

KIC 009899153

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})
009899153-01	OBS	7243.01	1.332477	132.106041	54.2	5.293	9.4	9.4	0.83	4895	0.60	731.78
009899153-02	OBS	No	244.175219	162.881511	570.4	4.200	14.4	4.7	0.83	4895	2.09	0.70
009899153-04	OBS	No	162.385501	282.732960	754.9	10.500	10.4	-1.0	0.83	4895	2.19	1.21

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009899153-01	OBS	FP	0.00	0	0	1	1	CENT_KIC_POS—HALO_GHOST—EPHEM_MATCH
009899153-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009899153-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS

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 009899153-01

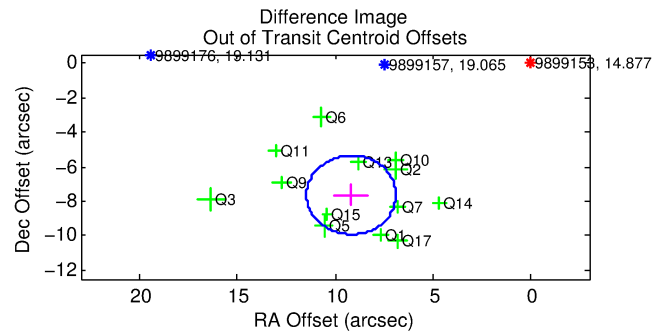
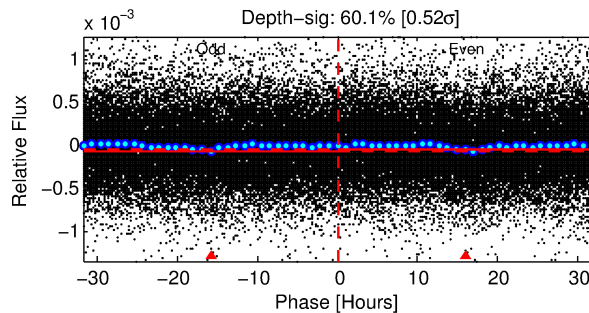
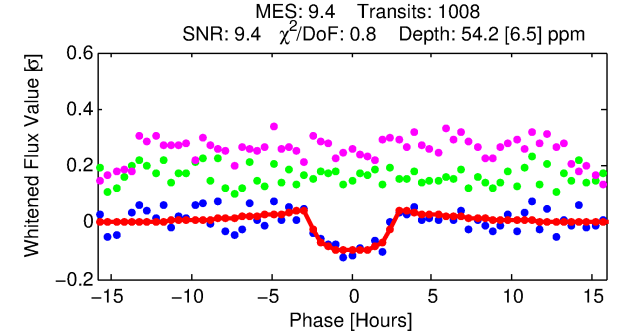
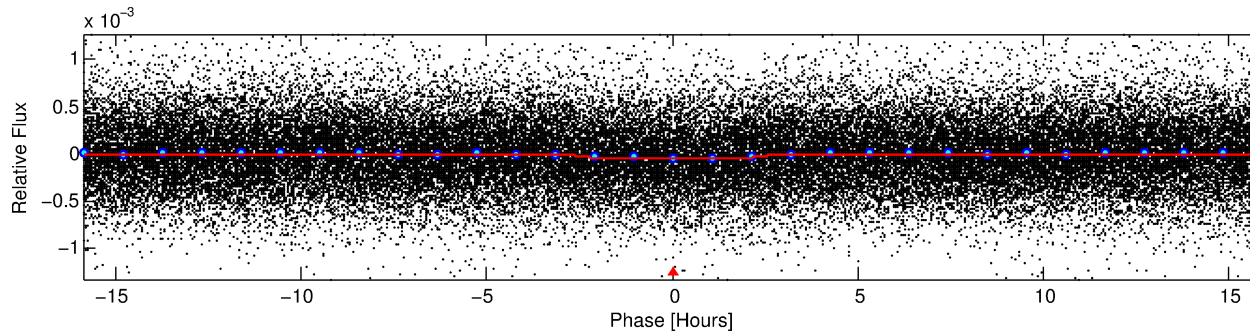
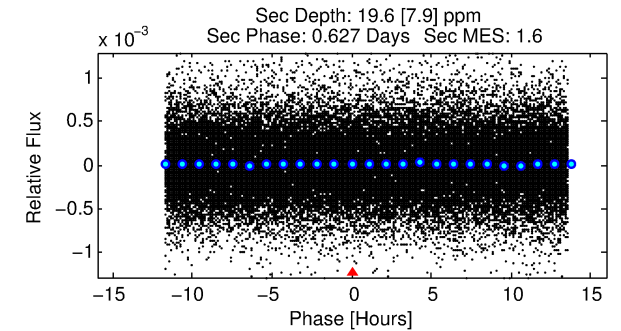
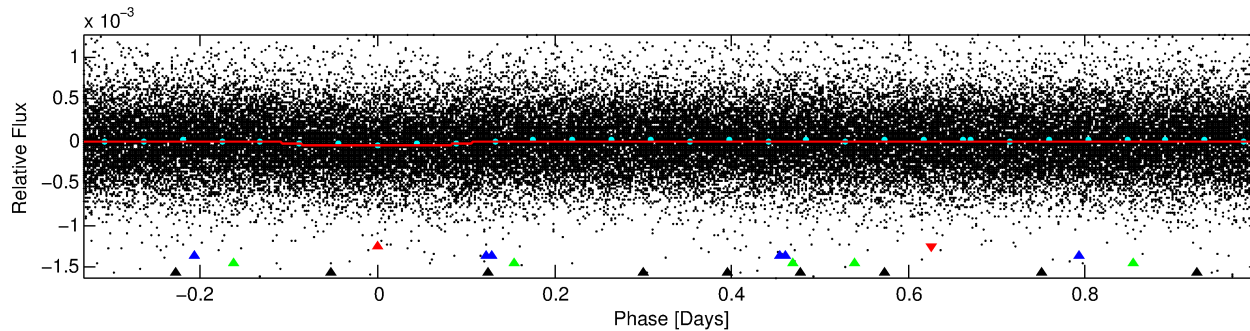
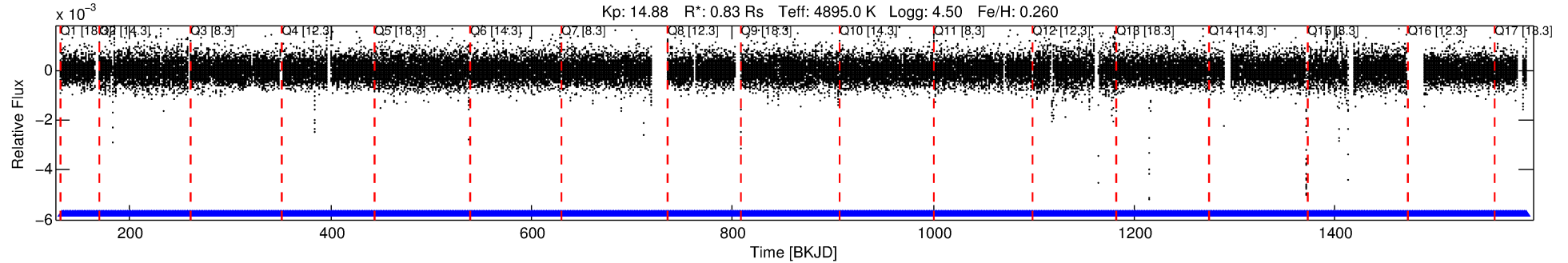
TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist (″)	Δ Row	Δ Col	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ_P	σ_T
009899153-01	9899153	BR-Cyg-pri	9899416	1:1	215.8	42	-34	10.03	14.88	11609.00	Direct-PRF	0	4.81	3.72

Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 9899153 Candidate: 1 of 4 Period: 1.332 d
KOI: K07243.01 Corr: 0.881

Kp: 14.88 R*: 0.83 Rs Teff: 4895.0 K Logg: 4.50 Fe/H: 0.260



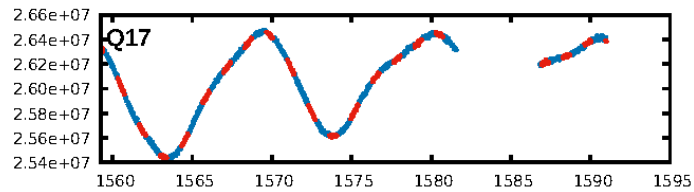
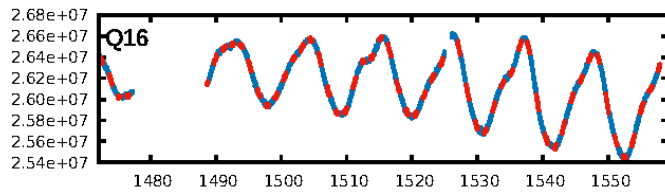
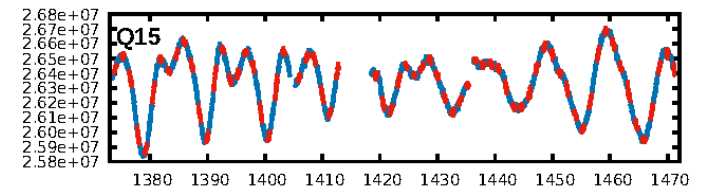
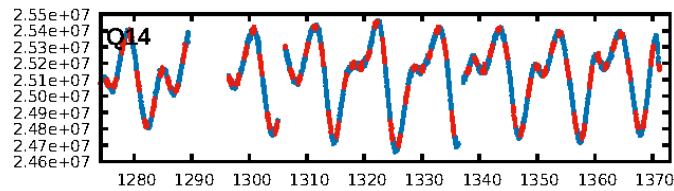
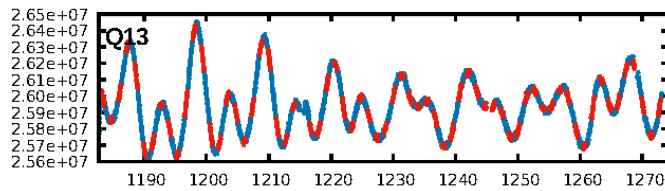
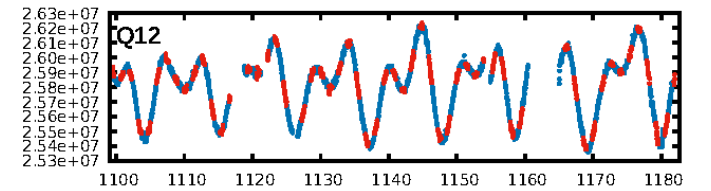
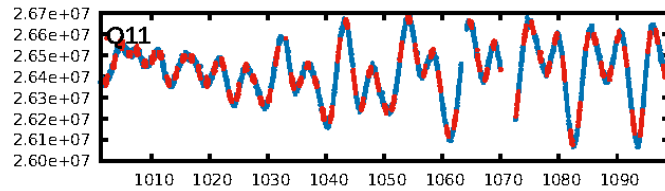
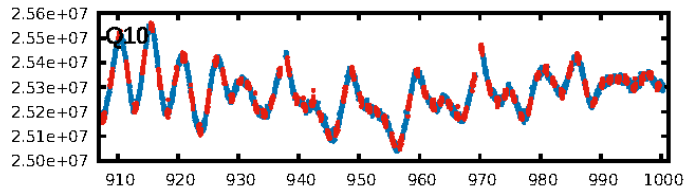
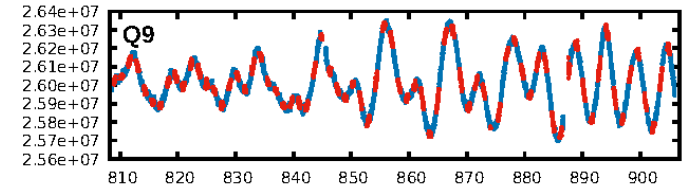
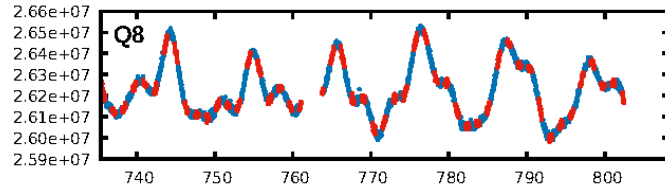
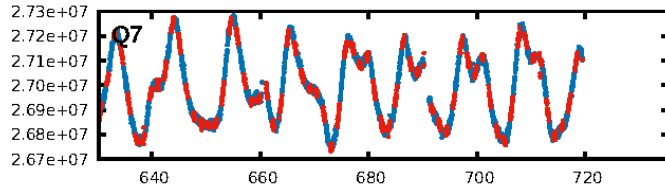
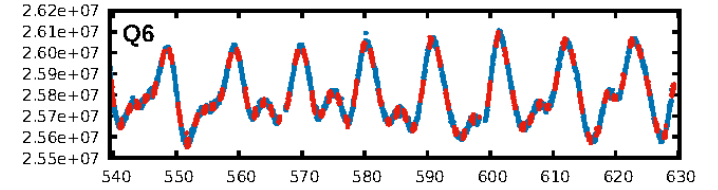
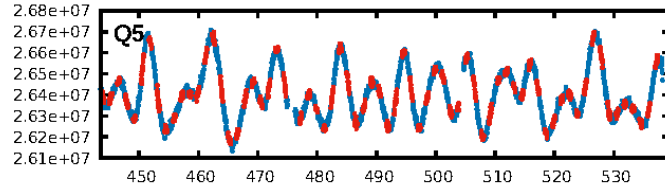
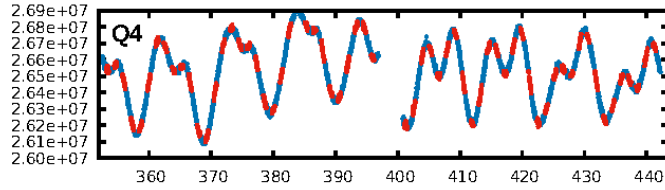
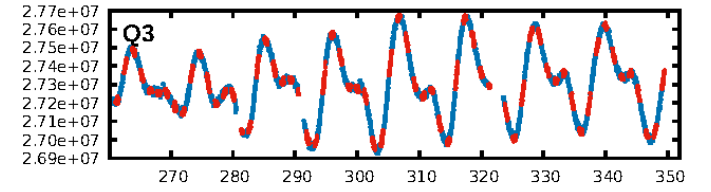
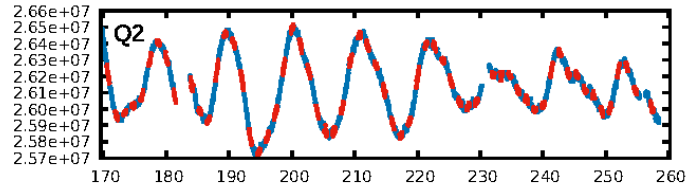
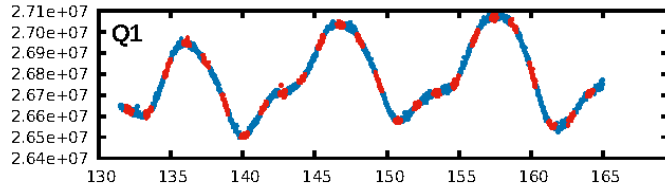
DV Fit Results:

Period = 1.33248 [0.00001] d
Epoch = 132.1060 [0.0051] BKJD
Rp/R* = 0.0066 [0.0049]
a/R* = 1.94 [3.35]
b = 0.33 [6.48]
Seff = 731.78 [601.51]
Teq = 1326 [273] K
Rp = 0.60 [0.45] Re
a = 0.0220 [0.0090] AU
Ag = 14.58 [25.40] [0.53σ]
Teffp = 4007 [1547] K [1.71σ]

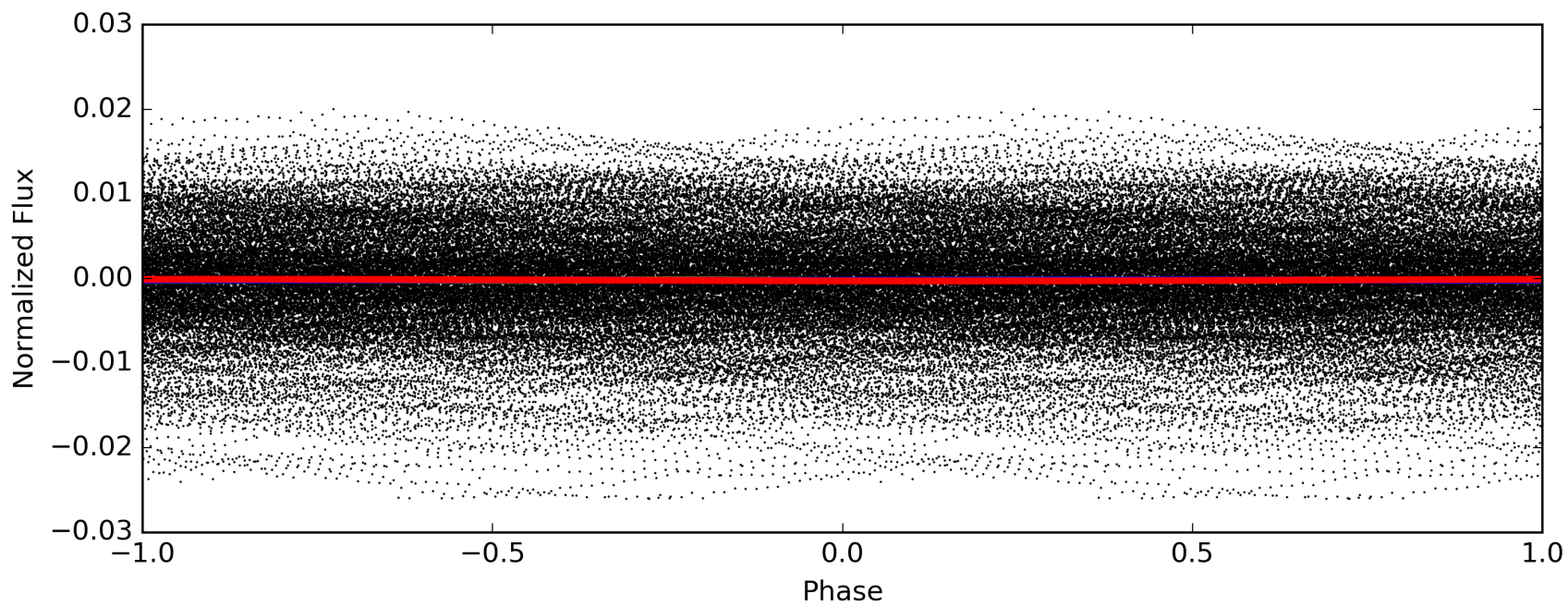
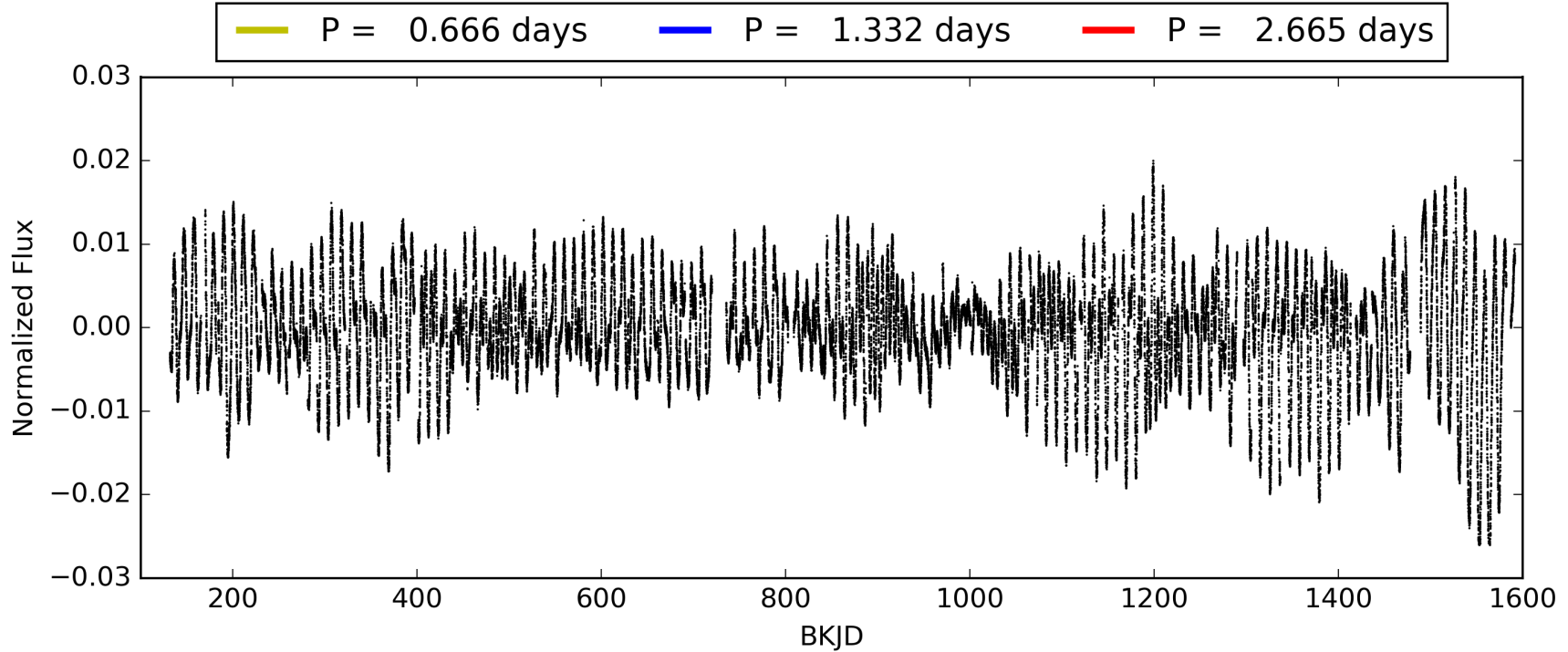
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [328.71σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.18e-16
RollingBand-fgt: 1.00 [963/963]
GhostDiagnostic-chr: -0.1857
Centroid-sig: N/A
Centroid-so: 4.751 arcsec [3.35σ]
OotOffset-rm: 11.944 arcsec [15.69σ]
KicOffset-rm: 1.040 arcsec [1.41σ]
OotOffset-st: 4/4/0/5 [13]
KicOffset-st: 4/4/3/5 [16]
DiffImageQuality-fgm: 0.00 [0/16]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 009899153-01, PDC Light Curves

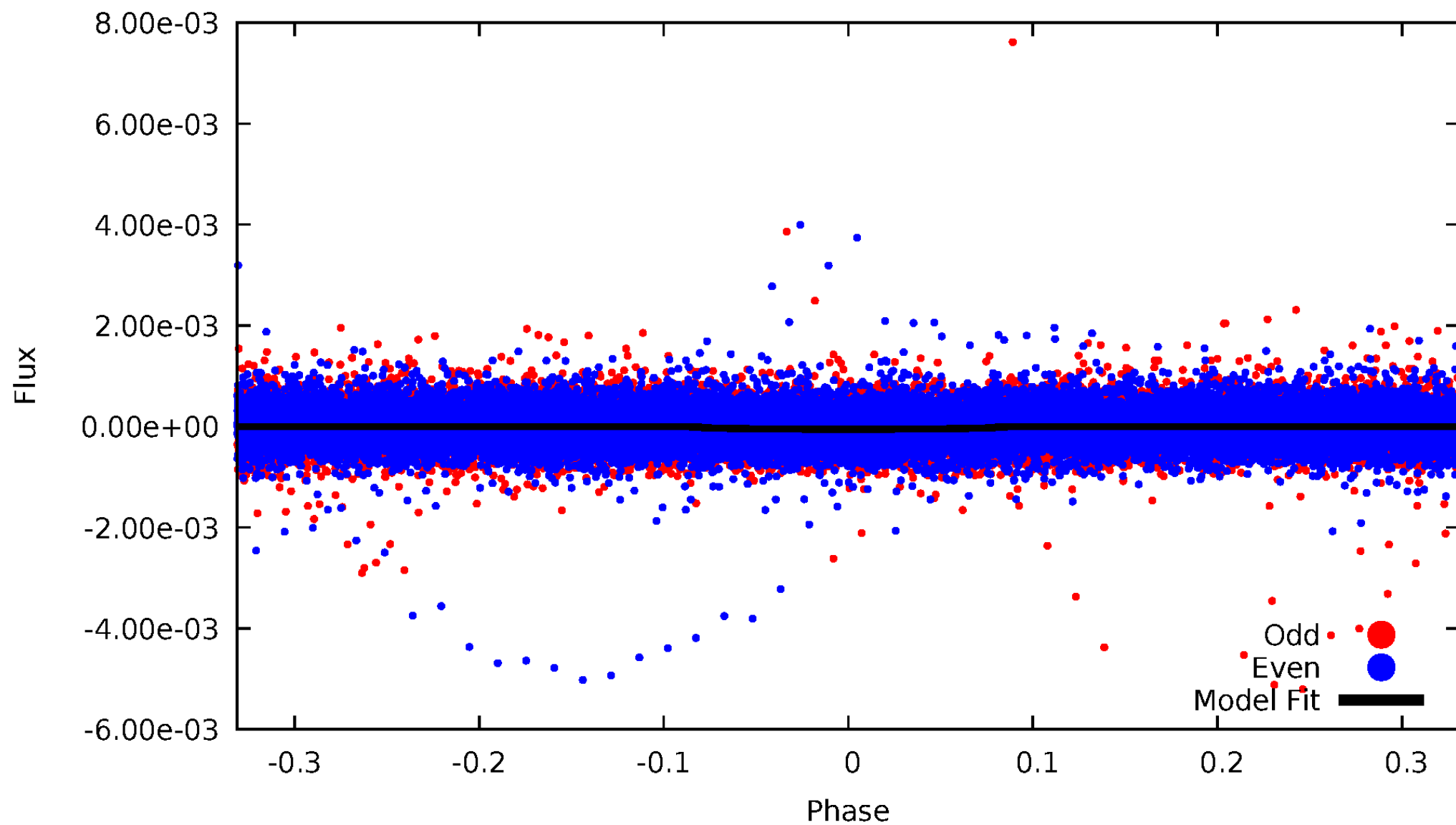


TCE 009899153-01



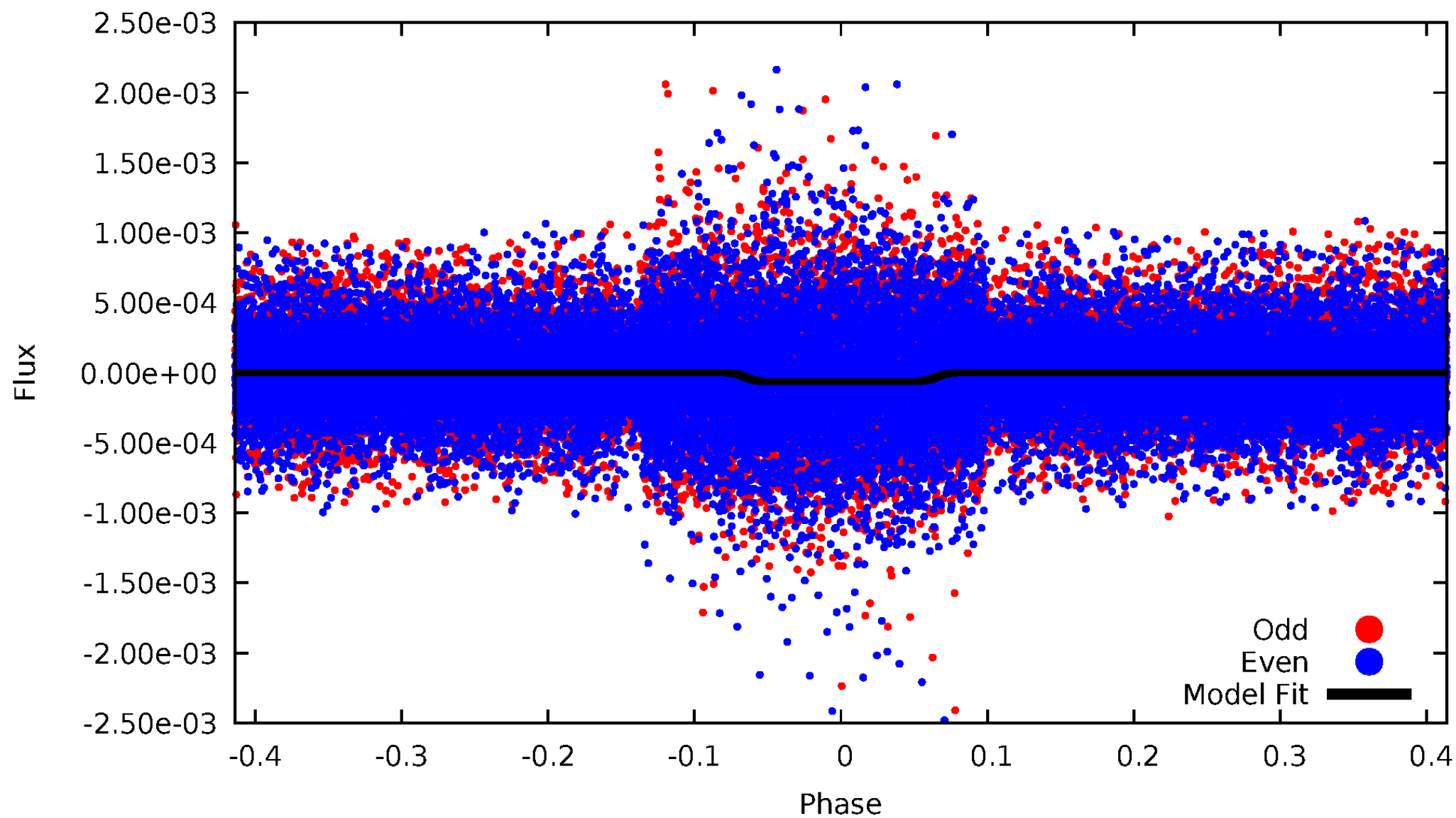
DV Odd/Even

TCE 009899153-01

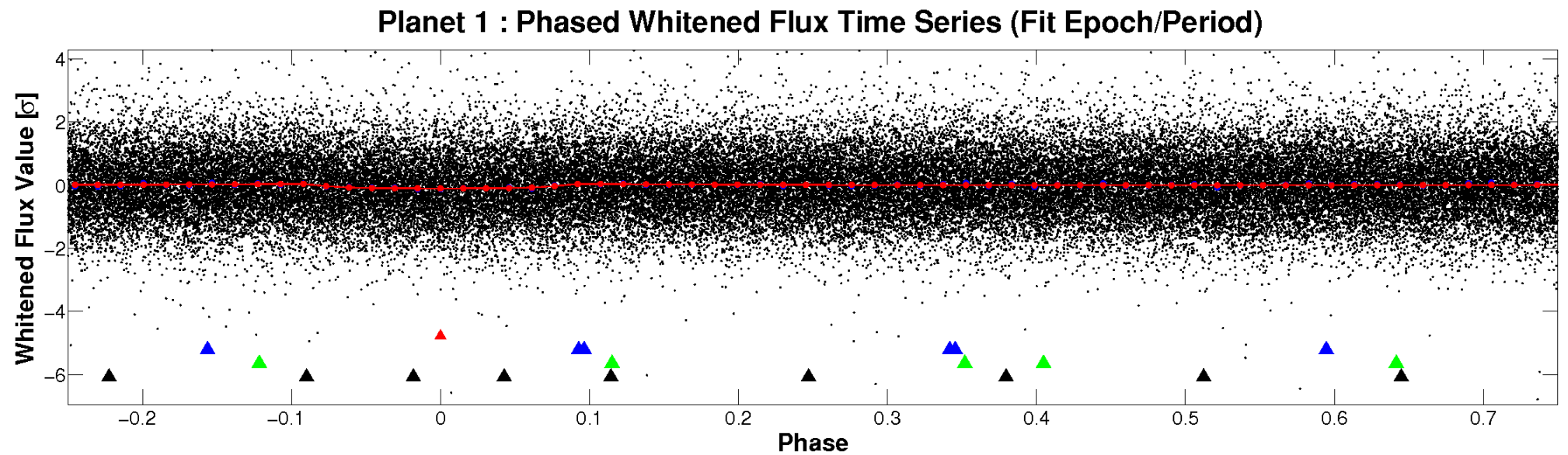
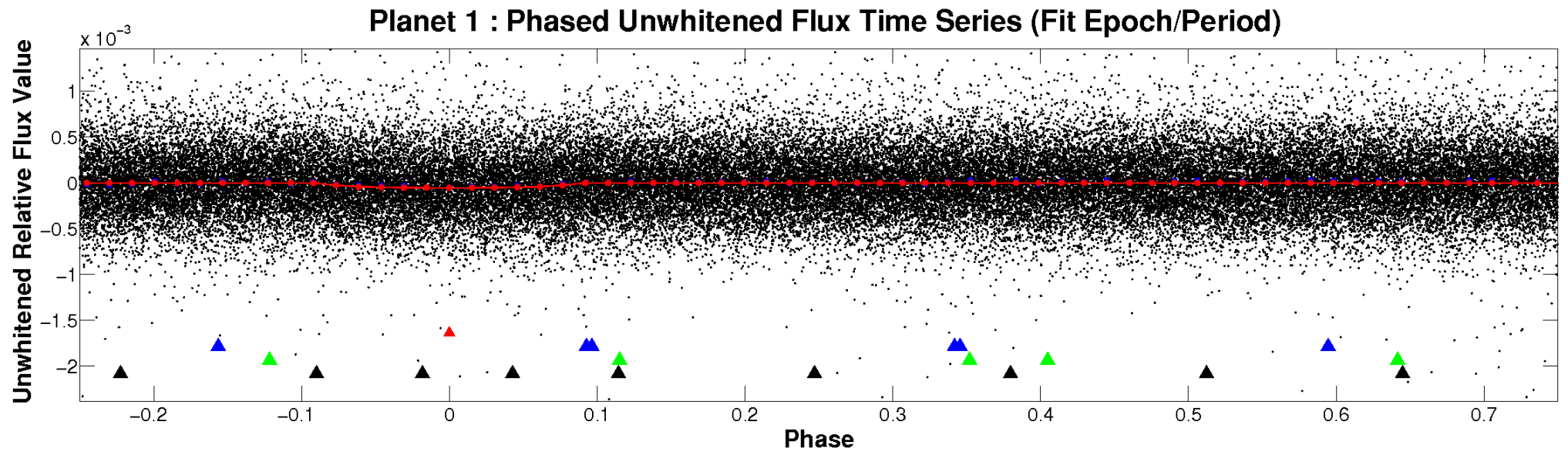


