

KIC 010083510

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})
010083510-01	OBS	No	2.470525	131.575700	37.5	9.000	13.6	-1.0	2.32	7500	1.44	7856.81
010083510-02	OBS	No	2.470392	132.191459	6.2	11.492	9.7	10.5	2.32	7500	0.67	7857.37
010083510-03	OBS	No	111.574704	191.906577	26.4	34.160	15.0	7.2	2.32	7500	1.33	48.85
010083510-04	OBS	No	103.503763	145.988243	41.8	4.726	8.1	7.8	2.32	7500	1.71	53.99
010083510-05	OBS	No	86.711756	140.203891	24.2	23.198	9.3	6.7	2.32	7500	1.31	68.37

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010083510-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_SATURATED
010083510-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
010083510-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—INCONSISTENT_TRANS—CENT_SATURATED
010083510-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—CENT_SATURATED
010083510-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_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.

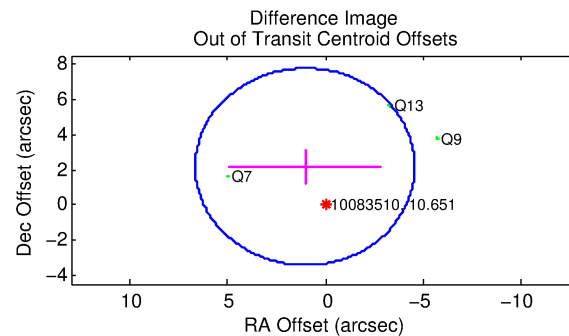
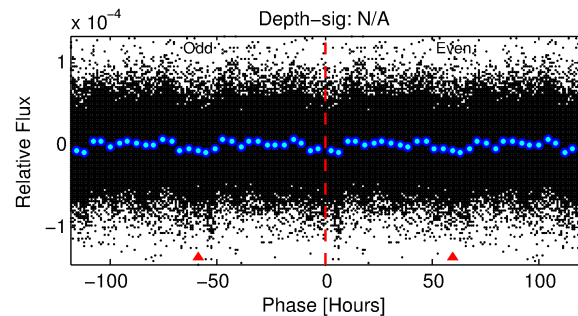
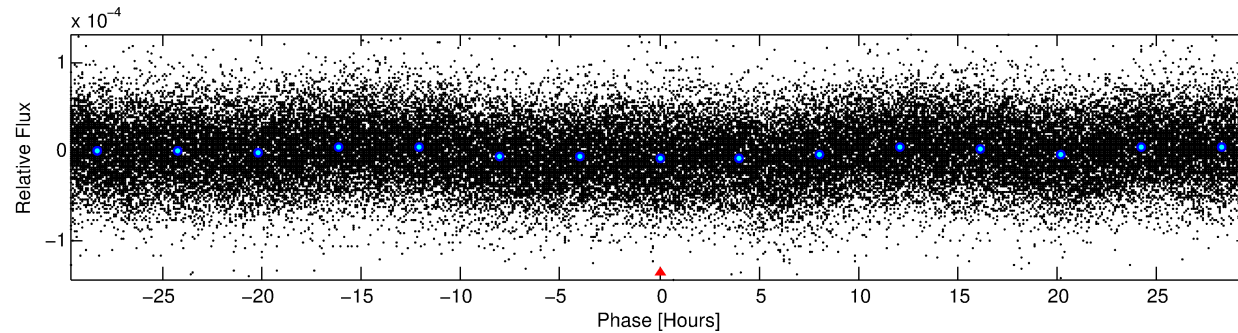
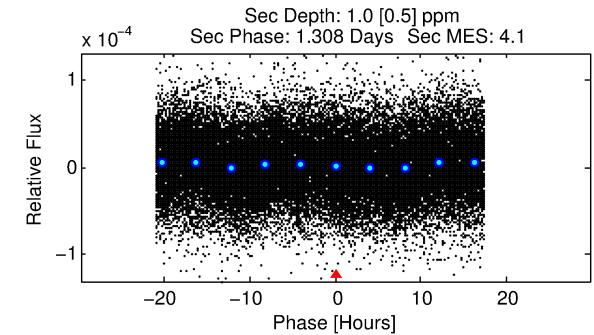
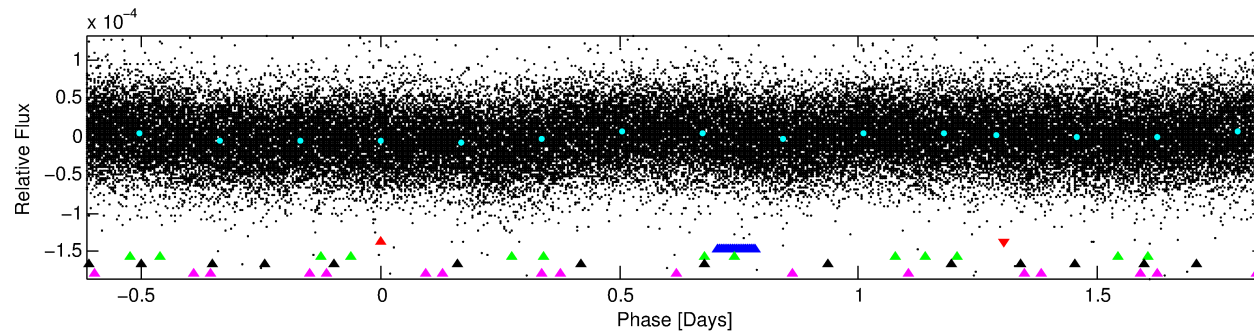
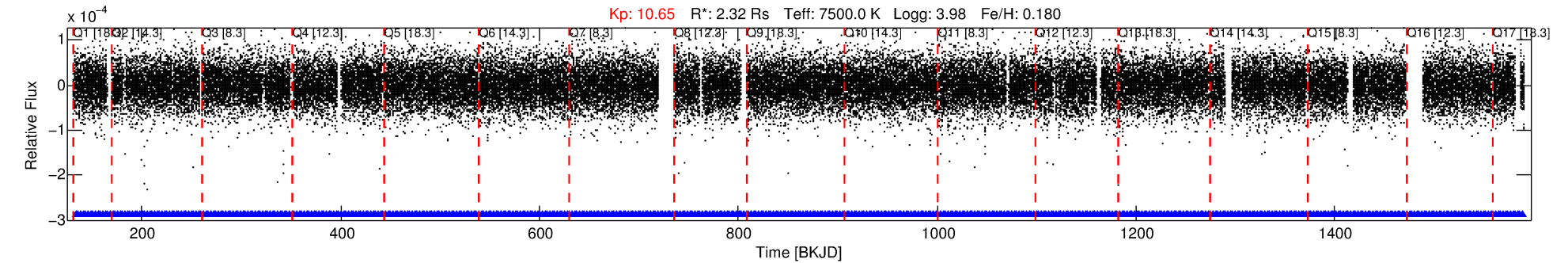
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010083510-01

No Significant Match Found

DV One-Page Summary

KIC: 10083510 Candidate: 1 of 5 Period: 2.471 d



TPS TCE Results:

Period = 2.47052 d
Epoch = 131.5757 BKJD

DV fit results are unavailable

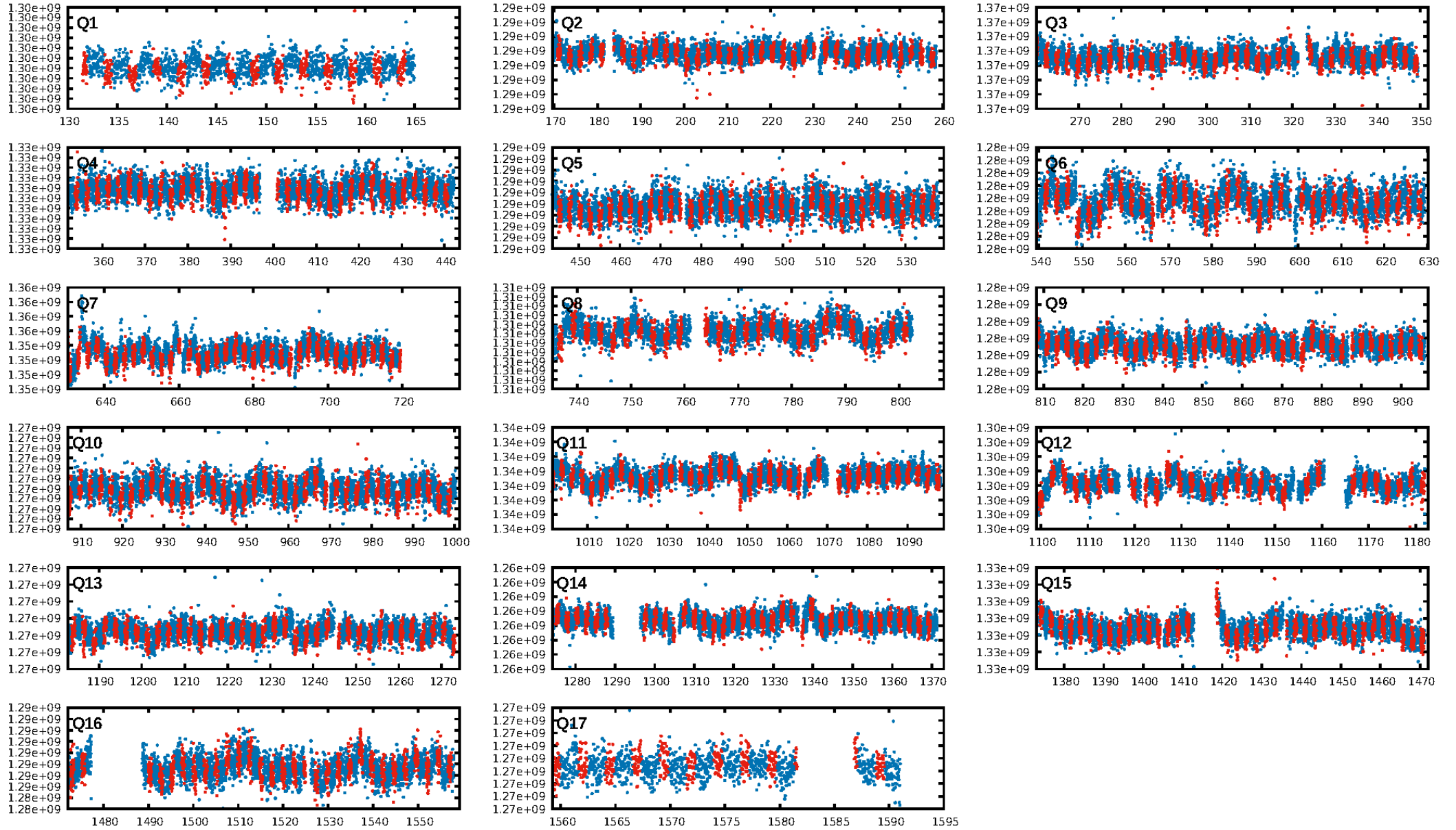
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: 100.0% [81.25 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.84e-28
RollingBand-fgt: 1.00 [535/535]
GhostDiagnostic-chr: 10.11
Centroid-sig: 4.0%
Centroid-so: 0.748 arcsec [1.24 σ]
OotOffset-rm: 2.414 arcsec [1.29 σ]
KicOffset-rm: 2.491 arcsec [1.47 σ]
OotOffset-st: 0/1/0/2 [3]
KicOffset-st: 0/1/0/2 [3]
DiffImageQuality-fgm: 0.00 [0/3]
DiffImageOverlap-fno: 0.00 [0/17]

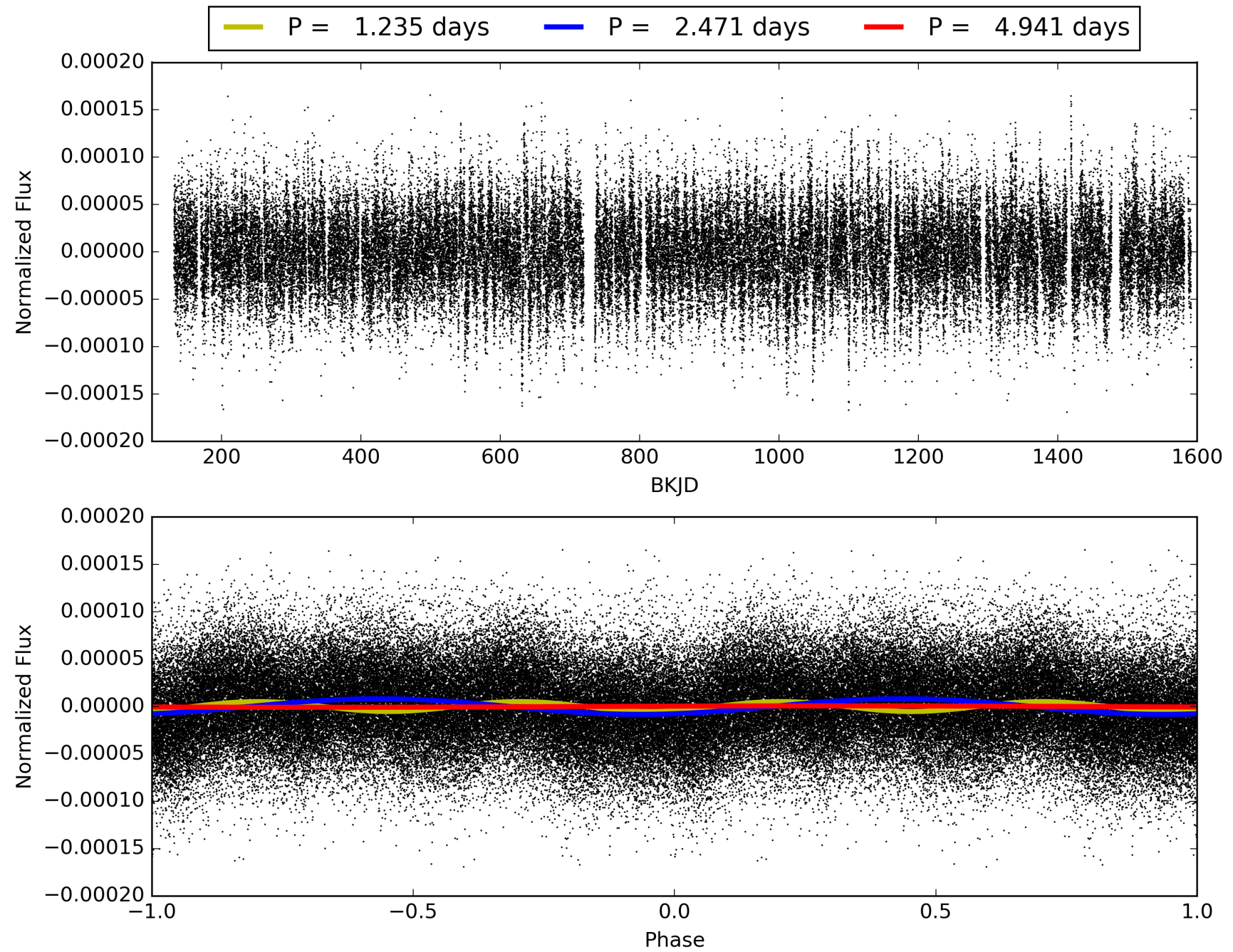
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 10:16:51 Z

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

TCE 010083510-01, PDC Light Curves

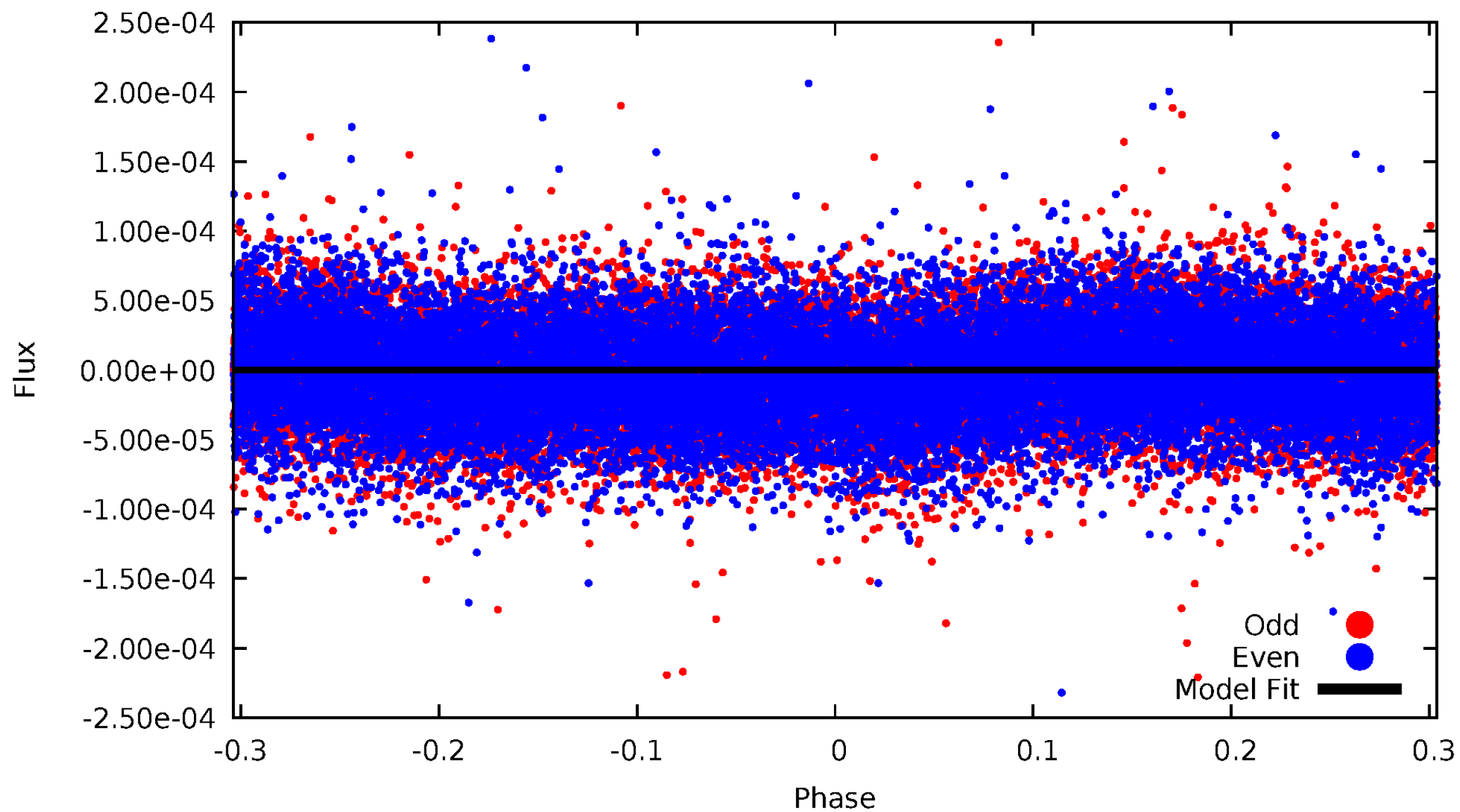


TCE 010083510-01



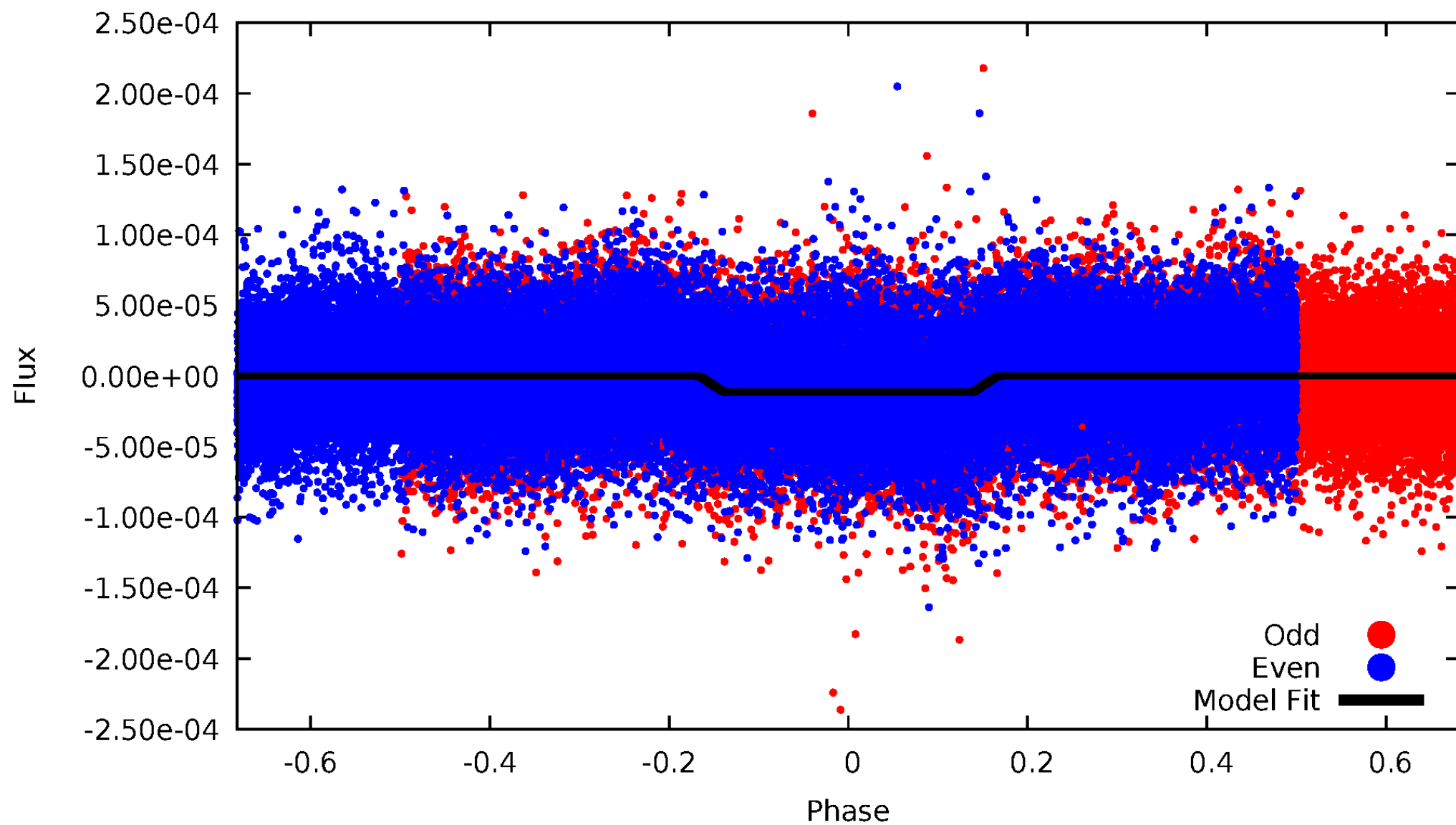
DV Odd/Even

TCE 010083510-01

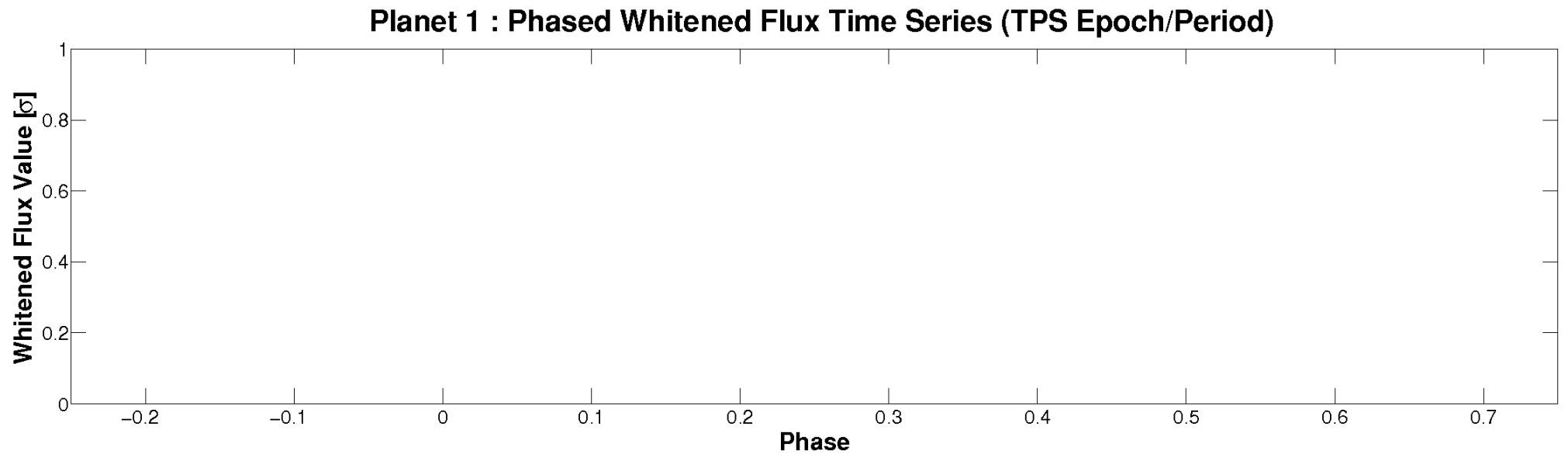
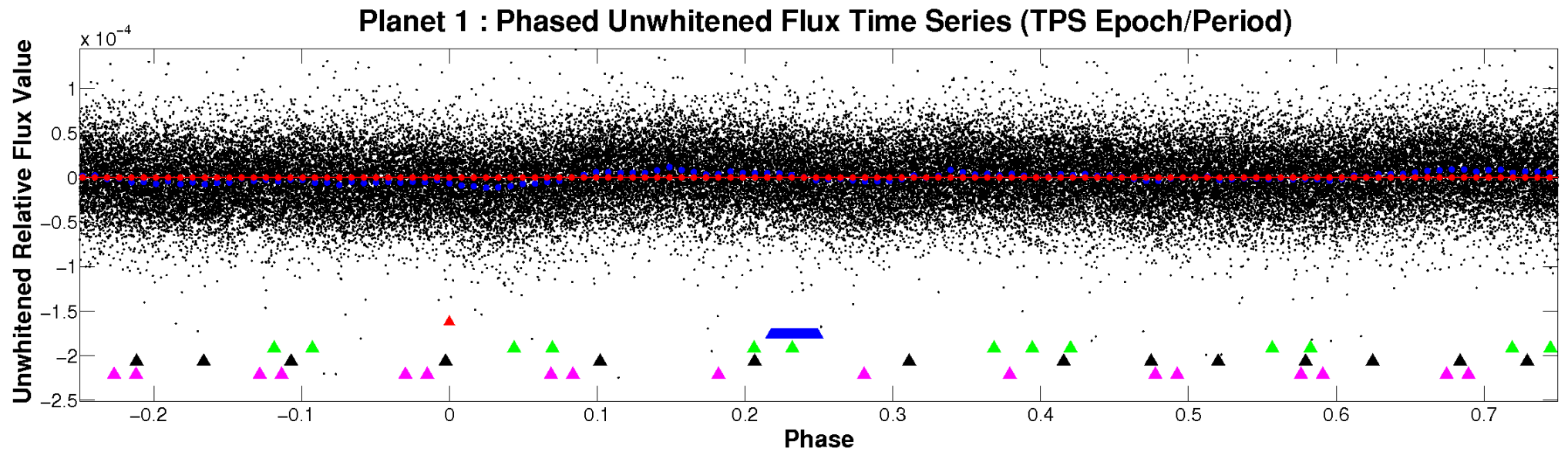


