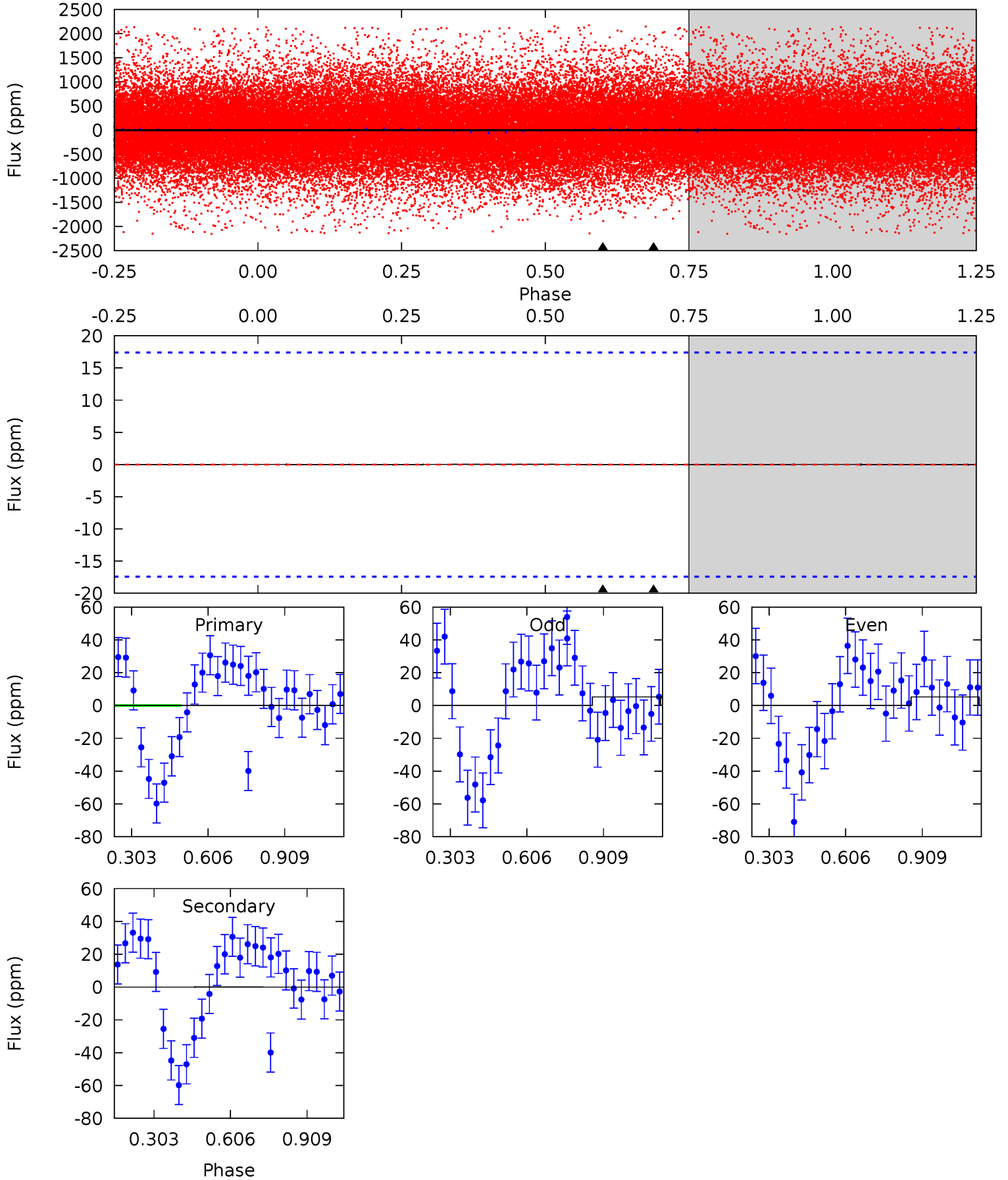
TCE 011454563-02 P= 0.768215 Days $T_0=131.649500$ (BKJD)



DV Model-Shift Uniqueness Test

011454563-02, P = 0.767403 Days, E = 131.159988 Days

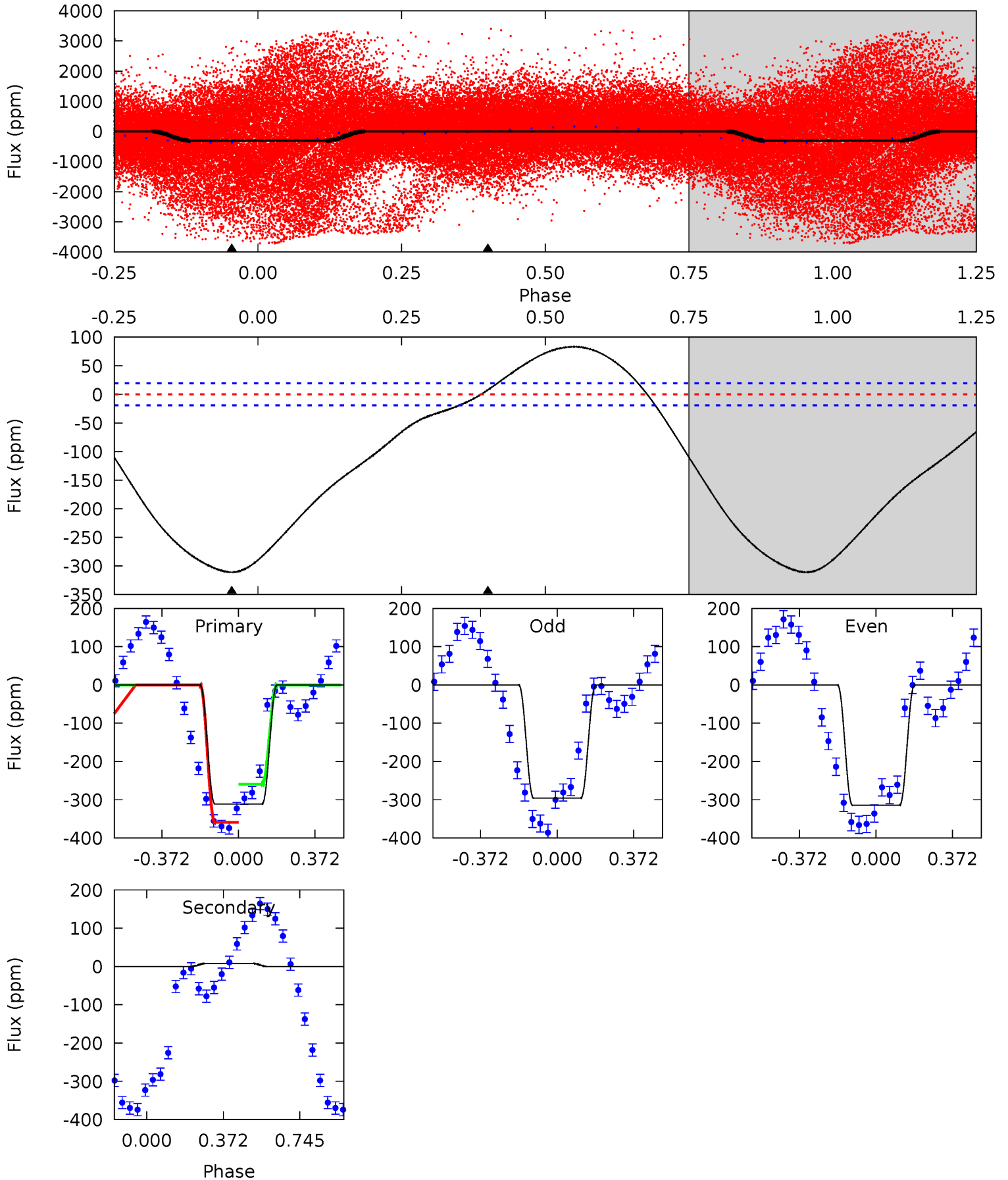
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	4.33	1.03	0.00	0	0	0	0	0.00	23.2	0.71	0.08



Alt Model-Shift Uniqueness Test

011454563-02, P = 0.768215 Days, E = 130.881285 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
69.4	-1.73	0	0	4.28	0.89	8.27	69.4	69.4	-1.73	-1.73	2.04	1.00	0.21	9.80



Stellar Parameters For KIC 011454563

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5496^{+148}_{-164}	$4.607^{+0.037}_{-0.112}$	$-0.380^{+0.300}_{-0.300}$	$0.743^{+0.129}_{-0.059}$	$0.825^{+0.080}_{-0.088}$	$2.831^{+0.532}_{-0.989}$
	+3%/-3%	+1%/-2%	+79%/-79%	+17%/-8%	+10%/-11%	+19%/-35%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 011454563-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-0 ± 4	$0.66^{+0.55}_{-0.44}$	2391^{+100}_{-94}	-2701^{+6295}_{-958}	$0.024^{+2.290}_{-1.979}$
Alt.	8 ± 4	$1.81^{+0.68}_{-0.64}$	2389^{+114}_{-97}	-2981^{+154}_{-290}	$-0.282^{+0.178}_{-0.490}$

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

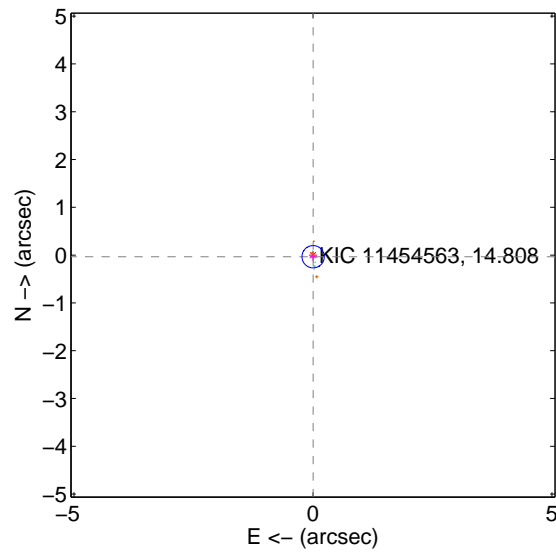
Supplemental centroid analysis for 011454563-02. Kepler magnitude: 14.81. Transit SNR 5.01

There are 8 quarters with good PRF difference image offsets

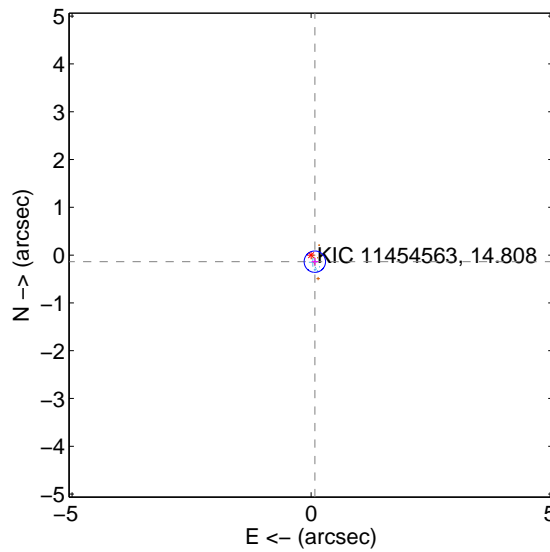
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.034 ± 0.078	0.44	-0.003 ± 0.067	-0.034 ± 0.078
PRF-fit source offset from KIC position	0.159 ± 0.075	2.13	-0.079 ± 0.068	-0.138 ± 0.077
photometric centroid source offset	1.31 ± 0.97	1.35	0.22 ± 1.02	-1.29 ± 0.97

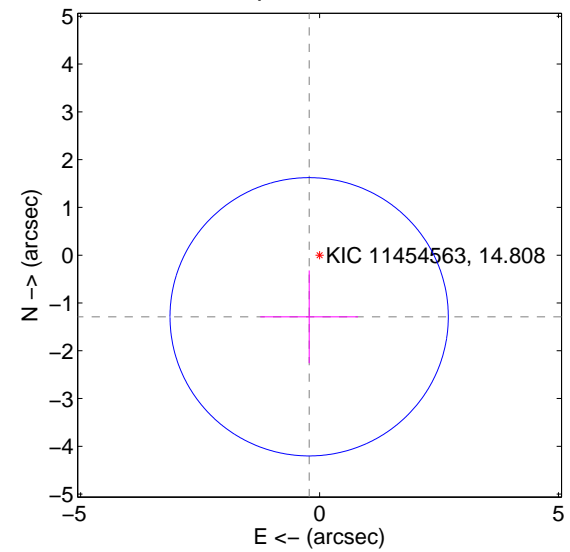
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

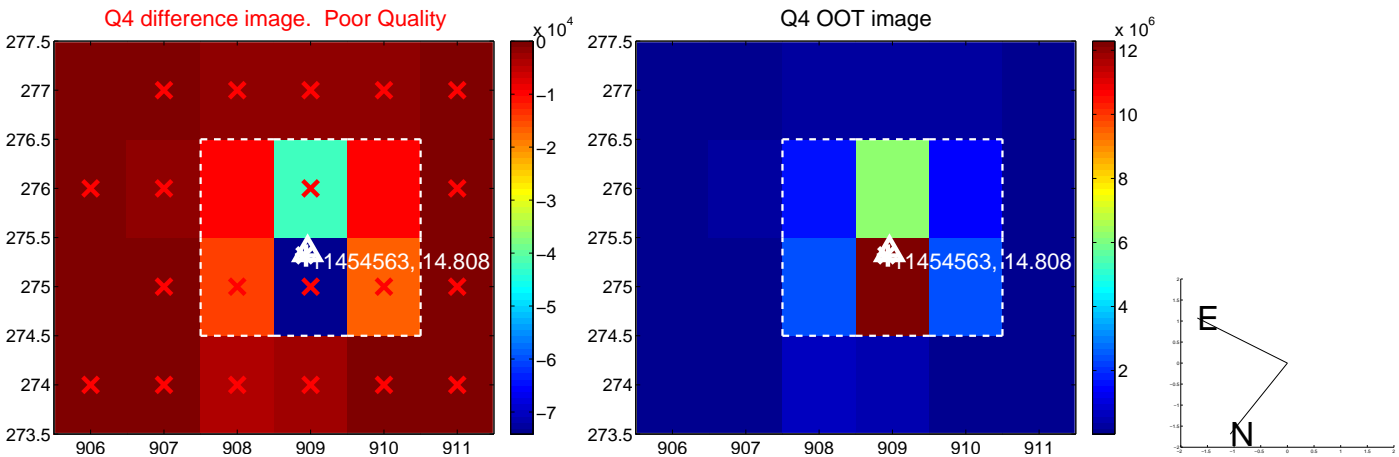
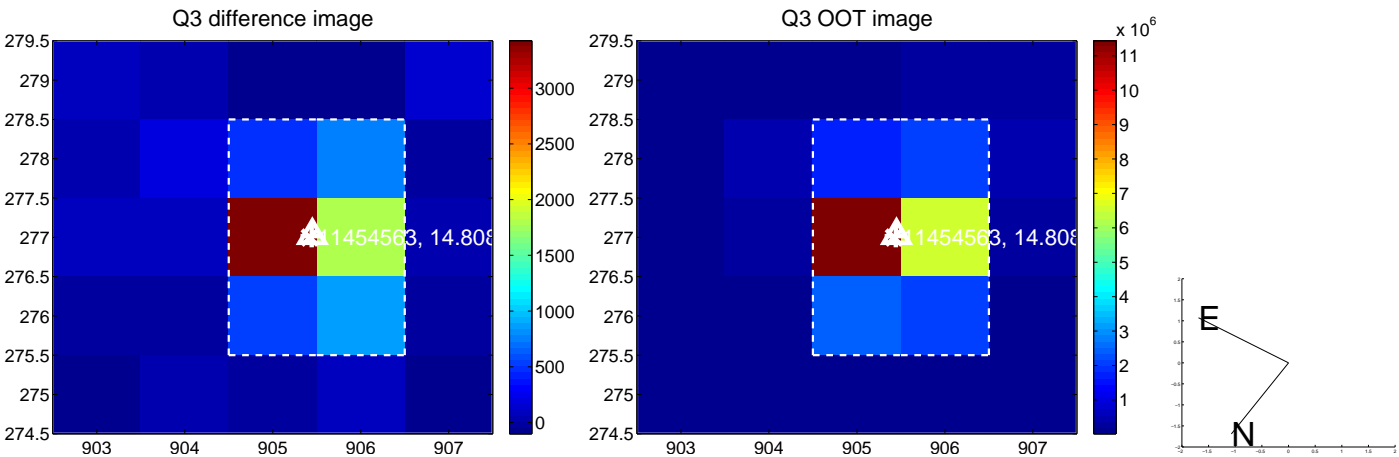
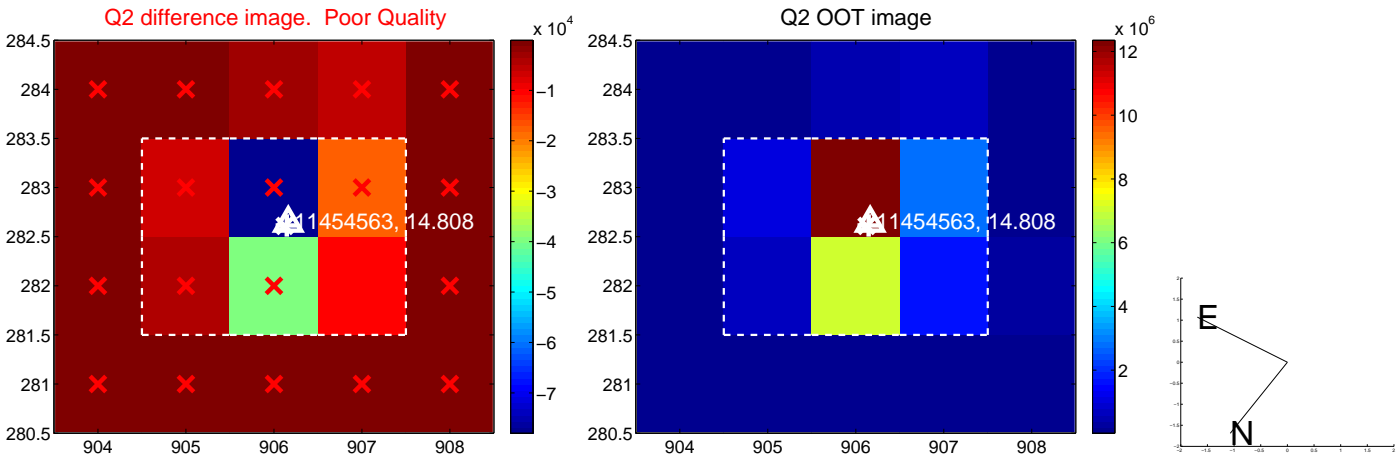
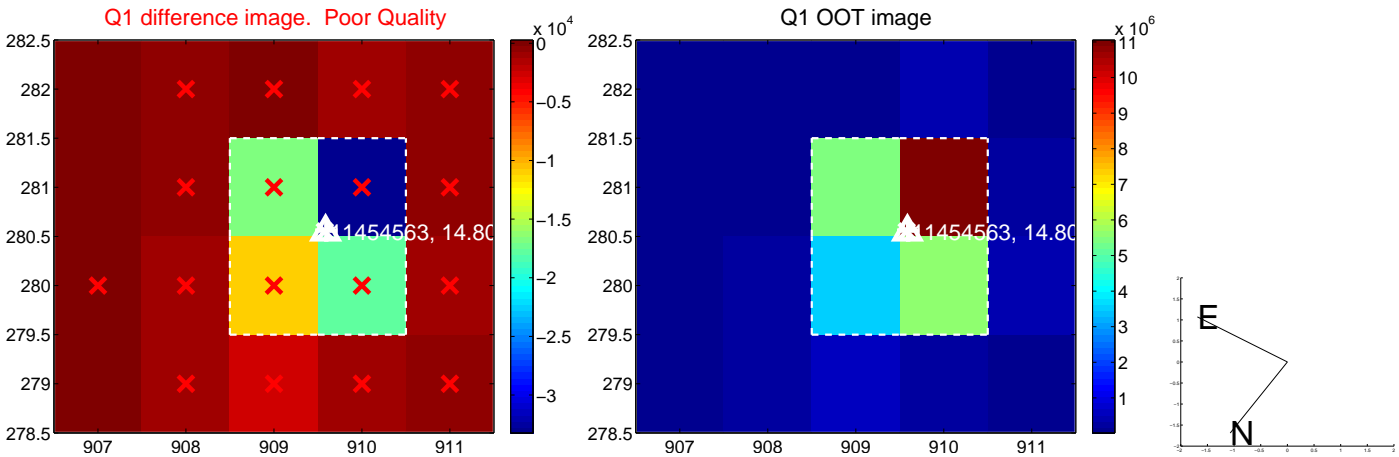


offset from photometric centroids

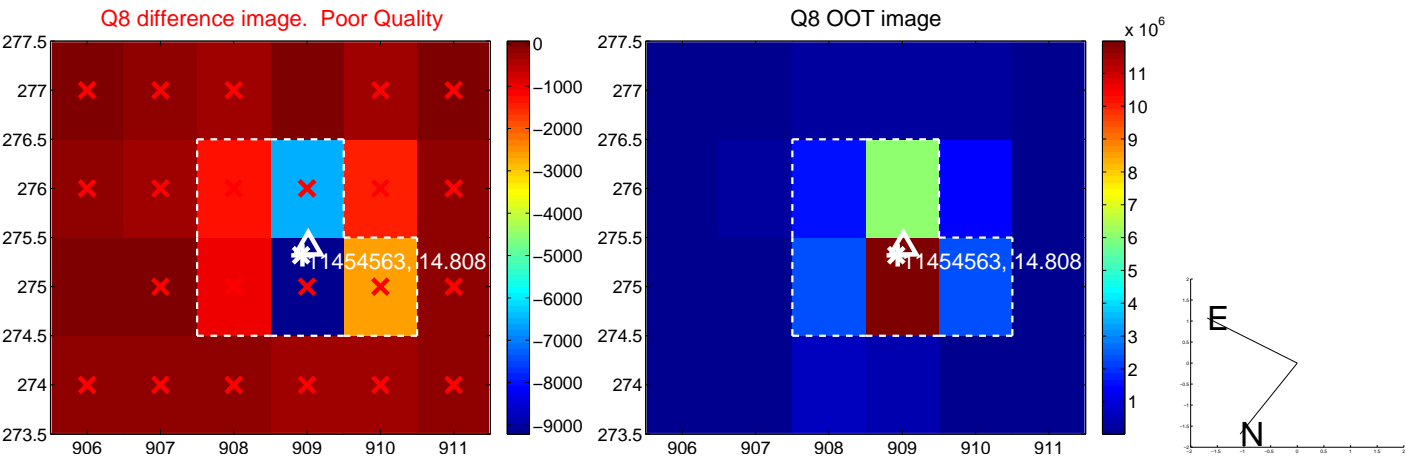
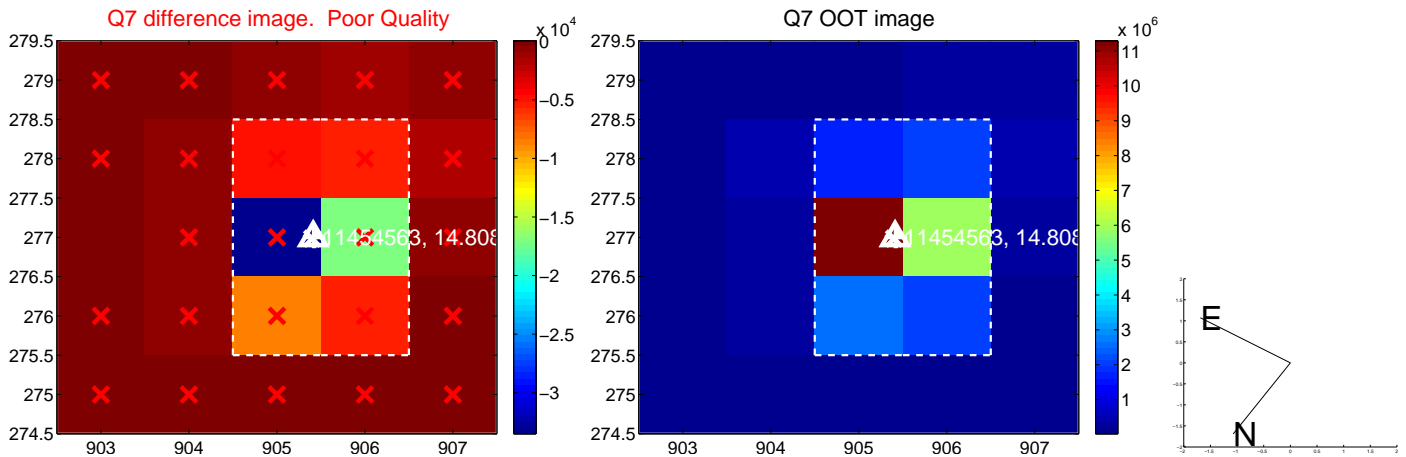
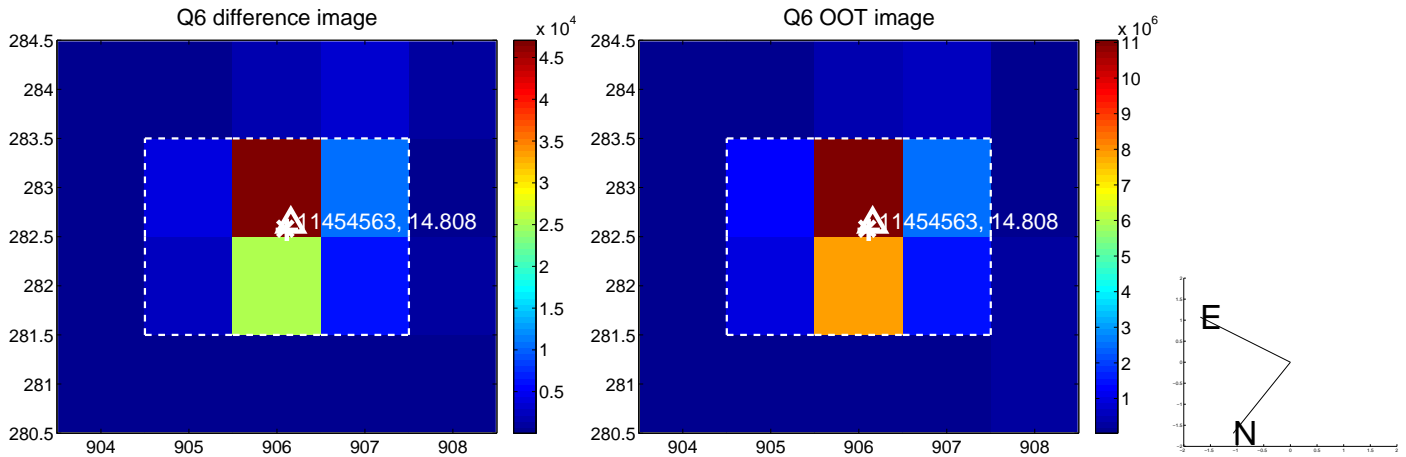
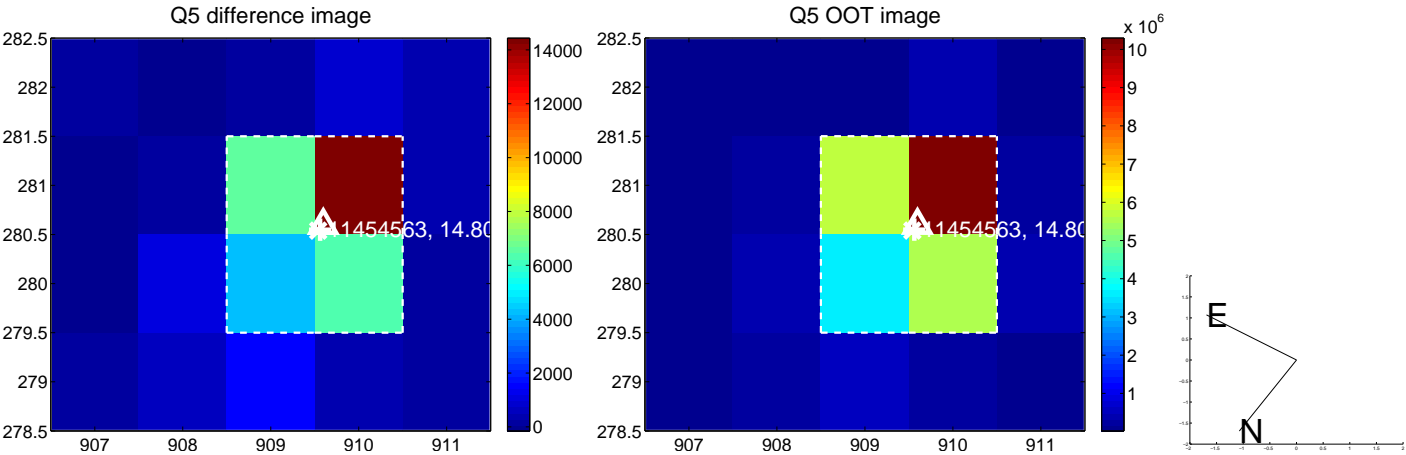


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

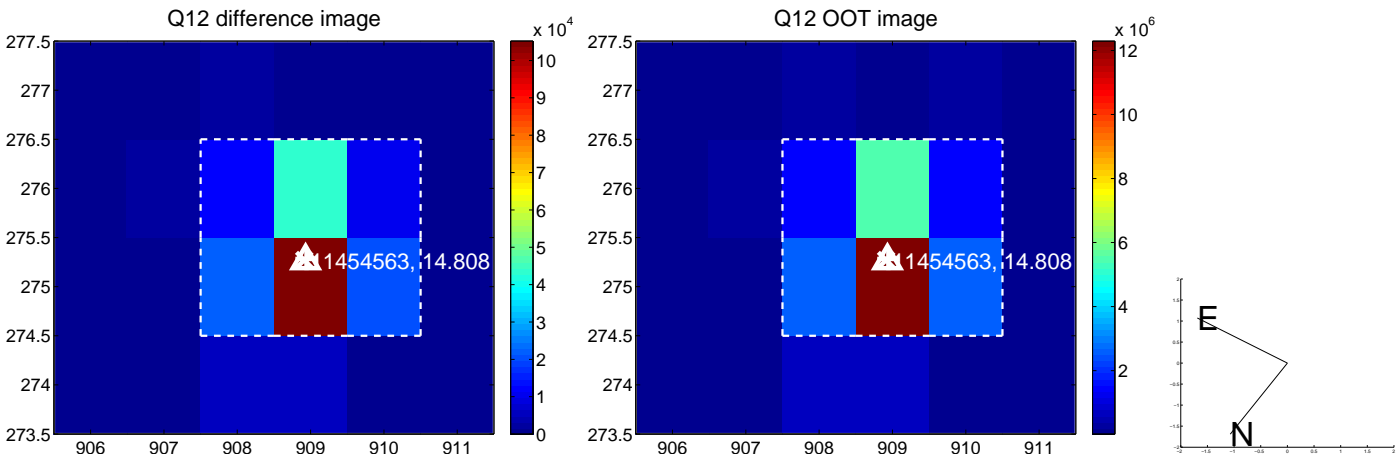
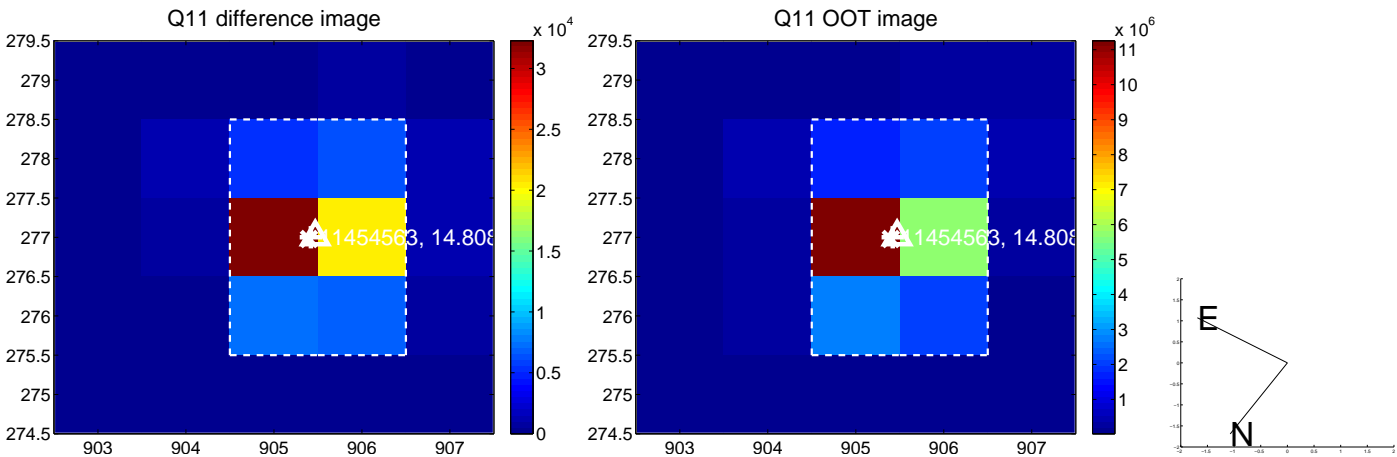
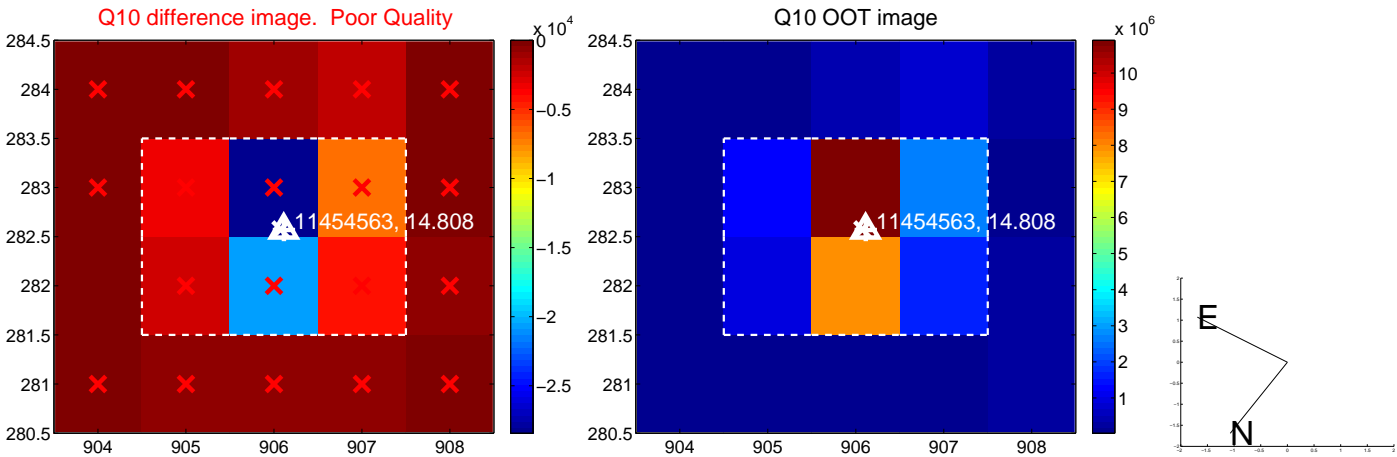
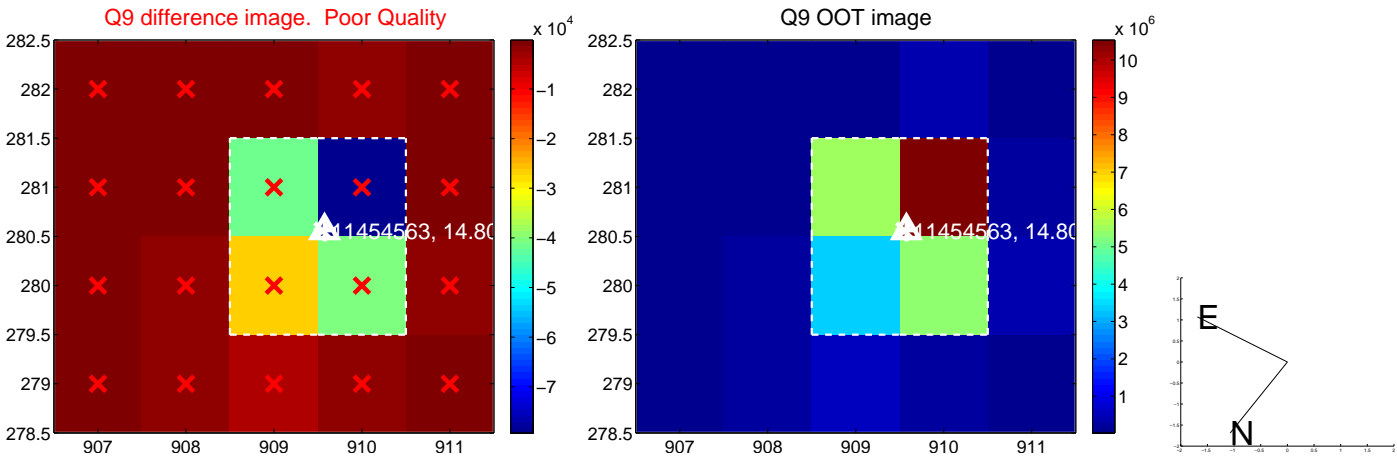
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