ALT Odd/Even

TCE 009899153-01

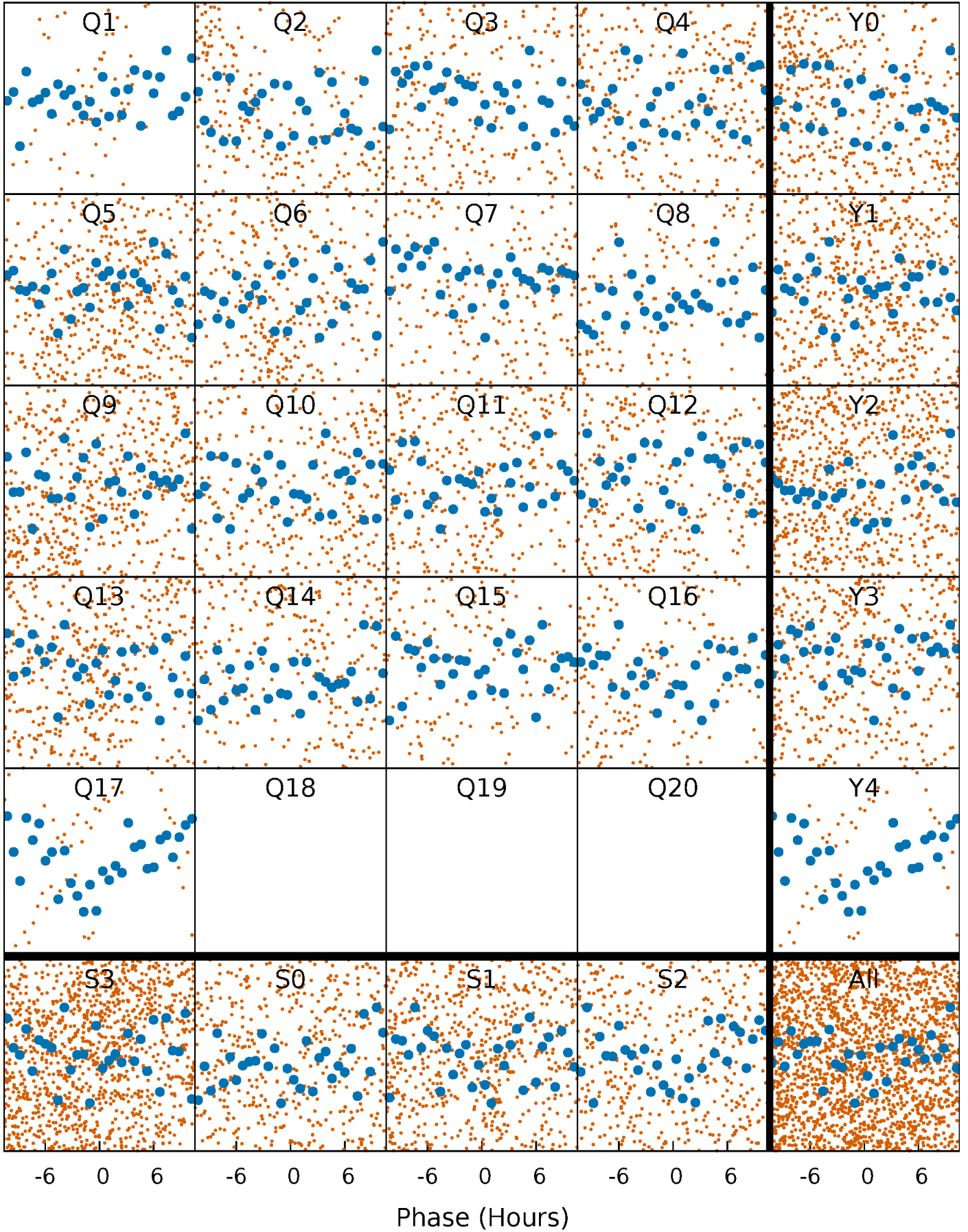


Non-Whitened Vs. Whitened Light Curve



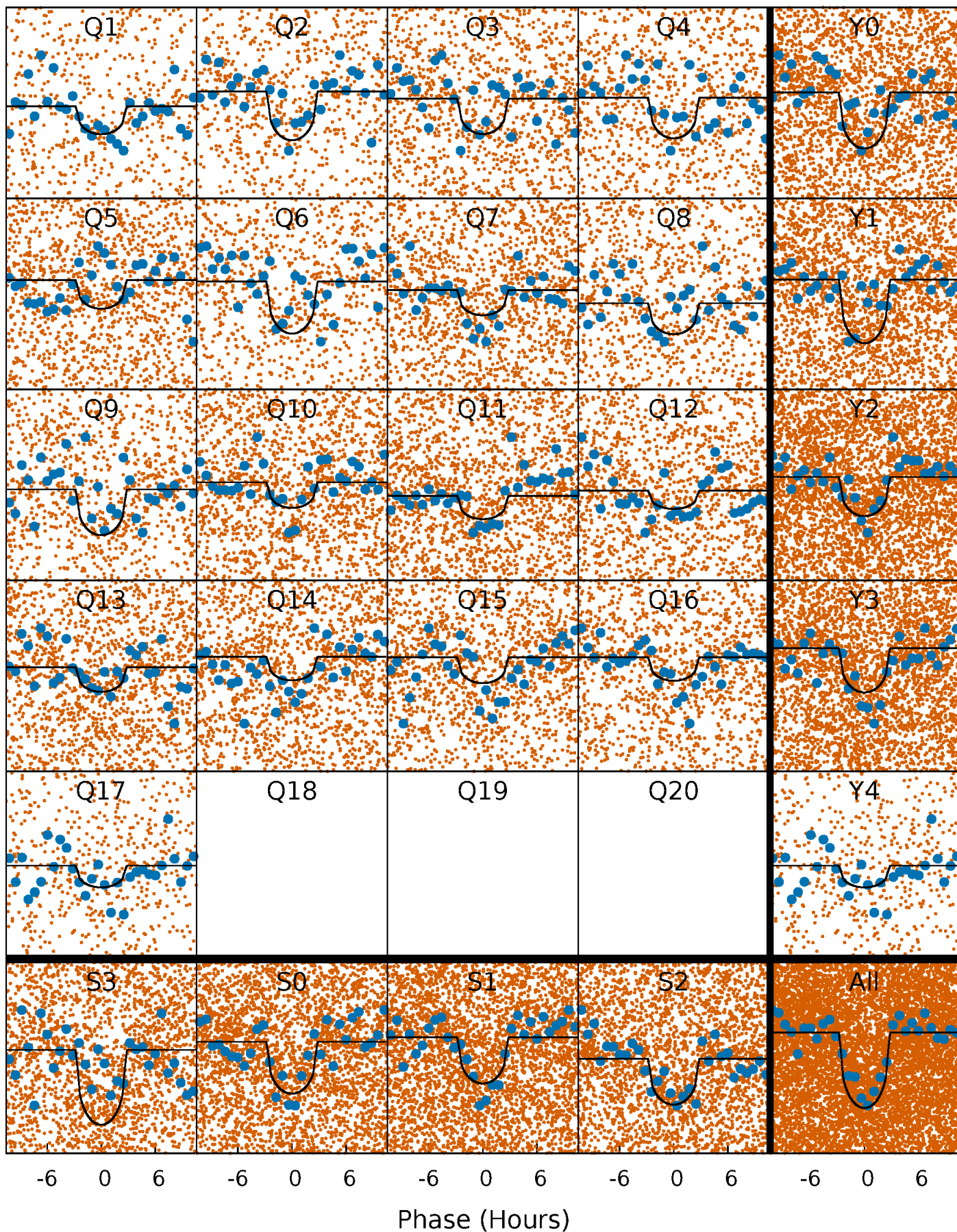
PDC Quarter-Phased Transit Curves

TCE 009899153-01 P= 1.332477 Days $T_0=132.106041$ (BKJD)



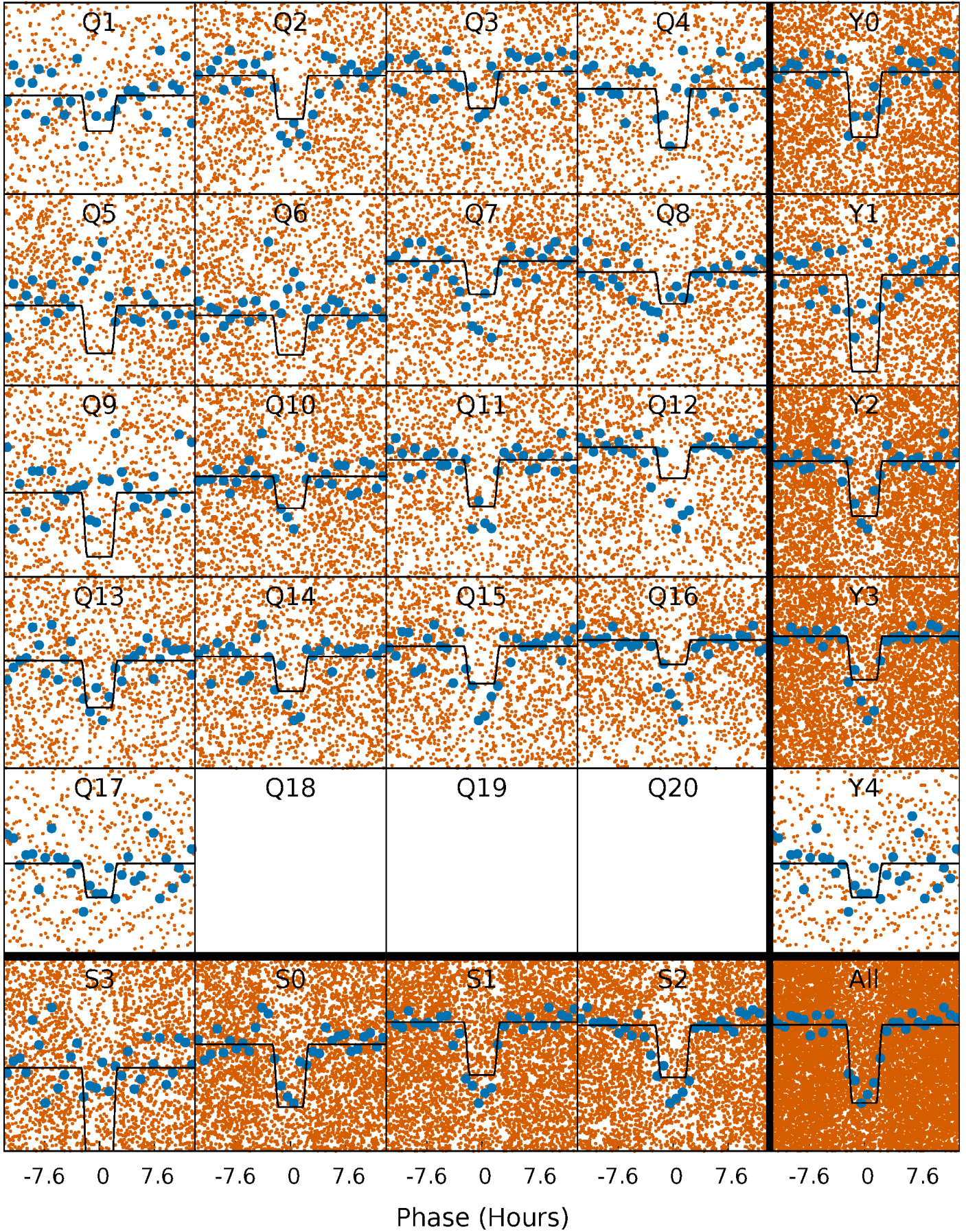
DV Quarter-Phased Transit Curves

TCE 009899153-01 P= 1.332477 Days $T_0=132.106041$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

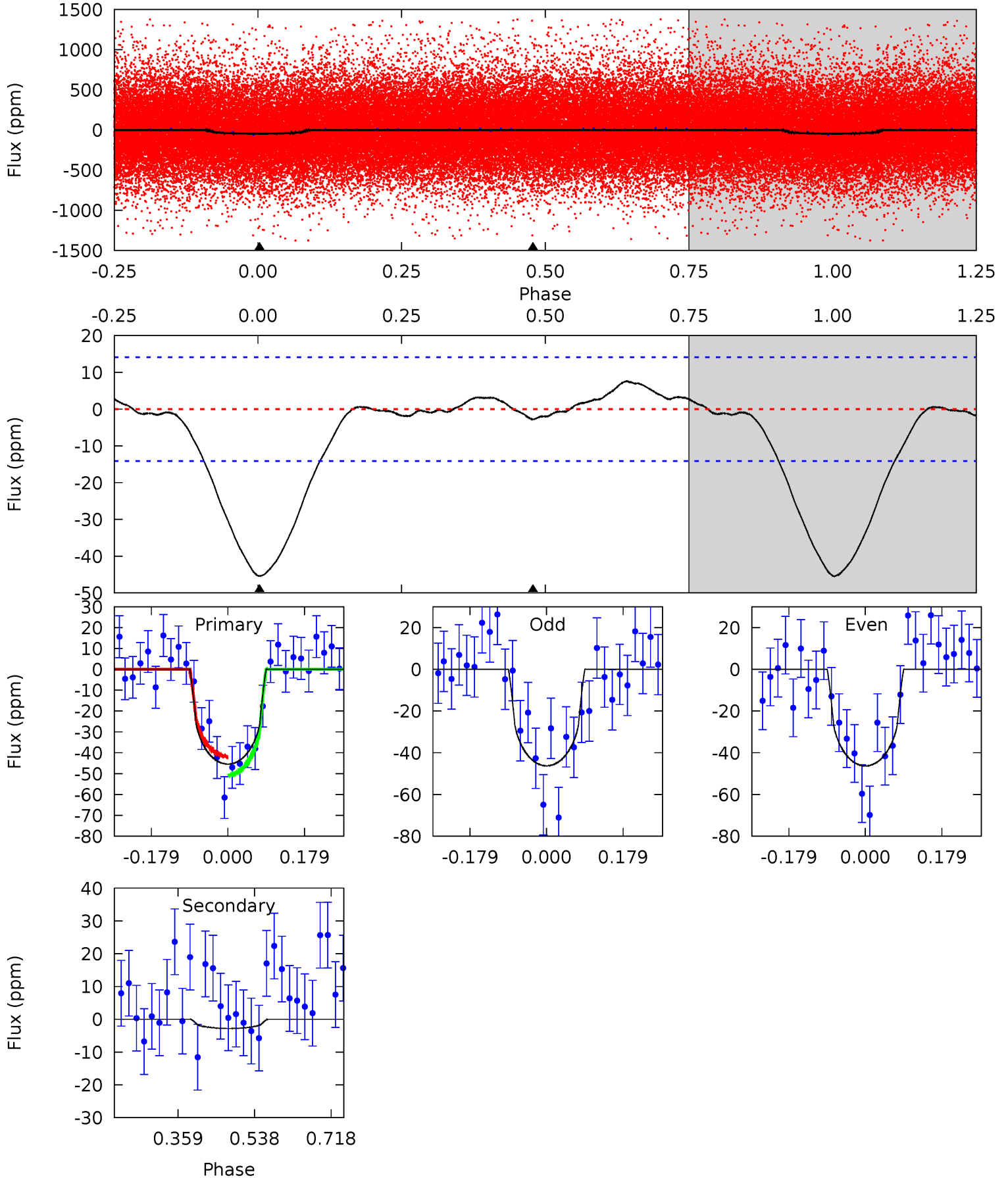
TCE 009899153-01 P= 1.332492 Days $T_0=132.108564$ (BKJD)



DV Model-Shift Uniqueness Test

009899153-01, P = 1.332477 Days, E = 130.773564 Days

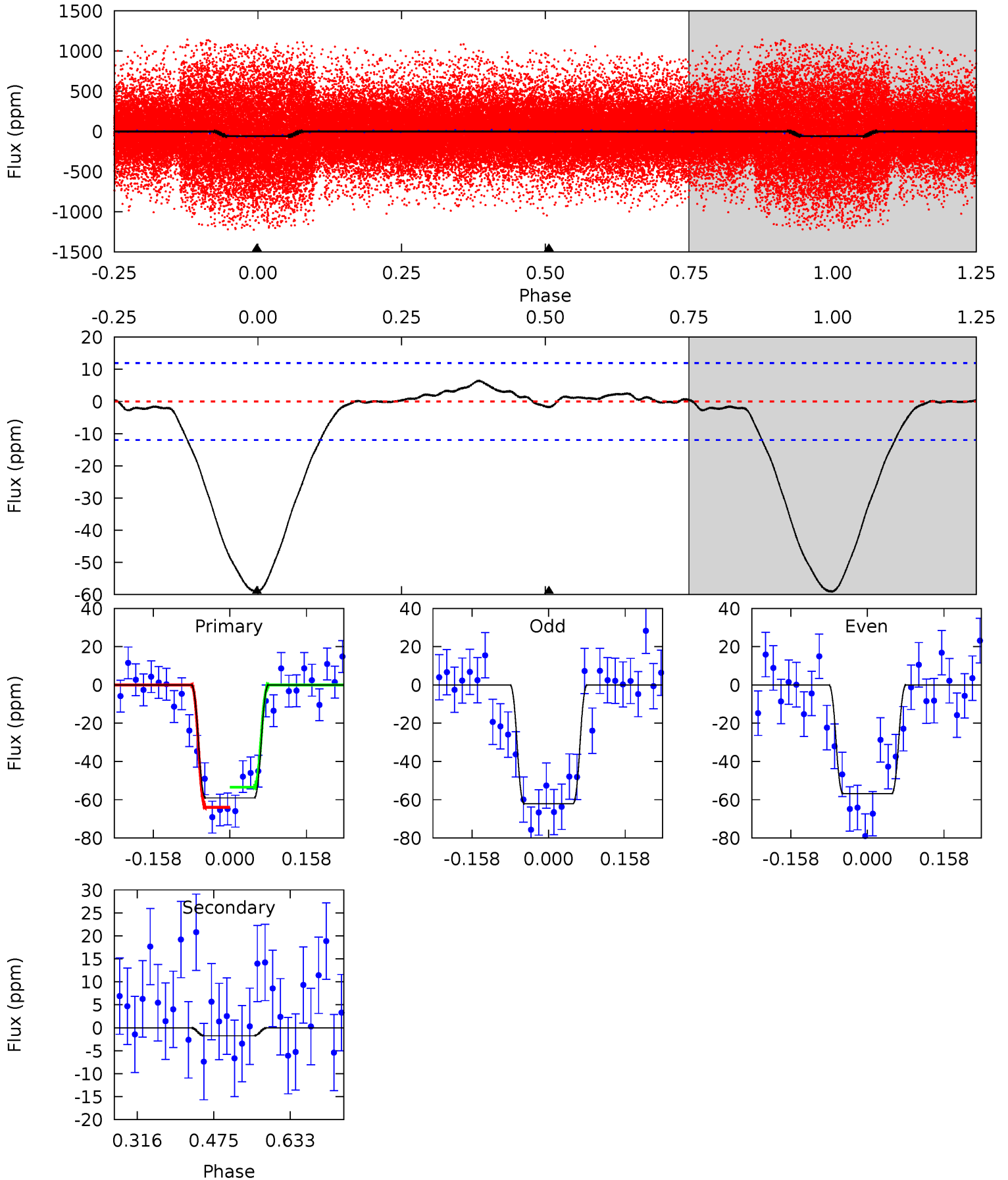
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.3	0.88	0	0	4.44	1.34	0.79	14.3	14.3	0.88	0.88	0.01	0.99	0.14	1.42



Alt Model-Shift Uniqueness Test

009899153-01, P = 1.332492 Days, E = 130.776072 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.1	0.65	0	0	4.47	1.41	0.57	22.1	22.1	0.65	0.65	0.99	0.89	0.10	1.96



Stellar Parameters For KIC 009899153

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4895^{+145}_{-145}	$4.502^{+0.088}_{-0.528}$	$0.260^{+0.200}_{-0.300}$	$0.828^{+0.078}_{-0.085}$	$0.796^{+0.067}_{-0.054}$	$1.973^{+0.711}_{-0.648}$
	+3%/-3%	+2%/-12%	+77%/-115%	+9%/-10%	+8%/-7%	+36%/-33%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009899153-01 / KOI 7243.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-3 ± 3	$0.65^{+0.46}_{-0.39}$	1877^{+85}_{-88}	2799^{+1019}_{-5382}	$1.291^{+7.163}_{-1.503}$
Alt.	-2 ± 3	$0.80^{+0.46}_{-0.45}$	1872^{+91}_{-84}	2344^{+961}_{-4956}	$0.550^{+3.258}_{-0.886}$

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

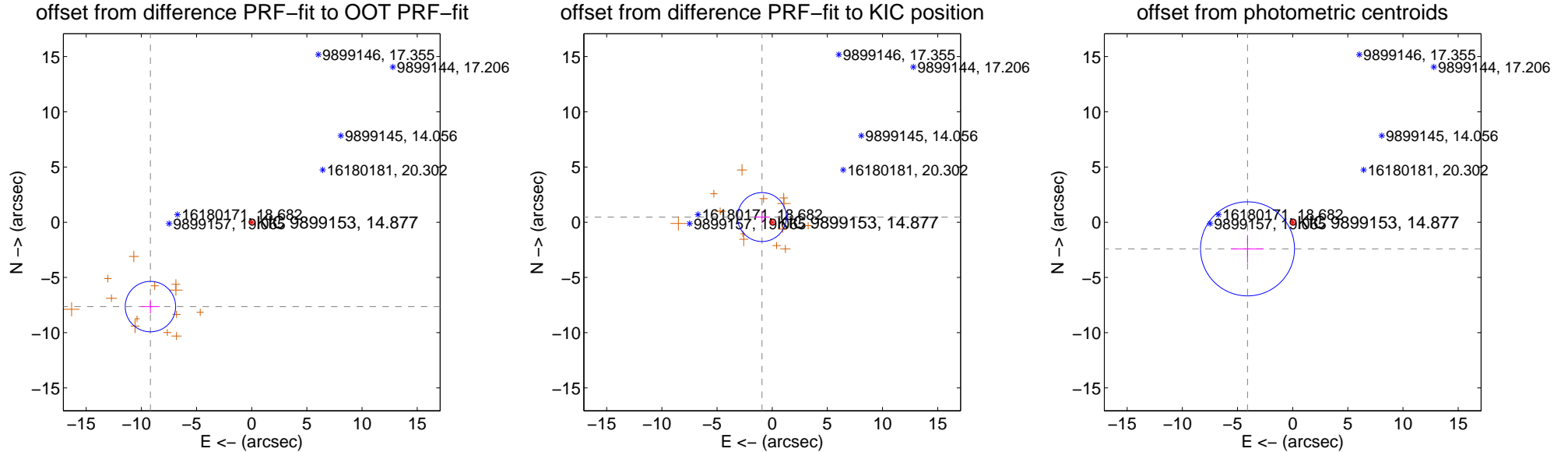
DV Centroid Data

Supplemental centroid analysis for 009899153-01. Kepler magnitude: 14.88. Transit SNR 9.39

There are 0 quarters with good PRF difference image offsets

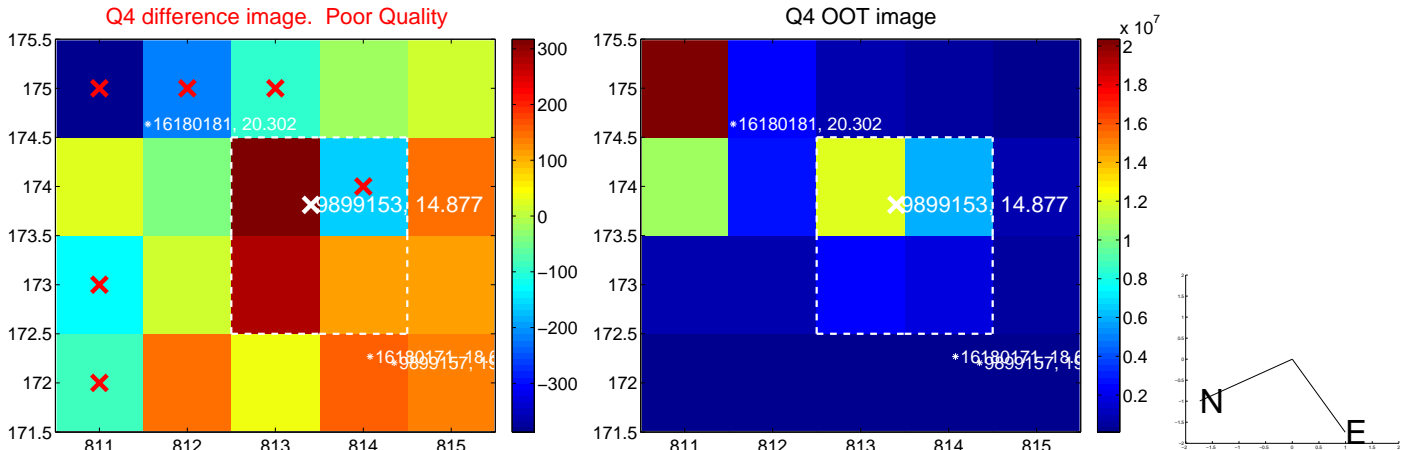
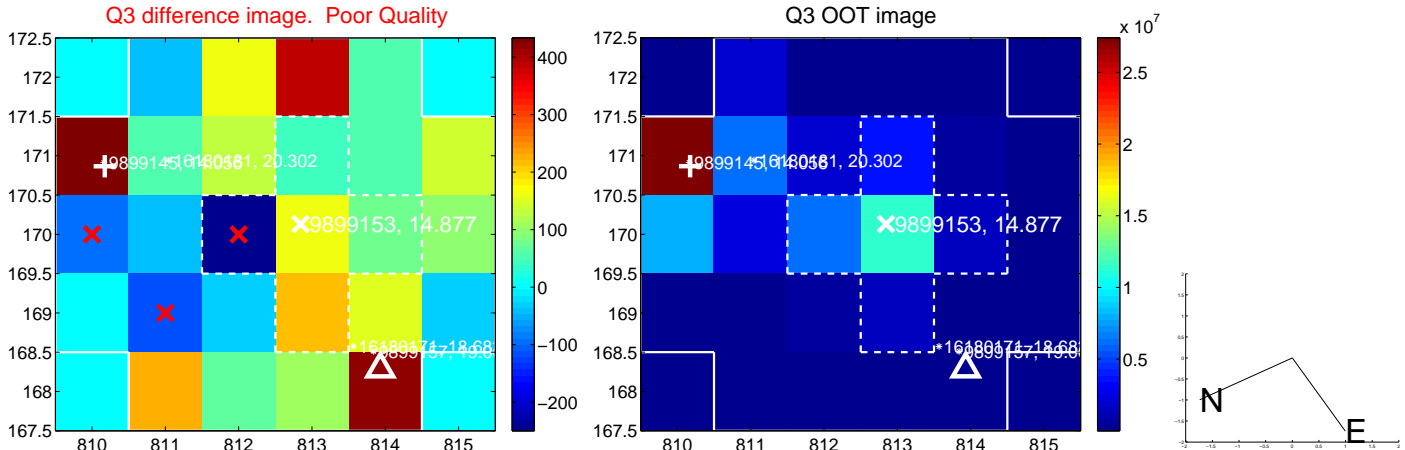
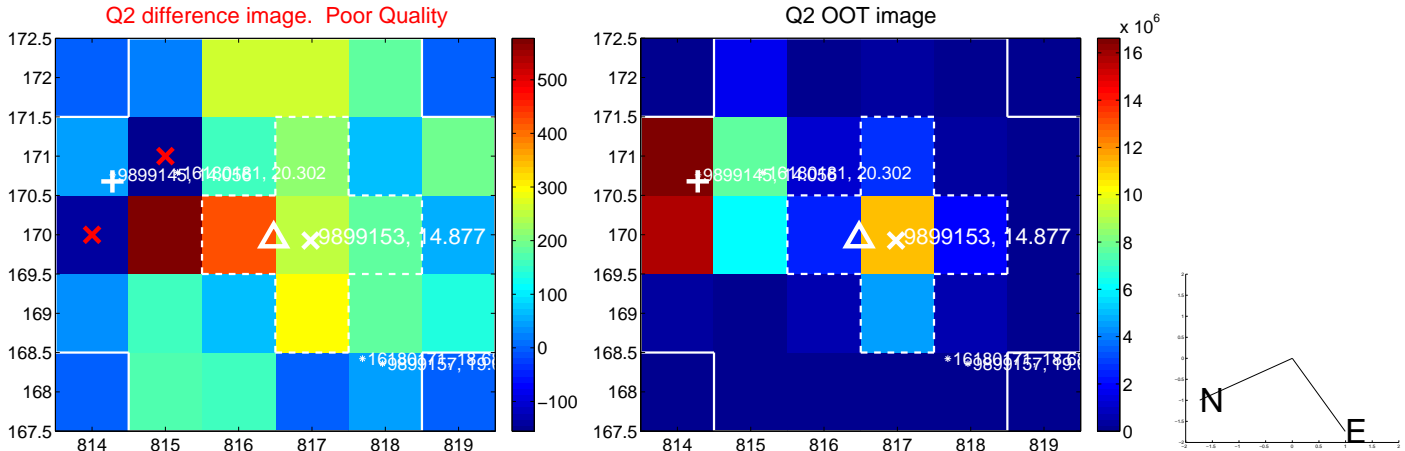
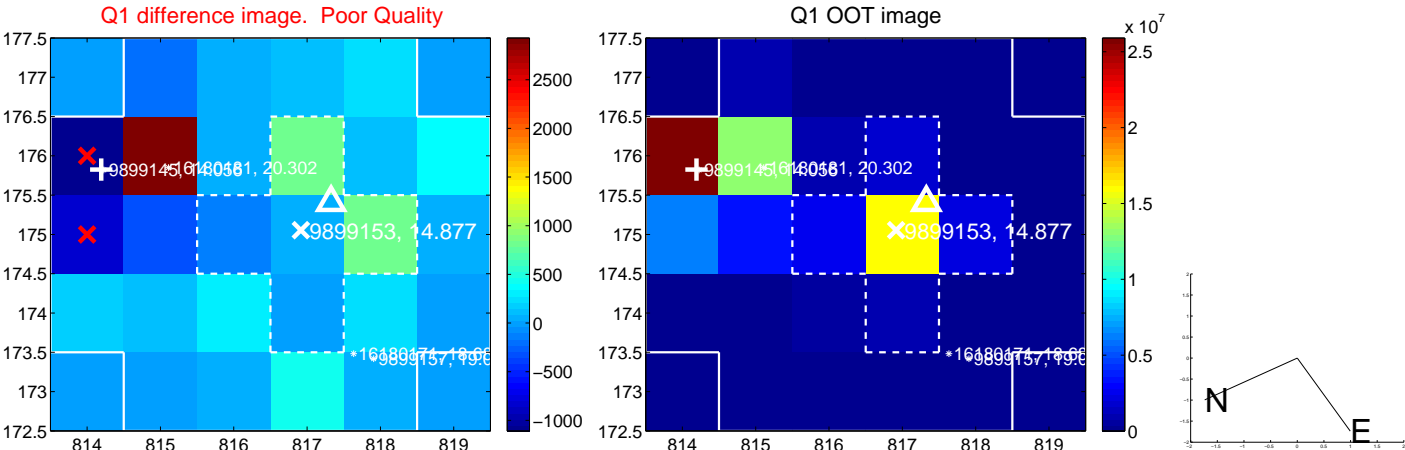
The OOT PRF centroid is offset from the target star catalog position by about 11.24 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	11.944 \pm 0.761	15.69	9.181 \pm 0.847	-7.640 \pm 0.616
PRF-fit source offset from KIC position	1.040 \pm 0.738	1.41	0.929 \pm 0.722	0.468 \pm 0.548
photometric centroid source offset	4.75 \pm 1.42	3.35	4.09 \pm 1.47	-2.41 \pm 1.25

