

KIC 006222079

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})
006222079-01	OBS	No	1.940112	133.342554	19.2	13.050	13.7	10.5	1.53	6631	0.68	3897.25
006222079-02	OBS	No	44.029567	158.315933	70.3	5.803	11.2	3.9	1.53	6631	1.49	60.66
006222079-03	OBS	No	44.030528	158.803419	282.1	7.500	12.2	-1.0	1.53	6631	2.59	60.65
006222079-04	OBS	No	41.175485	165.562220	253.7	1.495	8.7	9.0	1.53	6631	2.49	66.33
006222079-05	OBS	No	74.396249	188.969235	134.6	10.620	10.7	7.7	1.53	6631	2.00	30.14
006222079-06	OBS	No	25.853661	142.148072	105.2	6.549	7.4	9.9	1.53	6631	1.76	123.36

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006222079-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
006222079-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
006222079-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS—HALO_GHOST
006222079-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
006222079-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
006222079-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_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.

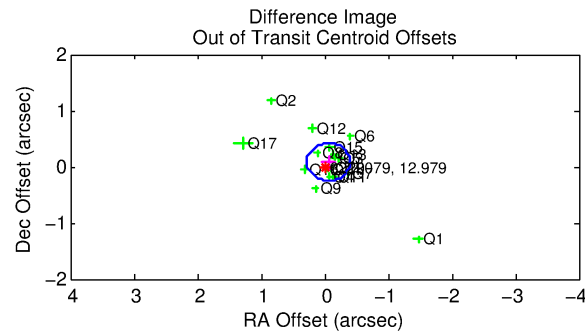
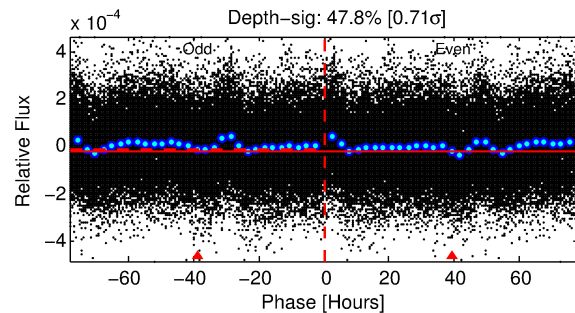
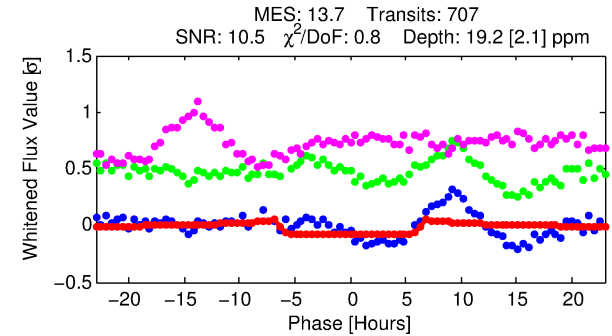
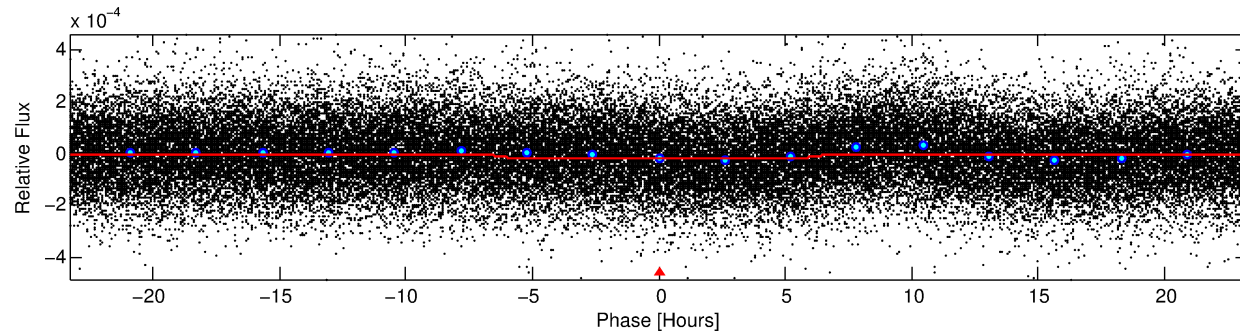
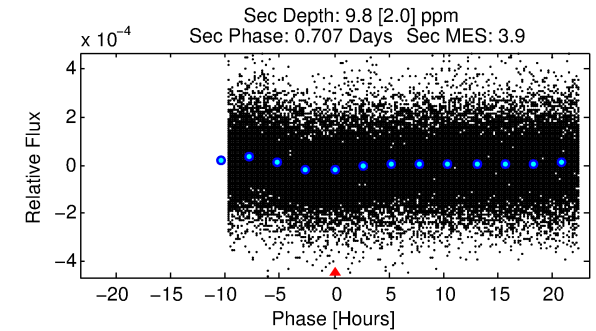
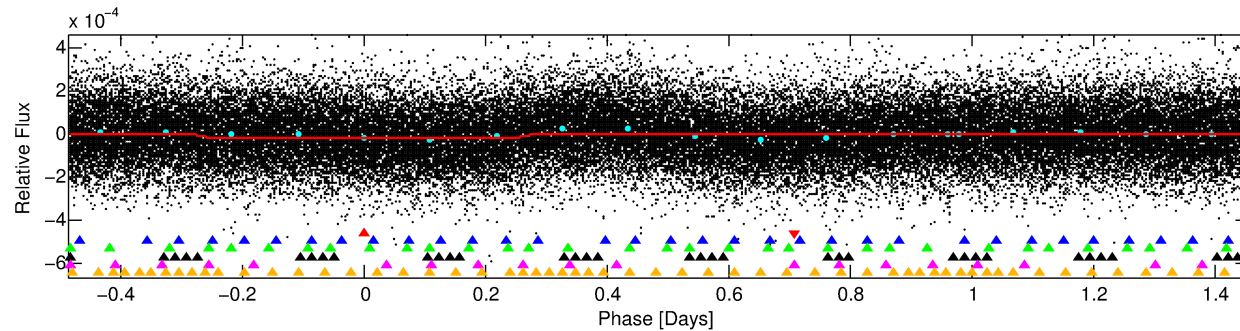
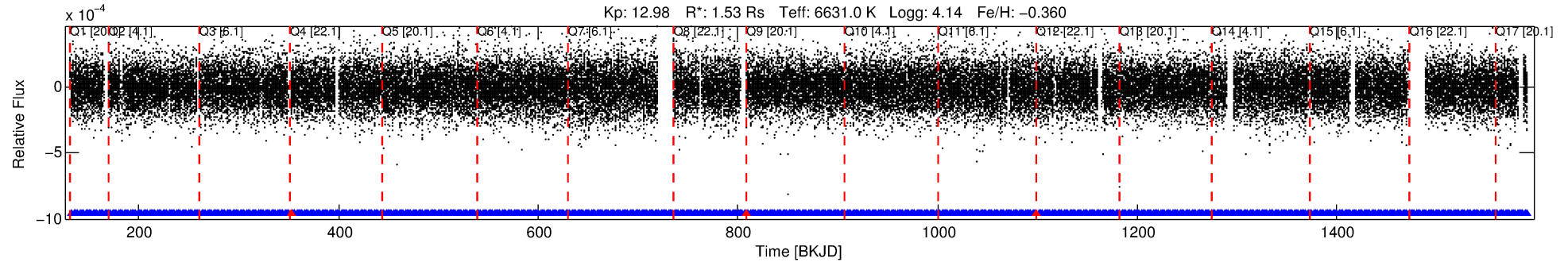
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006222079-01

No Significant Match Found

DV One-Page Summary

KIC: 6222079 Candidate: 1 of 6 Period: 1.940 d



DV Fit Results:

Period = 1.94011 [0.00002] d
Epoch = 133.3426 [0.0062] BKJD
Rp/R* = 0.0041 [0.0026]
a/R* = 1.28 [1.76]
b = 0.29 [11.25]
Seff = 3897.25 [1380.28]
Teq = 2015 [178] K
Rp = 0.68 [0.47] Re
a = 0.0323 [0.0069] AU
Ag = 12.12 [16.25] [0.68σ]
Teffp = 5812 [1899] K [1.99σ]

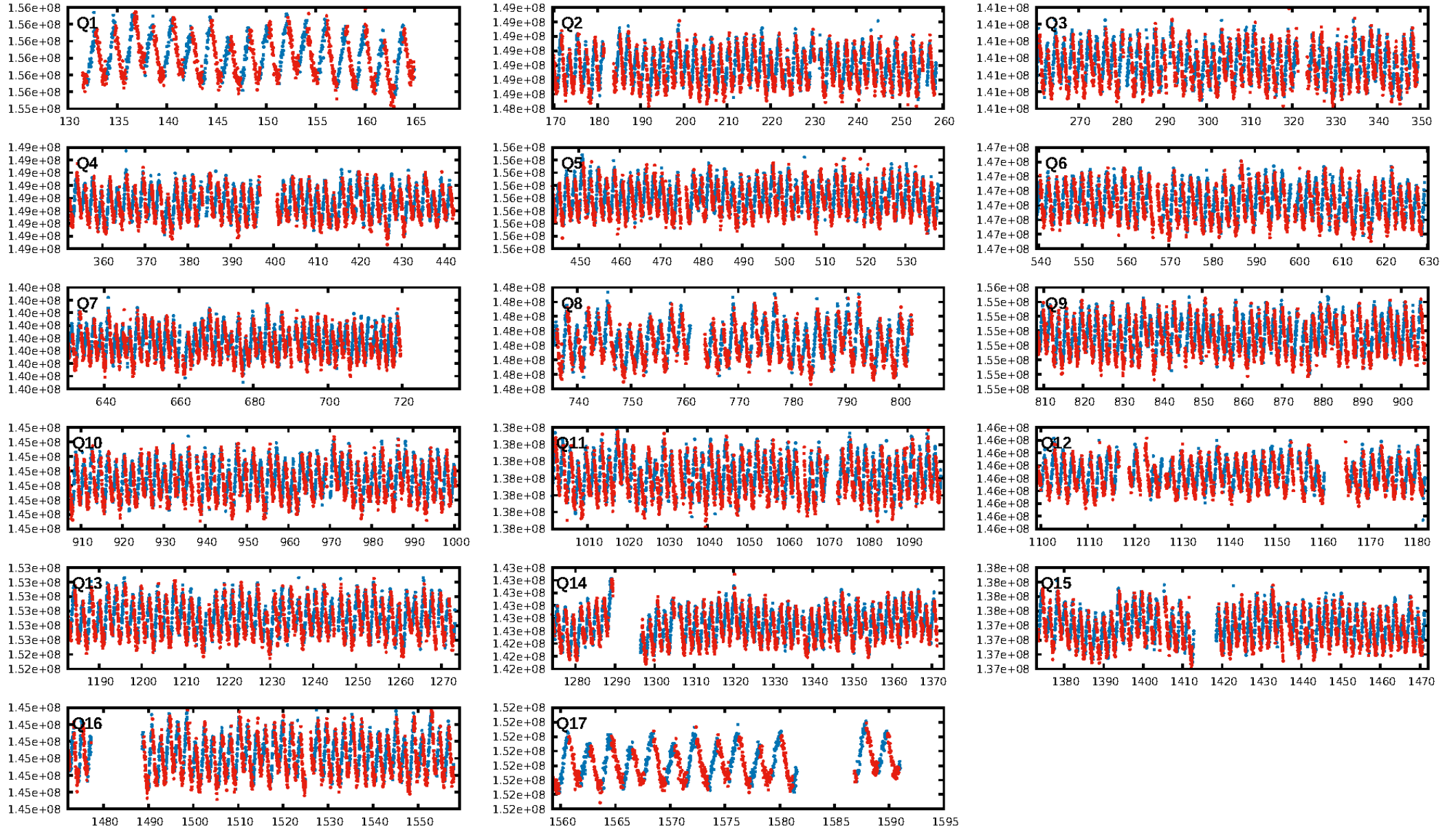
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [39.31σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.13e-24
RollingBand-fgt: 1.00 [672/675]
GhostDiagnostic-chr: 1.614
Centroid-sig: 0.0%
Centroid-so: 2.202 arcsec [2.62σ]
OotOffset-rm: 0.101 arcsec [0.90σ]
KicOffset-rm: 0.021 arcsec [0.13σ]
OotOffset-st: 4/4/4/5 [17]
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DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

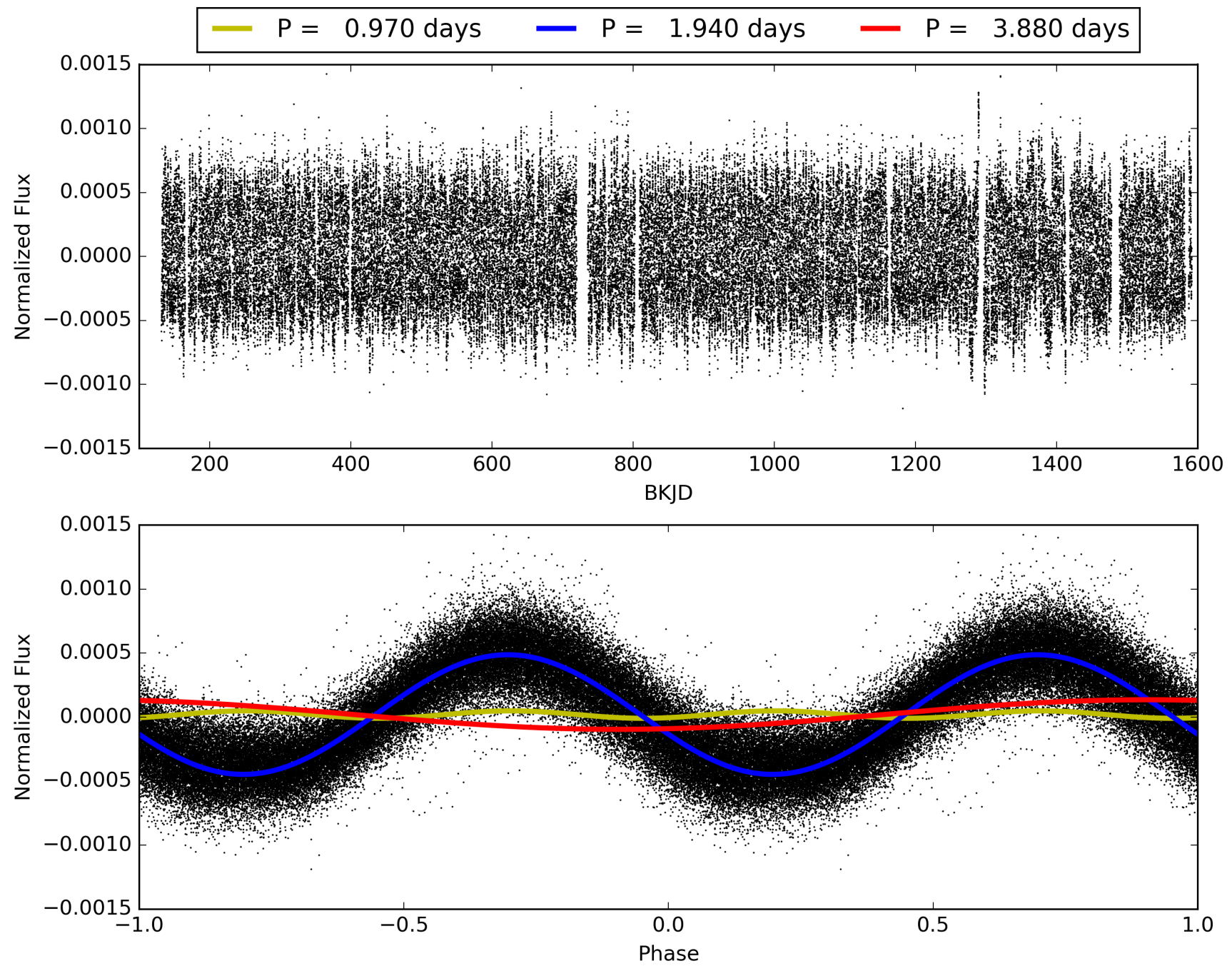
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 006222079-01, PDC Light Curves

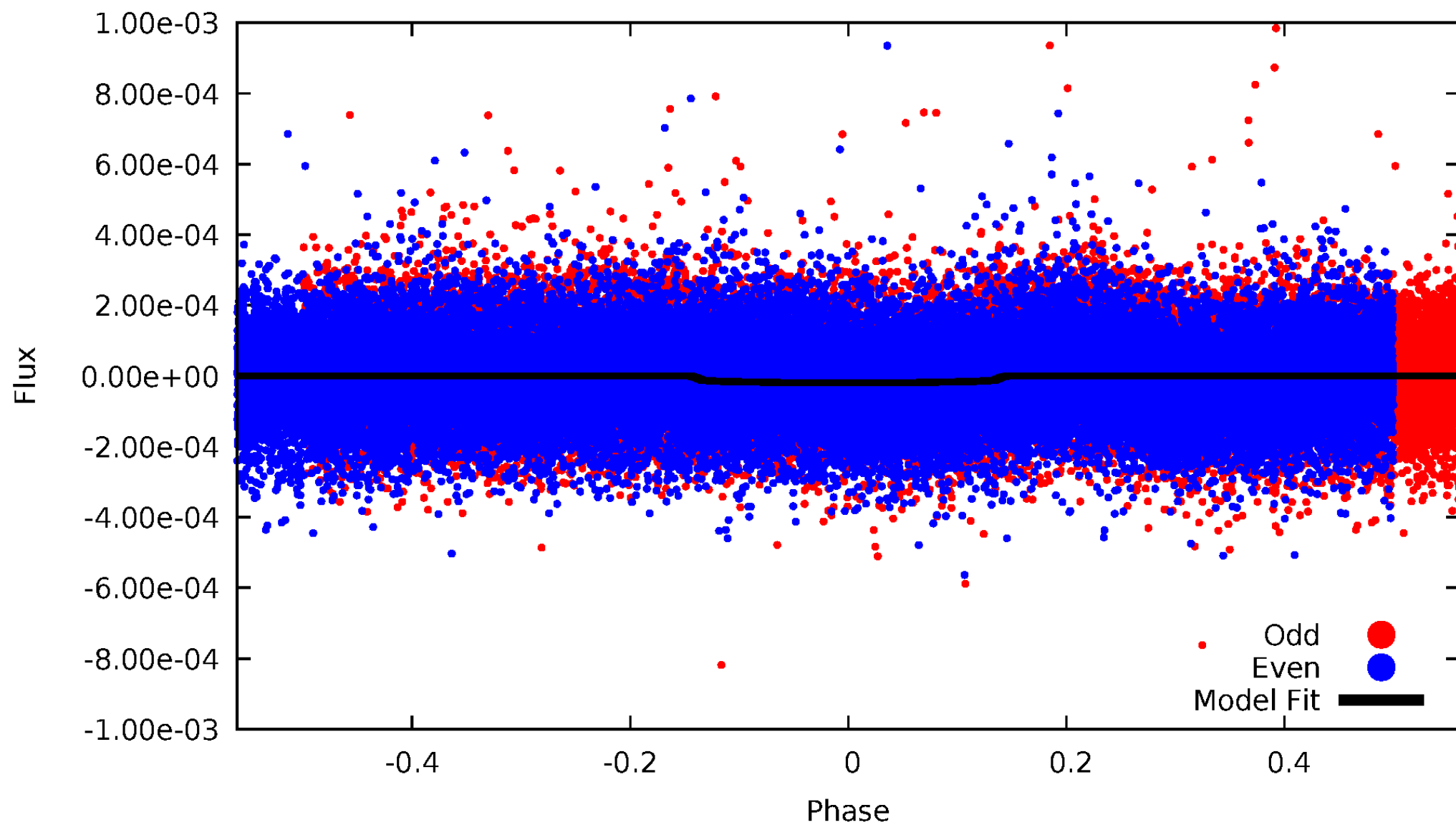


TCE 006222079-01



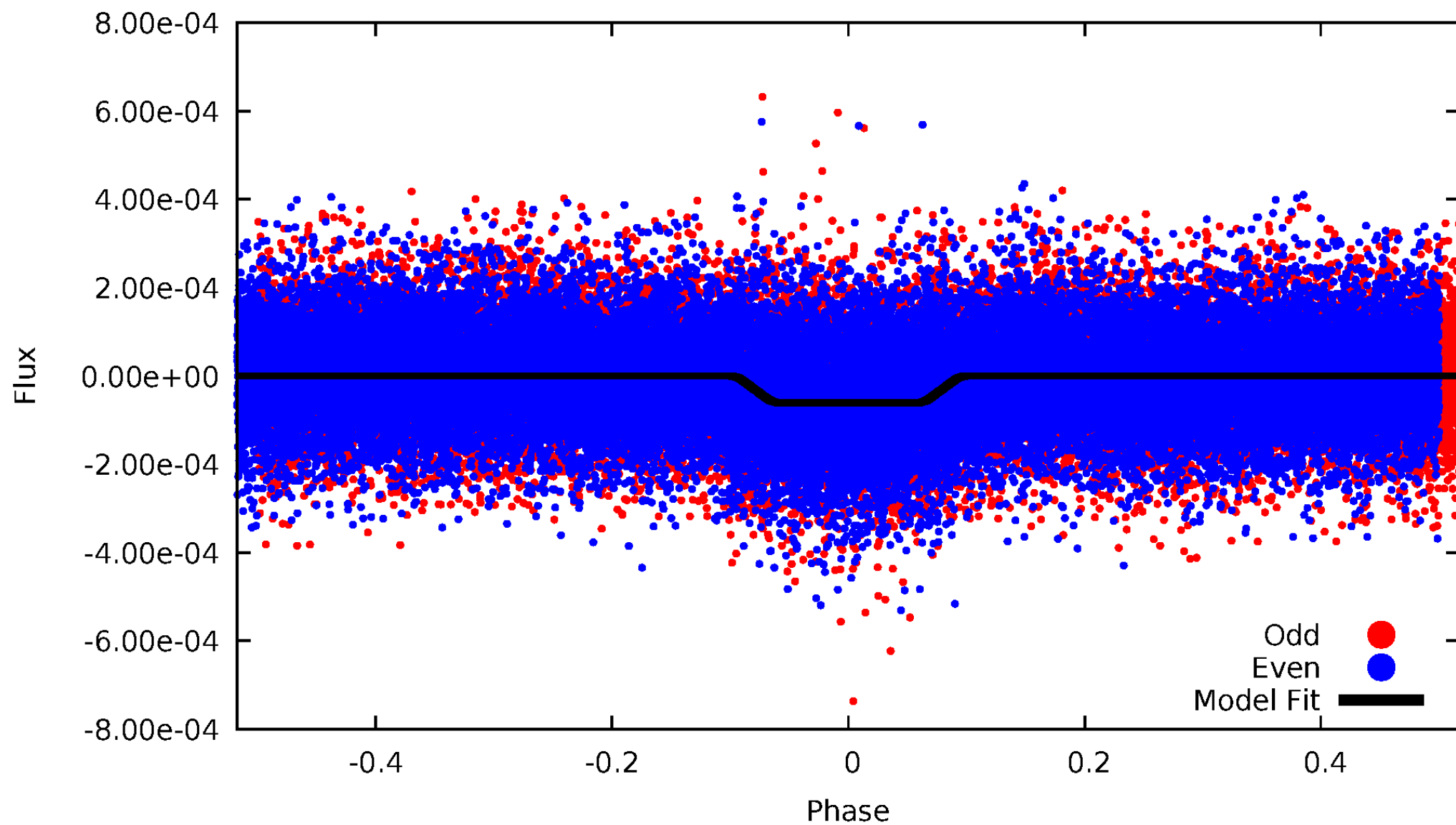
DV Odd/Even

TCE 006222079-01

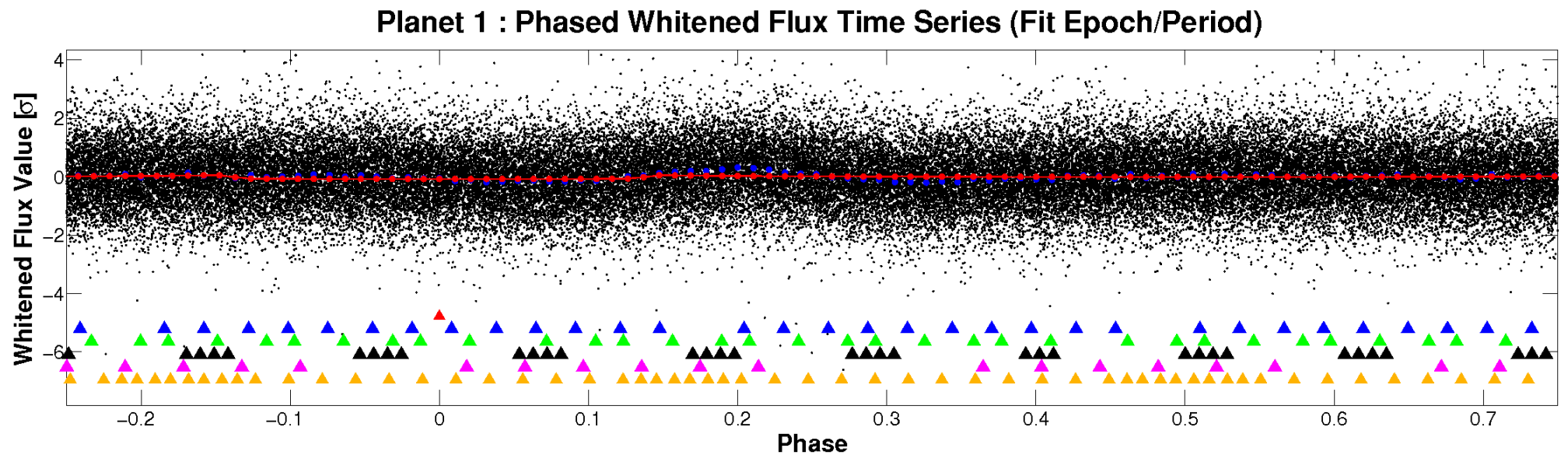
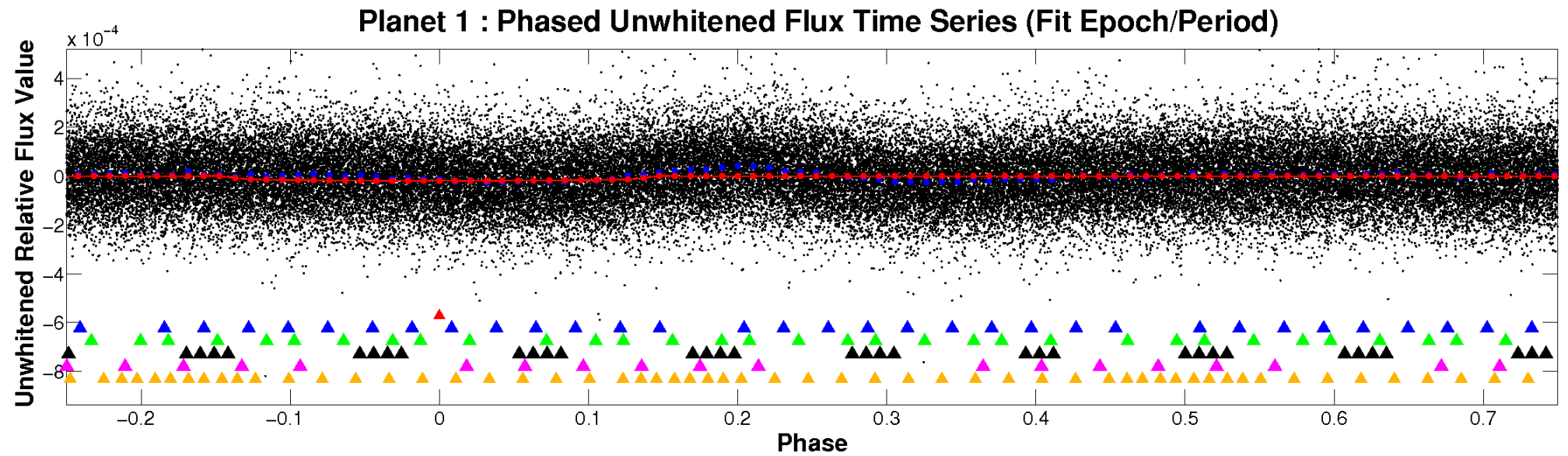


ALT Odd/Even

TCE 006222079-01

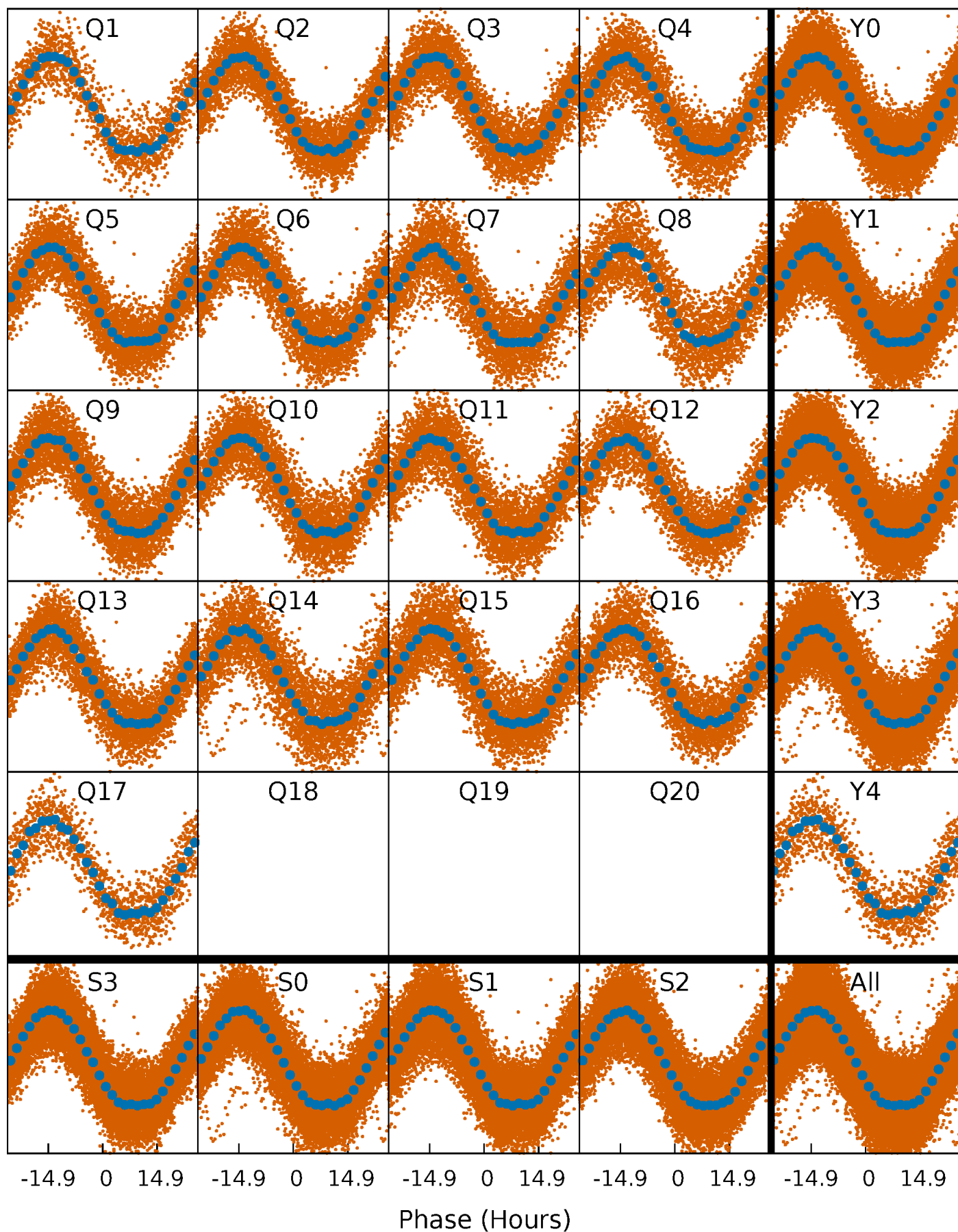


Non-Whitened Vs. Whitened Light Curve



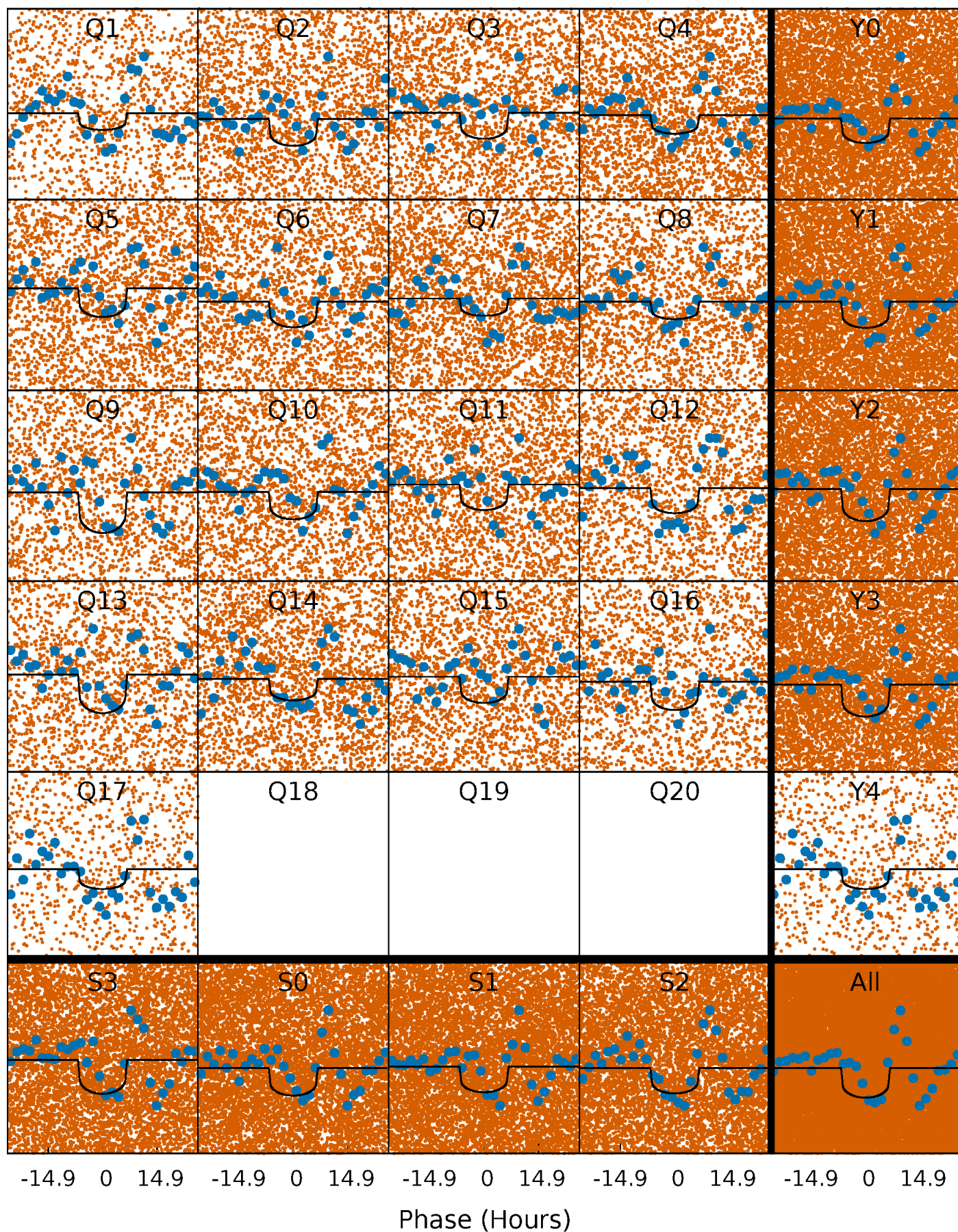
PDC Quarter-Phased Transit Curves

TCE 006222079-01 P= 1.940112 Days $T_0=133.342554$ (BKJD)



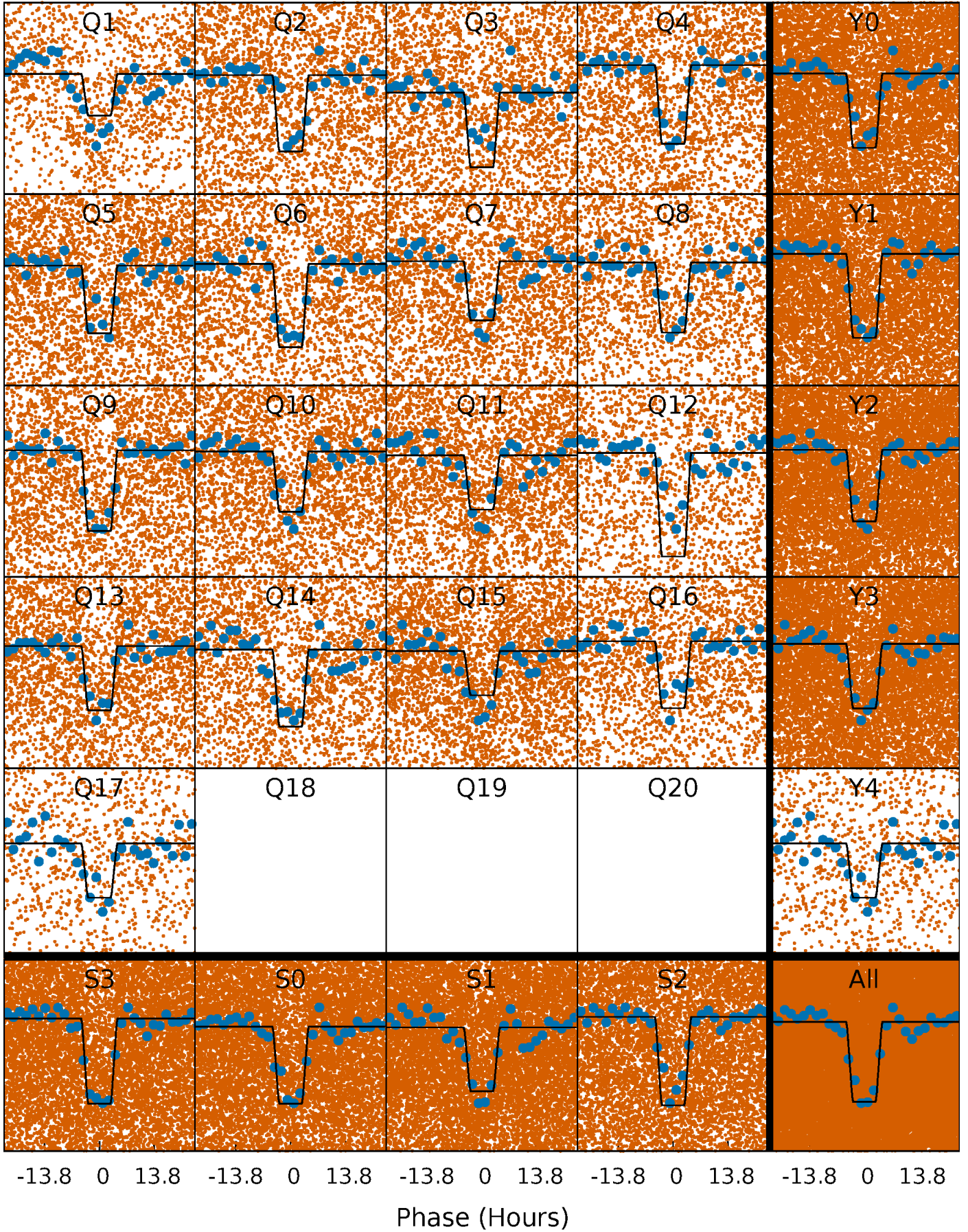
DV Quarter-Phased Transit Curves

TCE 006222079-01 P= 1.940112 Days $T_0=133.342554$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

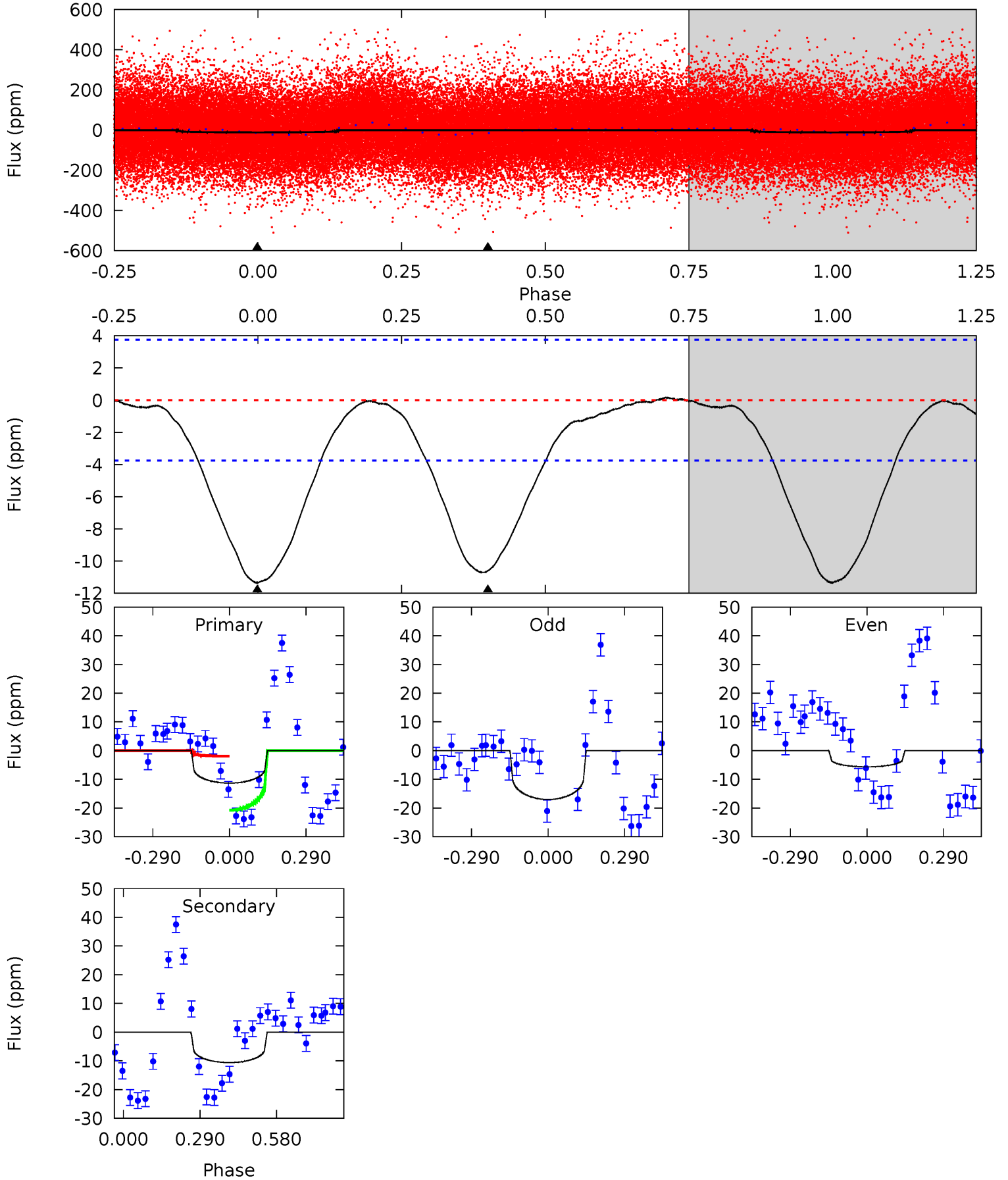
TCE 006222079-01 P= 1.940156 Days $T_0=133.442470$ (BKJD)



DV Model-Shift Uniqueness Test

006222079-01, P = 1.940112 Days, E = 131.402442 Days

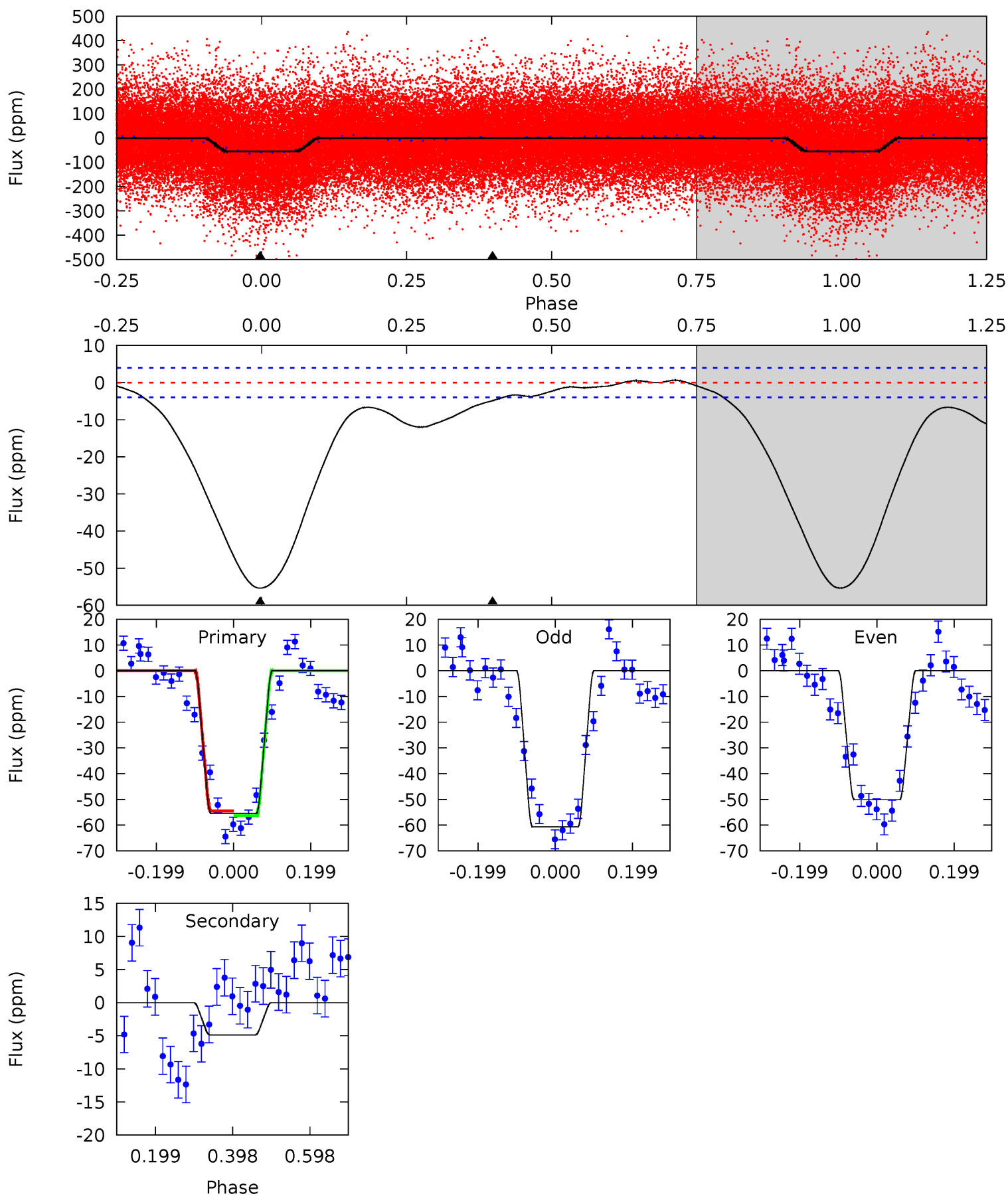
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.1	12.3	0	0	4.34	1.06	0.13	13.1	13.1	12.3	12.3	6.66	0.93	0.01	10.8



Alt Model-Shift Uniqueness Test

006222079-01, P = 1.940156 Days, E = 131.502314 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
61.6	5.41	0	0	4.42	1.28	1.50	61.6	61.6	5.41	5.41	5.86	0.97	0.01	1.02



Stellar Parameters For KIC 006222079

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	ρ_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6631^{+162}_{-223}	$4.144^{+0.186}_{-0.124}$	$-0.360^{+0.250}_{-0.300}$	$1.531^{+0.302}_{-0.369}$	$1.195^{+0.158}_{-0.175}$	$0.469^{+0.479}_{-0.178}$
	+2%/-3%	+4%/-3%	+69%/-83%	+20%/-24%	+13%/-15%	+102%/-38%
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 006222079-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-11 ± 1	$0.72^{+0.43}_{-0.40}$	2798^{+158}_{-181}	5688^{+3153}_{-1069}	12^{+48}_{-7}
Alt.	-5 ± 1	$1.29^{+0.42}_{-0.45}$	2792^{+174}_{-187}	3707^{+699}_{-414}	$1.653^{+2.295}_{-0.781}$

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 $A_{obs} \gg 1.0$

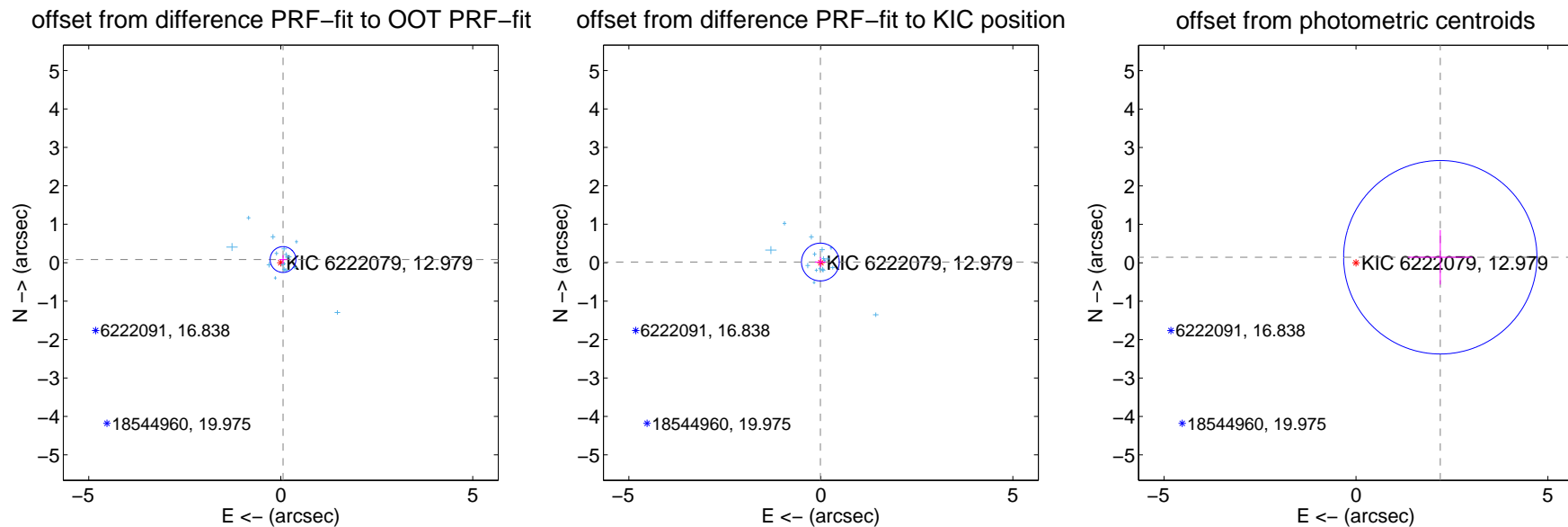
DV Centroid Data

Supplemental centroid analysis for 006222079-01. Kepler magnitude: 12.98. Transit SNR 10.45

There are 17 quarters with good PRF difference image offsets

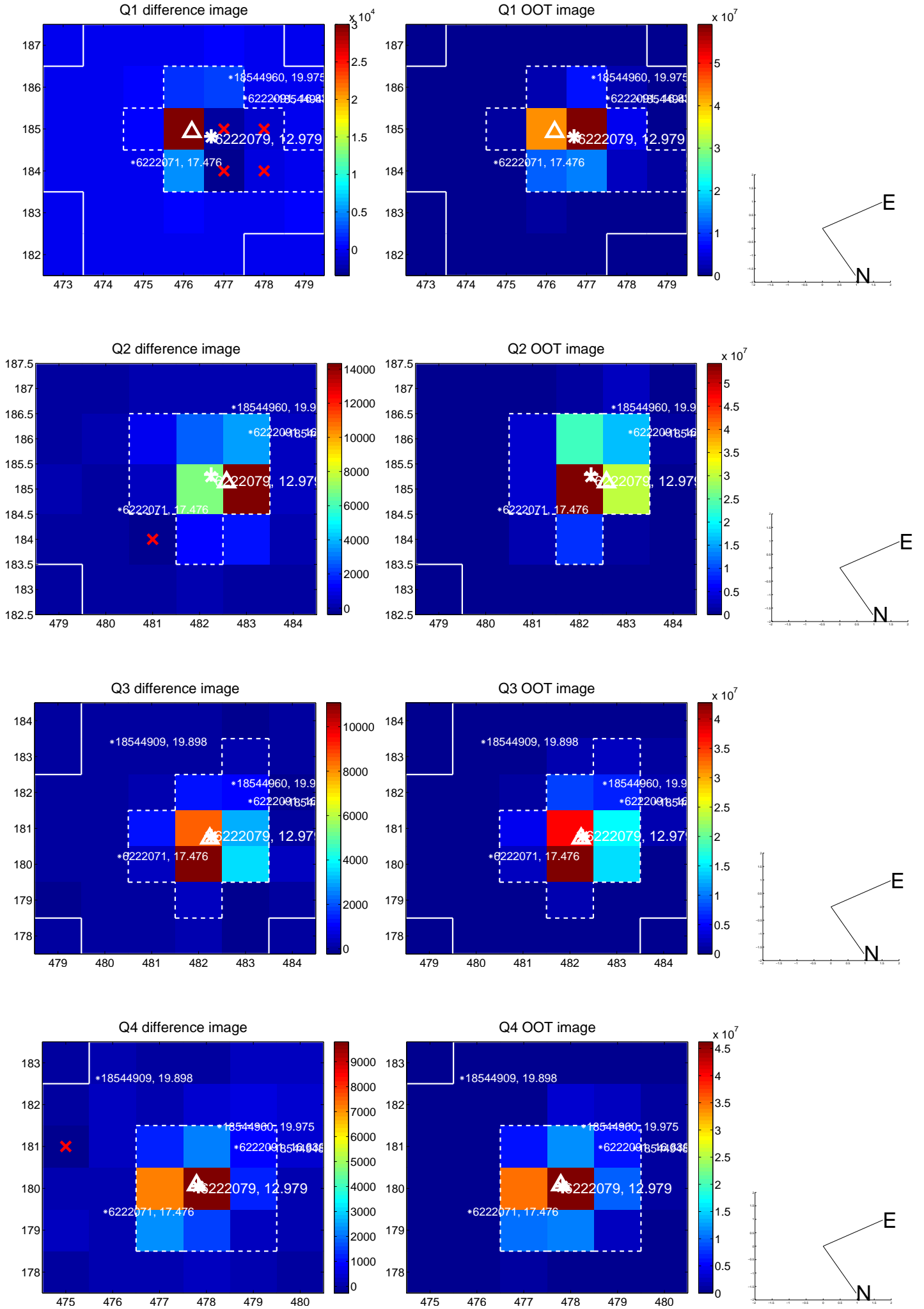
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.101 ± 0.112	0.90	-0.059 ± 0.103	0.082 ± 0.116
PRF-fit source offset from KIC position	0.021 ± 0.164	0.13	0.013 ± 0.141	0.017 ± 0.130
photometric centroid source offset	2.20 ± 0.84	2.62	-2.20 ± 0.84	0.14 ± 0.71