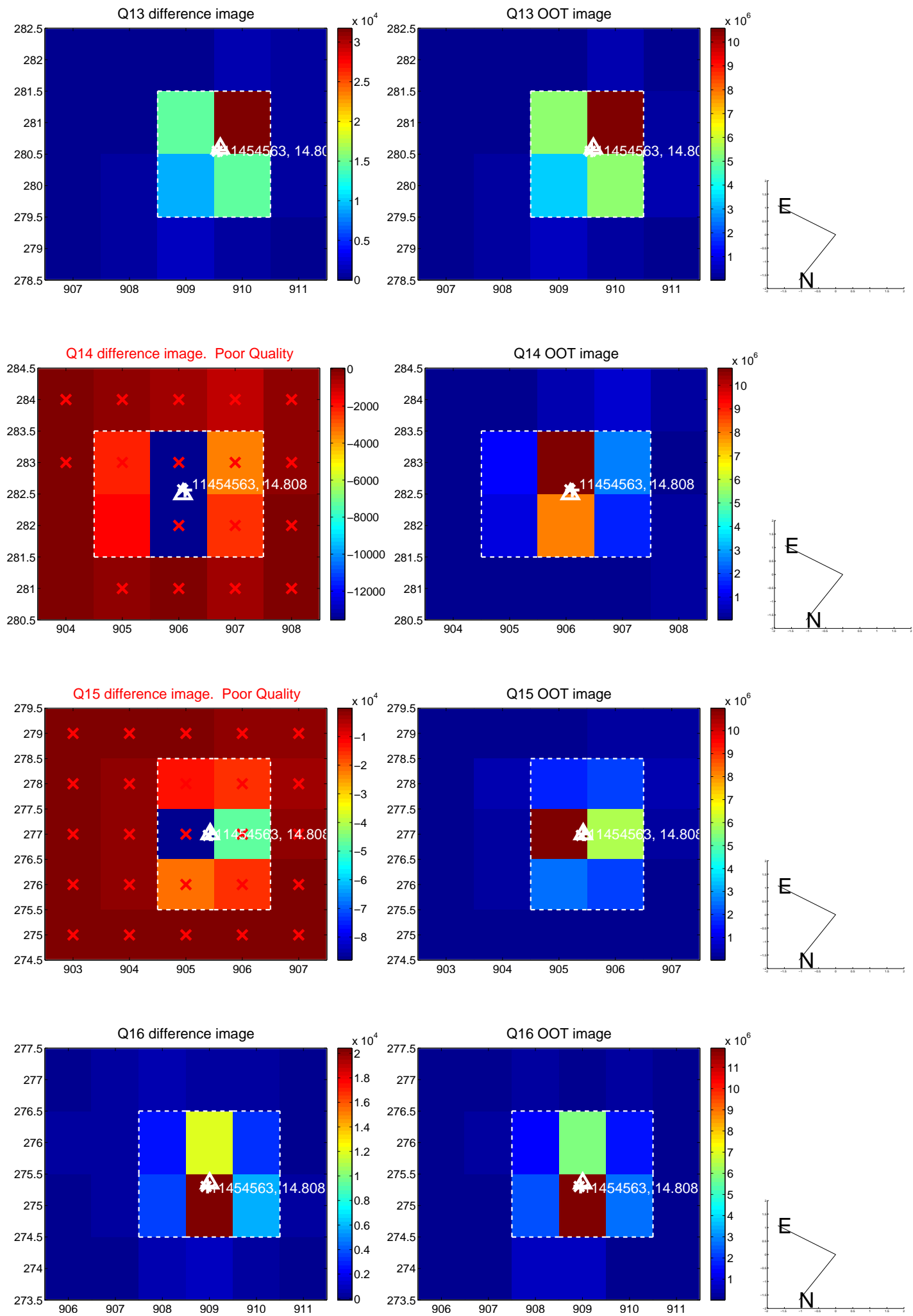
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



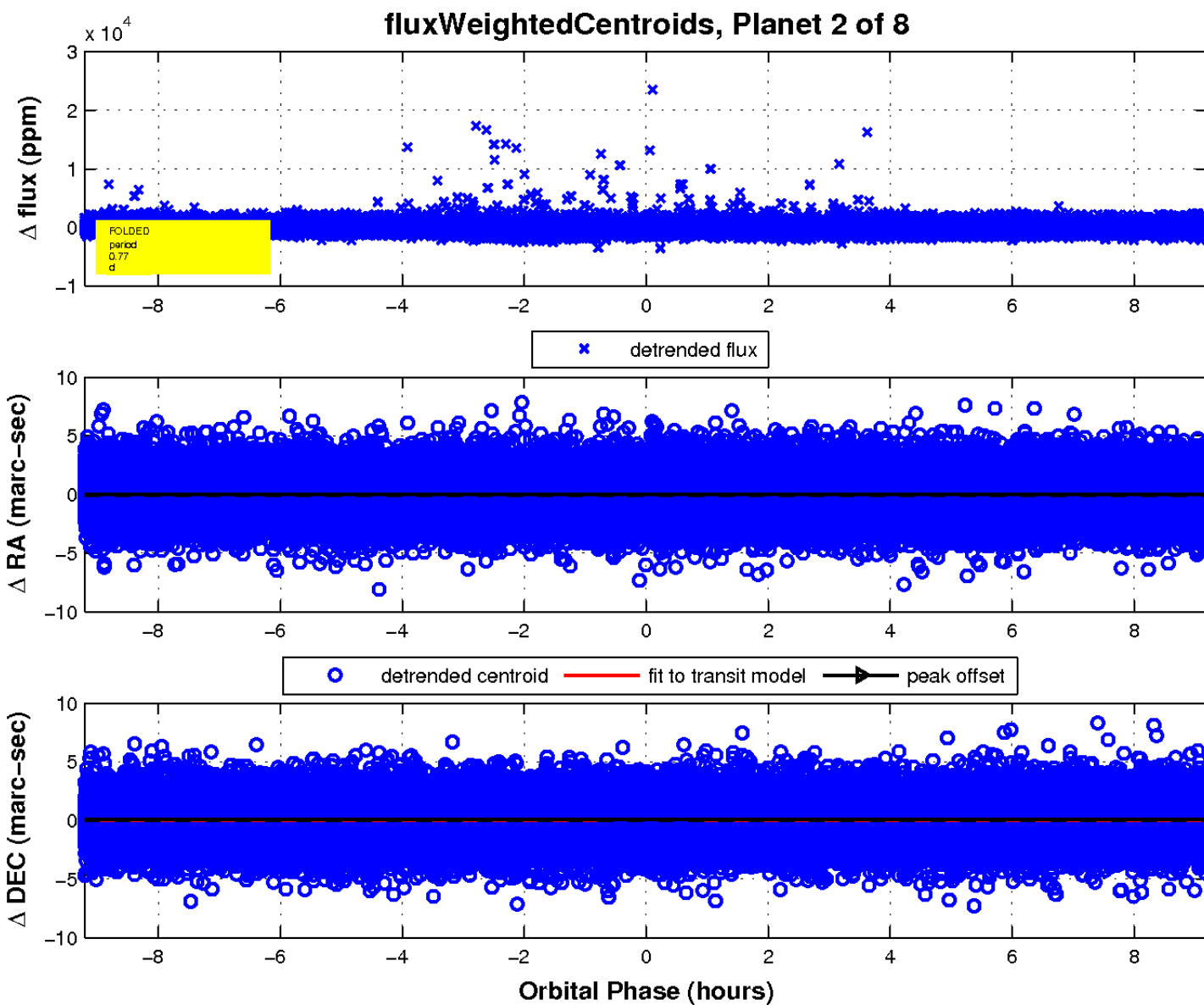
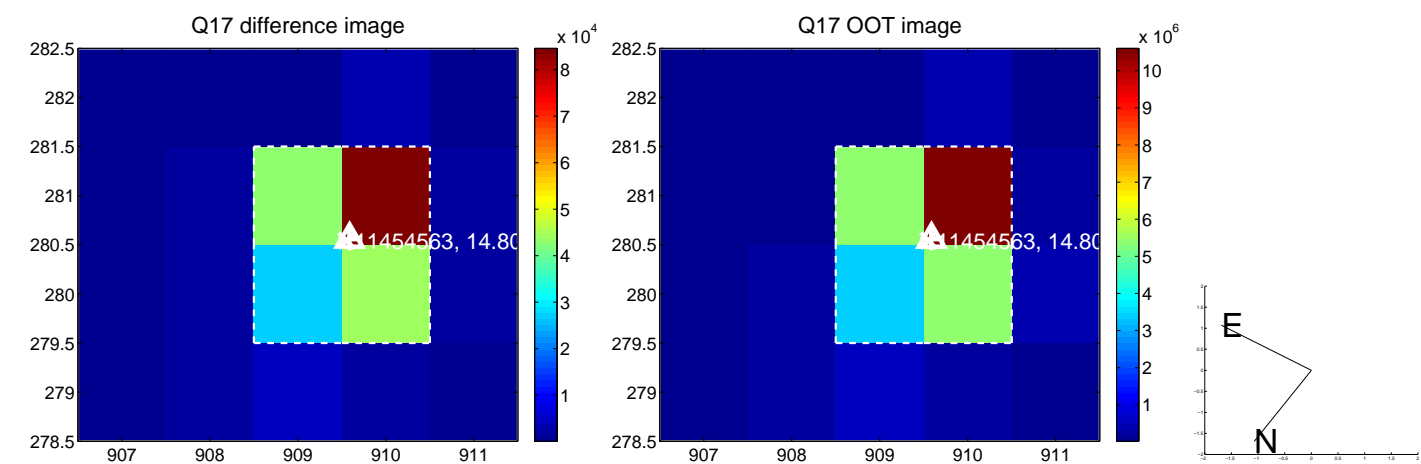
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

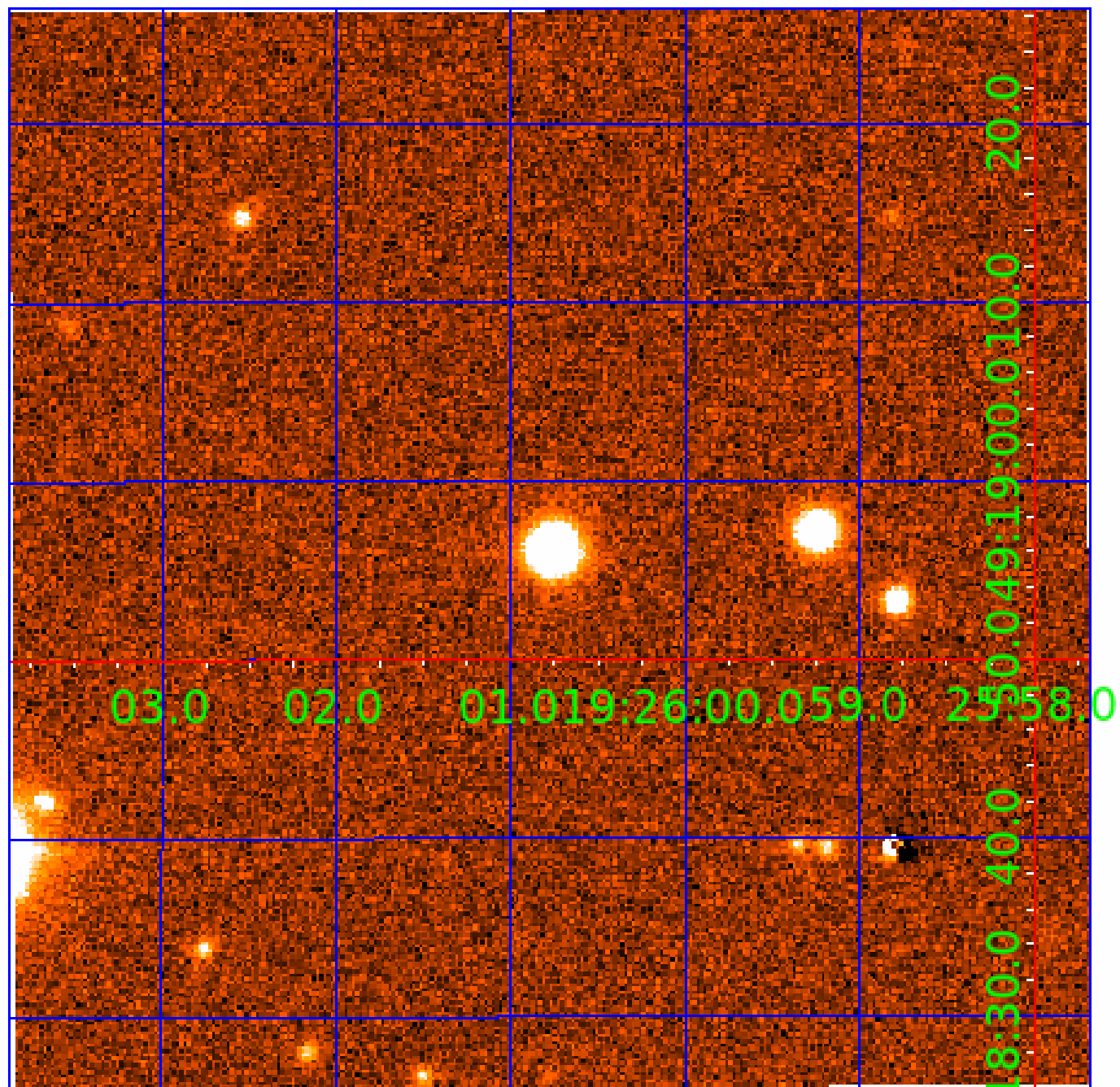


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011454563

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})
011454563-01	OBS	No	476.771310	313.910196	2242.8	20.640	13.2	13.6	0.74	5496	5.28	0.36
011454563-02	OBS	No	0.767403	131.927391	37.1	5.093	7.8	5.0	0.74	5496	0.45	1921.81
011454563-04	OBS	No	29.451478	140.602669	788.1	1.807	8.7	10.4	0.74	5496	2.30	14.85
011454563-07	OBS	No	12.588847	132.485563	339.3	3.614	8.7	8.3	0.74	5496	1.81	46.11
011454563-08	OBS	No	70.081000	184.990253	711.7	6.221	8.9	8.0	0.74	5496	2.31	4.67

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011454563-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
011454563-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
011454563-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV
011454563-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
011454563-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

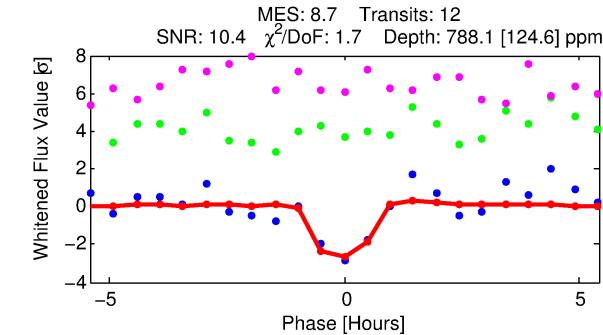
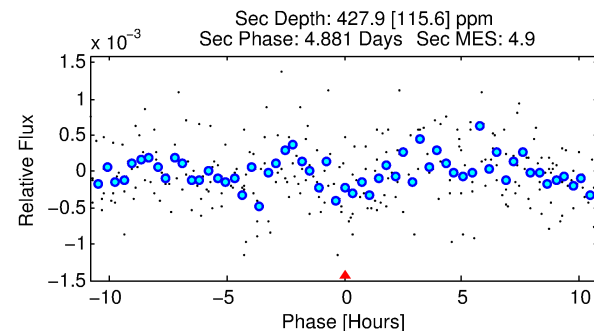
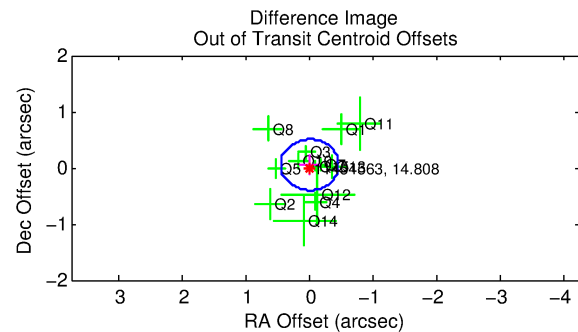
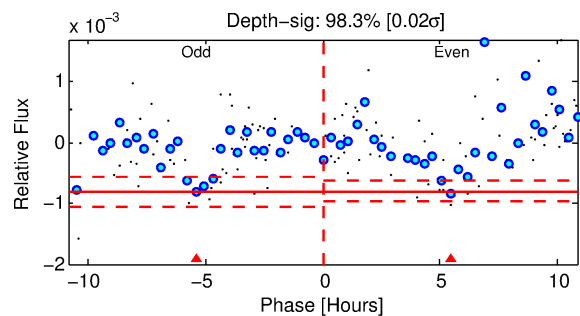
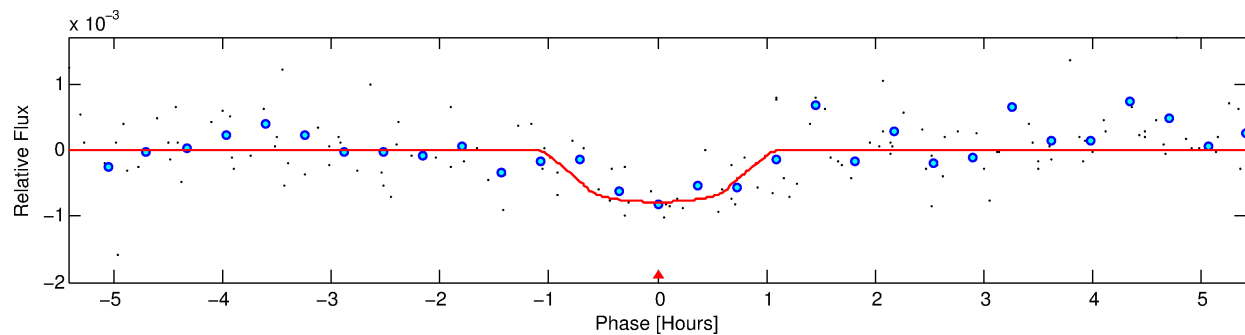
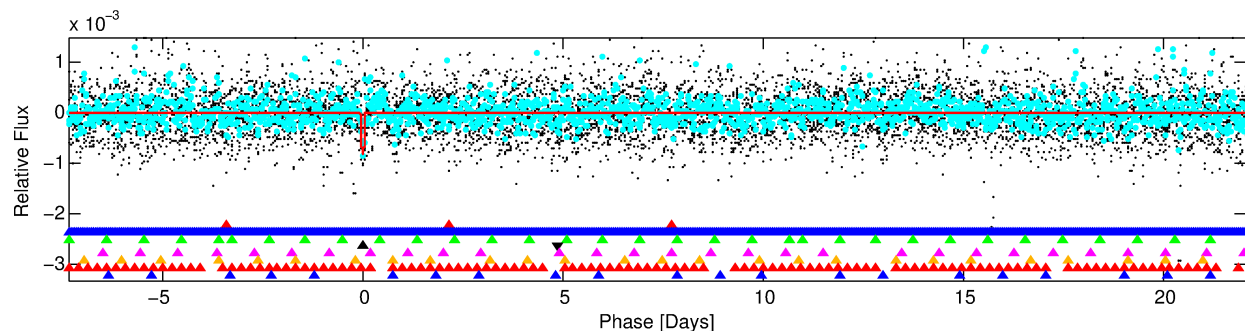
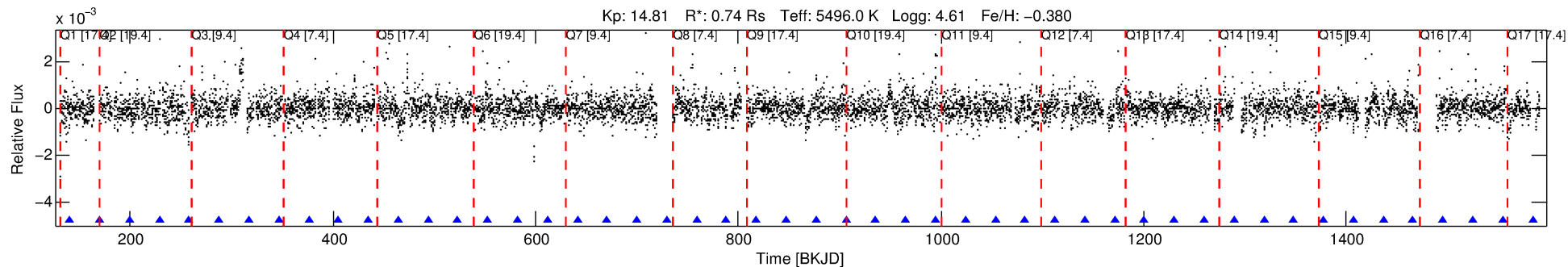
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011454563-04

No Significant Match Found

DV One-Page Summary

KIC: 11454563 Candidate: 4 of 8 Period: 29.451 d



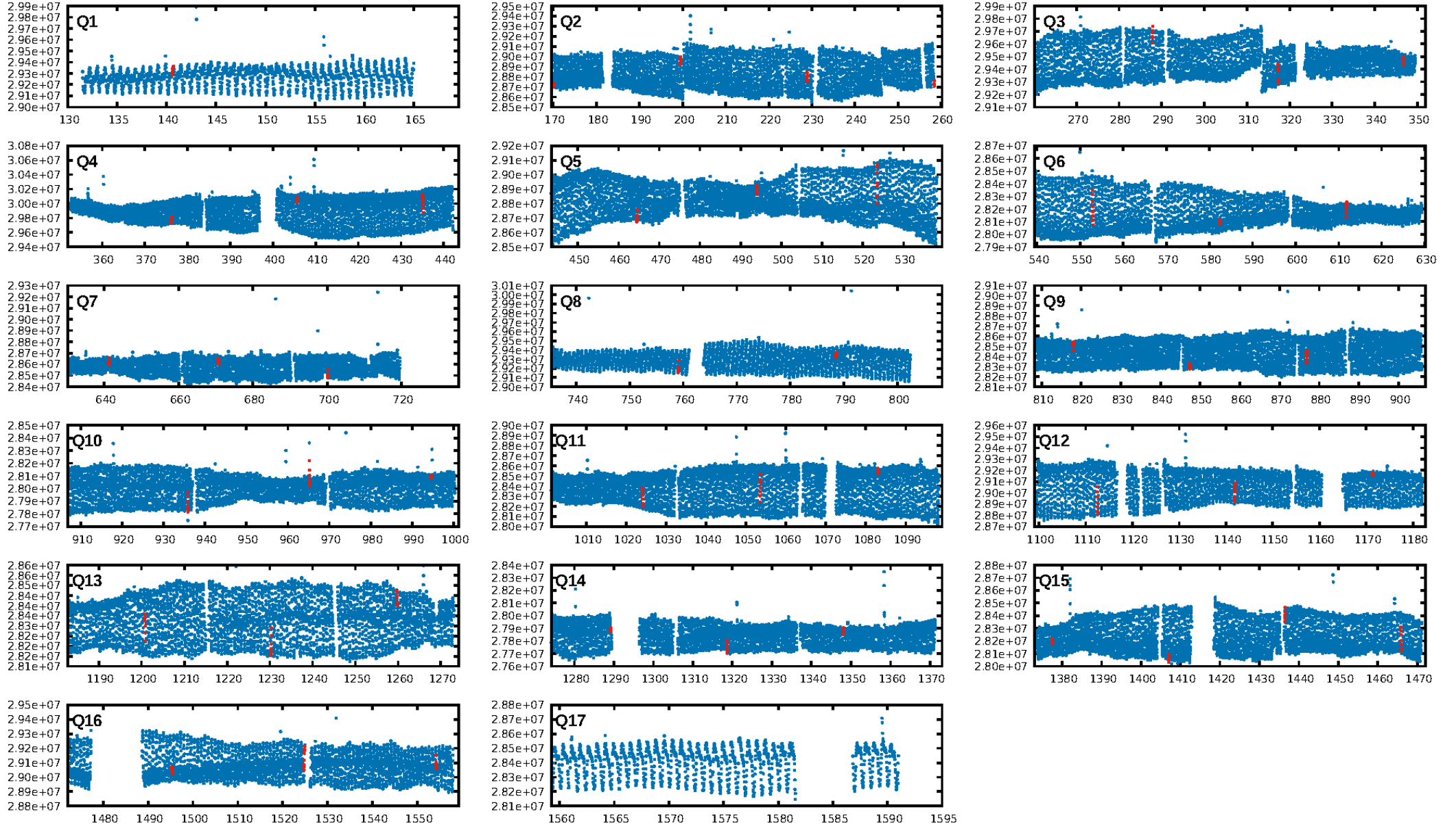
DV Fit Results:

Period = 29.45148 [0.00026] d
Epoch = 140.6027 [0.0071] BKJD
Rp/R* = 0.0283 [0.0426]
a/R* = 83.95 [537.99]
b = 0.78 [3.35]
Seff = 14.85 [3.55]
Teq = 501 [30] K
Rp = 2.30 [3.48] Re
a = 0.1744 [0.0251] AU
Ag = 1355.31 [4102.49] [0.33 σ]
Teffp = 4695 [3548] K [1.18 σ]

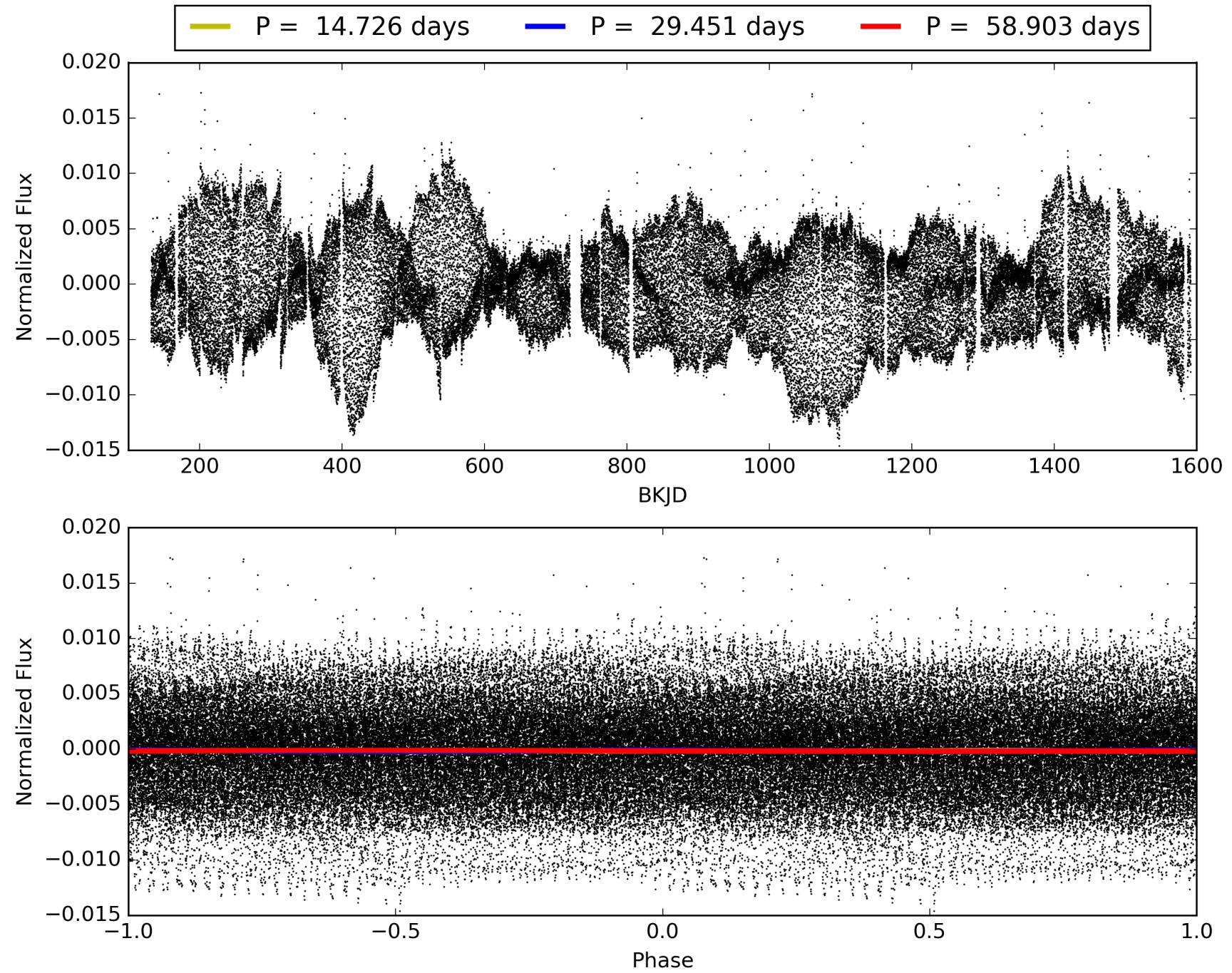
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [100.16 σ]
LongPeriod-sig: 100.0% [40.25 σ]
ModelChiSquare2-sig: 3.9%
ModelChiSquareGof-sig: 99.6%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [12/12]
GhostDiagnostic-chr: 0.3988
Centroid-sig: 55.3%
Centroid-so: 0.655 arcsec [1.29 σ]
OotOffset-rm: 0.050 arcsec [0.33 σ]
OotOffset-st: 3/4/3/3 [13]
KicOffset-rm: 0.094 arcsec [0.73 σ]
KicOffset-st: 3/4/3/3 [13]
DiffImageQuality-fgm: 0.62 [8/13]
DiffImageOverlap-fno: 0.25 [4/16]

TCE 011454563-04, PDC Light Curves

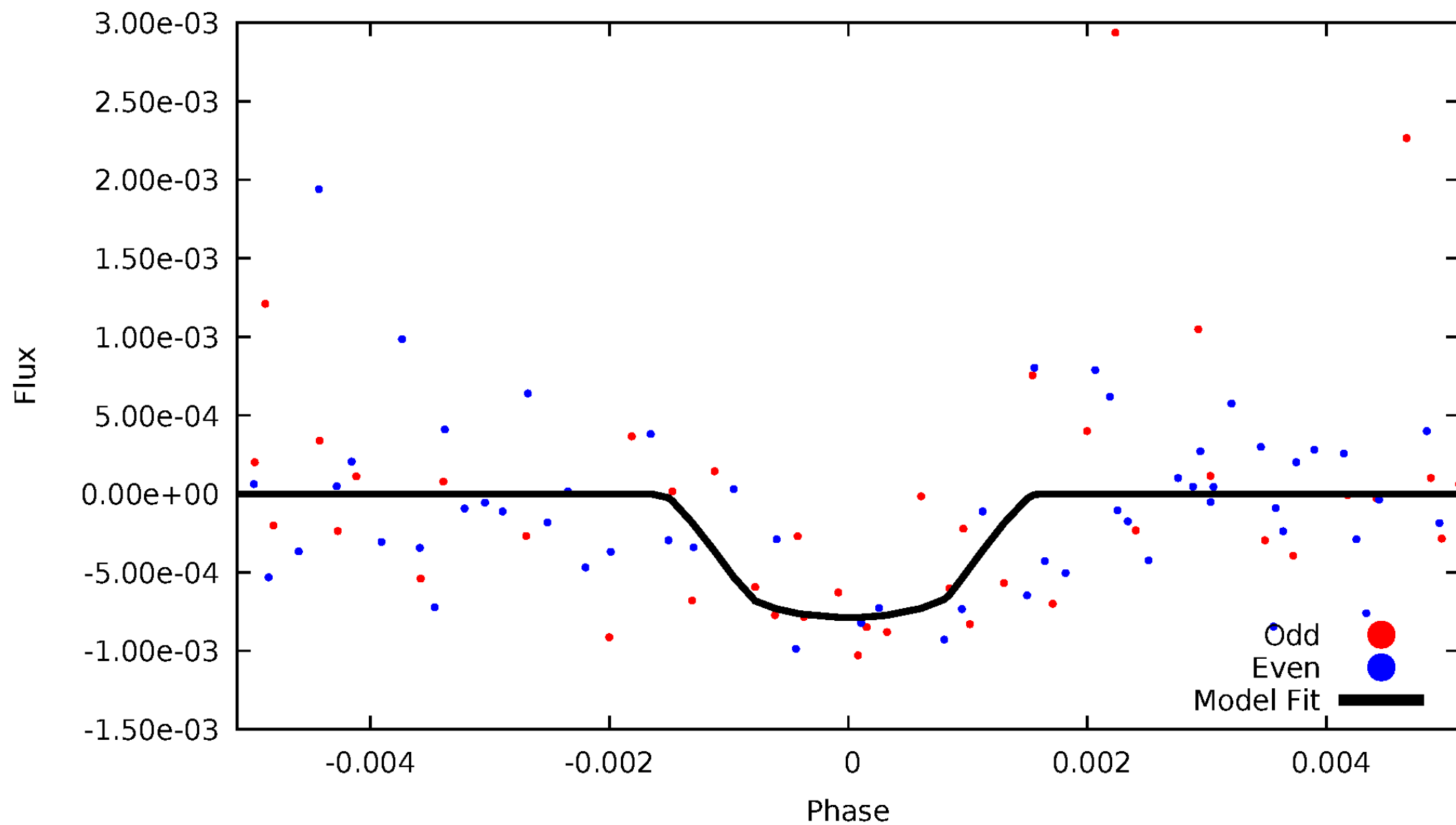


TCE 011454563-04



DV Odd/Even

TCE 011454563-04

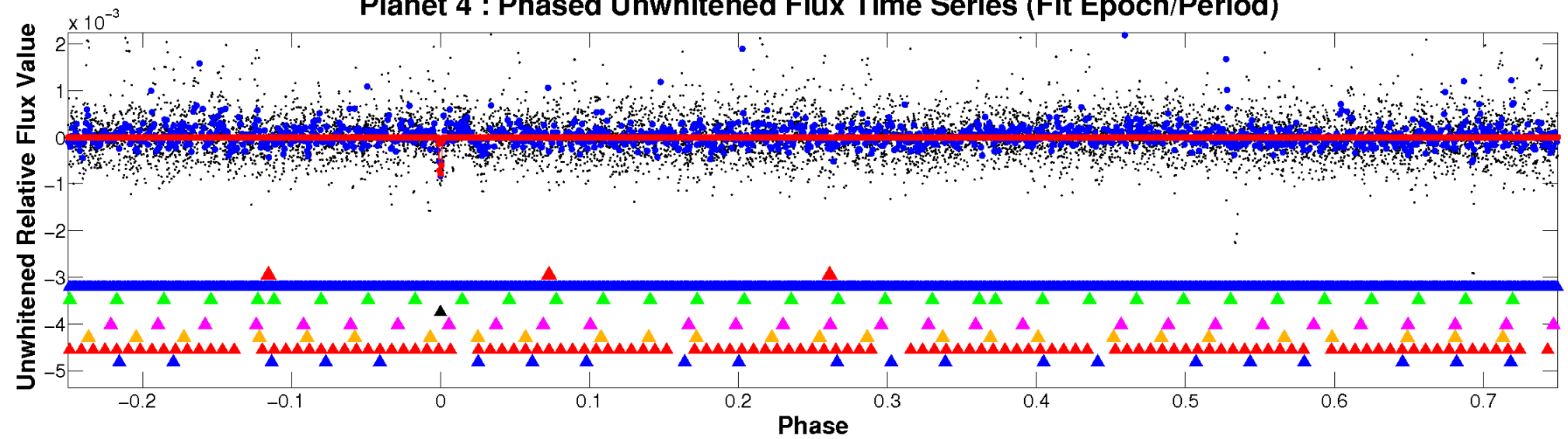


ALT Odd/Even

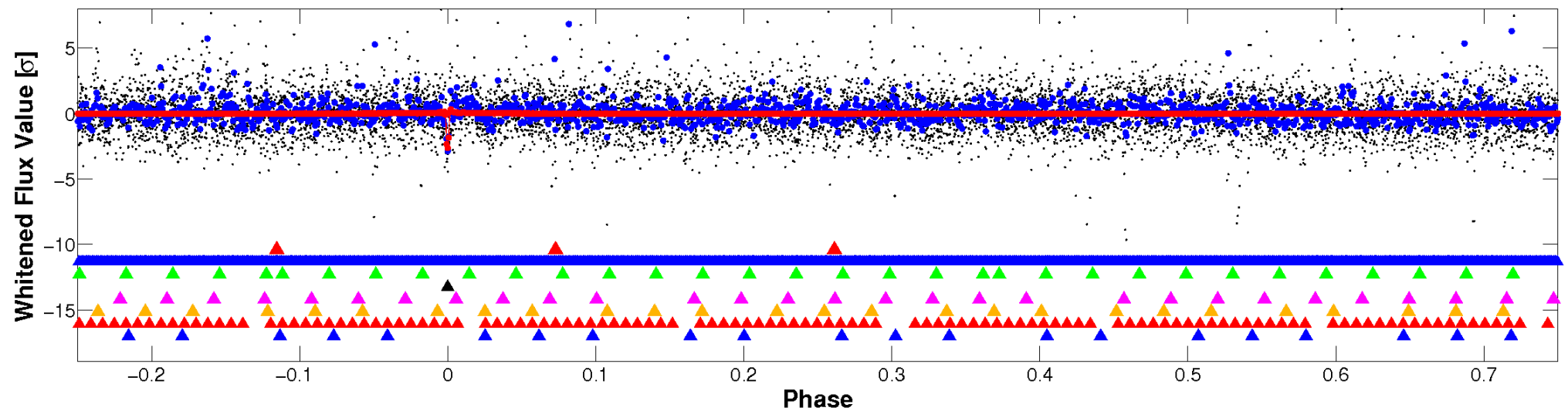
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

