

KIC 005525210

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})
005525210-01	OBS	No	0.702670	131.848742	5.8	4.972	10.5	4.2	2.11	6831	0.52	27424.28
005525210-02	OBS	No	38.959389	138.675493	156.2	20.878	8.7	7.0	2.11	6831	2.82	129.71

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005525210-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_SATURATED
005525210-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

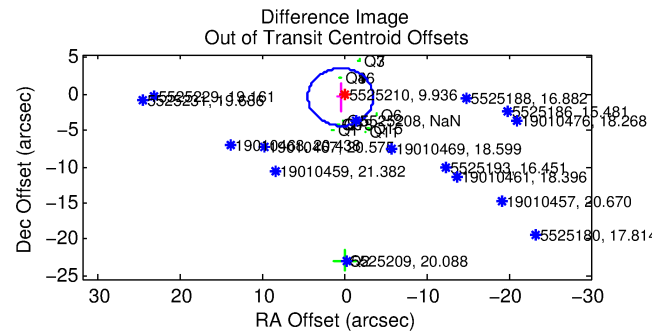
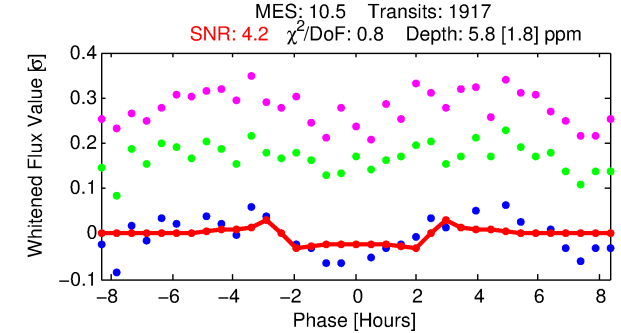
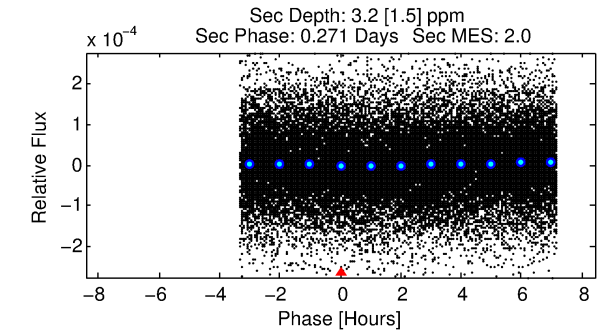
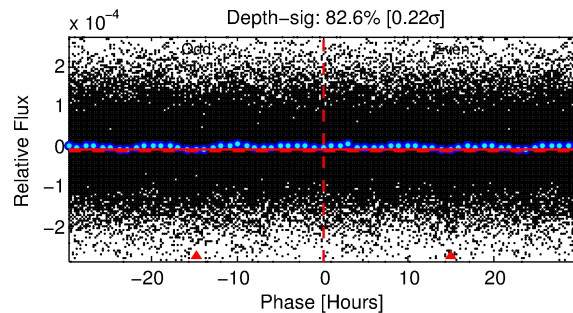
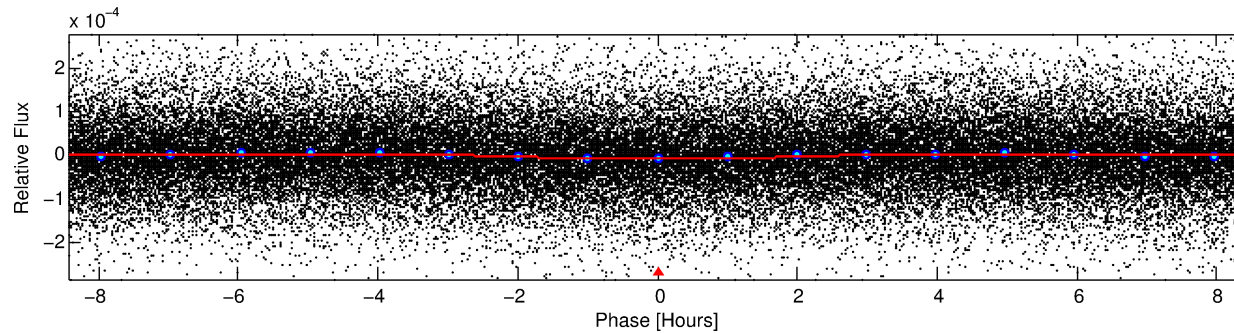
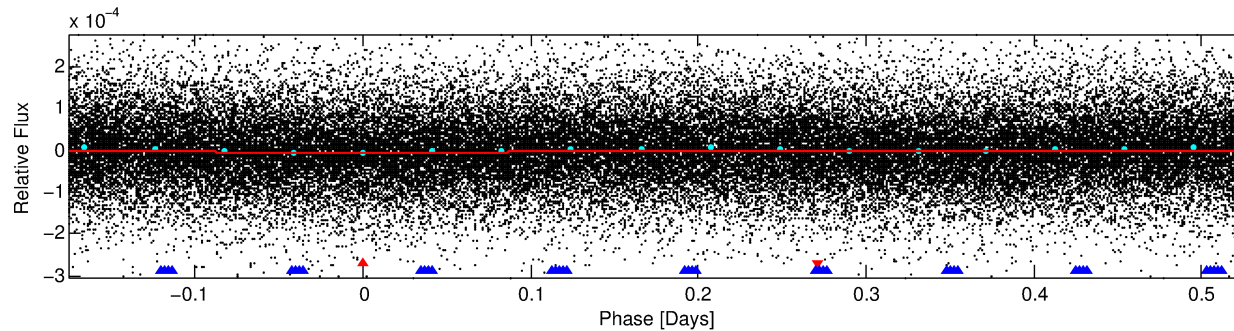
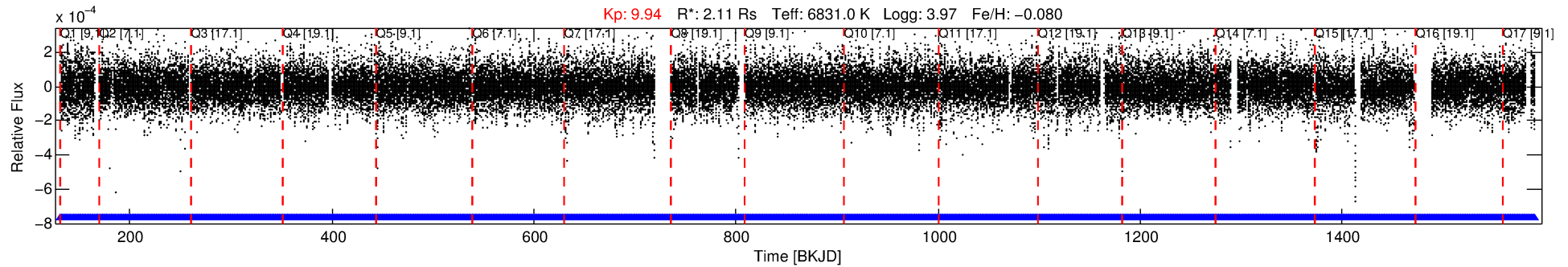
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005525210-01

No Significant Match Found

DV One-Page Summary

KIC: 5525210 Candidate: 1 of 2 Period: 0.703 d



DV Fit Results:

Period = 0.70267 [0.00002] d
Epoch = 131.8487 [0.0043] BKJD
 R_p/R^* = 0.0022 [0.0015]
 a/R^* = 1.23 [1.60]
 b = 0.32 [10.86]
 Seff = 27424.28 [12248.92]
 T_{eq} = 3281 [366] K
 R_p = 0.52 [0.38] R_e
 a = 0.0178 [0.0049] AU
 A_g = 2.05 [3.08] [0.34 σ]
 T_{effp} = 6073 [2193] K [1.26 σ]

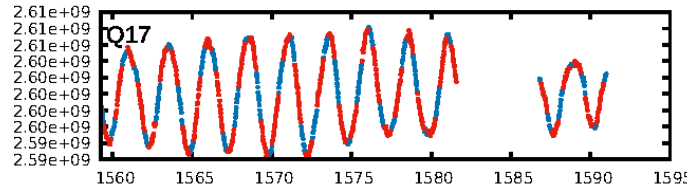
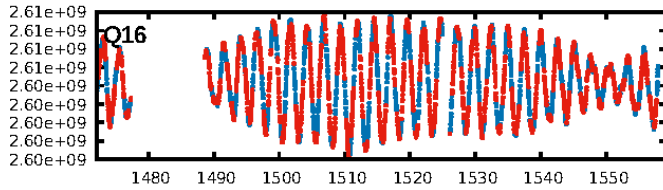
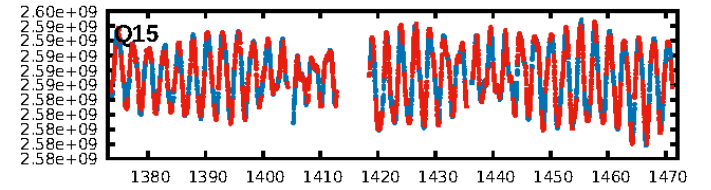
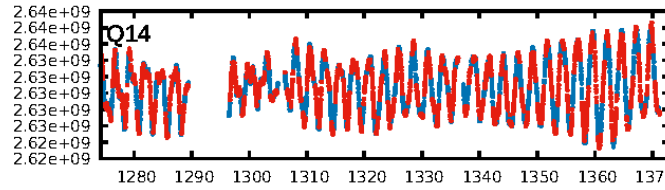
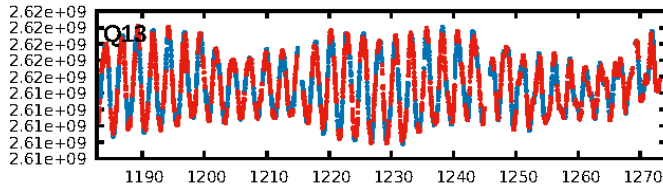
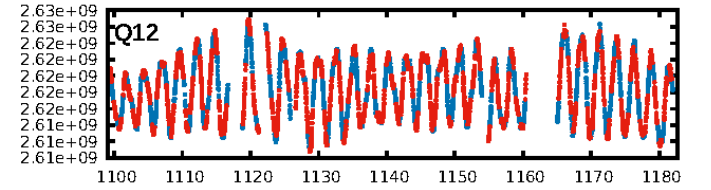
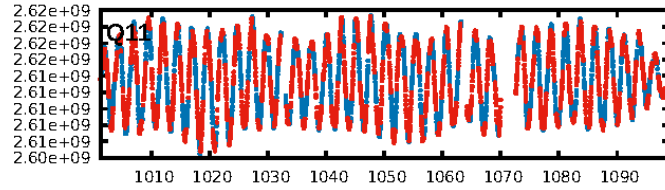
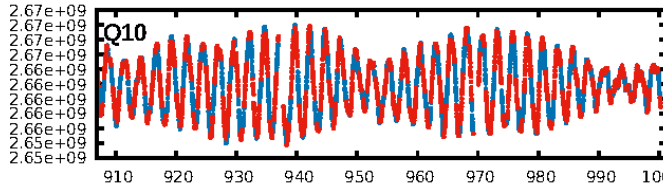
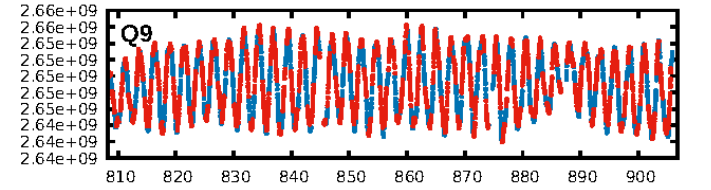
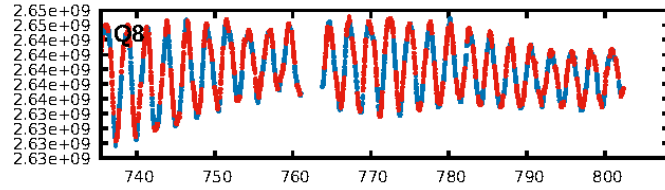
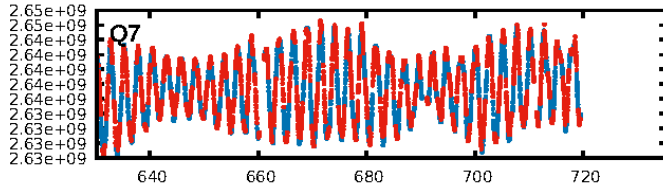
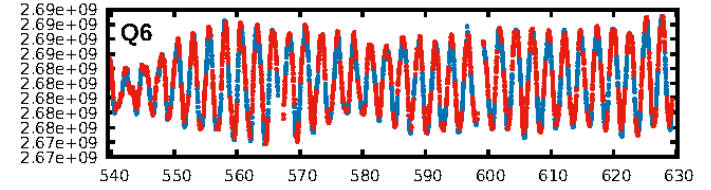
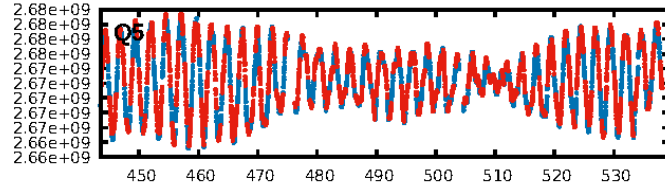
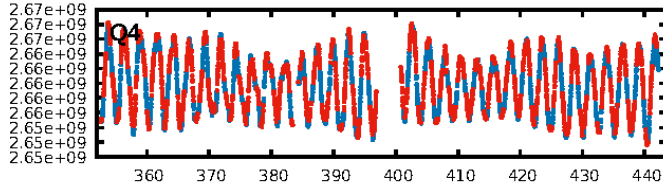
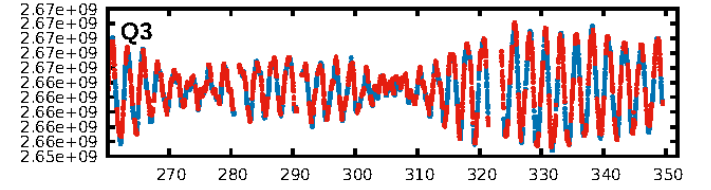
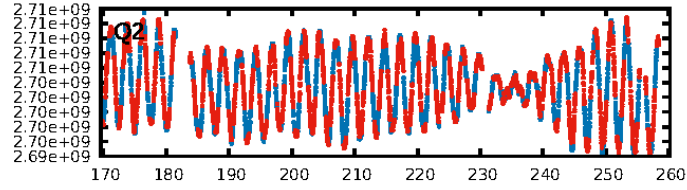
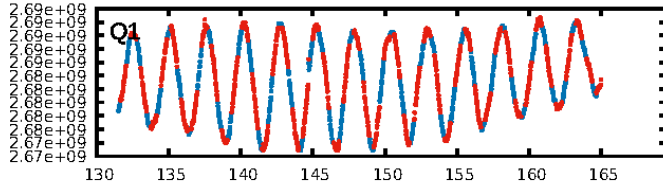
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [42.78 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 8.69e-20
RollingBand-fgt: 1.00 [1831/1831]
GhostDiagnostic-chr: N/A
Centroid-sig: 60.8%
Centroid-so: 0.522 arcsec [0.23 σ]
OotOffset-rm: 0.648 arcsec [0.49 σ]
OotOffset-st: 2/4/3/4 [13]
KicOffset-rm: 1.073 arcsec [0.55 σ]
KicOffset-st: 2/4/3/4 [13]
DiffImageQuality-fgm: 0.00 [0/13]
DiffImageOverlap-fno: 1.00 [17/17]

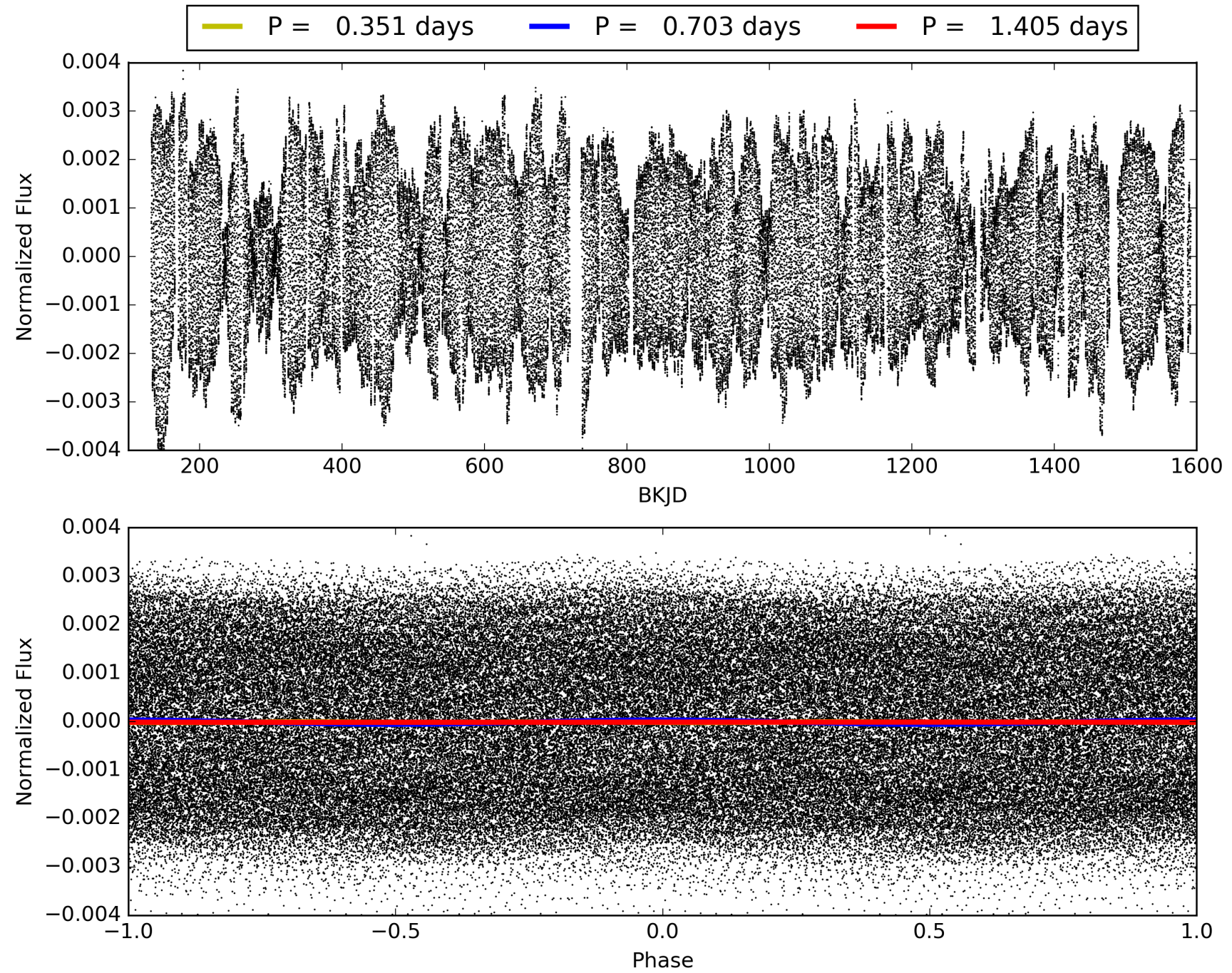
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 01:50:26 Z