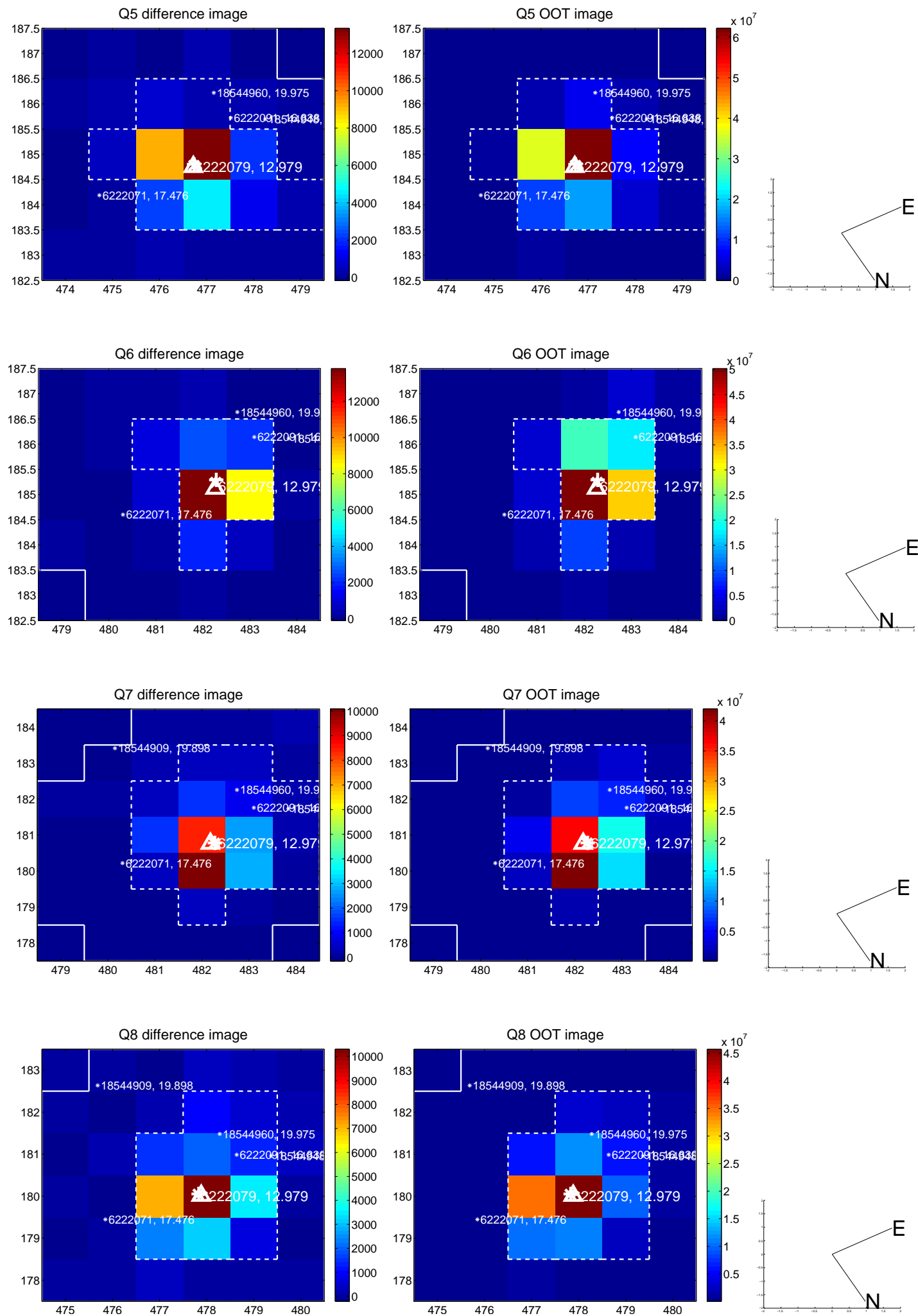


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

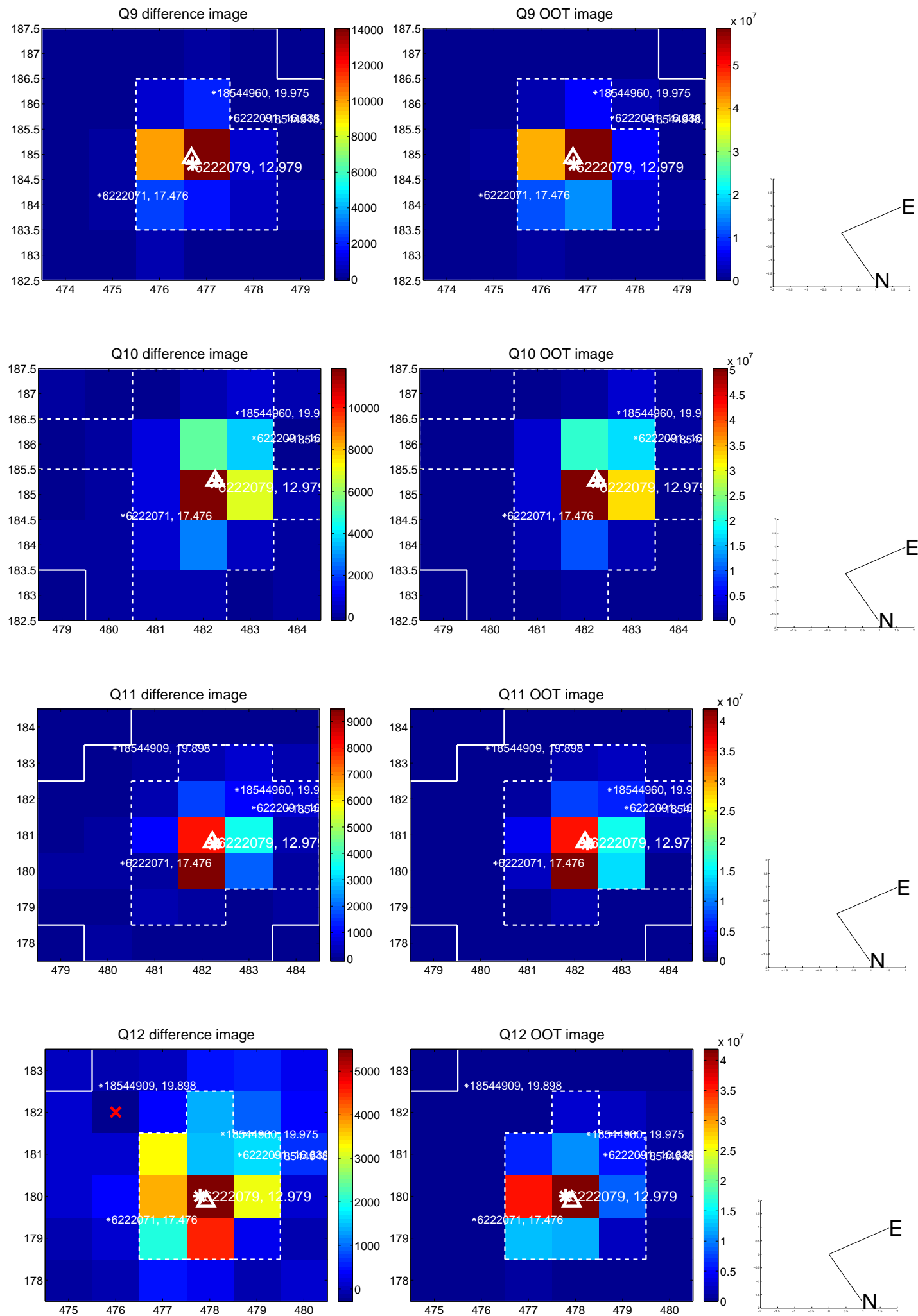
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



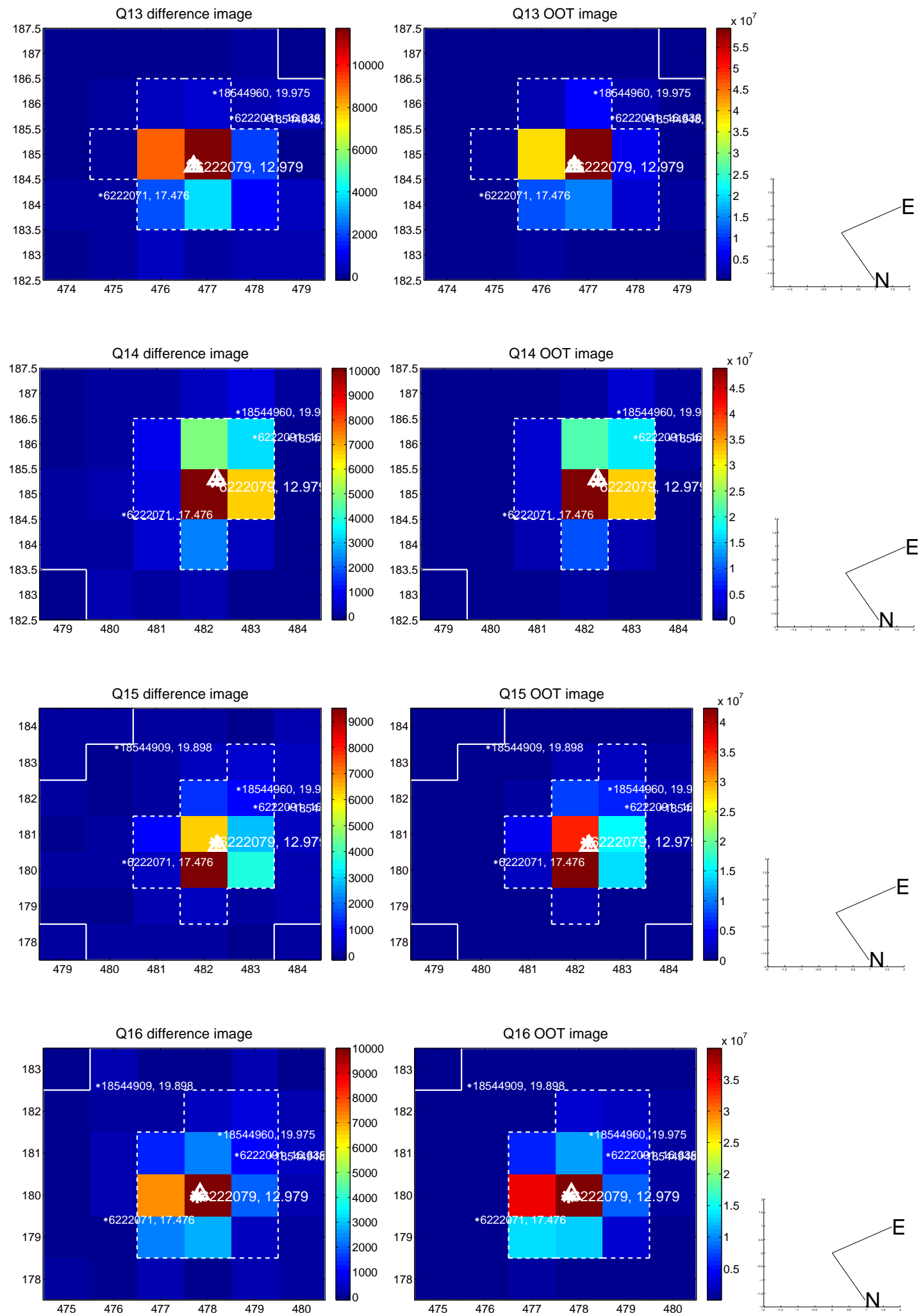
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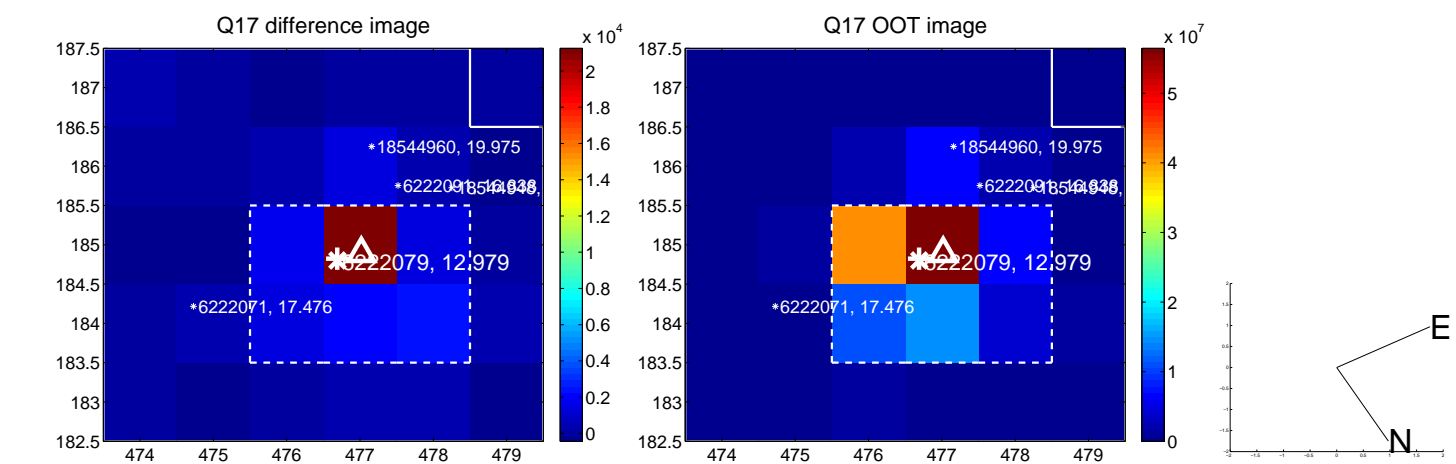
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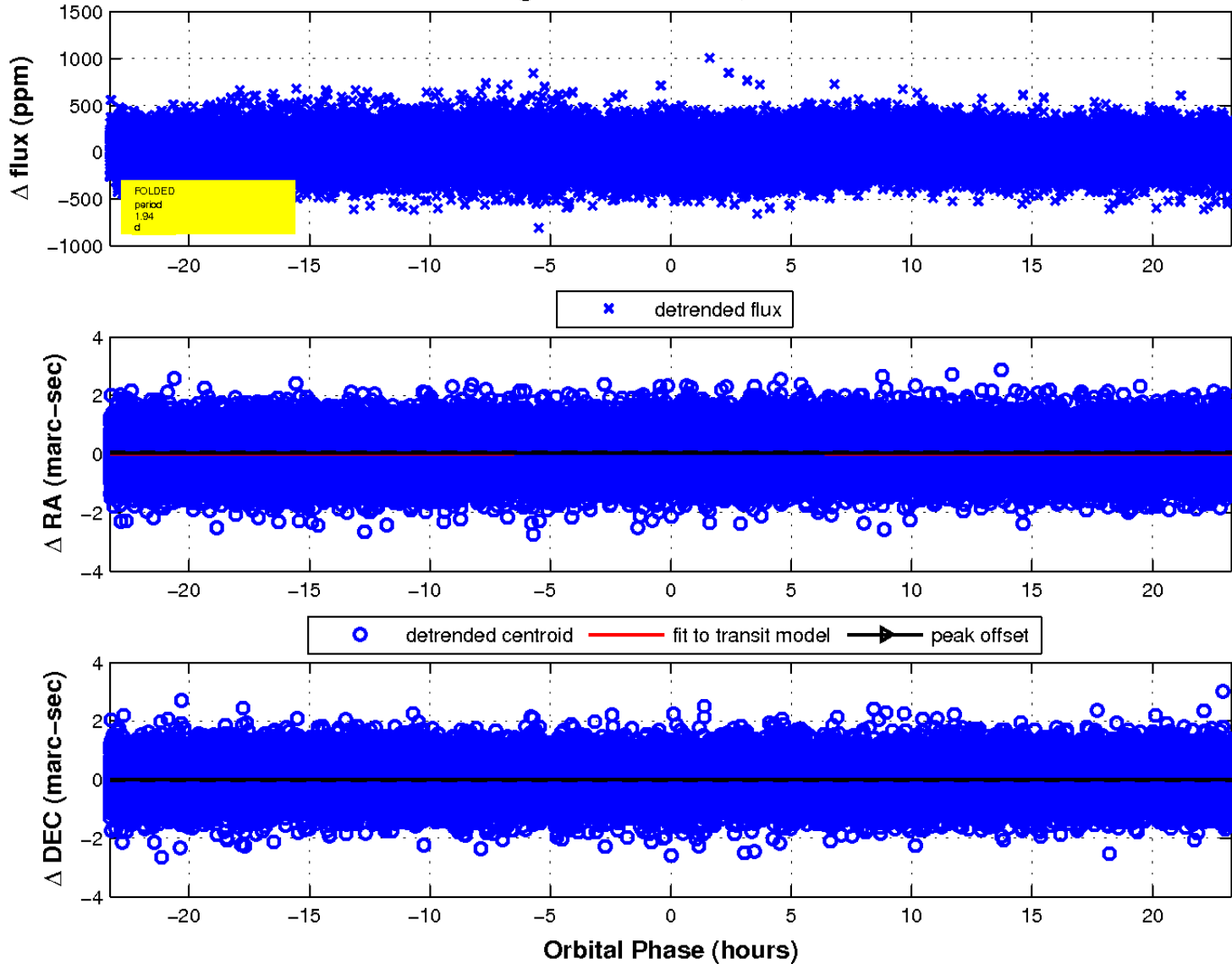
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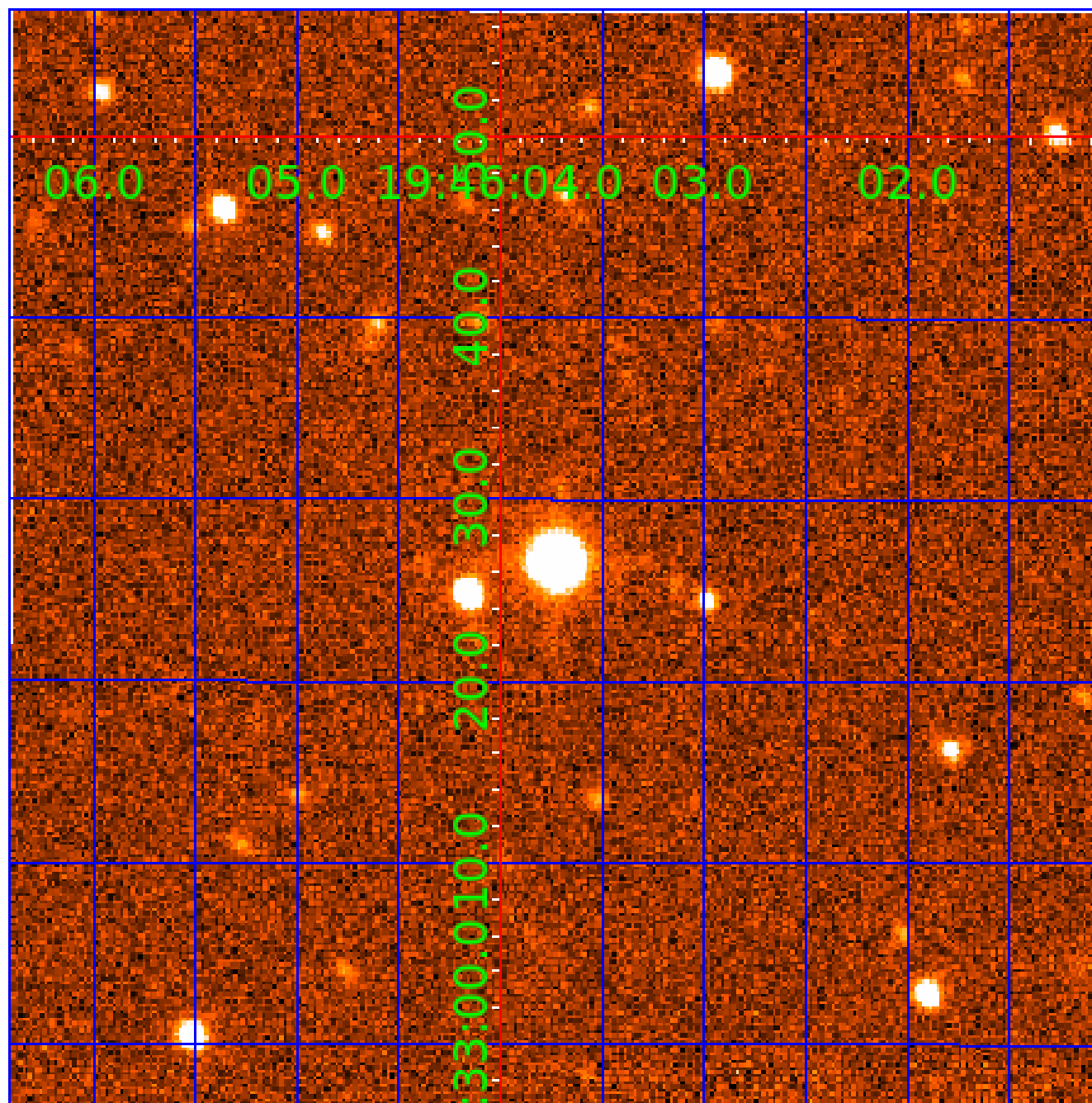


fluxWeightedCentroids, Planet 1 of 6



UKIRT Image

Declination



KIC 006222079

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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006222079-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
006222079-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS—HALO_GHOST
006222079-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
006222079-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
006222079-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_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.

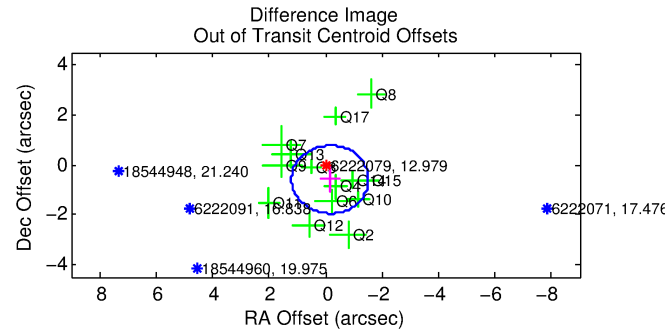
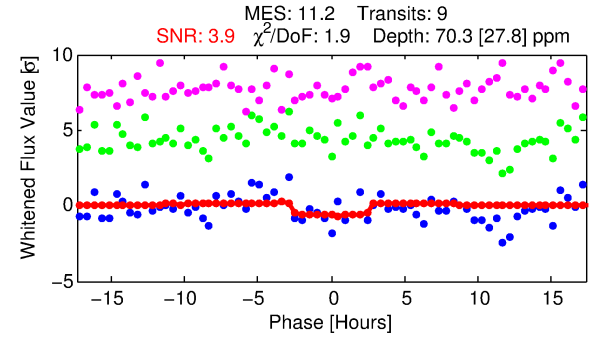
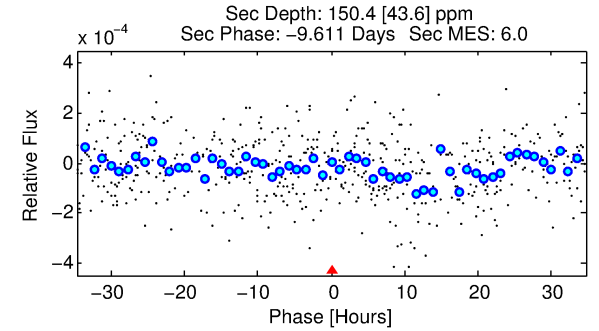
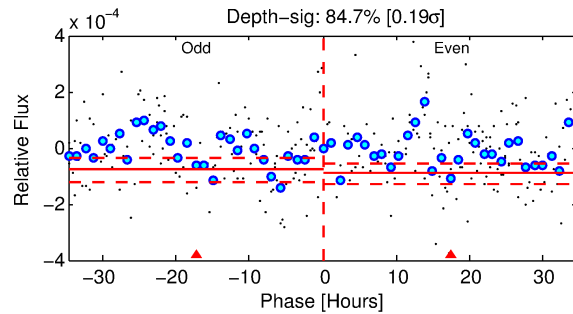
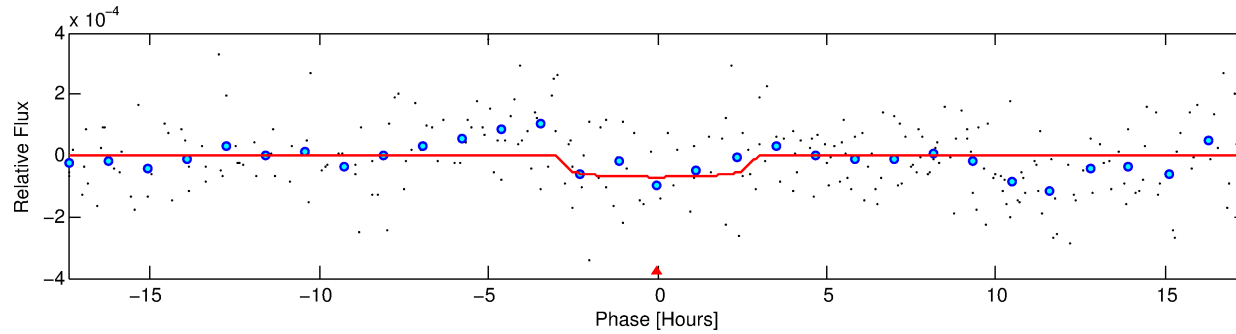
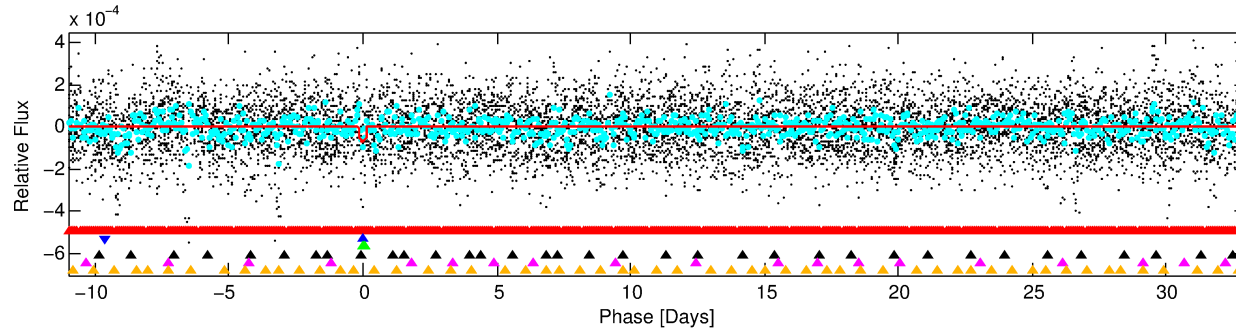
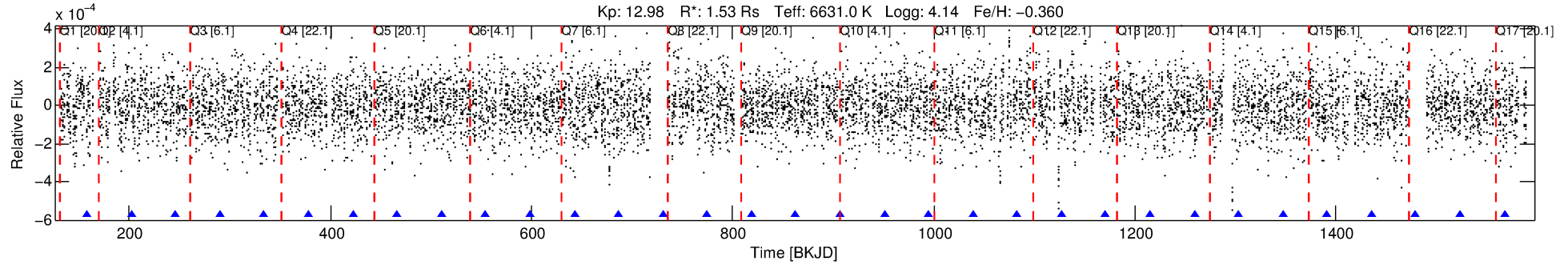
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006222079-02

No Significant Match Found

DV One-Page Summary

KIC: 6222079 Candidate: 2 of 6 Period: 44.030 d



DV Fit Results:

Period = 44.02957 [0.00162] d
Epoch = 158.3159 [0.0301] BKJD
Rp/R* = 0.0089 [0.0066]
a/R* = 26.84 [110.15]
b = 0.90 [0.91]
Seff = 60.66 [21.48]
Teq = 712 [63] K
Rp = 1.49 [1.16] Re
a = 0.2587 [0.0556] AU
Ag = 2488.08 [3851.40] [0.65 σ]
Teffp = 7771 [2951] K [2.39 σ]

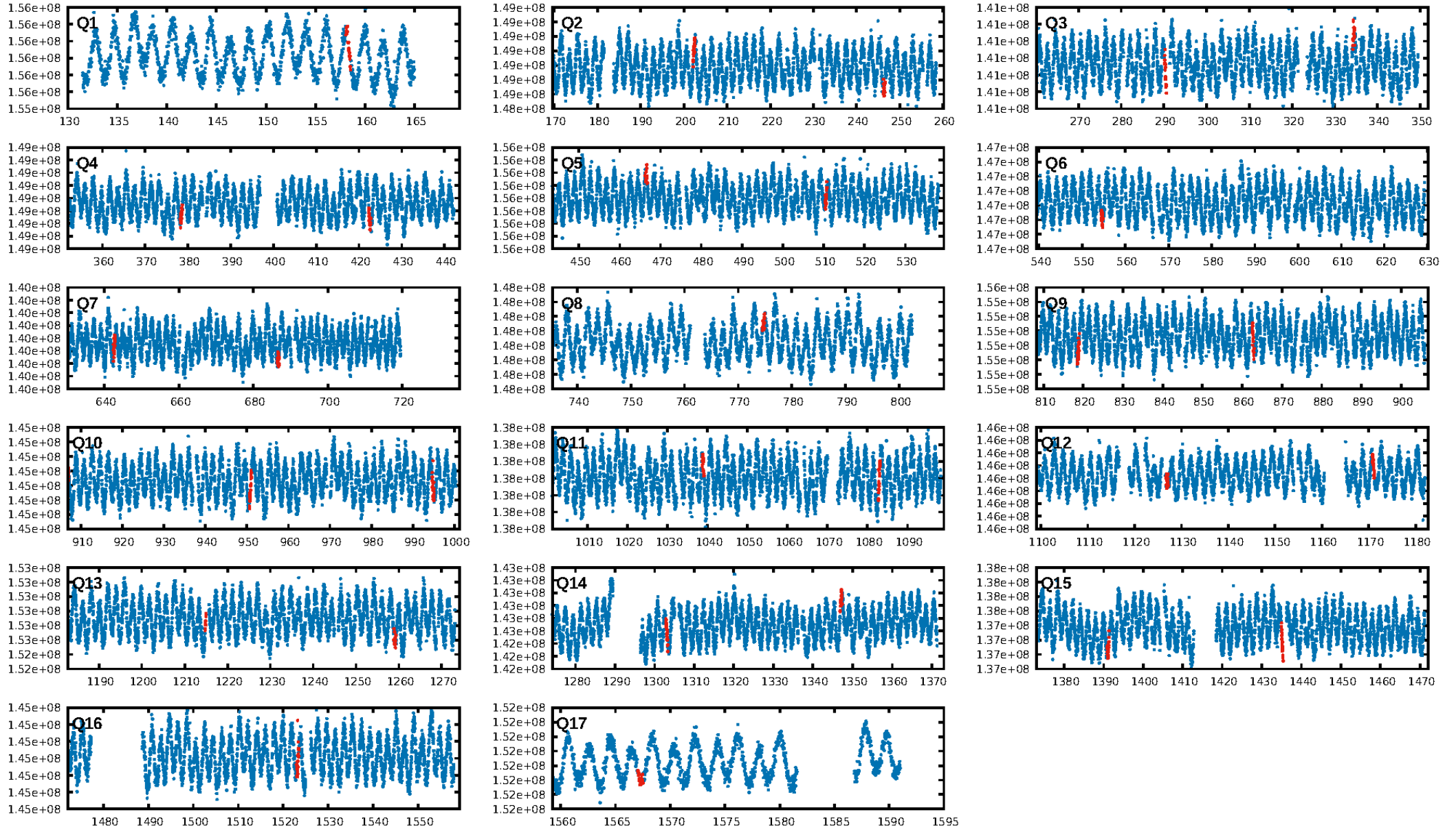
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [11.43 σ]
LongPeriod-sig: 0.2% [0.00 σ]
ModelChiSquare2-sig: 0.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.18e-18
RollingBand-fgt: 1.00 [9/9]
GhostDiagnostic-chr: 1.221
Centroid-sig: 6.2%
Centroid-so: 1.919 arcsec [1.31 σ]
OotOffset-rm: 0.617 arcsec [1.36 σ]
KicOffset-rm: 0.683 arcsec [1.72 σ]
OotOffset-st: 4/4/3/3 [14]
KicOffset-st: 4/4/3/3 [14]
DiffImageQuality-fgm: 0.50 [7/14]
DiffImageOverlap-fno: 0.00 [0/17]

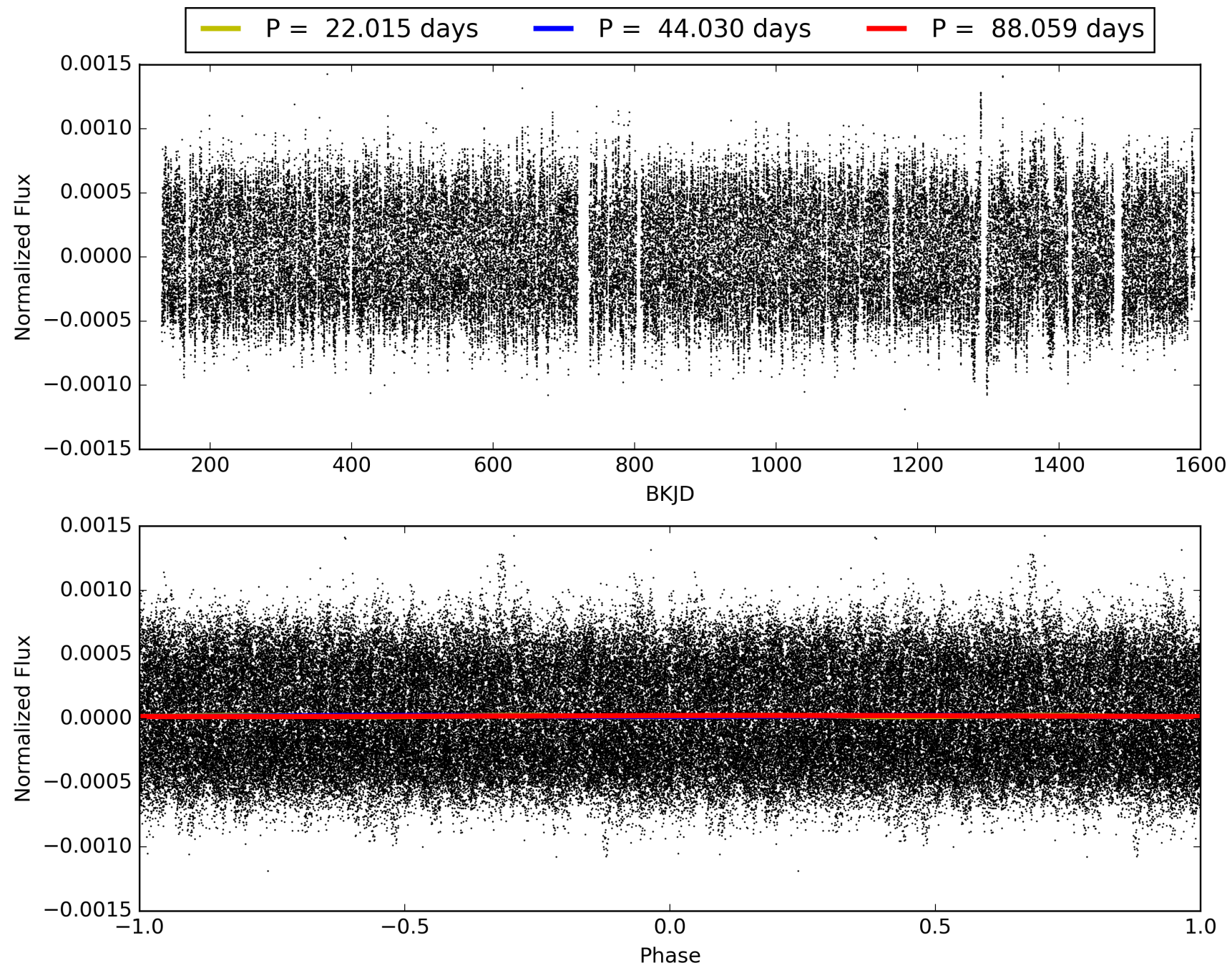
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 006222079-02, PDC Light Curves

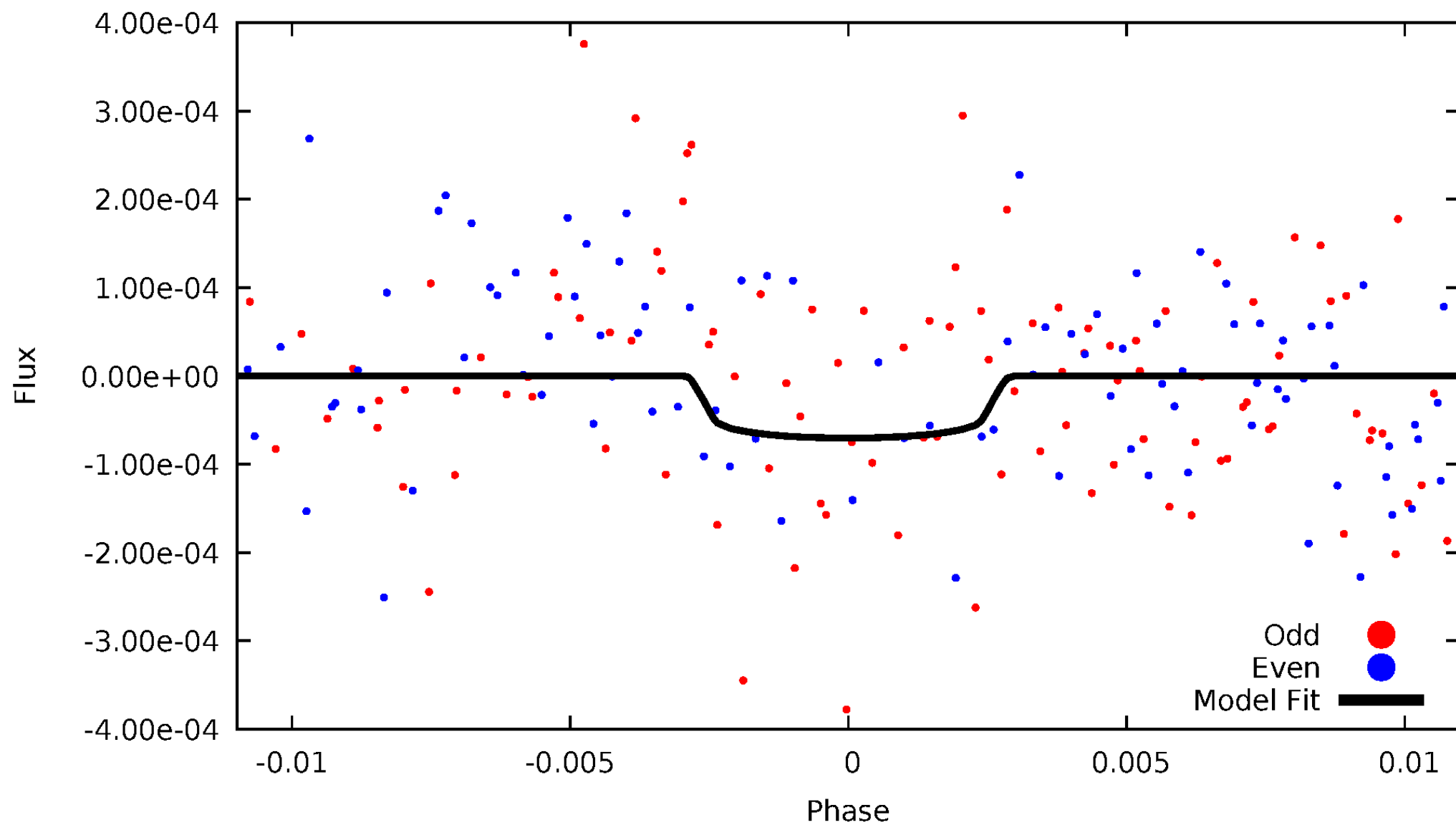


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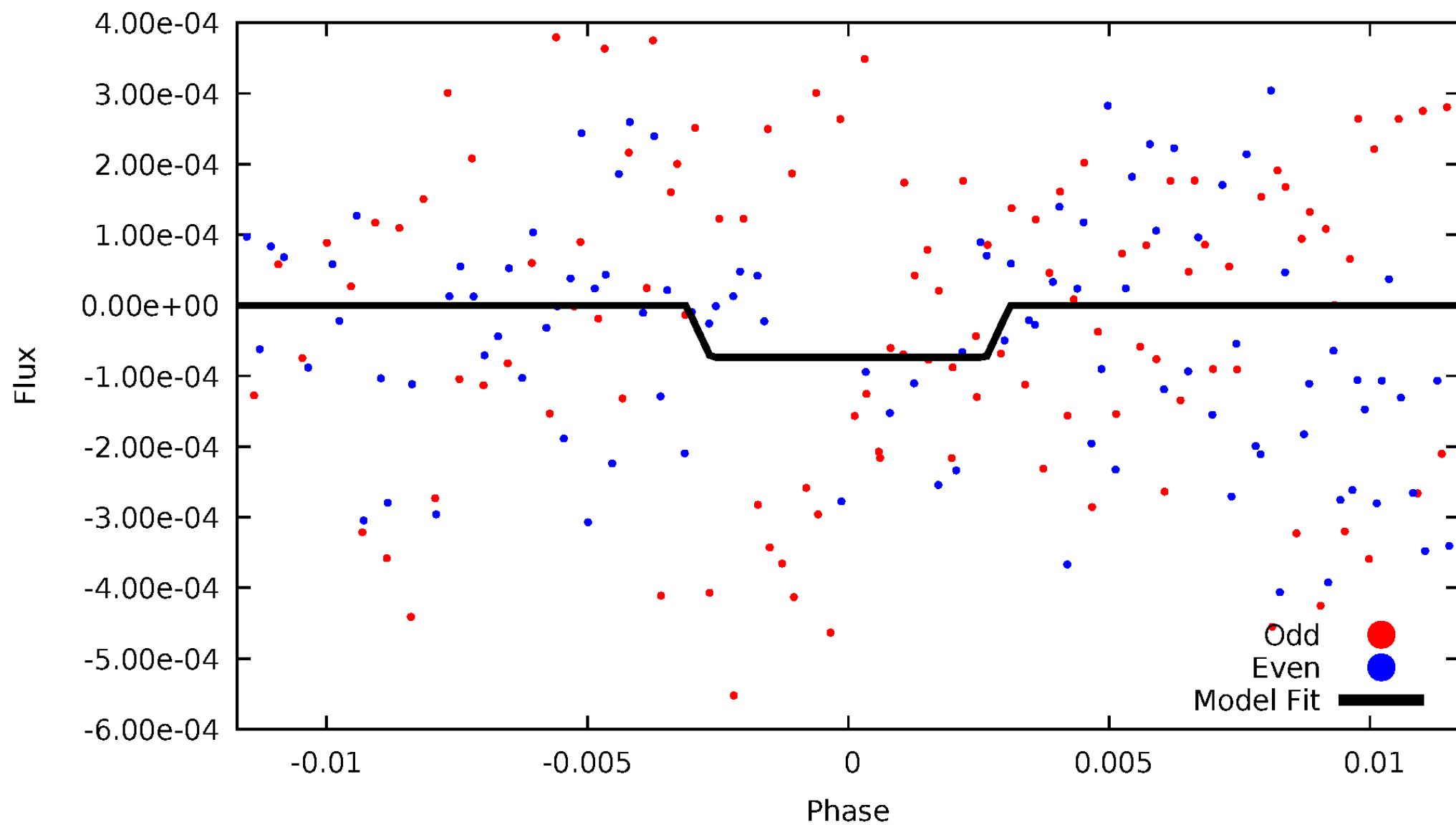
DV Odd/Even

TCE 006222079-02



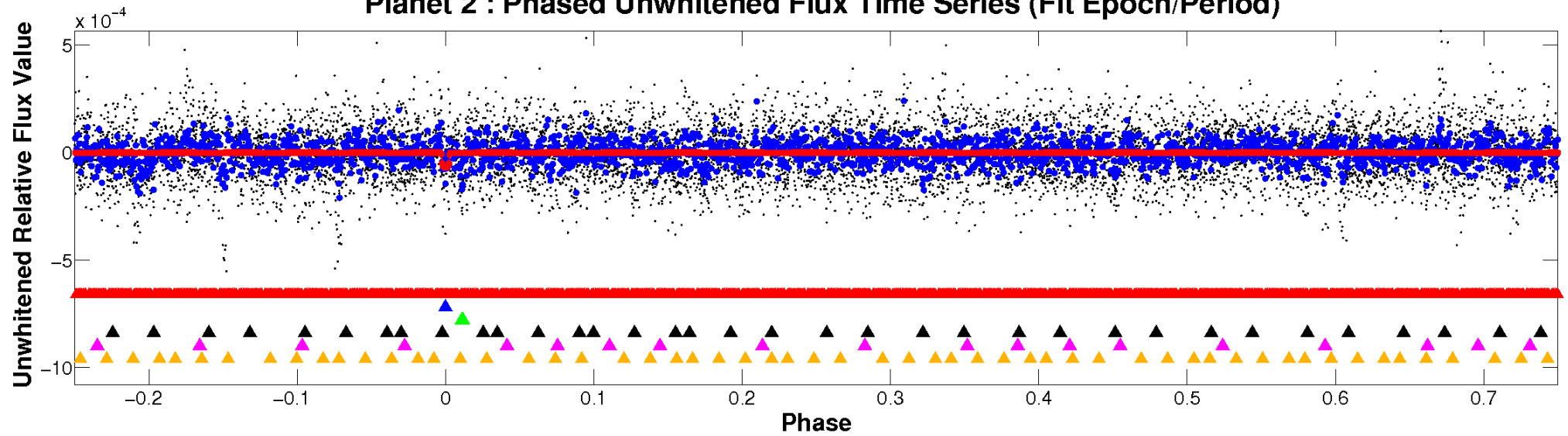
ALT Odd/Even

TCE 006222079-02

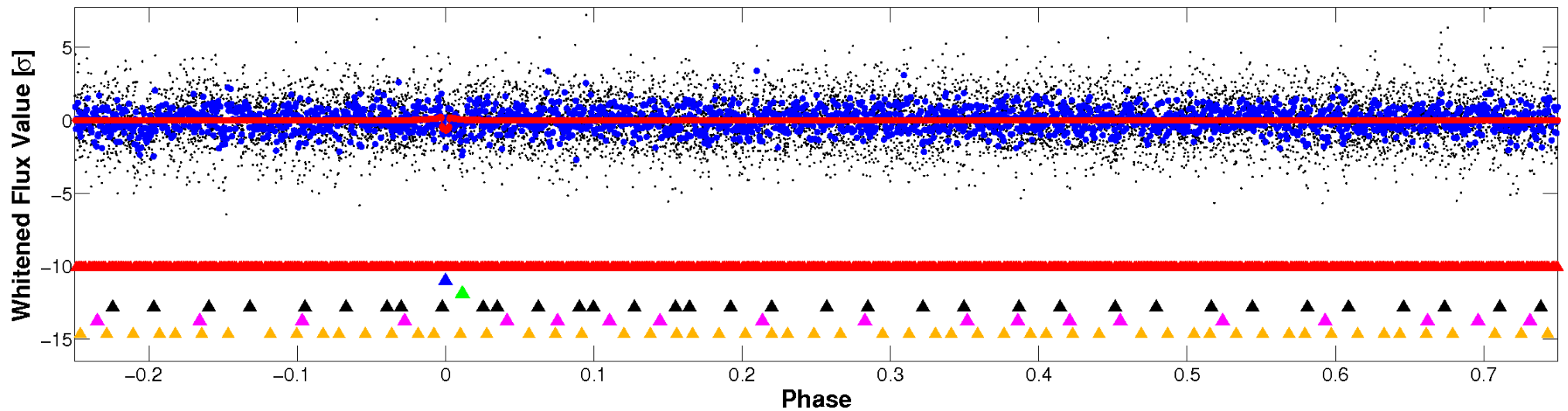


Non-Whitened Vs. Whitened Light Curve

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

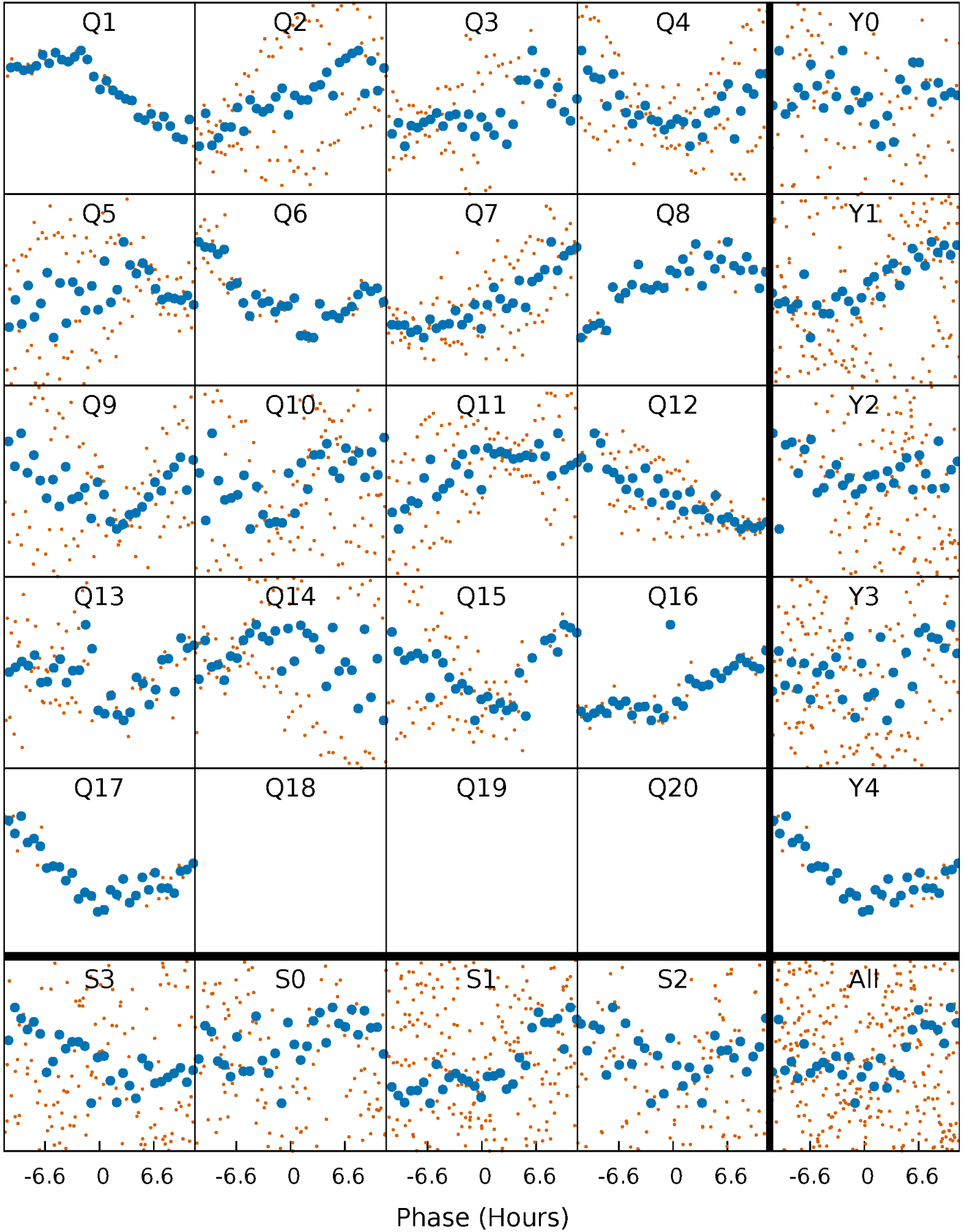


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



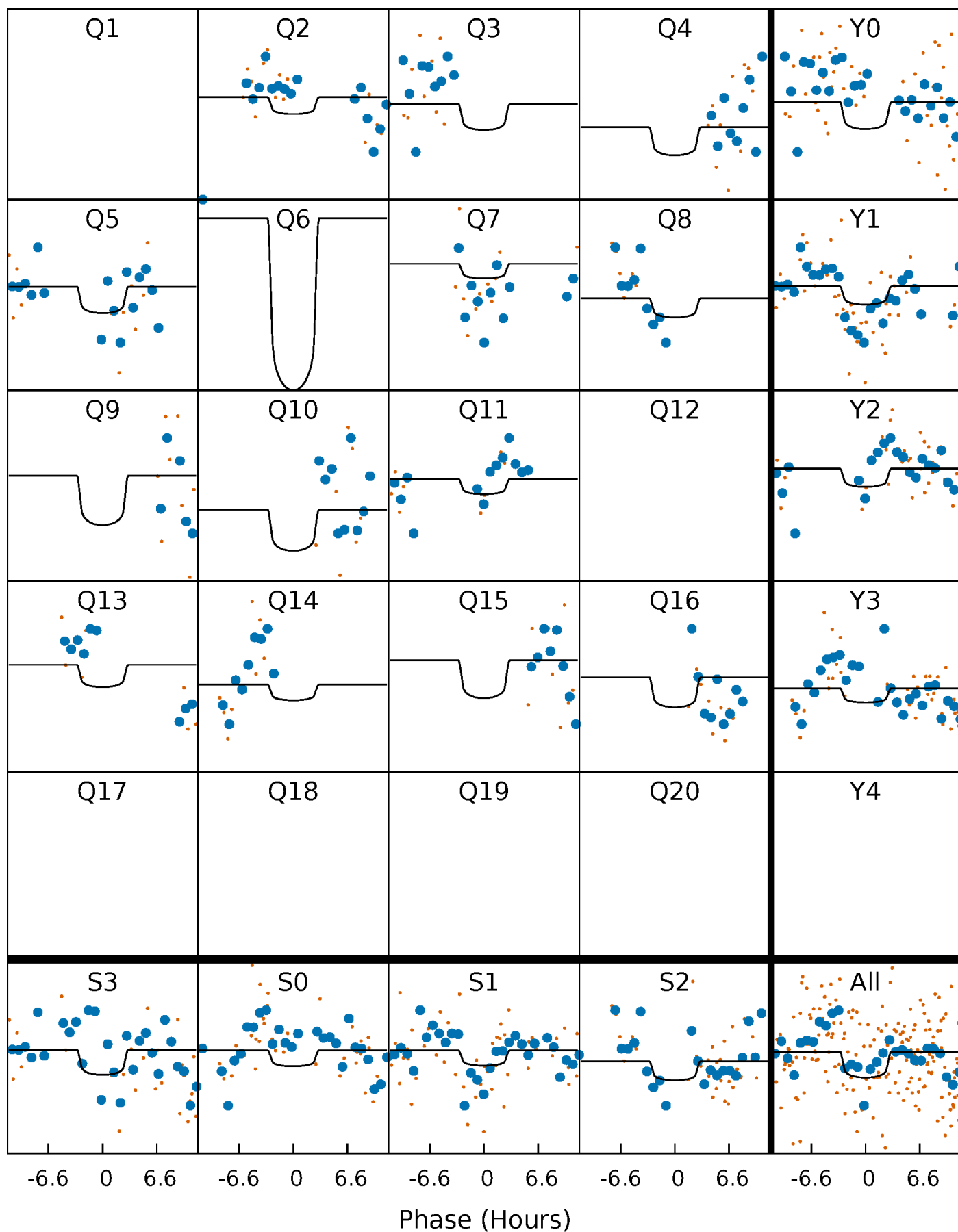
PDC Quarter-Phased Transit Curves

TCE 006222079-02 P= 44.029567 Days $T_0=158.315933$ (BKJD)



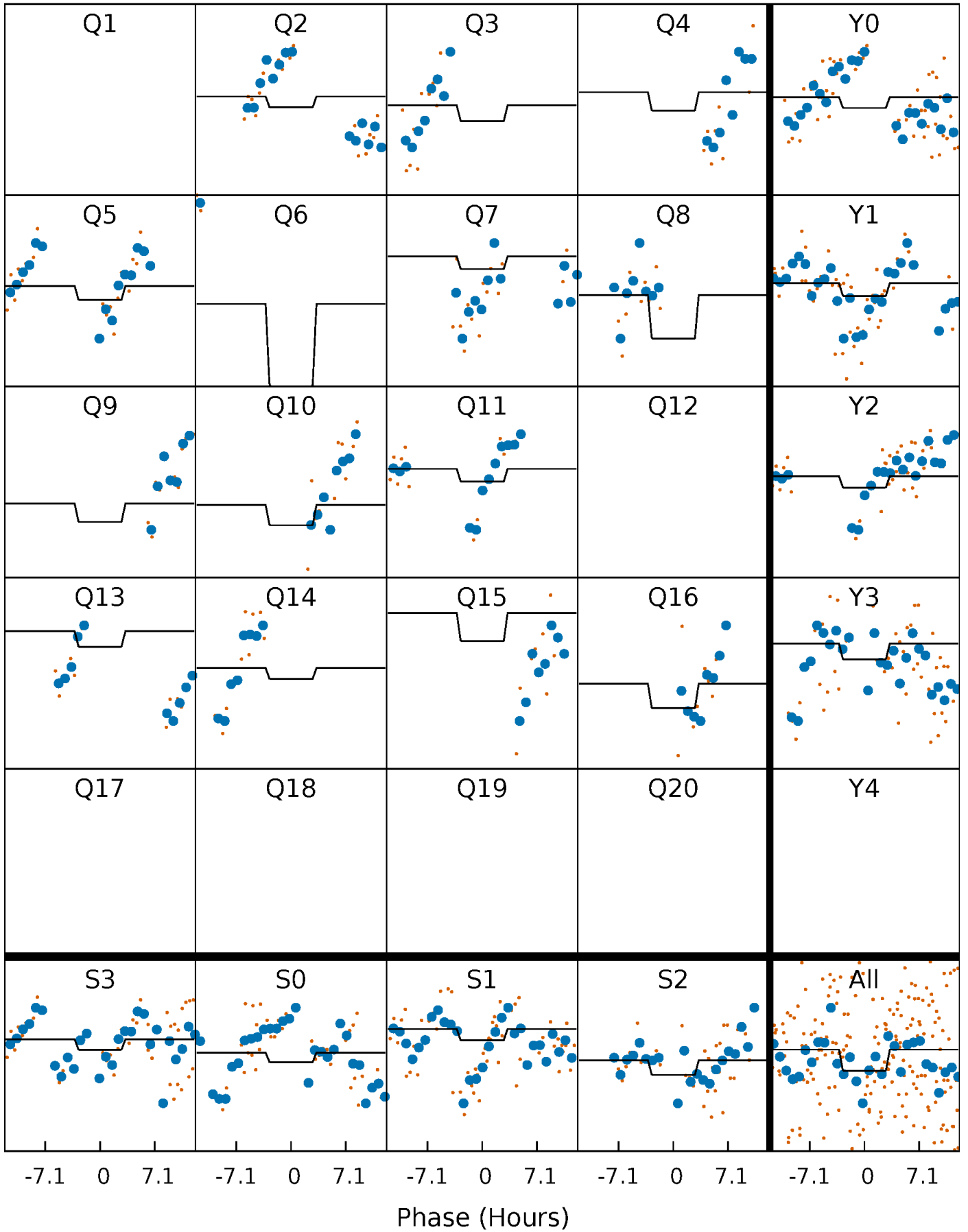
DV Quarter-Phased Transit Curves

TCE 006222079-02 P= 44.029567 Days $T_0=158.315933$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