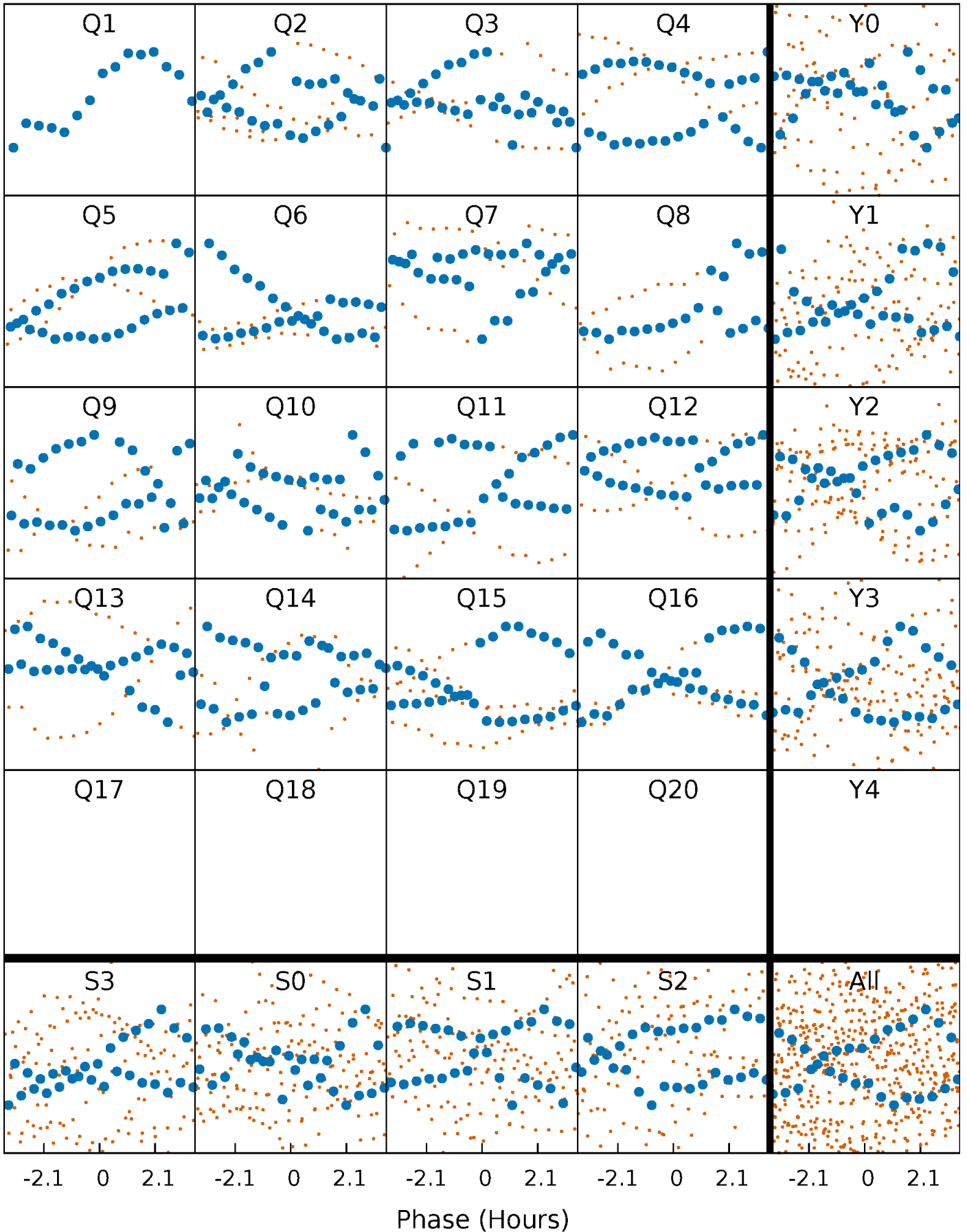


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



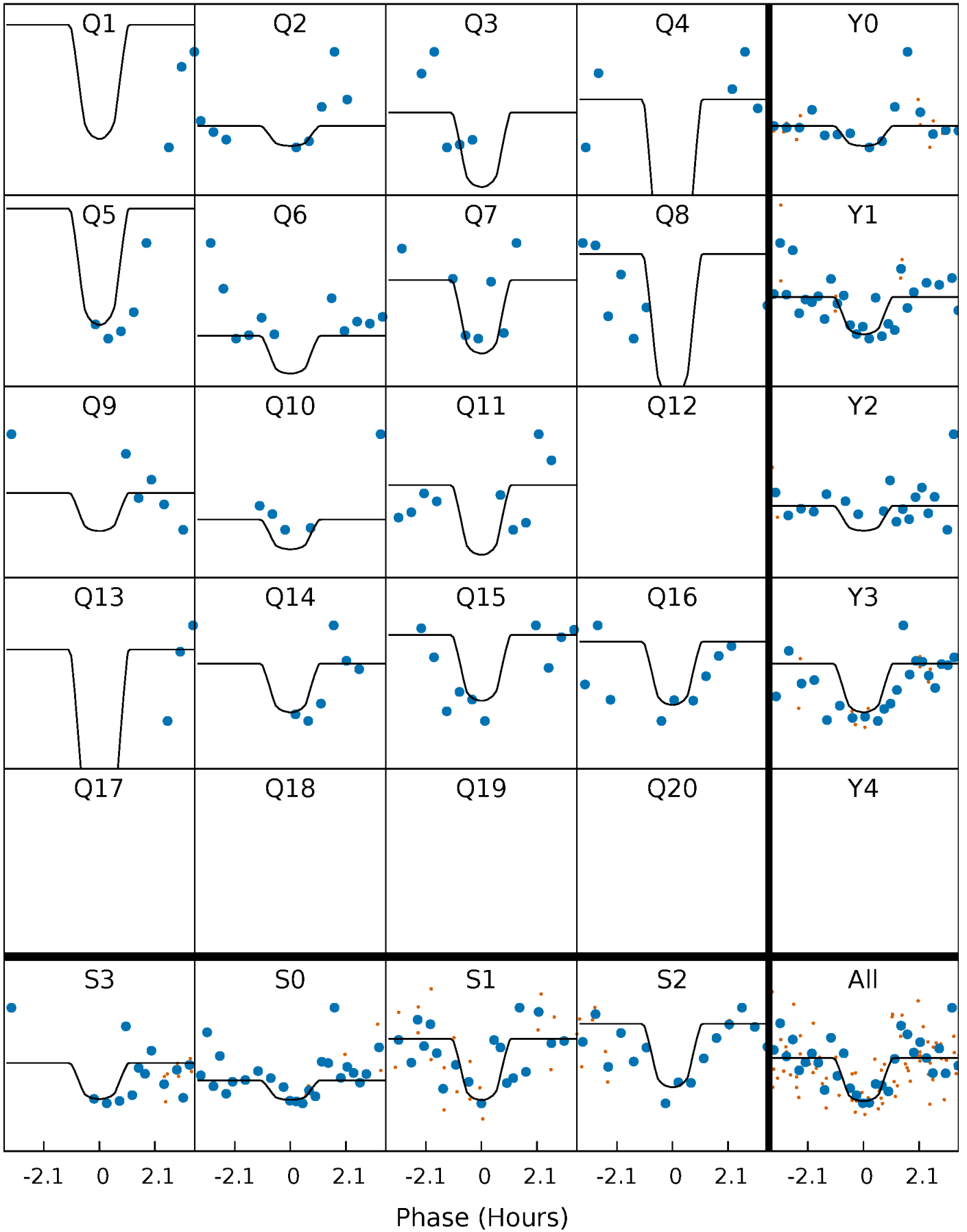
PDC Quarter-Phased Transit Curves

TCE 011454563-04 $P = 29.451478$ Days $T_0 = 140.602669$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 011454563-04 P= 29.451478 Days $T_0=140.602669$ (BKJD)

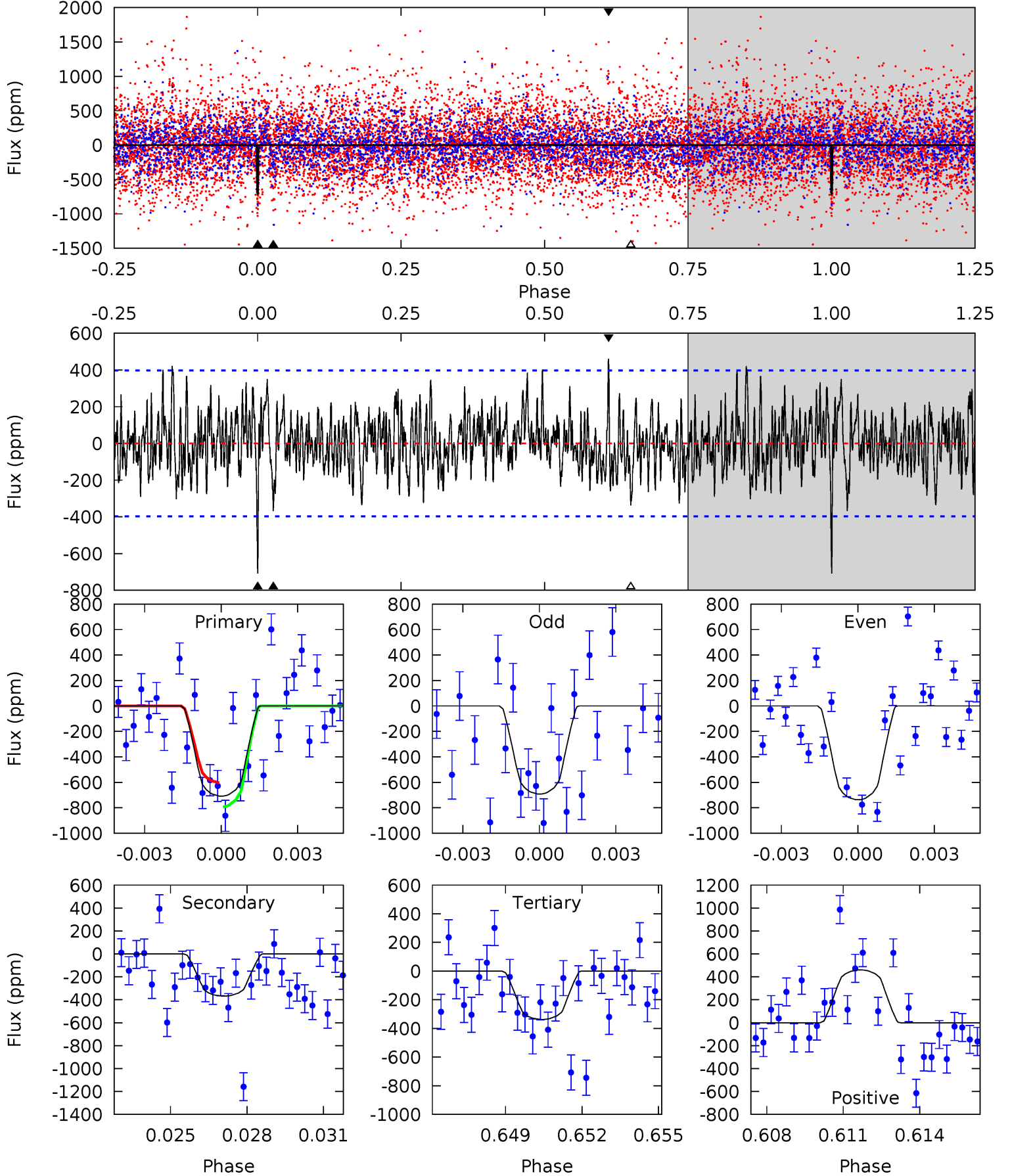


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

011454563-04, $P = 29.451478$ Days, $E = 111.151191$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.33	4.85	4.44	6.06	5.24	2.95	1.71	4.89	3.27	0.40	-1.22	0.30	0.83	0.39	1.25



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 011454563

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5496^{+148}_{-164}	$4.607^{+0.037}_{-0.112}$	$-0.380^{+0.300}_{-0.300}$	$0.743^{+0.129}_{-0.059}$	$0.825^{+0.080}_{-0.088}$	$2.831^{+0.532}_{-0.989}$
	+3%/-3%	+1%/-2%	+79%/-79%	+17%/-8%	+10%/-11%	+19%/-35%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 011454563-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-368 ± 76	$3.61^{+3.09}_{-2.28}$	705^{+33}_{-27}	3954^{+2108}_{-728}	458^{+3252}_{-324}
Alt.	N/A	N/A	N/A	N/A	N/A

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

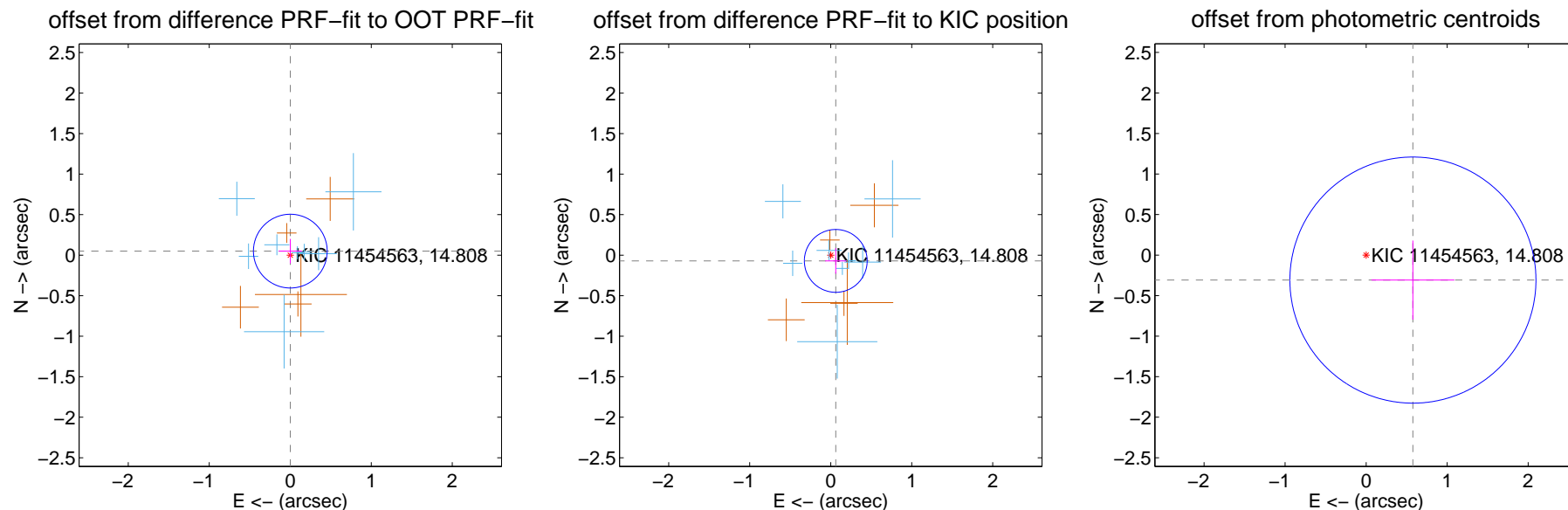
DV Centroid Data

Supplemental centroid analysis for 011454563-04. Kepler magnitude: 14.81. Transit SNR 10.44

There are 8 quarters with good PRF difference image offsets

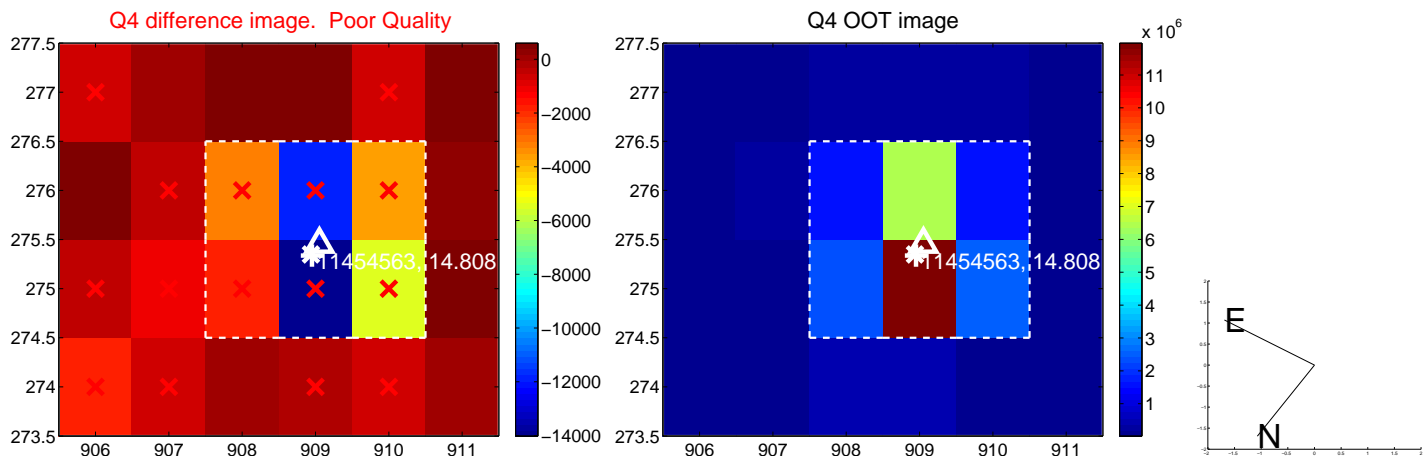
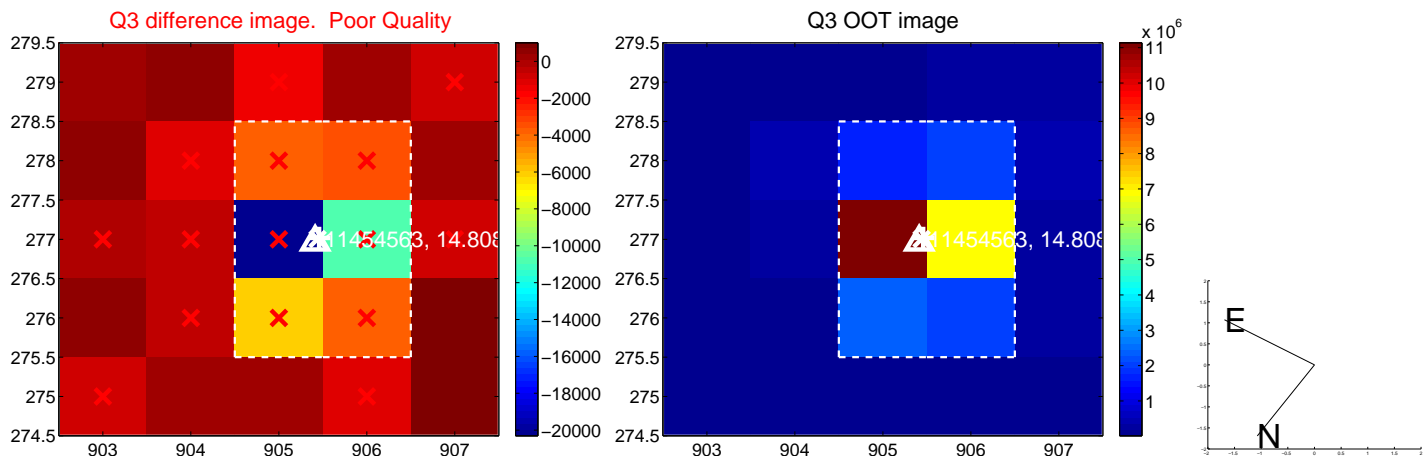
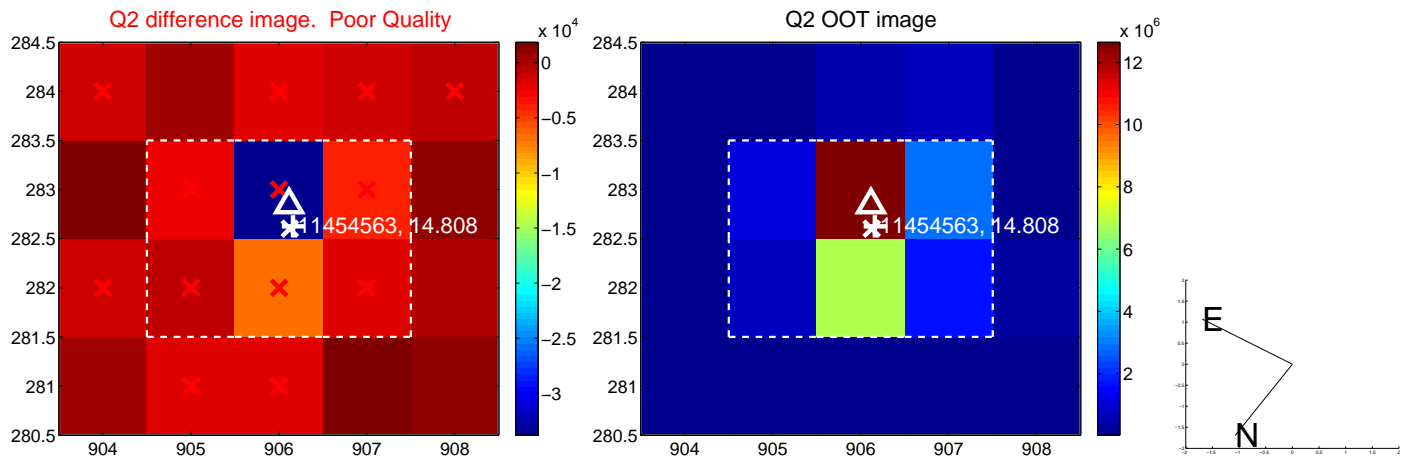
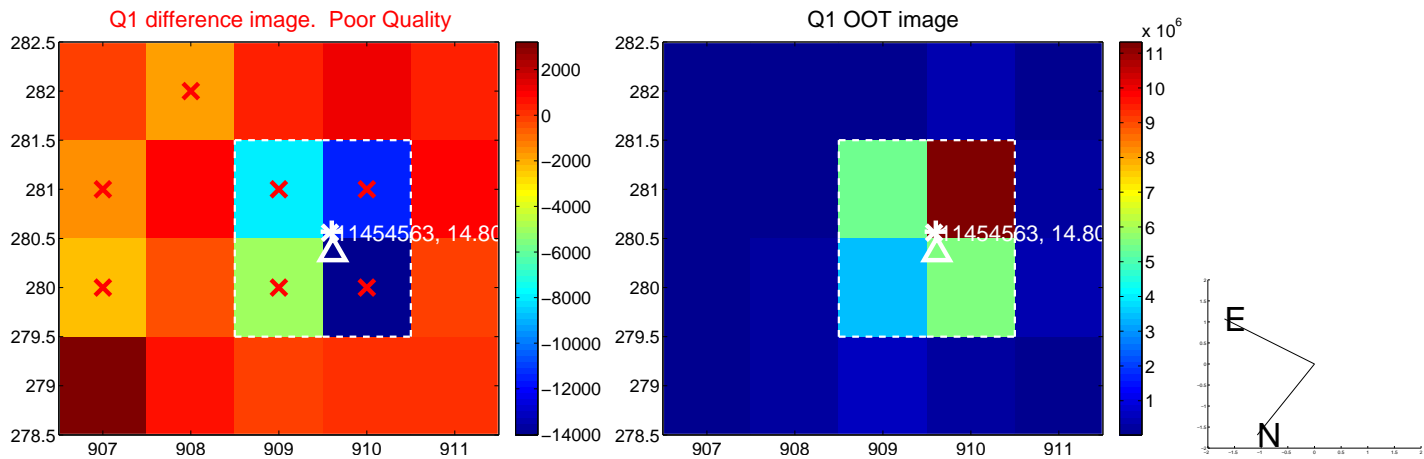
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.050 ± 0.152	0.33	-0.001 ± 0.143	0.050 ± 0.151
PRF-fit source offset from KIC position	0.094 ± 0.129	0.73	-0.062 ± 0.130	-0.071 ± 0.158
photometric centroid source offset	0.65 ± 0.51	1.29	-0.58 ± 0.51	-0.31 ± 0.49

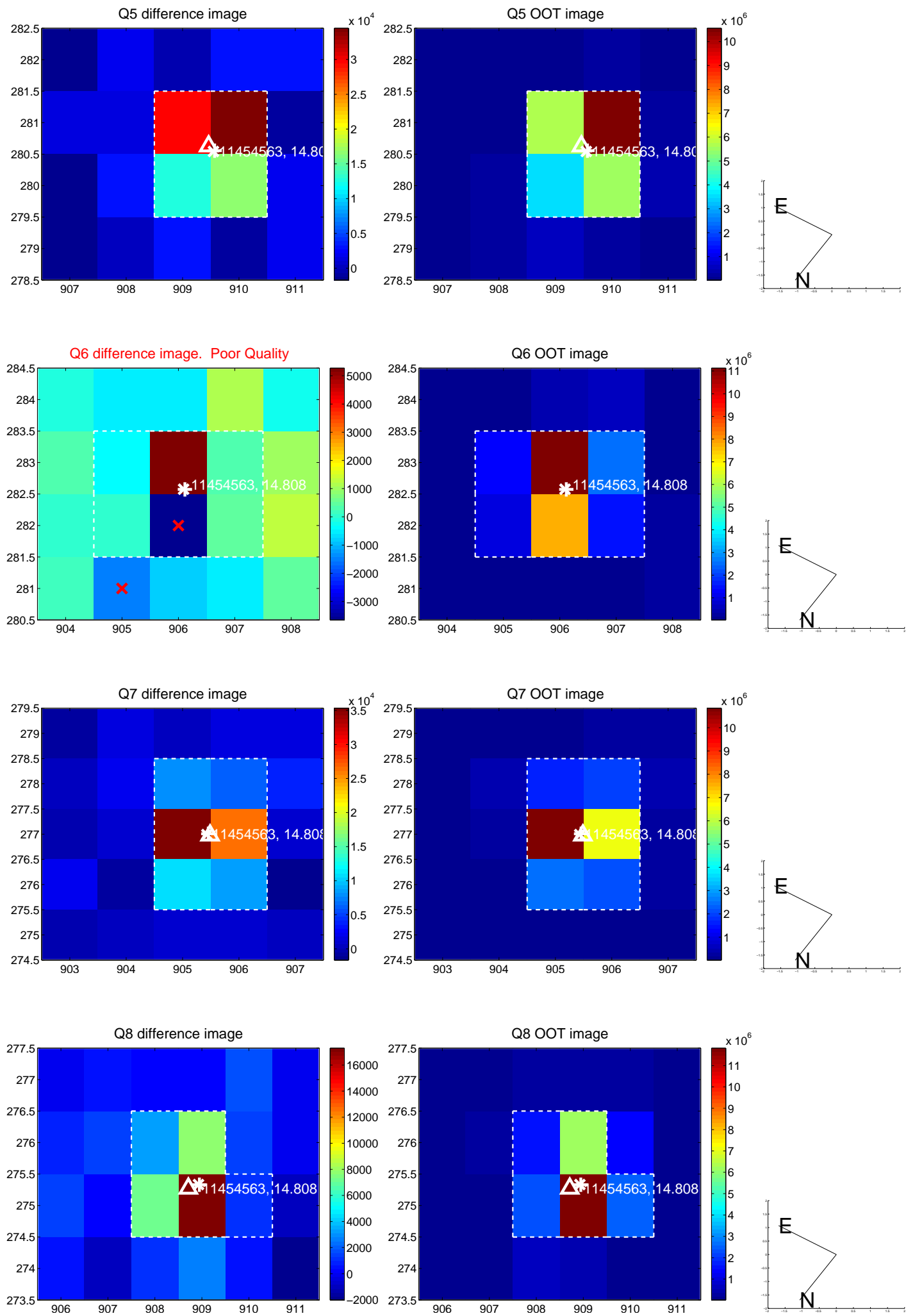


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

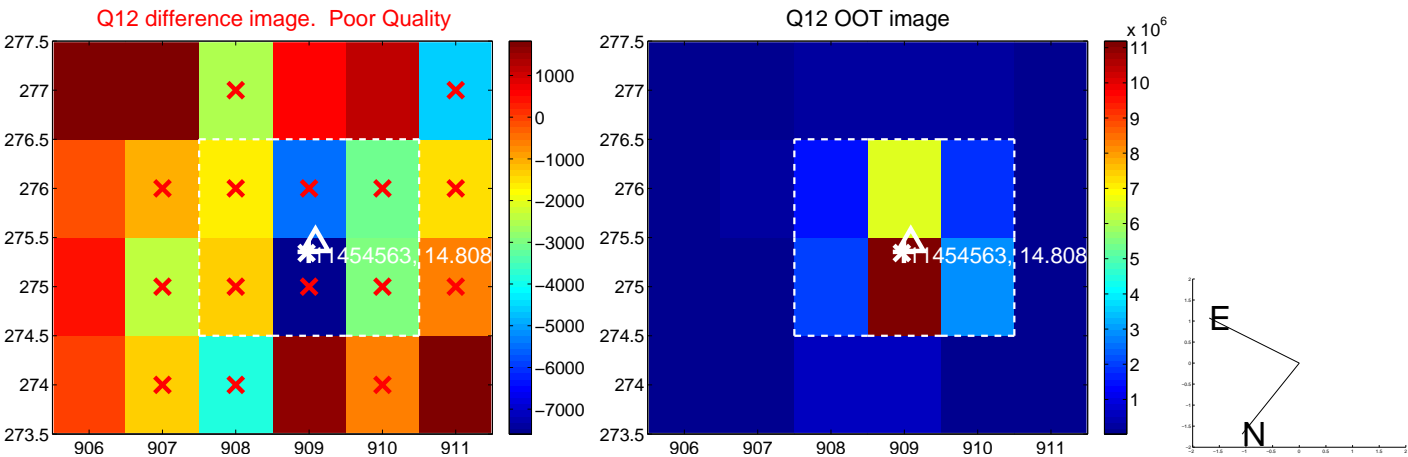
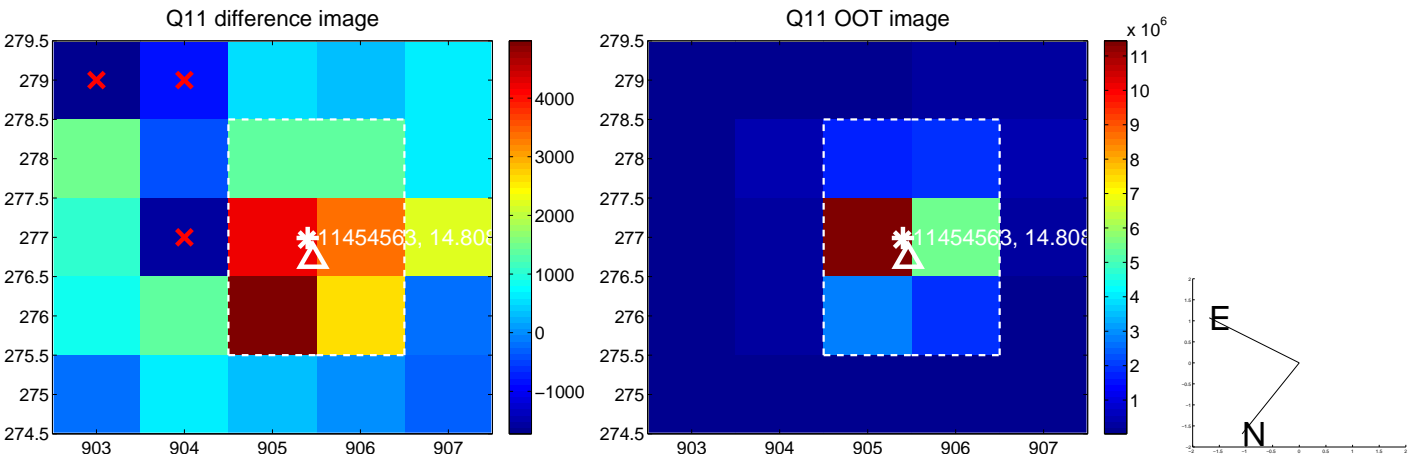
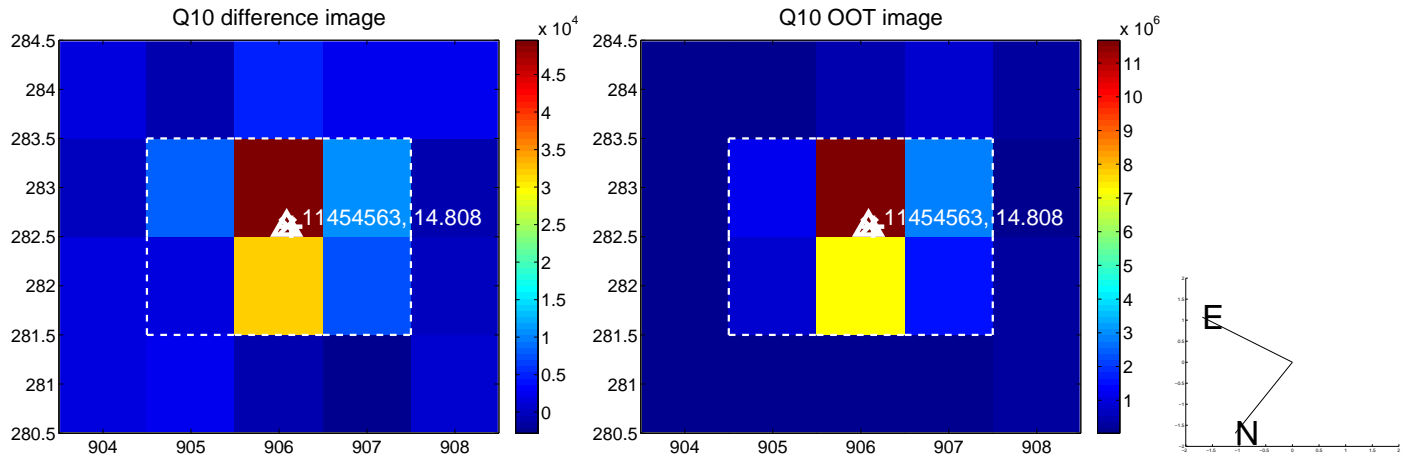
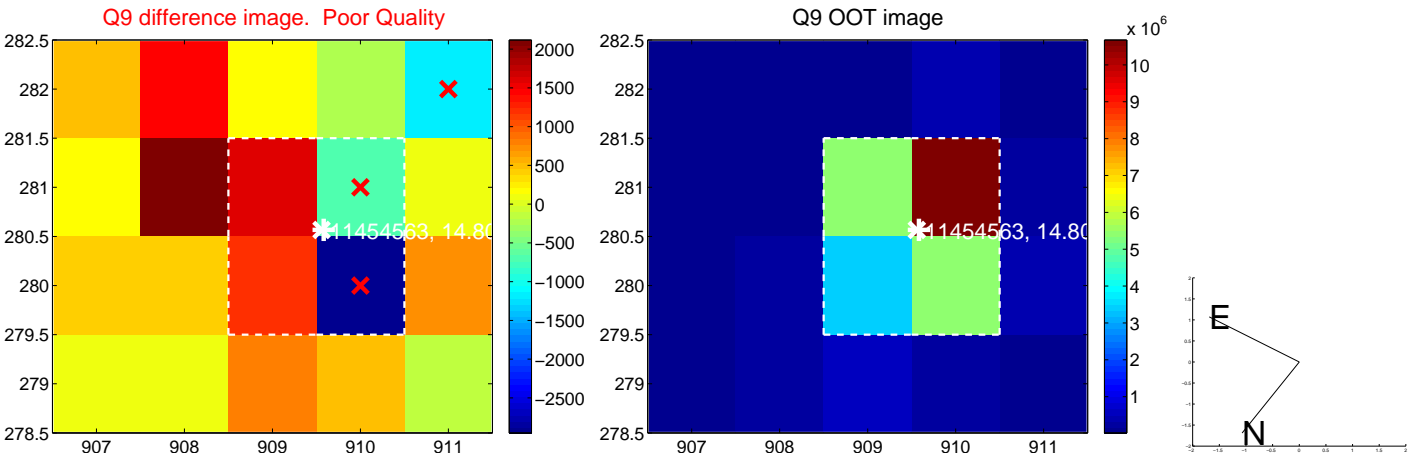
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