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

TCE 005525210-01, PDC Light Curves

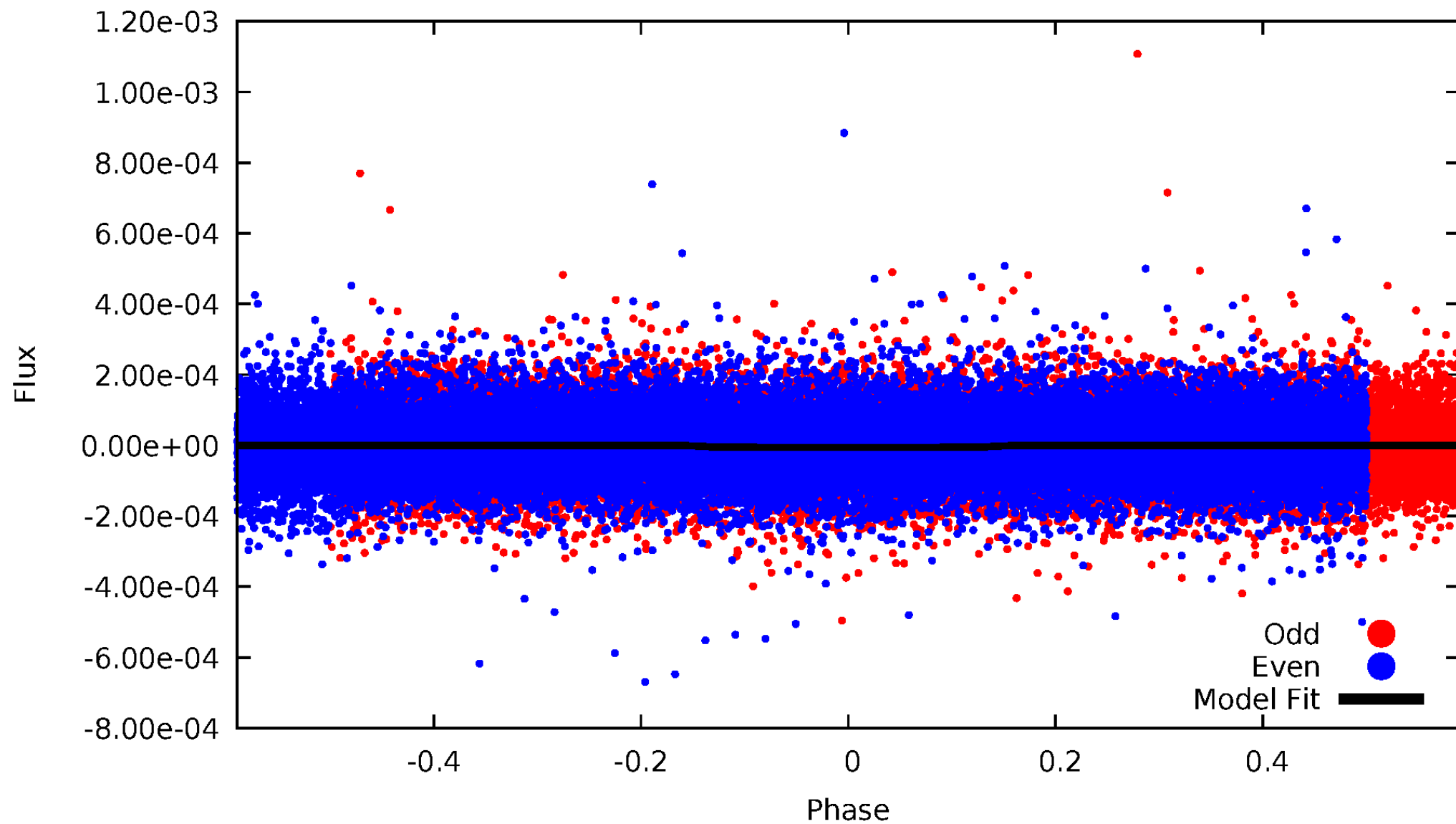


TCE 005525210-01



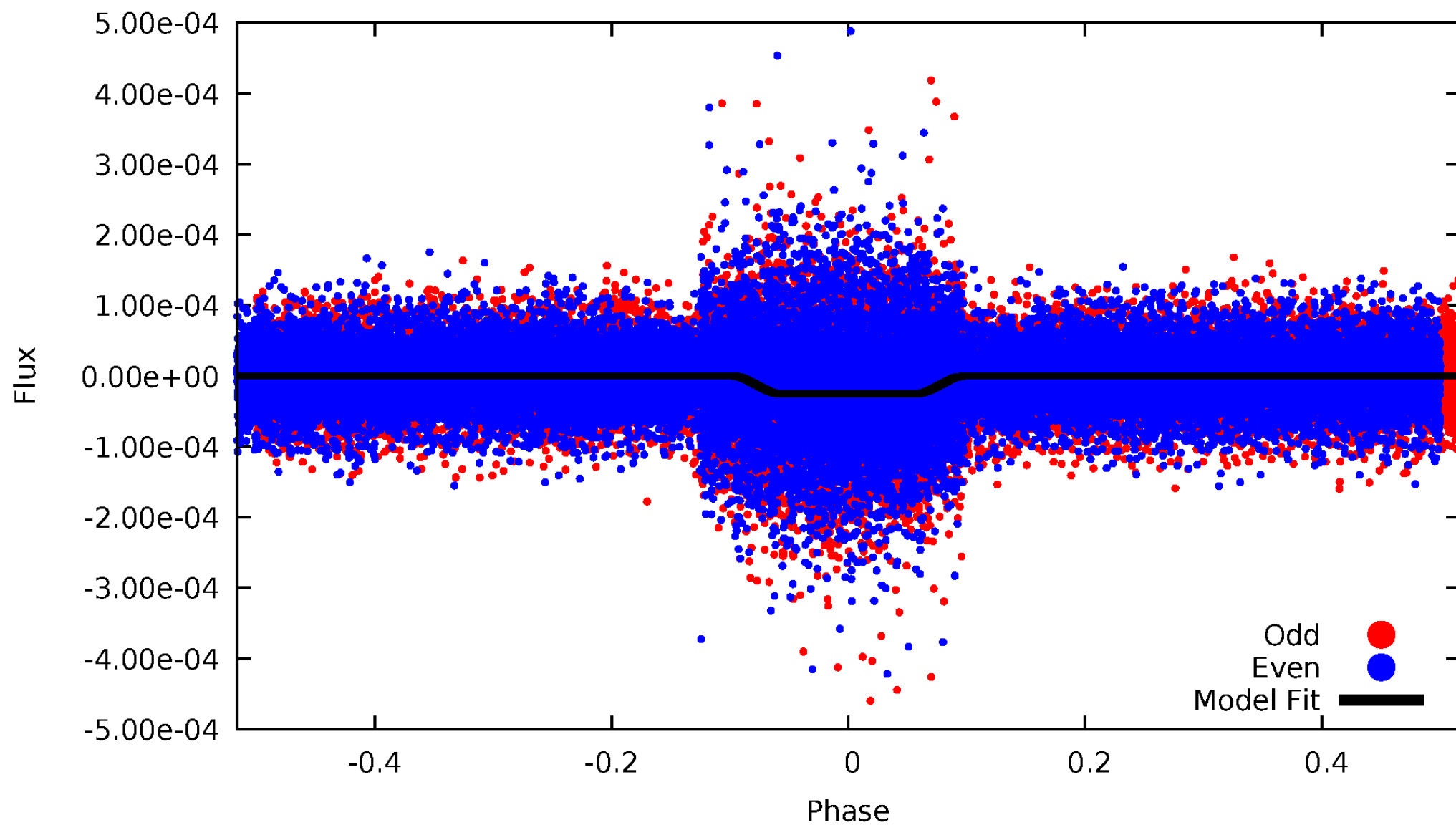
DV Odd/Even

TCE 005525210-01

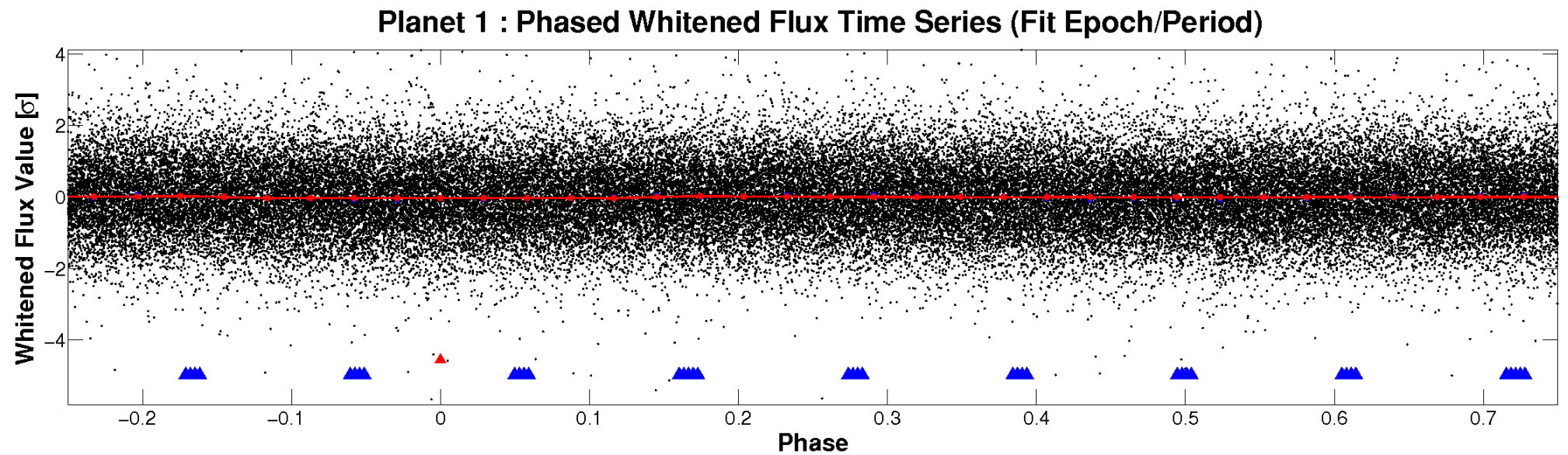
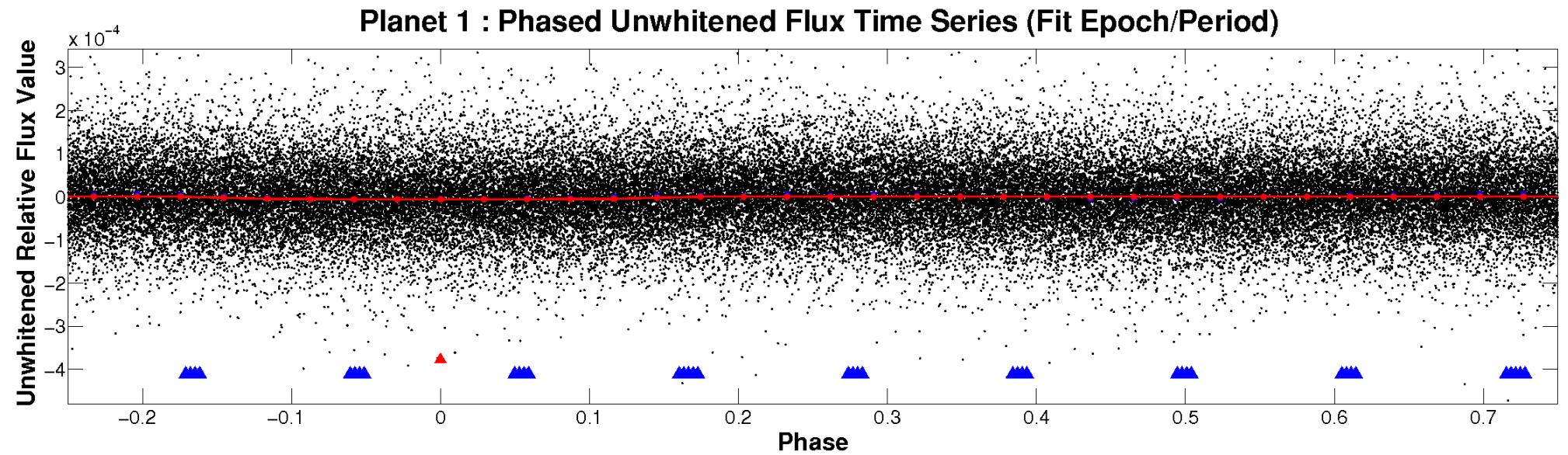


ALT Odd/Even

TCE 005525210-01

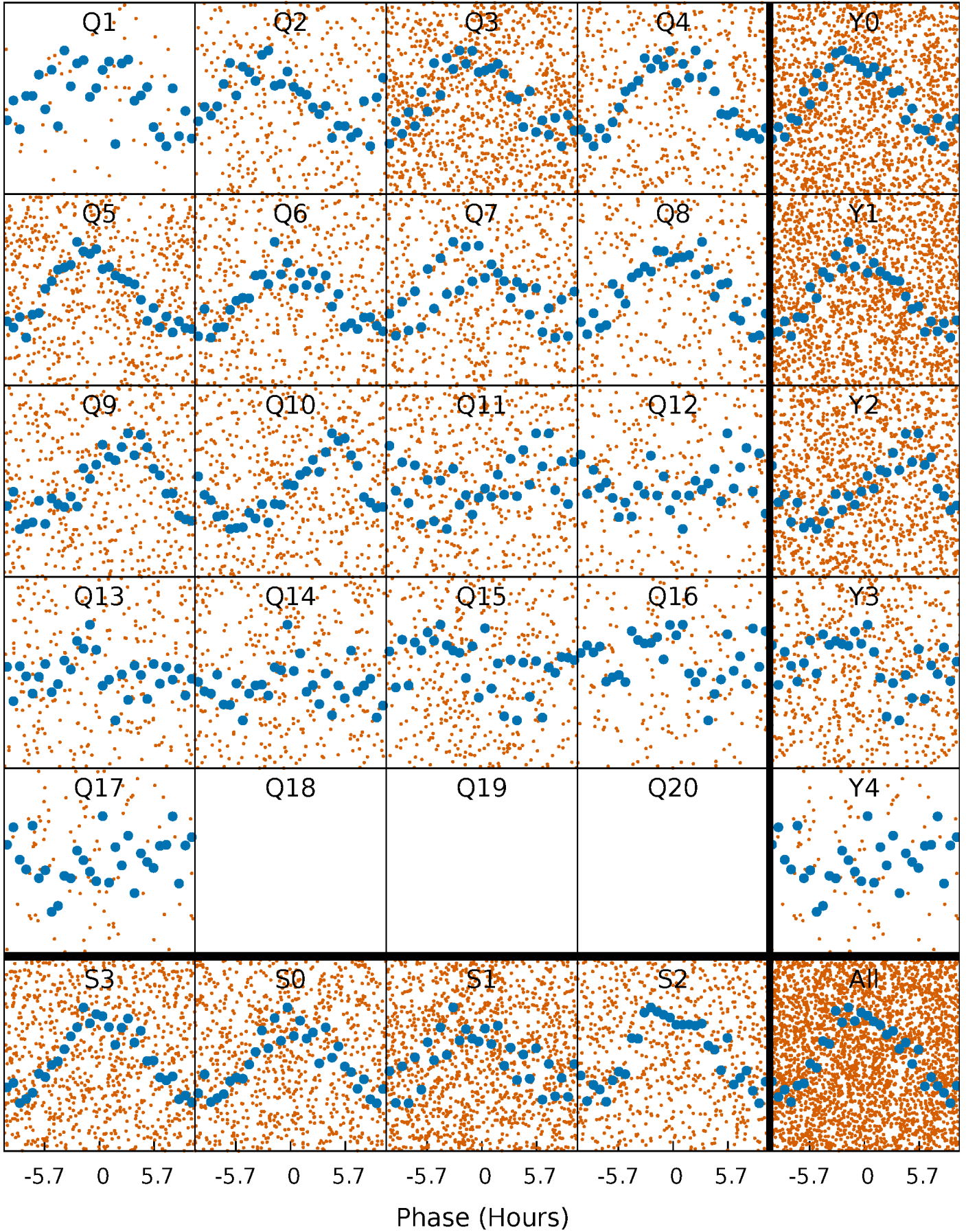


Non-Whitened Vs. Whitened Light Curve



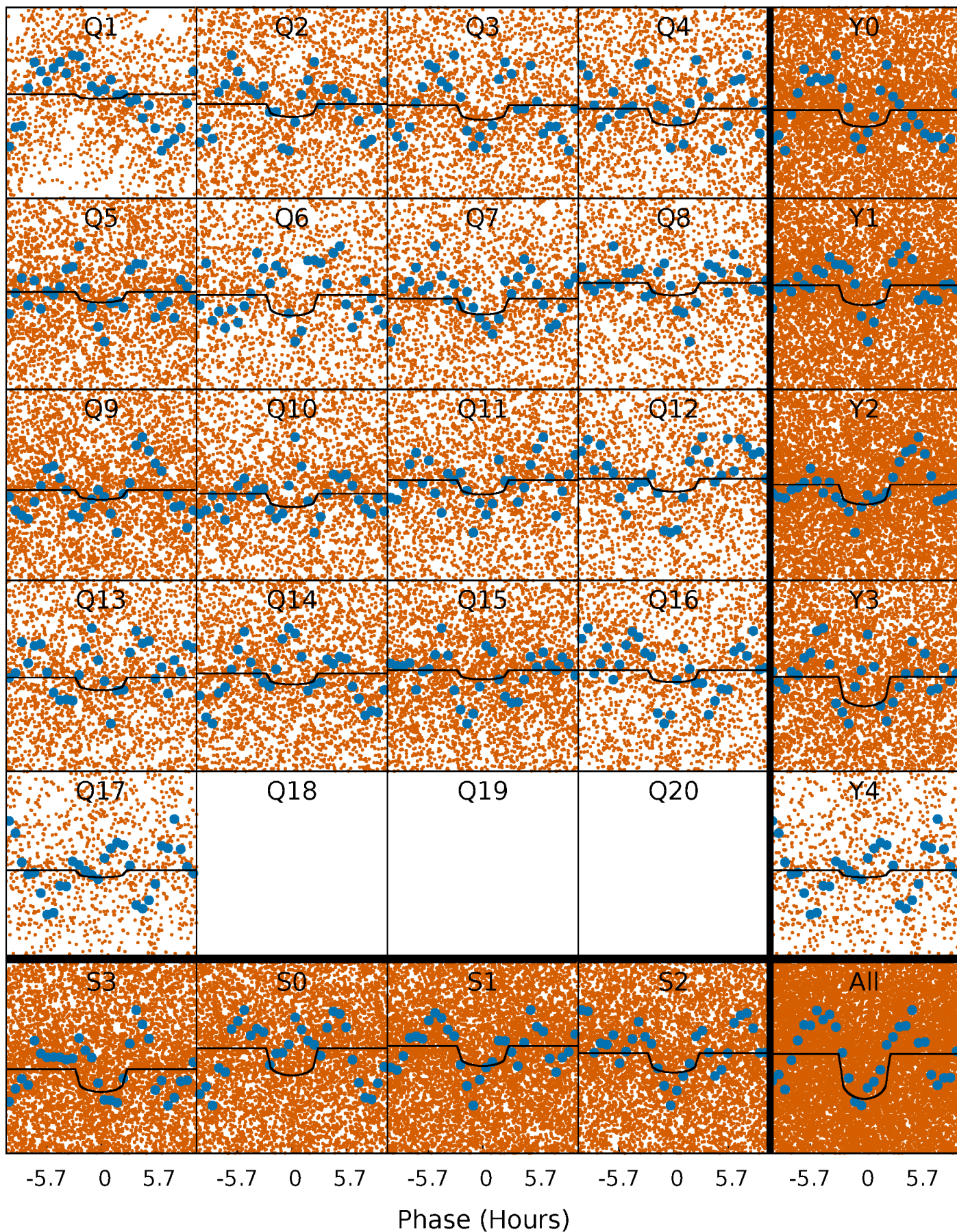
PDC Quarter-Phased Transit Curves

TCE 005525210-01 P= 0.702670 Days $T_0=131.848742$ (BKJD)



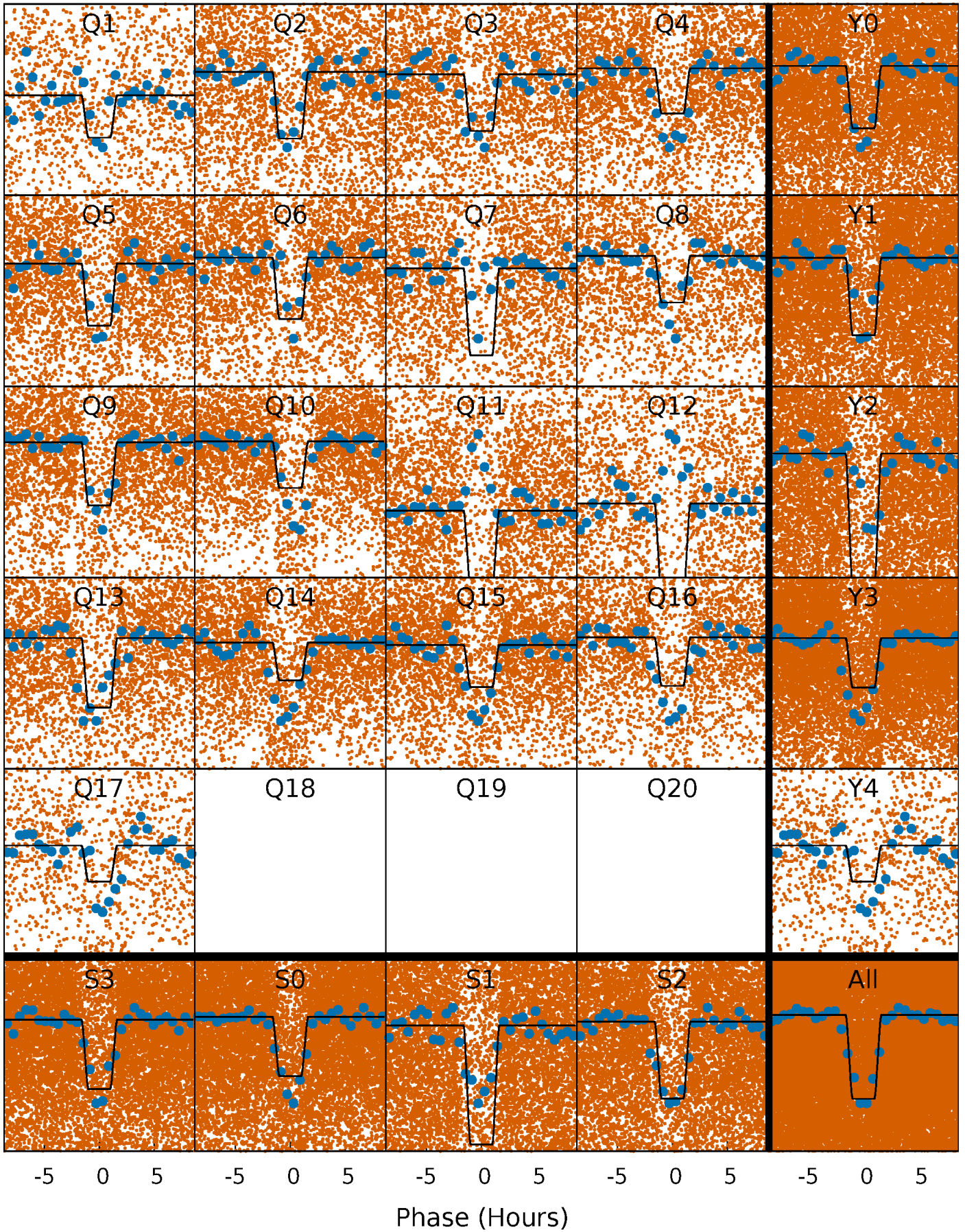
DV Quarter-Phased Transit Curves

TCE 005525210-01 P= 0.702670 Days $T_0=131.848742$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