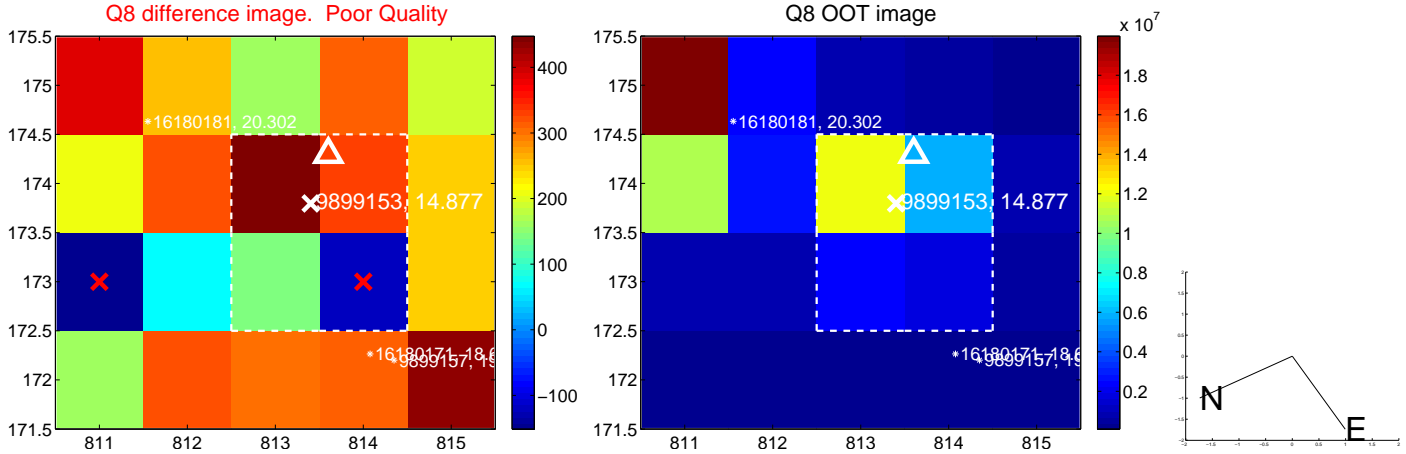
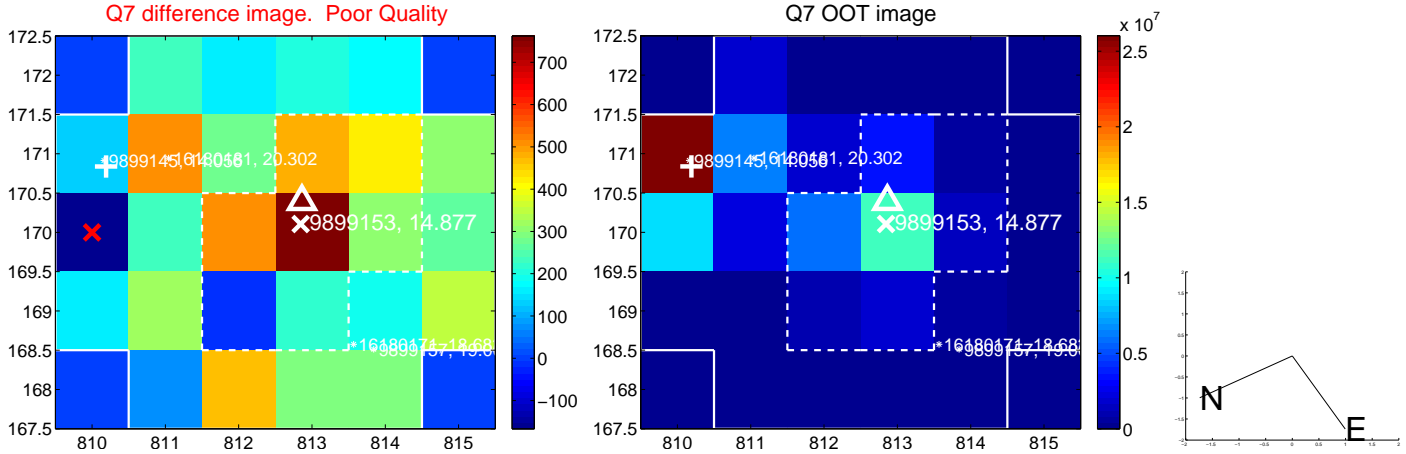
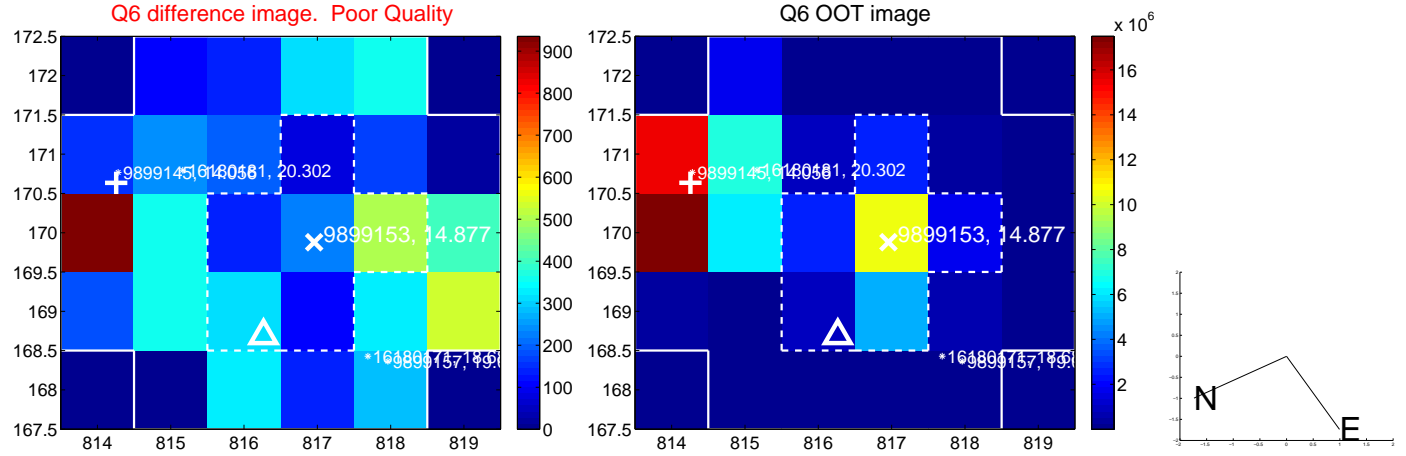
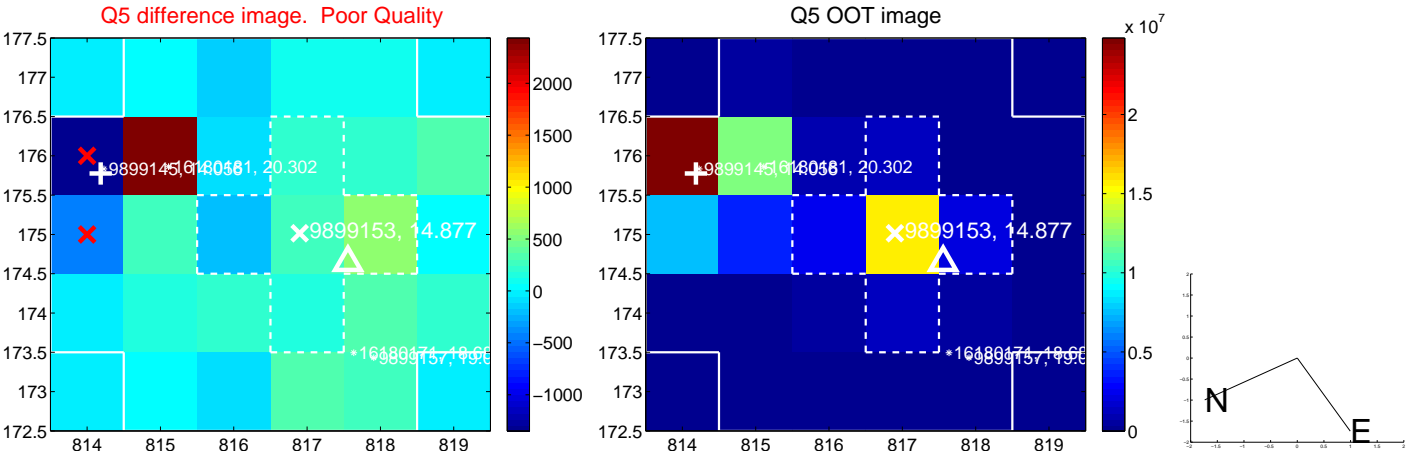


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

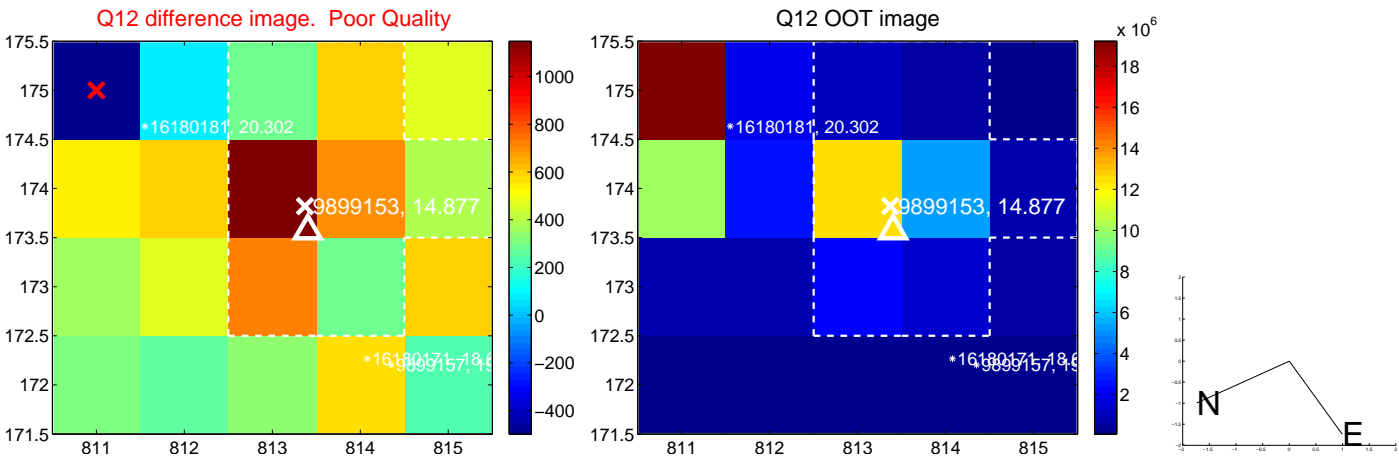
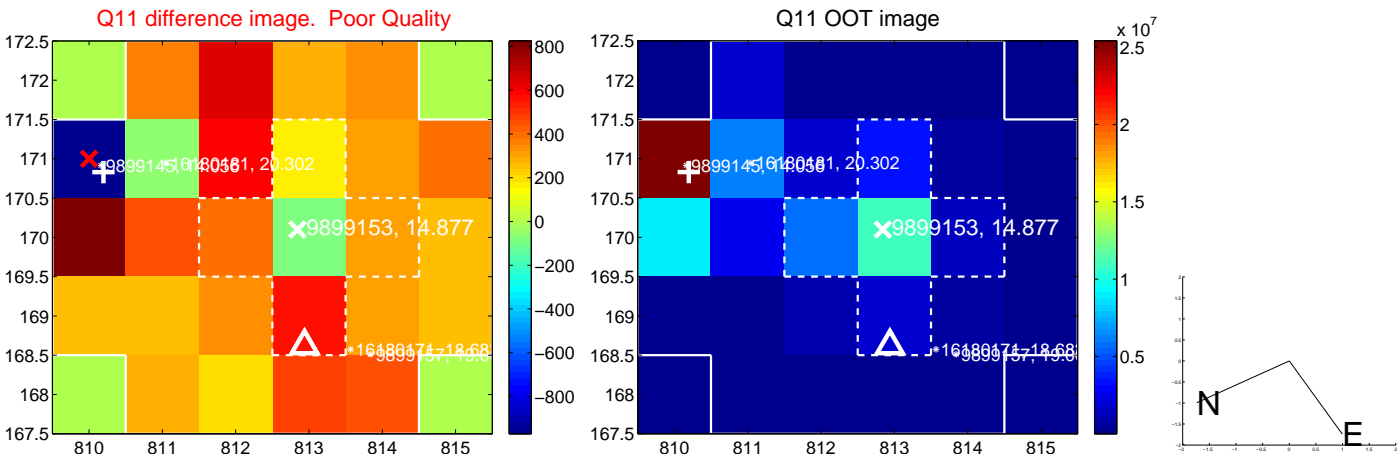
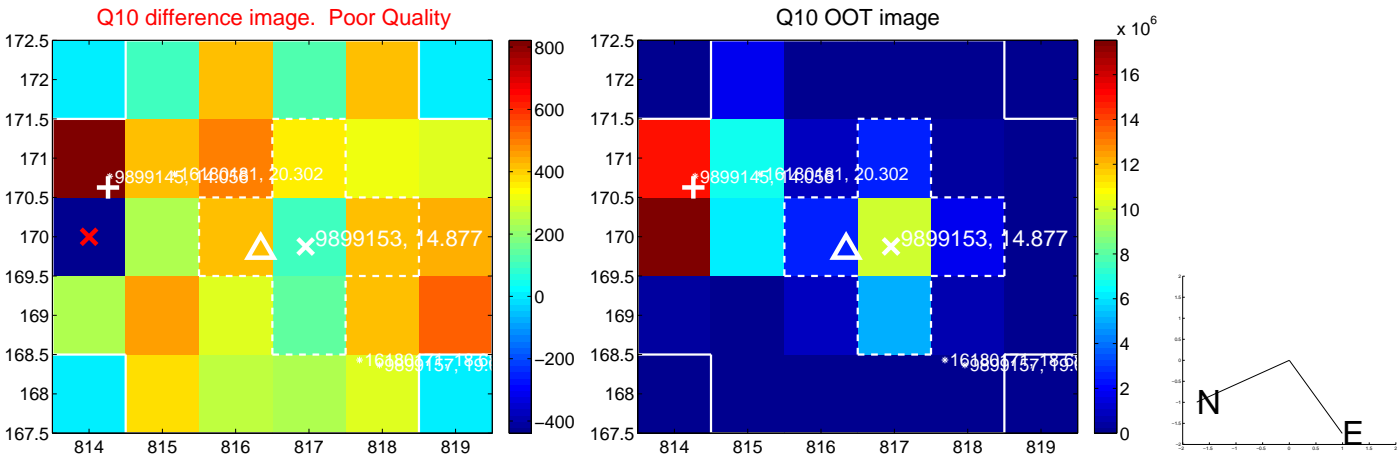
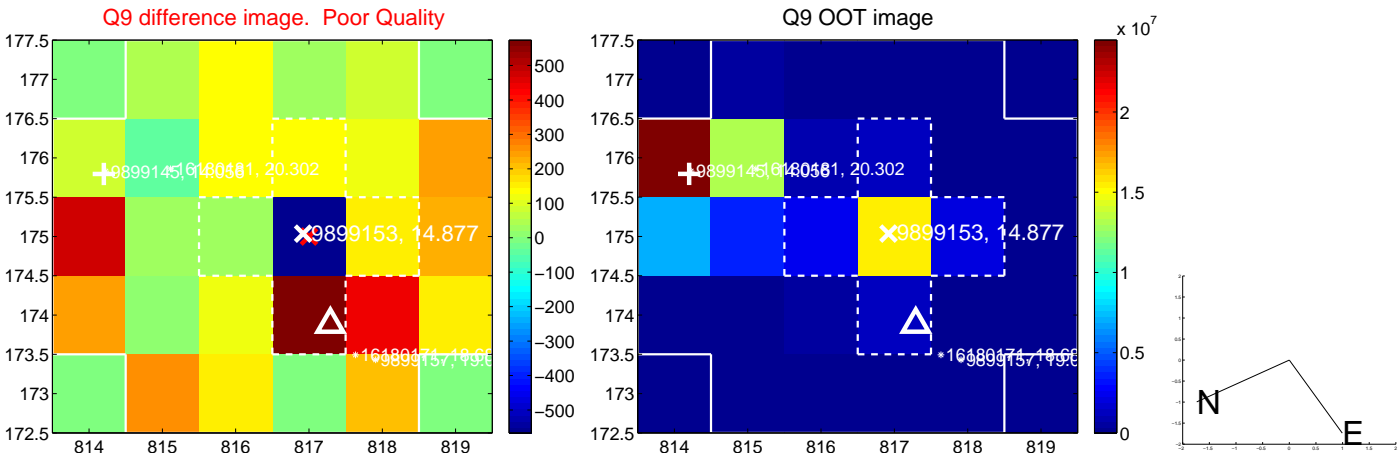
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



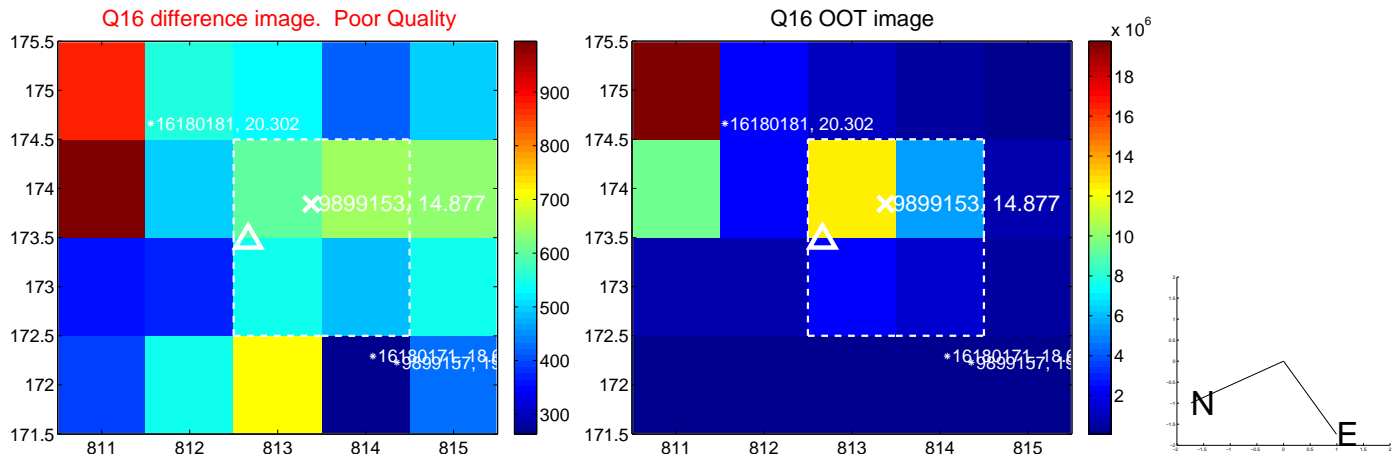
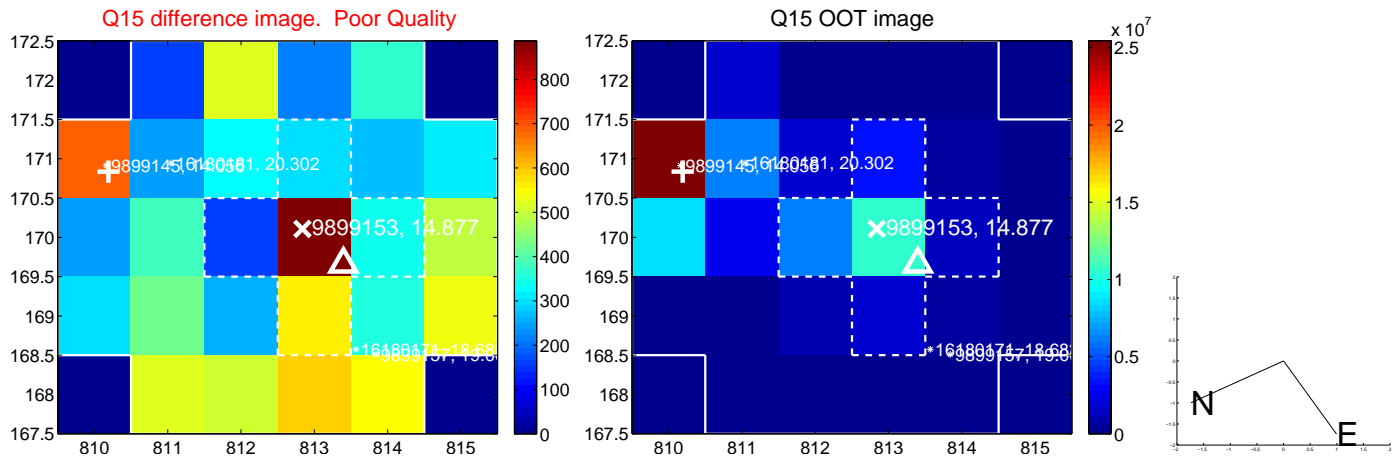
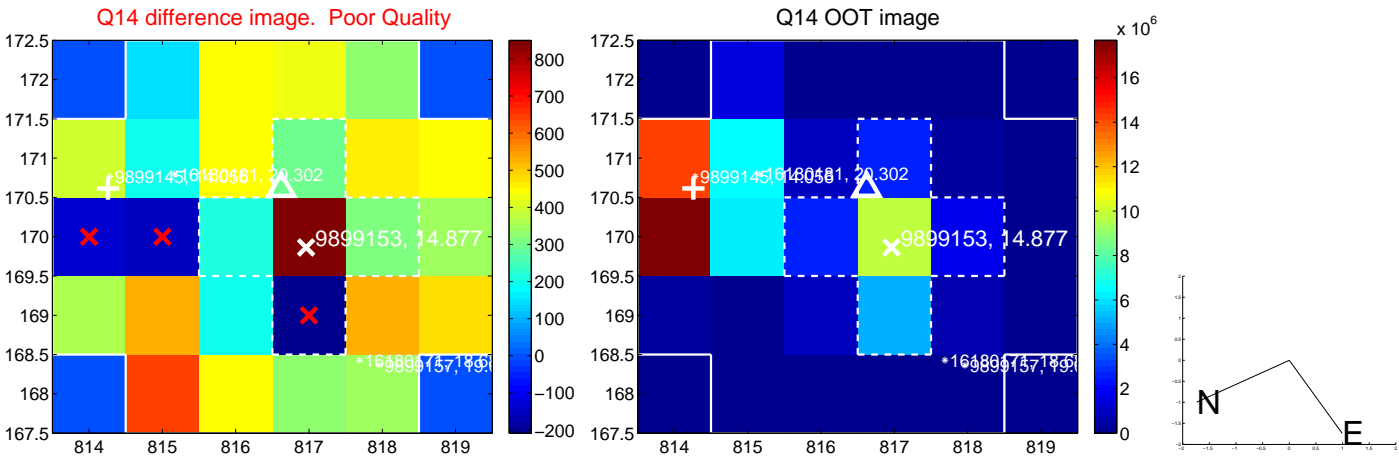
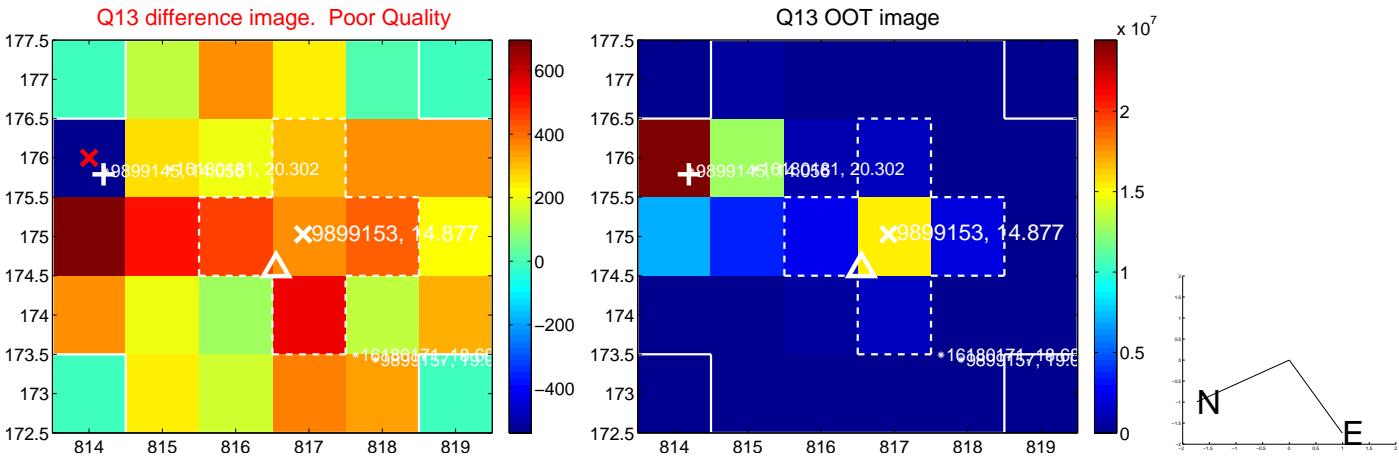
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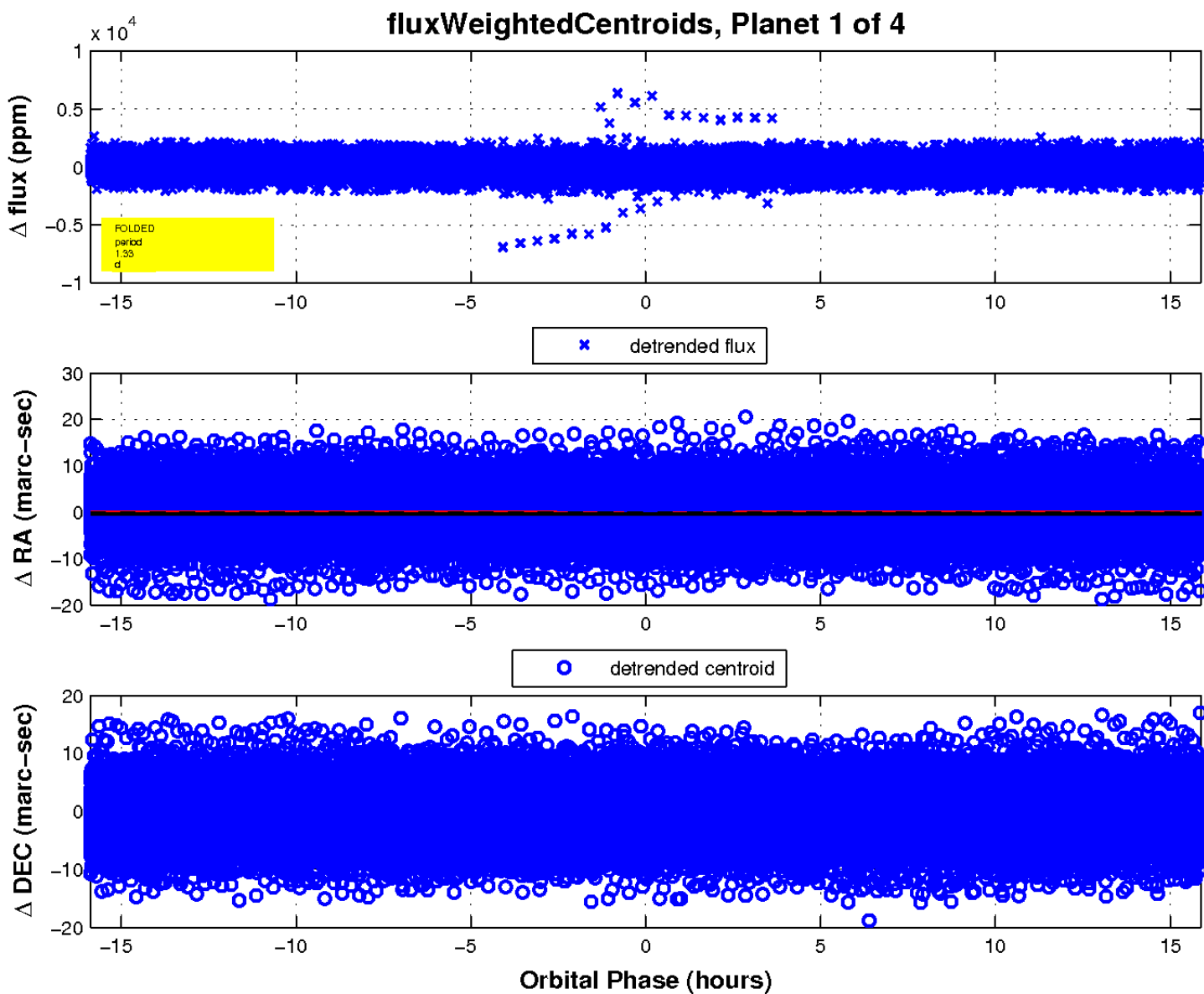
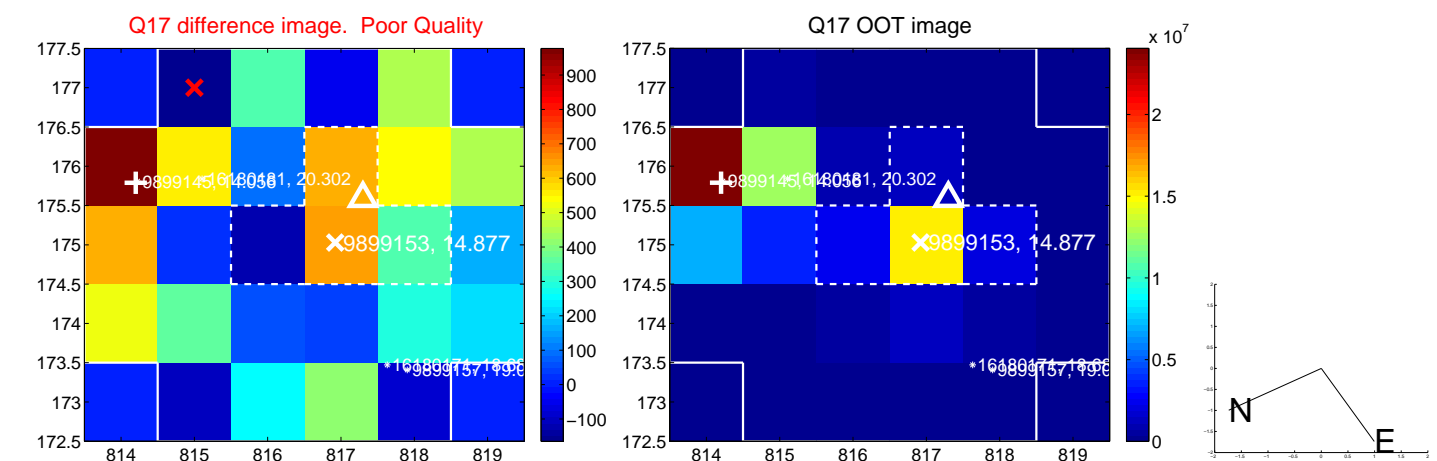
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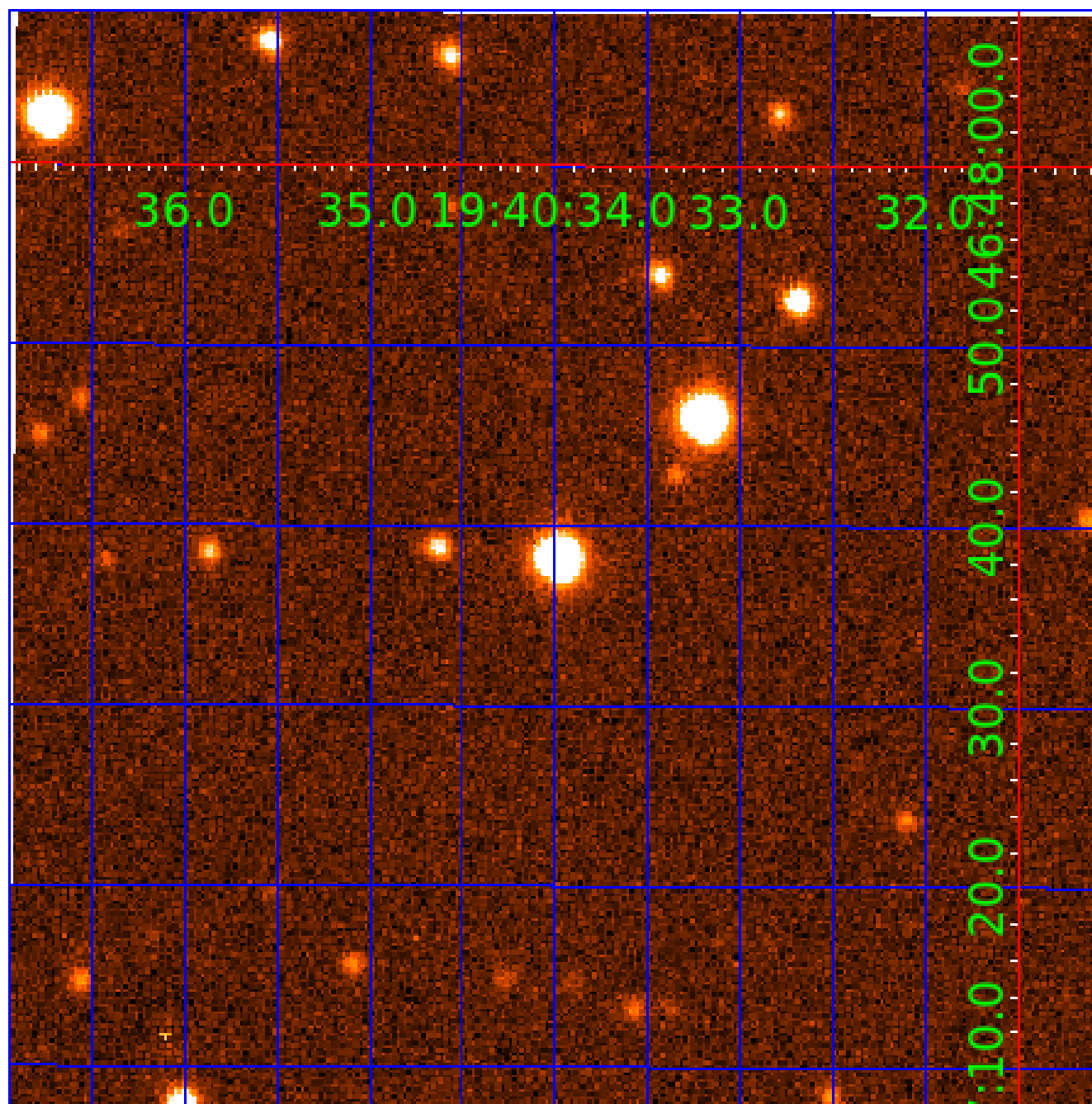


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009899153

Q1-17 DR25 TCE Parameters

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009899153-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS