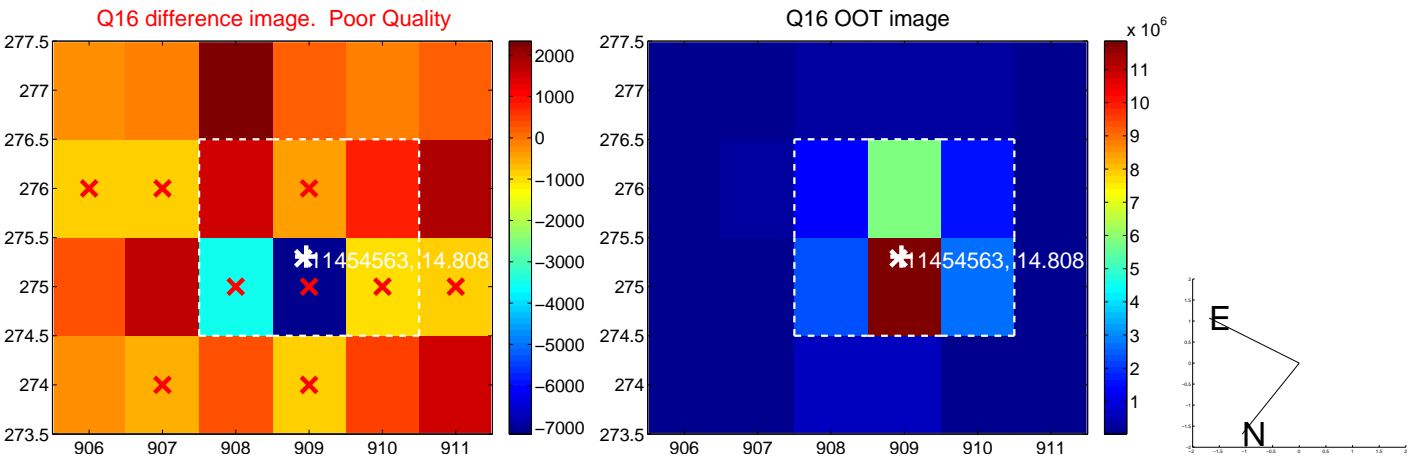
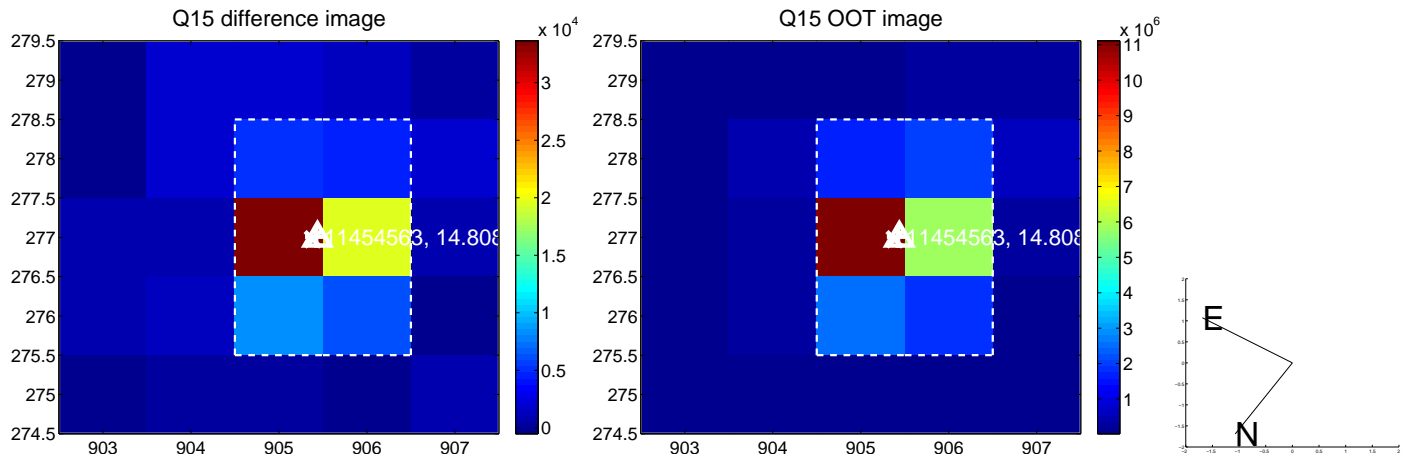
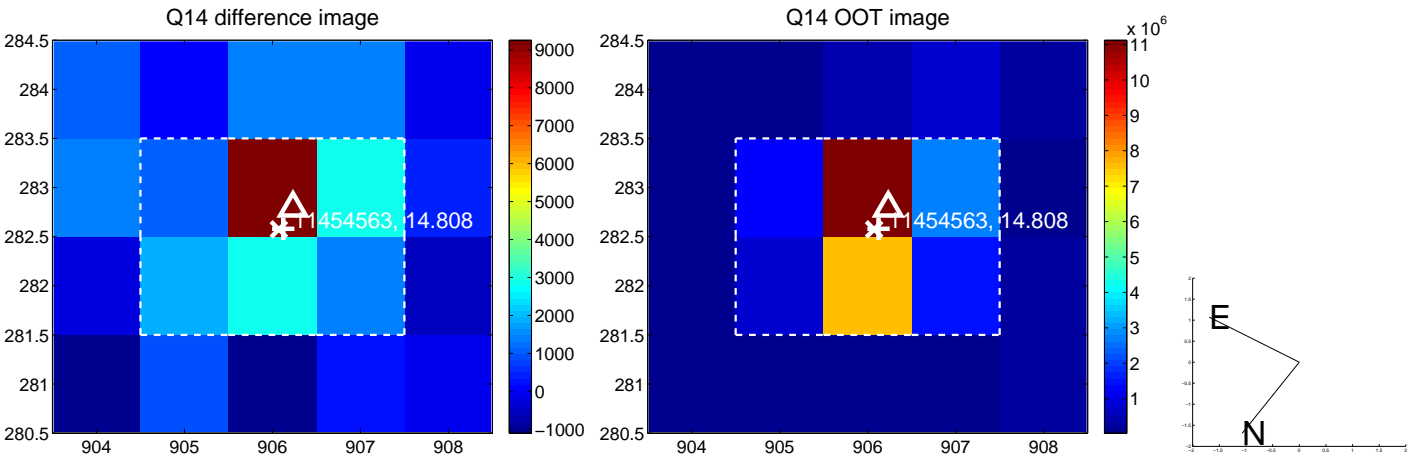
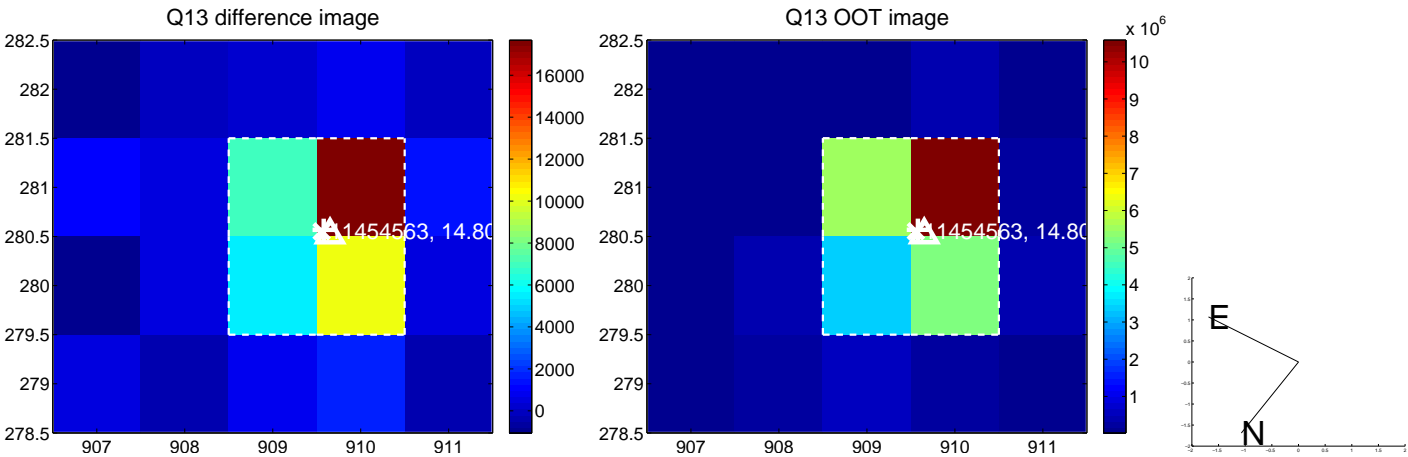
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



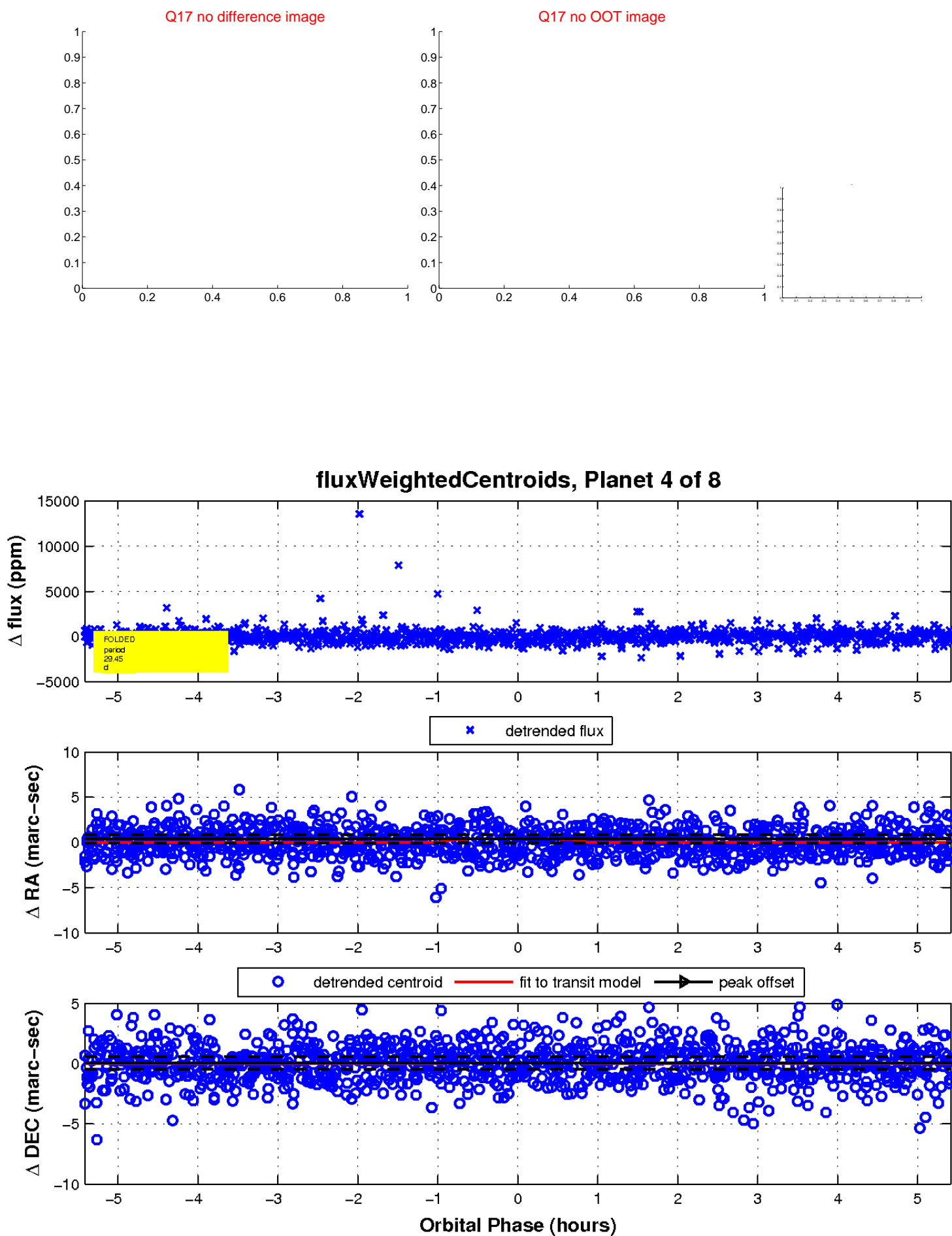
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

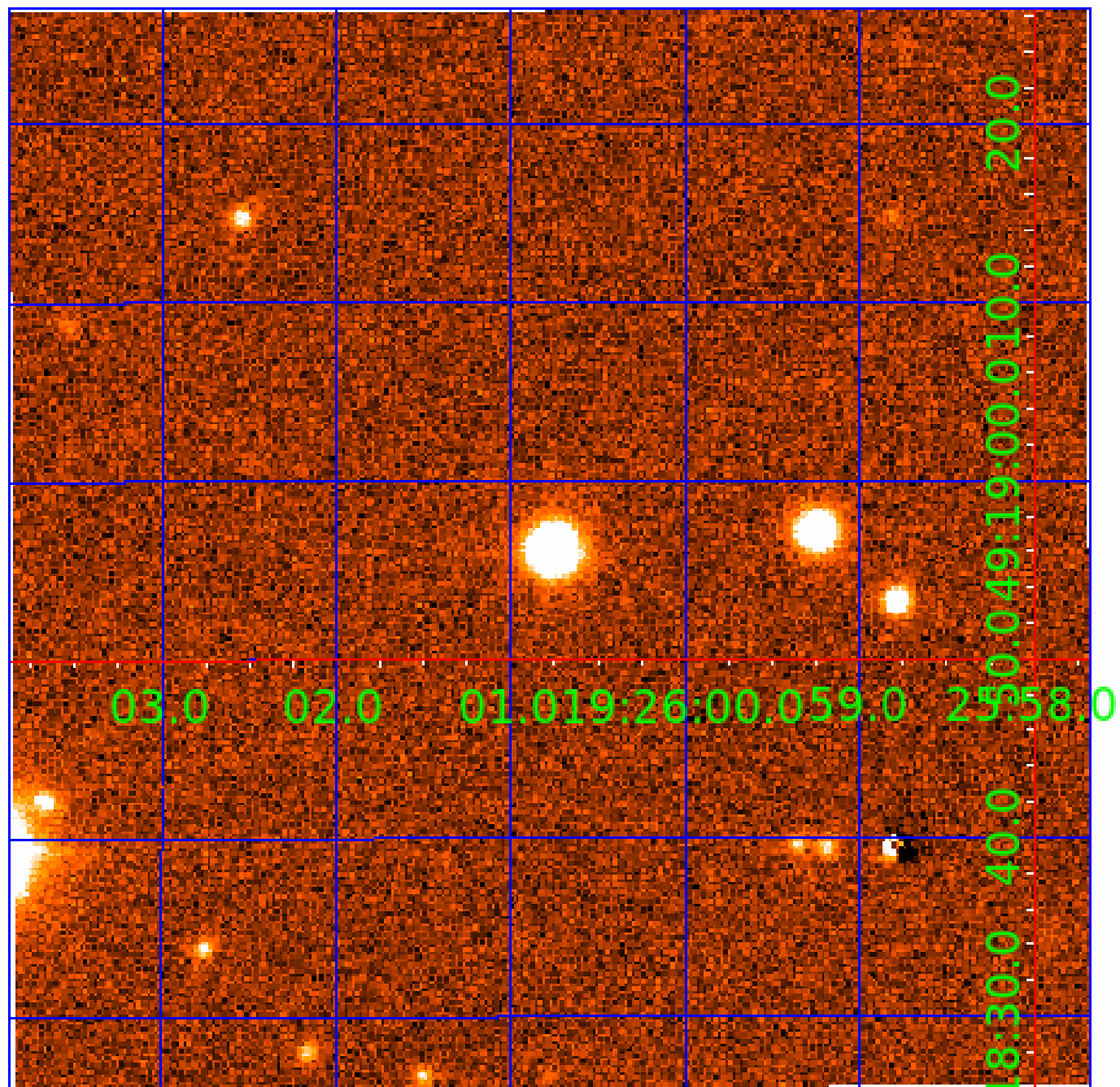


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011454563

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})
011454563-01	OBS	No	476.771310	313.910196	2242.8	20.640	13.2	13.6	0.74	5496	5.28	0.36
011454563-02	OBS	No	0.767403	131.927391	37.1	5.093	7.8	5.0	0.74	5496	0.45	1921.81
011454563-04	OBS	No	29.451478	140.602669	788.1	1.807	8.7	10.4	0.74	5496	2.30	14.85
011454563-07	OBS	No	12.588847	132.485563	339.3	3.614	8.7	8.3	0.74	5496	1.81	46.11
011454563-08	OBS	No	70.081000	184.990253	711.7	6.221	8.9	8.0	0.74	5496	2.31	4.67

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011454563-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
011454563-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
011454563-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV
011454563-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
011454563-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

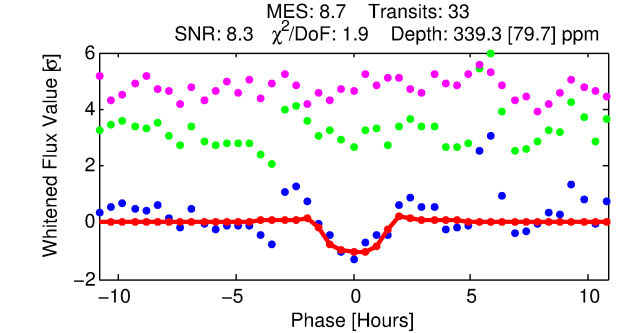
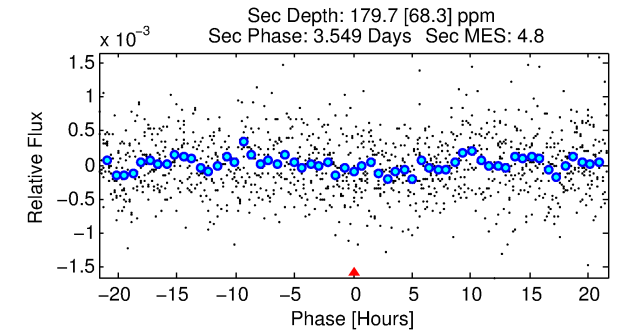
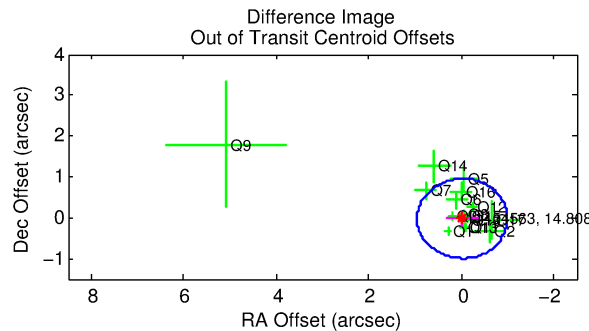
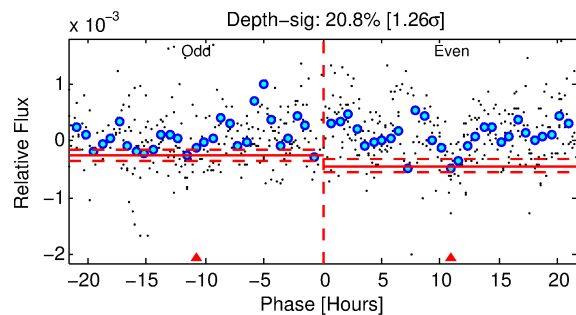
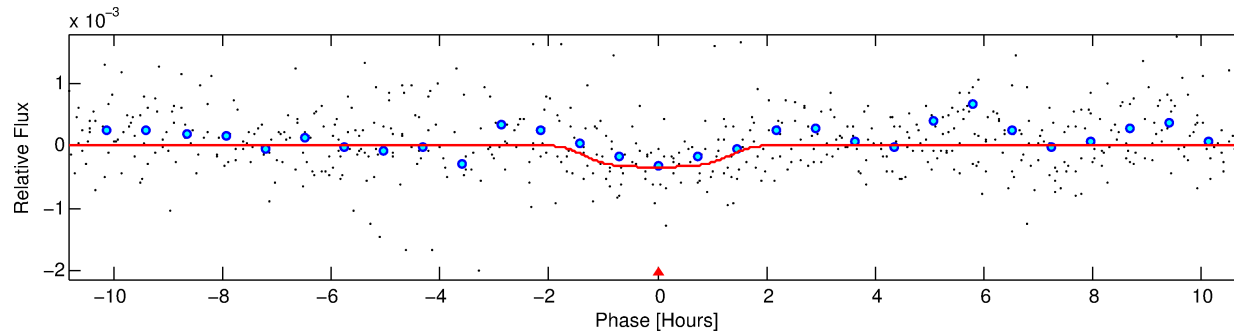
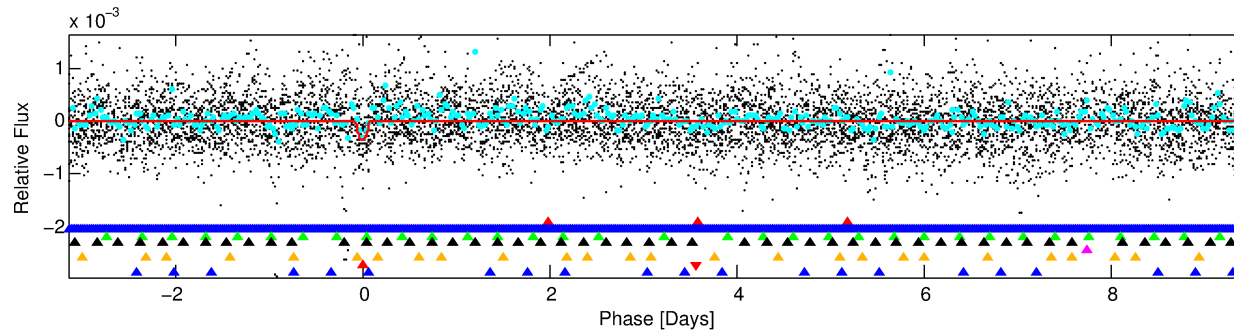
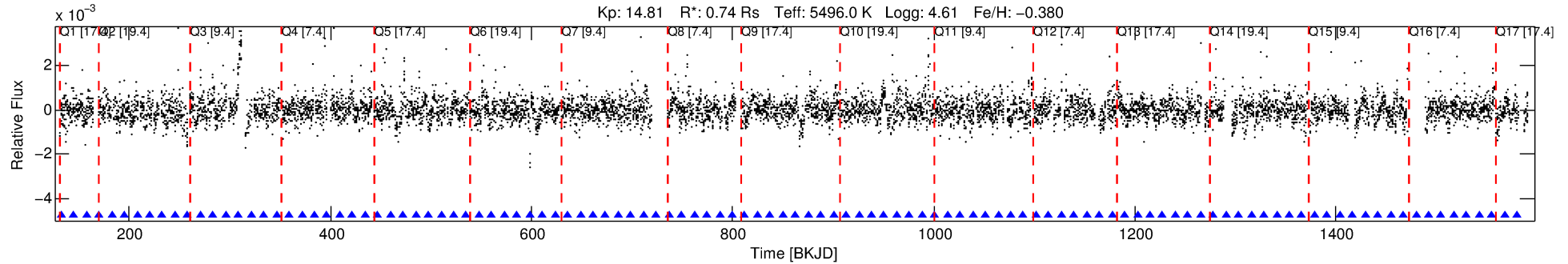
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011454563-07

No Significant Match Found

DV One-Page Summary

KIC: 11454563 Candidate: 7 of 8 Period: 12.589 d



DV Fit Results:

Period = 12.58885 [0.00022] d
Epoch = 132.4856 [0.0147] BKJD
Rp/R* = 0.0224 [0.0042]
a/R* = 8.94 [4.74]
b = 0.97 [0.04]
Seff = 46.11 [11.03]
Teq = 664 [40] K
Rp = 1.81 [0.46] Re
a = 0.0989 [0.0143] AU
Ag = 293.92 [168.34] [1.74 σ]
Teffp = 4254 [582] K [6.15 σ]

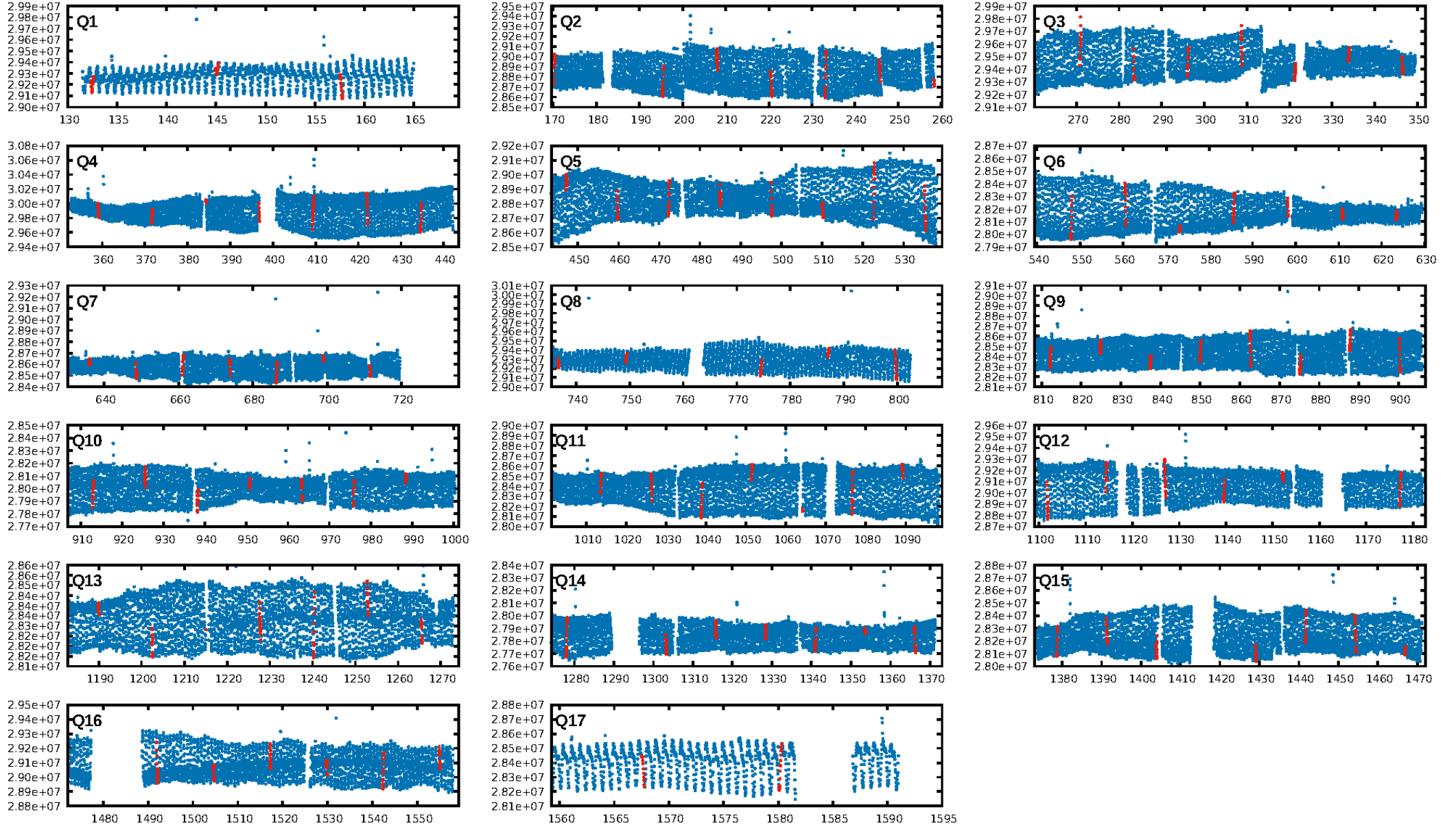
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [45.43 σ]
LongPeriod-sig: 100.0% [100.16 σ]
ModelChiSquare2-sig: 8.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [32/32]
GhostDiagnostic-chr: -1.989
Centroid-sig: 76.9%
Centroid-so: 0.358 arcsec [0.60 σ]
OotOffset-rm: 0.029 arcsec [0.09 σ]
OotOffset-st: 4/4/3/5 [16]
KicOffset-rm: 0.139 arcsec [0.43 σ]
KicOffset-st: 4/4/3/5 [16]
DiffImageQuality-fgm: 0.62 [10/16]
DiffImageOverlap-fno: 0.00 [0/17]

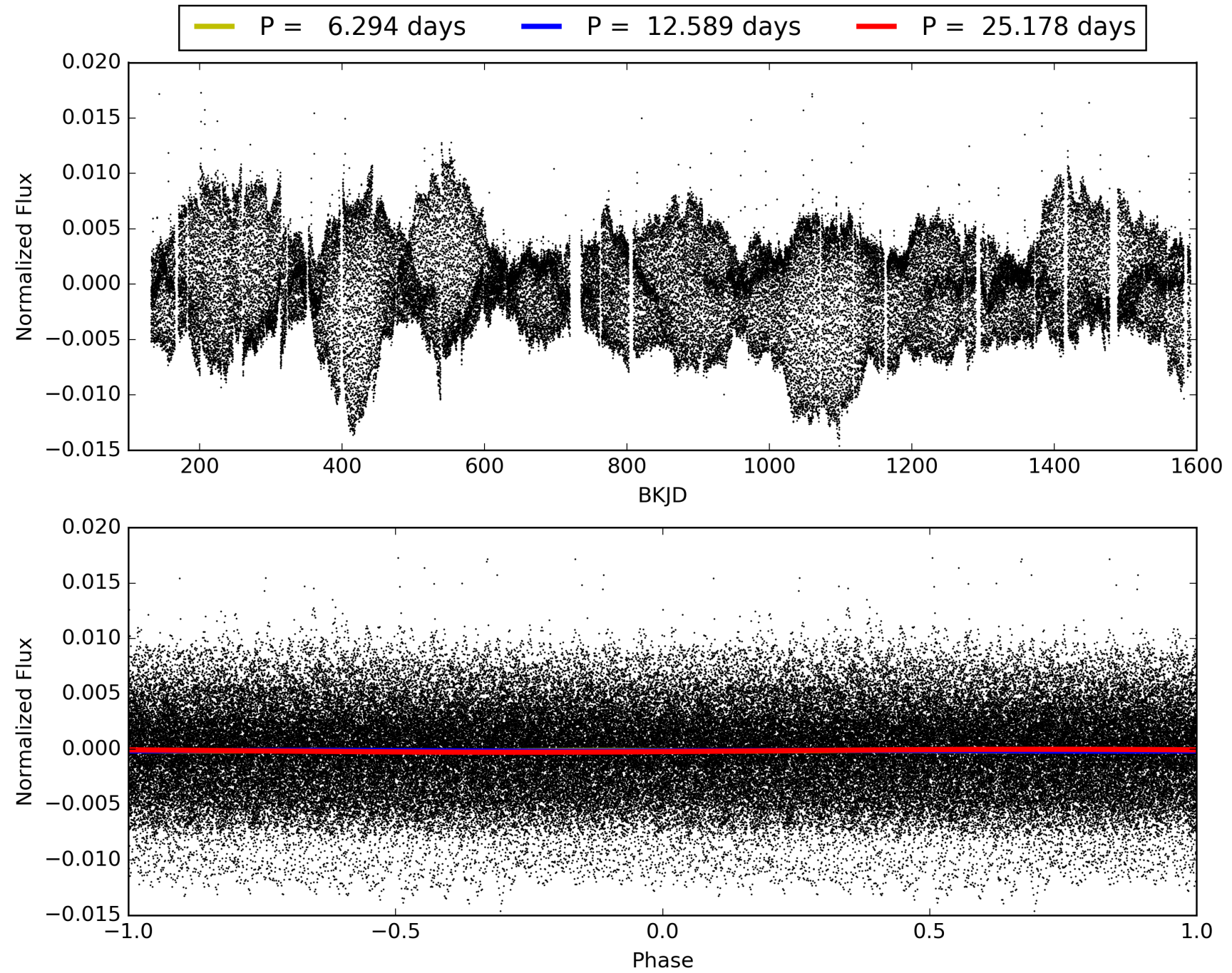
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:16:06 Z