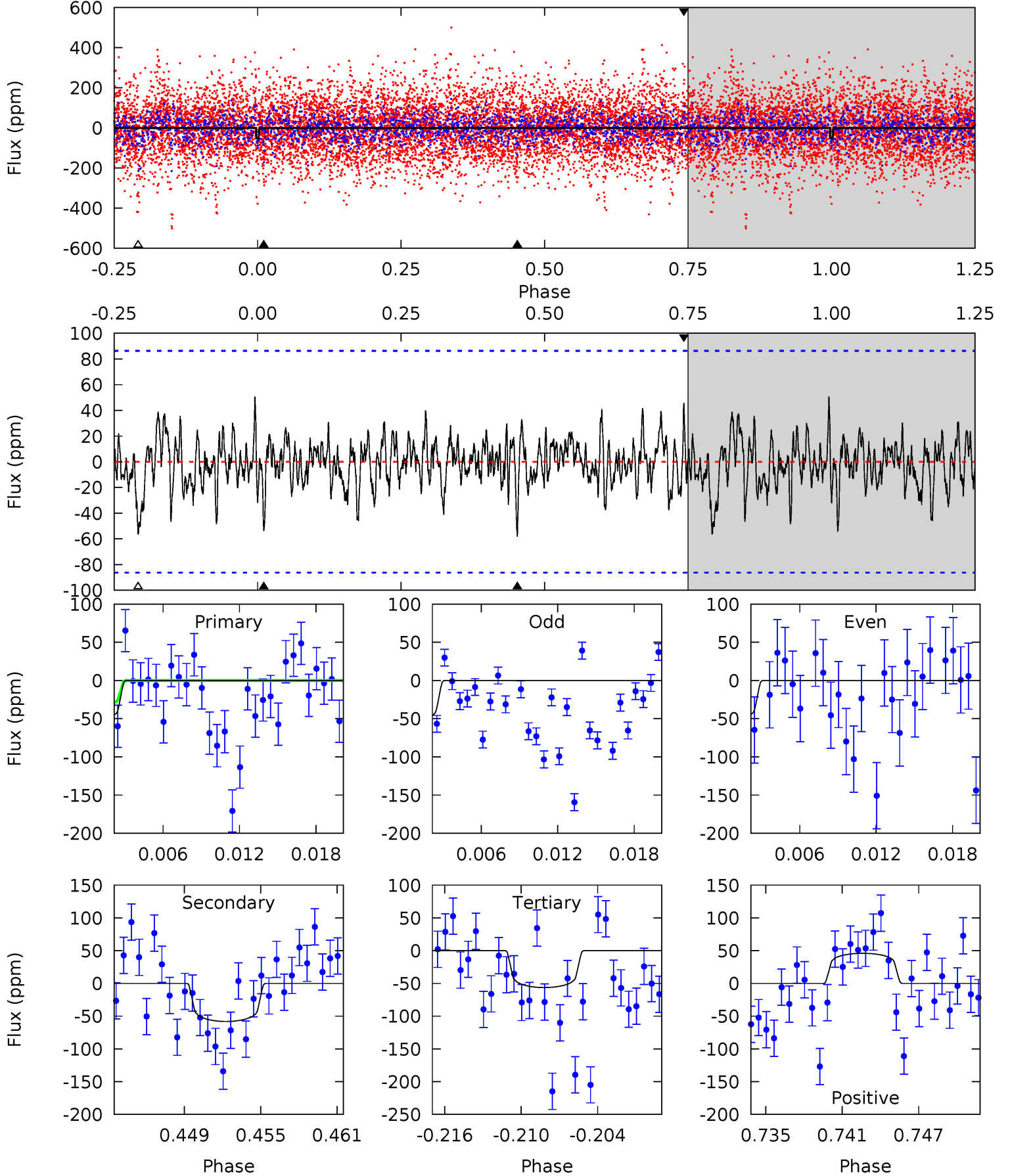
TCE 006222079-02 P= 44.031060 Days $T_0=158.313051$ (BKJD)



DV Model-Shift Uniqueness Test

006222079-02, P = 44.029567 Days, E = 114.286366 Days

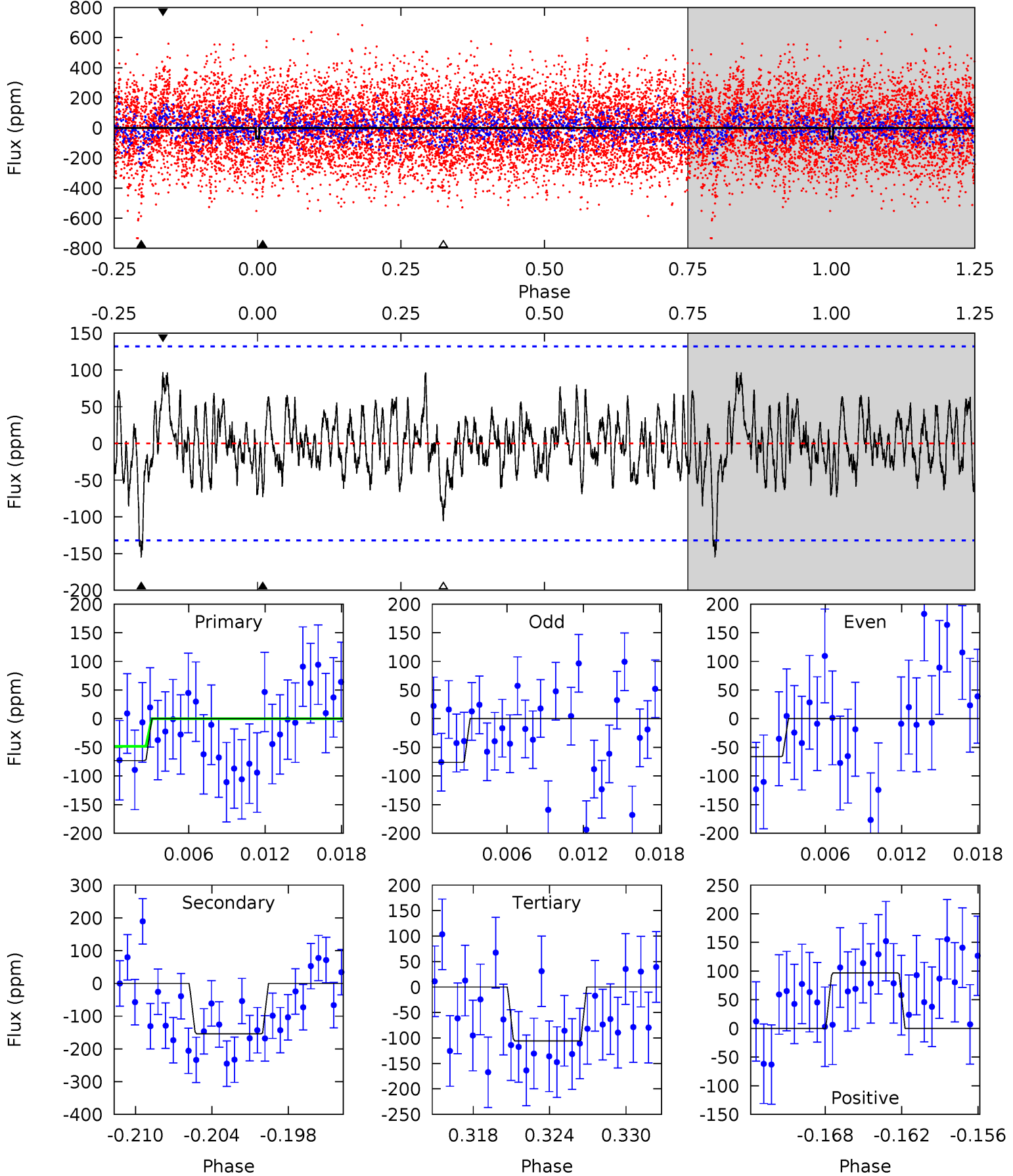
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.19	3.46	3.35	2.73	5.13	2.76	0.94	-0.16	0.46	0.10	0.73	0.04	-0.56	0.47	1.08



Alt Model-Shift Uniqueness Test

006222079-02, P = 44.031060 Days, E = 114.281991 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.84	5.98	4.10	3.75	5.12	2.75	1.27	-1.27	-0.92	1.87	2.22	0.18	0.63	0.39	1.05



Stellar Parameters For KIC 006222079

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6631^{+162}_{-223}	$4.144^{+0.186}_{-0.124}$	$-0.360^{+0.250}_{-0.300}$	$1.531^{+0.302}_{-0.369}$	$1.195^{+0.158}_{-0.175}$	$0.469^{+0.479}_{-0.178}$
	+2%/-3%	+4%/-3%	+69%/-83%	+20%/-24%	+13%/-15%	+102%/-38%
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 006222079-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-58 ± 17	$1.58^{+1.12}_{-0.90}$	985^{+61}_{-62}	5835^{+3700}_{-1218}	843^{+3623}_{-557}
Alt.	-154 ± 26	$1.46^{+1.09}_{-0.87}$	988^{+56}_{-62}	8027^{+7472}_{-2103}	2683^{+13116}_{-1810}

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 $A_{obs} \gg 1.0$

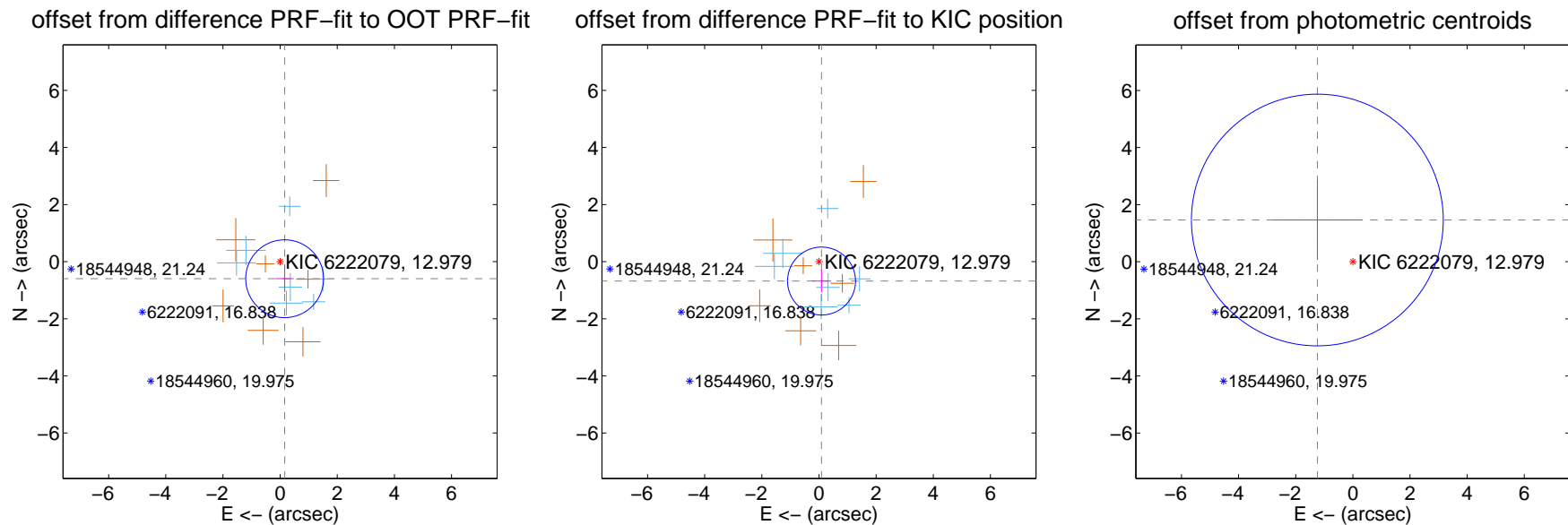
DV Centroid Data

Supplemental centroid analysis for 006222079-02. Kepler magnitude: 12.98. Transit SNR 3.91

There are 7 quarters with good PRF difference image offsets

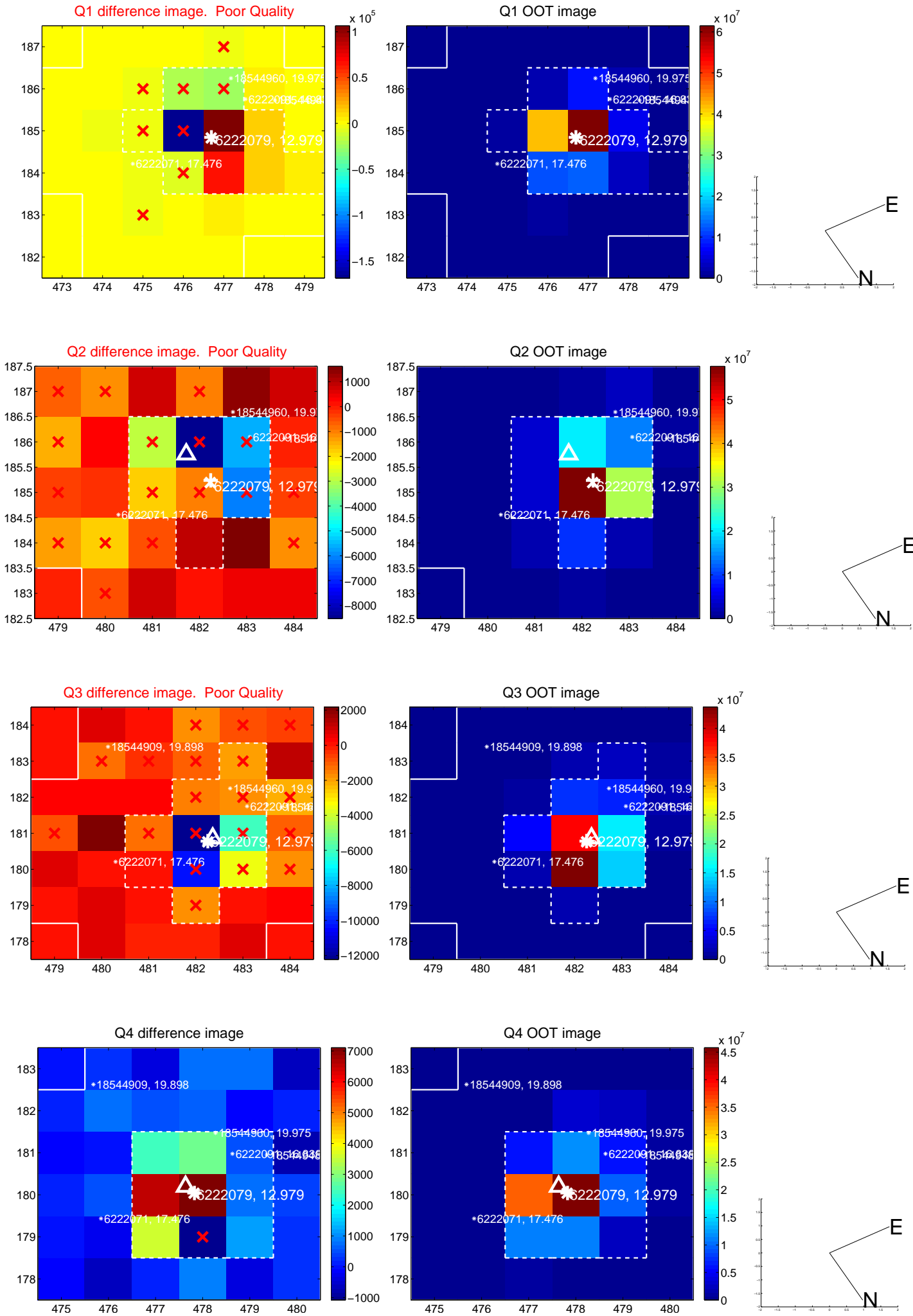
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.617 ± 0.454	1.36	-0.159 ± 0.317	-0.596 ± 0.471
PRF-fit source offset from KIC position	0.683 ± 0.396	1.72	-0.089 ± 0.332	-0.677 ± 0.397
photometric centroid source offset	1.92 ± 1.47	1.31	1.24 ± 1.56	1.46 ± 1.40

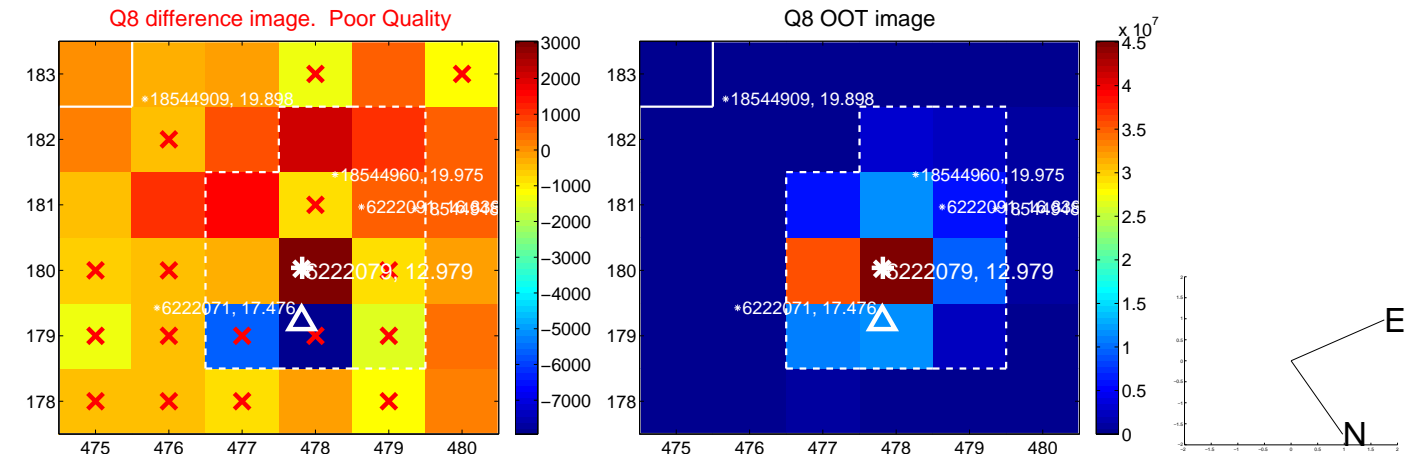
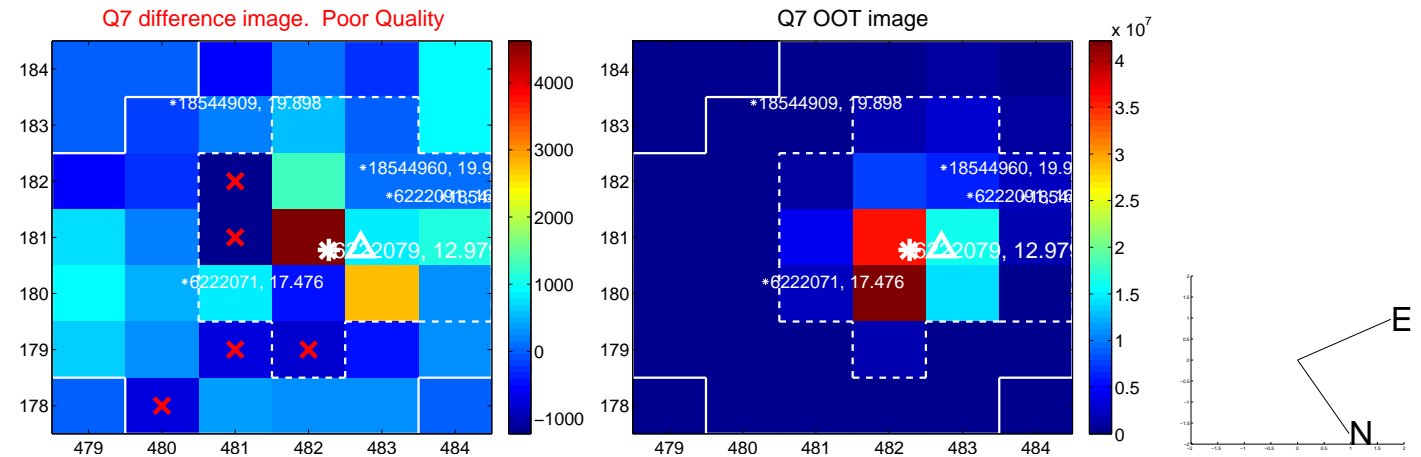
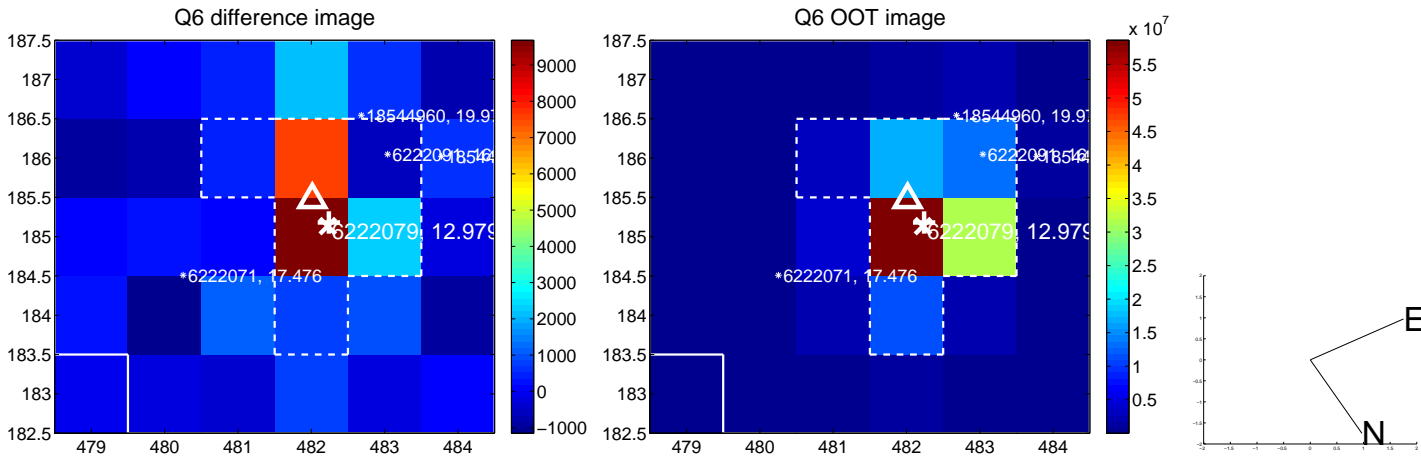
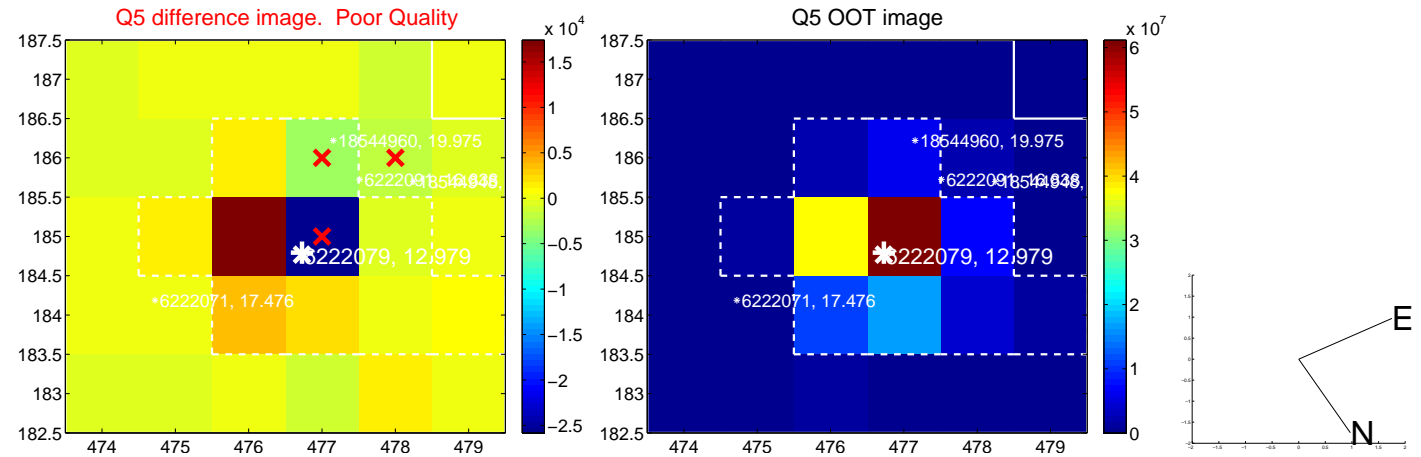


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

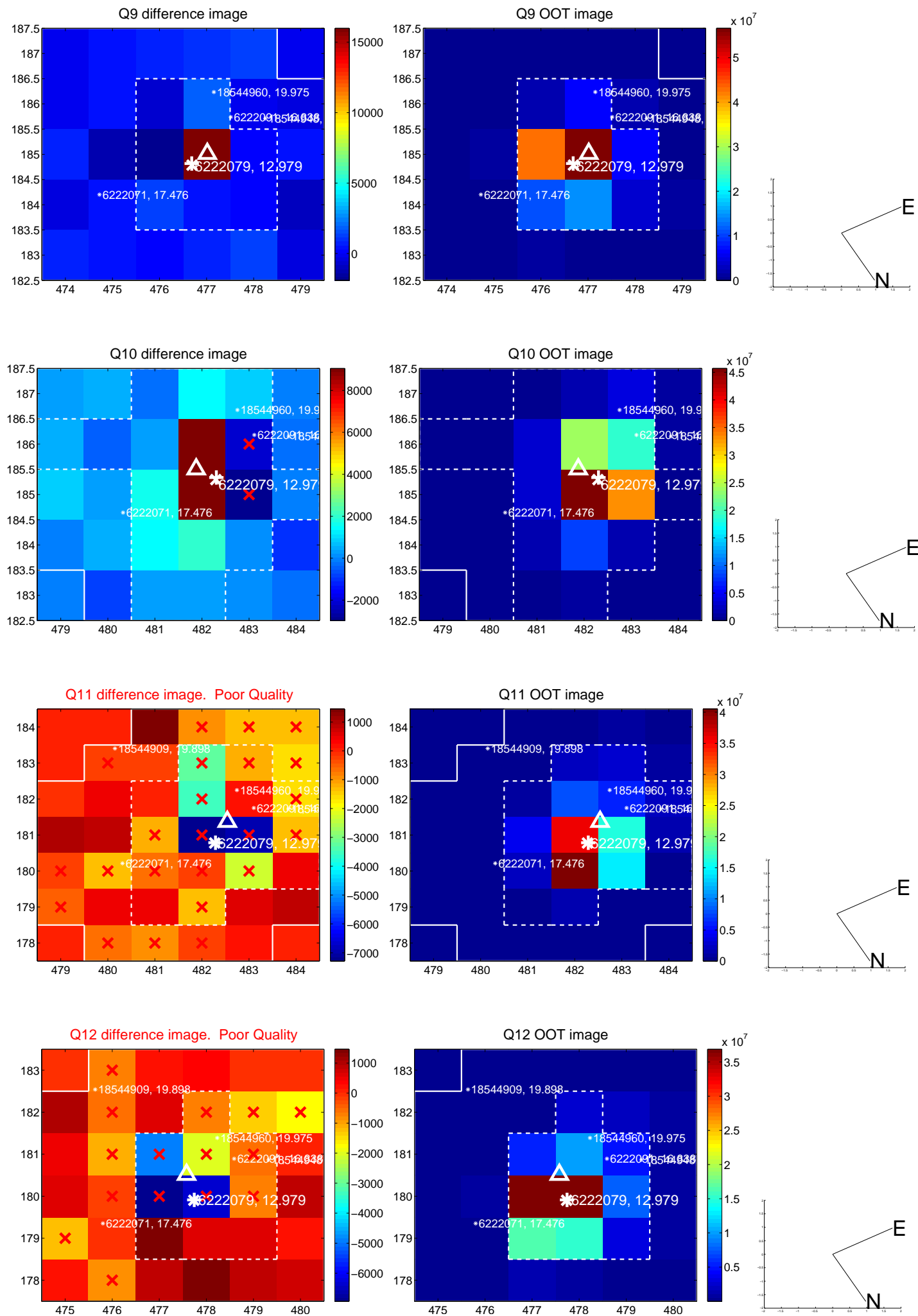
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



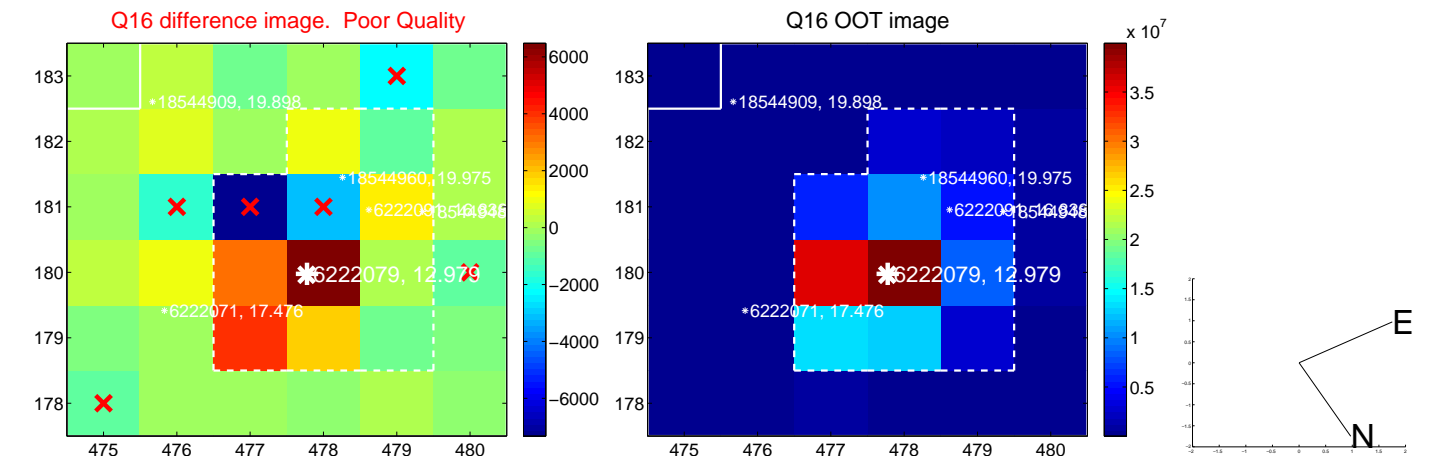
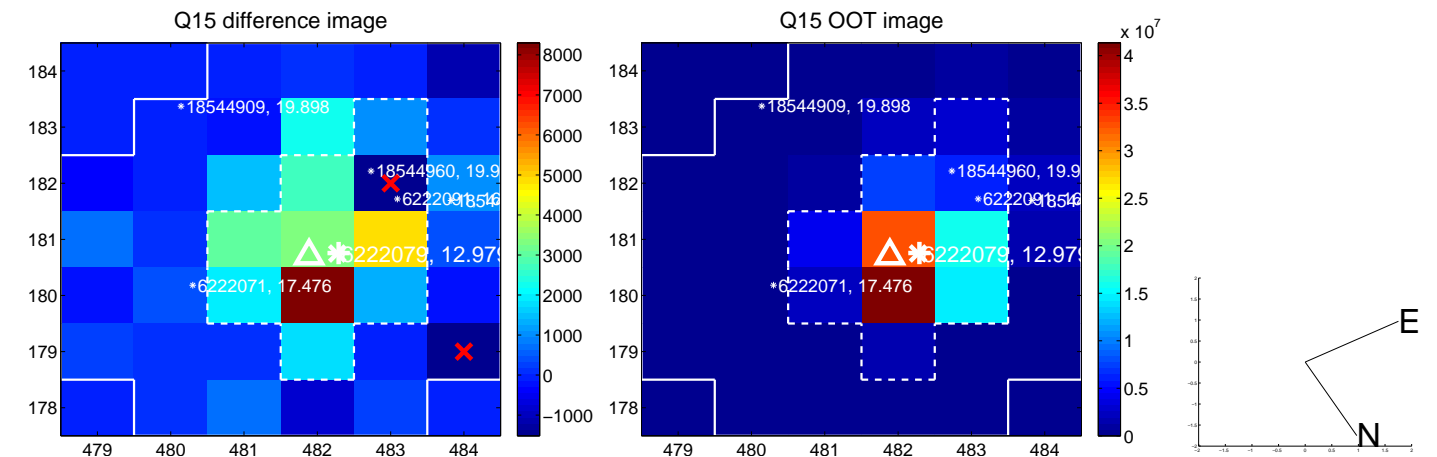
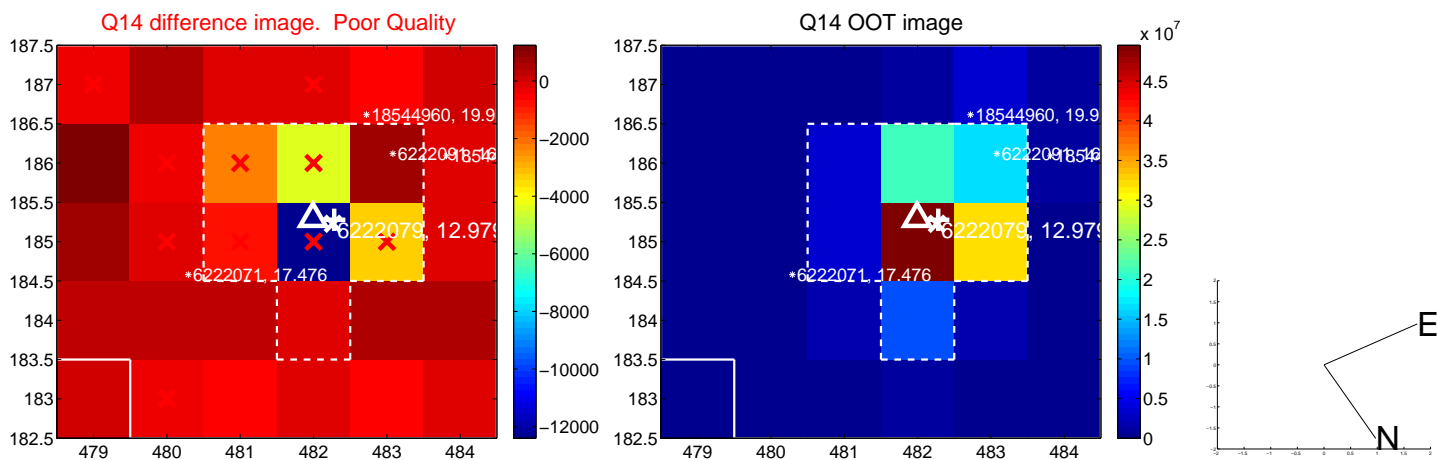
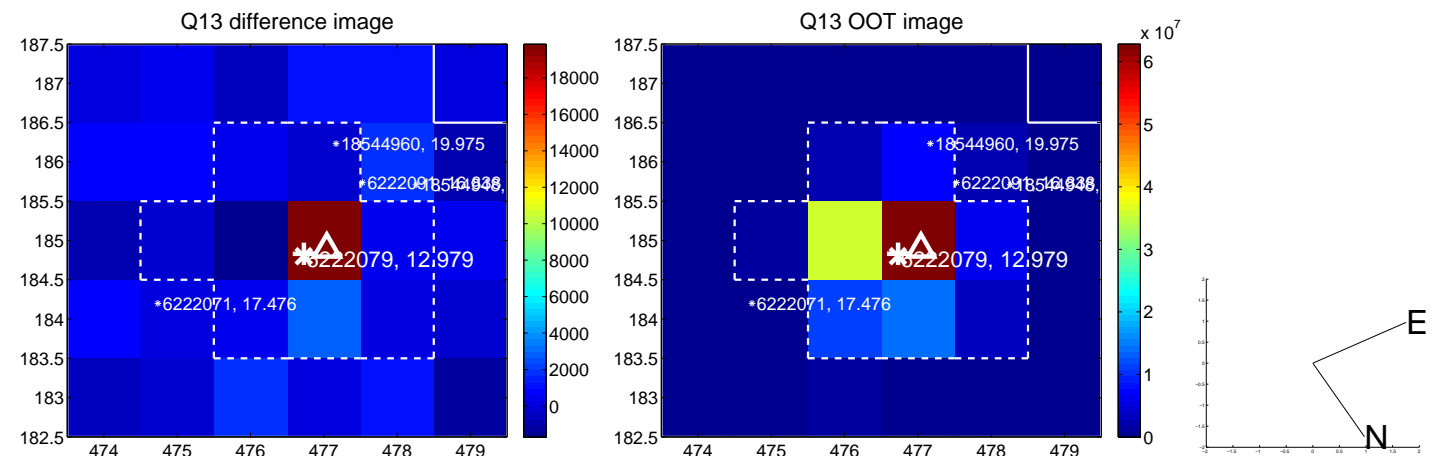
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



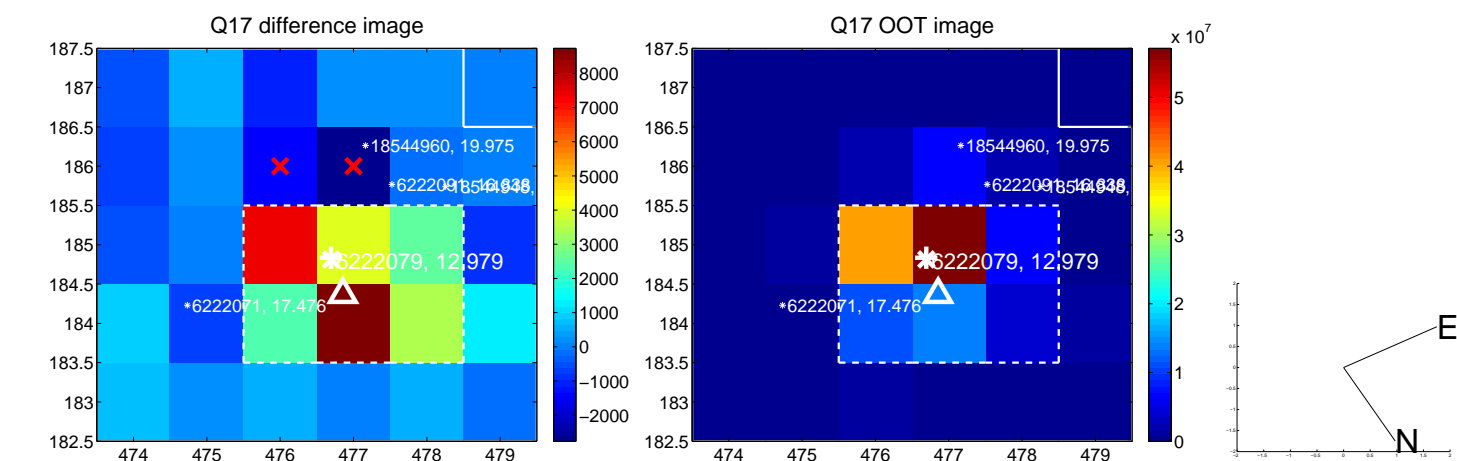
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



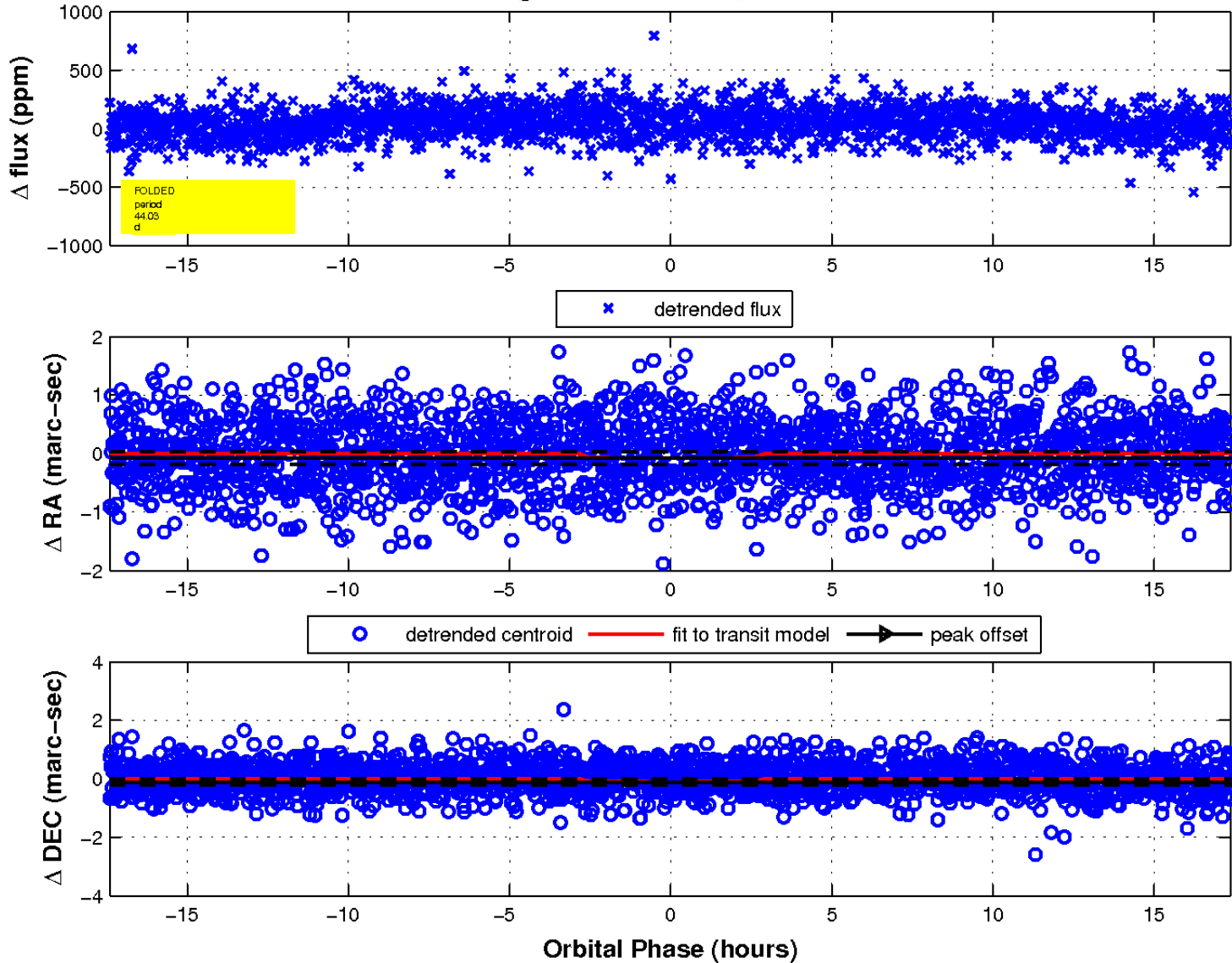
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

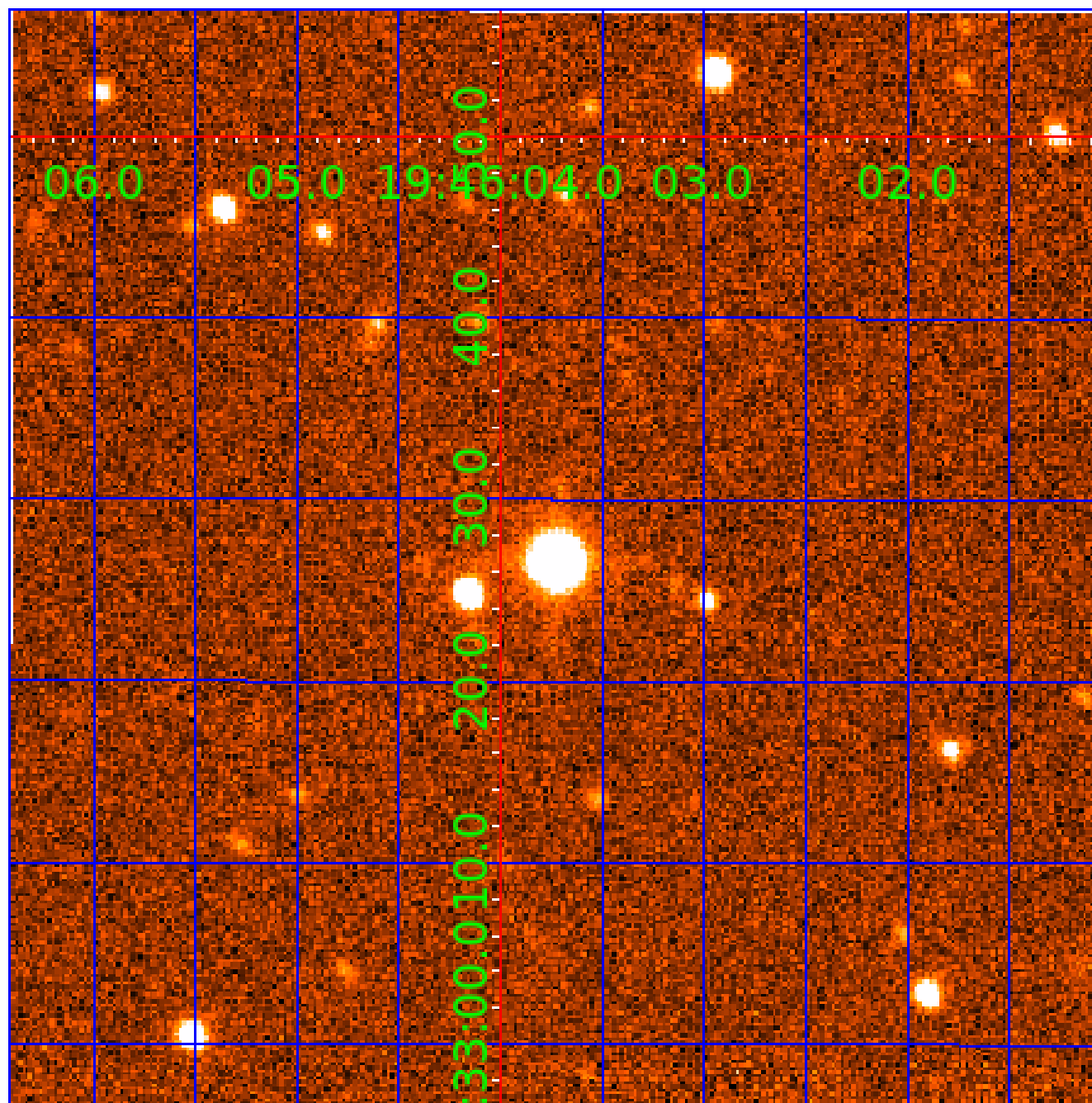


fluxWeightedCentroids, Planet 2 of 6



UKIRT Image

Declination



KIC 006222079

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})
006222079-01	OBS	No	1.940112	133.342554	19.2	13.050	13.7	10.5	1.53	6631	0.68	3897.25
006222079-02	OBS	No	44.029567	158.315933	70.3	5.803	11.2	3.9	1.53	6631	1.49	60.66
006222079-03	OBS	No	44.030528	158.803419	282.1	7.500	12.2	-1.0	1.53	6631	2.59	60.65
006222079-04	OBS	No	41.175485	165.562220	253.7	1.495	8.7	9.0	1.53	6631	2.49	66.33
006222079-05	OBS	No	74.396249	188.969235	134.6	10.620	10.7	7.7	1.53	6631	2.00	30.14
006222079-06	OBS	No	25.853661	142.148072	105.2	6.549	7.4	9.9	1.53	6631	1.76	123.36

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006222079-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
006222079-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
006222079-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS—HALO_GHOST
006222079-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
006222079-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
006222079-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_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.

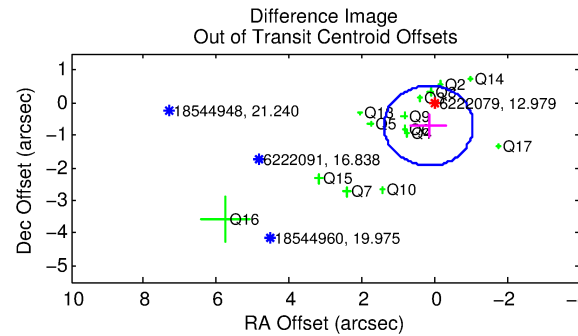
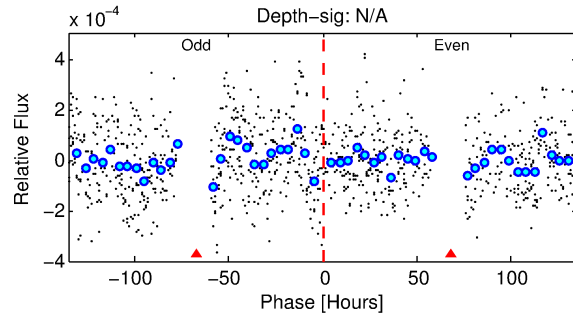
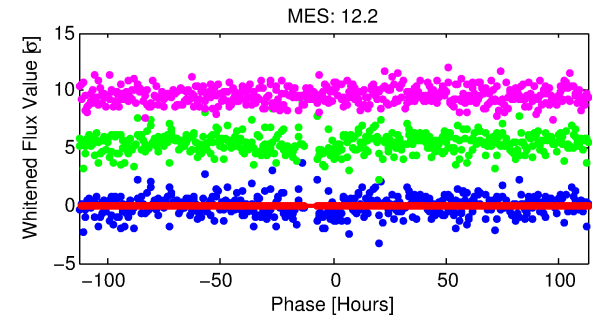
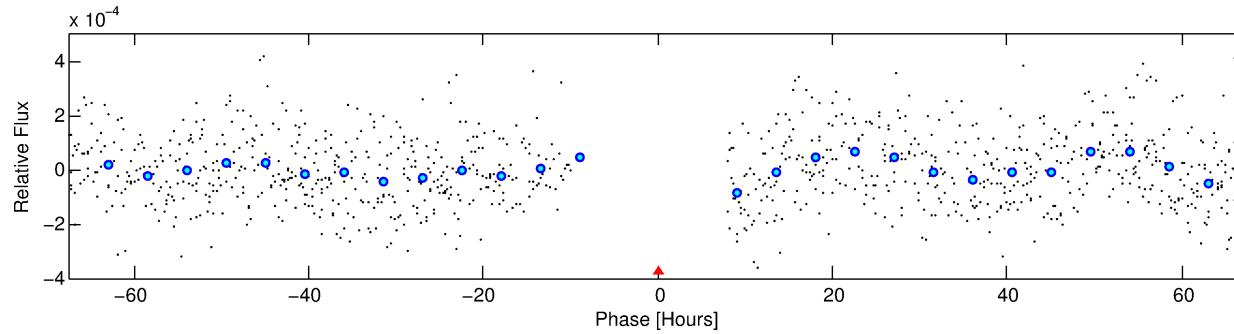
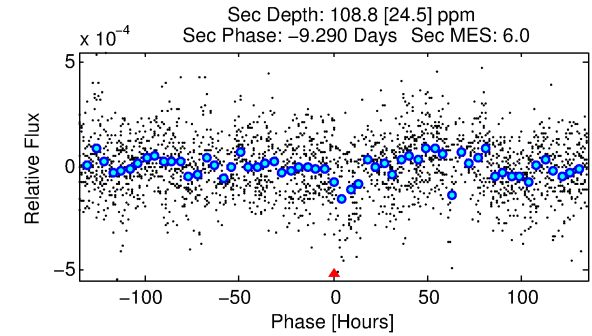
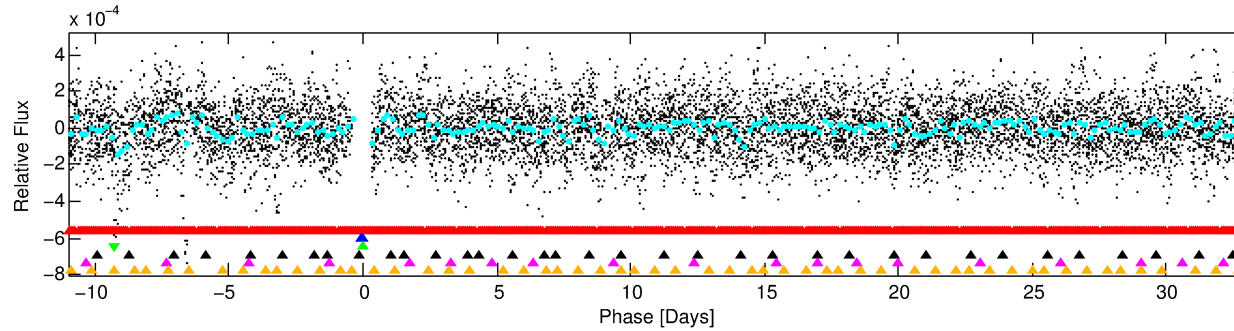
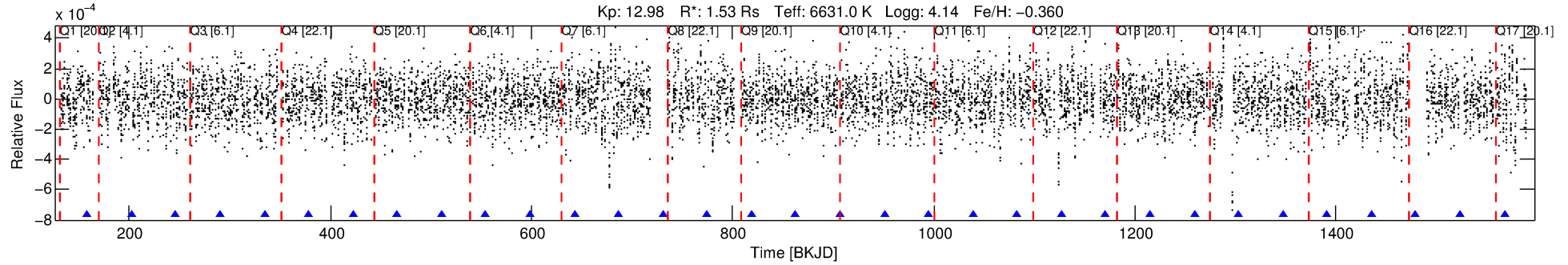
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006222079-03

No Significant Match Found

DV One-Page Summary

KIC: 6222079 Candidate: 3 of 6 Period: 44.031 d



TPS TCE Results:

Period = 44.03053 d
Epoch = 158.8034 BKJD

DV fit results are unavailable

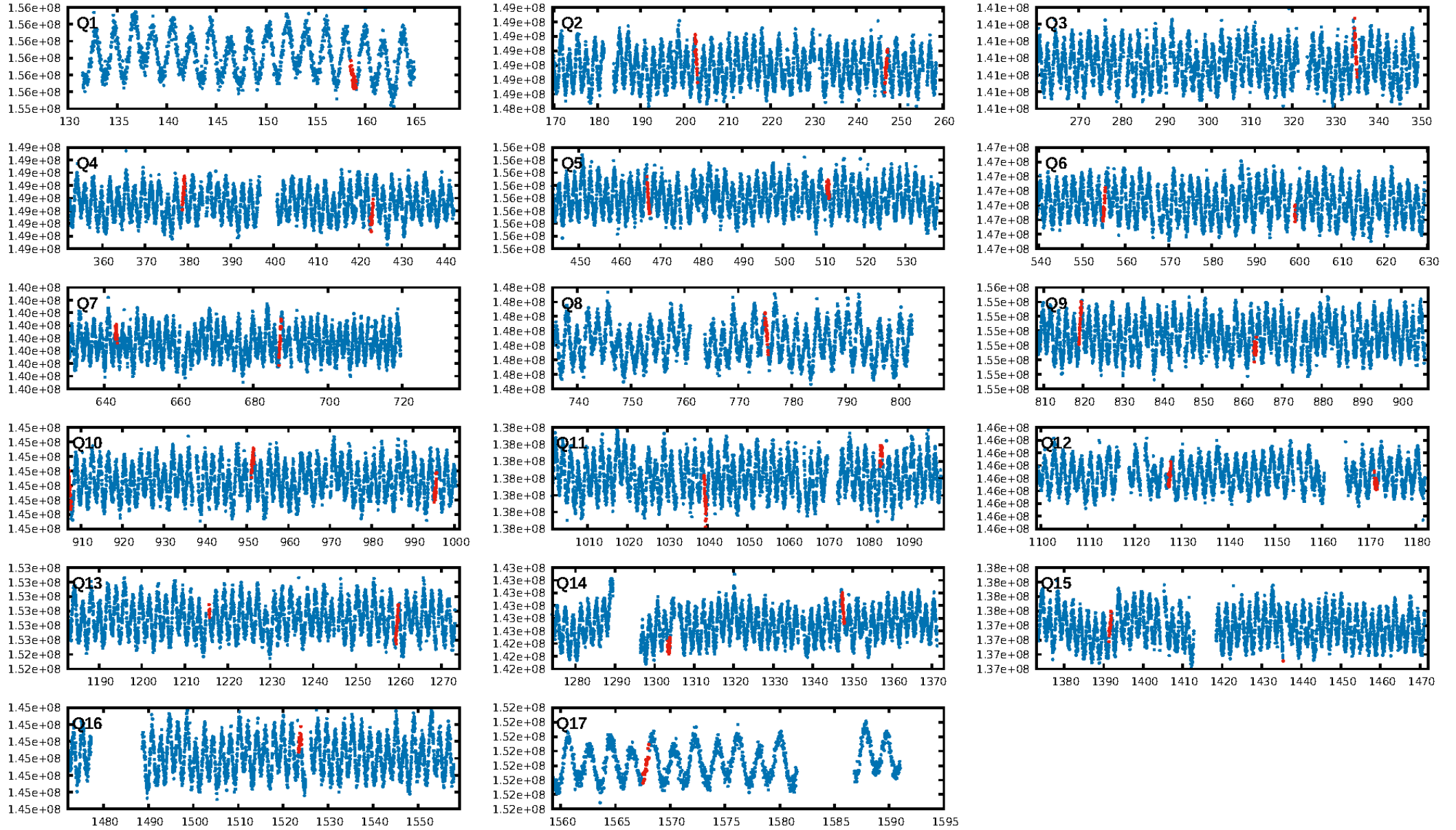
DV Diagnostic Results:

ShortPeriod-sig: 0.2% [0.00 σ]
LongPeriod-sig: 100.0% [56.05 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.97e-19
RollingBand-fgt: 1.00 [10/10]
GhostDiagnostic-chr: -0.1503
Centroid-sig: 1.6%
Centroid-so: 1.321 arcsec [1.42 σ]
OotOffset-rm: 0.730 arcsec [1.79 σ]
KicOffset-rm: 0.836 arcsec [1.98 σ]
OotOffset-st: 4/3/3/5 [15]
KicOffset-st: 4/3/3/5 [15]
DiffImageQuality-fgm: 0.33 [5/15]
DiffImageOverlap-fno: 0.00 [0/15]

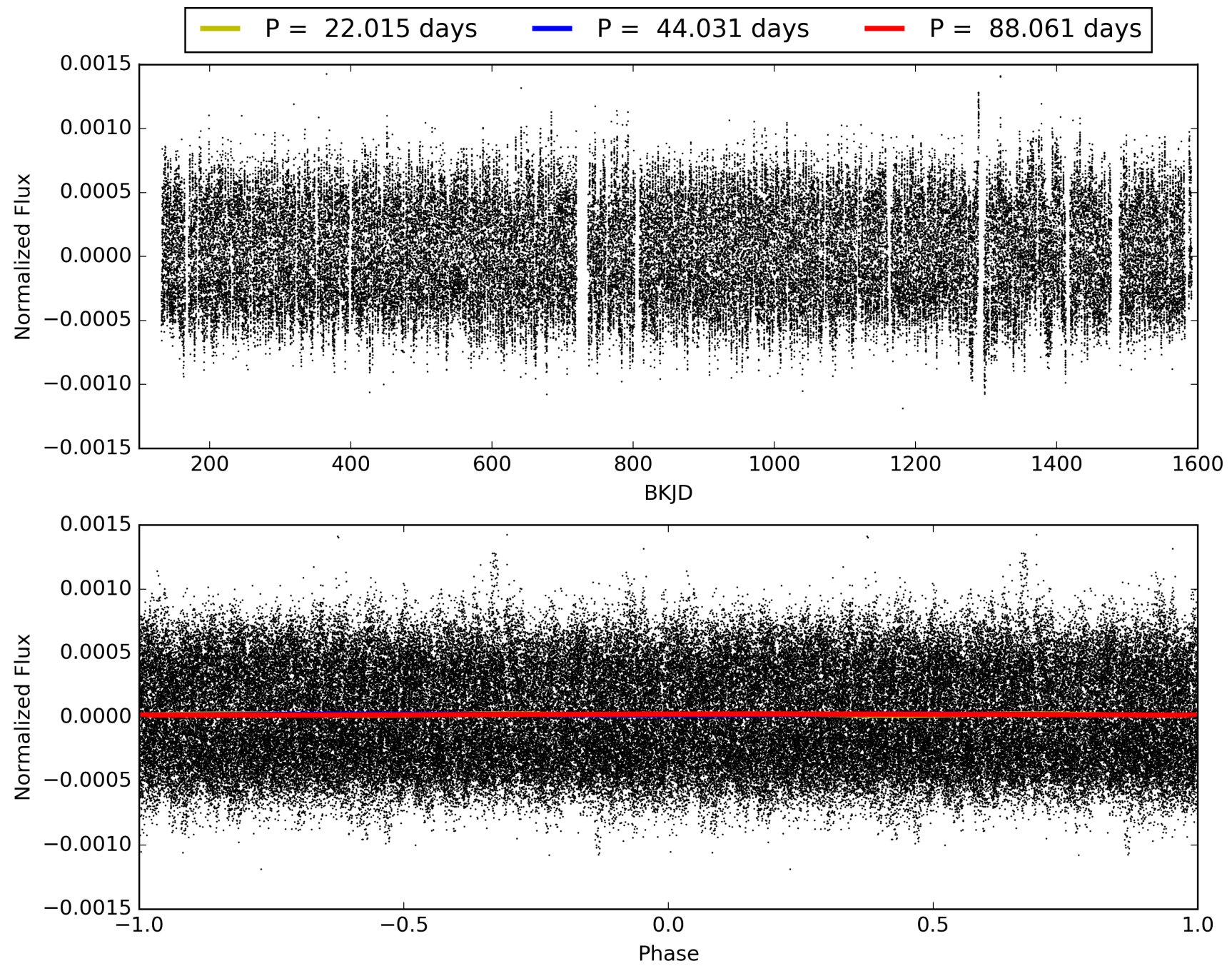
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:22:43 Z