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

Ephemeris Match Information For 009899153-02

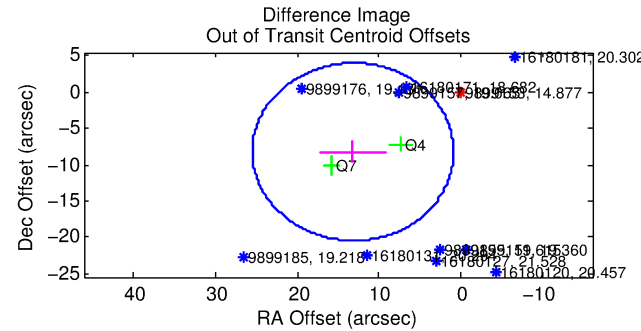
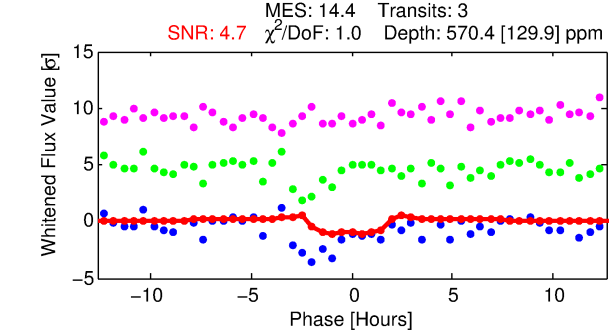
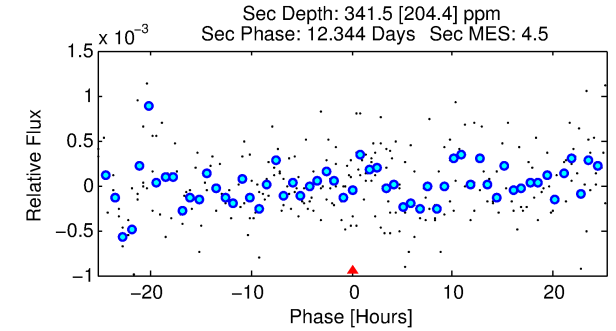
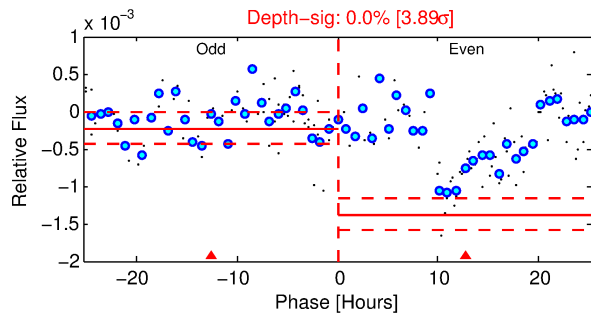
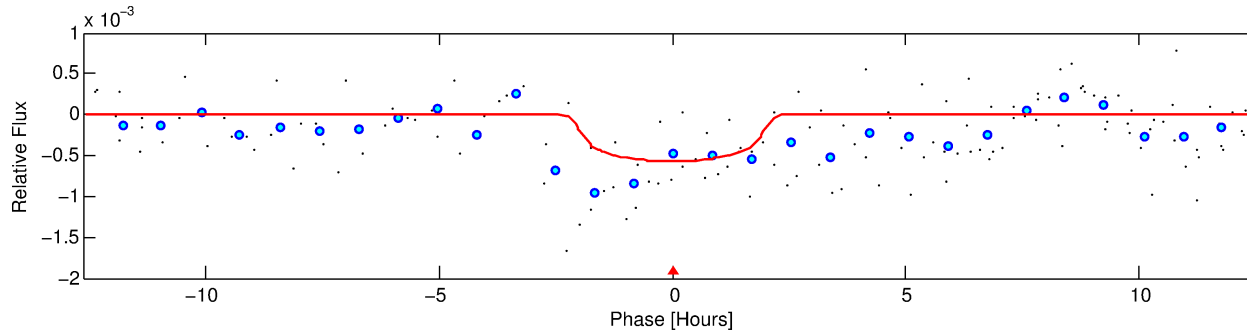
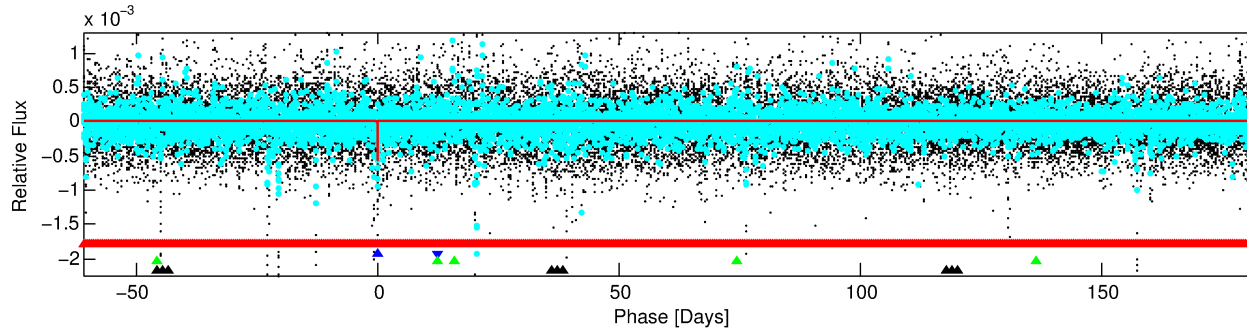
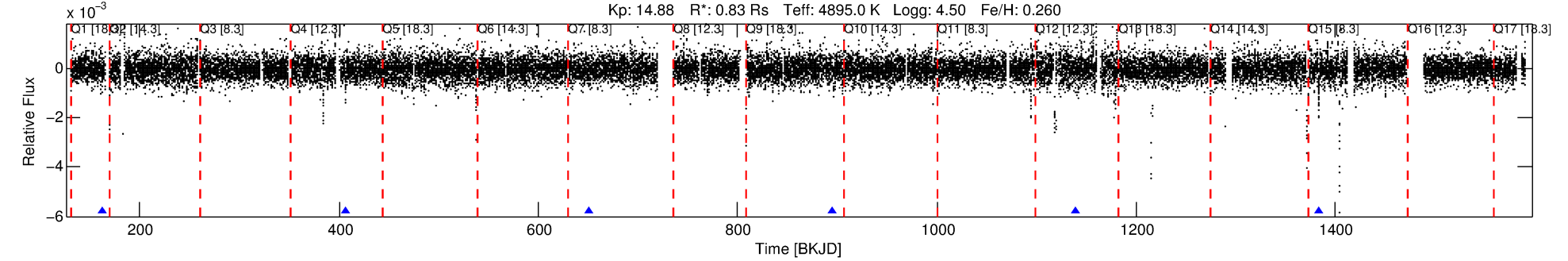
No Significant Match Found

DV One-Page Summary

KIC: 9899153 Candidate: 2 of 4 Period: 244.175 d

KOI: K07243 Corr: No Ephemeris Match

Kp: 14.88 R*: 0.83 Rs Teff: 4895.0 K Logg: 4.50 Fe/H: 0.260



DV Fit Results:

Period = 244.17522 [0.00567] d
Epoch = 162.8815 [0.0129] BKJD
Rp/R* = 0.0232 [0.0452]
a/R* = 339.47 [2173.33]
b = 0.68 [5.20]
Seff = 0.70 [0.58]
Teq = 233 [48] K
Rp = 2.09 [4.09] Re
a = 0.7082 [0.2911] AU
Ag = 21509.56 [86694.80] [0.25σ]
Teffp = 4372 [4317] K [0.96σ]

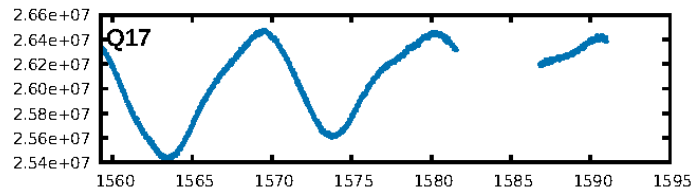
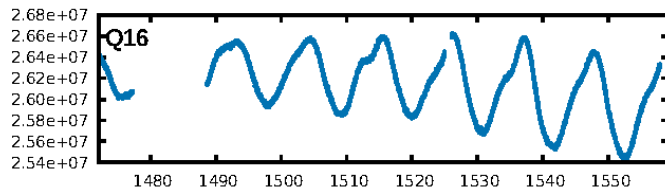
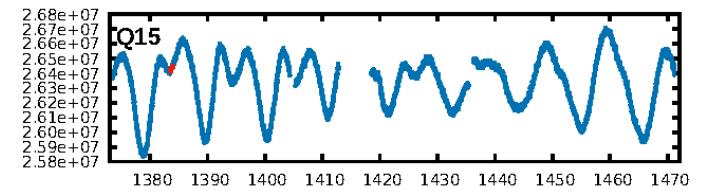
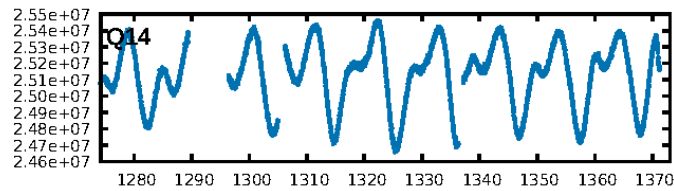
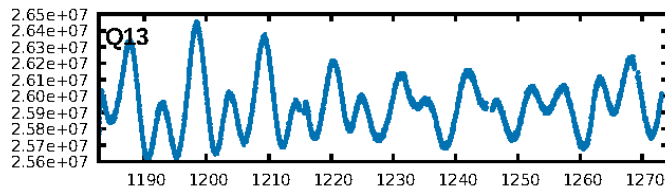
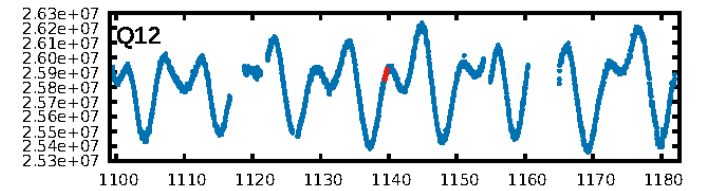
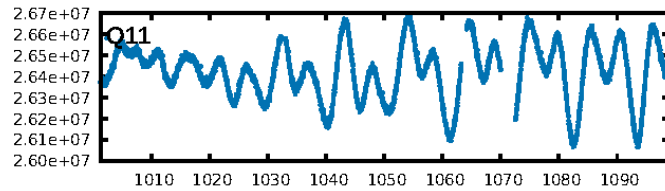
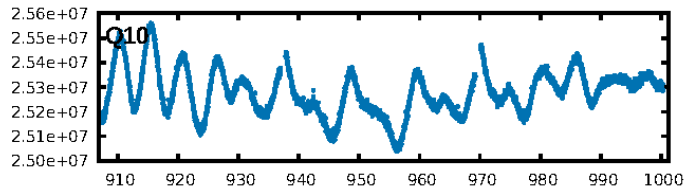
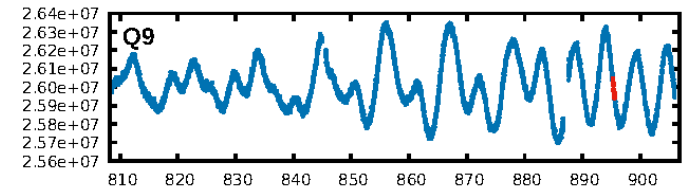
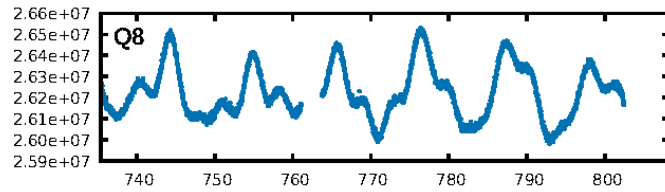
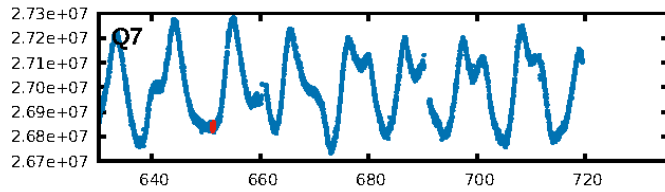
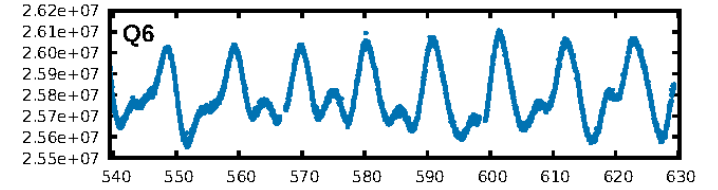
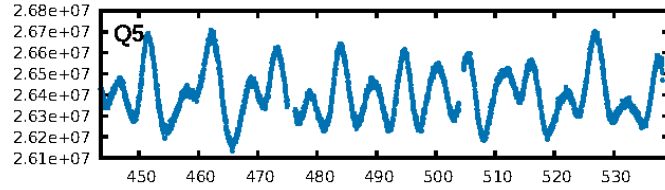
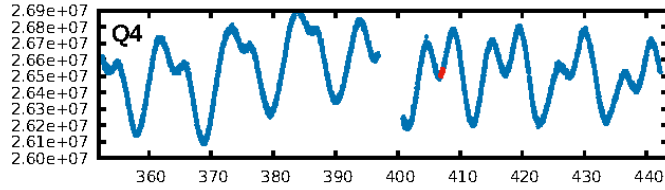
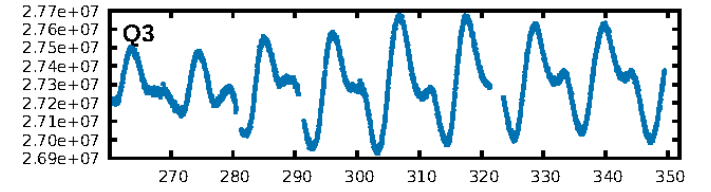
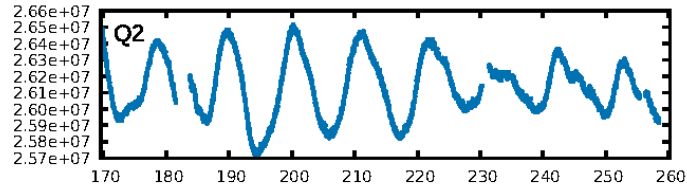
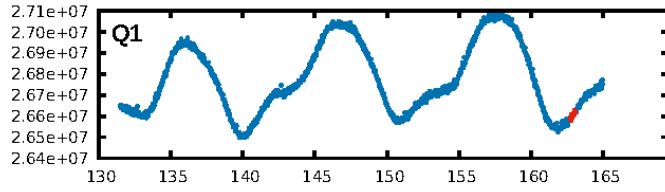
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [173.57σ]
LongPeriod-sig: 100.0% [237.76σ]
ModelChiSquare2-sig: 0.3%
ModelChiSquareGof-sig: 89.9%
Bootstrap-pfa: 8.62e-20
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.4802
Centroid-sig: N/A
Centroid-so: 1.429 arcsec [0.91σ]
OotOffset-rm: 15.554 arcsec [3.80σ]
KicOffset-rm: 5.574 arcsec [1.39σ]
OotOffset-st: 0/1/1/0 [2]
KicOffset-st: 0/1/2/0 [3]
DiffImageQuality-fgm: 0.00 [0/3]
DiffImageOverlap-fno: 0.17 [1/6]

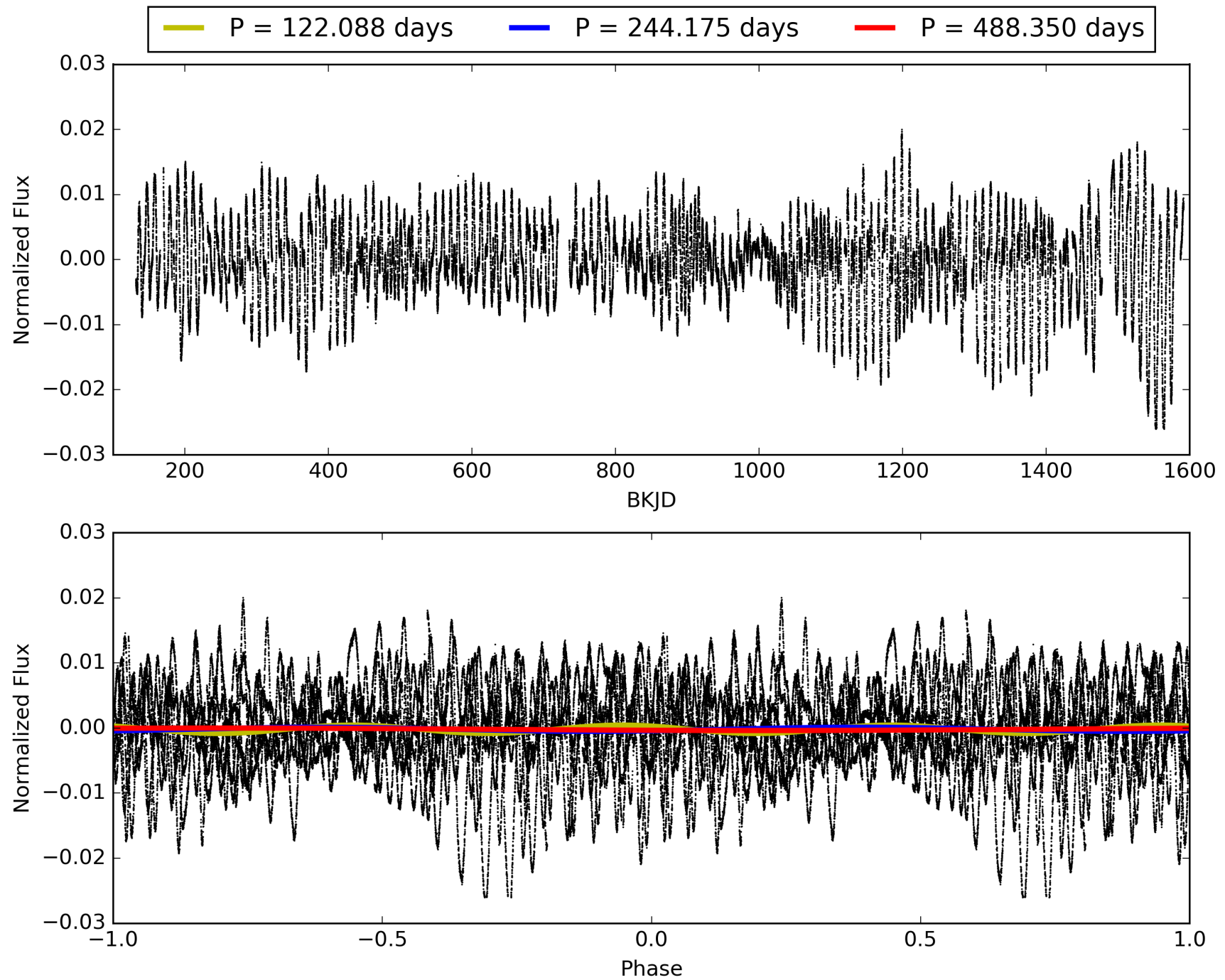
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 04:18:01 Z

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

TCE 009899153-02, PDC Light Curves

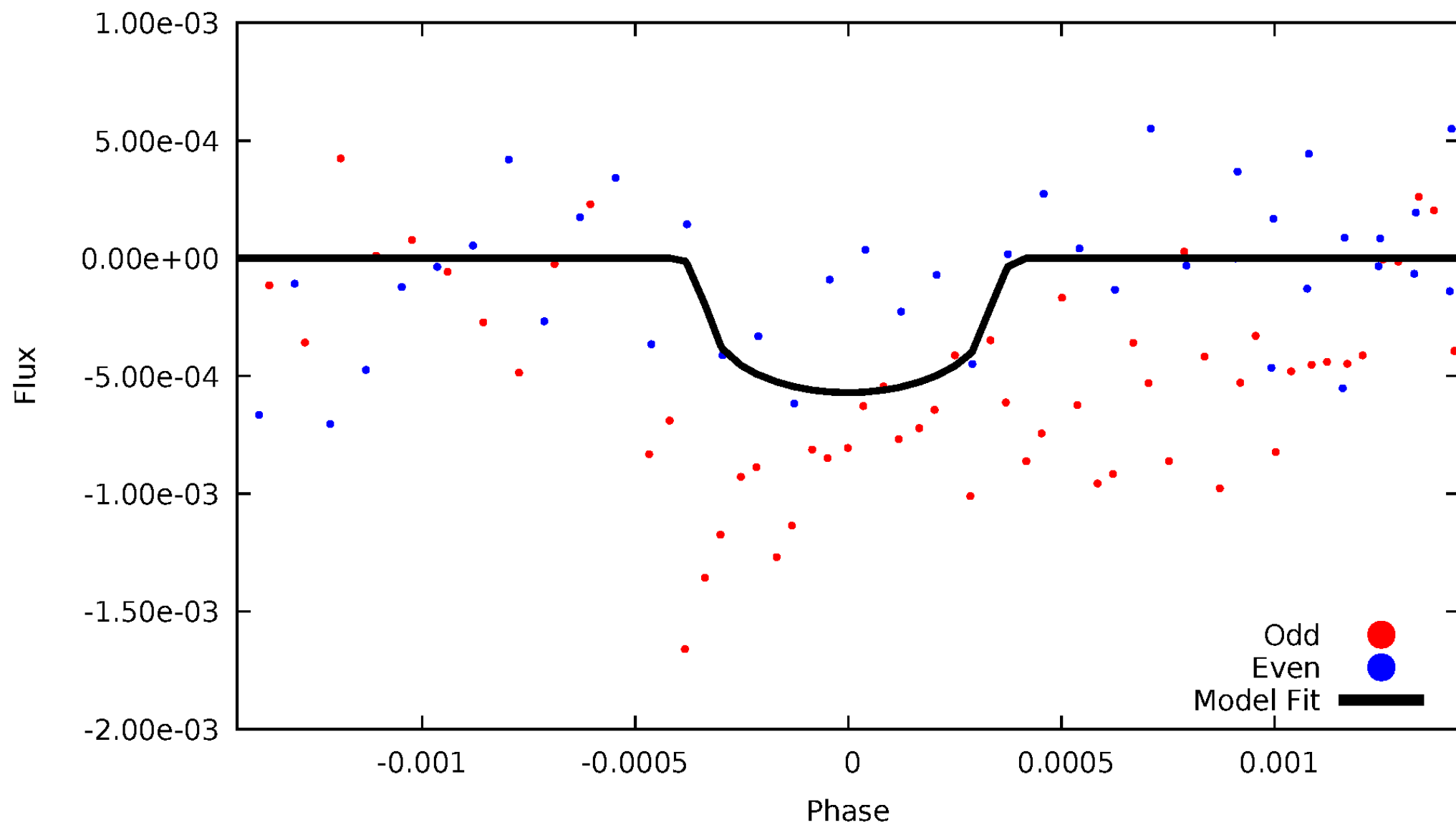


TCE 009899153-02



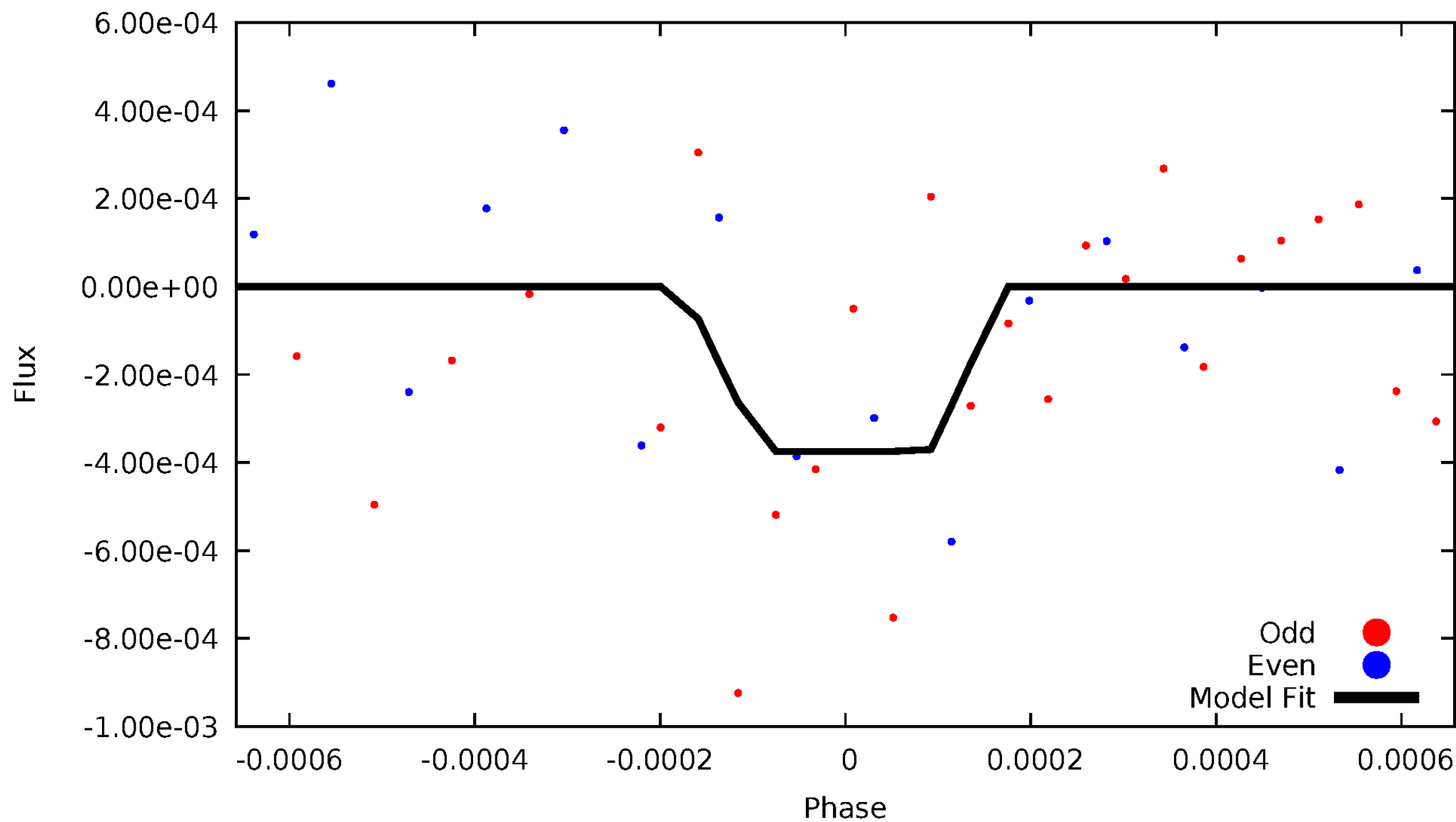
DV Odd/Even

TCE 009899153-02



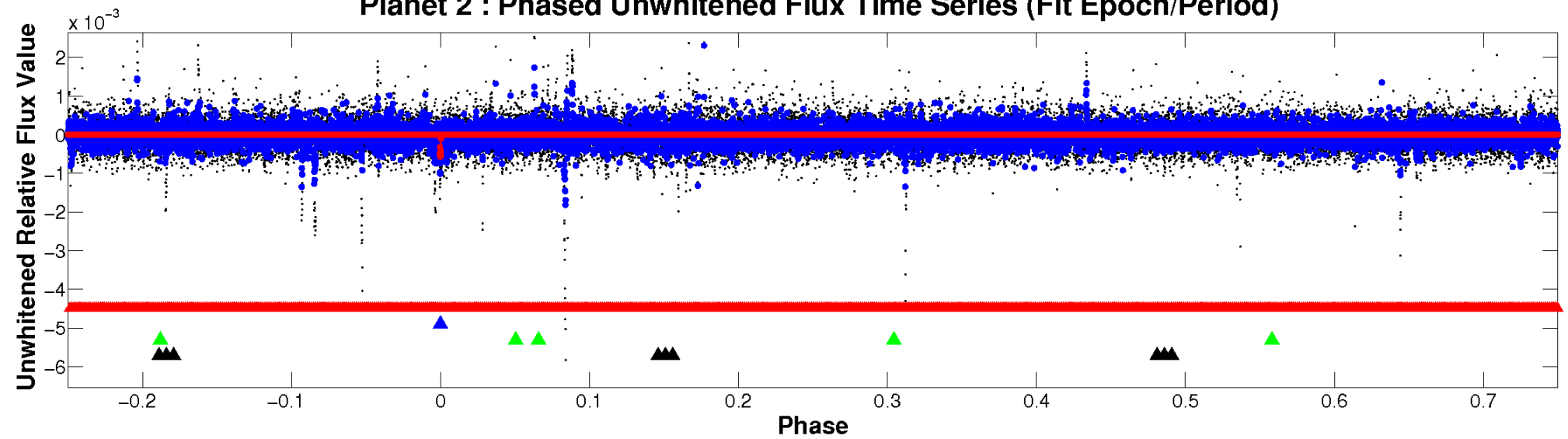
ALT Odd/Even

TCE 009899153-02

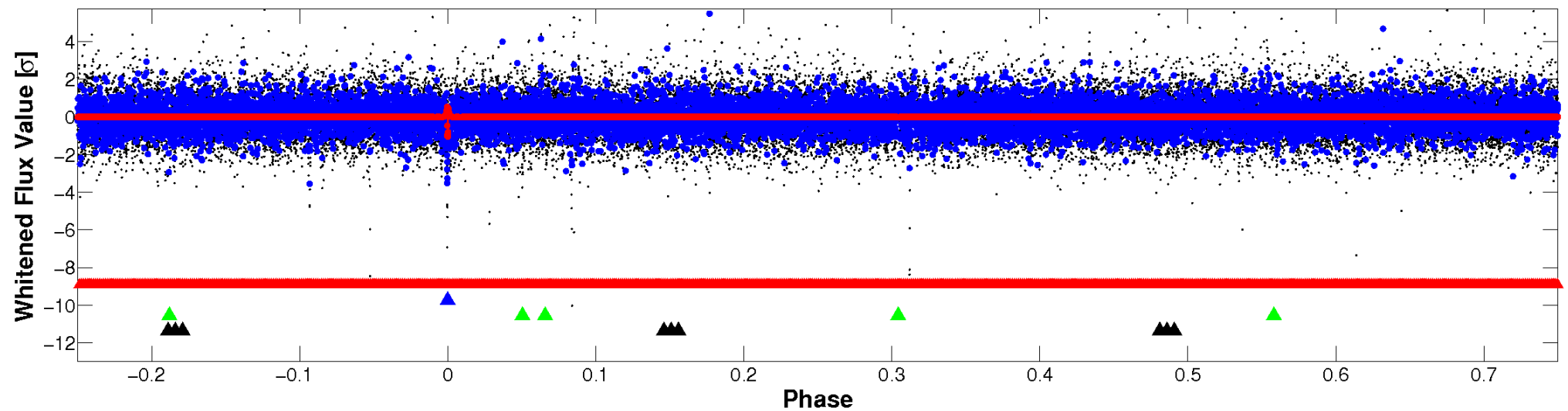


Non-Whitened Vs. Whitened Light Curve

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

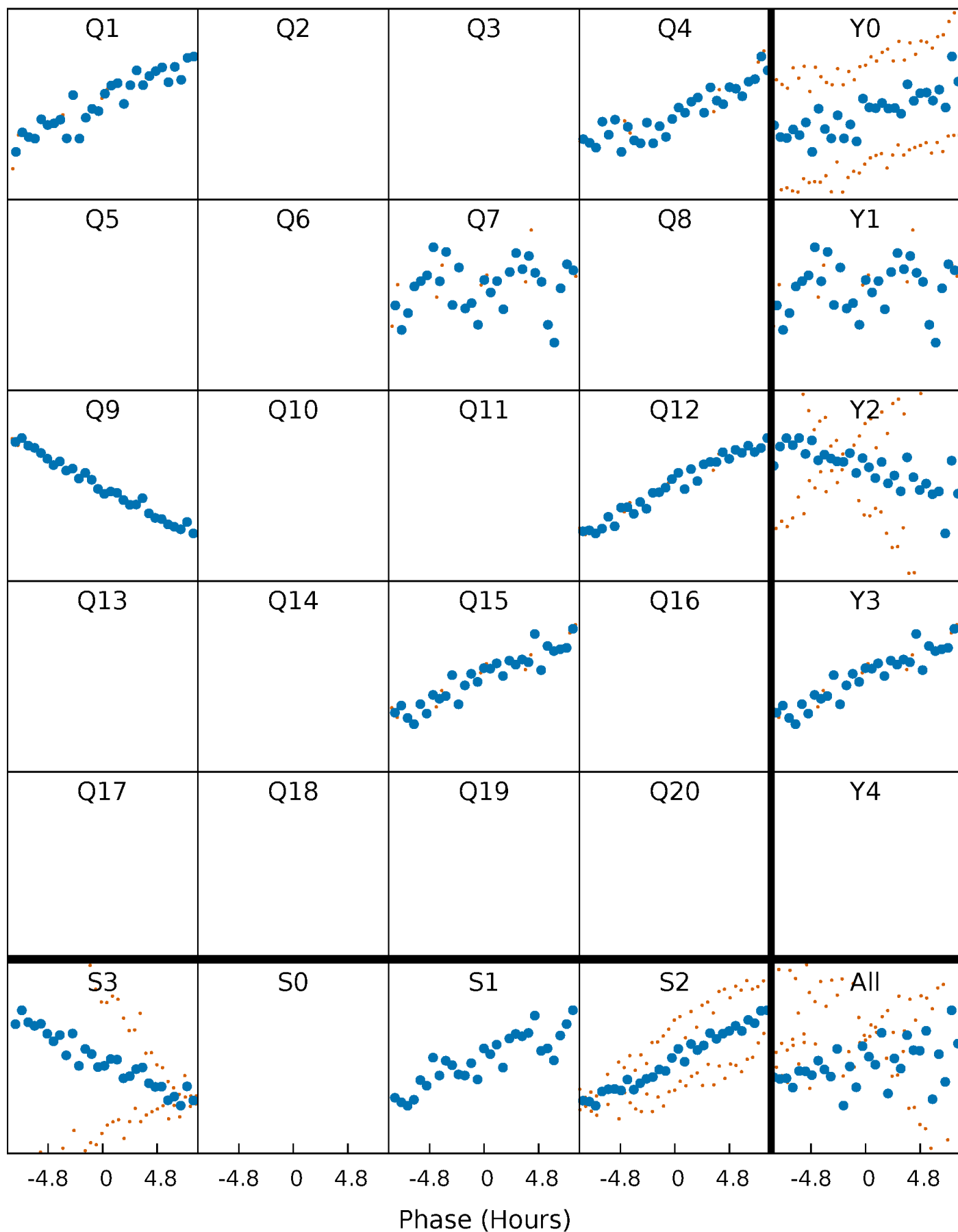


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



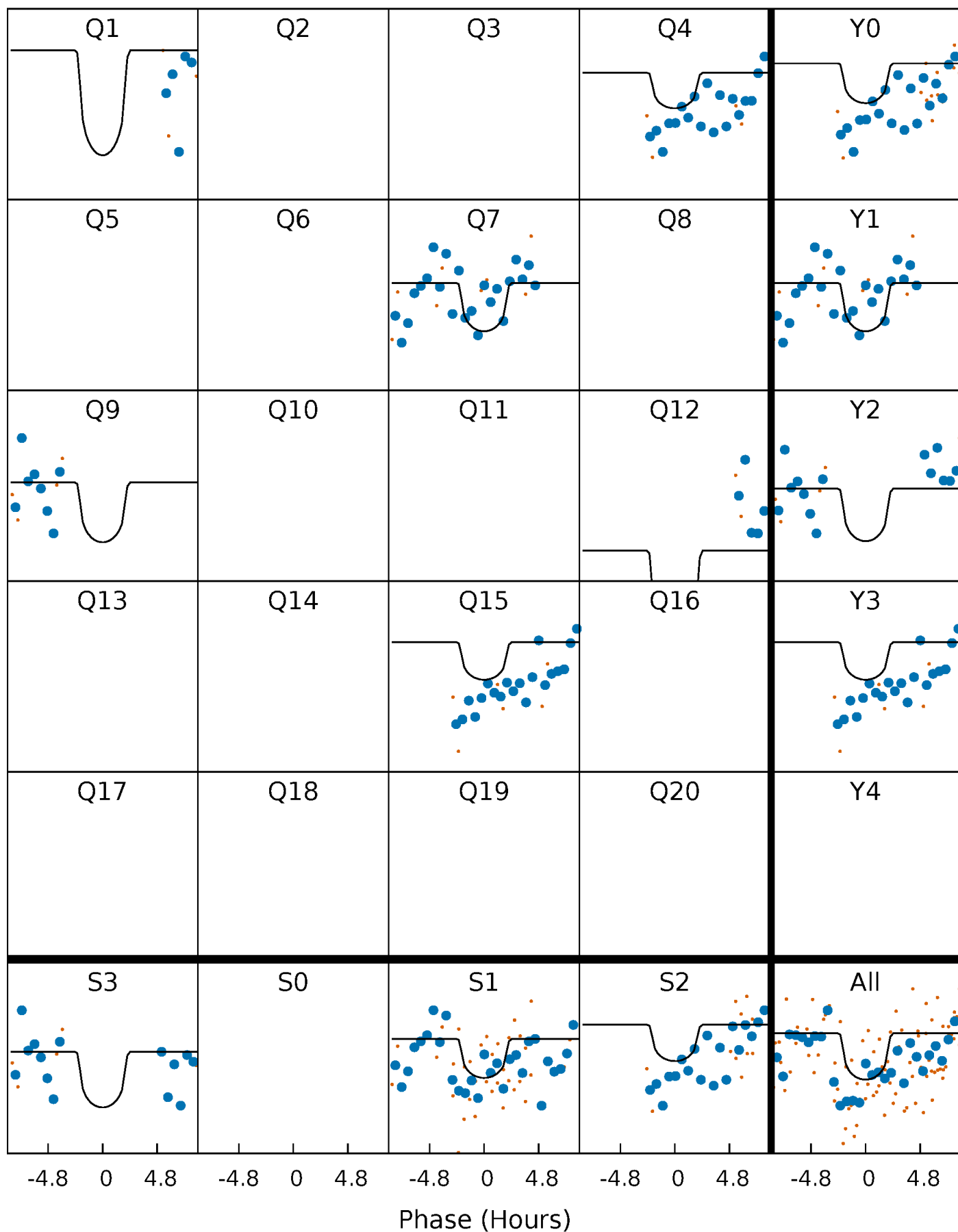
PDC Quarter-Phased Transit Curves

TCE 009899153-02 P=244.175219 Days $T_0=162.881511$ (BKJD)