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

TCE 011454563-07, PDC Light Curves

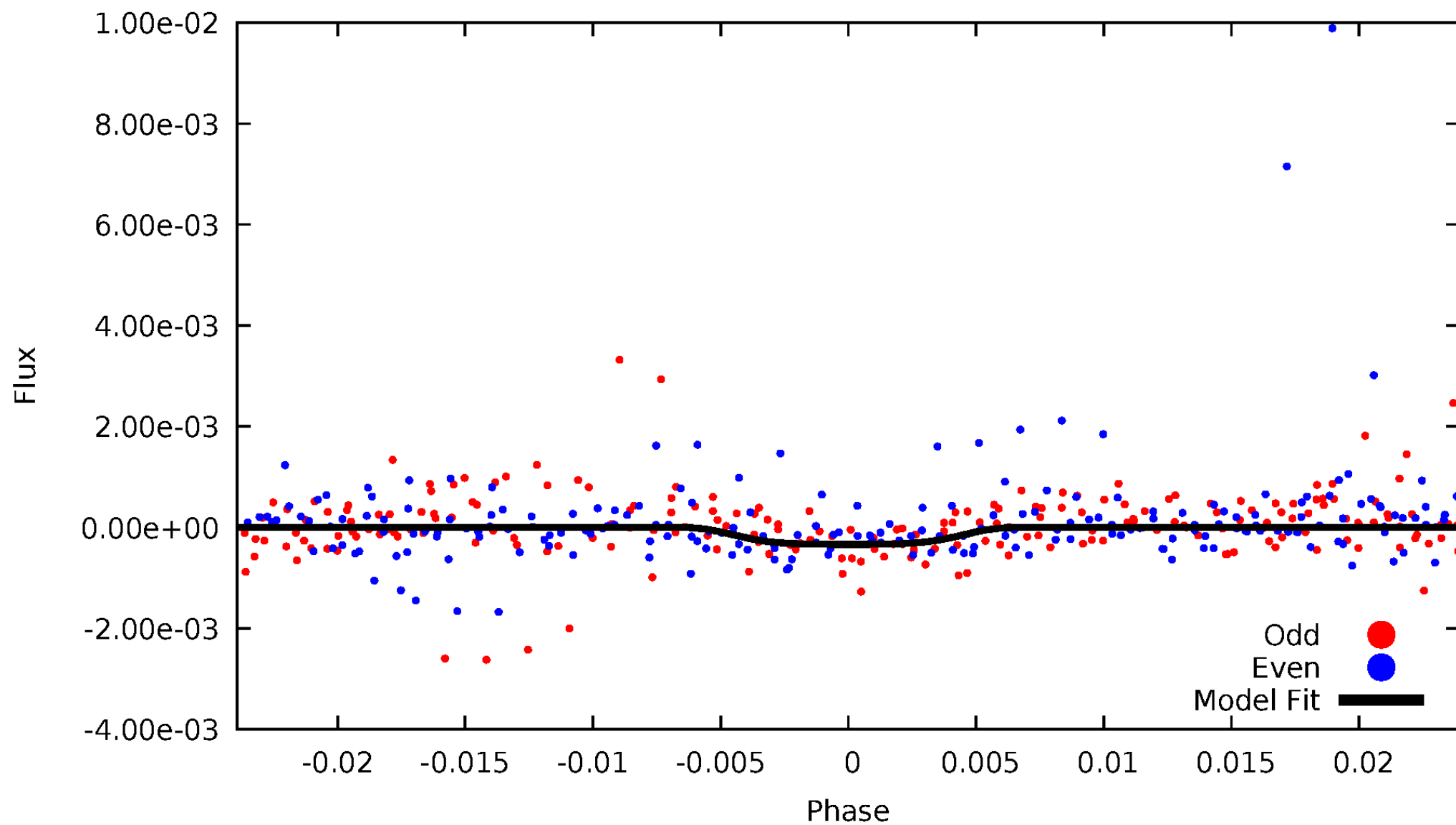


TCE 011454563-07



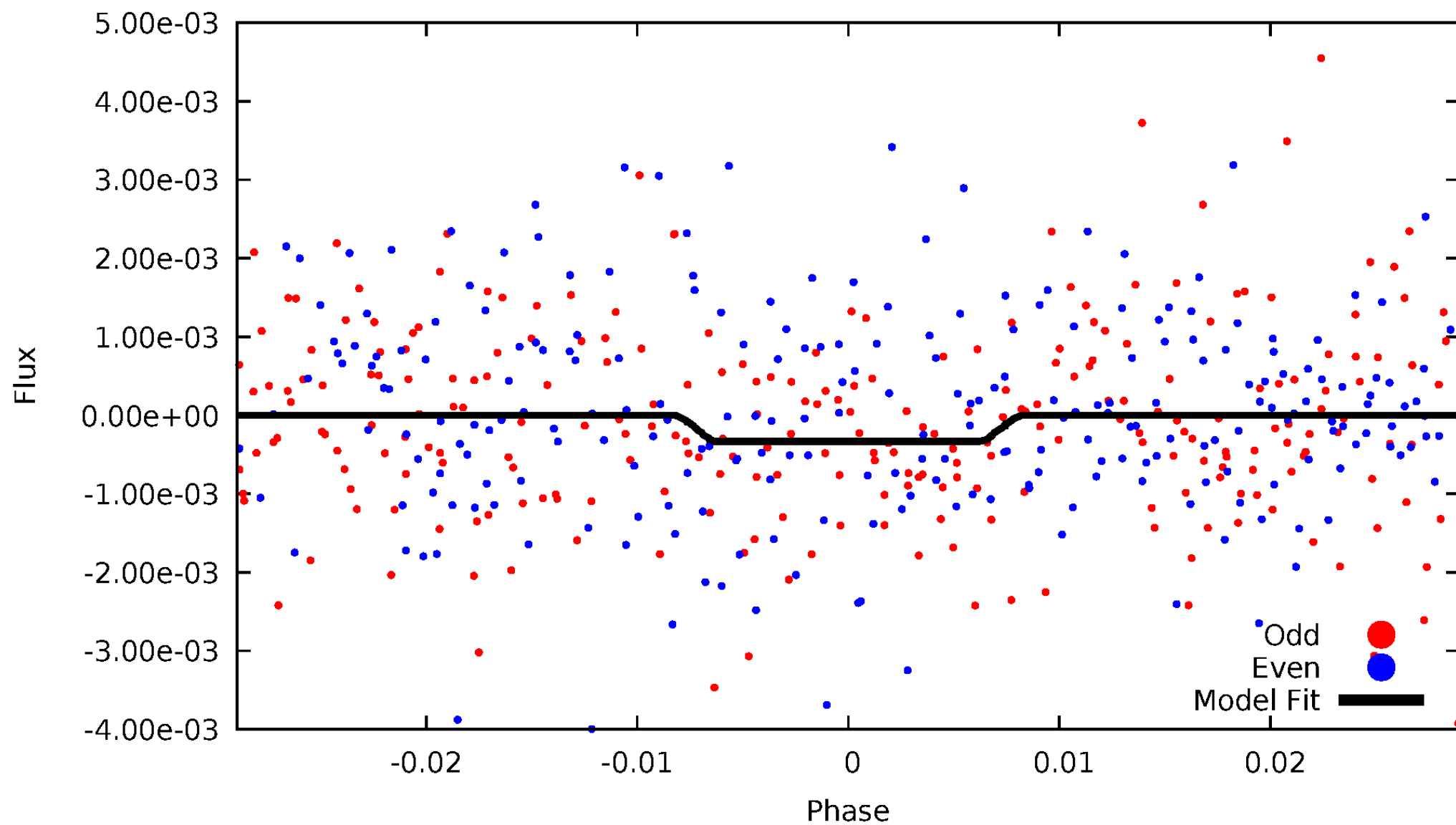
DV Odd/Even

TCE 011454563-07



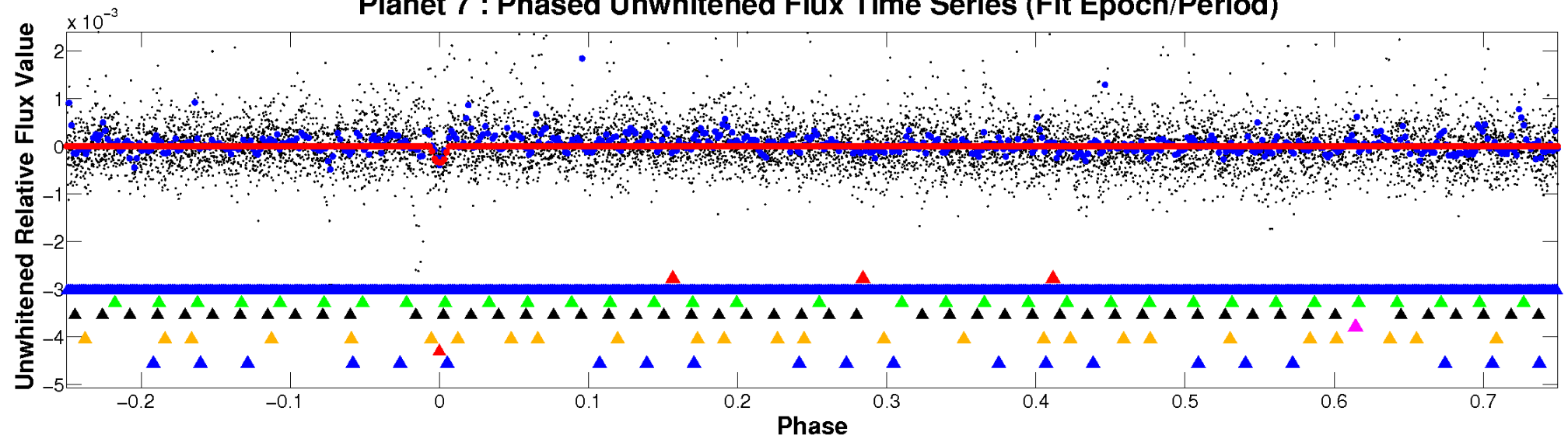
ALT Odd/Even

TCE 011454563-07

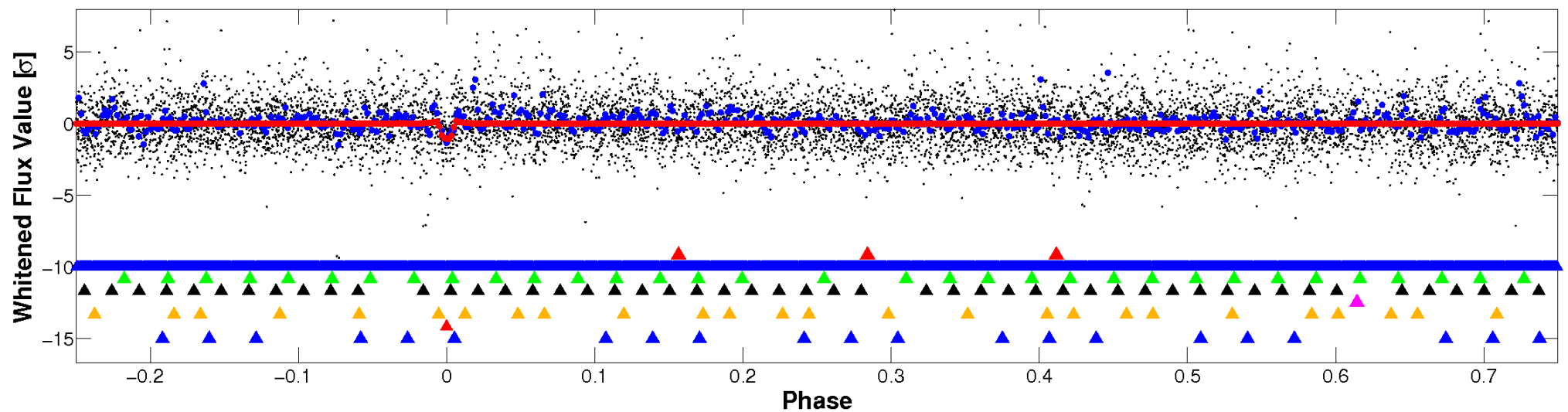


Non-Whitened Vs. Whitened Light Curve

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

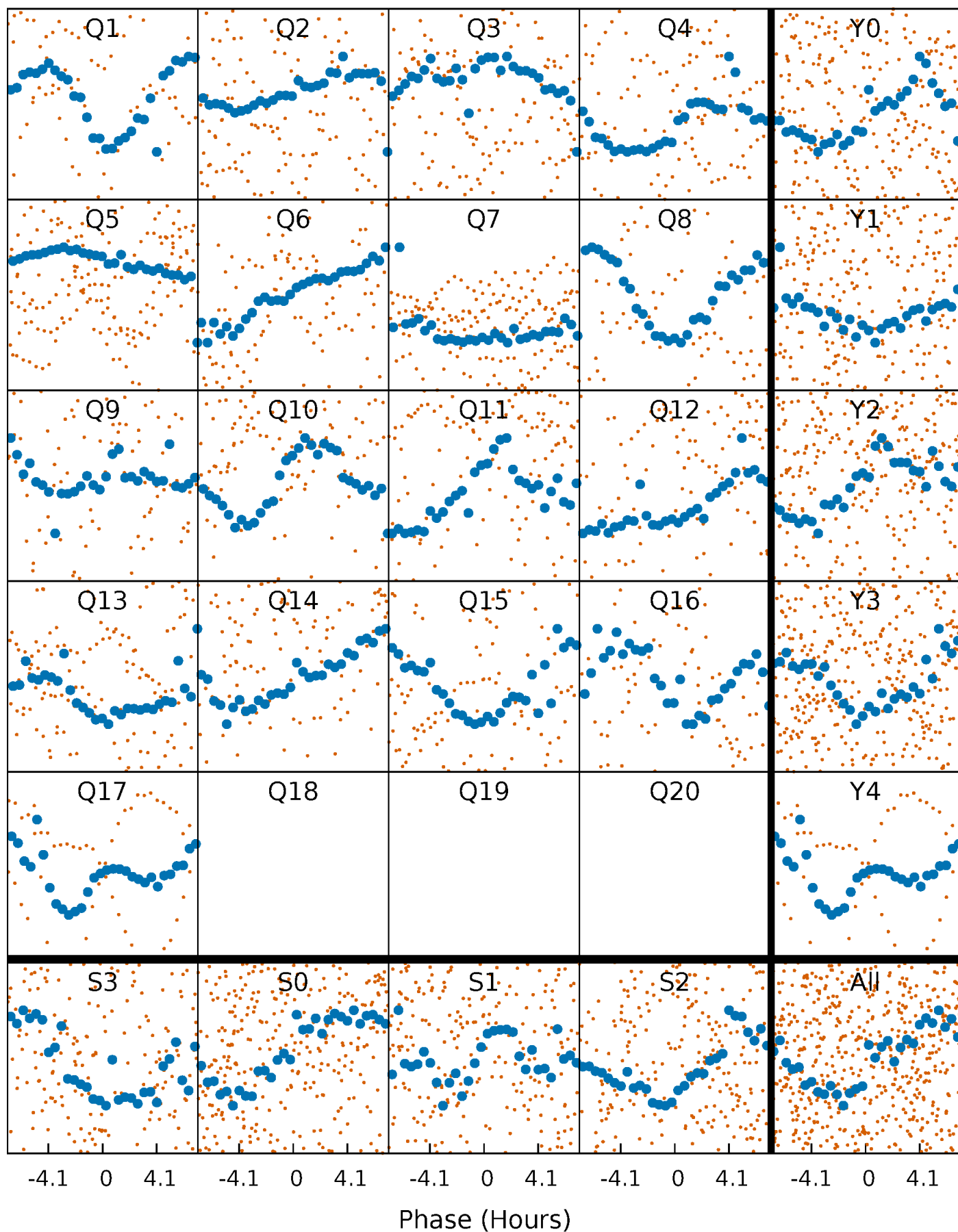


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



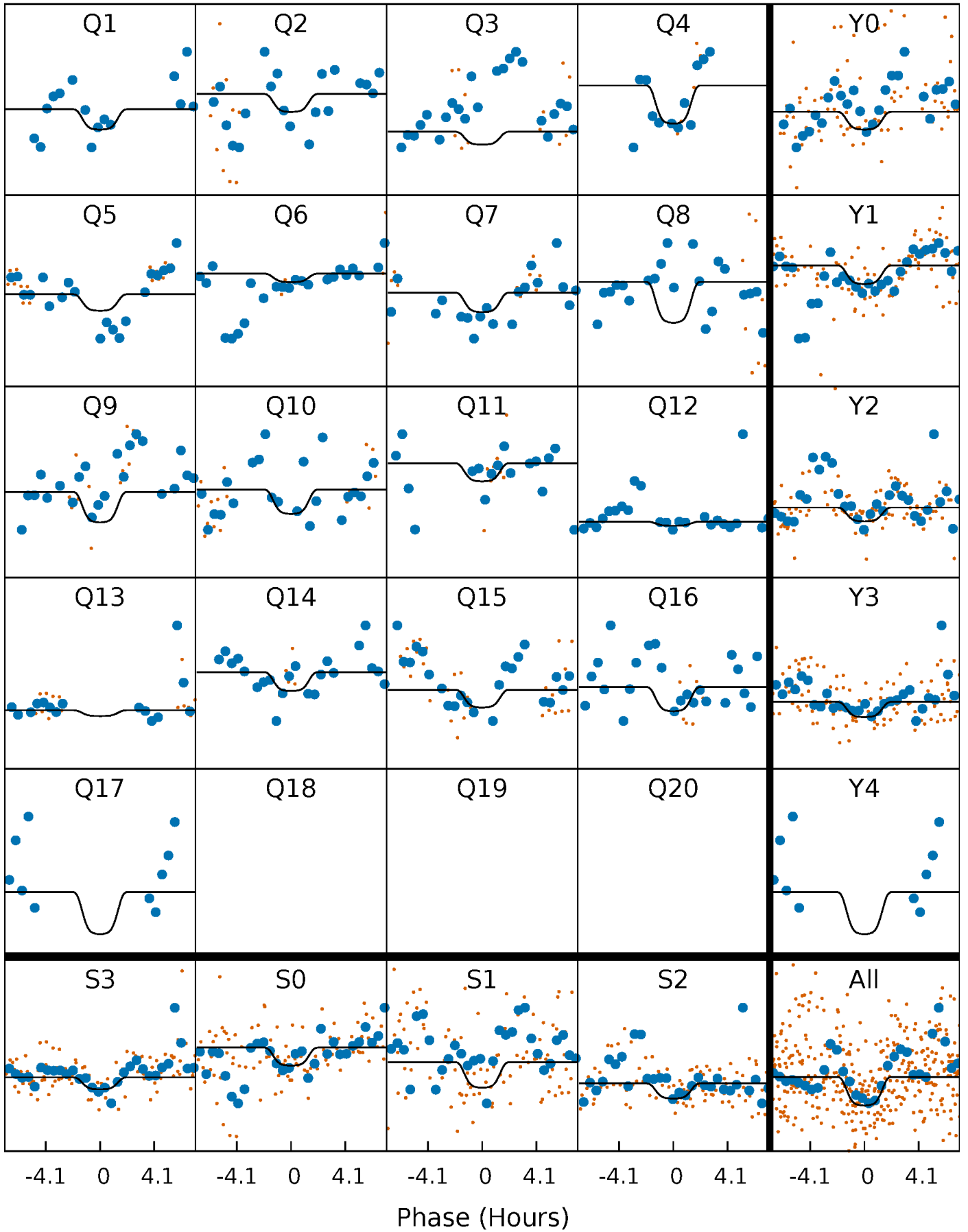
PDC Quarter-Phased Transit Curves

TCE 011454563-07 P= 12.588847 Days $T_0=132.485563$ (BKJD)



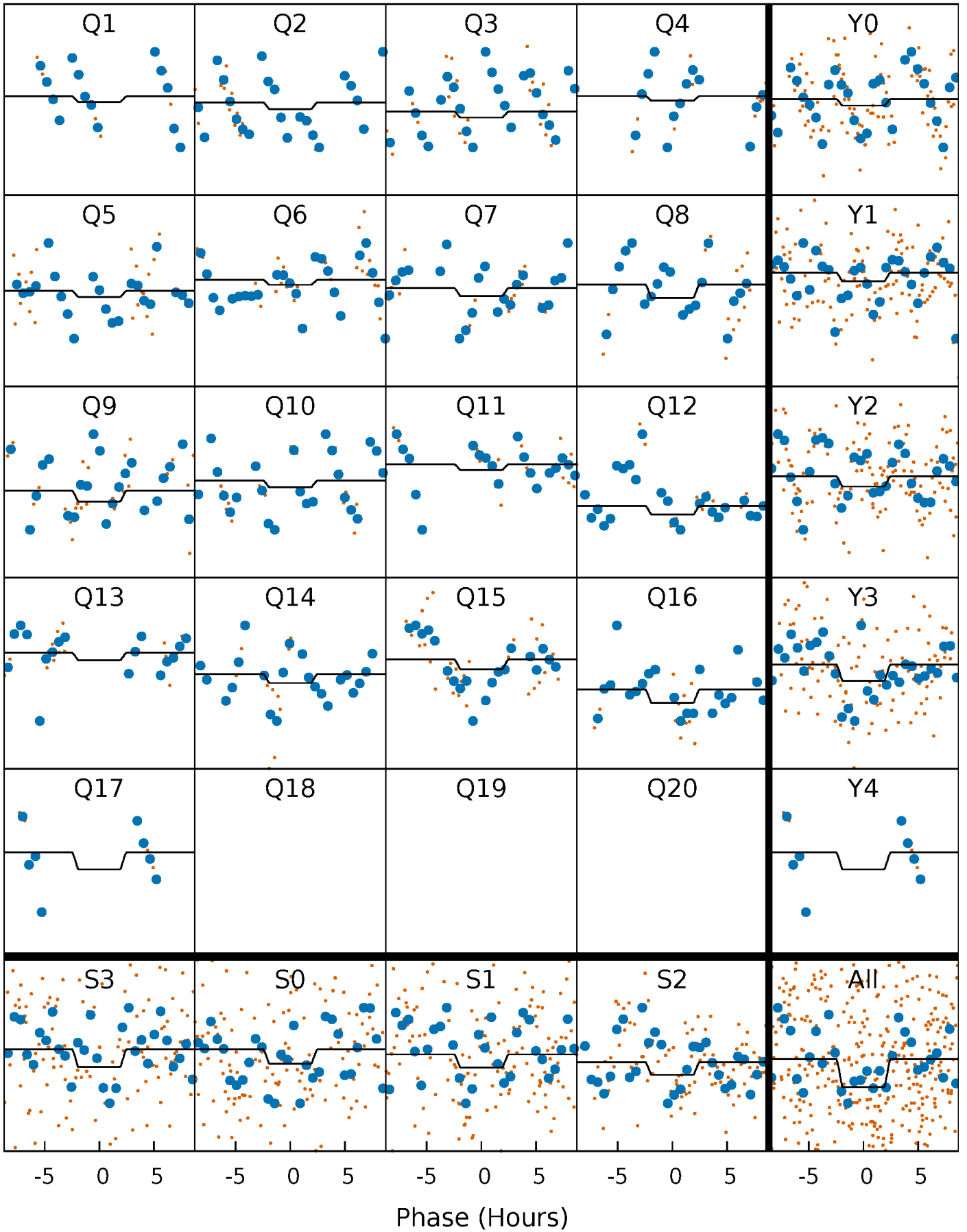
DV Quarter-Phased Transit Curves

TCE 011454563-07 P= 12.588847 Days $T_0=132.485563$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

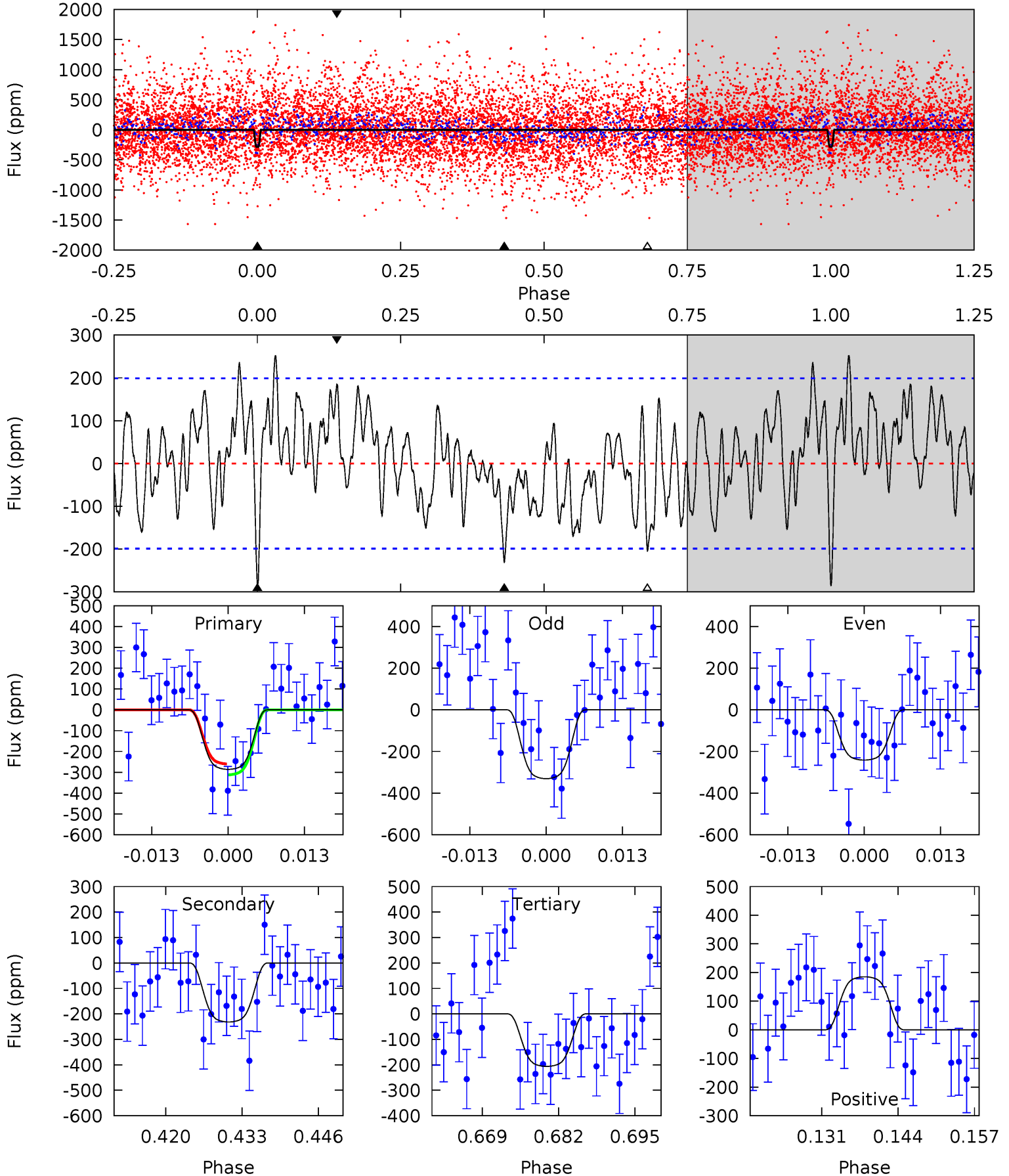
TCE 011454563-07 $P = 12.588751$ Days $T_0 = 132.504934$ (BKJD)



DV Model-Shift Uniqueness Test

011454563-07, $P = 12.588847$ Days, $E = 119.896716$ Days

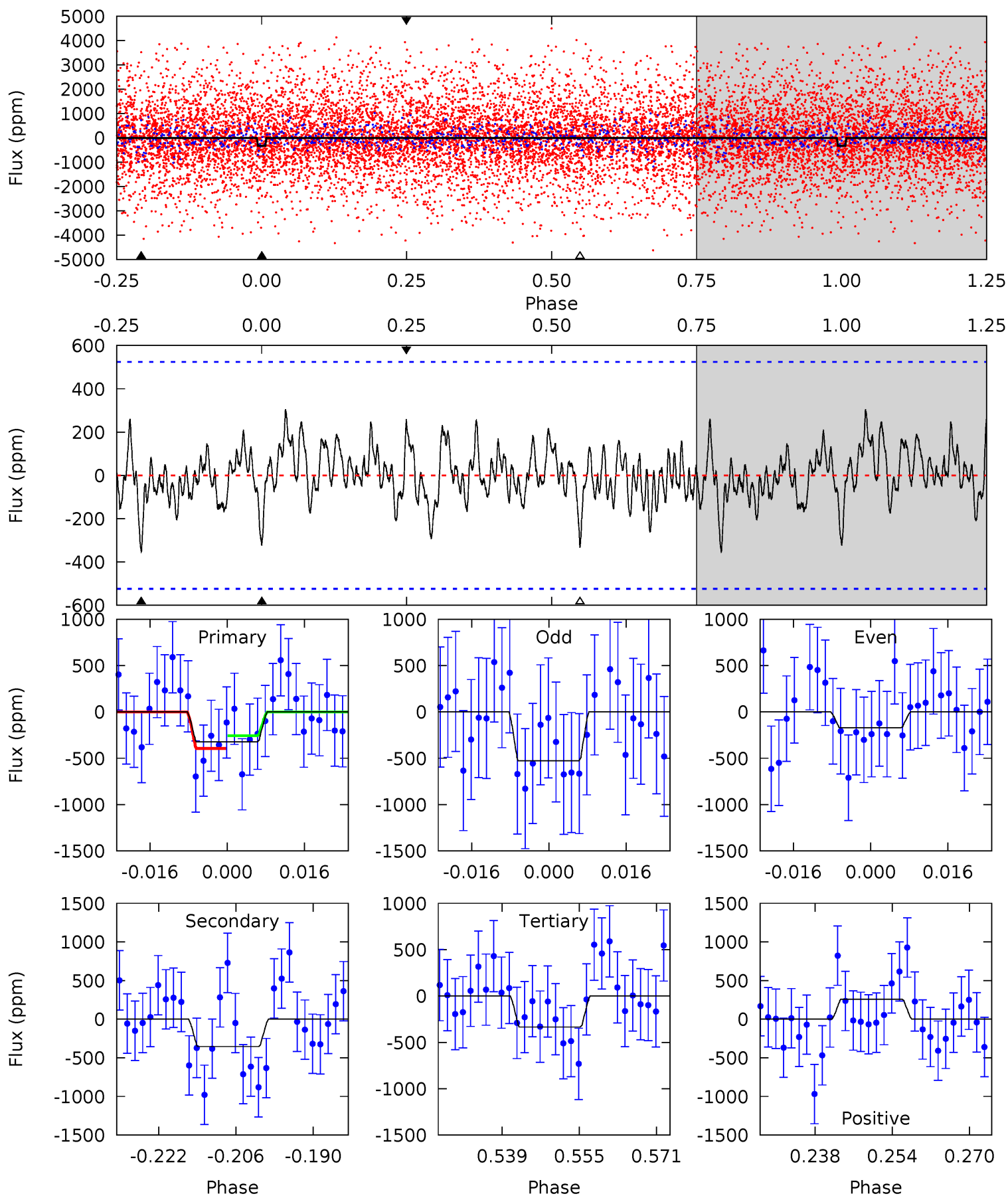
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.15	5.79	5.15	4.63	4.97	2.48	2.18	2.00	2.52	0.64	1.17	1.11	0.57	0.47	0.65



Alt Model-Shift Uniqueness Test

011454563-07, P = 12.588751 Days, E = 119.916183 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.05	3.34	3.15	2.44	4.94	2.41	0.97	-0.10	0.61	0.19	0.89	1.69	0.66	0.46	0.66



Stellar Parameters For KIC 011454563

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5496^{+148}_{-164}	$4.607^{+0.037}_{-0.112}$	$-0.380^{+0.300}_{-0.300}$	$0.743^{+0.129}_{-0.059}$	$0.825^{+0.080}_{-0.088}$	$2.831^{+0.532}_{-0.989}$
	+3%/-3%	+1%/-2%	+79%/-79%	+17%/-8%	+10%/-11%	+19%/-35%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 011454563-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-232 ± 40	$1.86^{+0.39}_{-0.34}$	941^{+44}_{-37}	4658^{+473}_{-345}	359^{+202}_{-125}
Alt.	-354 ± 106	$1.54^{+0.37}_{-0.36}$	941^{+47}_{-36}	5501^{+881}_{-622}	783^{+667}_{-339}

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 $A_{obs} \gg 1.0$

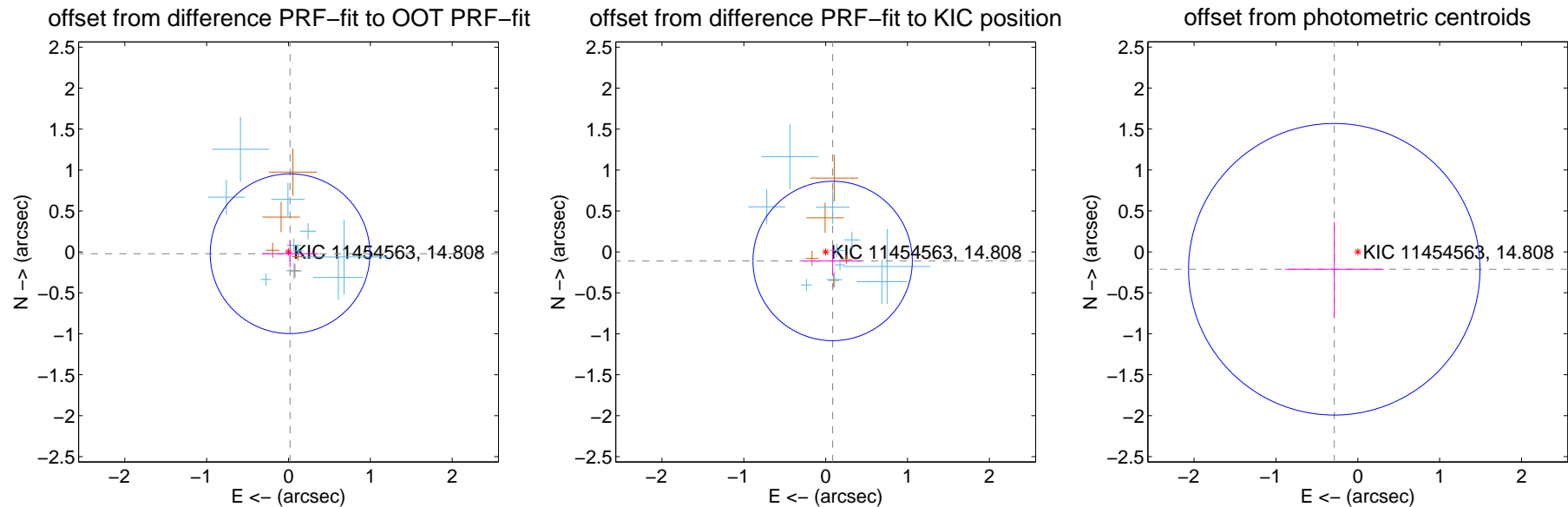
DV Centroid Data

Supplemental centroid analysis for 011454563-07. Kepler magnitude: 14.81. Transit SNR 8.28

There are 10 quarters with good PRF difference image offsets

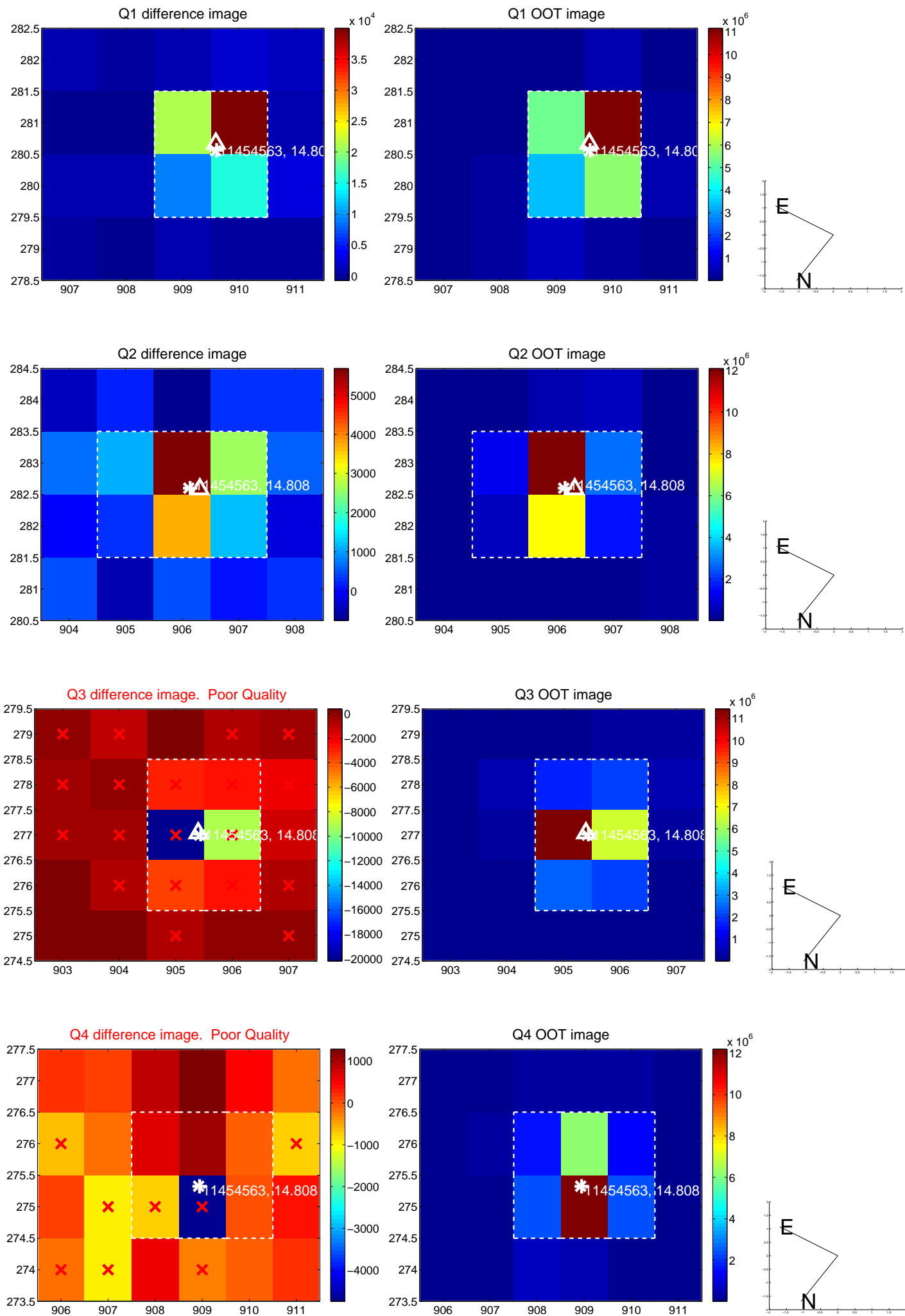
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.029 ± 0.325	0.09	-0.019 ± 0.345	-0.022 ± 0.165
PRF-fit source offset from KIC position	0.139 ± 0.324	0.43	-0.085 ± 0.359	-0.111 ± 0.168
photometric centroid source offset	0.36 ± 0.59	0.60	0.29 ± 0.60	-0.21 ± 0.58