ALT Odd/Even

TCE 010083510-01

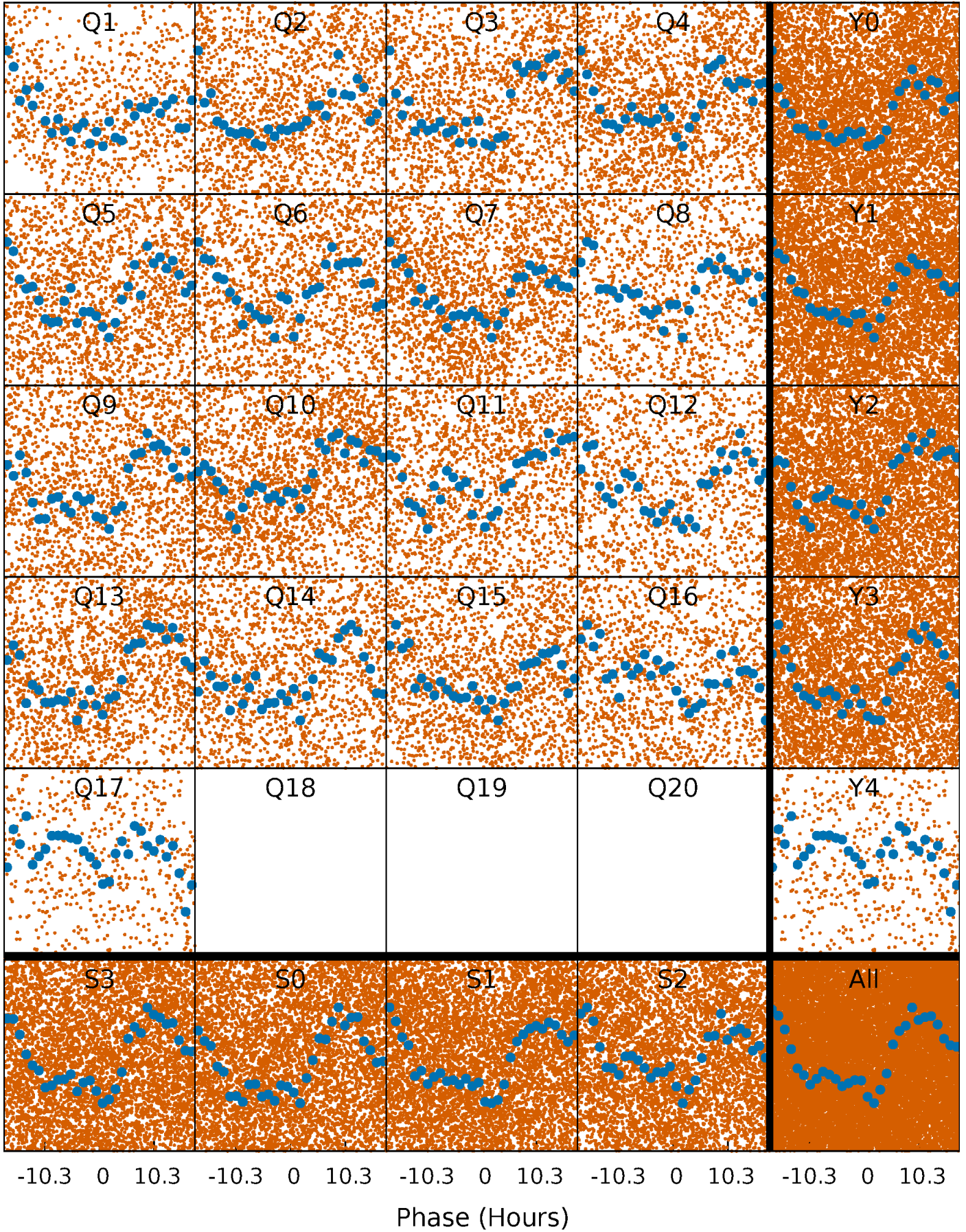


Non-Whitened Vs. Whitened Light Curve



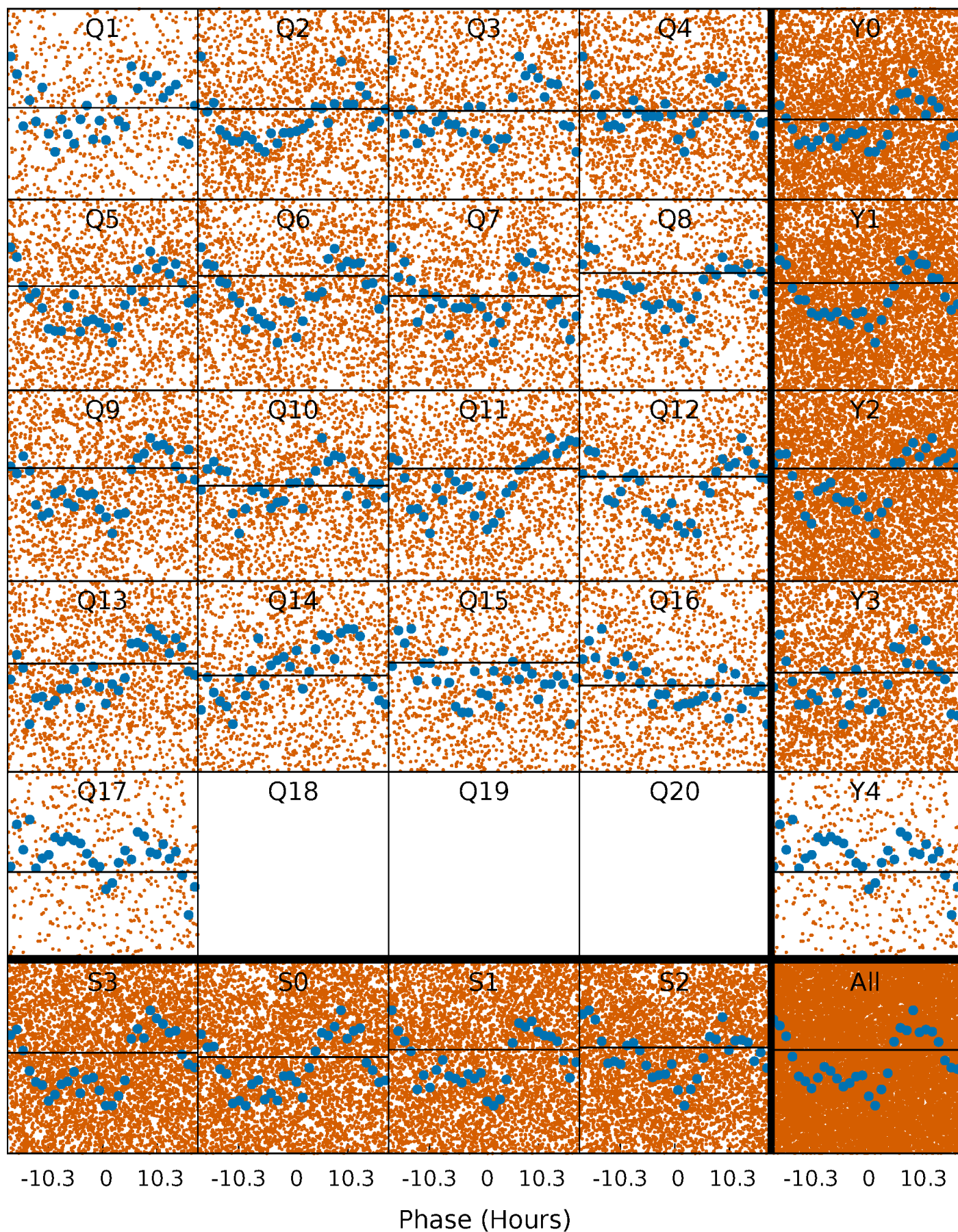
PDC Quarter-Phased Transit Curves

TCE 010083510-01 P= 2.470525 Days $T_0=131.575700$ (BKJD)



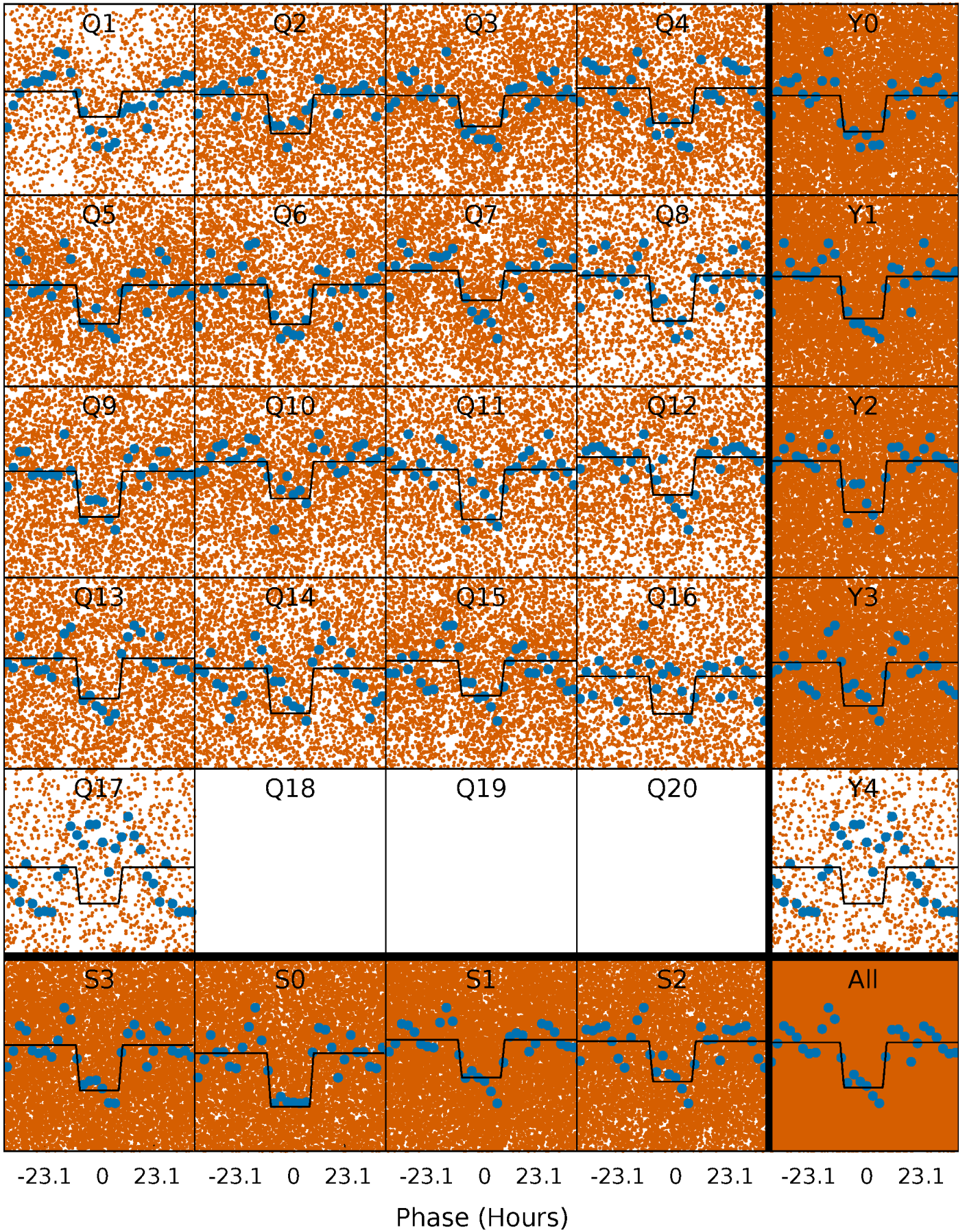
DV Quarter-Phased Transit Curves

TCE 010083510-01 P= 2.470525 Days $T_0=131.575700$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

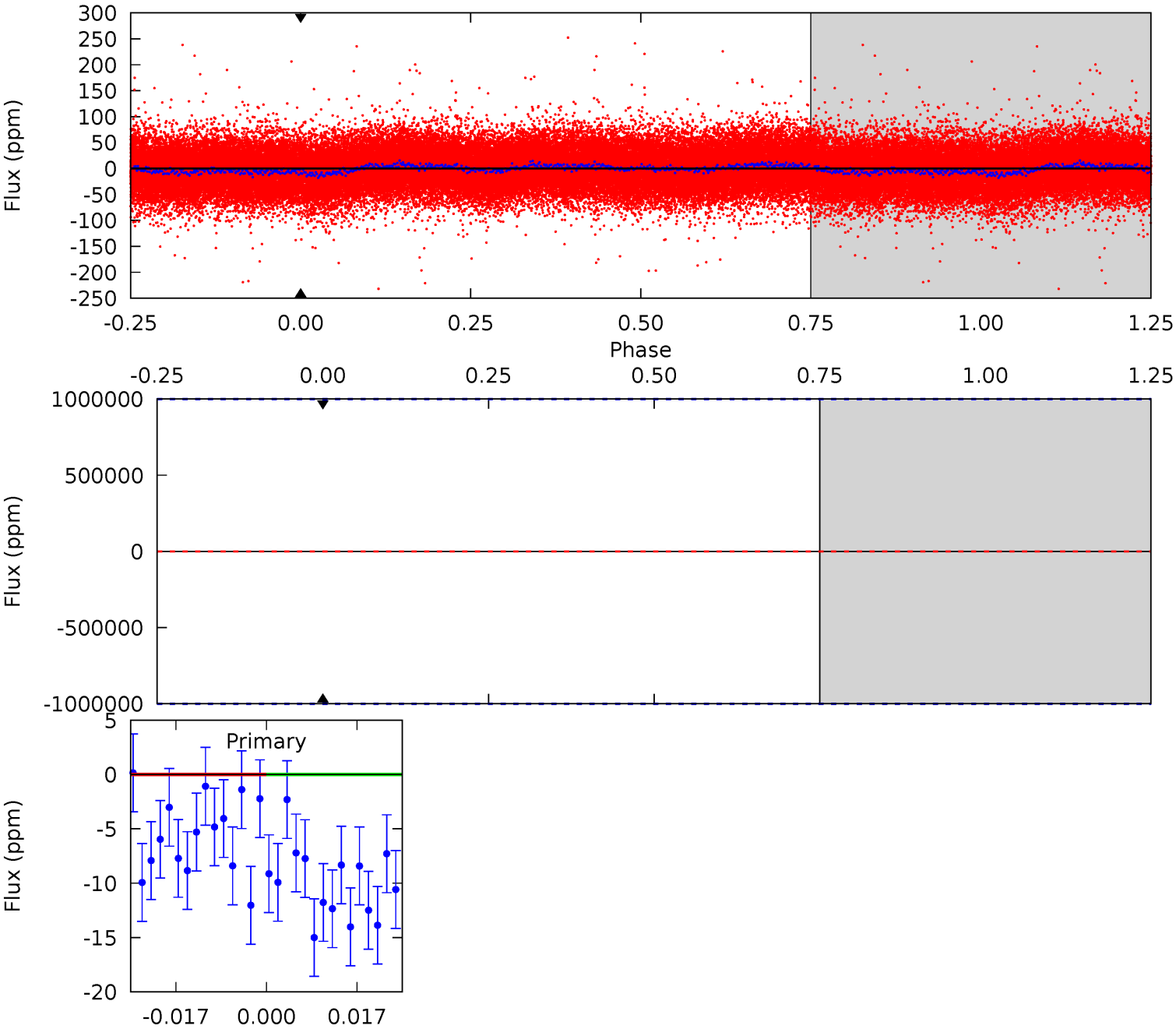
TCE 010083510-01 P= 2.470525 Days $T_0=133.878092$ (BKJD)



DV Model-Shift Uniqueness Test

010083510-01, P = 2.470525 Days, E = 129.105175 Days

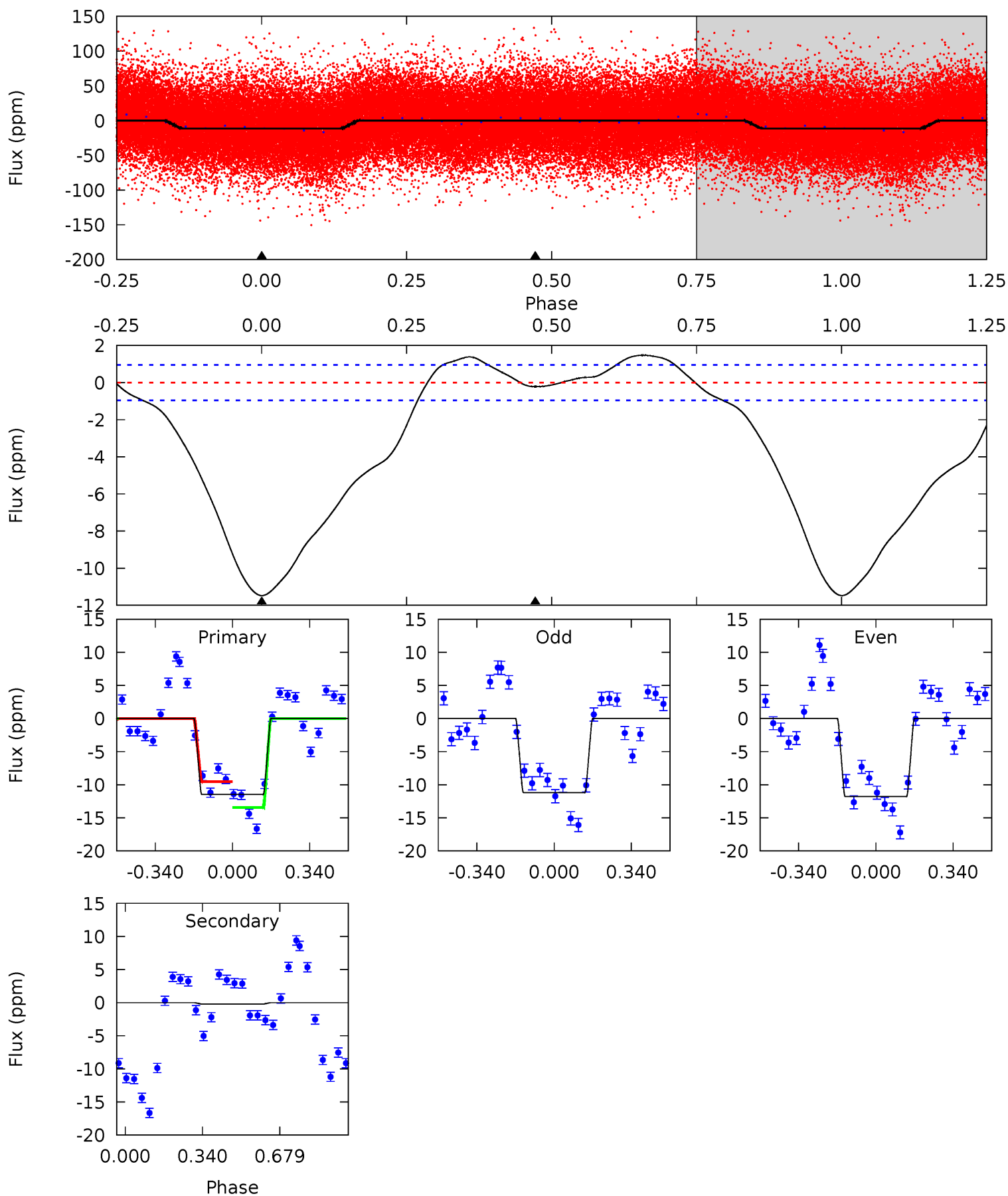
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

010083510-01, P = 2.470525 Days, E = 131.407567 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
51.5	0.96	0	0	4.30	0.95	7.03	51.5	51.5	0.96	0.96	1.32	1.00	0.11	8.72



Stellar Parameters For KIC 010083510

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7500^{+206}_{-335}	$3.978^{+0.187}_{-0.153}$	$0.180^{+0.150}_{-0.350}$	$2.316^{+0.525}_{-0.642}$	$1.859^{+0.148}_{-0.346}$	$0.211^{+0.229}_{-0.088}$
	+3%/-4%	+5%/-4%	+83%/-194%	+23%/-28%	+8%/-19%	+108%/-42%
Source	KIC0	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 010083510-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$18.03^{+19.67}_{-13.07}$	3337^{+237}_{-247}	4512^{+34611}_{-46471}	$2.116^{+541.824}_{-614.762}$
Alt.	-0 ± 0	$17.61^{+20.54}_{-12.27}$	3335^{+224}_{-260}	-3255^{+173}_{-133}	$0.000^{+0.007}_{-0.001}$

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

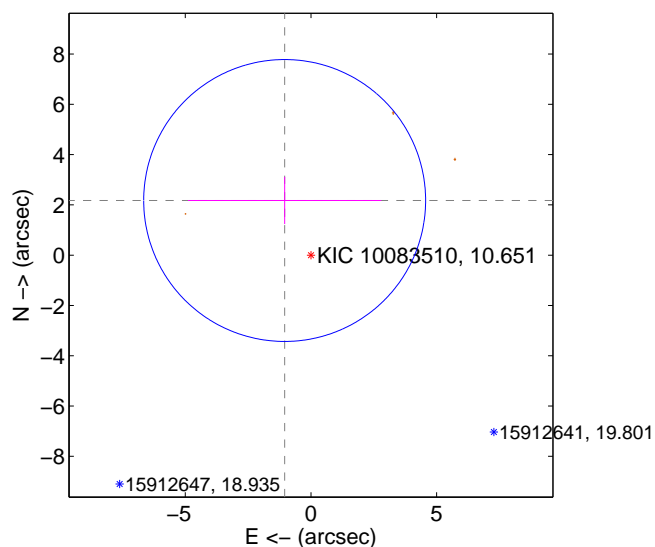
Supplemental centroid analysis for 010083510-01. **Kepler magnitude: 10.65.** Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

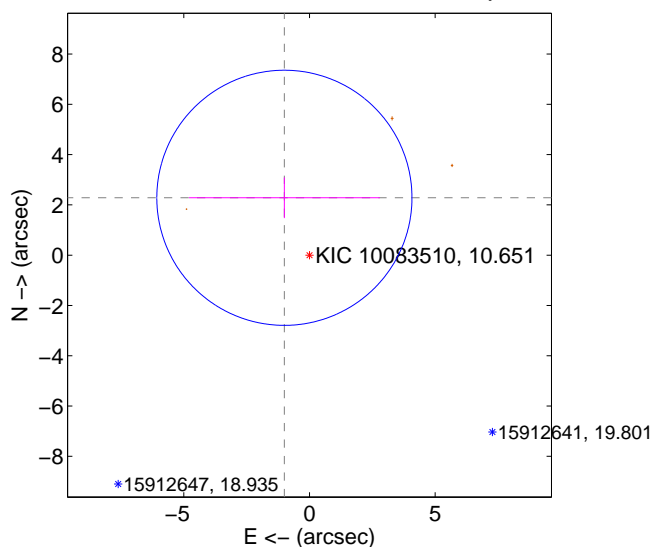
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.414 ± 1.869	1.29	1.046 ± 3.845	2.175 ± 0.939
PRF-fit source offset from KIC position	2.491 ± 1.692	1.47	0.998 ± 3.797	2.282 ± 0.807
photometric centroid source offset	0.75 ± 0.60	1.24	-0.26 ± 0.74	-0.70 ± 0.58

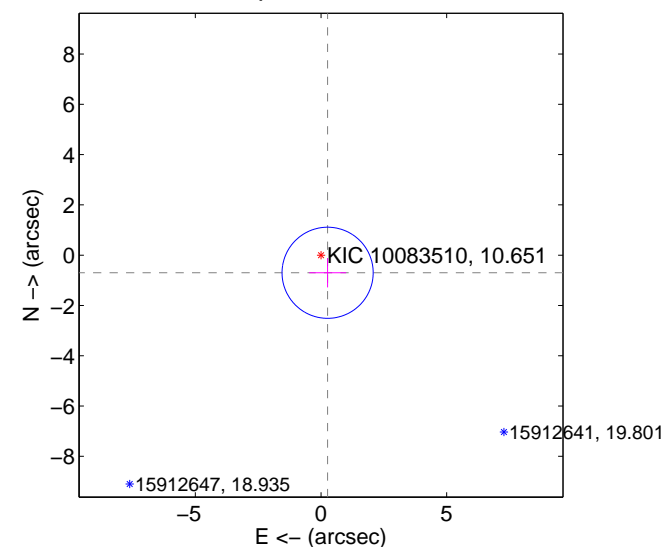
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