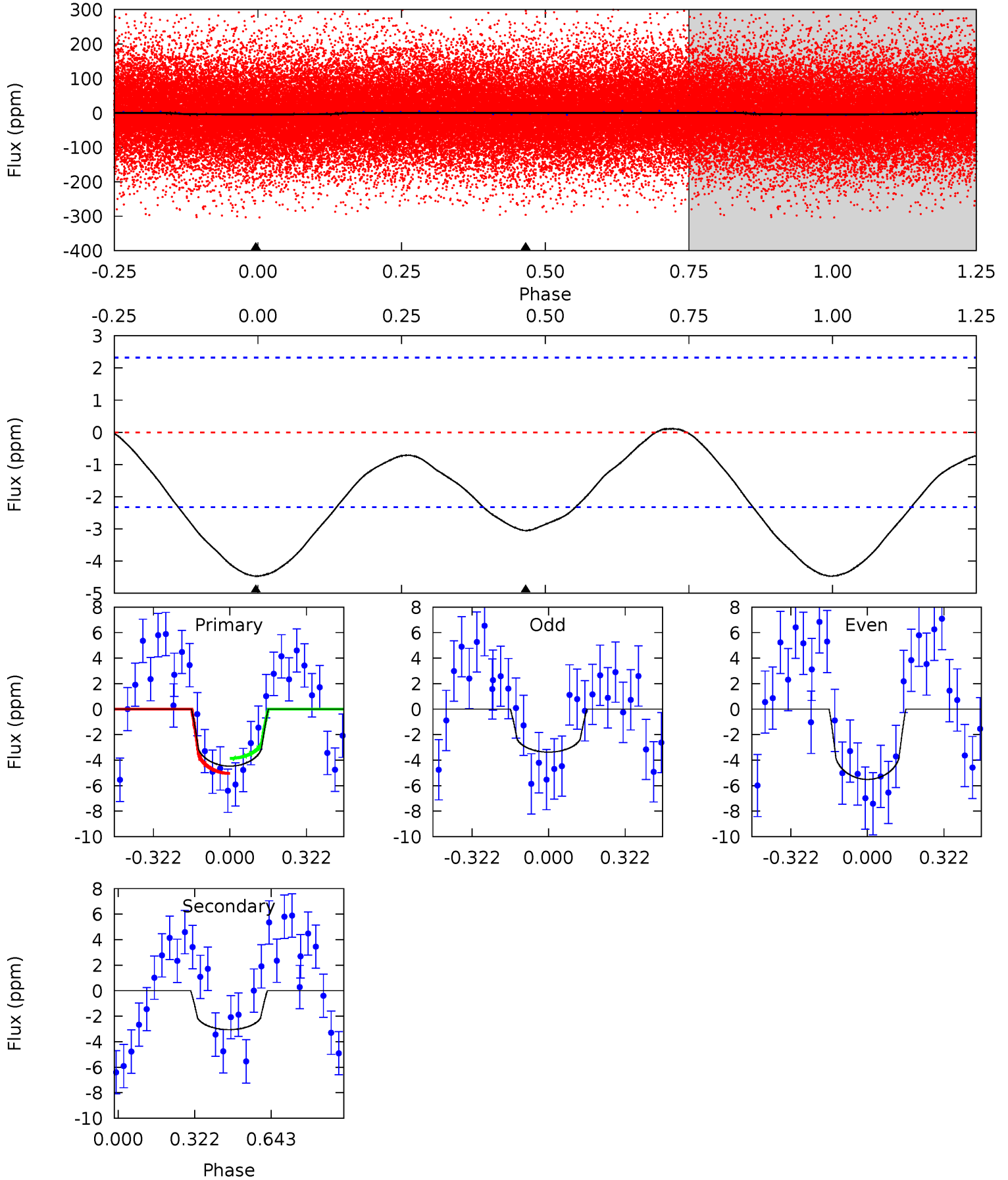
TCE 005525210-01 P= 0.702755 Days $T_0=131.828790$ (BKJD)



DV Model-Shift Uniqueness Test

005525210-01, P = 0.702670 Days, E = 131.146072 Days

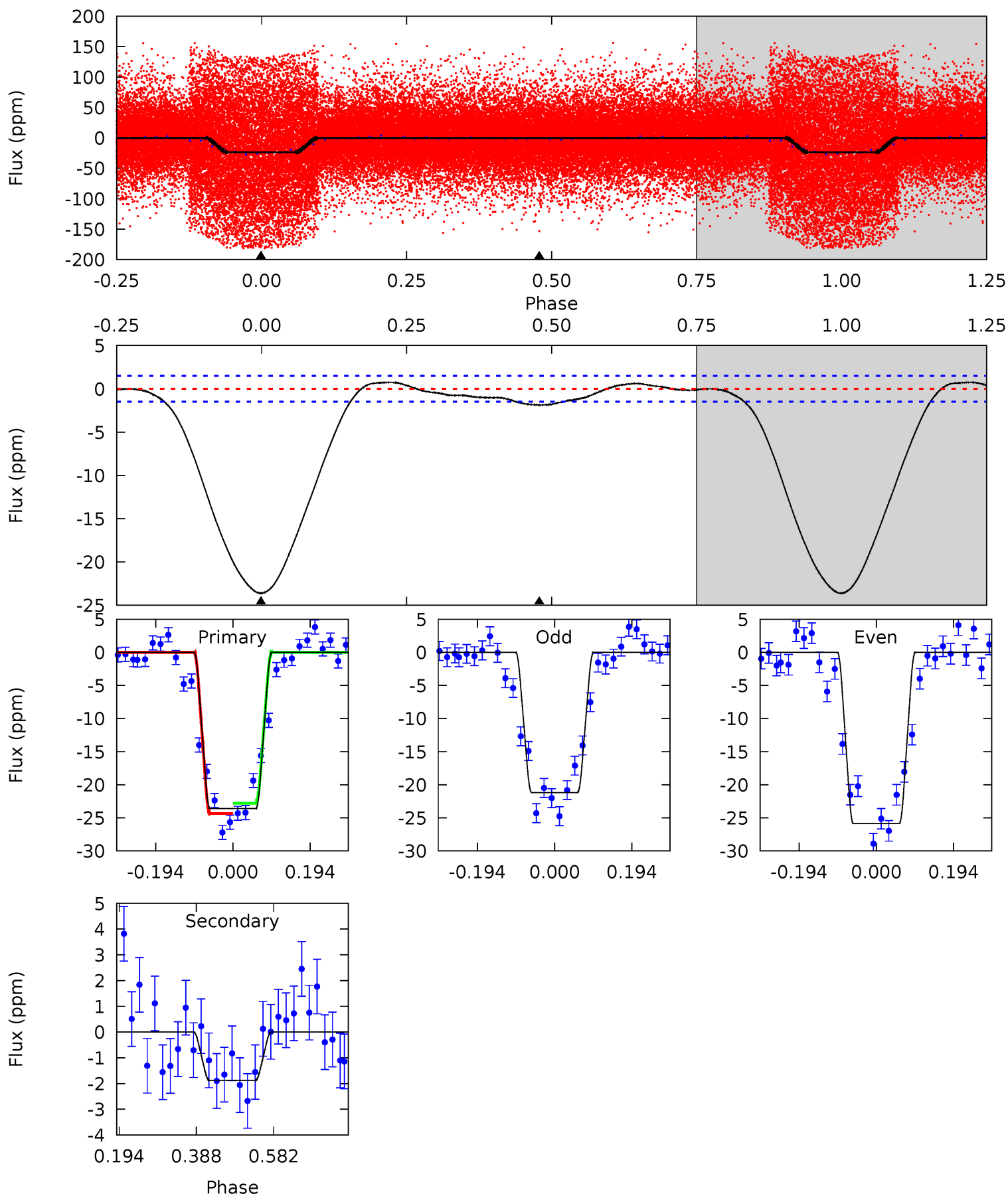
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.29	5.67	0	0	4.31	0.99	0.69	8.29	8.29	5.67	5.67	1.98	1.03	0.03	1.08



Alt Model-Shift Uniqueness Test

005525210-01, P = 0.702755 Days, E = 131.126035 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
70.0	5.57	0	0	4.42	1.30	1.00	70.0	70.0	5.57	5.57	6.95	1.00	0.03	2.27



Stellar Parameters For KIC 005525210

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6831^{+153}_{-221}	$3.971^{+0.245}_{-0.123}$	$-0.080^{+0.250}_{-0.300}$	$2.106^{+0.428}_{-0.642}$	$1.511^{+0.160}_{-0.297}$	$0.228^{+0.331}_{-0.088}$
	+2%/-3%	+6%/-3%	+312%/-375%	+20%/-30%	+11%/-20%	+145%/-39%
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 005525210-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-3 ± 1	$0.52^{+0.33}_{-0.27}$	4531^{+276}_{-353}	5615^{+3151}_{-1392}	$2.001^{+6.682}_{-1.298}$
Alt.	-2 ± 0	$1.11^{+0.39}_{-0.36}$	4531^{+284}_{-370}	-2827^{+6689}_{-848}	$0.263^{+0.302}_{-0.124}$

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

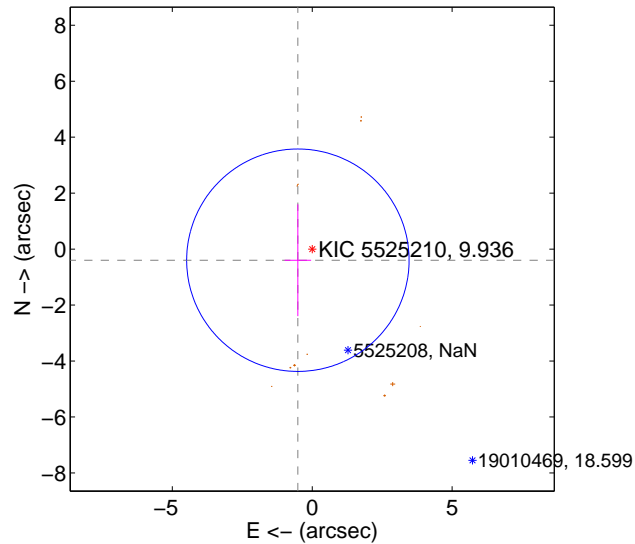
Supplemental centroid analysis for 005525210-01. **Kepler magnitude: 9.94.** Transit SNR 4.23

There are 0 quarters with good PRF difference image offsets

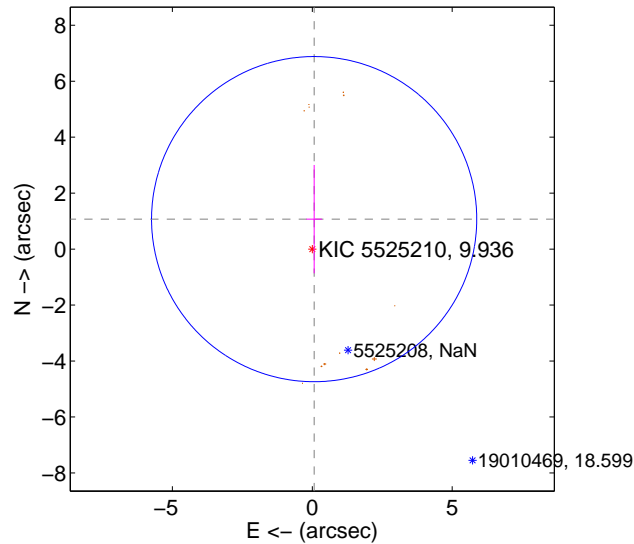
The OOT PRF centroid is offset from the target star catalog position by about 2.66 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.648 ± 1.325	0.49	0.512 ± 0.472	-0.397 ± 1.998
PRF-fit source offset from KIC position	1.073 ± 1.937	0.55	-0.067 ± 0.278	1.071 ± 1.937
photometric centroid source offset	0.52 ± 2.23	0.23	0.28 ± 1.55	-0.44 ± 2.45

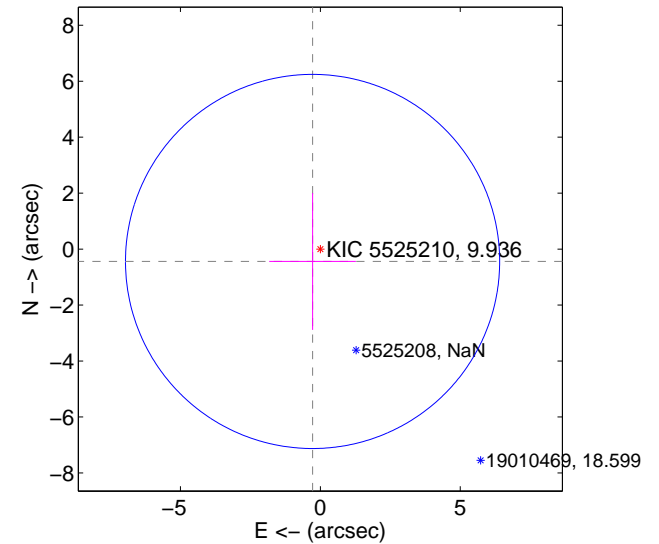
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