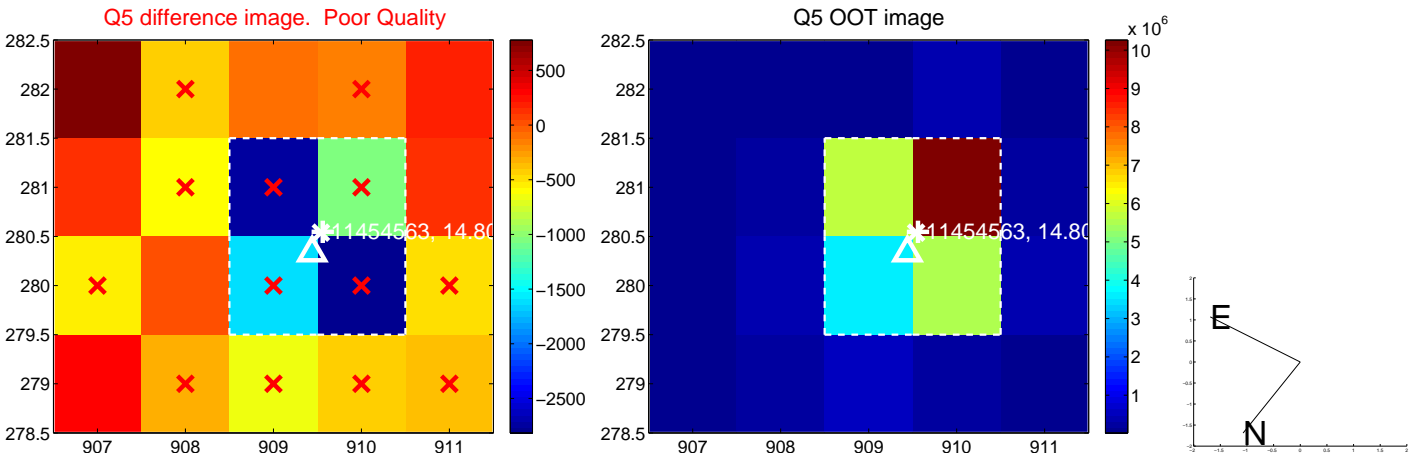


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

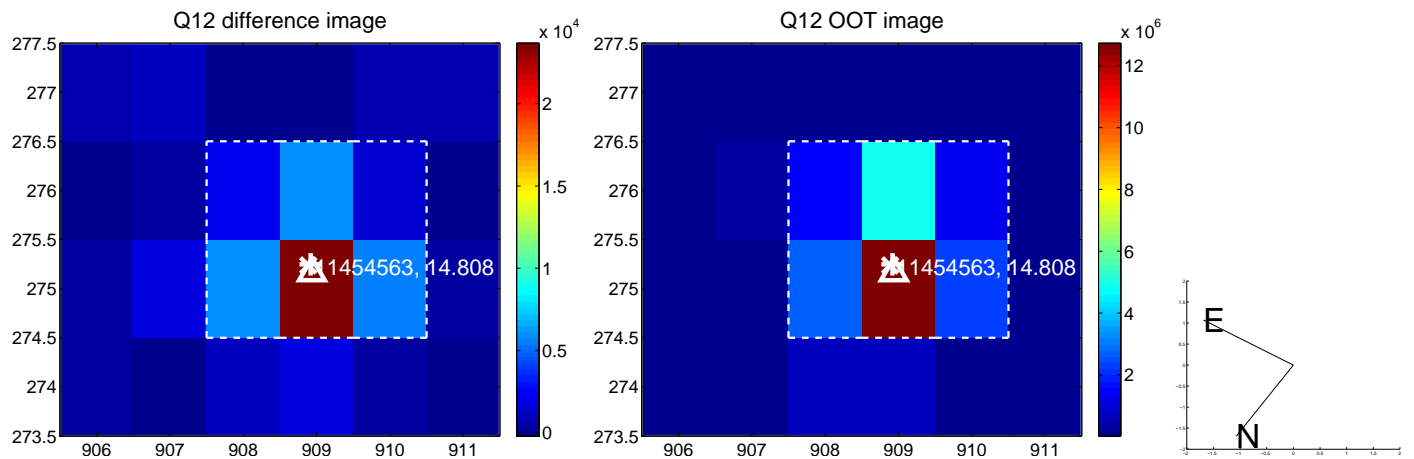
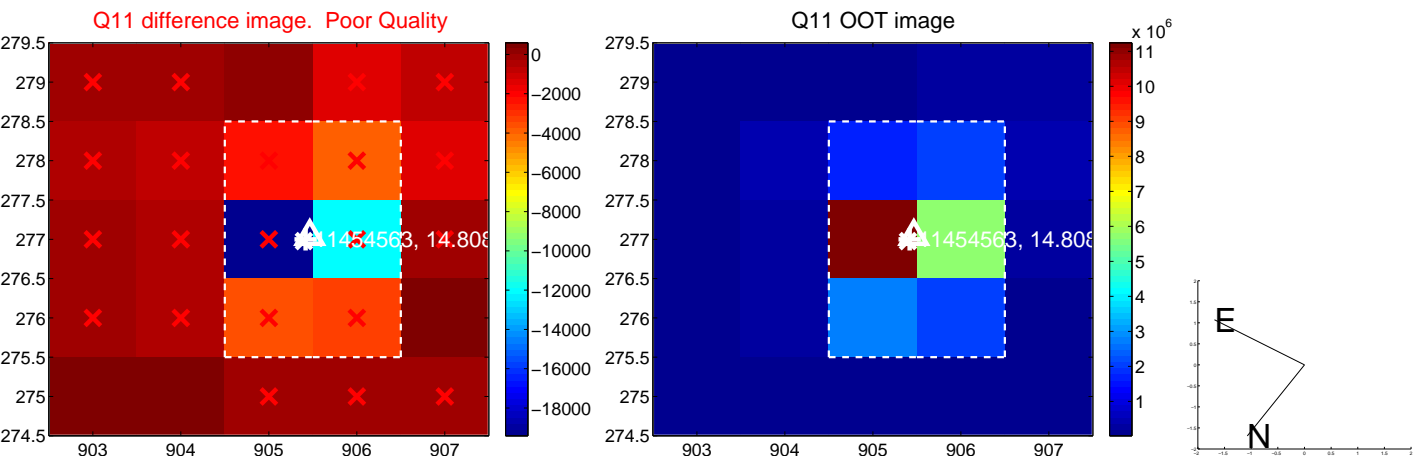
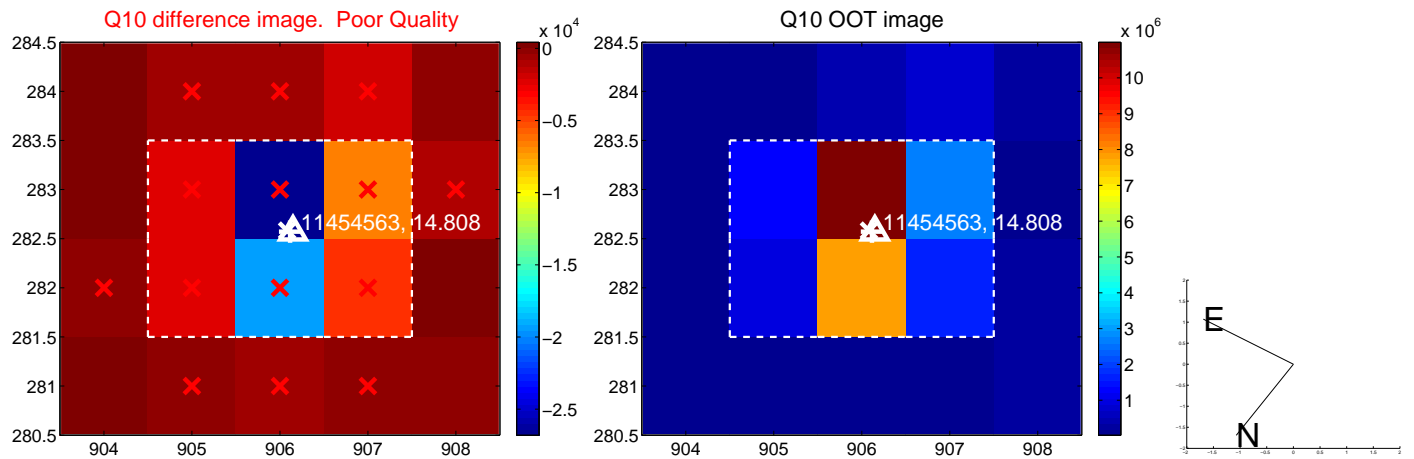
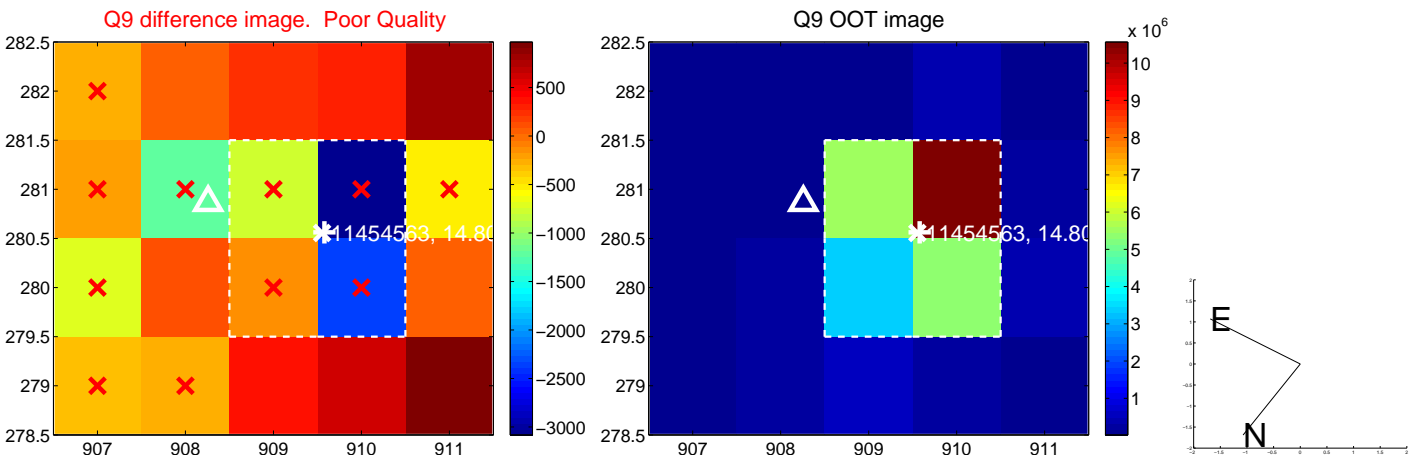
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



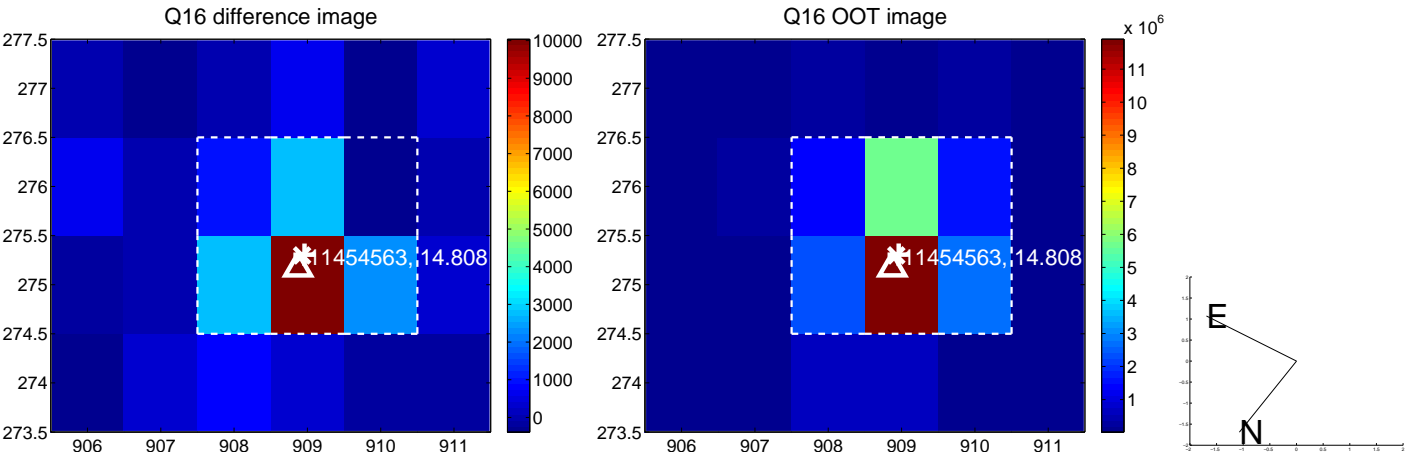
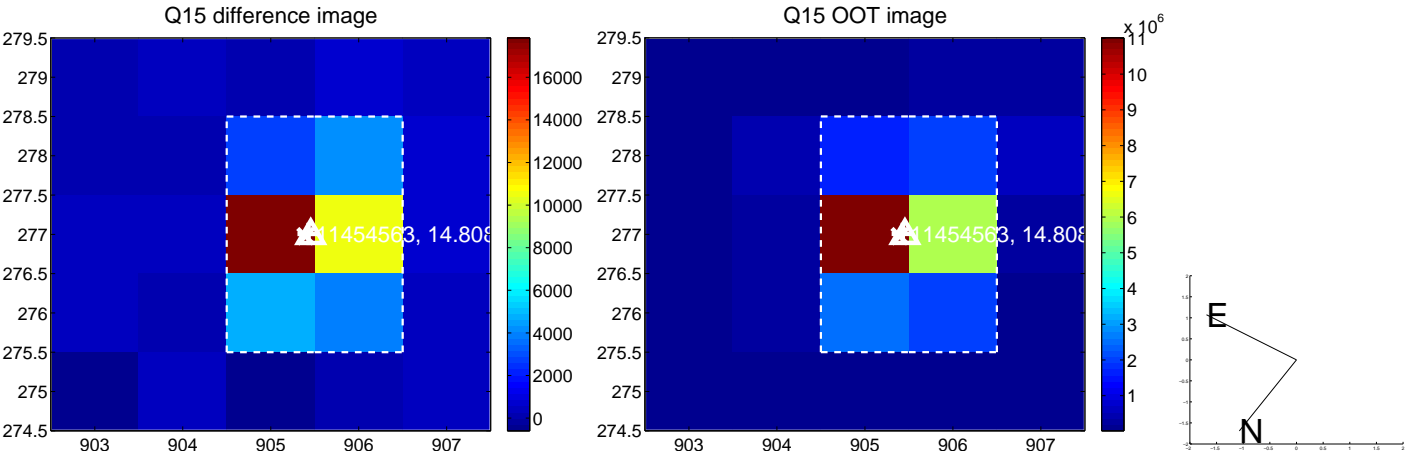
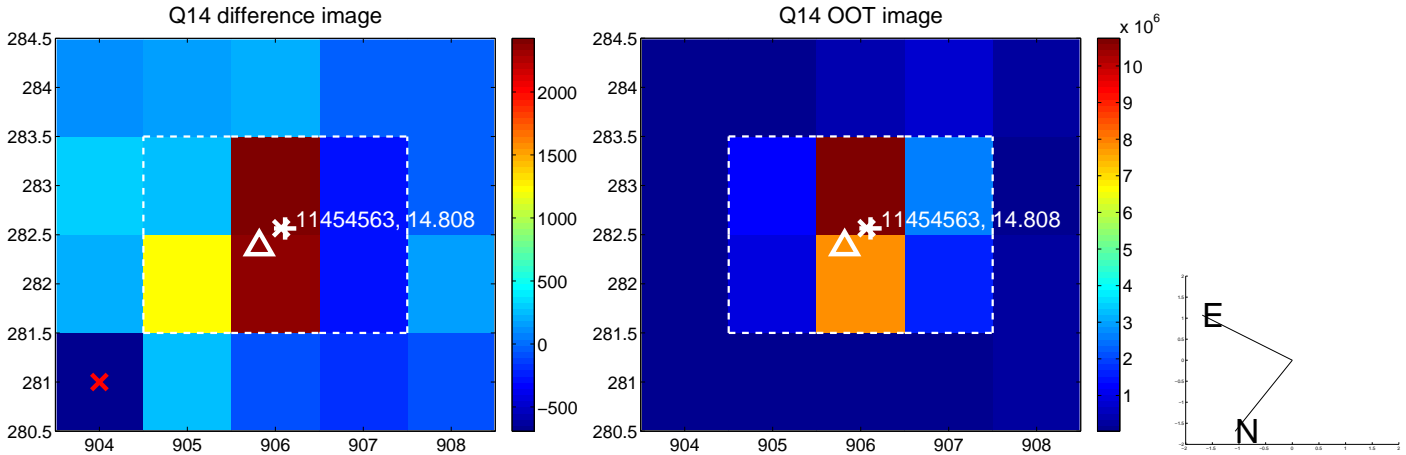
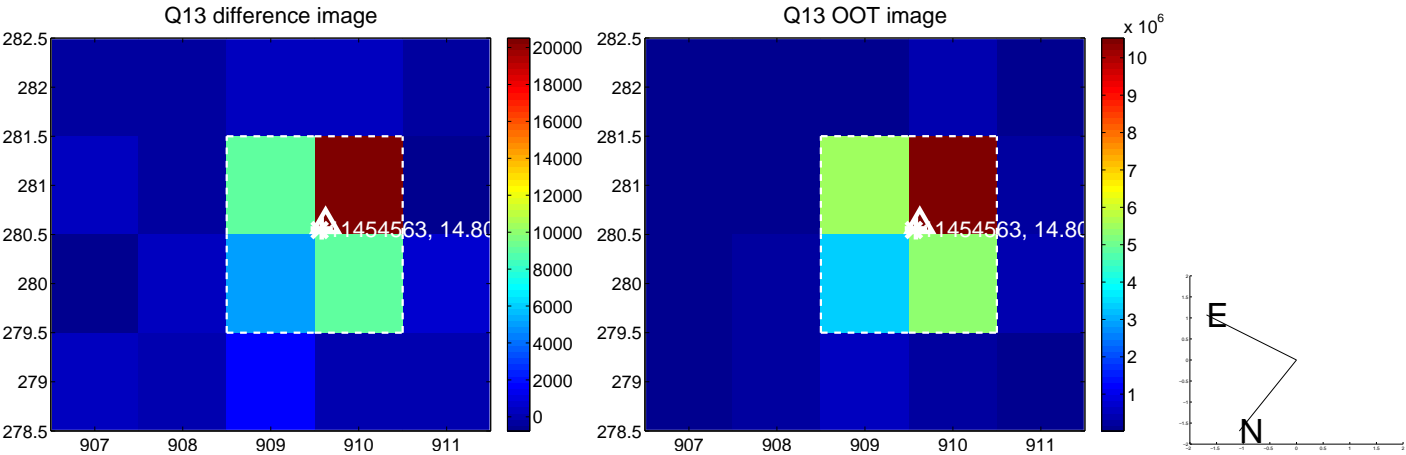
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



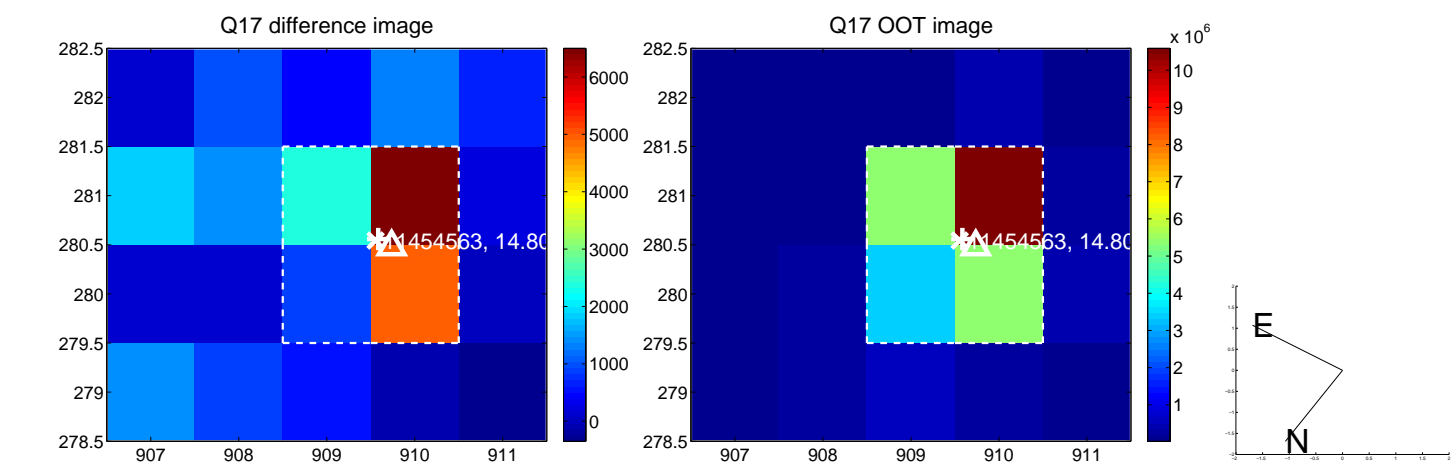
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



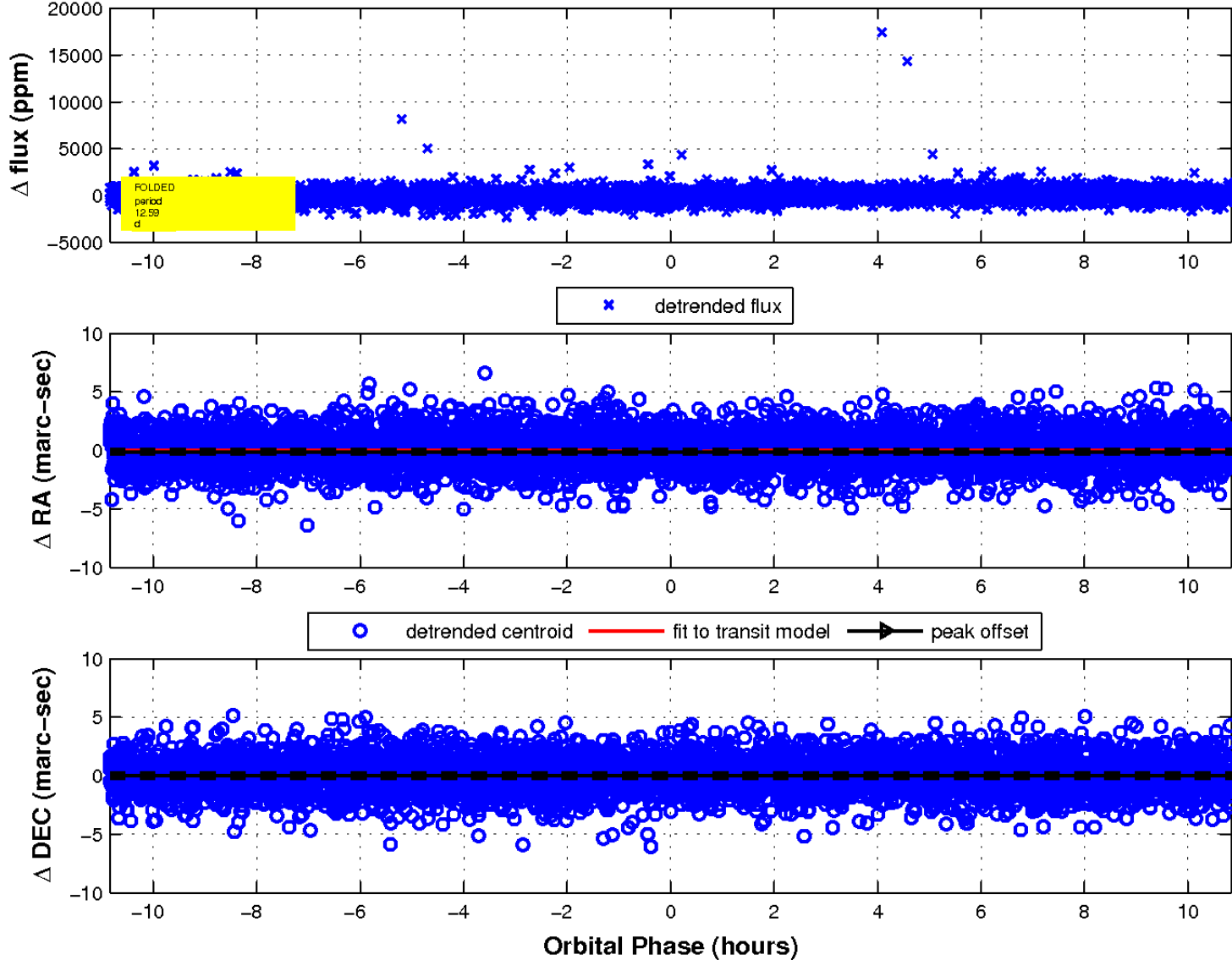
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

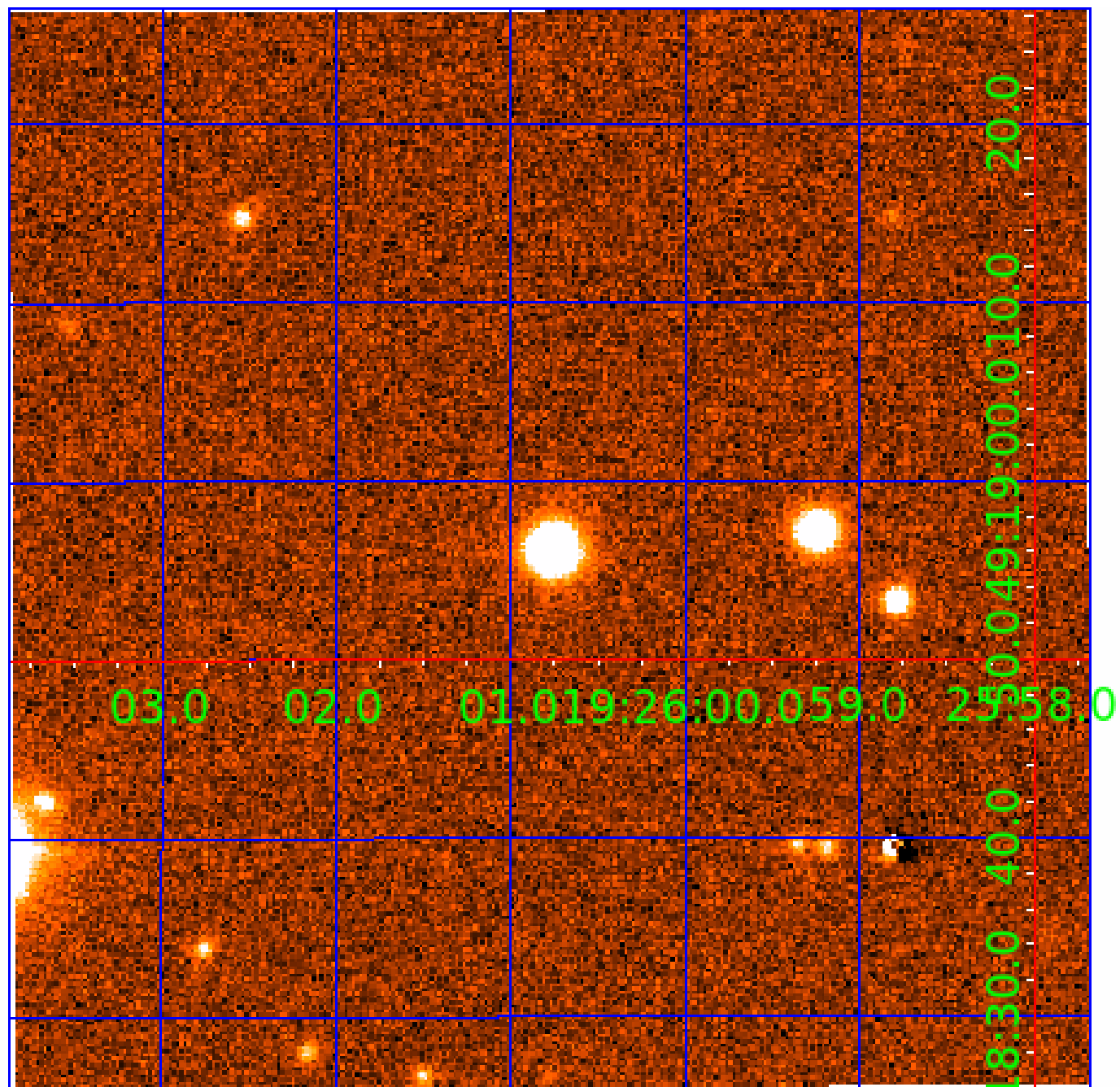


fluxWeightedCentroids, Planet 7 of 8



UKIRT Image

Declination



KIC 011454563

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})
011454563-01	OBS	No	476.771310	313.910196	2242.8	20.640	13.2	13.6	0.74	5496	5.28	0.36
011454563-02	OBS	No	0.767403	131.927391	37.1	5.093	7.8	5.0	0.74	5496	0.45	1921.81
011454563-04	OBS	No	29.451478	140.602669	788.1	1.807	8.7	10.4	0.74	5496	2.30	14.85
011454563-07	OBS	No	12.588847	132.485563	339.3	3.614	8.7	8.3	0.74	5496	1.81	46.11
011454563-08	OBS	No	70.081000	184.990253	711.7	6.221	8.9	8.0	0.74	5496	2.31	4.67

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011454563-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
011454563-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
011454563-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV
011454563-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
011454563-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

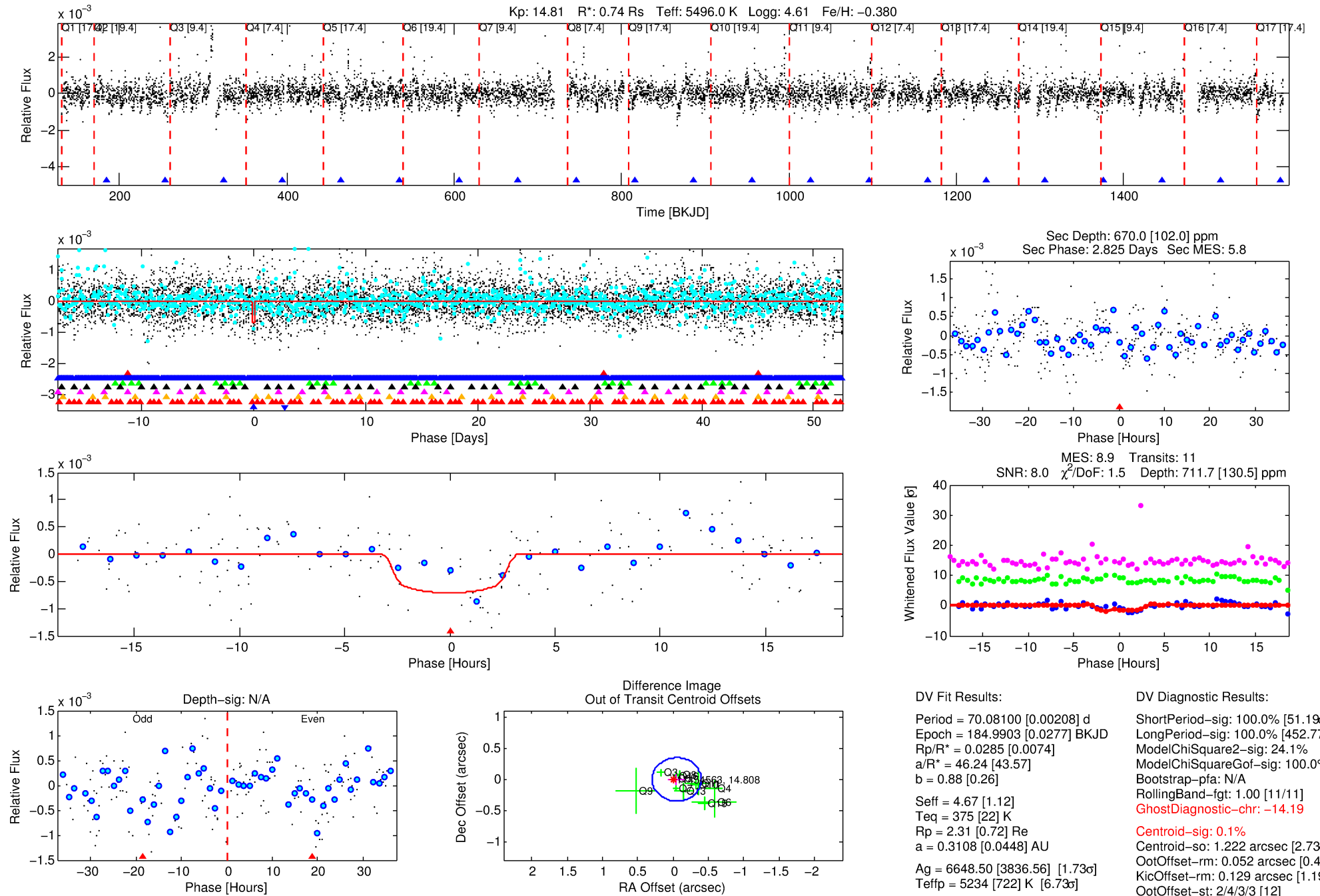
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011454563-08

No Significant Match Found

DV One-Page Summary

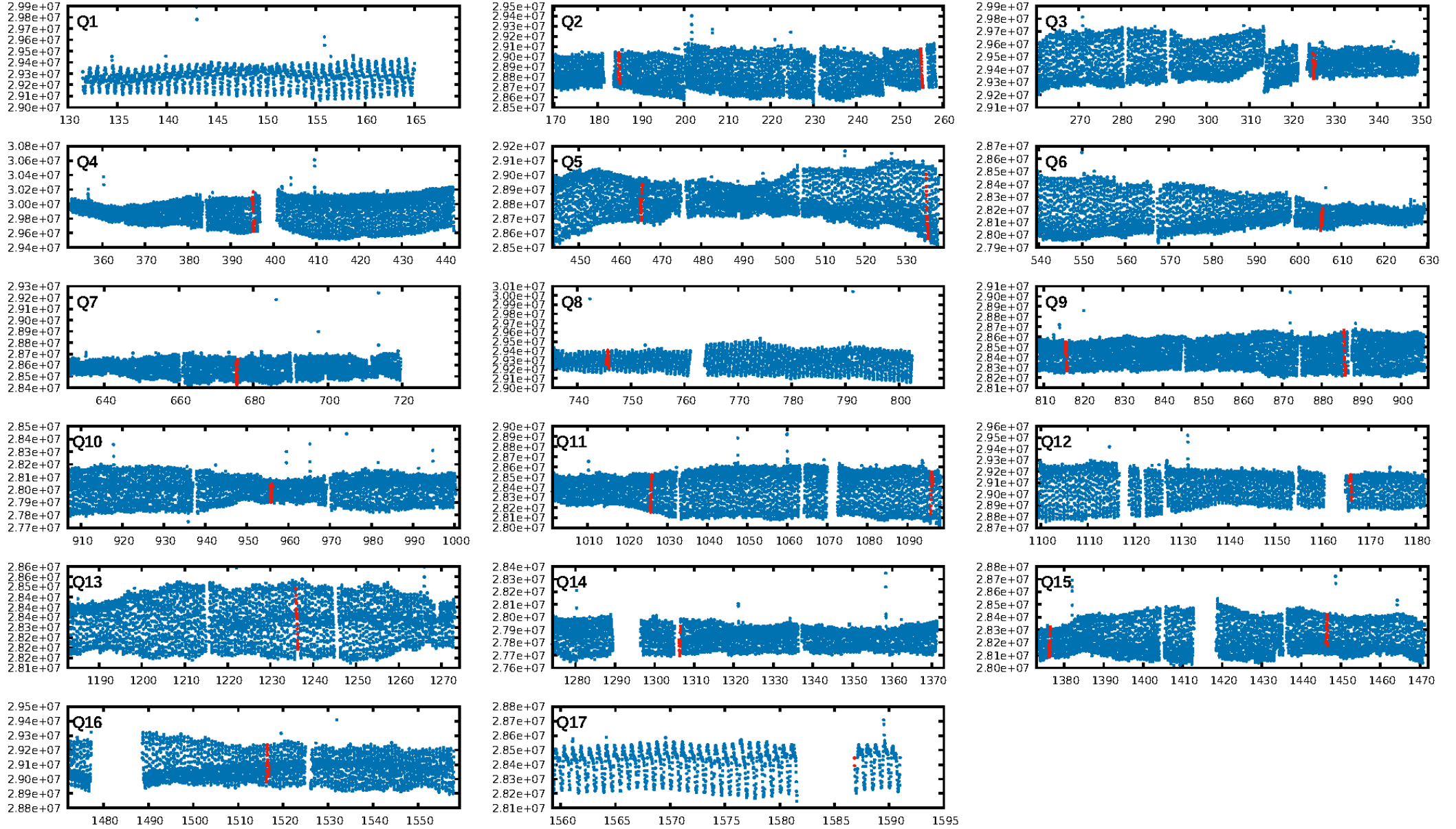
KIC: 11454563 Candidate: 8 of 8 Period: 70.081 d