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

TCE 006222079-03, PDC Light Curves

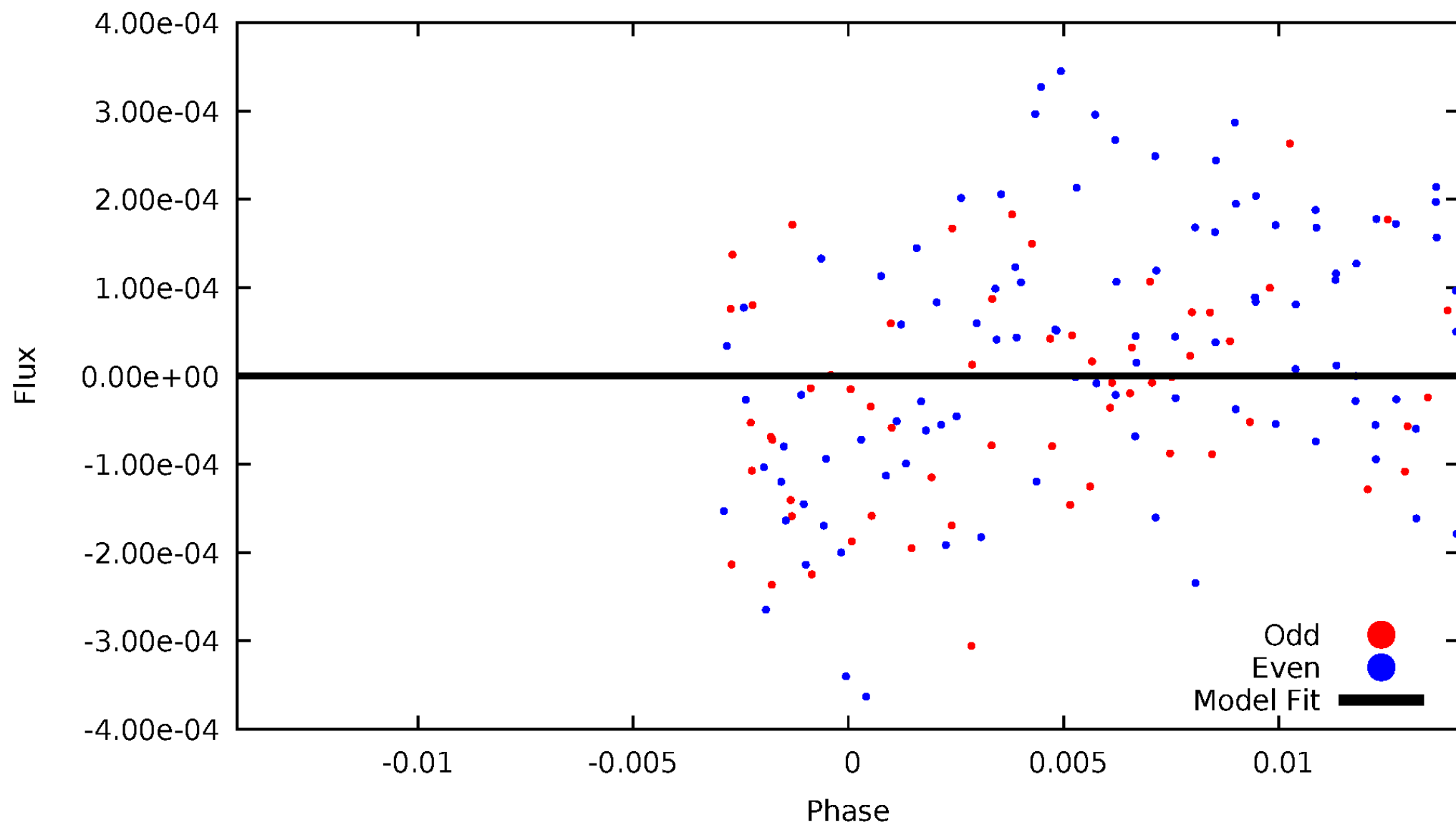


TCE 006222079-03



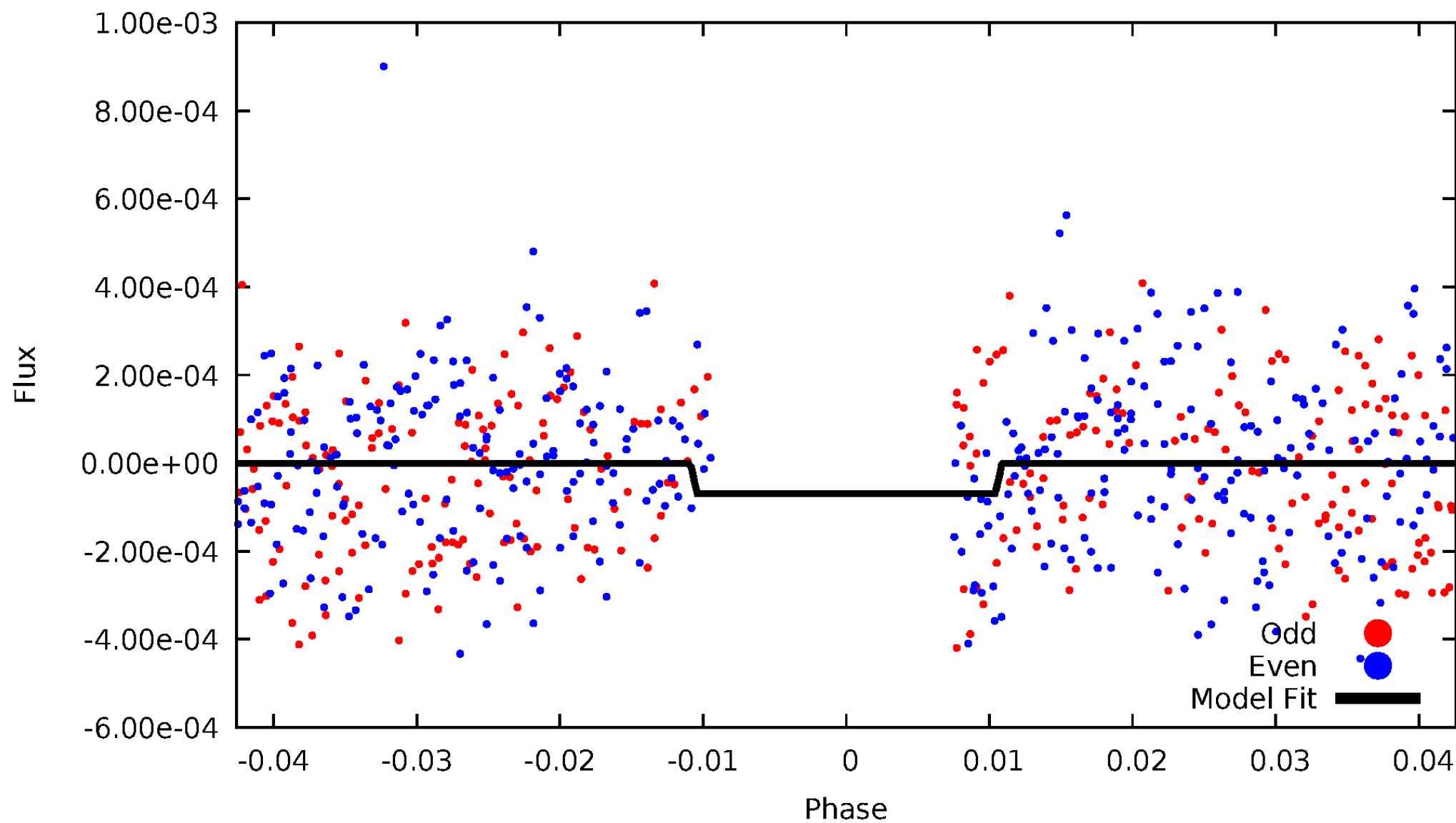
DV Odd/Even

TCE 006222079-03

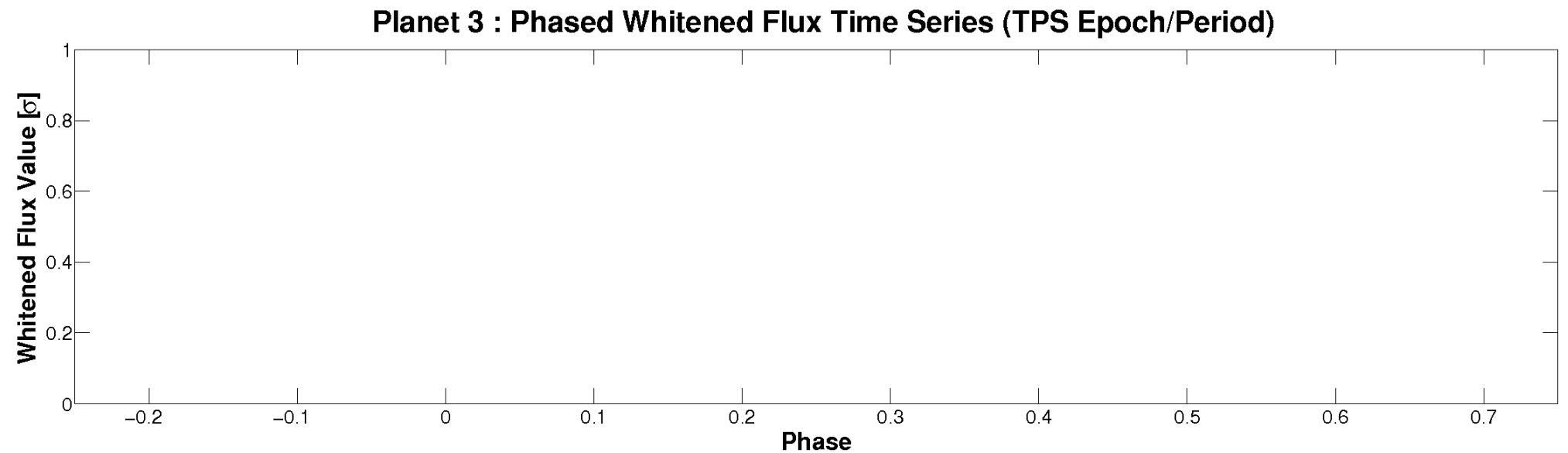
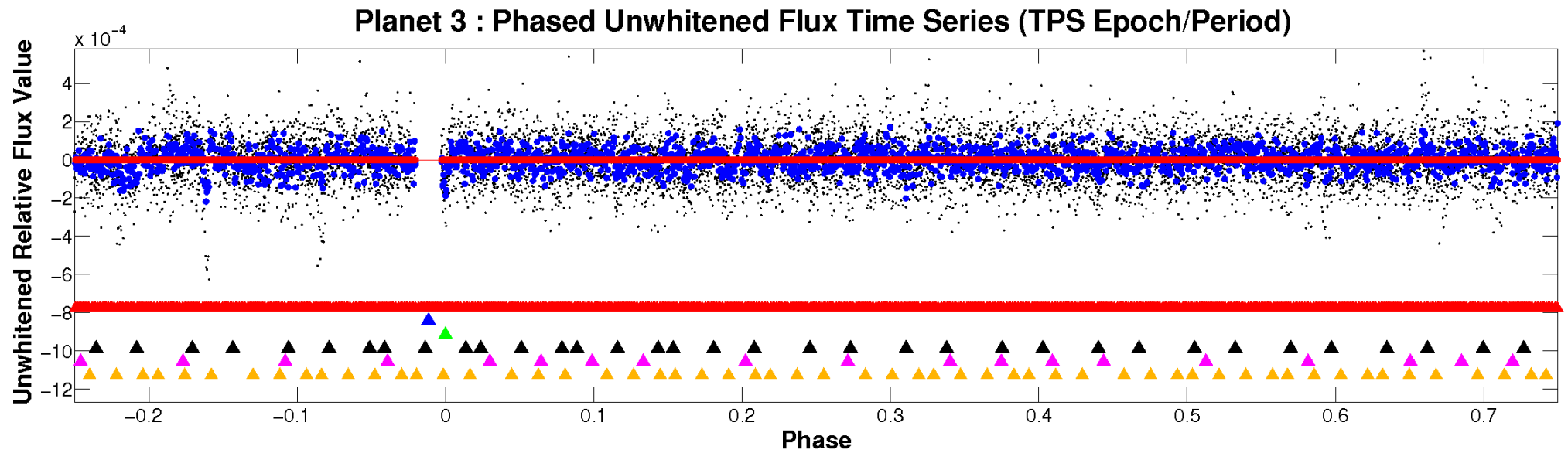


ALT Odd/Even

TCE 006222079-03

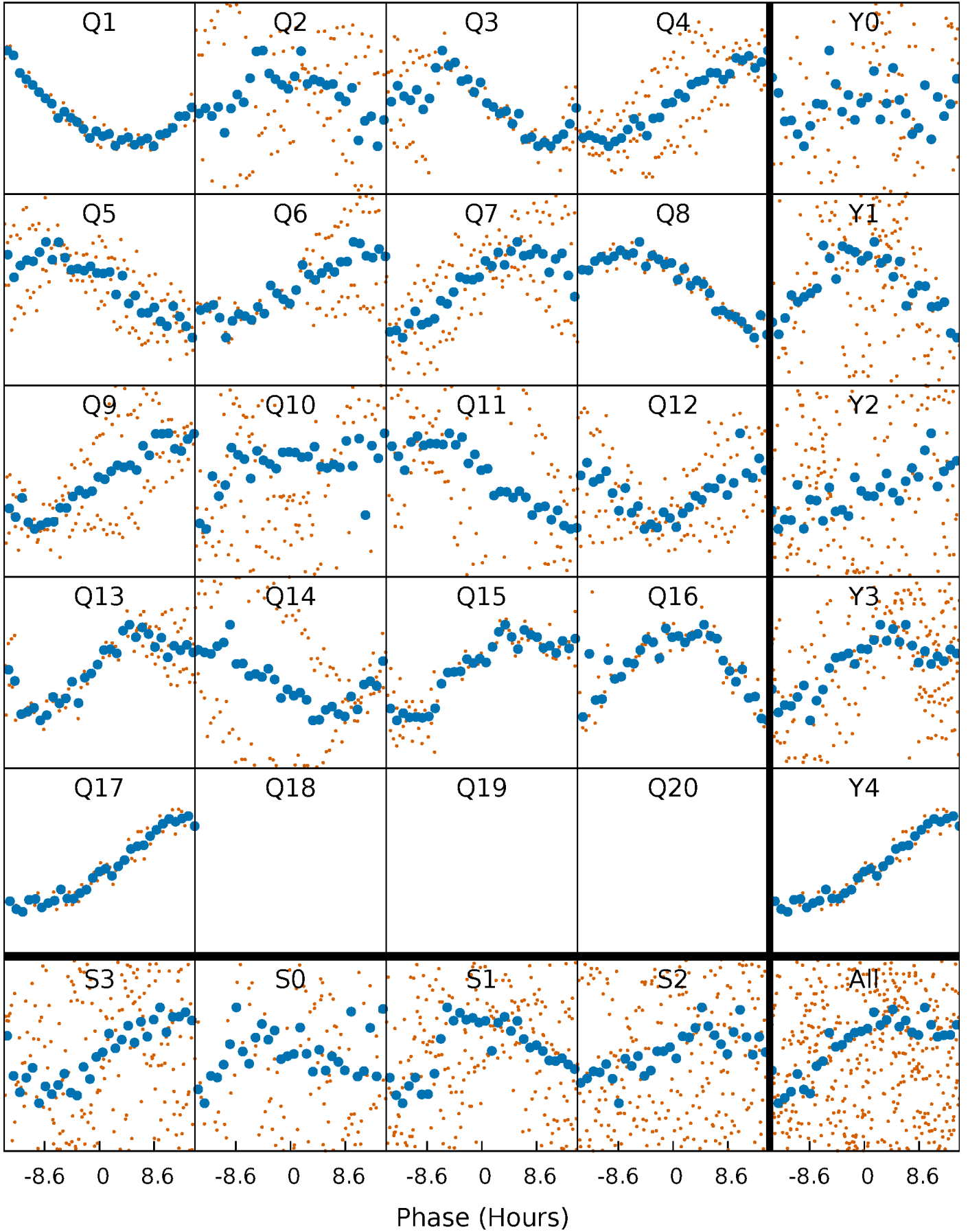


Non-Whitened Vs. Whitened Light Curve



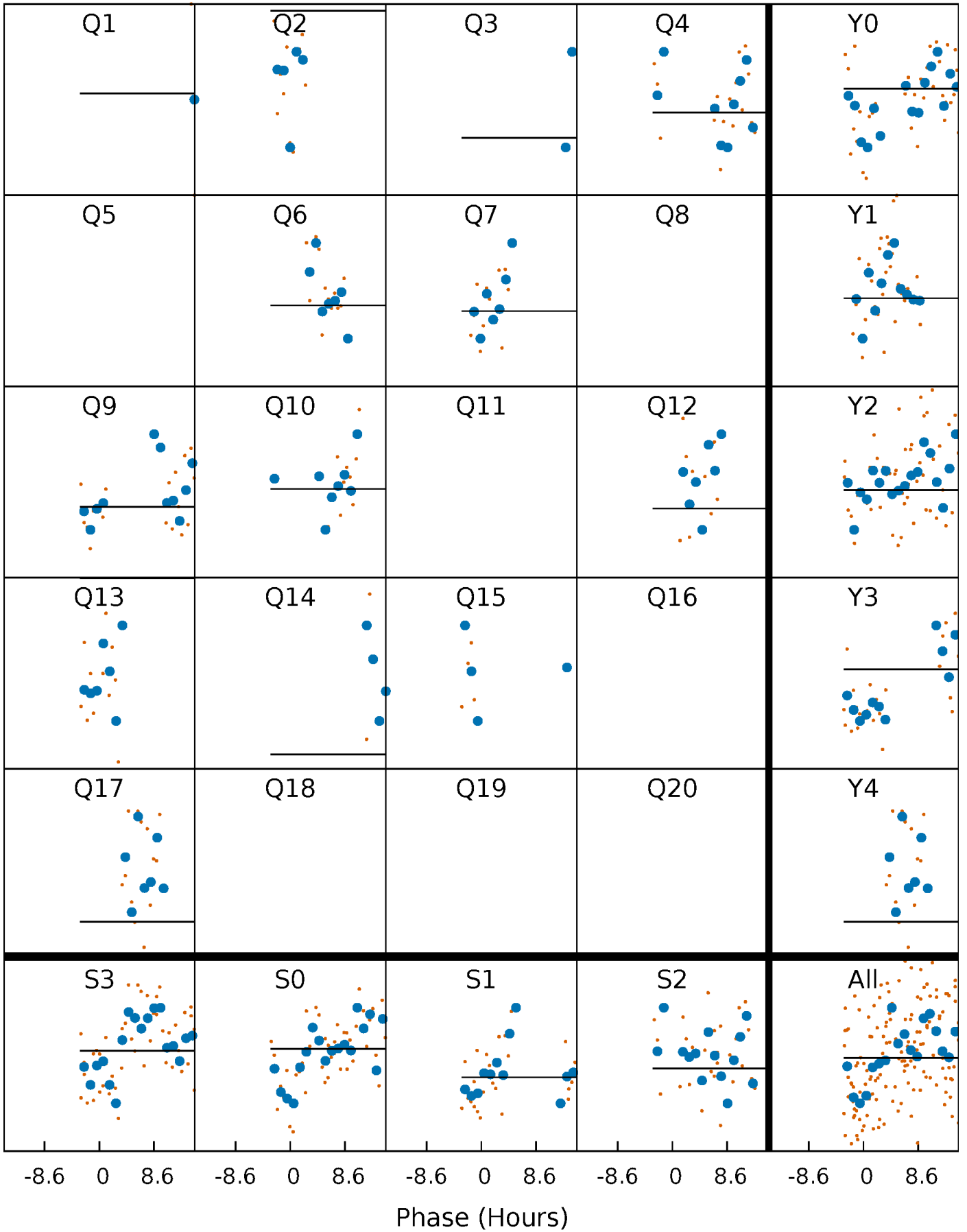
PDC Quarter-Phased Transit Curves

TCE 006222079-03 P= 44.030528 Days $T_0=158.803419$ (BKJD)



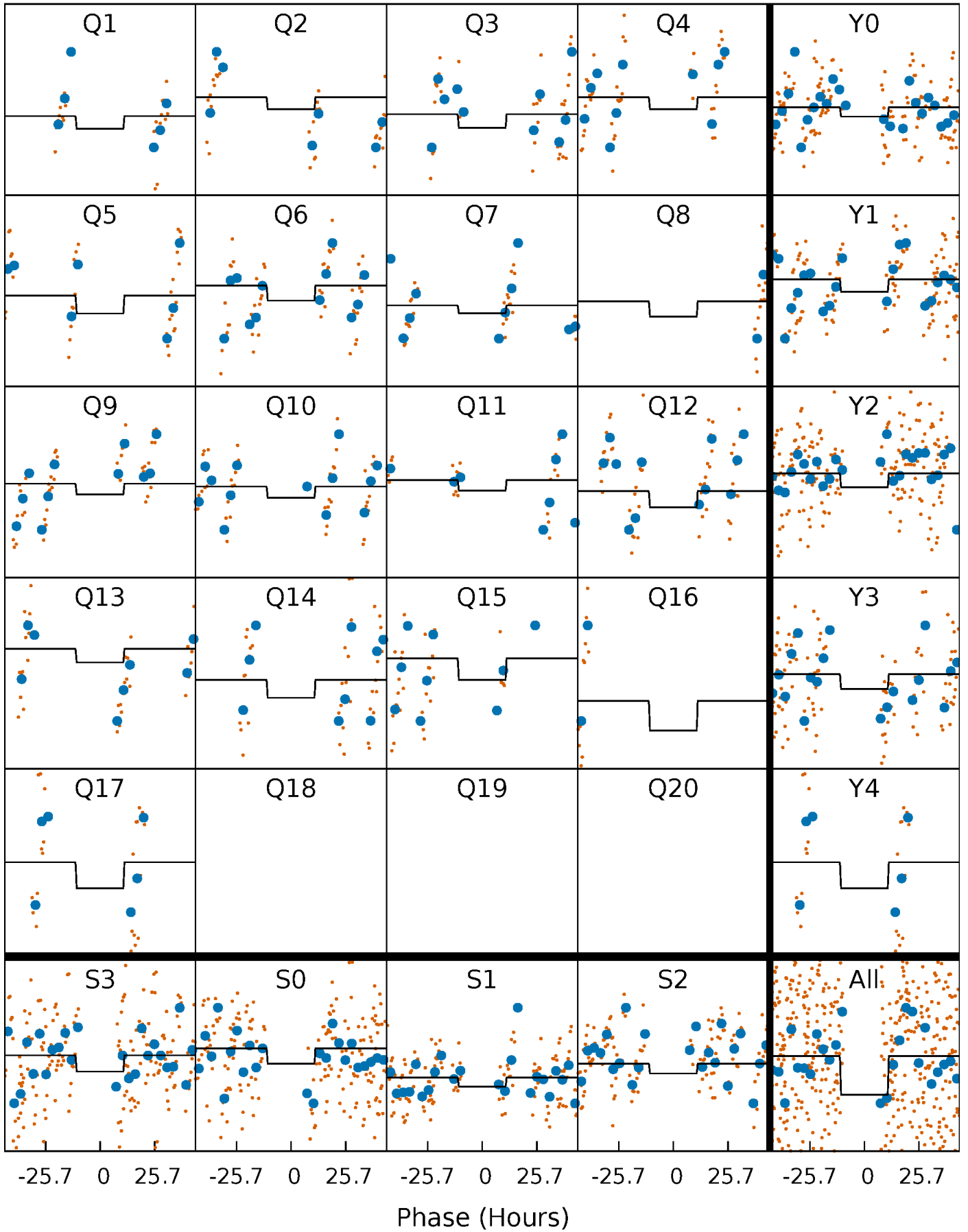
DV Quarter-Phased Transit Curves

TCE 006222079-03 P= 44.030528 Days $T_0=158.803419$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

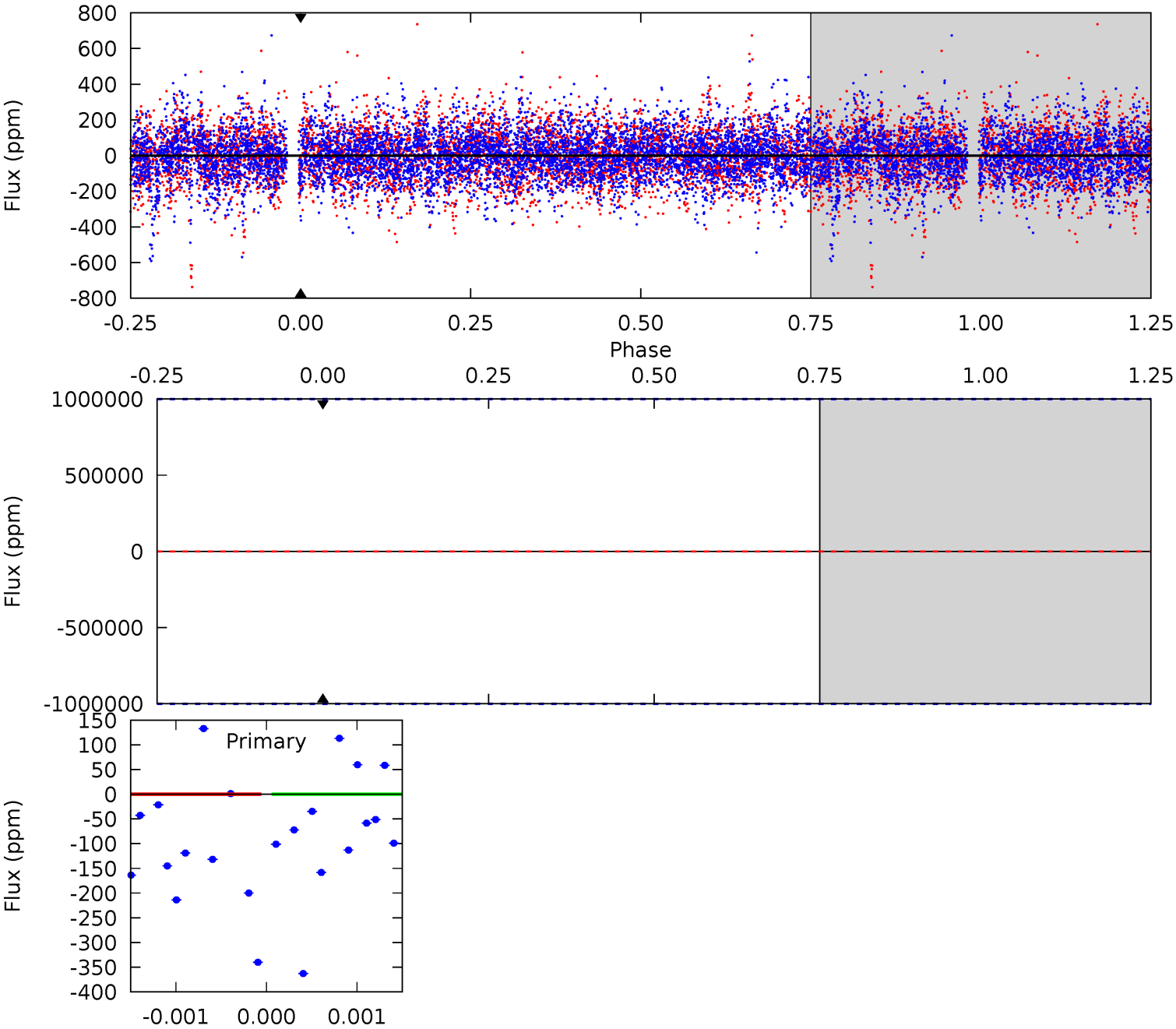
TCE 006222079-03 P= 44.030528 Days $T_0=158.343833$ (BKJD)



DV Model-Shift Uniqueness Test

006222079-03, P = 44.030528 Days, E = 114.772891 Days

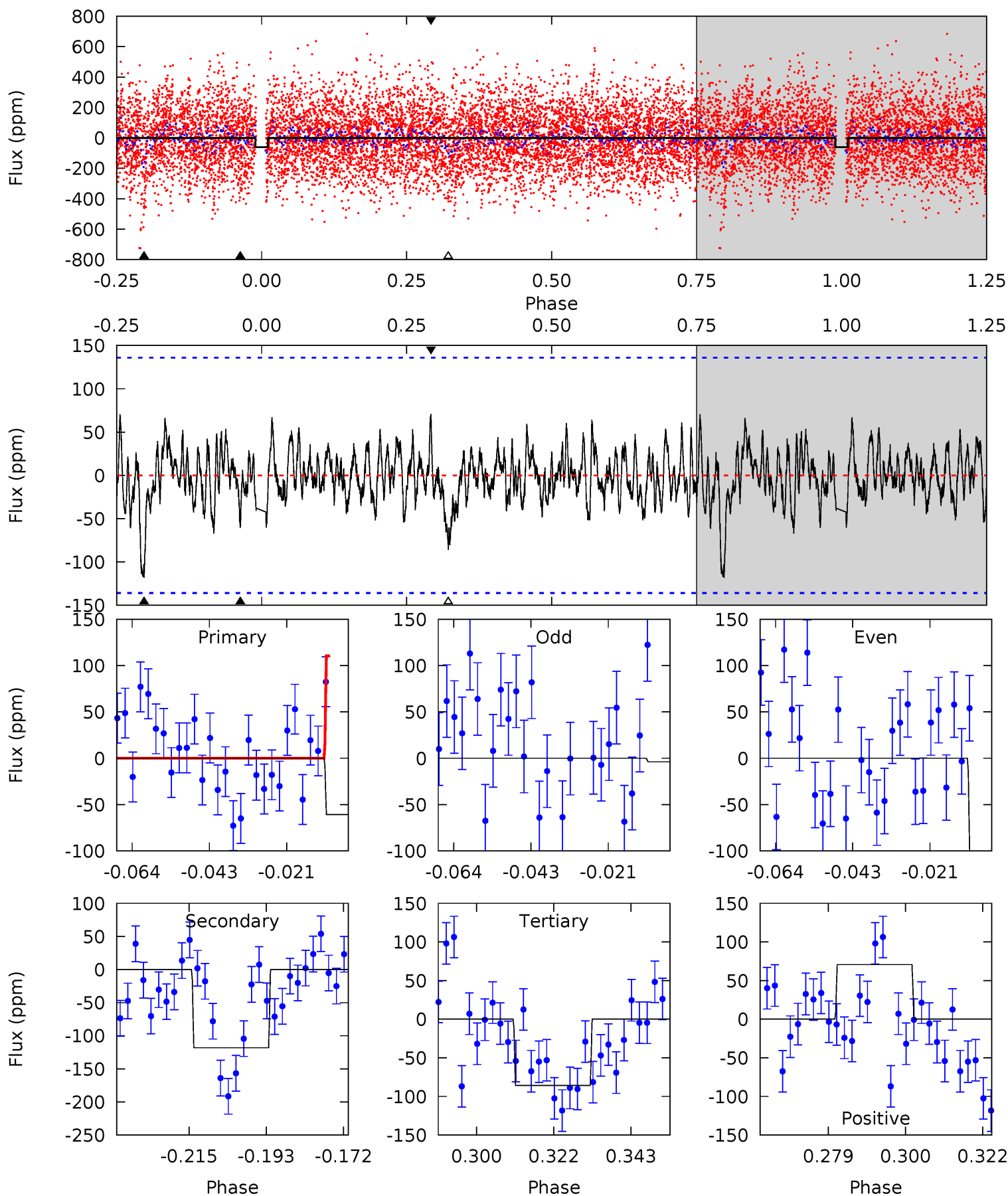
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

006222079-03, P = 44.030528 Days, E = 114.313305 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.18	4.24	3.08	2.54	4.88	2.30	0.91	-0.90	-0.36	1.16	1.70	1.89	-0.41	0.37	0.16



Stellar Parameters For KIC 006222079

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6631^{+162}_{-223}	$4.144^{+0.186}_{-0.124}$	$-0.360^{+0.250}_{-0.300}$	$1.531^{+0.302}_{-0.369}$	$1.195^{+0.158}_{-0.175}$	$0.469^{+0.479}_{-0.178}$
	+2%/-3%	+4%/-3%	+69%/-83%	+20%/-24%	+13%/-15%	+102%/-38%
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 006222079-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$11.43^{+13.27}_{-7.74}$	986^{+59}_{-64}	-4551^{+34748}_{-25130}	$-282.680^{+46293.434}_{-44247.277}$
Alt.	-118 ± 28	$11.17^{+12.13}_{-7.54}$	987^{+59}_{-68}	3205^{+1545}_{-614}	35^{+286}_{-27}

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

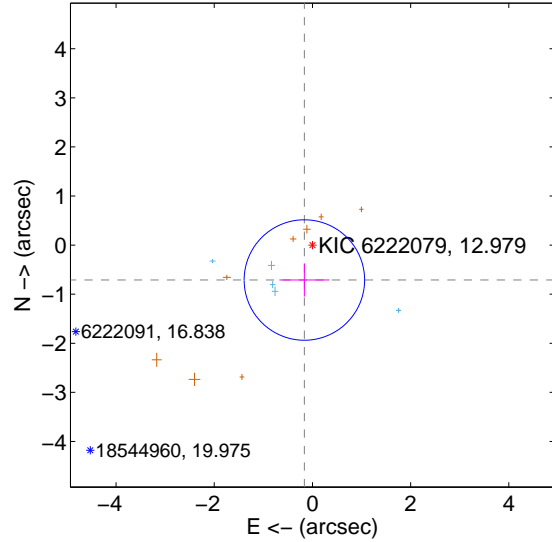
Supplemental centroid analysis for 006222079-03. Kepler magnitude: 12.98. Transit SNR -1.00

There are 5 quarters with good PRF difference image offsets

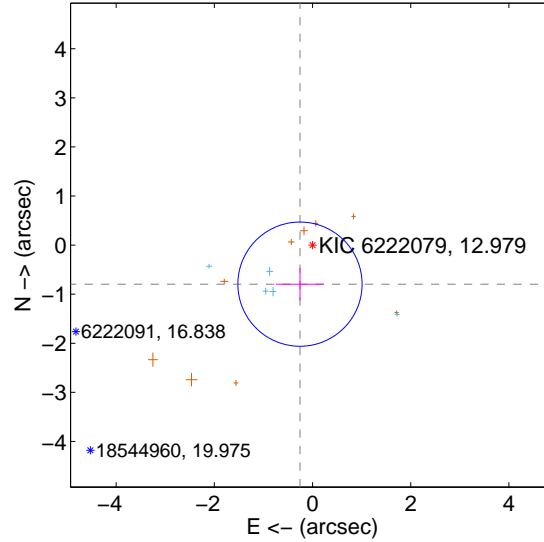
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.730 ± 0.409	1.79	0.164 ± 0.508	-0.712 ± 0.338
PRF-fit source offset from KIC position	0.836 ± 0.422	1.98	0.256 ± 0.488	-0.796 ± 0.328
photometric centroid source offset	1.32 ± 0.93	1.42	-0.79 ± 1.04	1.06 ± 0.86

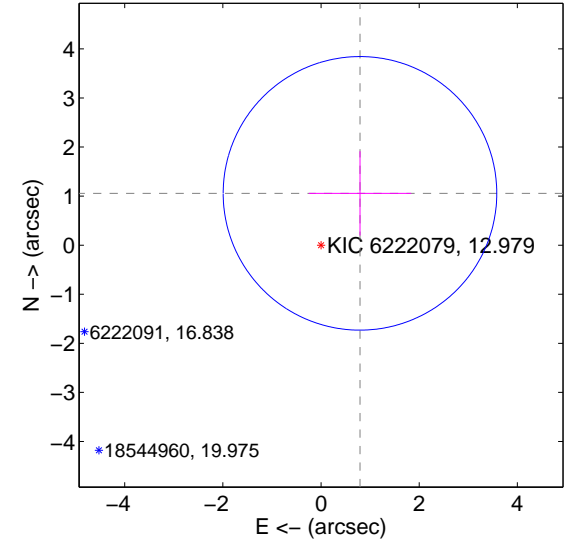
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

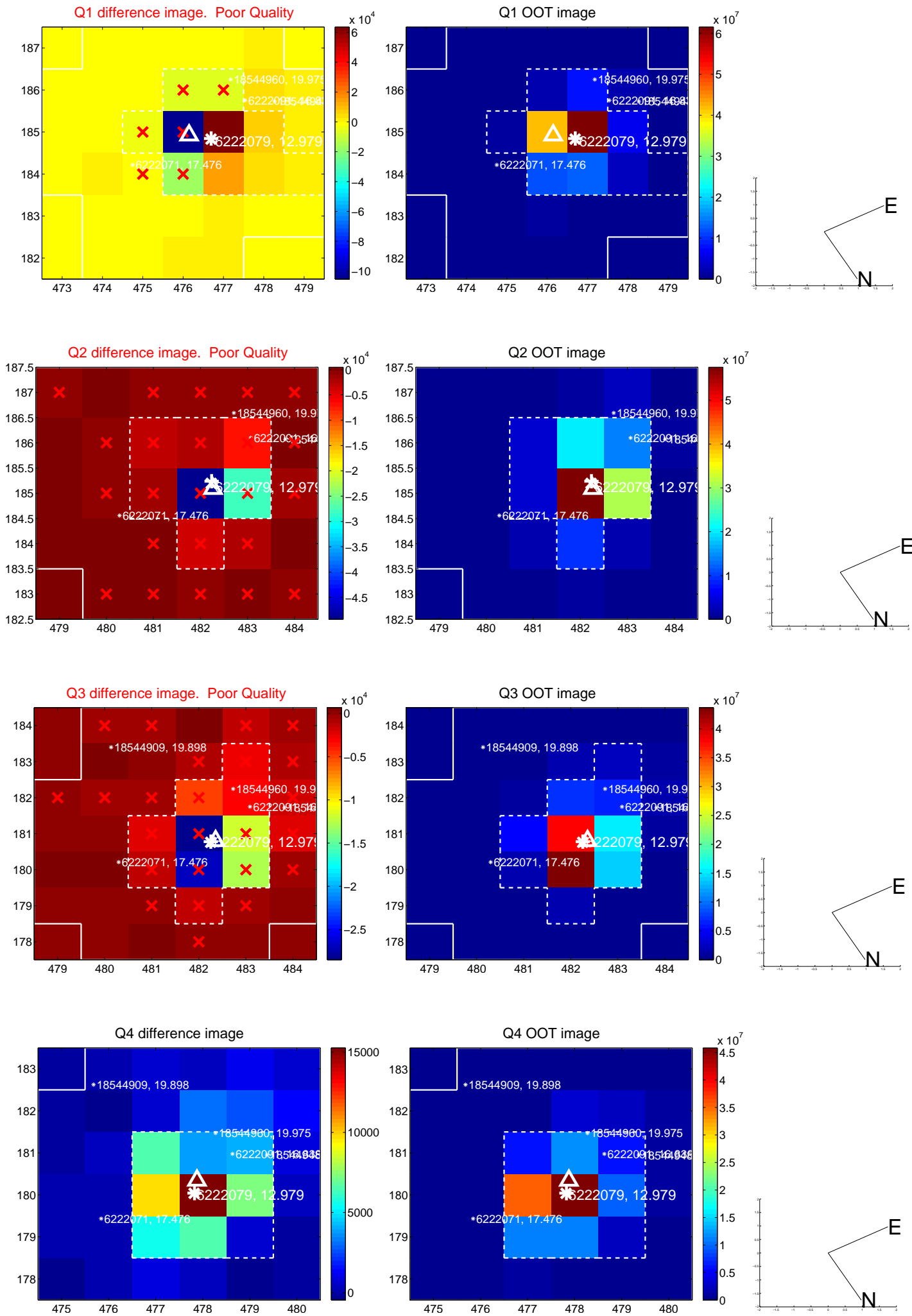


offset from photometric centroids

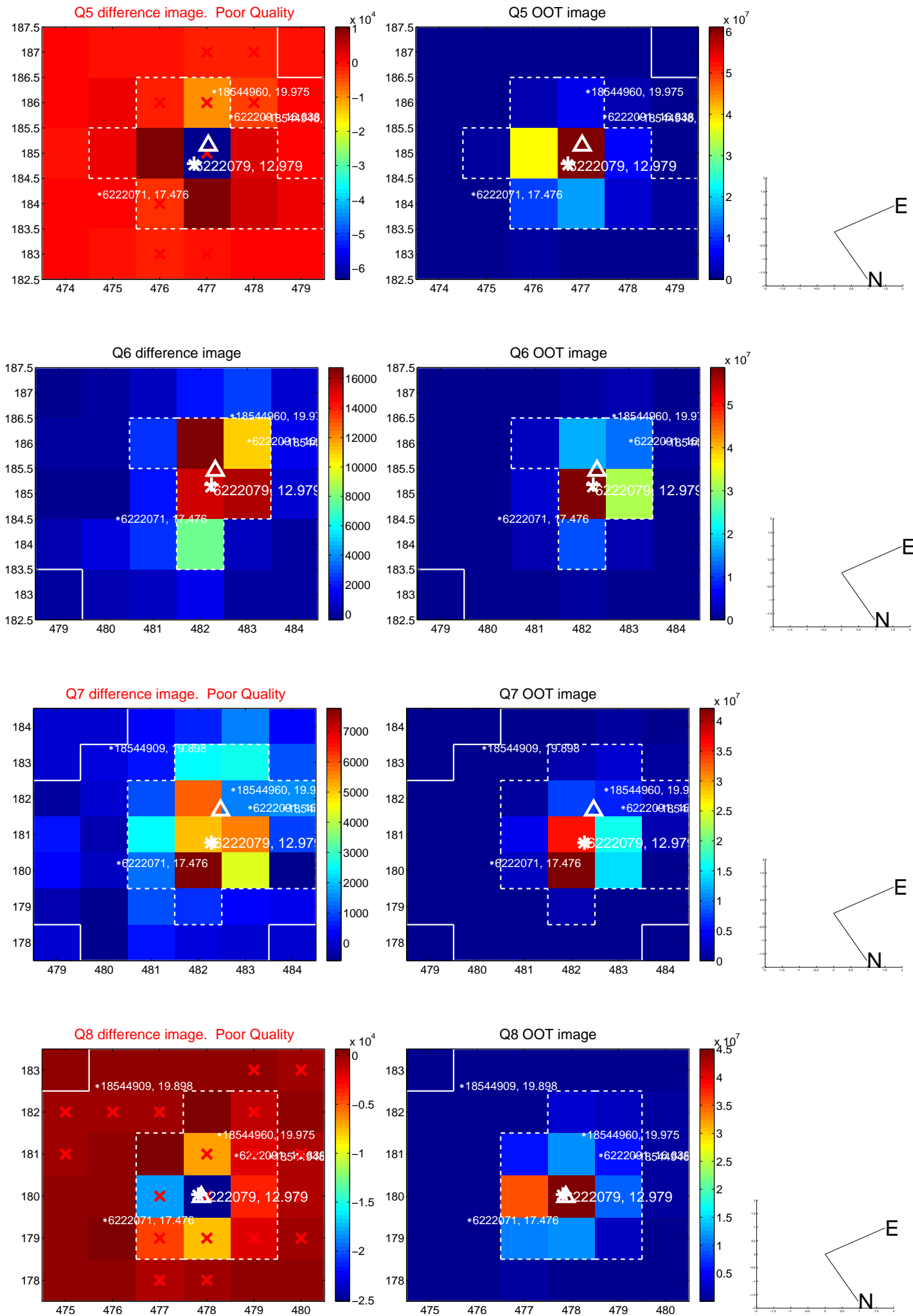


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

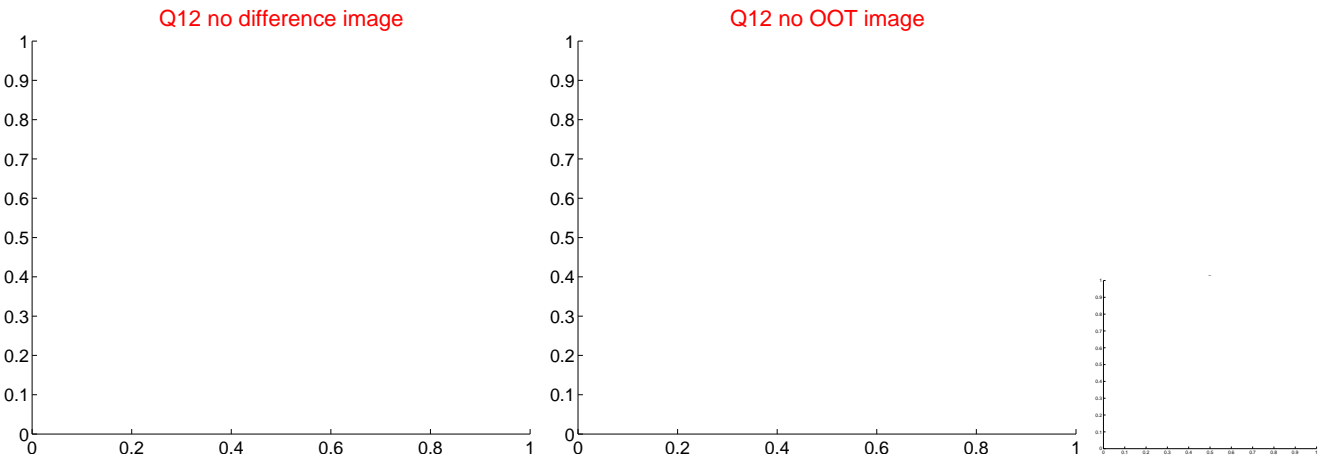
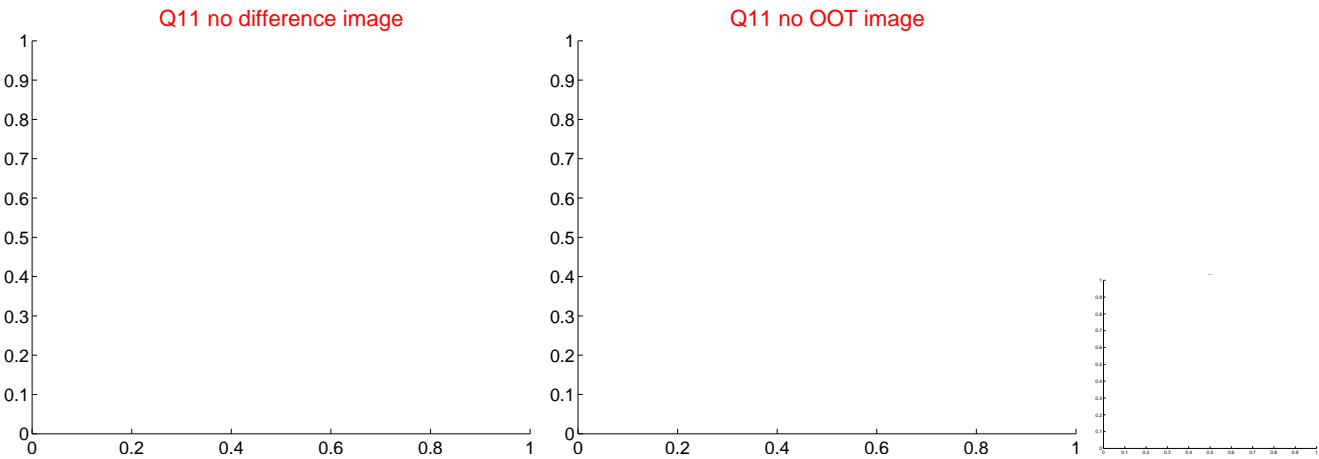
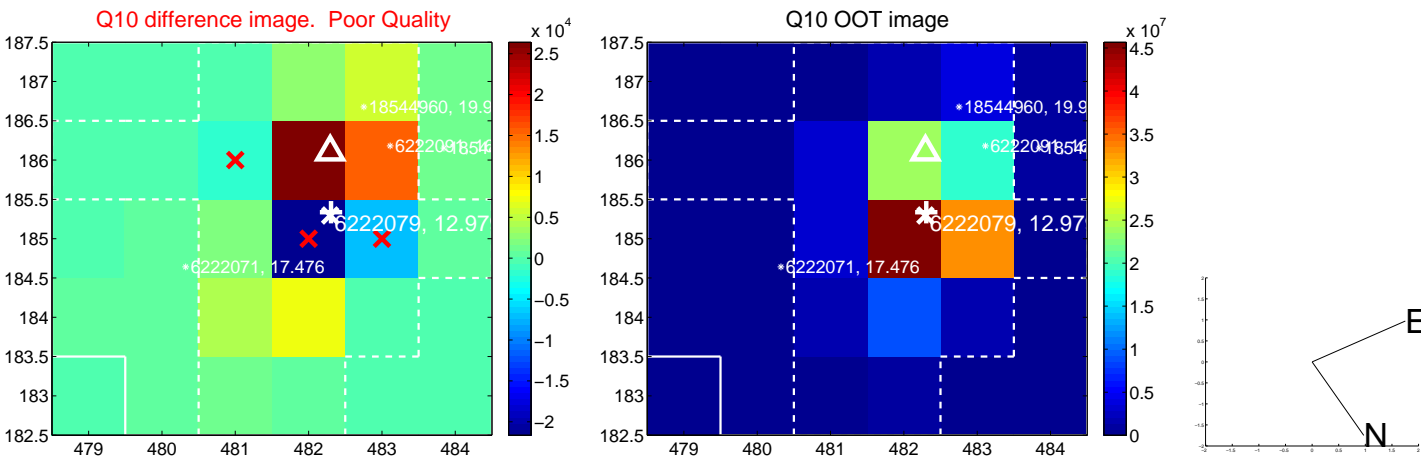
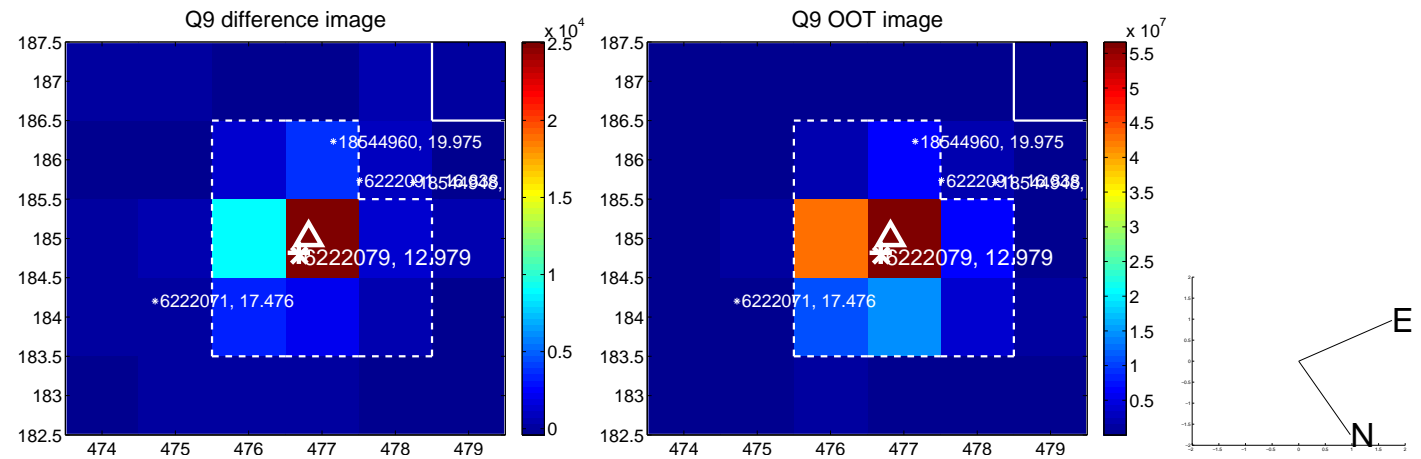
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



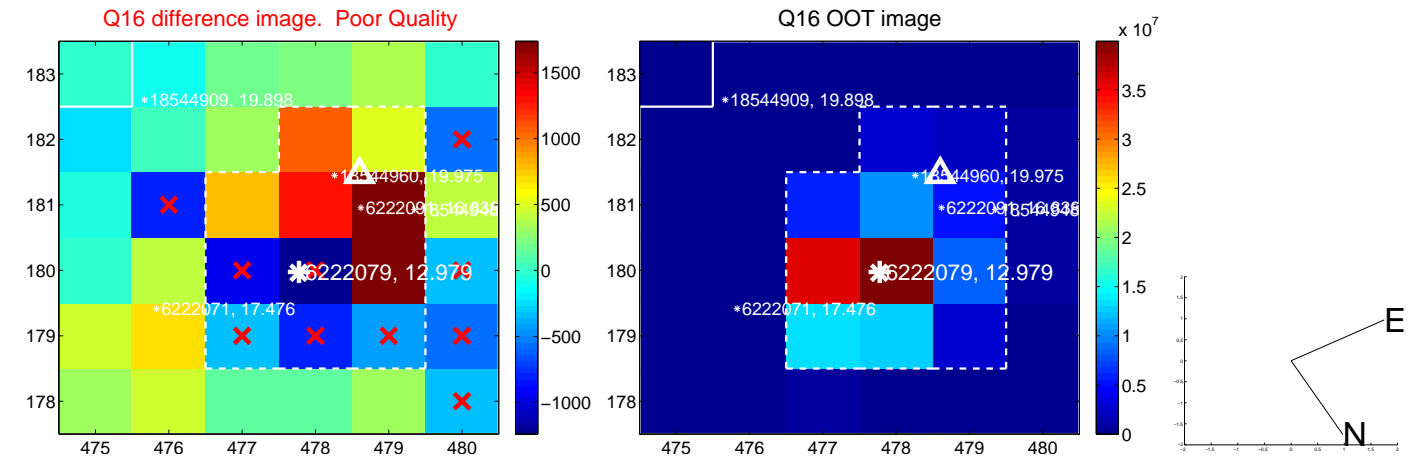
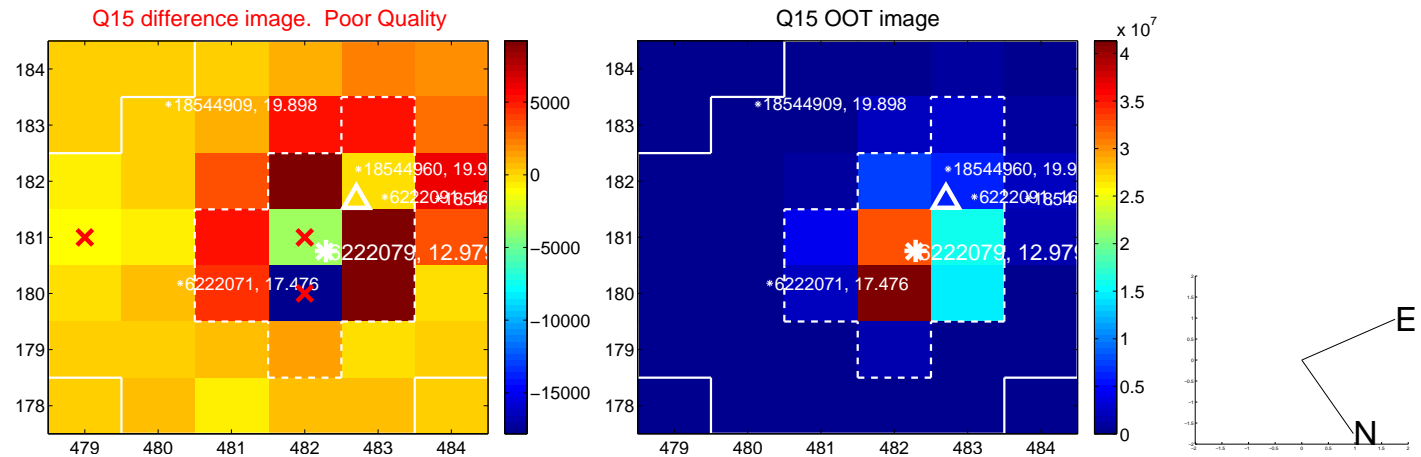
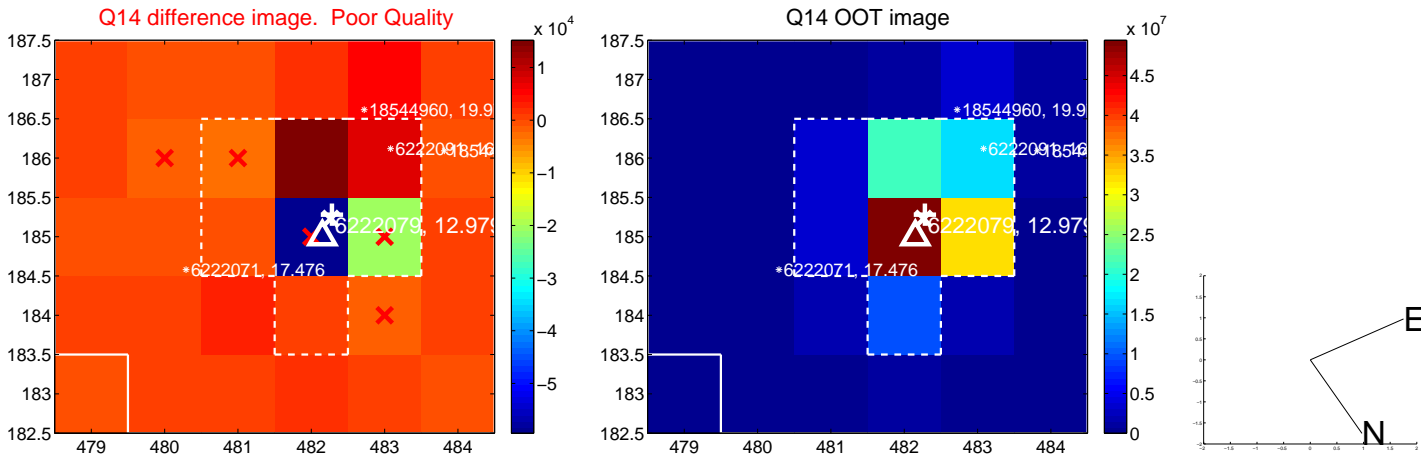
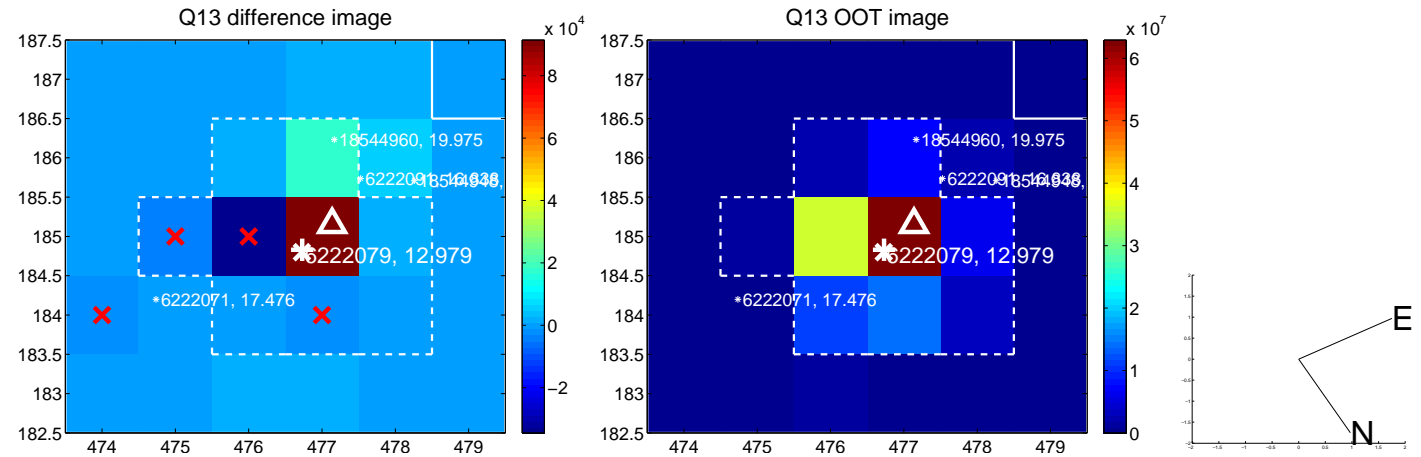
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