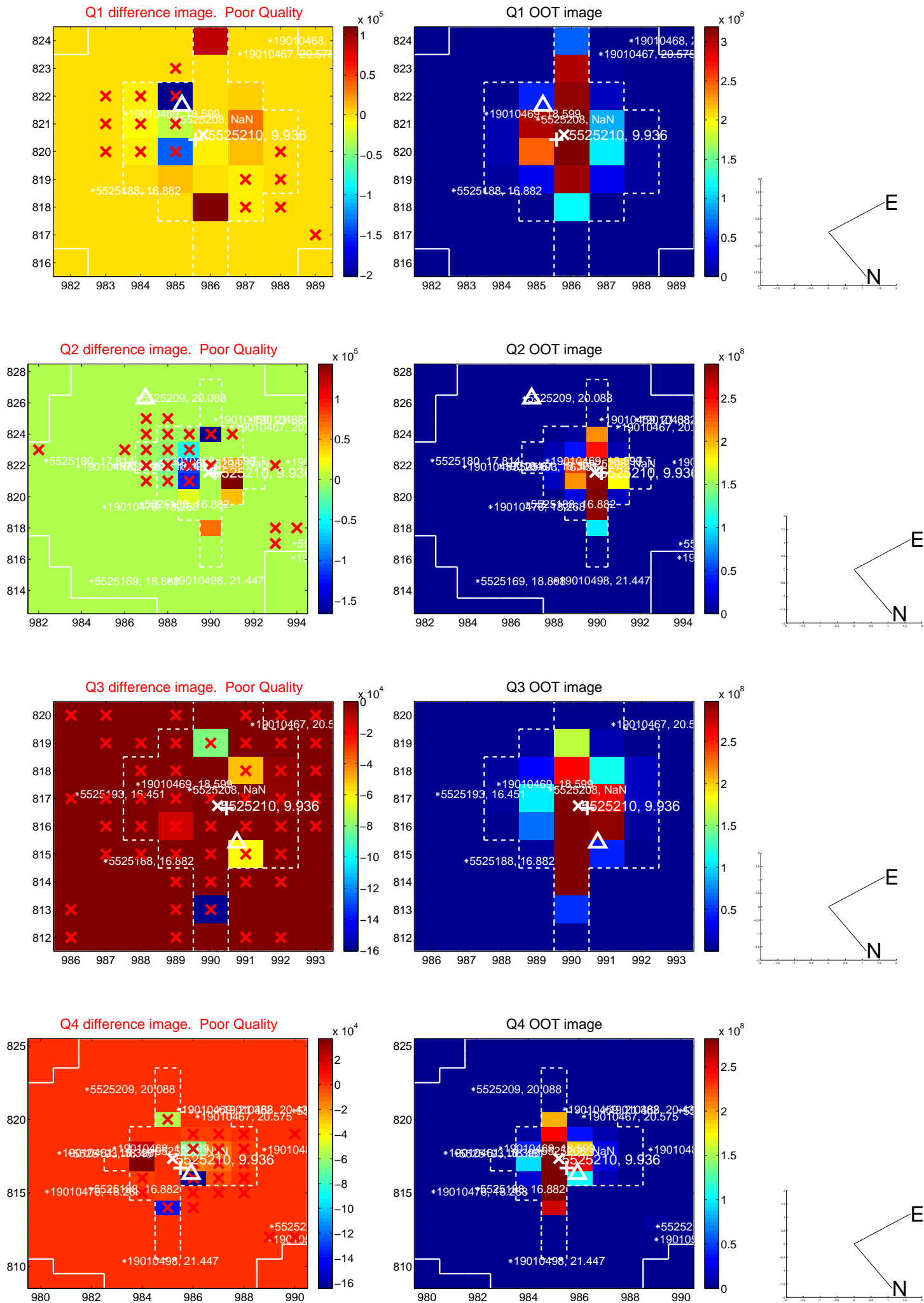


offset from photometric centroids

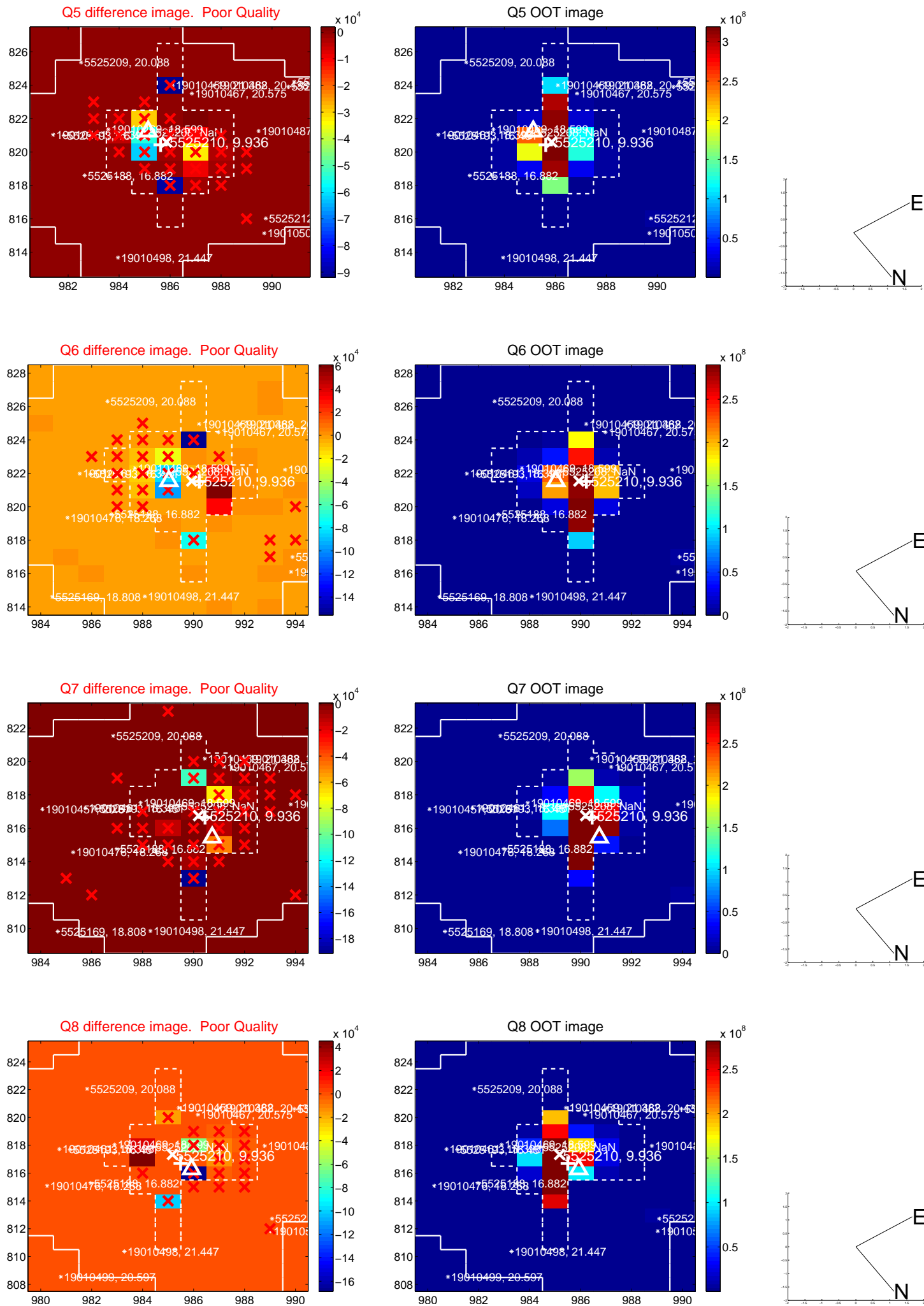


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

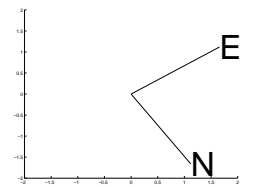
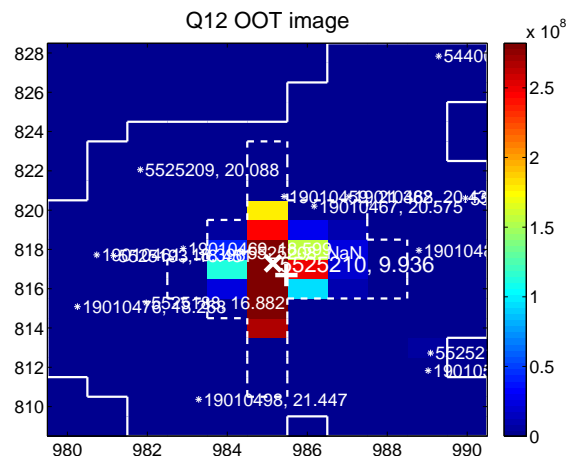
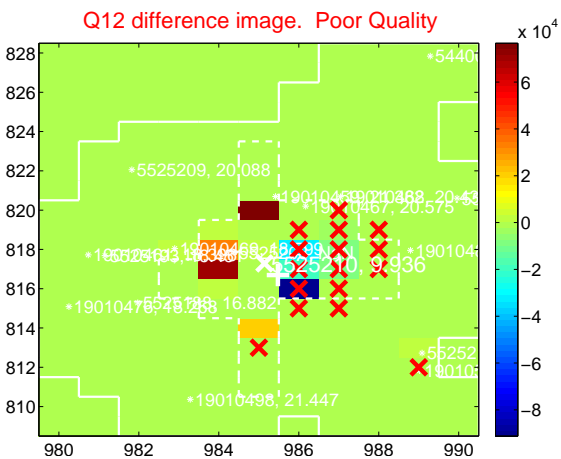
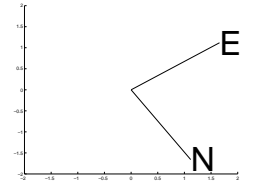
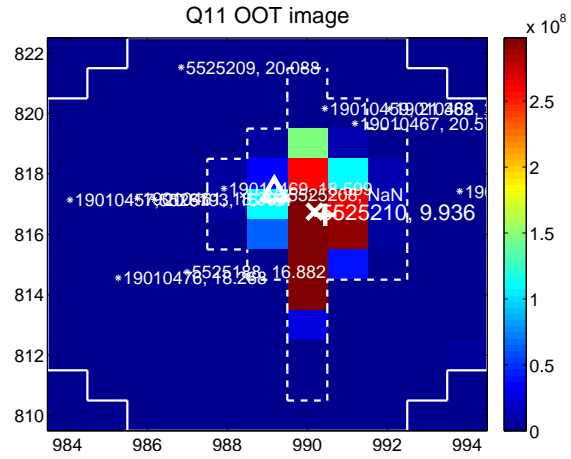
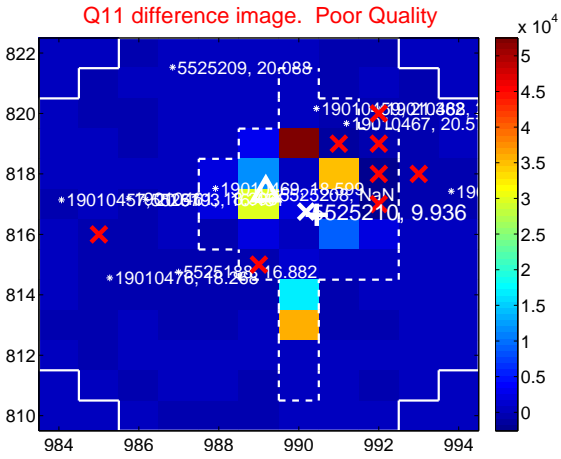
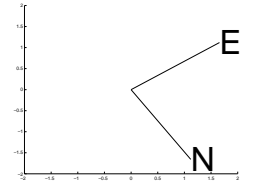
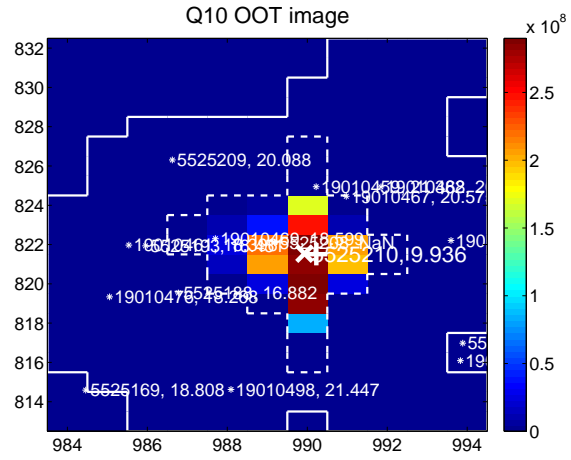
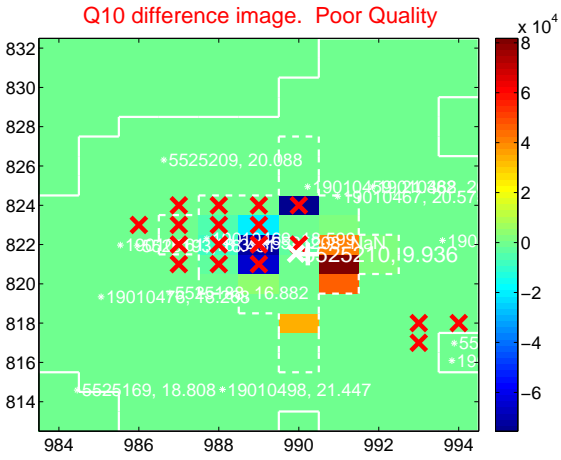
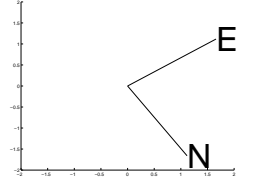
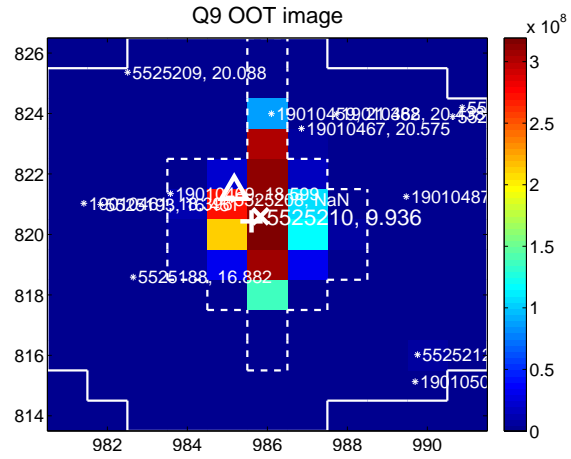
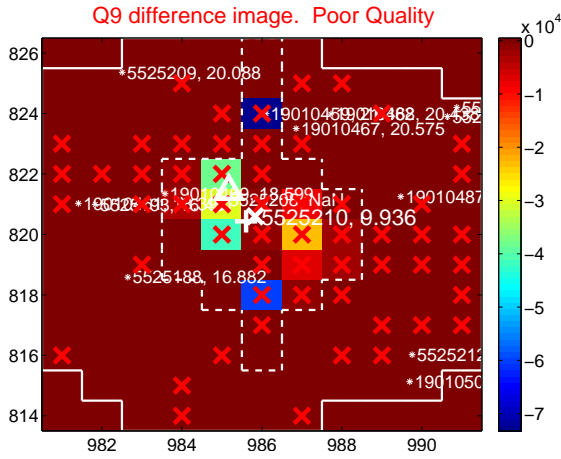
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



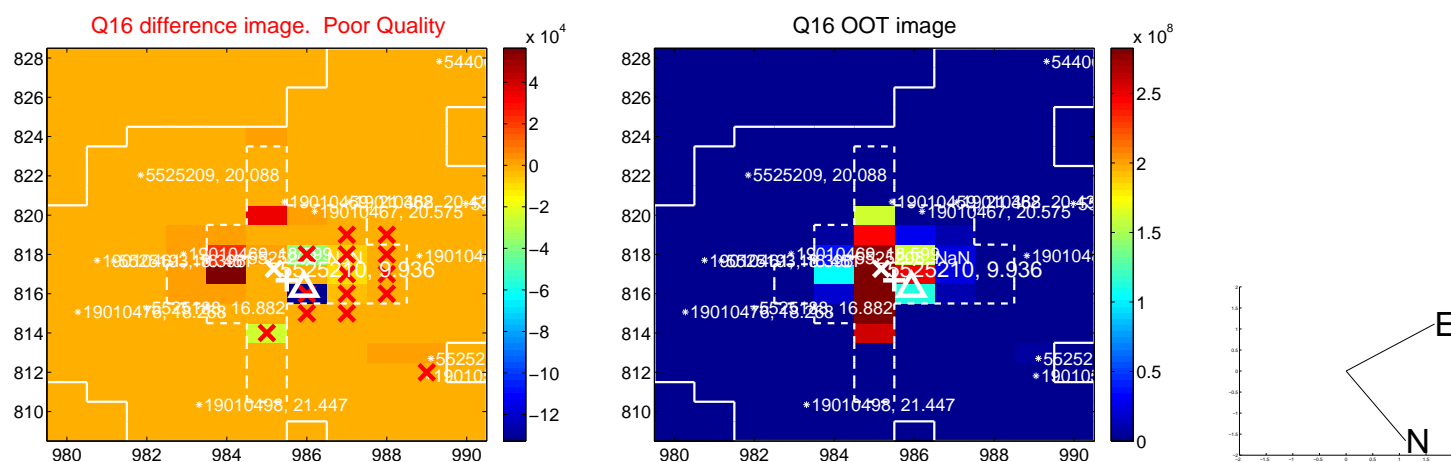
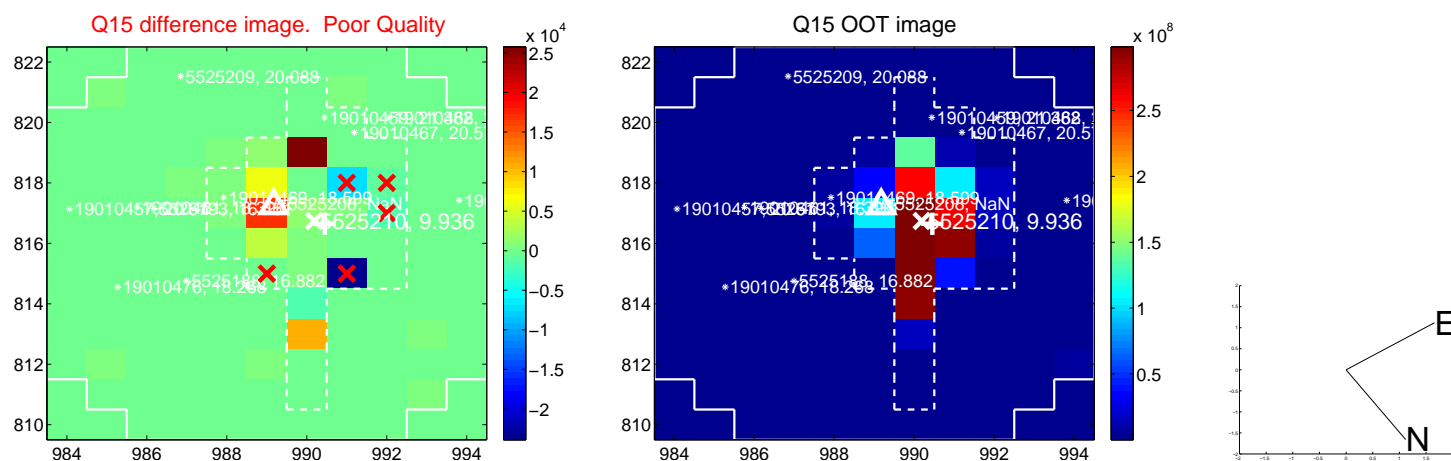
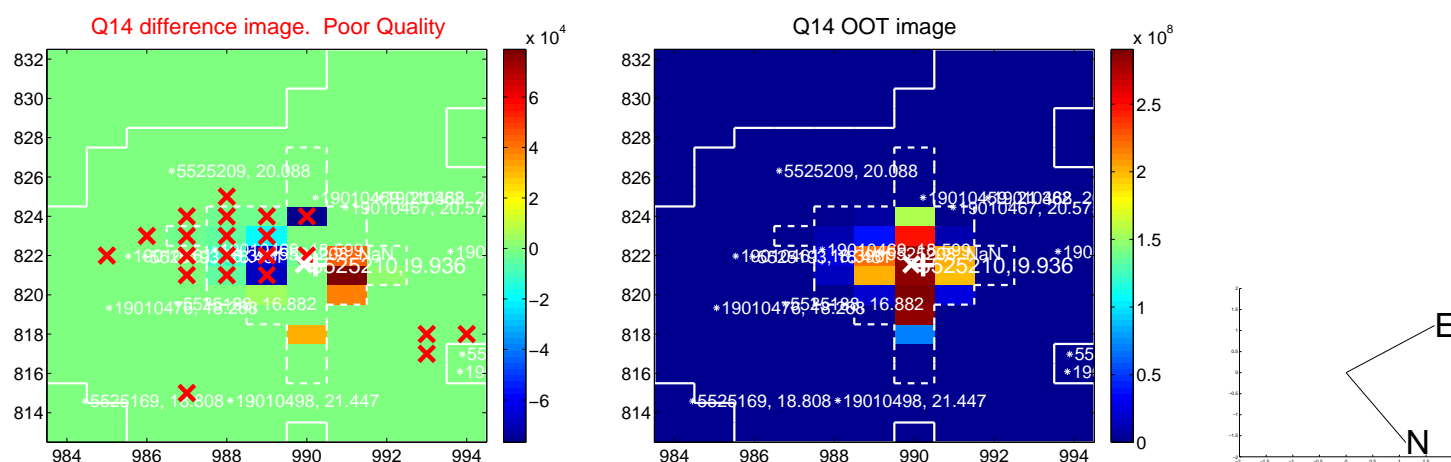
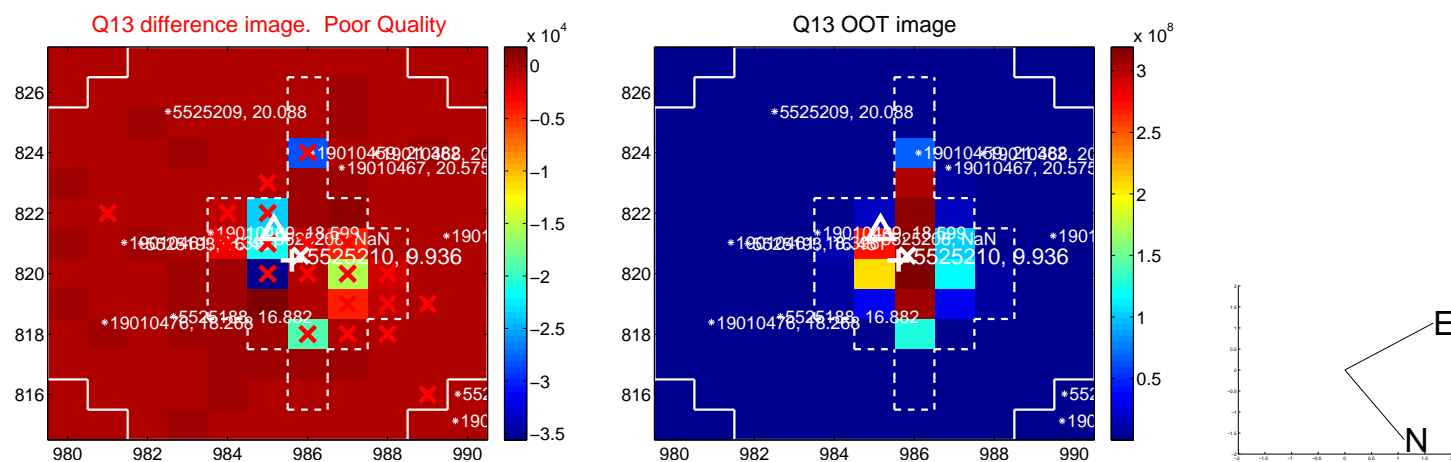
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



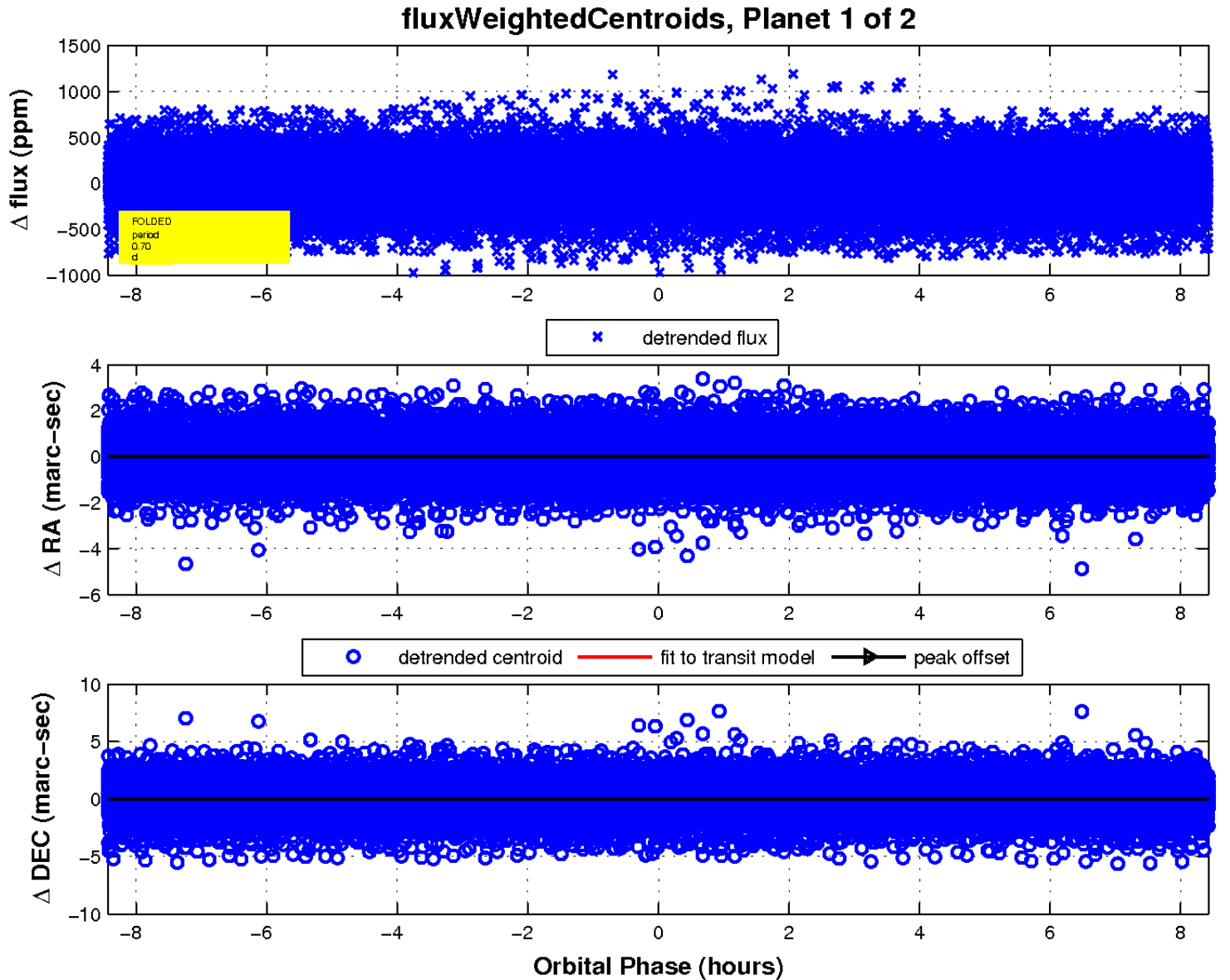
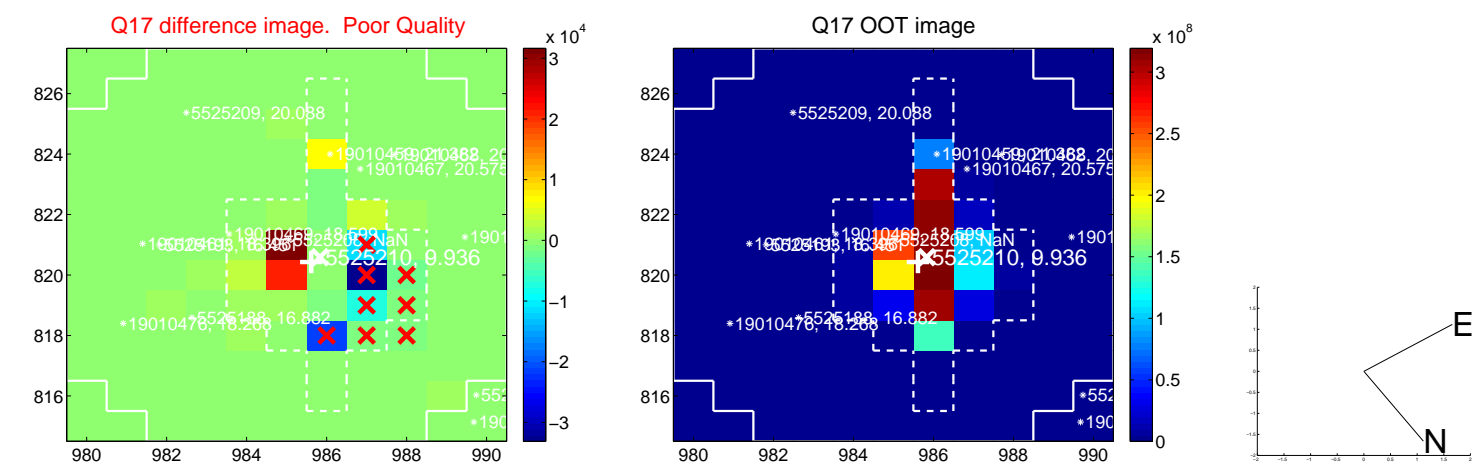
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