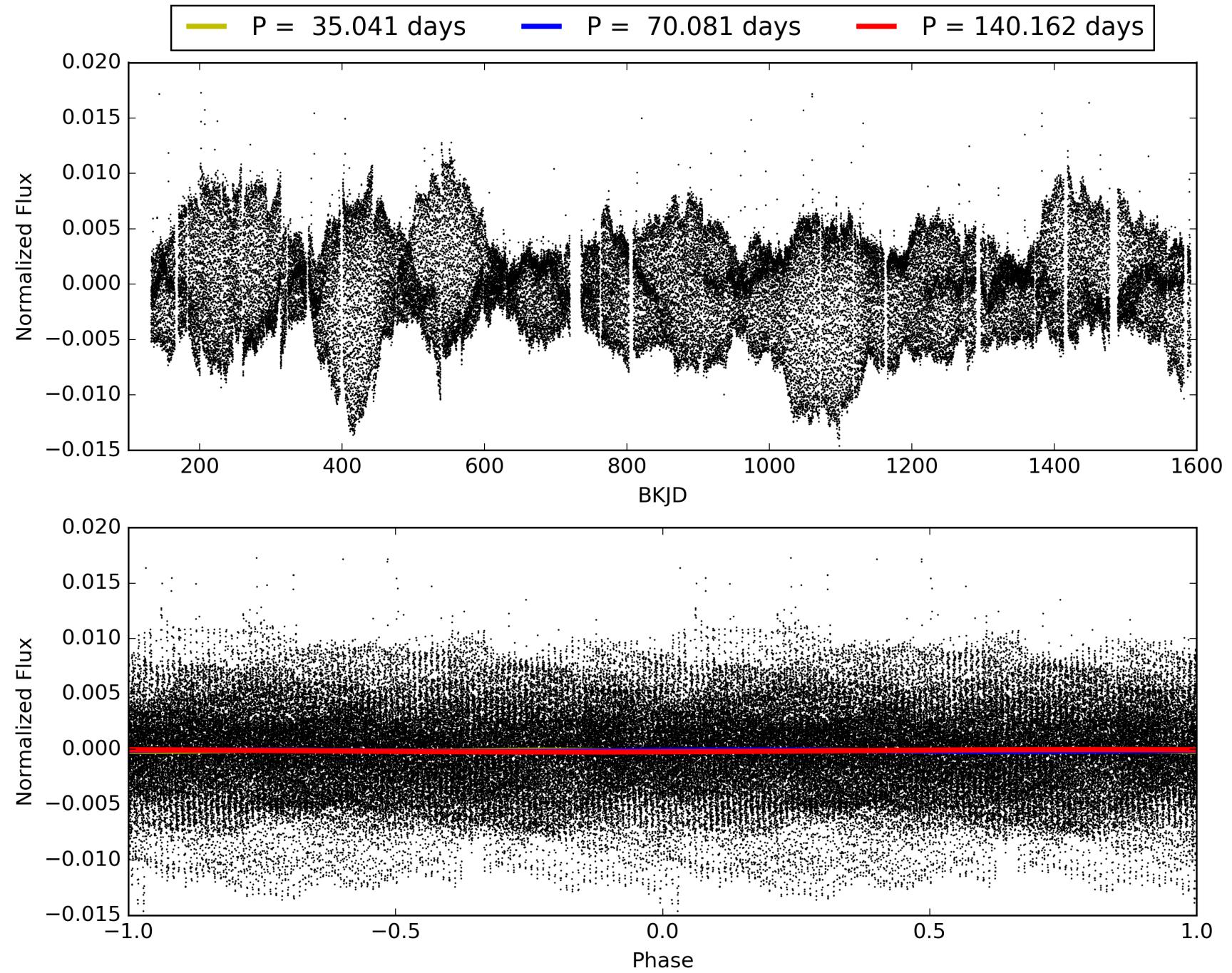
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:16:09 Z

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

TCE 011454563-08, PDC Light Curves

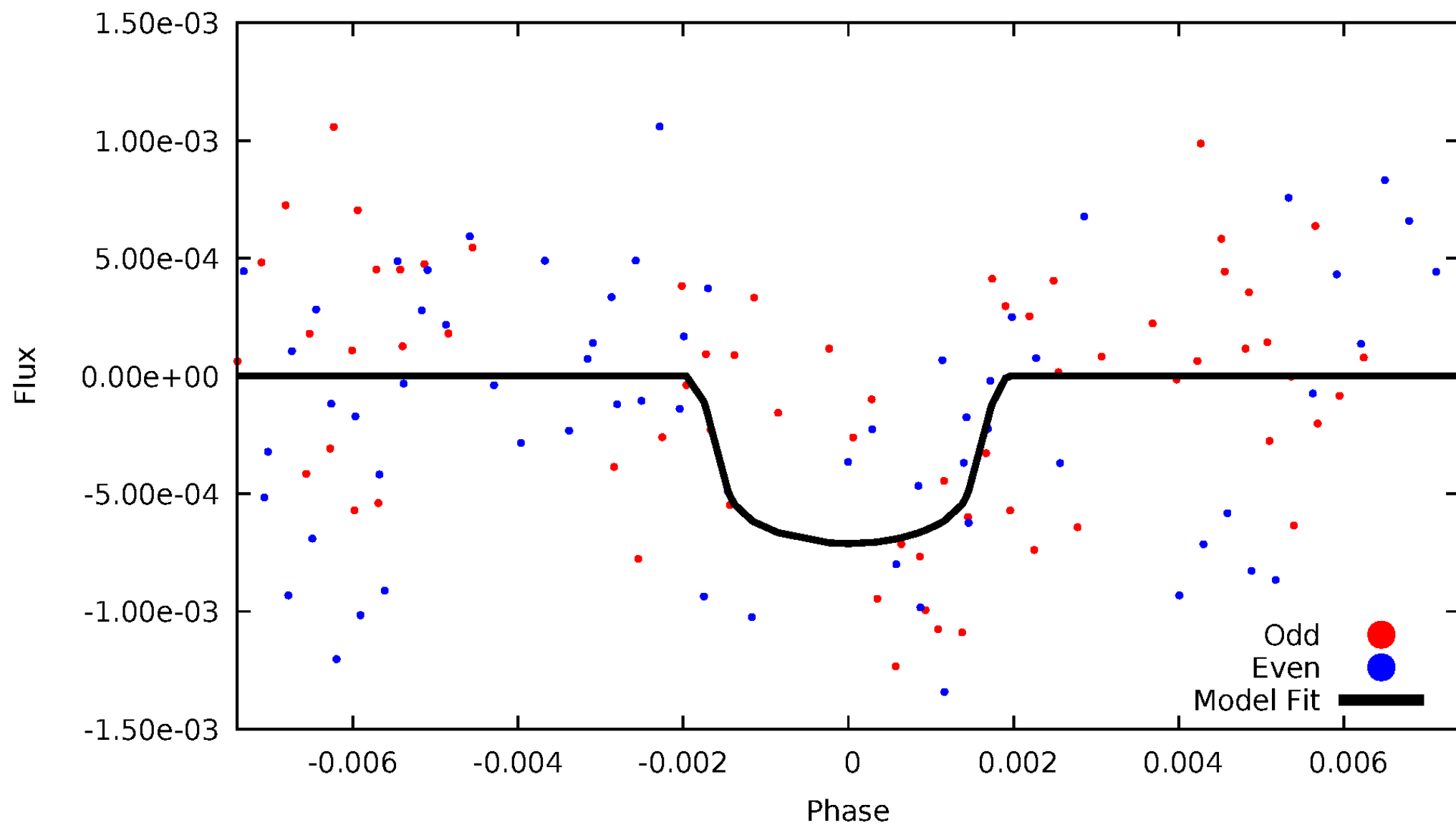


TCE 011454563-08



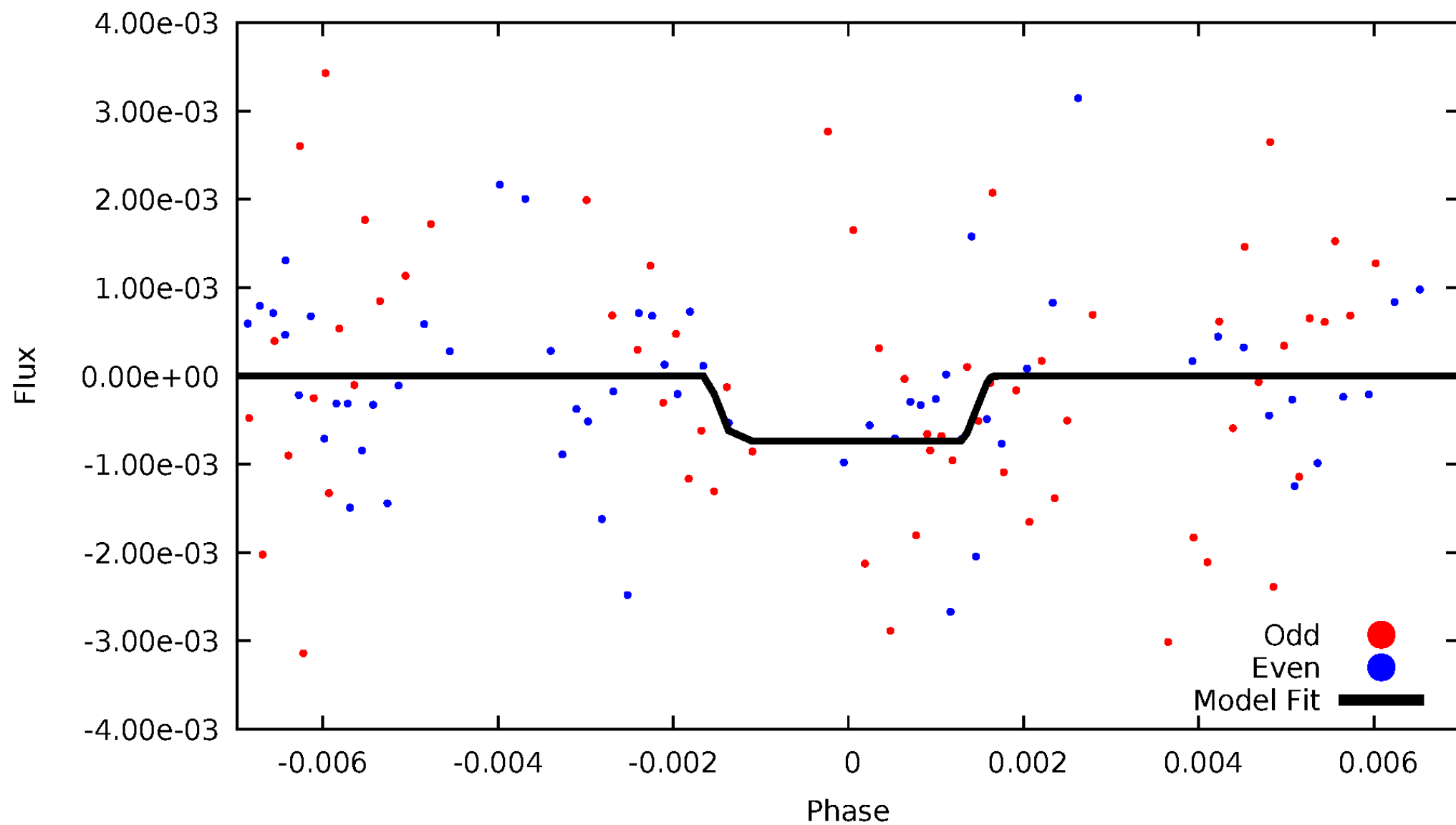
DV Odd/Even

TCE 011454563-08



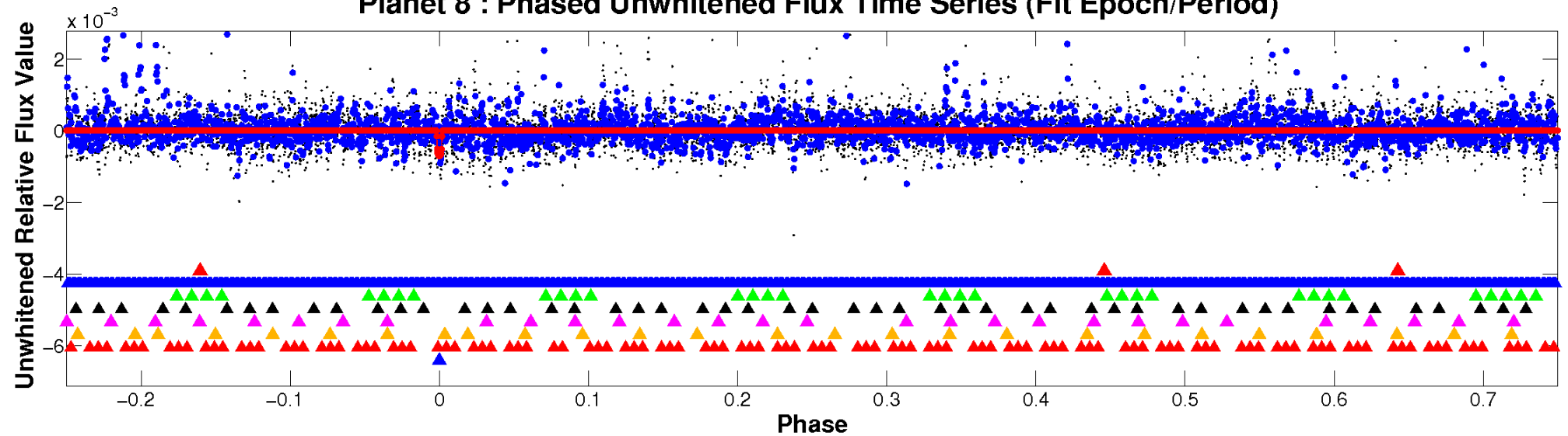
ALT Odd/Even

TCE 011454563-08

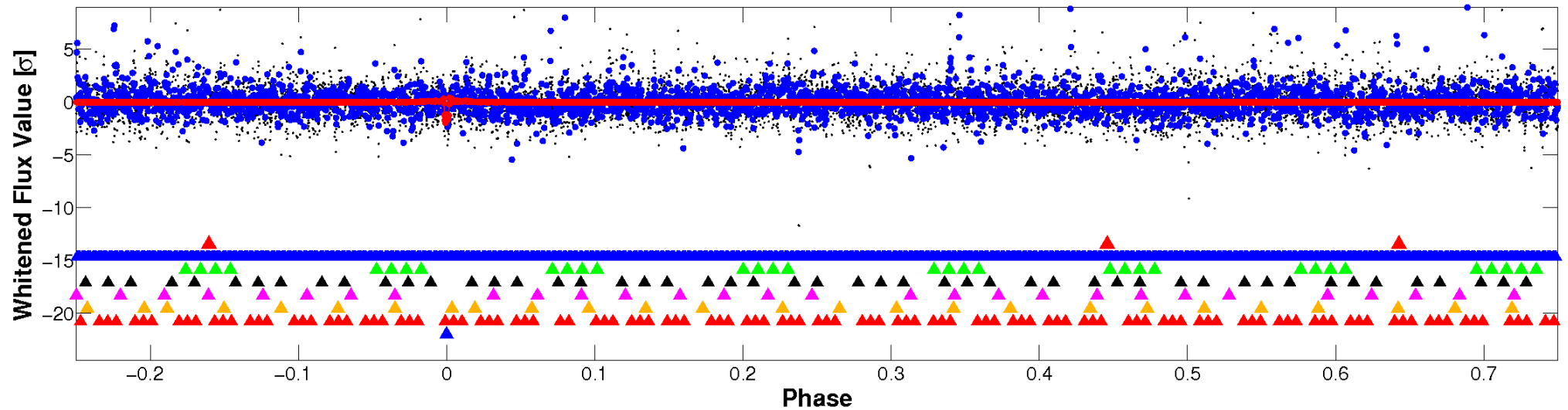


Non-Whitened Vs. Whitened Light Curve

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

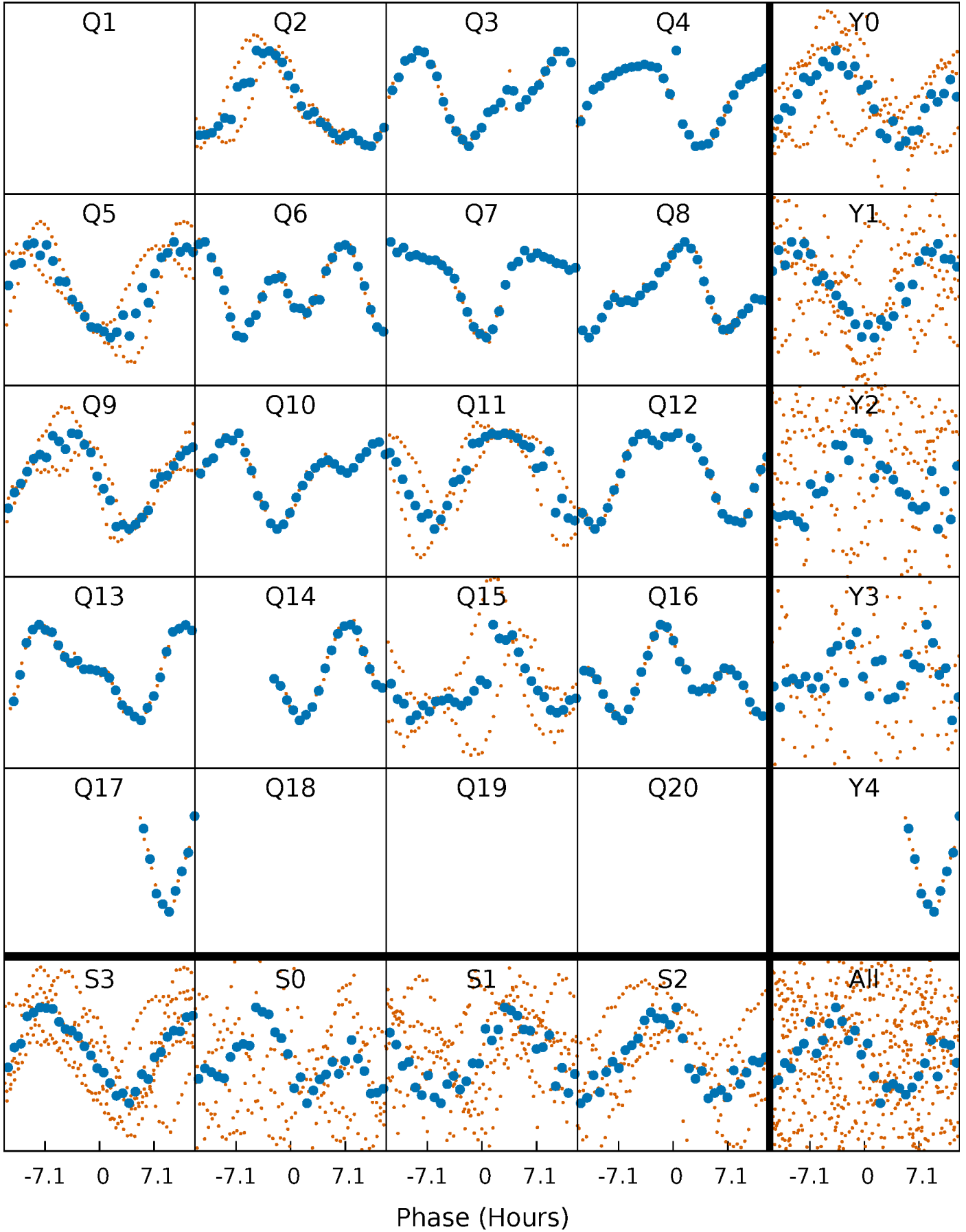


Planet 8 : Phased Whitened Flux Time Series (Fit Epoch/Period)



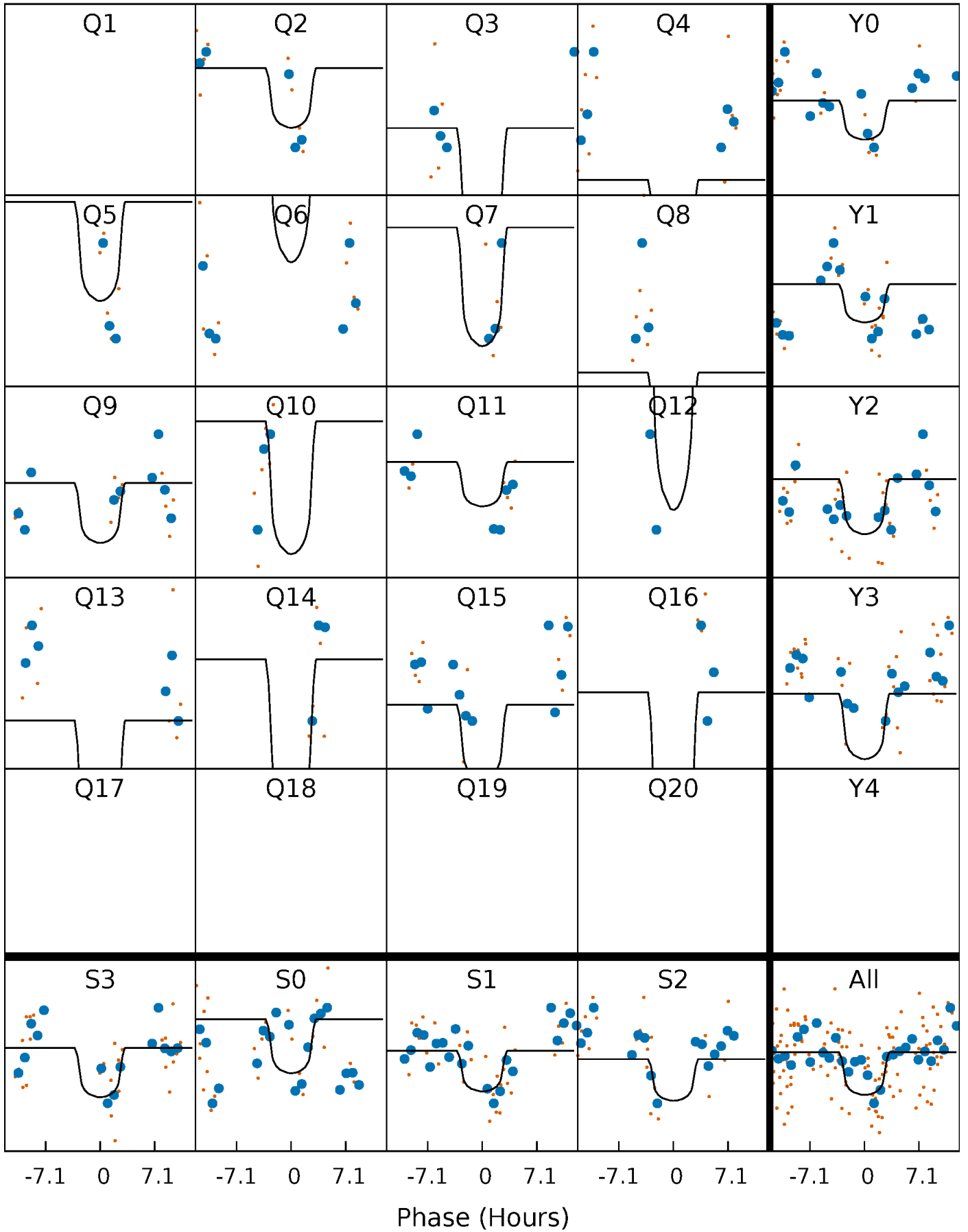
PDC Quarter-Phased Transit Curves

TCE 011454563-08 P= 70.081000 Days $T_0=184.990253$ (BKJD)



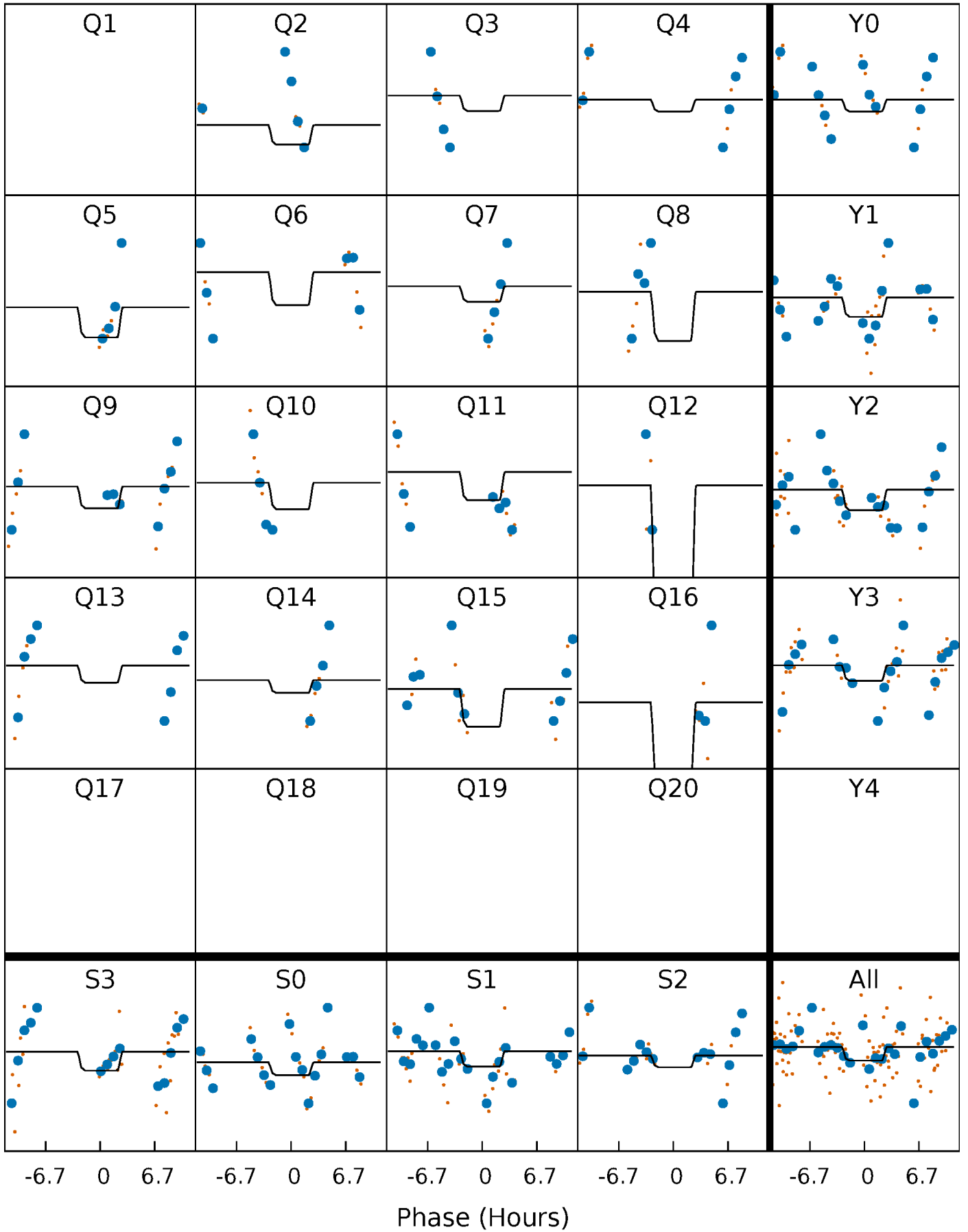
DV Quarter-Phased Transit Curves

TCE 011454563-08 P= 70.081000 Days $T_0=184.990253$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

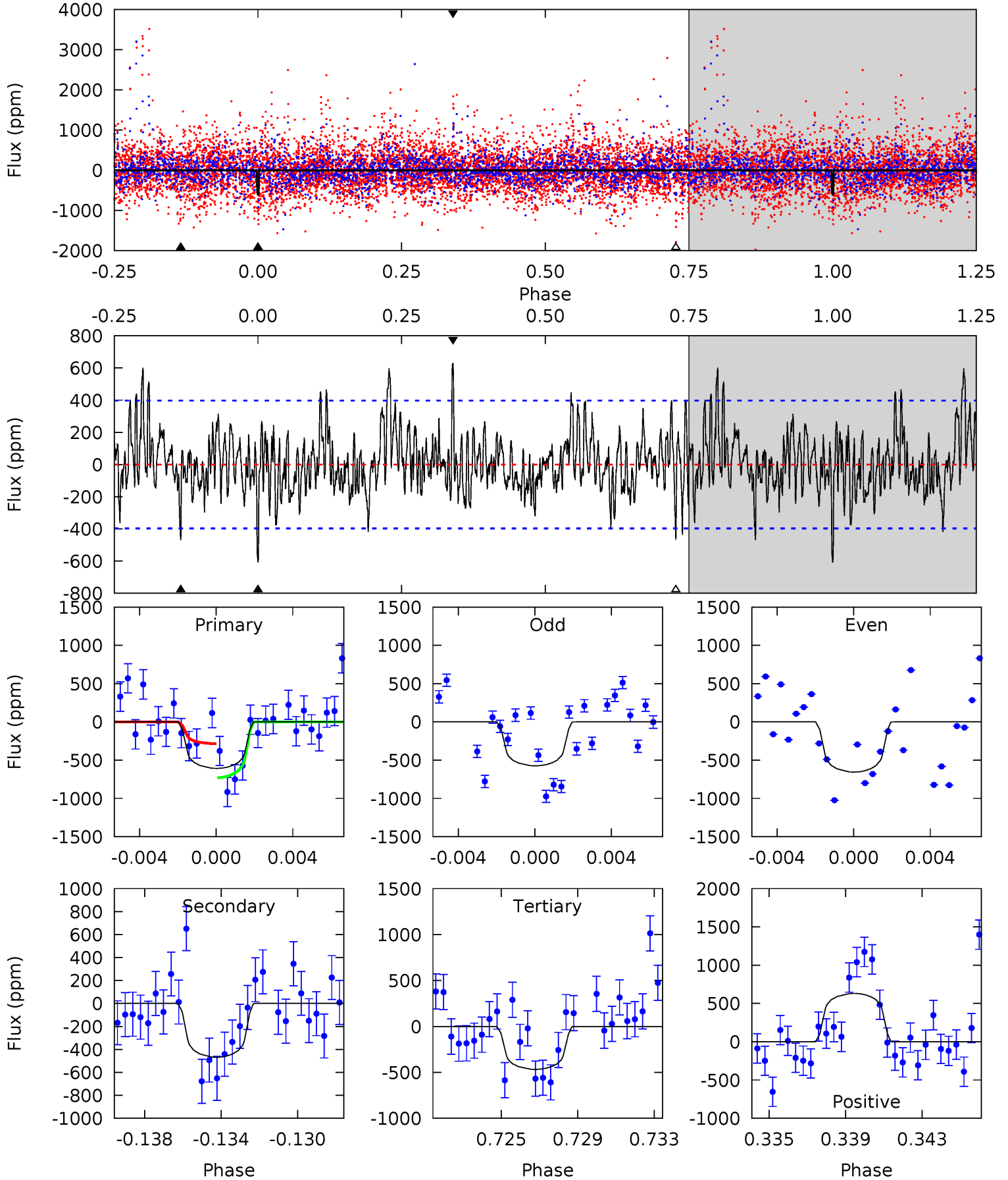
TCE 011454563-08 P= 70.082074 Days $T_0=184.989247$ (BKJD)



DV Model-Shift Uniqueness Test

011454563-08, P = 70.081000 Days, E = 114.909253 Days

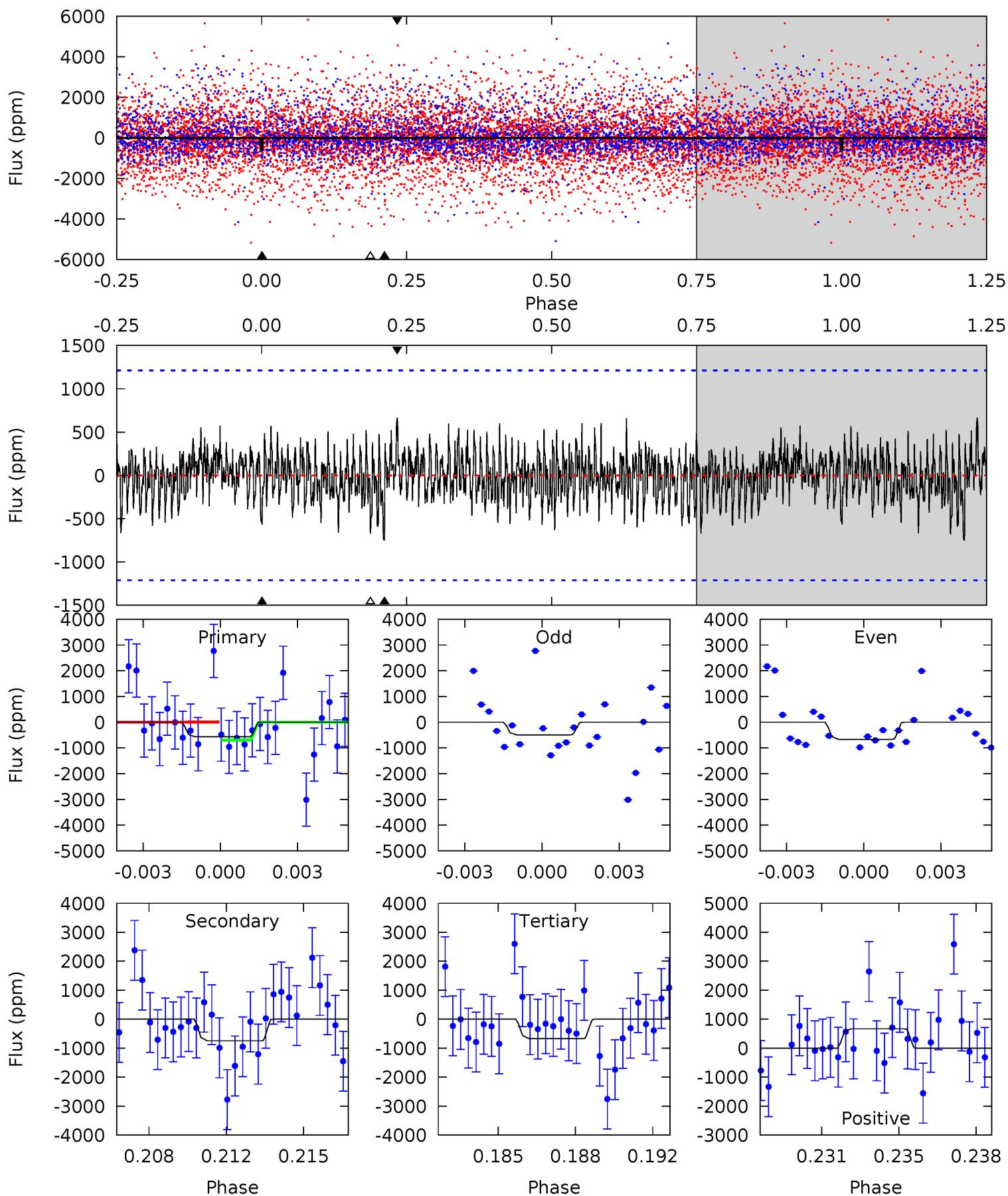
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.96	6.14	6.13	8.27	5.20	2.88	2.04	1.83	-0.31	0.02	-2.13	0.50	1.04	0.51	2.61



