

KIC 008907769

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})
008907769-01	OBS	No	1.772465	132.929803	12.2	11.242	8.2	6.1	1.86	5947	0.65	4575.94
008907769-02	OBS	No	151.057444	137.409086	582.6	25.634	13.9	16.9	1.86	5947	5.86	12.20
008907769-03	OBS	No	503.309287	195.959885	191.9	6.232	11.0	8.4	1.86	5947	2.88	2.45
008907769-04	OBS	No	89.750594	146.133439	241.4	3.230	8.7	8.5	1.86	5947	5.82	24.43
008907769-05	OBS	No	40.101113	139.926442	155.3	1.538	7.4	8.5	1.86	5947	2.70	71.51

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008907769-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_UNRESOLVED_OFFSET
008907769-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS
008907769-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
008907769-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008907769-05	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—HALO_GHOST

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

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

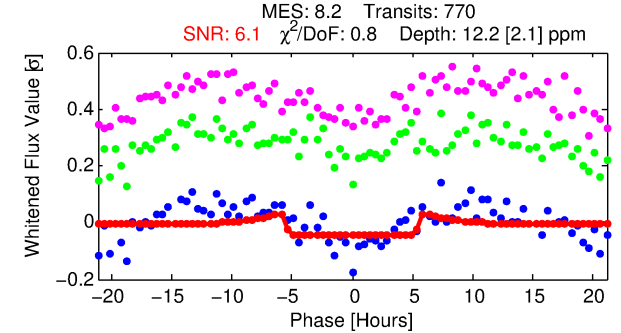
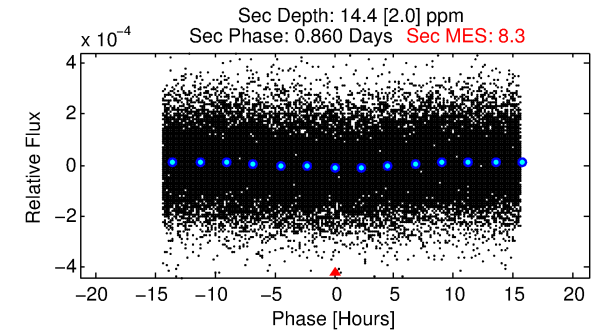
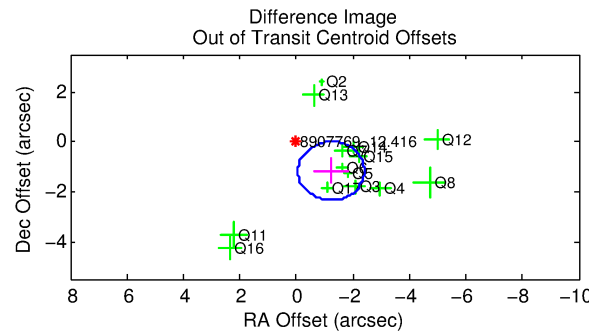
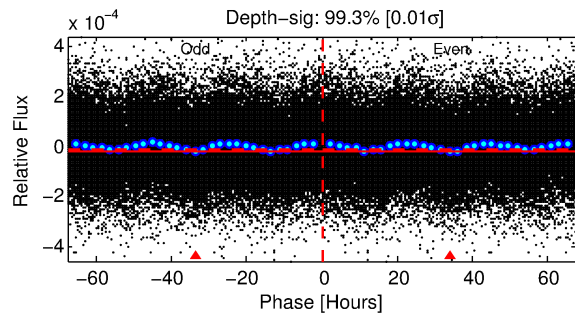
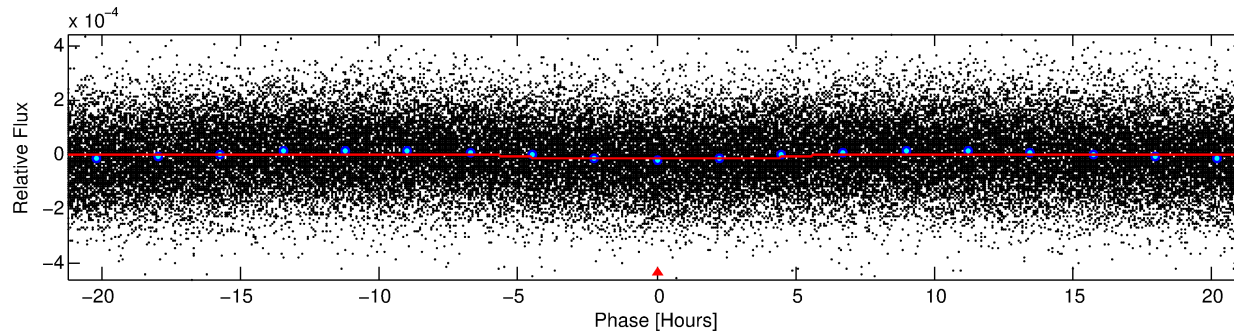
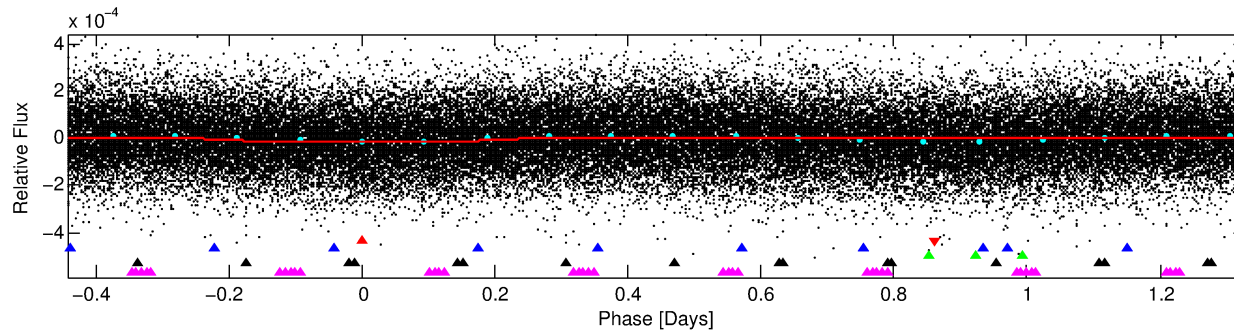
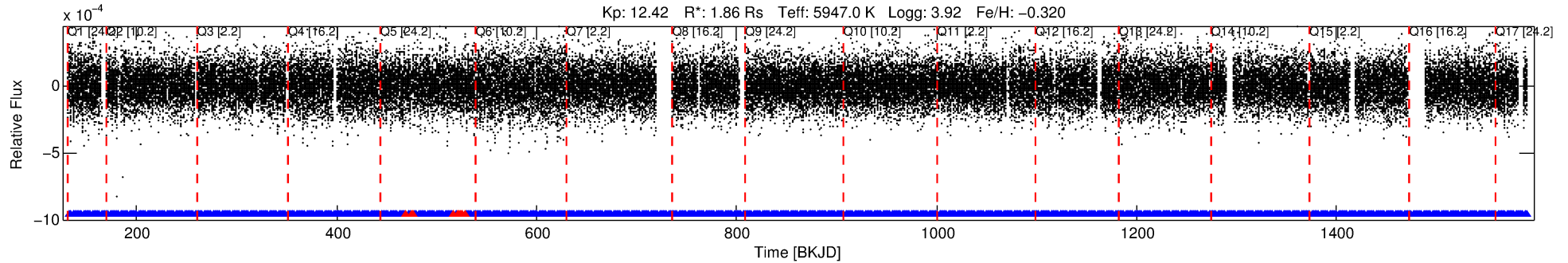
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008907769-01

No Significant Match Found

DV One-Page Summary

KIC: 8907769 Candidate: 1 of 5 Period: 1.772 d



DV Fit Results:

Period = 1.77247 [0.00003] d
Epoch = 132.9298 [0.0084] BKJD
Rp/R* = 0.0032 [0.0037]
a/R* = 1.36 [3.48]
b = 0.01 [412.71]
Seff = 4575.94 [2443.46]
Teq = 2097 [280] K
Rp = 0.65 [0.77] Re
a = 0.0291 [0.0092] AU
Ag = 16.03 [37.89] [0.40 σ]
Teffp = 6489 [3747] K [1.17 σ]

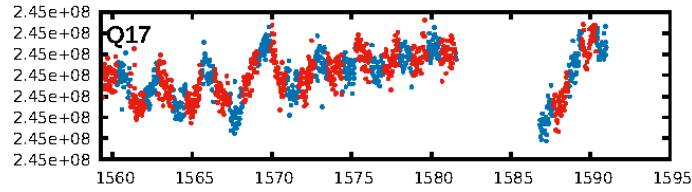
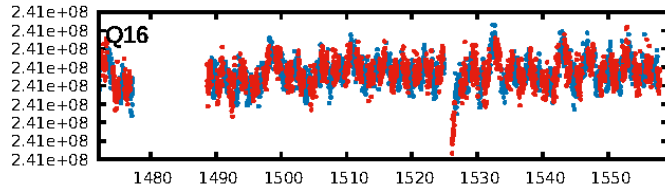
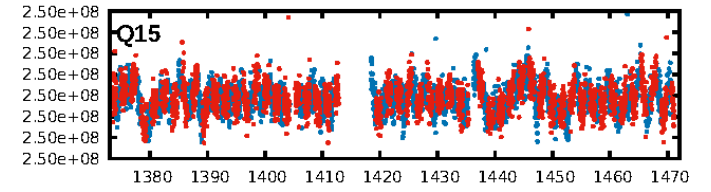
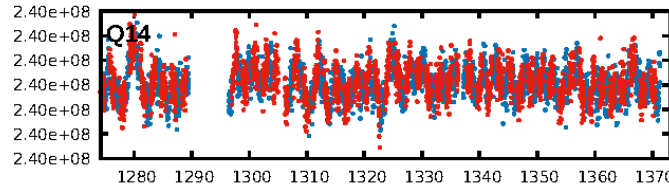
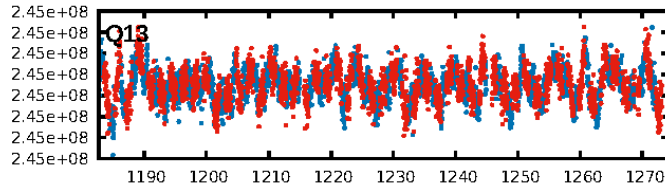
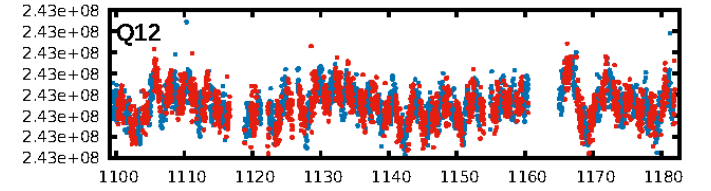
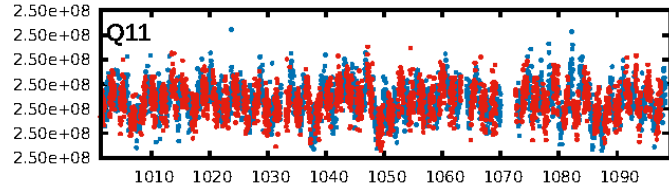
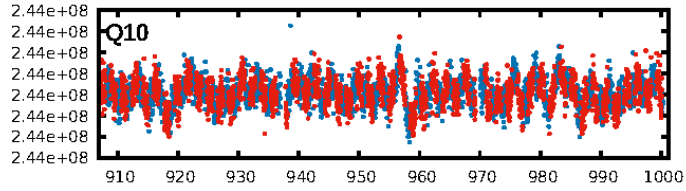
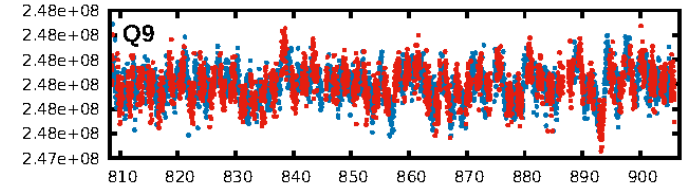
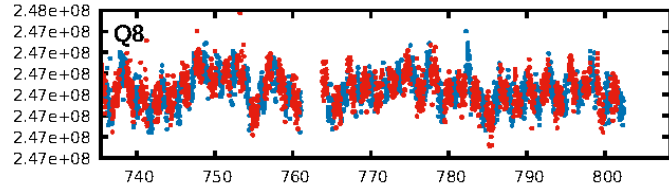
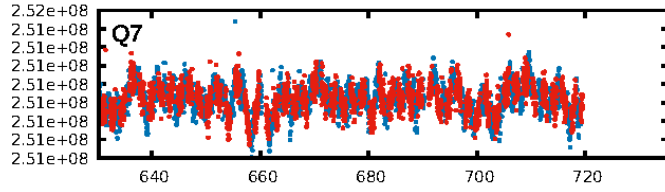
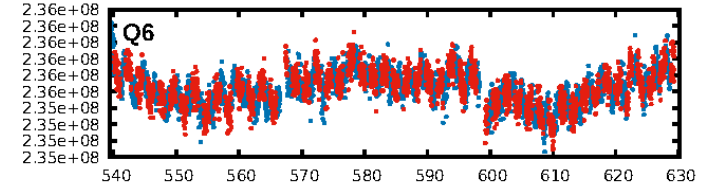
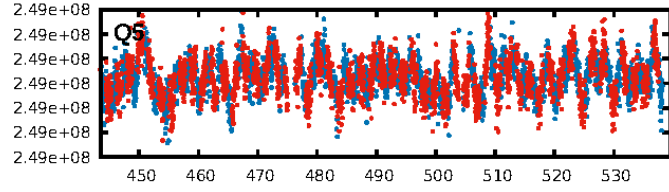
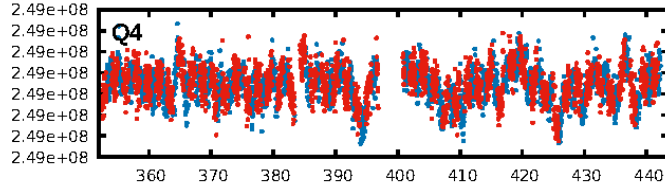
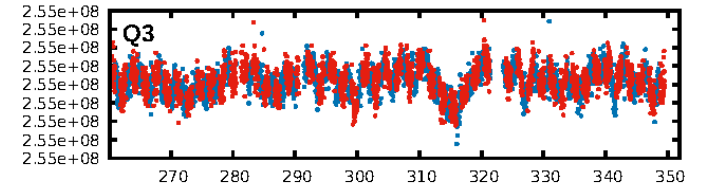
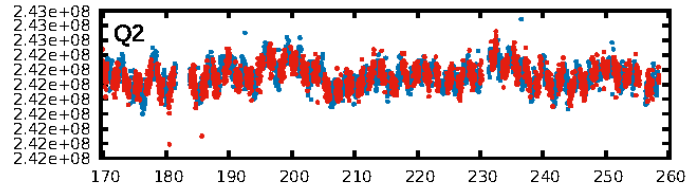
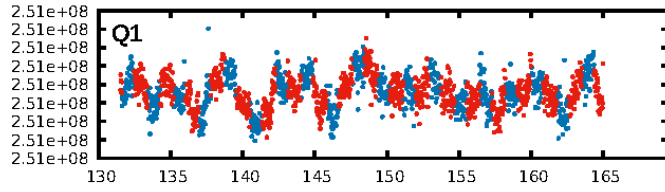
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [81.07 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 8.29e-07
RollingBand-fgt: 0.99 [727/736]
GhostDiagnostic-chr: 1.95
Centroid-sig: N/A
Centroid-so: 2.215 arcsec [2.42 σ]
OotOffset-rm: 1.697 arcsec [4.34 σ]
KicOffset-rm: 1.586 arcsec [3.92 σ]
OotOffset-st: 3/4/4/3 [14]
KicOffset-st: 3/4/4/3 [14]
DiffImageQuality-fgm: 0.57 [8/14]
DiffImageOverlap-fno: 1.00 [17/17]

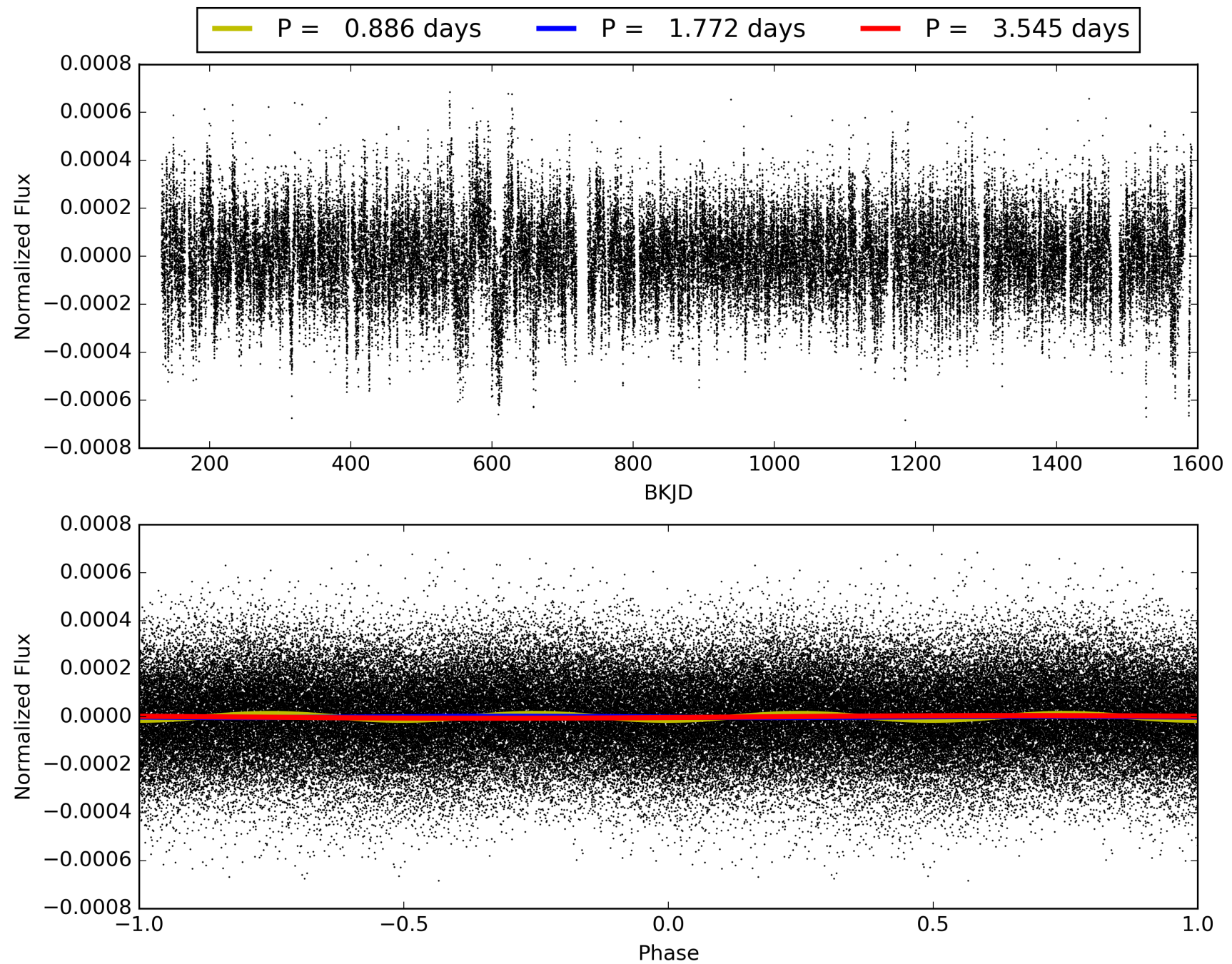
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 008907769-01, PDC Light Curves

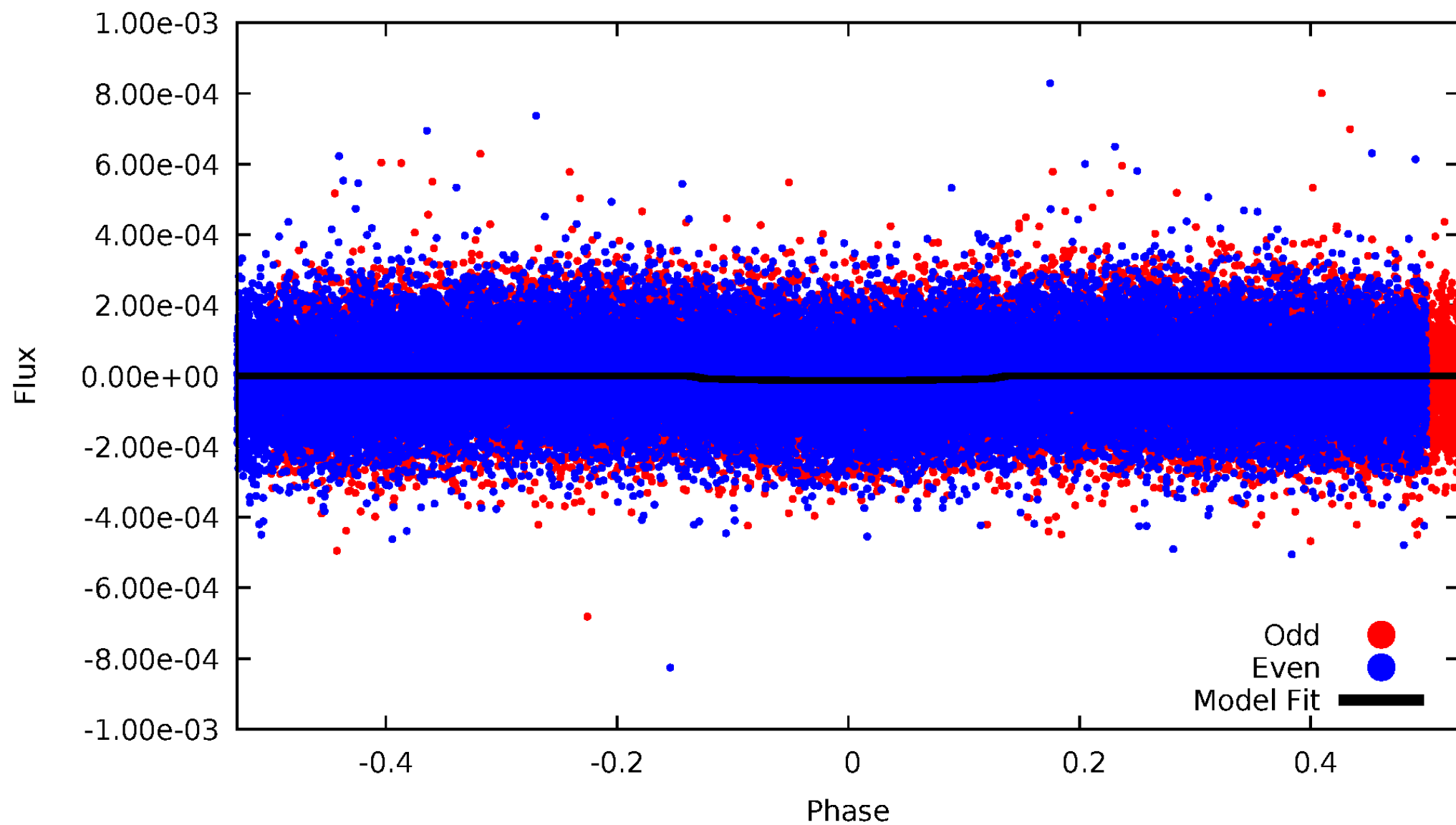


TCE 008907769-01



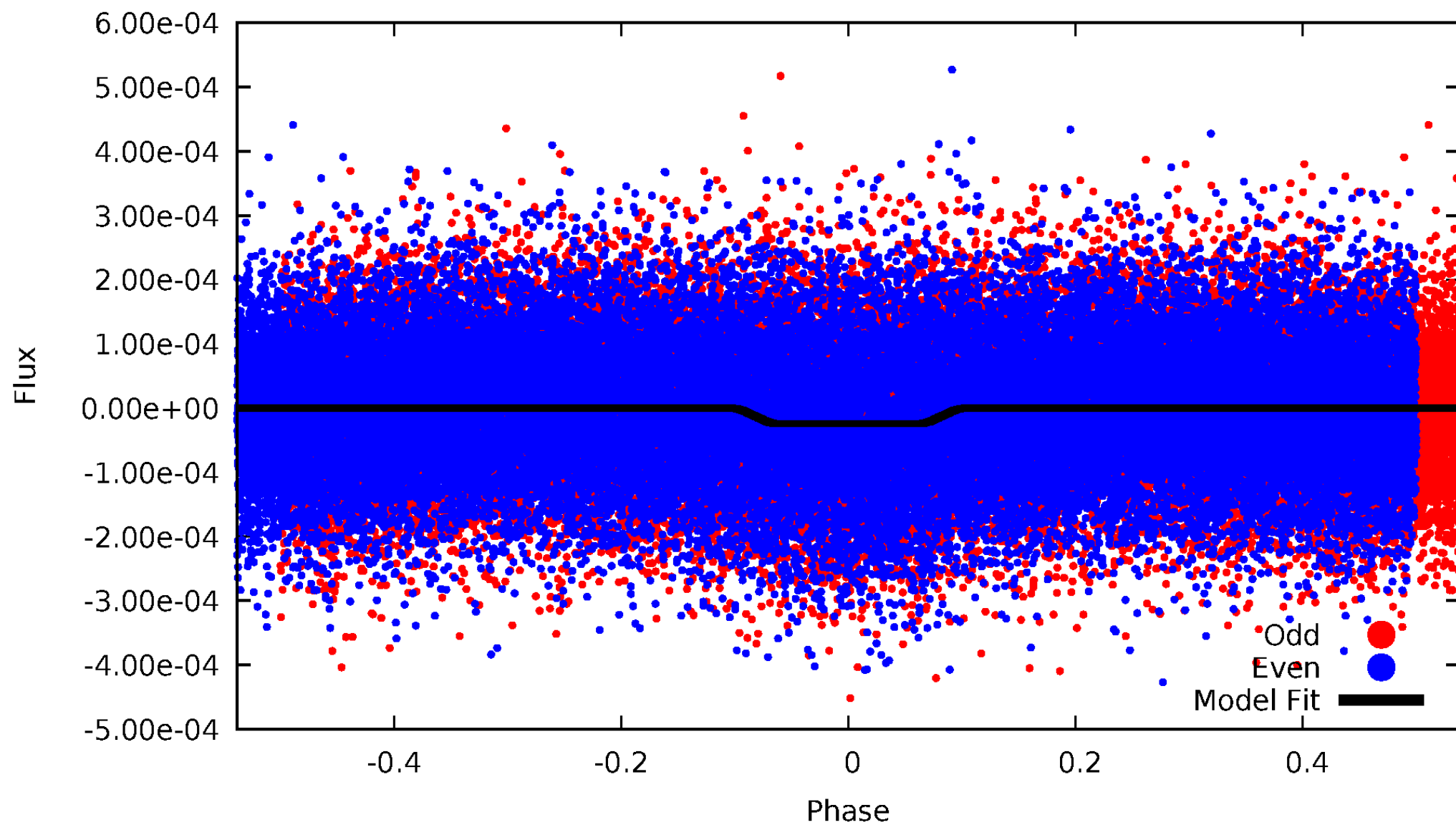
DV Odd/Even

TCE 008907769-01

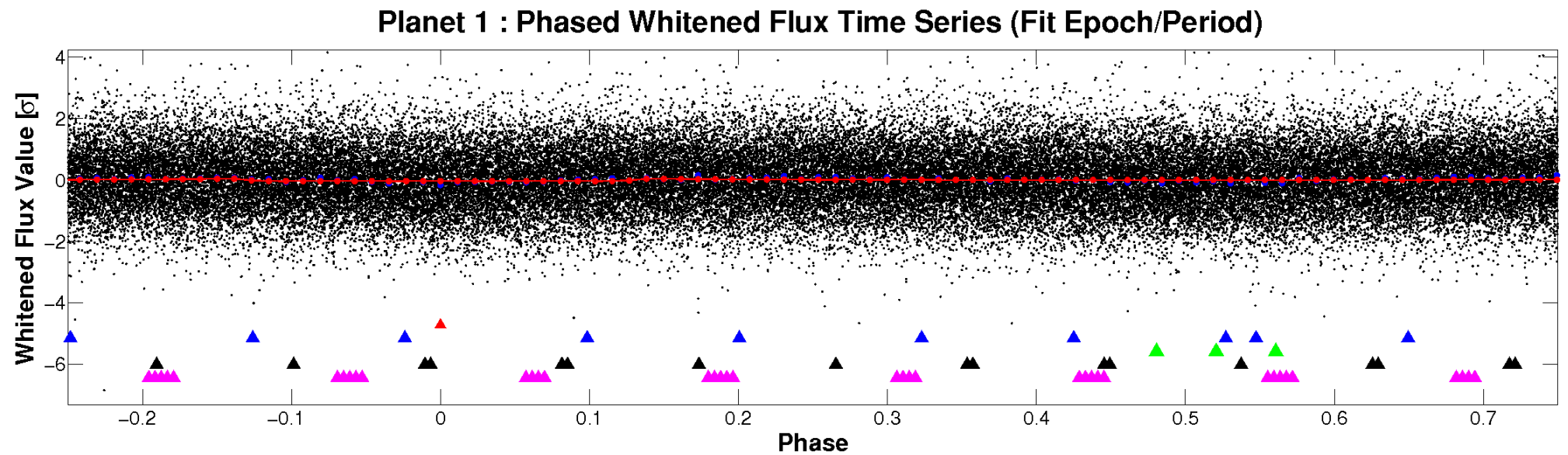
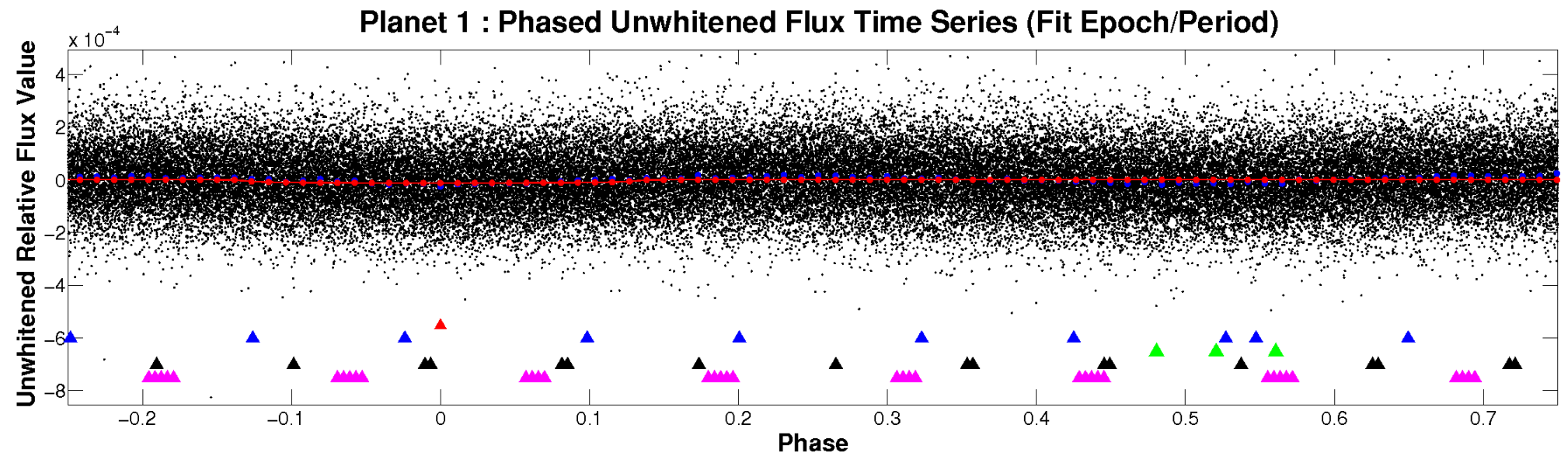


ALT Odd/Even

TCE 008907769-01

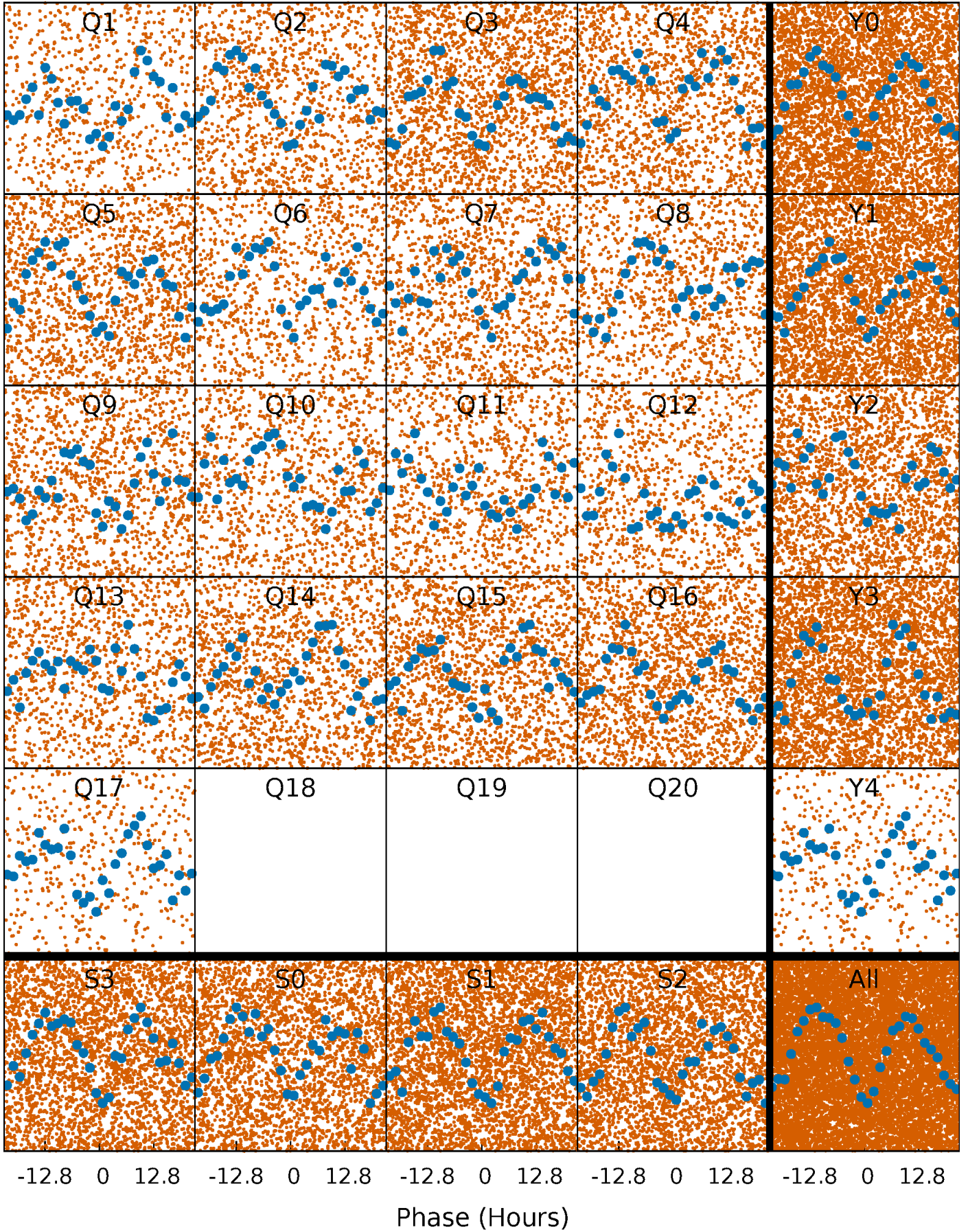


Non-Whitened Vs. Whitened Light Curve



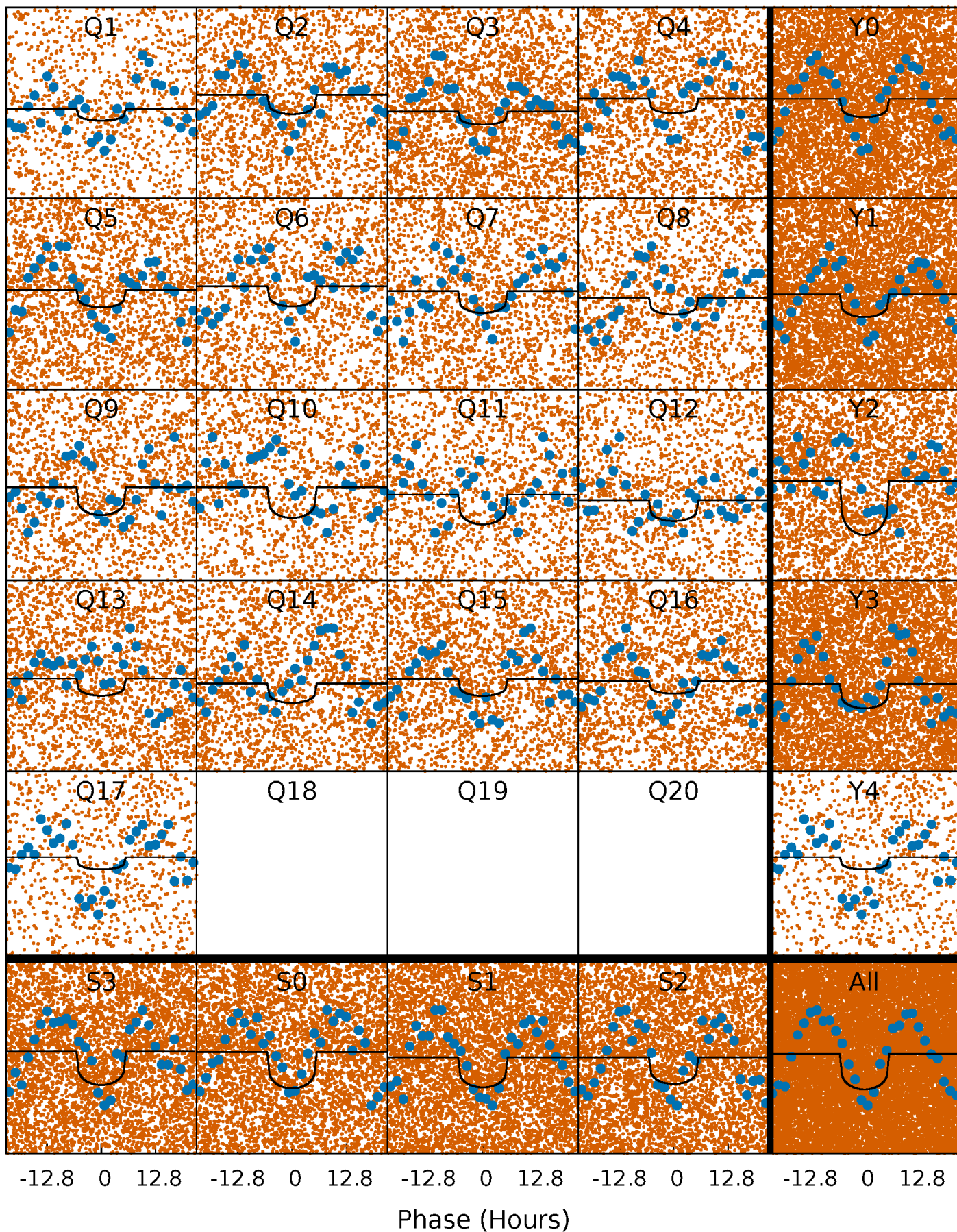
PDC Quarter-Phased Transit Curves

TCE 008907769-01 P= 1.772465 Days $T_0=132.929803$ (BKJD)



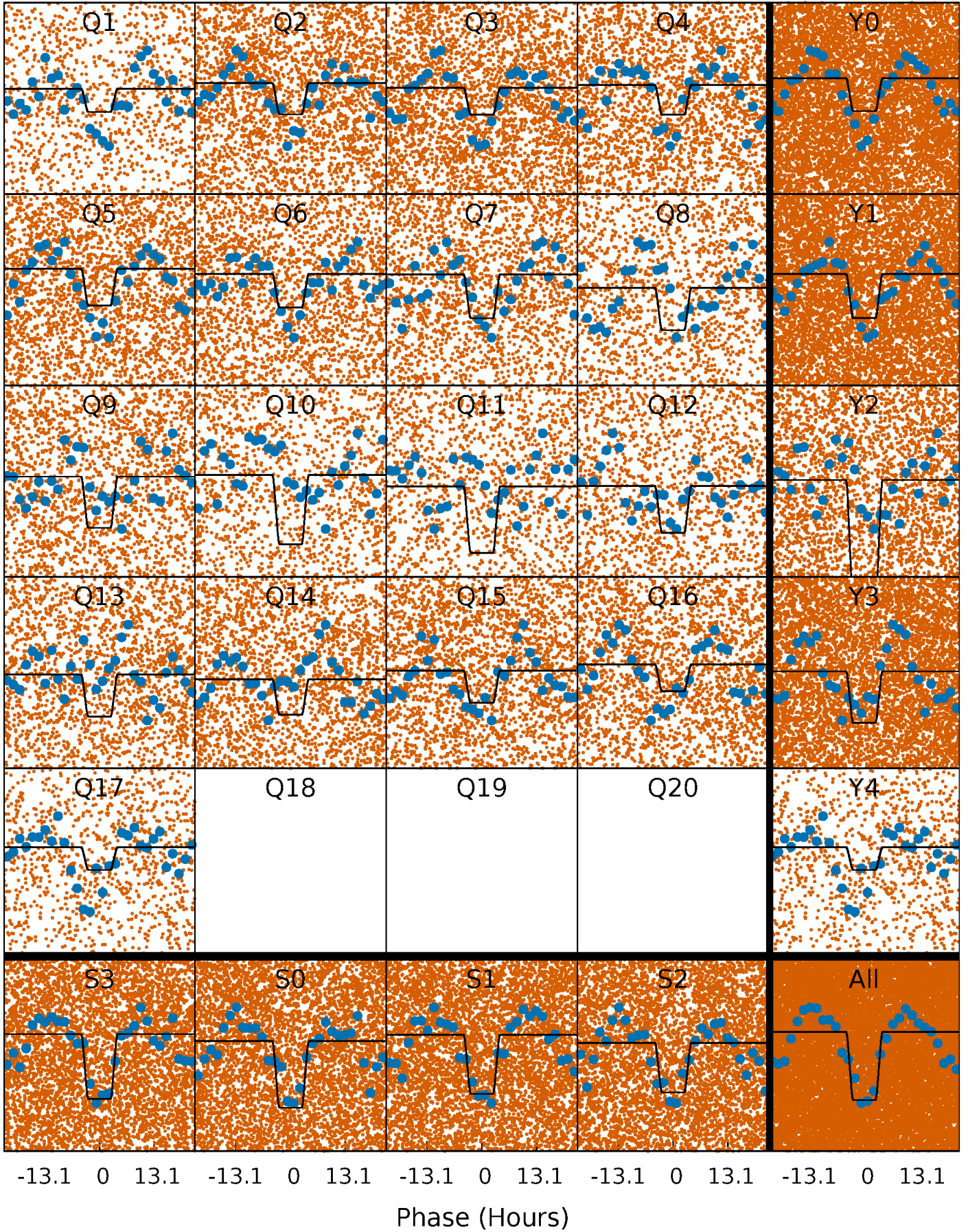
DV Quarter-Phased Transit Curves

TCE 008907769-01 P= 1.772465 Days $T_0=132.929803$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

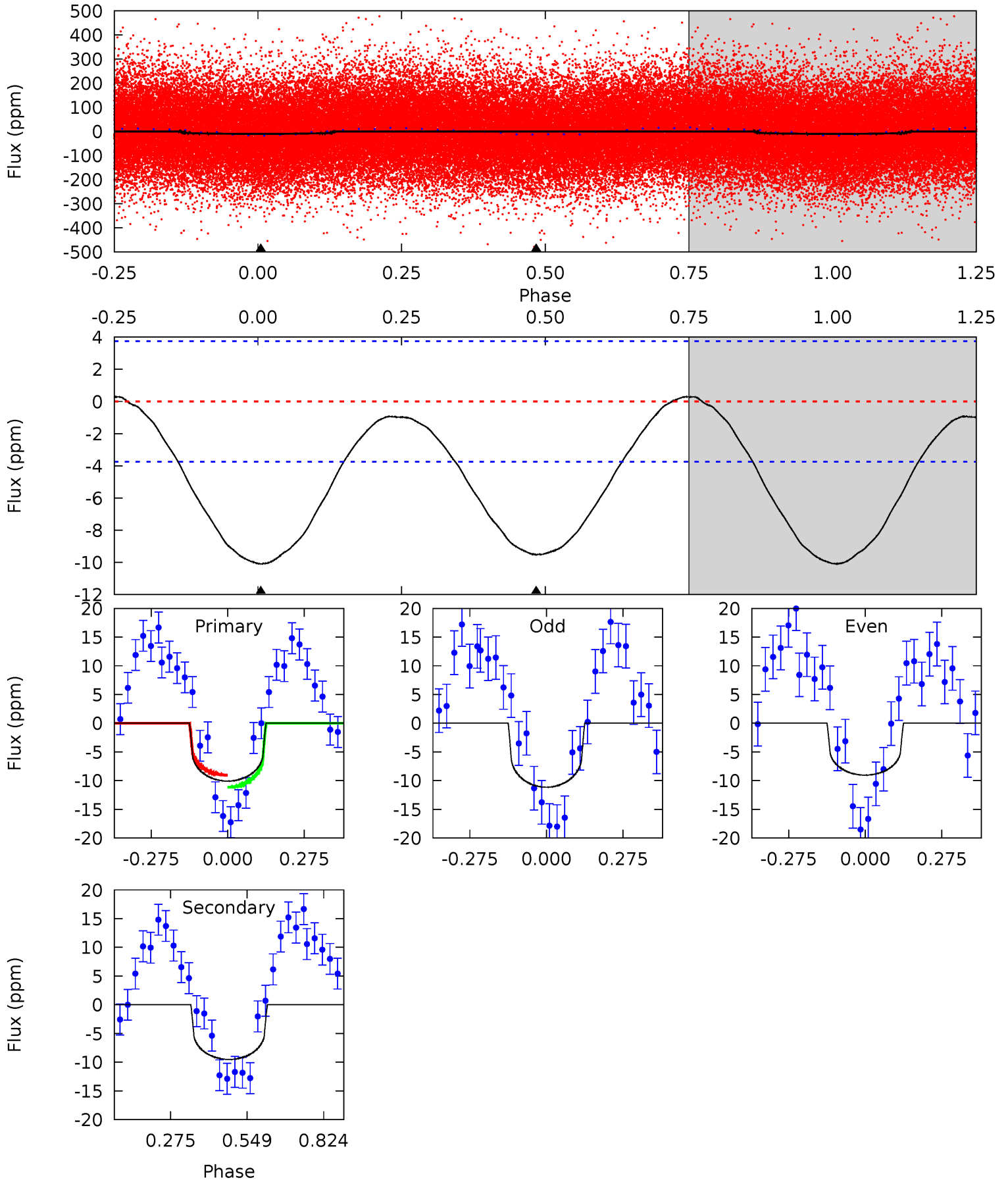
TCE 008907769-01 P= 1.772551 Days $T_0=132.914534$ (BKJD)



DV Model-Shift Uniqueness Test

008907769-01, P = 1.772465 Days, E = 131.157338 Days

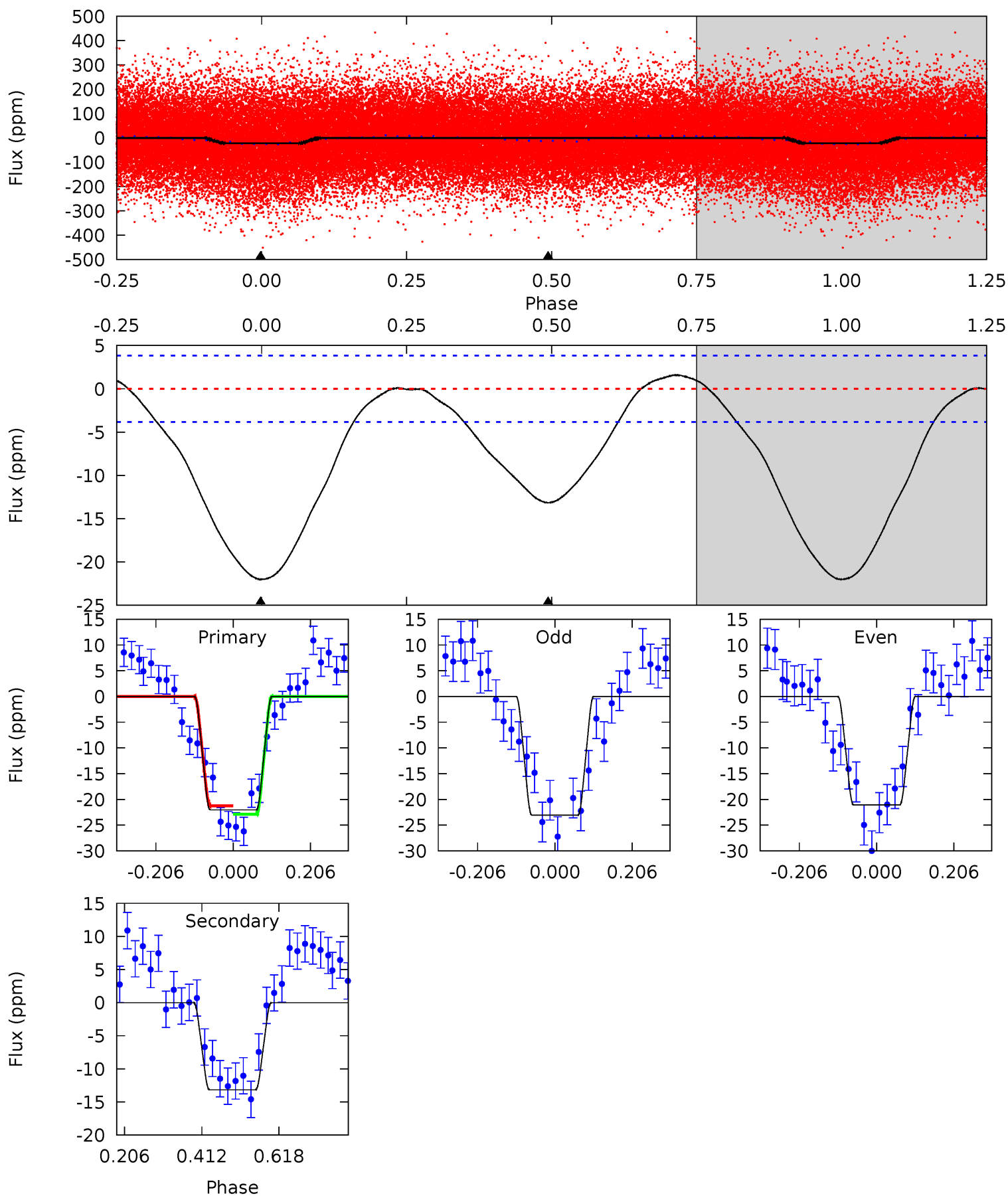
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.7	11.1	0	0	4.35	1.09	0.60	11.7	11.7	11.1	11.1	1.21	1.02	0.03	1.24