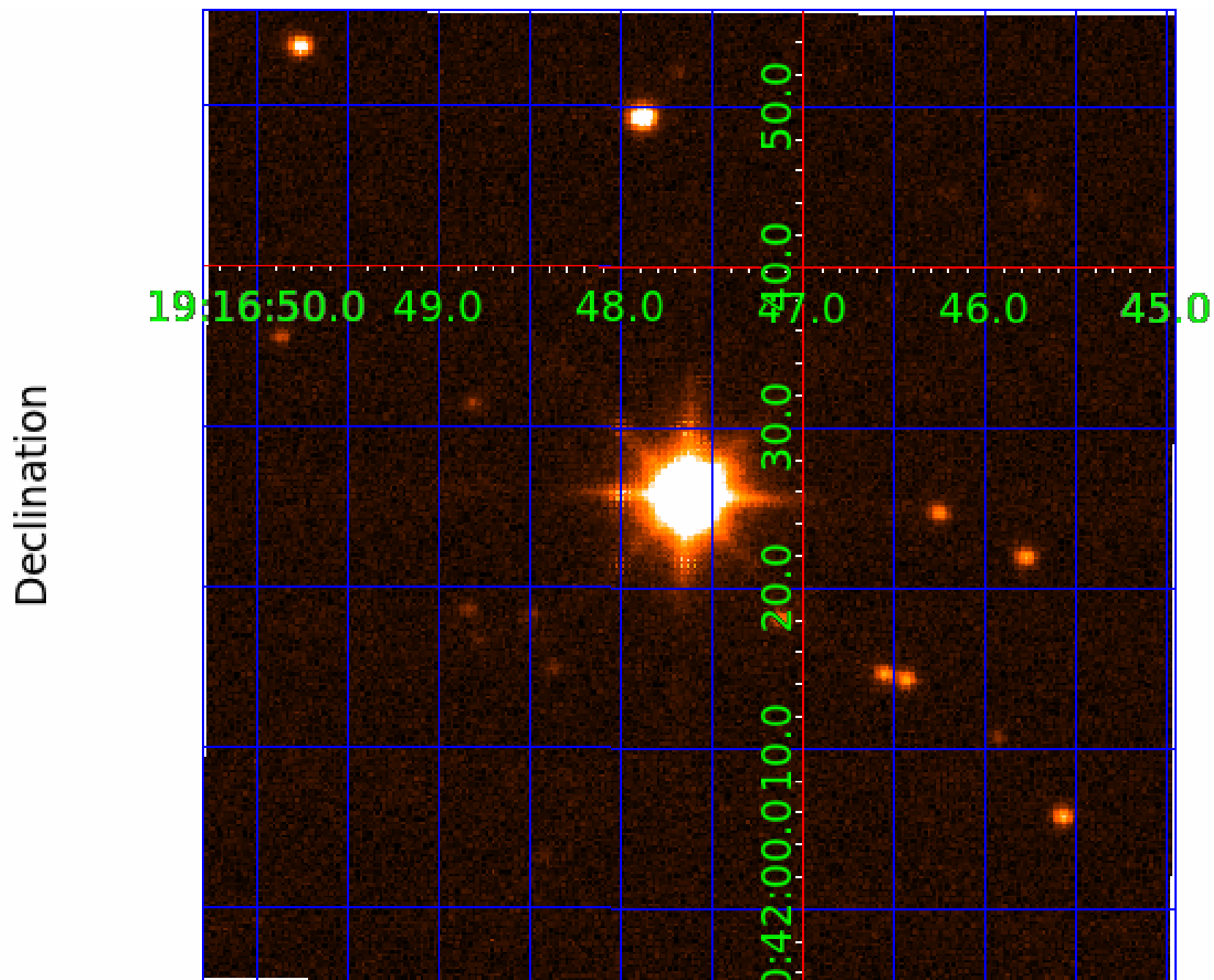
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 005525210

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})
005525210-01	OBS	No	0.702670	131.848742	5.8	4.972	10.5	4.2	2.11	6831	0.52	27424.28
005525210-02	OBS	No	38.959389	138.675493	156.2	20.878	8.7	7.0	2.11	6831	2.82	129.71

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005525210-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_SATURATED
005525210-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

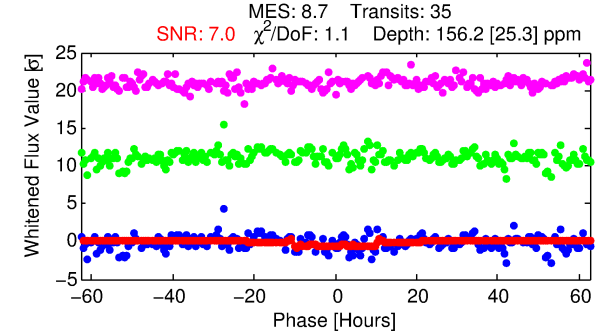
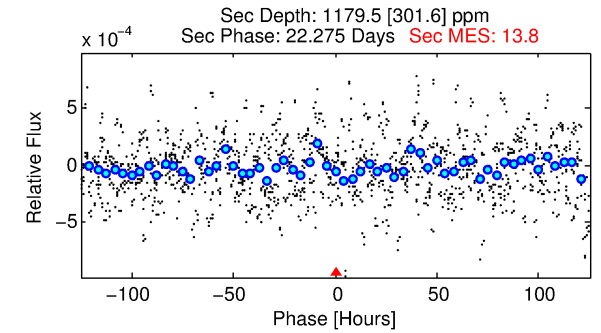
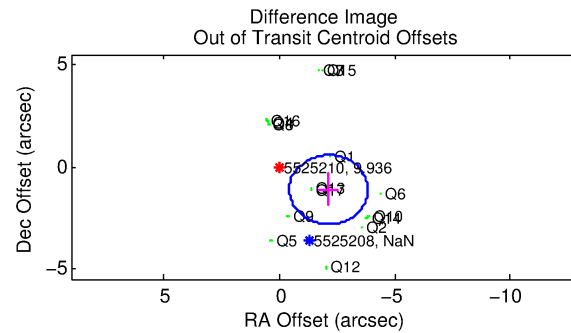
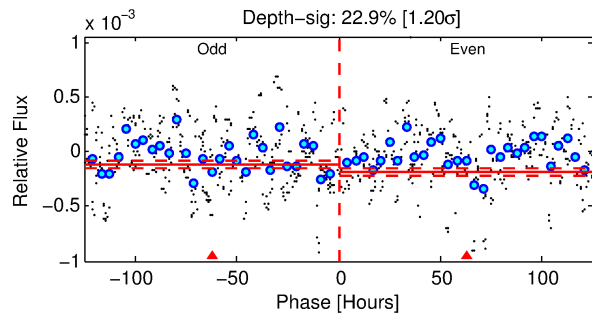
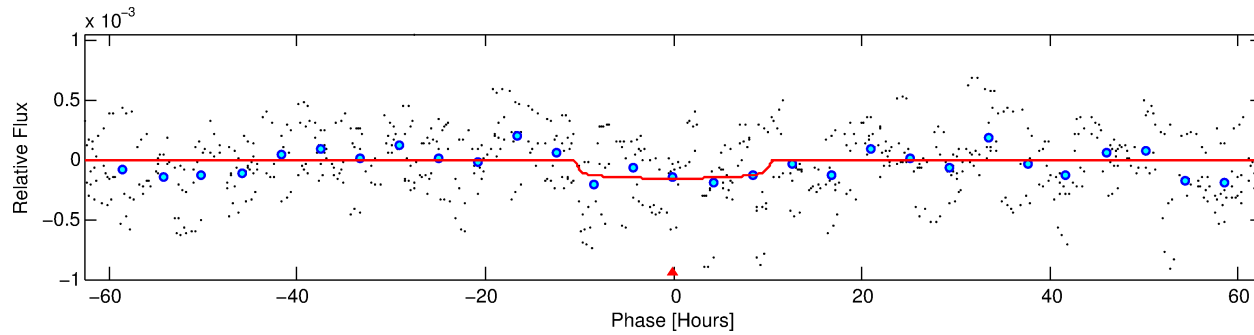
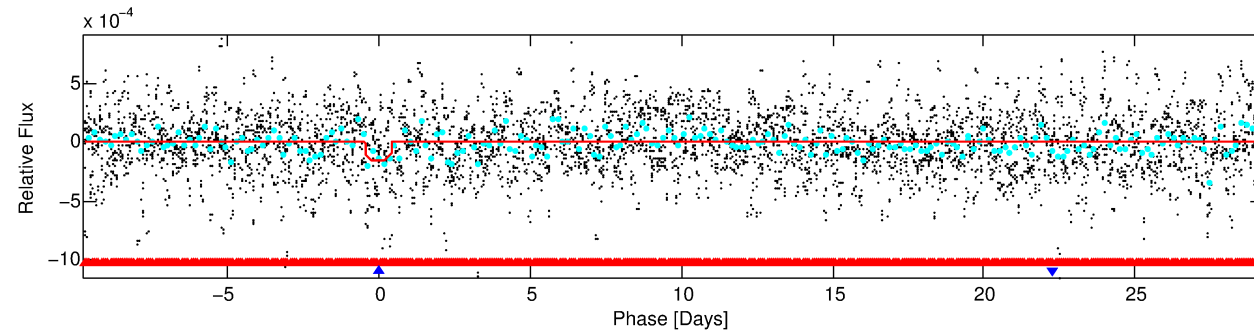
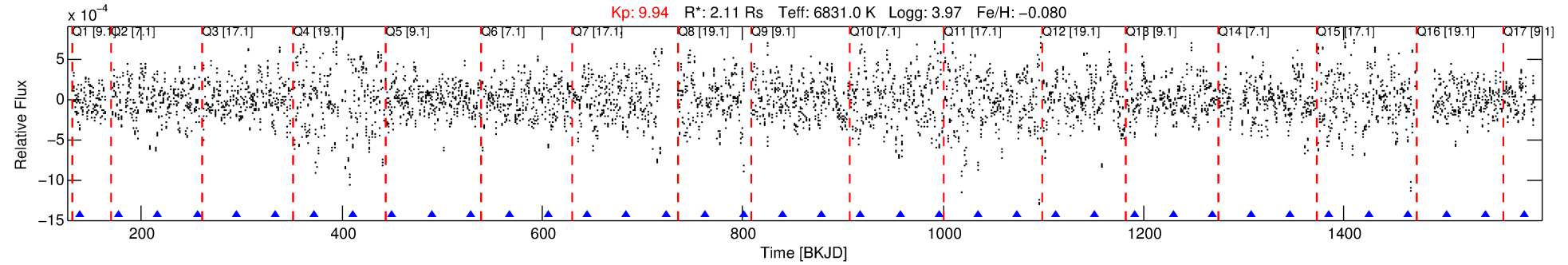
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005525210-02

No Significant Match Found

DV One-Page Summary

KIC: 5525210 Candidate: 2 of 2 Period: 38.959 d



DV Fit Results:

Period = 38.95939 [0.00112] d
Epoch = 138.6755 [0.0237] BKJD
Rp/R* = 0.0123 [0.0032]
a/R* = 10.47 [15.18]
b = 0.70 [1.05]
Seff = 129.71 [57.94]
Teq = 861 [96] K
Rp = 2.82 [1.13] Re
a = 0.2583 [0.0715] AU
Ag = 5453.11 [3945.10] [1.38 σ]
Teffp = 11433 [1709] K [6.18 σ]

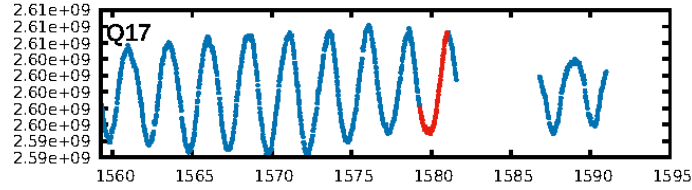
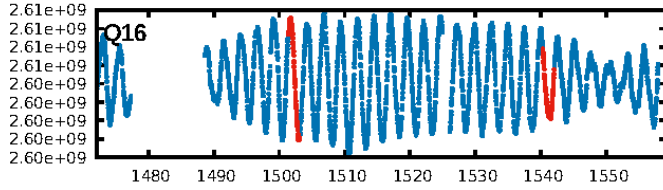
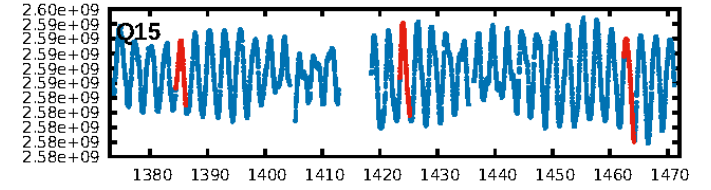
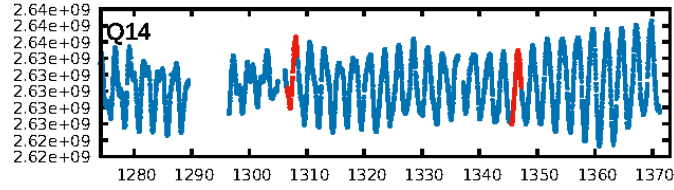
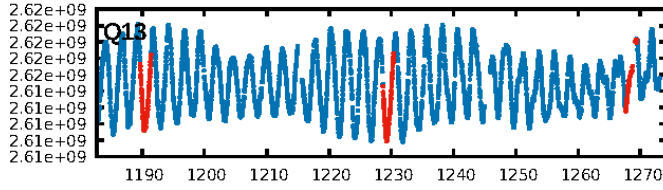
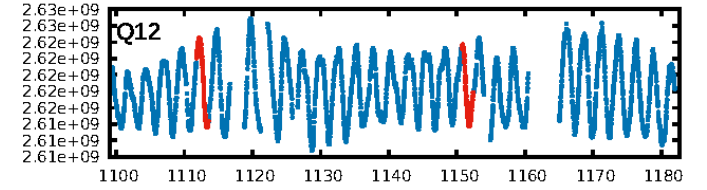
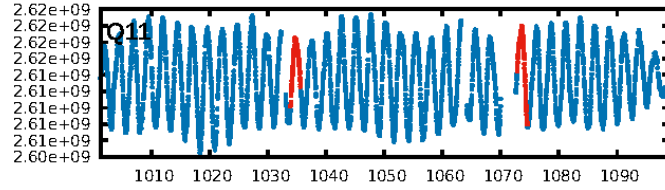
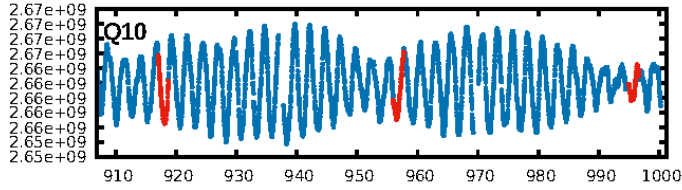
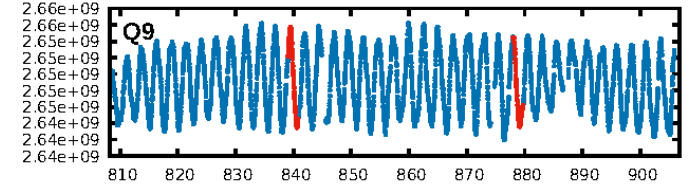
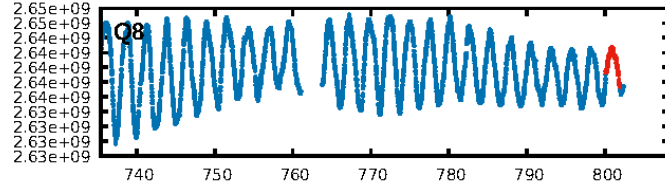
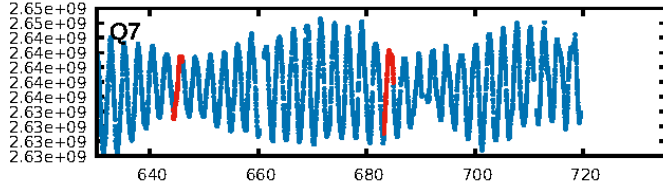
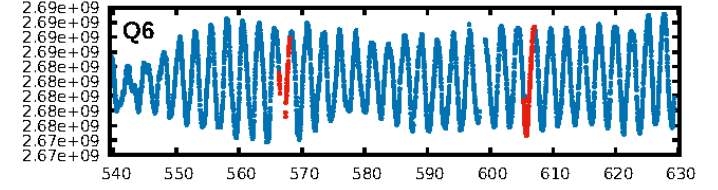
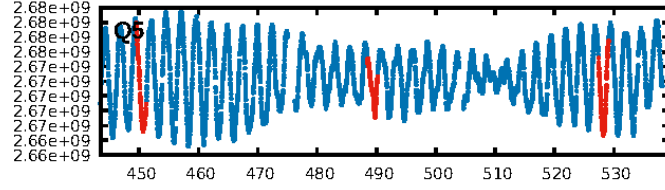
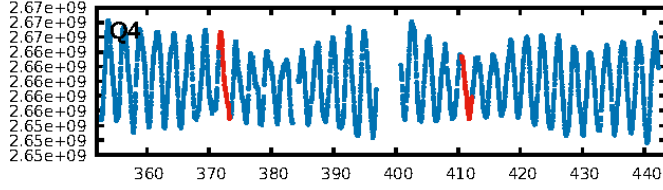
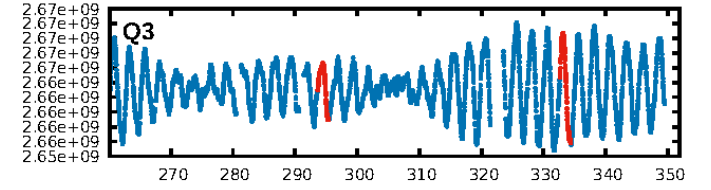
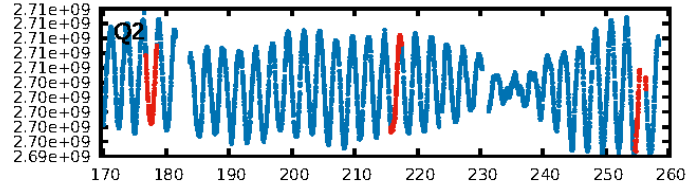
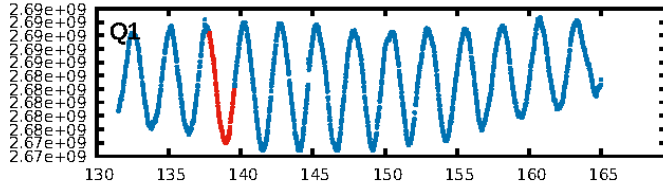
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [42.78 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.15e-10
RollingBand-fgt: 1.00 [33/33]
GhostDiagnostic-chr: N/A
Centroid-sig: 14.1%
Centroid-so: 1.500 arcsec [1.98 σ]
OotOffset-rm: 2.412 arcsec [4.27 σ]
KicOffset-rm: 2.191 arcsec [4.93 σ]
OotOffset-st: 4/3/4/5 [16]
KicOffset-st: 4/3/4/5 [16]
DiffImageQuality-fgm: 0.00 [0/16]
DiffImageOverlap-fno: 0.00 [0/16]