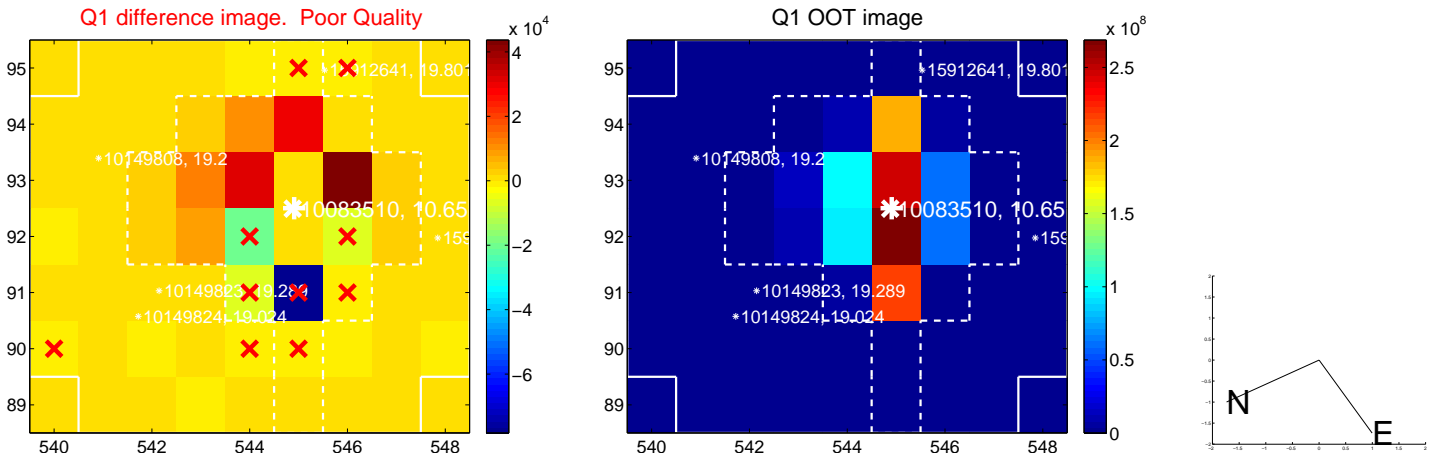


offset from photometric centroids

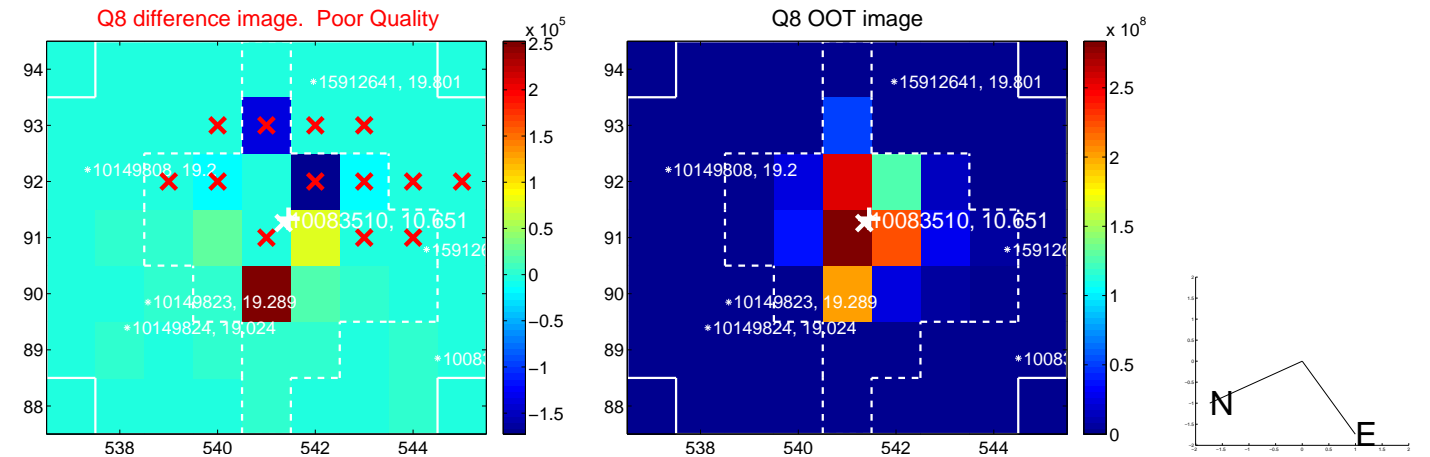
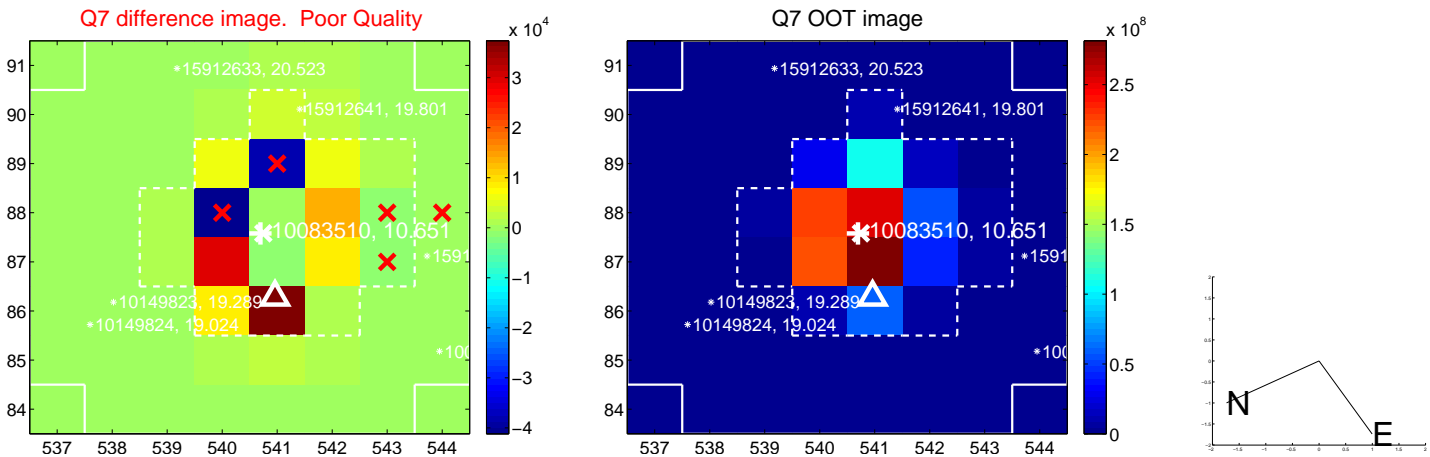
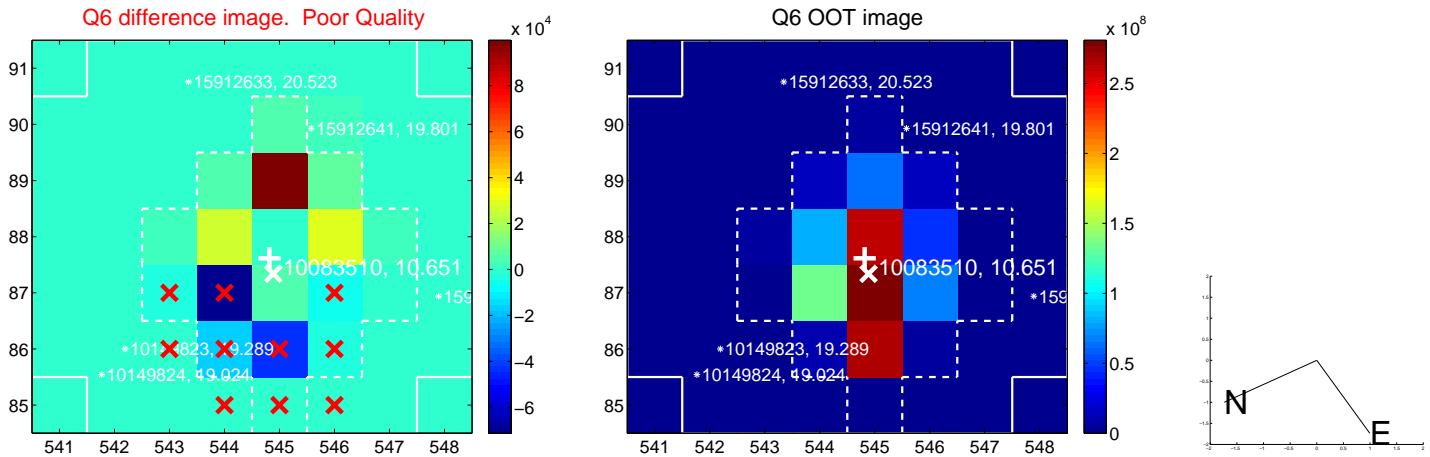
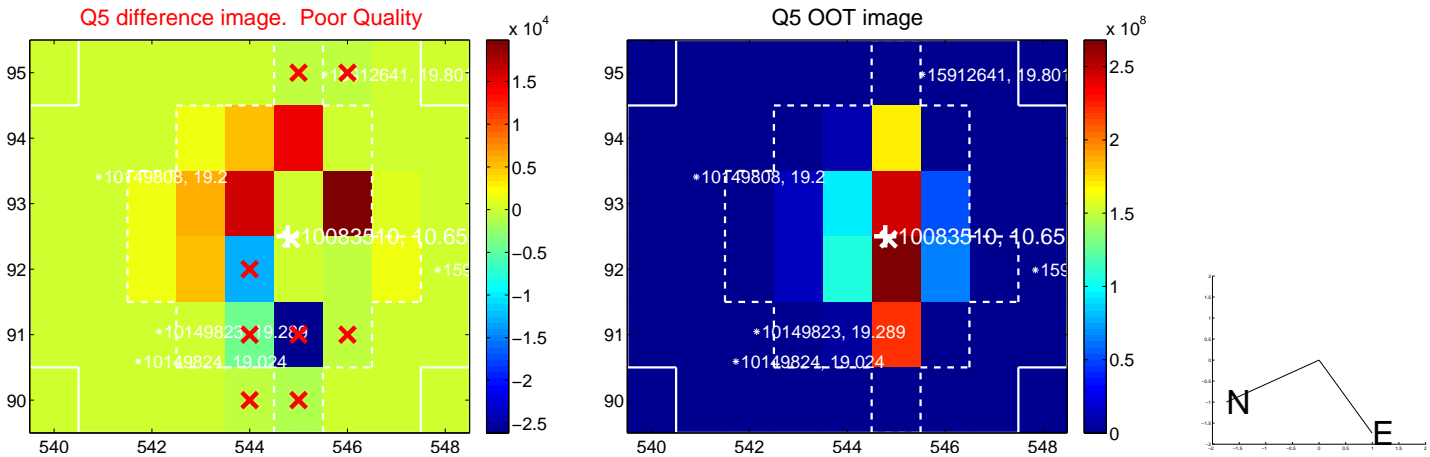


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

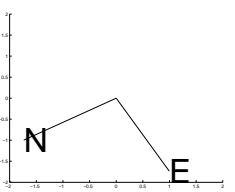
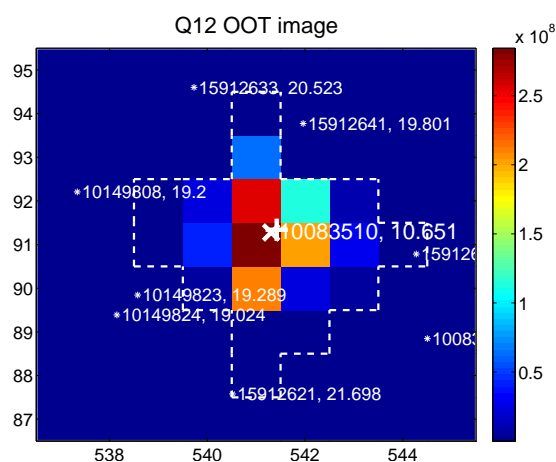
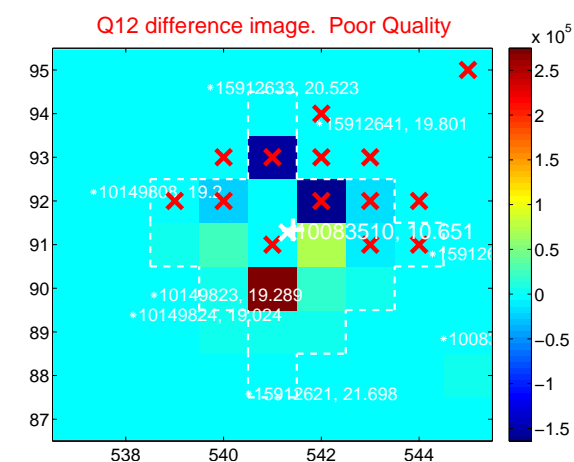
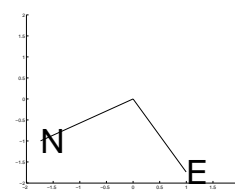
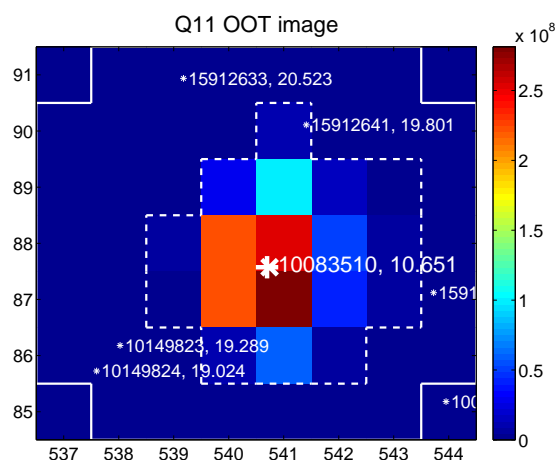
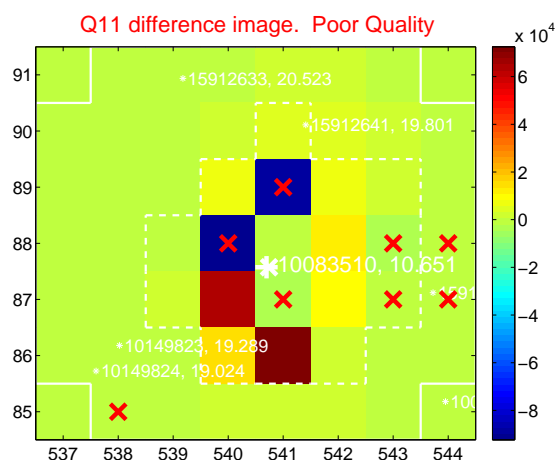
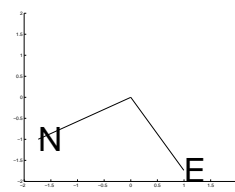
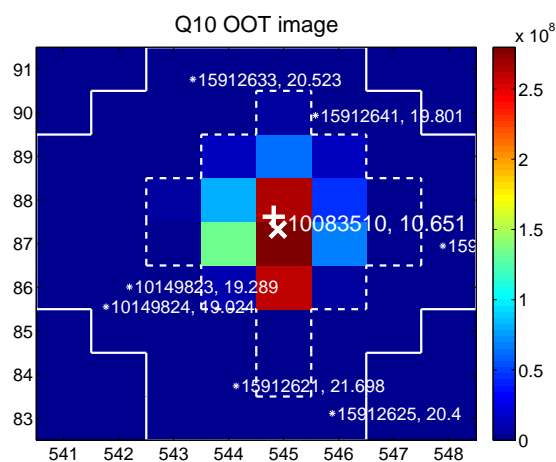
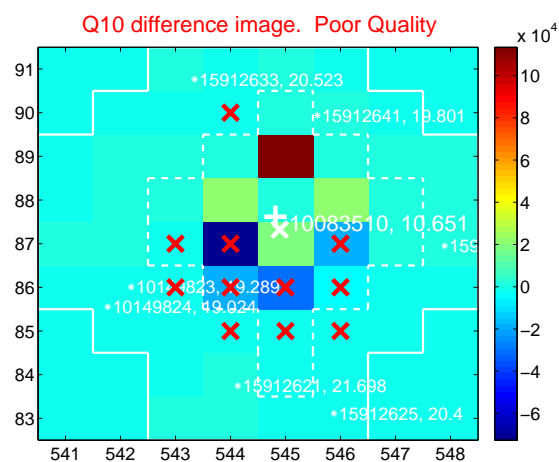
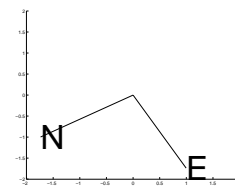
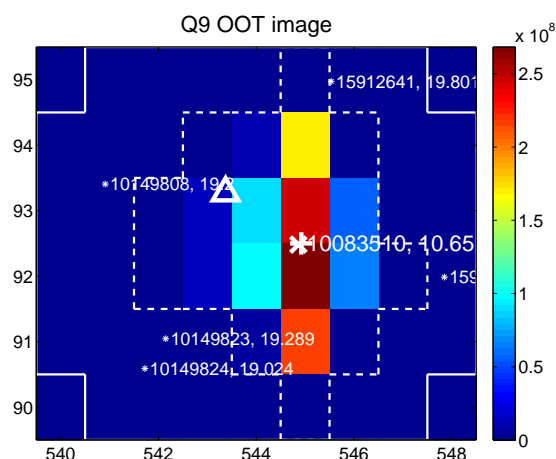
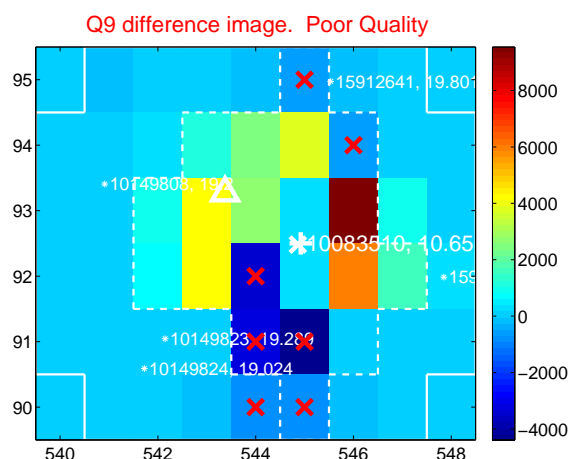
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



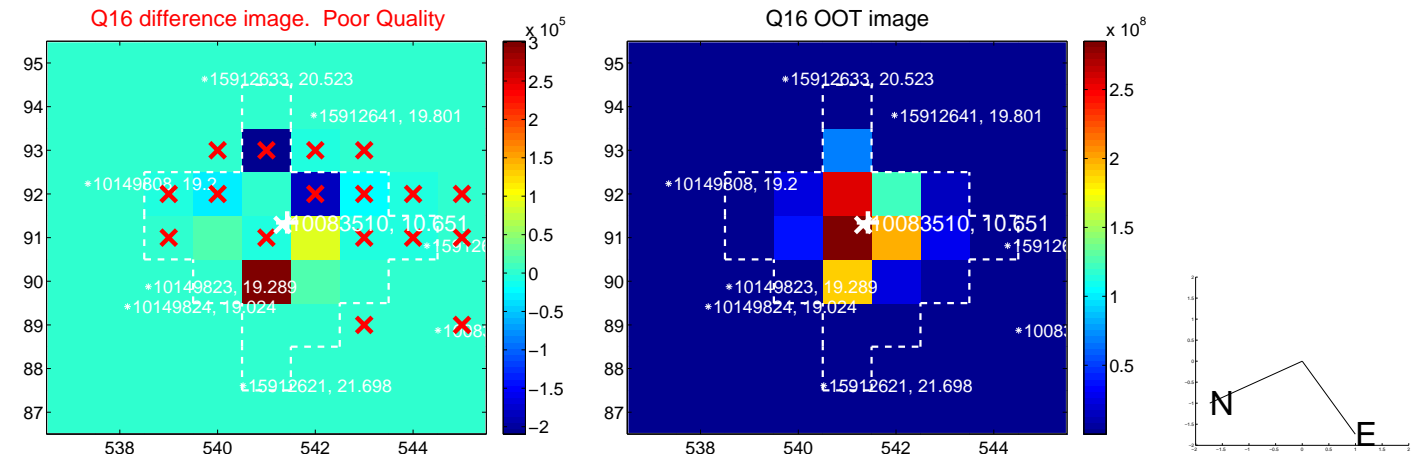
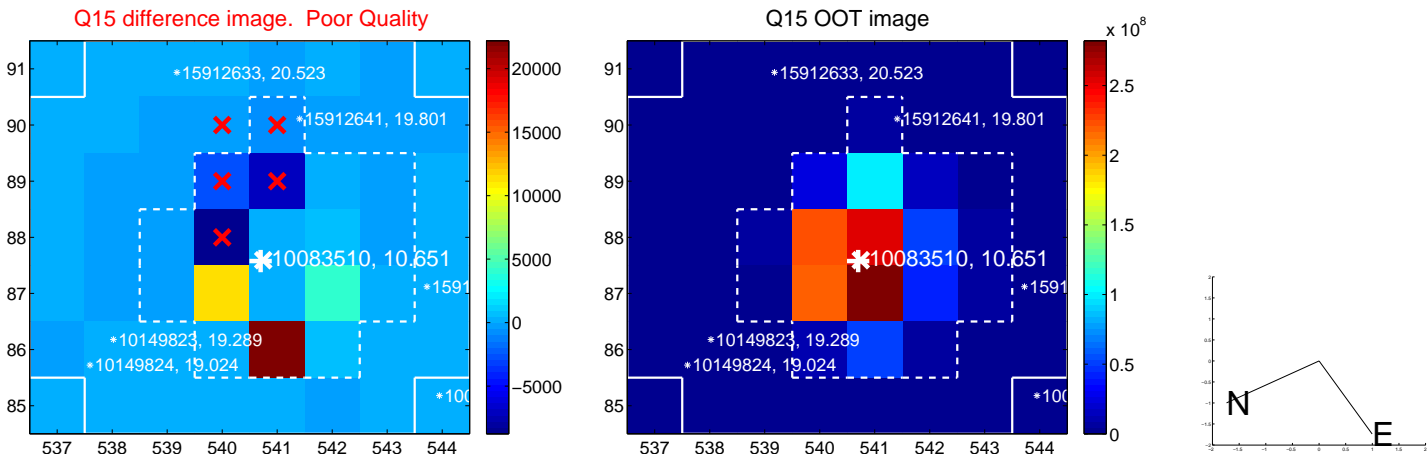
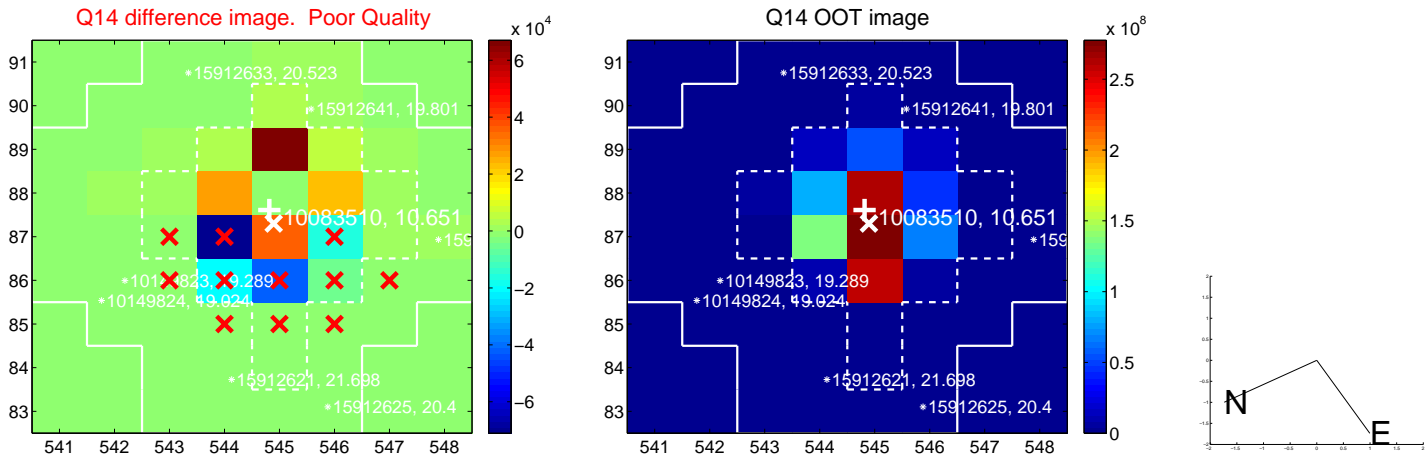
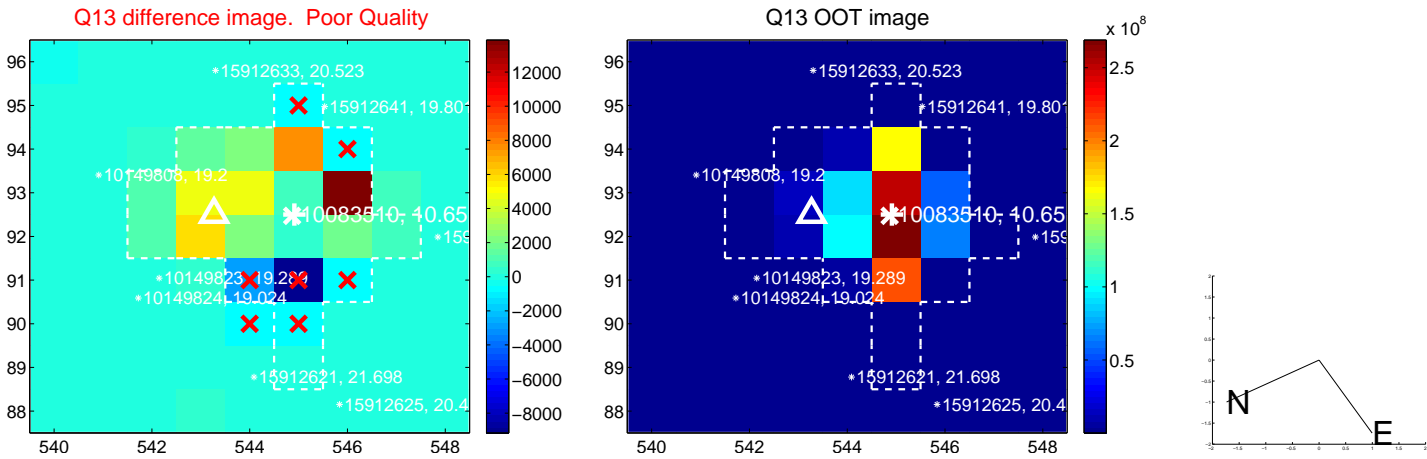
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



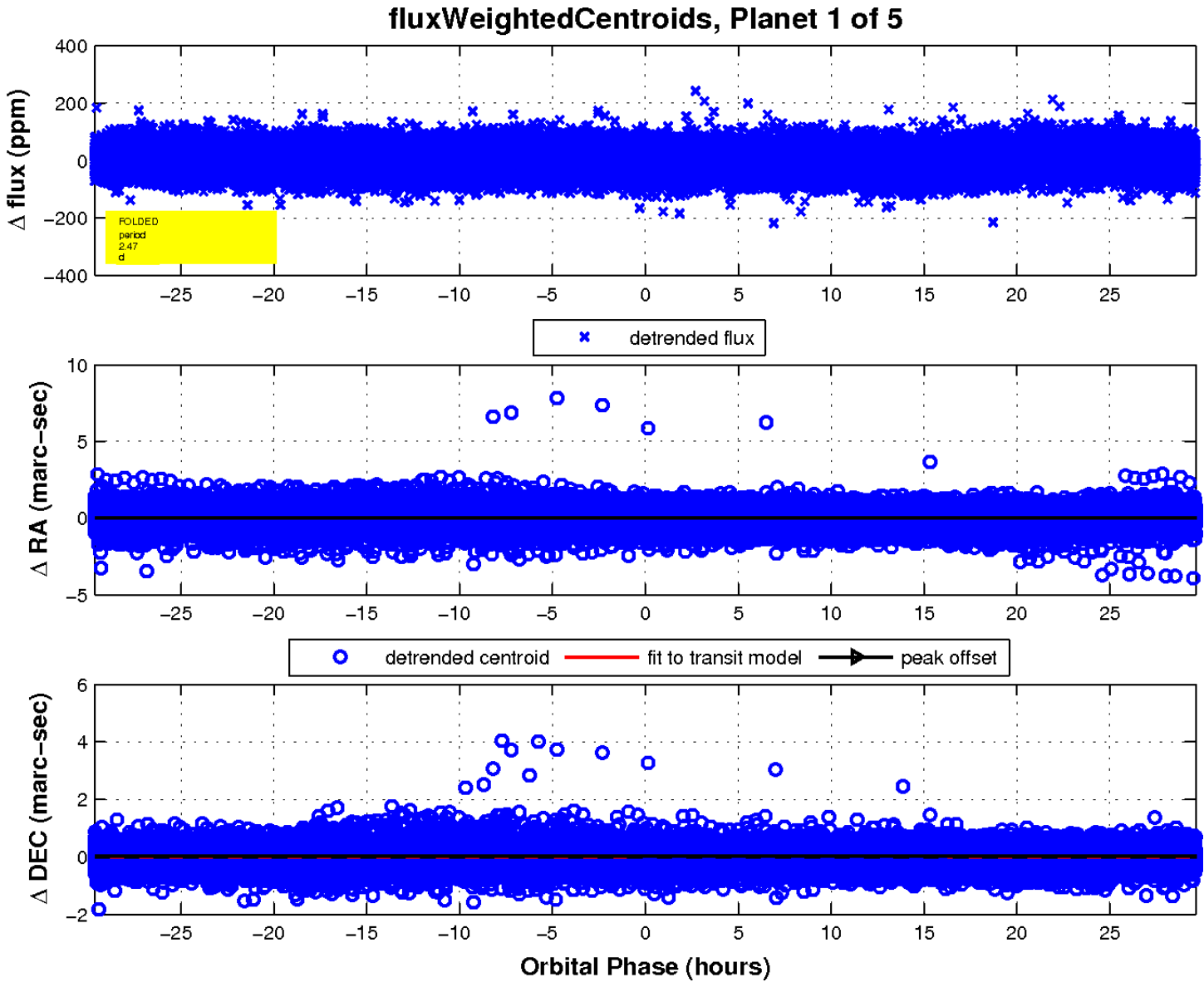
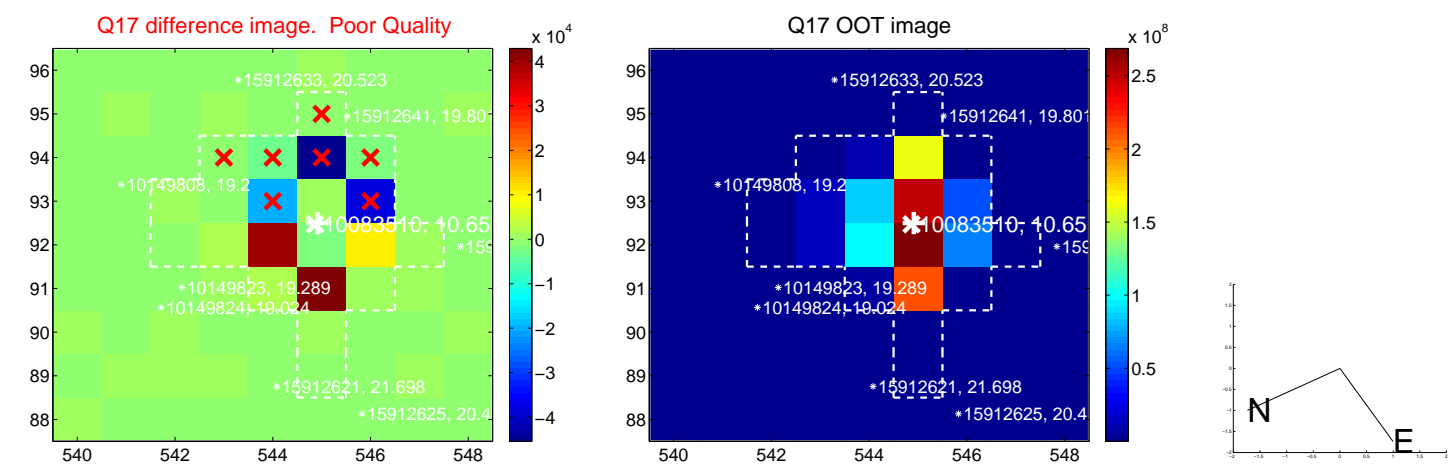
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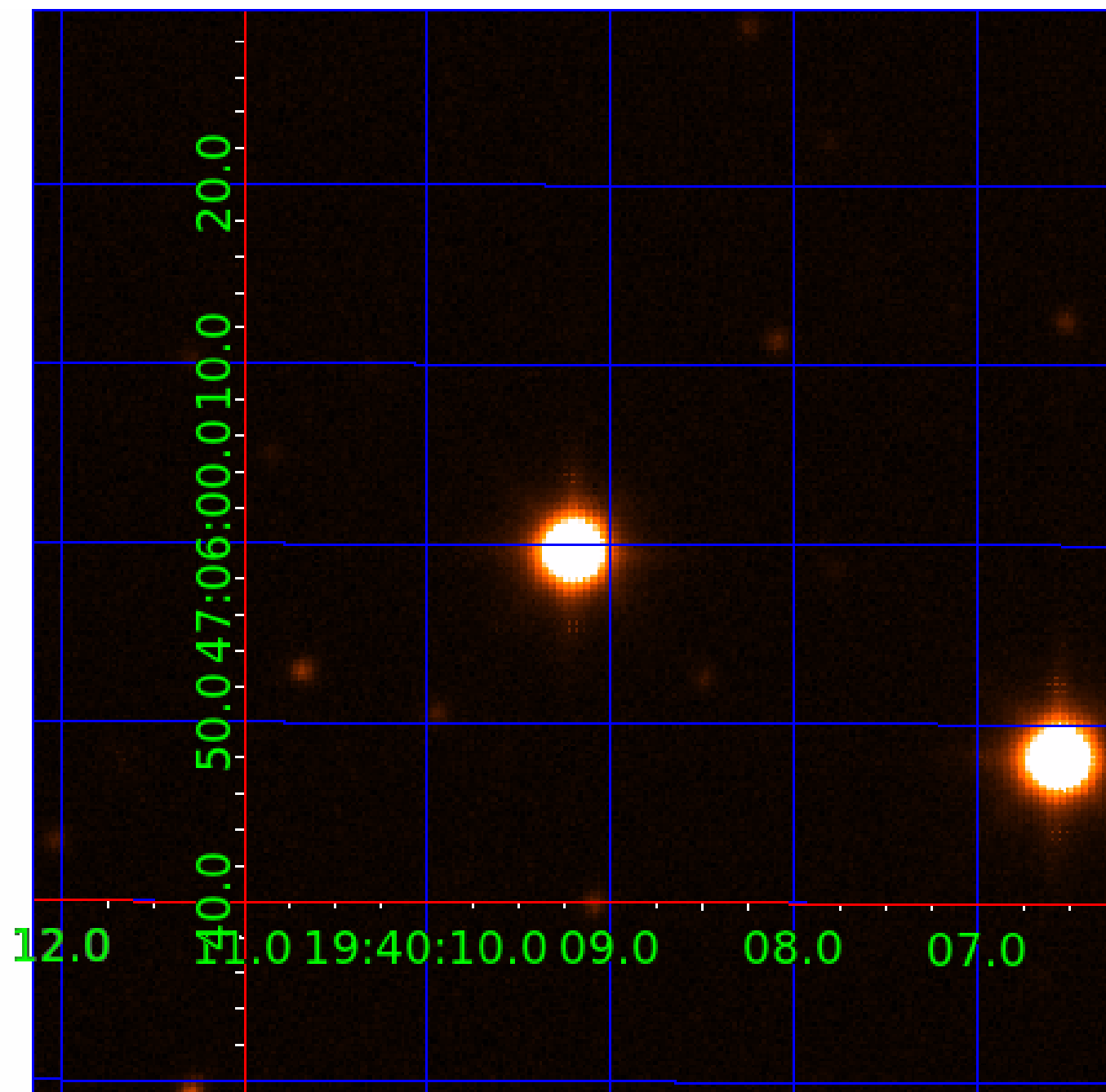


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010083510

Q1-17 DR25 TCE Parameters

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010083510-04	OBS	No	103.503763	145.988243	41.8	4.726	8.1	7.8	2.32	7500	1.71	53.99
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010083510-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—INCONSISTENT_TRANS—CENT_SATURATED
010083510-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—CENT_SATURATED
010083510-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_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.