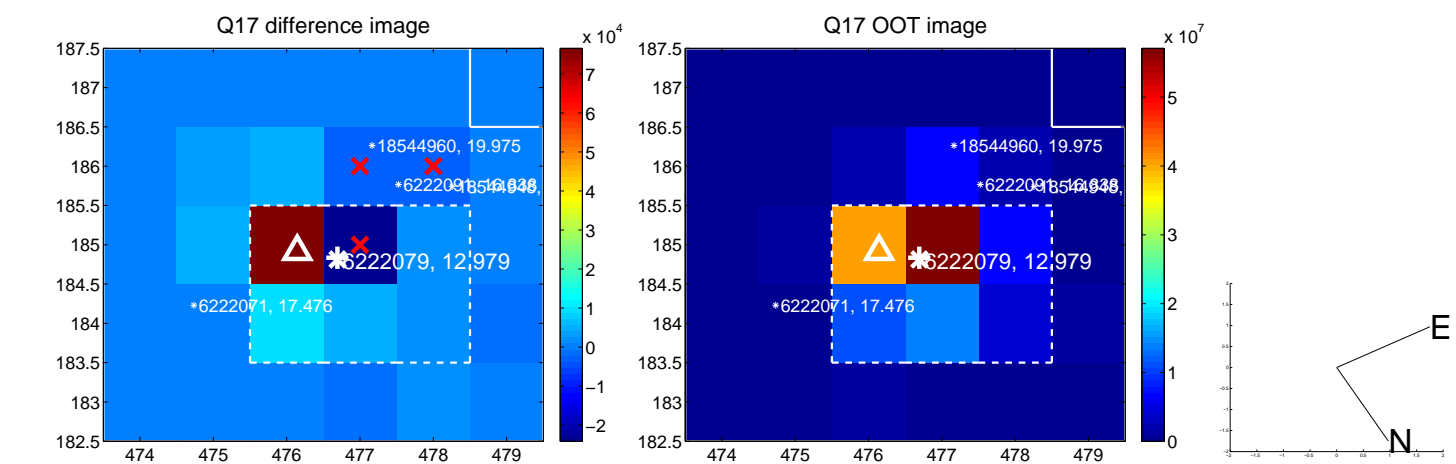
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



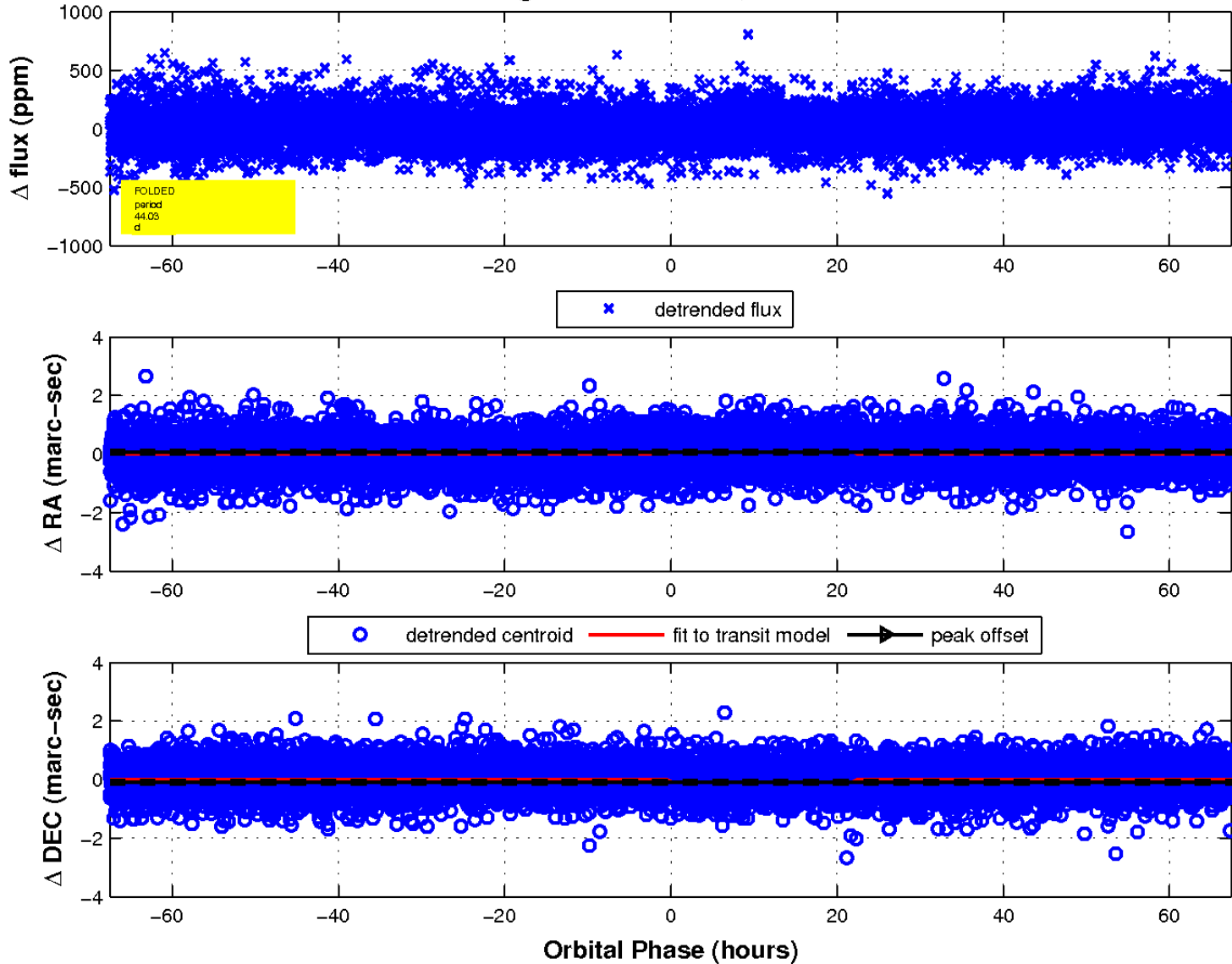
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

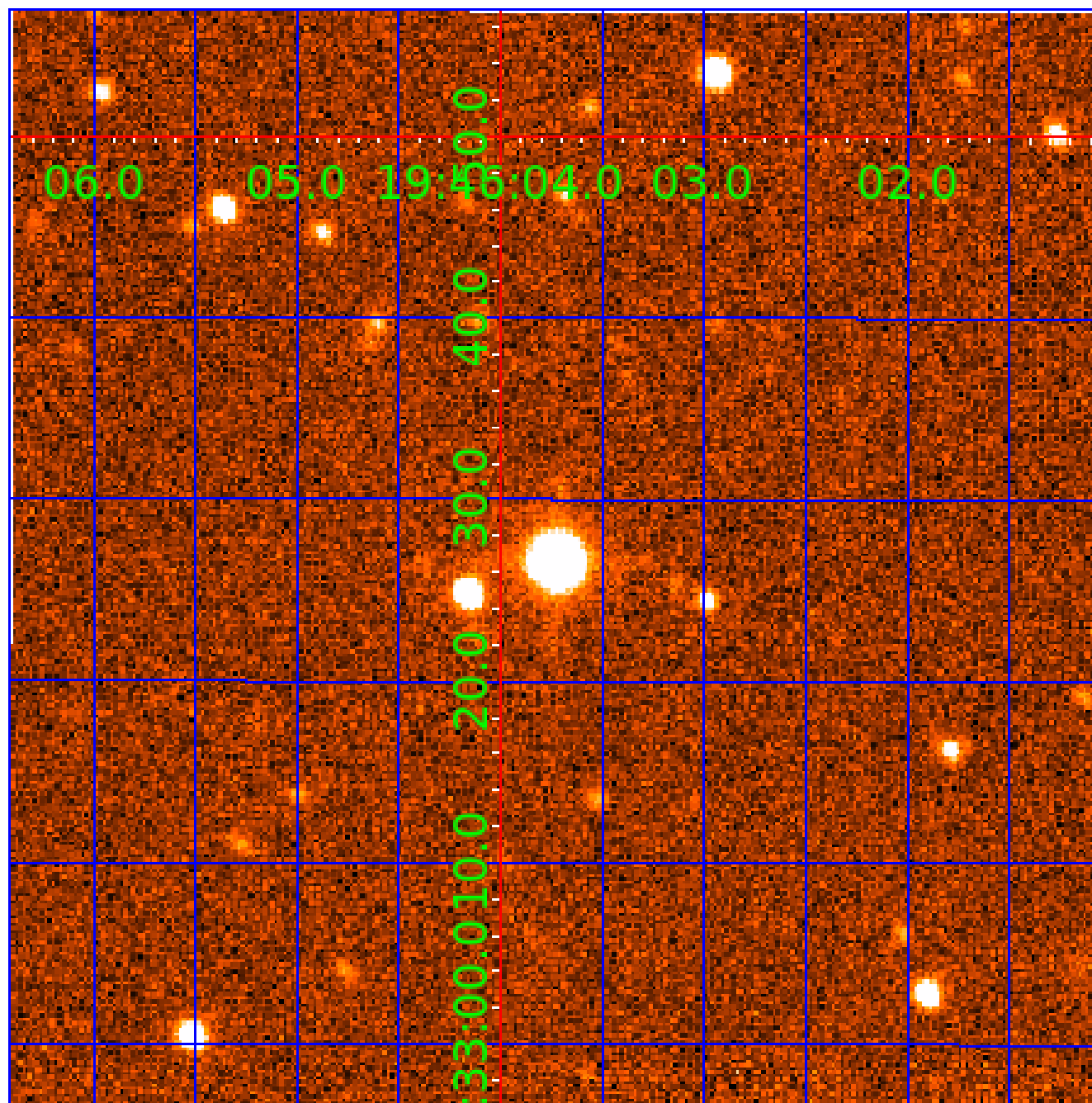


fluxWeightedCentroids, Planet 3 of 6



UKIRT Image

Declination



KIC 006222079

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})
006222079-01	OBS	No	1.940112	133.342554	19.2	13.050	13.7	10.5	1.53	6631	0.68	3897.25
006222079-02	OBS	No	44.029567	158.315933	70.3	5.803	11.2	3.9	1.53	6631	1.49	60.66
006222079-03	OBS	No	44.030528	158.803419	282.1	7.500	12.2	-1.0	1.53	6631	2.59	60.65
006222079-04	OBS	No	41.175485	165.562220	253.7	1.495	8.7	9.0	1.53	6631	2.49	66.33
006222079-05	OBS	No	74.396249	188.969235	134.6	10.620	10.7	7.7	1.53	6631	2.00	30.14
006222079-06	OBS	No	25.853661	142.148072	105.2	6.549	7.4	9.9	1.53	6631	1.76	123.36

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006222079-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
006222079-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
006222079-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS—HALO_GHOST
006222079-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
006222079-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
006222079-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_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.

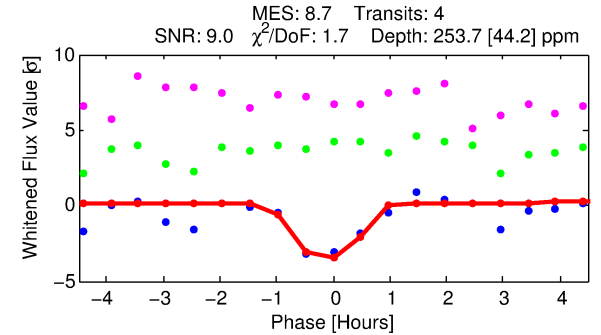
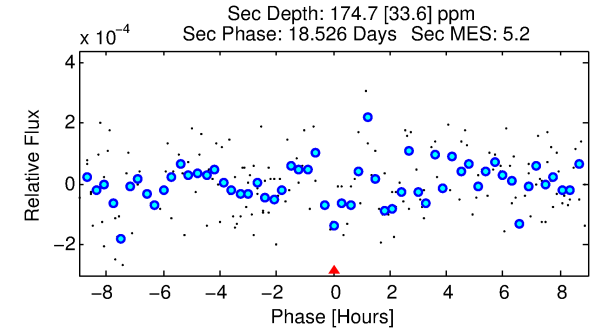
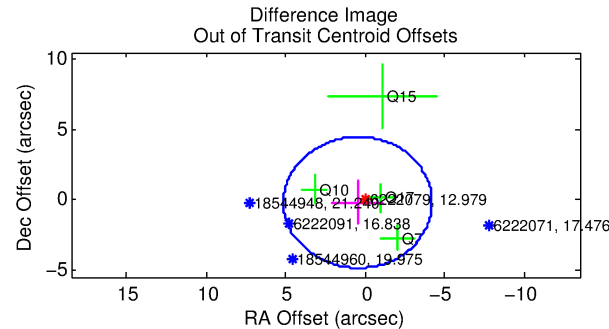
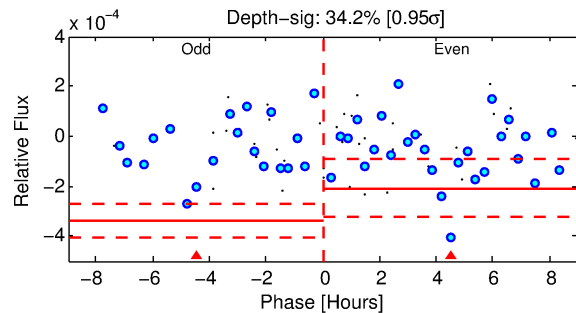
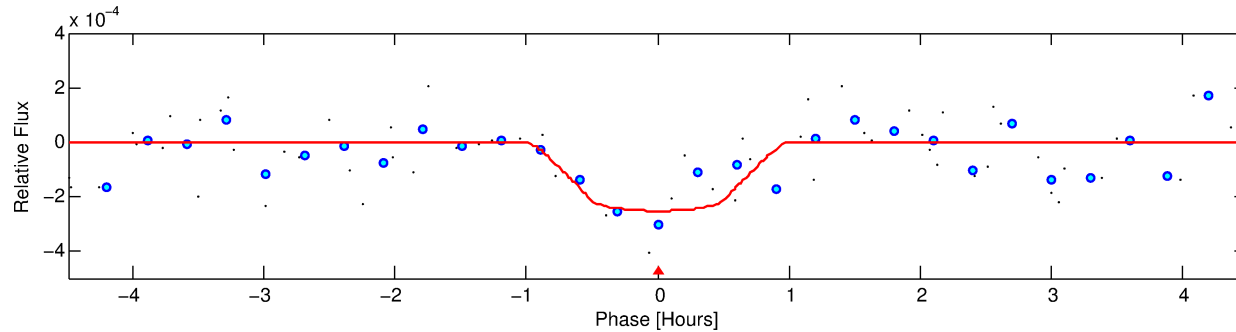
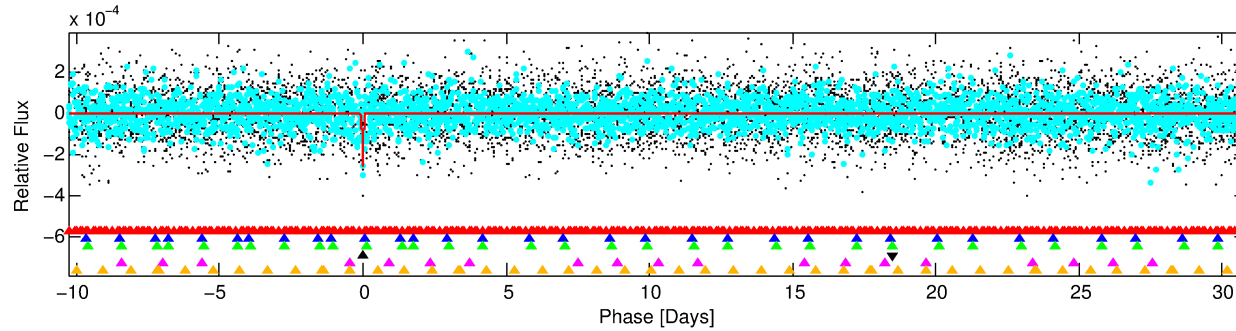
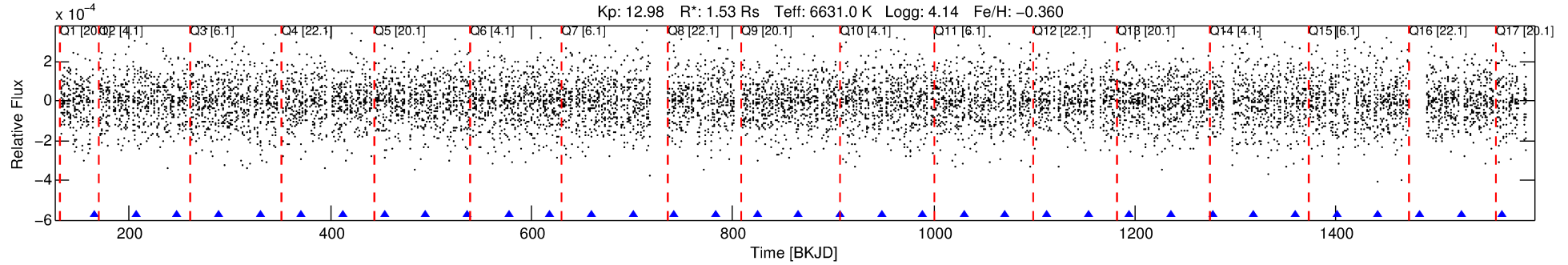
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006222079-04

No Significant Match Found

DV One-Page Summary

KIC: 6222079 Candidate: 4 of 6 Period: 41.175 d



DV Fit Results:

Period = 41.17549 [0.00041] d
Epoch = 165.5622 [0.0075] BKJD
Rp/R* = 0.0149 [0.0206]
a/R* = 202.38 [1512.45]
b = 0.32 [20.80]
Seff = 66.32 [23.49]
Teq = 728 [64] K
Rp = 2.49 [3.49] Re
a = 0.2474 [0.0532] AU
Ag = 949.21 [2647.64] [0.36σ]
Teffp = 6245 [4330] K [1.27σ]

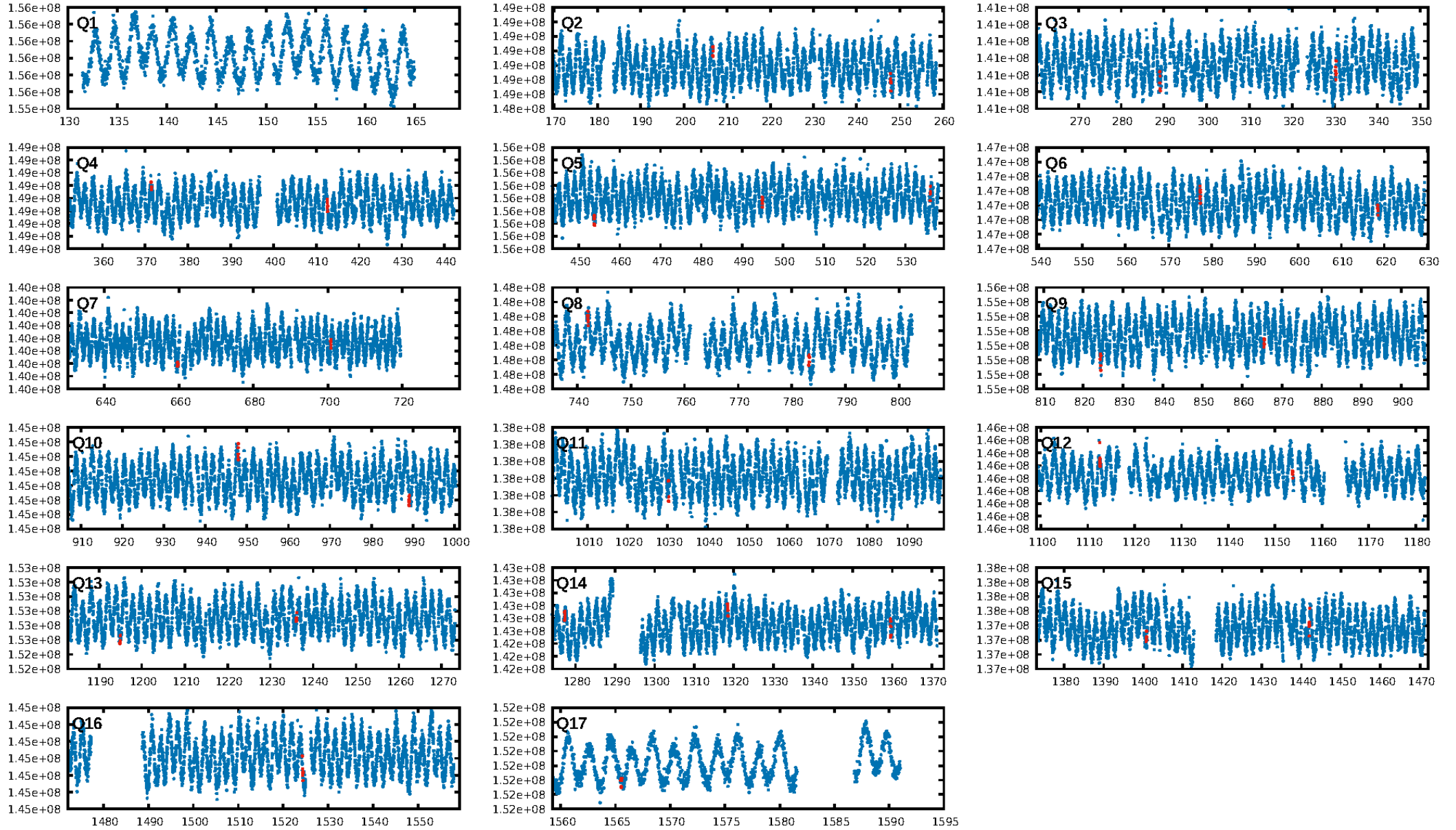
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [54.74σ]
LongPeriod-sig: 100.0% [11.43σ]
ModelChiSquare2-sig: 10.7%
ModelChiSquareGof-sig: 57.8%
Bootstrap-pfa: 2.97e-09
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -2.832
Centroid-sig: 29.8%
Centroid-so: 0.655 arcsec [0.96σ]
OotOffset-rm: 0.513 arcsec [0.33σ]
OotOffset-st: 1/2/0/1 [4]
KicOffset-rm: 0.608 arcsec [0.39σ]
KicOffset-st: 1/2/0/1 [4]
DiffImageQuality-fgm: 0.25 [1/4]
DiffImageOverlap-fno: 0.67 [10/15]

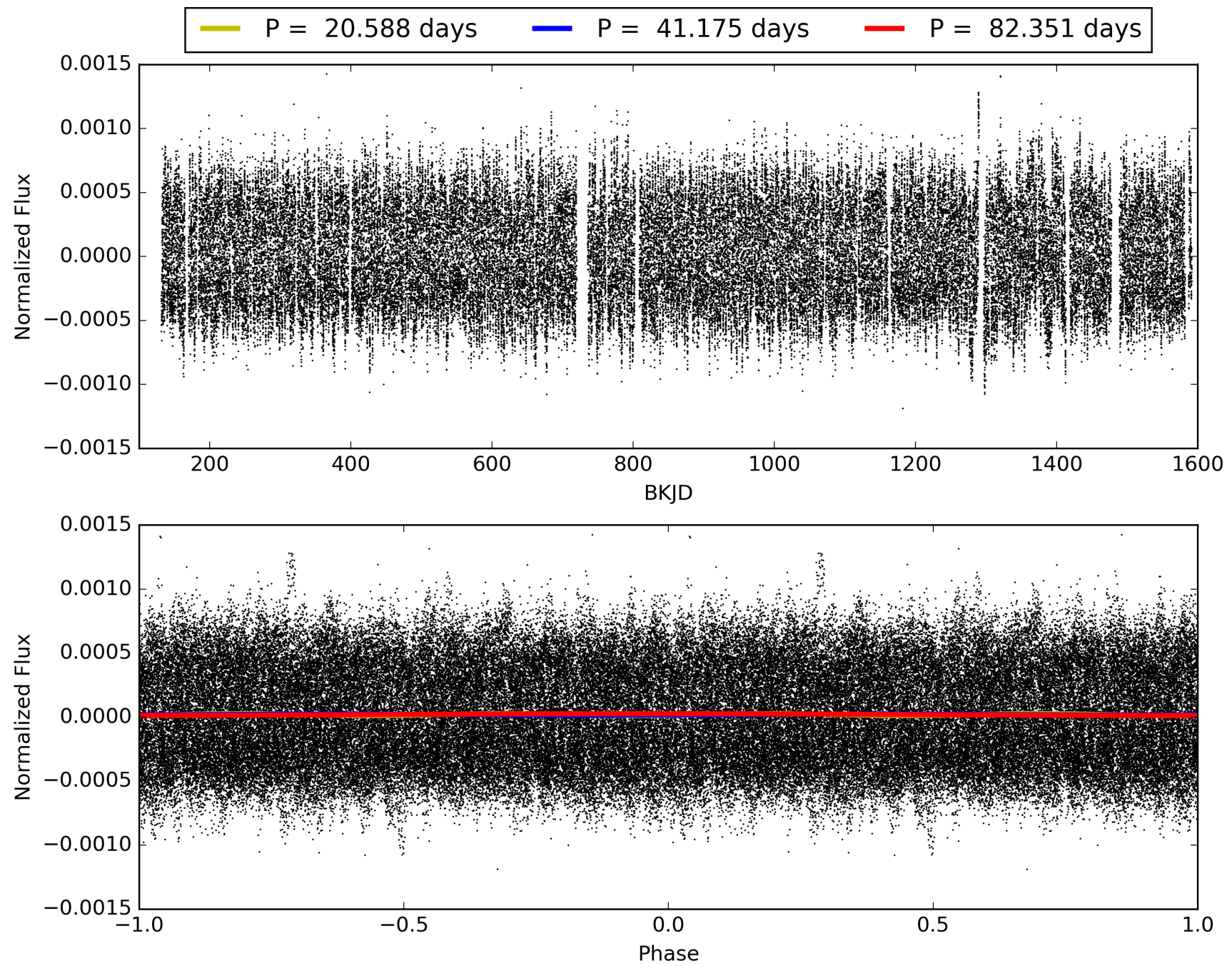
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:22:47 Z

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

TCE 006222079-04, PDC Light Curves

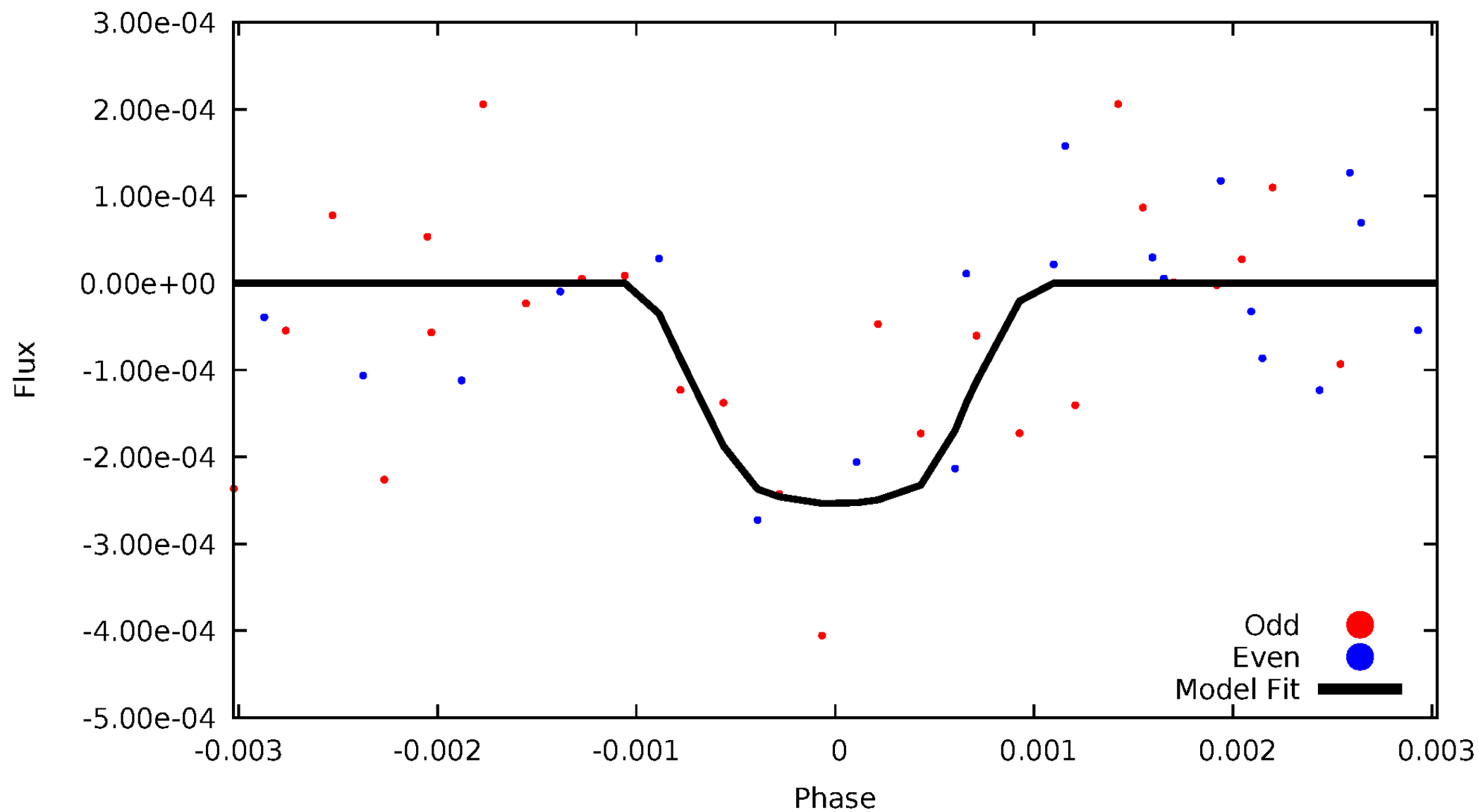


TCE 006222079-04



DV Odd/Even

TCE 006222079-04

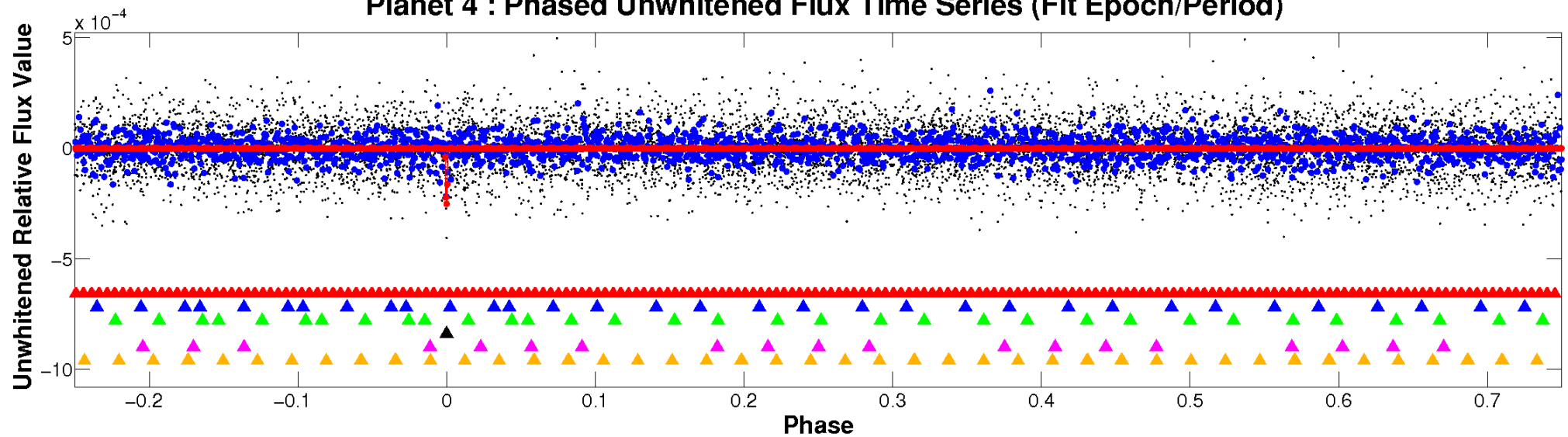


ALT Odd/Even

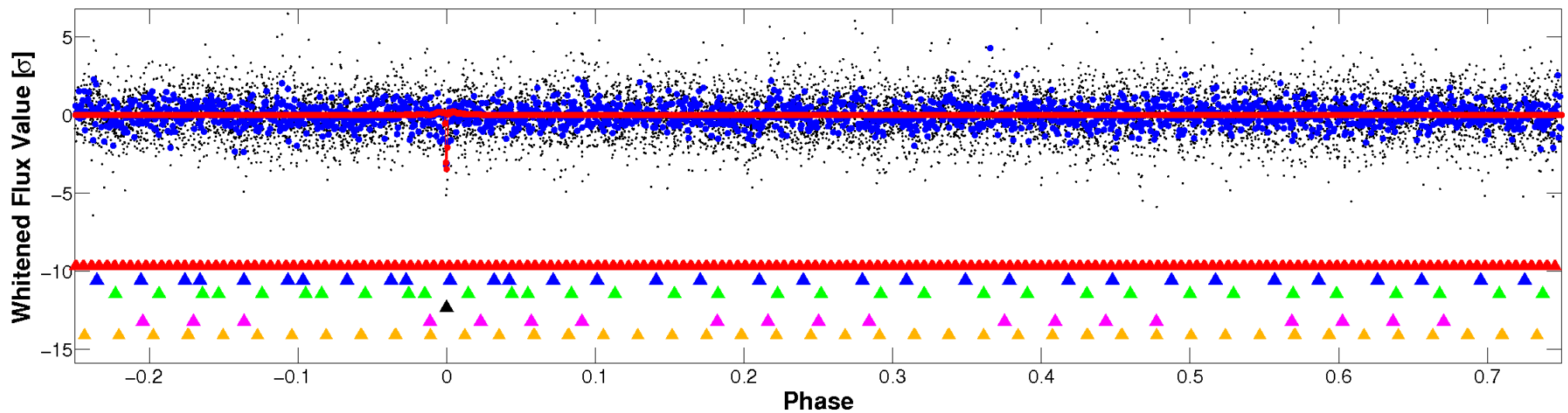
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

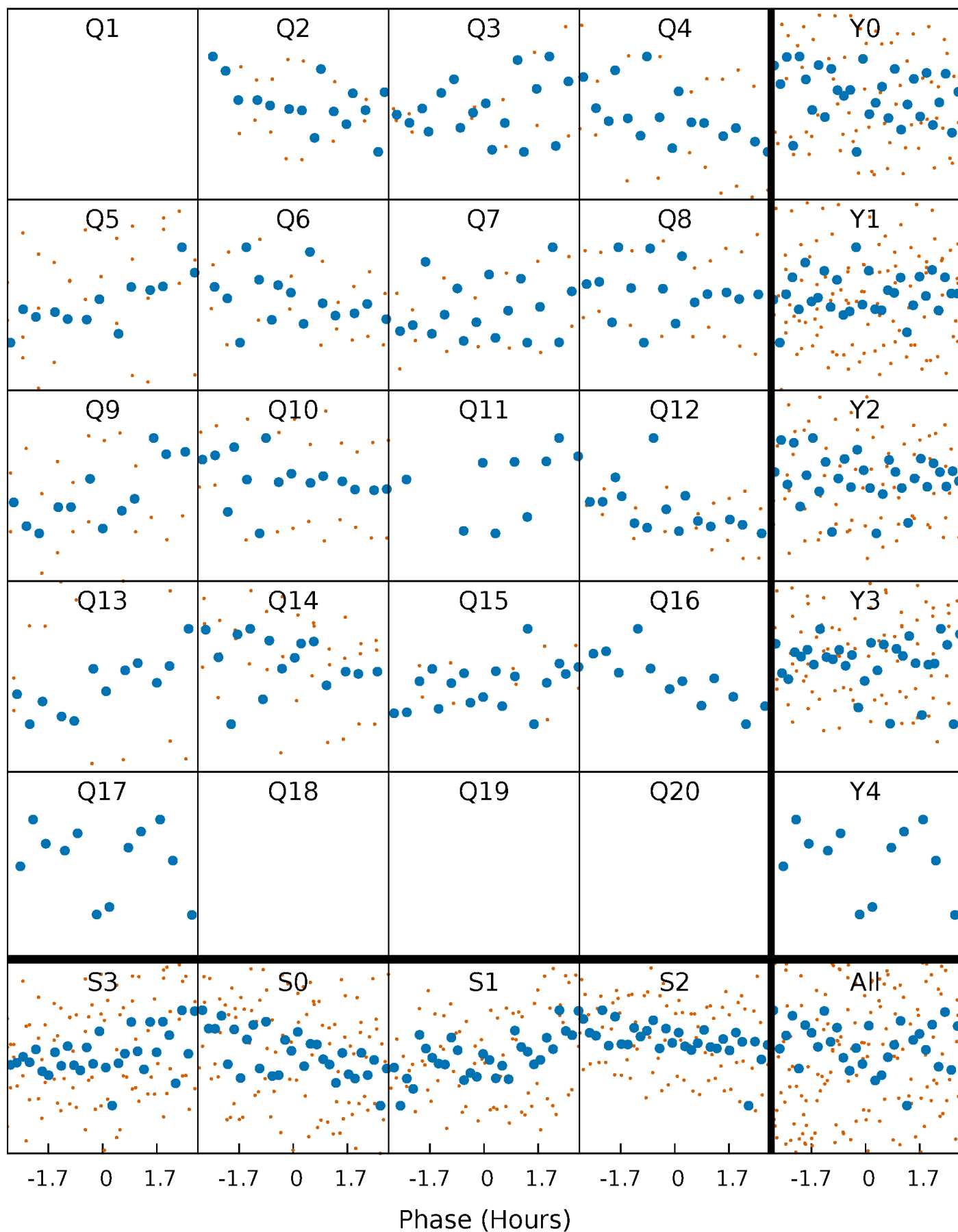


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



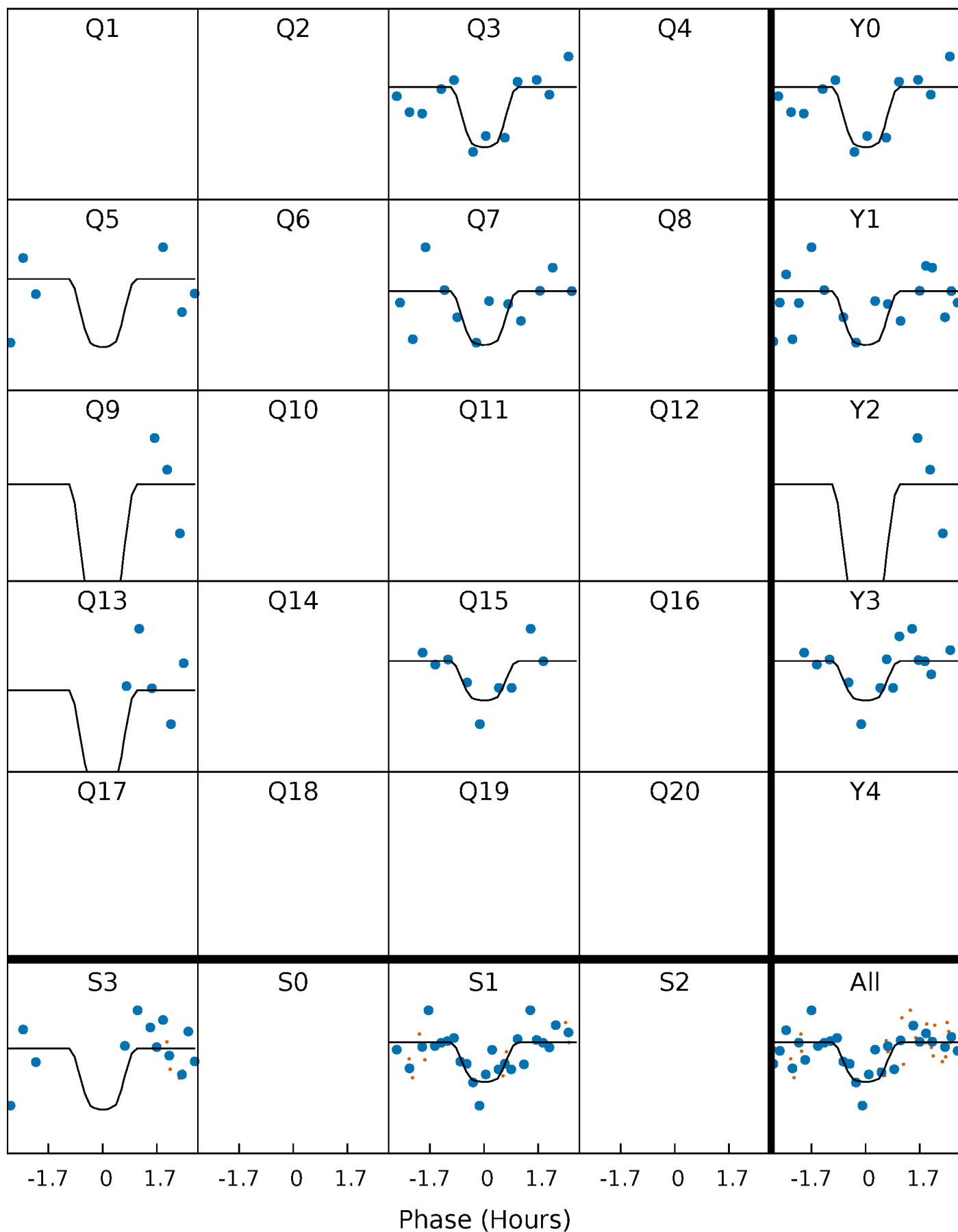
PDC Quarter-Phased Transit Curves

TCE 006222079-04 P= 41.175485 Days $T_0=165.562220$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 006222079-04 P= 41.175485 Days $T_0=165.562220$ (BKJD)

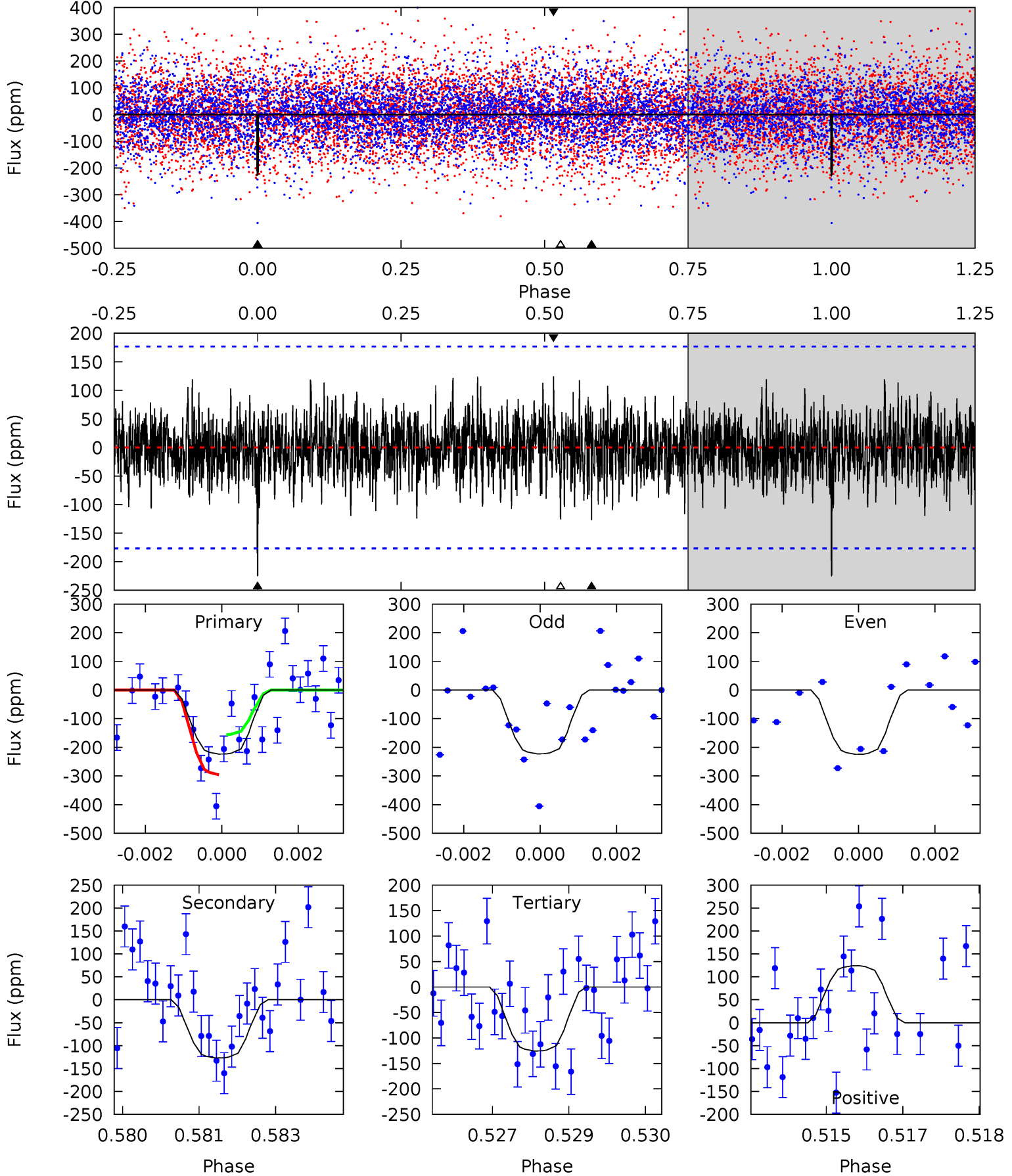


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

006222079-04, P = 41.175485 Days, E = 124.386735 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.78	3.85	3.81	3.77	5.36	3.14	1.15	2.98	3.01	0.04	0.08	0.02	0.91	0.36	2.07



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 006222079

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6631^{+162}_{-223}	$4.144^{+0.186}_{-0.124}$	$-0.360^{+0.250}_{-0.300}$	$1.531^{+0.302}_{-0.369}$	$1.195^{+0.158}_{-0.175}$	$0.469^{+0.479}_{-0.178}$
	+2%/-3%	+4%/-3%	+69%/-83%	+20%/-24%	+13%/-15%	+102%/-38%
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 006222079-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-127 ± 33	$3.29^{+3.08}_{-2.18}$	1007^{+59}_{-65}	4936^{+4309}_{-1048}	375^{+3177}_{-274}
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

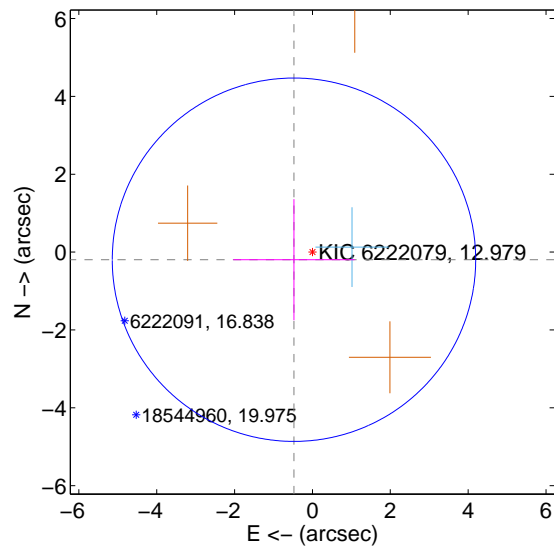
Supplemental centroid analysis for 006222079-04. Kepler magnitude: 12.98. Transit SNR 9.02

There are 1 quarters with good PRF difference image offsets

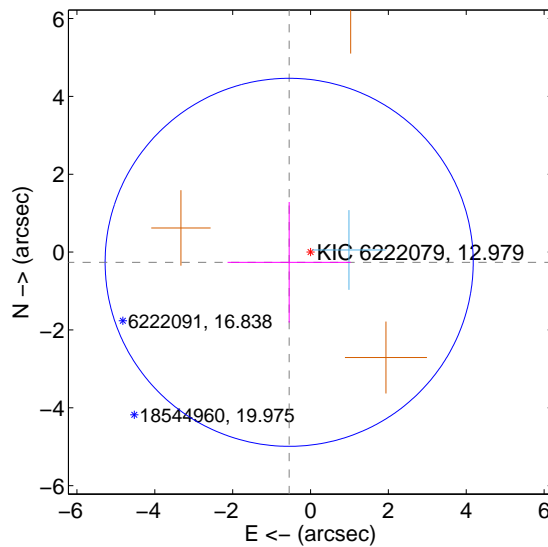
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.513 ± 1.556	0.33	0.474 ± 1.555	-0.196 ± 1.556
PRF-fit source offset from KIC position	0.608 ± 1.576	0.39	0.548 ± 1.582	-0.262 ± 1.549
photometric centroid source offset	0.66 ± 0.68	0.96	-0.62 ± 0.69	-0.22 ± 0.63

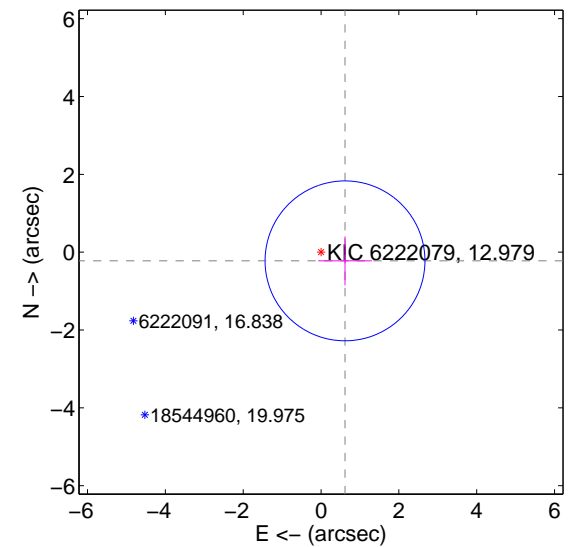
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