Alt Model-Shift Uniqueness Test

008907769-01, P = 1.772551 Days, E = 131.141983 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.3	15.1	0	0	4.41	1.26	0.91	25.3	25.3	15.1	15.1	1.13	1.12	0.07	0.95



Stellar Parameters For KIC 008907769

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5947^{+196}_{-160}	$3.919^{+0.308}_{-0.103}$	$-0.320^{+0.350}_{-0.250}$	$1.861^{+0.342}_{-0.587}$	$1.048^{+0.180}_{-0.163}$	$0.229^{+0.430}_{-0.084}$
	+3%/-3%	+8%/-3%	+109%/-78%	+18%/-32%	+17%/-16%	+188%/-37%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 008907769-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-10 ± 1	$0.79^{+0.67}_{-0.52}$	2891^{+183}_{-256}	5160^{+4214}_{-1137}	$7.361^{+57.357}_{-5.178}$
Alt.	-13 ± 1	$1.05^{+0.68}_{-0.63}$	2888^{+183}_{-259}	4906^{+2954}_{-891}	$5.802^{+31.118}_{-3.729}$

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

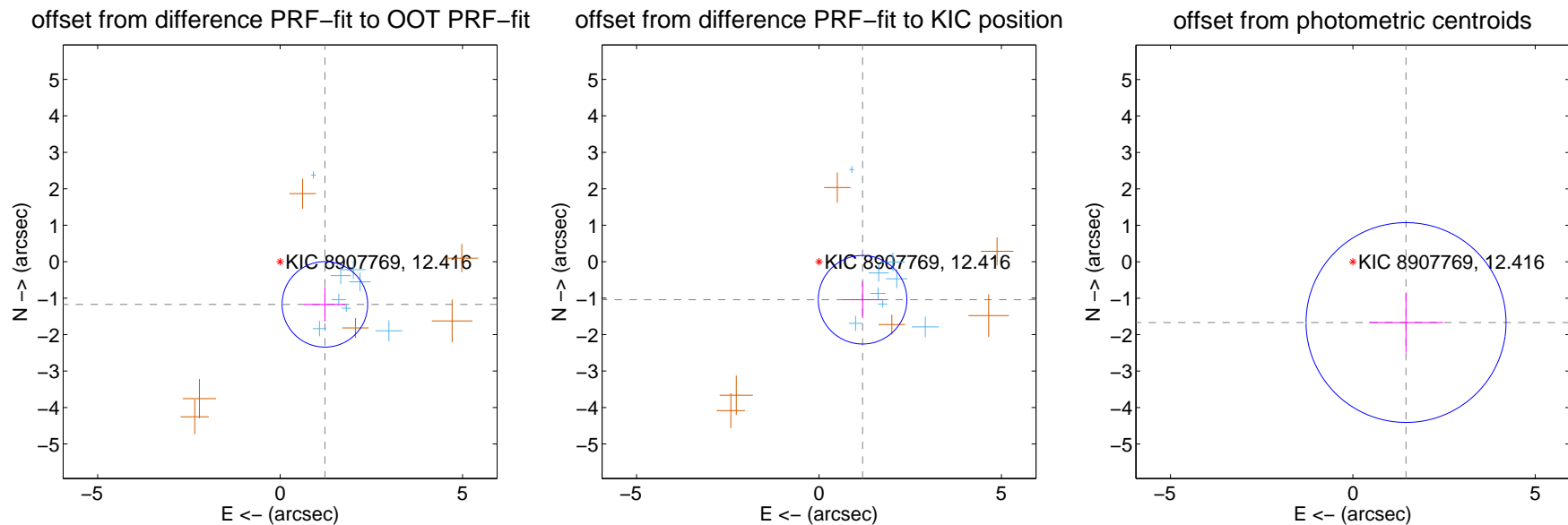
DV Centroid Data

Supplemental centroid analysis for 008907769-01. Kepler magnitude: 12.42. Transit SNR 6.10

There are 8 quarters with good PRF difference image offsets

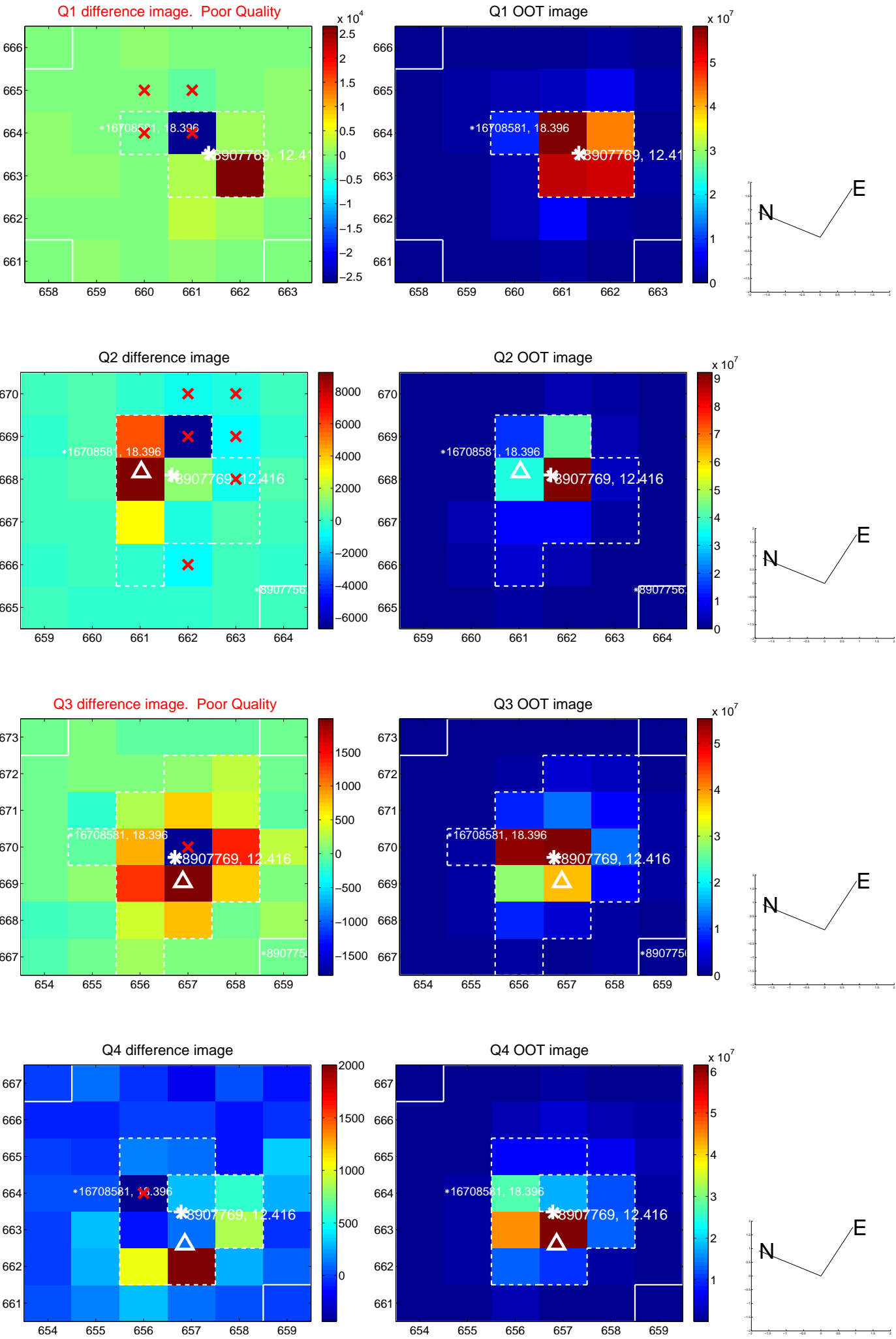
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.697 ± 0.391	4.34	-1.228 ± 0.567	-1.171 ± 0.477
PRF-fit source offset from KIC position	1.586 ± 0.405	3.92	-1.194 ± 0.549	-1.043 ± 0.499
photometric centroid source offset	2.21 ± 0.91	2.42	-1.46 ± 1.02	-1.67 ± 0.83

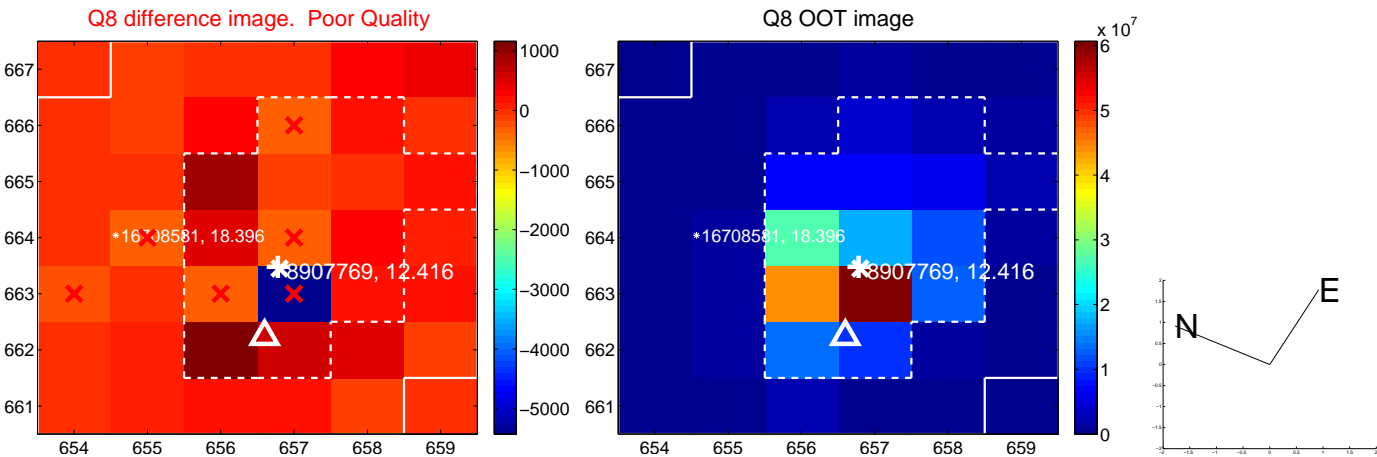
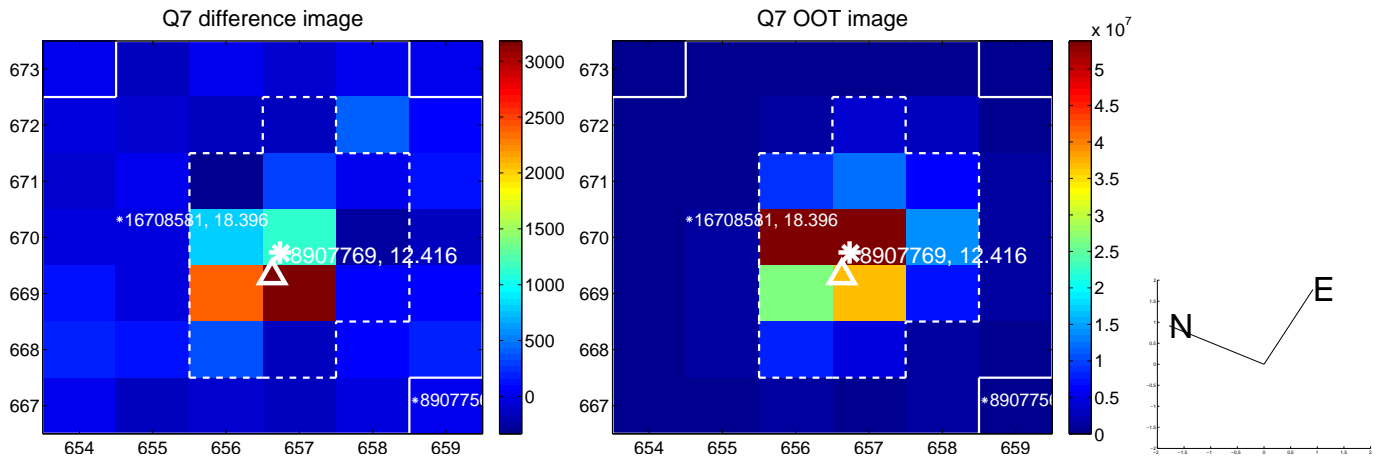
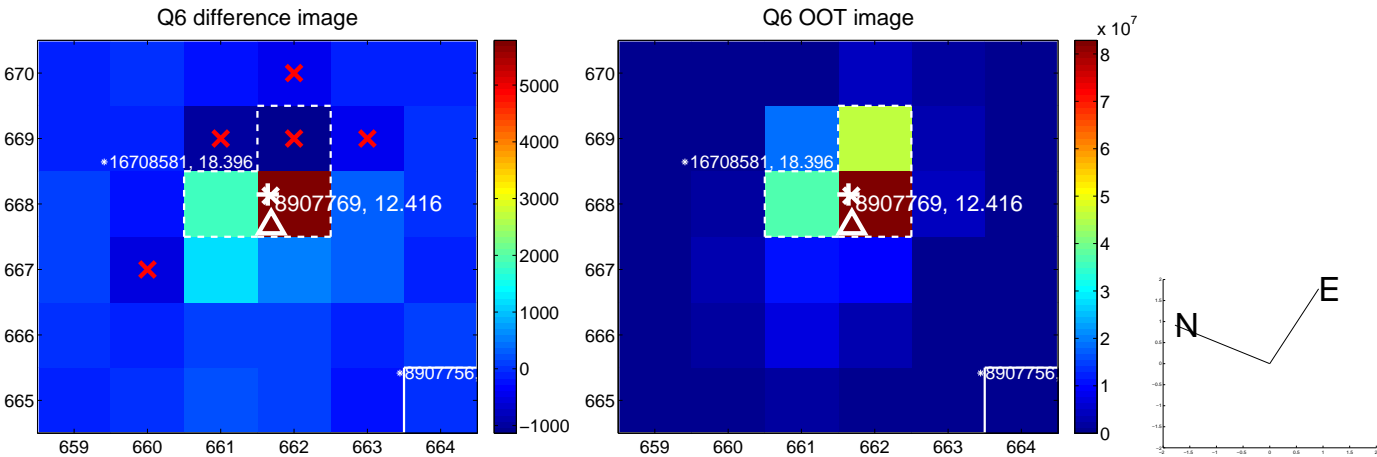
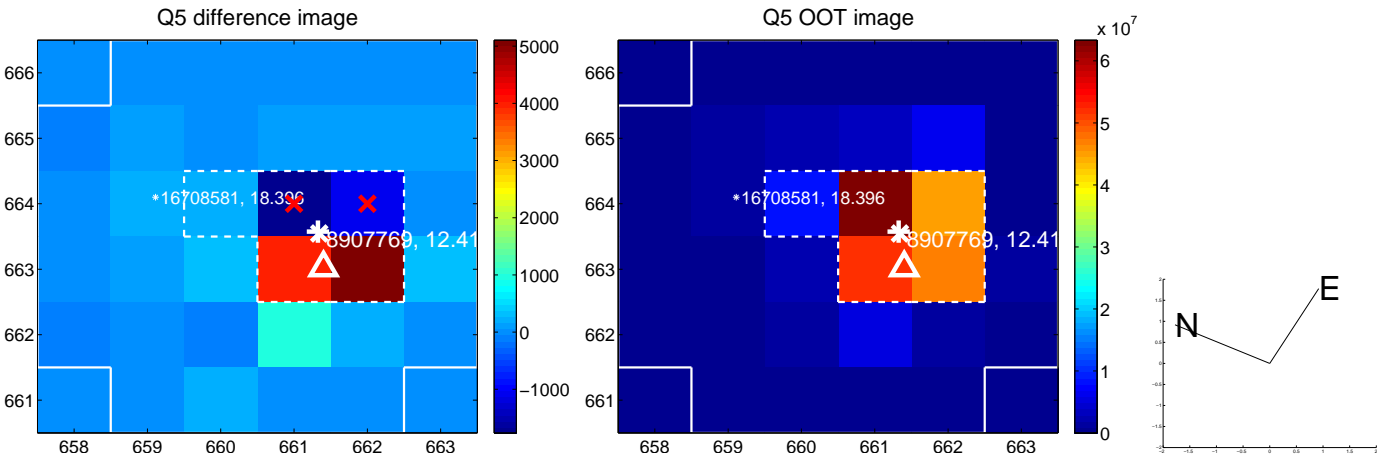


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

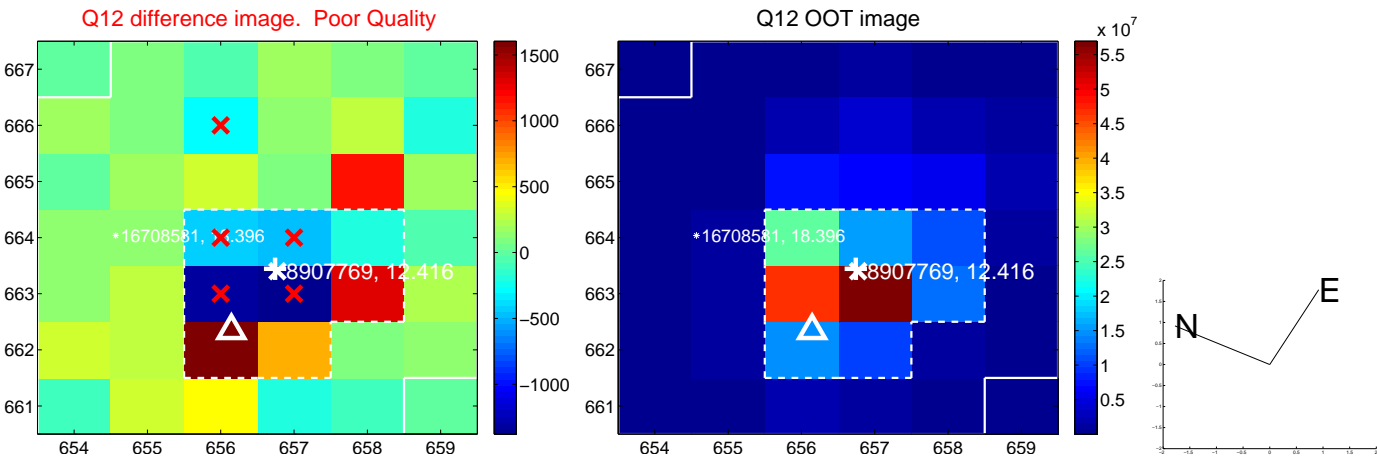
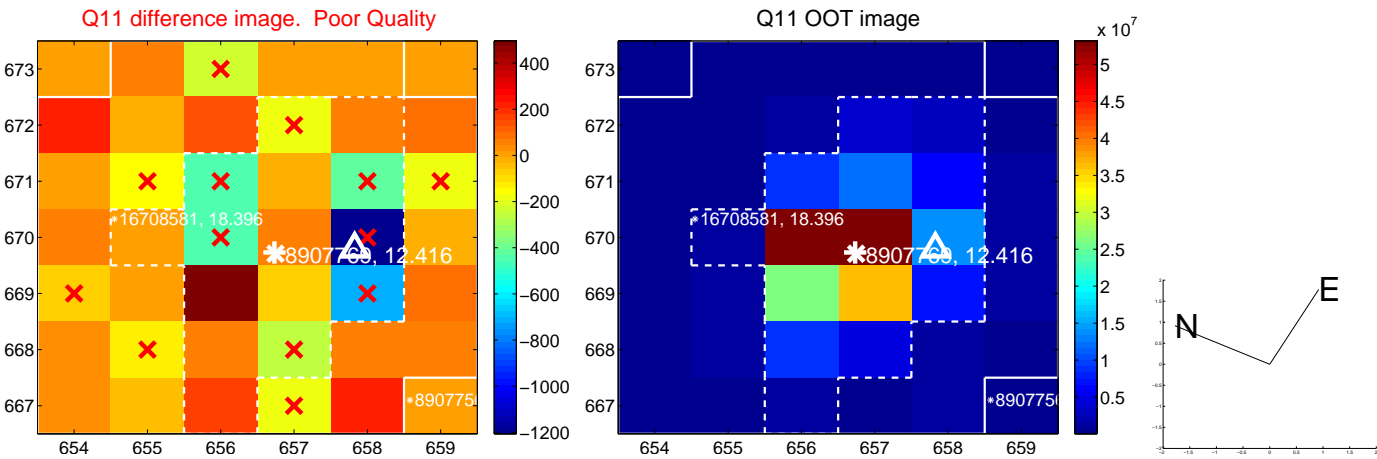
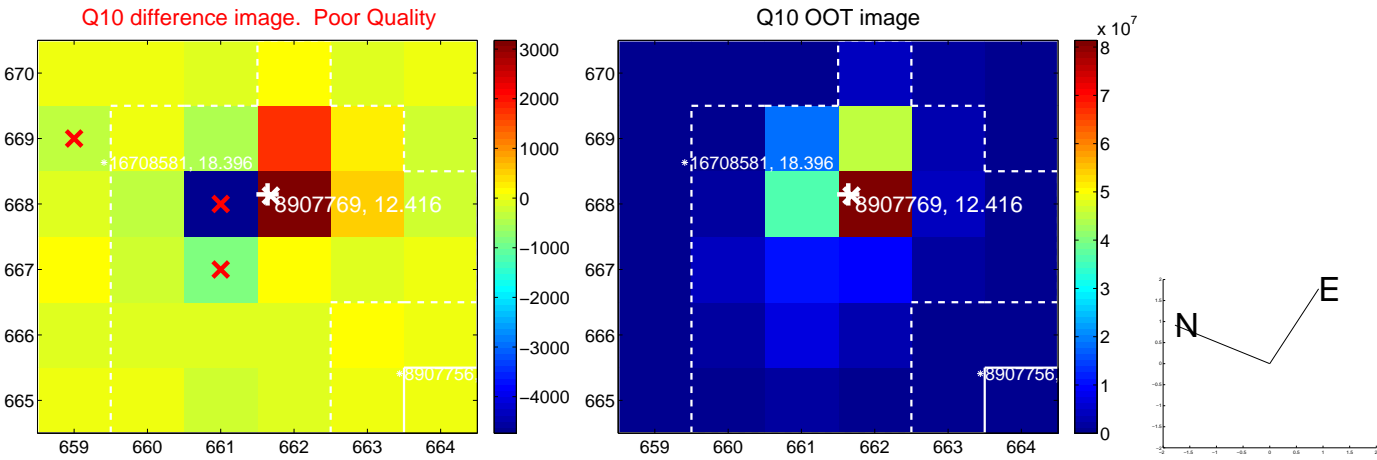
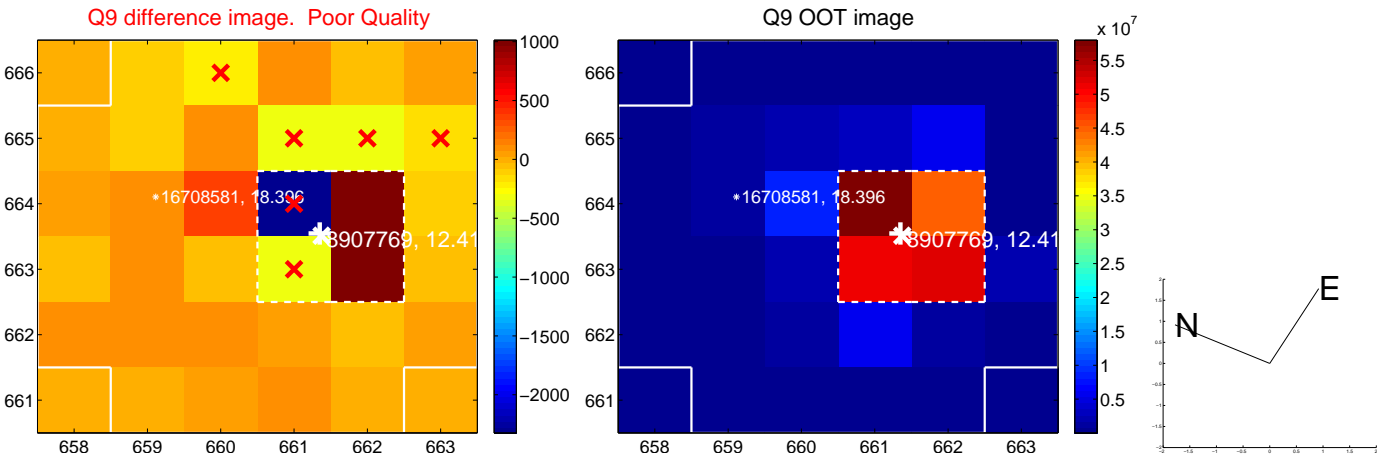
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



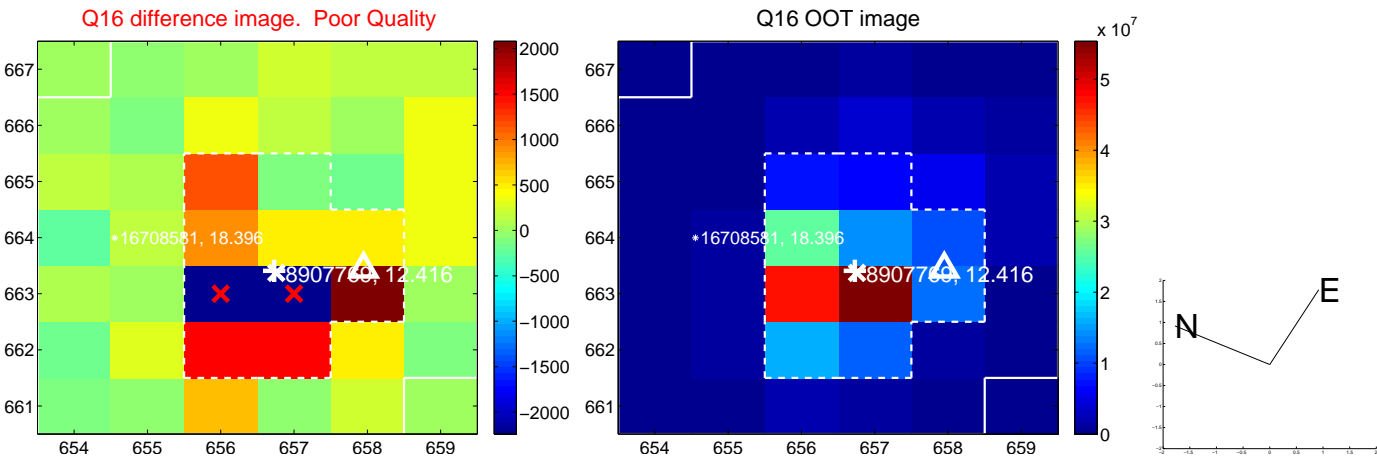
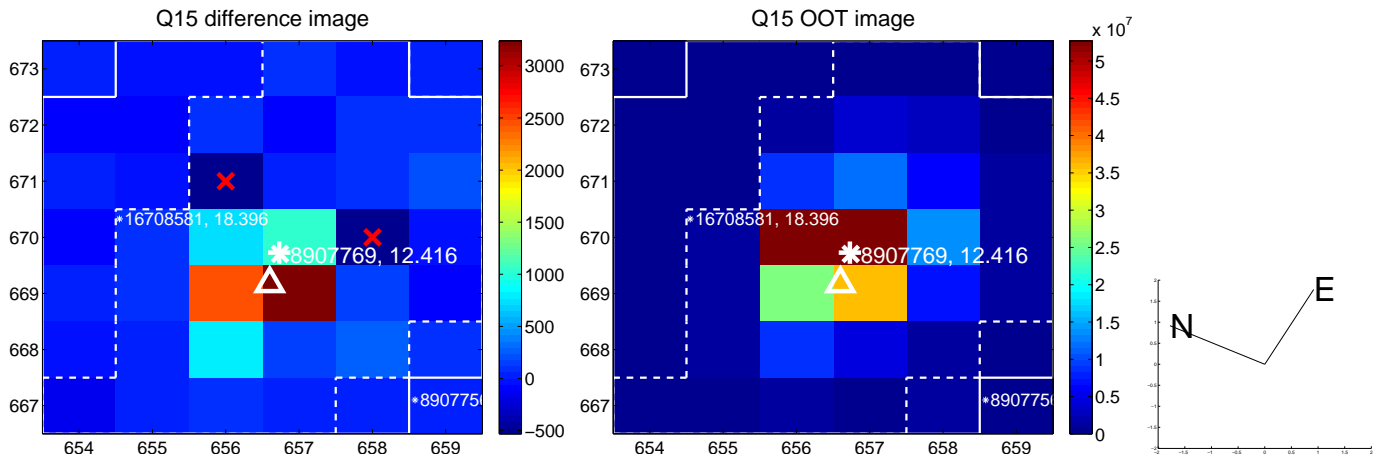
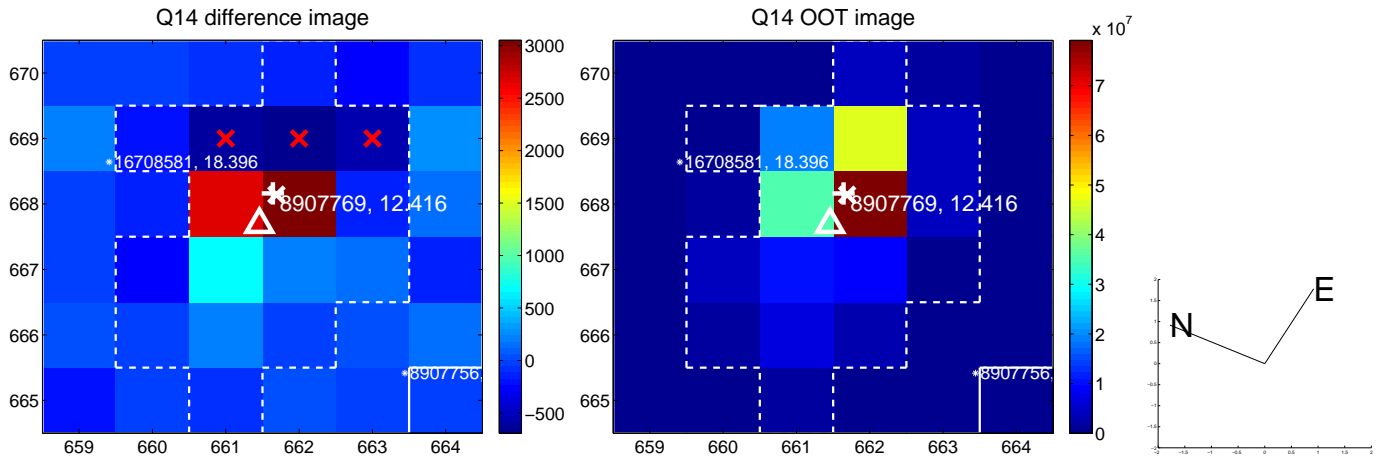
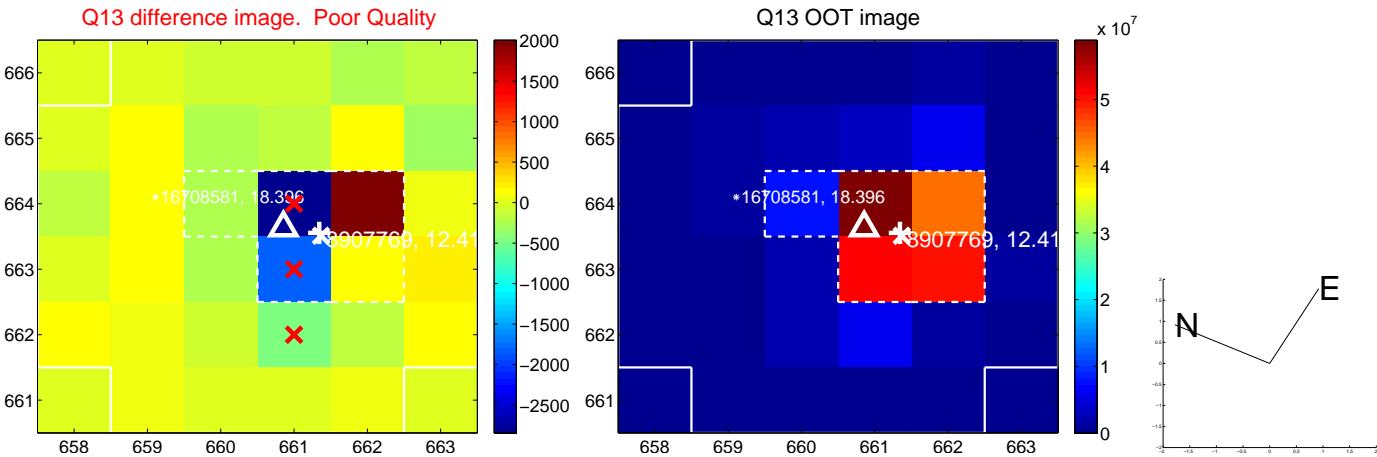
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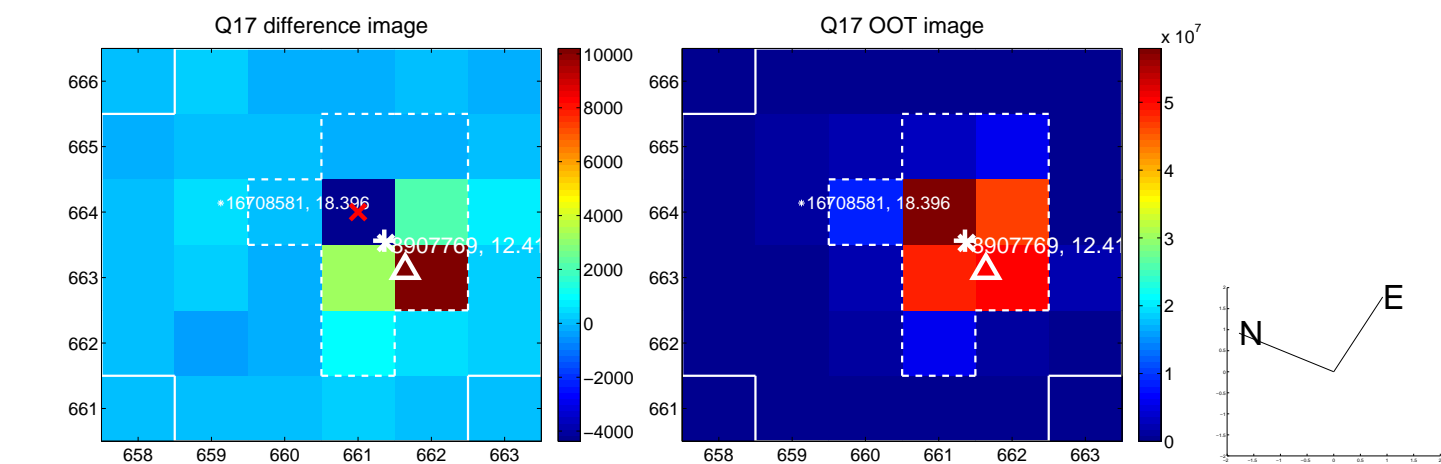
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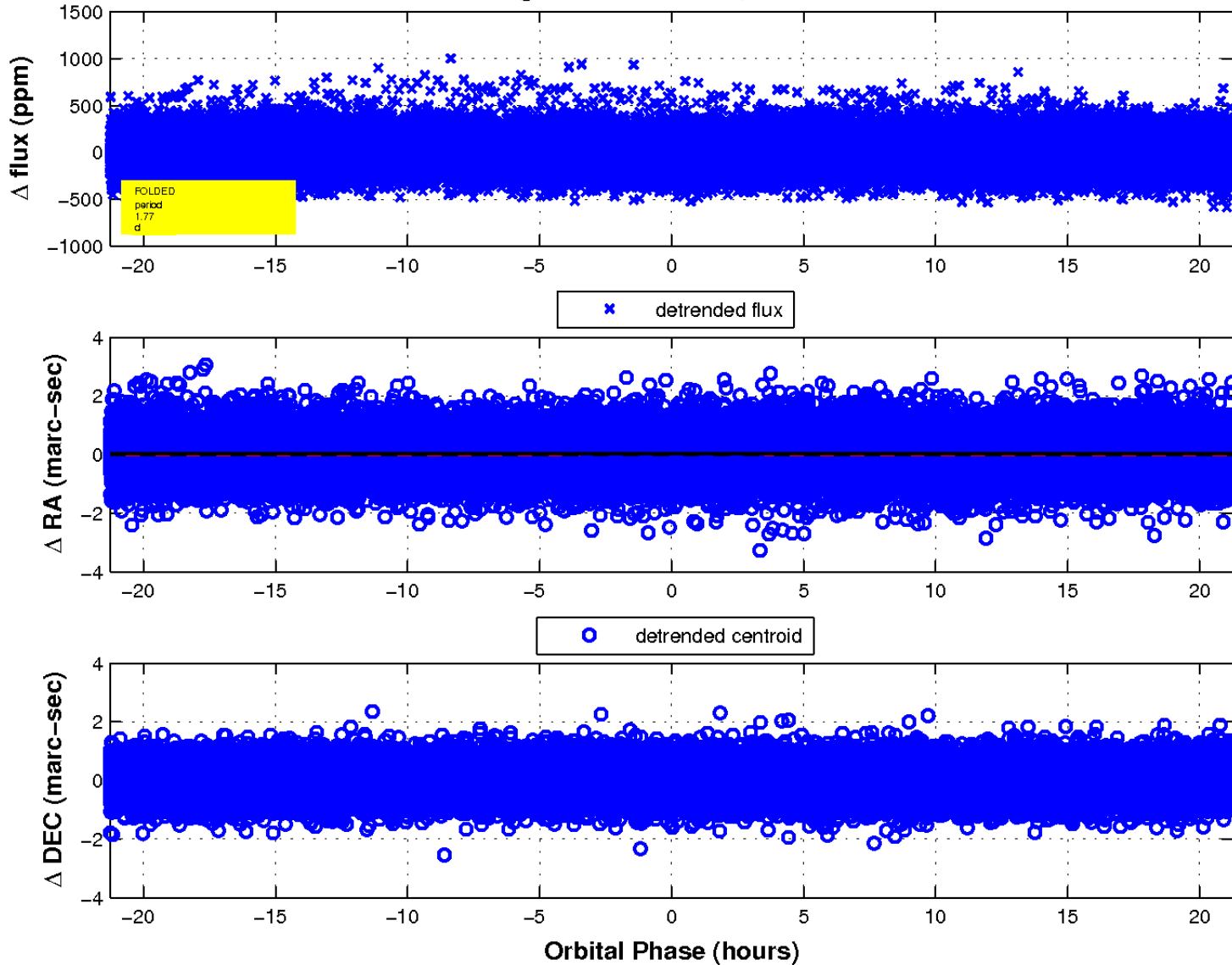
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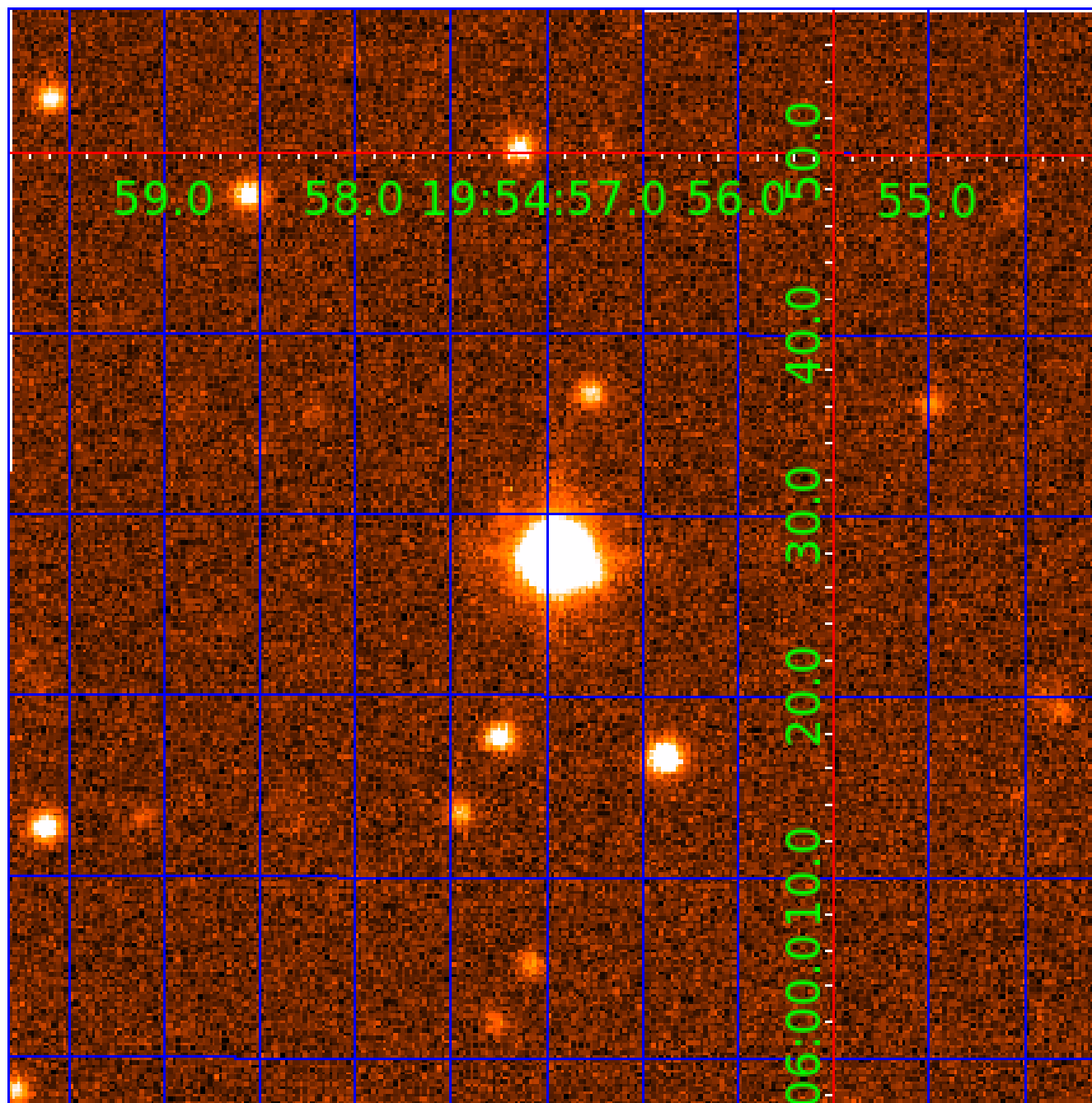


fluxWeightedCentroids, Planet 1 of 5



UKIRT Image

Declination



KIC 008907769

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})
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Robovetter Results

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008907769-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
008907769-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
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Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

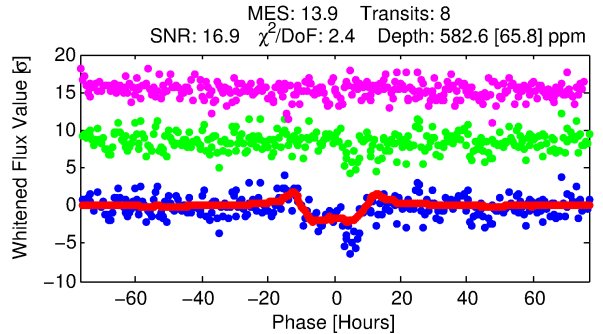
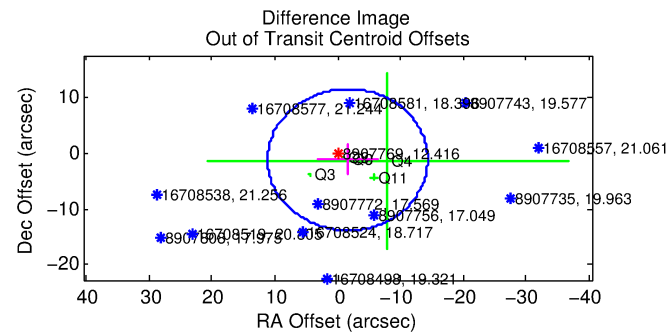
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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

Ephemeris Match Information For 008907769-02

No Significant Match Found

KIC: 8907769 Candidate: 2 of 5 Period: 151.057 d

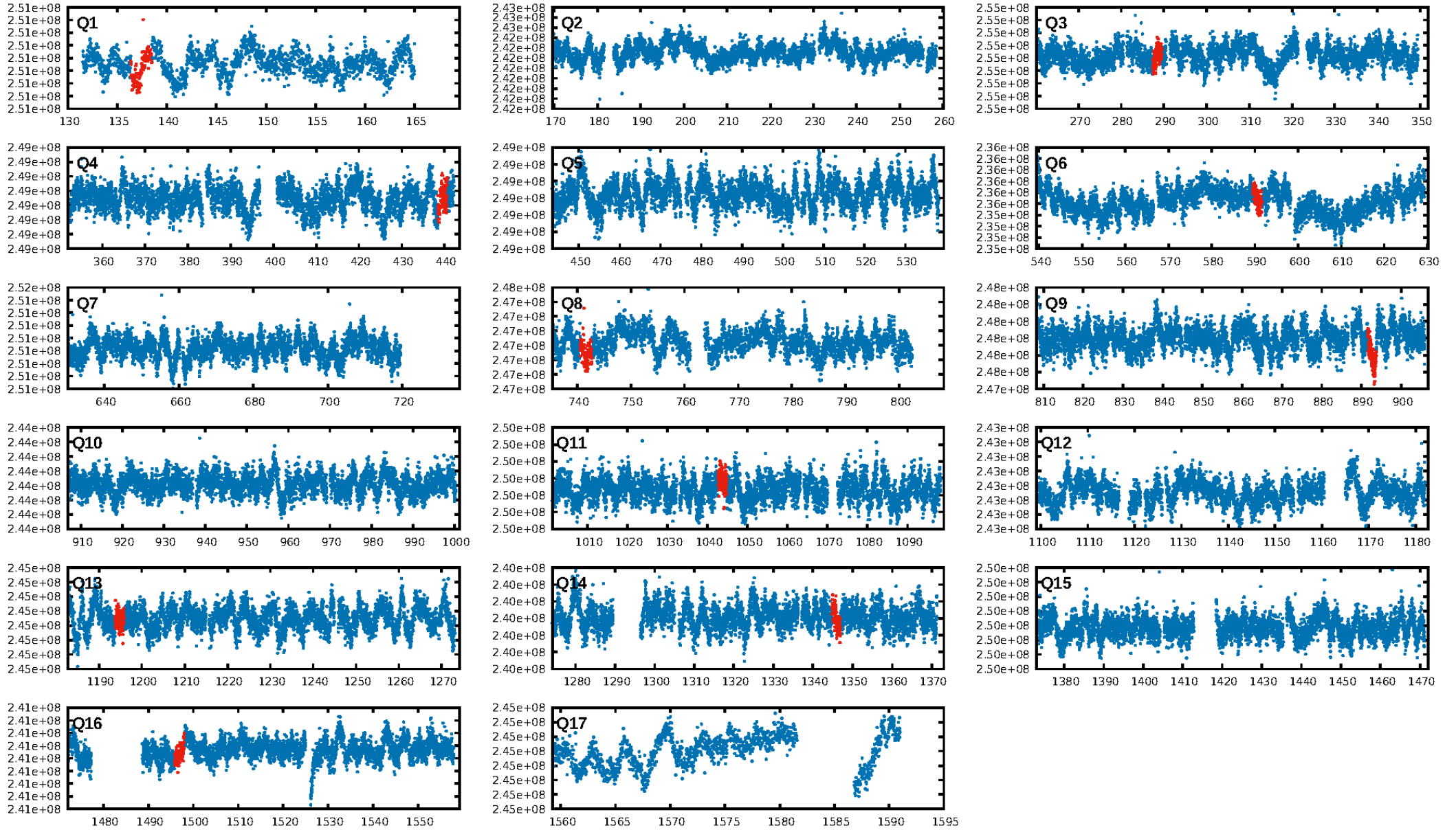


ShortPeriod-sig: 100.0% [56.95σ]
 LongPeriod-sig: 100.0% [320.46σ]
 ModelChiSquare2-sig: 0.0%
 ModelChiSquareGof-sig: 100.0%
 Bootstrap-pfa: 1.04e-21
 RollingBand-fgt: 1.00 [7/7]
 GhostDiagnostic-chr: -1.594