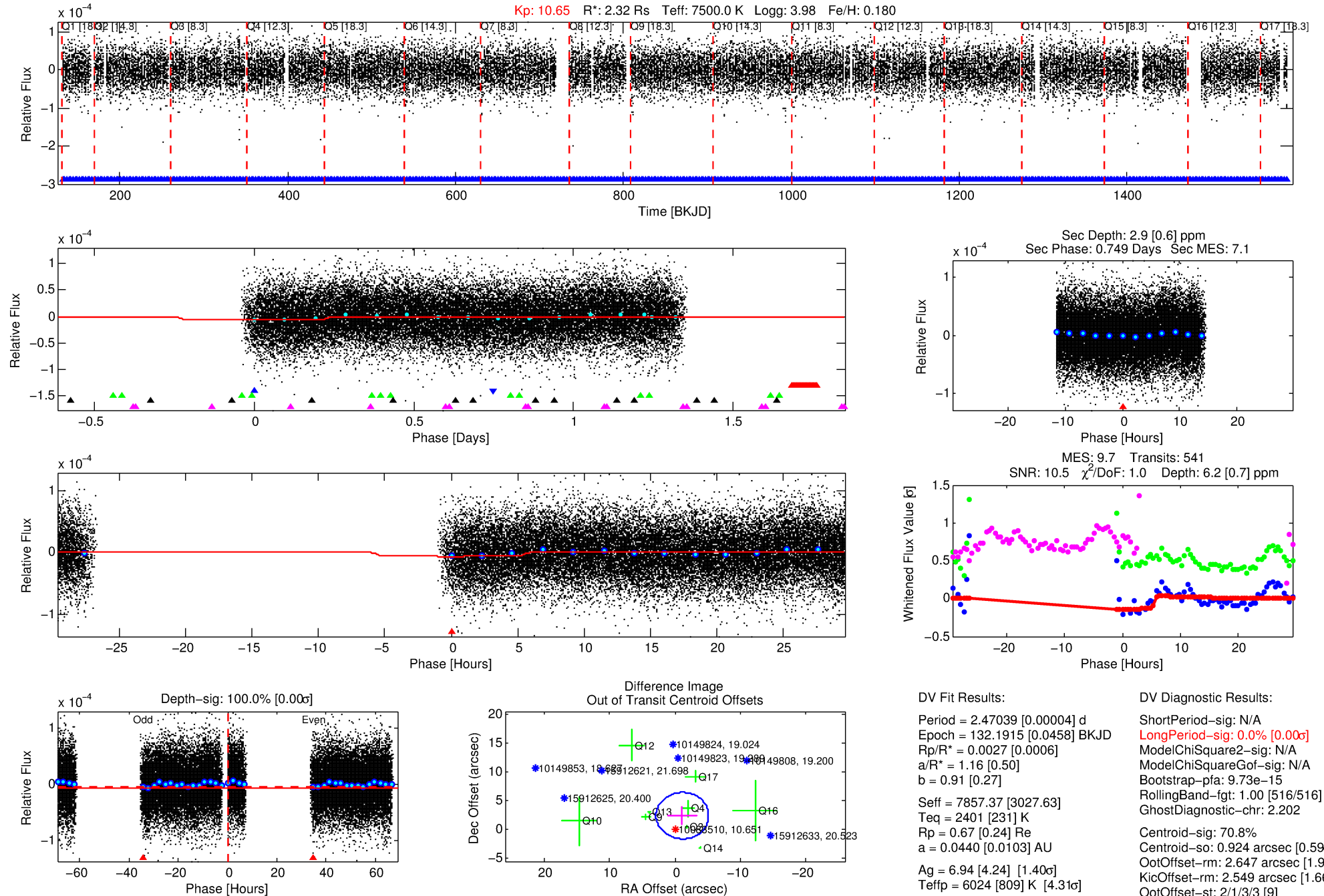
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010083510-02

No Significant Match Found

DV One-Page Summary

KIC: 10083510 Candidate: 2 of 5 Period: 2.470 d



DV Fit Results:

Period = 2.47039 [0.00004] d
Epoch = 132.1915 [0.0458] BKJD
 $R_p/R^* = 0.0027$ [0.0006]
 $a/R^* = 1.16$ [0.50]
 $b = 0.91$ [0.27]
 $T_{\text{eff}} = 7857.37$ [3027.63]
 $T_{\text{eq}} = 2401$ [231] K
 $R_p = 0.67$ [0.24] R_{eq}
 $a = 0.0440$ [0.0103] AU
 $A_g = 6.94$ [4.24] [1.40 σ]
 $T_{\text{effp}} = 6024$ [809] K [4.31 σ]

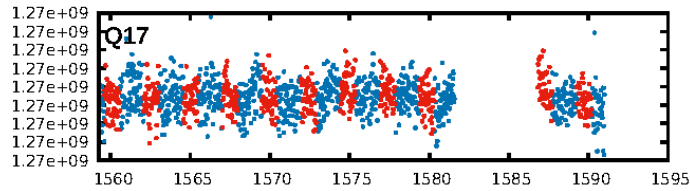
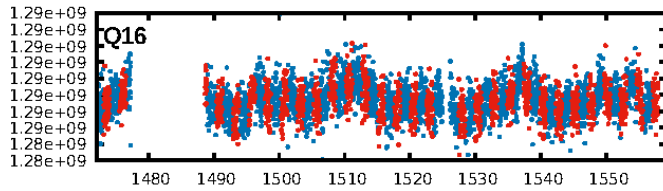
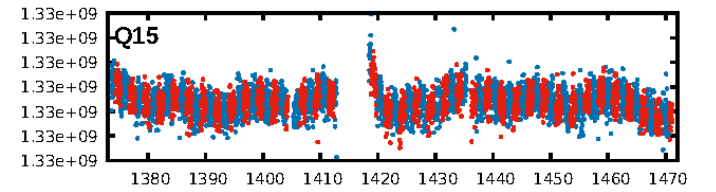
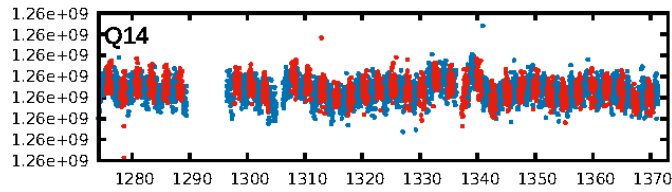
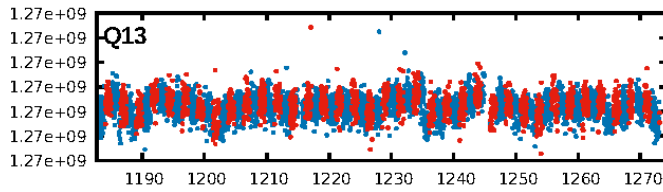
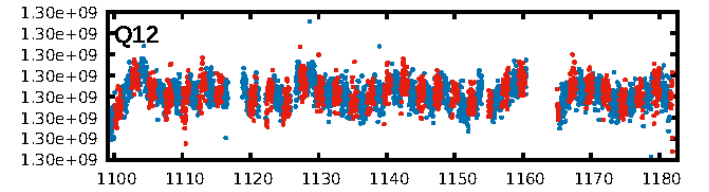
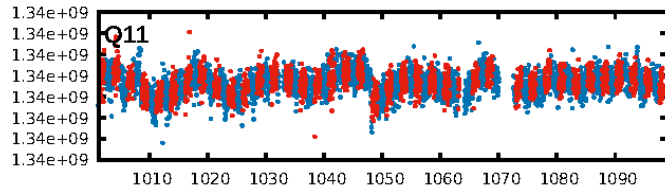
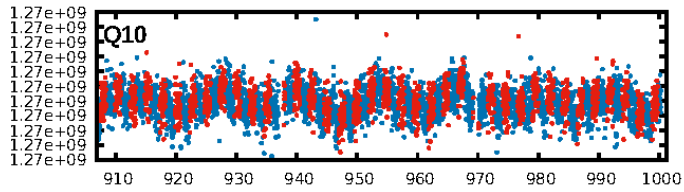
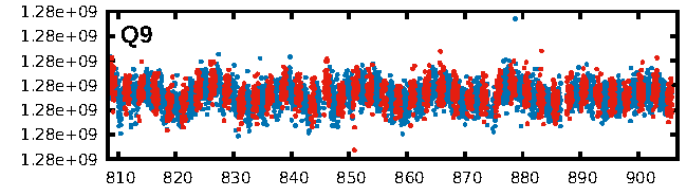
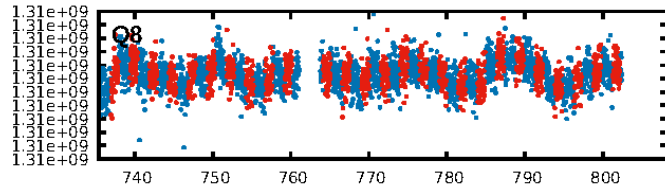
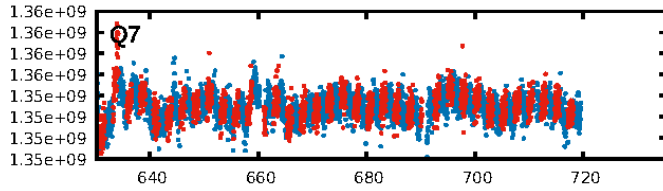
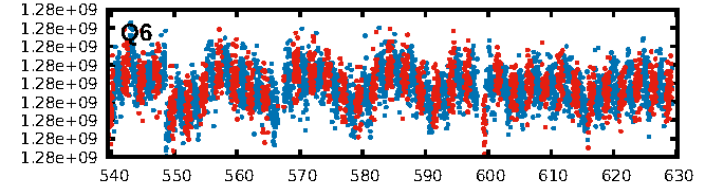
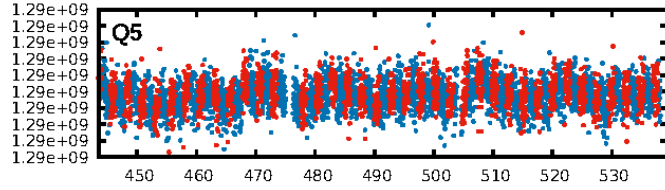
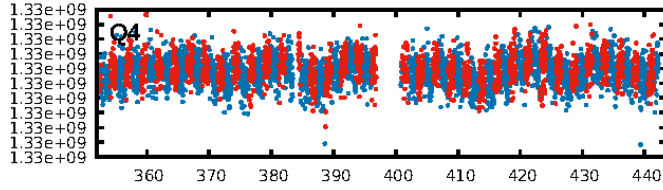
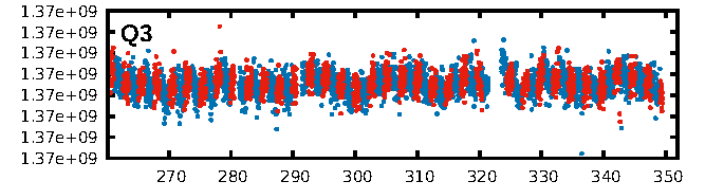
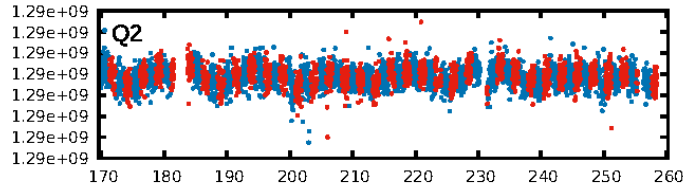
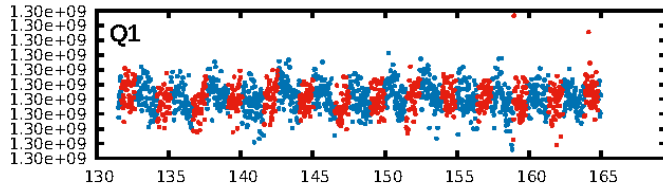
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 9.73e-15
RollingBand-fgt: 1.00 [516/516]
GhostDiagnostic-chr: 2.202
Centroid-sig: 70.8%
Centroid-so: 0.924 arcsec [0.59 σ]
OotOffset-rm: 2.647 arcsec [1.97 σ]
KicOffset-rm: 2.549 arcsec [1.66 σ]
OotOffset-st: 2/1/3/3 [9]
KicOffset-st: 2/1/3/3 [9]
DiffImageQuality-fgm: 0.00 [0/9]
DiffImageOverlap-fno: 0.00 [0/17]

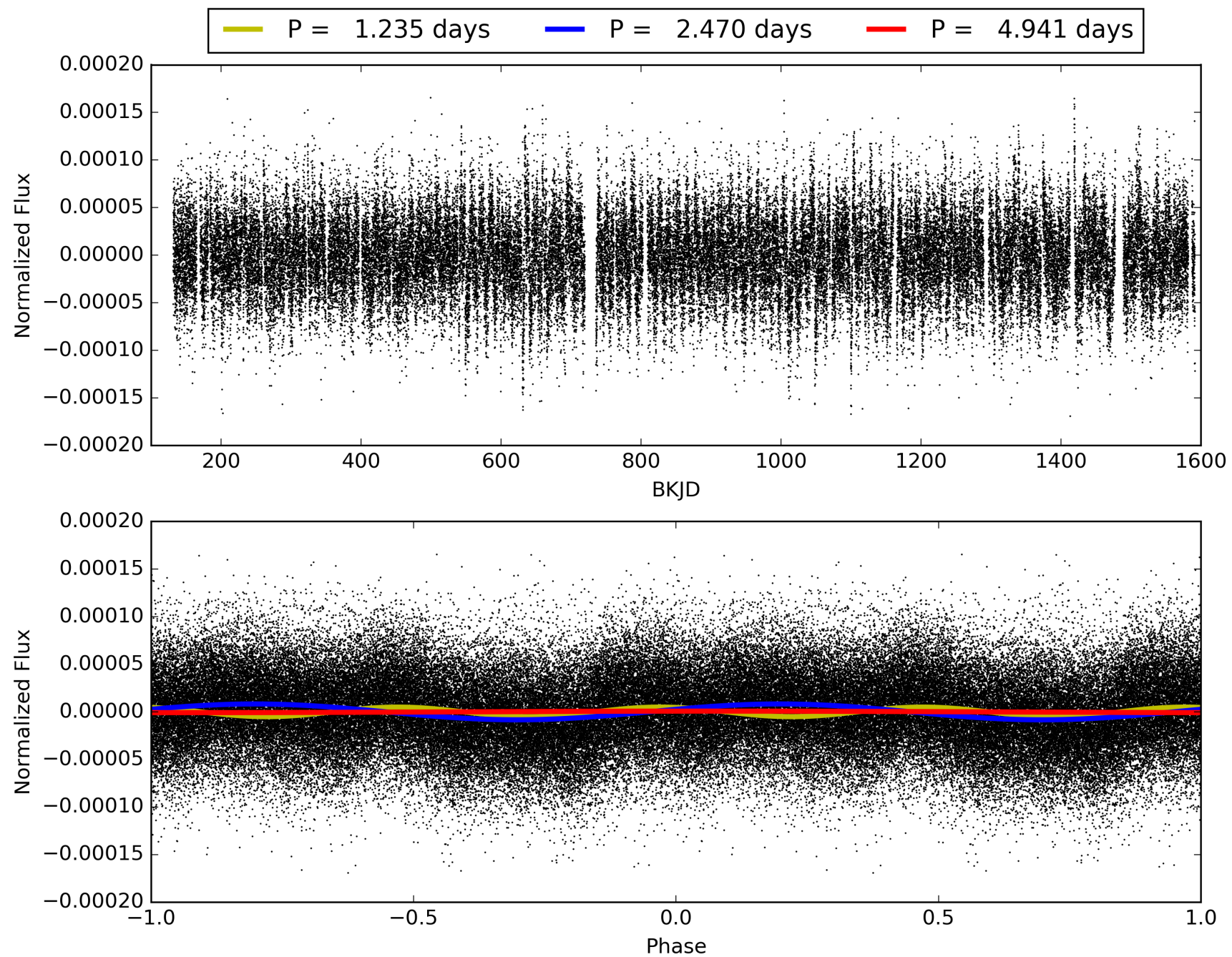
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 10:17:05 Z