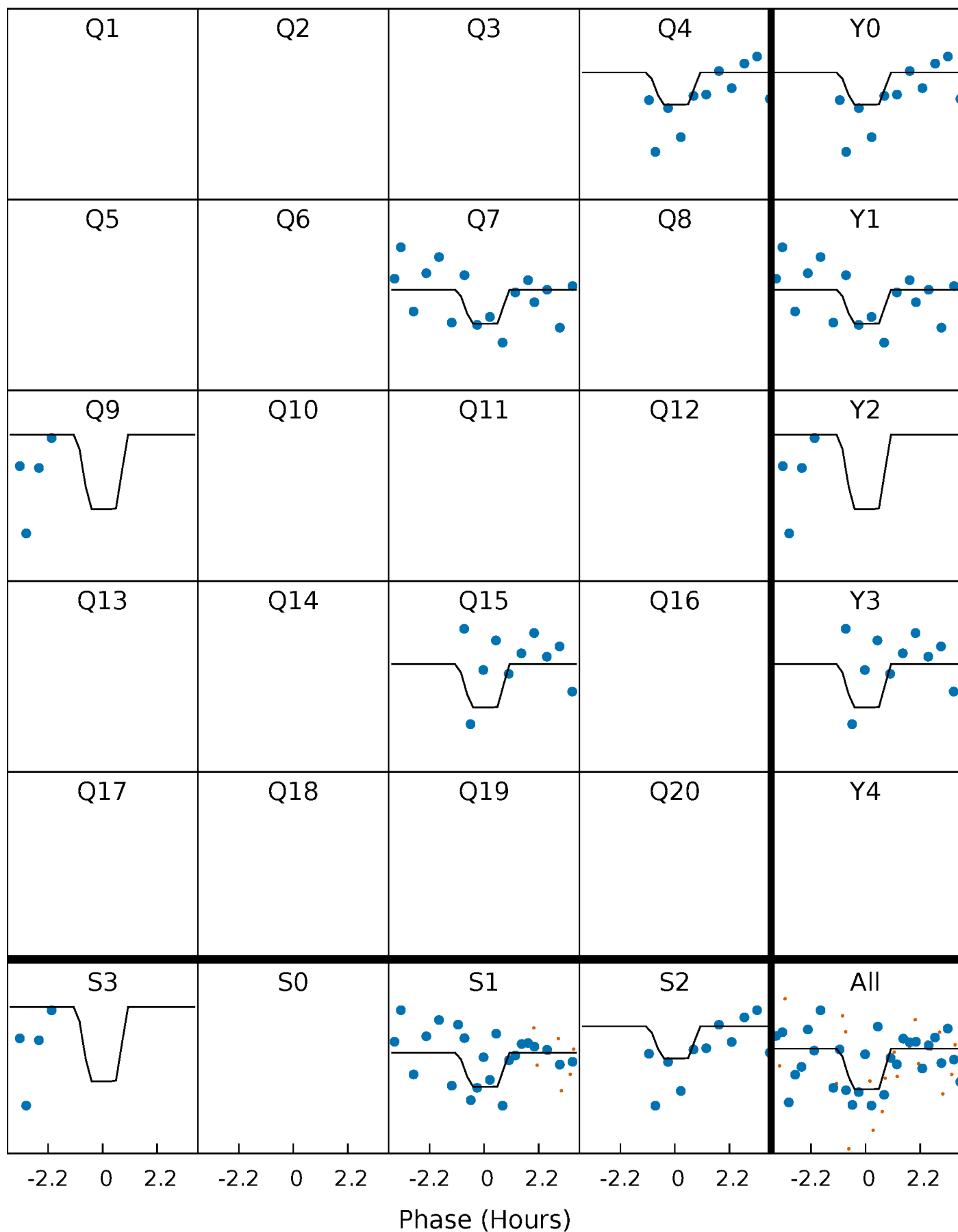
DV Quarter-Phased Transit Curves

TCE 009899153-02 P=244.175219 Days $T_0=162.881511$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

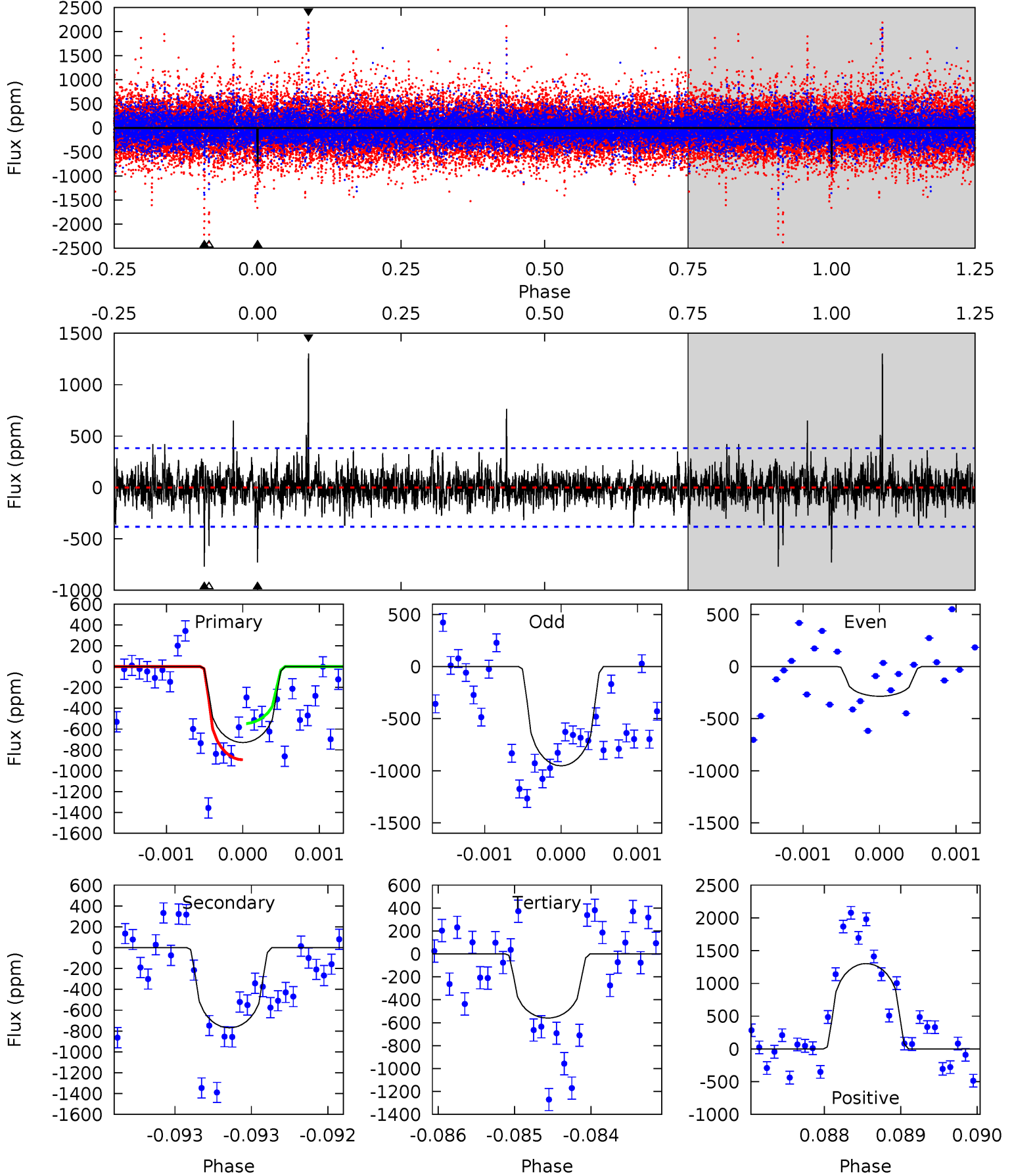
TCE 009899153-02 P=244.169825 Days $T_0=162.833173$ (BKJD)



DV Model-Shift Uniqueness Test

009899153-02, P = 244.175219 Days, E = 162.881511 Days

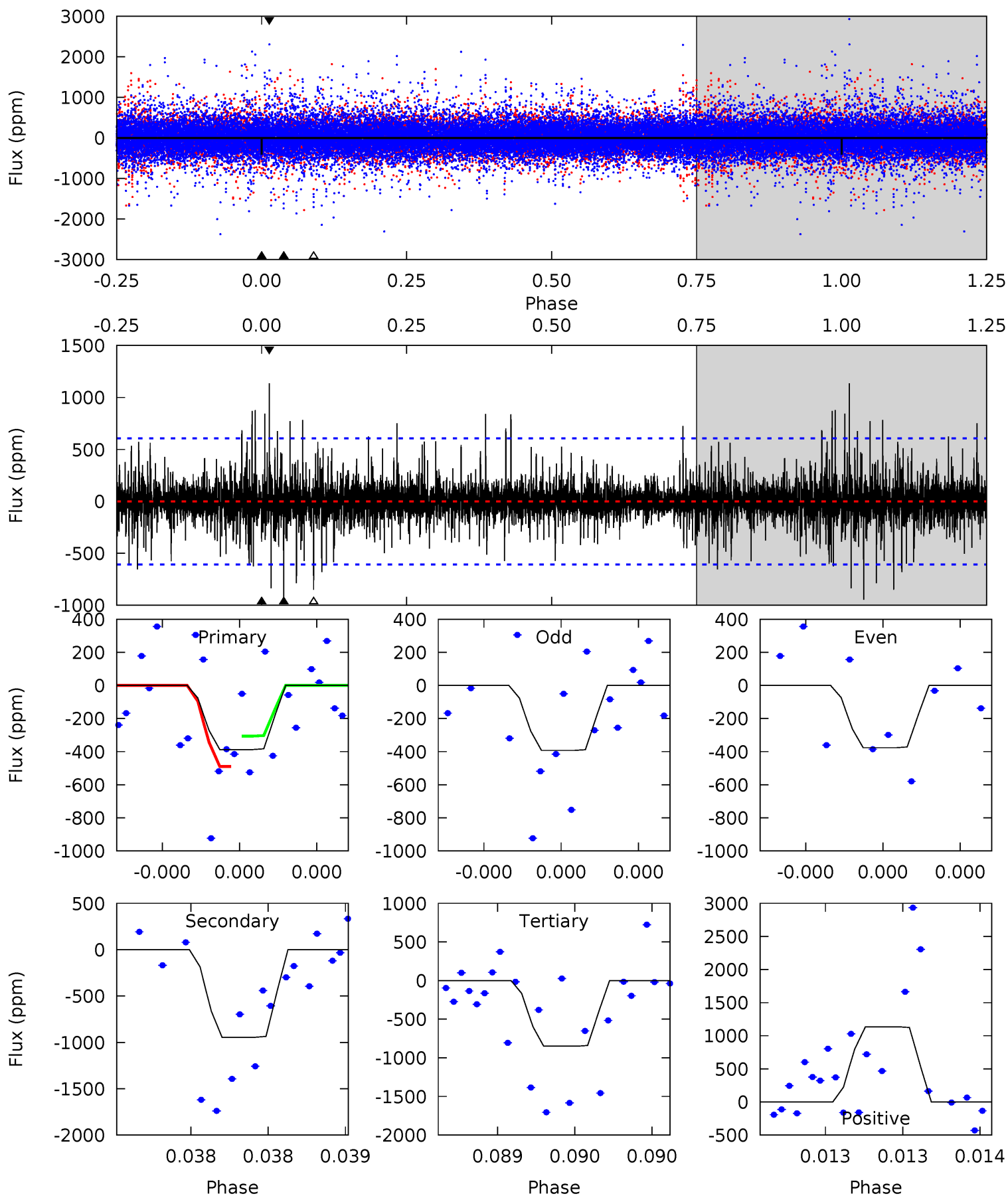
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.5	11.1	8.06	18.8	5.50	3.37	1.59	2.43	-8.26	3.01	-7.68	4.26	0.80	0.63	2.50



Alt Model-Shift Uniqueness Test

009899153-02, P = 244.169825 Days, E = 162.833173 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.61	8.82	7.93	10.6	5.66	3.62	1.29	-4.32	-6.98	0.89	-1.78	0.07	1.06	0.55	0.86



Stellar Parameters For KIC 009899153

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4895^{+145}_{-145}	$4.502^{+0.088}_{-0.528}$	$0.260^{+0.200}_{-0.300}$	$0.828^{+0.078}_{-0.085}$	$0.796^{+0.067}_{-0.054}$	$1.973^{+0.711}_{-0.648}$
	+3%/-3%	+2%/-12%	+77%/-115%	+9%/-10%	+8%/-7%	+36%/-33%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009899153-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-769 ± 69	$3.96^{+3.60}_{-2.75}$	330^{+18}_{-15}	4112^{+2977}_{-780}	$13351^{+126067}_{-9676}$
Alt.	-945 ± 107	$3.55^{+3.69}_{-2.42}$	331^{+17}_{-16}	4478^{+3230}_{-952}	$20155^{+178889}_{-15017}$

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 $A_{obs} \gg 1.0$

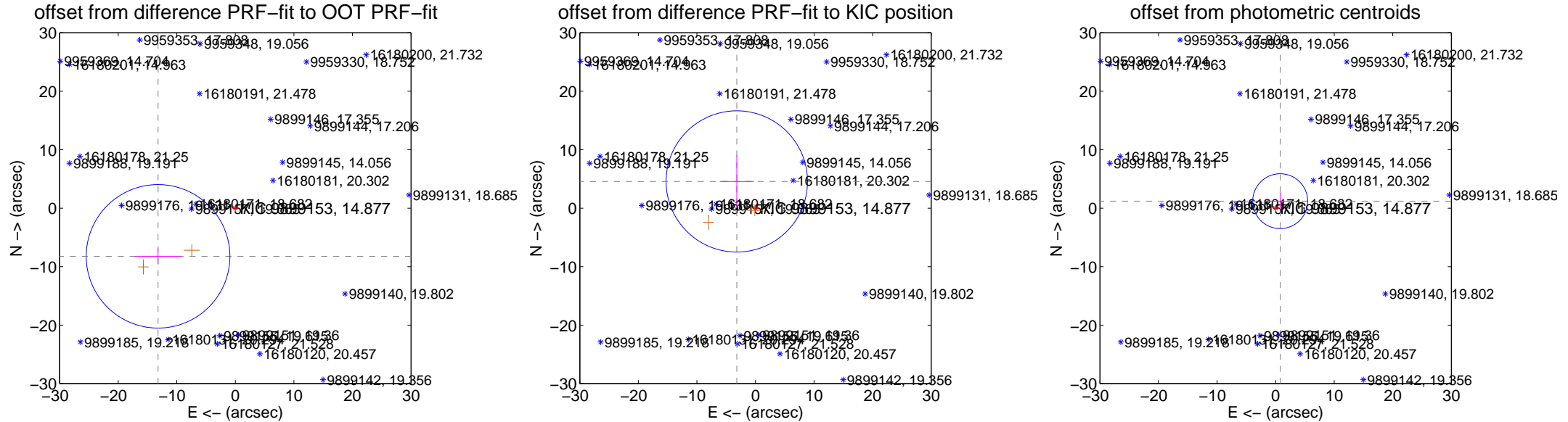
DV Centroid Data

Supplemental centroid analysis for 009899153-02. Kepler magnitude: 14.88. Transit SNR 4.70

There are 0 quarters with good PRF difference image offsets

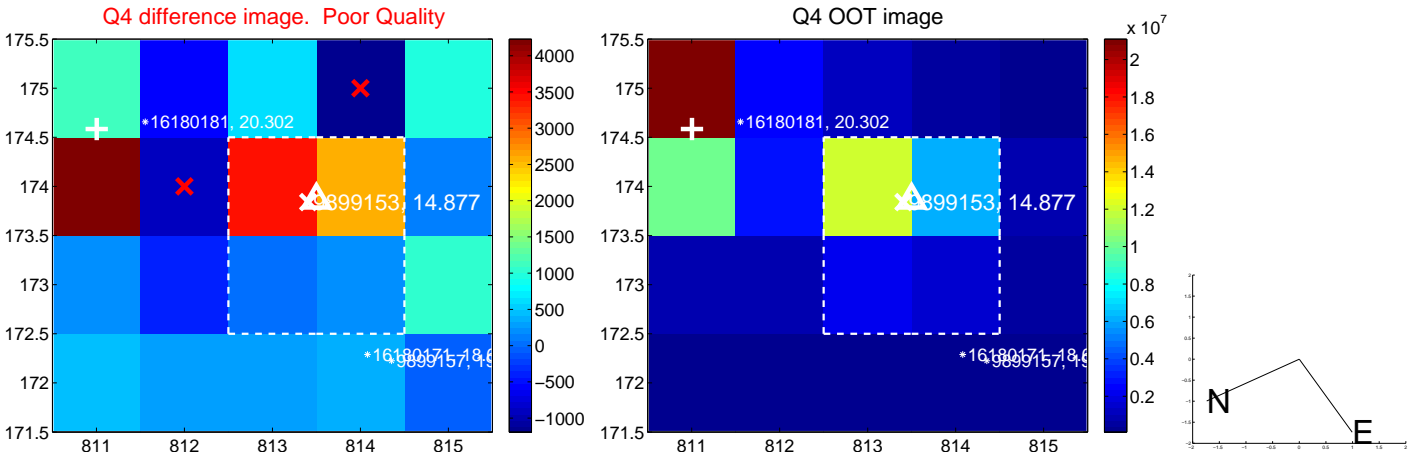
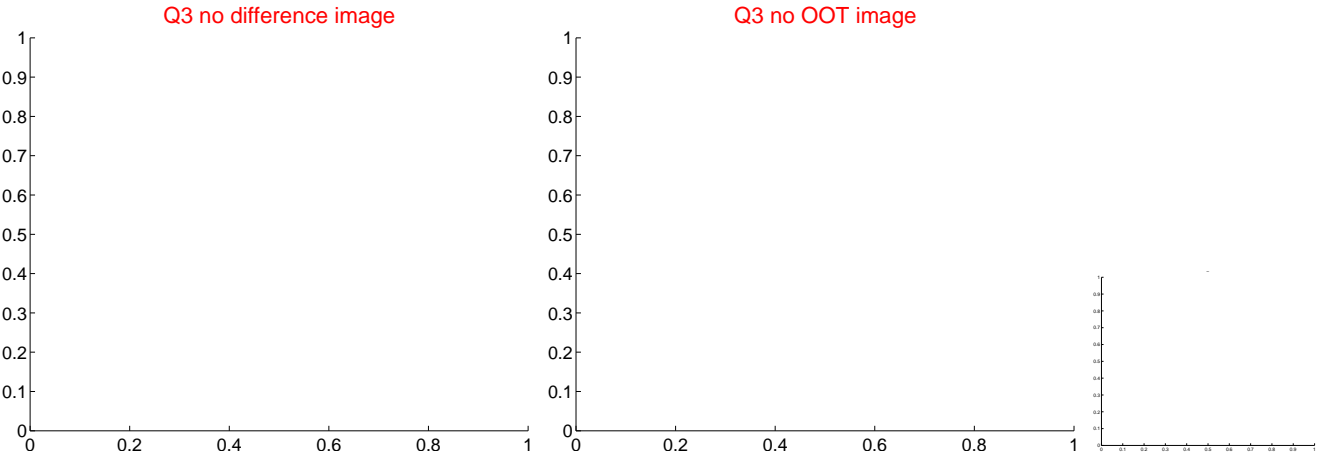
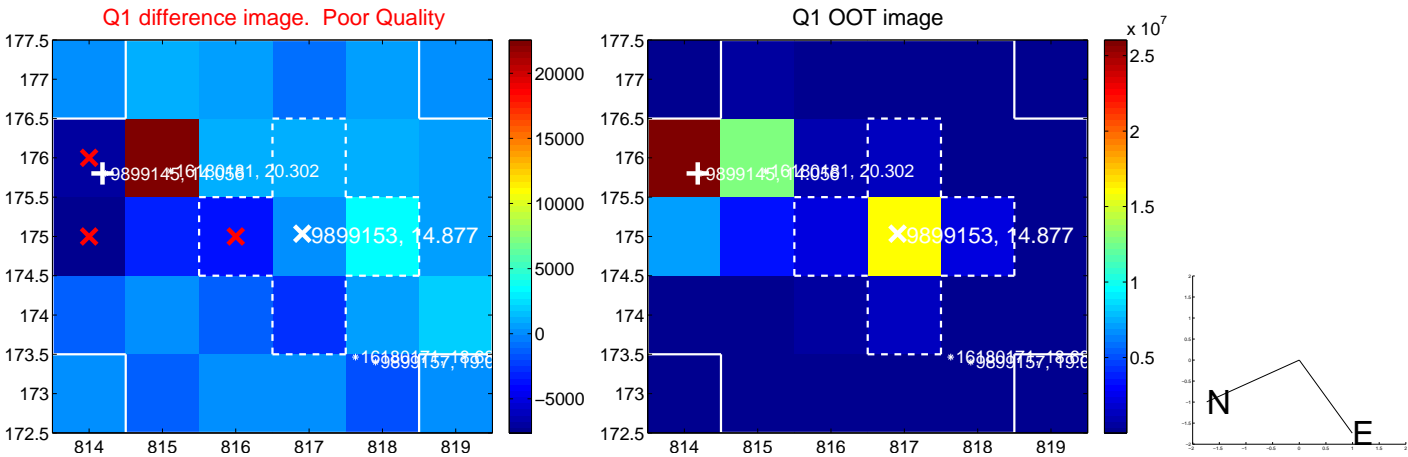
The OOT PRF centroid is offset from the target star catalog position by about 10.83 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	15.554 ± 4.089	3.80	13.196 ± 3.965	-8.232 ± 1.370
PRF-fit source offset from KIC position	5.574 ± 4.024	1.39	3.191 ± 2.925	4.570 ± 4.463
photometric centroid source offset	1.43 ± 1.56	0.91	-0.78 ± 1.73	1.20 ± 1.49

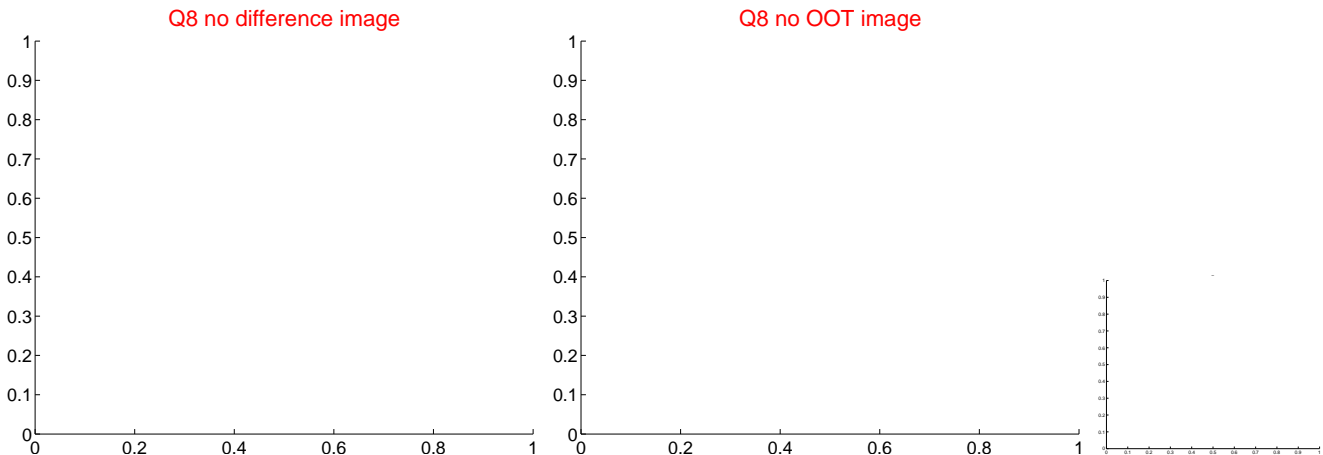
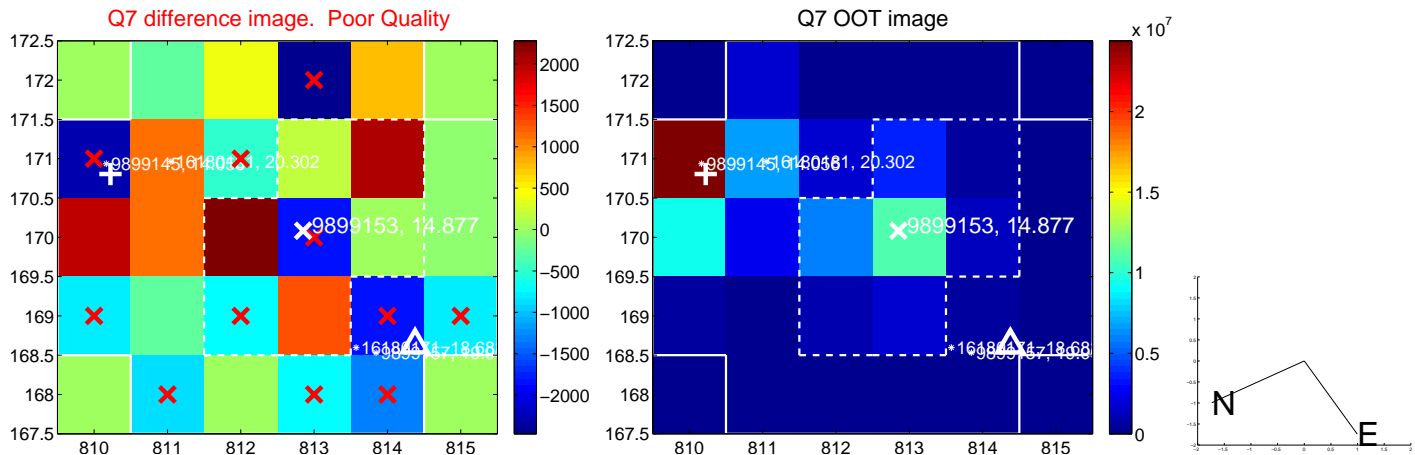
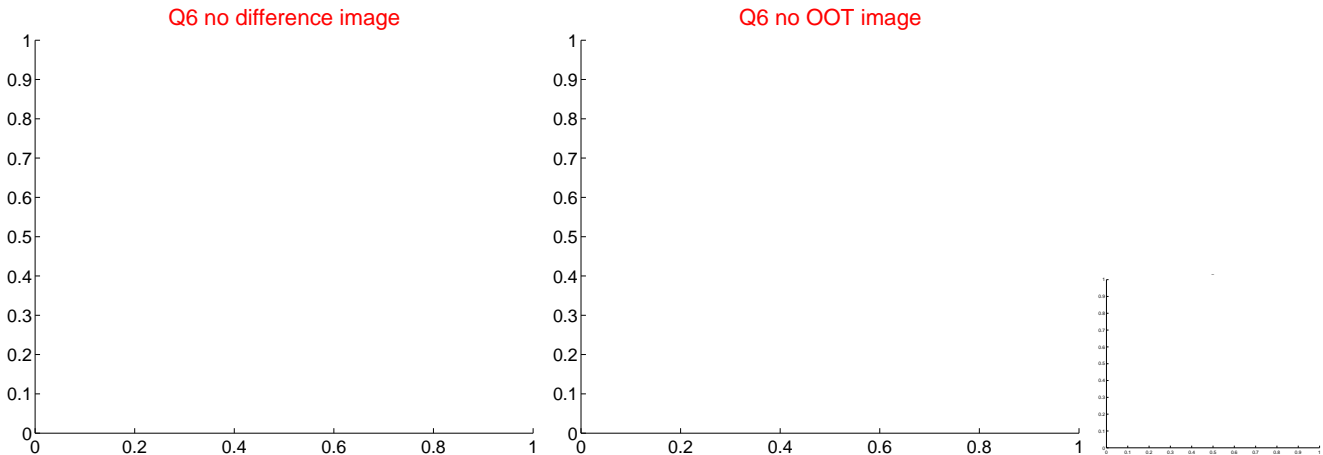
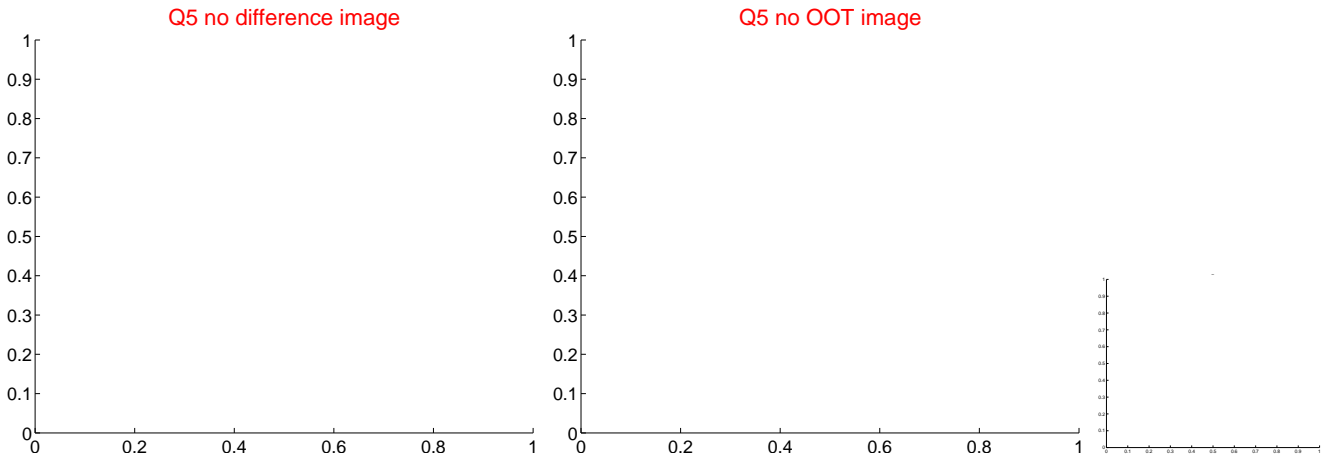