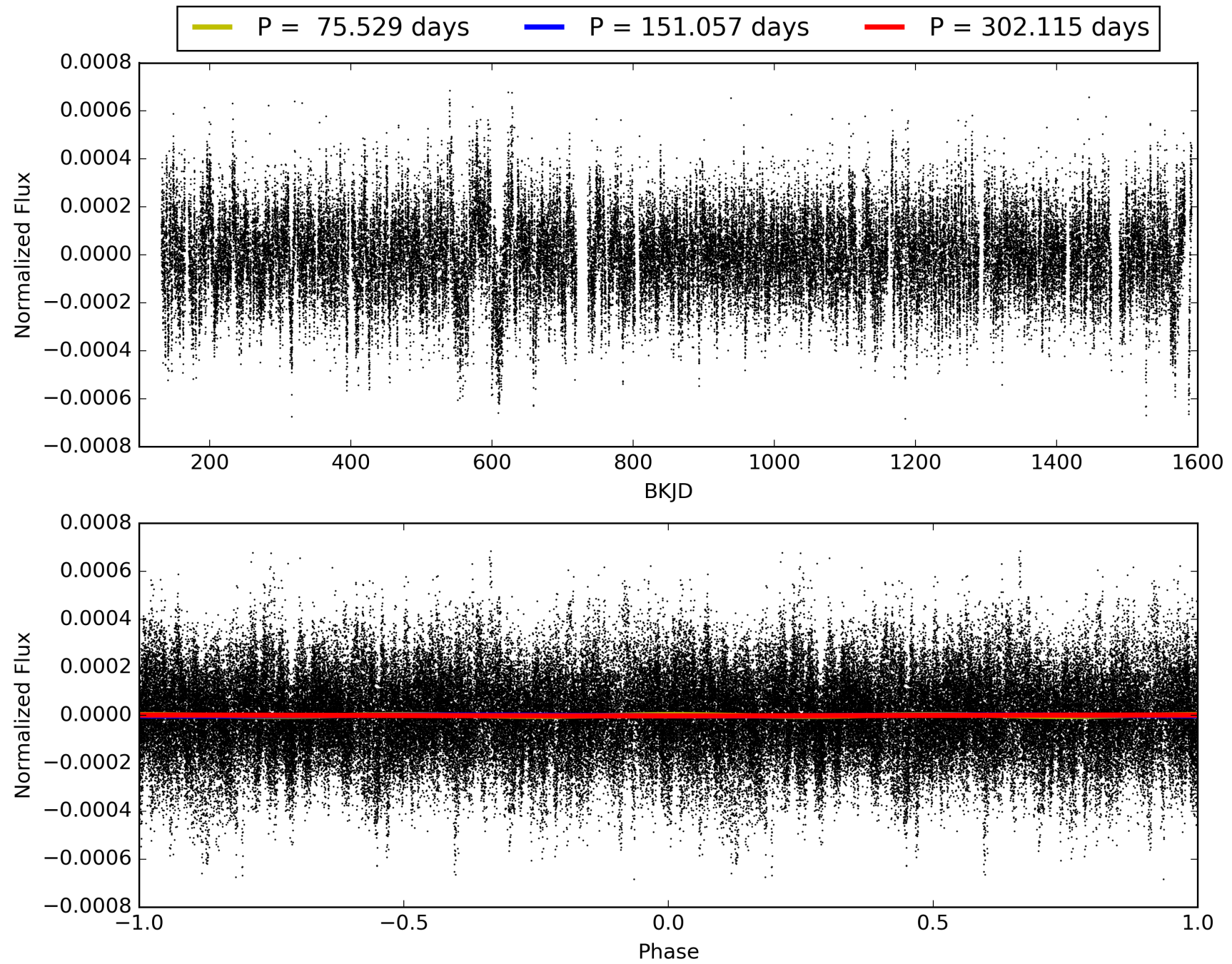
Centroid-sig: N/A
 Centroid-so: 0.107 arcsec [0.70σ]
 OotOffset-rm: 1.923 arcsec [0.45σ]
 KicOffset-rm: 1.788 arcsec [0.41σ]
 OotOffset-st: 1/2/2/1 [6]
 KicOffset-st: 1/2/2/1 [6]
 DiffImageQuality-fgm: 0.50 [3/6]
 DiffImageOverlap-fno: 0.00 [0/8]

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

TCE 008907769-02, PDC Light Curves

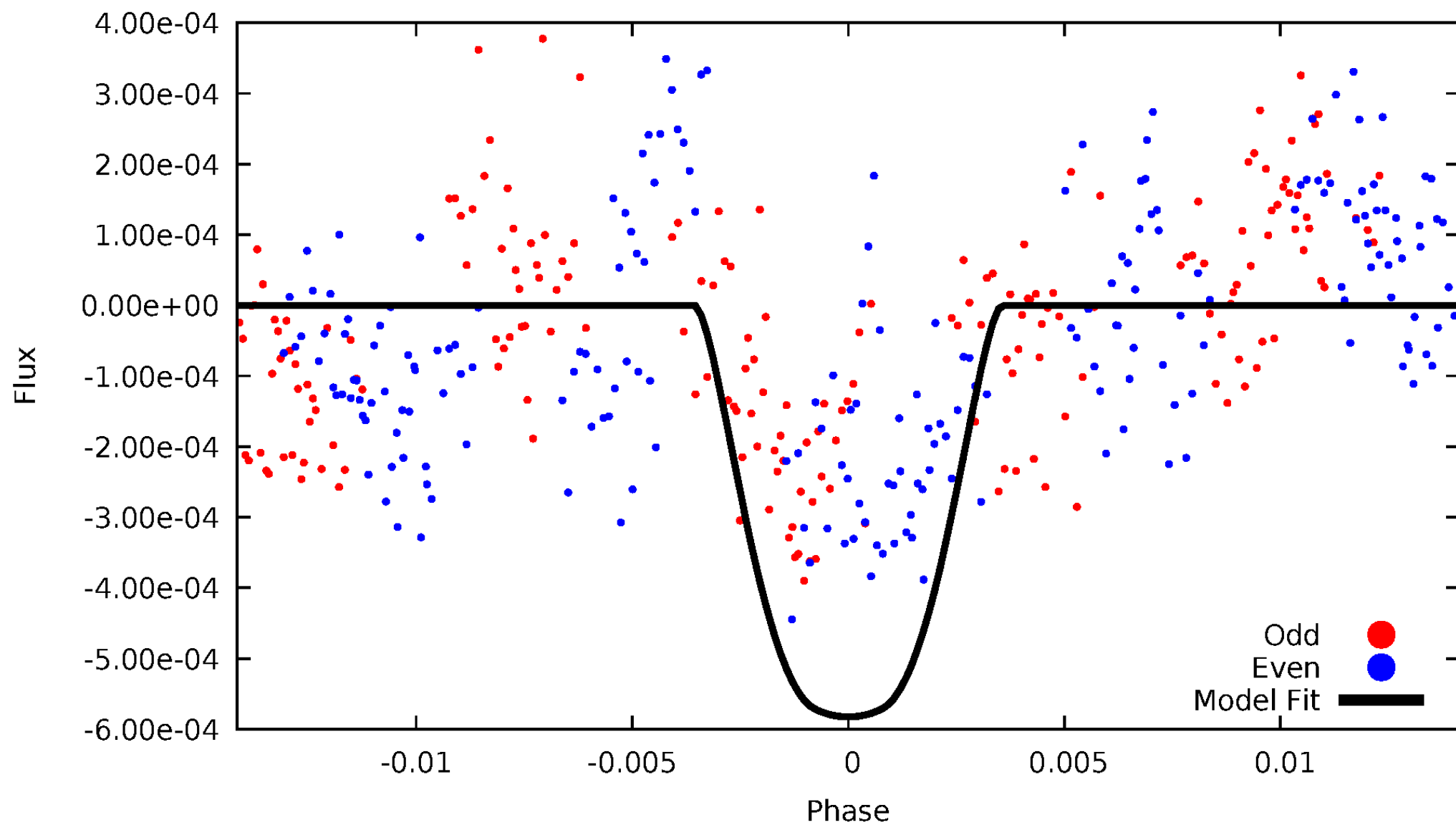


TCE 008907769-02



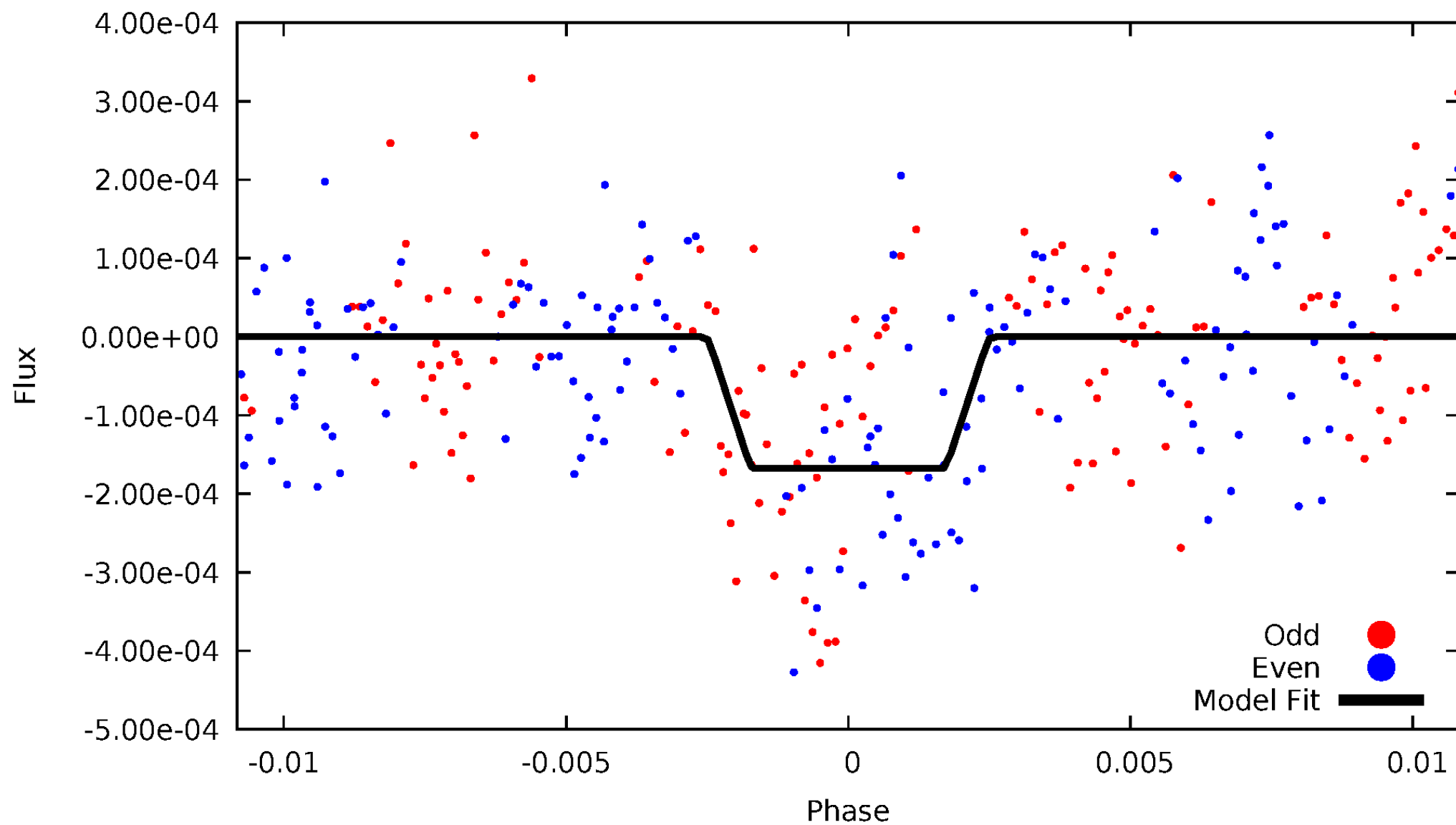
DV Odd/Even

TCE 008907769-02



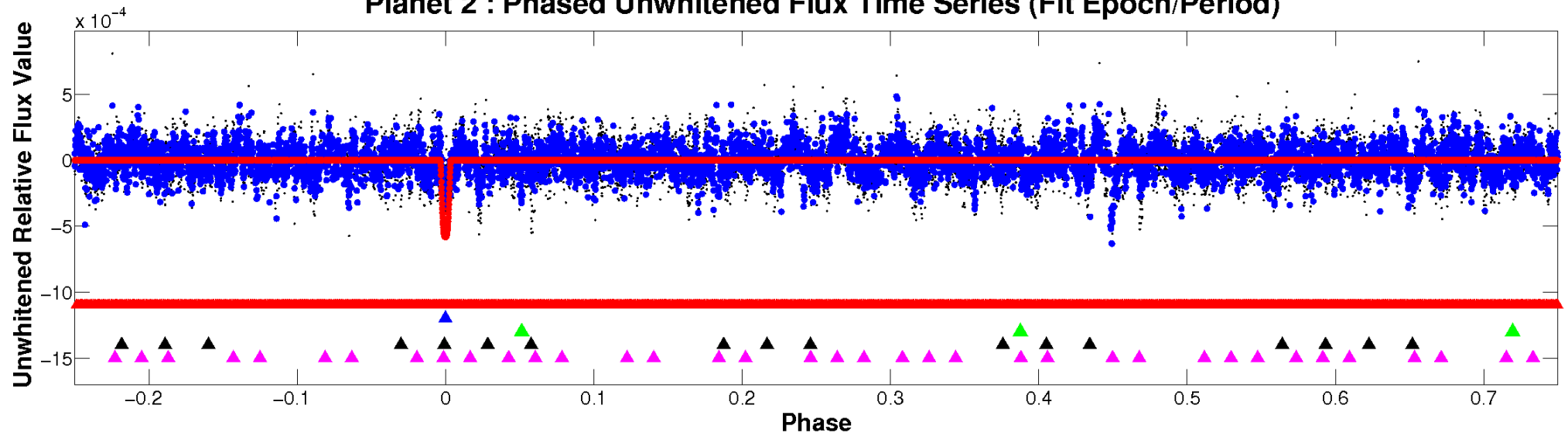
ALT Odd/Even

TCE 008907769-02

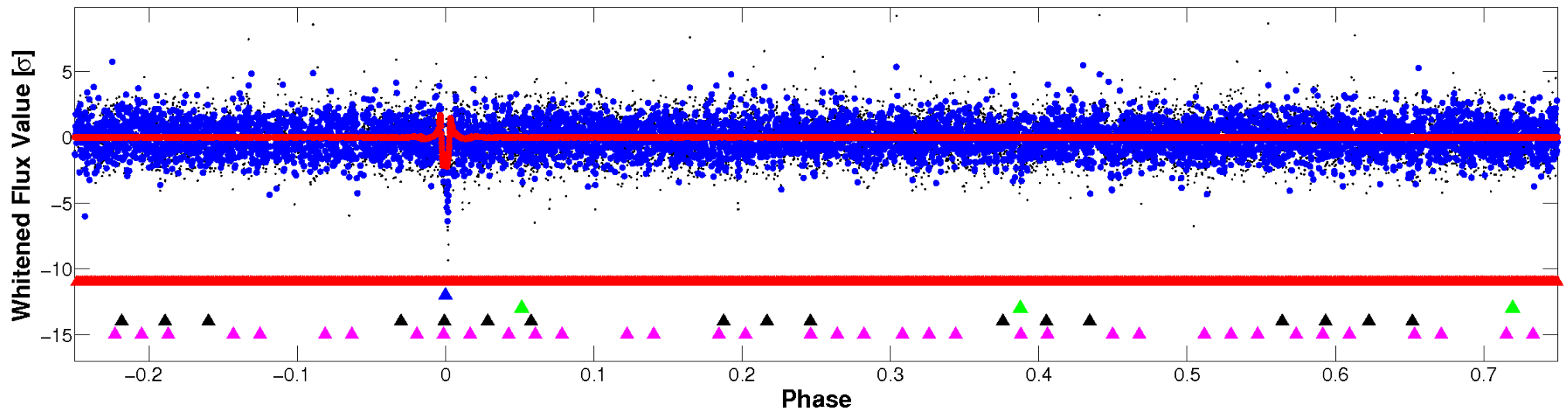


Non-Whitened Vs. Whitened Light Curve

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

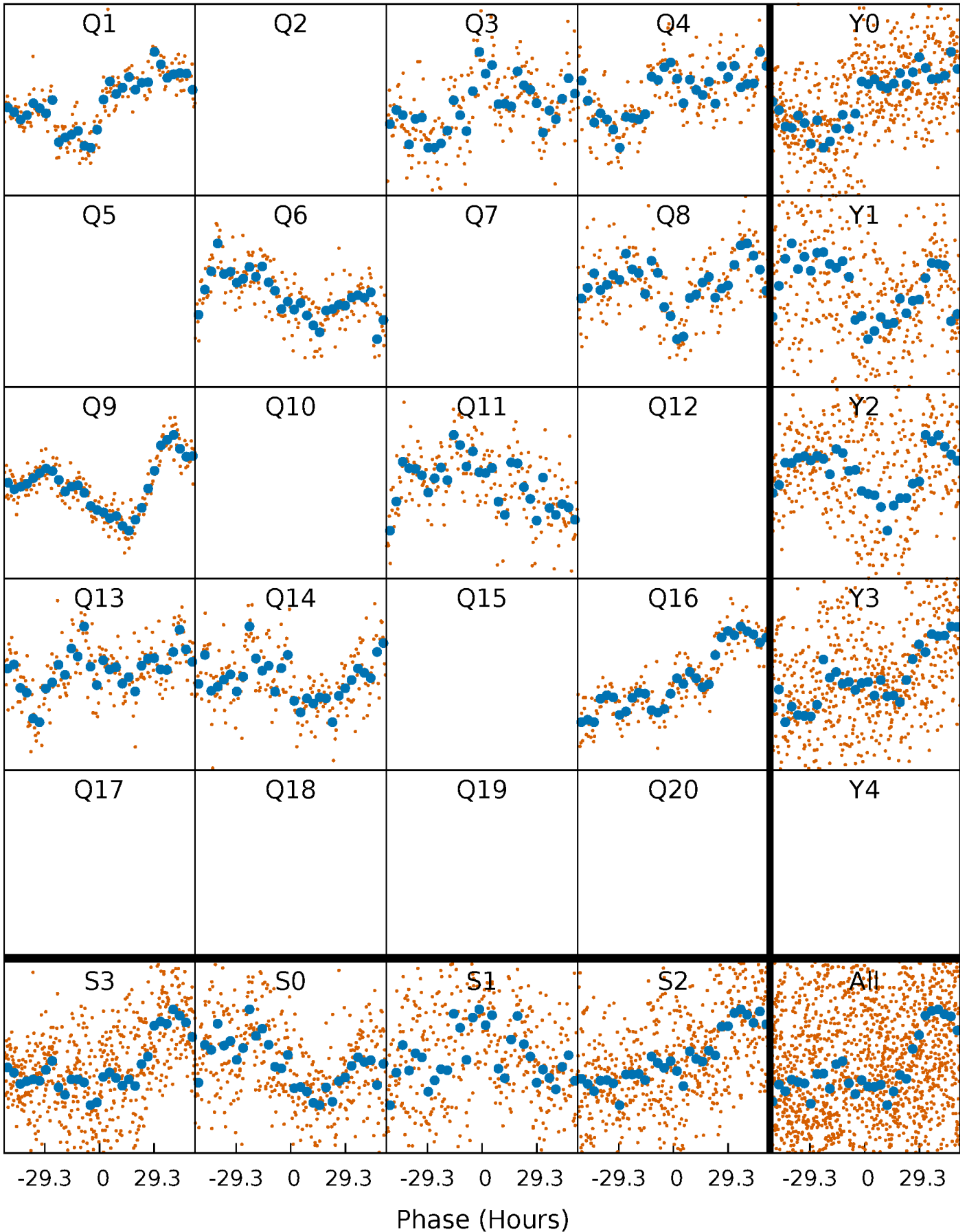


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



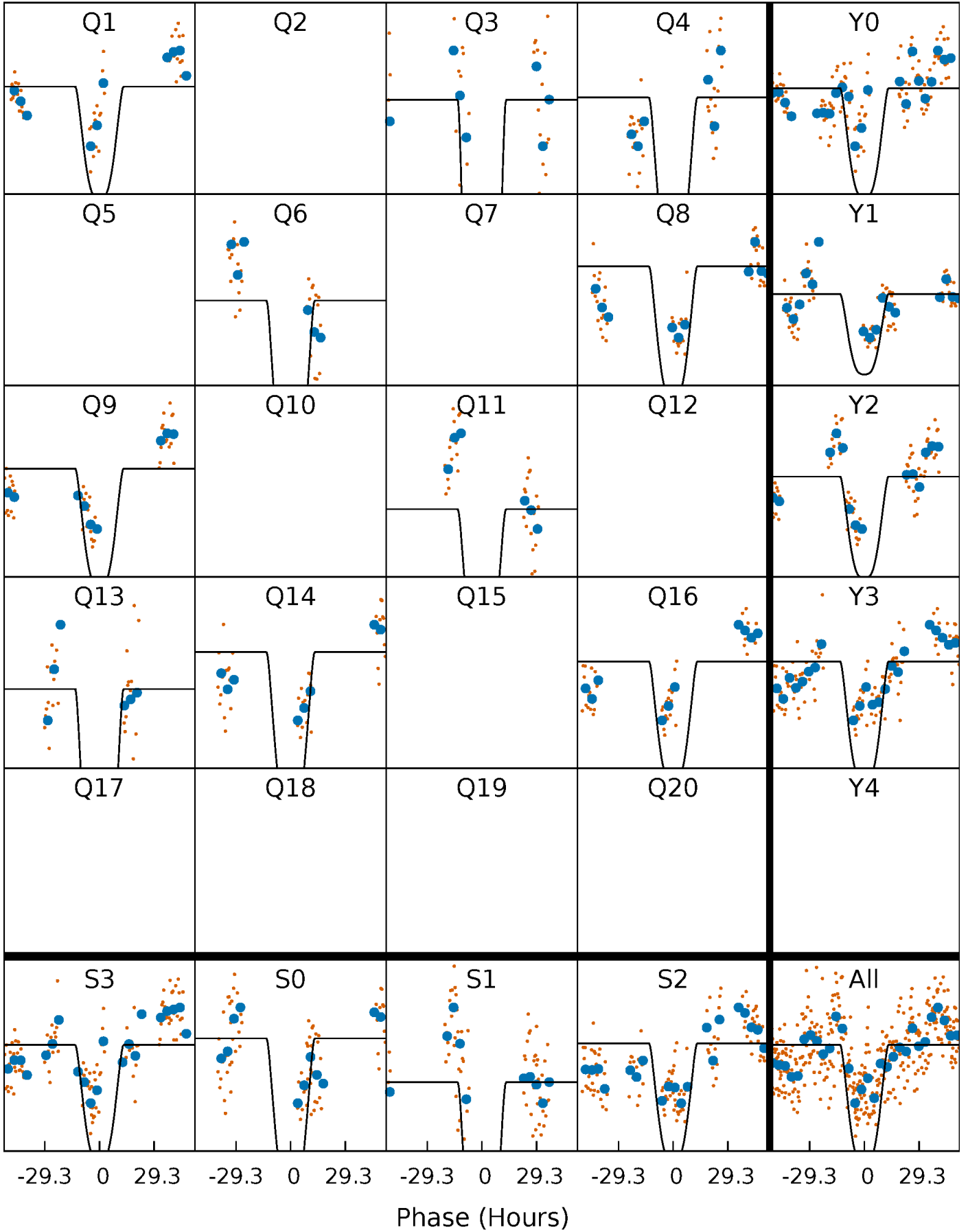
PDC Quarter-Phased Transit Curves

TCE 008907769-02 P=151.057444 Days $T_0=137.409086$ (BKJD)



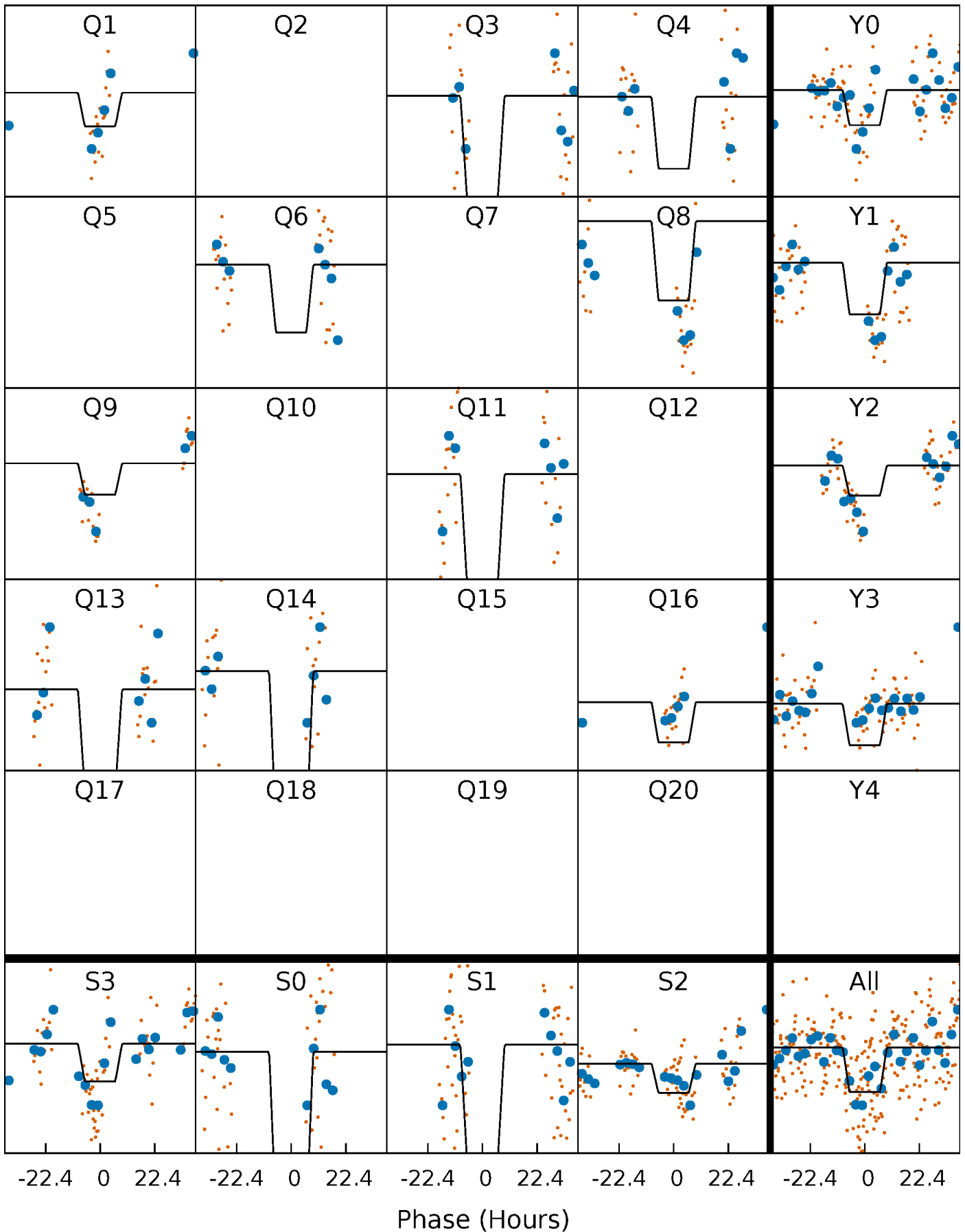
DV Quarter-Phased Transit Curves

TCE 008907769-02 $P=151.057444$ Days $T_0=137.409086$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

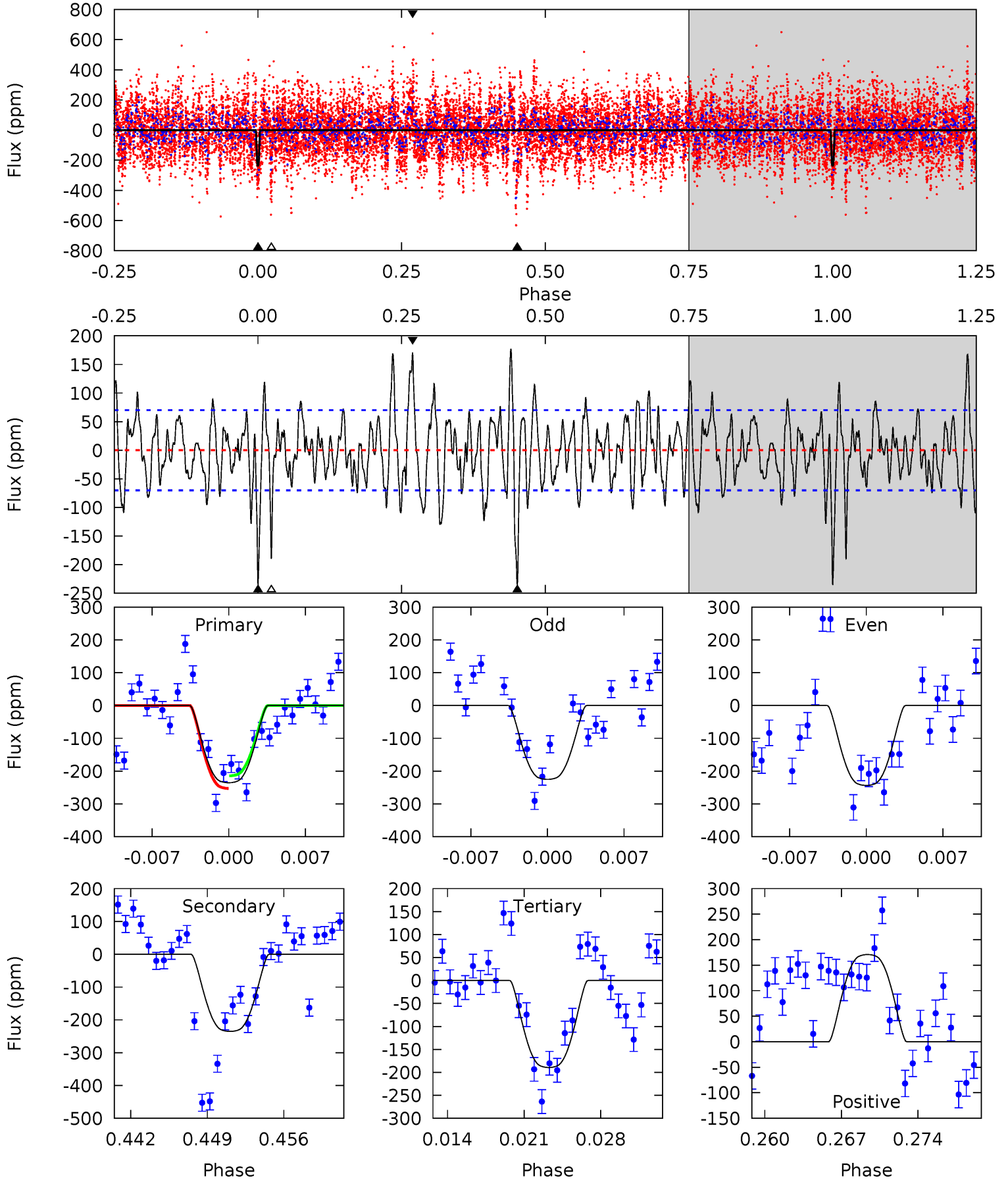
TCE 008907769-02 P=151.051687 Days $T_0=137.358450$ (BKJD)



DV Model-Shift Uniqueness Test

008907769-02, P = 151.057444 Days, E = 137.409086 Days

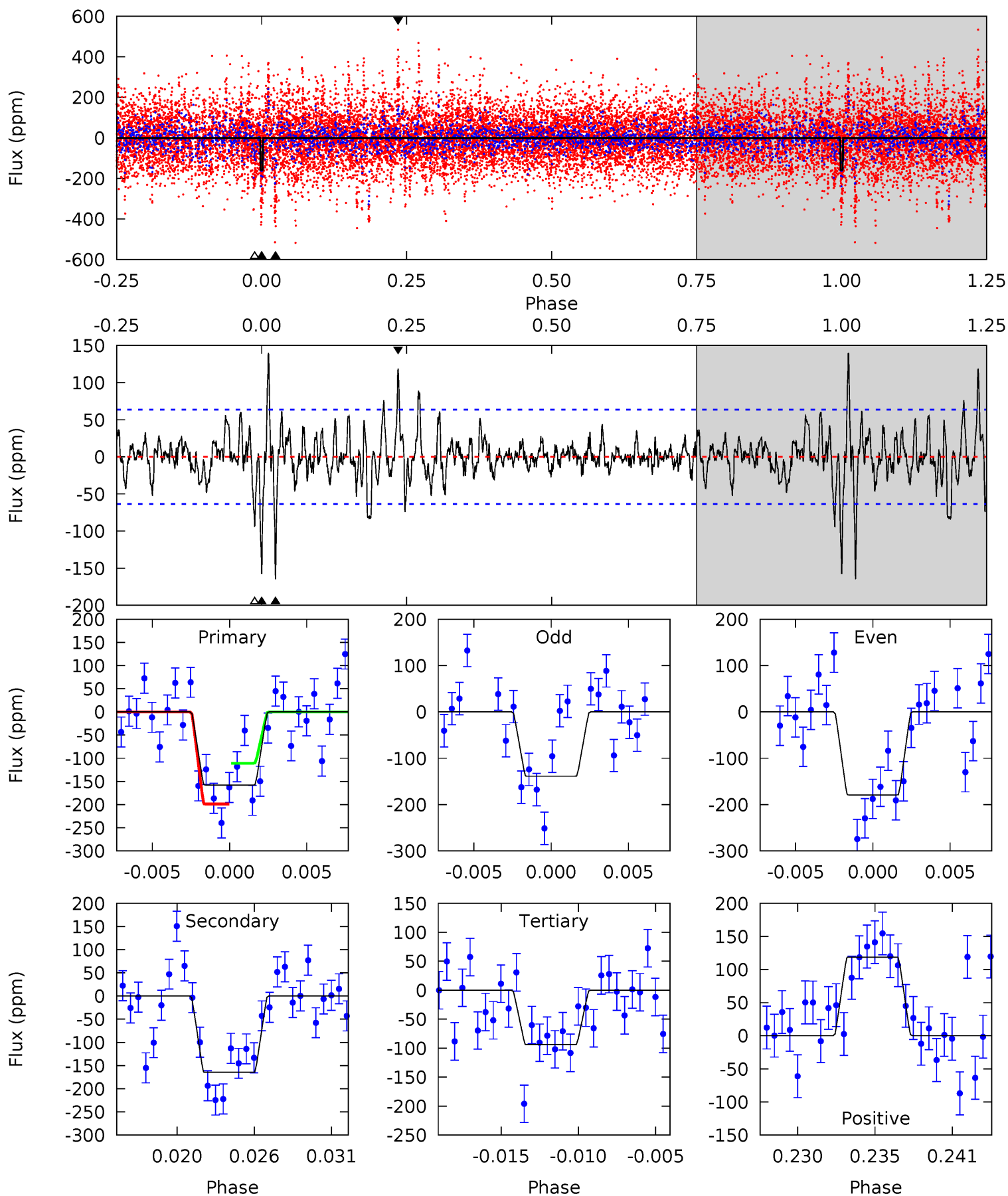
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.1	17.1	13.8	12.4	5.09	2.70	4.00	3.35	4.70	3.33	4.68	0.67	-2.97	0.43	1.39



Alt Model-Shift Uniqueness Test

008907769-02, P = 151.051687 Days, E = 137.358450 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.8	13.4	7.64	9.65	5.15	2.80	2.03	5.18	3.16	5.75	3.73	1.65	1.28	0.46	3.59



Stellar Parameters For KIC 008907769

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5947^{+196}_{-160}	$3.919^{+0.308}_{-0.103}$	$-0.320^{+0.350}_{-0.250}$	$1.861^{+0.342}_{-0.587}$	$1.048^{+0.180}_{-0.163}$	$0.229^{+0.430}_{-0.084}$
	+3%/-3%	+8%/-3%	+109%/-78%	+18%/-32%	+17%/-16%	+188%/-37%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 008907769-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-235 ± 14	$5.63^{+0.87}_{-1.00}$	651^{+43}_{-56}	4518^{+171}_{-147}	1317^{+576}_{-309}
Alt.	-165 ± 12	$2.51^{+0.56}_{-0.58}$	654^{+43}_{-58}	5971^{+505}_{-460}	4701^{+2888}_{-1571}

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

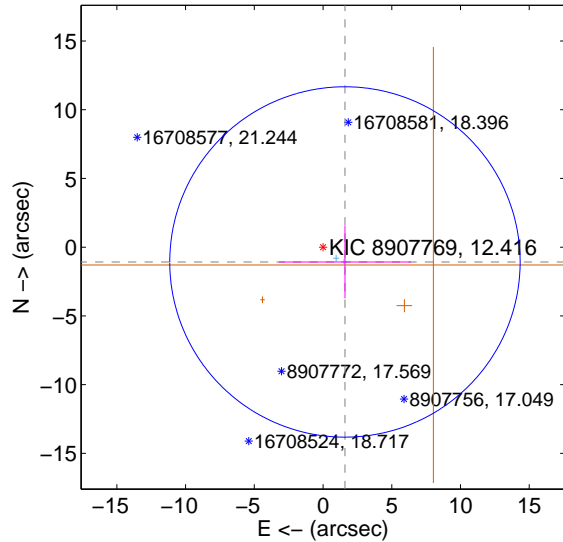
Supplemental centroid analysis for 008907769-02. Kepler magnitude: 12.42. Transit SNR 16.91

There are 3 quarters with good PRF difference image offsets

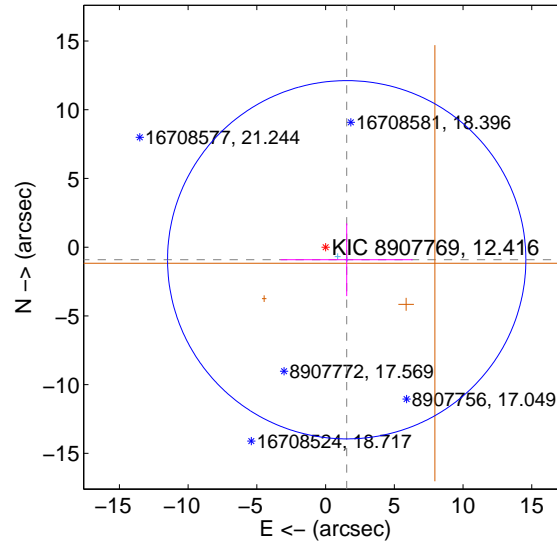
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.923 ± 4.249	0.45	-1.594 ± 4.804	-1.076 ± 2.647
PRF-fit source offset from KIC position	1.788 ± 4.345	0.41	-1.537 ± 4.804	-0.915 ± 2.647
photometric centroid source offset	0.11 ± 0.15	0.70	0.11 ± 0.15	-0.02 ± 0.13

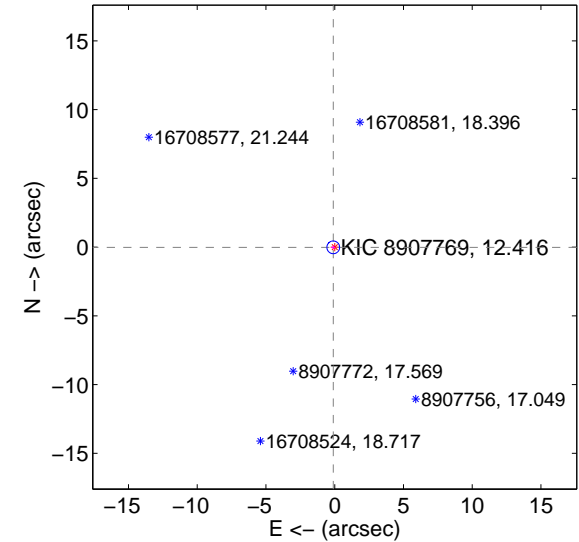
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

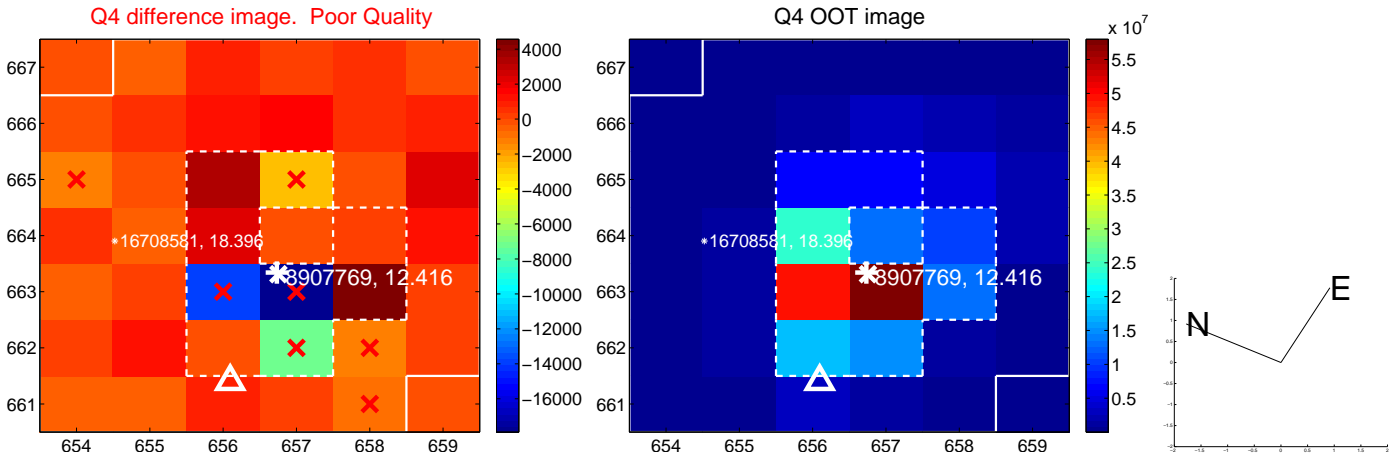
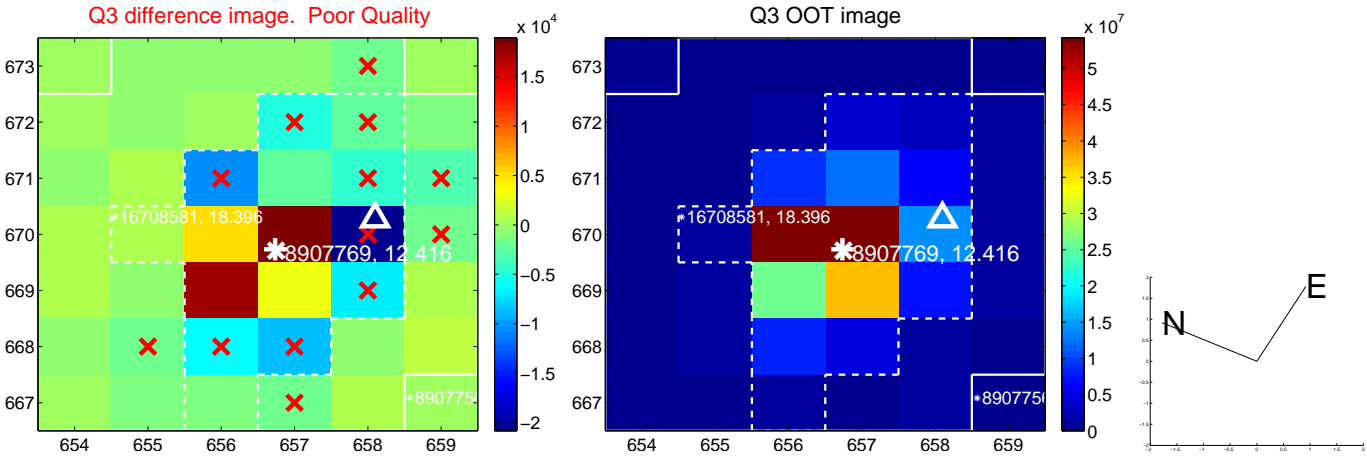
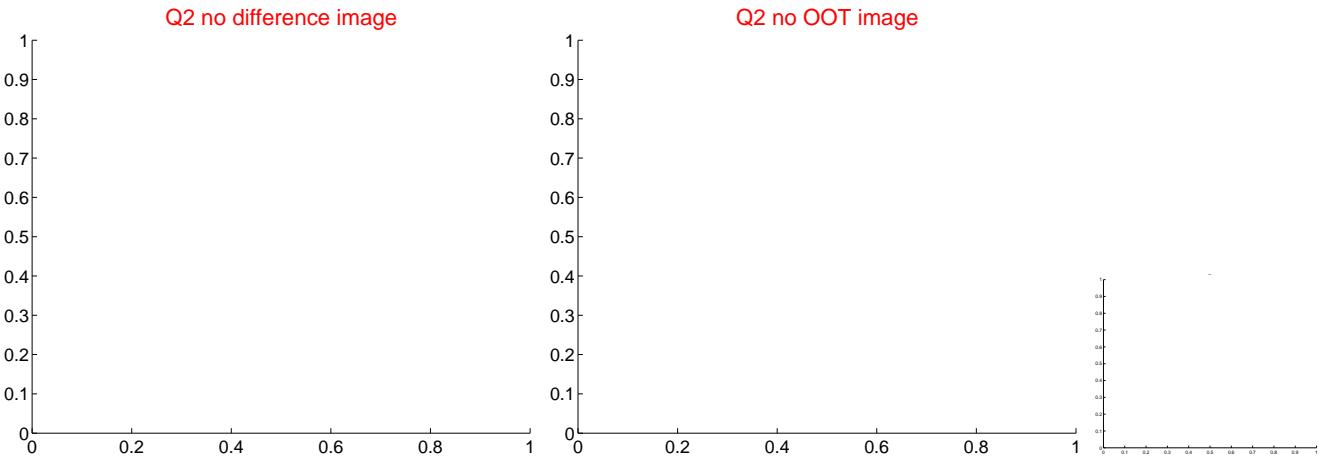
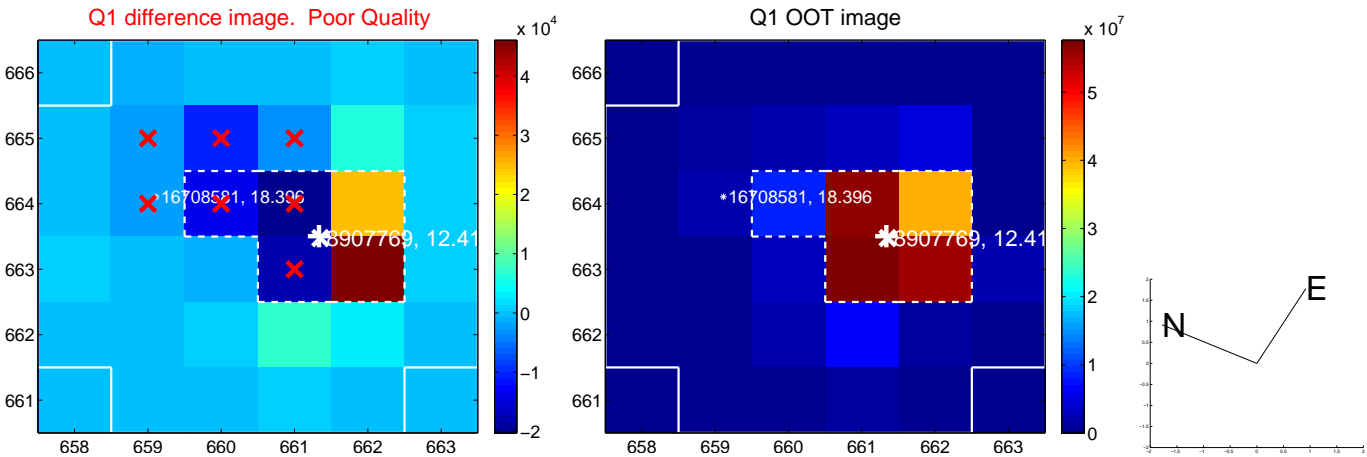