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

TCE 010083510-02, PDC Light Curves

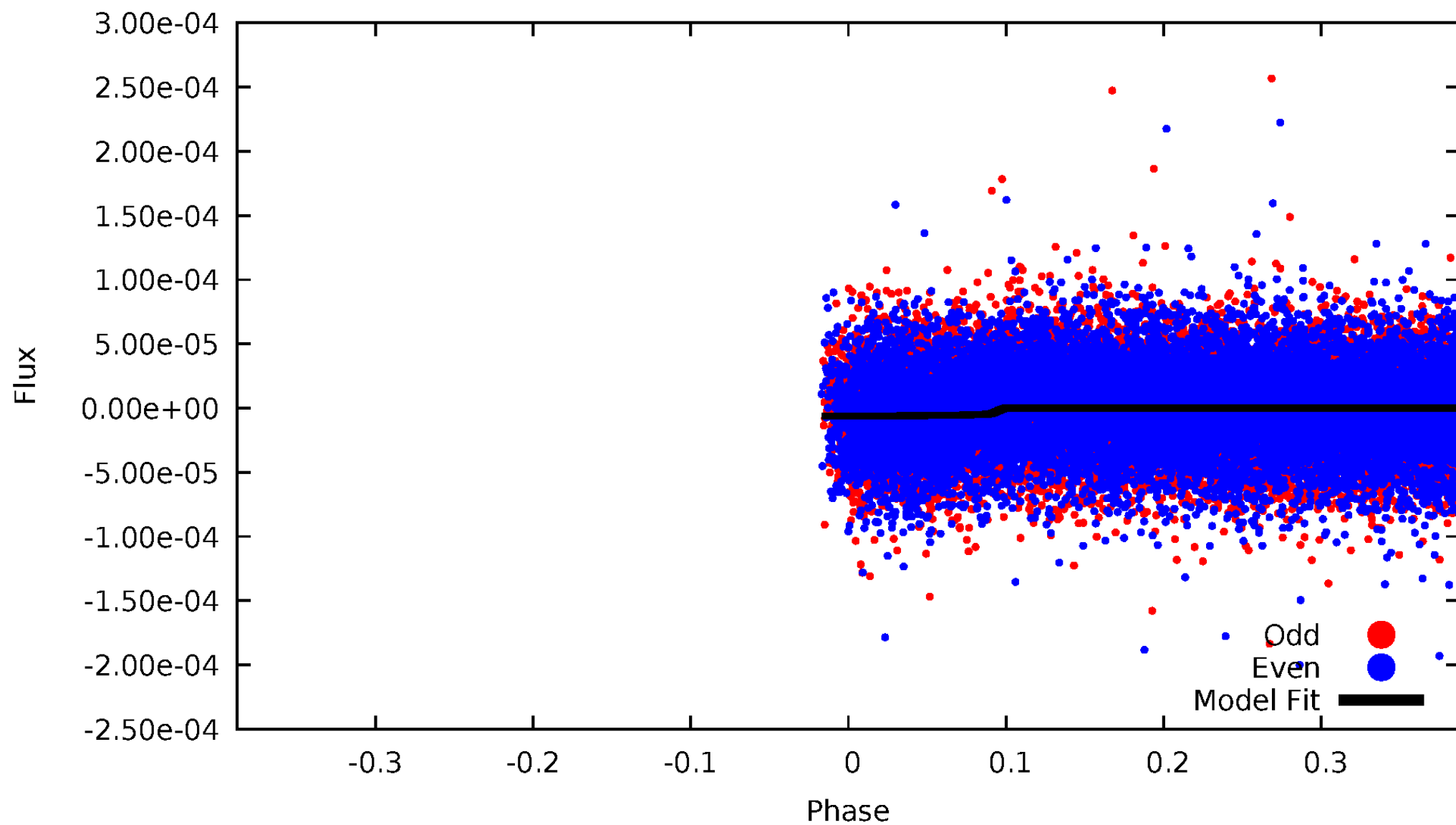


TCE 010083510-02



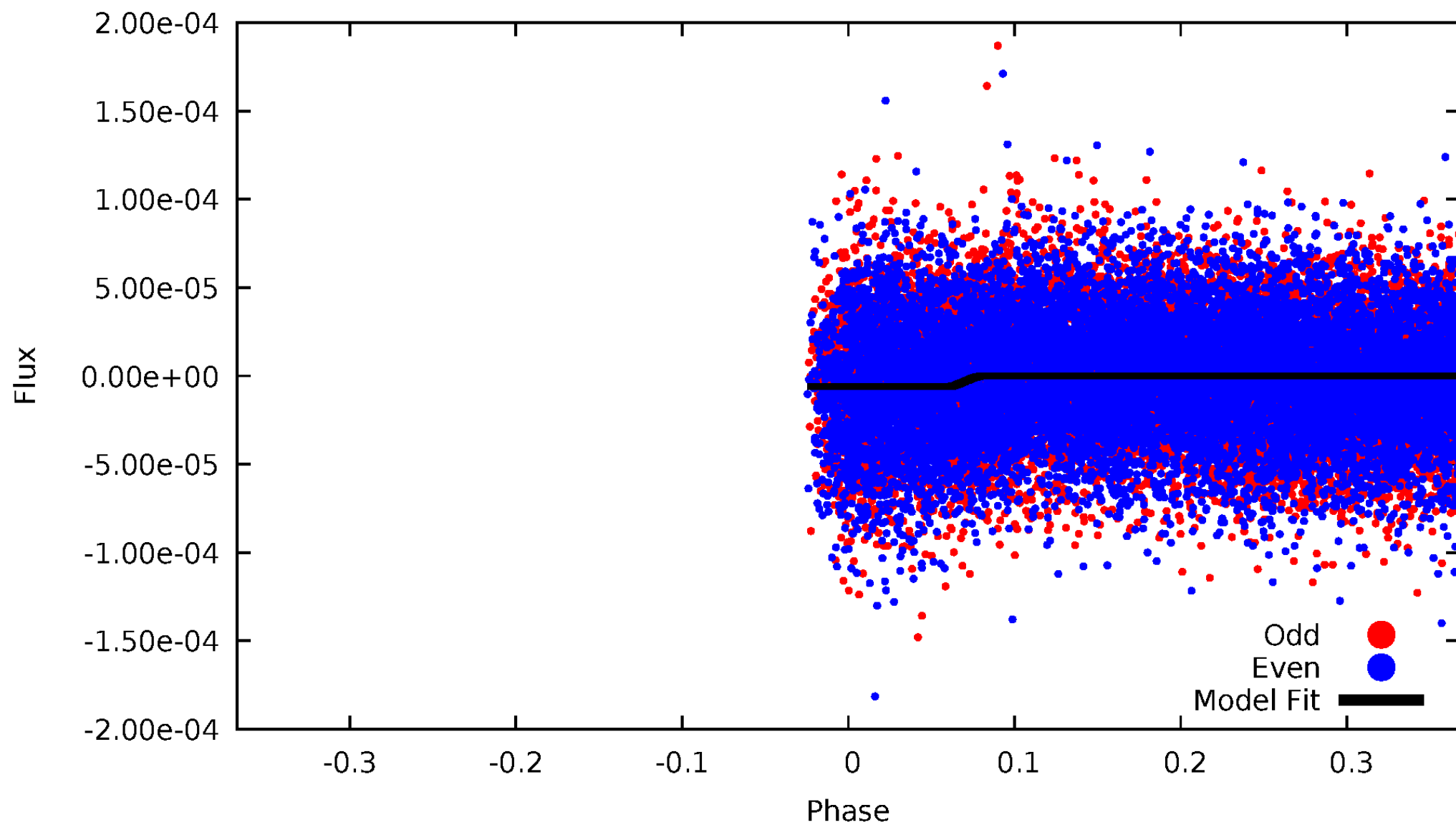
DV Odd/Even

TCE 010083510-02



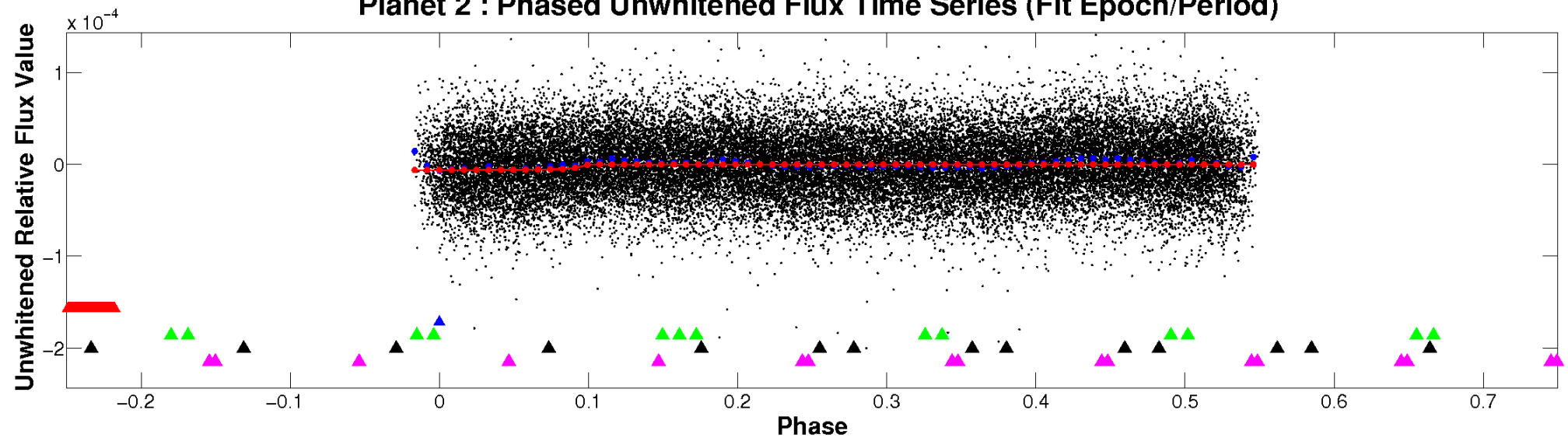
ALT Odd/Even

TCE 010083510-02

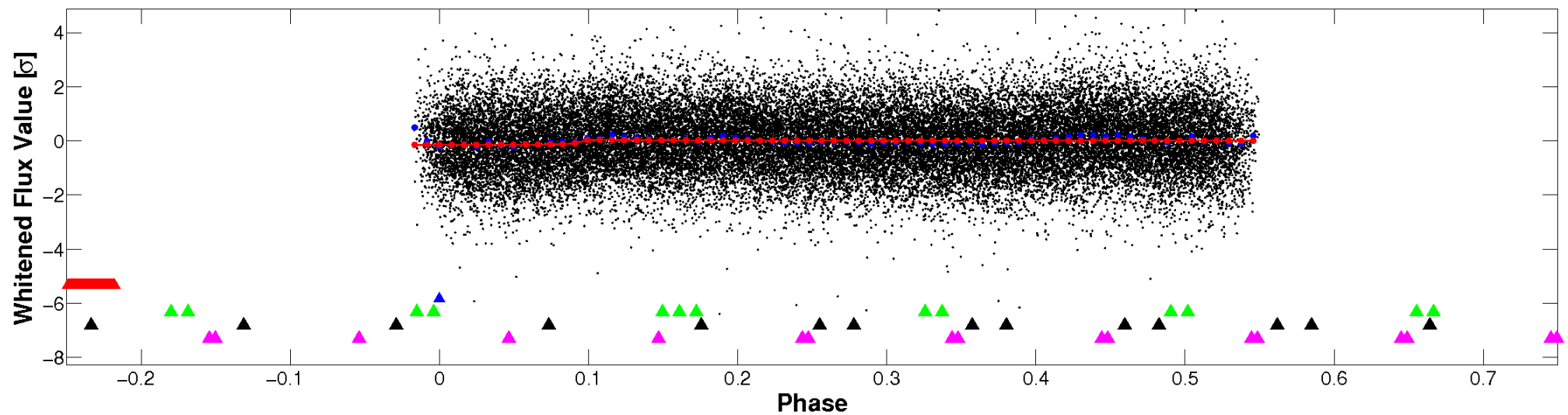


Non-Whitened Vs. Whitened Light Curve

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

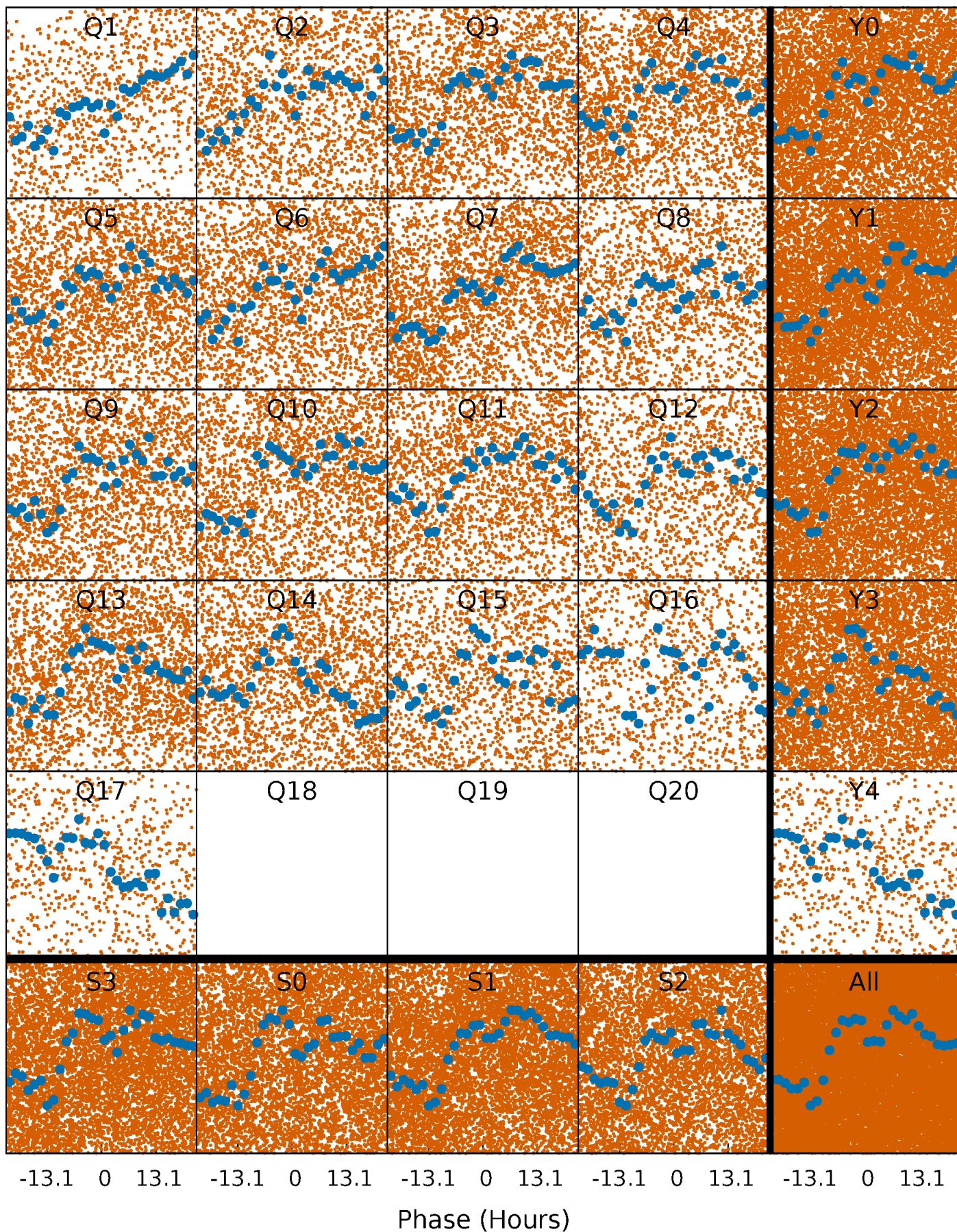


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



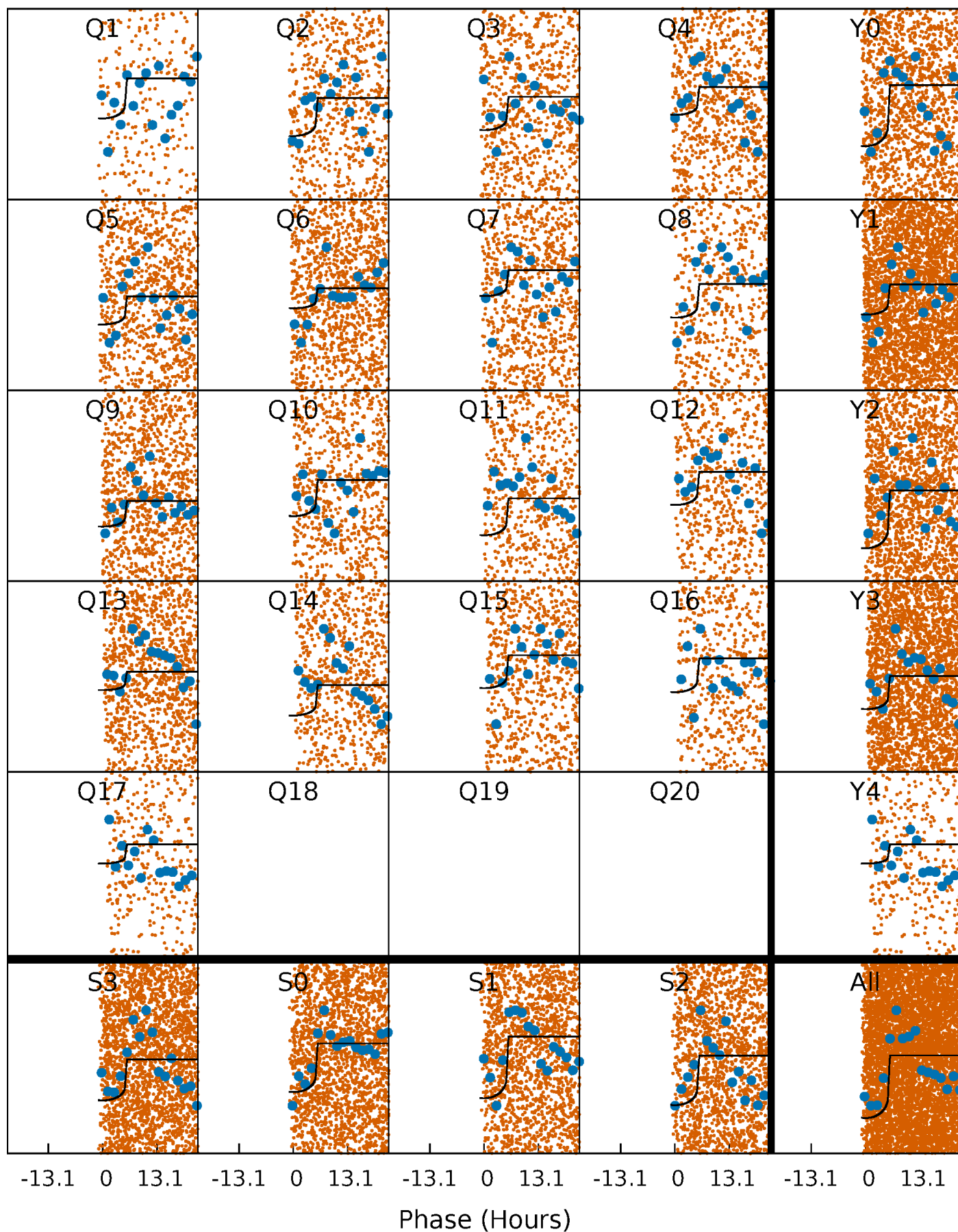
PDC Quarter-Phased Transit Curves

TCE 010083510-02 P= 2.470392 Days $T_0=132.191459$ (BKJD)



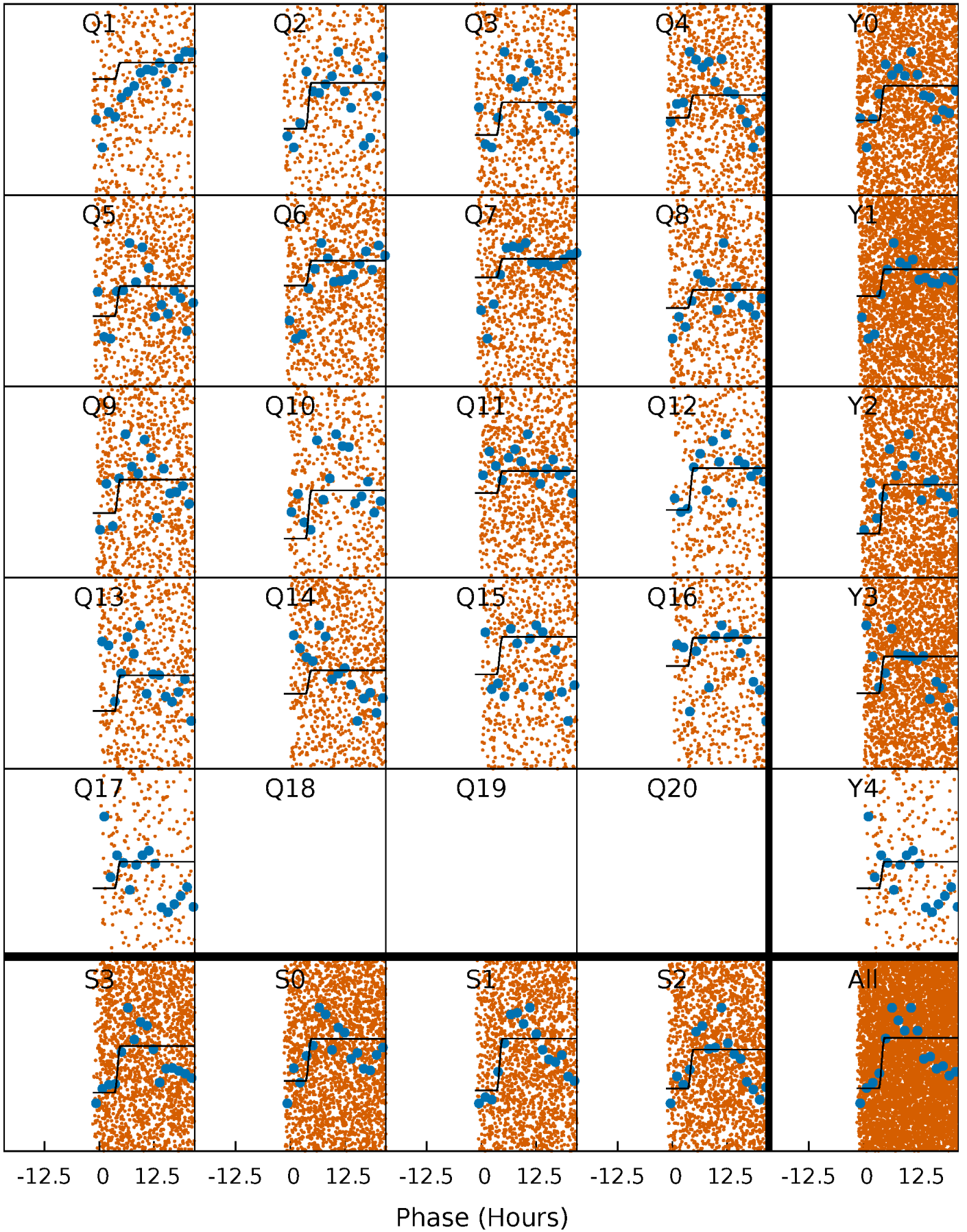
DV Quarter-Phased Transit Curves

TCE 010083510-02 P= 2.470392 Days $T_0=132.191459$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

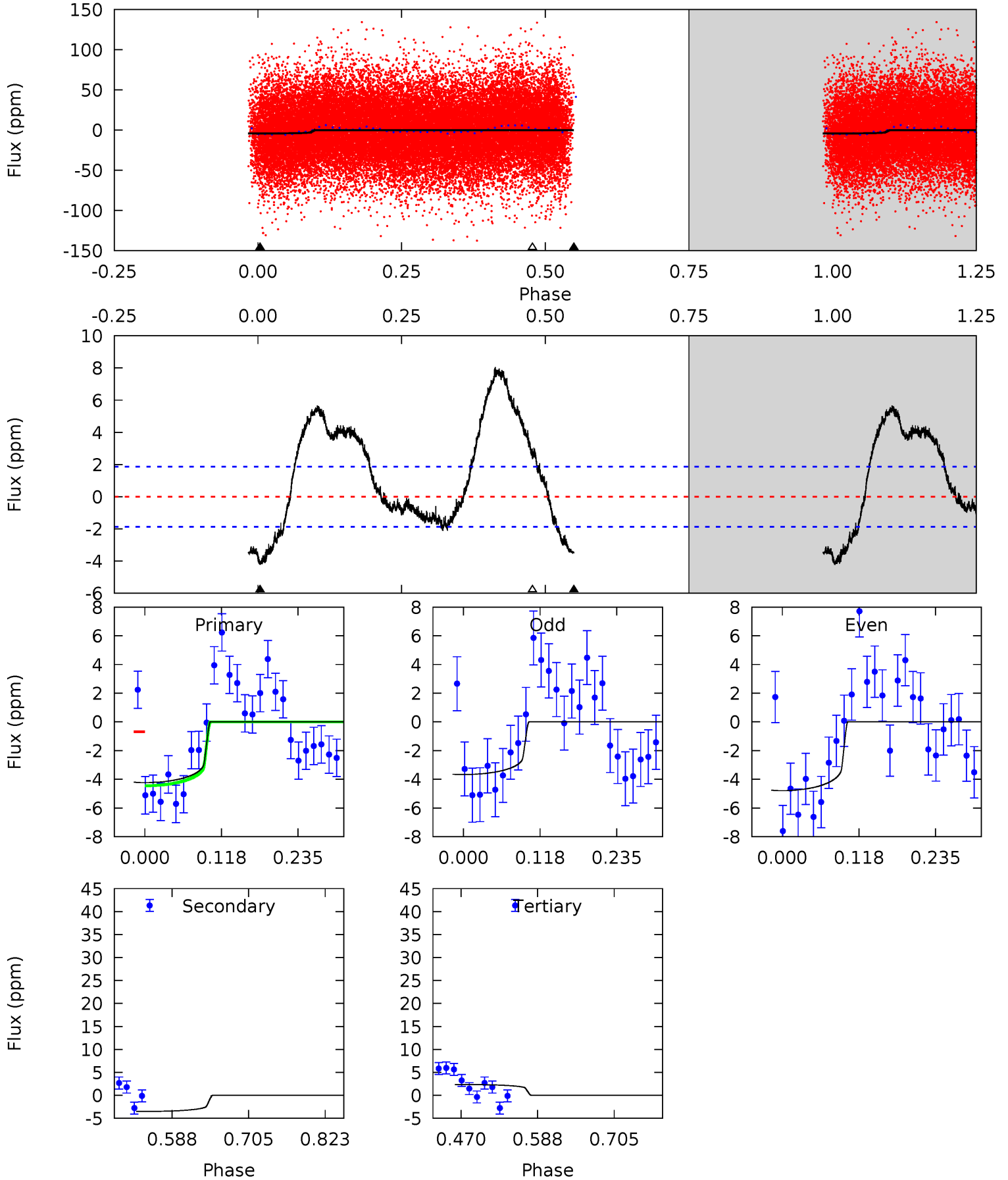
TCE 010083510-02 P= 2.470390 Days $T_0=132.210356$ (BKJD)



DV Model-Shift Uniqueness Test

010083510-02, P = 2.470392 Days, E = 129.721067 Days

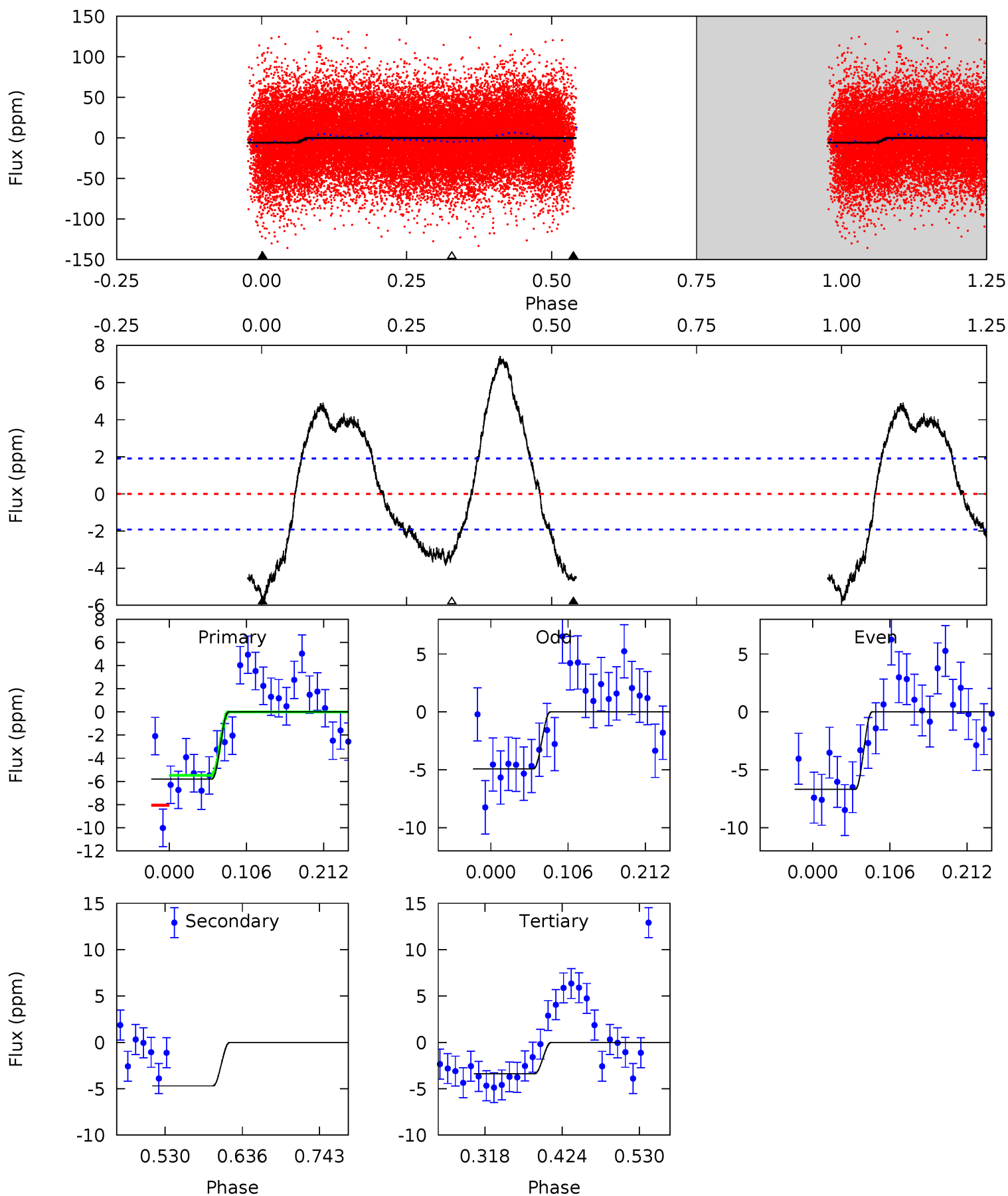
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.2	8.49	-5.68	0	4.53	1.57	7.43	15.9	10.2	14.2	8.49	1.36	0.88	0.66	1.86



Alt Model-Shift Uniqueness Test

010083510-02, P = 2.470390 Days, E = 129.739966 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.8	11.2	8.03	0	4.55	1.62	7.91	5.76	13.8	3.14	11.2	2.11	1.04	0.56	1.85



Stellar Parameters For KIC 010083510

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7500^{+206}_{-335}	$3.978^{+0.187}_{-0.153}$	$0.180^{+0.150}_{-0.350}$	$2.316^{+0.525}_{-0.642}$	$1.859^{+0.148}_{-0.346}$	$0.211^{+0.229}_{-0.088}$
	+3%/-4%	+5%/-4%	+83%/-194%	+23%/-28%	+8%/-19%	+108%/-42%
Source	KIC0	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 010083510-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-4 ± 0	$0.65^{+0.18}_{-0.17}$	3323^{+239}_{-251}	6131^{+910}_{-671}	$8.605^{+6.943}_{-3.431}$
Alt.	-5 ± 0	$0.62^{+0.18}_{-0.17}$	3339^{+242}_{-242}	6835^{+1195}_{-778}	13^{+11}_{-5}

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

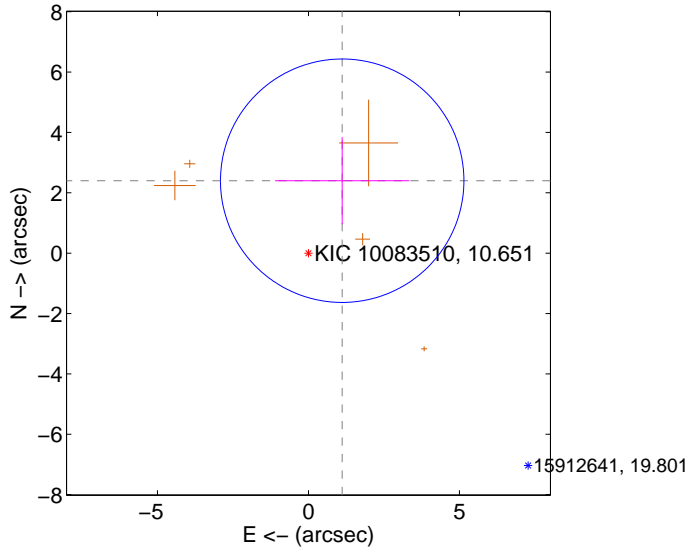
Supplemental centroid analysis for 010083510-02. **Kepler magnitude: 10.65.** Transit SNR 10.46

There are 0 quarters with good PRF difference image offsets

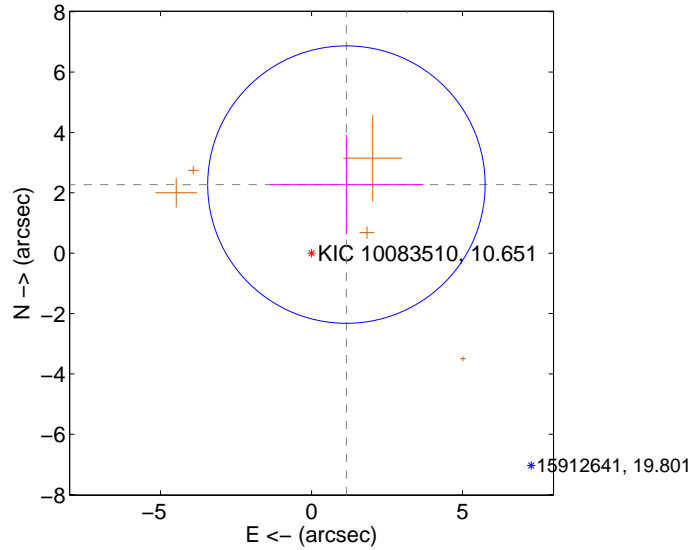
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.647 ± 1.344	1.97	-1.118 ± 2.225	2.400 ± 1.442
PRF-fit source offset from KIC position	2.549 ± 1.532	1.66	-1.156 ± 2.548	2.271 ± 1.648
photometric centroid source offset	0.92 ± 1.57	0.59	-0.91 ± 1.58	0.16 ± 1.31

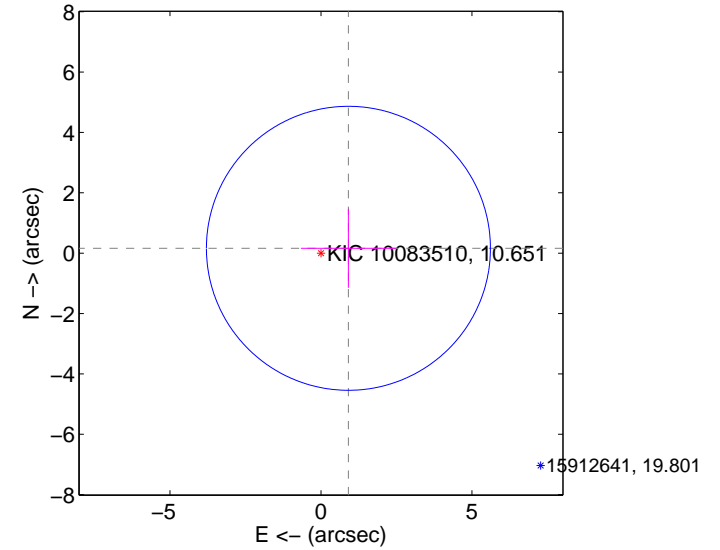
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