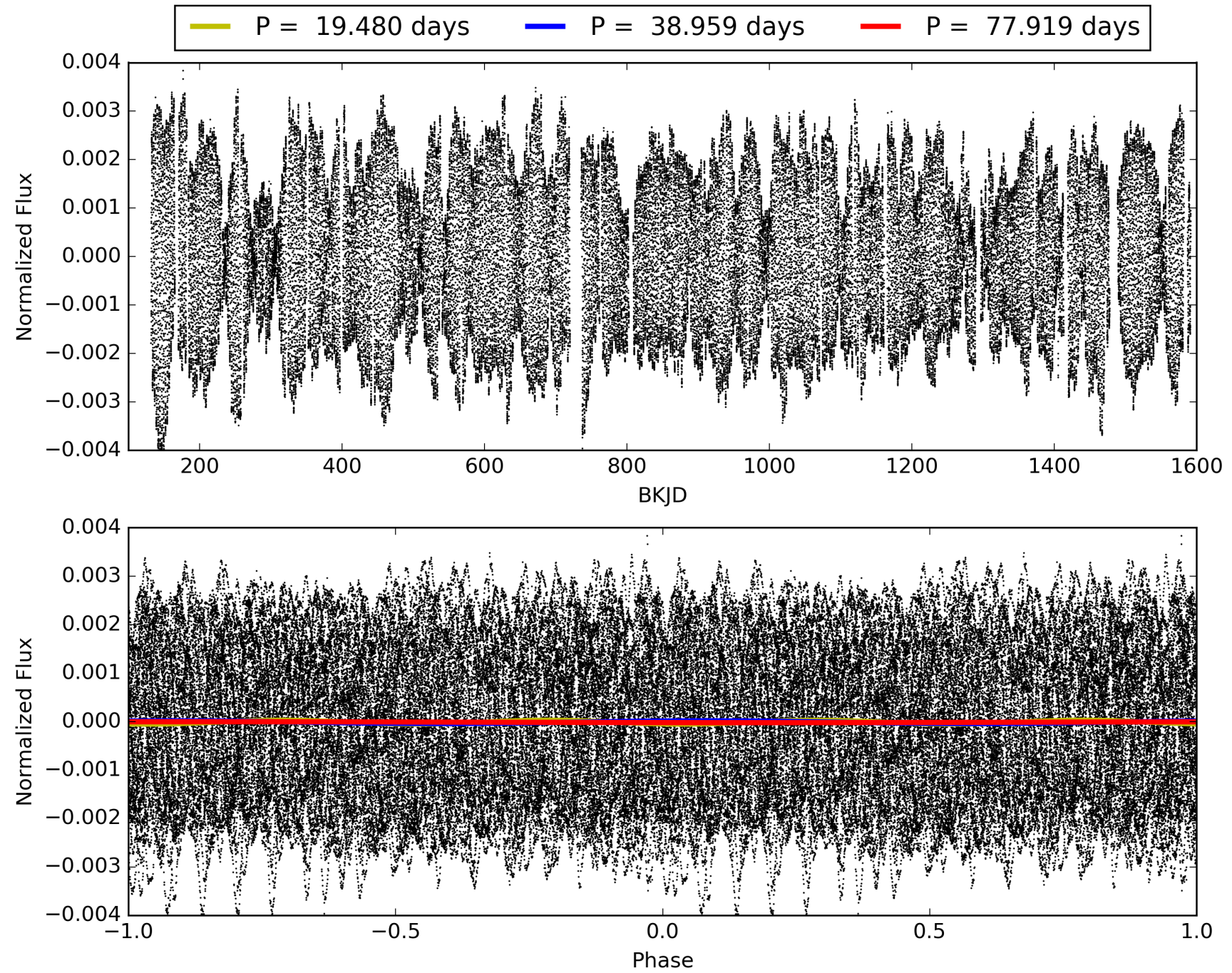
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 01:50:38 Z

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

TCE 005525210-02, PDC Light Curves

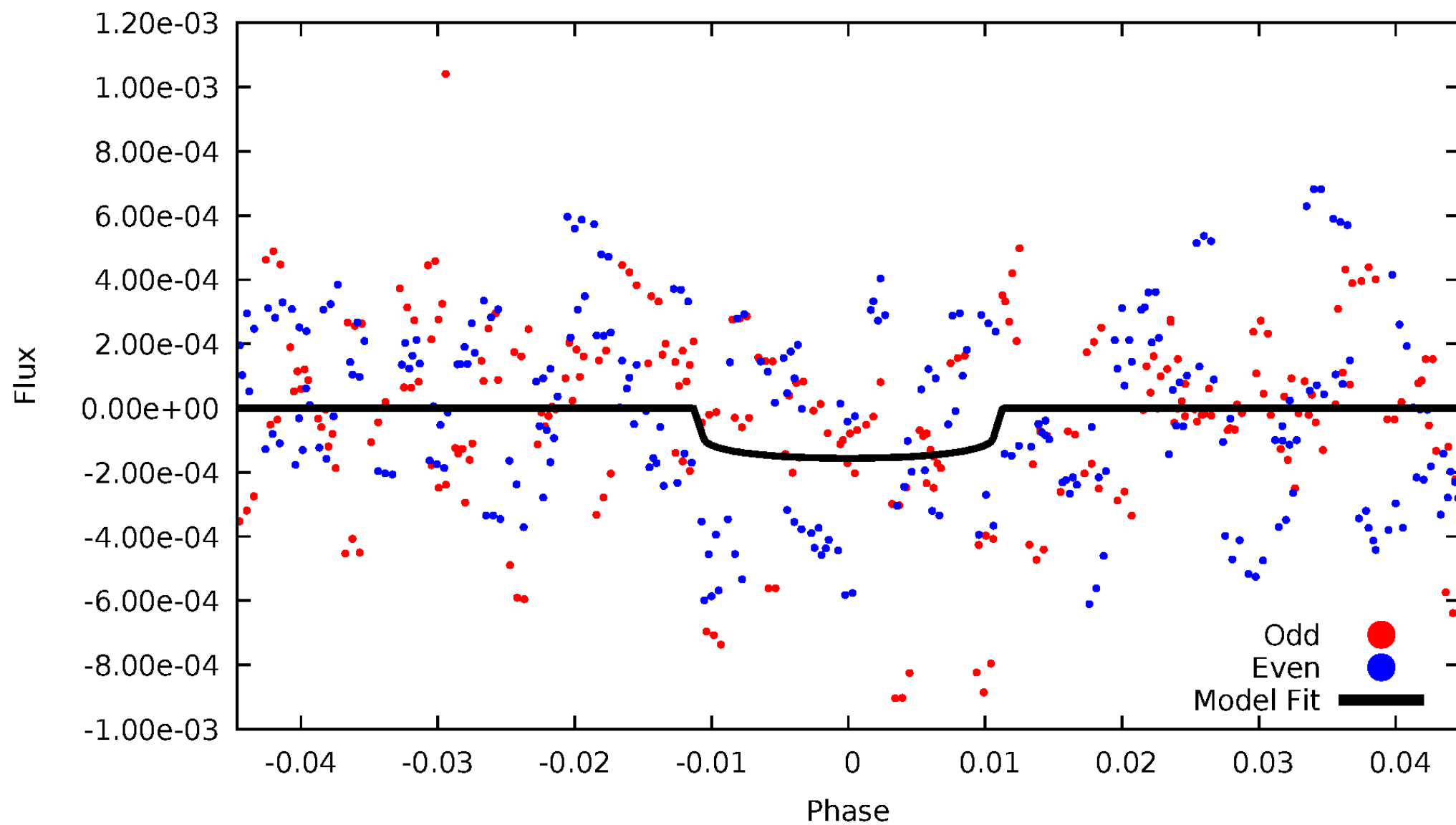


TCE 005525210-02



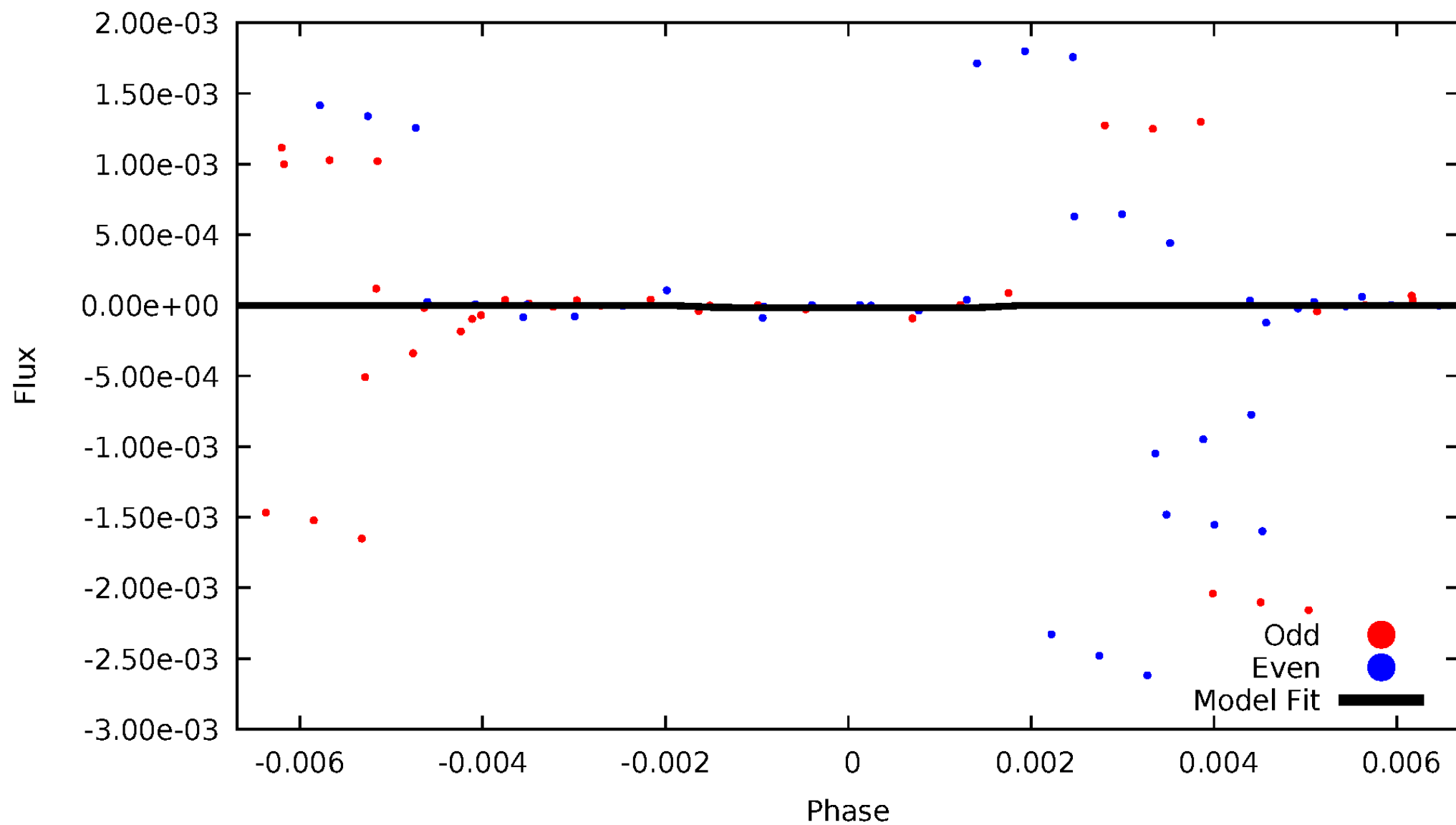
DV Odd/Even

TCE 005525210-02



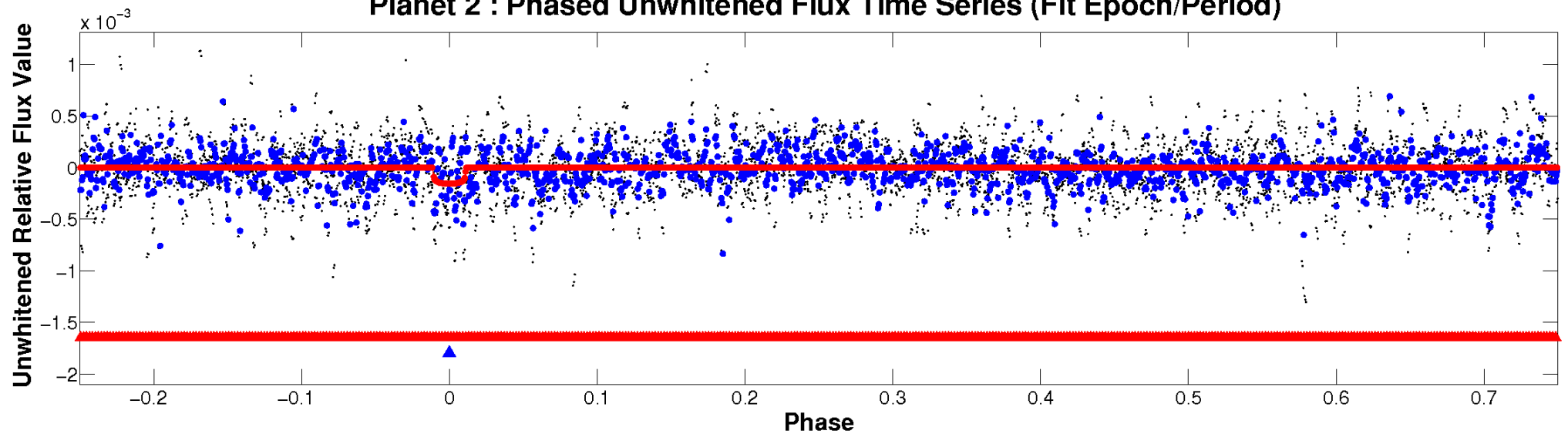
ALT Odd/Even

TCE 005525210-02

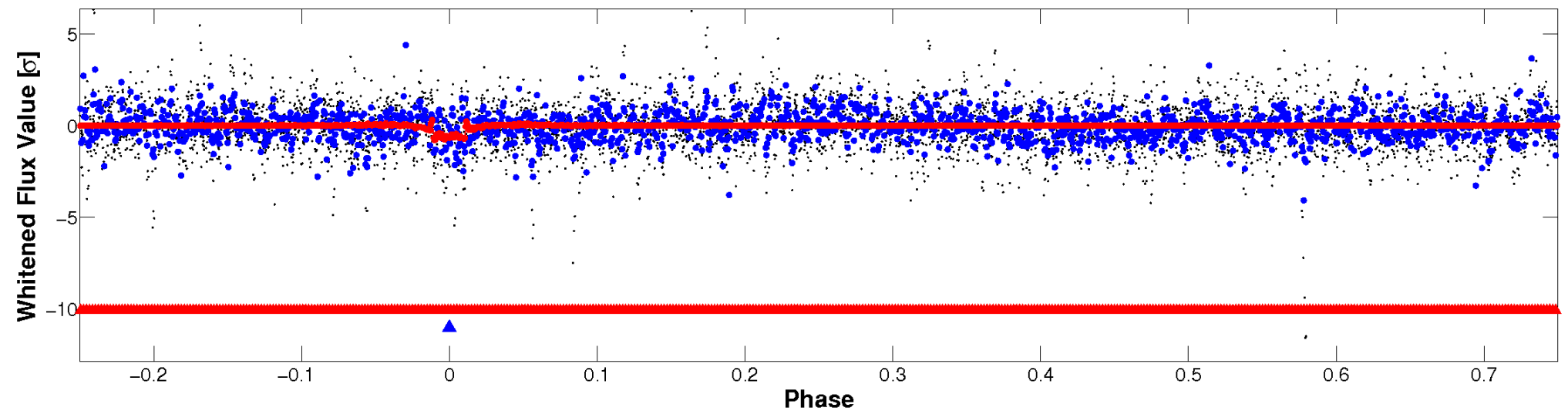


Non-Whitened Vs. Whitened Light Curve

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

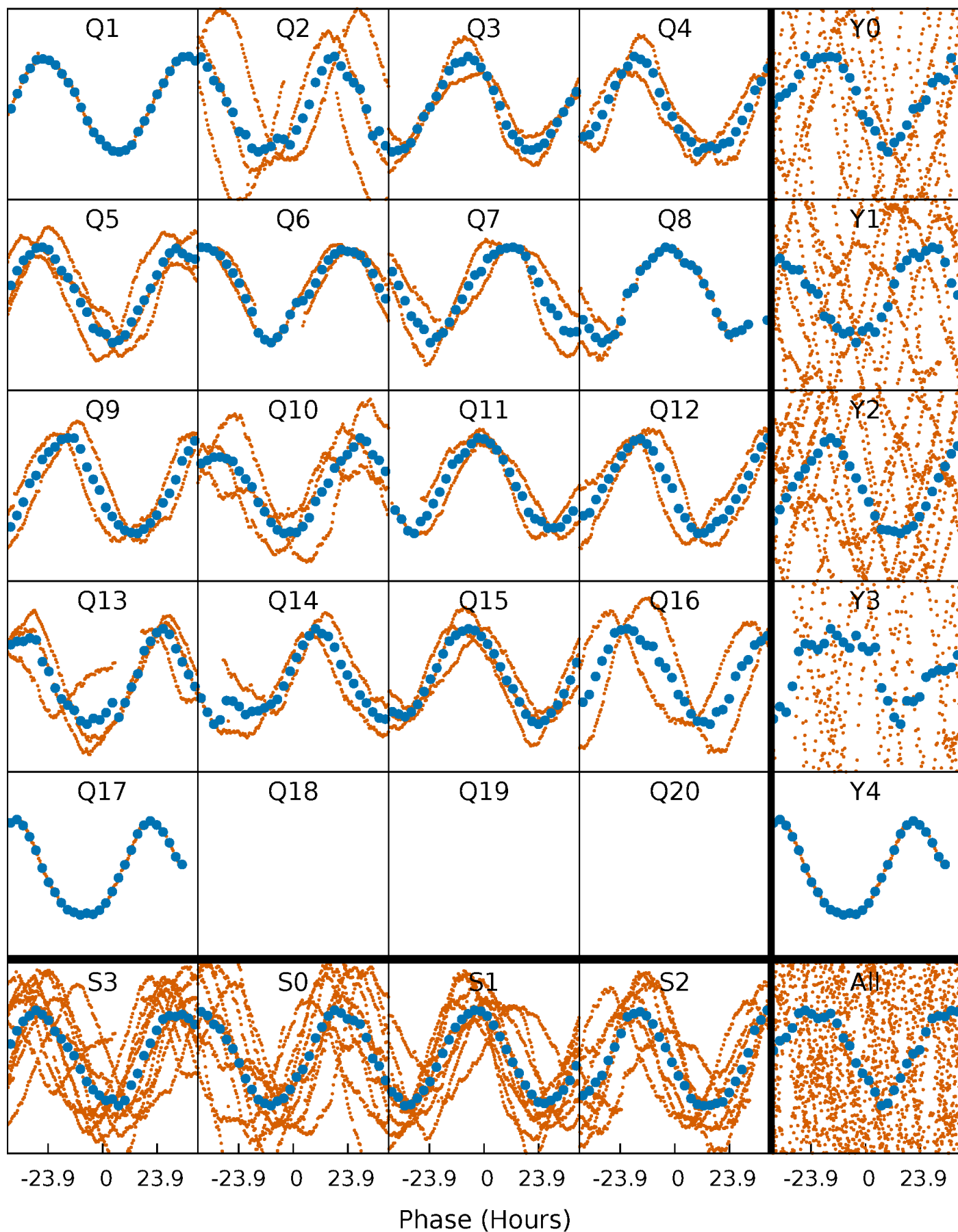


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



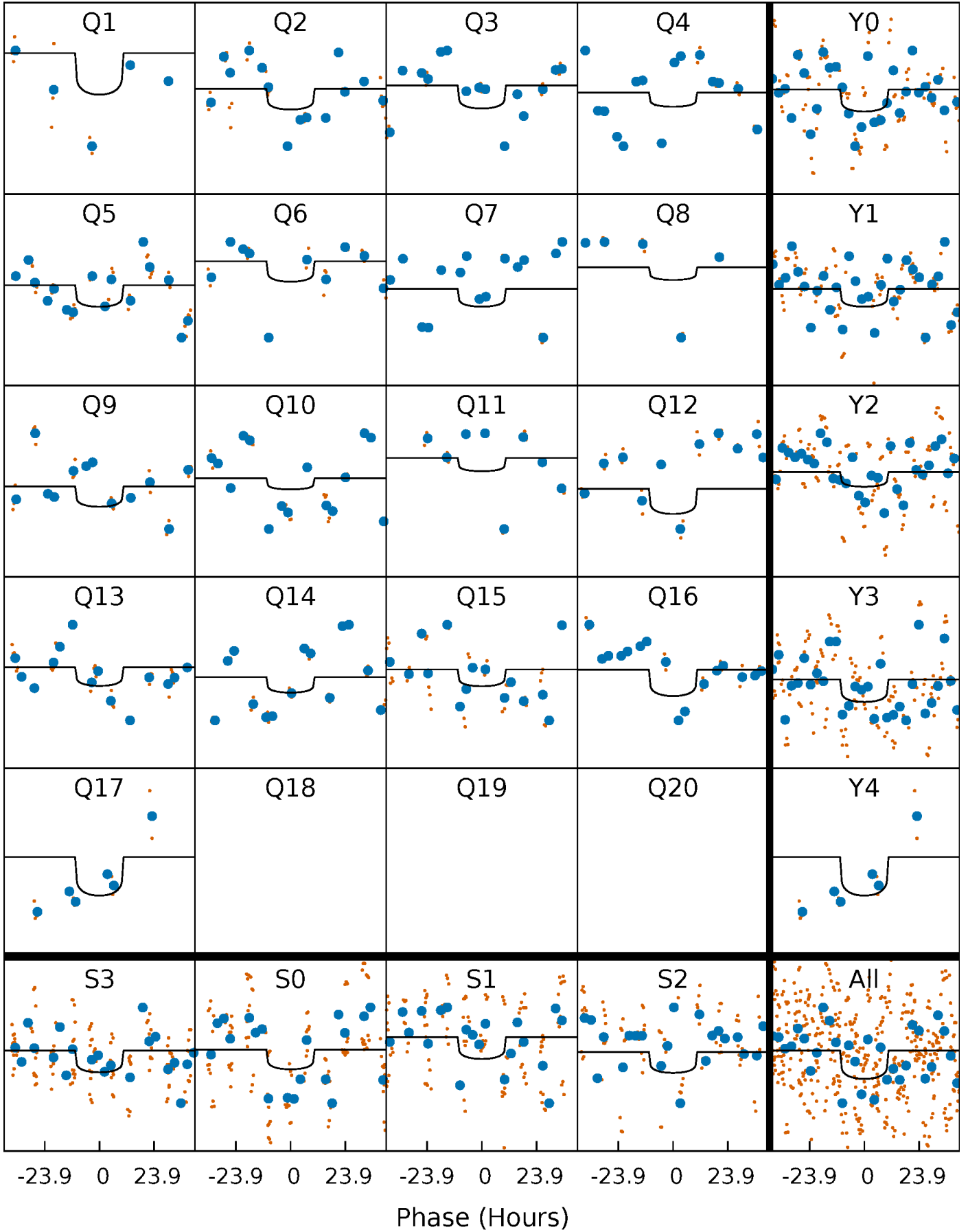
PDC Quarter-Phased Transit Curves

TCE 005525210-02 P= 38.959389 Days $T_0=138.675492$ (BKJD)