Alt Model-Shift Uniqueness Test

011454563-08, $P = 70.082074$ Days, $E = 114.907173$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.45	3.23	2.90	2.88	5.23	2.94	1.02	-0.45	-0.43	0.33	0.35	0.39	1.32	0.47	1.20



Stellar Parameters For KIC 011454563

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5496^{+148}_{-164}	$4.607^{+0.037}_{-0.112}$	$-0.380^{+0.300}_{-0.300}$	$0.743^{+0.129}_{-0.059}$	$0.825^{+0.080}_{-0.088}$	$2.831^{+0.532}_{-0.989}$
	+3%/-3%	+1%/-2%	+79%/-79%	+17%/-8%	+10%/-11%	+19%/-35%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 011454563-08 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-469 ± 76	$2.36^{+0.68}_{-0.65}$	530^{+22}_{-21}	4882^{+689}_{-477}	4381^{+3992}_{-1776}
Alt.	-749 ± 231	$2.27^{+0.67}_{-0.66}$	532^{+25}_{-22}	5451^{+1084}_{-661}	7460^{+8264}_{-3450}

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

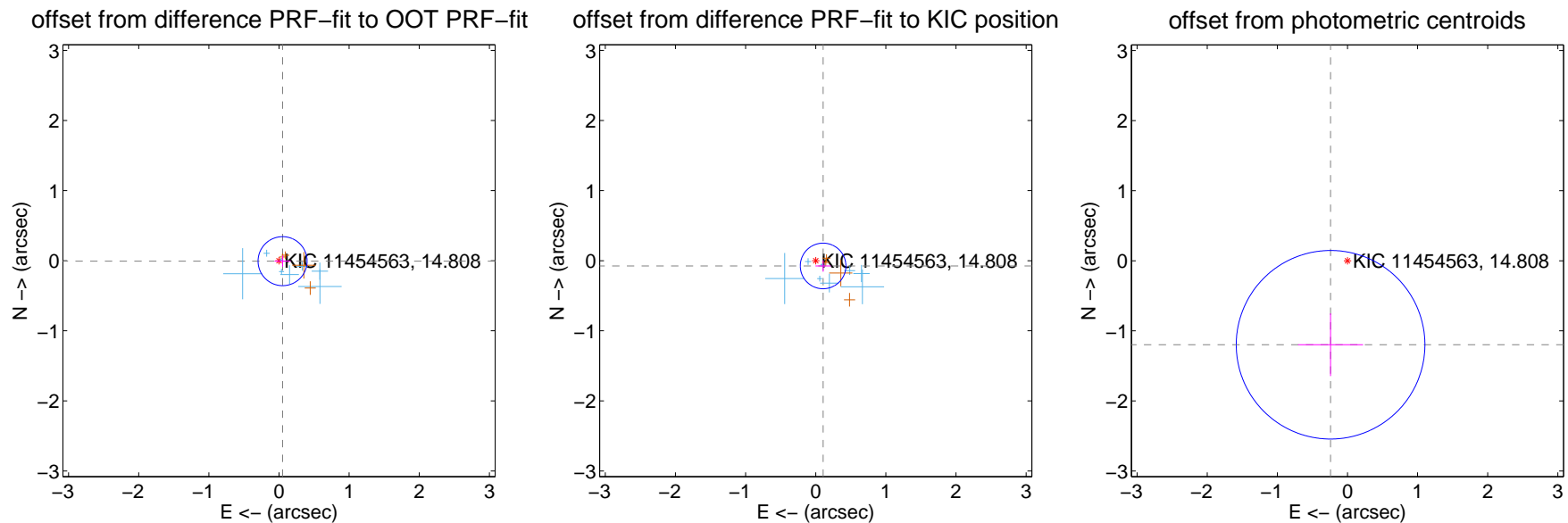
DV Centroid Data

Supplemental centroid analysis for 011454563-08. Kepler magnitude: 14.81. Transit SNR 8.02

There are 8 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.052 ± 0.116	0.44	-0.051 ± 0.115	-0.007 ± 0.080
PRF-fit source offset from KIC position	0.129 ± 0.108	1.19	-0.105 ± 0.109	-0.075 ± 0.082
photometric centroid source offset	1.22 ± 0.45	2.73	0.24 ± 0.46	-1.20 ± 0.45



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

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

Q1 no difference image



Q1 no OOT image



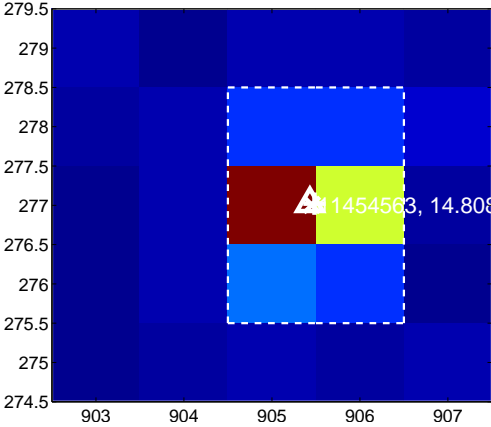
Q2 no difference image



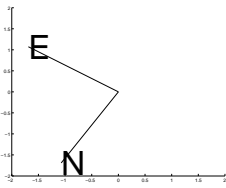
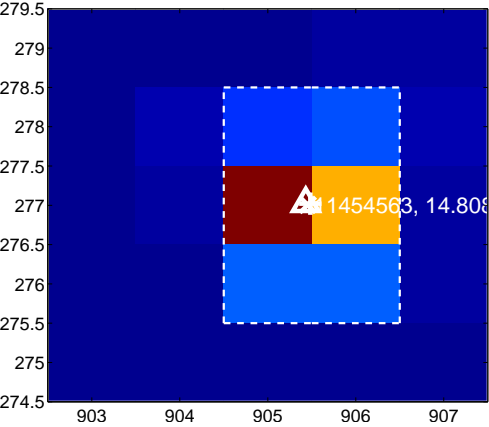
Q2 no OOT image



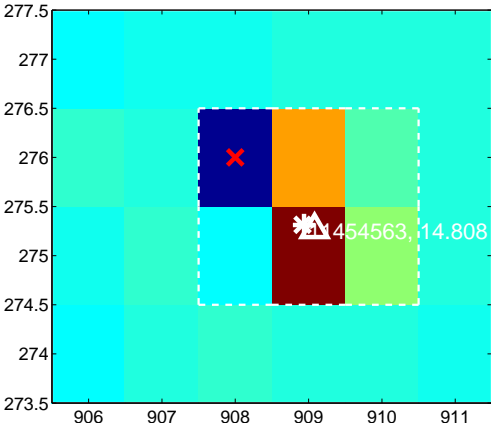
Q3 difference image



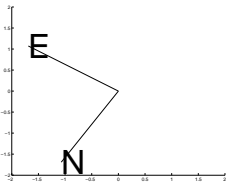
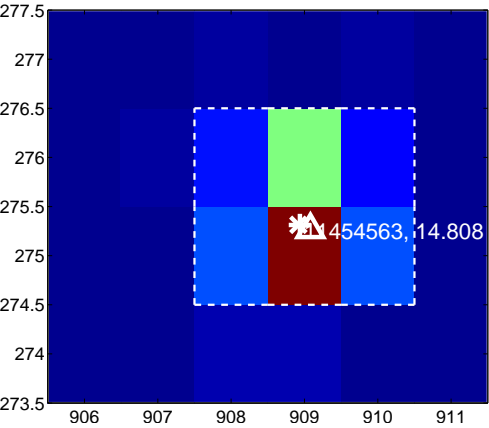
Q3 OOT image



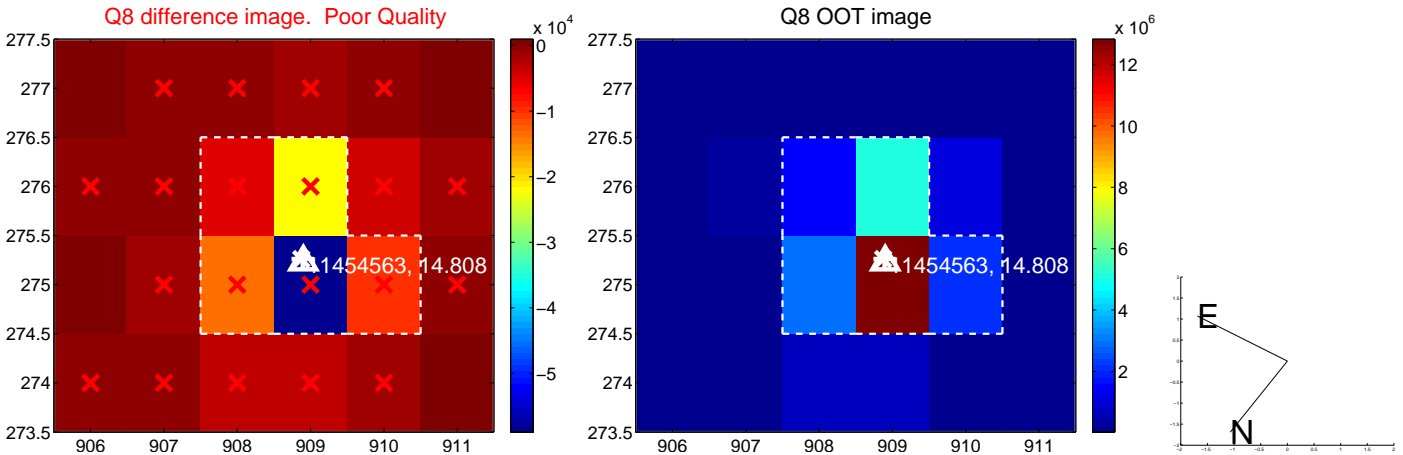
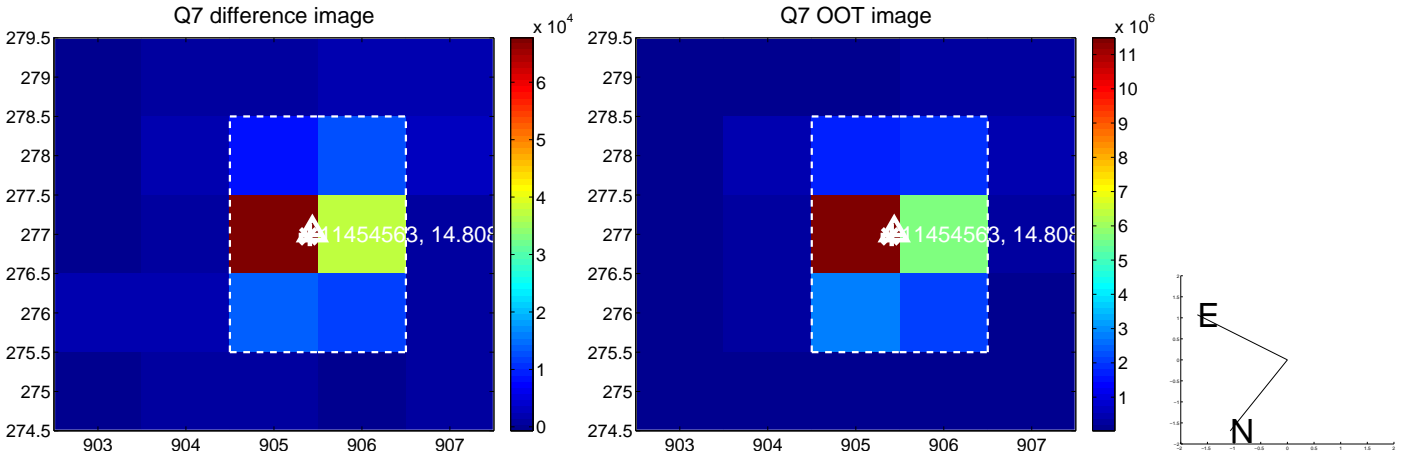
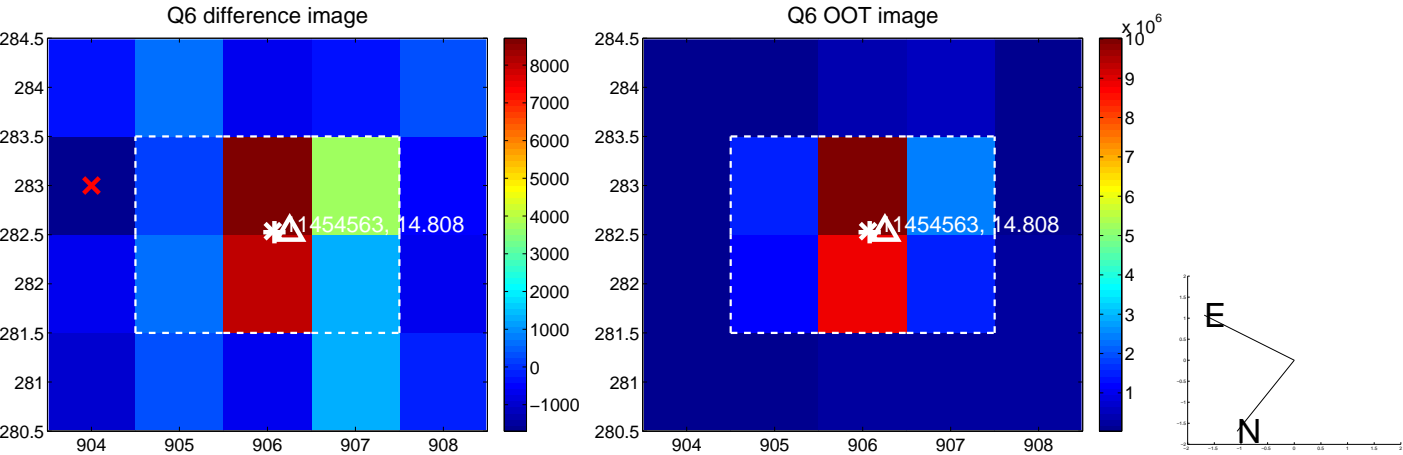
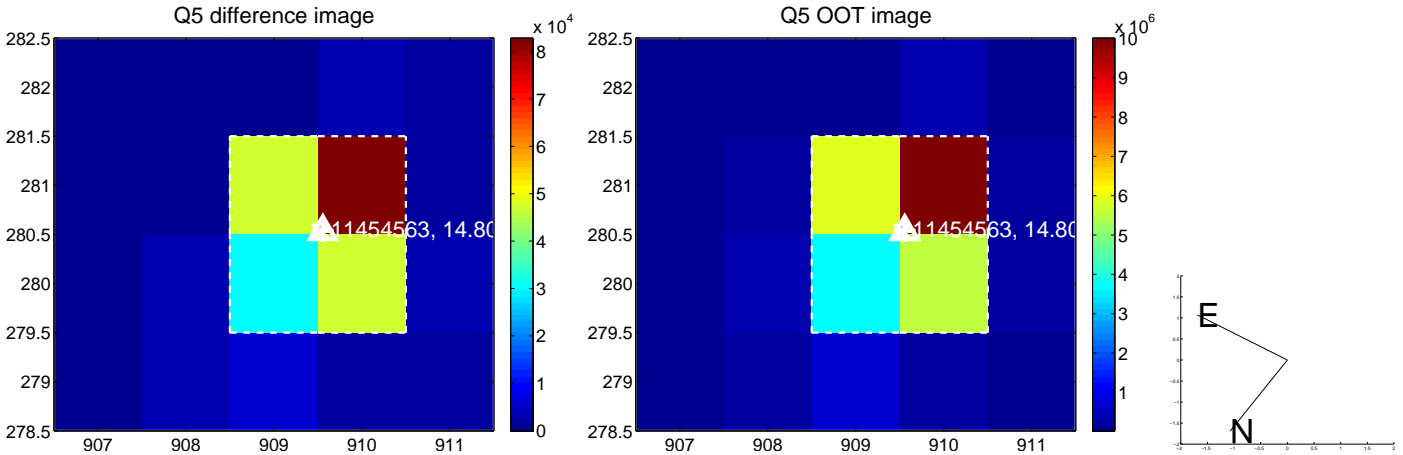
Q4 difference image



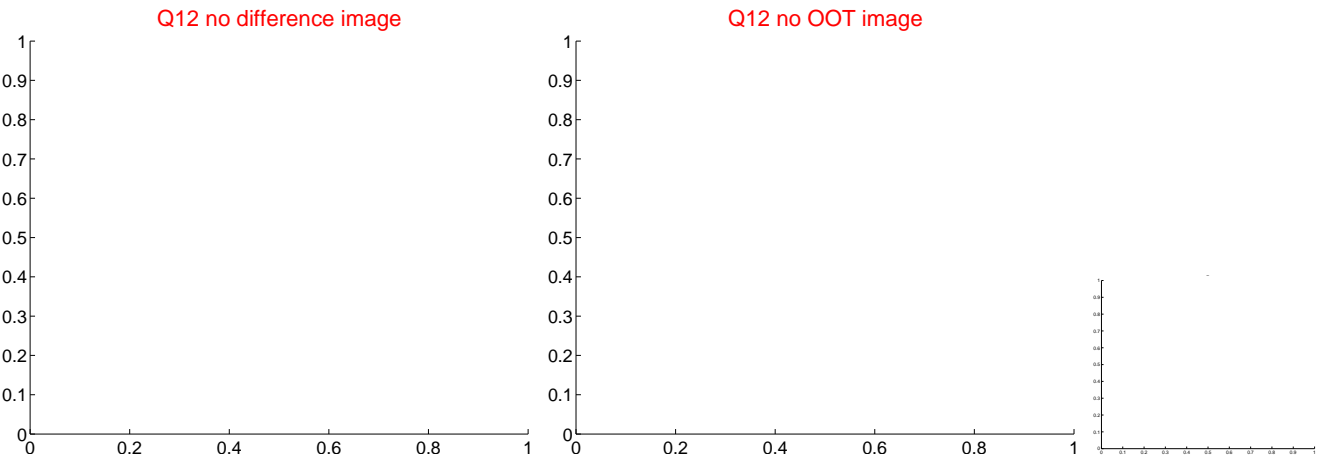
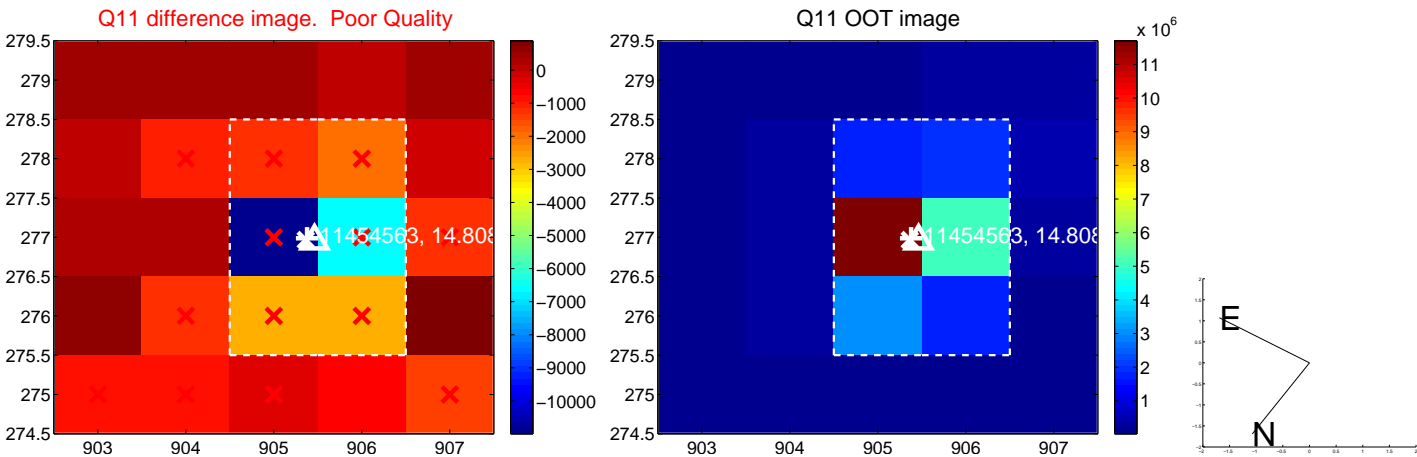
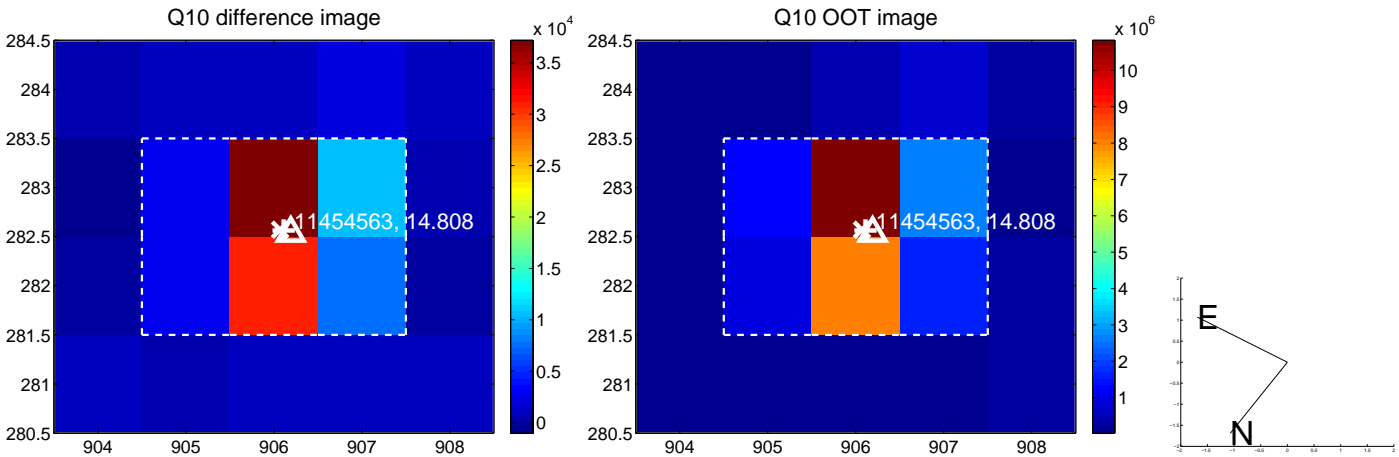
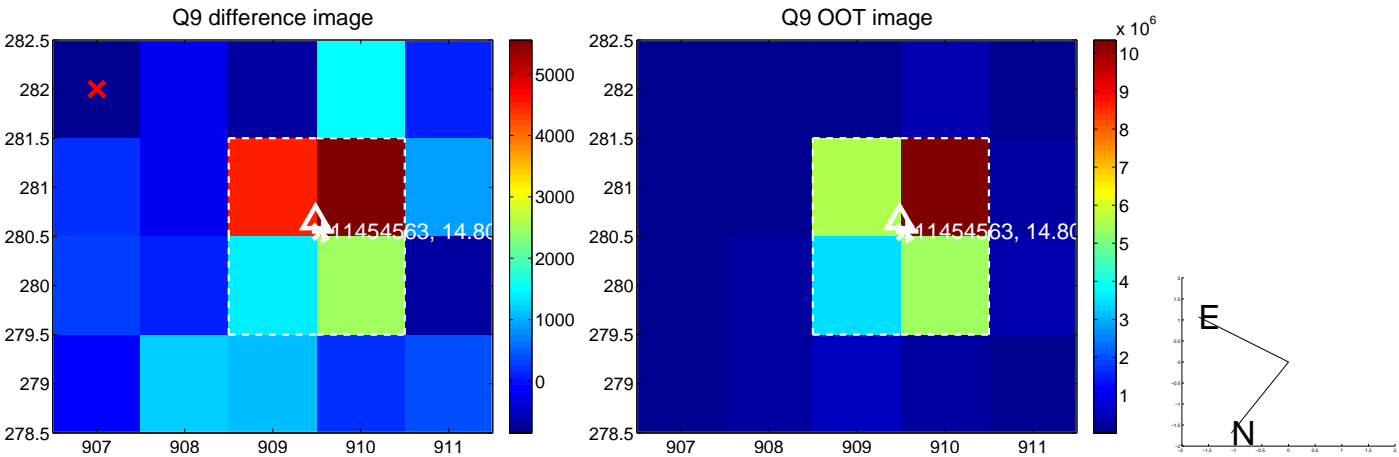
Q4 OOT image



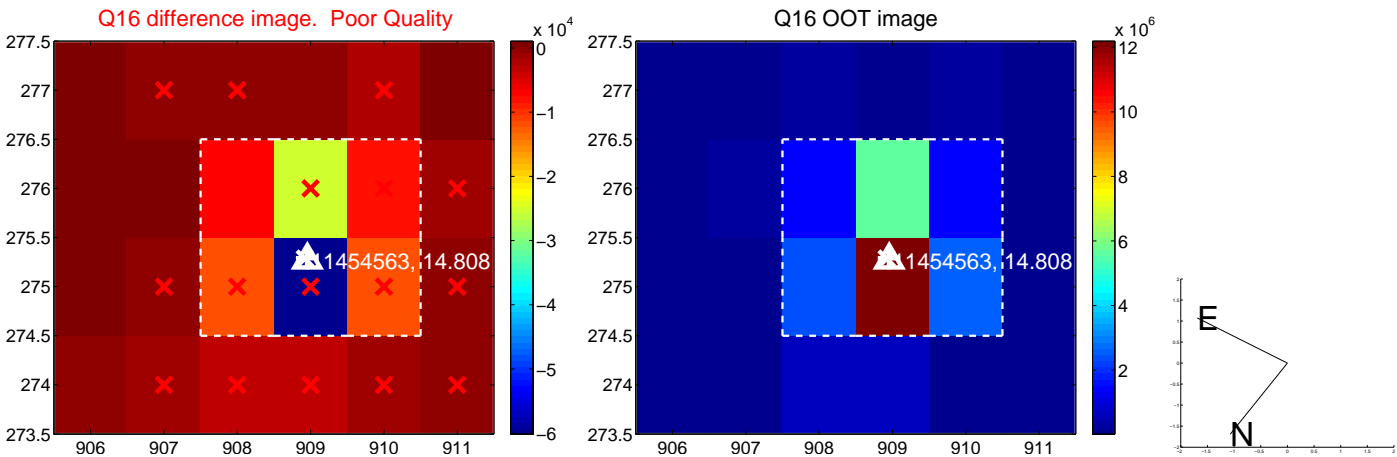
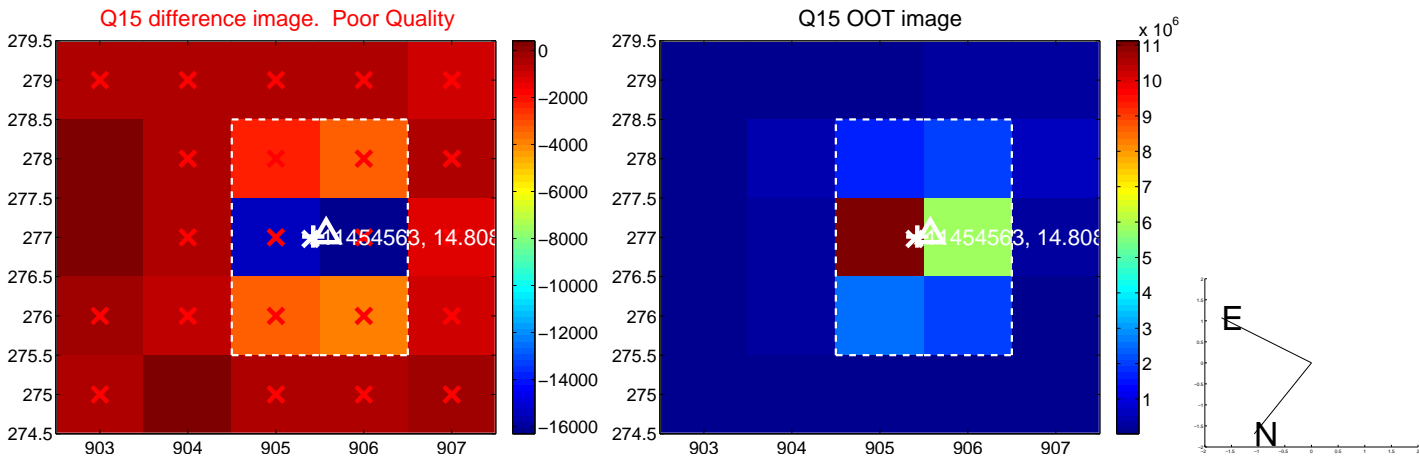
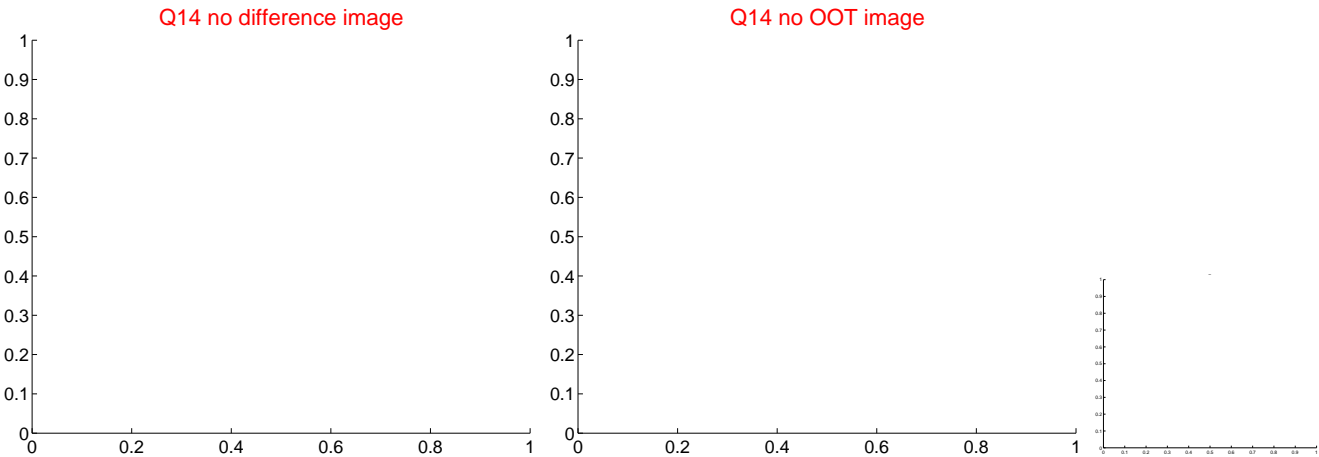
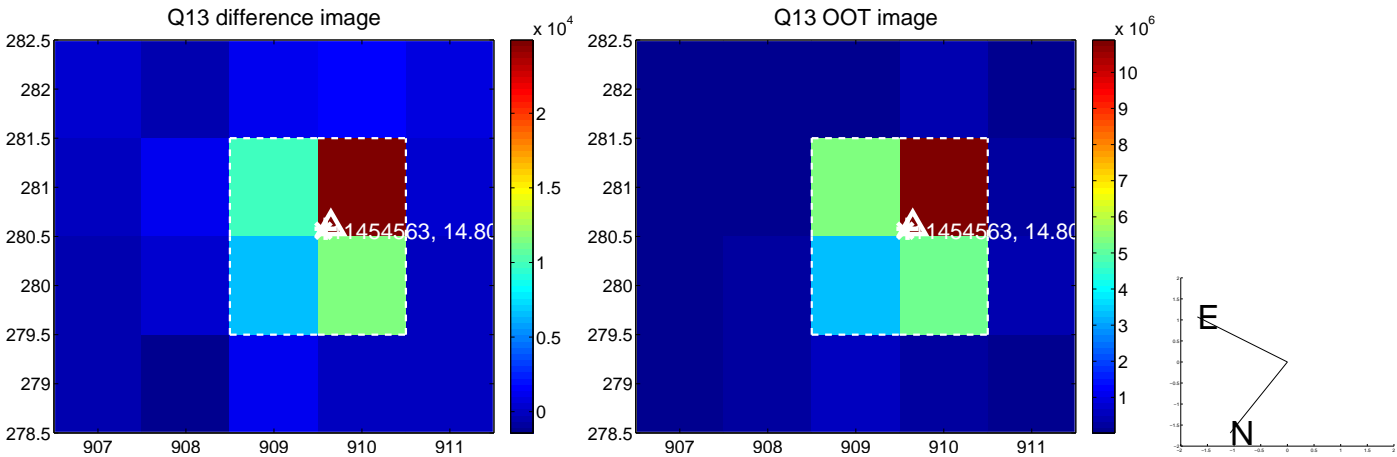
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



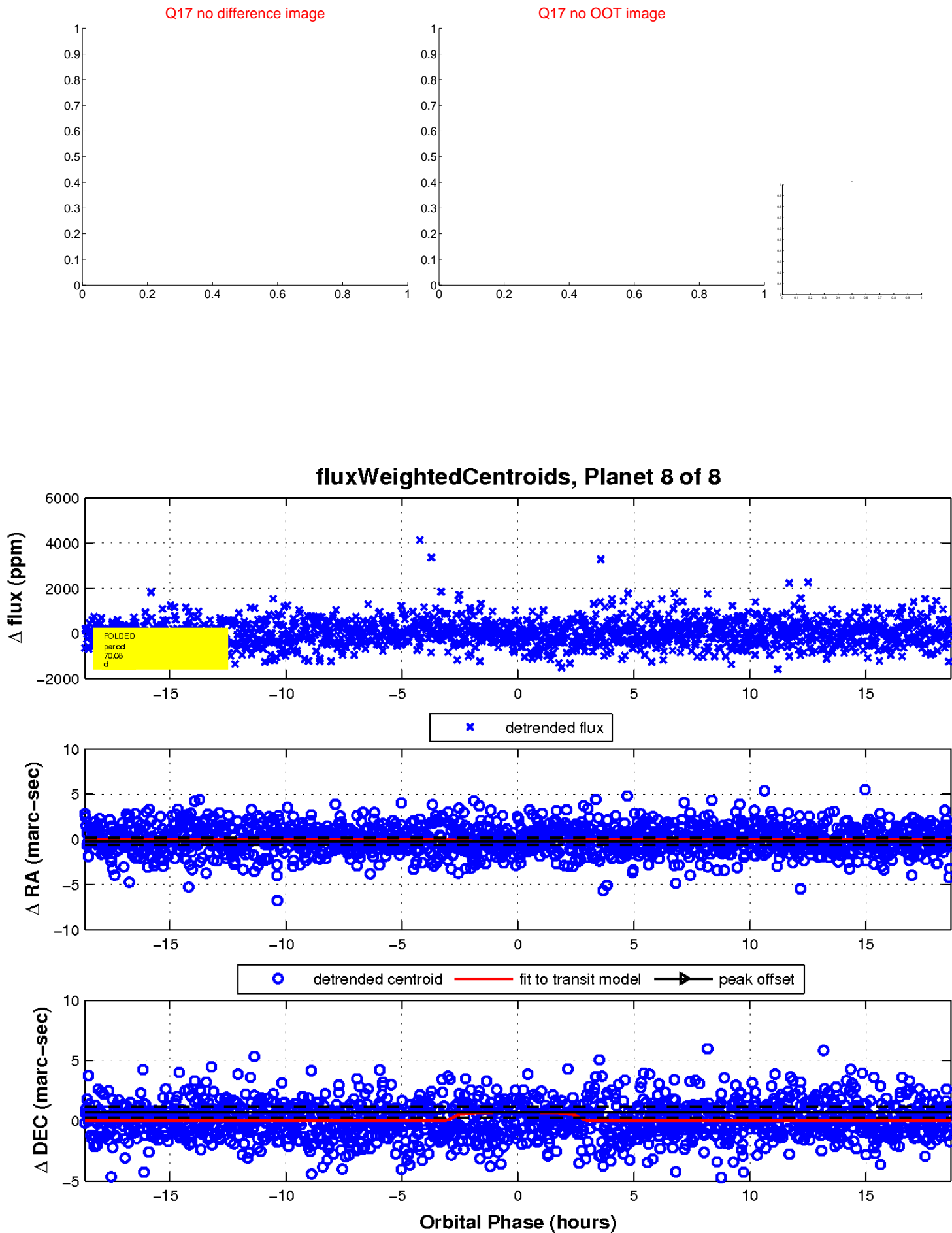
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