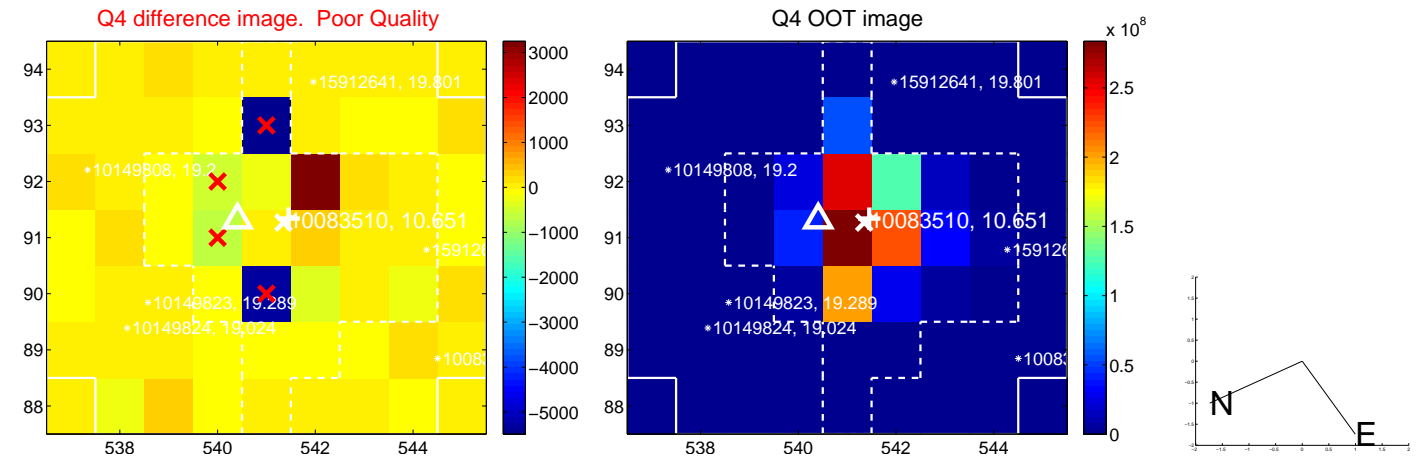
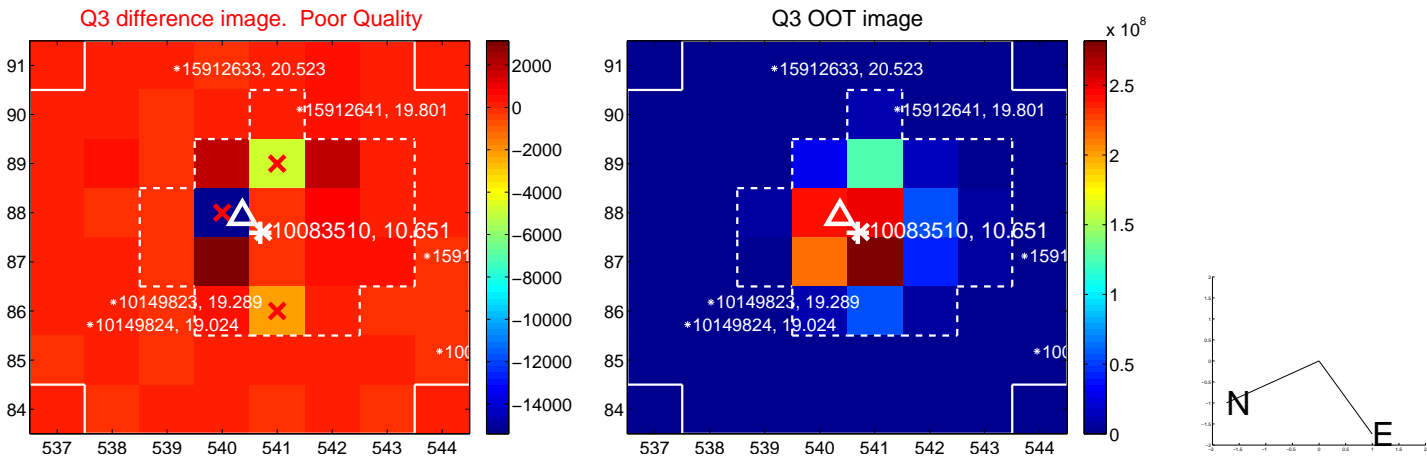
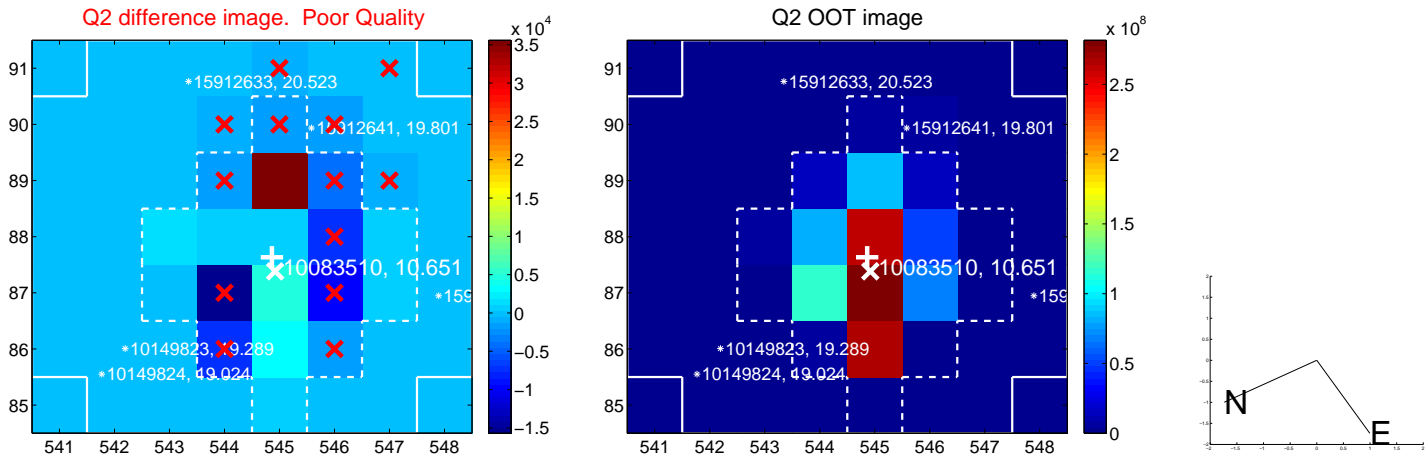
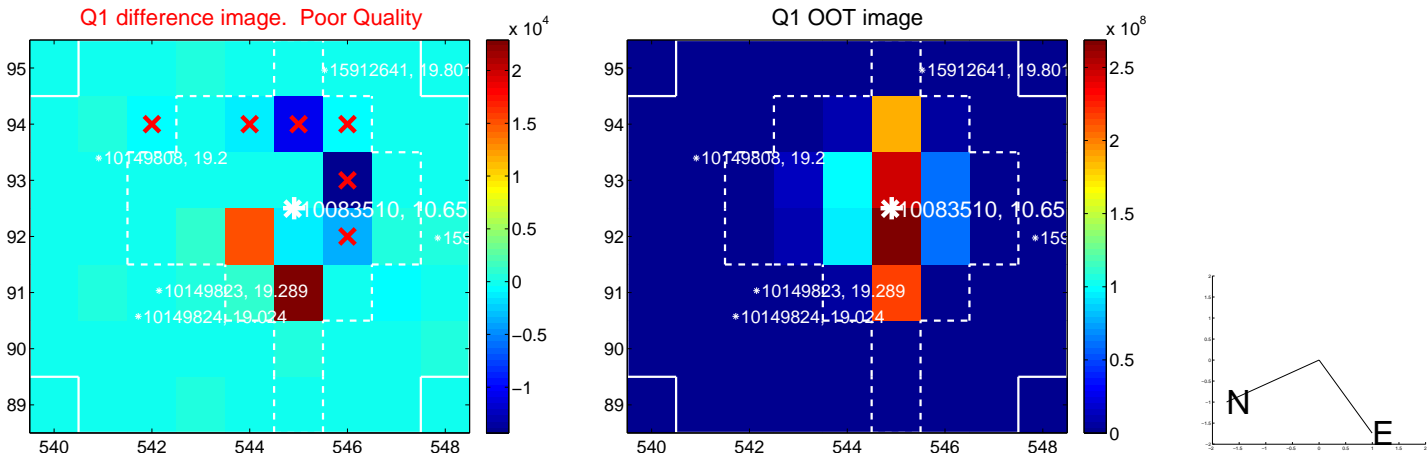


offset from photometric centroids

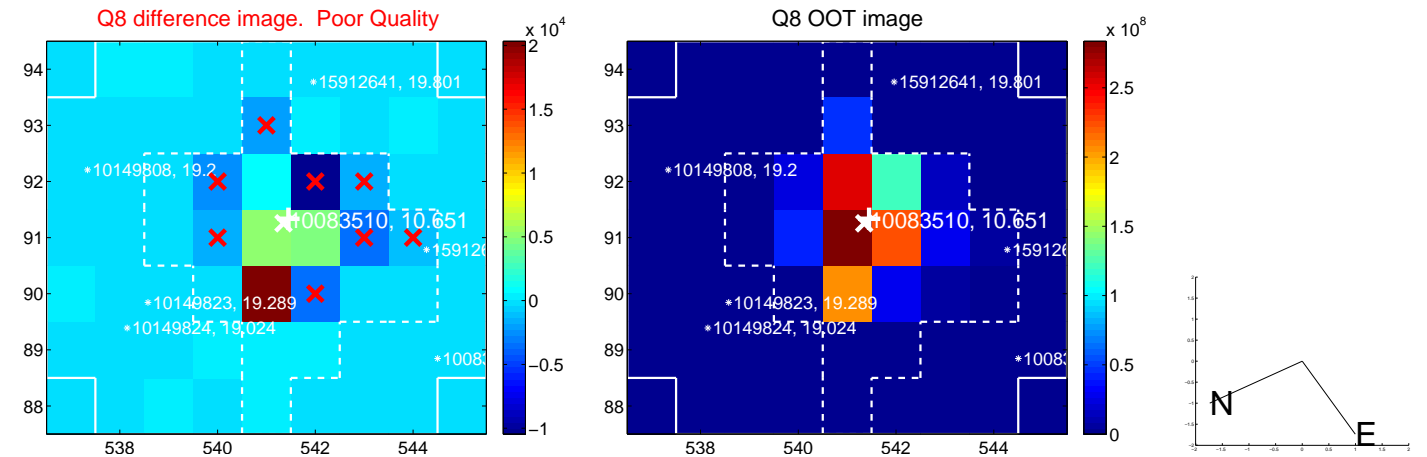
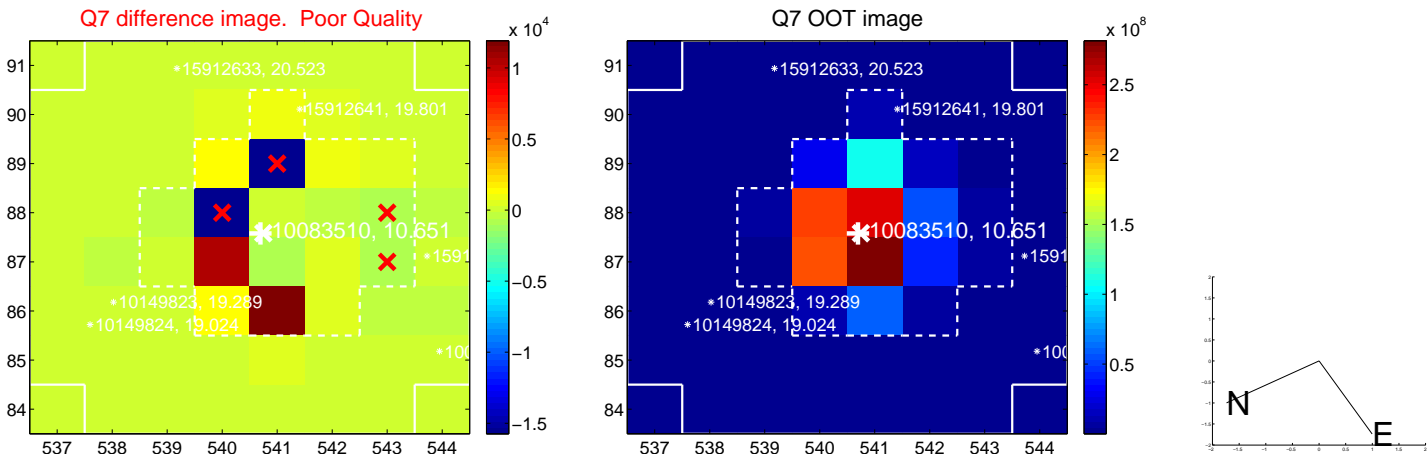
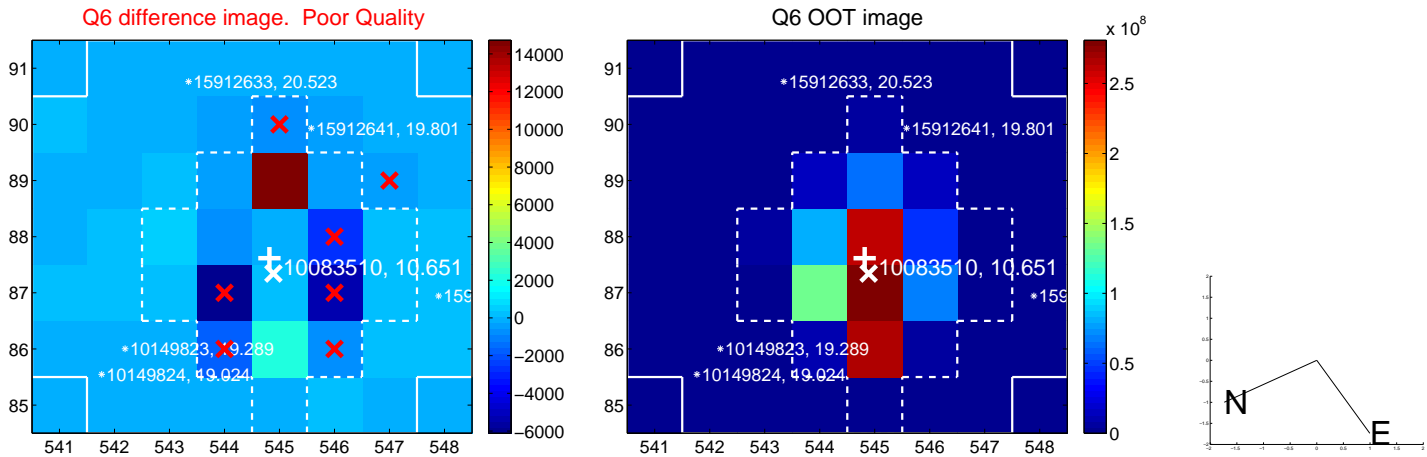
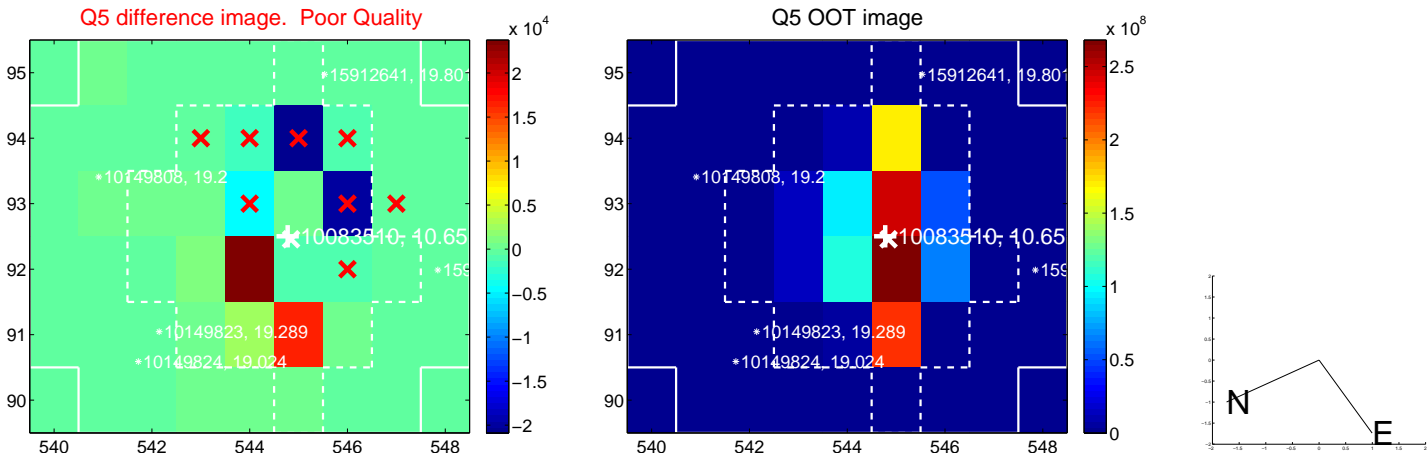


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

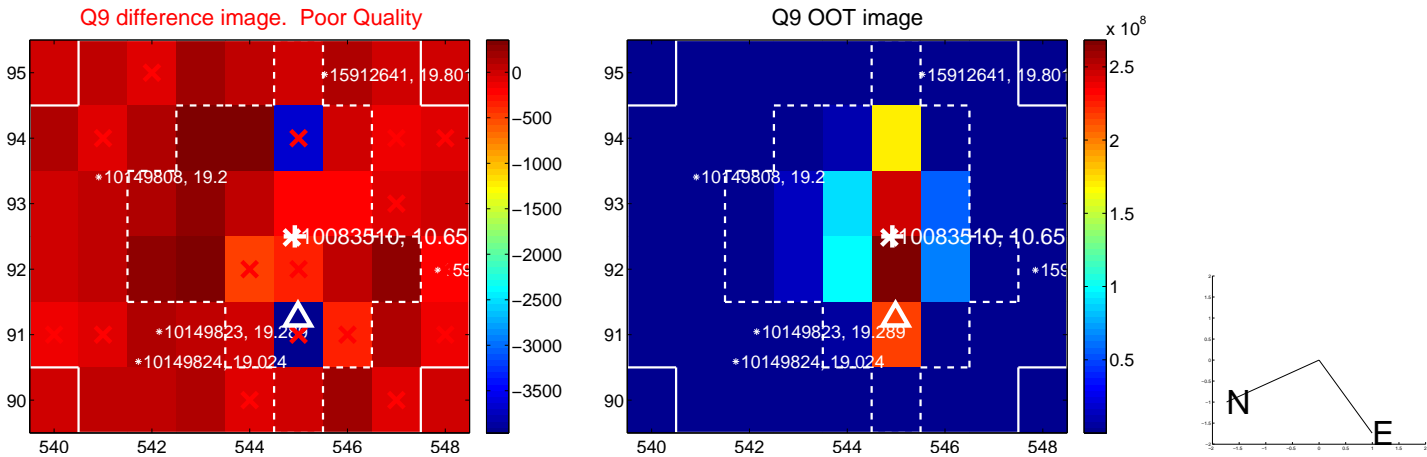
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



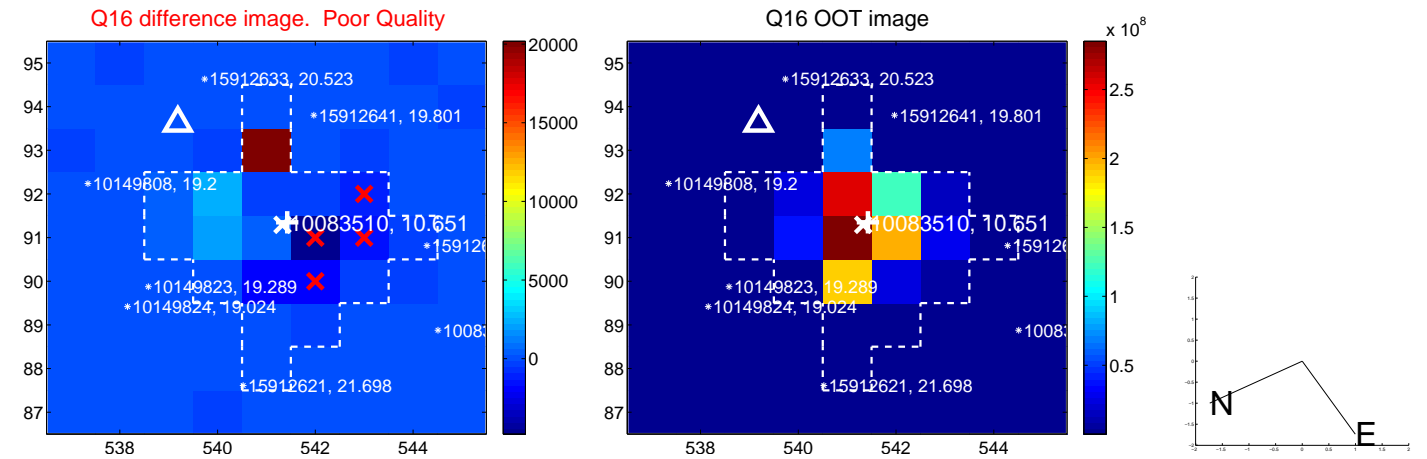
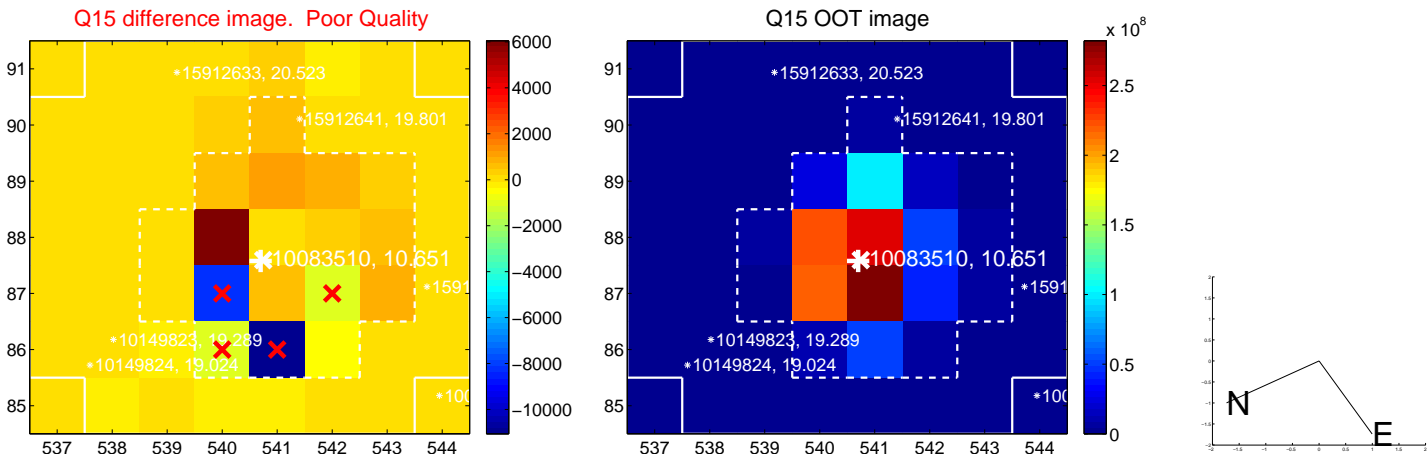
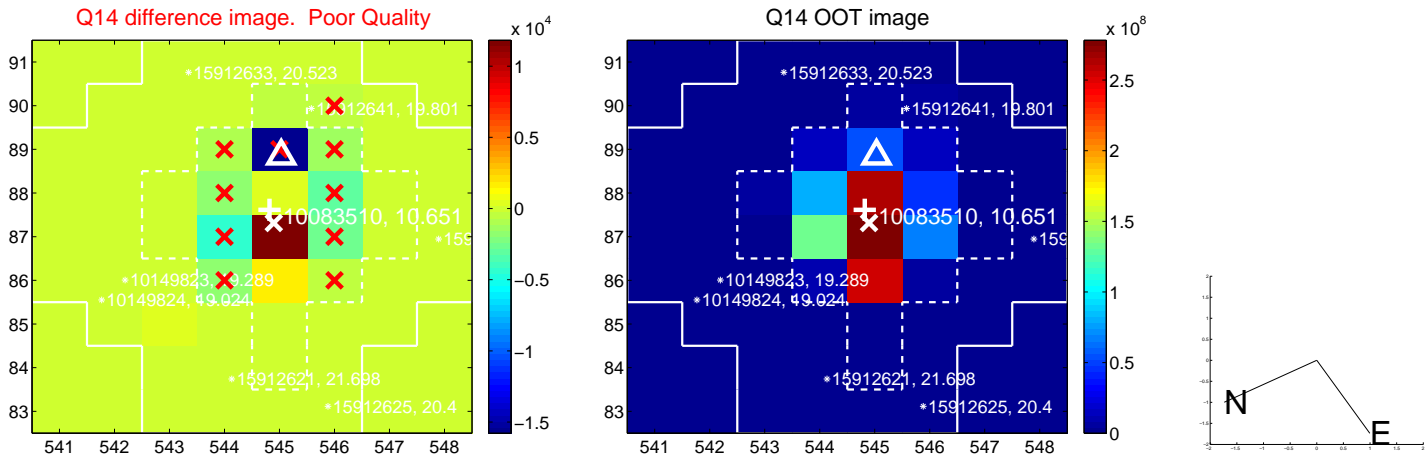
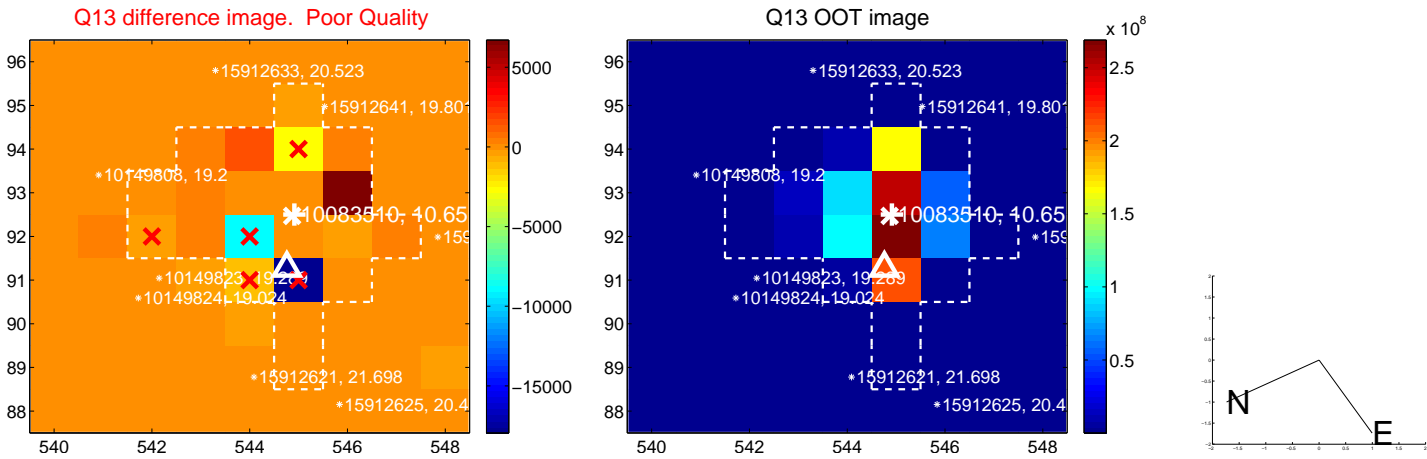
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



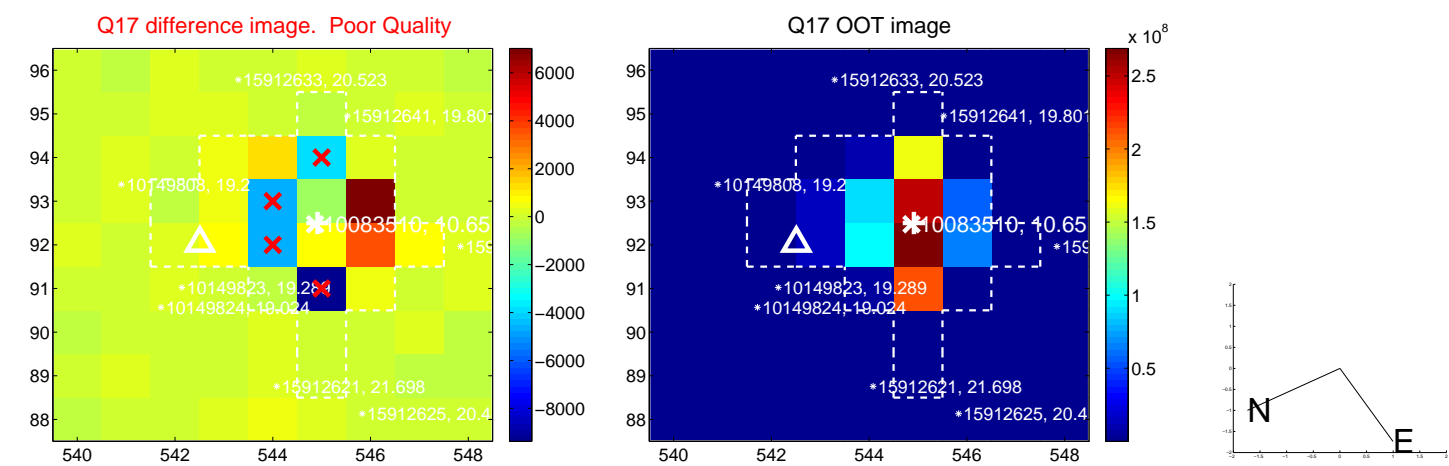
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