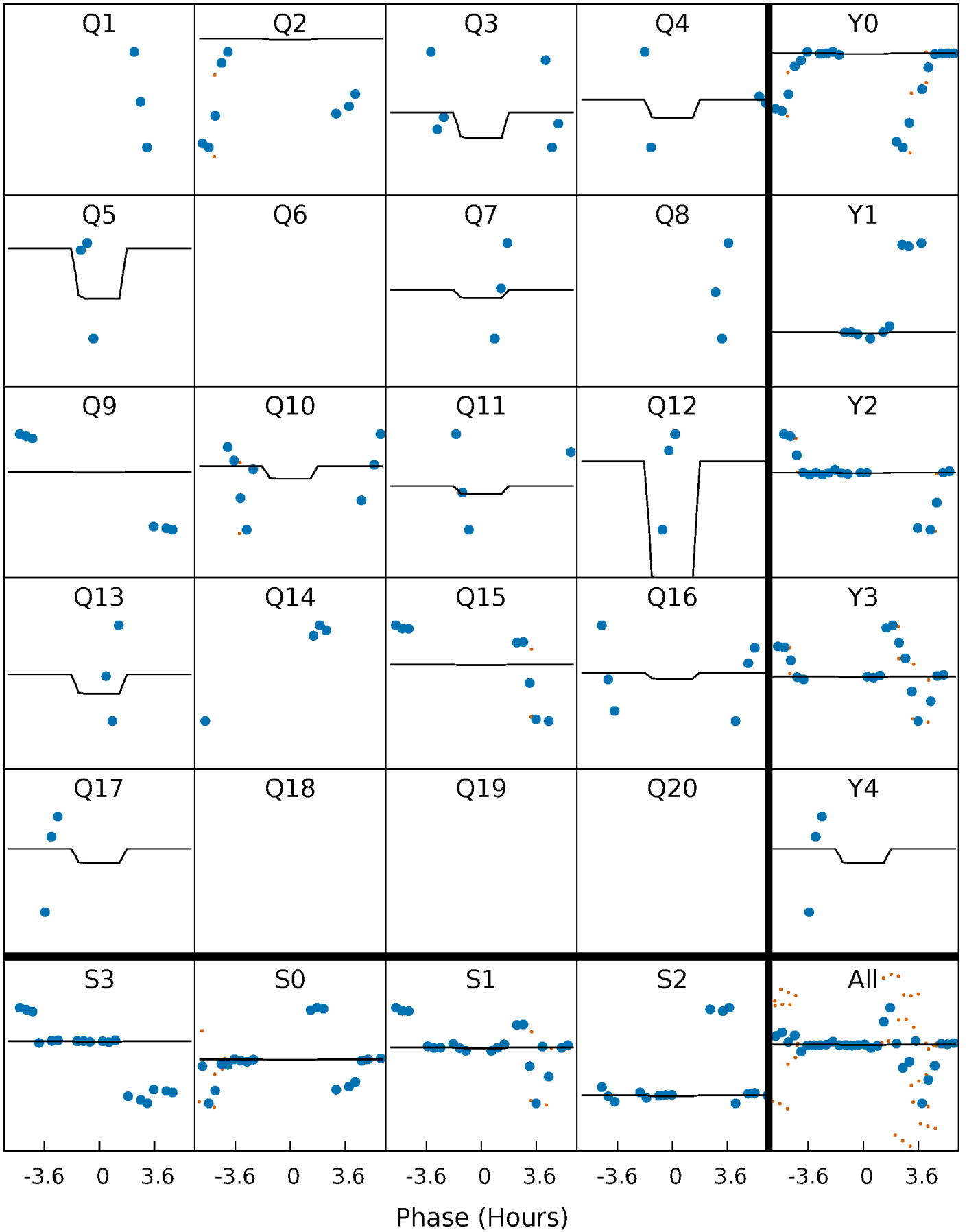
DV Quarter-Phased Transit Curves

TCE 005525210-02 P= 38.959389 Days $T_0=138.675492$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

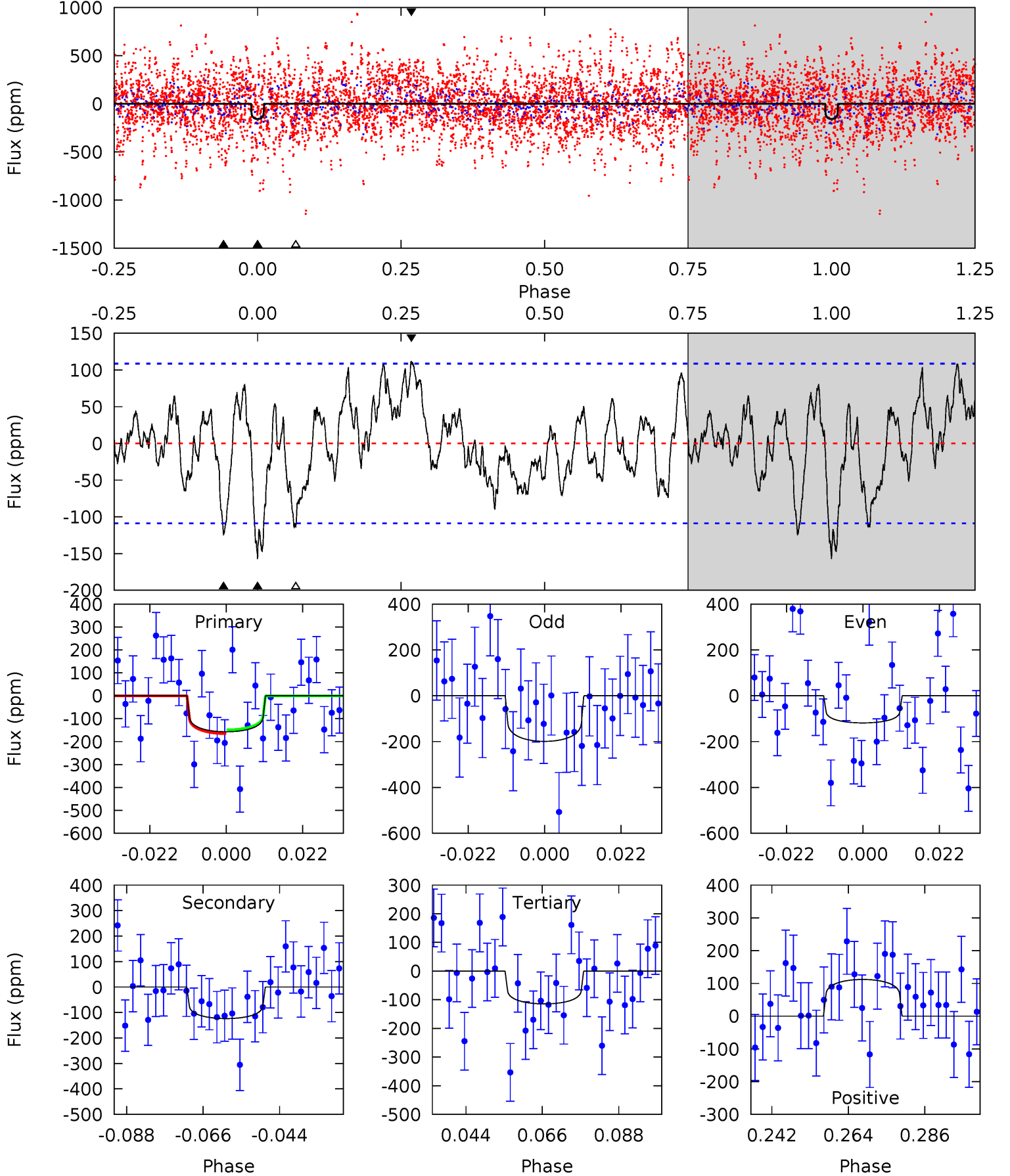
TCE 005525210-02 P= 38.976154 Days $T_0=138.414643$ (BKJD)



DV Model-Shift Uniqueness Test

005525210-02, P = 38.959389 Days, E = 99.716103 Days

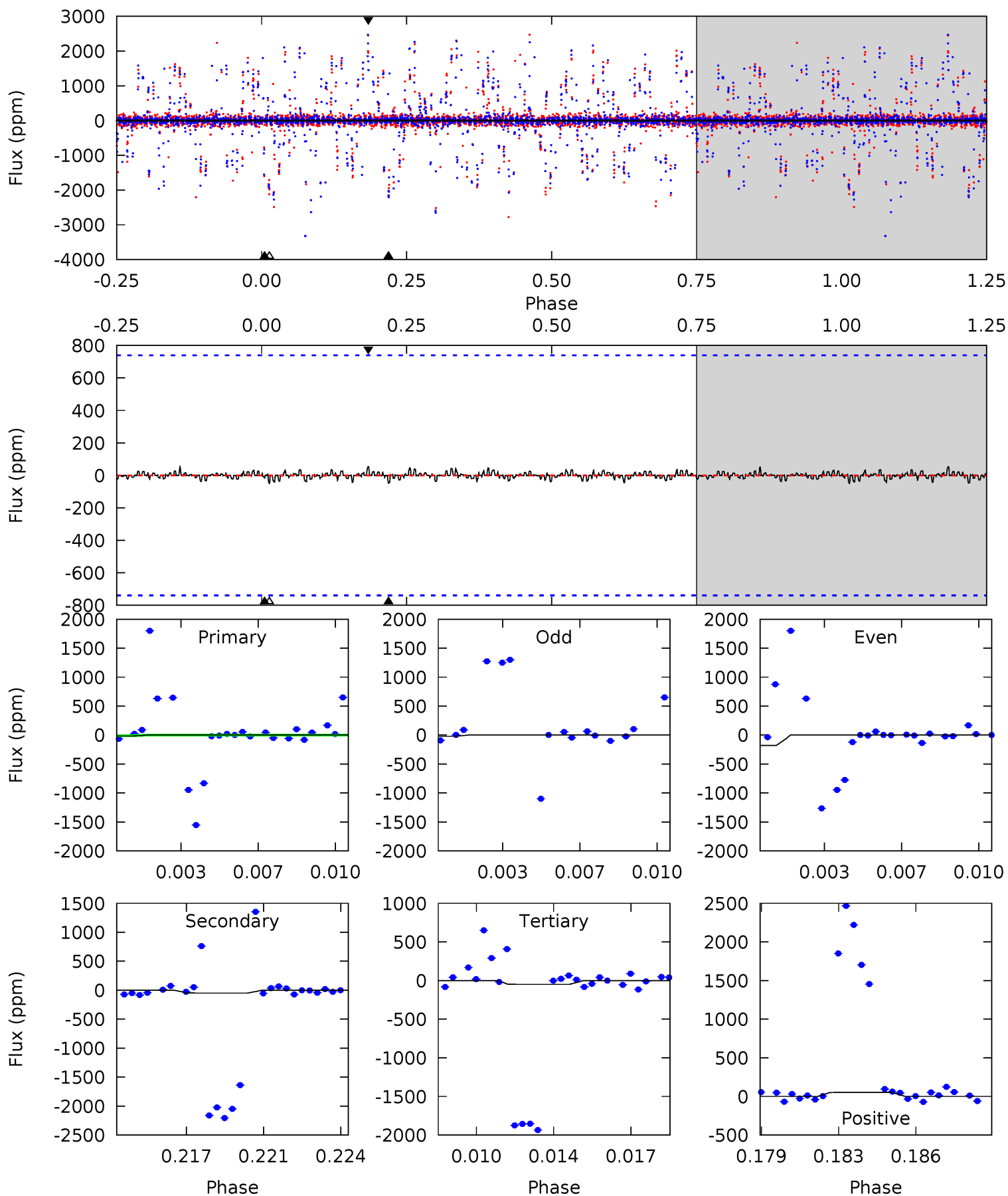
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.05	5.55	5.12	5.02	4.87	2.29	1.99	1.92	2.03	0.42	0.53	1.76	1.09	0.42	0.37



Alt Model-Shift Uniqueness Test

005525210-02, P = 38.976154 Days, E = 99.438489 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.12	0.35	0.35	0.38	5.23	2.92	0.09	-0.23	-0.26	0.00	-0.03	0.42	1.83	0.52	0.05



Stellar Parameters For KIC 005525210

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6831^{+153}_{-221}	$3.971^{+0.245}_{-0.123}$	$-0.080^{+0.250}_{-0.300}$	$2.106^{+0.428}_{-0.642}$	$1.511^{+0.160}_{-0.297}$	$0.228^{+0.331}_{-0.088}$
	+2%/-3%	+6%/-3%	+312%/-375%	+20%/-30%	+11%/-20%	+145%/-39%
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 005525210-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-124 ± 22	$2.63^{+0.88}_{-0.79}$	1181^{+74}_{-99}	6523^{+1371}_{-813}	672^{+637}_{-308}
Alt.	-50 ± 141	$0.98^{+0.75}_{-0.60}$	1188^{+72}_{-96}	7615^{+13688}_{-20518}	1111^{+11261}_{-5974}

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

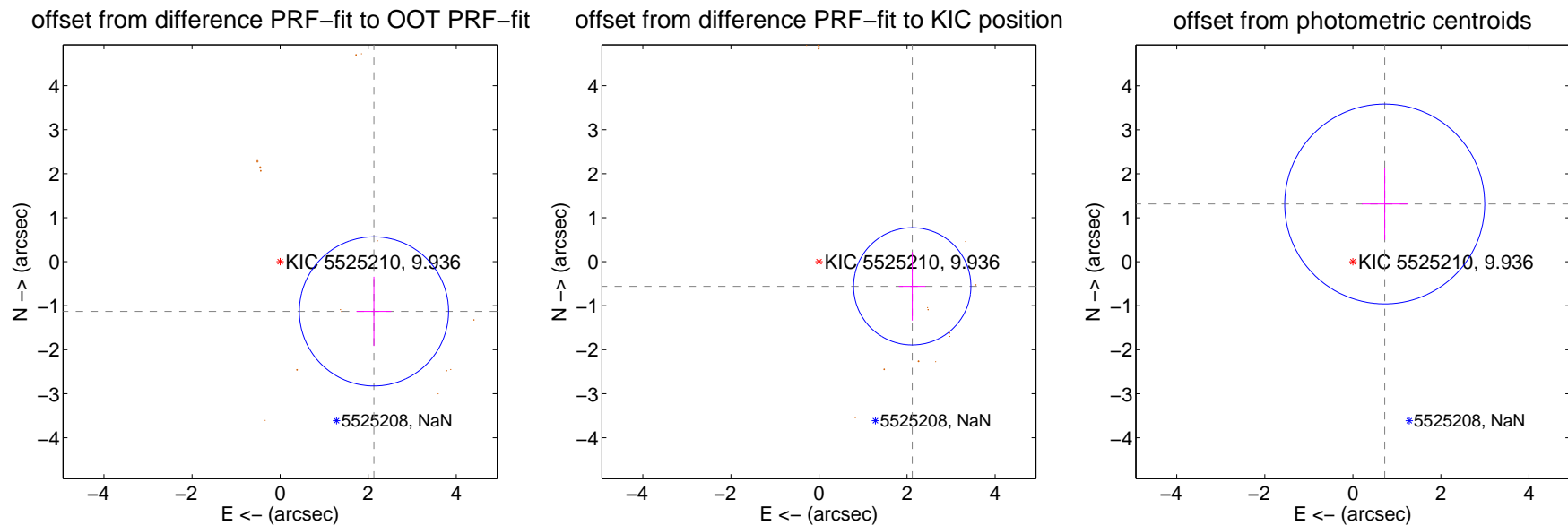
DV Centroid Data

Supplemental centroid analysis for 005525210-02. **Kepler magnitude: 9.94.** Transit SNR 6.95

There are 0 quarters with good PRF difference image offsets

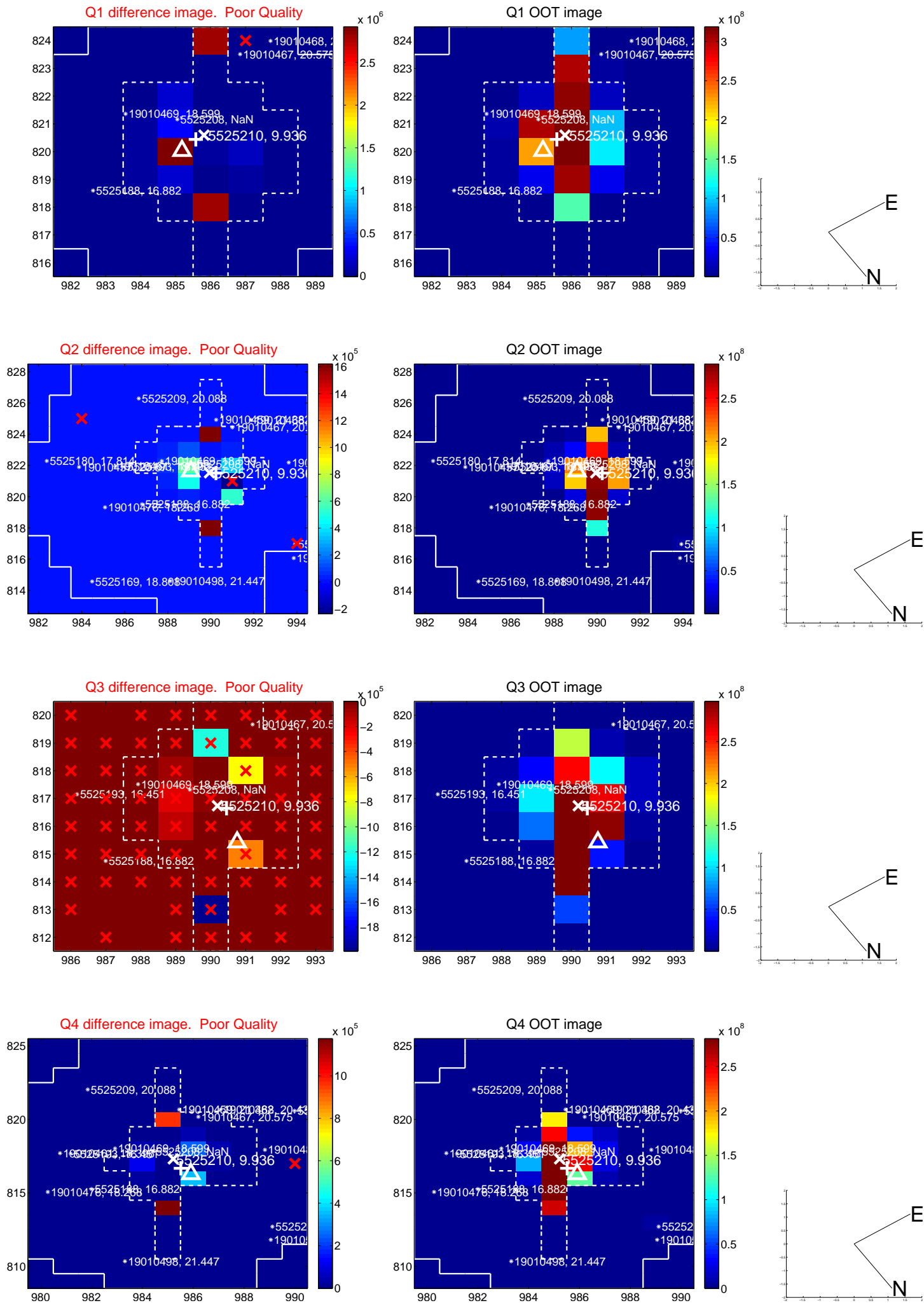
The direct PRF centroid is offset from the target star catalog position by about 1.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.412 ± 0.565	4.27	-2.131 ± 0.394	-1.129 ± 0.787
PRF-fit source offset from KIC position	2.191 ± 0.444	4.93	-2.118 ± 0.303	-0.560 ± 0.779
photometric centroid source offset	1.50 ± 0.76	1.98	-0.72 ± 0.52	1.31 ± 0.82