offset from photometric centroids

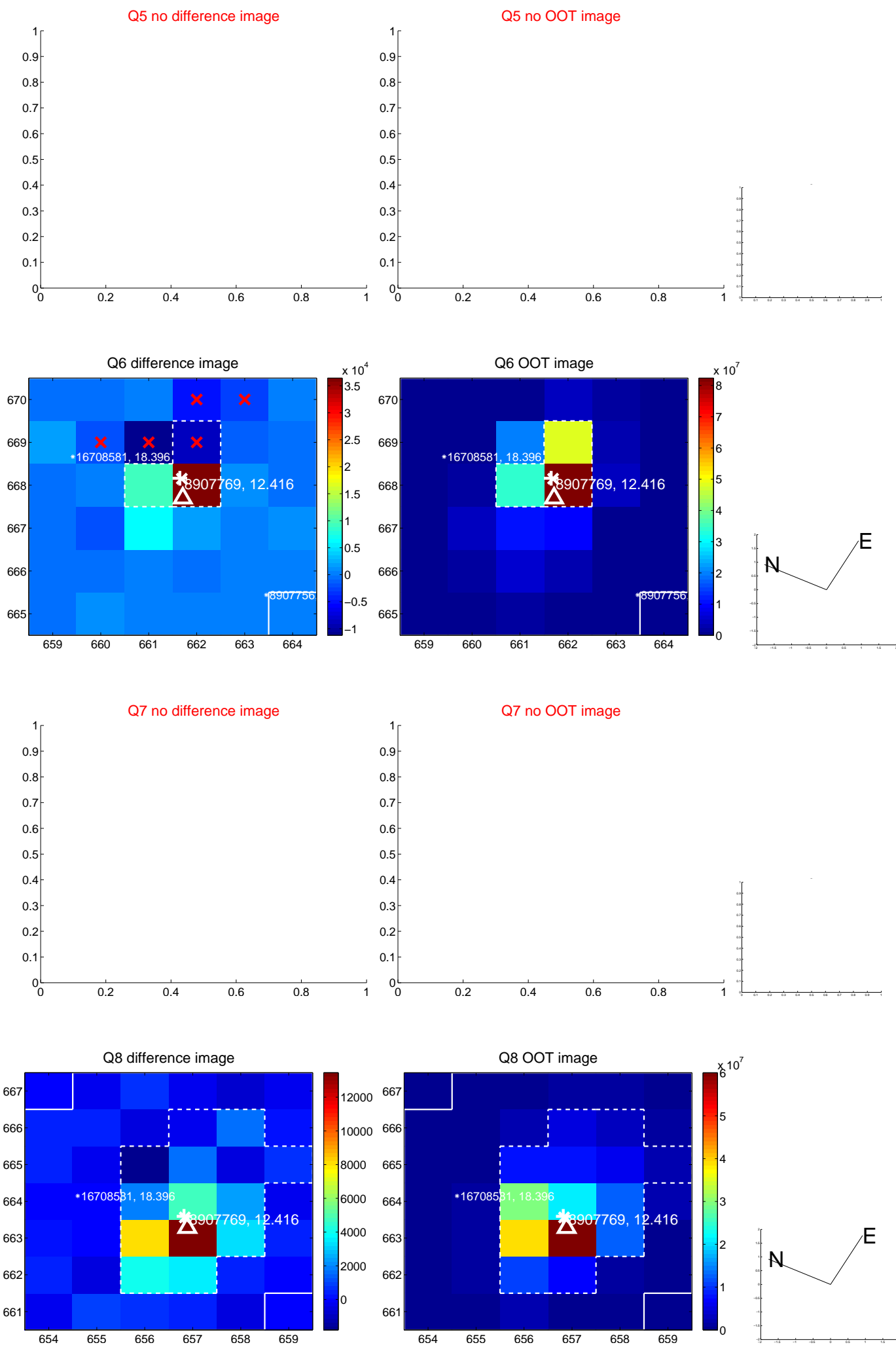


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

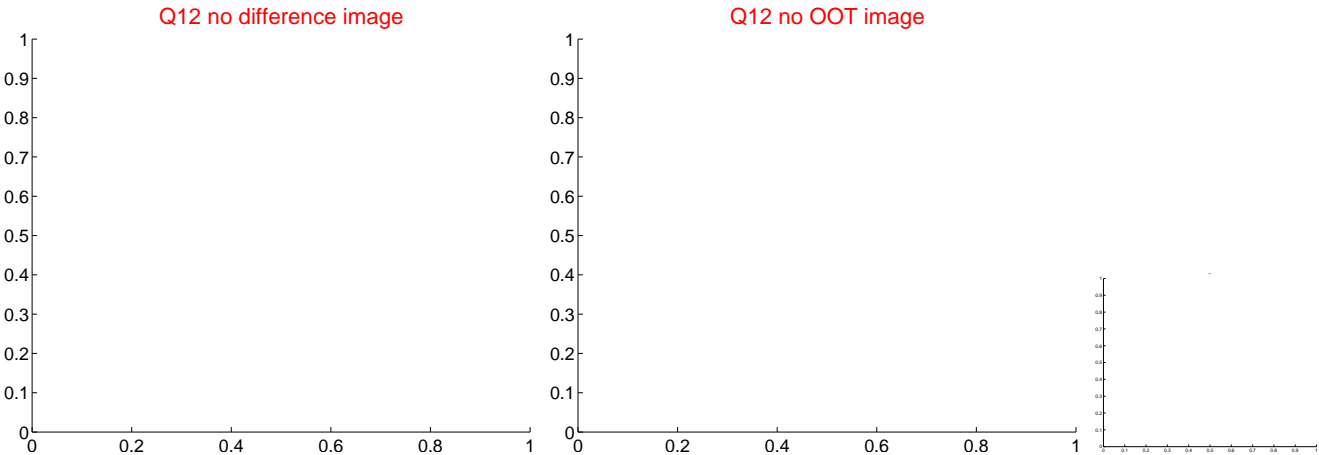
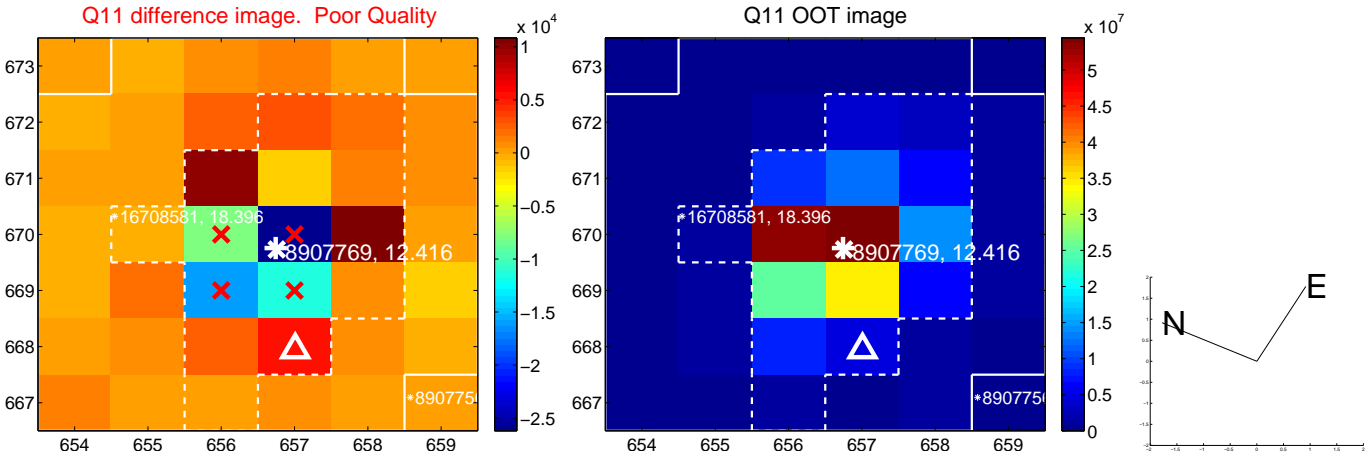
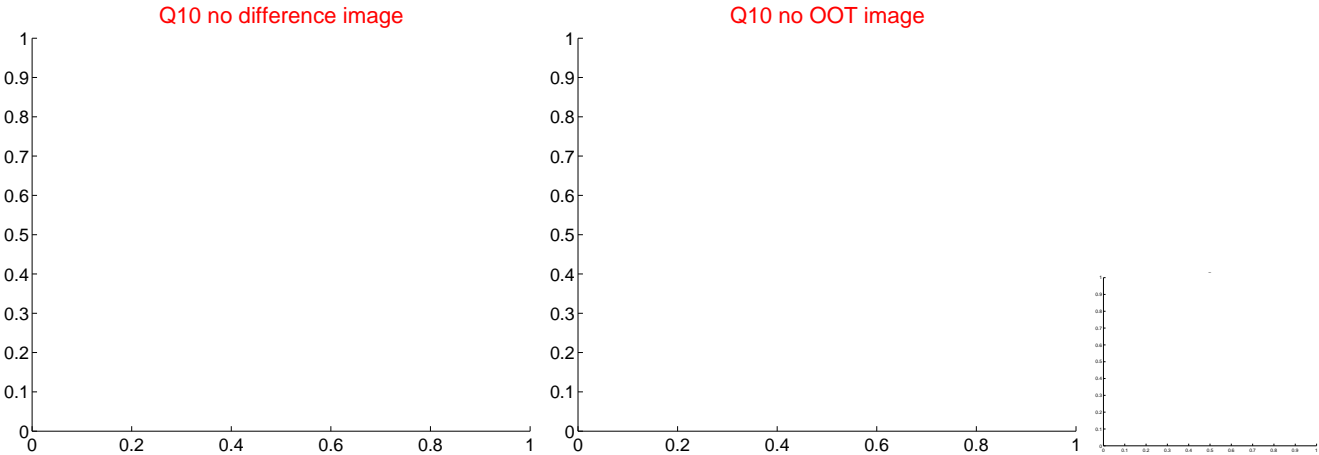
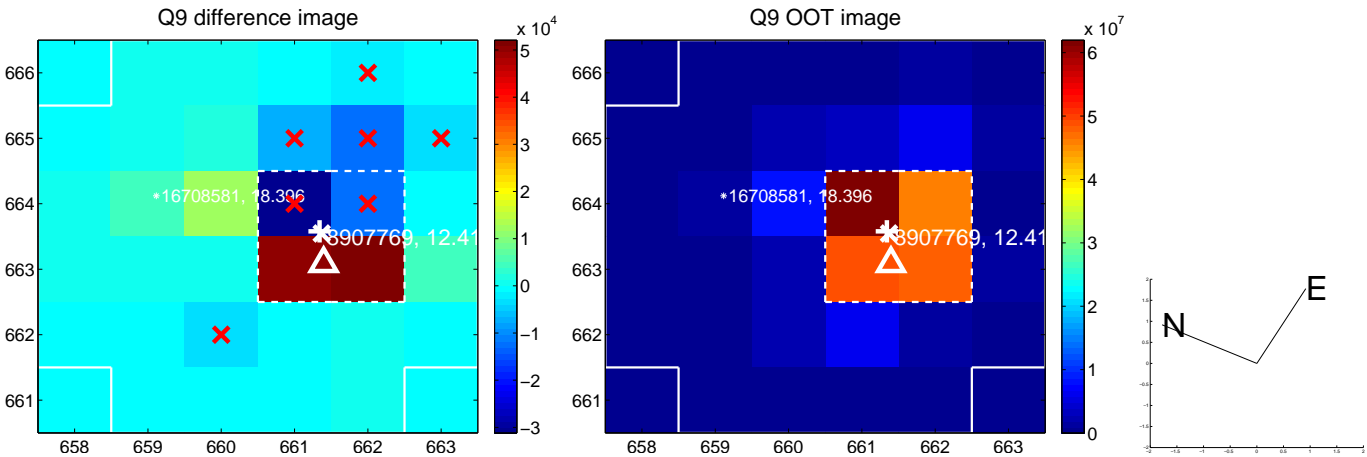
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



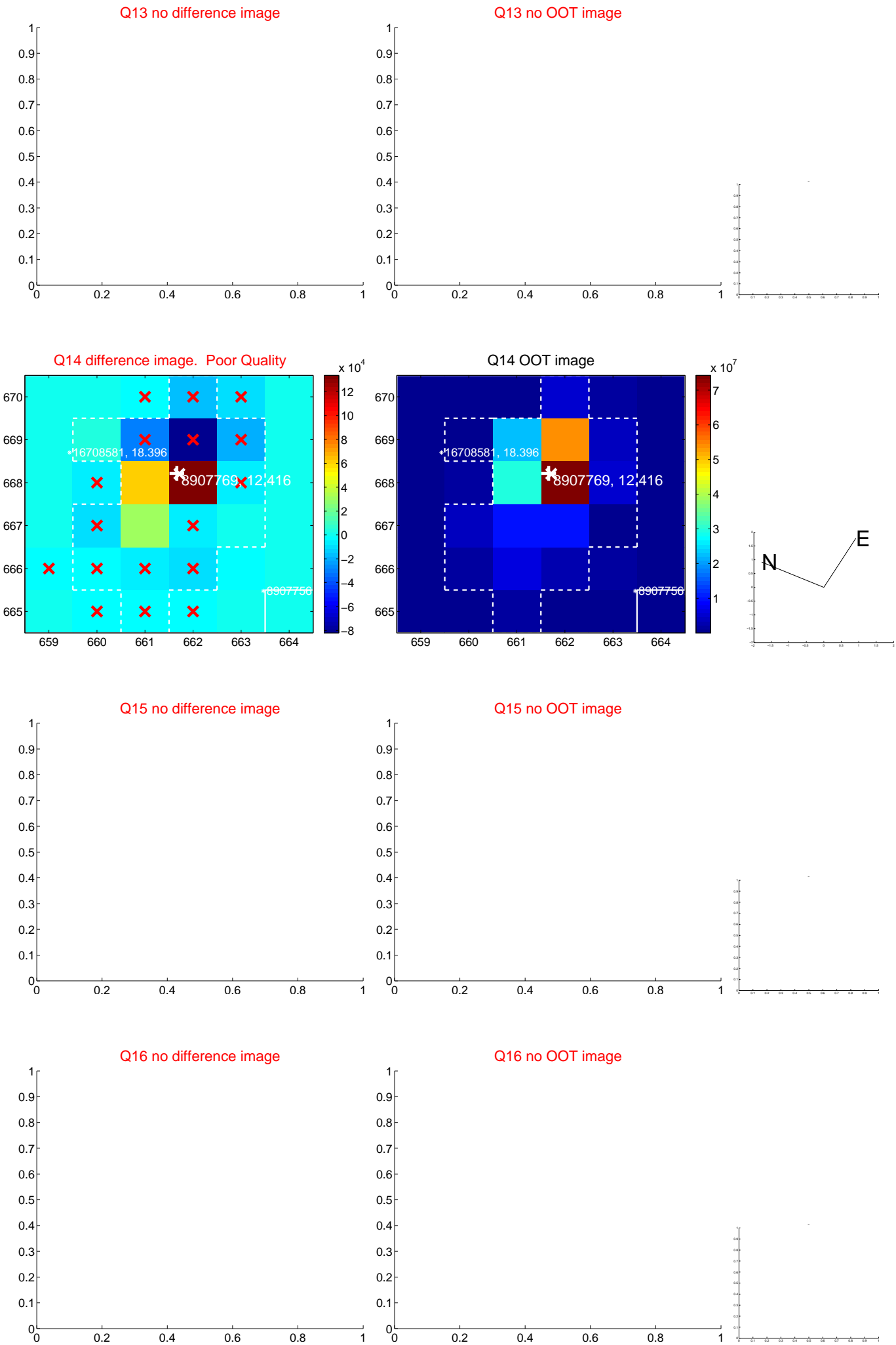
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



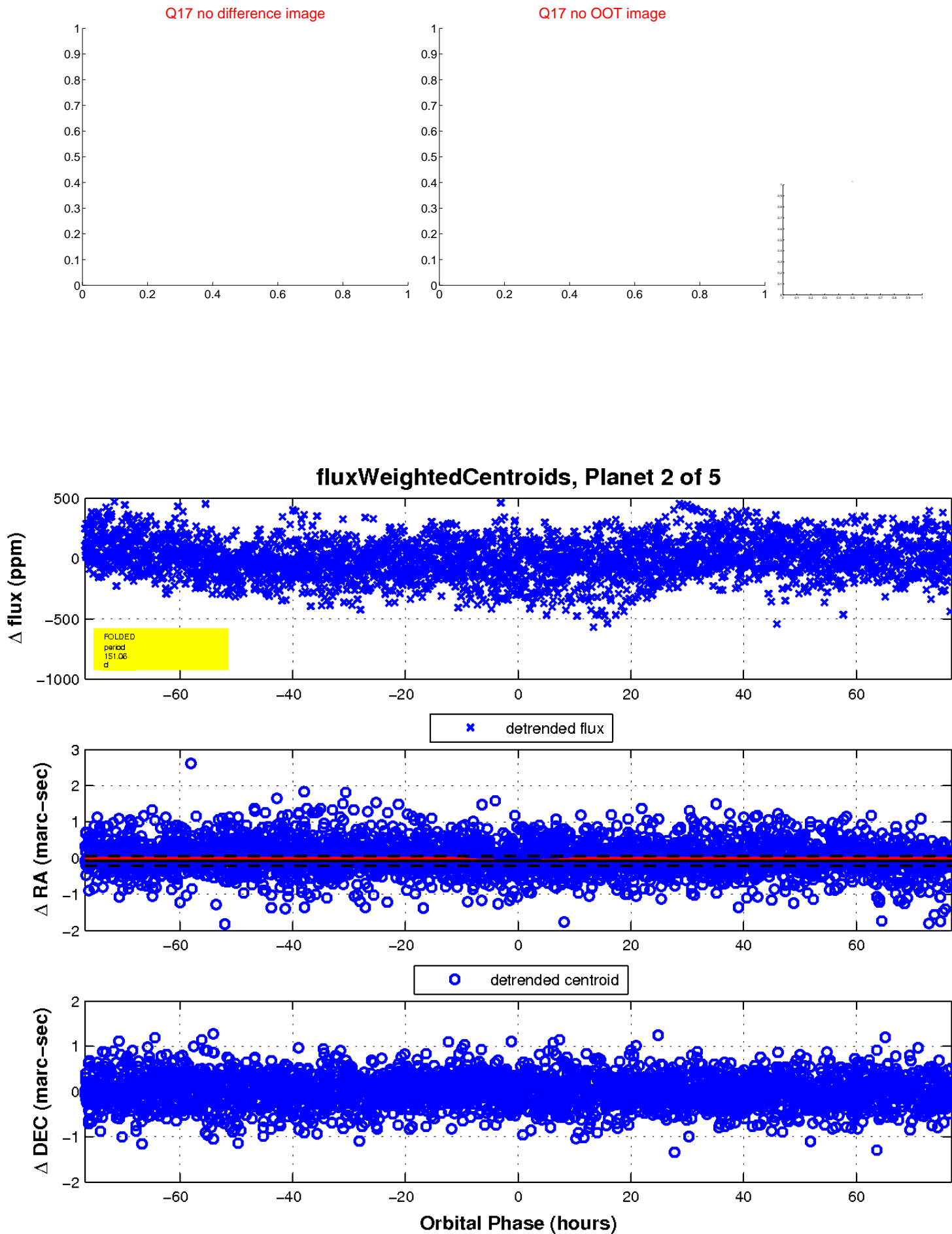
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

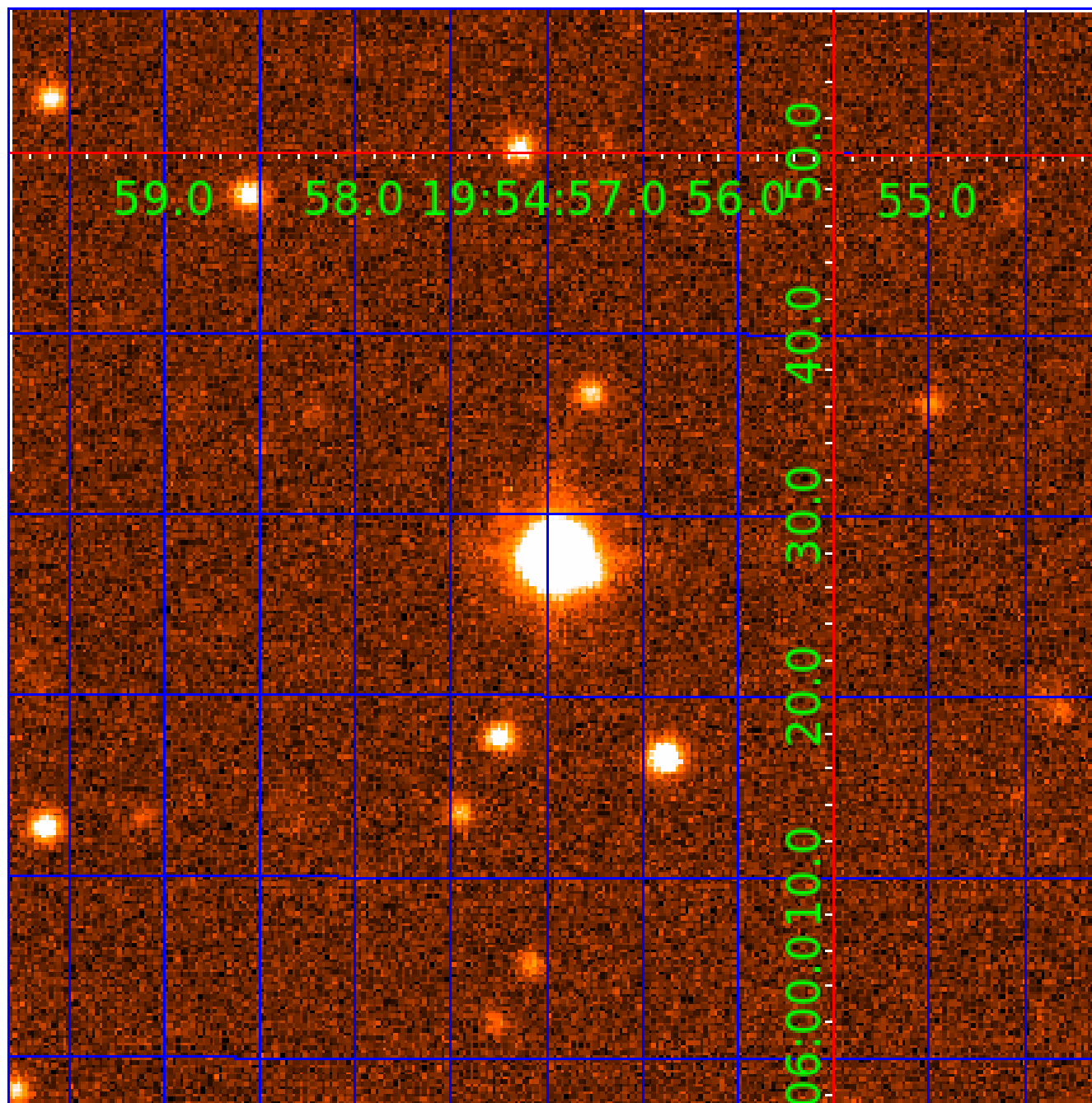


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008907769

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})
008907769-01	OBS	No	1.772465	132.929803	12.2	11.242	8.2	6.1	1.86	5947	0.65	4575.94
008907769-02	OBS	No	151.057444	137.409086	582.6	25.634	13.9	16.9	1.86	5947	5.86	12.20
008907769-03	OBS	No	503.309287	195.959885	191.9	6.232	11.0	8.4	1.86	5947	2.88	2.45
008907769-04	OBS	No	89.750594	146.133439	241.4	3.230	8.7	8.5	1.86	5947	5.82	24.43
008907769-05	OBS	No	40.101113	139.926442	155.3	1.538	7.4	8.5	1.86	5947	2.70	71.51

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008907769-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_UNRESOLVED_OFFSET
008907769-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS
008907769-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
008907769-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008907769-05	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—HALO_GHOST

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

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

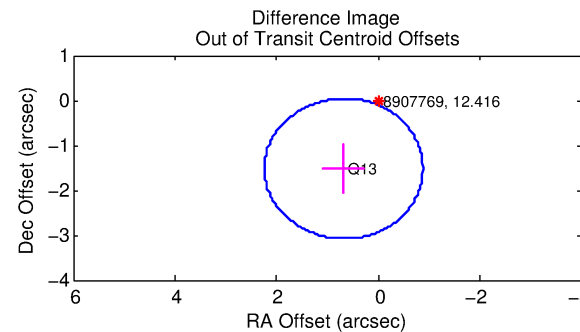
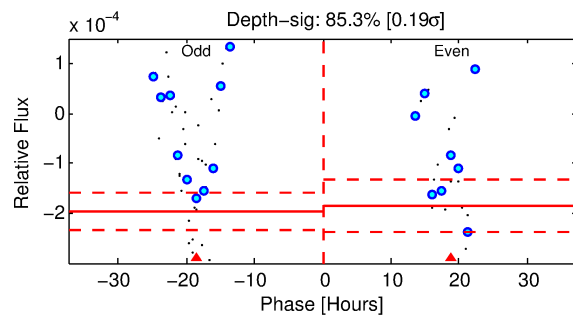
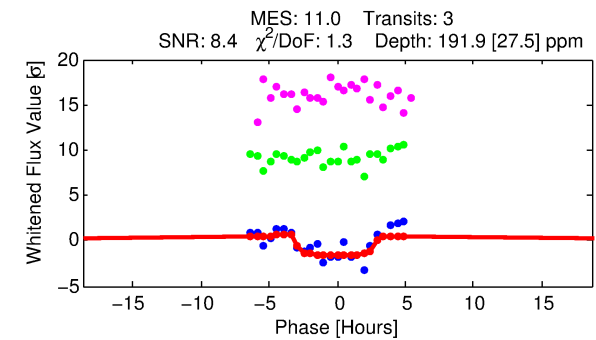
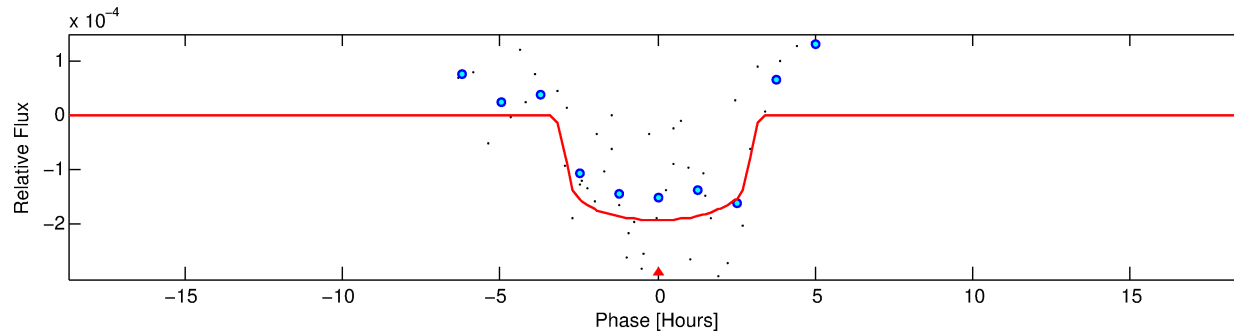
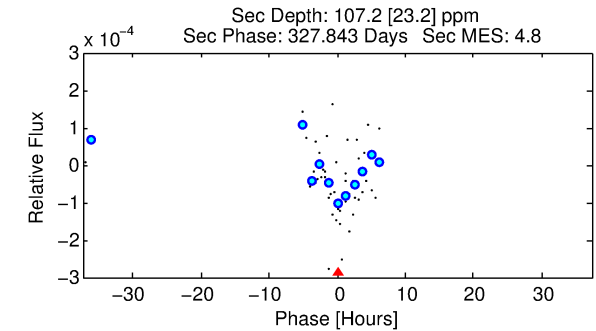
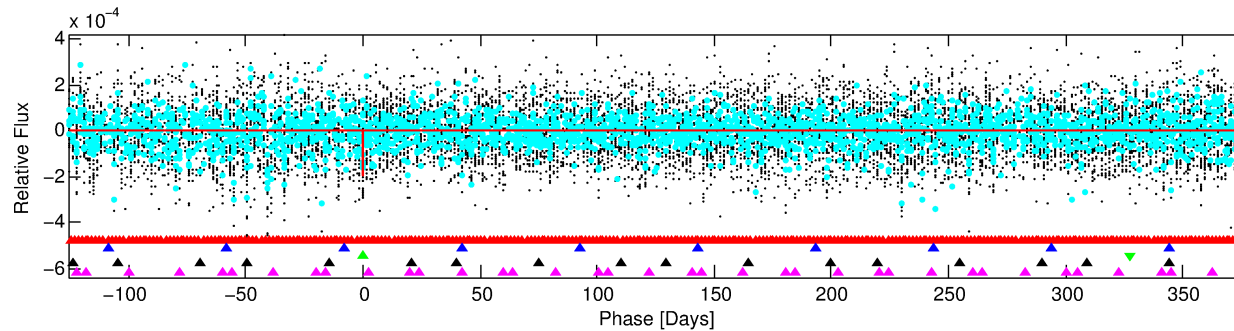
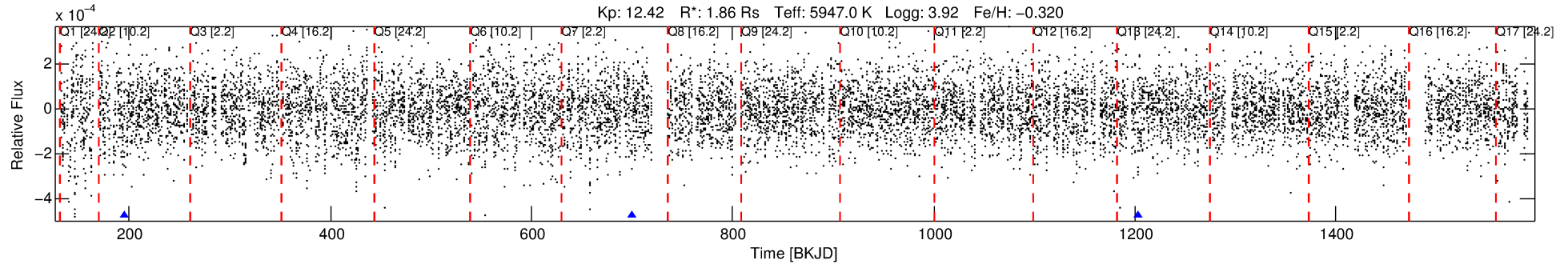
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008907769-03

No Significant Match Found

DV One-Page Summary

KIC: 8907769 Candidate: 3 of 5 Period: 503.309 d



DV Fit Results:

Period = 503.30929 [0.00854] d
Epoch = 195.9599 [0.0138] BKJD
Rp/R* = 0.0142 [0.0082]
a/R* = 365.41 [1041.89]
b = 0.82 [1.14]
Seff = 2.45 [1.31]
Teq = 319 [43] K
Rp = 2.89 [1.89] Re
a = 1.2582 [0.3981] AU
Ag = 11216.10 [14330.16] [0.78σ]
Teffp = 5077 [1492] K [3.19σ]

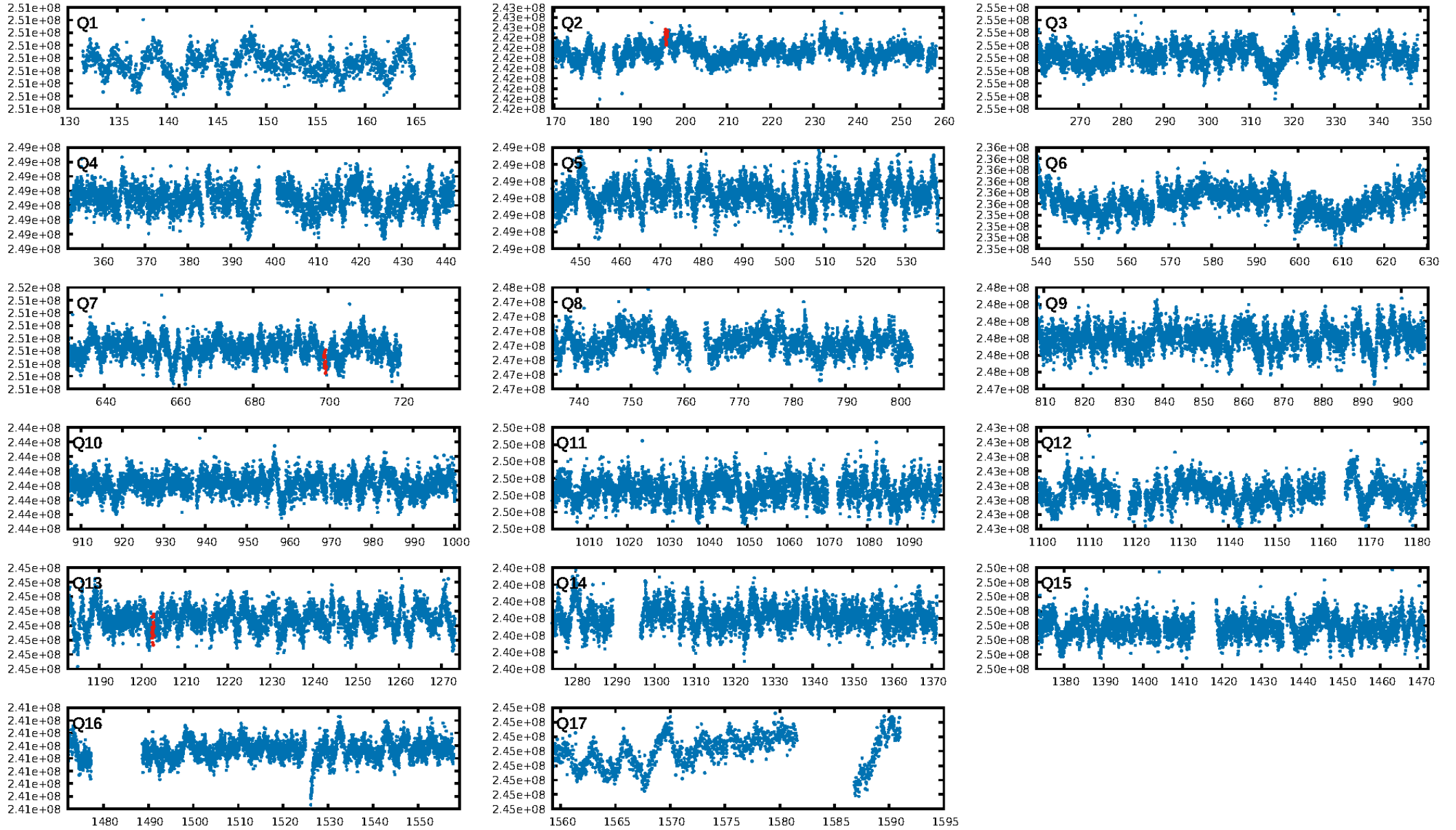
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [320.46σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 49.7%
ModelChiSquareGof-sig: 44.7%
Bootstrap-pfa: 1.63e-12
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.08909
Centroid-sig: N/A
Centroid-so: 0.710 arcsec [0.57σ]
OotOffset-rm: 1.667 arcsec [3.20σ]
KicOffset-rm: 1.581 arcsec [3.10σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/0/0/1 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [3/3]

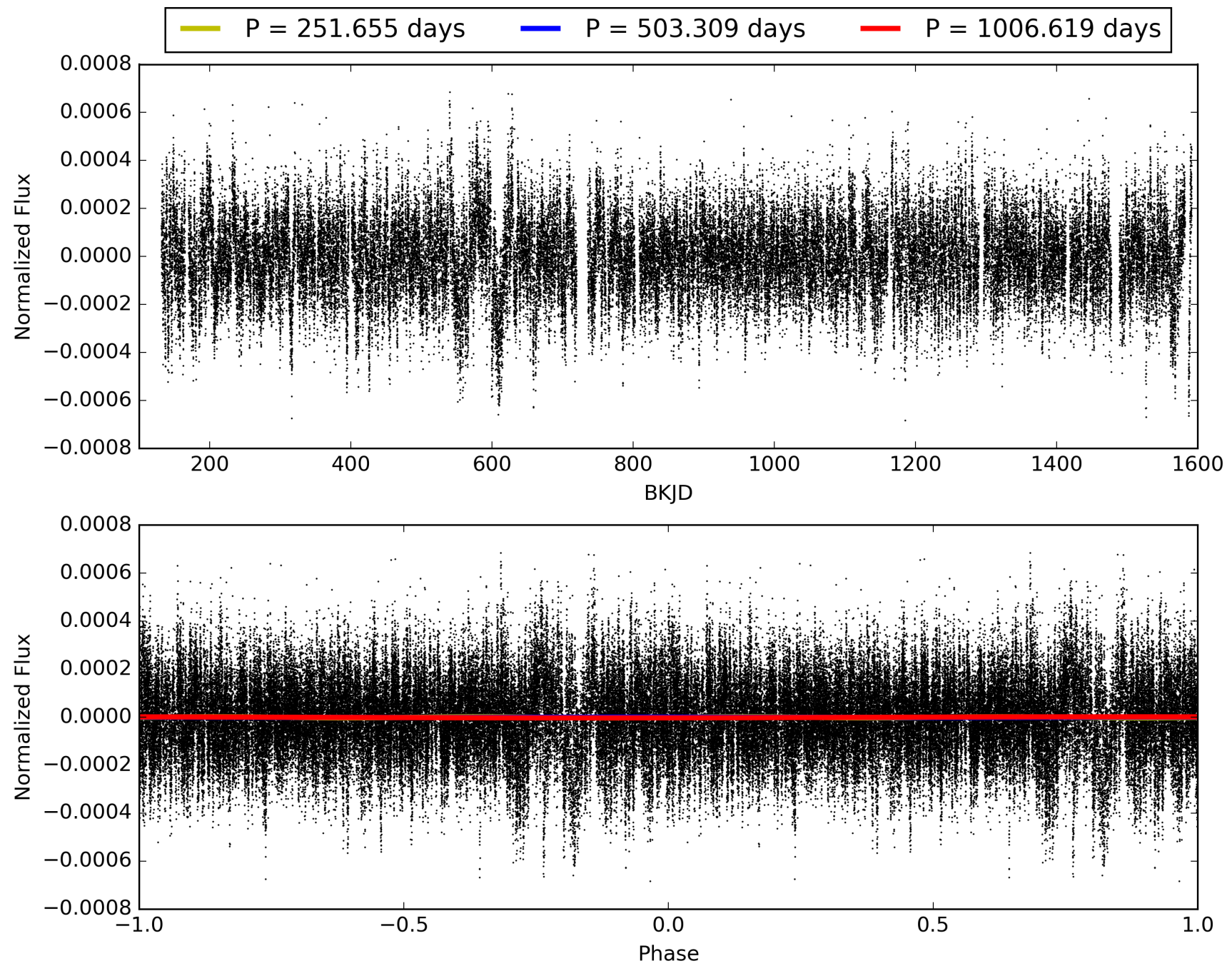
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 08:06:22 Z