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

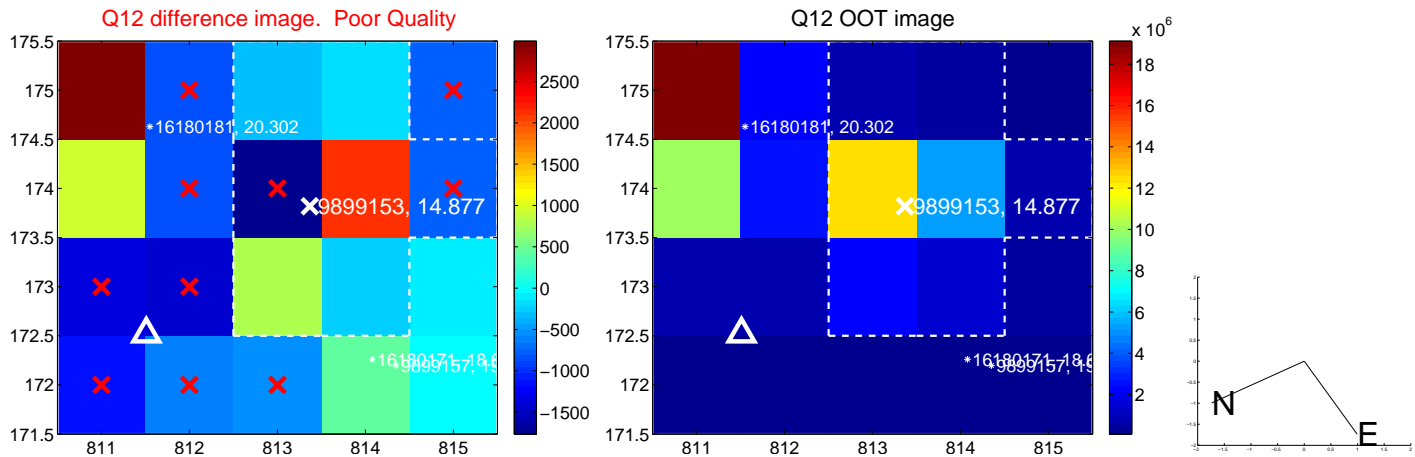
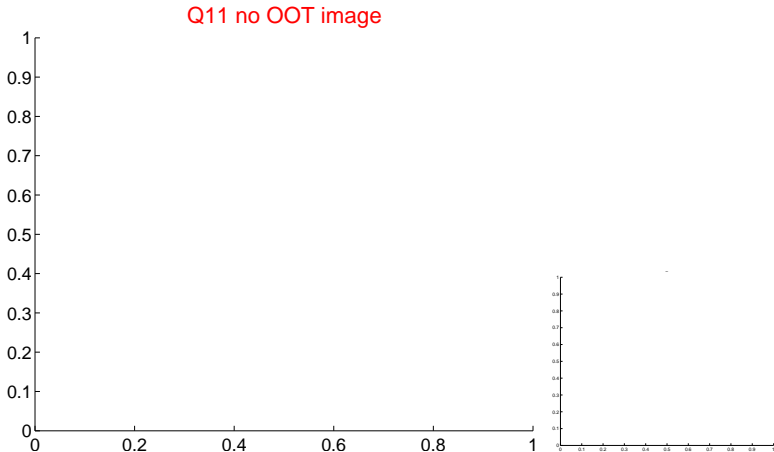
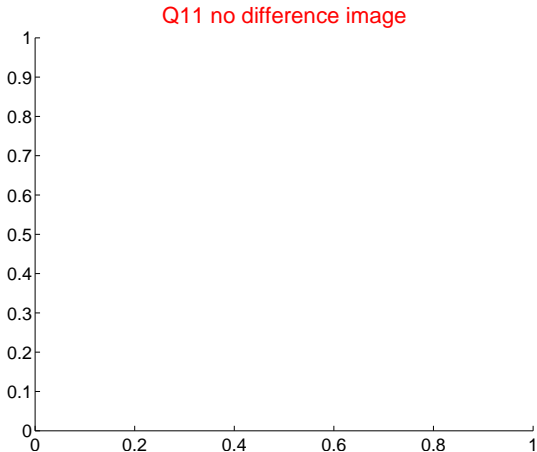
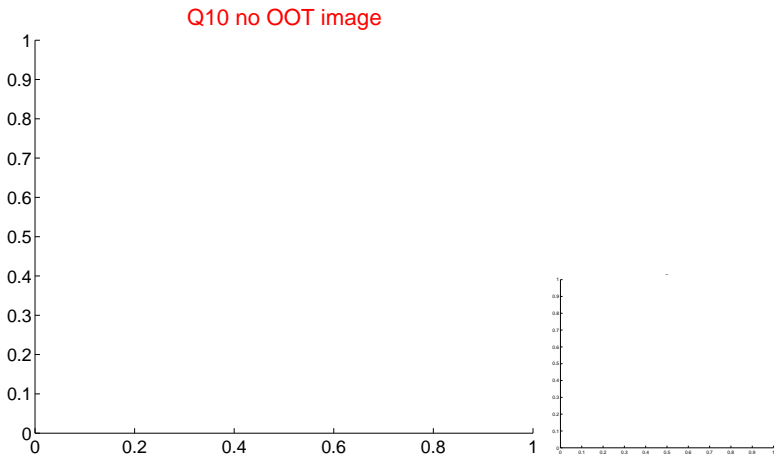
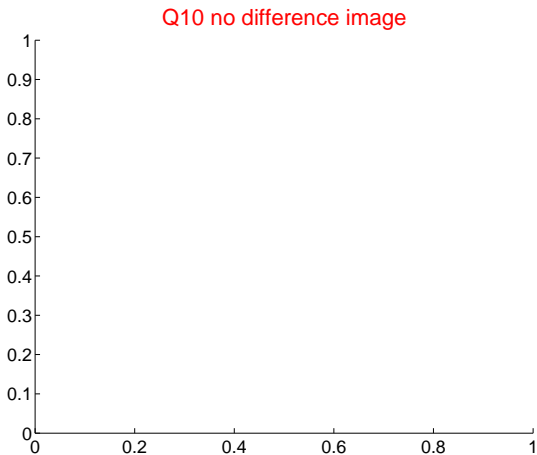
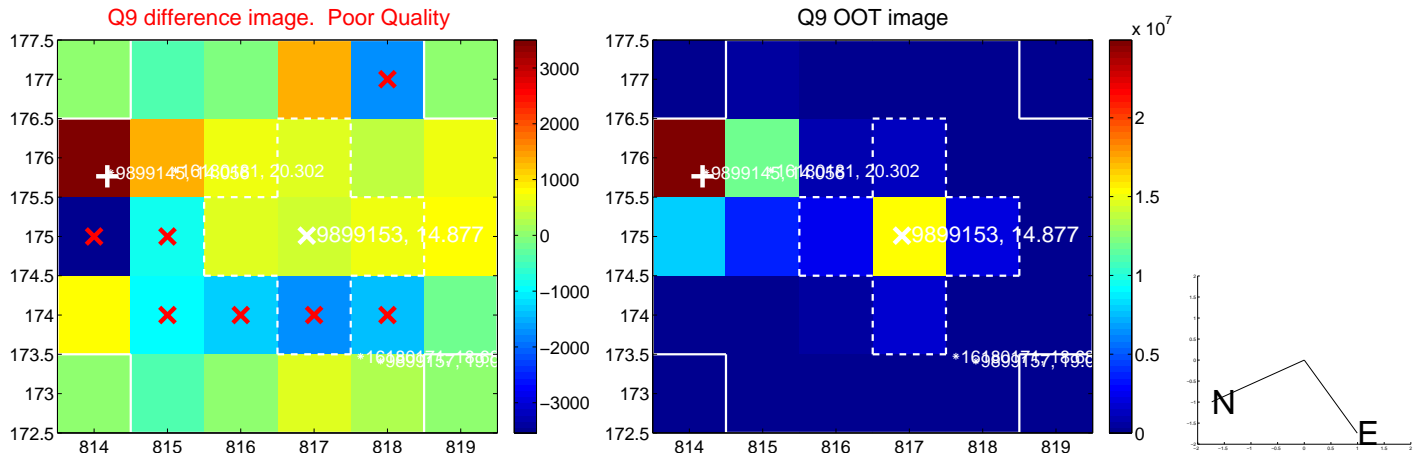
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



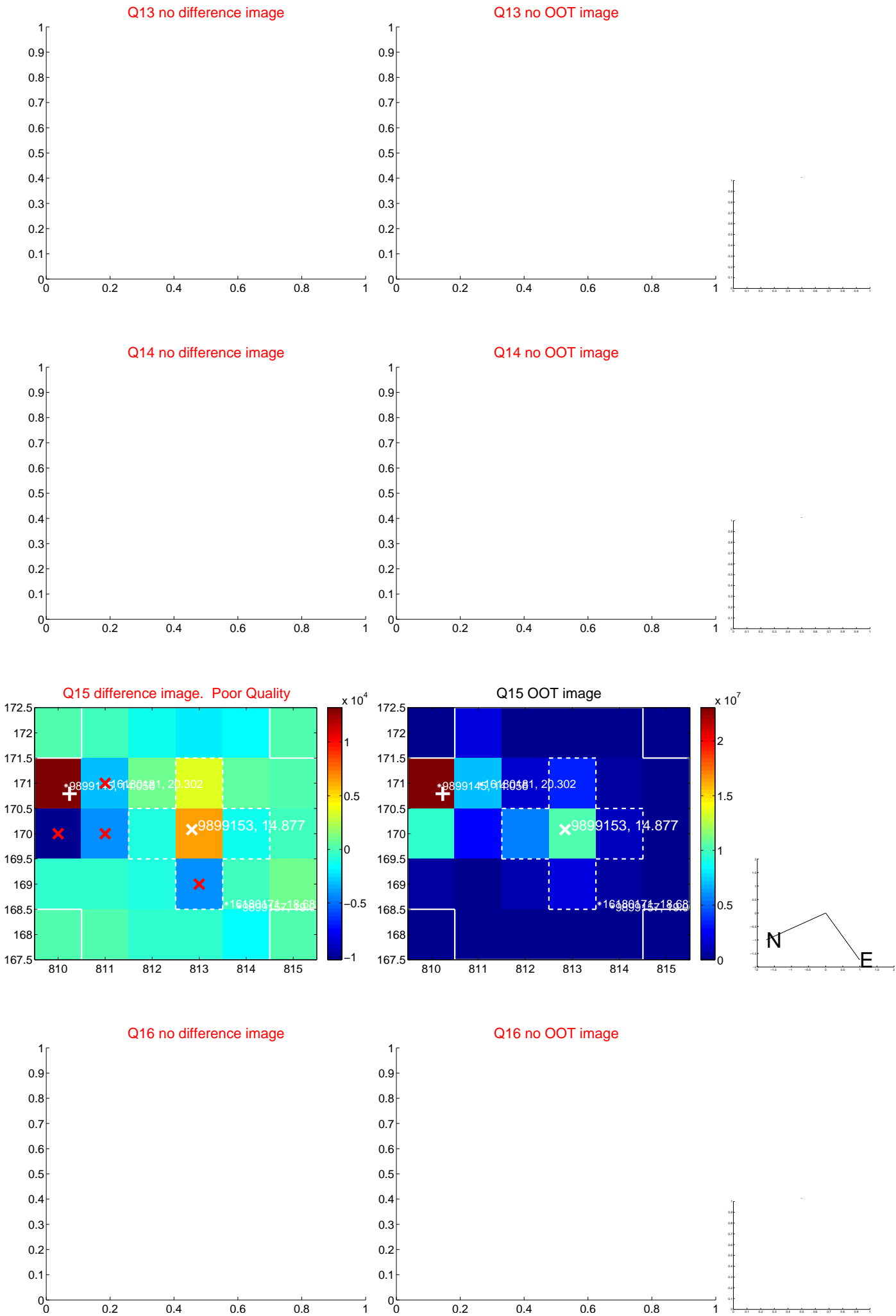
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



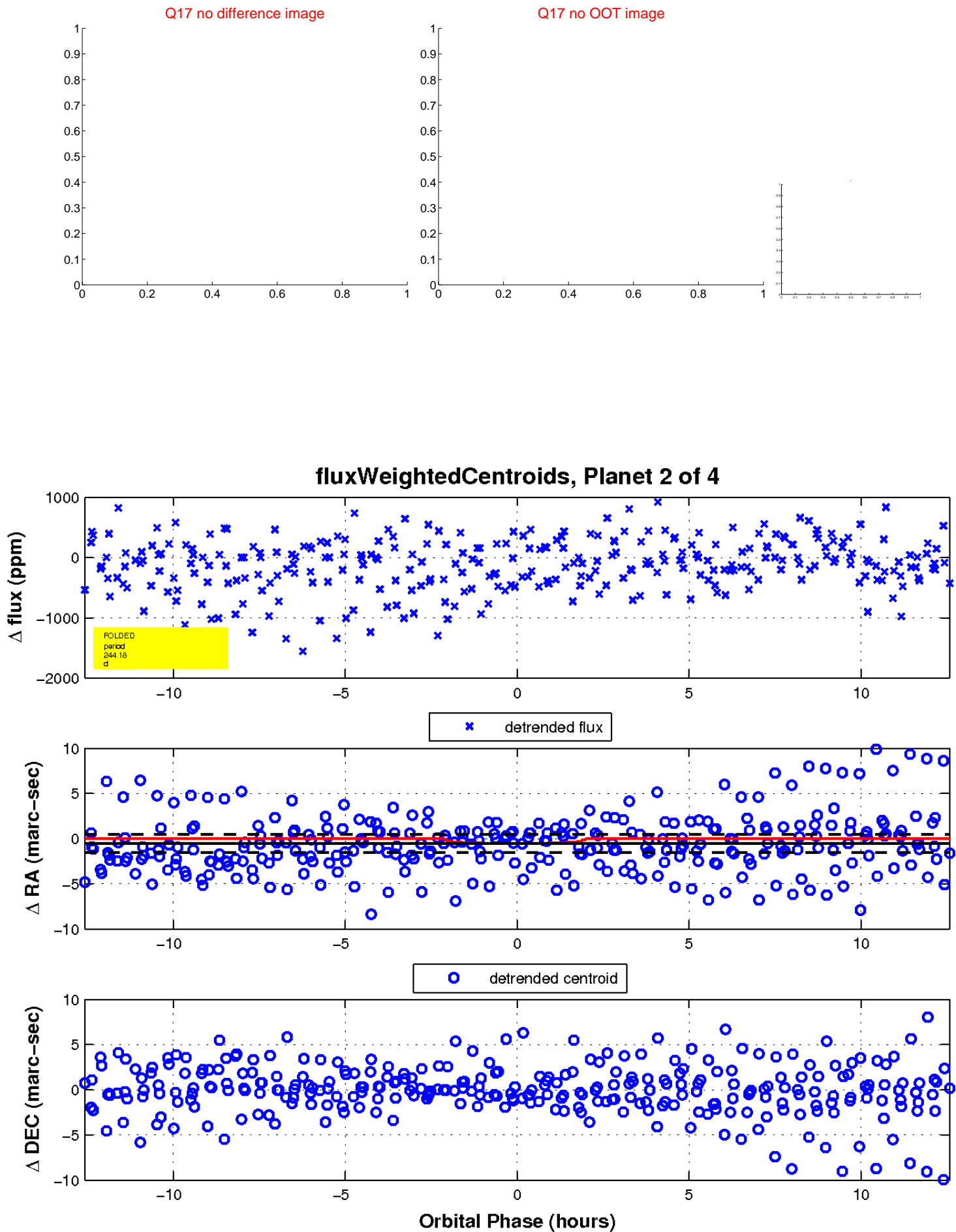
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

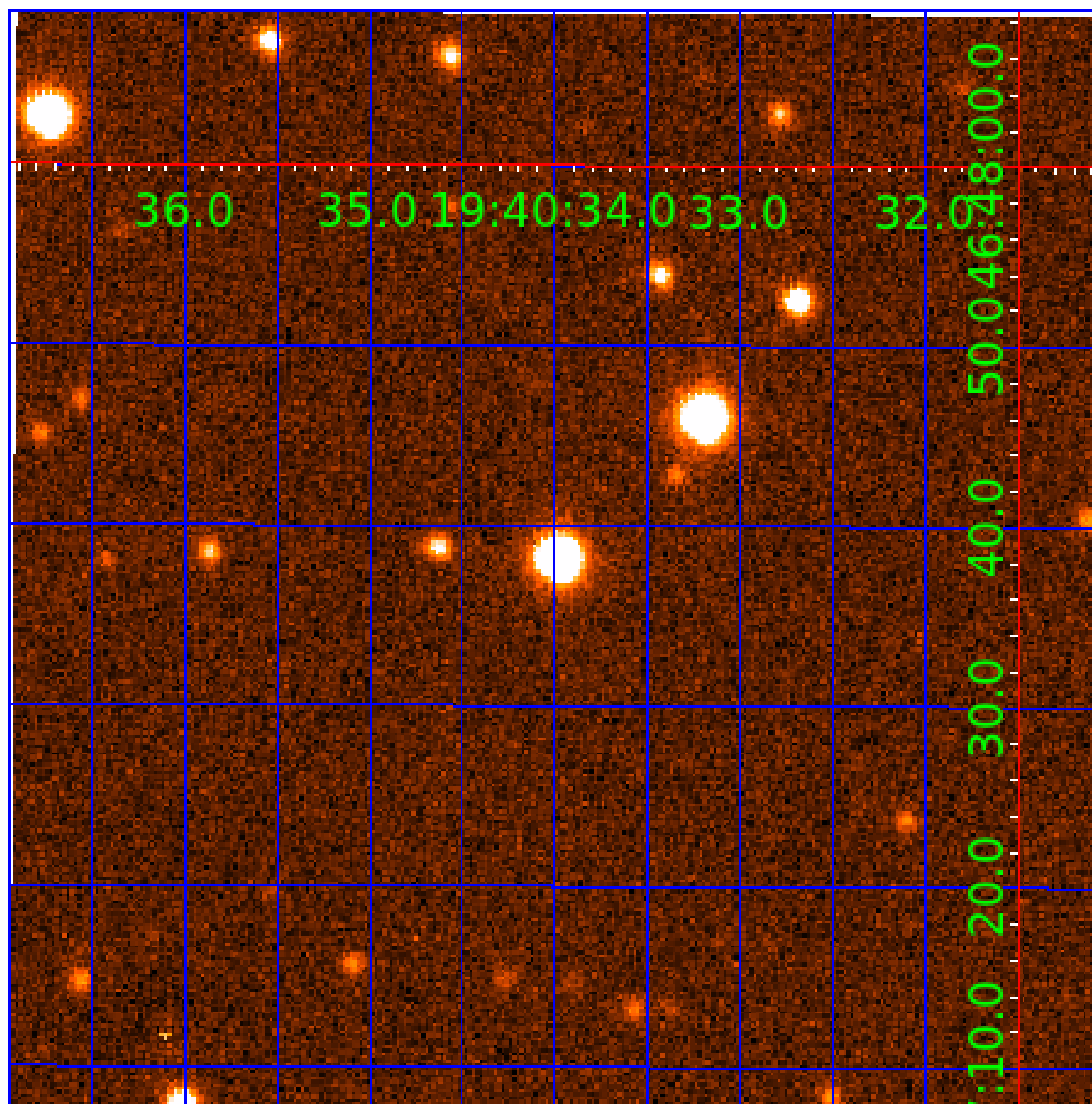


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009899153

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})
009899153-01	OBS	7243.01	1.332477	132.106041	54.2	5.293	9.4	9.4	0.83	4895	0.60	731.78
009899153-02	OBS	No	244.175219	162.881511	570.4	4.200	14.4	4.7	0.83	4895	2.09	0.70
009899153-04	OBS	No	162.385501	282.732960	754.9	10.500	10.4	-1.0	0.83	4895	2.19	1.21

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009899153-01	OBS	FP	0.00	0	0	1	1	CENT_KIC_POS—HALO_GHOST—EPHEM_MATCH
009899153-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009899153-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS

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

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

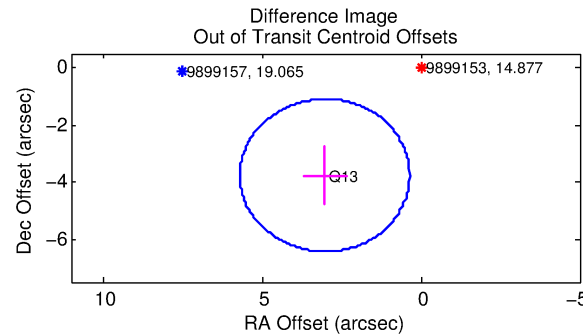
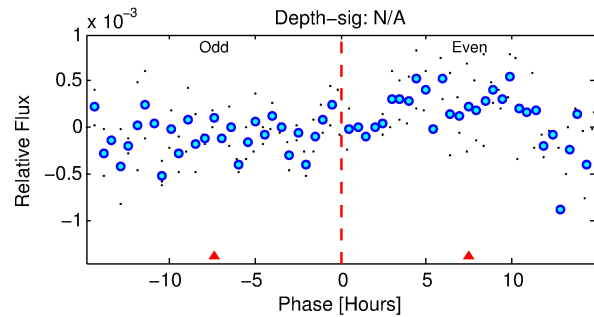
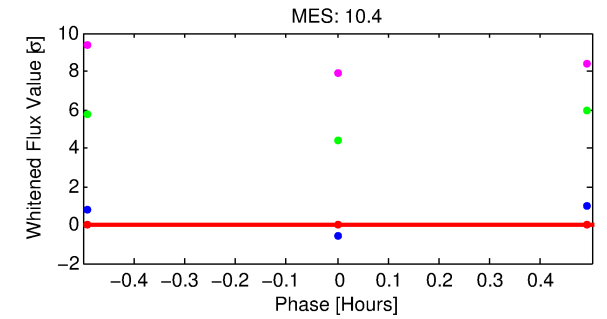
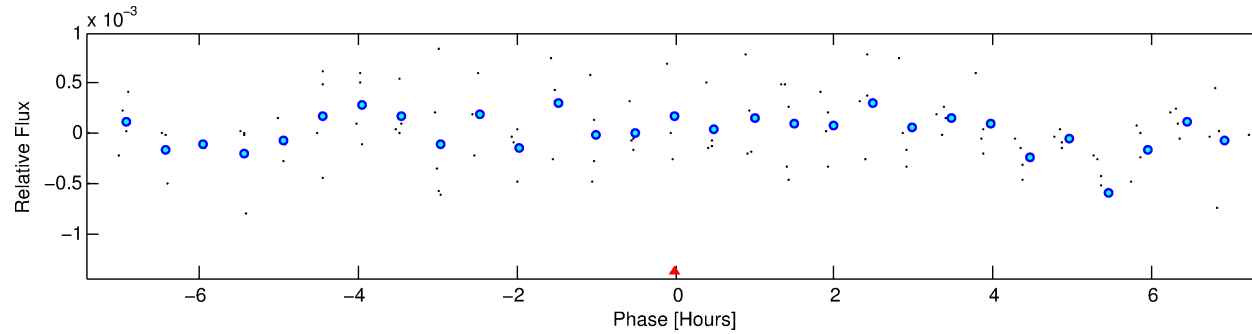
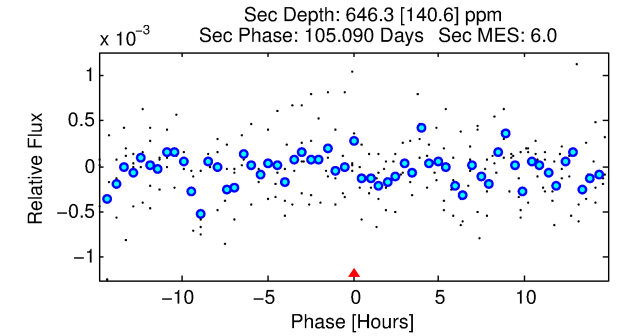
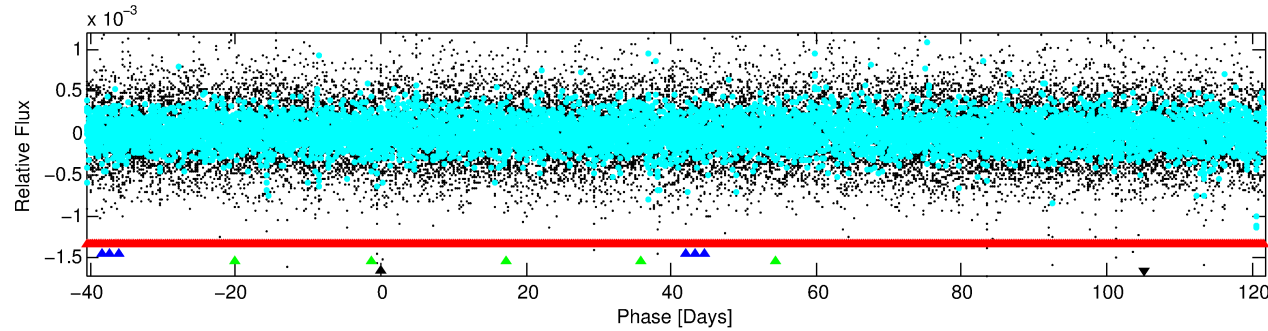
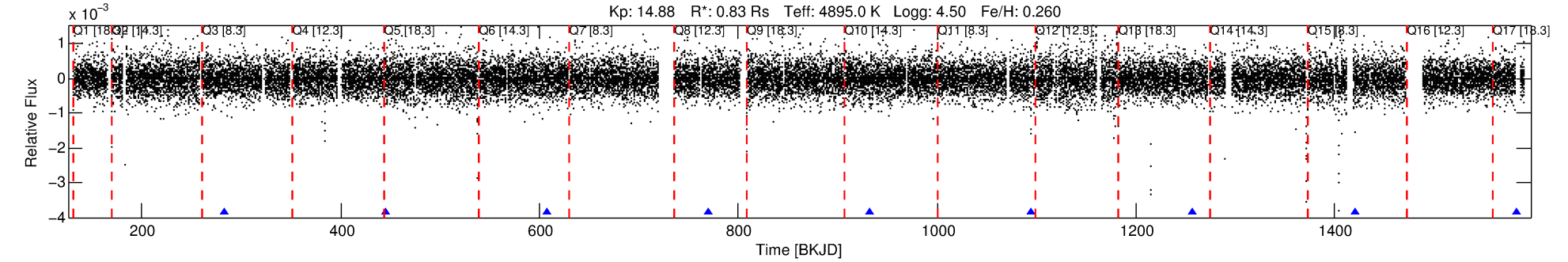
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009899153-04

No Significant Match Found

DV One-Page Summary

KIC: 9899153 Candidate: 4 of 4 Period: 162.386 d
KOI: K07243 Corr: No Ephemeris Match



TPS TCE Results:

Period = 162.38550 d
Epoch = 282.7330 BKJD

DV fit results are unavailable

DV Diagnostic Results:

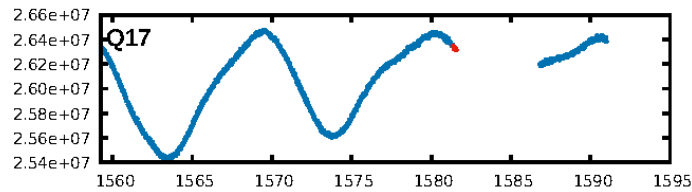
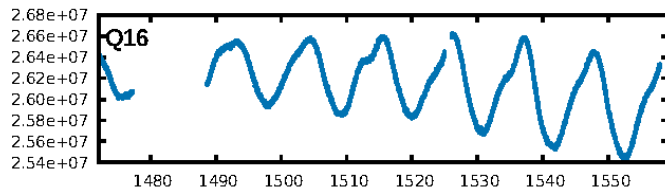
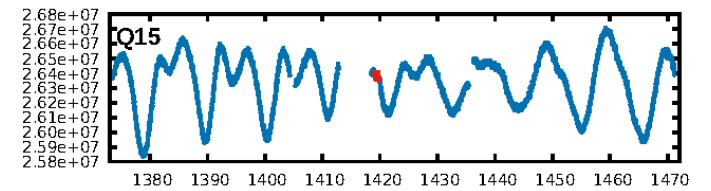
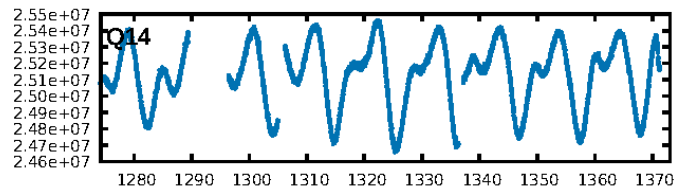
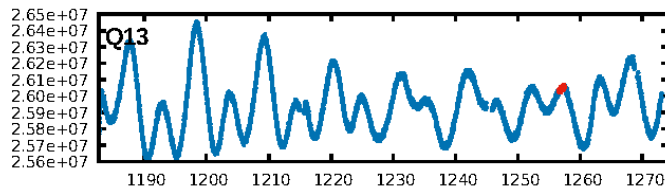
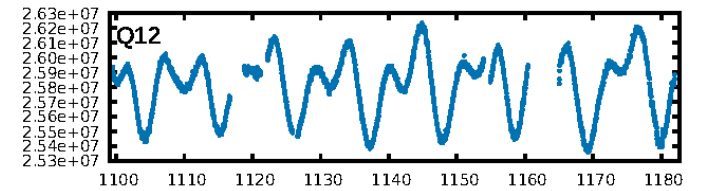
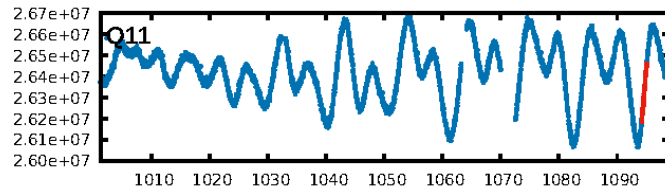
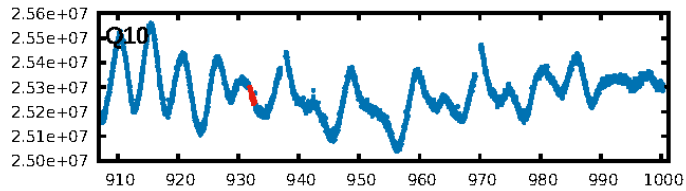
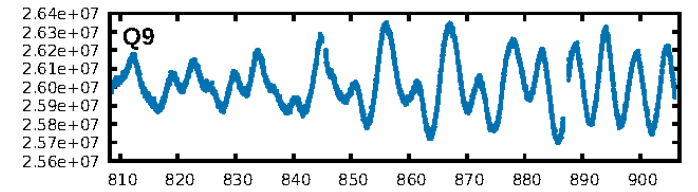
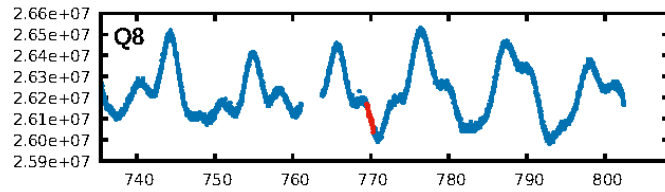
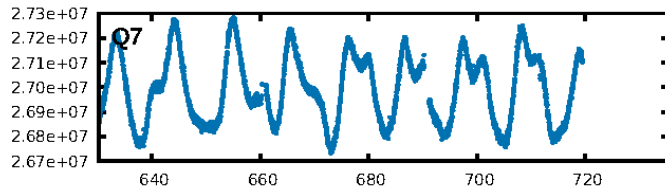
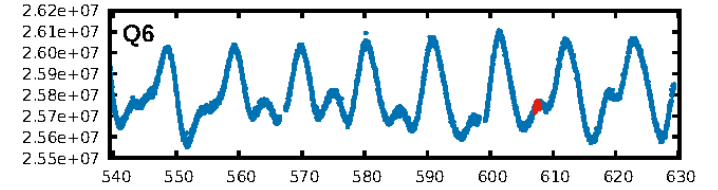
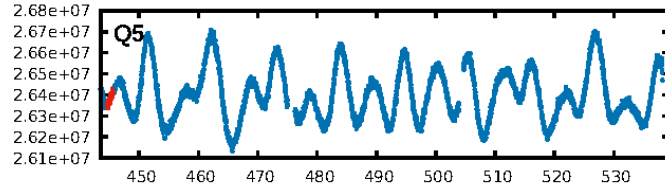
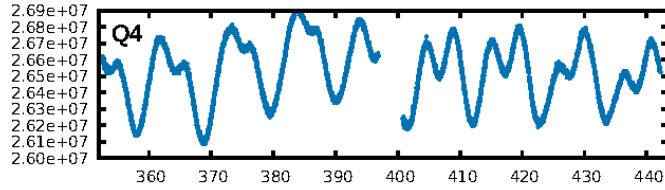
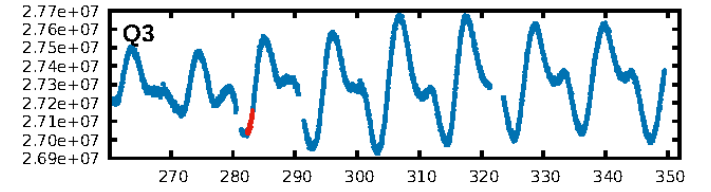
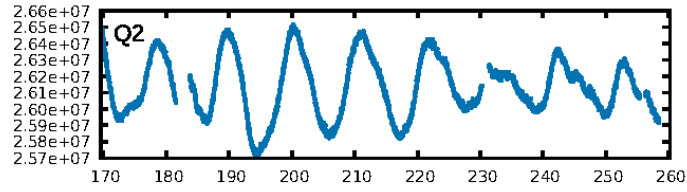
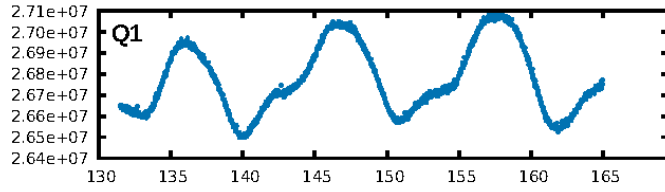
ShortPeriod-sig: 100.0% [328.71σ]
LongPeriod-sig: 100.0% [173.57σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.41e-10
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 1.092

Centroid-sig: N/A
Centroid-so: 7.132 arcsec [1.73σ]
OotOffset-rm: 4.825 arcsec [5.42σ]
KicOffset-rm: 7.776 arcsec [9.82σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/0/1/1 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 0.50 [4/8]