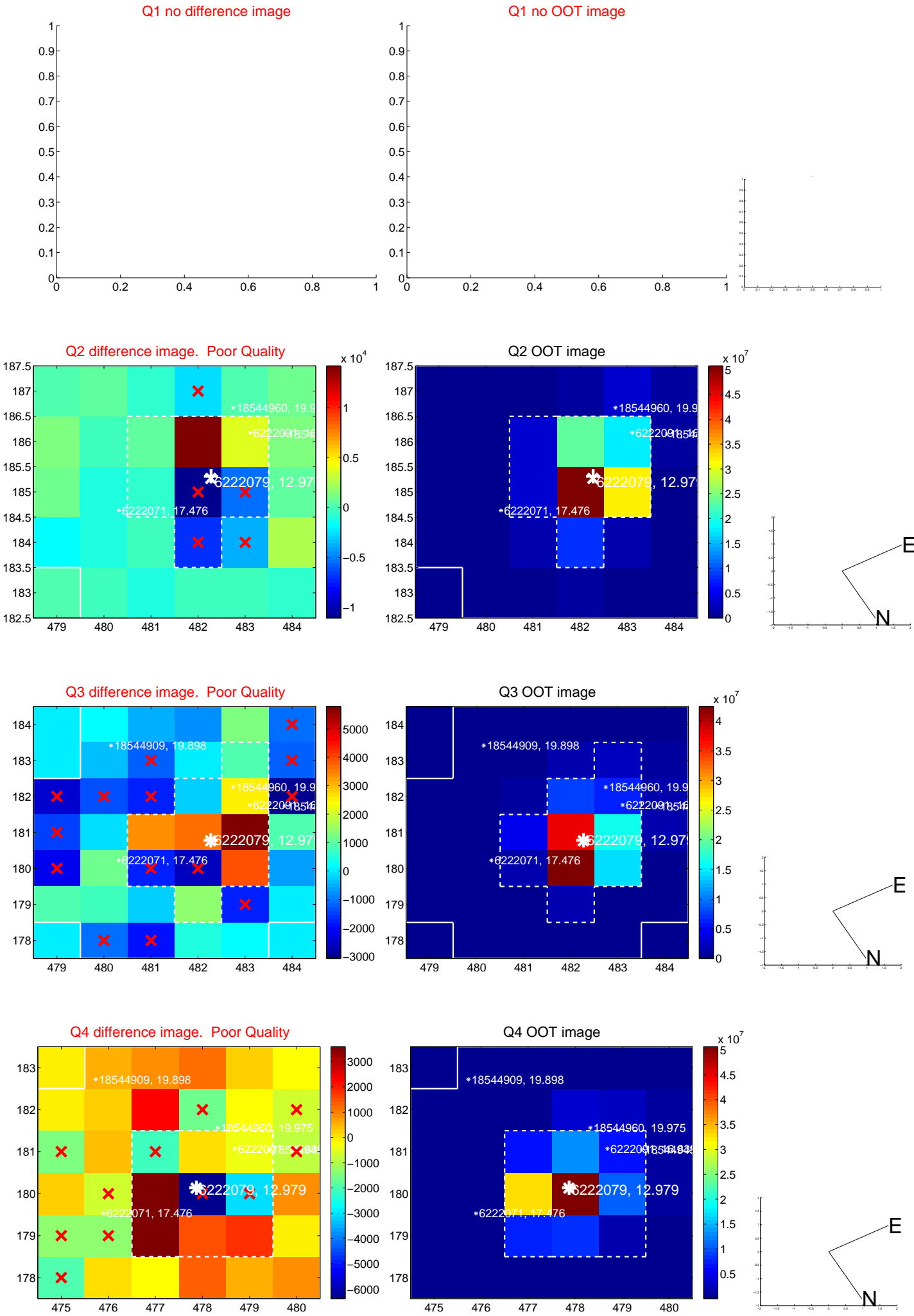


offset from photometric centroids

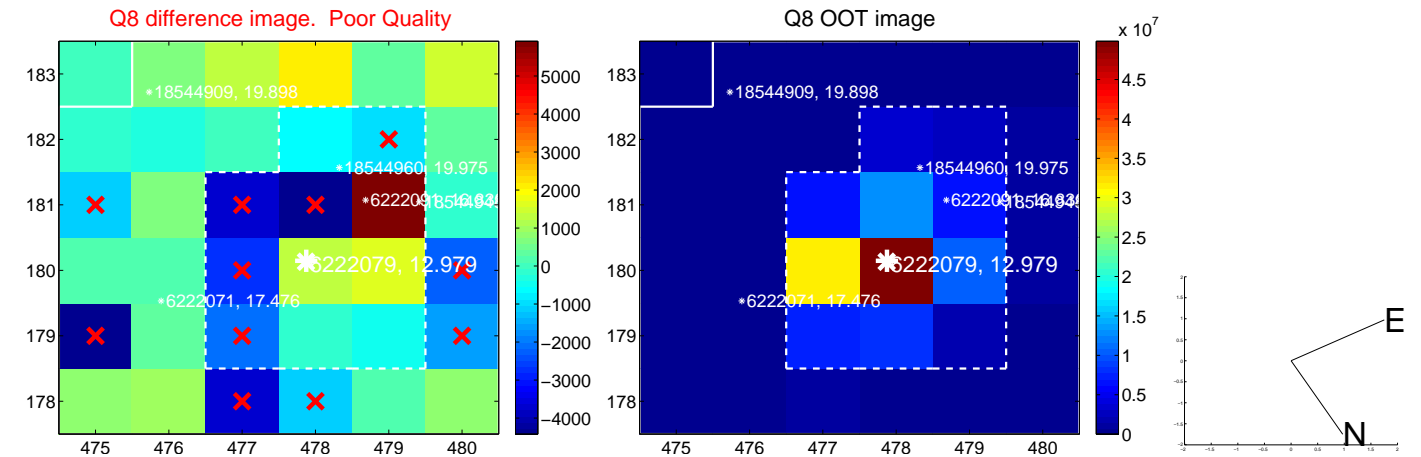
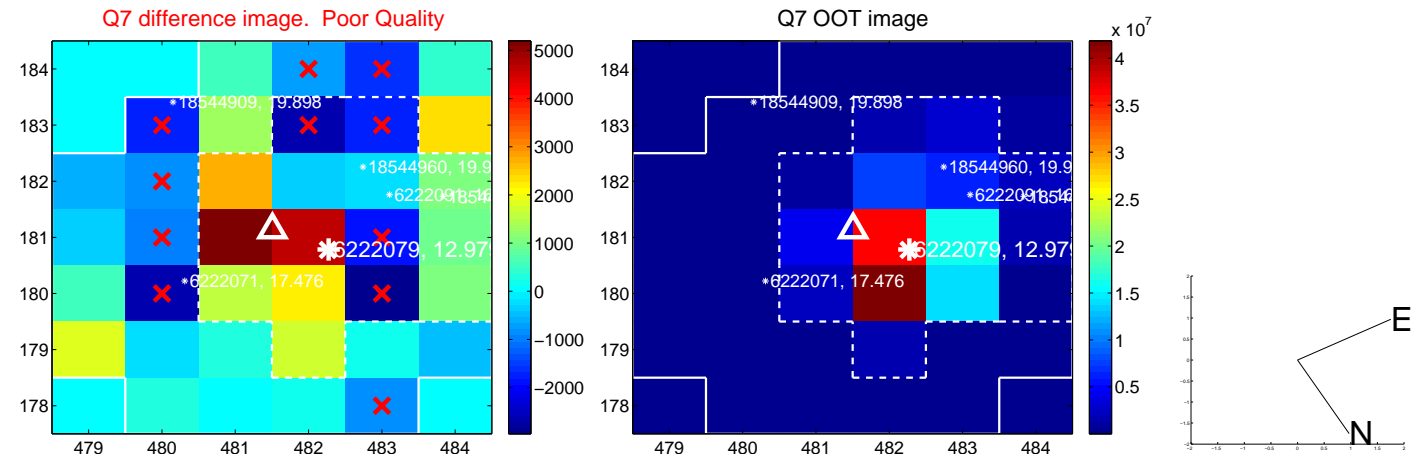
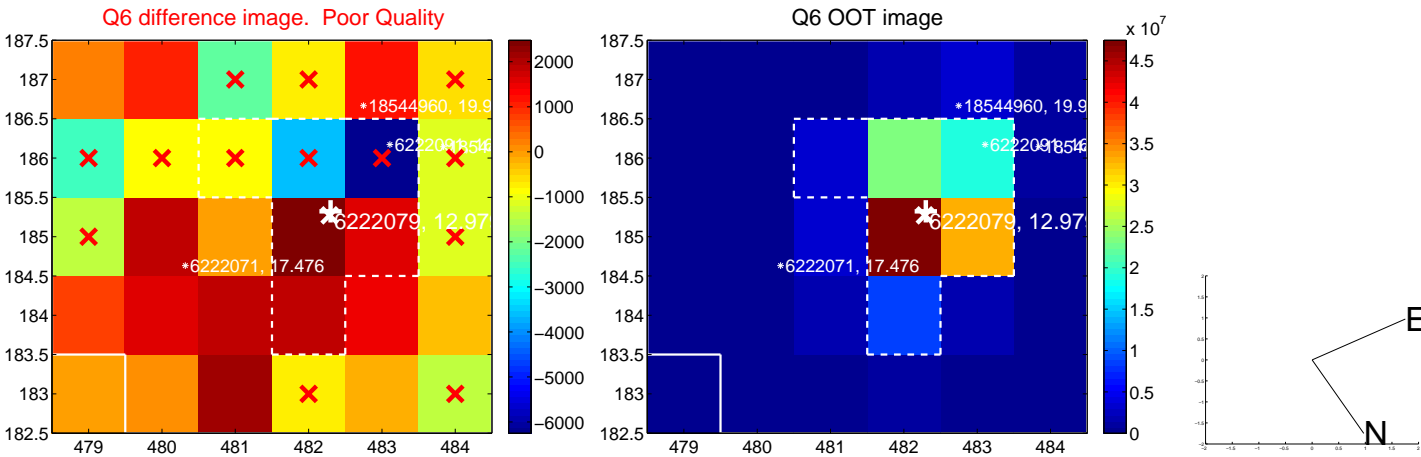
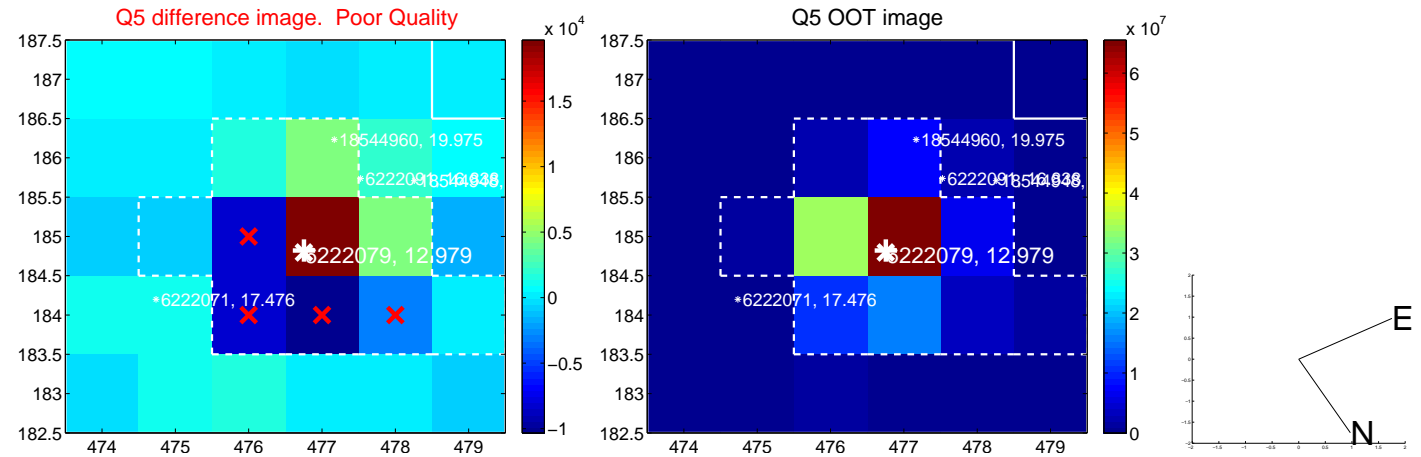


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

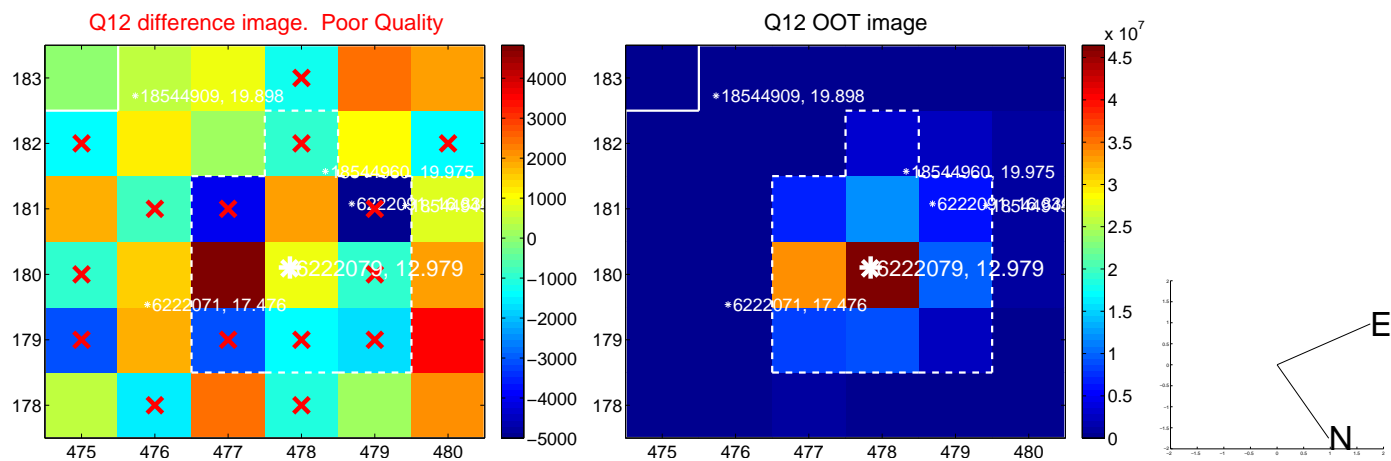
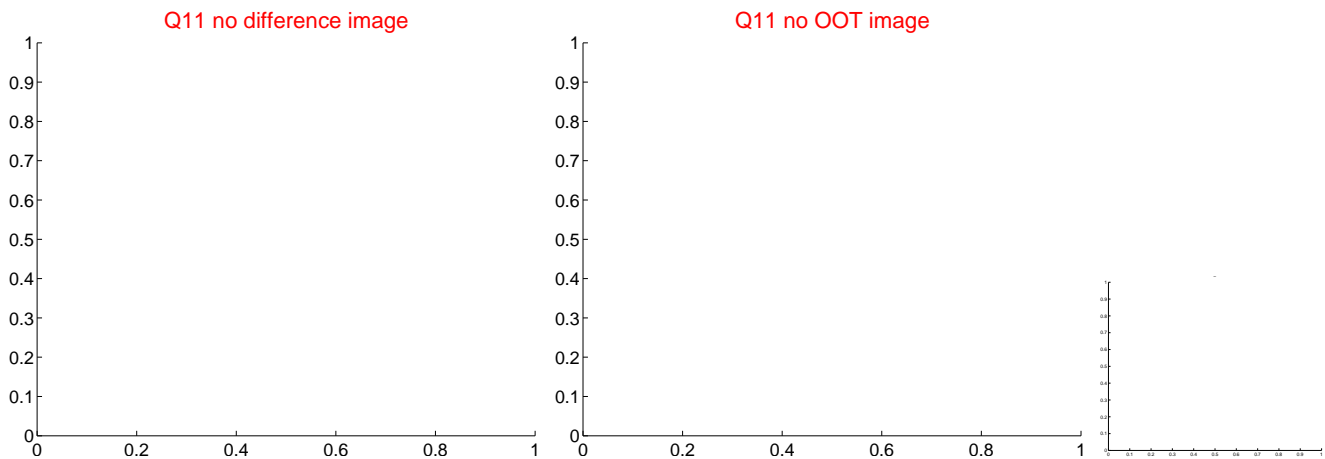
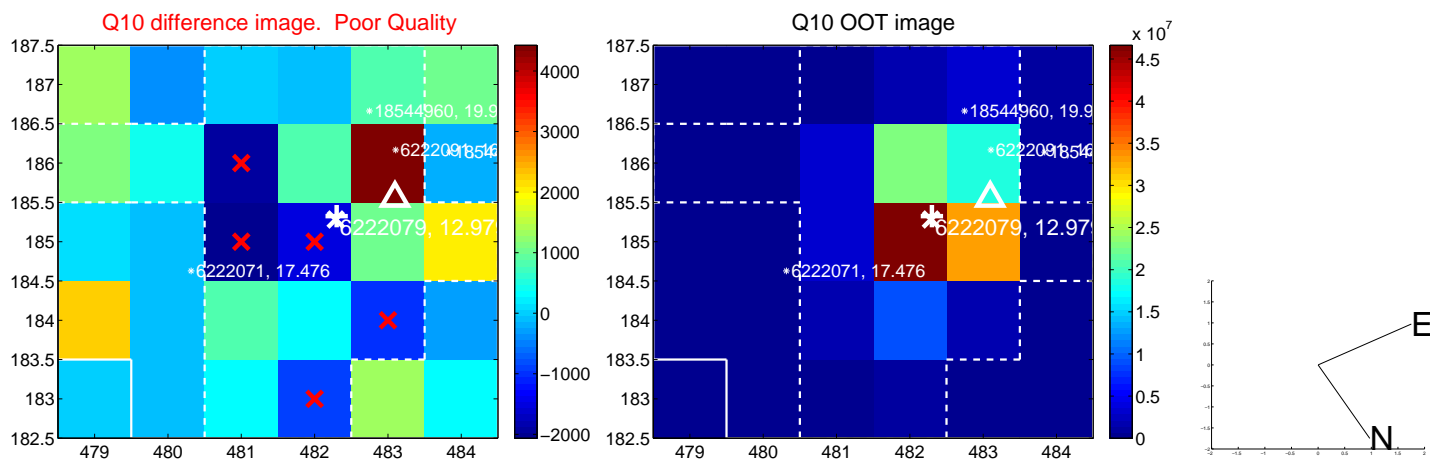
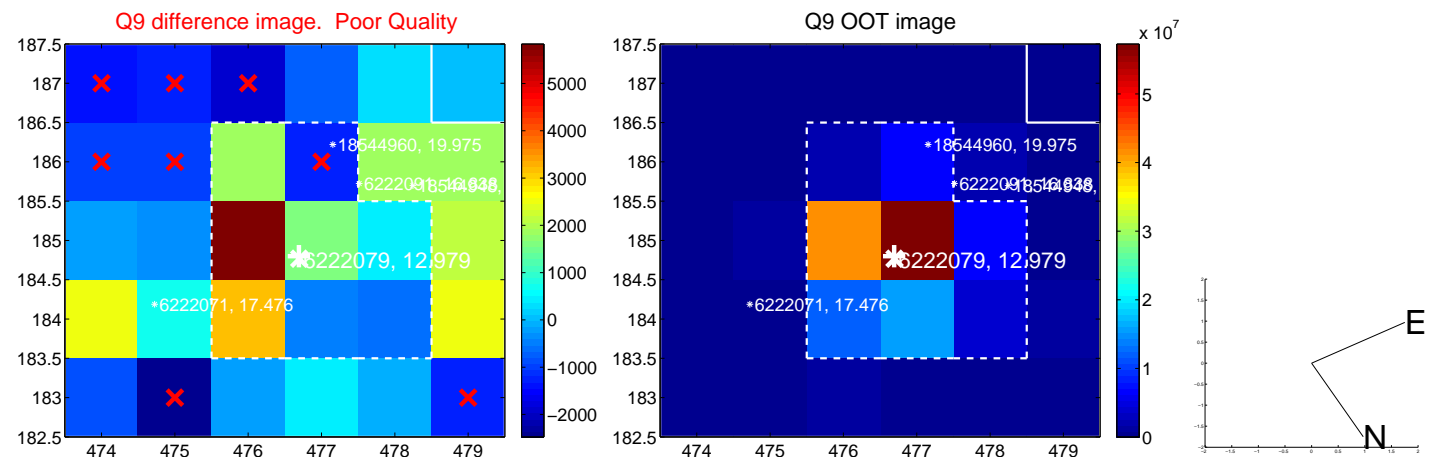
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

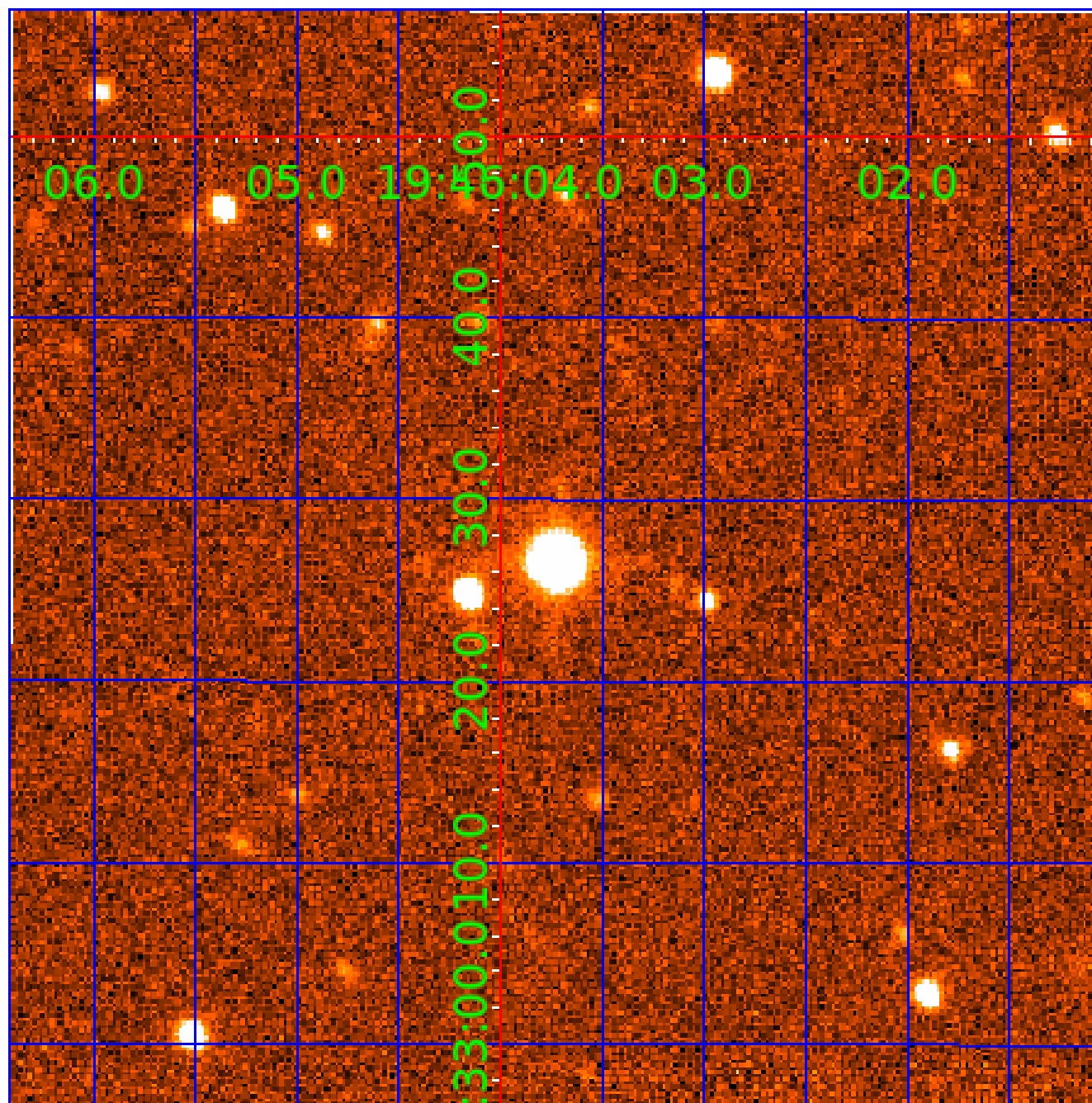


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006222079

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})
006222079-01	OBS	No	1.940112	133.342554	19.2	13.050	13.7	10.5	1.53	6631	0.68	3897.25
006222079-02	OBS	No	44.029567	158.315933	70.3	5.803	11.2	3.9	1.53	6631	1.49	60.66
006222079-03	OBS	No	44.030528	158.803419	282.1	7.500	12.2	-1.0	1.53	6631	2.59	60.65
006222079-04	OBS	No	41.175485	165.562220	253.7	1.495	8.7	9.0	1.53	6631	2.49	66.33
006222079-05	OBS	No	74.396249	188.969235	134.6	10.620	10.7	7.7	1.53	6631	2.00	30.14
006222079-06	OBS	No	25.853661	142.148072	105.2	6.549	7.4	9.9	1.53	6631	1.76	123.36

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006222079-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
006222079-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
006222079-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS—HALO_GHOST
006222079-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
006222079-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
006222079-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT

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

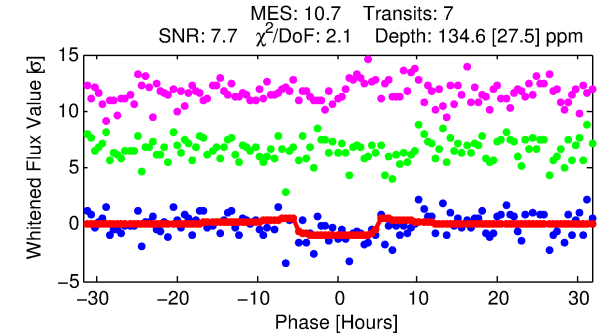
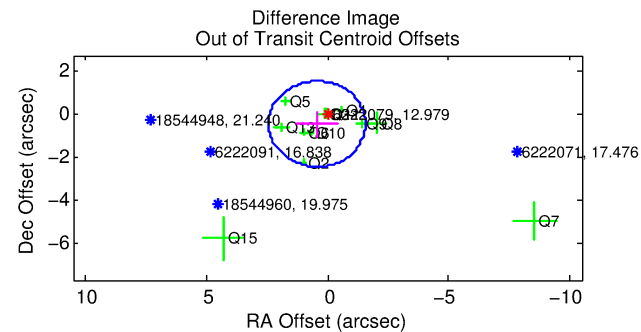
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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

Ephemeris Match Information For 006222079-05

No Significant Match Found

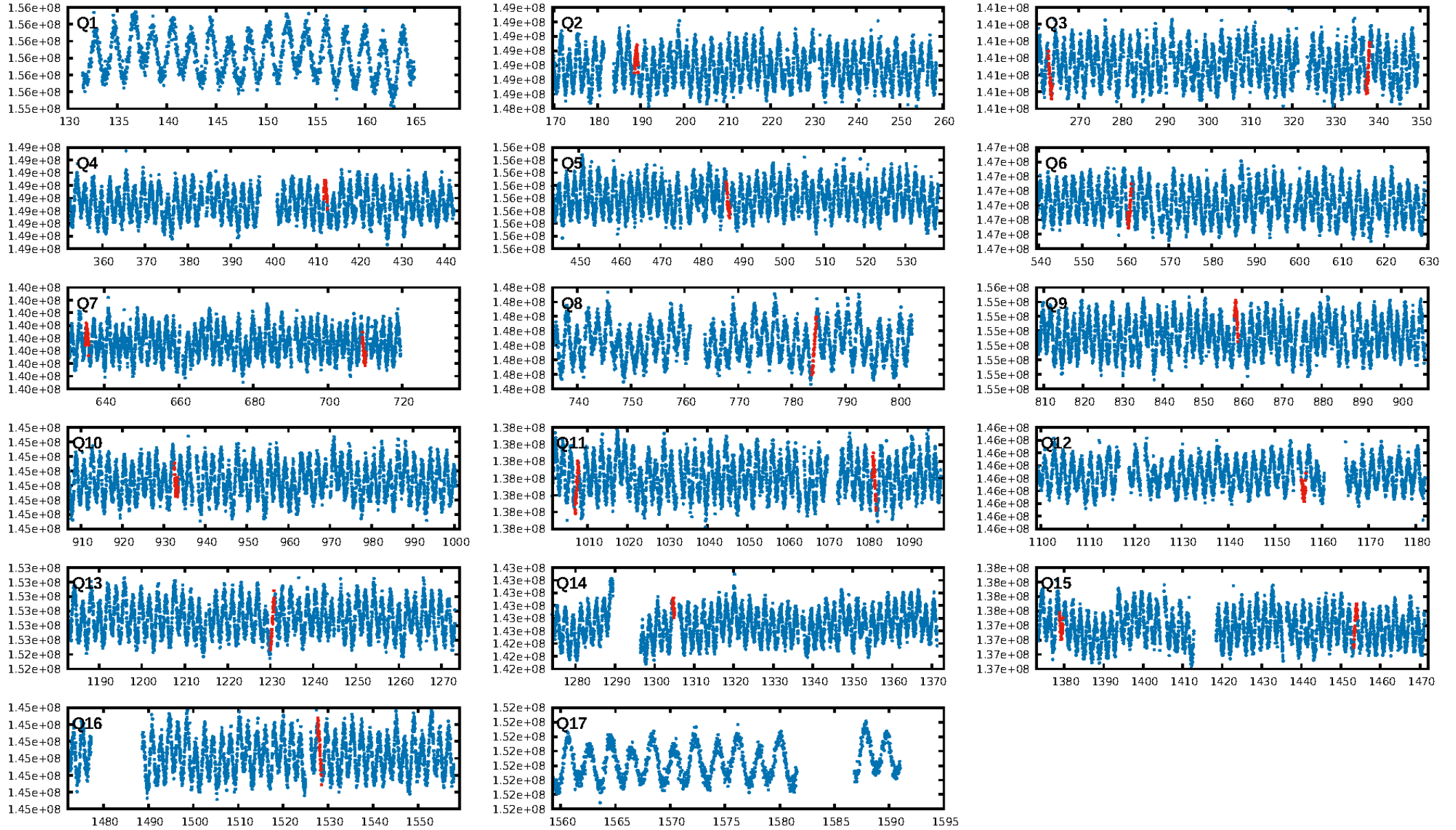
KIC: 6222079 Candidate: 5 of 6 Period: 74.396 d



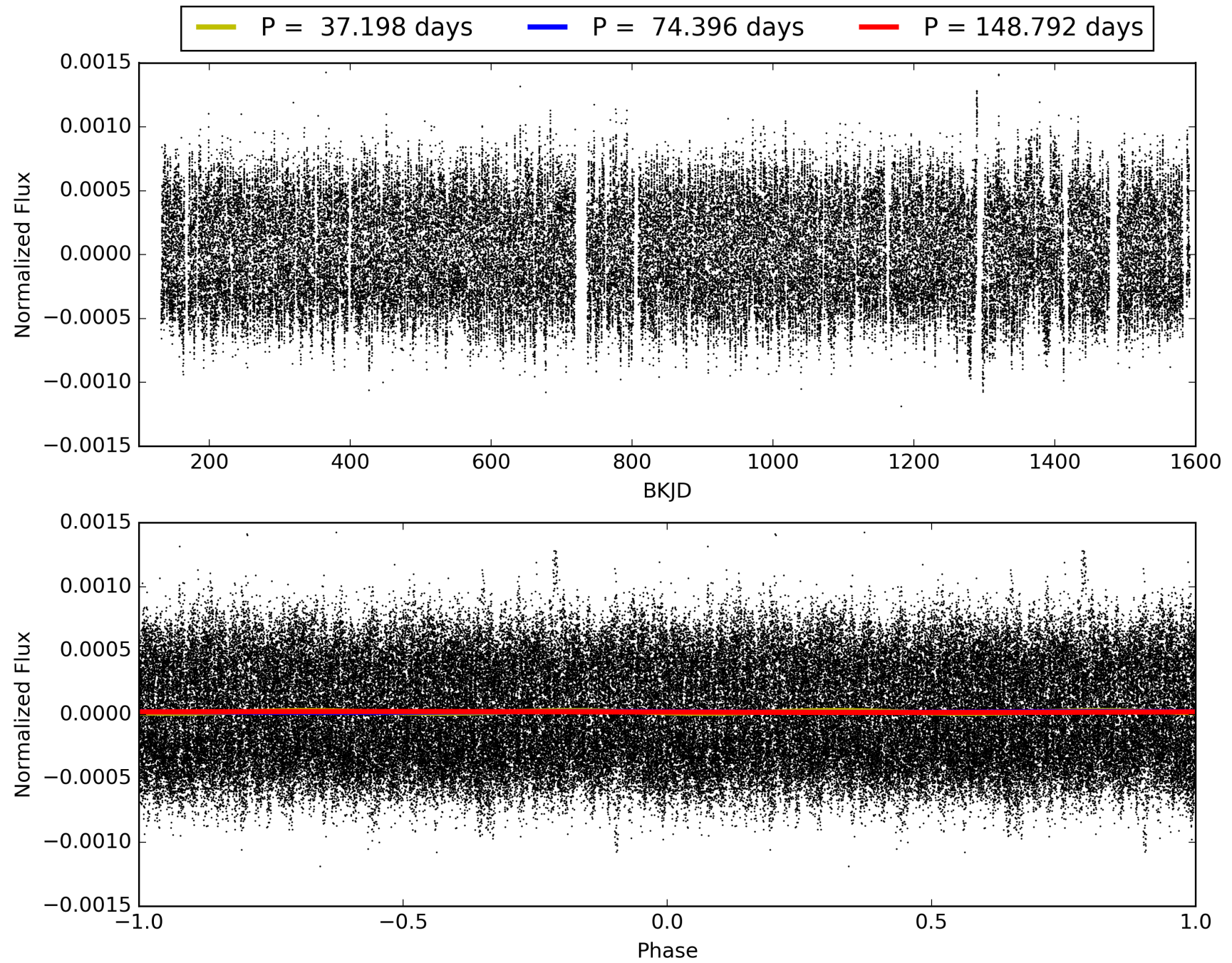
ShortPeriod-sig: 100.0% [56.05σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.50e-25
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: -0.512

Centroid-sig: 0.0%
Centroid-so: 2.919 arcsec [3.29σ]
OotOffset-rm: 0.634 arcsec [0.95σ]
KicOffset-rm: 0.768 arcsec [1.06σ]
OotOffset-st: 3/4/2/3 [12]
KicOffset-st: 3/4/2/3 [12]
DiffImageQuality-fgm: 0.42 [5/12]
DiffImageOverlap-fno: 0.00 [0/13]

TCE 006222079-05, PDC Light Curves

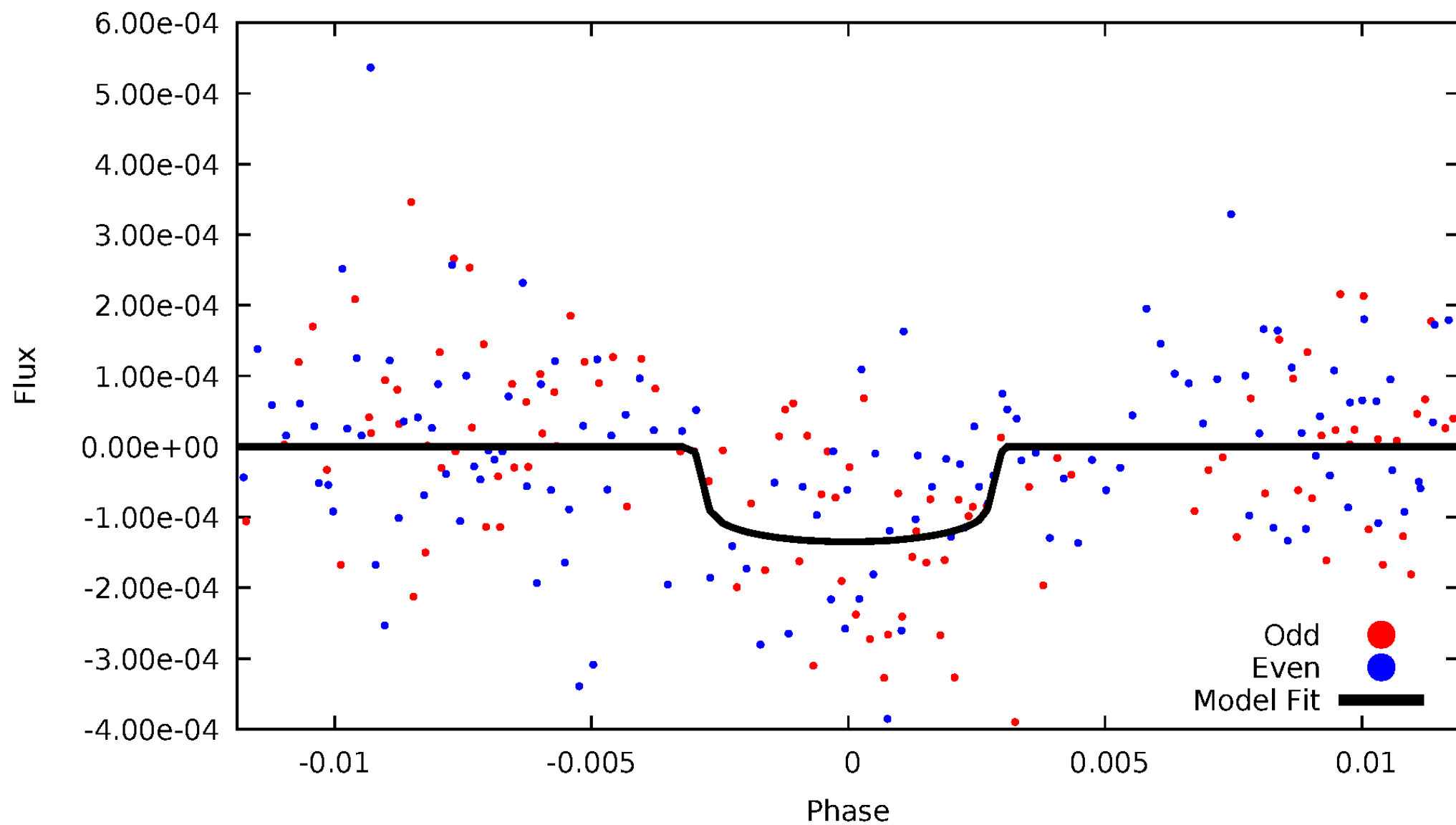


TCE 006222079-05



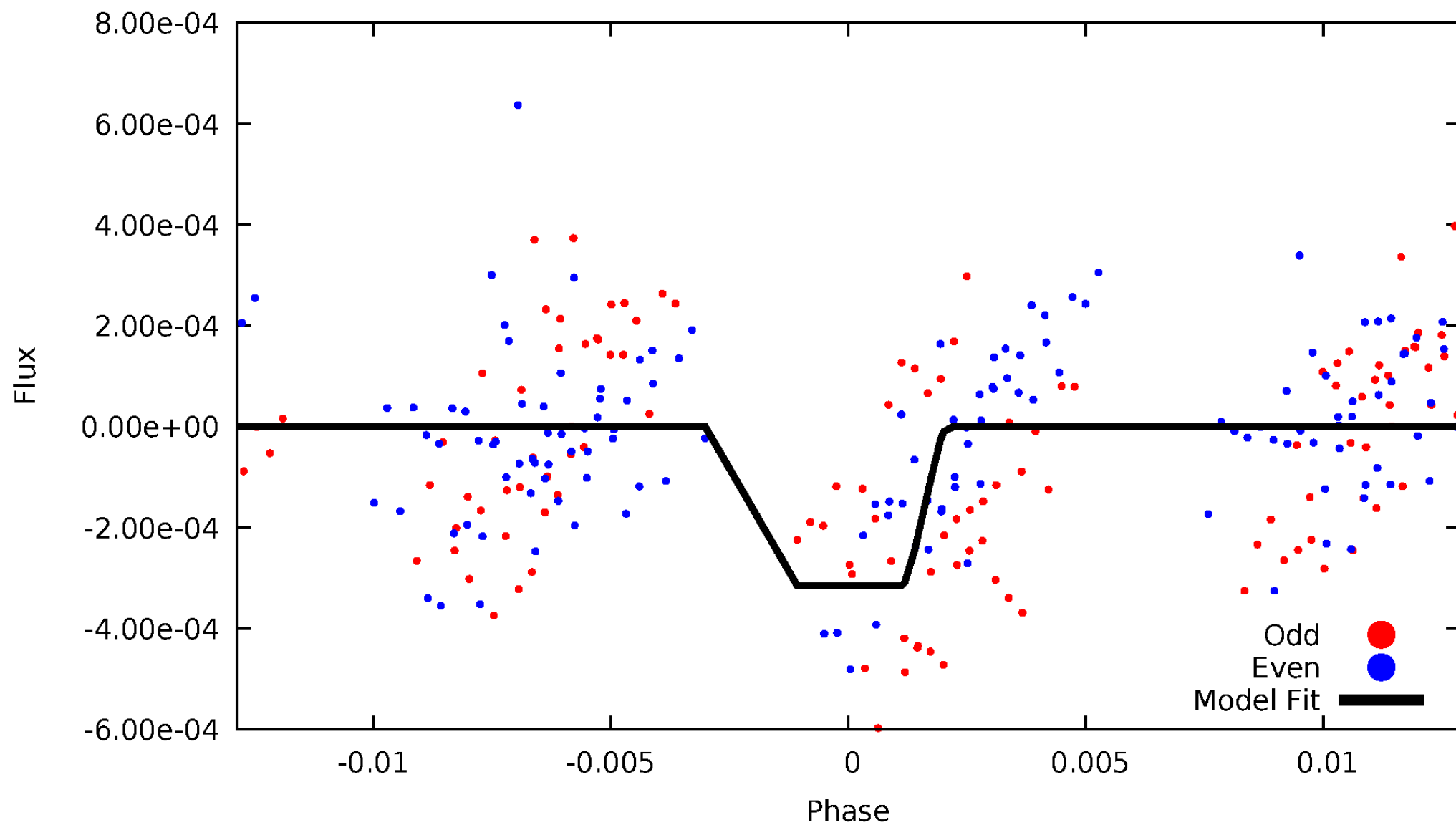
DV Odd/Even

TCE 006222079-05



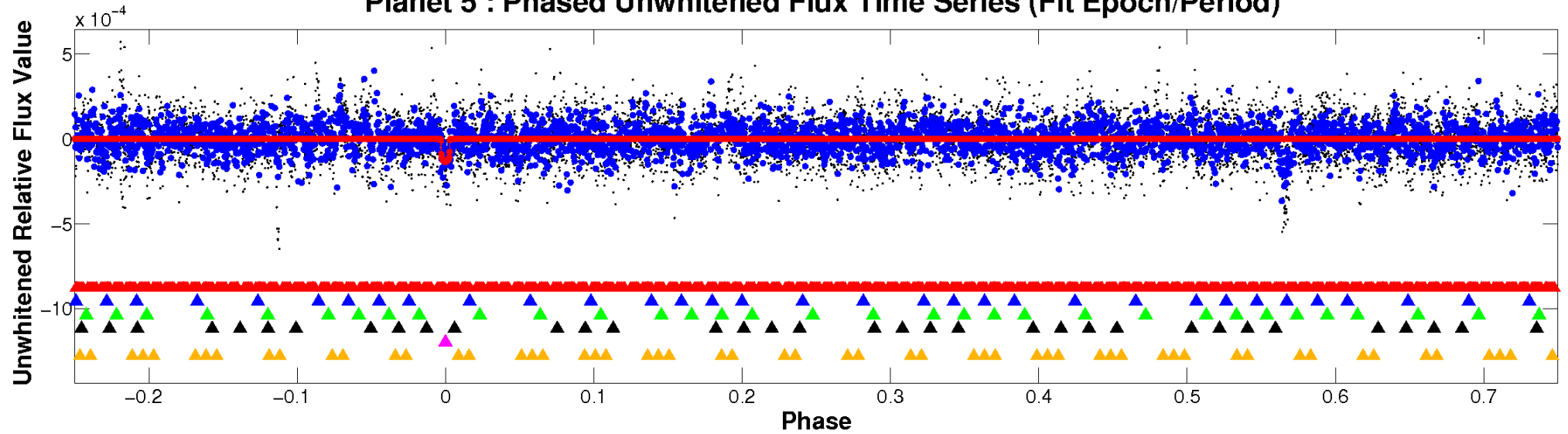
ALT Odd/Even

TCE 006222079-05

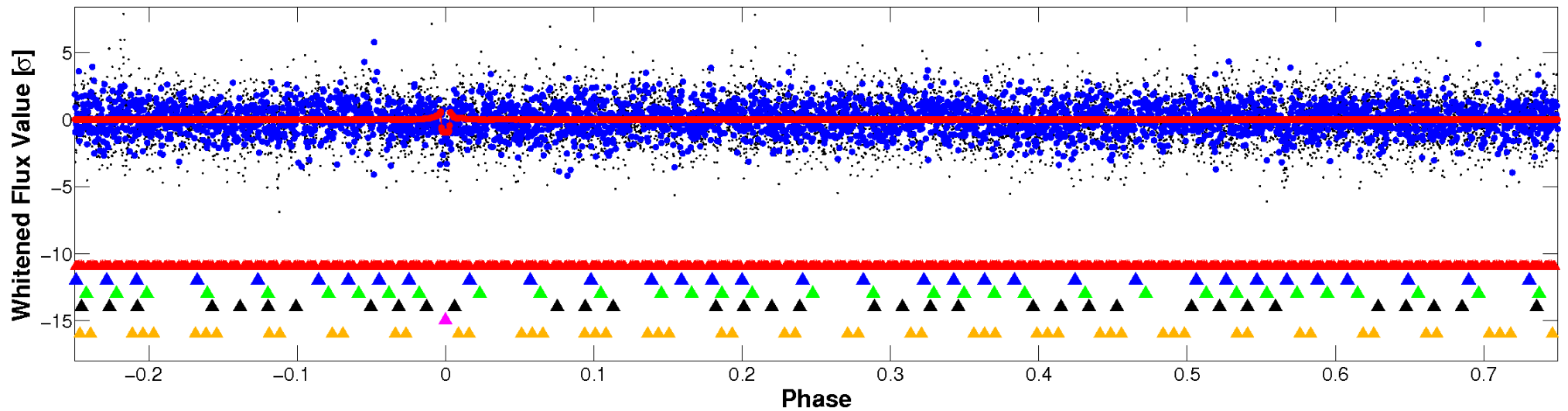


Non-Whitened Vs. Whitened Light Curve

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

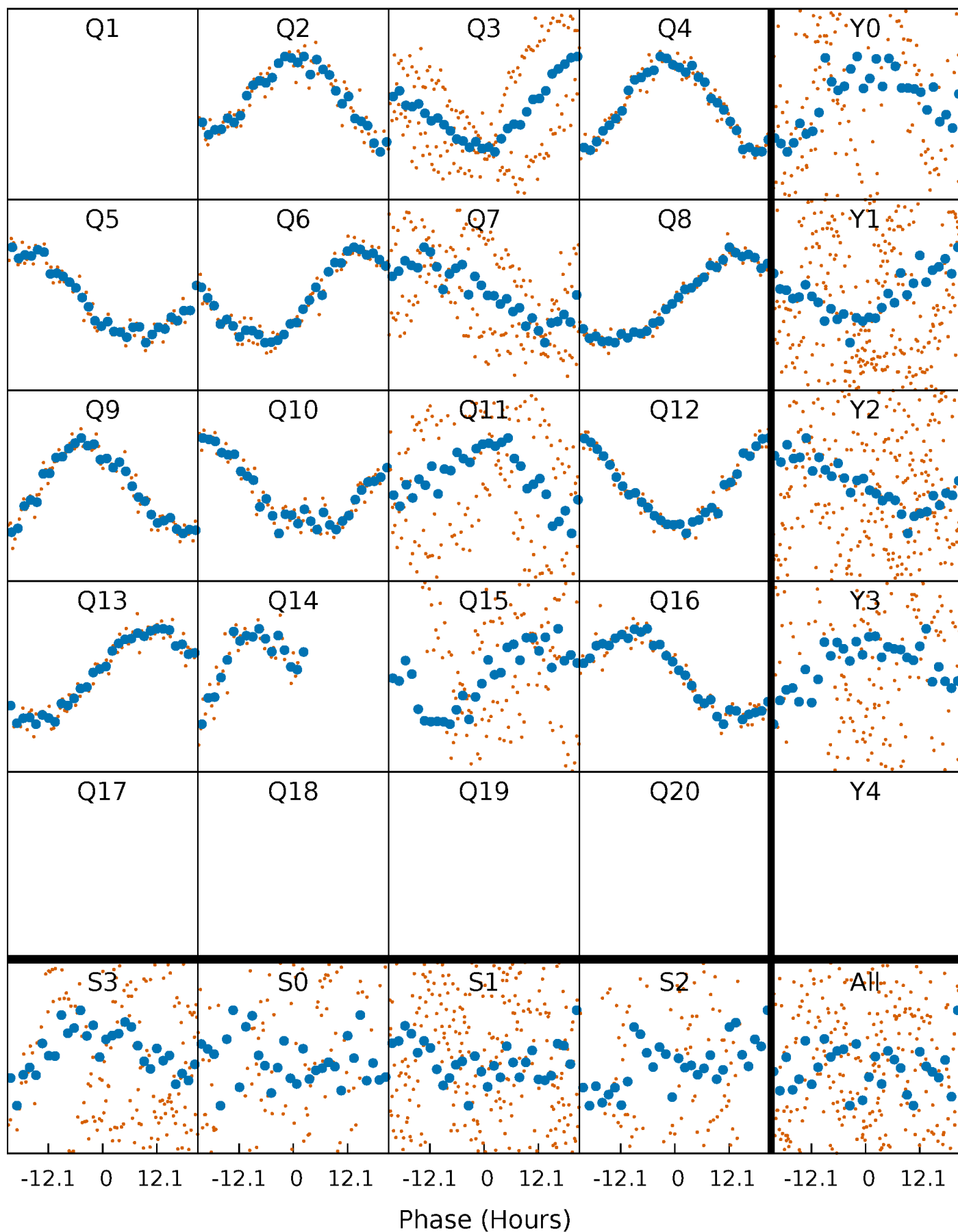


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



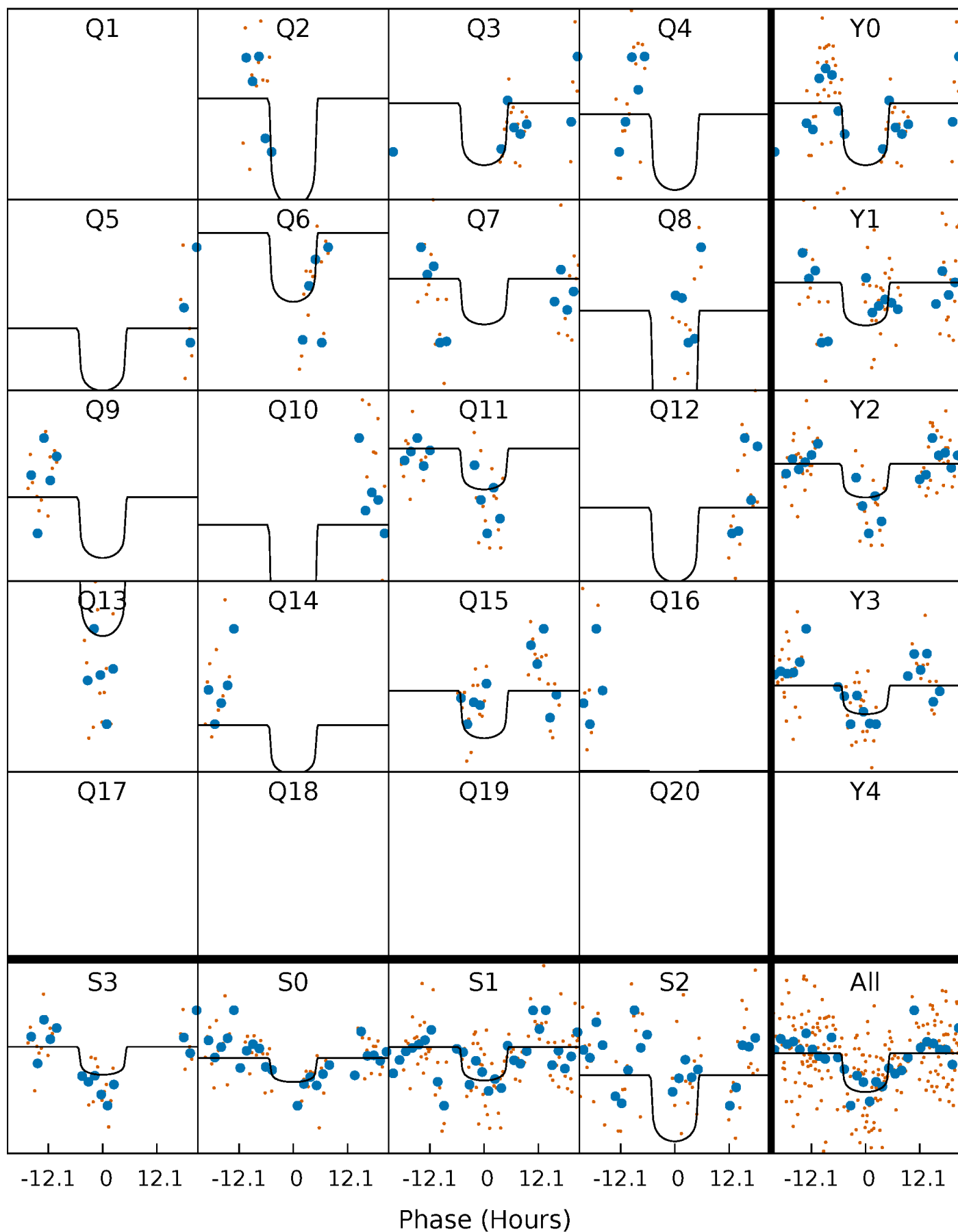
PDC Quarter-Phased Transit Curves

TCE 006222079-05 P= 74.396249 Days $T_0=188.969235$ (BKJD)



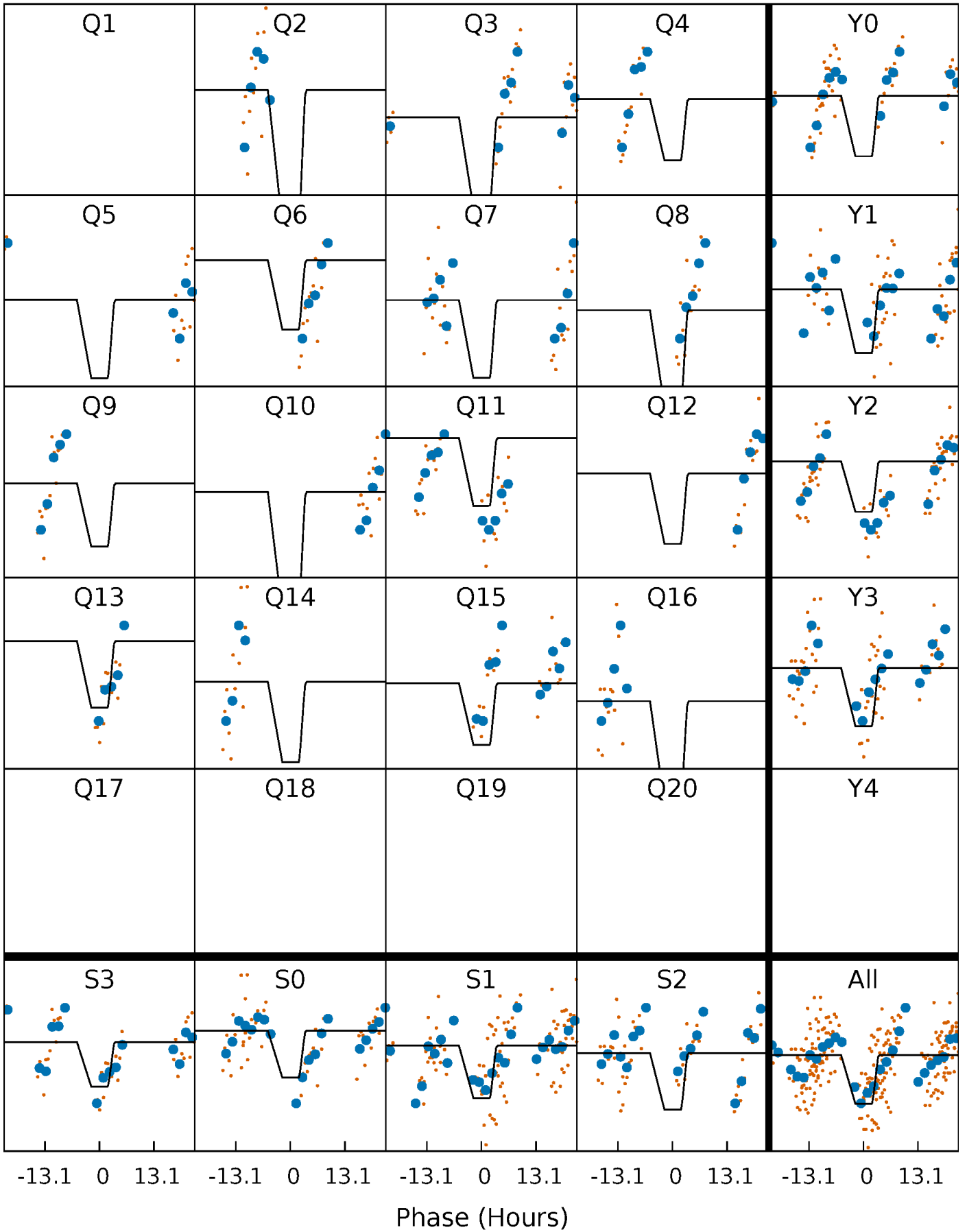
DV Quarter-Phased Transit Curves

TCE 006222079-05 P= 74.396249 Days $T_0=188.969235$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

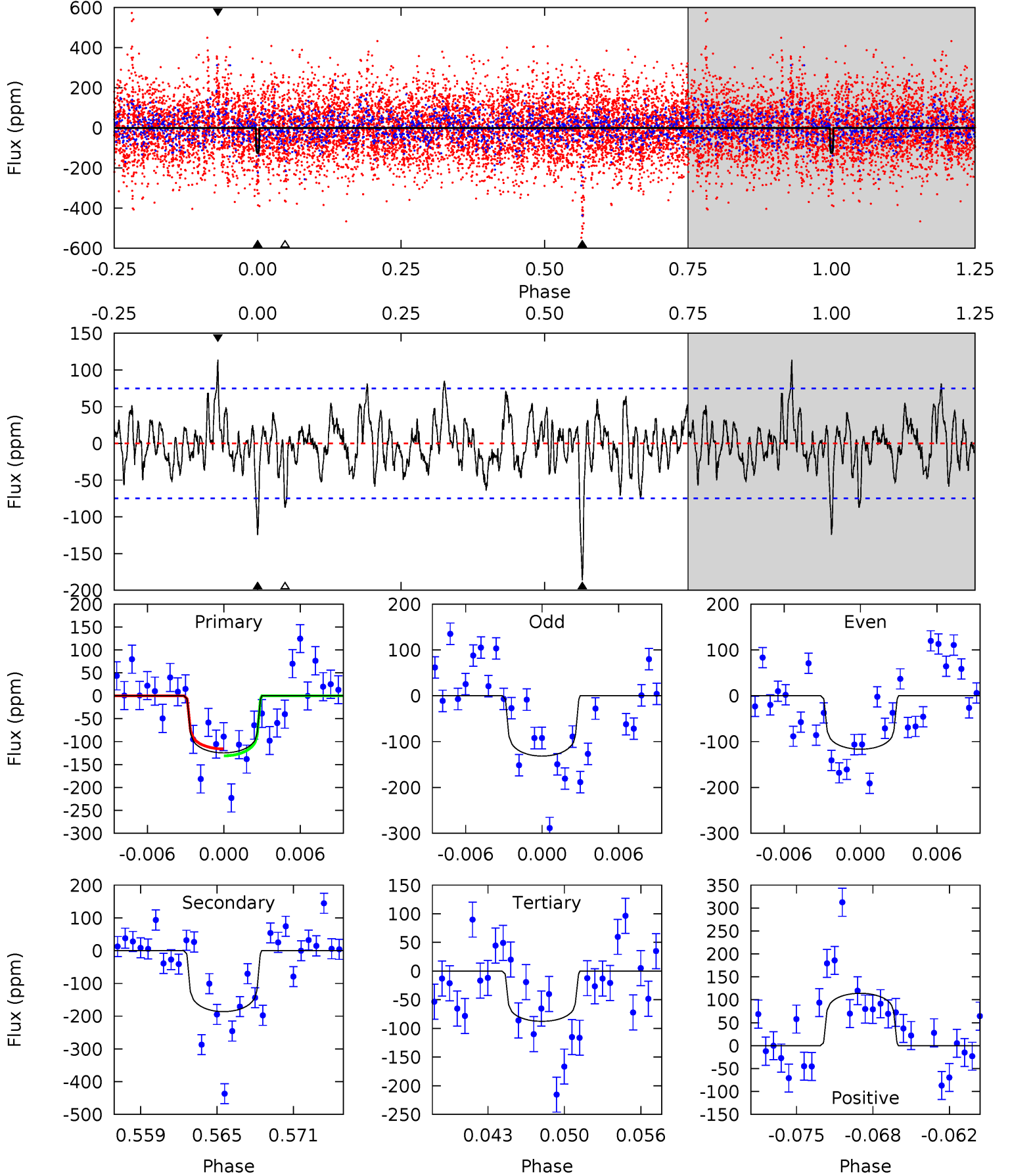
TCE 006222079-05 P= 74.385227 Days $T_0=188.993397$ (BKJD)



DV Model-Shift Uniqueness Test

006222079-05, P = 74.396249 Days, E = 114.572986 Days

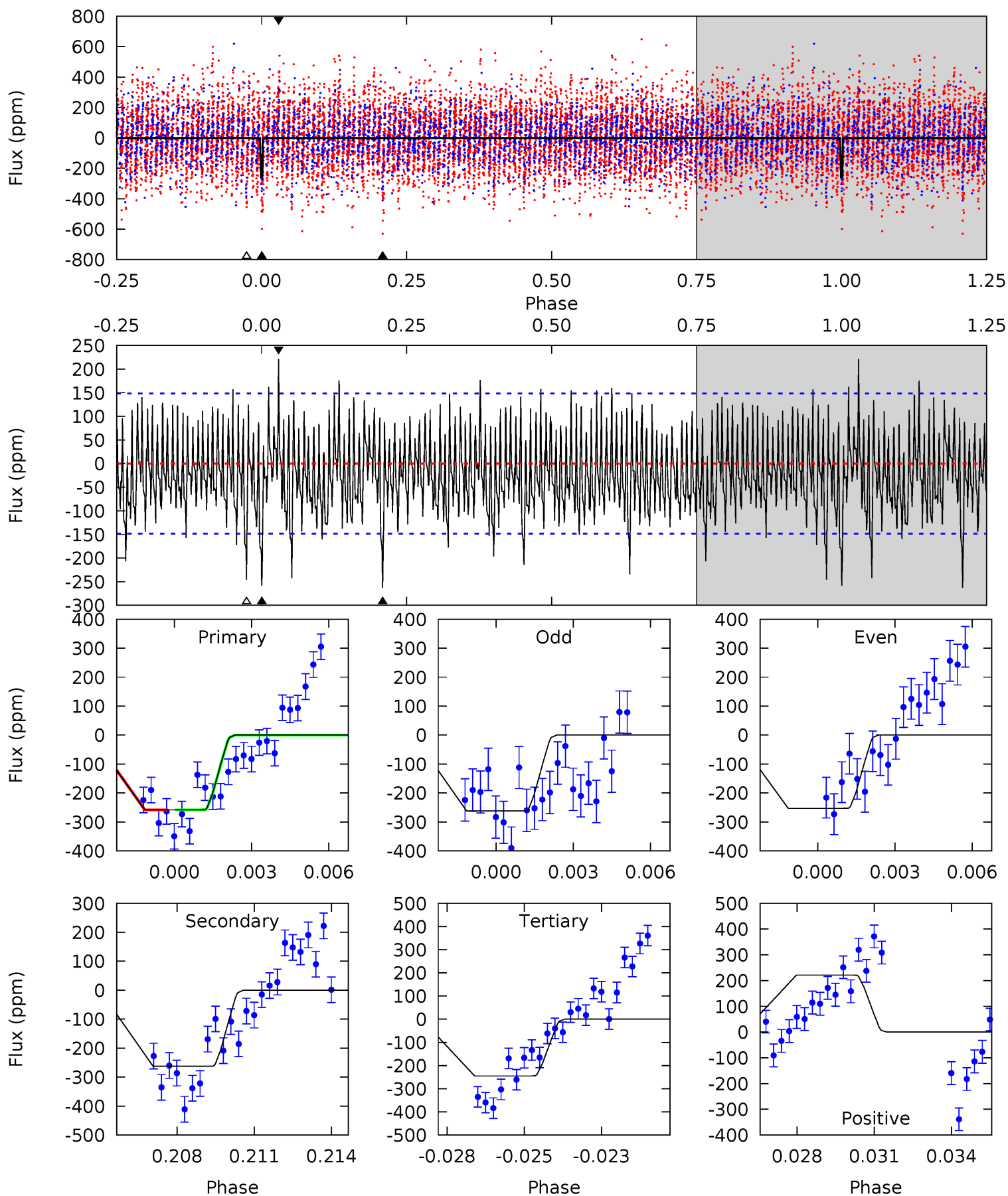
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.51	12.7	5.99	7.79	5.12	2.74	1.91	2.53	0.72	6.74	4.93	0.51	0.88	0.38	0.51