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

TCE 008907769-03, PDC Light Curves

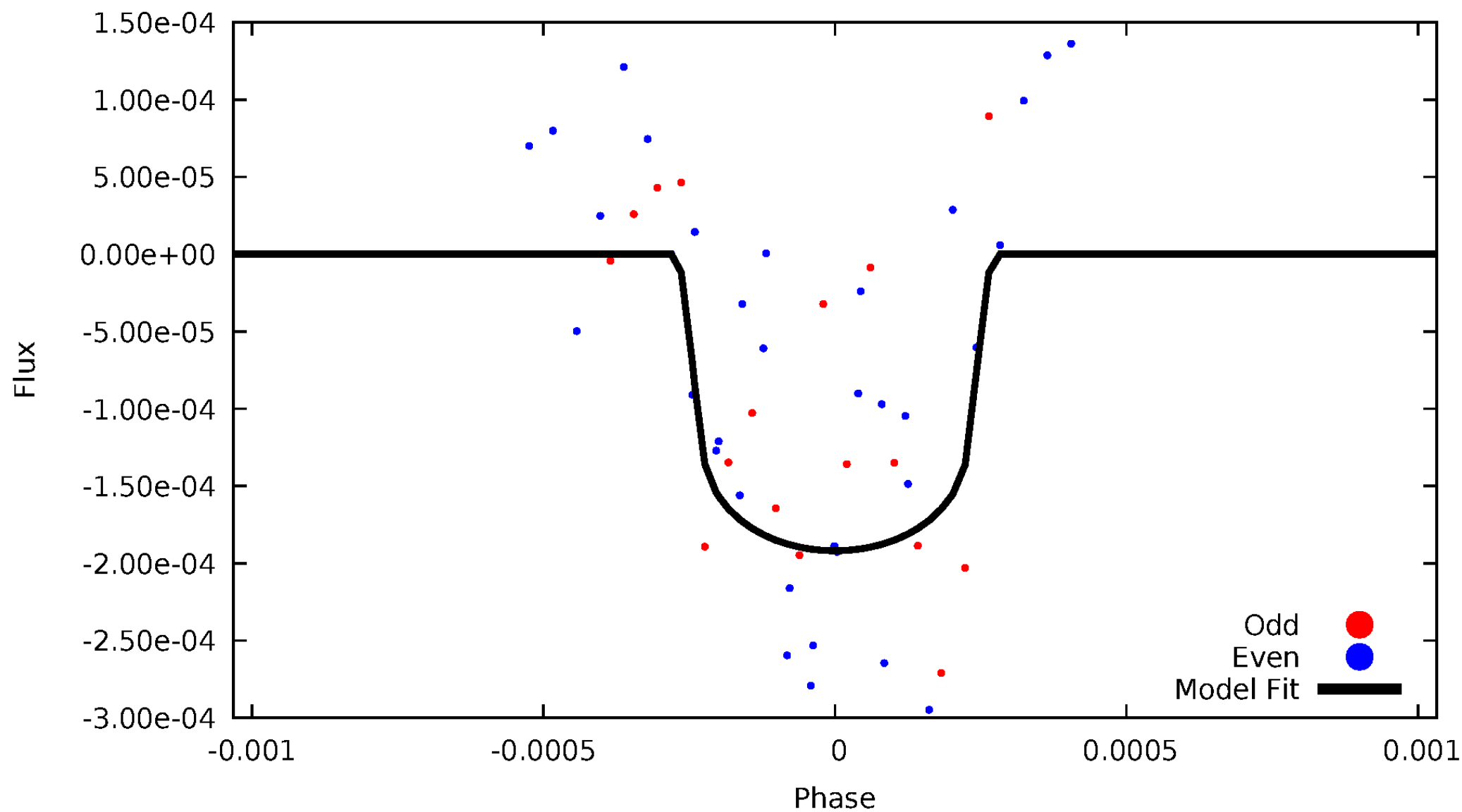


TCE 008907769-03



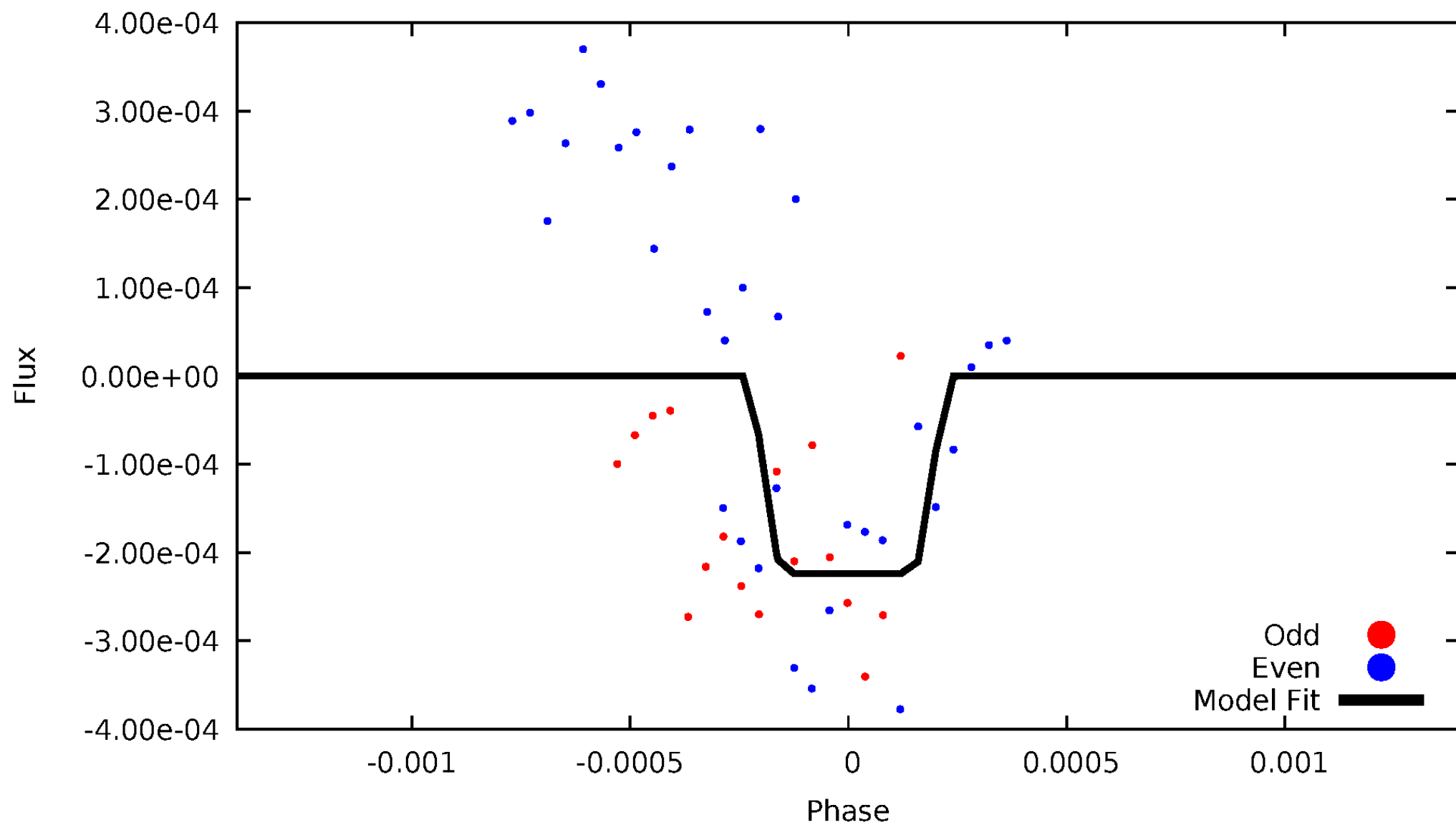
DV Odd/Even

TCE 008907769-03



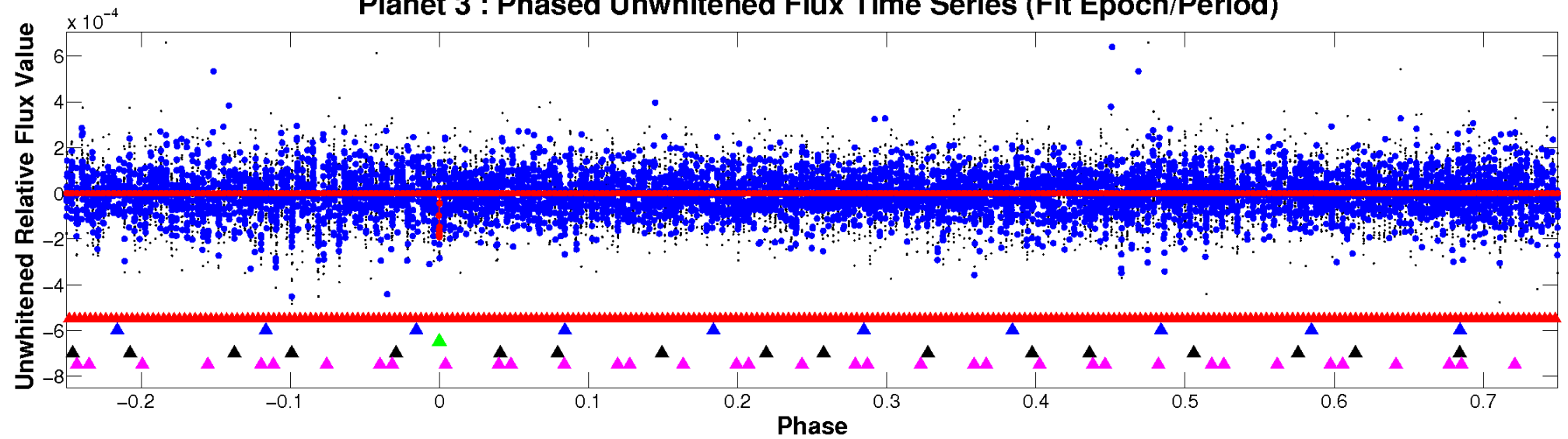
ALT Odd/Even

TCE 008907769-03

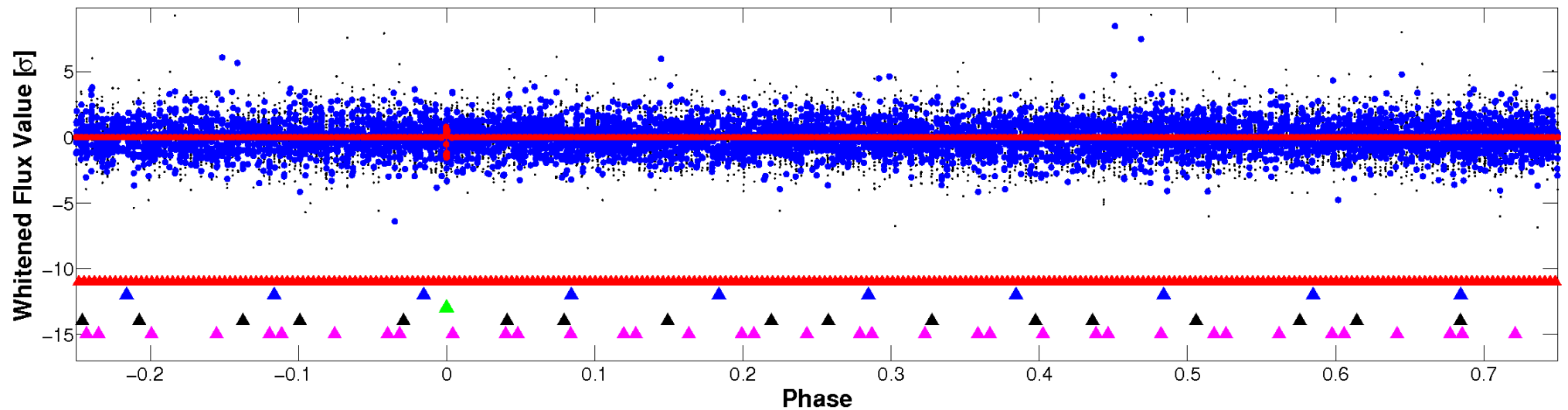


Non-Whitened Vs. Whitened Light Curve

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

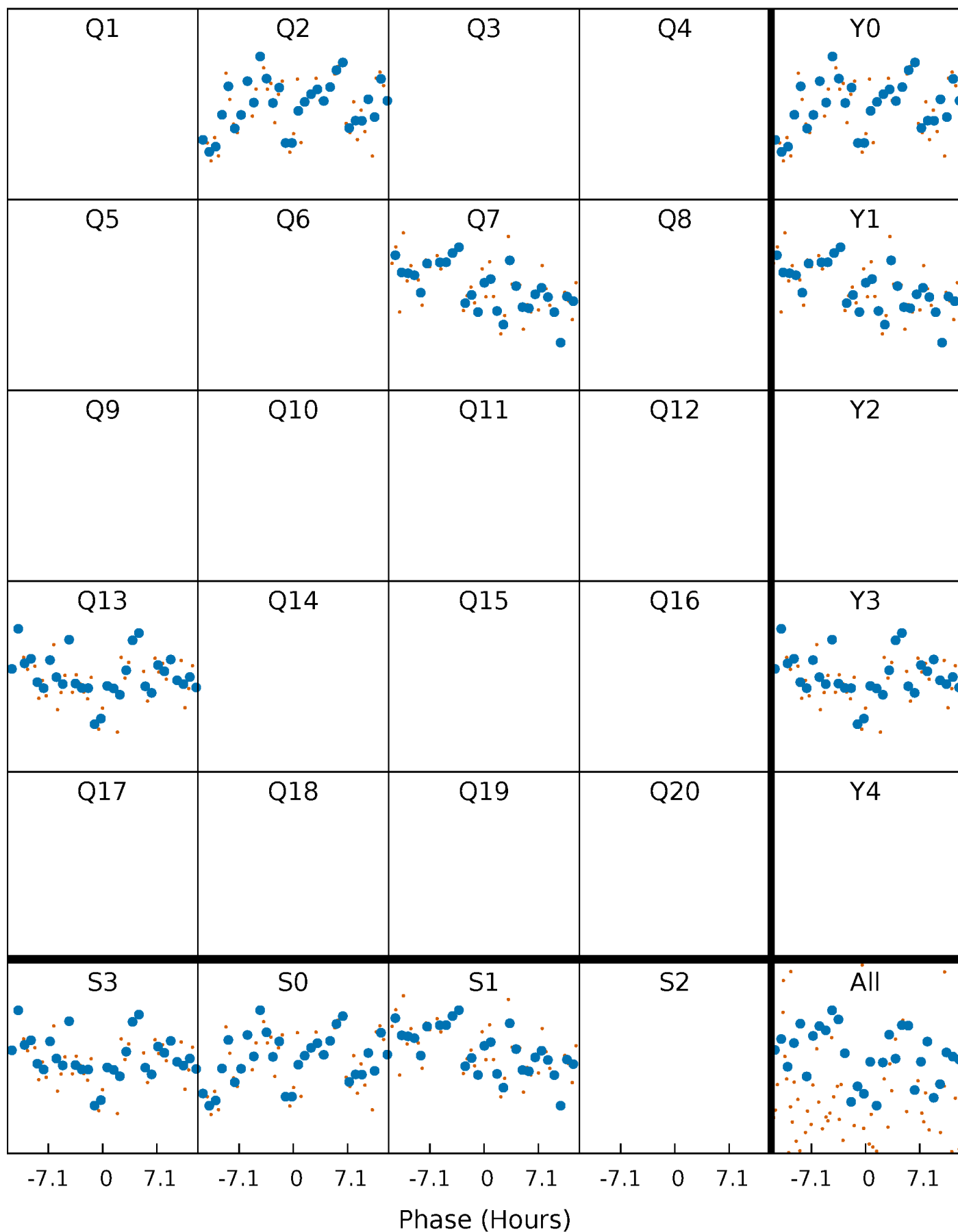


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



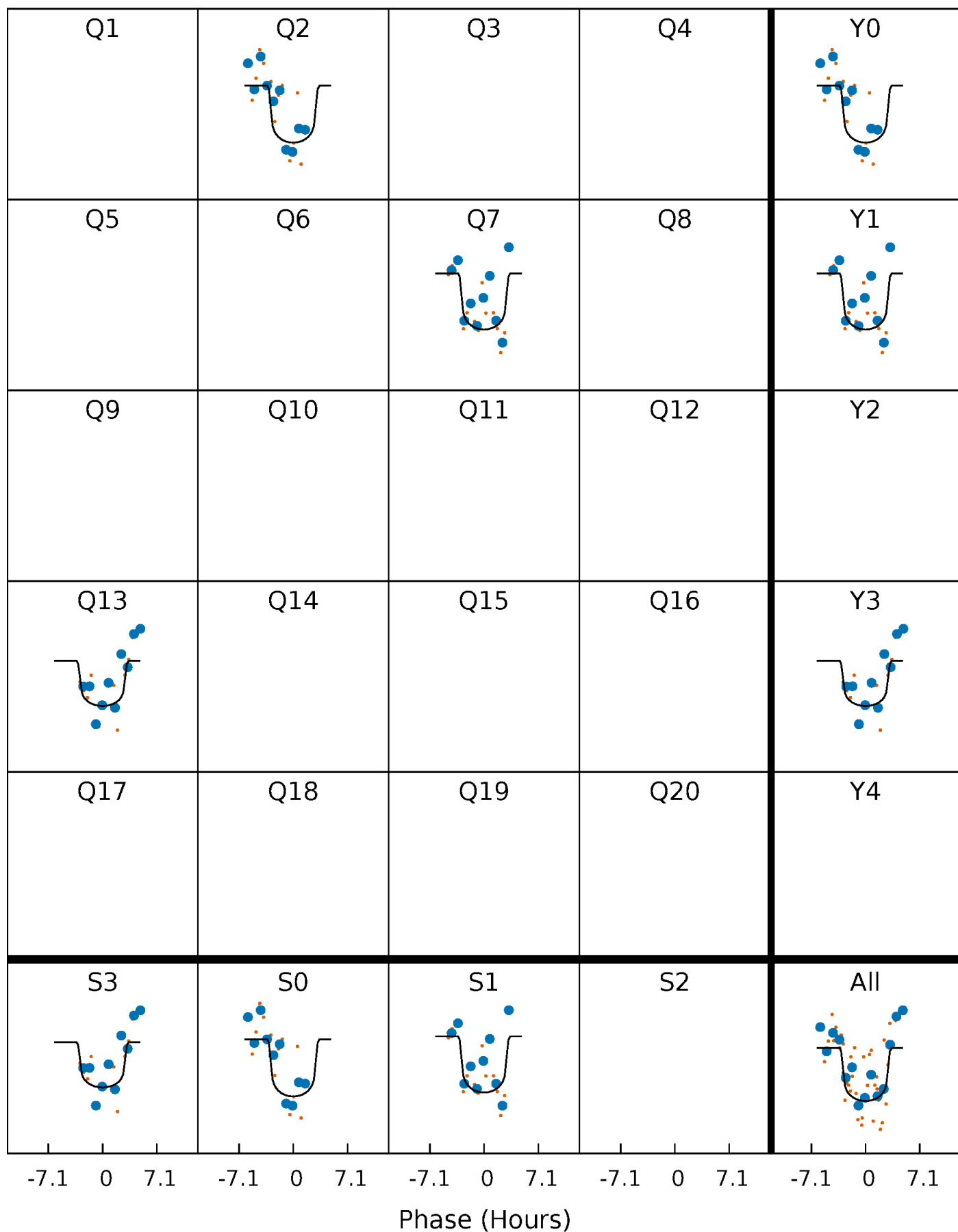
PDC Quarter-Phased Transit Curves

TCE 008907769-03 P=503.309287 Days $T_0=195.959885$ (BKJD)



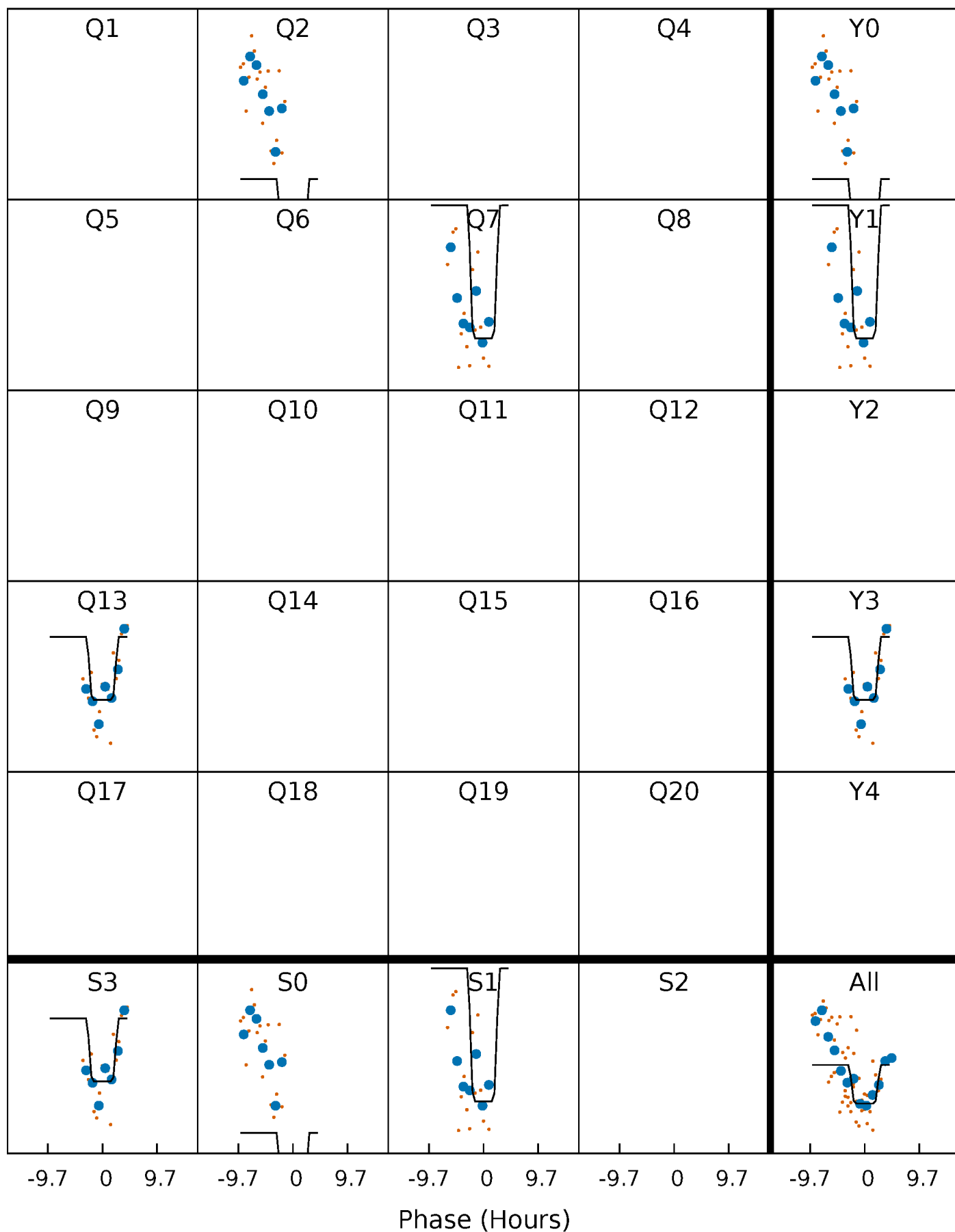
DV Quarter-Phased Transit Curves

TCE 008907769-03 P=503.309287 Days $T_0=195.959885$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

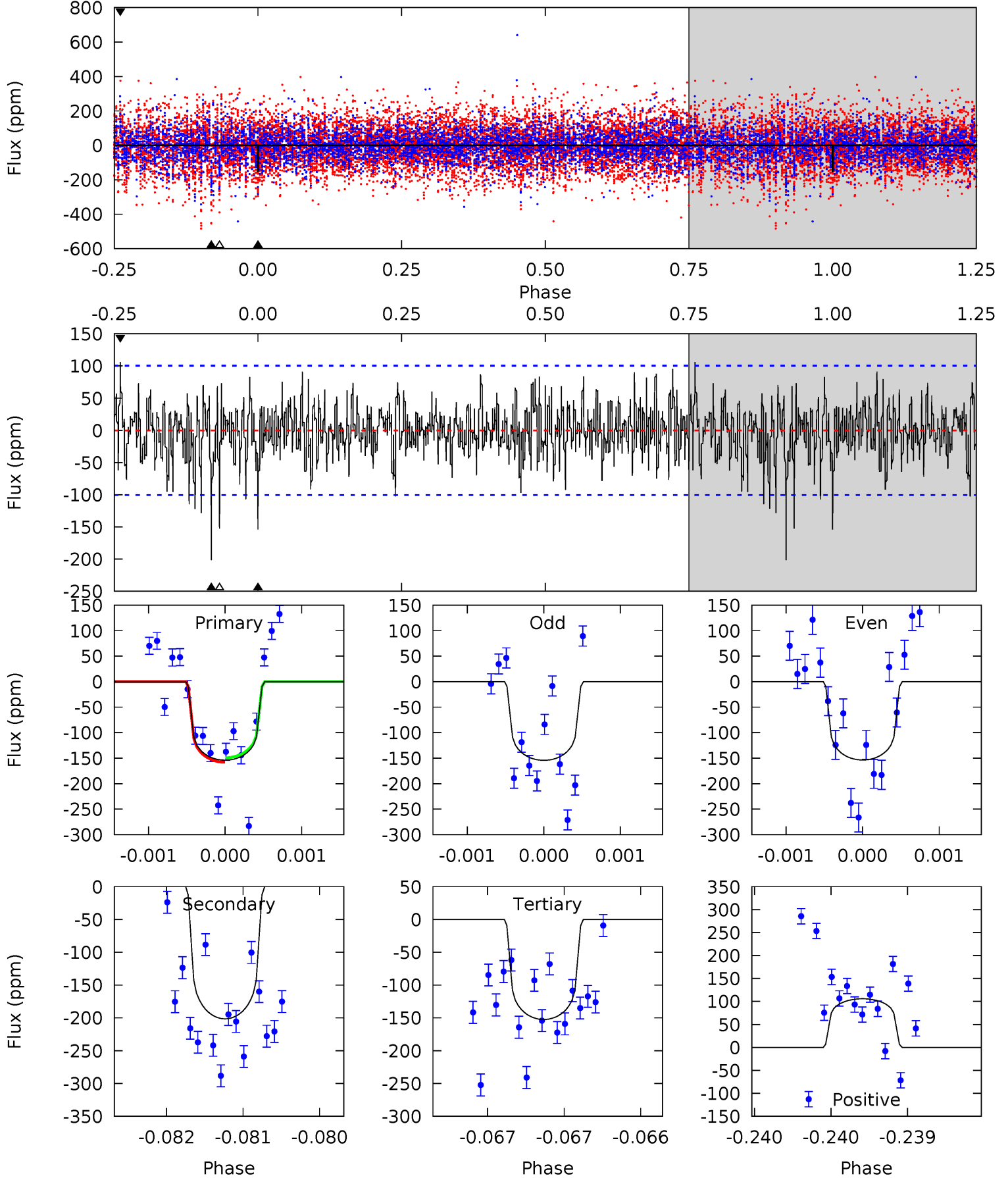
TCE 008907769-03 P=503.258149 Days $T_0=196.083424$ (BKJD)



DV Model-Shift Uniqueness Test

008907769-03, P = 503.309287 Days, E = 195.959885 Days

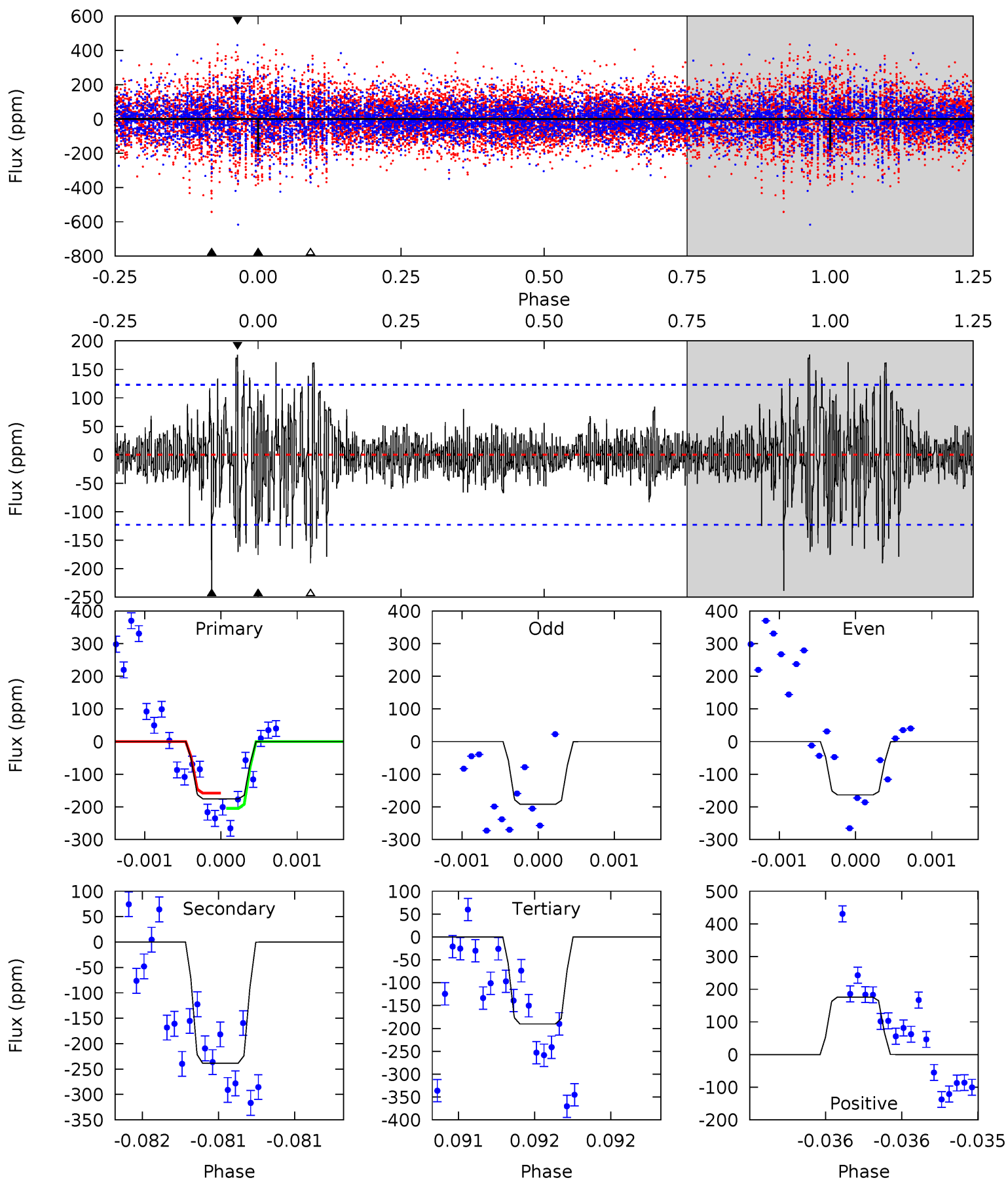
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.51	11.1	8.44	5.86	5.56	3.46	1.90	0.08	2.66	2.71	5.29	0.02	0.99	0.34	0.24



Alt Model-Shift Uniqueness Test

008907769-03, P = 503.258149 Days, E = 196.083424 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.94	10.8	8.61	7.95	5.57	3.47	1.78	-0.67	-0.01	2.18	2.84	0.64	0.43	0.42	1.03



Stellar Parameters For KIC 008907769

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5947^{+196}_{-160}	$3.919^{+0.308}_{-0.103}$	$-0.320^{+0.350}_{-0.250}$	$1.861^{+0.342}_{-0.587}$	$1.048^{+0.180}_{-0.163}$	$0.229^{+0.430}_{-0.084}$
	+3%/-3%	+8%/-3%	+109%/-78%	+18%/-32%	+17%/-16%	+188%/-37%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 008907769-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-201 ± 18	$2.79^{+1.87}_{-1.44}$	440^{+27}_{-36}	5803^{+3062}_{-1020}	22543^{+74775}_{-14285}
Alt.	-239 ± 22	$2.81^{+1.84}_{-1.41}$	440^{+28}_{-44}	6046^{+2989}_{-1084}	26177^{+81268}_{-16531}

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

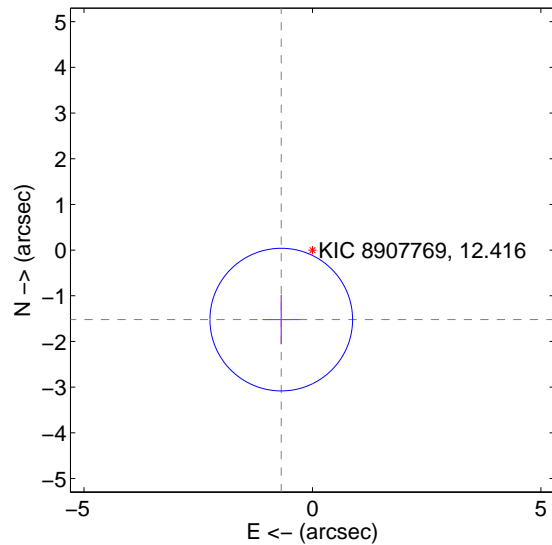
Supplemental centroid analysis for 008907769-03. Kepler magnitude: 12.42. Transit SNR 8.42

There are 1 quarters with good PRF difference image offsets

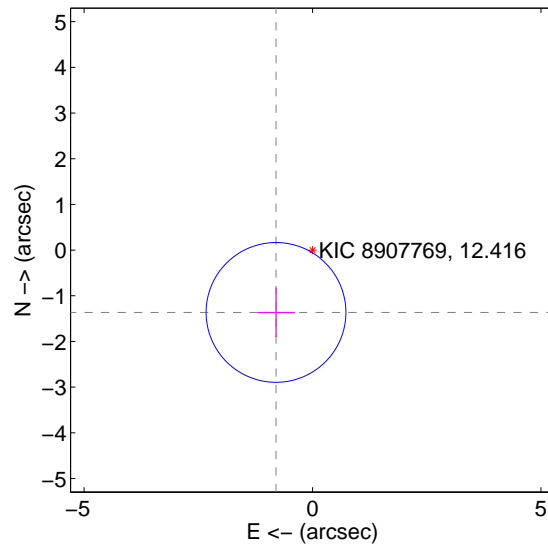
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.667 ± 0.520	3.20	0.682 ± 0.411	-1.521 ± 0.540
PRF-fit source offset from KIC position	1.581 ± 0.510	3.10	0.799 ± 0.411	-1.364 ± 0.540
photometric centroid source offset	0.71 ± 1.23	0.57	0.71 ± 1.23	0.02 ± 1.12

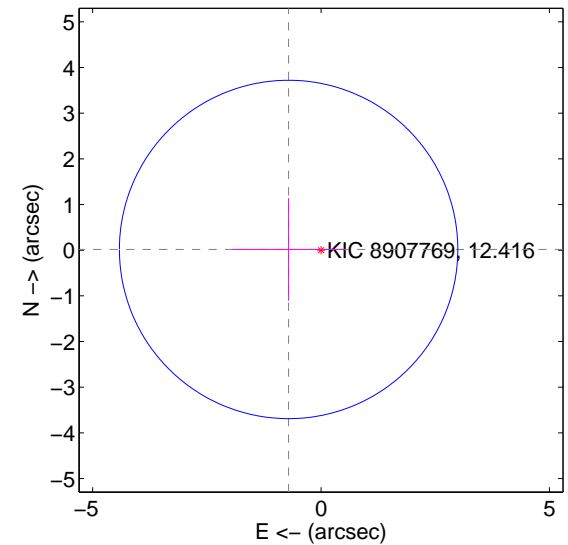
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

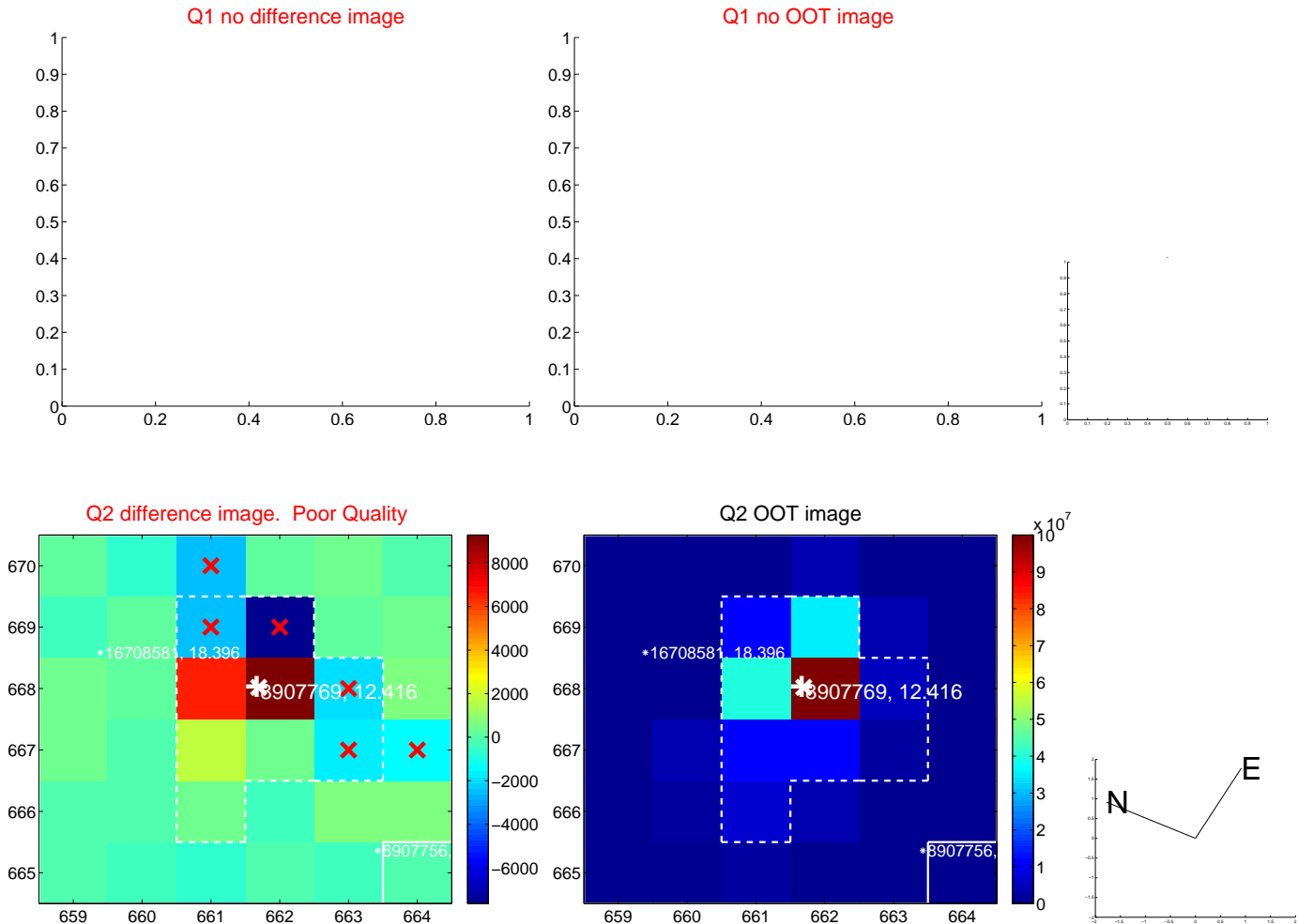


offset from photometric centroids

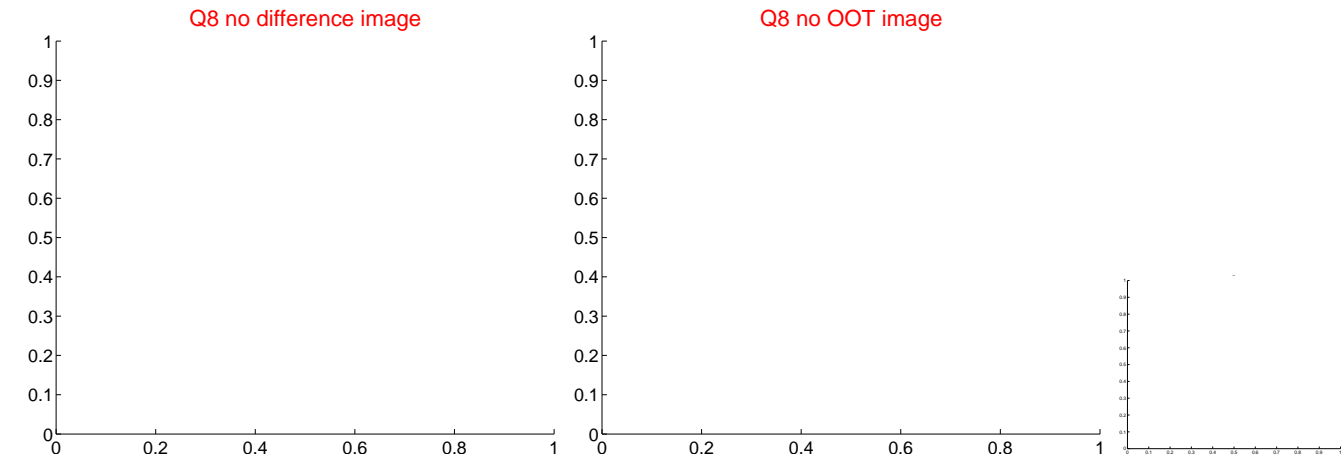
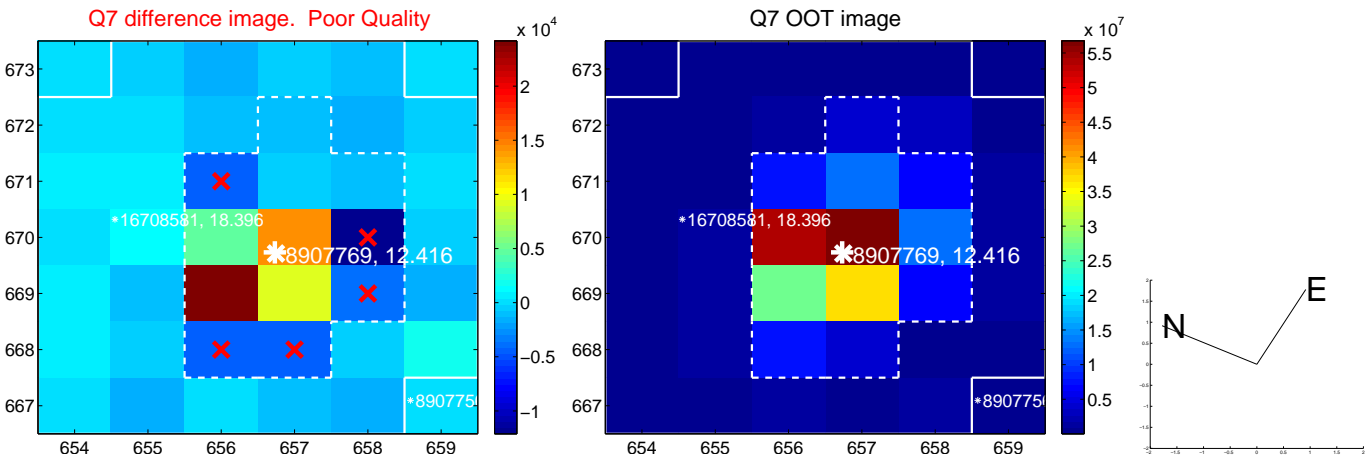
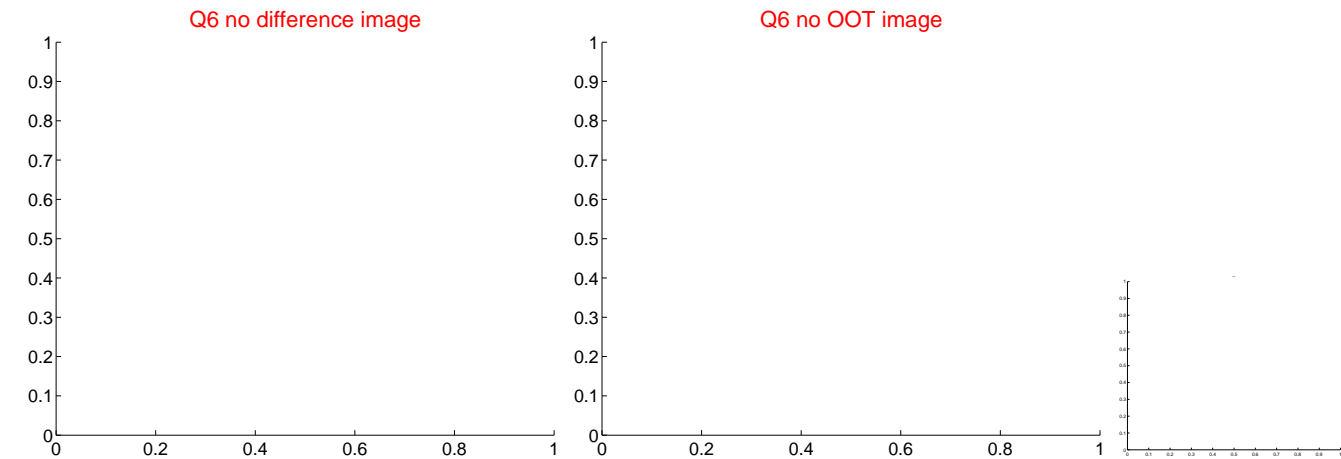
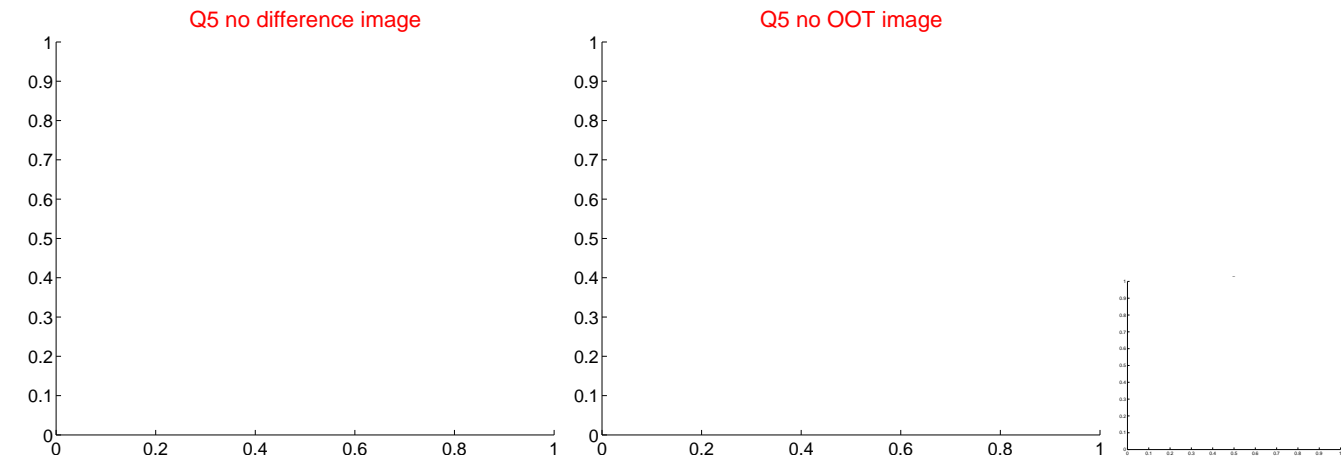


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

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



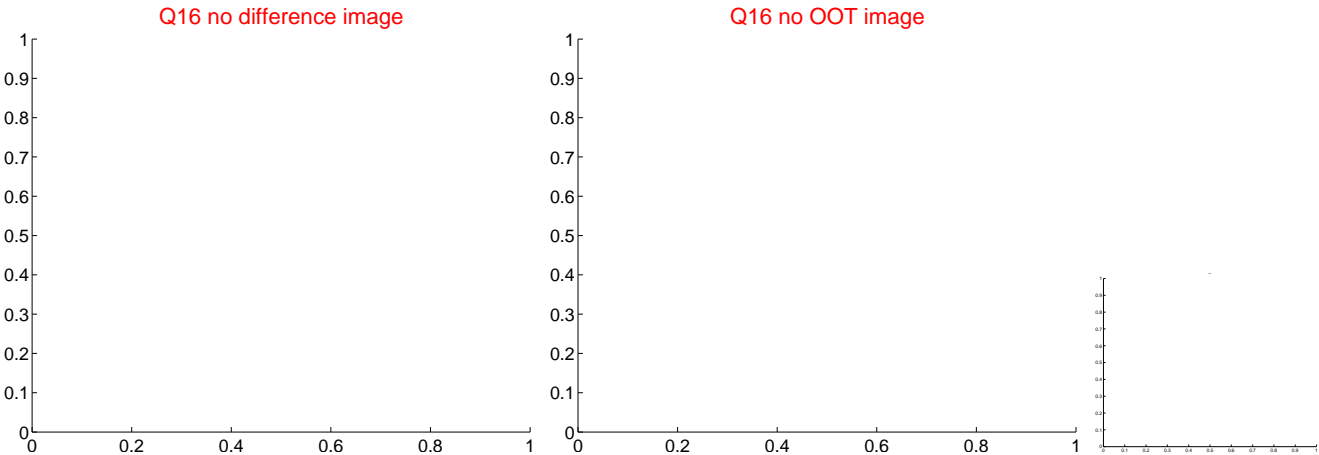
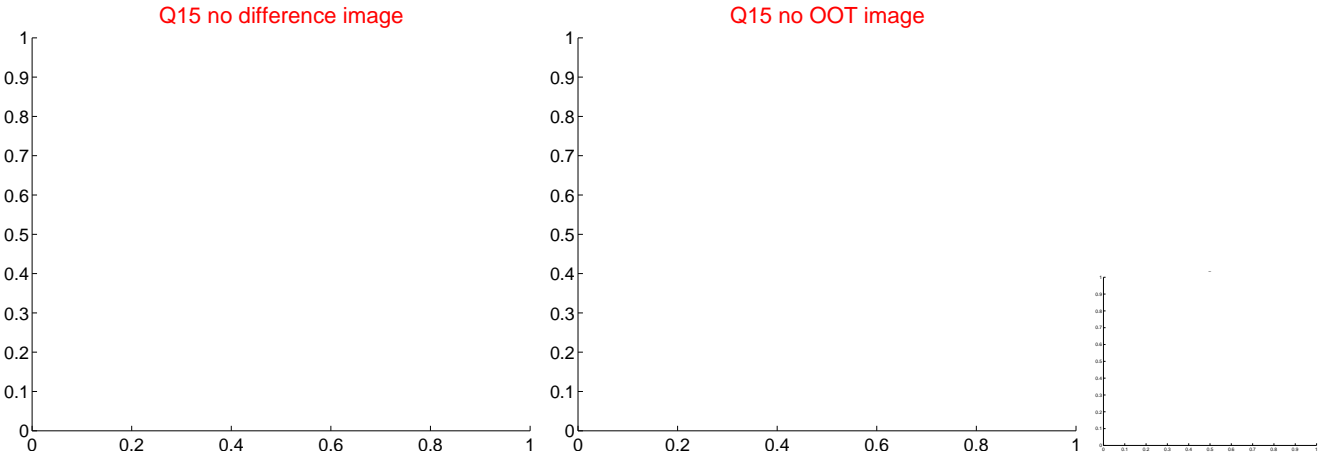
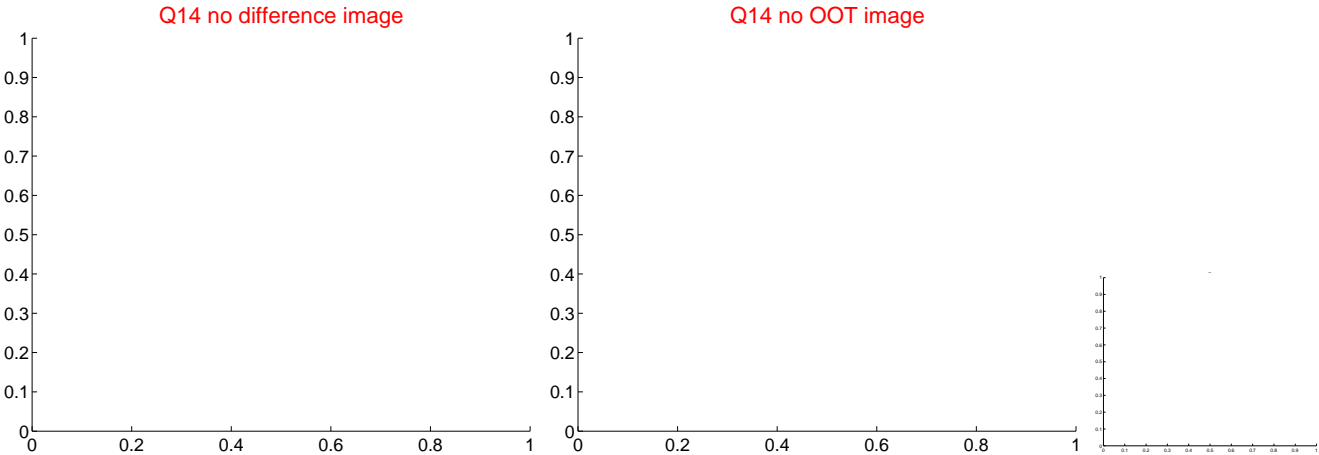
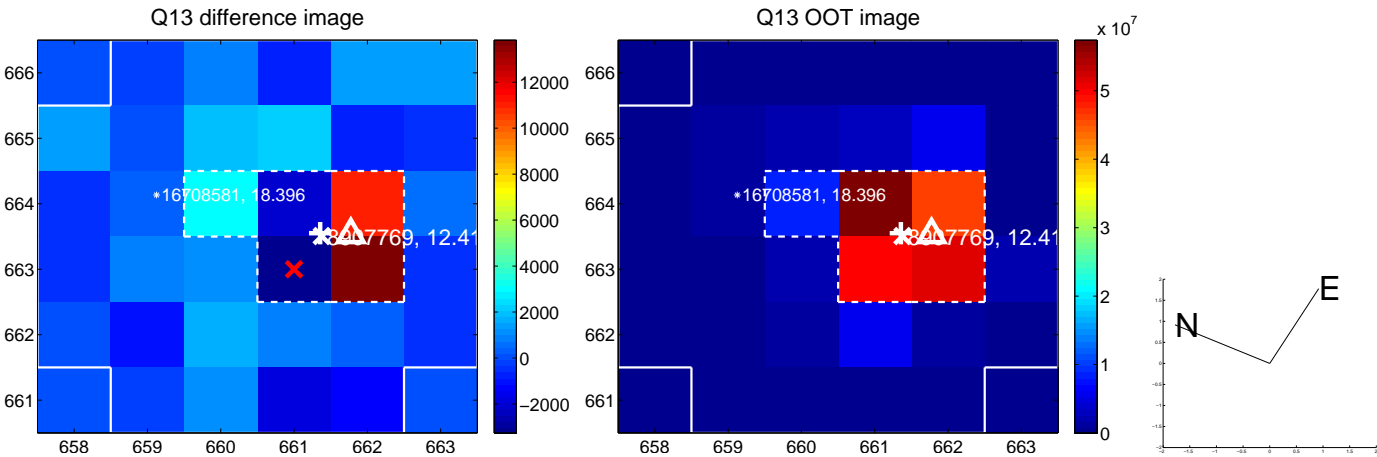
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



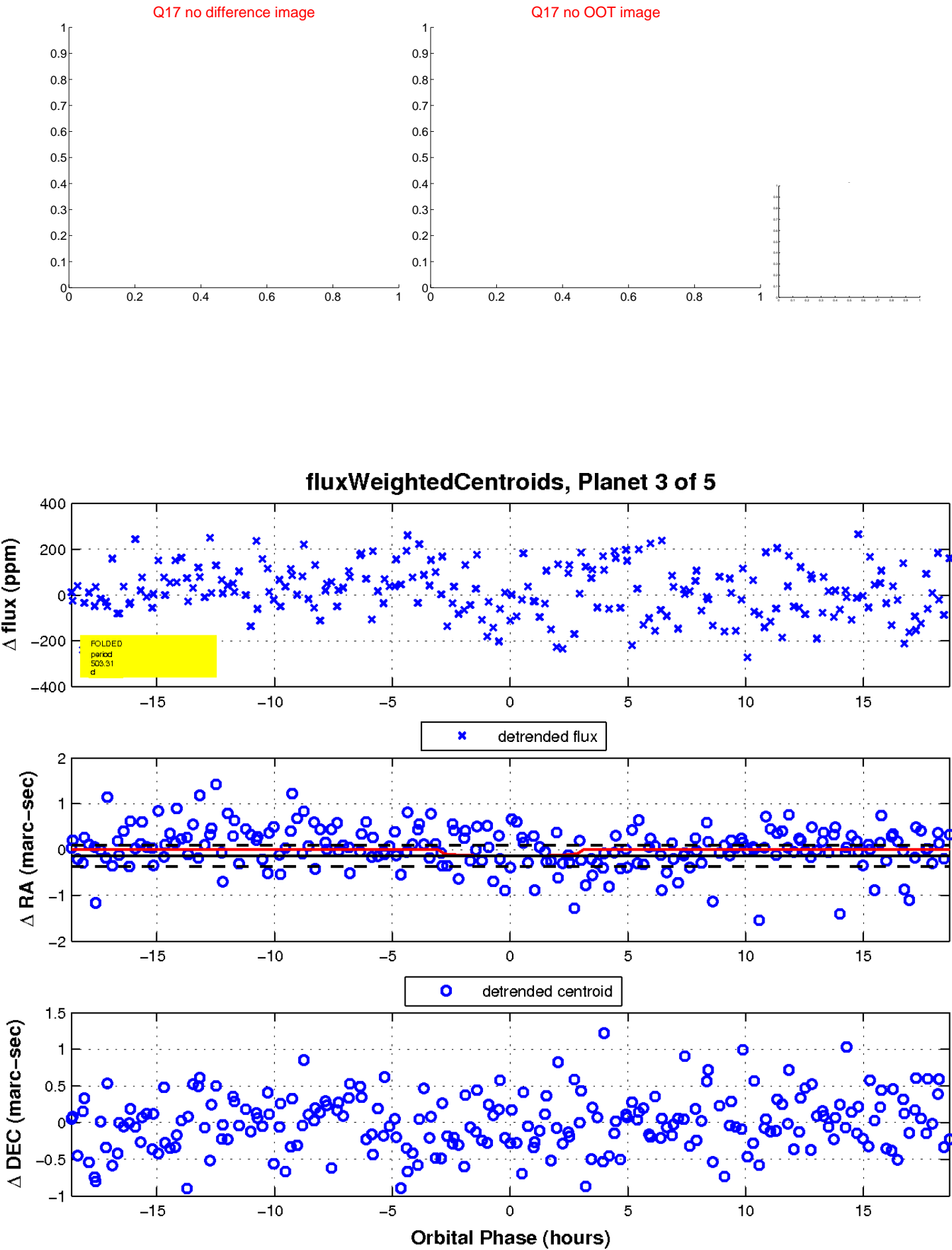
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