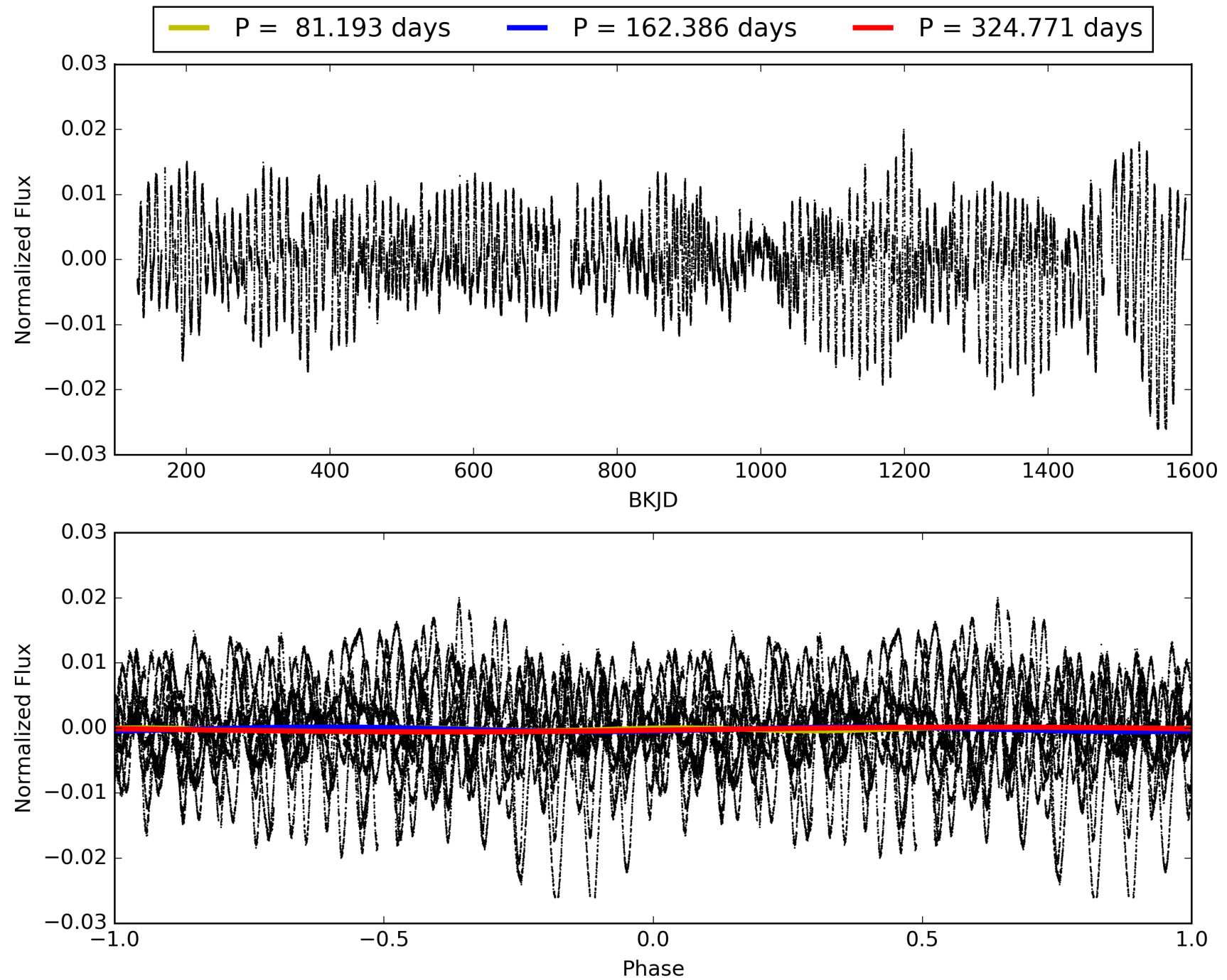
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 04:18:16 Z

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

TCE 009899153-04, PDC Light Curves

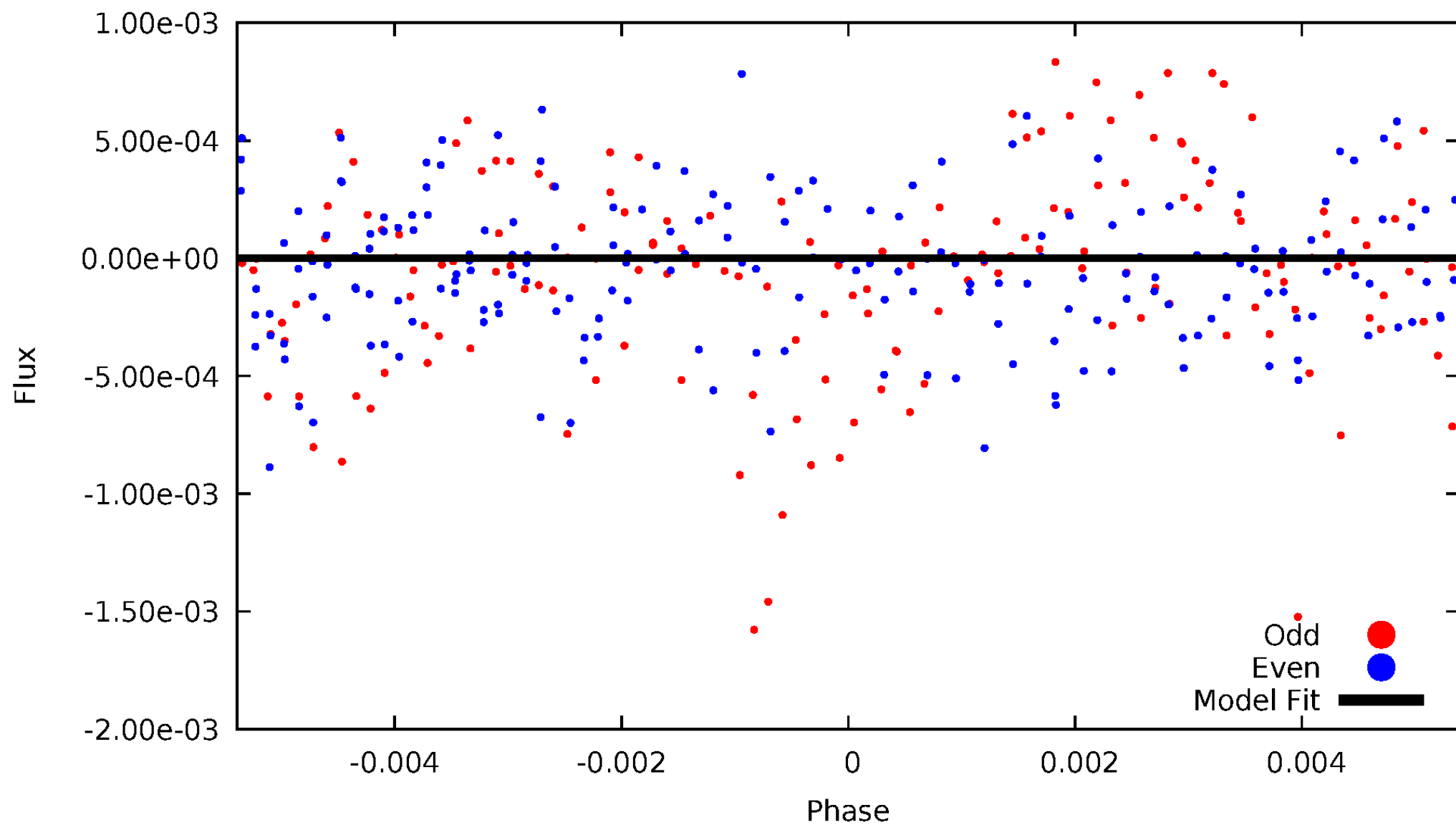


TCE 009899153-04



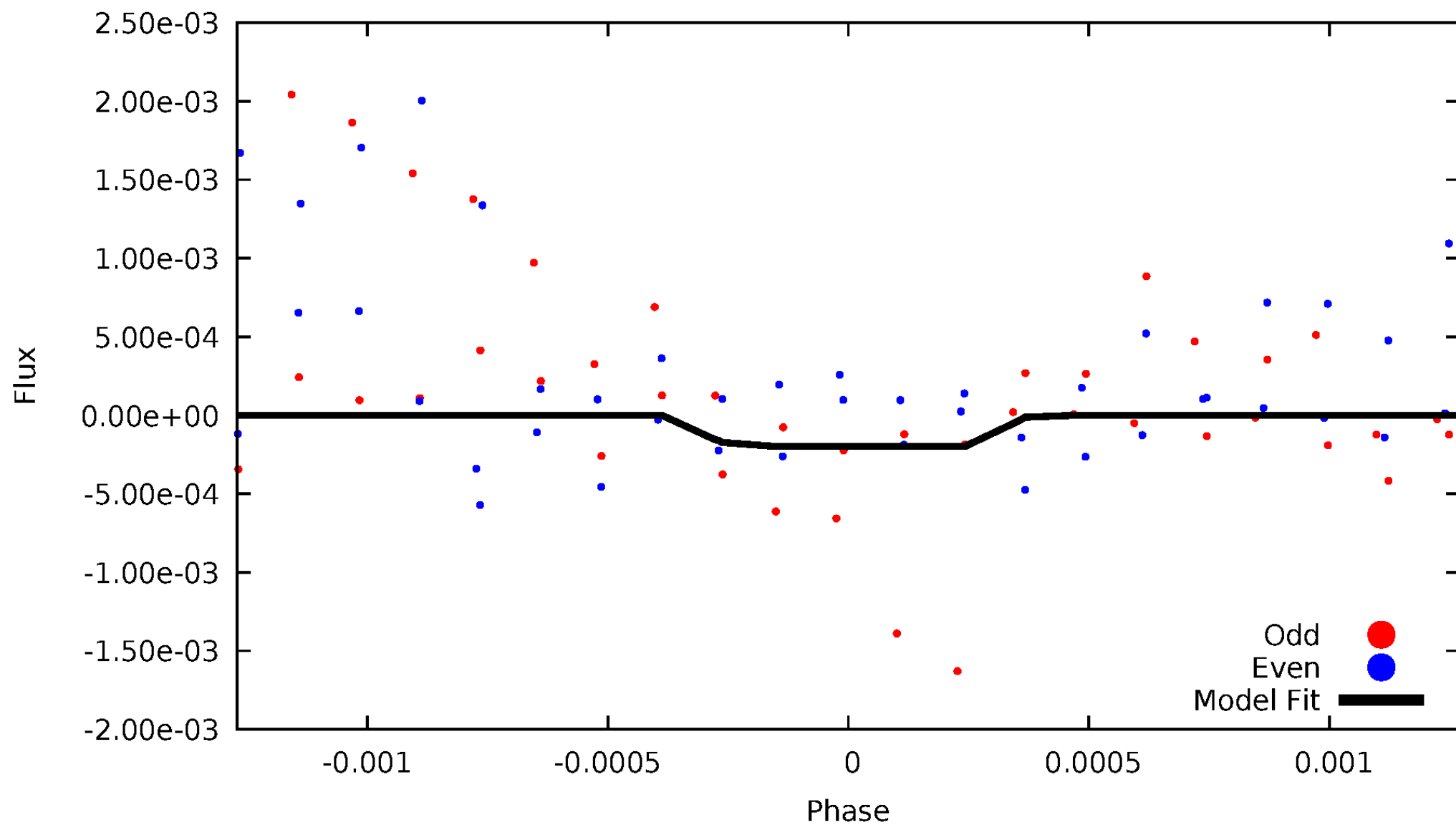
DV Odd/Even

TCE 009899153-04



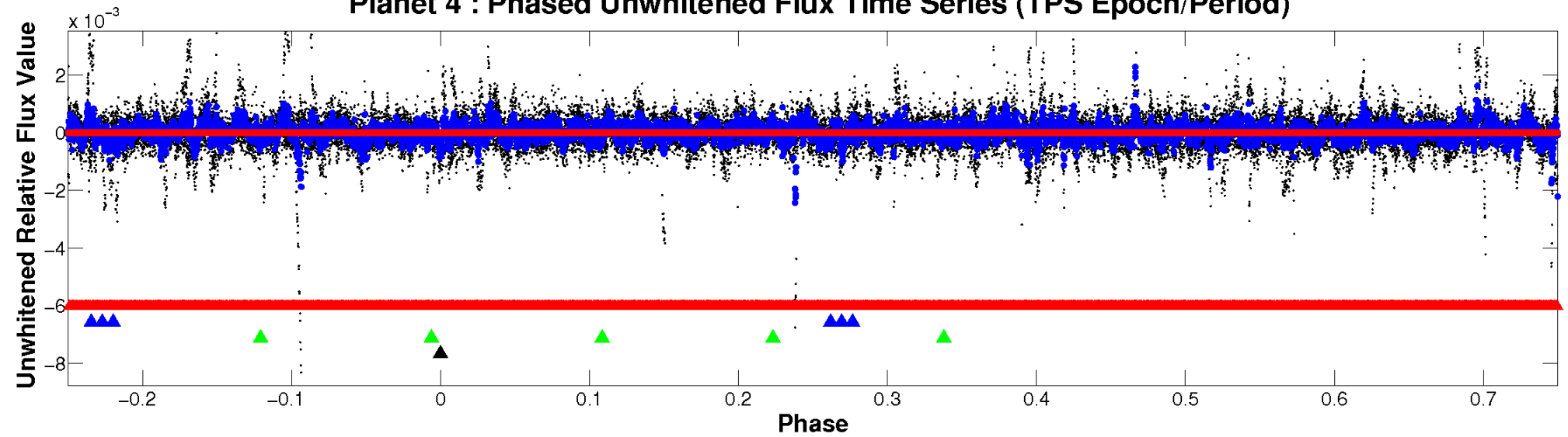
ALT Odd/Even

TCE 009899153-04



Non-Whitened Vs. Whitened Light Curve

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

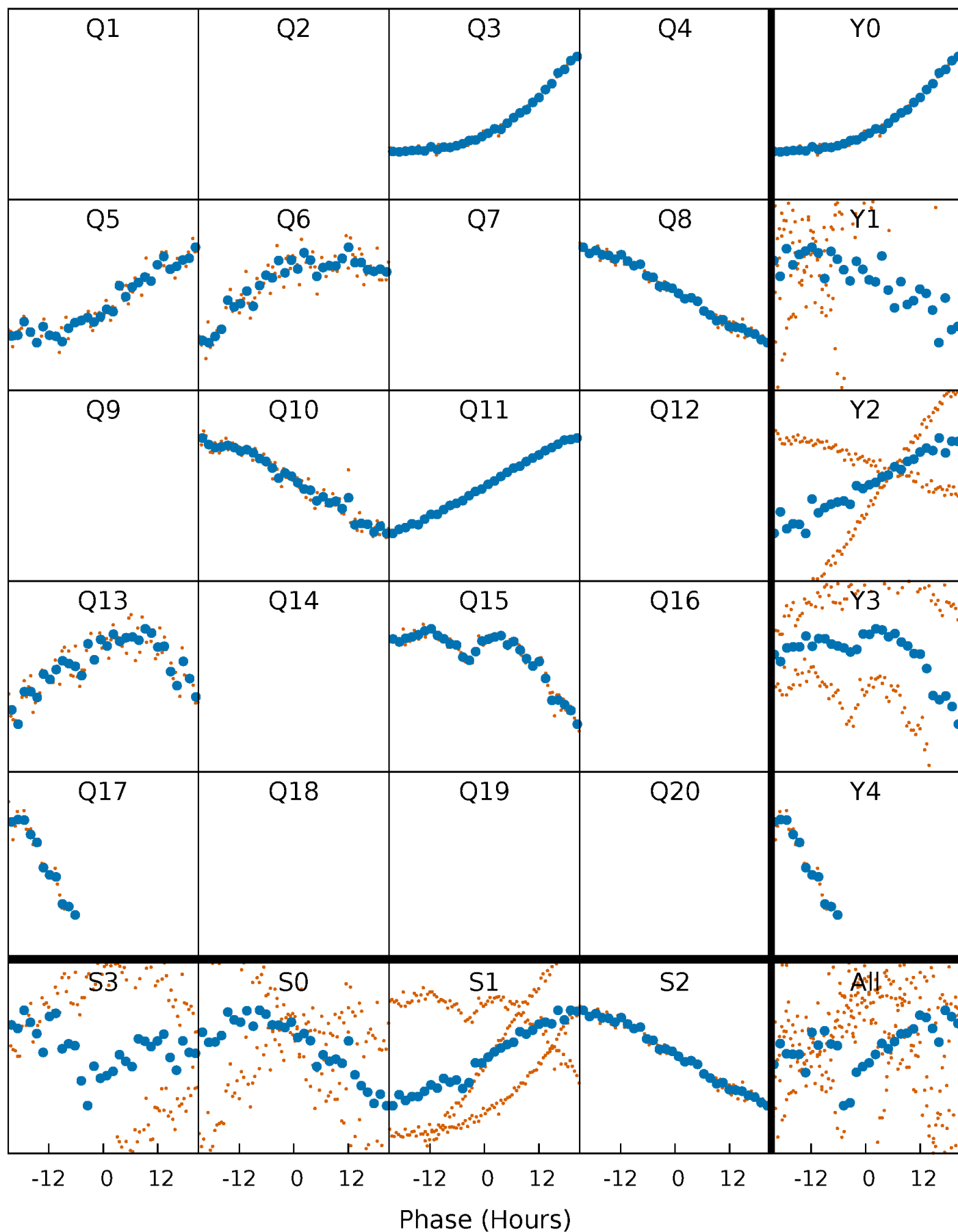


Planet 4 : Phased Whitened Flux Time Series (TPS Epoch/Period)



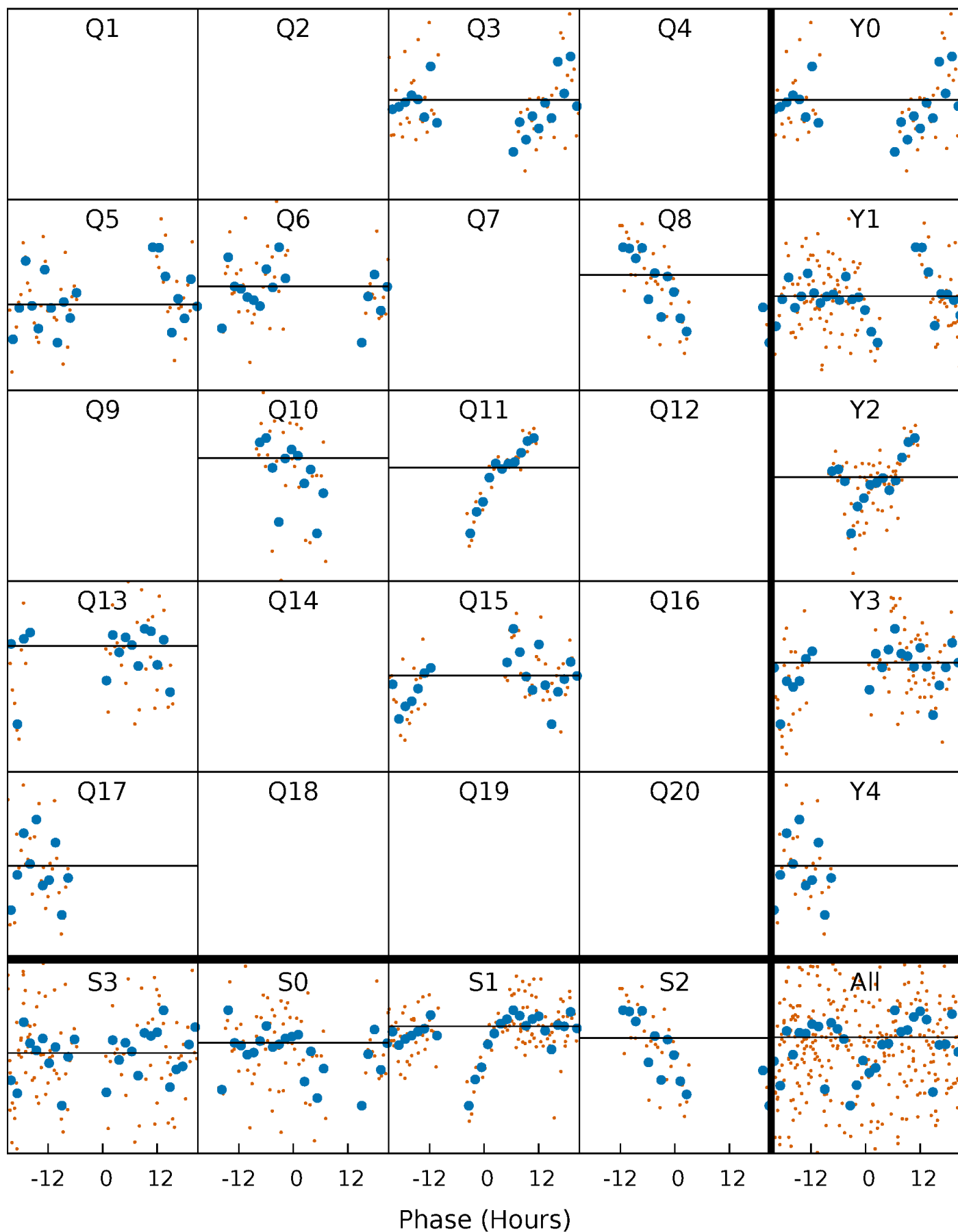
PDC Quarter-Phased Transit Curves

TCE 009899153-04 P=162.385501 Days $T_0=282.732960$ (BKJD)



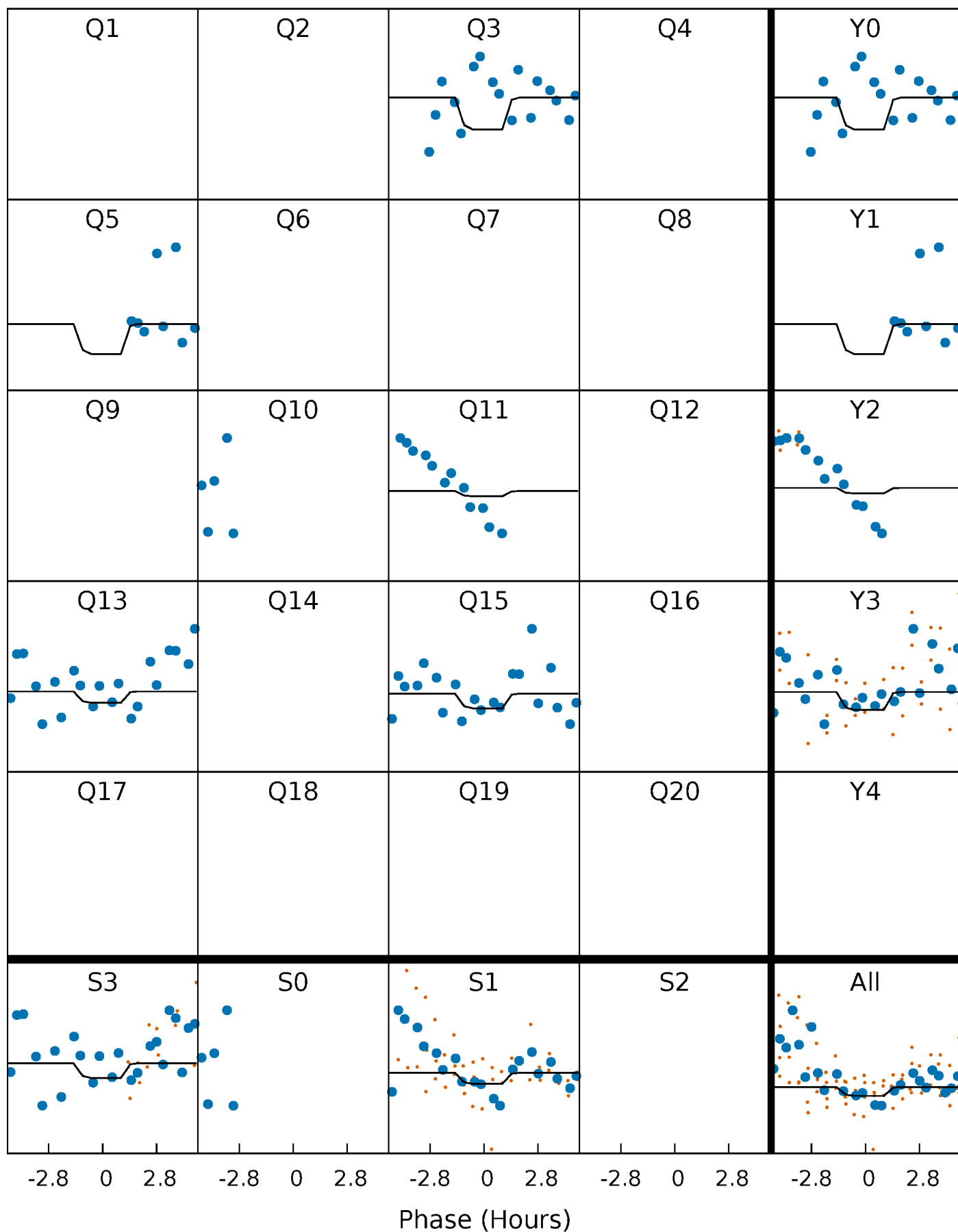
DV Quarter-Phased Transit Curves

TCE 009899153-04 P=162.385501 Days $T_0=282.732960$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

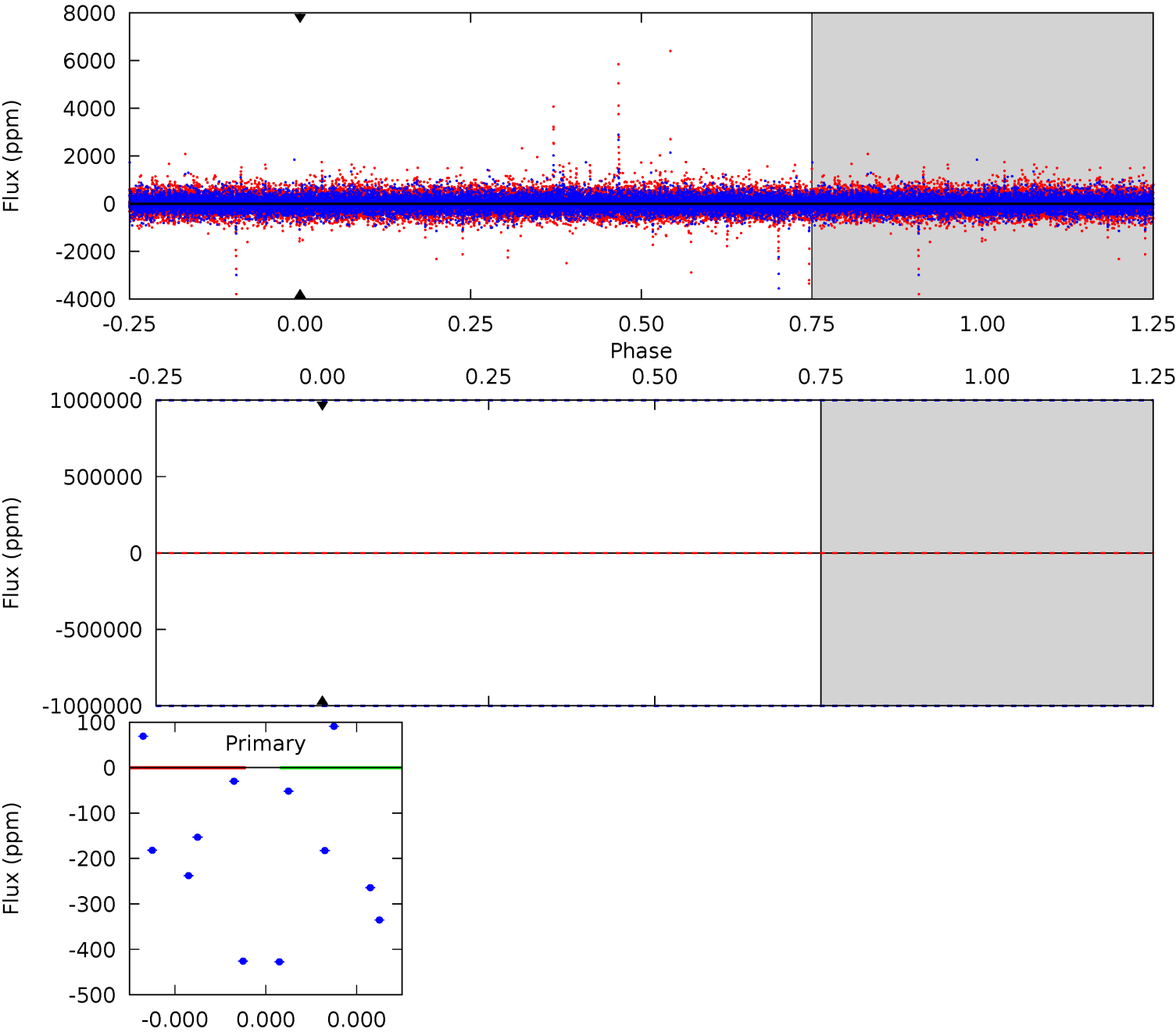
TCE 009899153-04 P=162.385501 Days $T_0=283.153657$ (BKJD)



DV Model-Shift Uniqueness Test

009899153-04, P = 162.385501 Days, E = 120.347459 Days

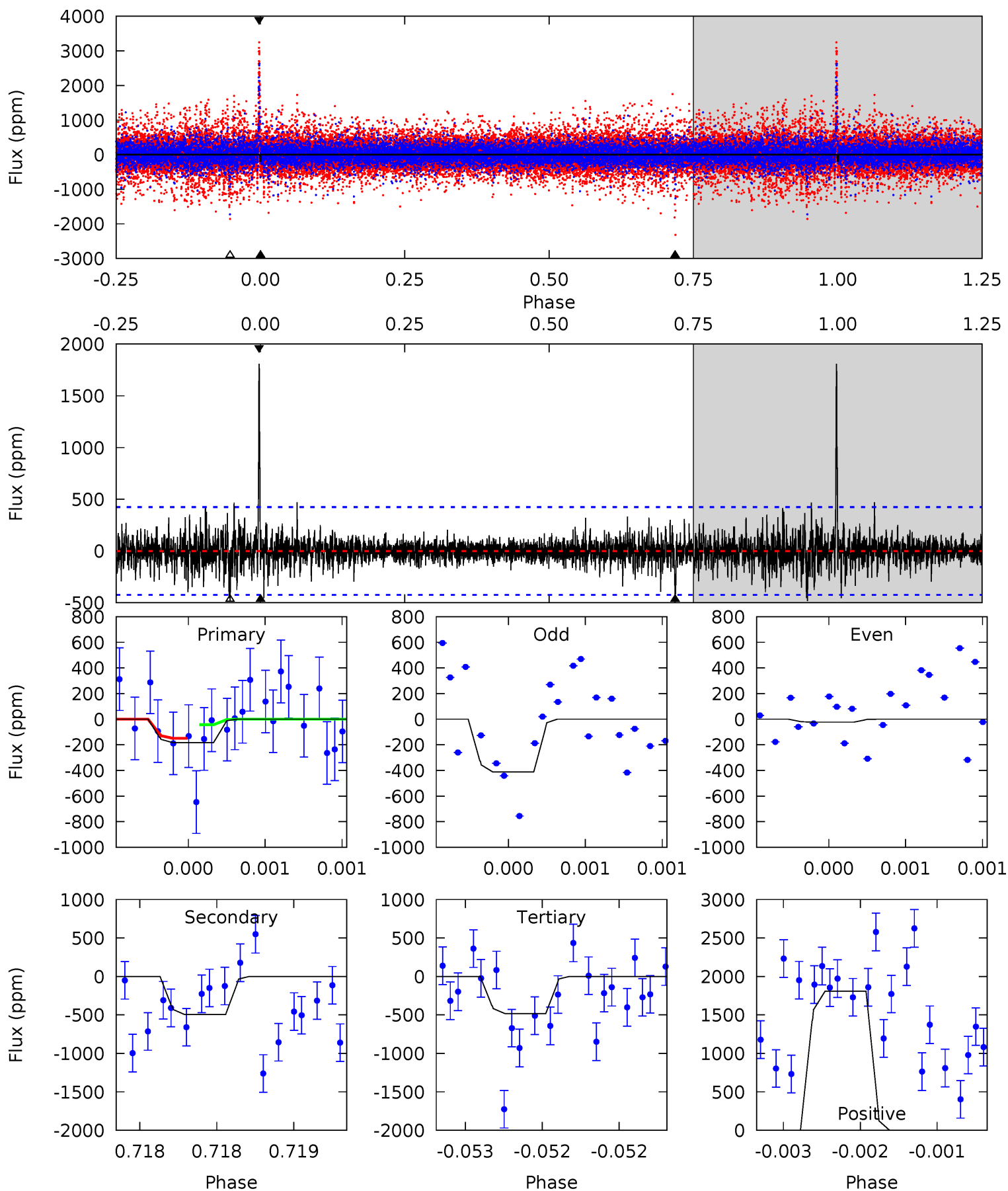
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

009899153-04, P = 162.385501 Days, E = 120.768156 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.37	6.44	6.26	23.5	5.51	3.37	1.44	-3.89	-21.1	0.18	-17.0	2.27	2.33	0.78	0.67



Stellar Parameters For KIC 009899153

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4895^{+145}_{-145}	$4.502^{+0.088}_{-0.528}$	$0.260^{+0.200}_{-0.300}$	$0.828^{+0.078}_{-0.085}$	$0.796^{+0.067}_{-0.054}$	$1.973^{+0.711}_{-0.648}$
	+3%/-3%	+2%/-12%	+77%/-115%	+9%/-10%	+8%/-7%	+36%/-33%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009899153-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$7.71^{+7.44}_{-5.51}$	379^{+19}_{-16}	3534^{+10216}_{-16534}	$3067^{+557639}_{-449995}$
Alt.	-496 ± 77	$6.66^{+6.97}_{-4.69}$	377^{+20}_{-16}	3246^{+1682}_{-580}	1815^{+17204}_{-1374}

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

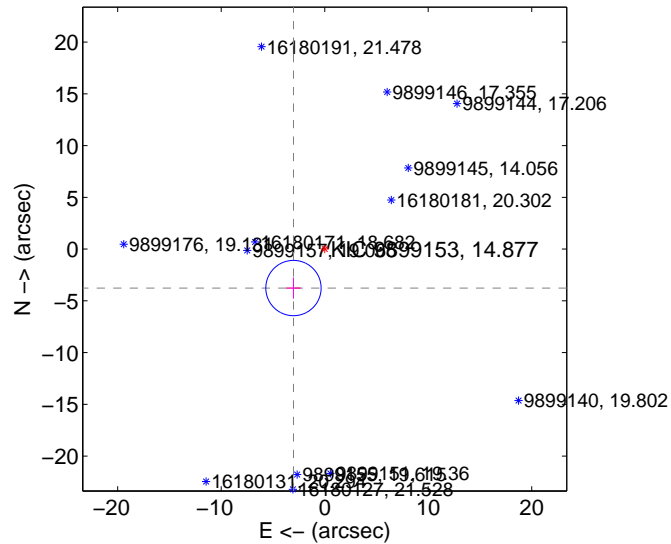
Supplemental centroid analysis for 009899153-04. Kepler magnitude: 14.88. Transit SNR -1.00