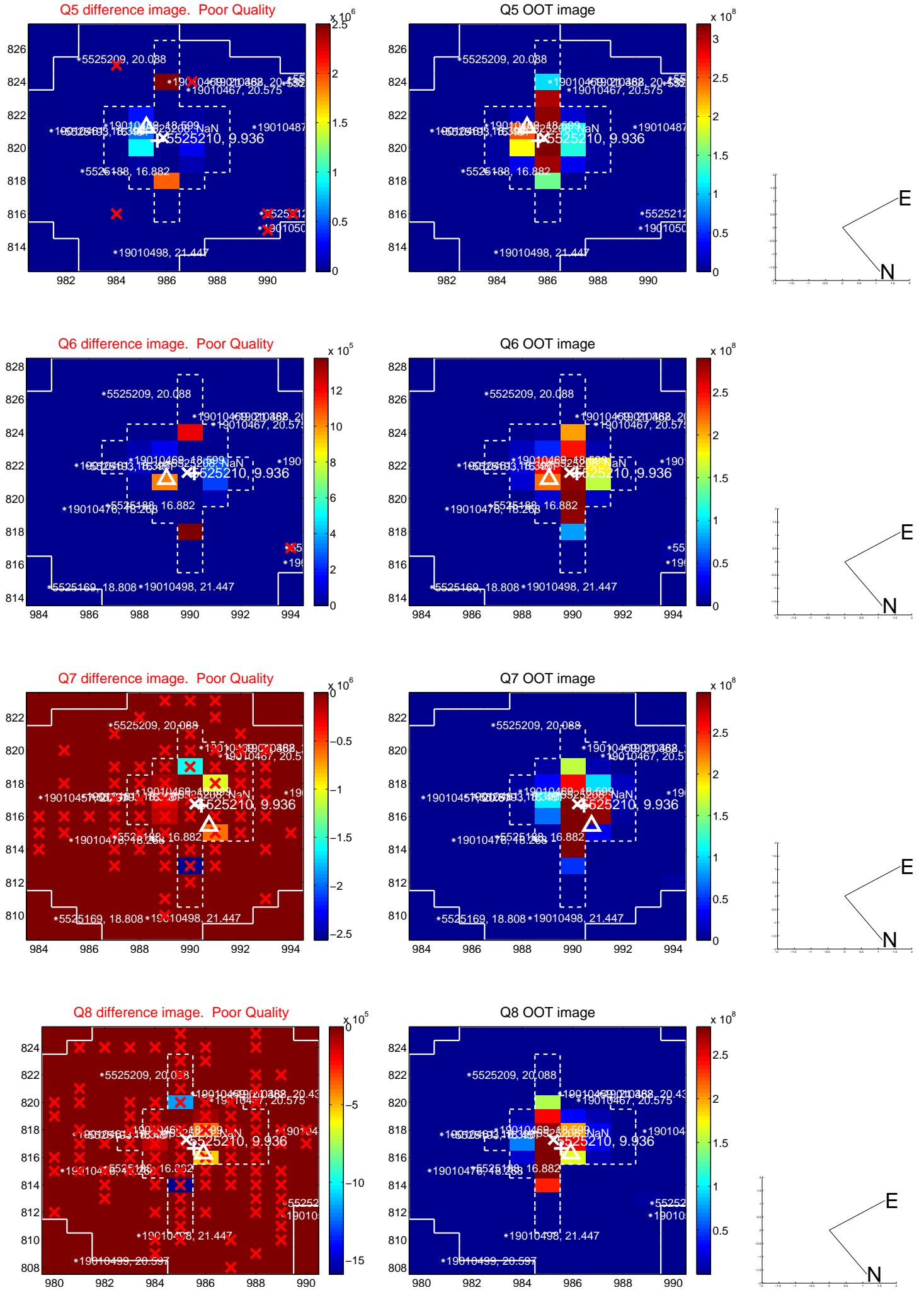


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

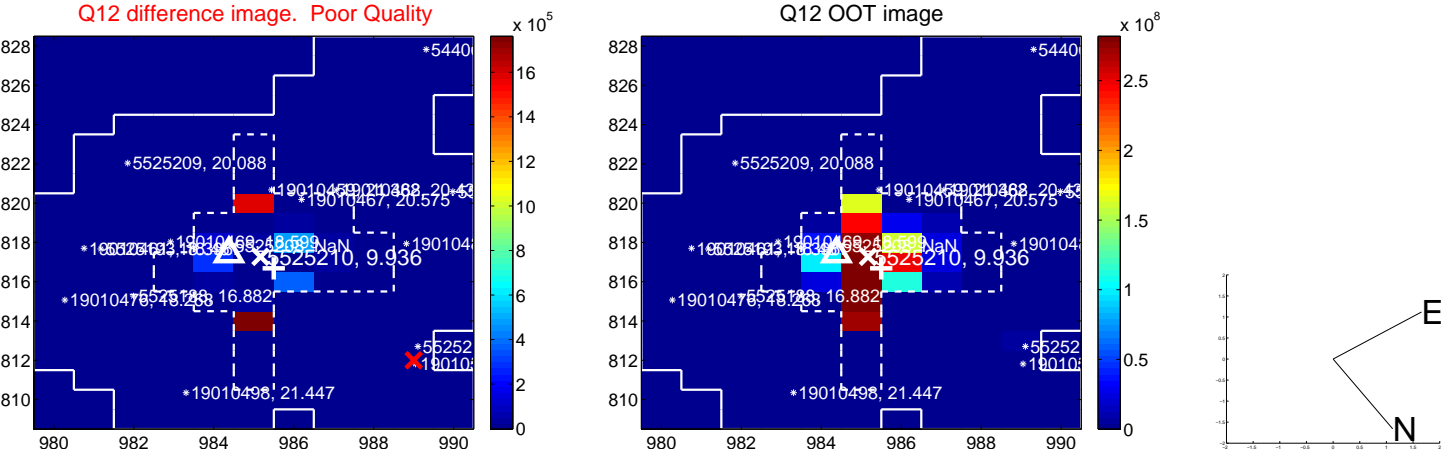
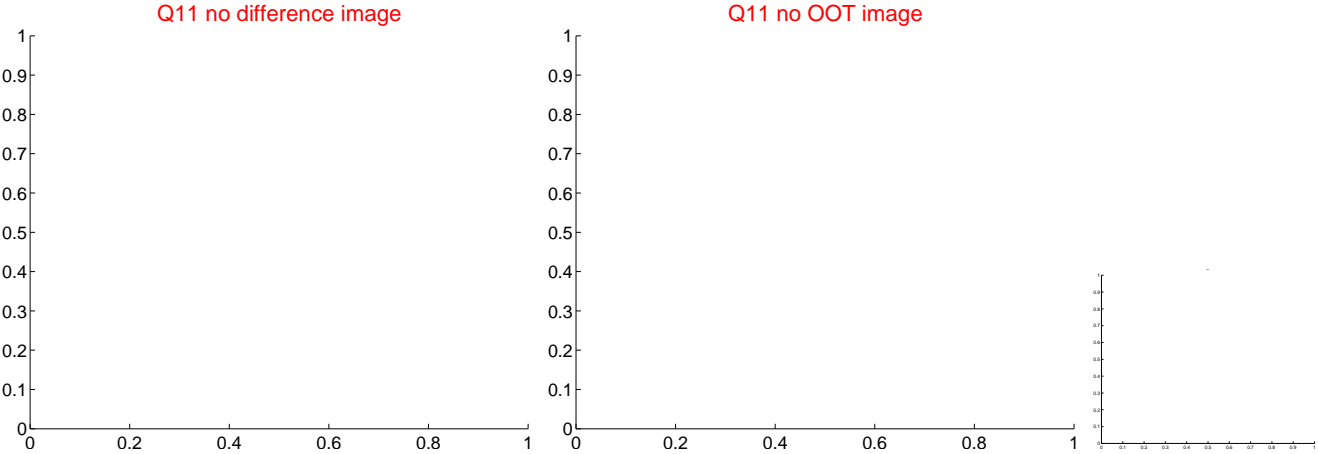
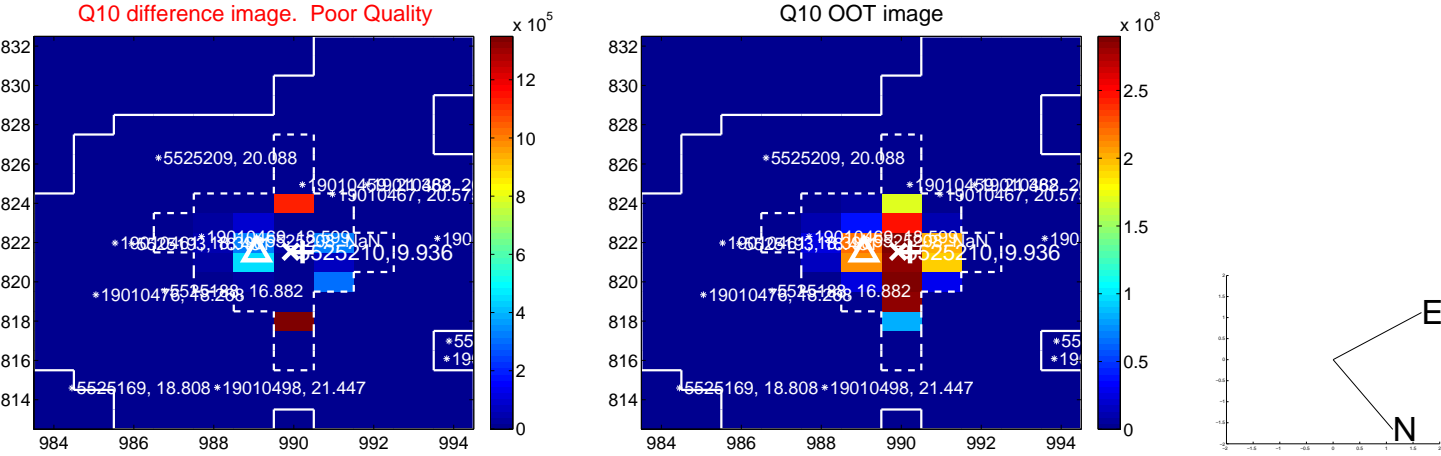
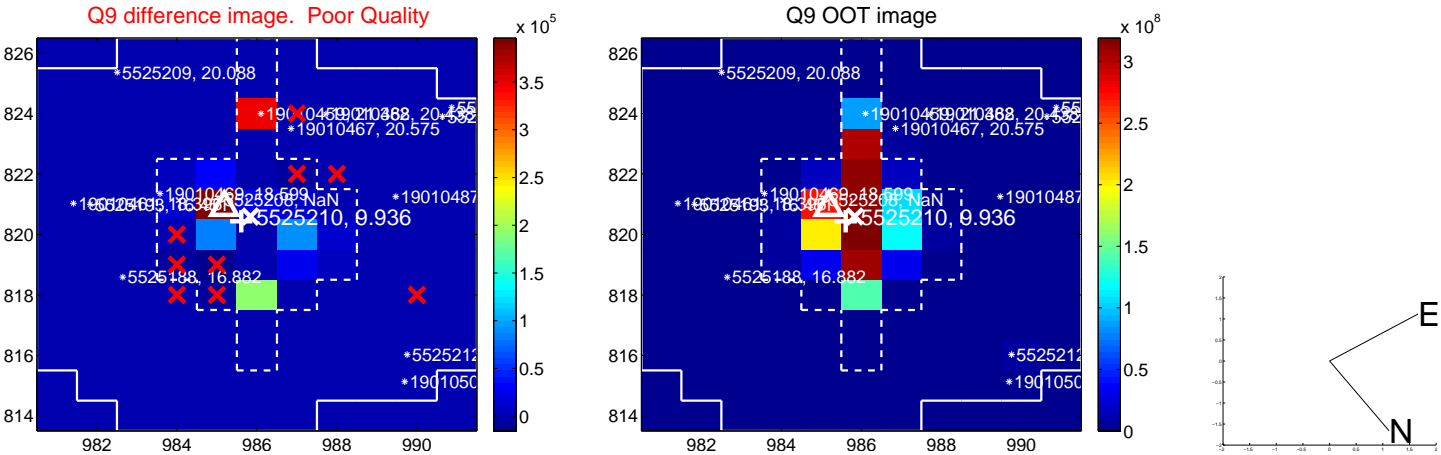
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



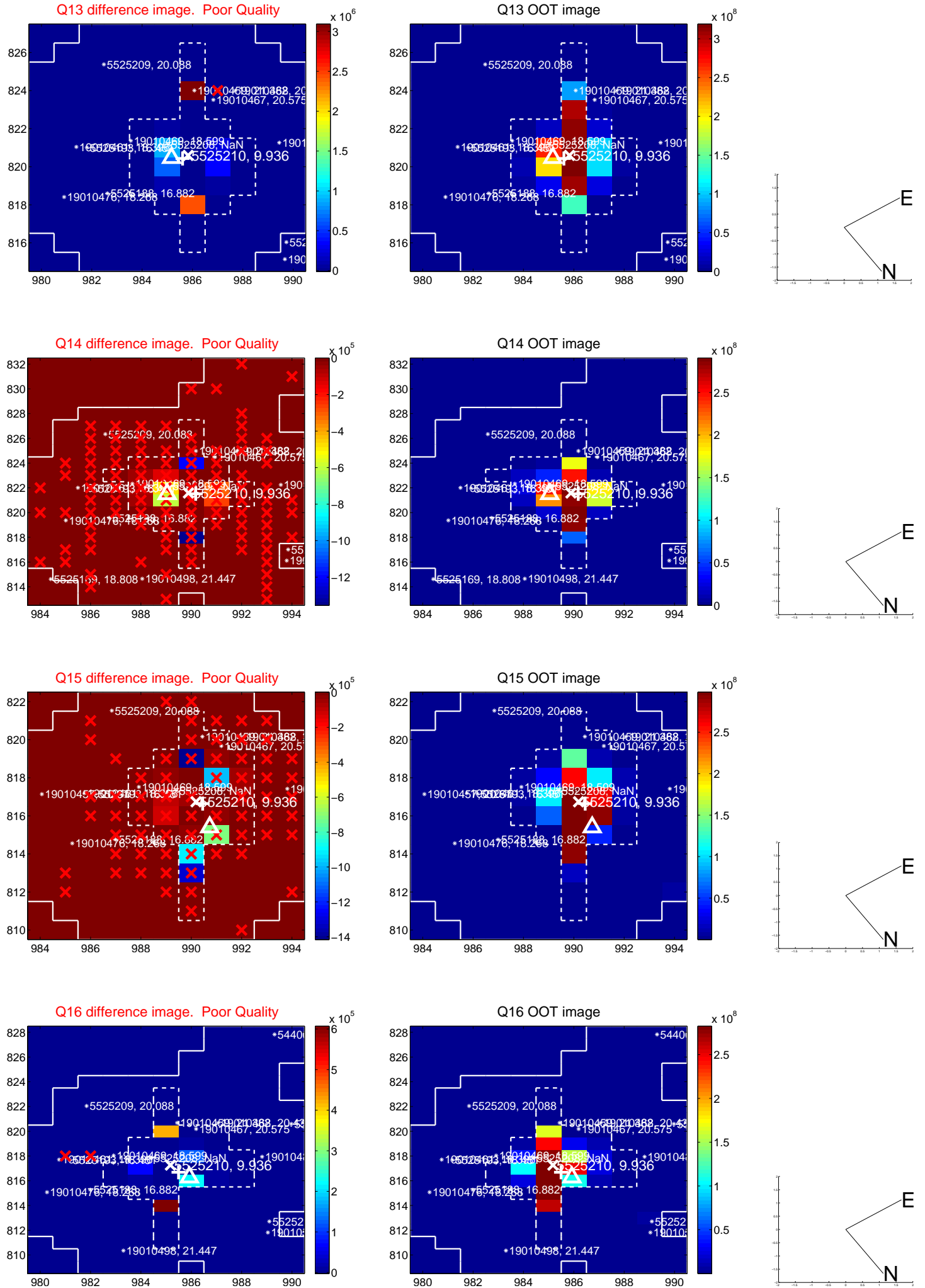
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



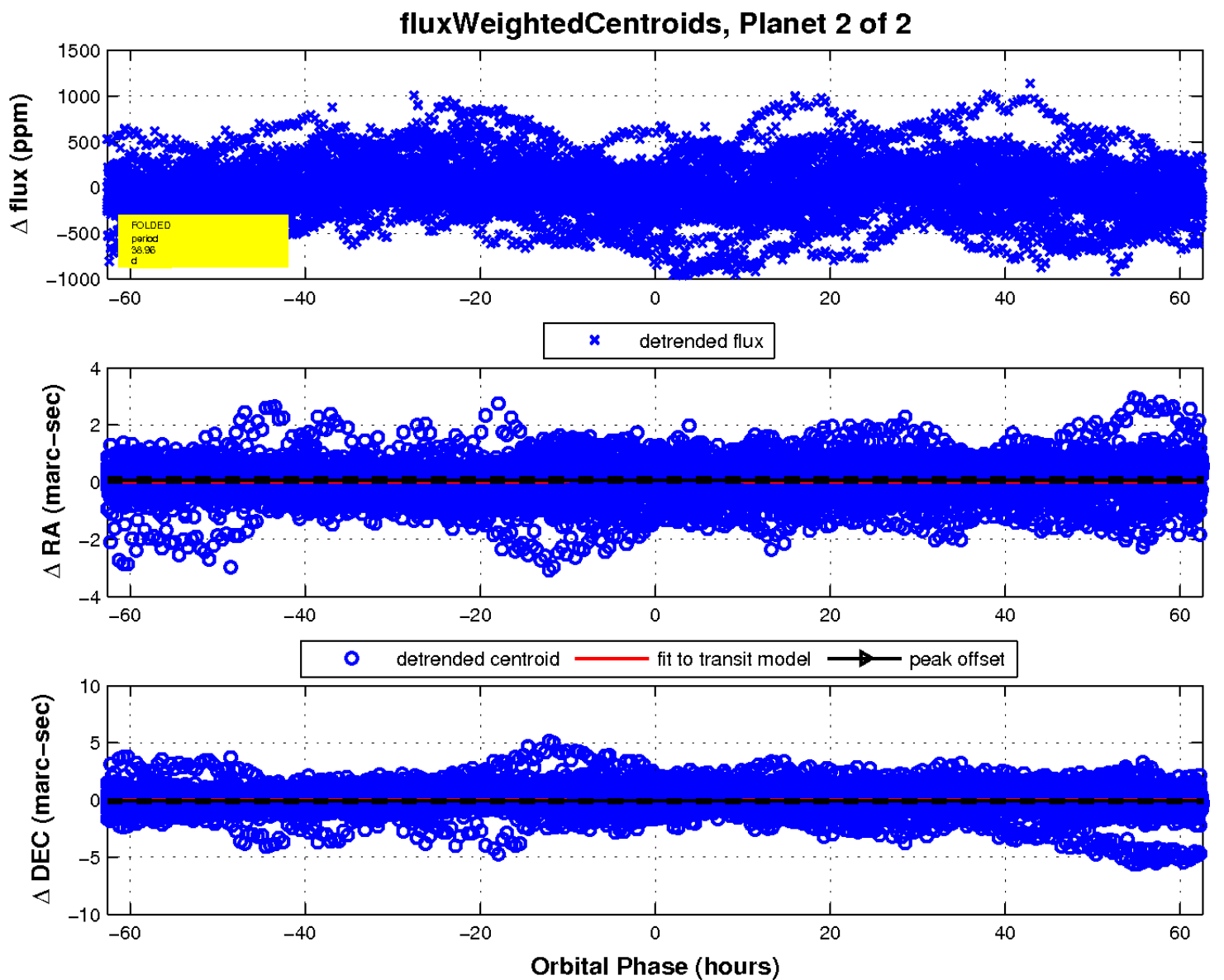
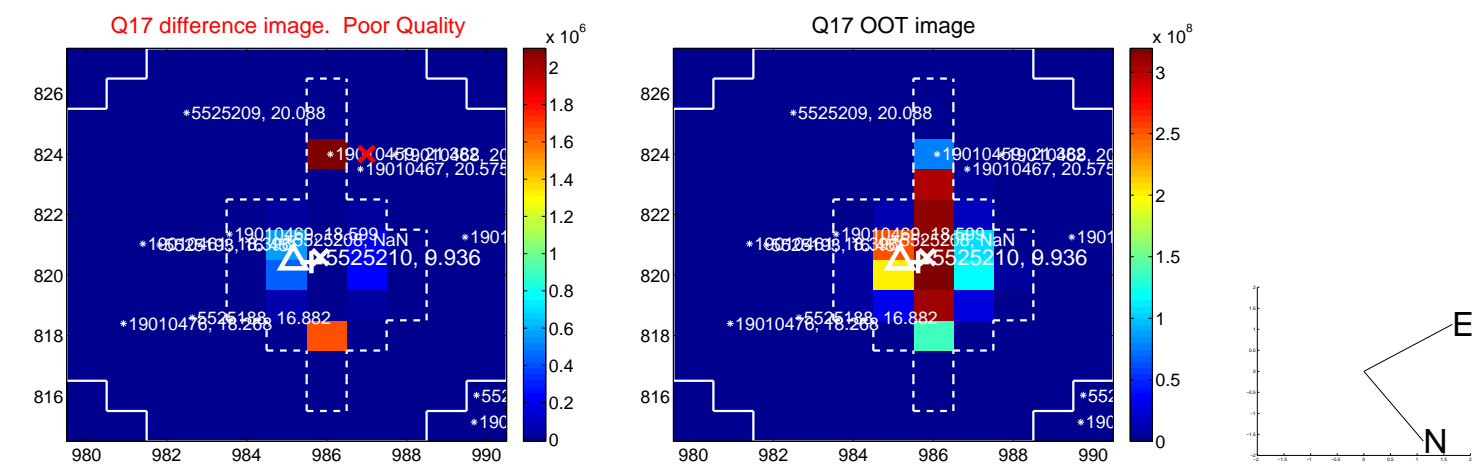
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