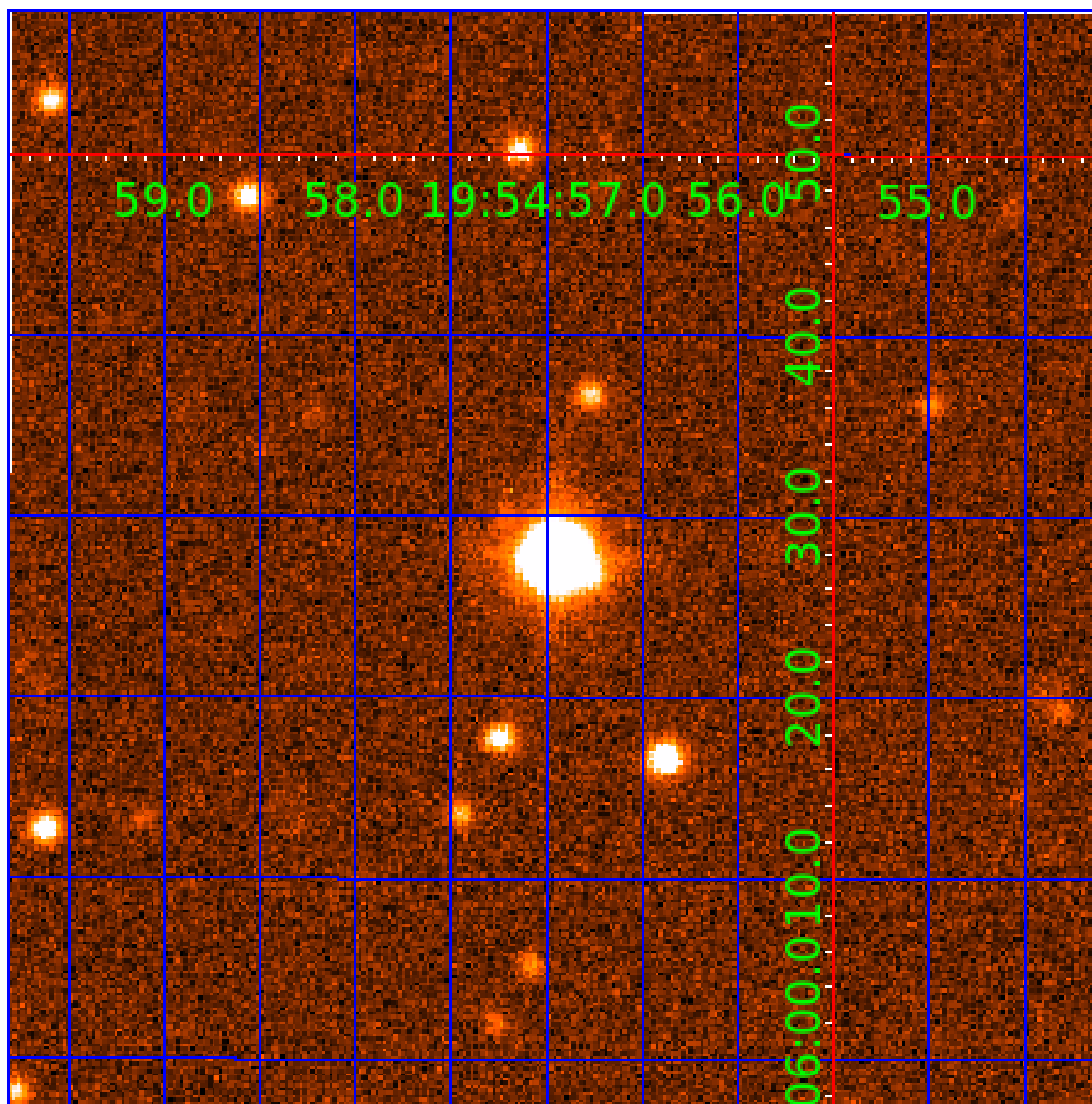


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008907769

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})
008907769-01	OBS	No	1.772465	132.929803	12.2	11.242	8.2	6.1	1.86	5947	0.65	4575.94
008907769-02	OBS	No	151.057444	137.409086	582.6	25.634	13.9	16.9	1.86	5947	5.86	12.20
008907769-03	OBS	No	503.309287	195.959885	191.9	6.232	11.0	8.4	1.86	5947	2.88	2.45
008907769-04	OBS	No	89.750594	146.133439	241.4	3.230	8.7	8.5	1.86	5947	5.82	24.43
008907769-05	OBS	No	40.101113	139.926442	155.3	1.538	7.4	8.5	1.86	5947	2.70	71.51

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008907769-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_UNRESOLVED_OFFSET
008907769-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS
008907769-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
008907769-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008907769-05	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—HALO_GHOST

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

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

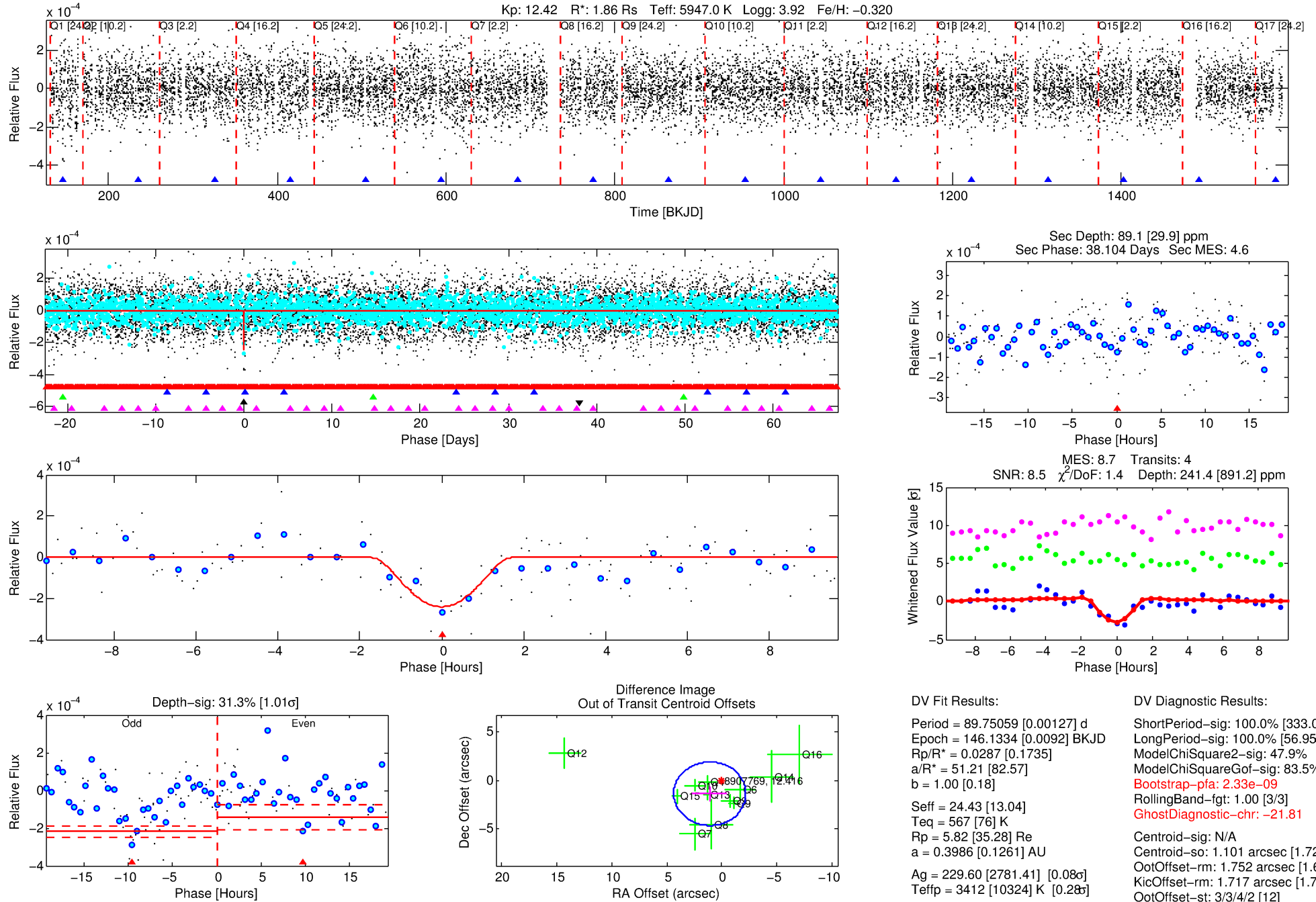
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008907769-04

No Significant Match Found

DV One-Page Summary

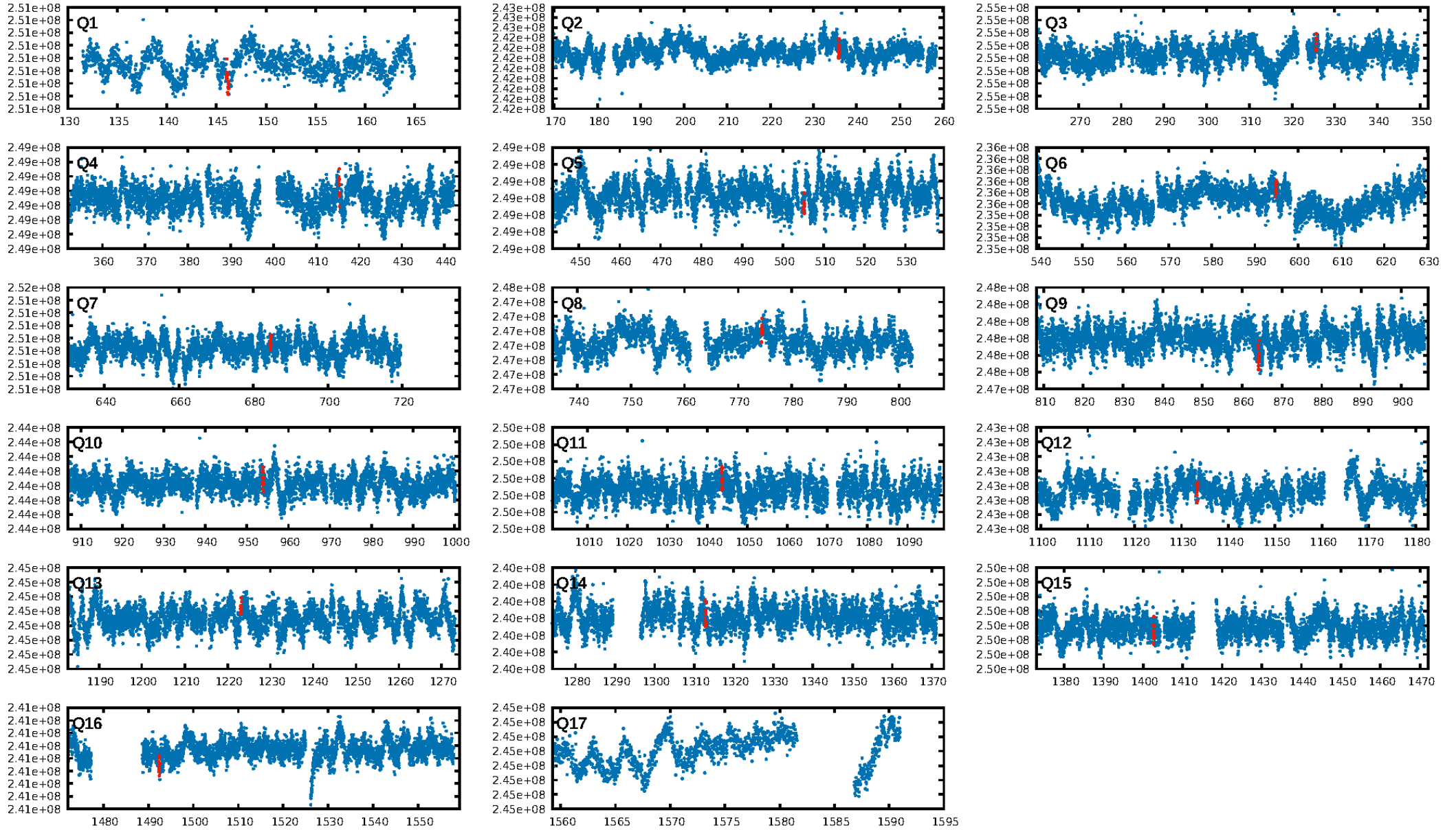
KIC: 8907769 Candidate: 4 of 5 Period: 89.751 d



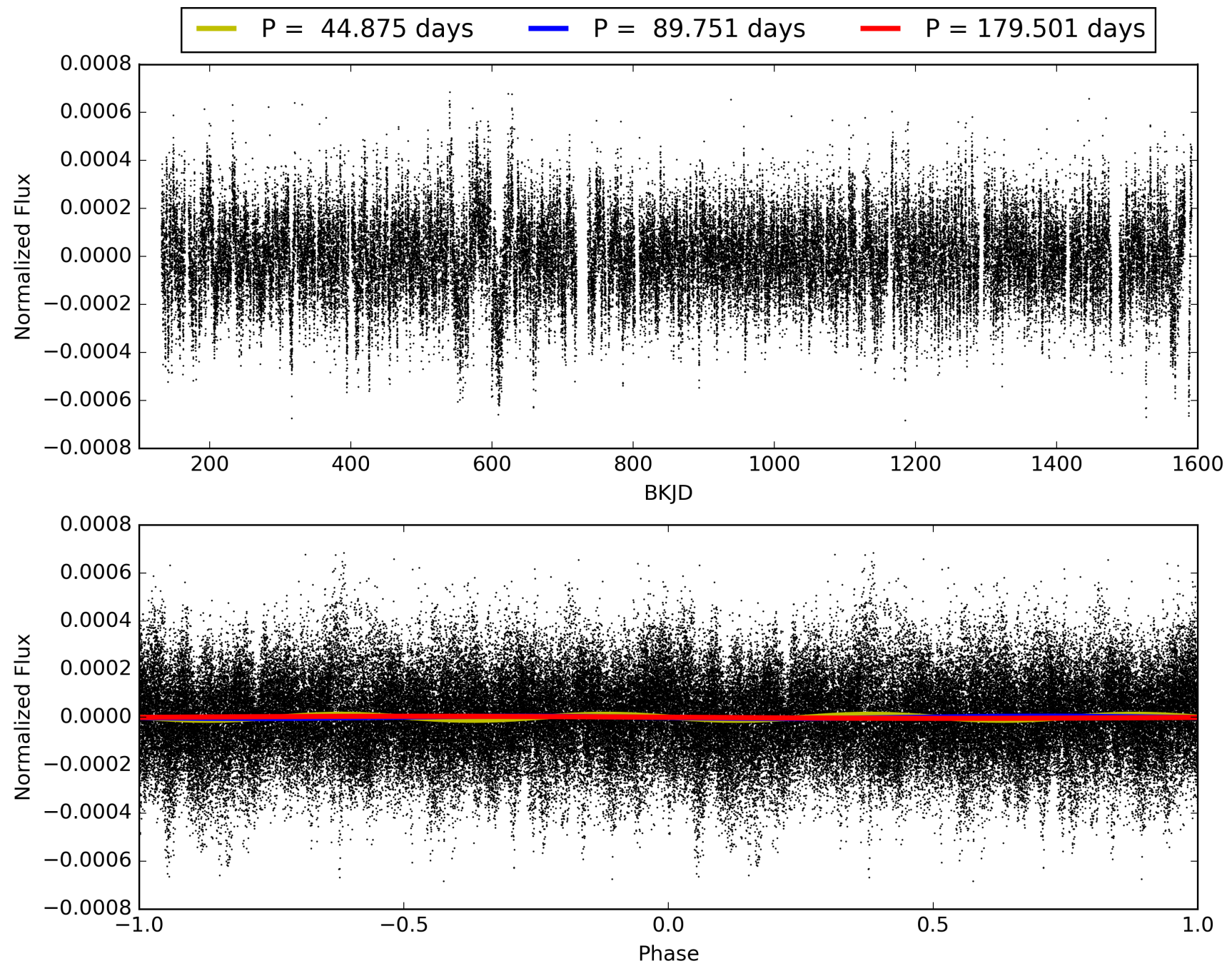
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 08:06:26 Z

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

TCE 008907769-04, PDC Light Curves

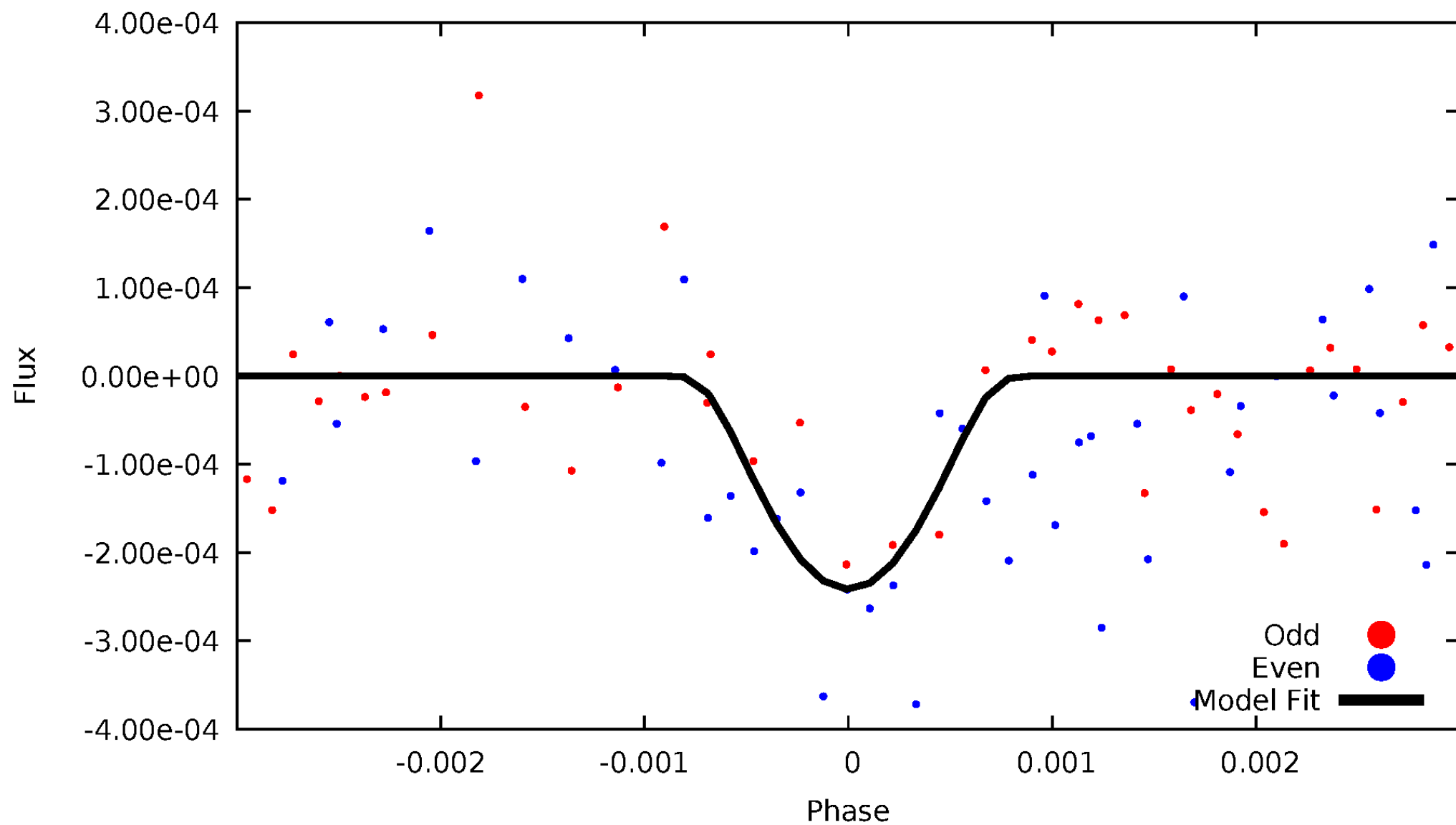


TCE 008907769-04



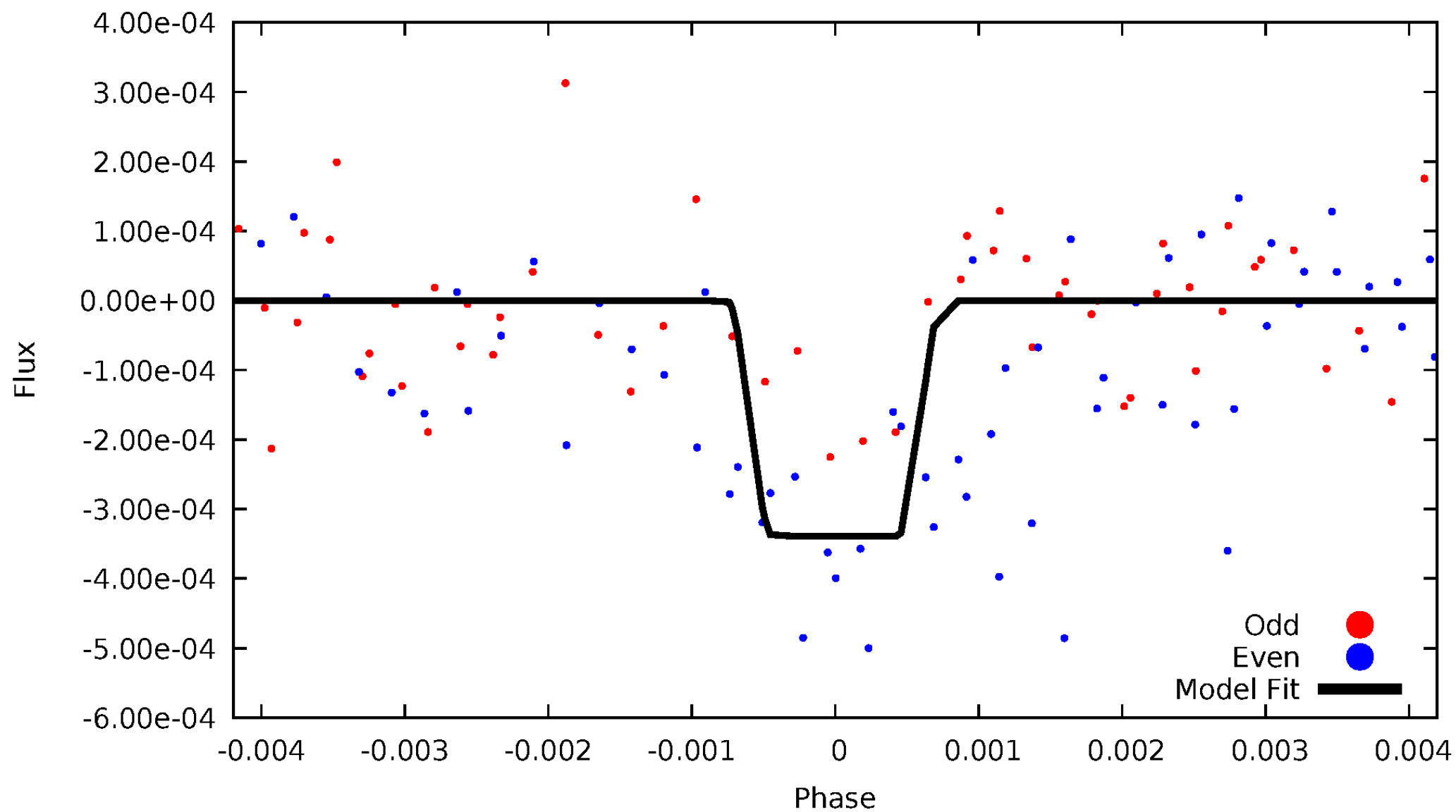
DV Odd/Even

TCE 008907769-04



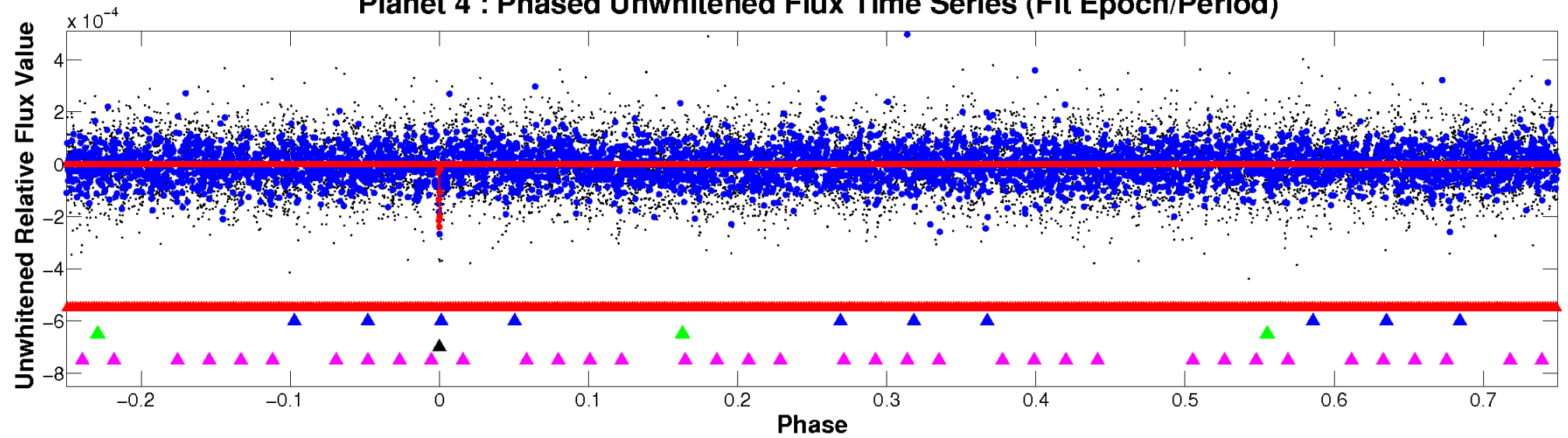
ALT Odd/Even

TCE 008907769-04

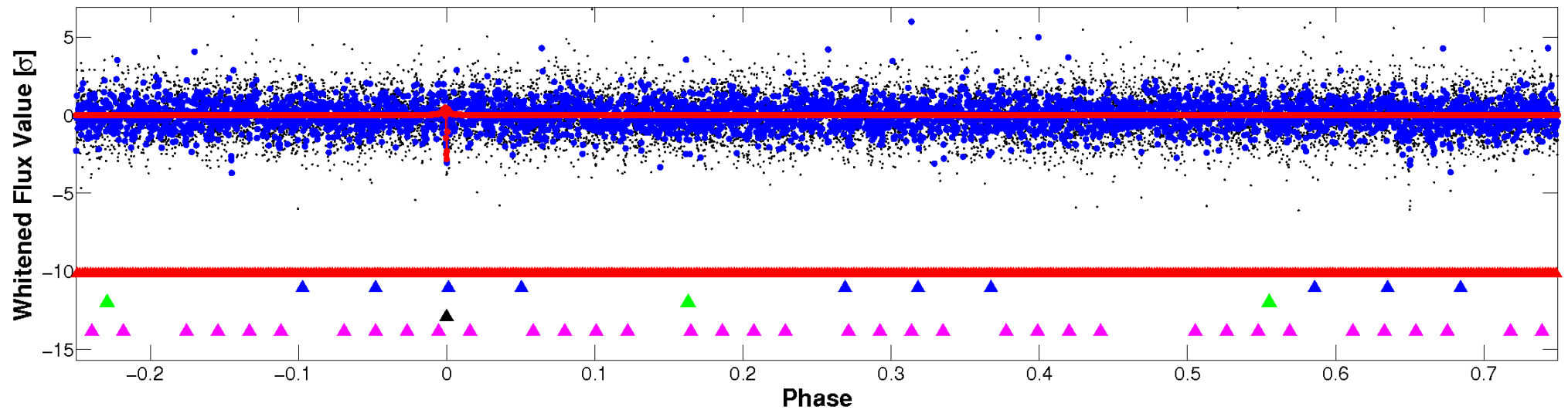


Non-Whitened Vs. Whitened Light Curve

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

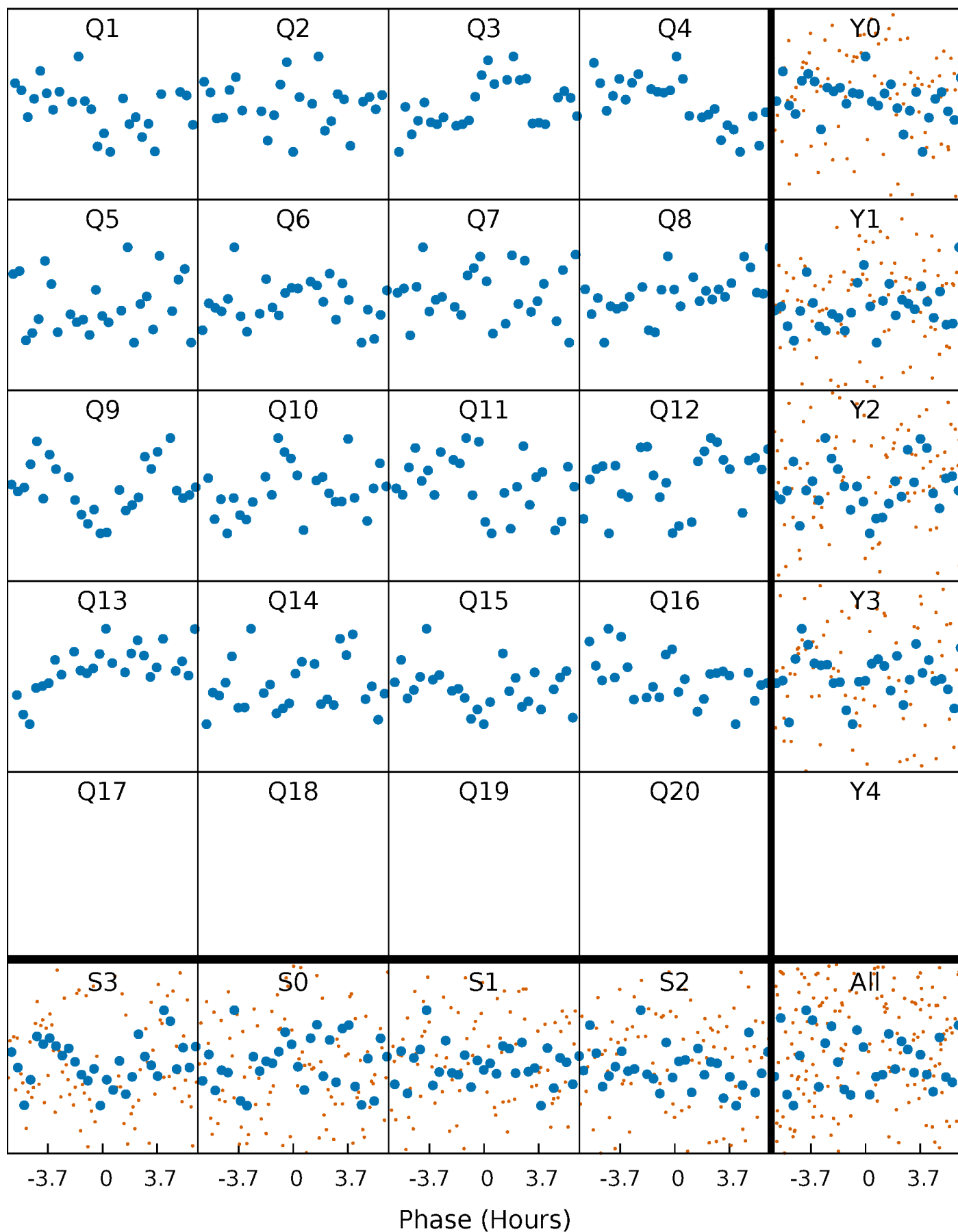


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



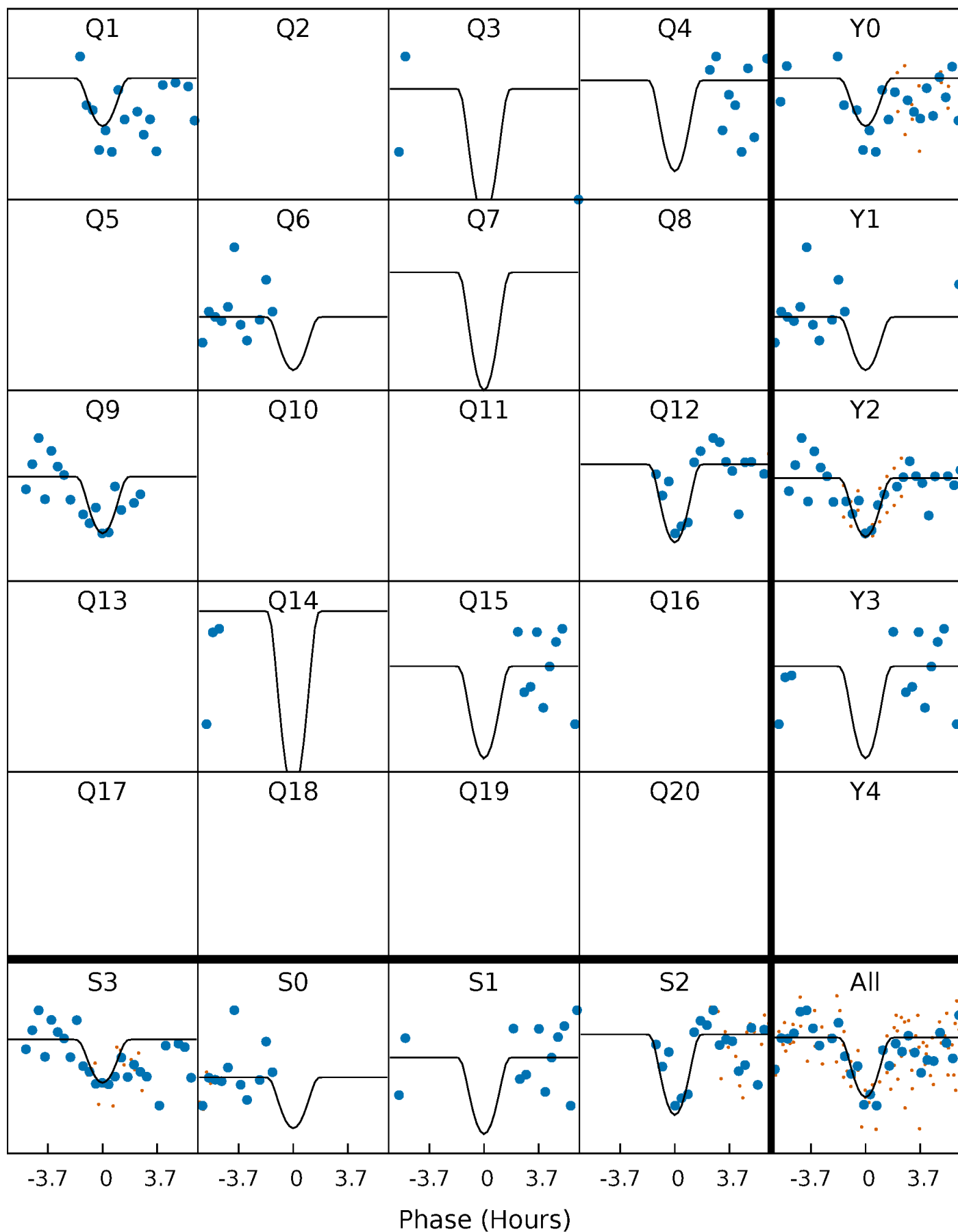
PDC Quarter-Phased Transit Curves

TCE 008907769-04 P= 89.750594 Days $T_0=146.133439$ (BKJD)



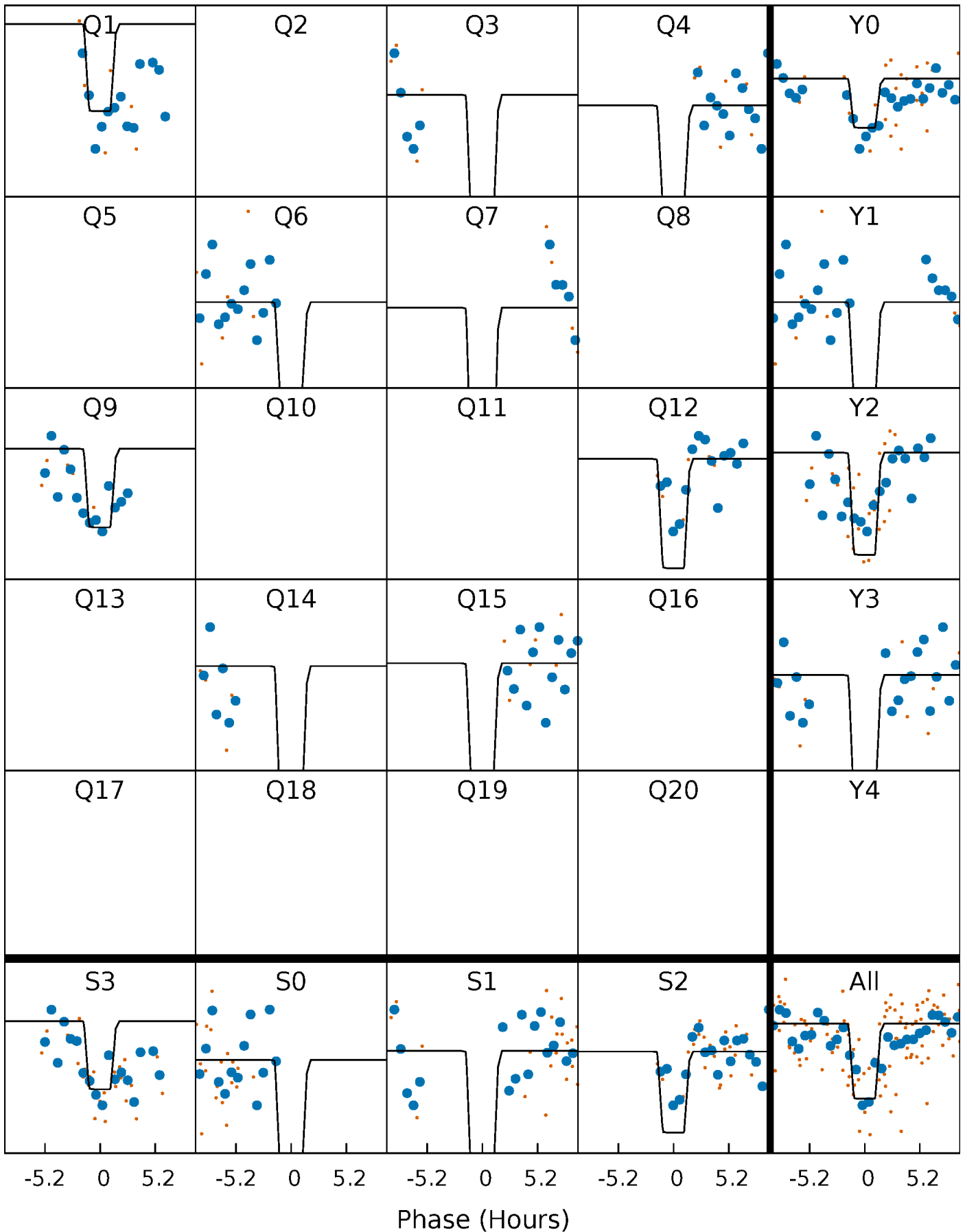
DV Quarter-Phased Transit Curves

TCE 008907769-04 P= 89.750594 Days $T_0=146.133439$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

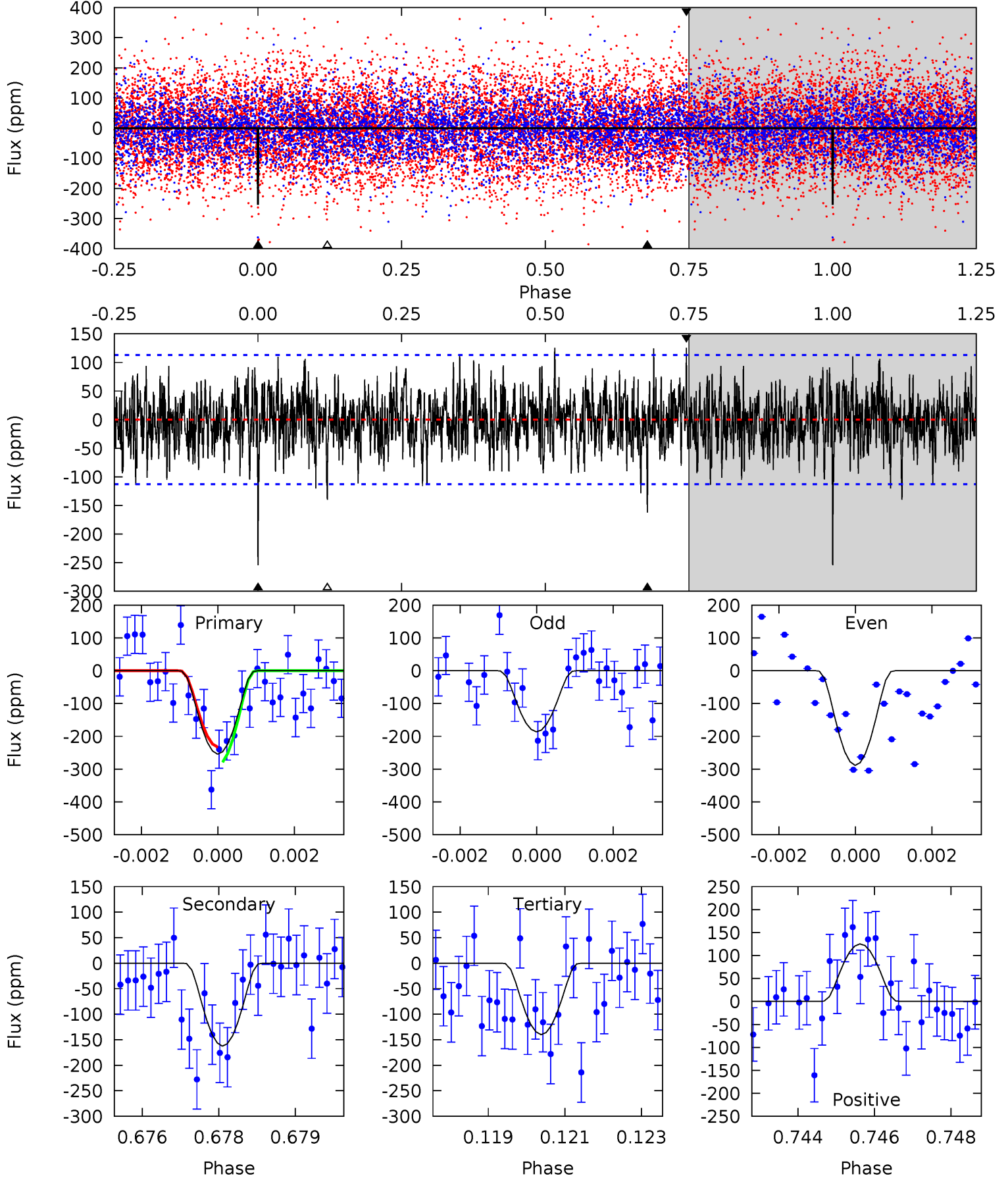
TCE 008907769-04 P= 89.749974 Days $T_0=146.142484$ (BKJD)



DV Model-Shift Uniqueness Test

008907769-04, P = 89.750594 Days, E = 56.382845 Days

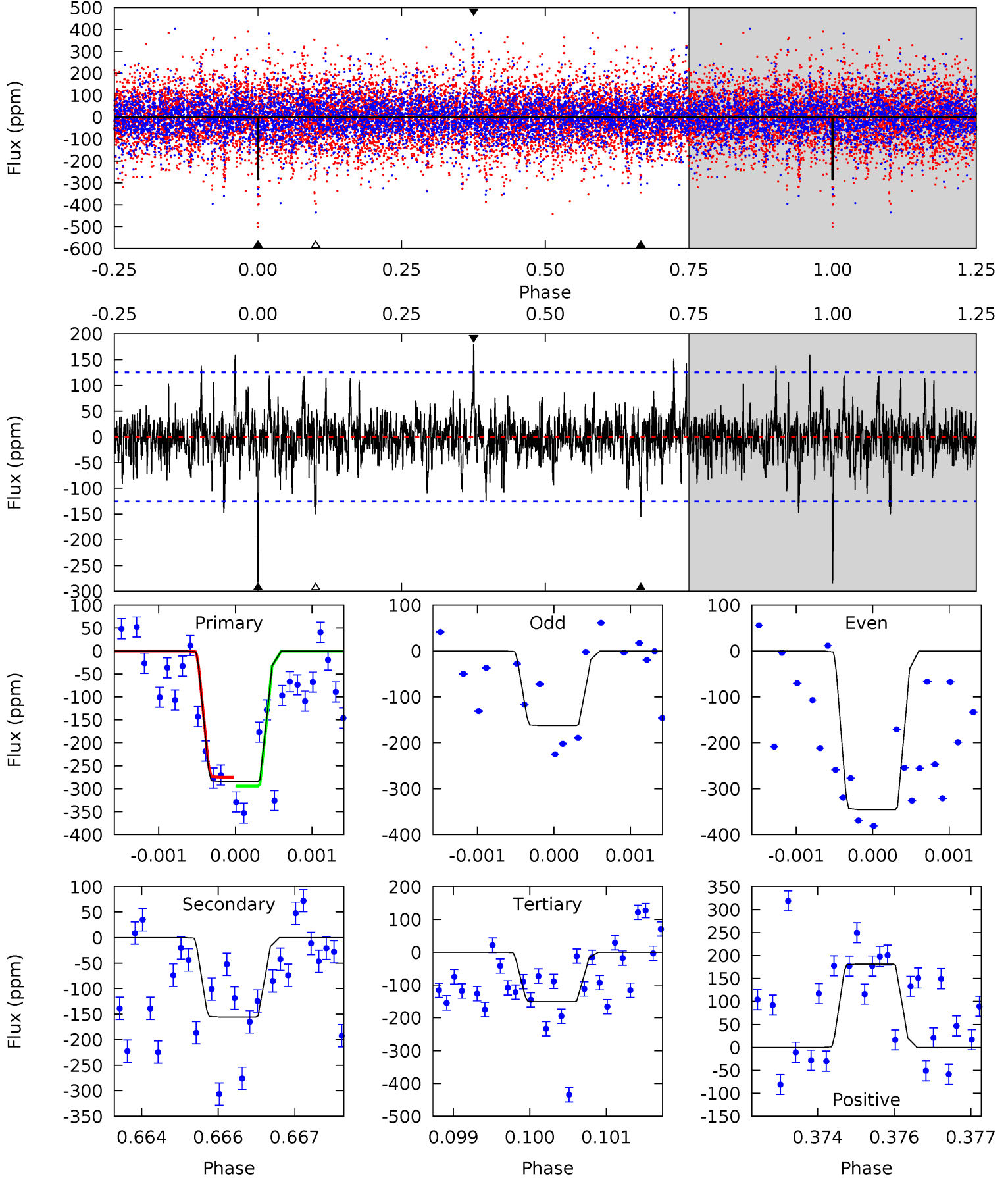
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.1	7.71	6.64	5.95	5.36	3.14	1.82	5.44	6.13	1.07	1.76	2.33	1.09	0.33	1.10



Alt Model-Shift Uniqueness Test

008907769-04, P = 89.749974 Days, E = 56.392510 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.2	6.68	6.47	7.78	5.39	3.19	1.54	5.75	4.43	0.21	-1.10	3.75	0.92	0.39	0.41



Stellar Parameters For KIC 008907769

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5947^{+196}_{-160}	$3.919^{+0.308}_{-0.103}$	$-0.320^{+0.350}_{-0.250}$	$1.861^{+0.342}_{-0.587}$	$1.048^{+0.180}_{-0.163}$	$0.229^{+0.430}_{-0.084}$
	+3%/-3%	+8%/-3%	+109%/-78%	+18%/-32%	+17%/-16%	+188%/-37%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 008907769-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-162 ± 21	$23.54^{+26.37}_{-15.75}$	781^{+51}_{-71}	2674^{+1054}_{-425}	25^{+208}_{-19}
Alt.	-156 ± 23	$23.17^{+27.41}_{-15.53}$	775^{+54}_{-70}	2685^{+1048}_{-462}	25^{+200}_{-20}

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 $A_{obs} \gg 1.0$

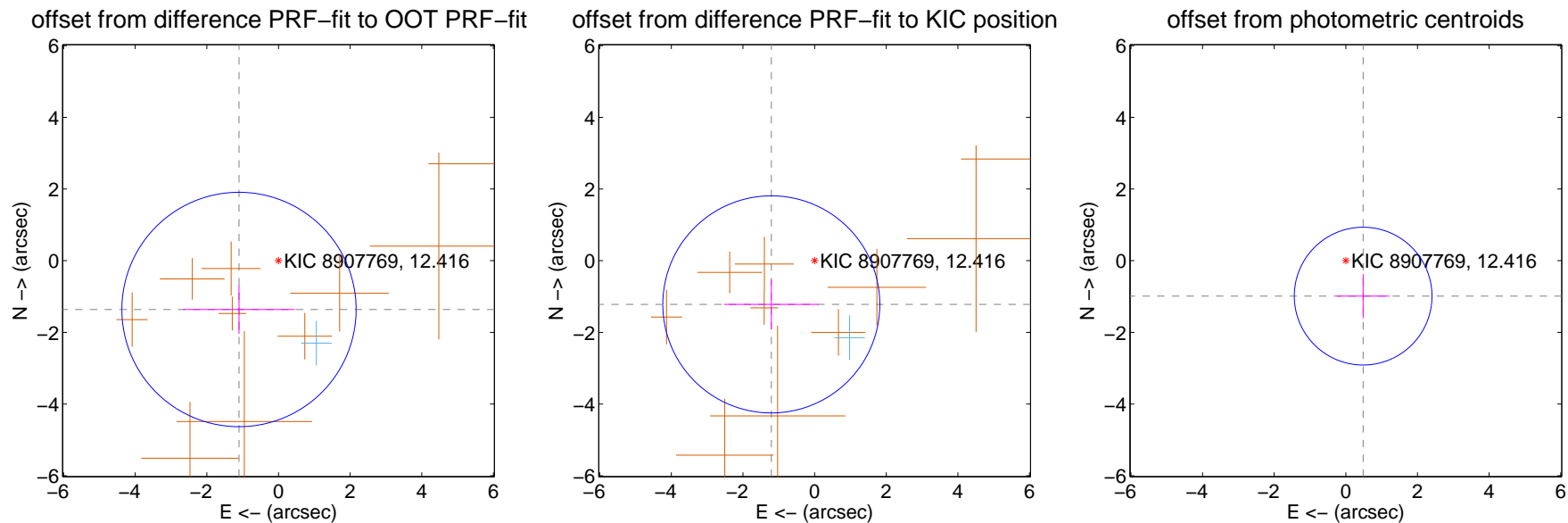
DV Centroid Data

Supplemental centroid analysis for 008907769-04. Kepler magnitude: 12.42. Transit SNR 8.50