Alt Model-Shift Uniqueness Test

006222079-05, $P = 74.385227$ Days, $E = 114.608170$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.16	9.31	8.70	7.85	5.26	2.99	2.38	0.46	1.31	0.61	1.46	0.16	0.96	0.46	0.00



Stellar Parameters For KIC 006222079

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6631^{+162}_{-223}	$4.144^{+0.186}_{-0.124}$	$-0.360^{+0.250}_{-0.300}$	$1.531^{+0.302}_{-0.369}$	$1.195^{+0.158}_{-0.175}$	$0.469^{+0.479}_{-0.178}$
	+2%/-3%	+4%/-3%	+69%/-83%	+20%/-24%	+13%/-15%	+102%/-38%
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 006222079-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-186 ± 15	$1.93^{+0.70}_{-0.58}$	827^{+49}_{-56}	7156^{+1698}_{-967}	3702^{+3787}_{-1670}
Alt.	-262 ± 28	$2.91^{+0.67}_{-0.68}$	828^{+50}_{-58}	6298^{+892}_{-584}	2323^{+1637}_{-826}

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

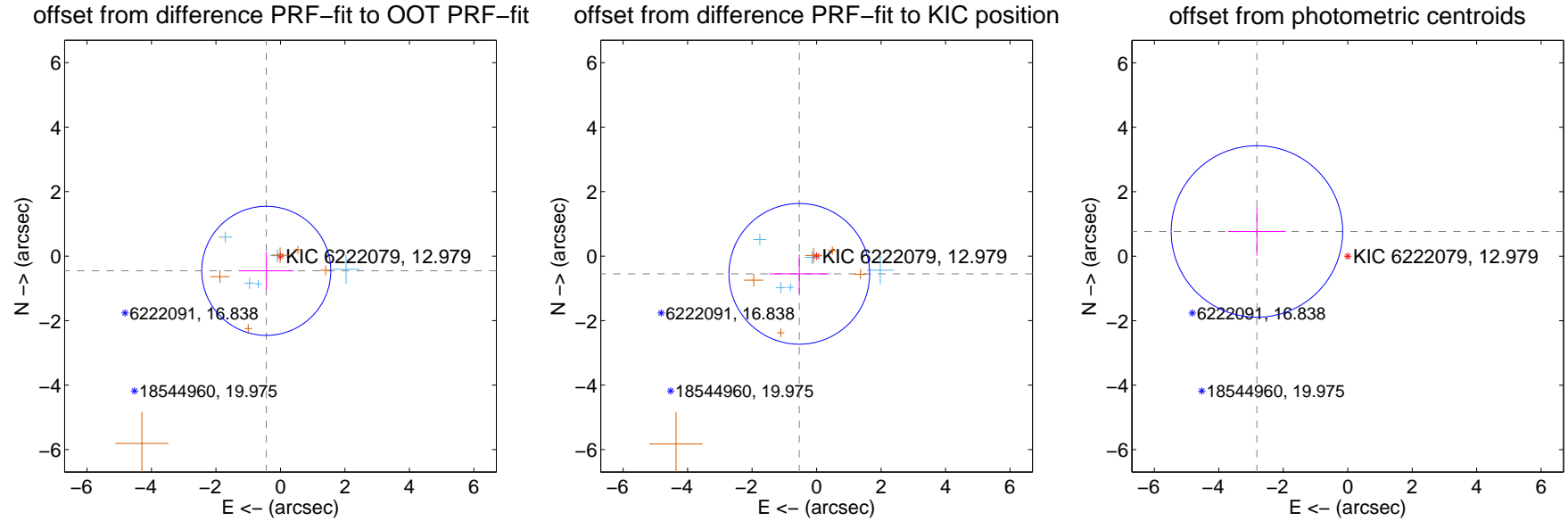
DV Centroid Data

Supplemental centroid analysis for 006222079-05. Kepler magnitude: 12.98. Transit SNR 7.71

There are 5 quarters with good PRF difference image offsets

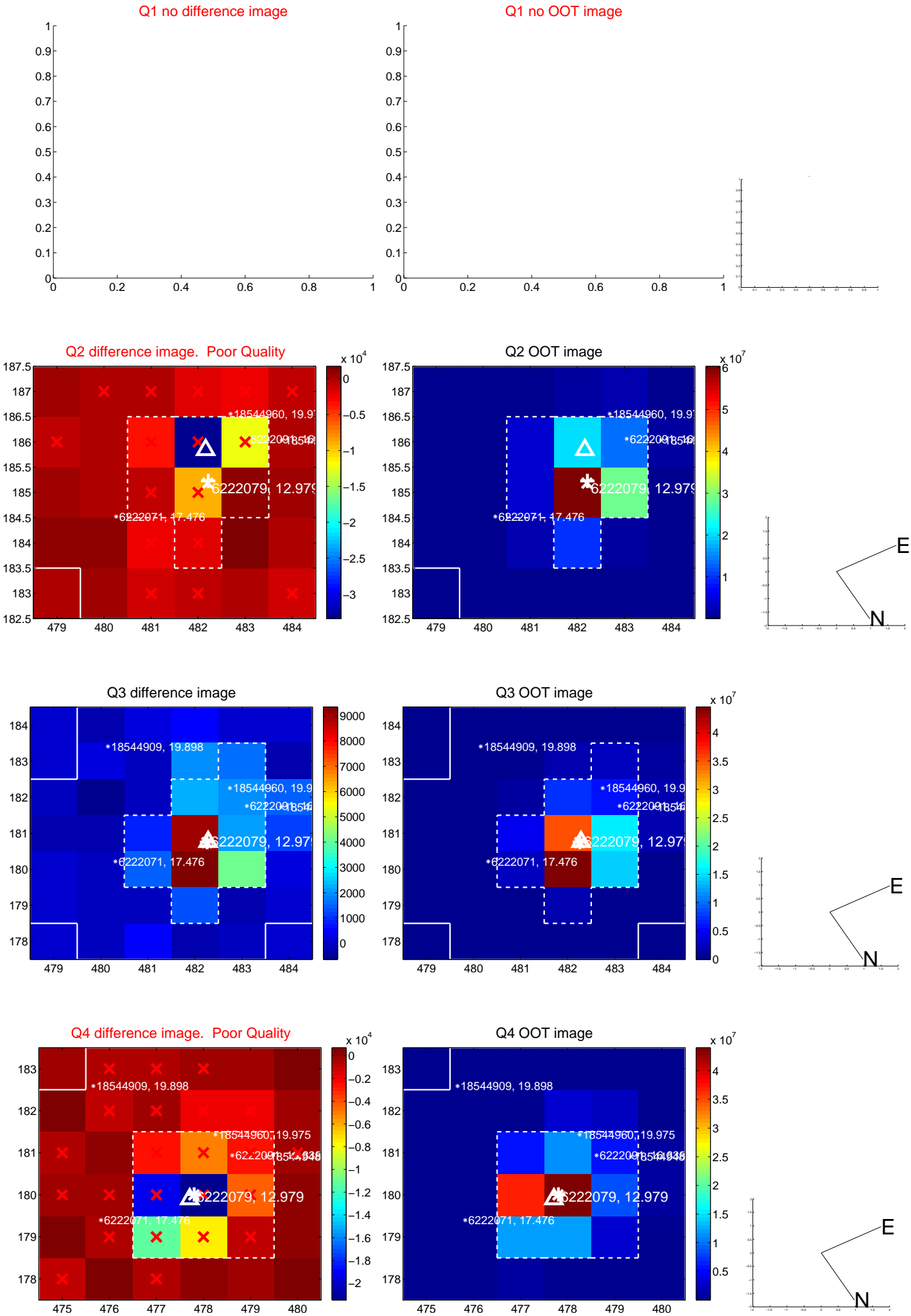
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.634 ± 0.667	0.95	0.440 ± 0.850	-0.456 ± 0.577
PRF-fit source offset from KIC position	0.768 ± 0.727	1.06	0.536 ± 0.929	-0.550 ± 0.608
photometric centroid source offset	2.92 ± 0.89	3.29	2.82 ± 0.90	0.77 ± 0.75

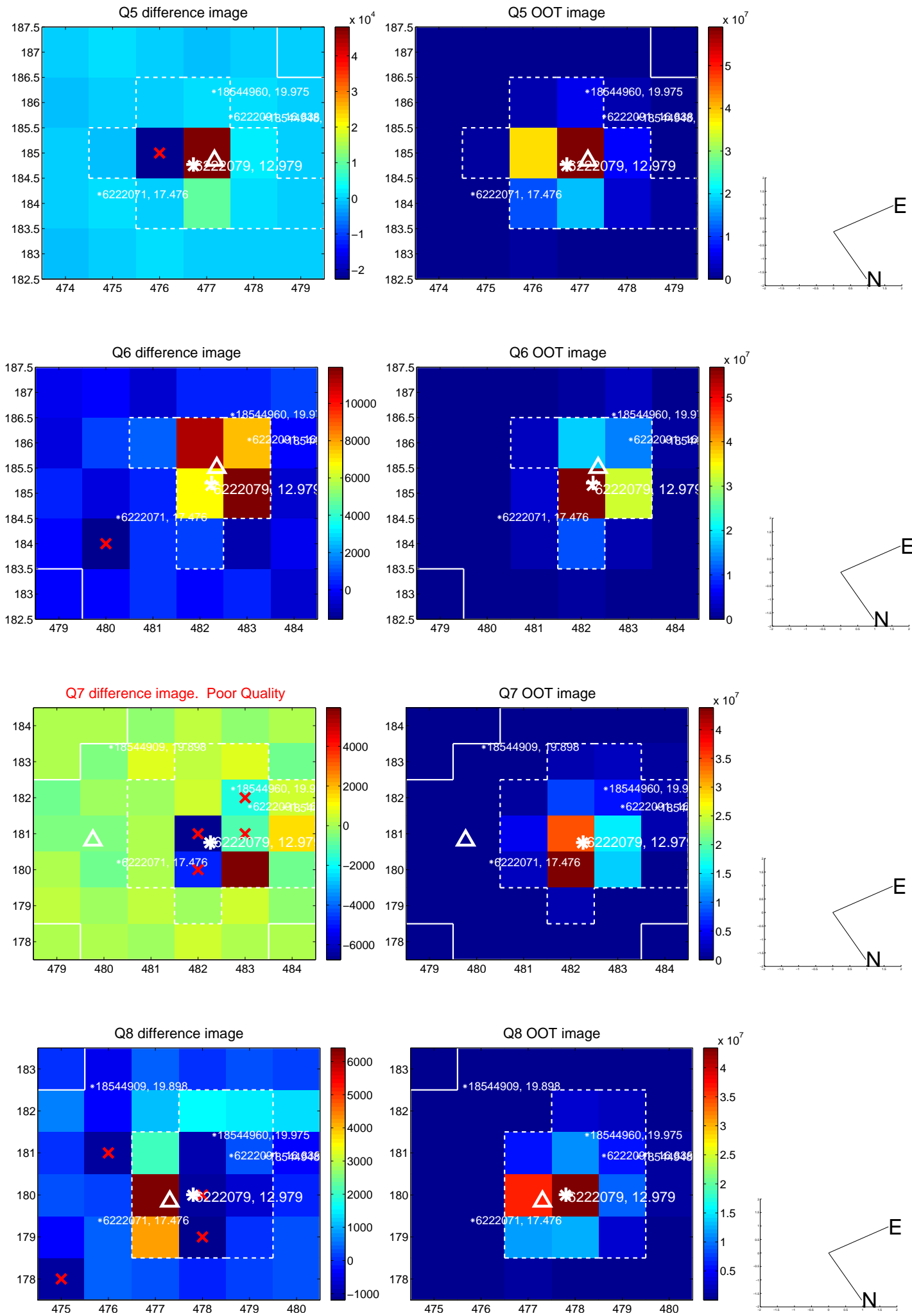


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

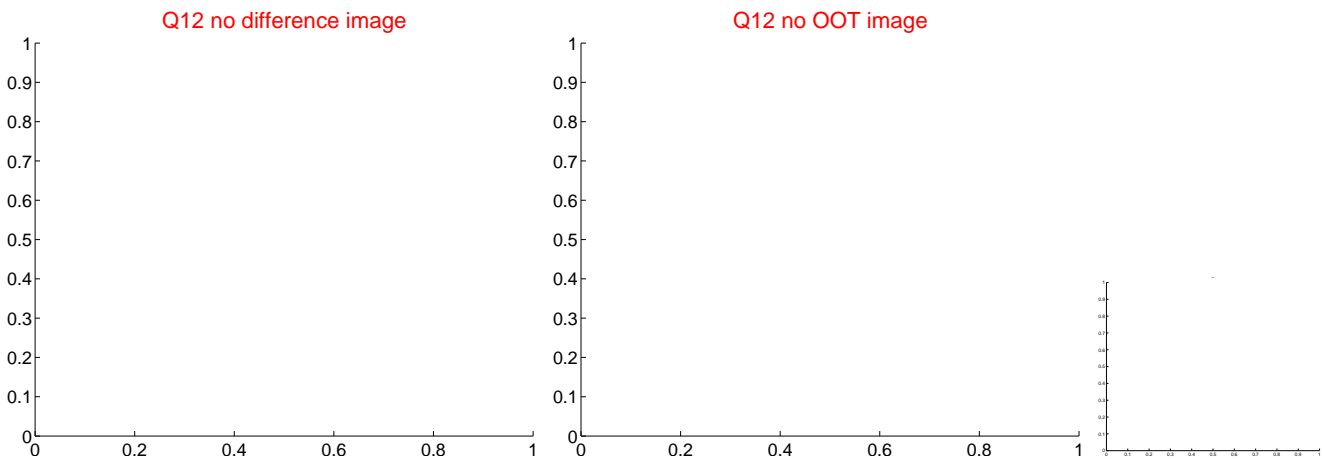
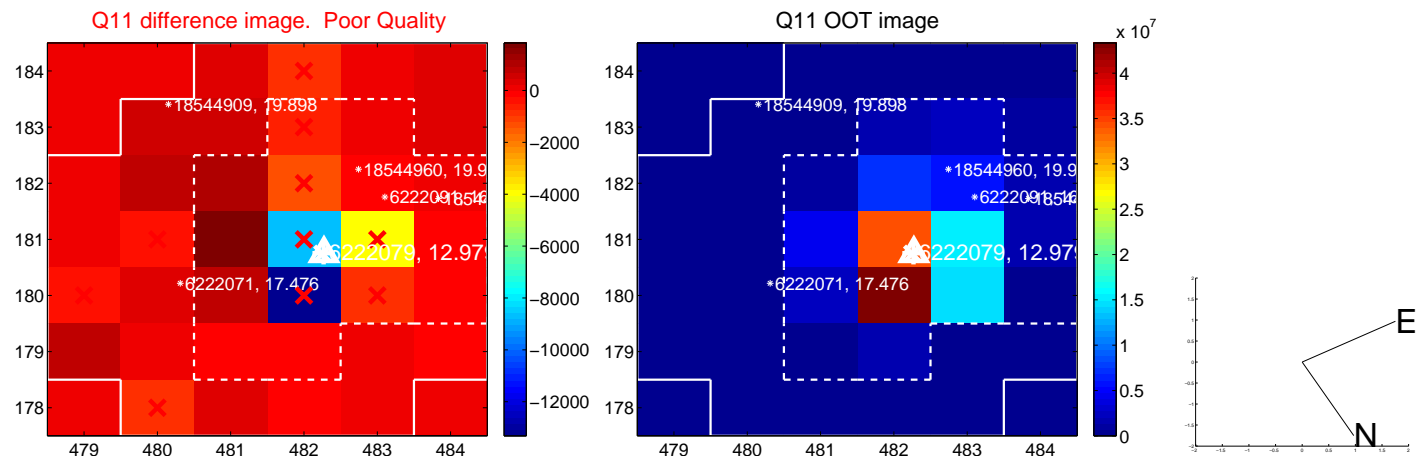
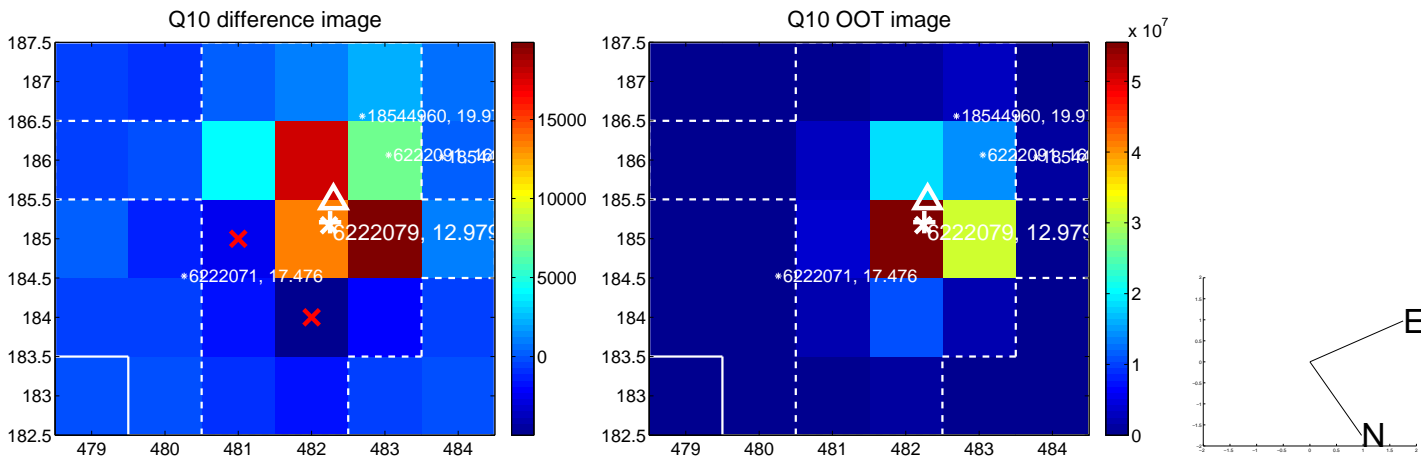
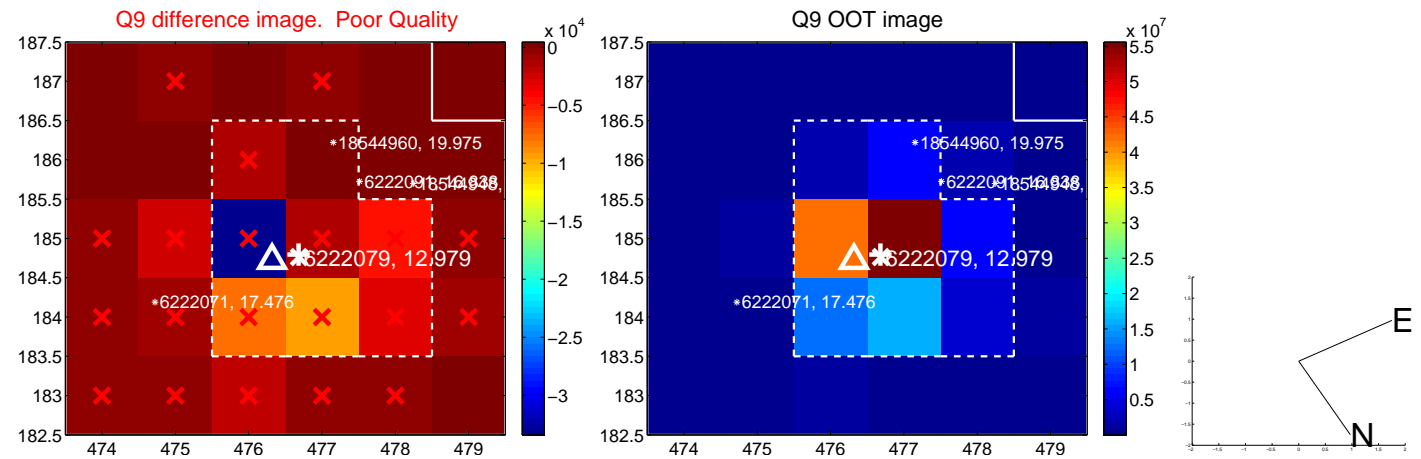
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



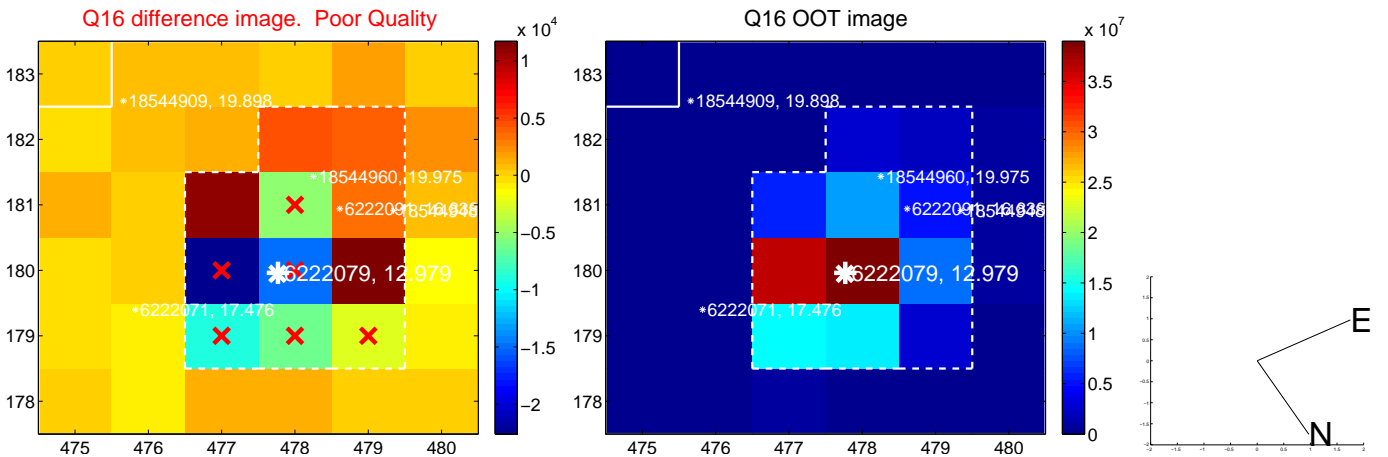
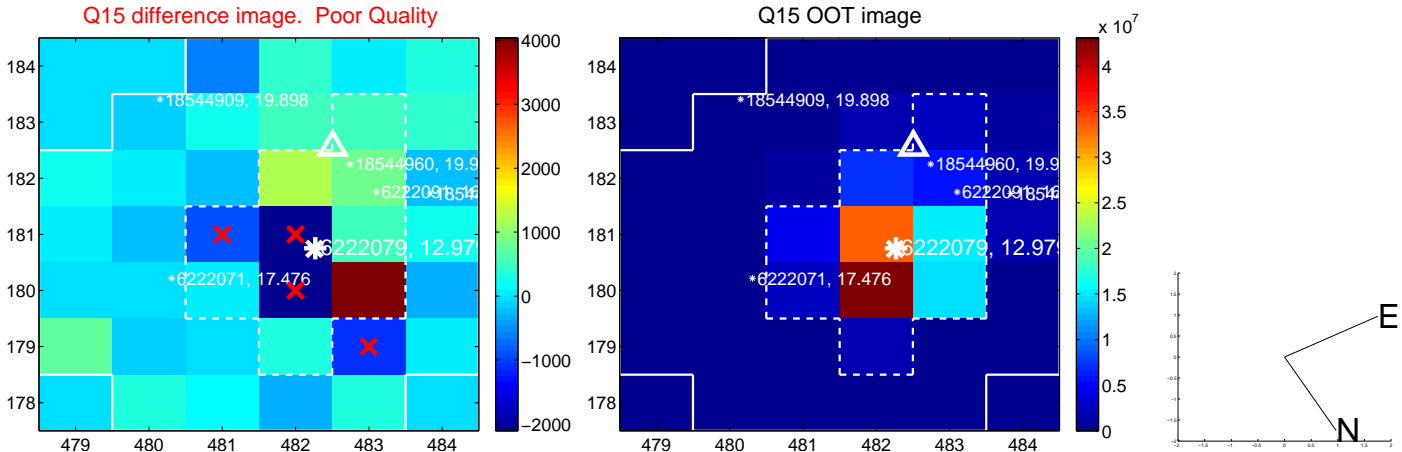
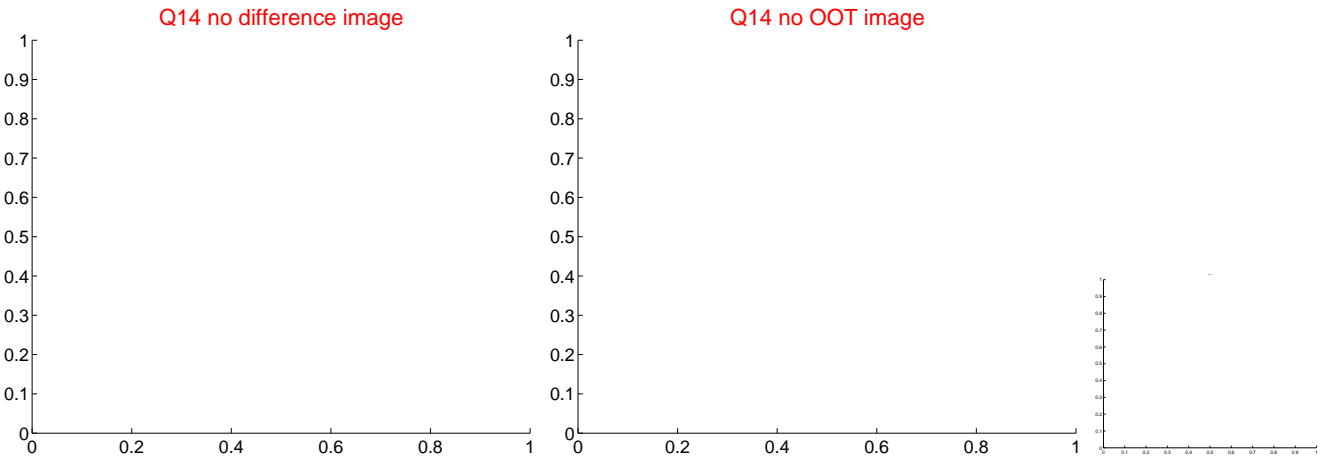
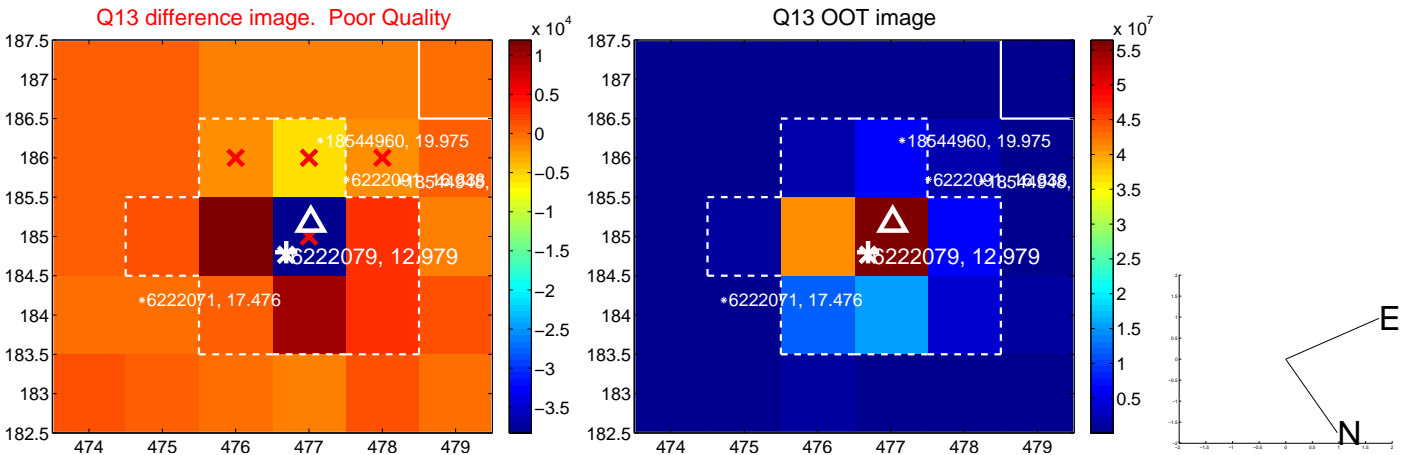
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



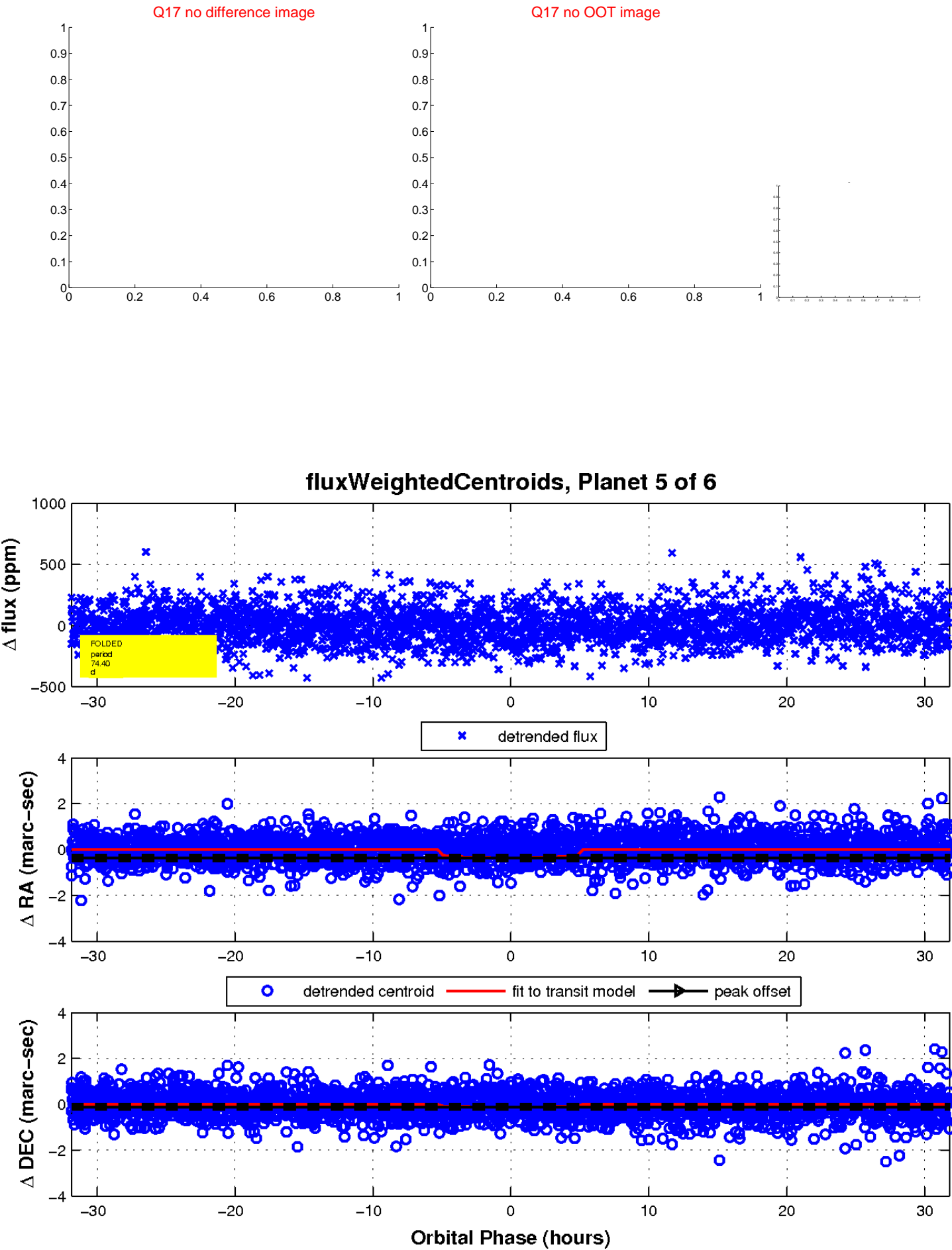
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

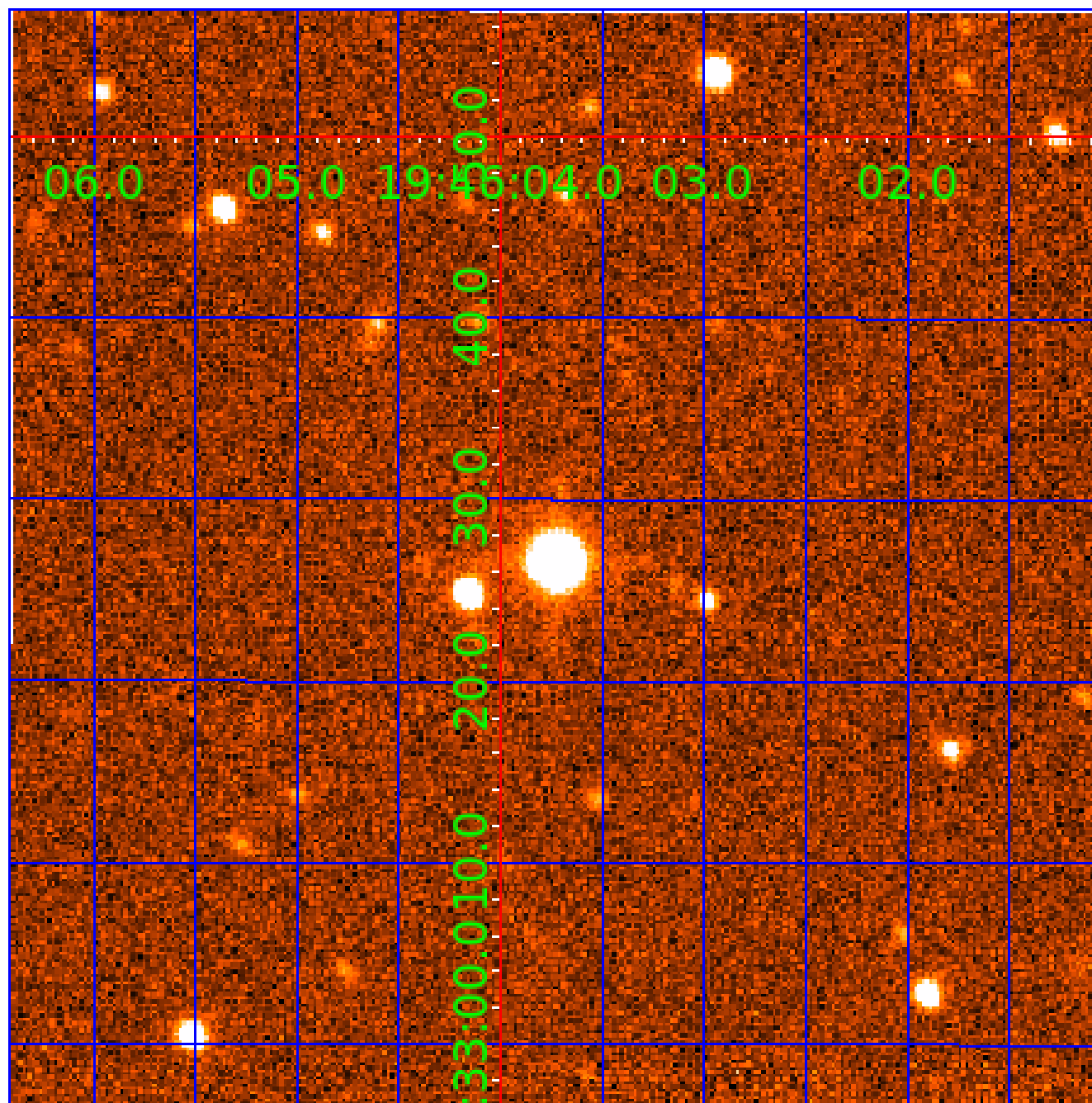


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006222079

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})
006222079-01	OBS	No	1.940112	133.342554	19.2	13.050	13.7	10.5	1.53	6631	0.68	3897.25
006222079-02	OBS	No	44.029567	158.315933	70.3	5.803	11.2	3.9	1.53	6631	1.49	60.66
006222079-03	OBS	No	44.030528	158.803419	282.1	7.500	12.2	-1.0	1.53	6631	2.59	60.65
006222079-04	OBS	No	41.175485	165.562220	253.7	1.495	8.7	9.0	1.53	6631	2.49	66.33
006222079-05	OBS	No	74.396249	188.969235	134.6	10.620	10.7	7.7	1.53	6631	2.00	30.14
006222079-06	OBS	No	25.853661	142.148072	105.2	6.549	7.4	9.9	1.53	6631	1.76	123.36

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006222079-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
006222079-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
006222079-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_NOFITS—HALO_GHOST
006222079-04	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
006222079-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
006222079-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_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.

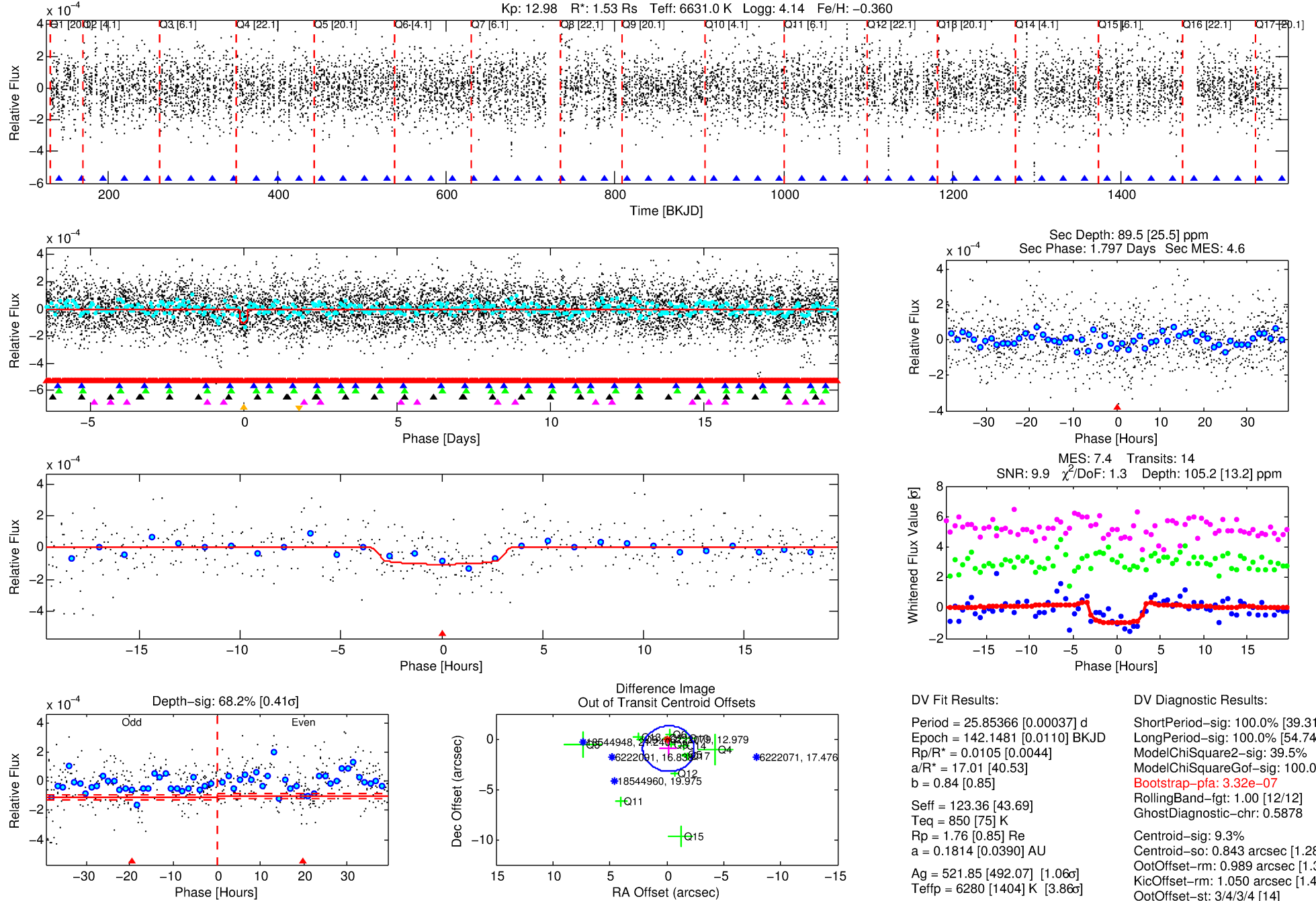
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006222079-06

No Significant Match Found

DV One-Page Summary

KIC: 6222079 Candidate: 6 of 6 Period: 25.854 d



DV Fit Results:

Period = 25.85366 [0.00037] d
Epoch = 142.1481 [0.0110] BKJD
Rp/R* = 0.0105 [0.0044]
a/R* = 17.01 [40.53]
b = 0.84 [0.85]
Seff = 123.36 [43.69]
Teq = 850 [75] K
Rp = 1.76 [0.85] Re
a = 0.1814 [0.0390] AU
Ag = 521.85 [492.07] [1.06 σ]
Teffp = 6280 [1404] K [3.86 σ]

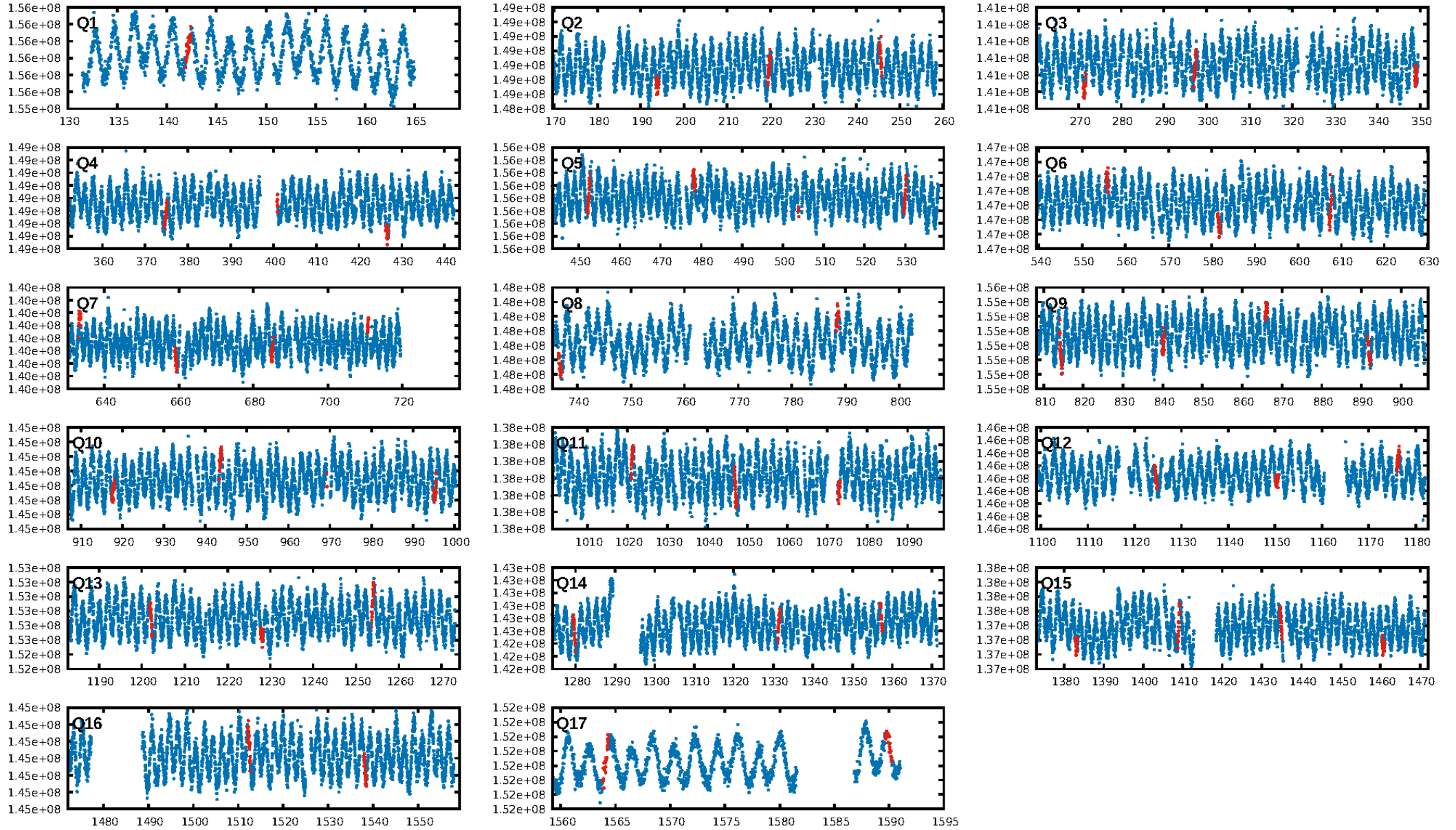
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [39.31 σ]
LongPeriod-sig: 100.0% [54.74 σ]
ModelChiSquare2-sig: 39.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.32e-07
RollingBand-fgt: 1.00 [12/12]
GhostDiagnostic-chr: 0.5878
Centroid-sig: 9.3%
Centroid-so: 0.843 arcsec [1.28 σ]
OotOffset-rm: 0.989 arcsec [1.31 σ]
KicOffset-rm: 1.050 arcsec [1.46 σ]
OotOffset-st: 3/4/3/4 [14]
KicOffset-st: 3/4/3/4 [14]
DiffImageQuality-fgm: 0.43 [6/14]
DiffImageOverlap-fno: 0.59 [10/17]

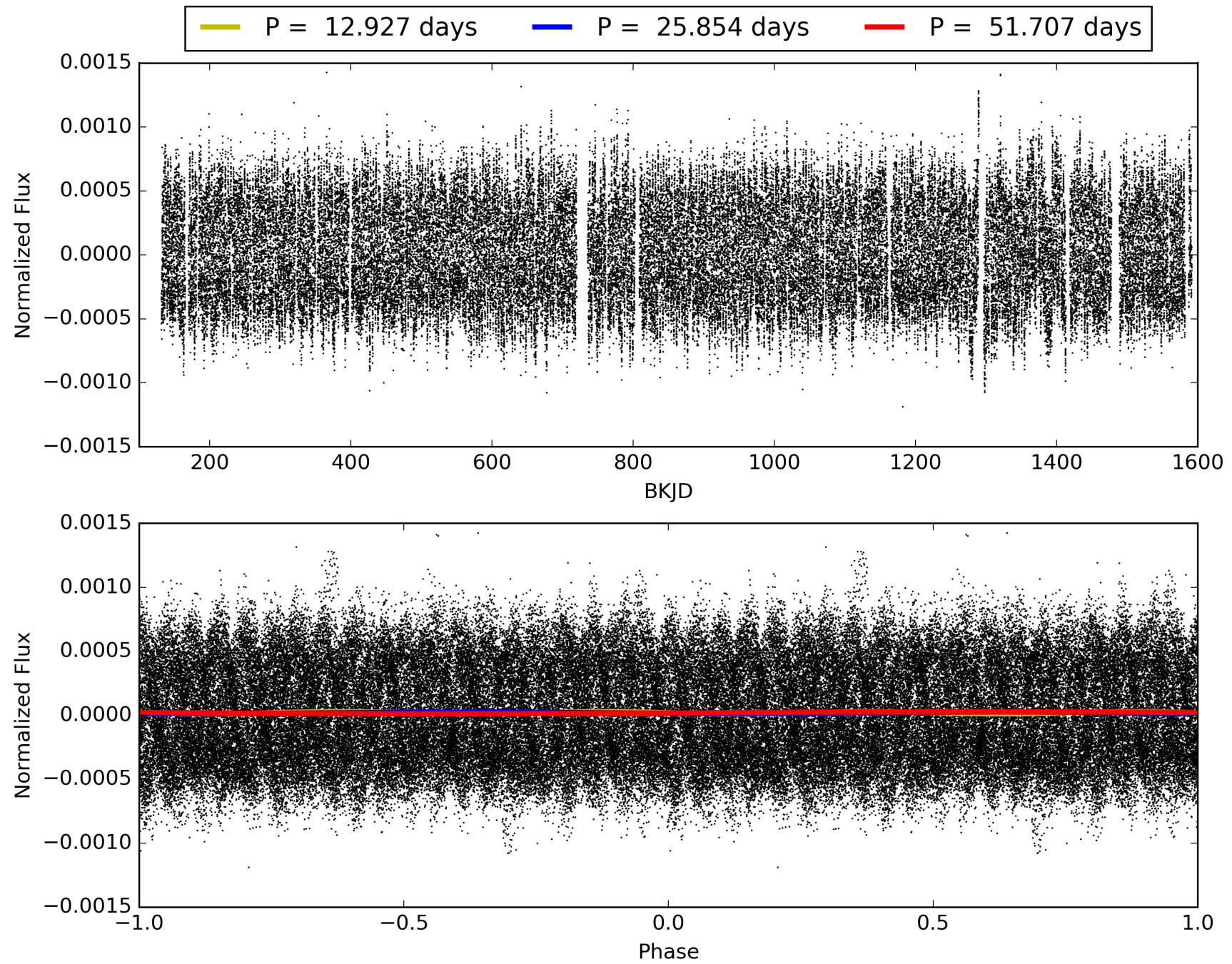
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:22:54 Z