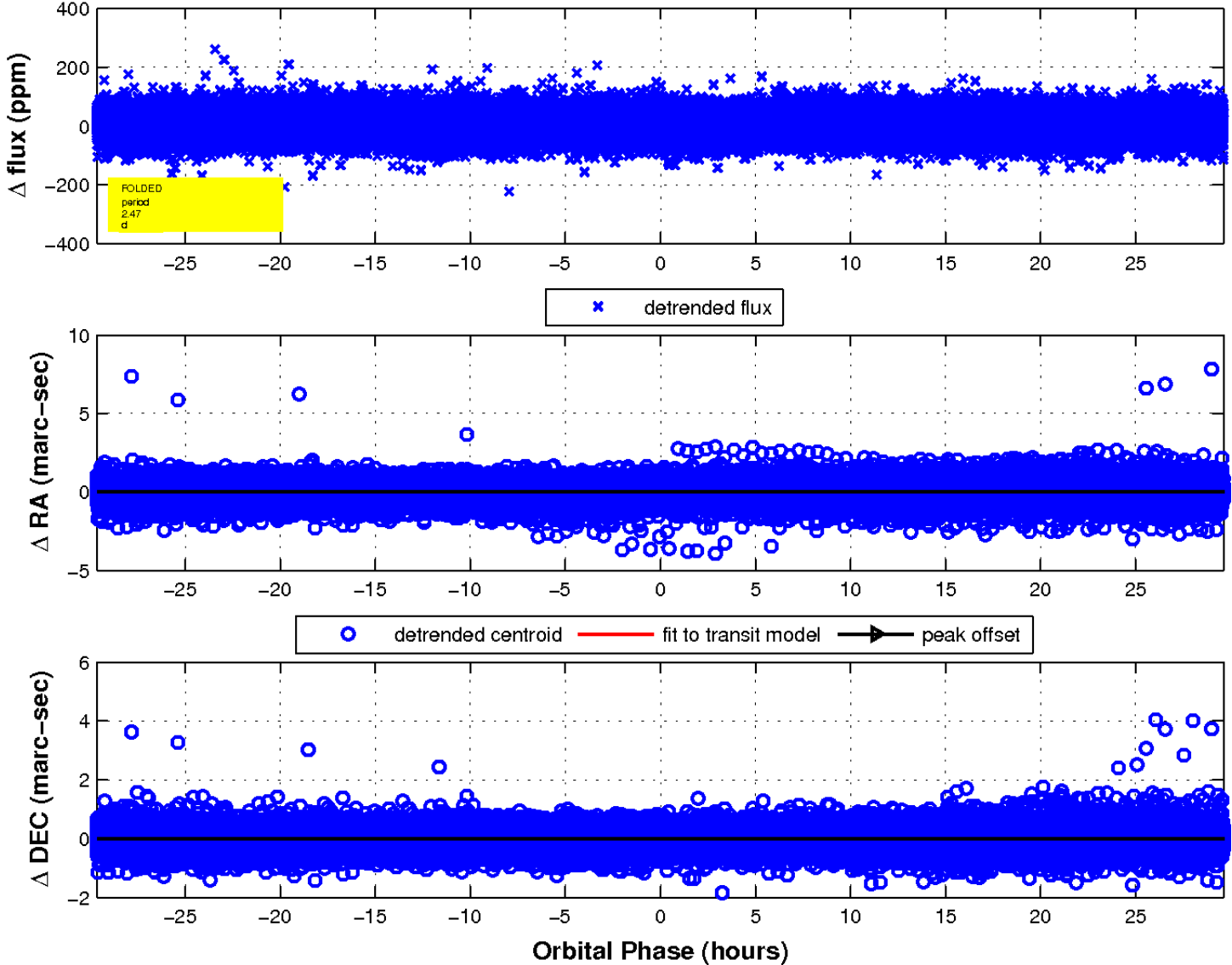
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

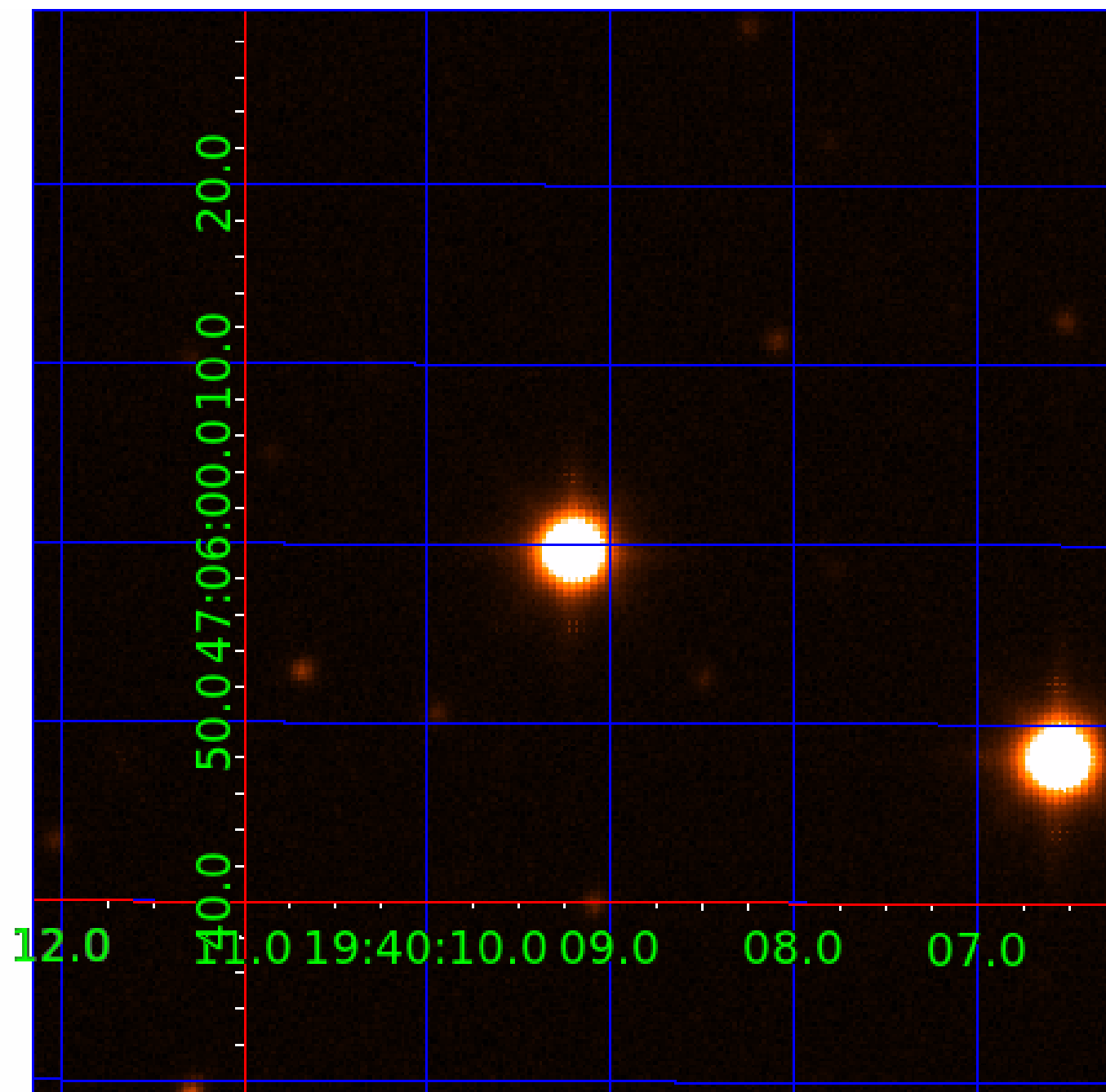


fluxWeightedCentroids, Planet 2 of 5



UKIRT Image

Declination



KIC 010083510

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})
010083510-01	OBS	No	2.470525	131.575700	37.5	9.000	13.6	-1.0	2.32	7500	1.44	7856.81
010083510-02	OBS	No	2.470392	132.191459	6.2	11.492	9.7	10.5	2.32	7500	0.67	7857.37
010083510-03	OBS	No	111.574704	191.906577	26.4	34.160	15.0	7.2	2.32	7500	1.33	48.85
010083510-04	OBS	No	103.503763	145.988243	41.8	4.726	8.1	7.8	2.32	7500	1.71	53.99
010083510-05	OBS	No	86.711756	140.203891	24.2	23.198	9.3	6.7	2.32	7500	1.31	68.37

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010083510-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_SATURATED
010083510-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
010083510-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—INCONSISTENT_TRANS—CENT_SATURATED
010083510-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—CENT_SATURATED
010083510-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_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.

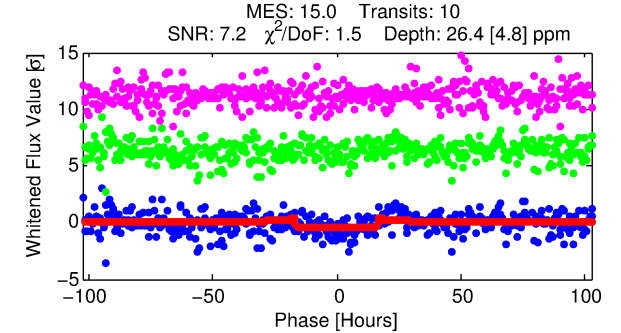
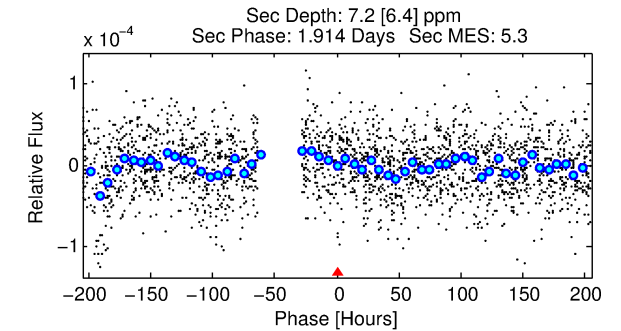
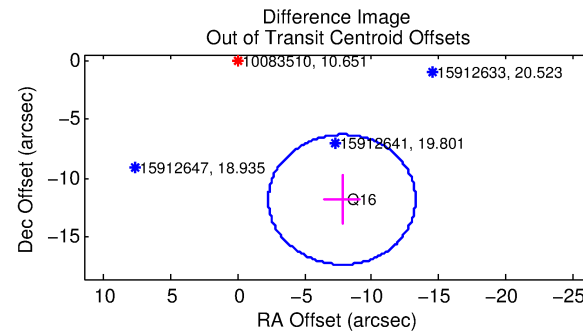
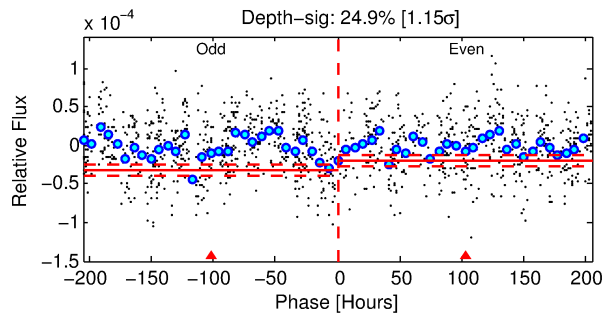
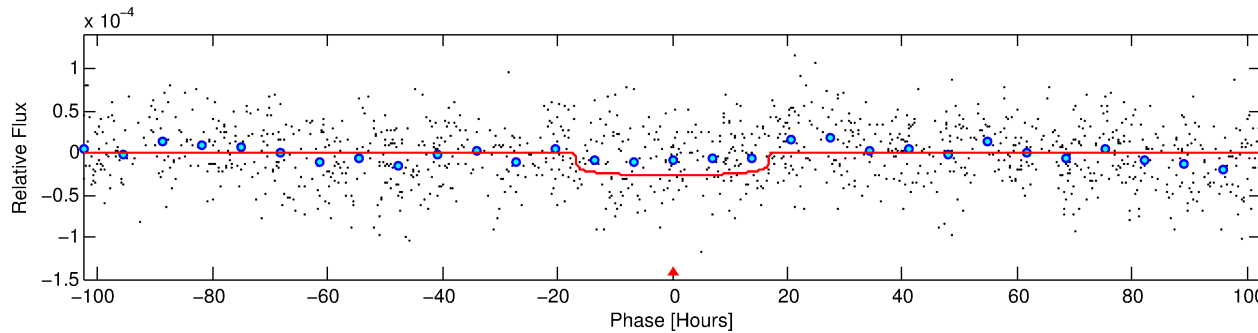
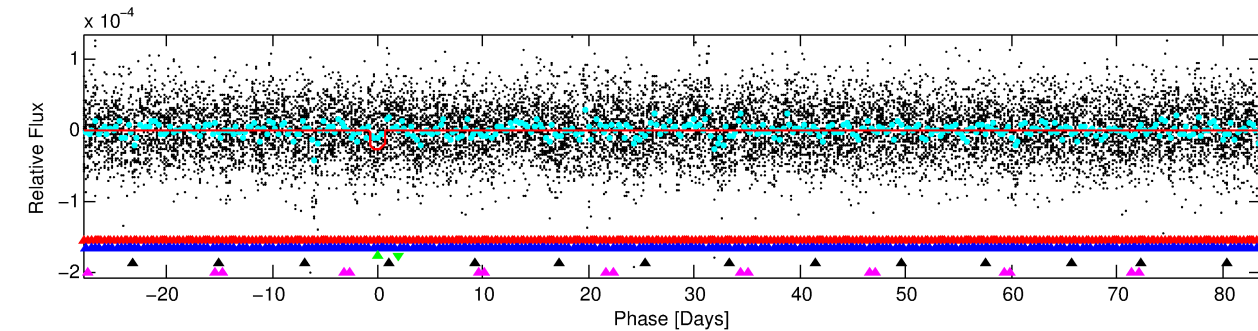
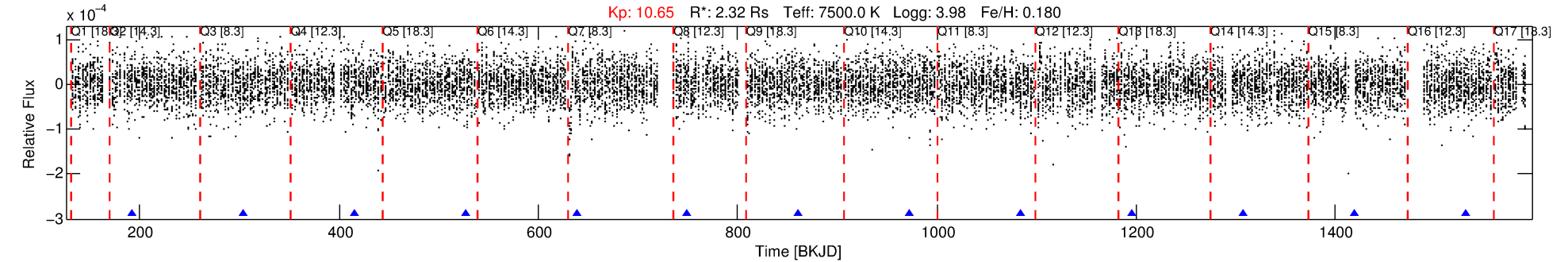
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010083510-03

No Significant Match Found

DV One-Page Summary

KIC: 10083510 Candidate: 3 of 5 Period: 111.575 d



DV Fit Results:

Period = 111.57470 [0.00532] d
Epoch = 191.9066 [0.0442] BKJD
Rp/R* = 0.0053 [0.0009]
a/R* = 13.81 [11.65]
b = 0.84 [0.30]
Seff = 48.85 [18.82]
Teq = 674 [65] K
Rp = 1.33 [0.43] Re
a = 0.5579 [0.1305] AU
Ag = 701.28 [701.31] [1.00 σ]
Teffp = 5364 [1283] K [3.65 σ]

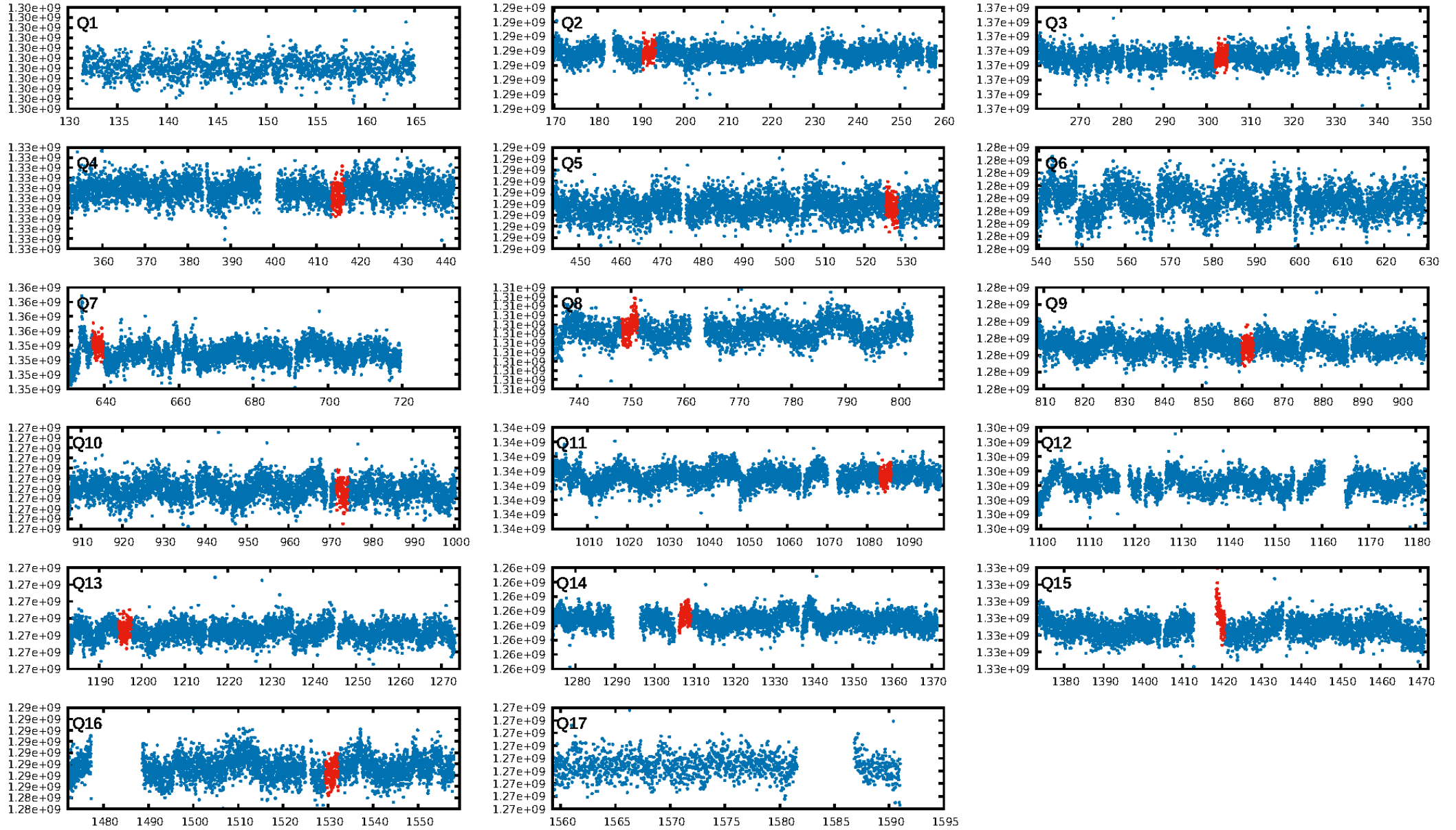
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [5.62 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.26e-21
RollingBand-fgt: 1.00 [10/10]
GhostDiagnostic-chr: 8.647
Centroid-sig: 0.1%
Centroid-so: 7.912 arcsec [3.01 σ]
OotOffset-rm: 14.126 arcsec [7.71 σ]
KicOffset-rm: 14.468 arcsec [7.86 σ]
OotOffset-st: 0/0/1/0 [1]
KicOffset-st: 0/0/1/0 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 0.00 [0/8]

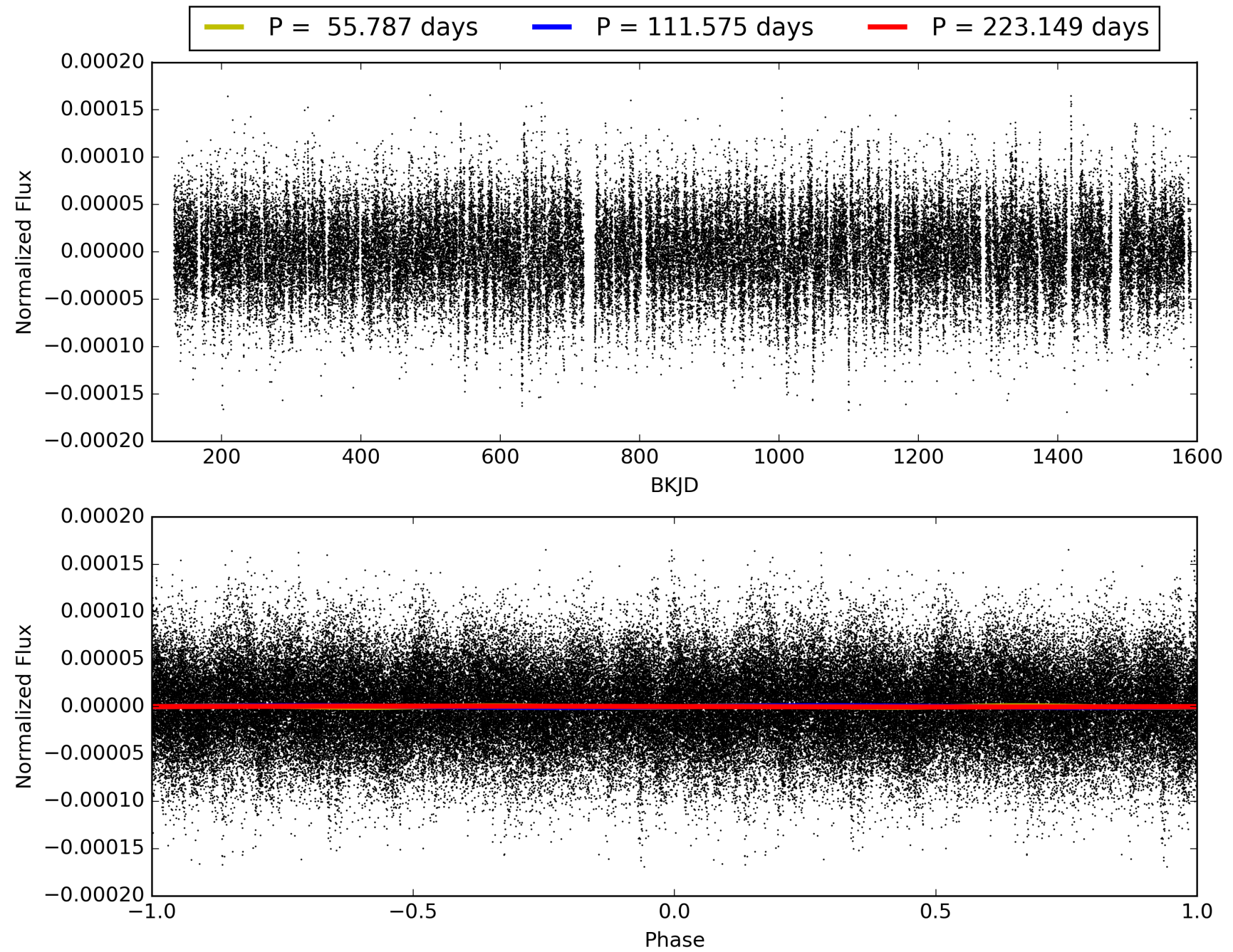
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 10:17:13 Z