There are 1 quarters with good PRF difference image offsets

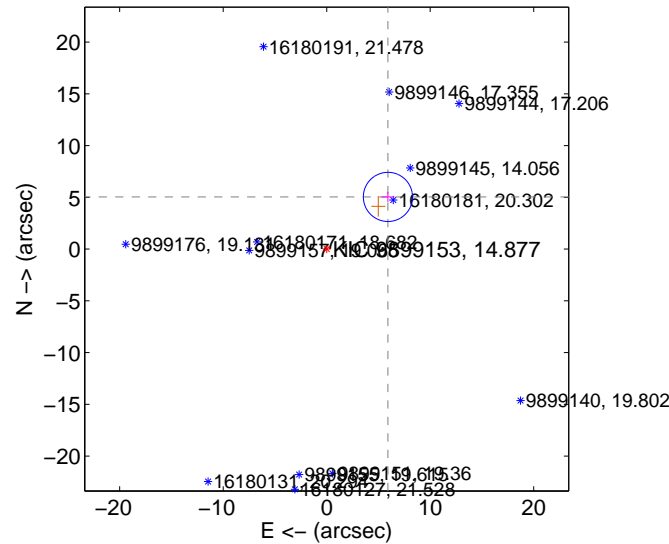
The OOT PRF centroid is offset from the target star catalog position by about 11.25 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.825 ± 0.891	5.42	3.018 ± 0.685	-3.764 ± 1.001
PRF-fit source offset from KIC position	7.776 ± 0.792	9.82	-5.919 ± 0.628	5.043 ± 0.488
photometric centroid source offset	7.13 ± 4.12	1.73	-2.75 ± 4.44	-6.58 ± 4.06

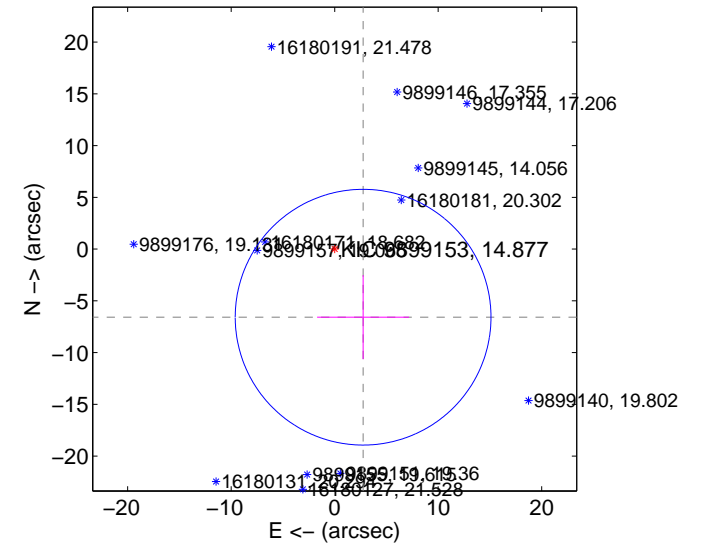
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

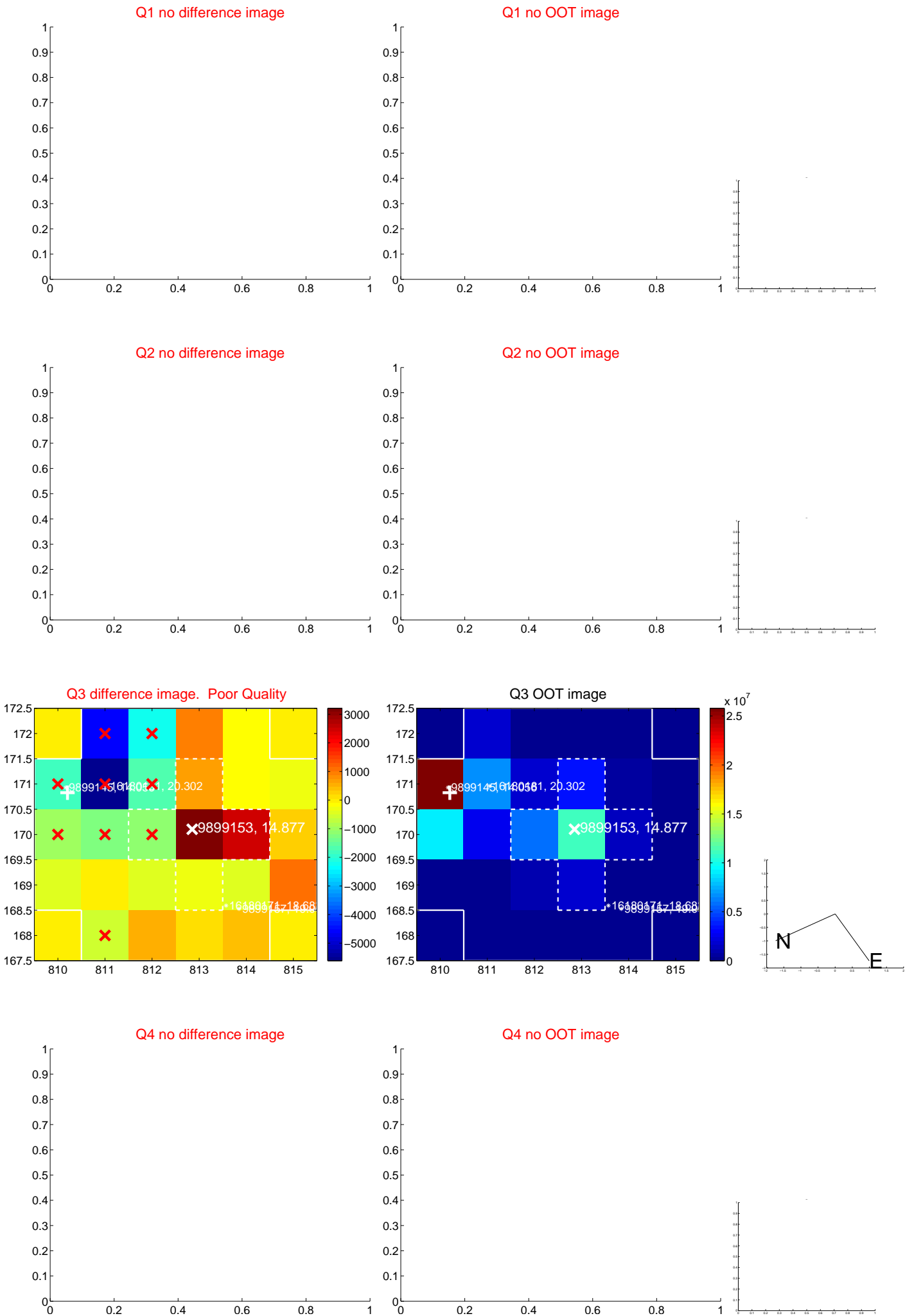


offset from photometric centroids

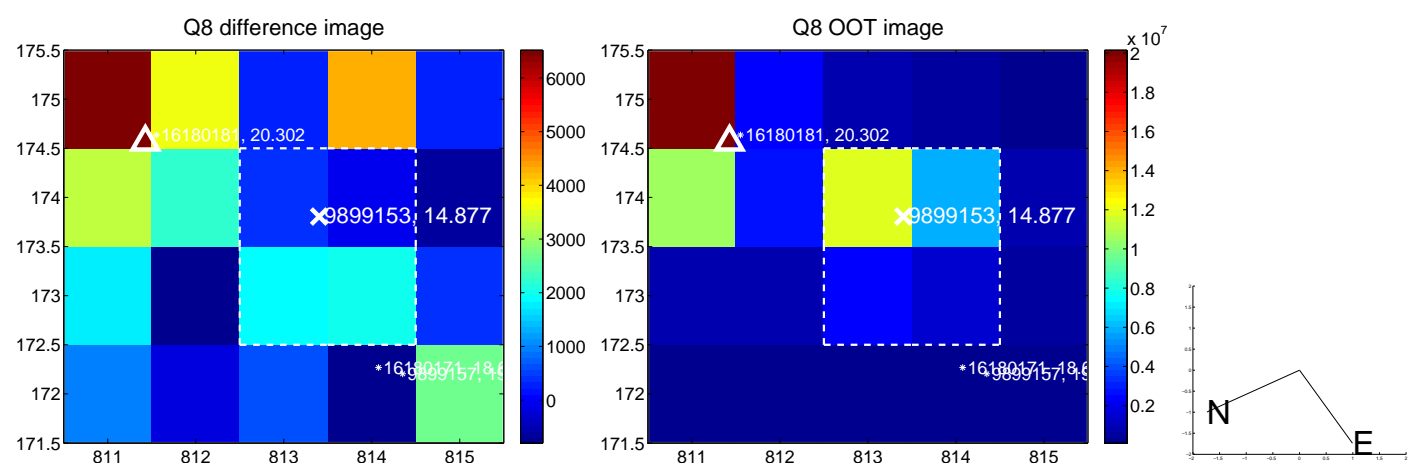
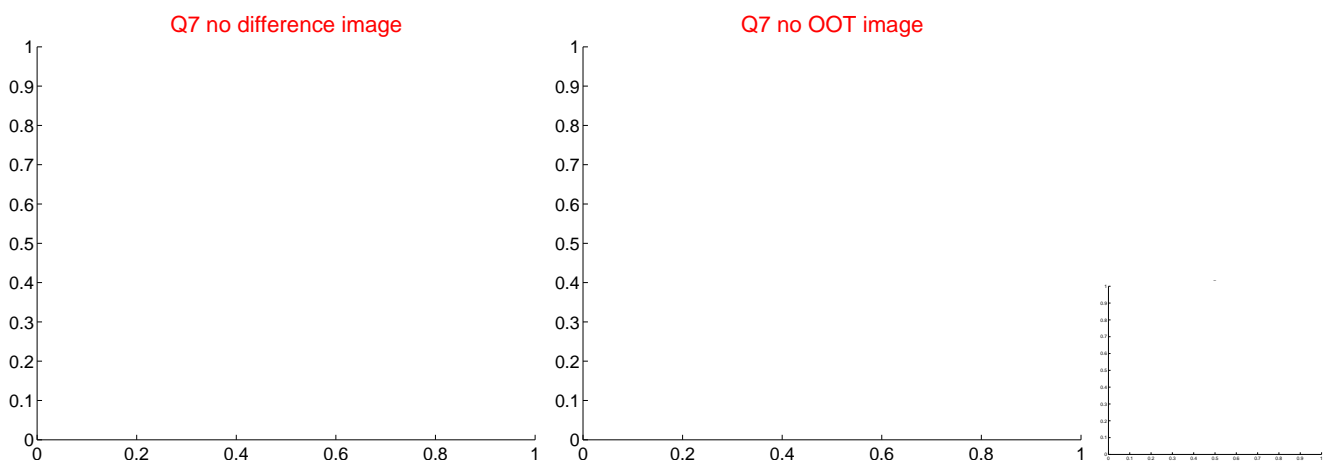
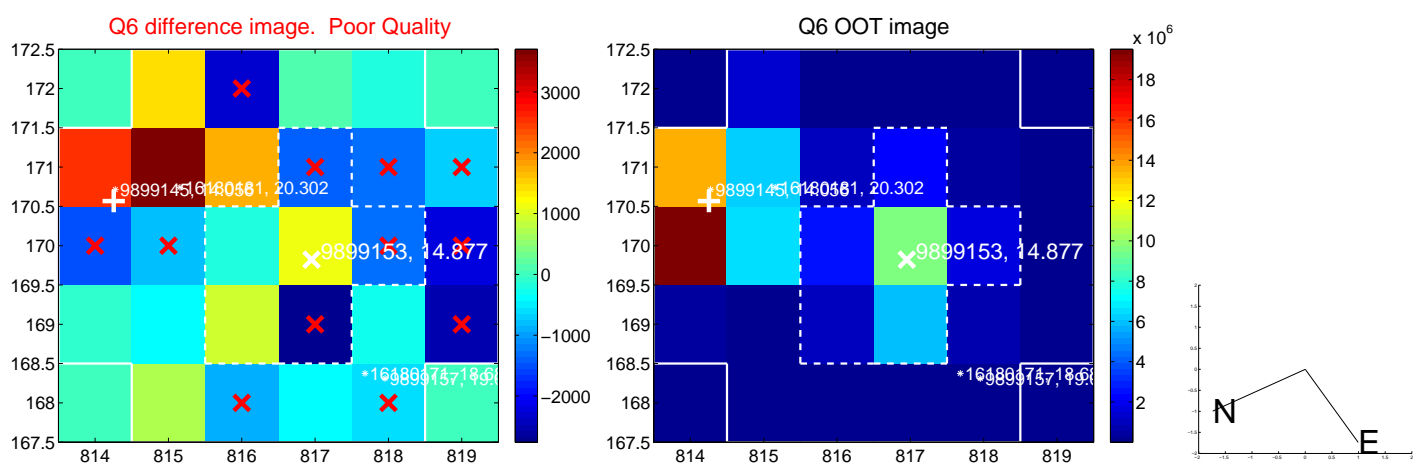
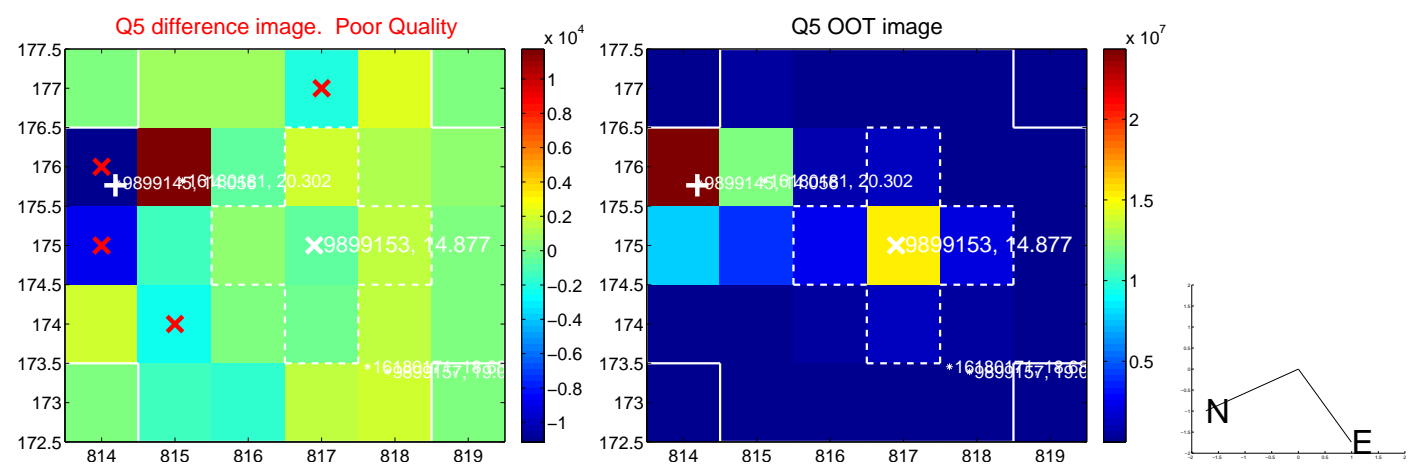


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

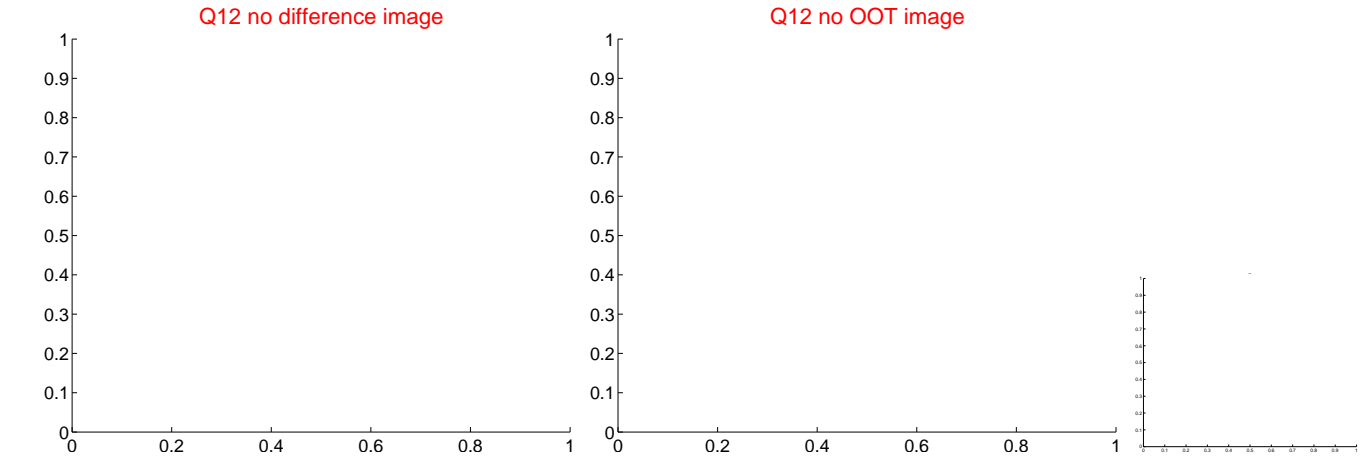
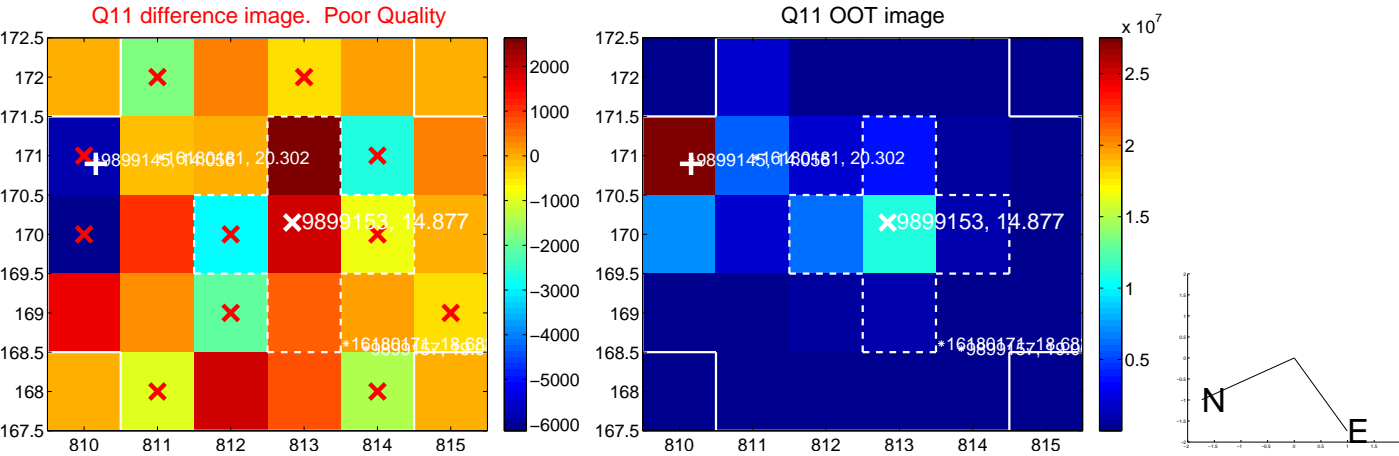
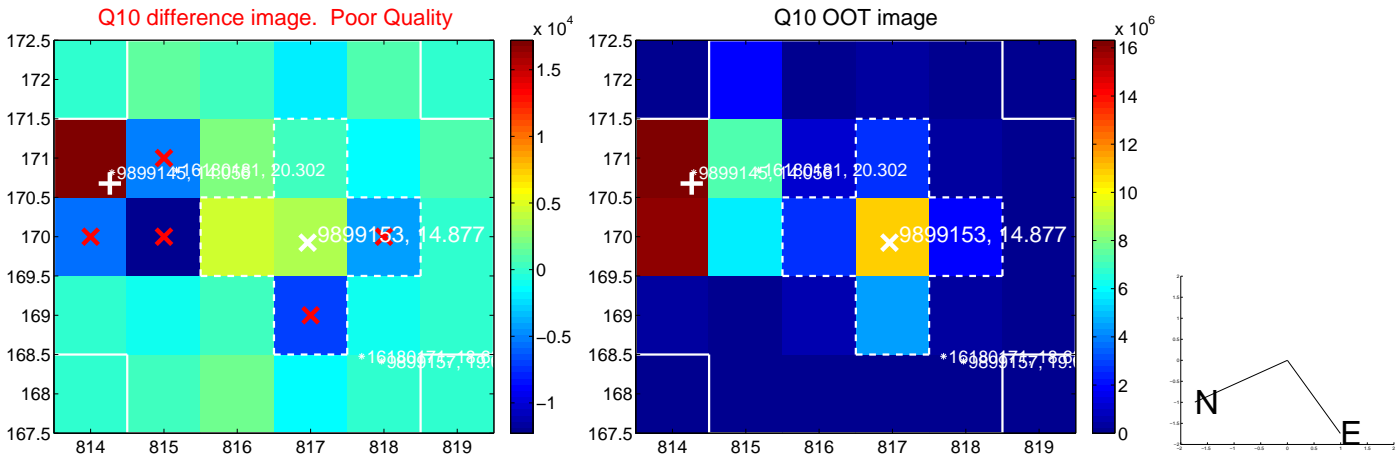
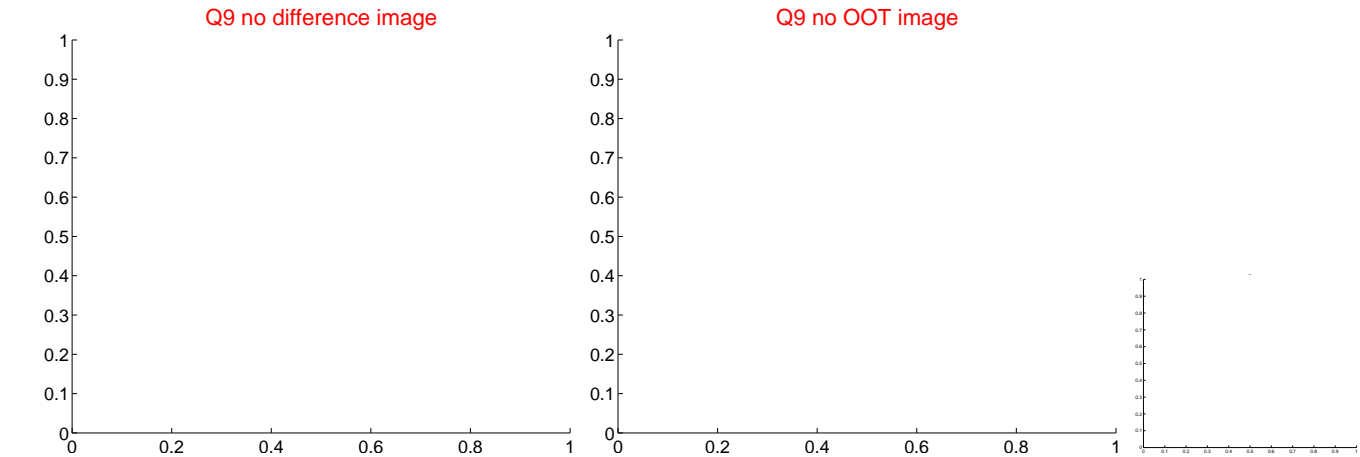
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



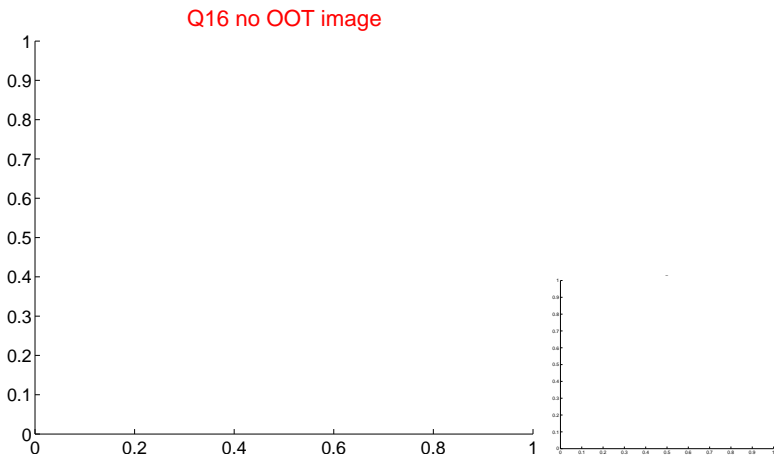
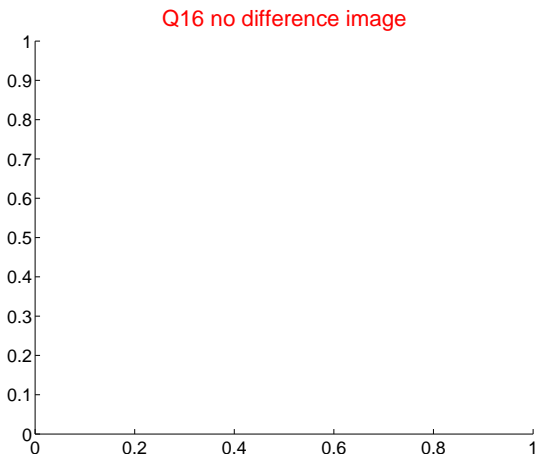
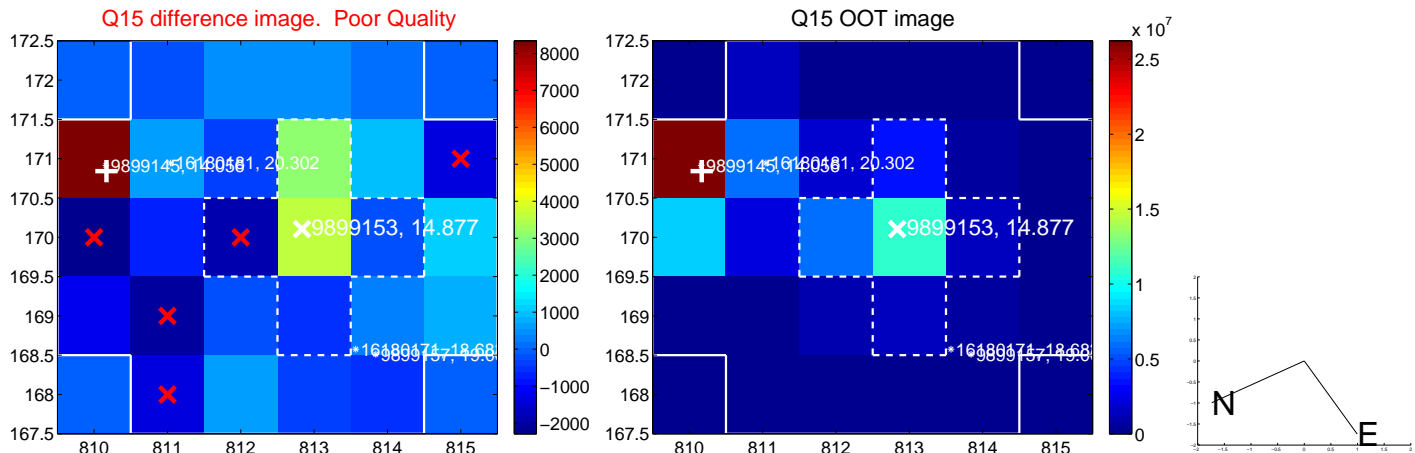
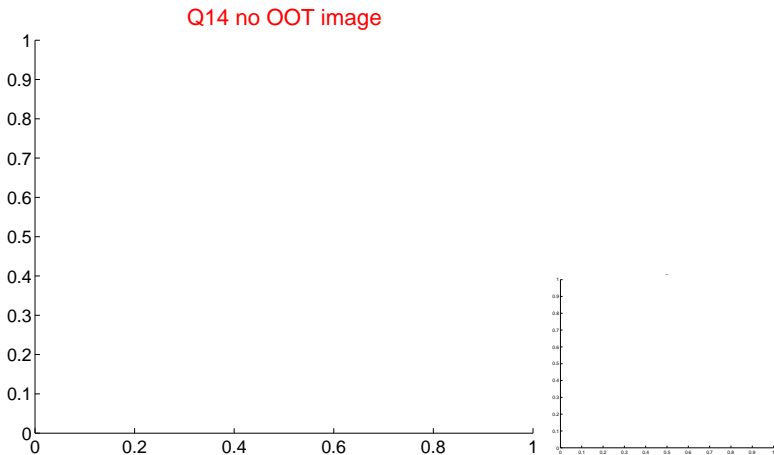
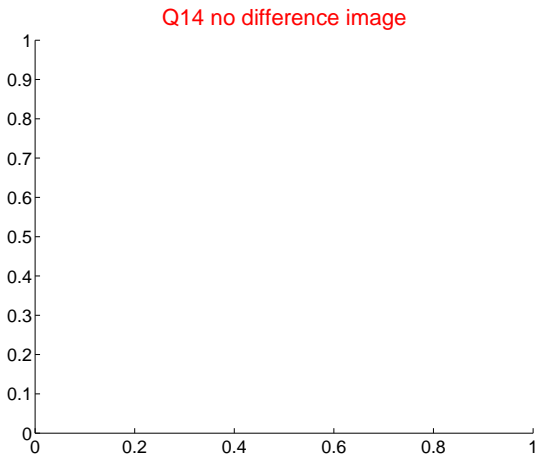
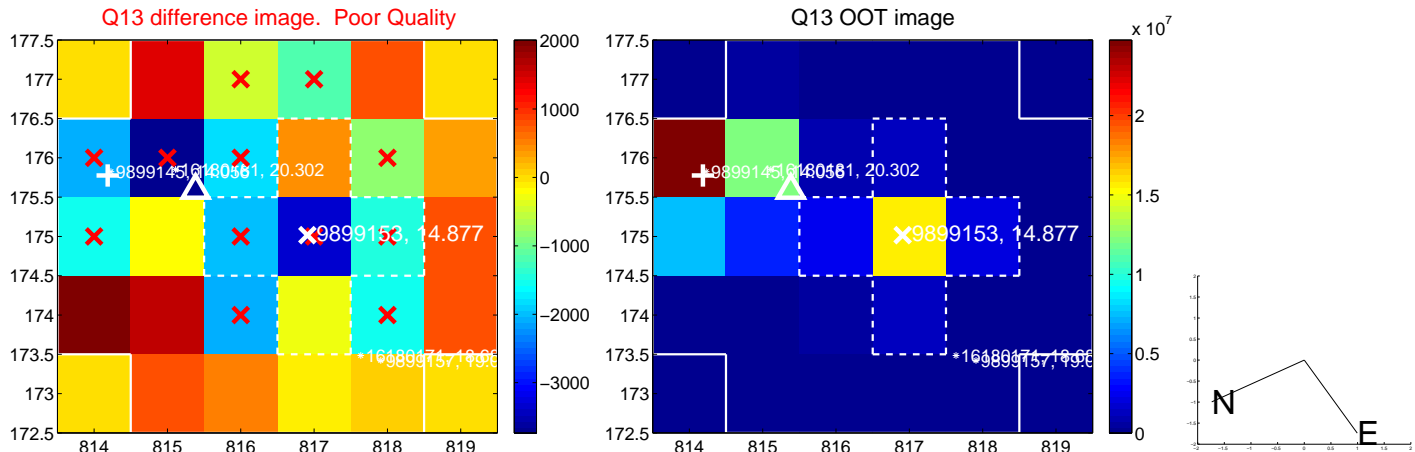
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



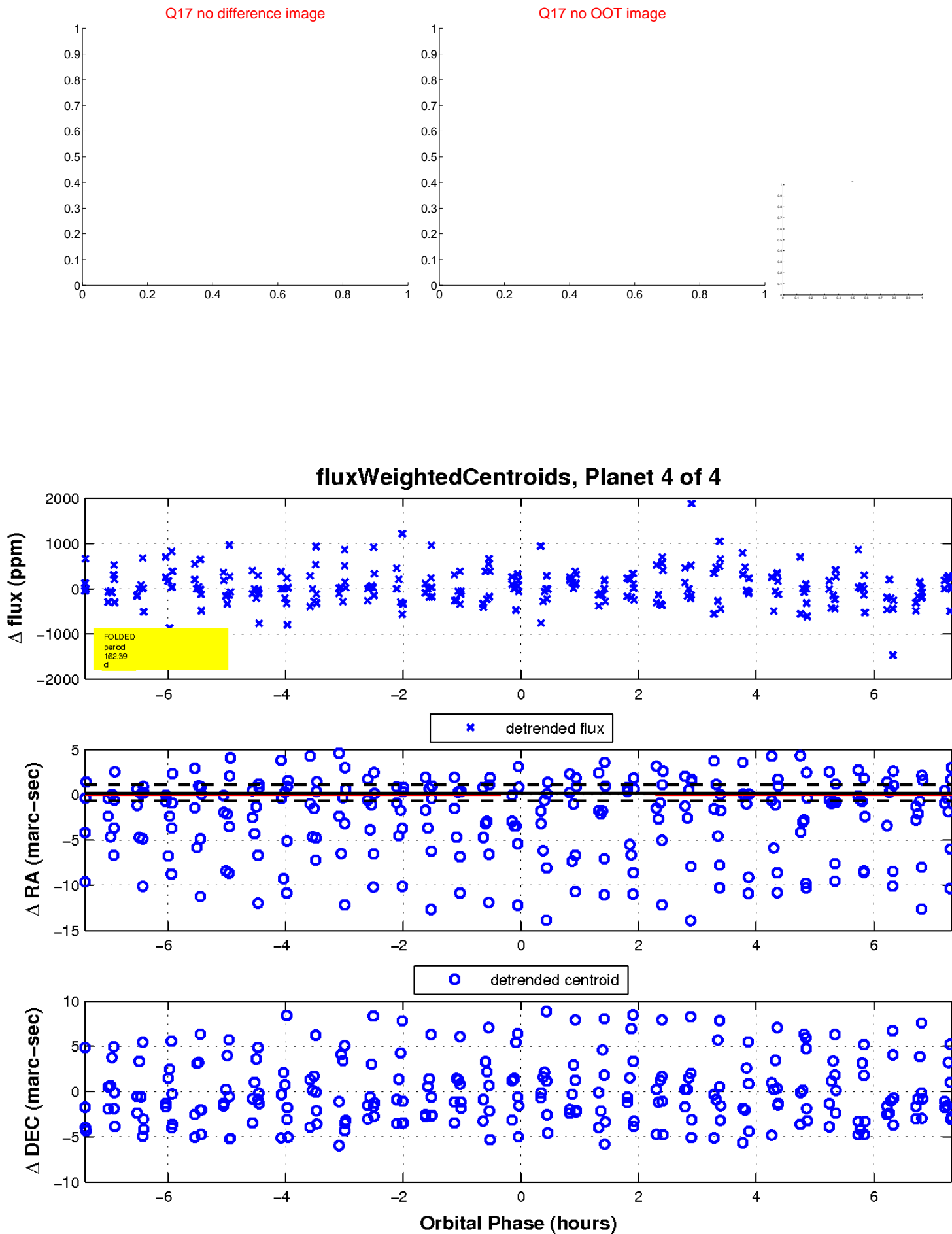
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