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

TCE 006222079-06, PDC Light Curves

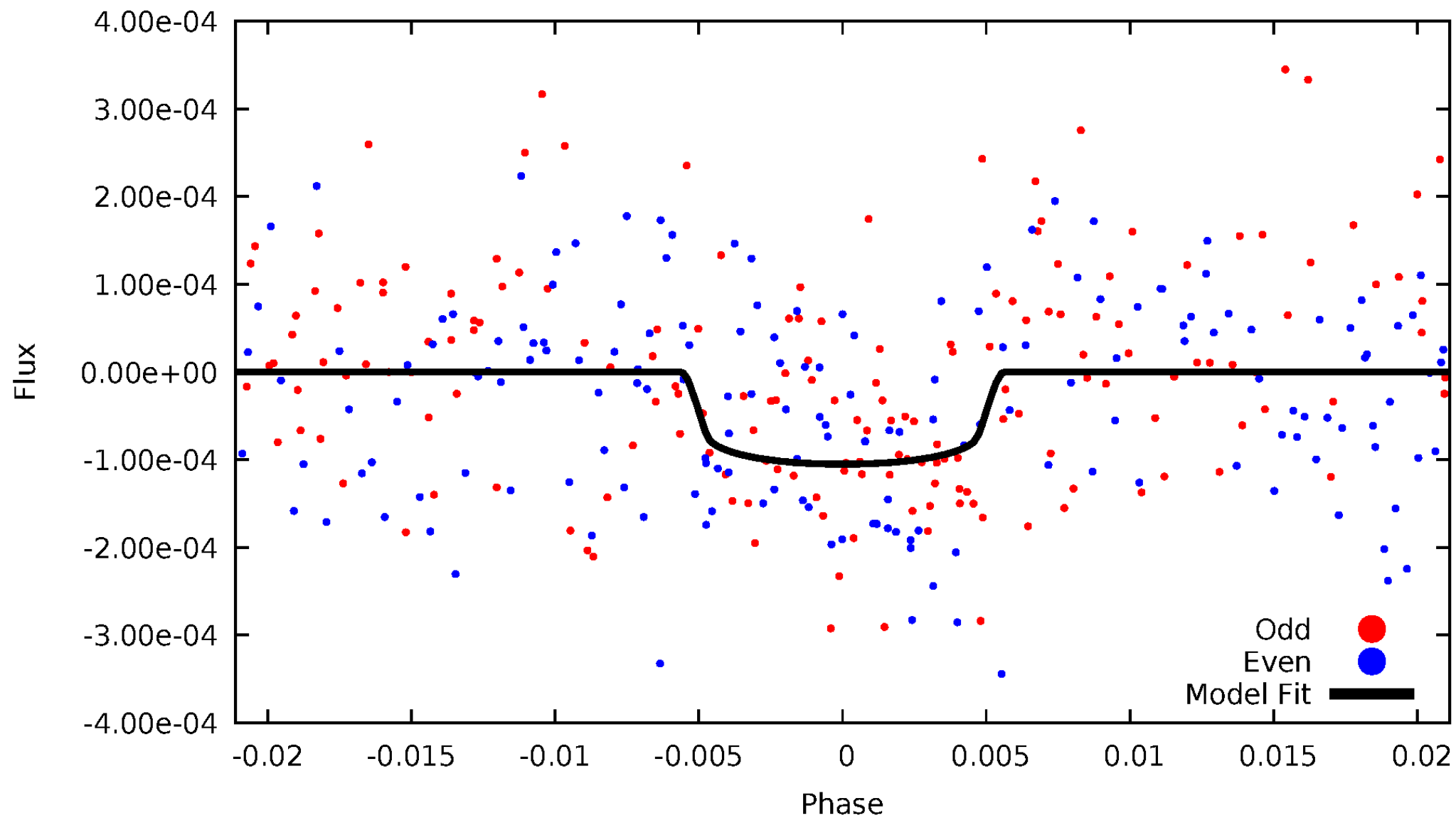


TCE 006222079-06



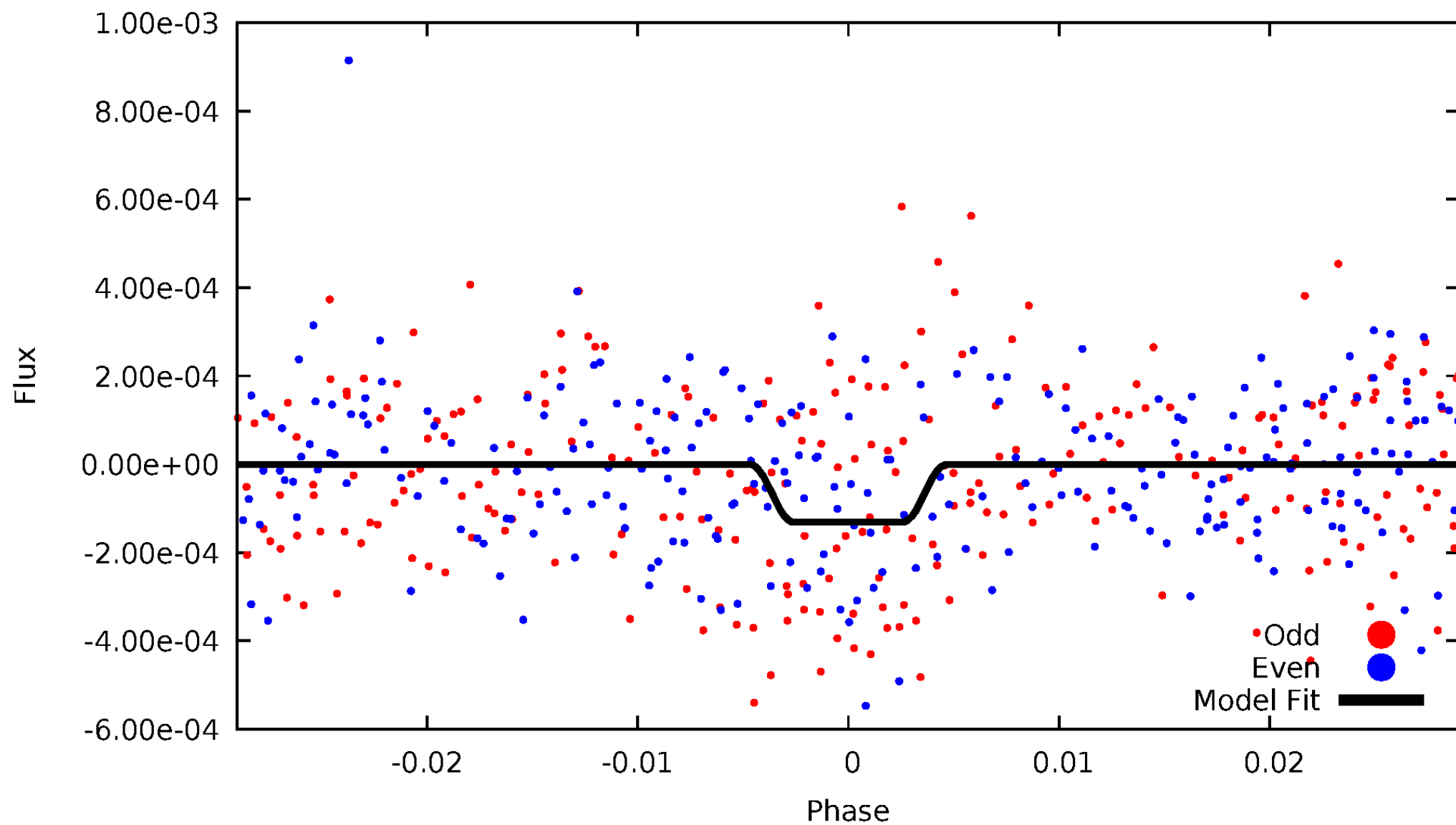
DV Odd/Even

TCE 006222079-06



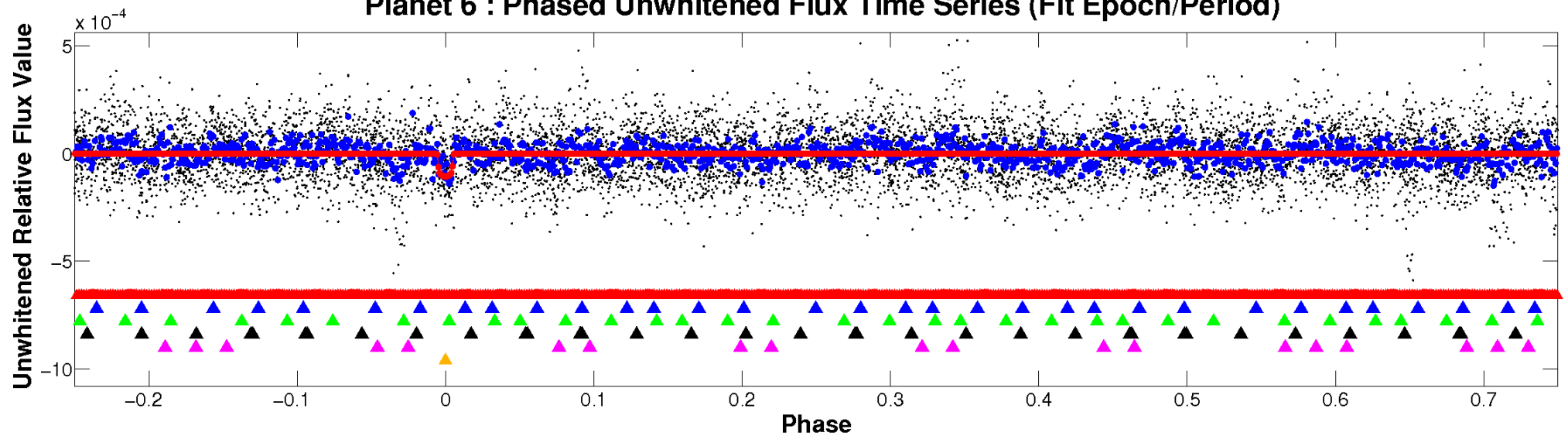
ALT Odd/Even

TCE 006222079-06

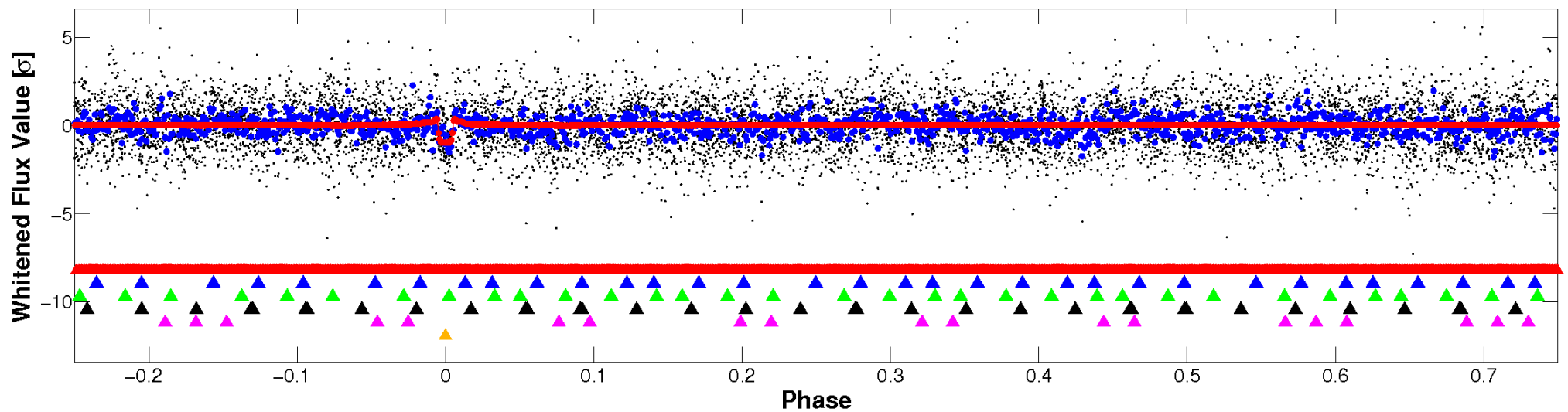


Non-Whitened Vs. Whitened Light Curve

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

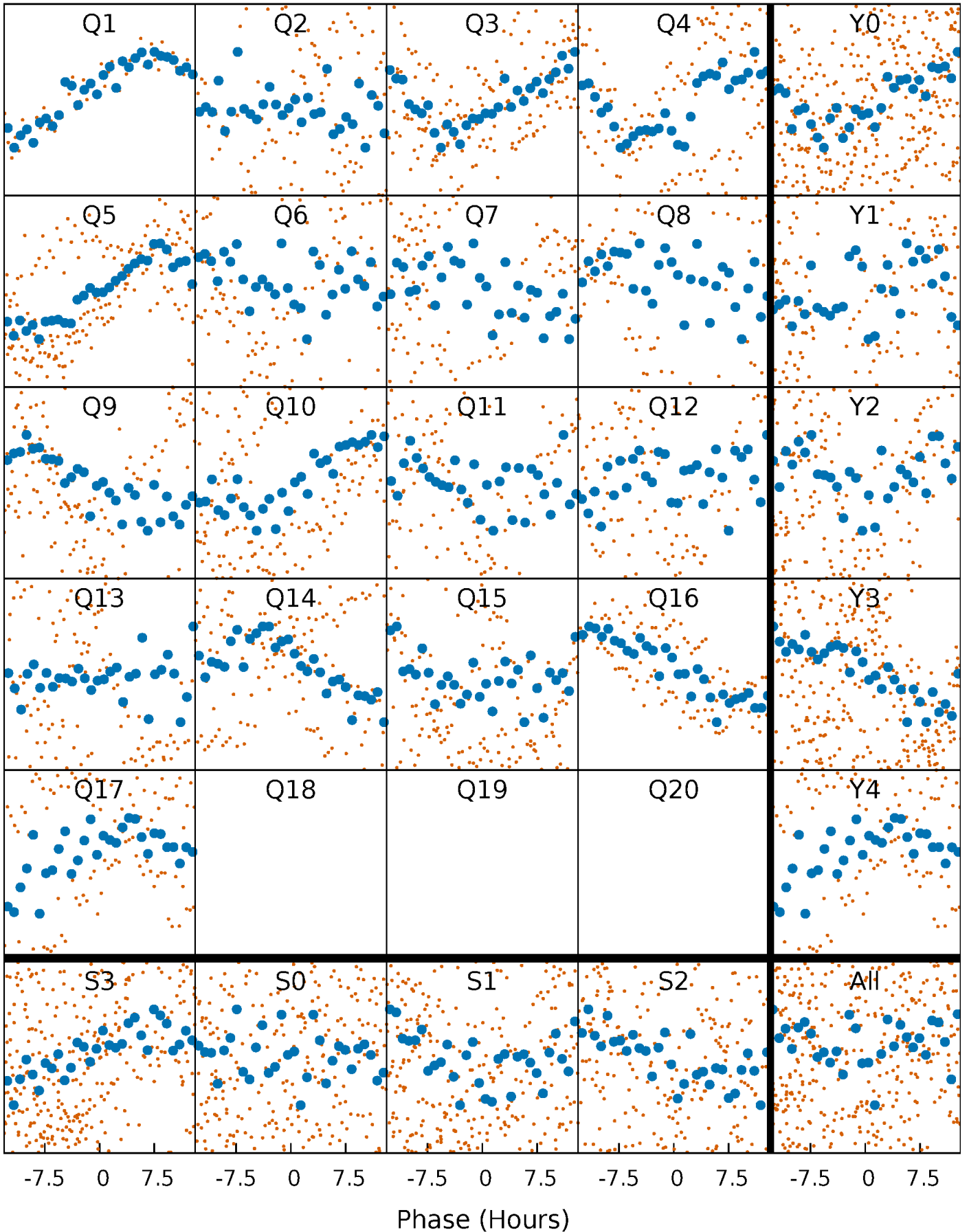


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



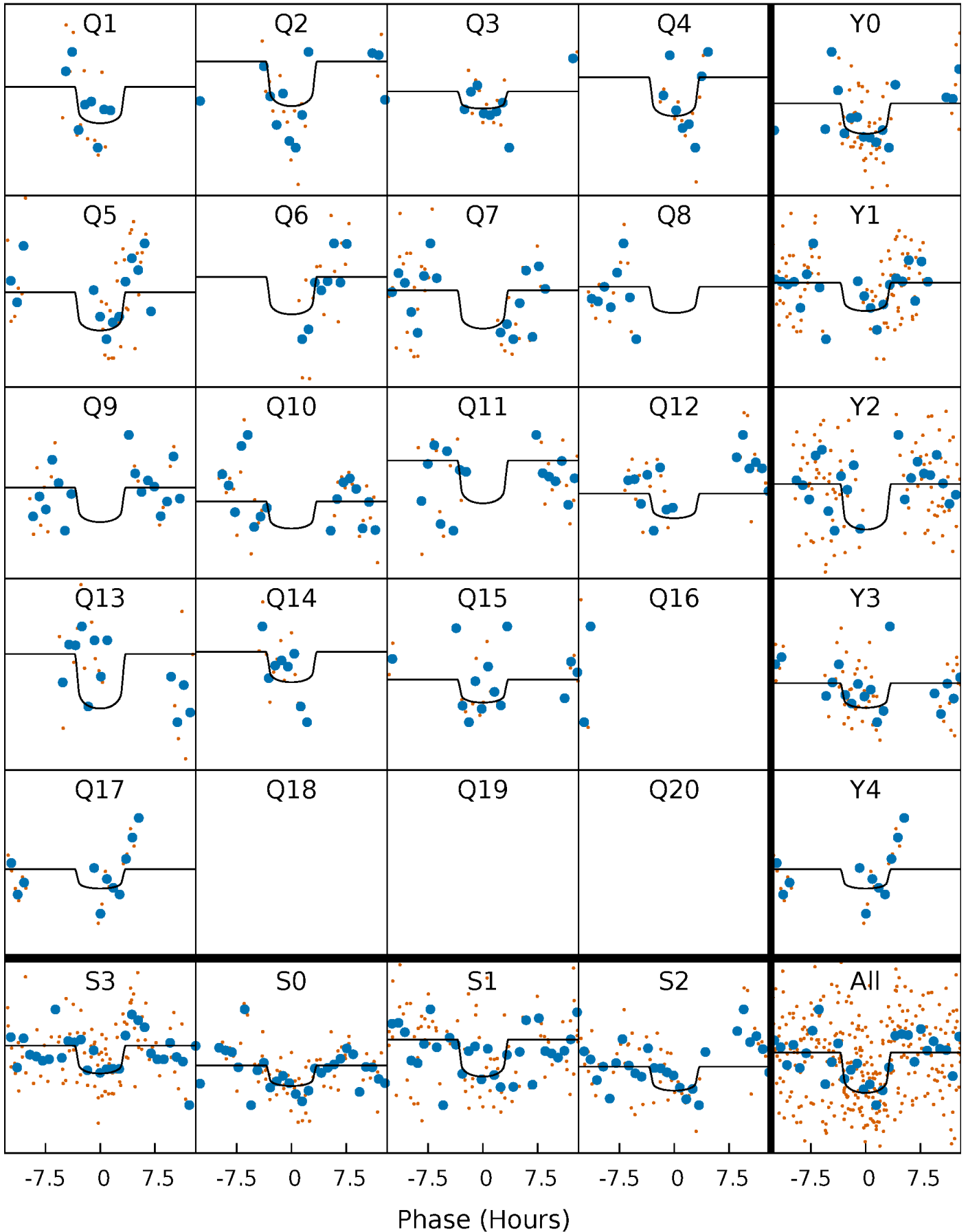
PDC Quarter-Phased Transit Curves

TCE 006222079-06 P= 25.853661 Days $T_0=142.148072$ (BKJD)



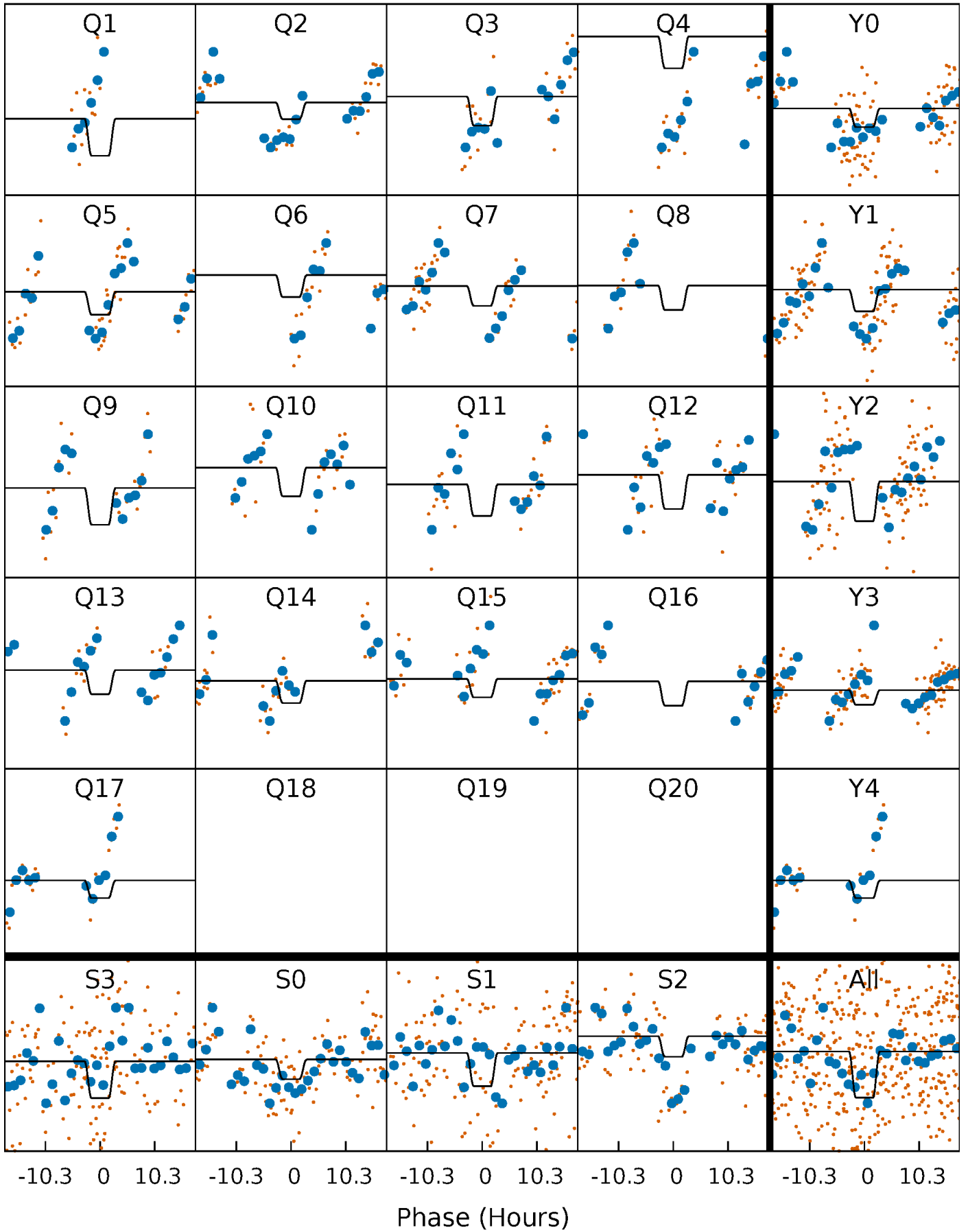
DV Quarter-Phased Transit Curves

TCE 006222079-06 P= 25.853661 Days $T_0=142.148072$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

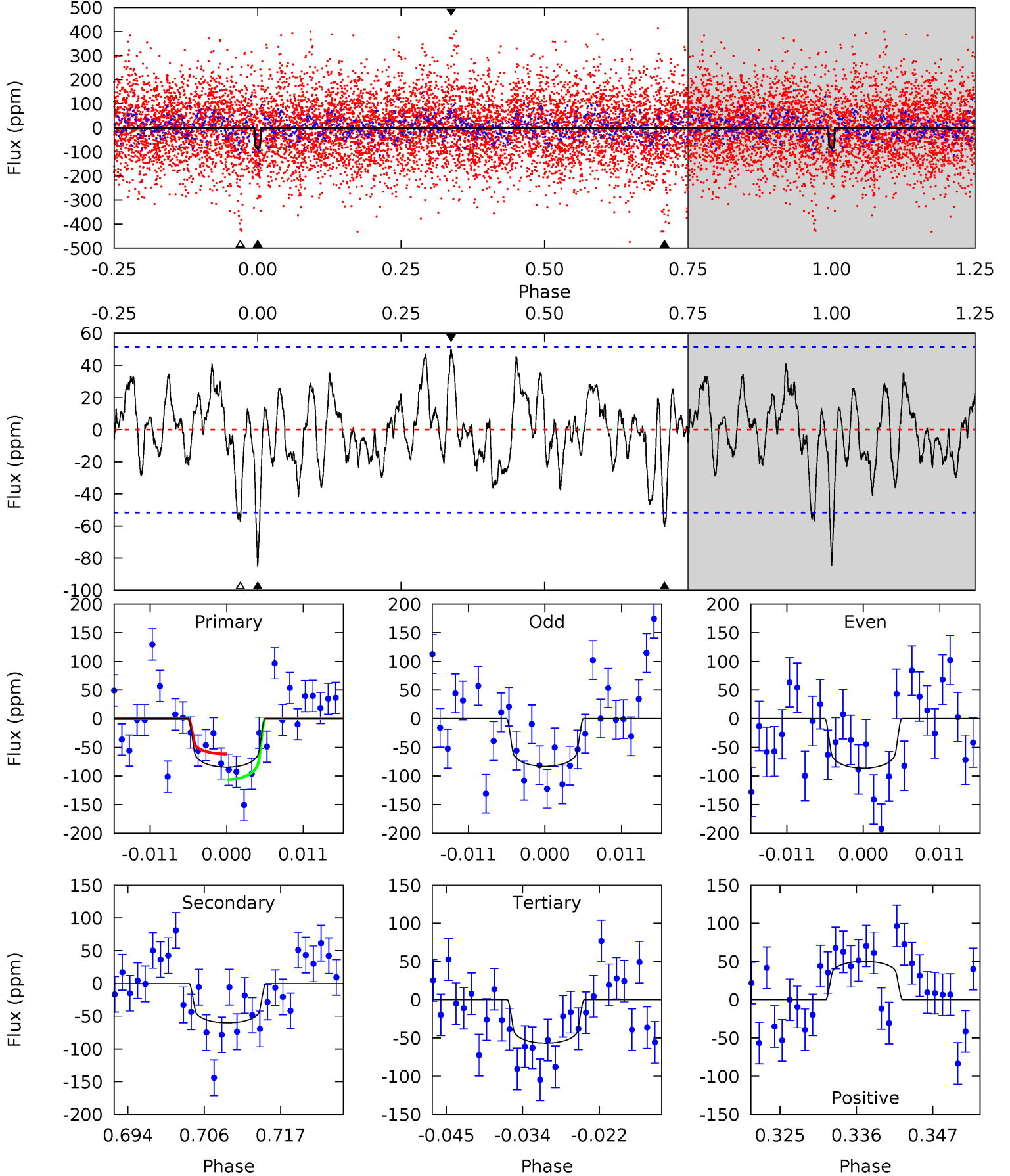
TCE 006222079-06 P= 25.854270 Days $T_0=142.178140$ (BKJD)



DV Model-Shift Uniqueness Test

006222079-06, P = 25.853661 Days, E = 116.294411 Days

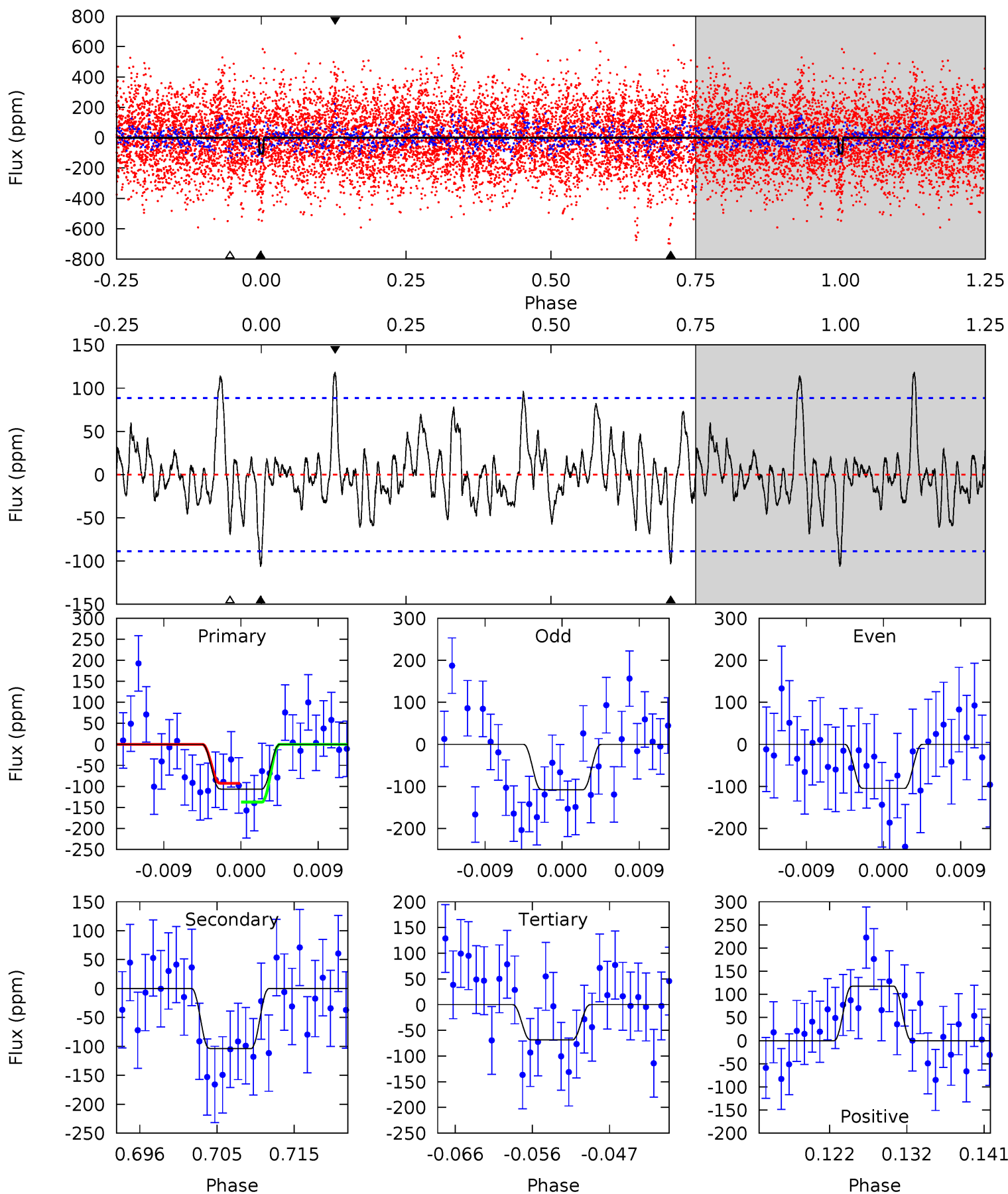
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.20	5.83	5.51	4.87	5.00	2.54	1.83	2.69	3.33	0.32	0.96	0.16	1.06	0.37	2.17



Alt Model-Shift Uniqueness Test

006222079-06, P = 25.854270 Days, E = 116.323870 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.05	5.89	3.91	6.69	5.04	2.60	1.84	2.14	-0.64	1.98	-0.80	0.08	0.94	0.53	1.26



Stellar Parameters For KIC 006222079

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6631^{+162}_{-223}	$4.144^{+0.186}_{-0.124}$	$-0.360^{+0.250}_{-0.300}$	$1.531^{+0.302}_{-0.369}$	$1.195^{+0.158}_{-0.175}$	$0.469^{+0.479}_{-0.178}$
	+2%/-3%	+4%/-3%	+69%/-83%	+20%/-24%	+13%/-15%	+102%/-38%
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 006222079-06 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-60 ± 10	$1.69^{+0.79}_{-0.68}$	1172^{+72}_{-74}	5696^{+1734}_{-900}	376^{+718}_{-204}
Alt.	-104 ± 18	$1.87^{+0.85}_{-0.78}$	1179^{+72}_{-75}	6211^{+2073}_{-989}	528^{+987}_{-277}

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

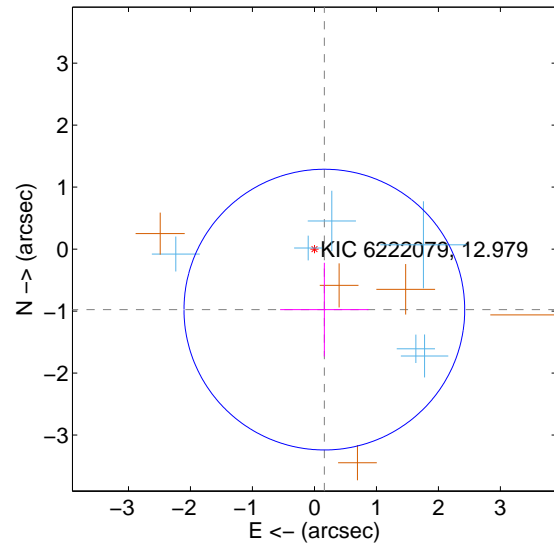
Supplemental centroid analysis for 006222079-06. Kepler magnitude: 12.98. Transit SNR 9.92

There are 6 quarters with good PRF difference image offsets

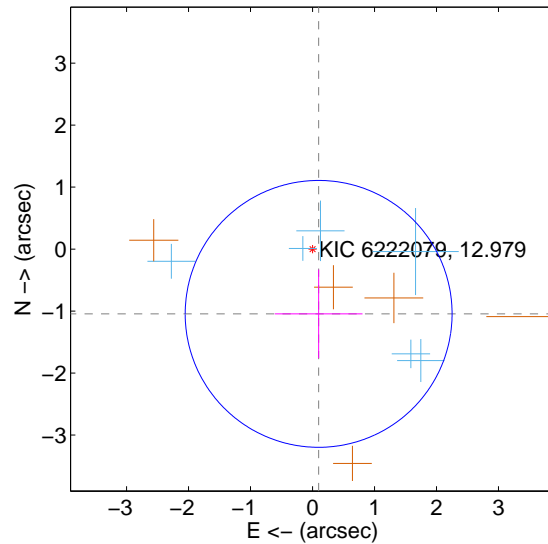
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.989 ± 0.755	1.31	-0.160 ± 0.713	-0.976 ± 0.756
PRF-fit source offset from KIC position	1.050 ± 0.718	1.46	-0.099 ± 0.707	-1.045 ± 0.714
photometric centroid source offset	0.84 ± 0.66	1.28	-0.07 ± 0.76	-0.84 ± 0.66

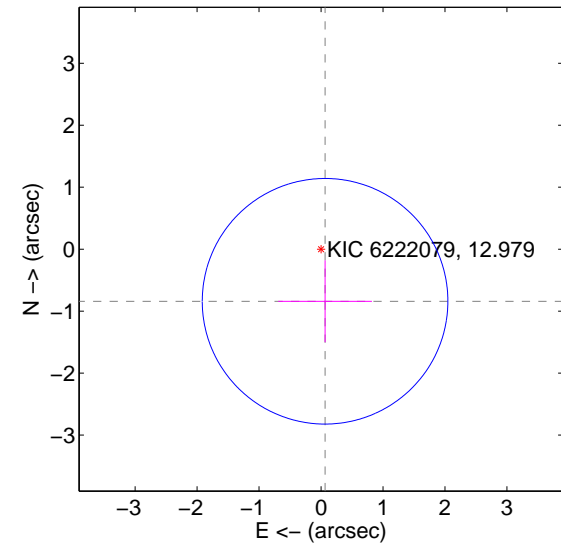
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

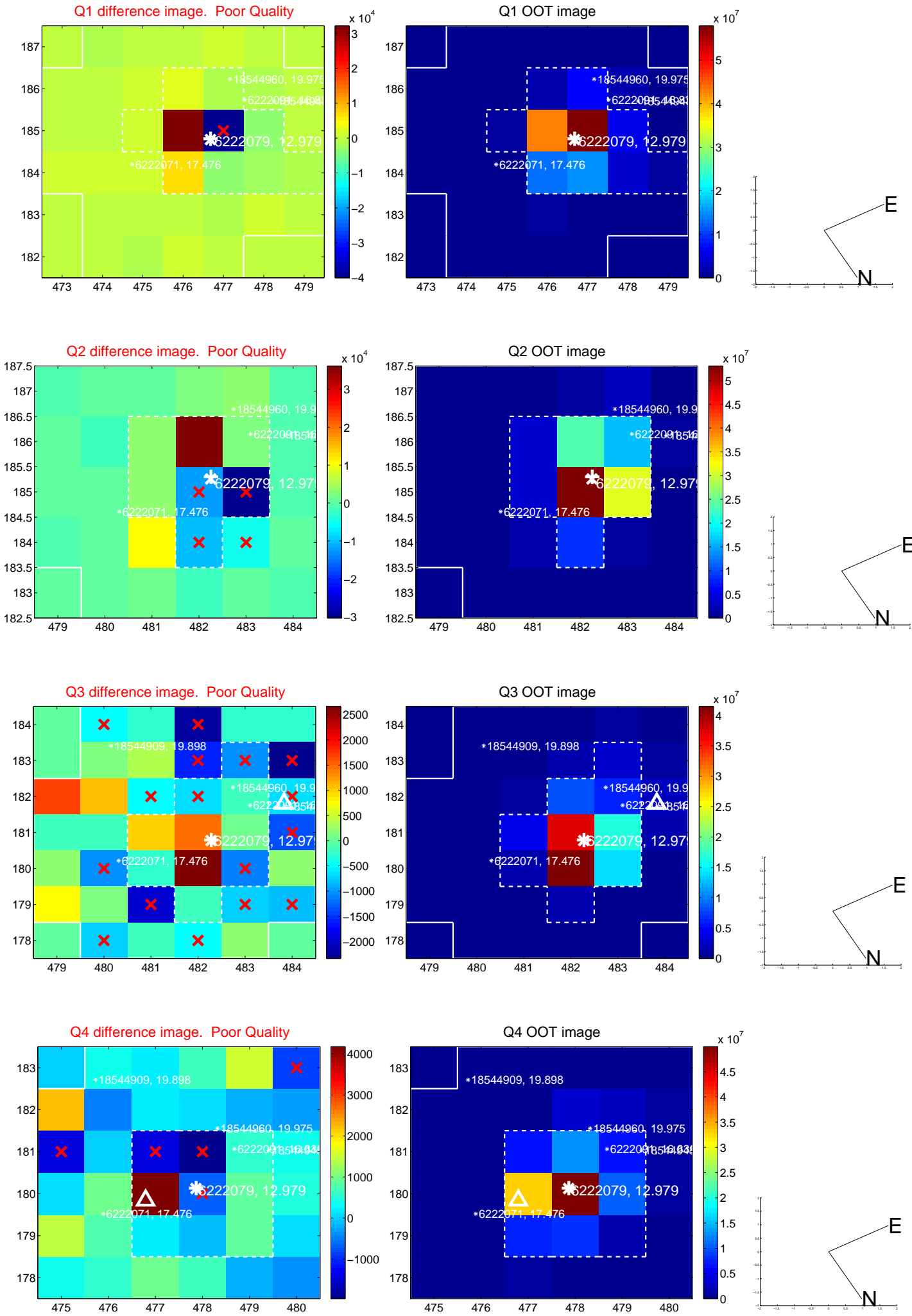


offset from photometric centroids

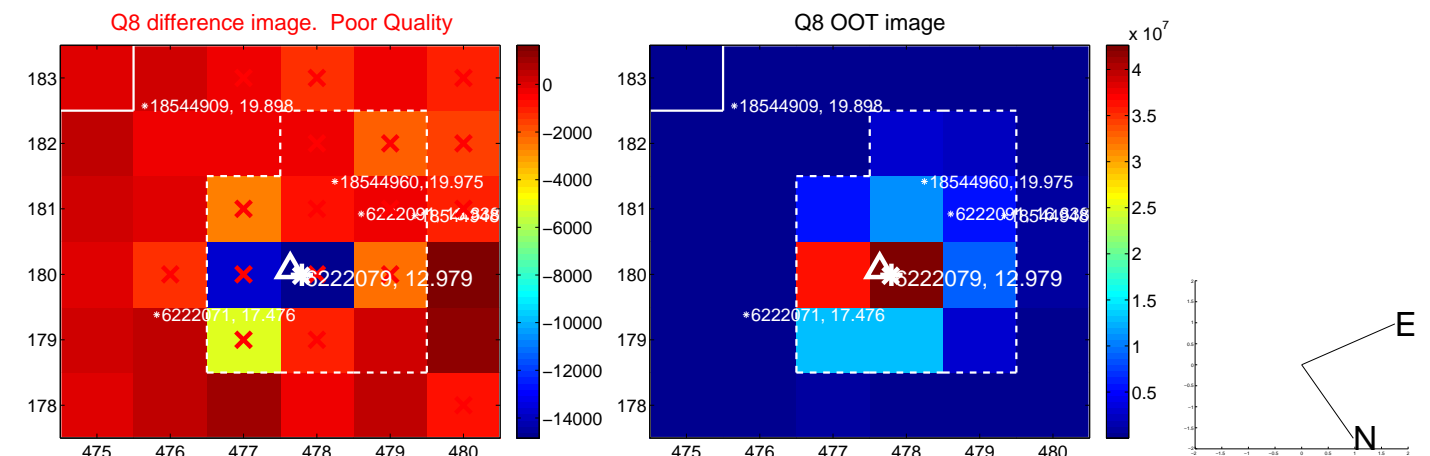
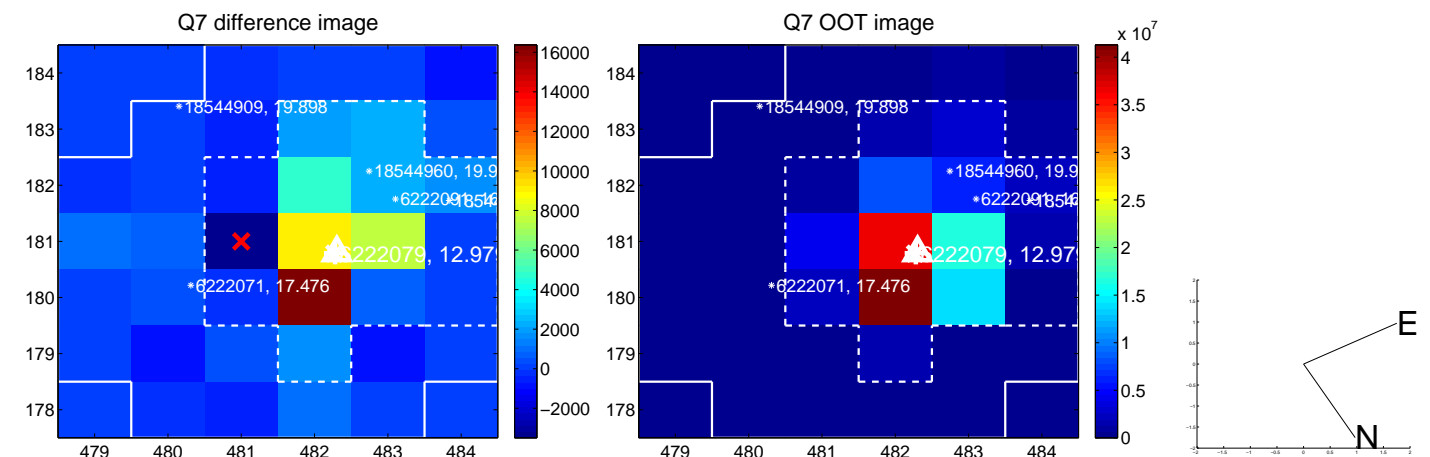
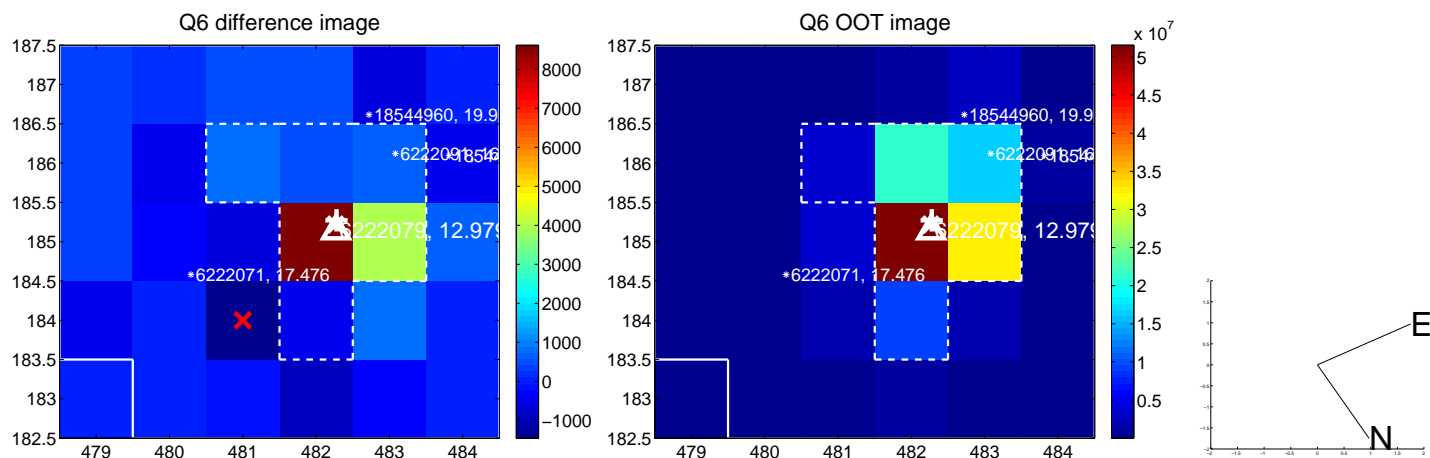
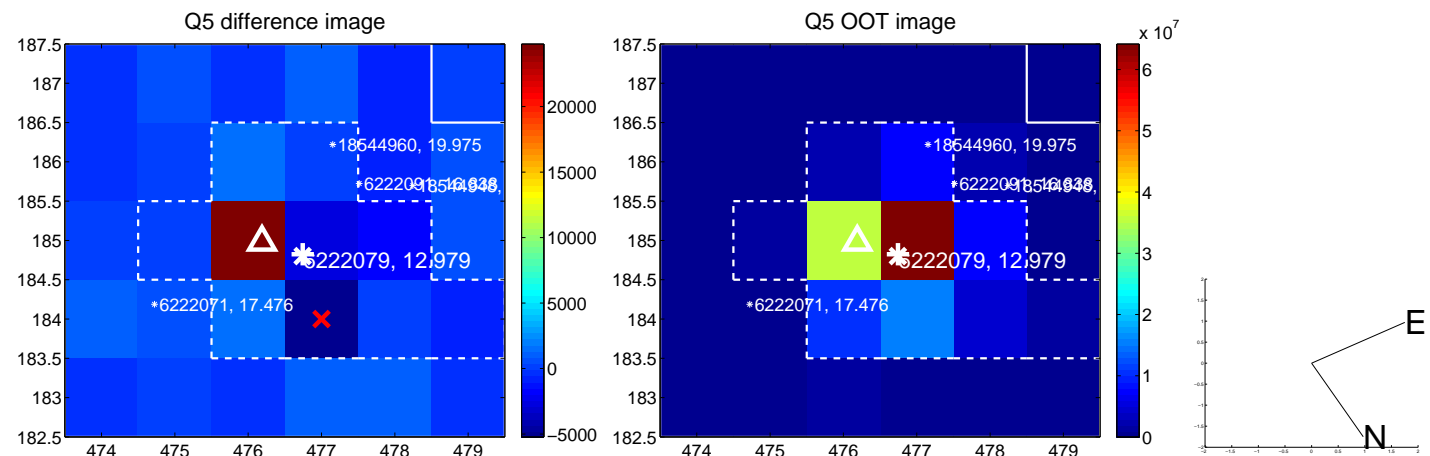


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

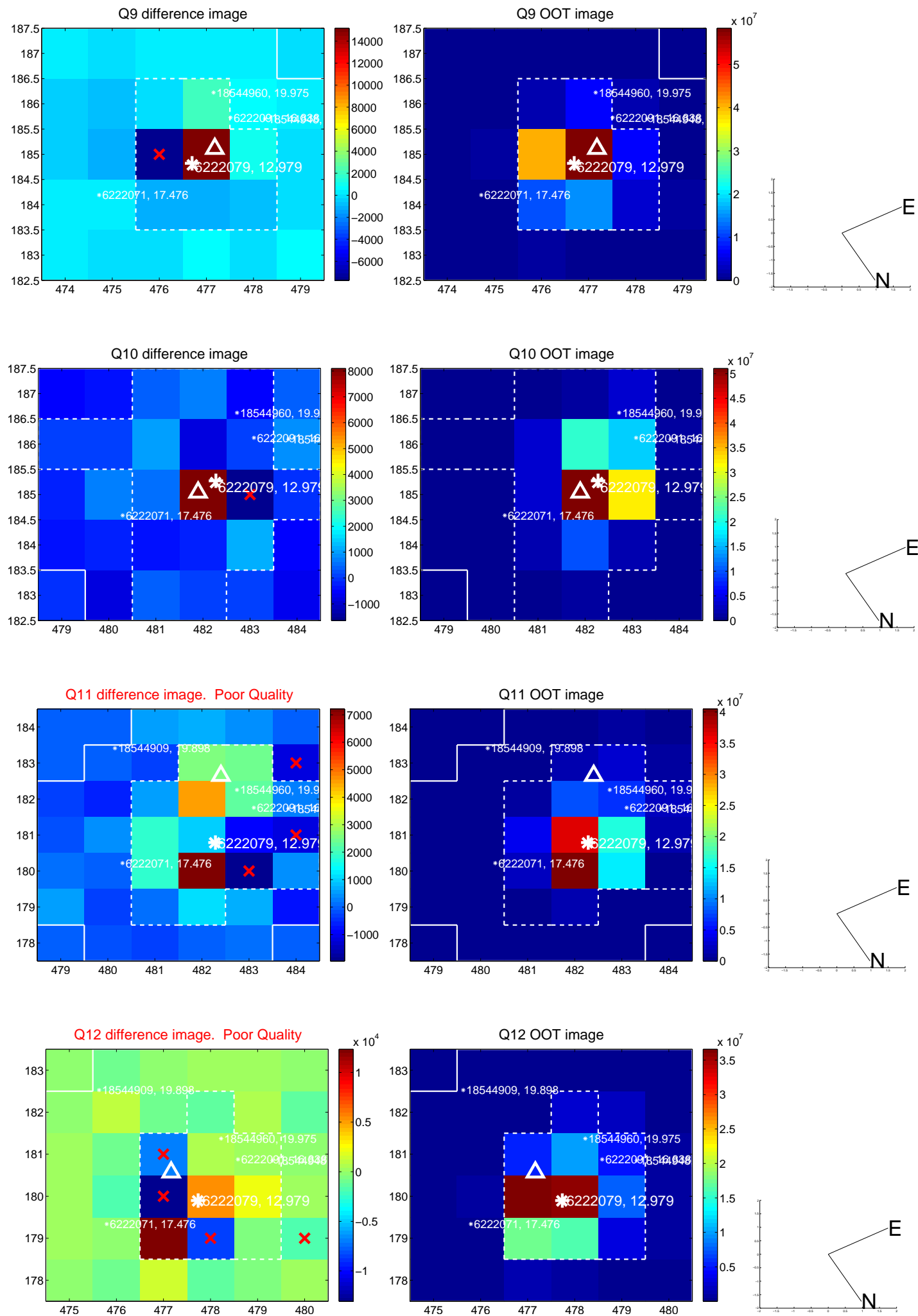
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



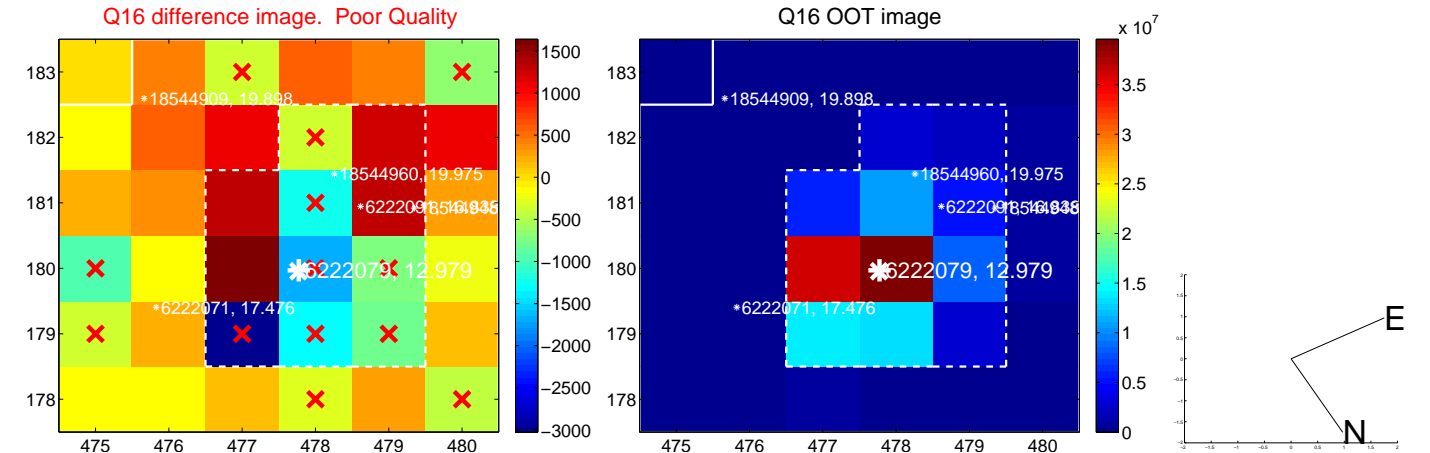
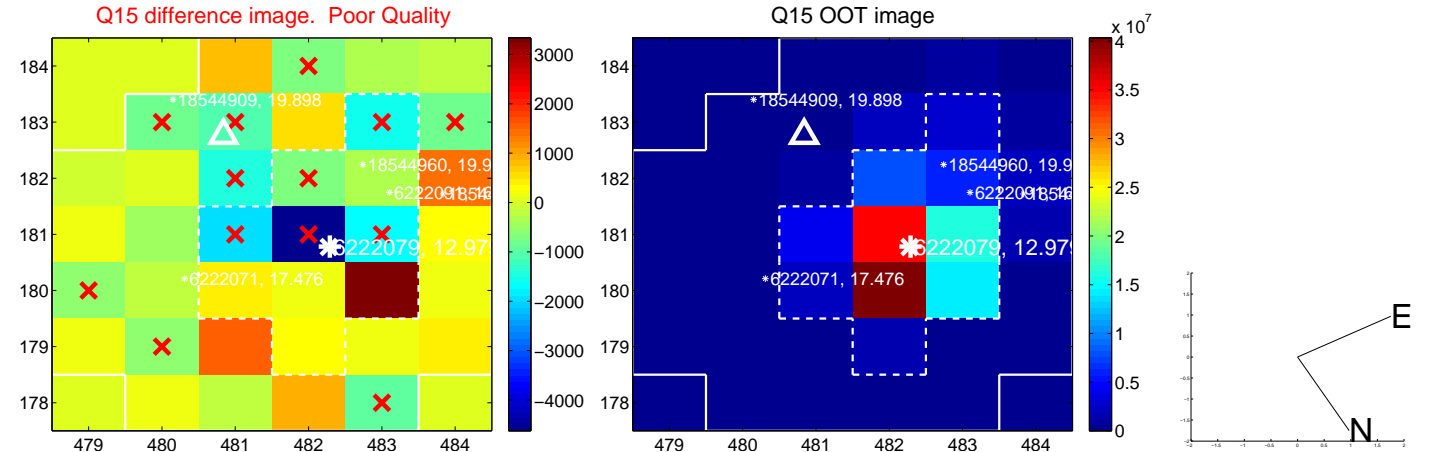
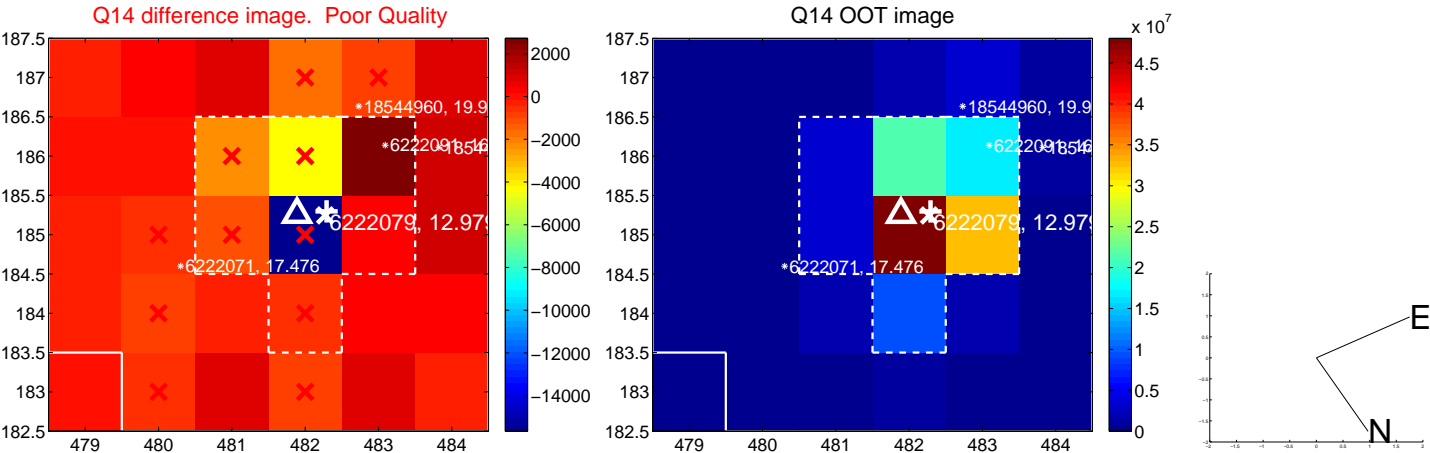
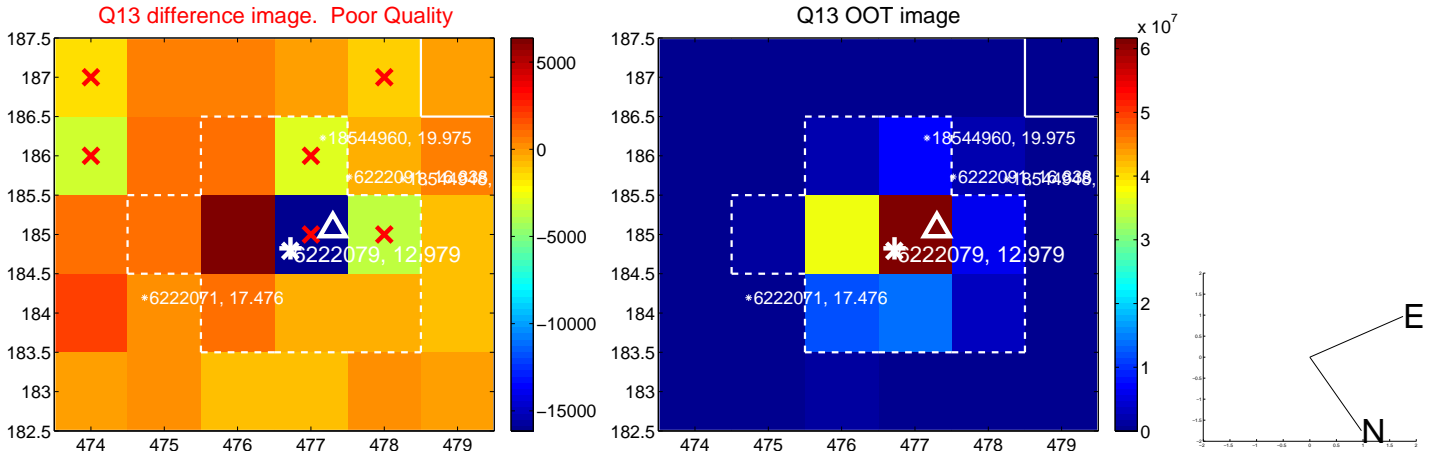
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



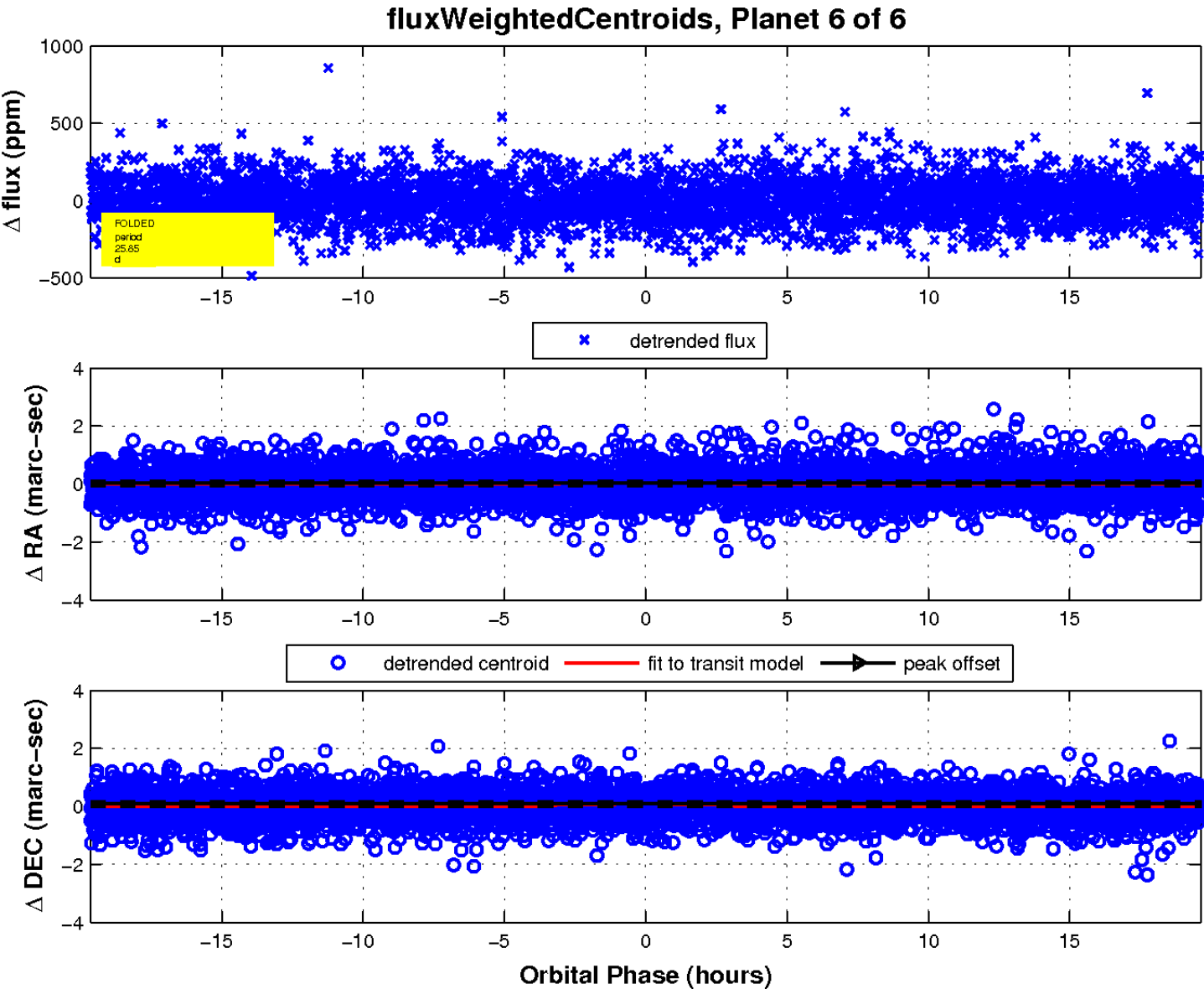
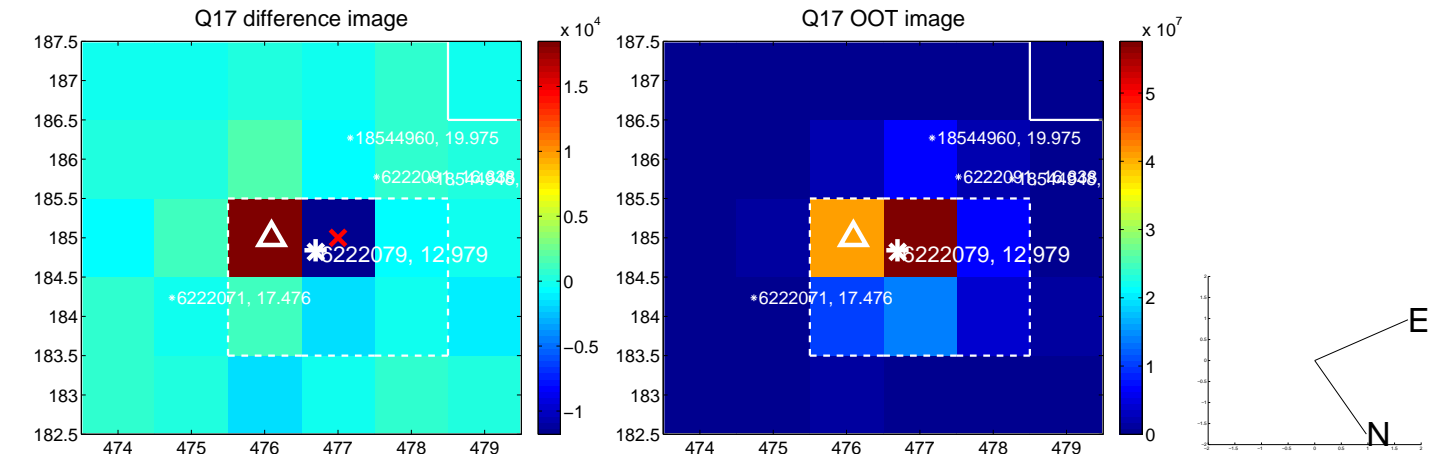
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