There are 1 quarters with good PRF difference image offsets

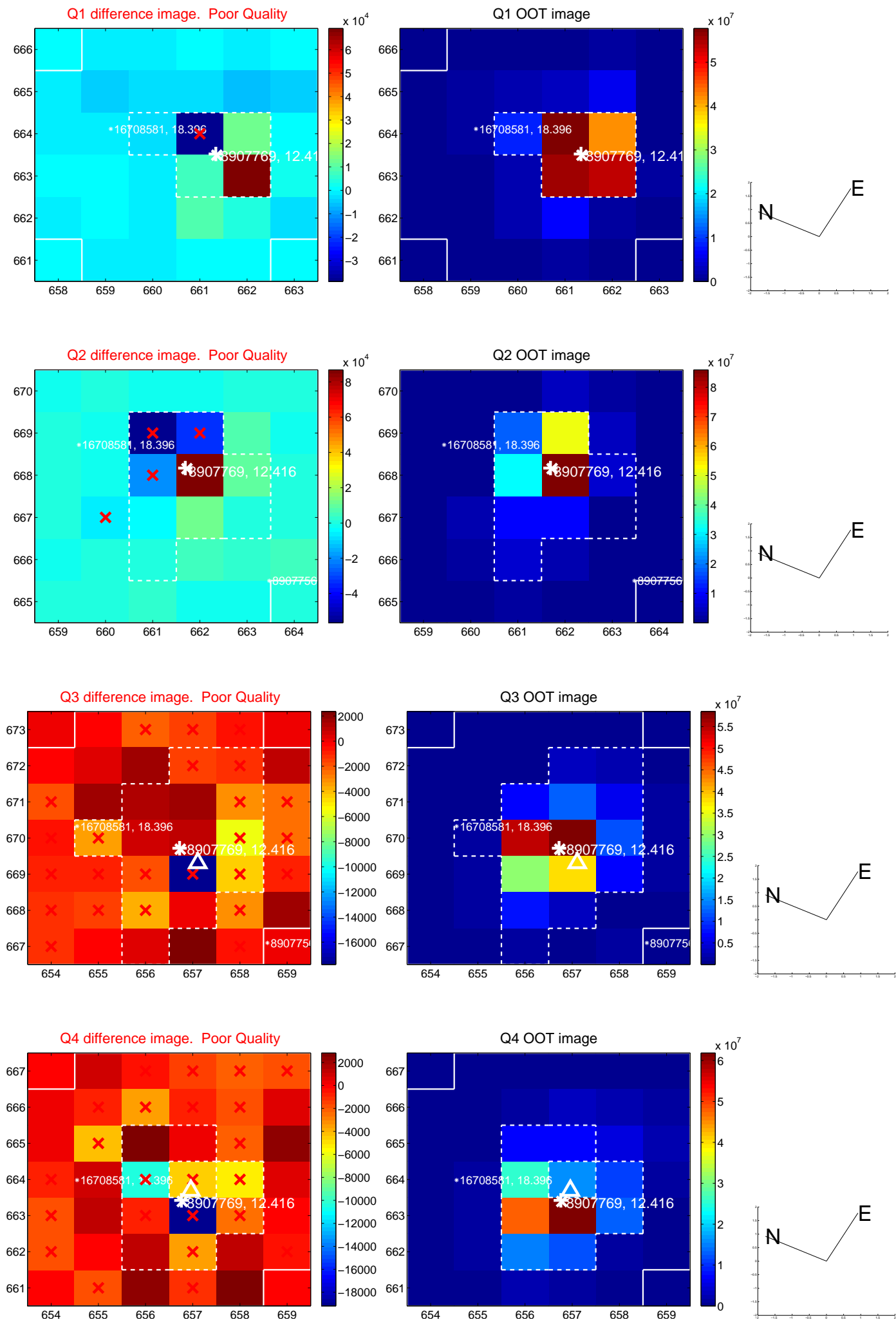
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.752 ± 1.090	1.61	1.103 ± 1.559	-1.362 ± 0.682
PRF-fit source offset from KIC position	1.717 ± 1.010	1.70	1.209 ± 1.319	-1.219 ± 0.693
photometric centroid source offset	1.10 ± 0.64	1.72	-0.48 ± 0.73	-0.99 ± 0.62

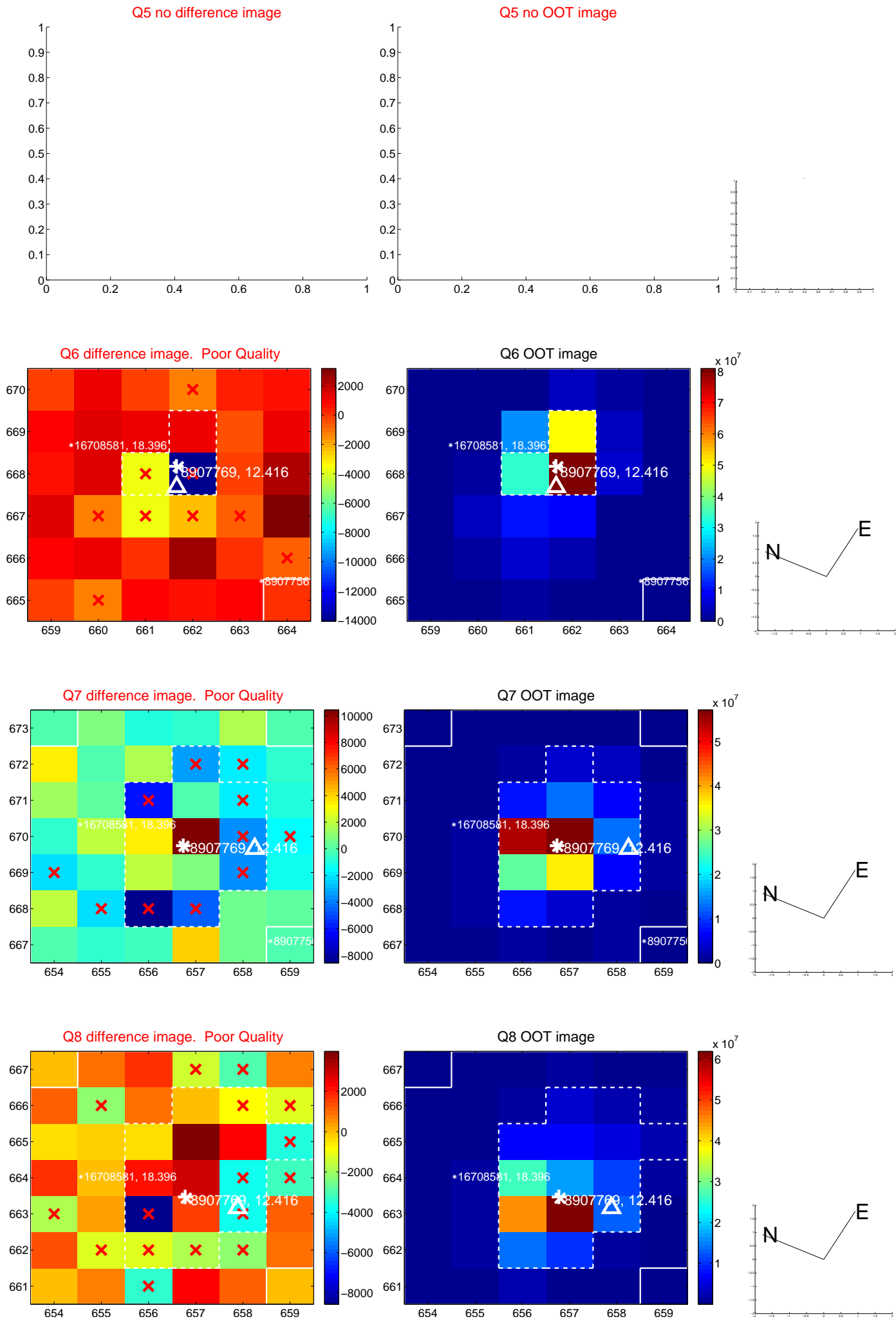


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

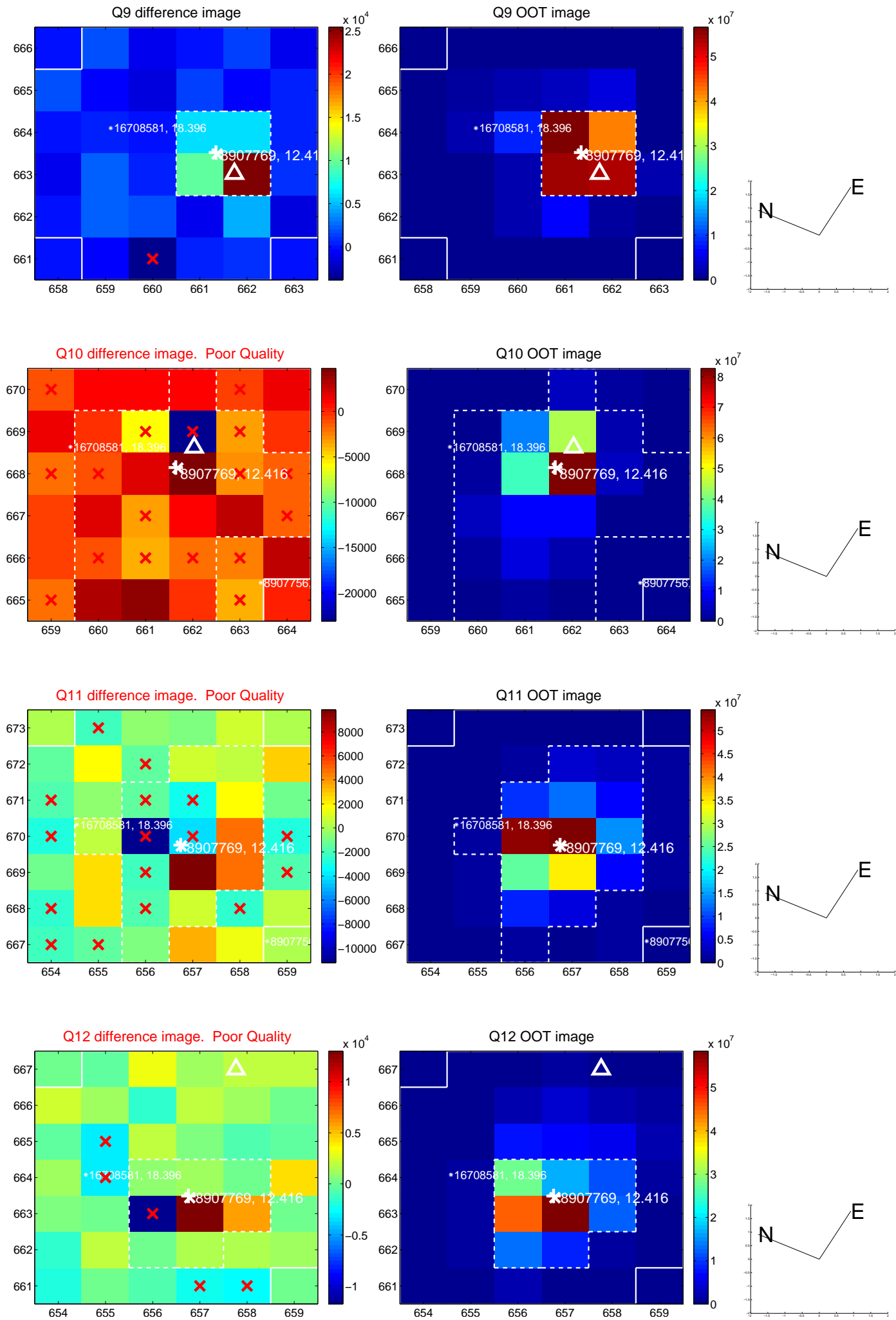
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



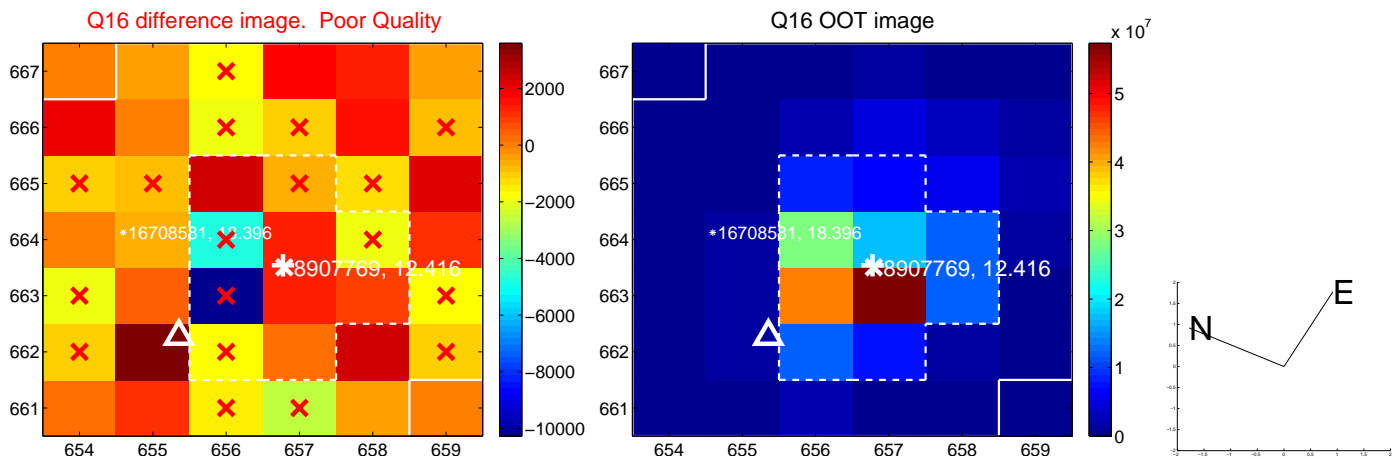
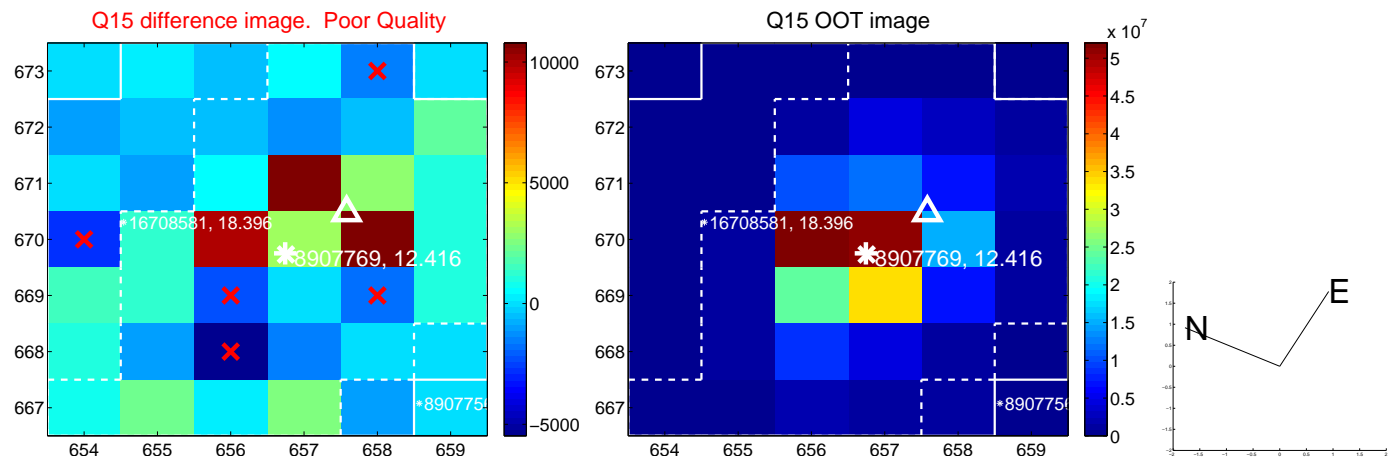
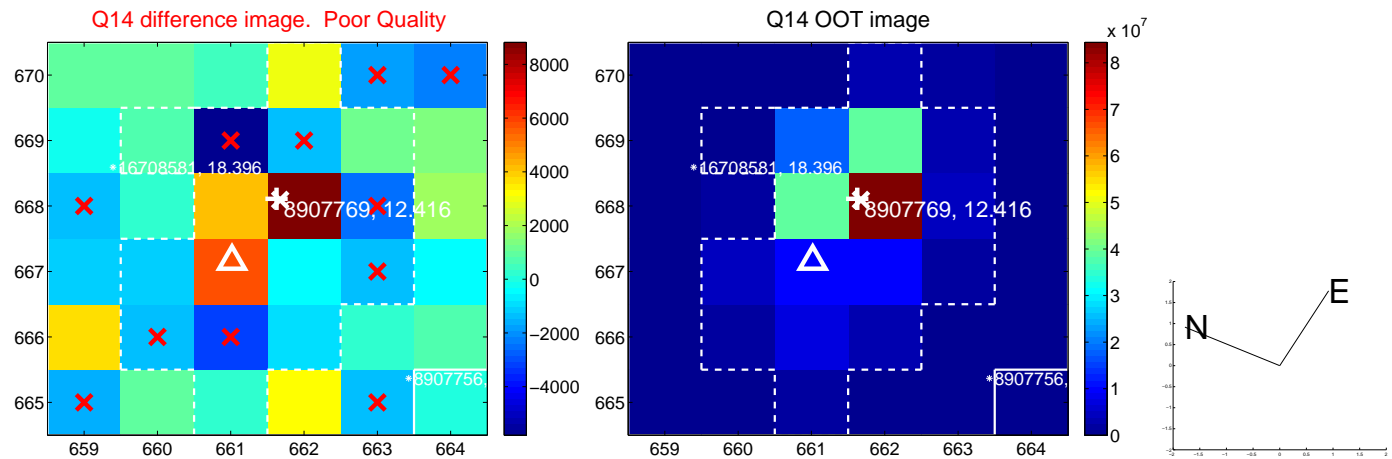
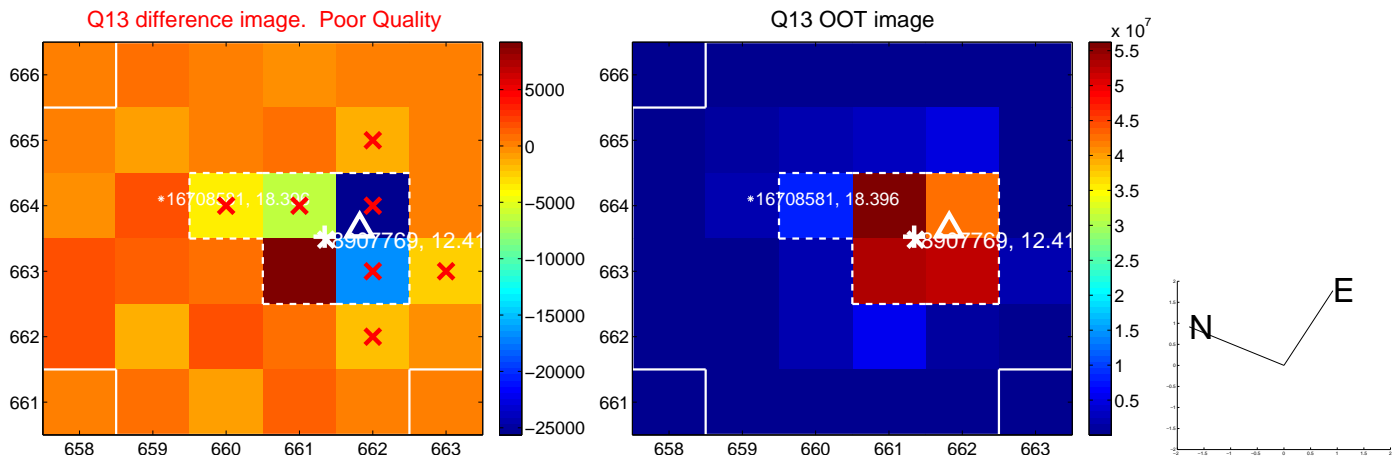
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



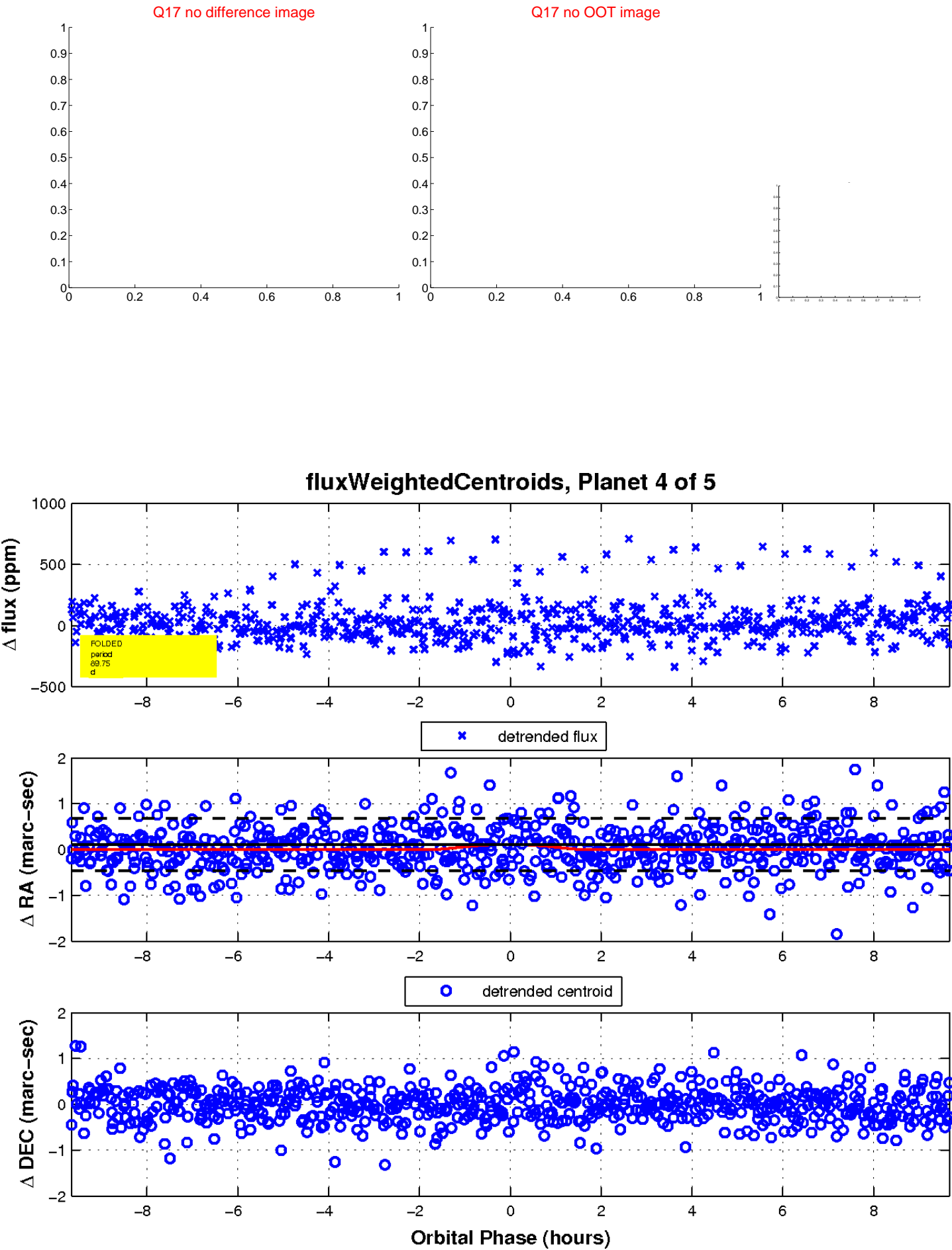
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

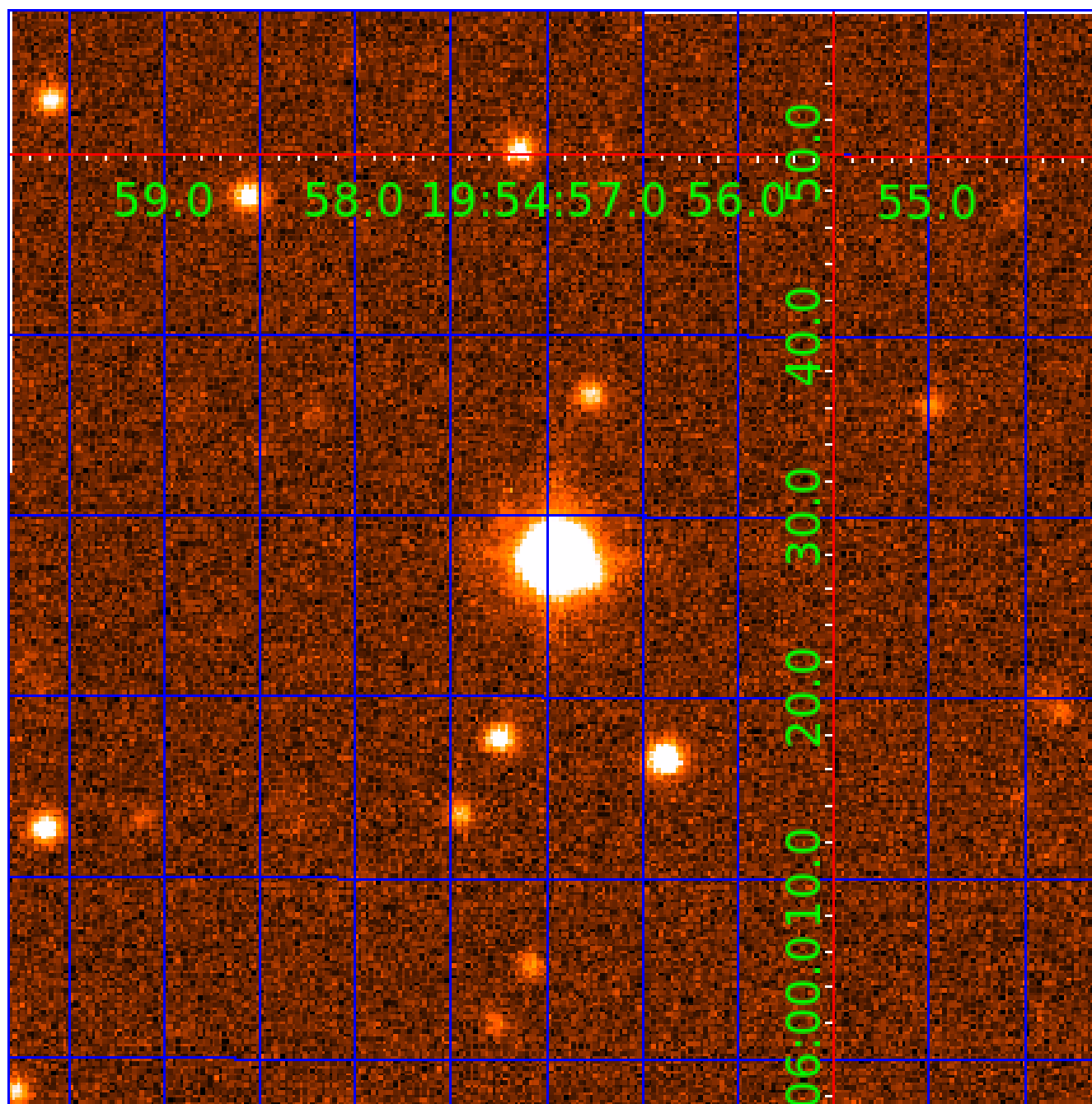


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008907769

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})
008907769-01	OBS	No	1.772465	132.929803	12.2	11.242	8.2	6.1	1.86	5947	0.65	4575.94
008907769-02	OBS	No	151.057444	137.409086	582.6	25.634	13.9	16.9	1.86	5947	5.86	12.20
008907769-03	OBS	No	503.309287	195.959885	191.9	6.232	11.0	8.4	1.86	5947	2.88	2.45
008907769-04	OBS	No	89.750594	146.133439	241.4	3.230	8.7	8.5	1.86	5947	5.82	24.43
008907769-05	OBS	No	40.101113	139.926442	155.3	1.538	7.4	8.5	1.86	5947	2.70	71.51

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008907769-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_UNRESOLVED_OFFSET
008907769-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_MEAS
008907769-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
008907769-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008907769-05	OBS	FP	0.00	1	0	1	0	TRANS_GAPPED—HALO_GHOST

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

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

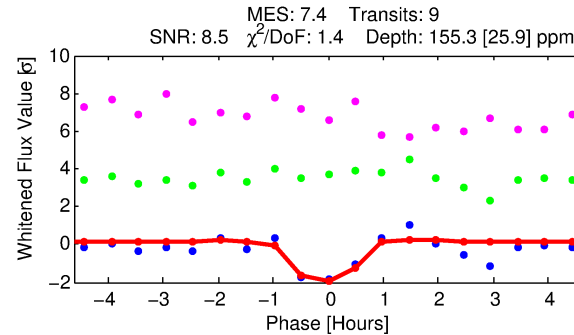
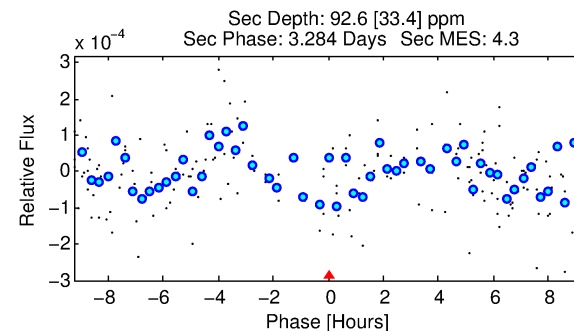
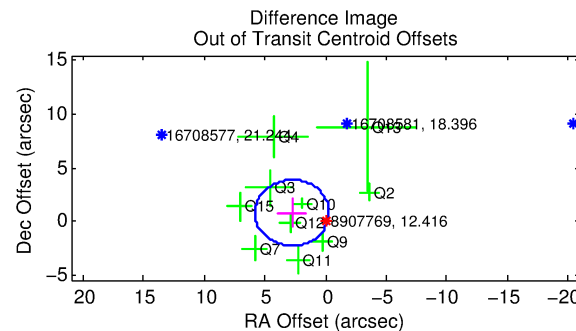
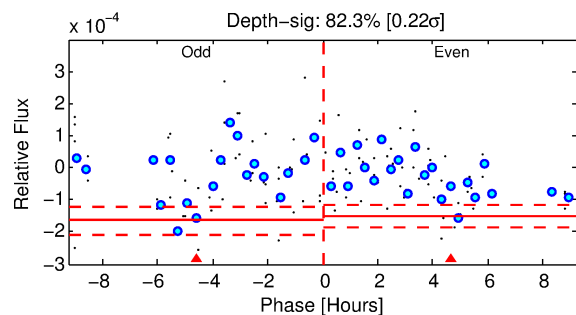
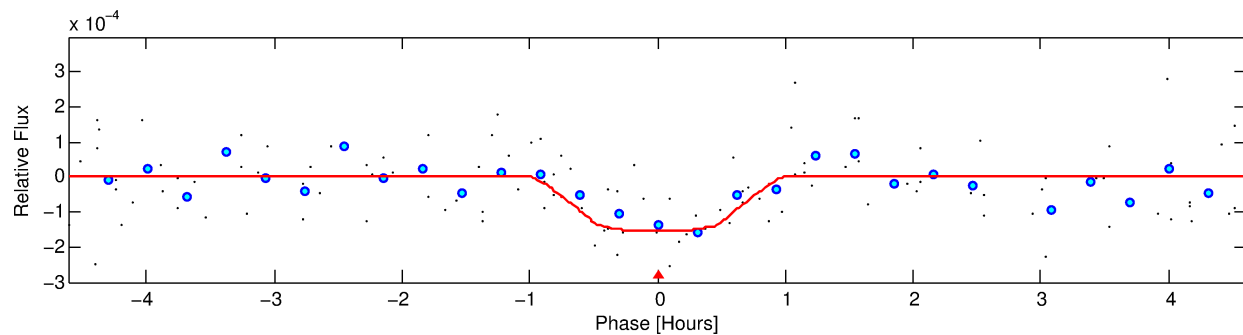
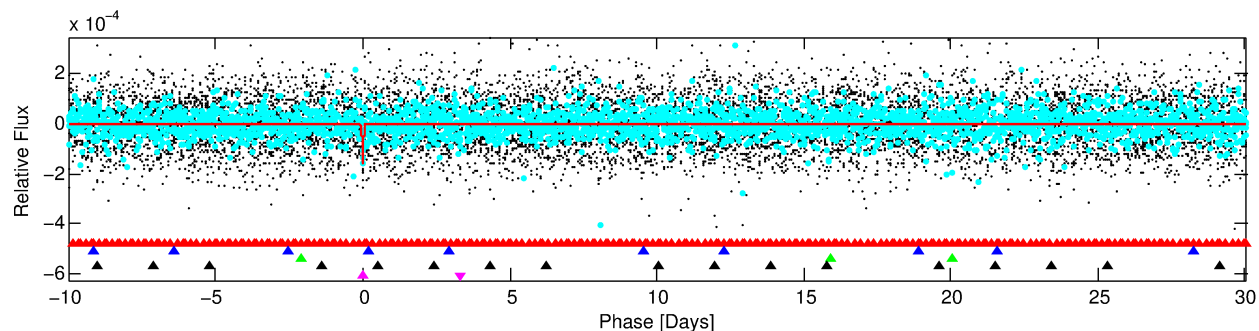
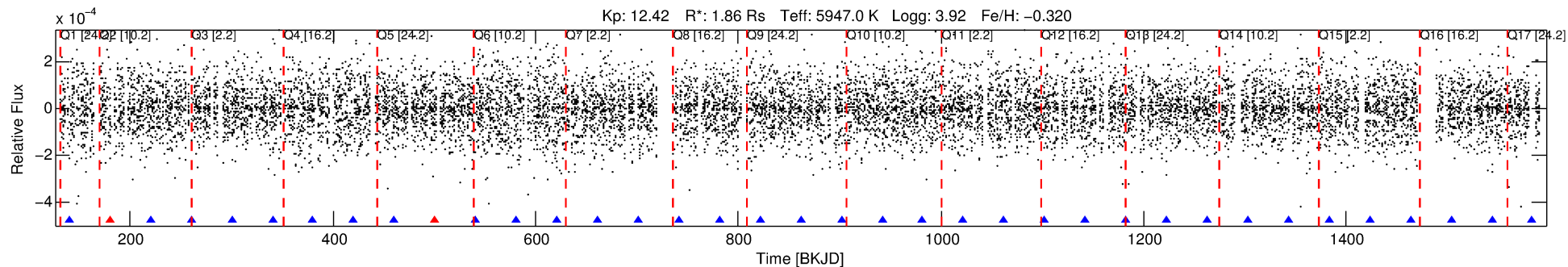
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008907769-05

No Significant Match Found

DV One-Page Summary

KIC: 8907769 Candidate: 5 of 5 Period: 40.101 d



DV Fit Results:

Period = 40.10111 [0.00030] d
Epoch = 139.9264 [0.0064] BKJD
Rp/R* = 0.0133 [0.0129]
a/R* = 99.68 [494.68]
b = 0.88 [1.29]
Seff = 71.51 [38.19]
Teq = 742 [99] K
Rp = 2.70 [2.76] Re
a = 0.2330 [0.0737] AU
Ag = 379.63 [776.26] [0.49σ]
Teffp = 5061 [2508] K [1.72σ]

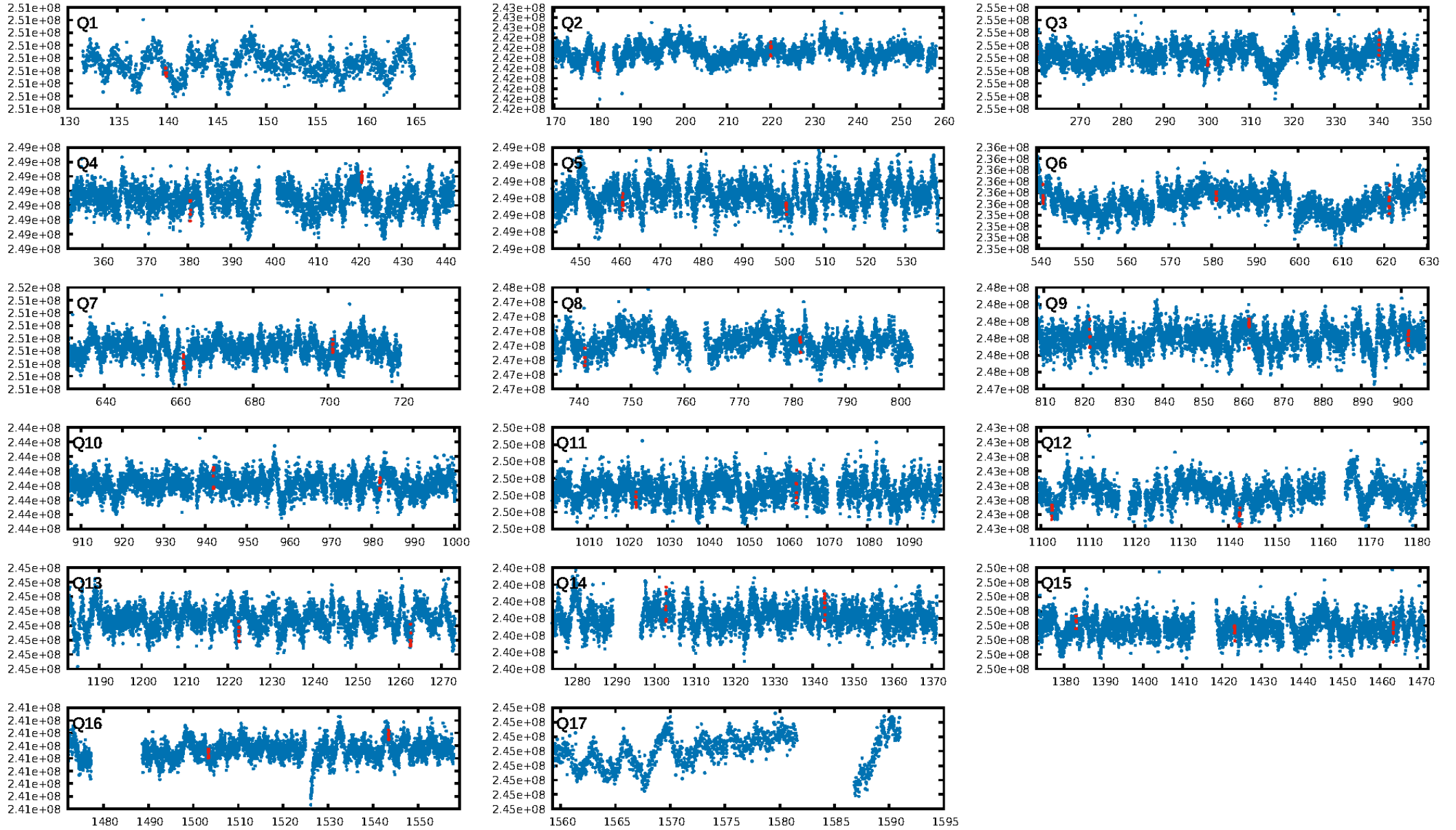
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [81.07σ]
LongPeriod-sig: 100.0% [333.07σ]
ModelChiSquare2-sig: 45.0%
ModelChiSquareGof-sig: 82.7%
Bootstrap-pfa: 7.63e-08
RollingBand-fgt: 0.78 [7/9]
GhostDiagnostic-chr: 0.2154
Centroid-sig: N/A
Centroid-so: 1.326 arcsec [1.81σ]
OotOffset-rm: 2.880 arcsec [2.82σ]
KicOffset-rm: 2.949 arcsec [3.06σ]
OotOffset-st: 2/4/2/2 [10]
KicOffset-st: 2/4/2/2 [10]
DiffImageQuality-fgm: 0.30 [3/10]
DiffImageOverlap-fno: 0.81 [13/16]

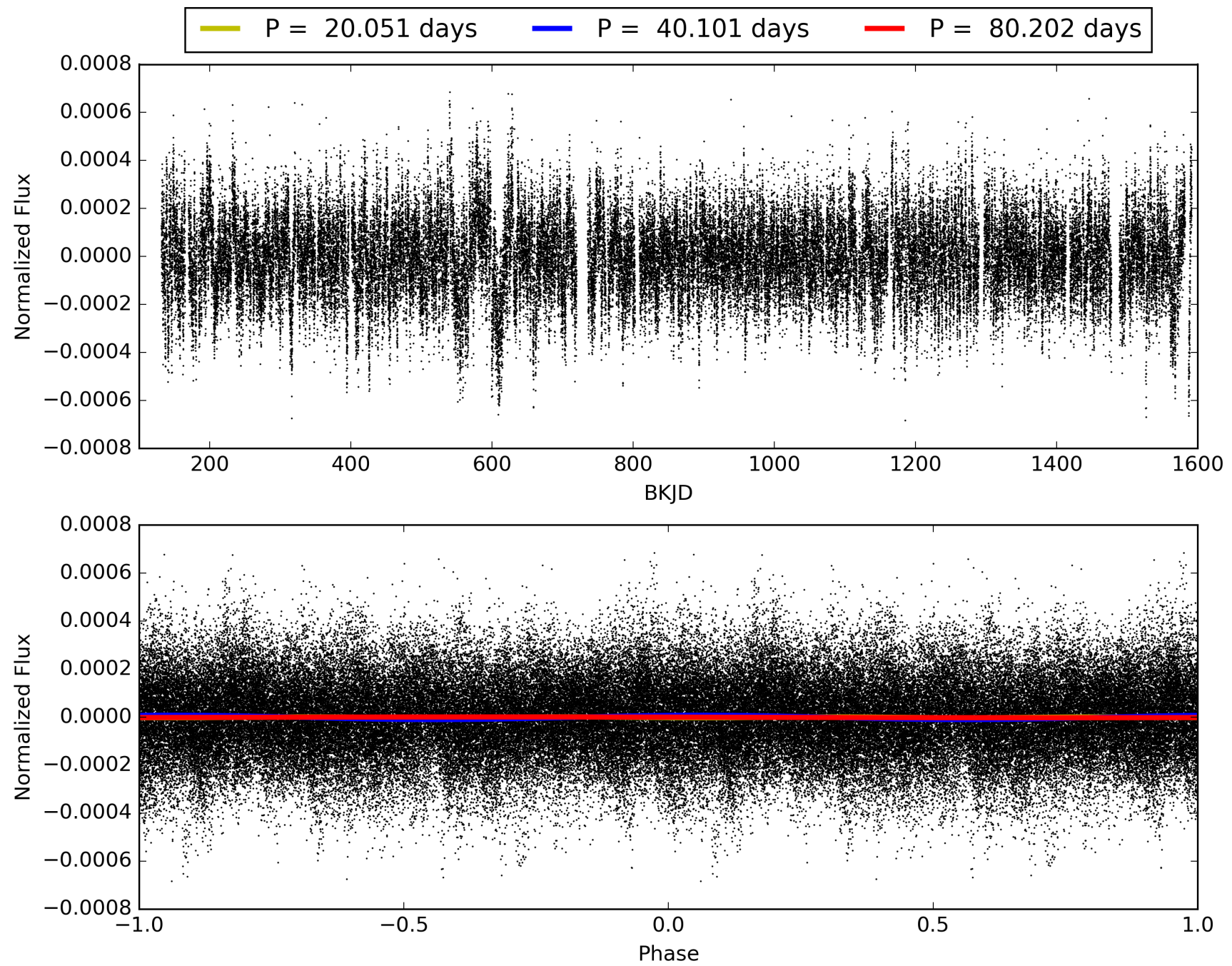
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 08:06:30 Z

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

TCE 008907769-05, PDC Light Curves

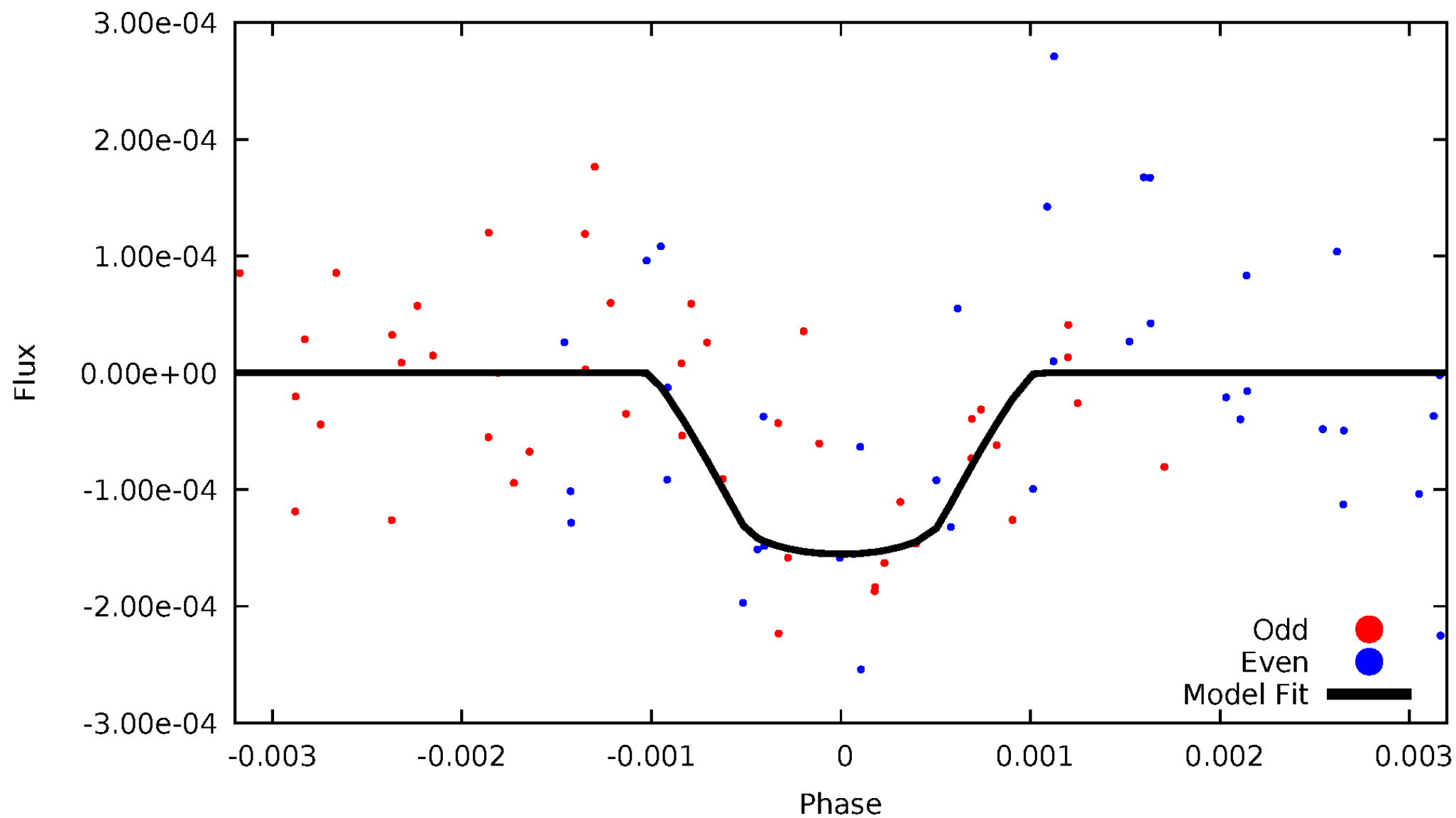


TCE 008907769-05



DV Odd/Even

TCE 008907769-05

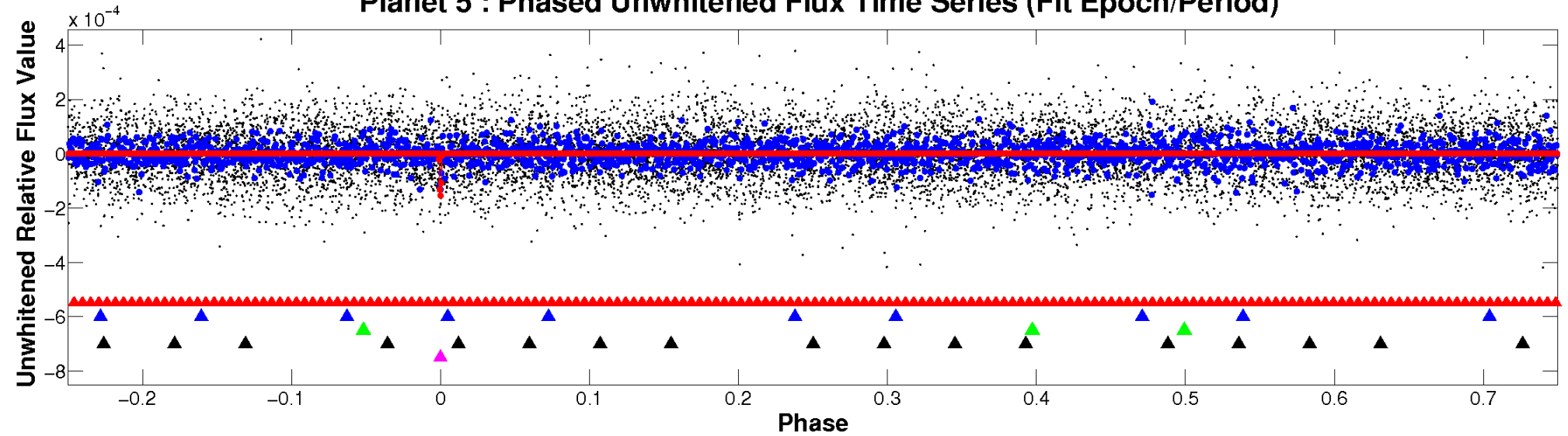


ALT Odd/Even

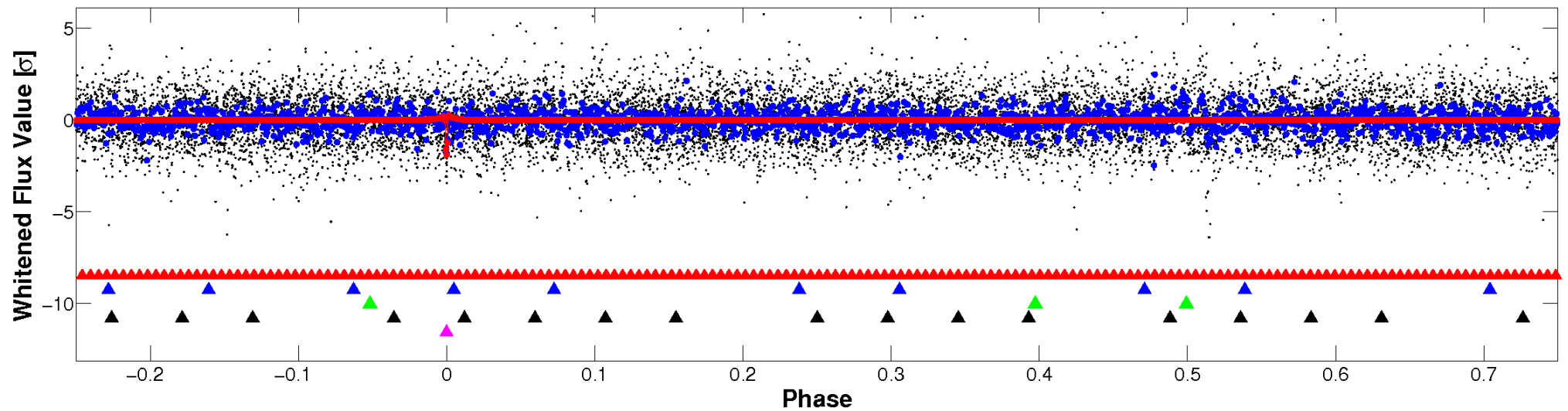
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

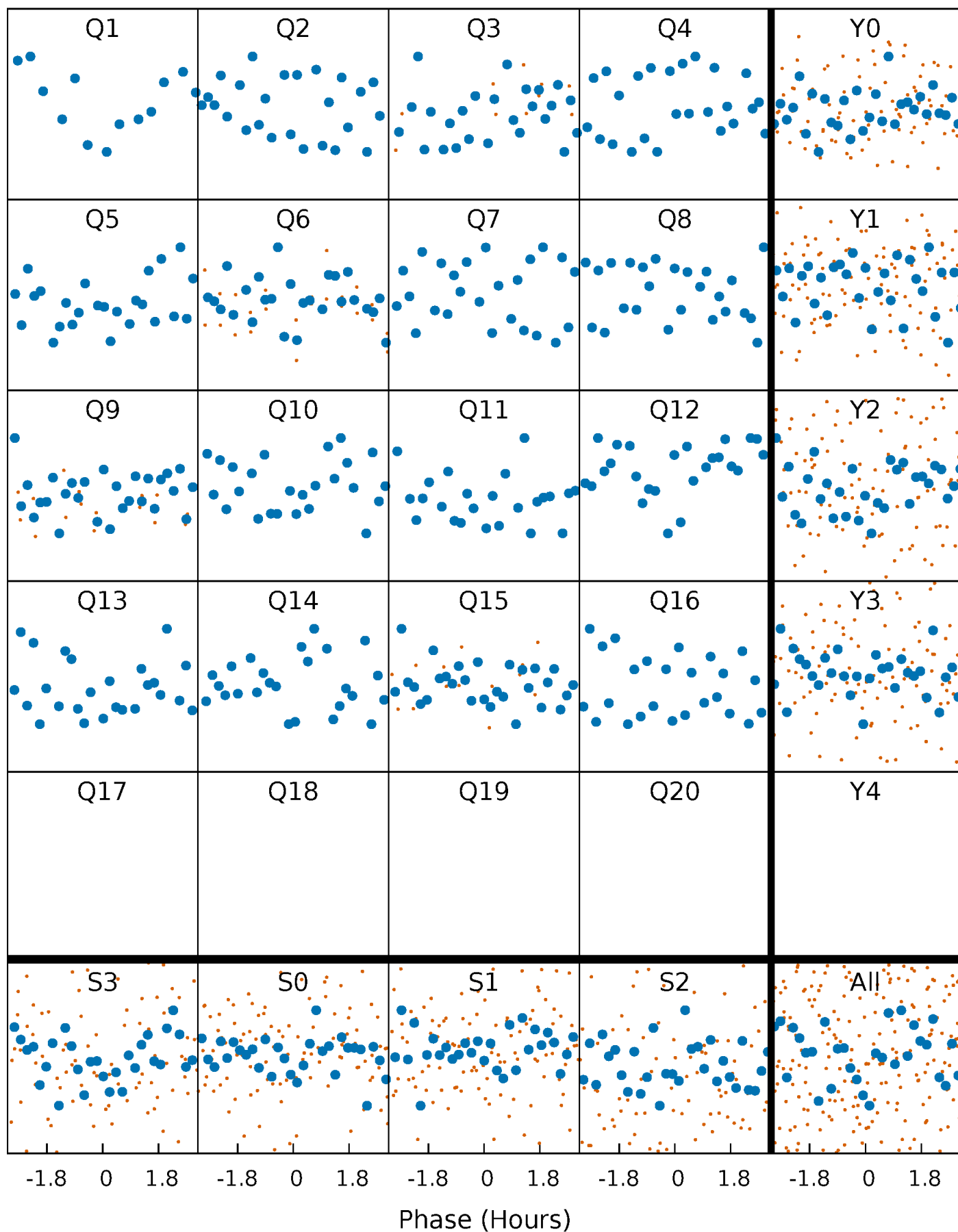


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



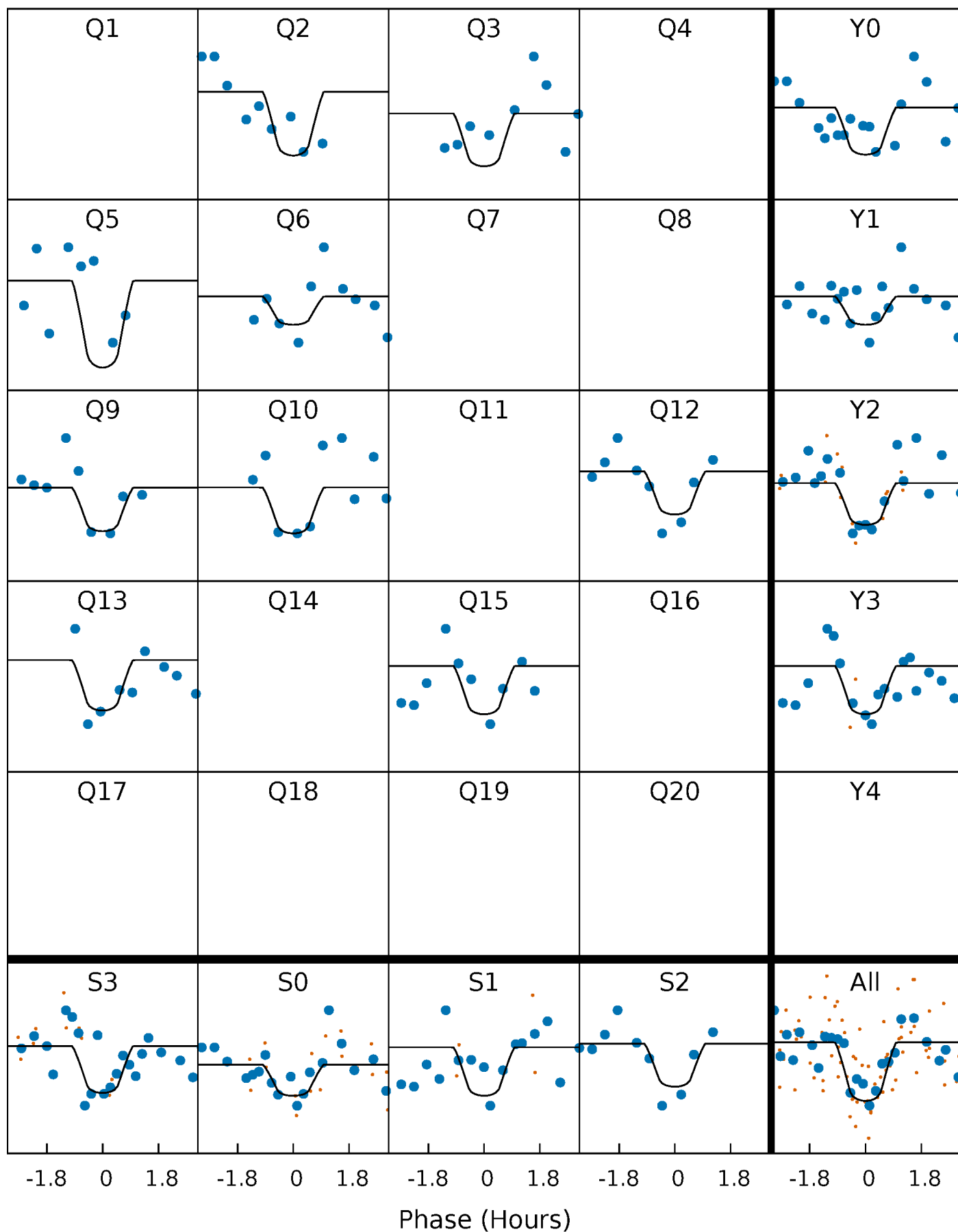
PDC Quarter-Phased Transit Curves

TCE 008907769-05 $P = 40.101113$ Days $T_0 = 139.926442$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 008907769-05 $P = 40.101113$ Days $T_0 = 139.926442$ (BKJD)

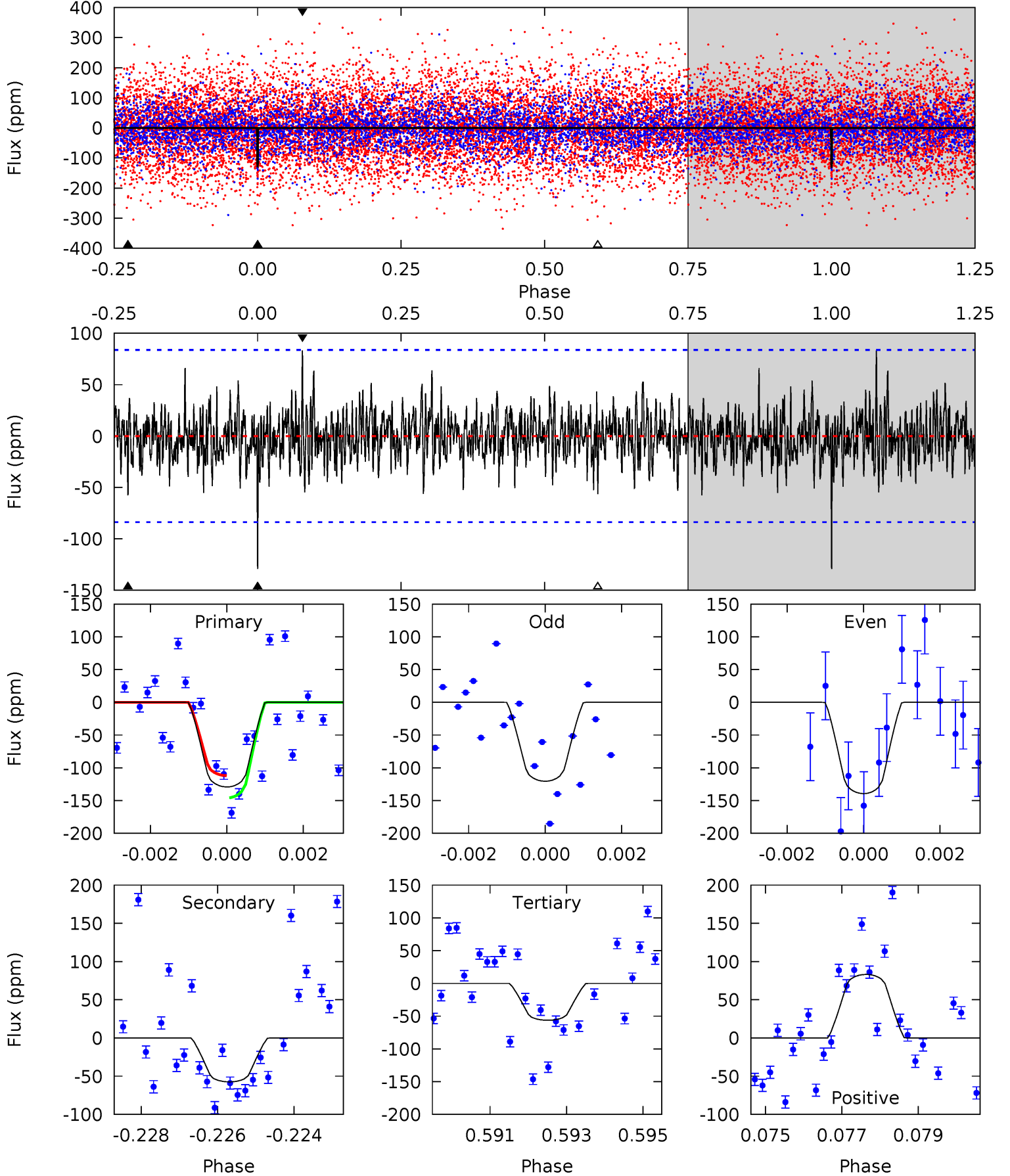


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

008907769-05, P = 40.101113 Days, E = 99.825329 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.22	3.65	3.58	5.28	5.32	3.08	1.22	4.64	2.93	0.08	-1.63	0.59	0.91	0.39	1.07



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 008907769

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5947^{+196}_{-160}	$3.919^{+0.308}_{-0.103}$	$-0.320^{+0.350}_{-0.250}$	$1.861^{+0.342}_{-0.587}$	$1.048^{+0.180}_{-0.163}$	$0.229^{+0.430}_{-0.084}$
	+3%/-3%	+8%/-3%	+109%/-78%	+18%/-32%	+17%/-16%	+188%/-37%
Source	PHO1	FLK73	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 008907769-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-57 ± 16	$2.91^{+2.37}_{-1.77}$	1020^{+59}_{-87}	4347^{+2491}_{-775}	196^{+1173}_{-137}
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 $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

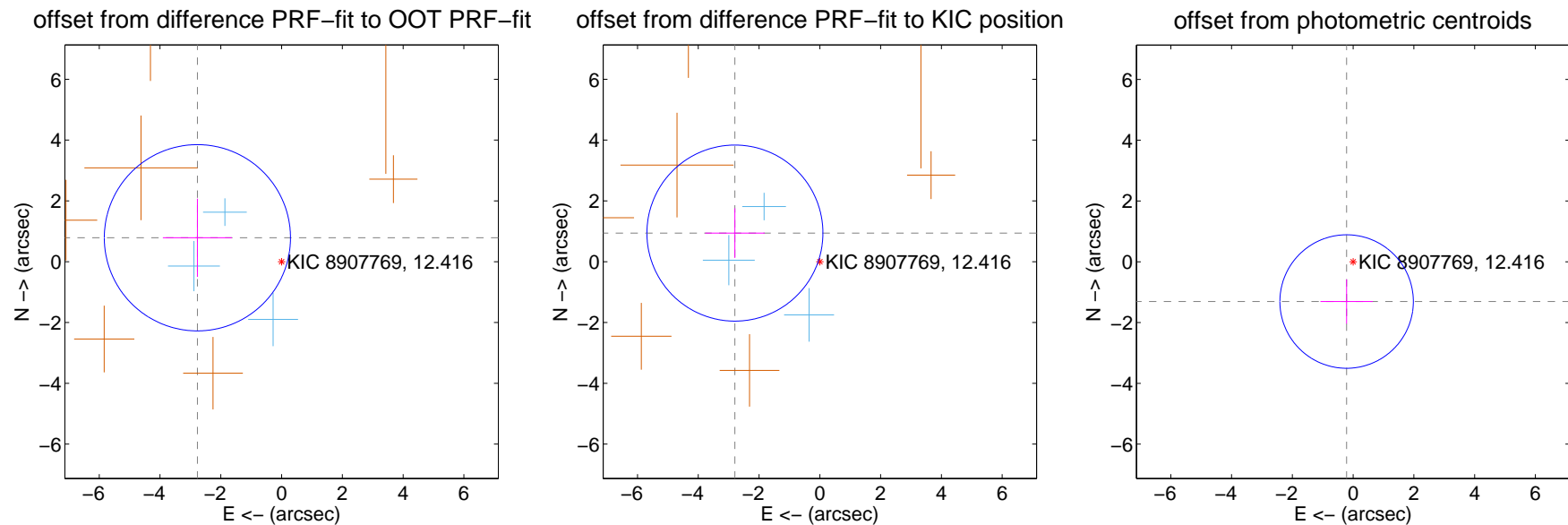
DV Centroid Data

Supplemental centroid analysis for 008907769-05. Kepler magnitude: 12.42. Transit SNR 8.47

There are 3 quarters with good PRF difference image offsets

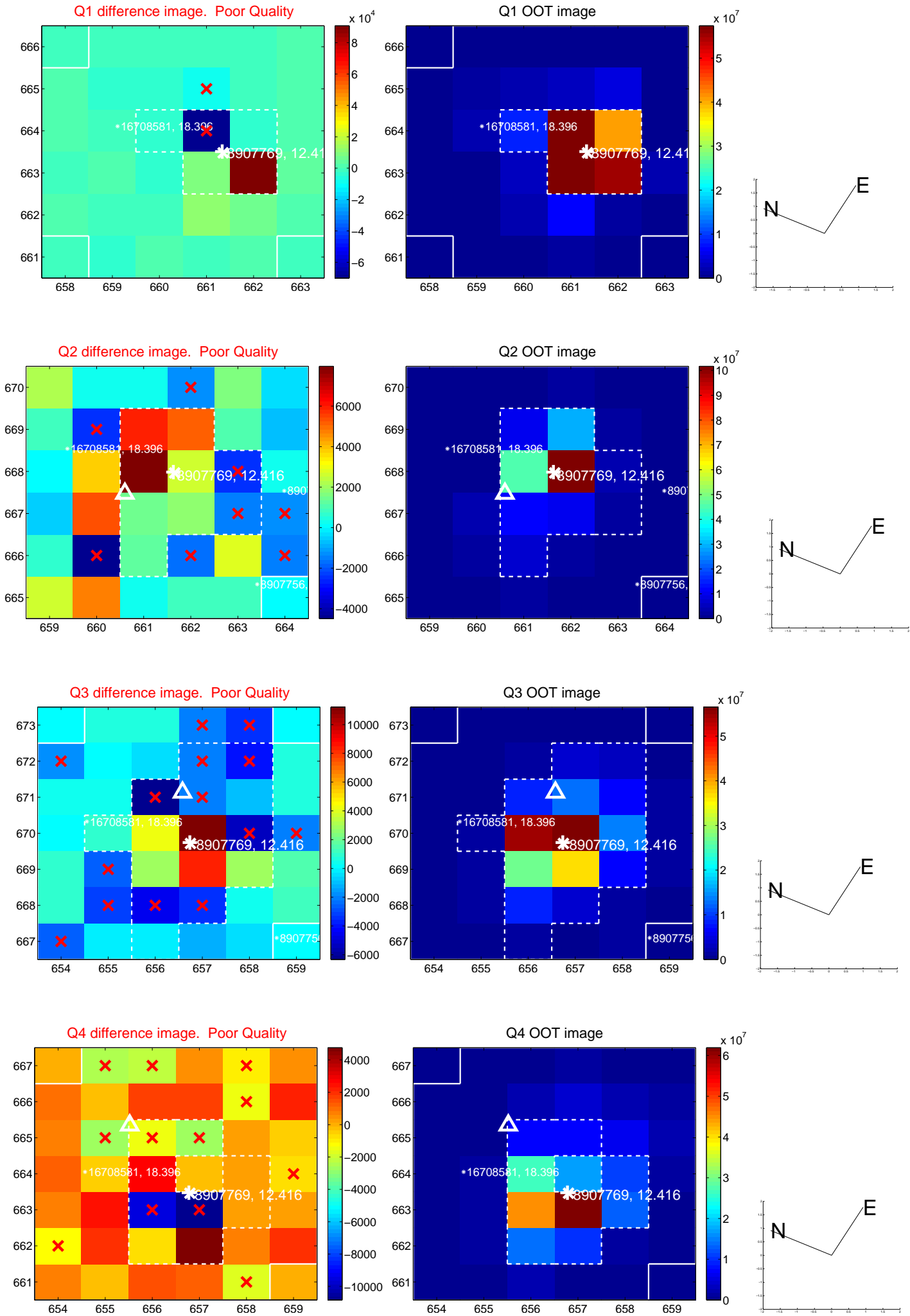
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.880 ± 1.021	2.82	2.770 ± 1.135	0.787 ± 1.288
PRF-fit source offset from KIC position	2.949 ± 0.965	3.06	2.795 ± 0.981	0.941 ± 0.816
photometric centroid source offset	1.33 ± 0.73	1.81	0.21 ± 0.86	-1.31 ± 0.73

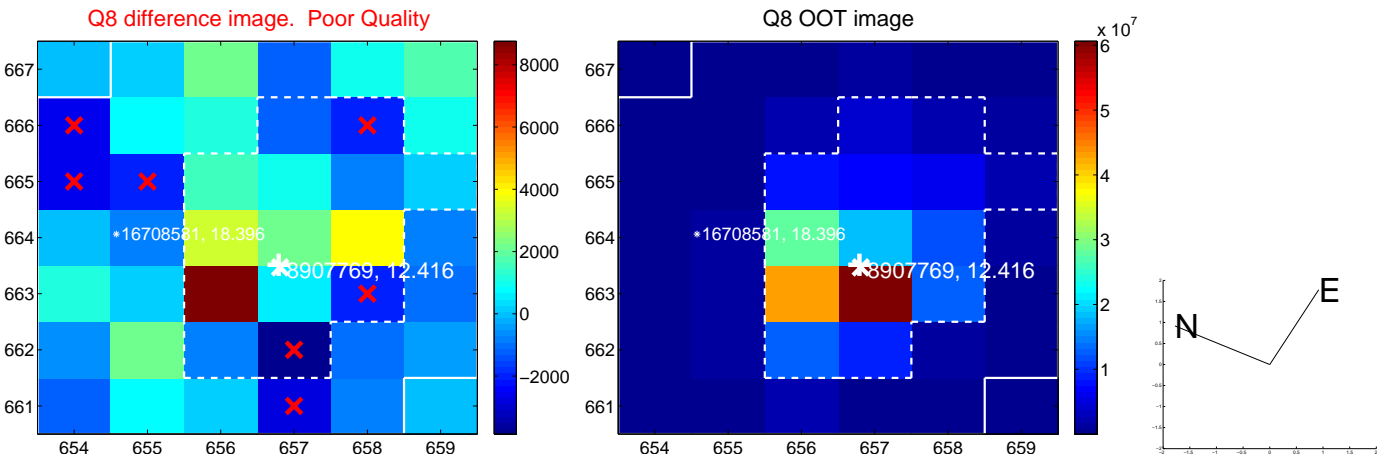
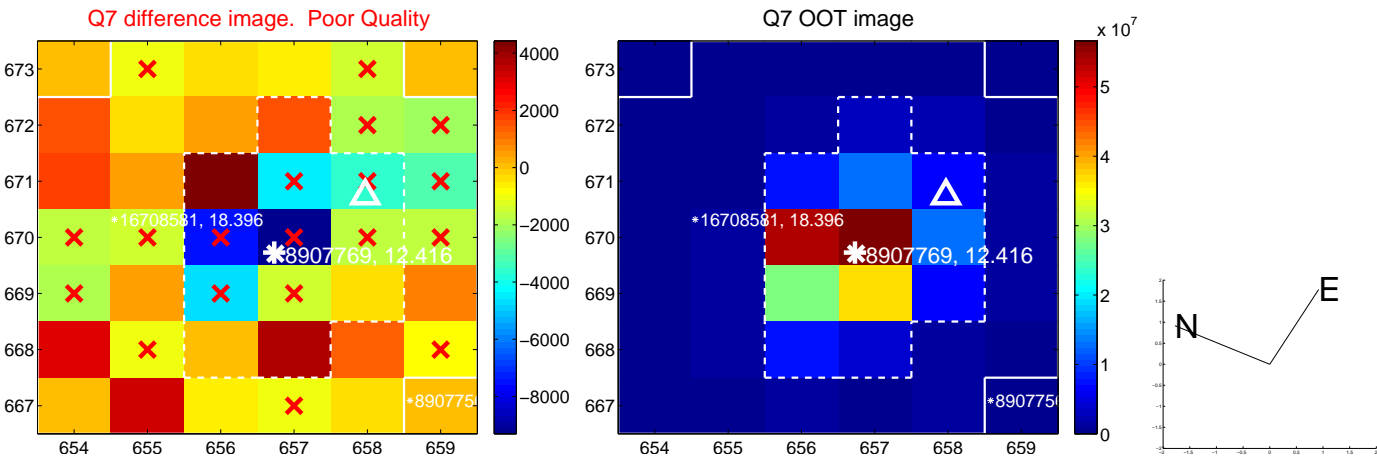
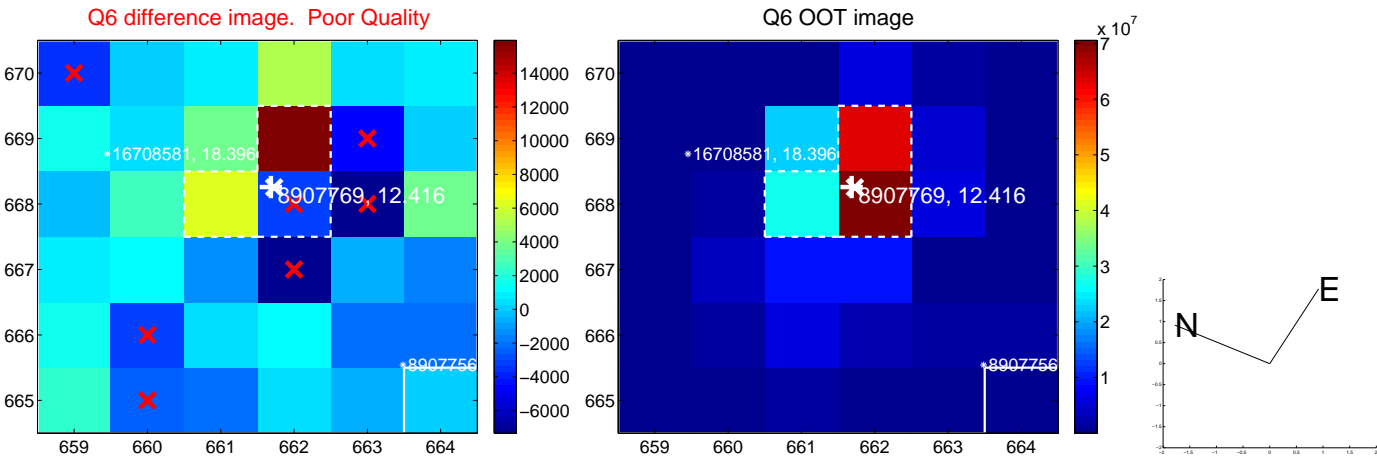
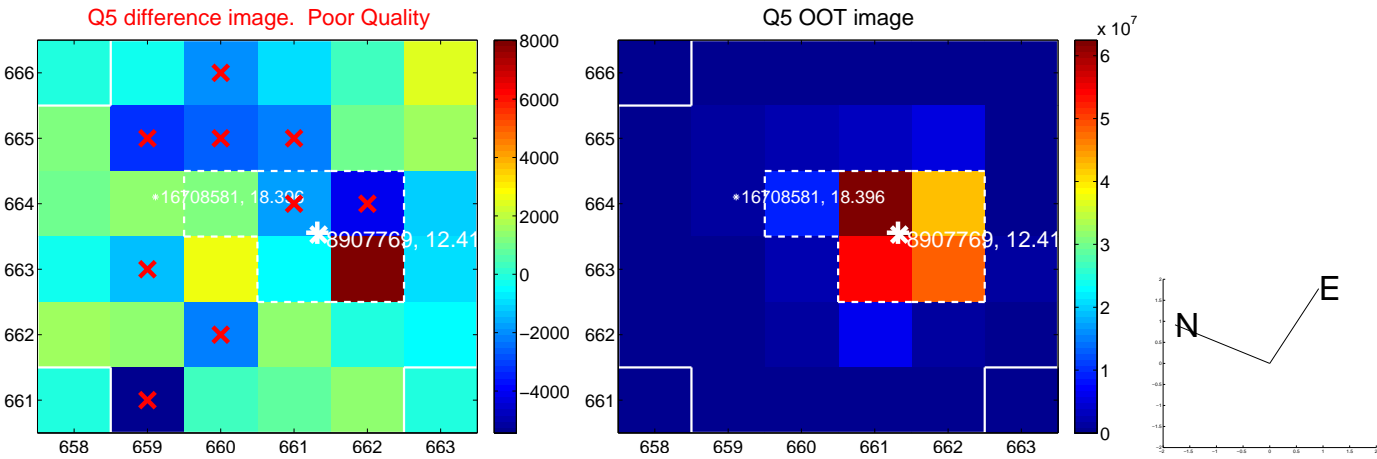


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

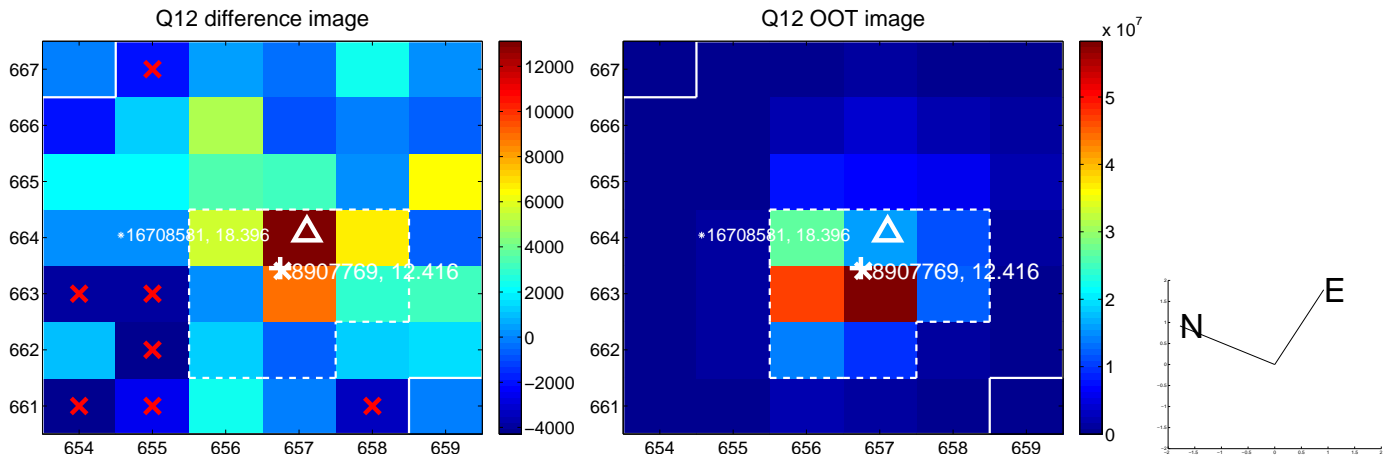
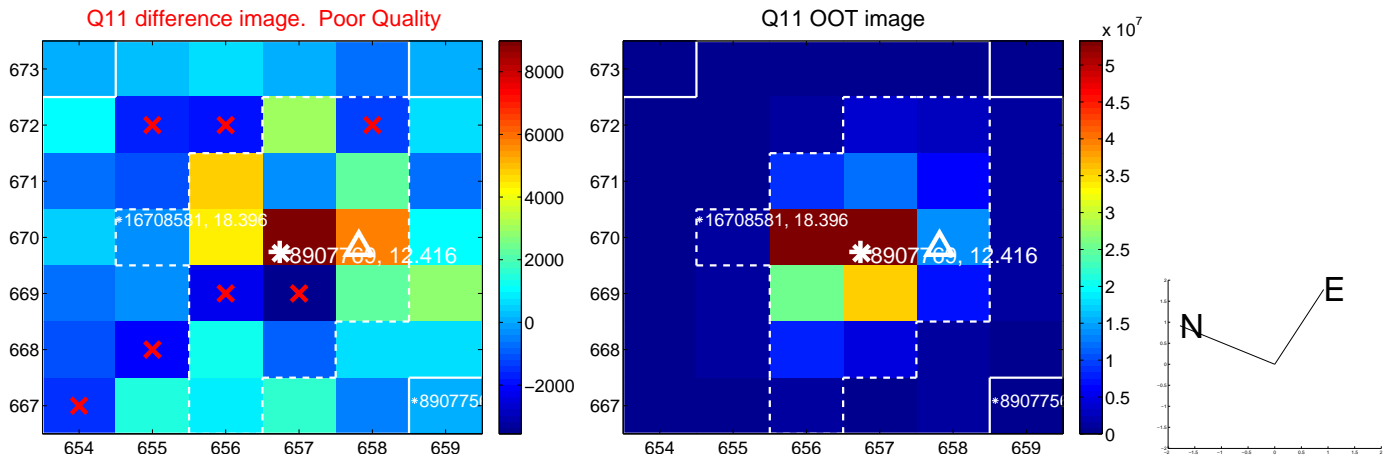
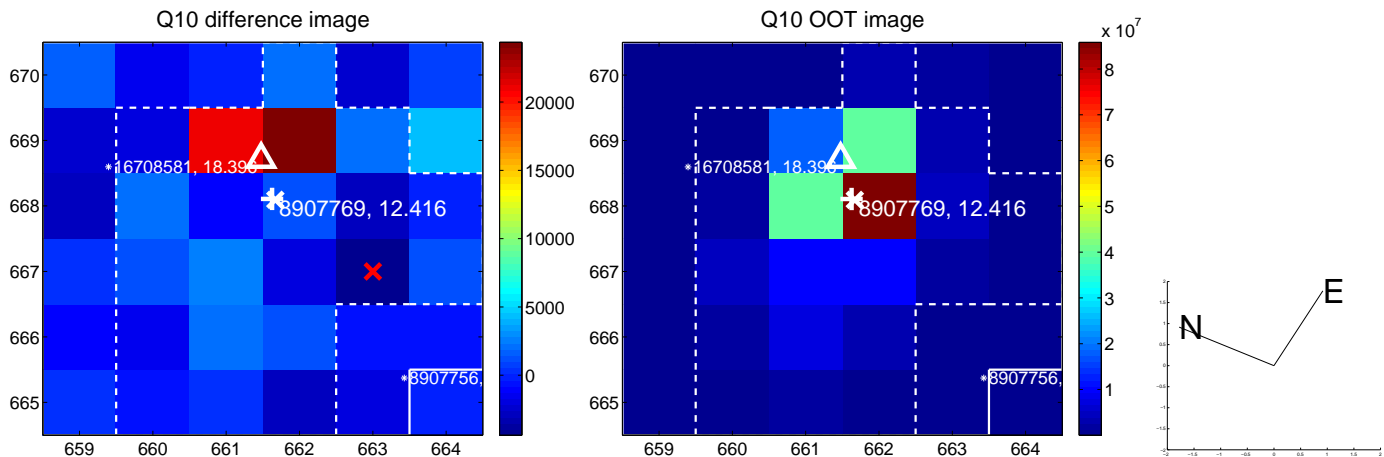
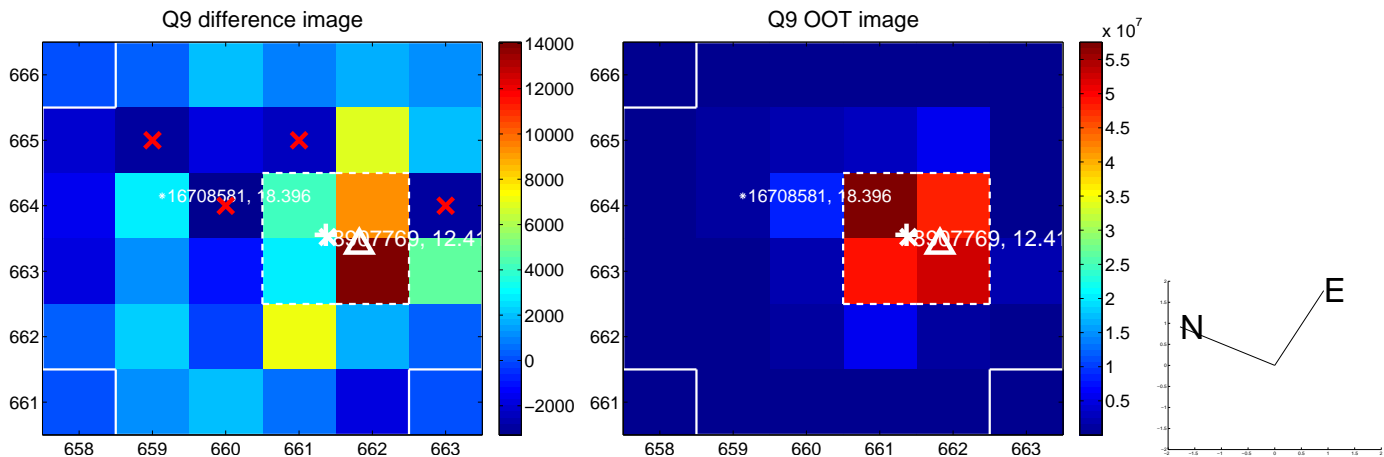
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



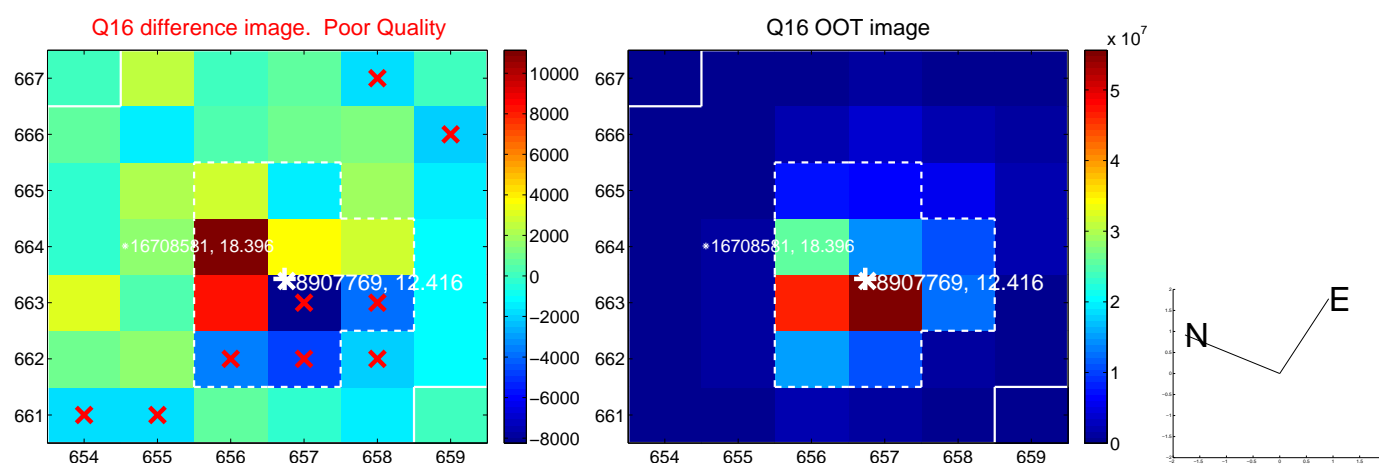
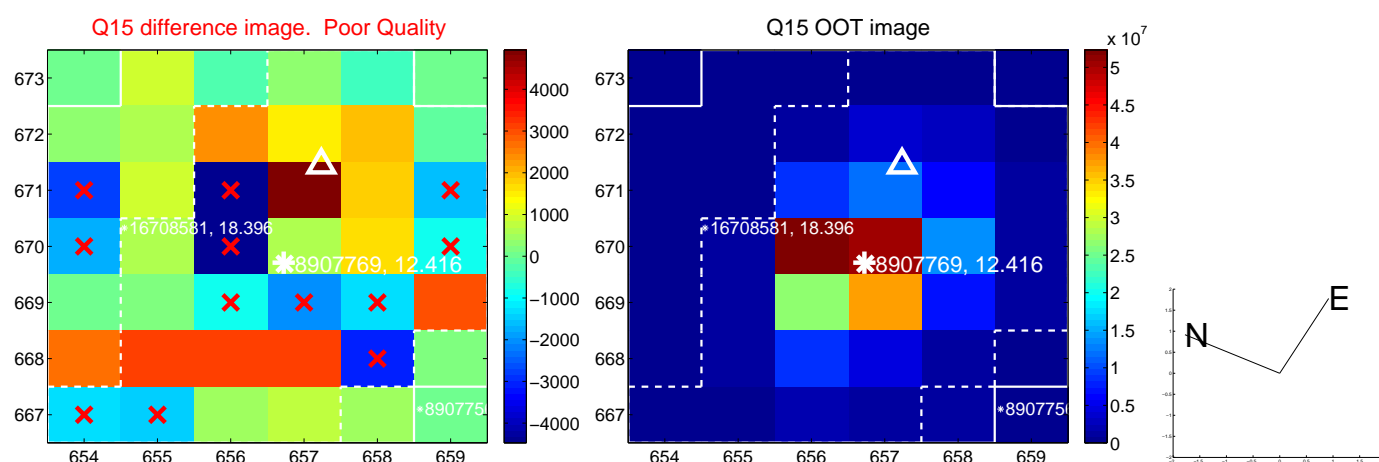
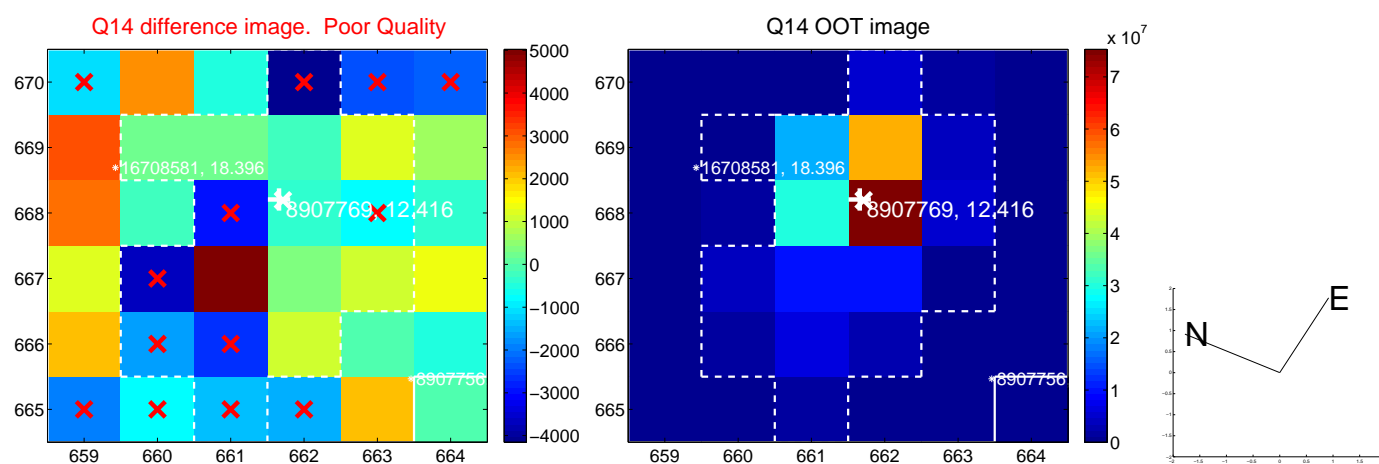
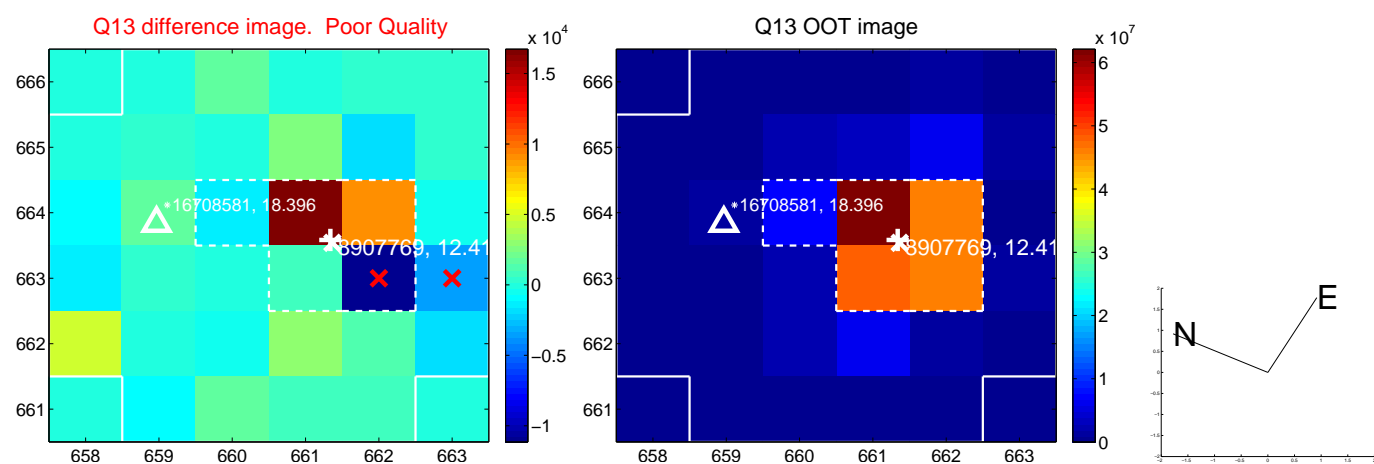
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



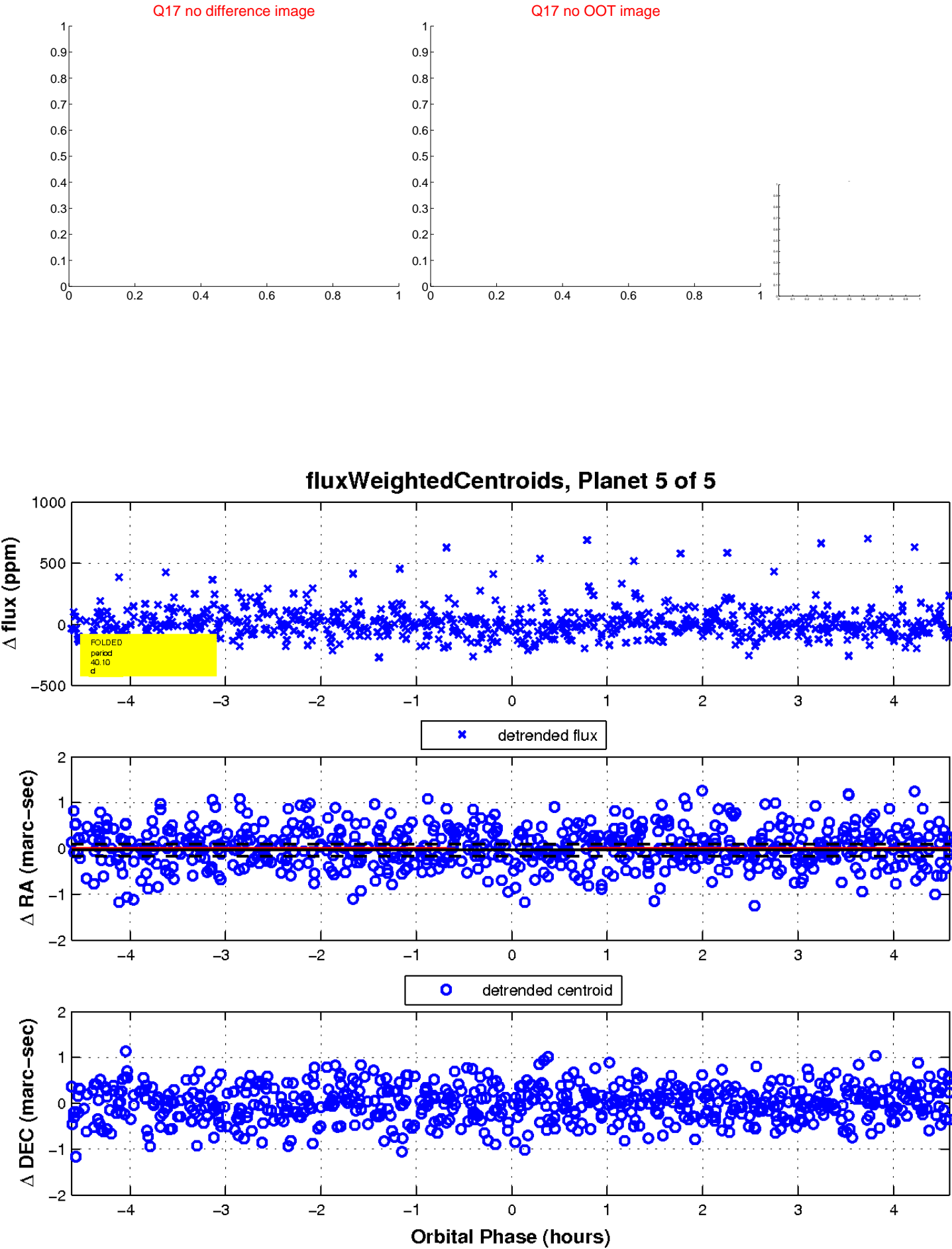
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