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

TCE 010083510-03, PDC Light Curves

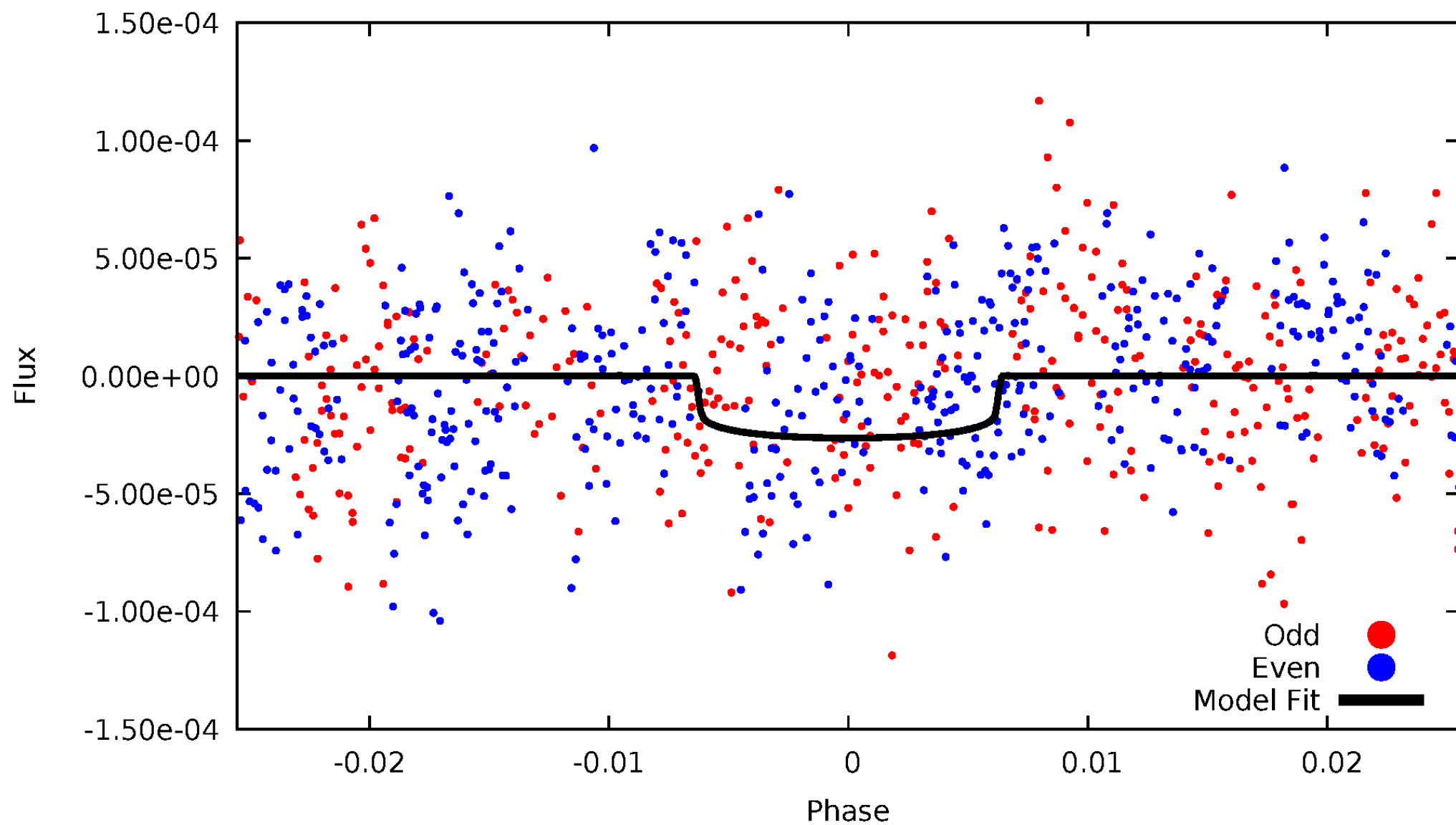


TCE 010083510-03



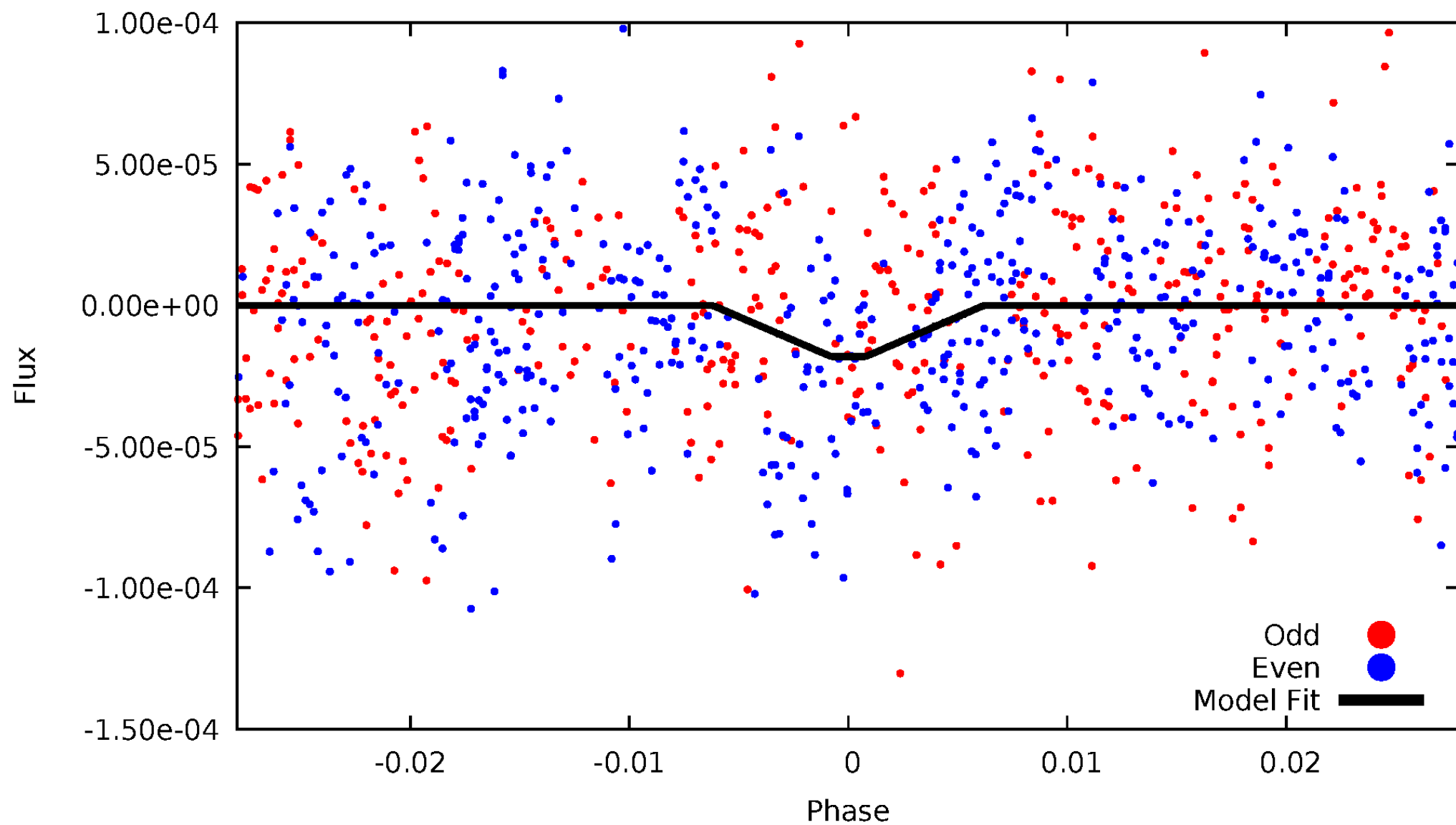
DV Odd/Even

TCE 010083510-03



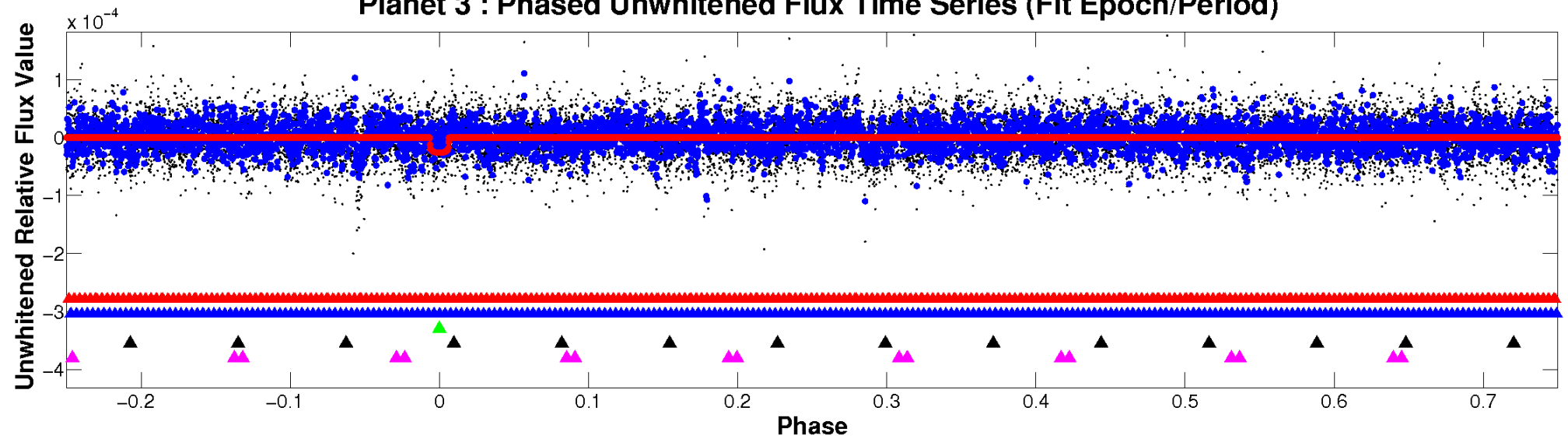
ALT Odd/Even

TCE 010083510-03

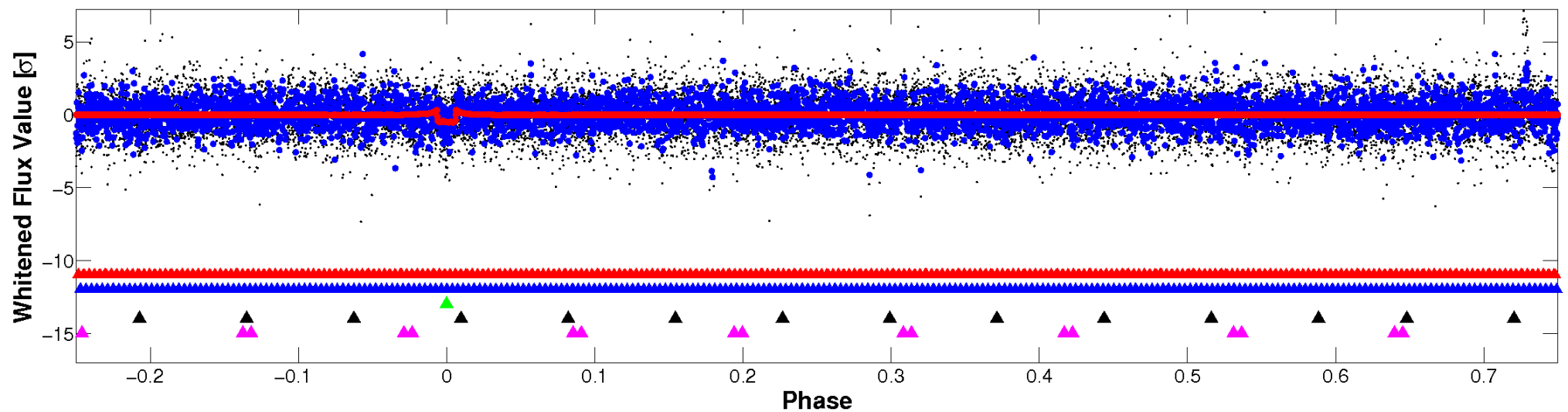


Non-Whitened Vs. Whitened Light Curve

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

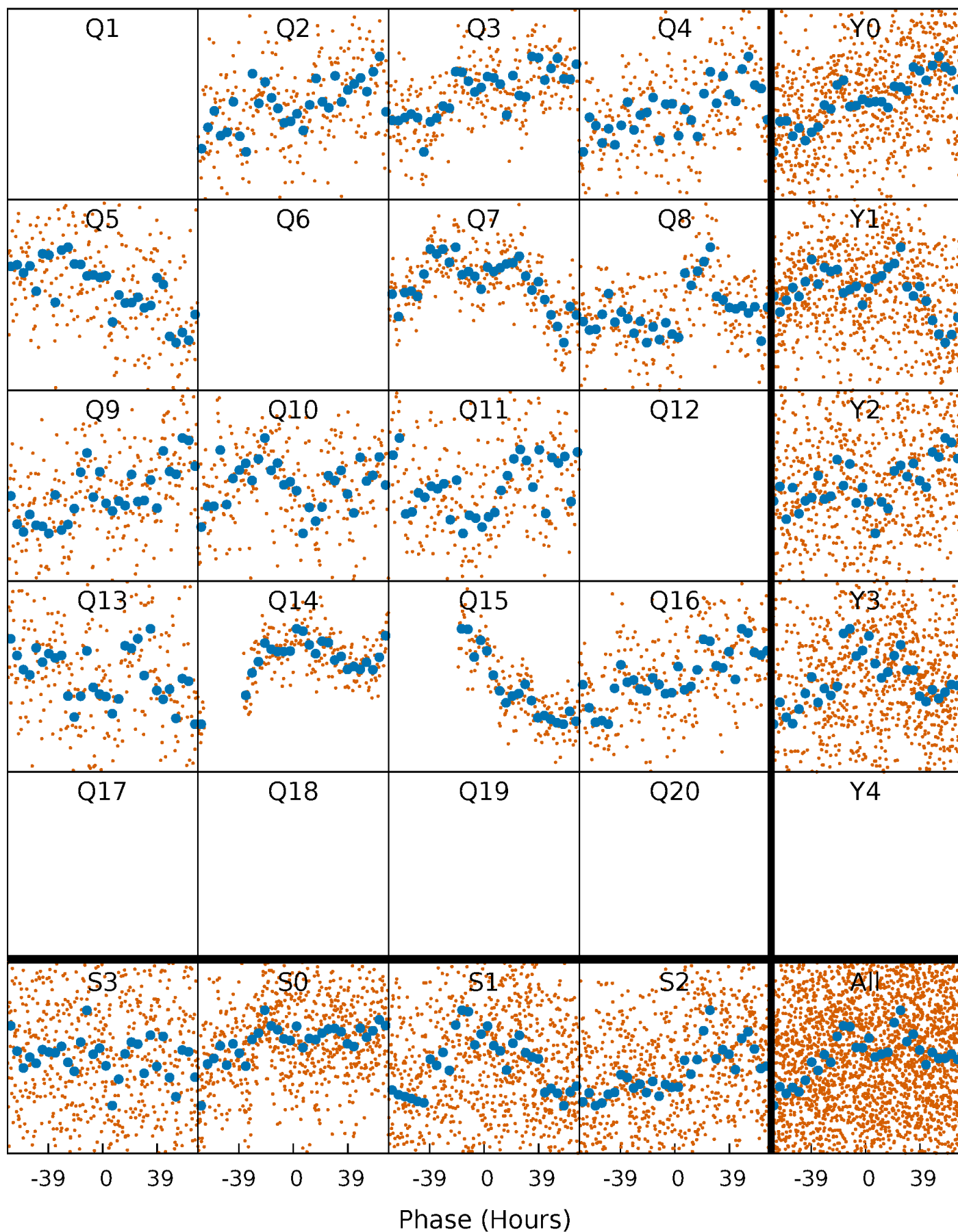


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



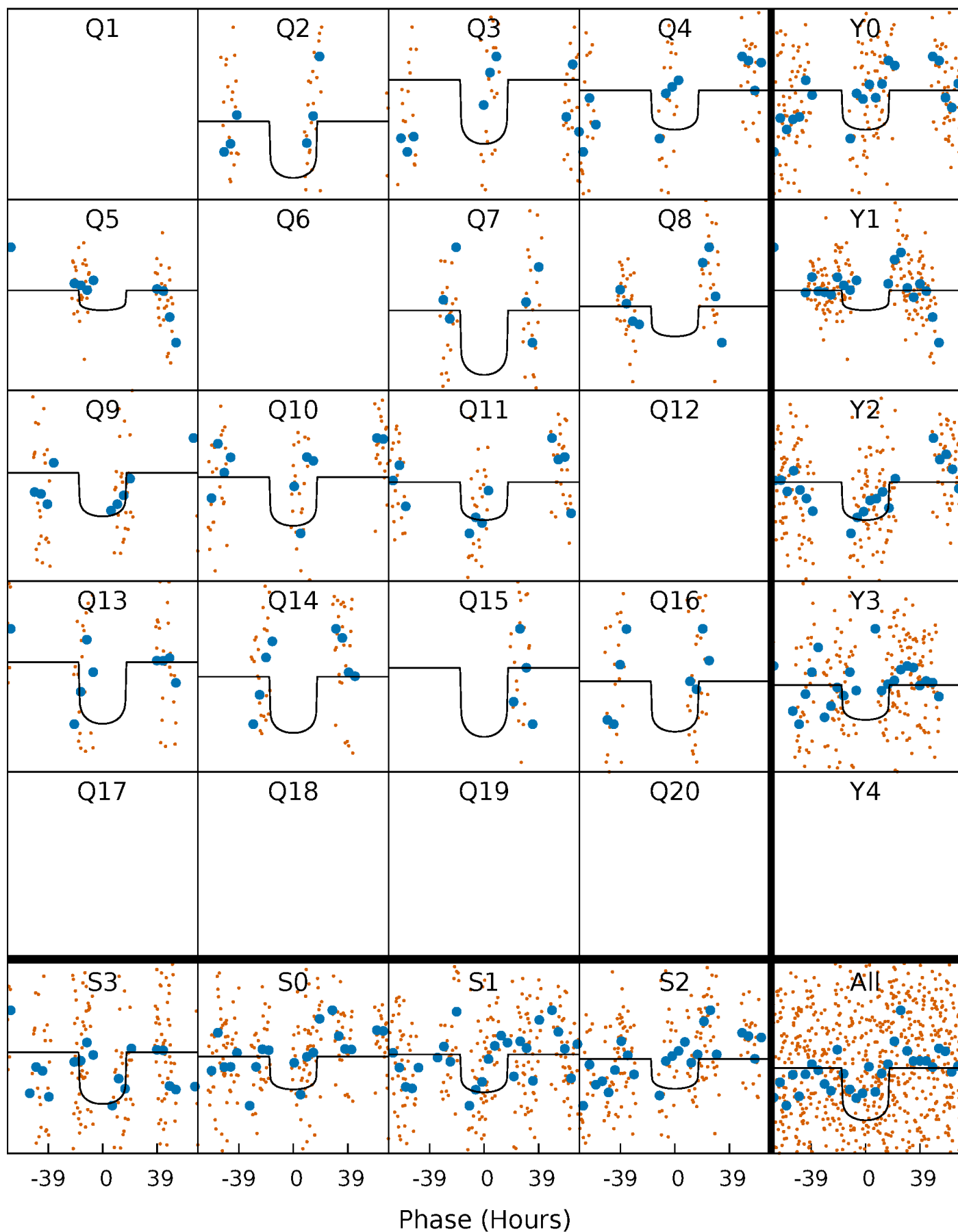
PDC Quarter-Phased Transit Curves

TCE 010083510-03 P=111.574704 Days $T_0=191.906577$ (BKJD)



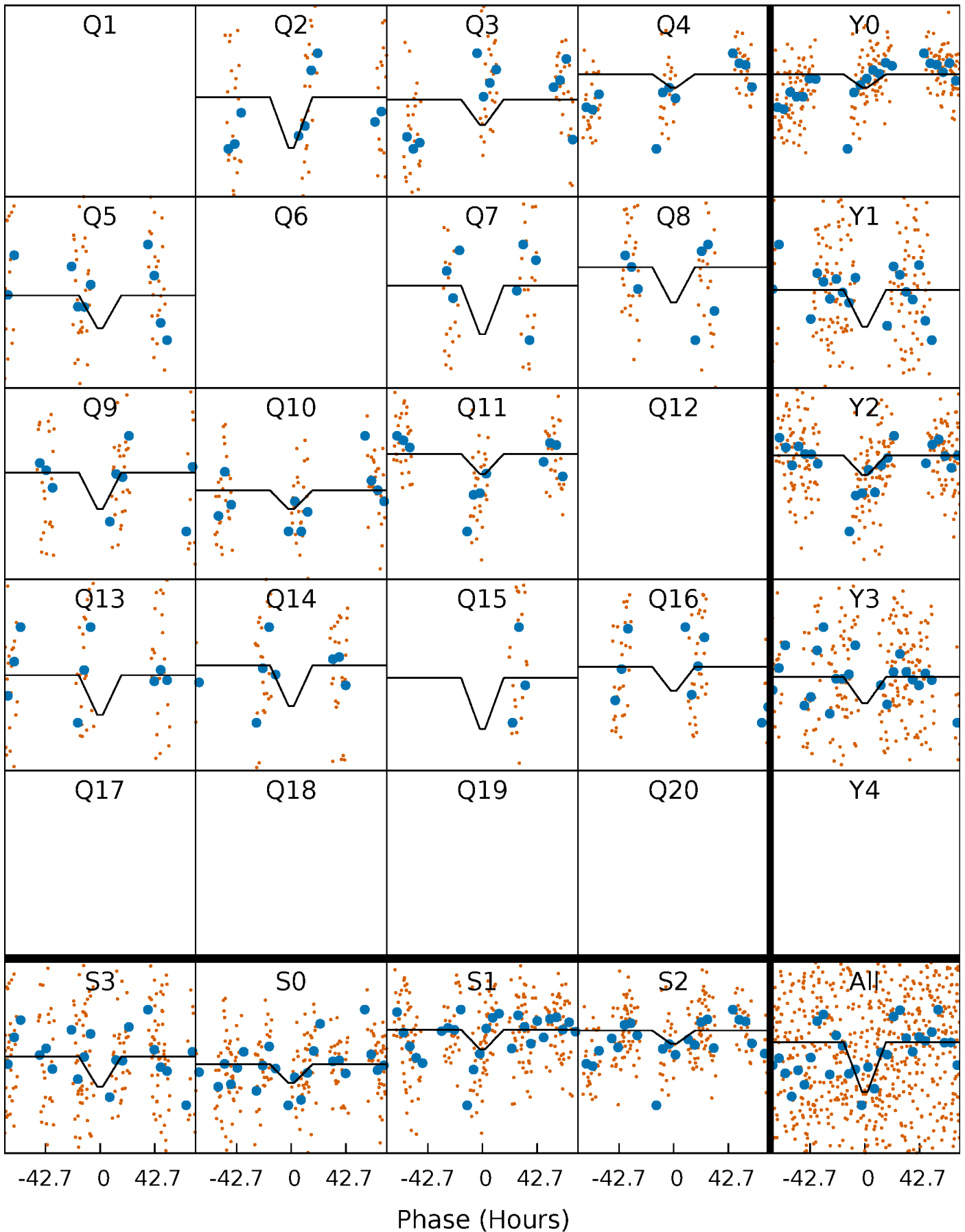
DV Quarter-Phased Transit Curves

TCE 010083510-03 P=111.574704 Days $T_0=191.906577$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

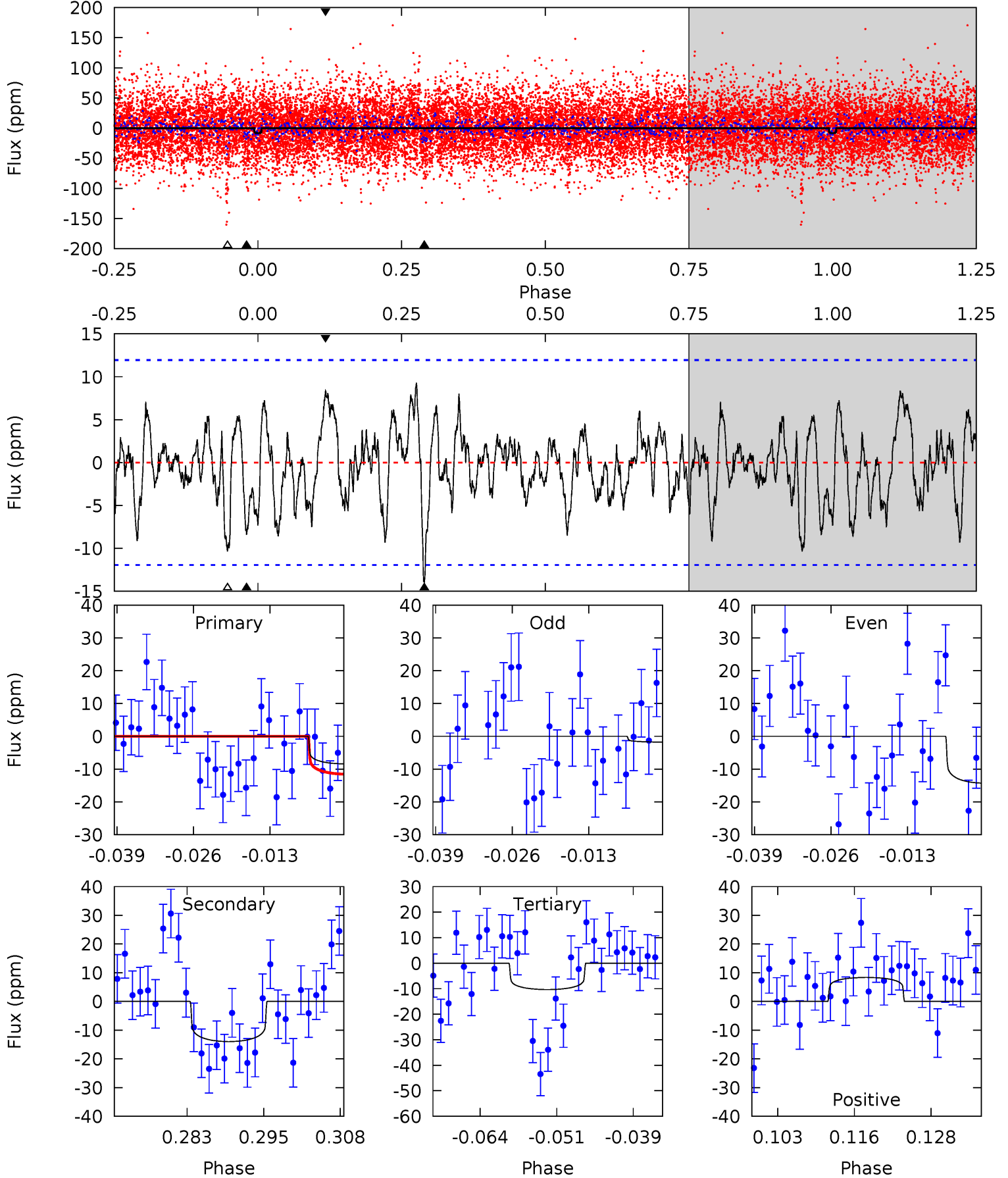
TCE 010083510-03 P=111.567238 Days $T_0=191.897544$ (BKJD)



DV Model-Shift Uniqueness Test

010083510-03, P = 111.574704 Days, E = 80.331873 Days

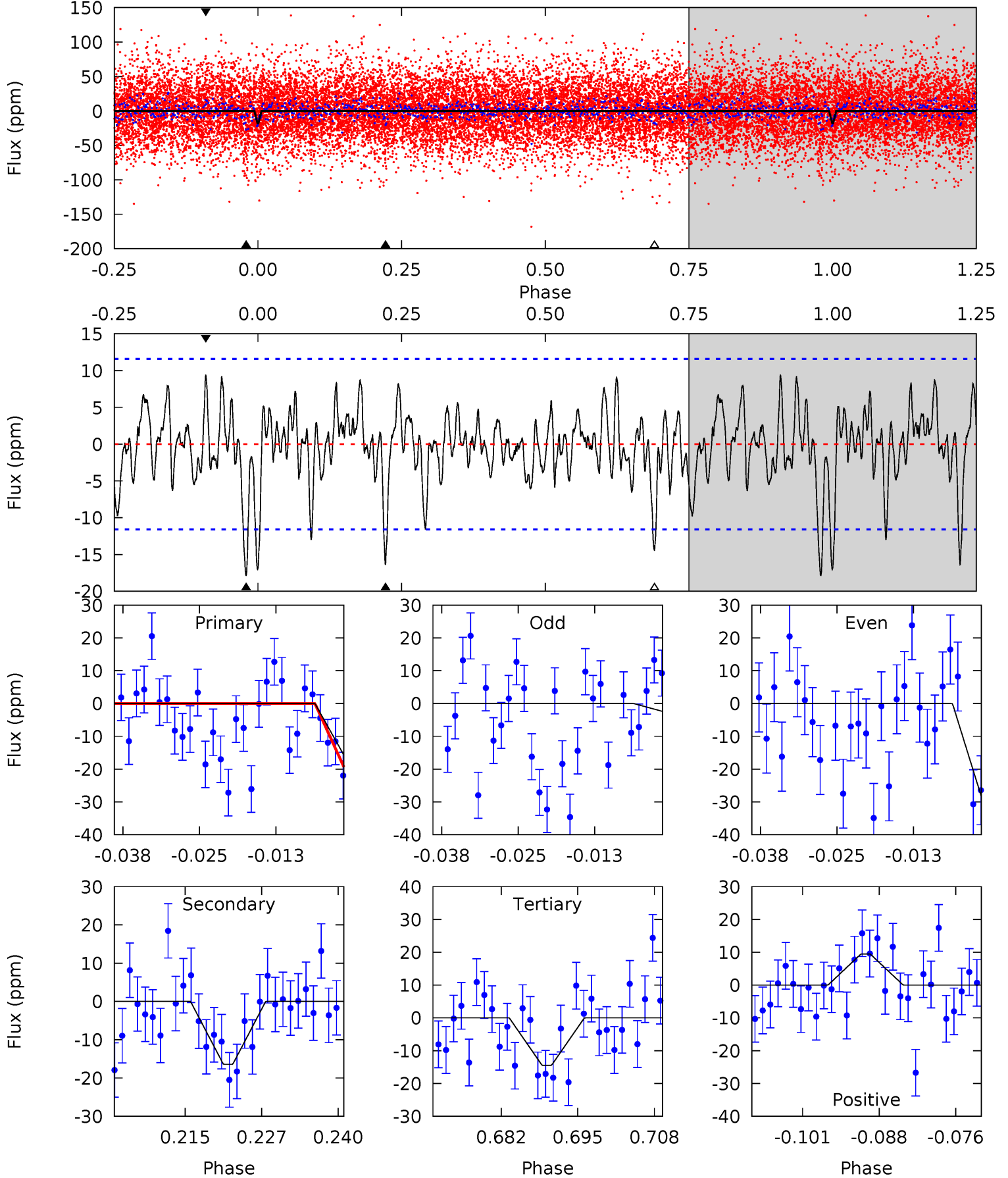
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.51	5.83	4.31	3.49	4.98	2.49	1.46	-0.80	0.02	1.52	2.34	2.62	1.29	0.40	1.22



Alt Model-Shift Uniqueness Test

010083510-03, P = 111.567238 Days, E = 80.330306 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.69	7.06	6.22	4.06	4.98	2.49	1.72	1.47	3.63	0.83	2.99	6.34	0.11	0.35	1.69



Stellar Parameters For KIC 010083510

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7500^{+206}_{-335}	$3.978^{+0.187}_{-0.153}$	$0.180^{+0.150}_{-0.350}$	$2.316^{+0.525}_{-0.642}$	$1.859^{+0.148}_{-0.346}$	$0.211^{+0.229}_{-0.088}$
	+3%/-4%	+5%/-4%	+83%/-194%	+23%/-28%	+8%/-19%	+108%/-42%
Source	KIC0	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 010083510-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-14 ± 2	$1.32^{+0.29}_{-0.27}$	939^{+63}_{-72}	6160^{+692}_{-549}	1335^{+827}_{-486}
Alt.	-16 ± 2	$1.06^{+0.28}_{-0.25}$	942^{+68}_{-78}	7219^{+1195}_{-778}	2426^{+1851}_{-915}

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 $A_{obs} \gg 1.0$

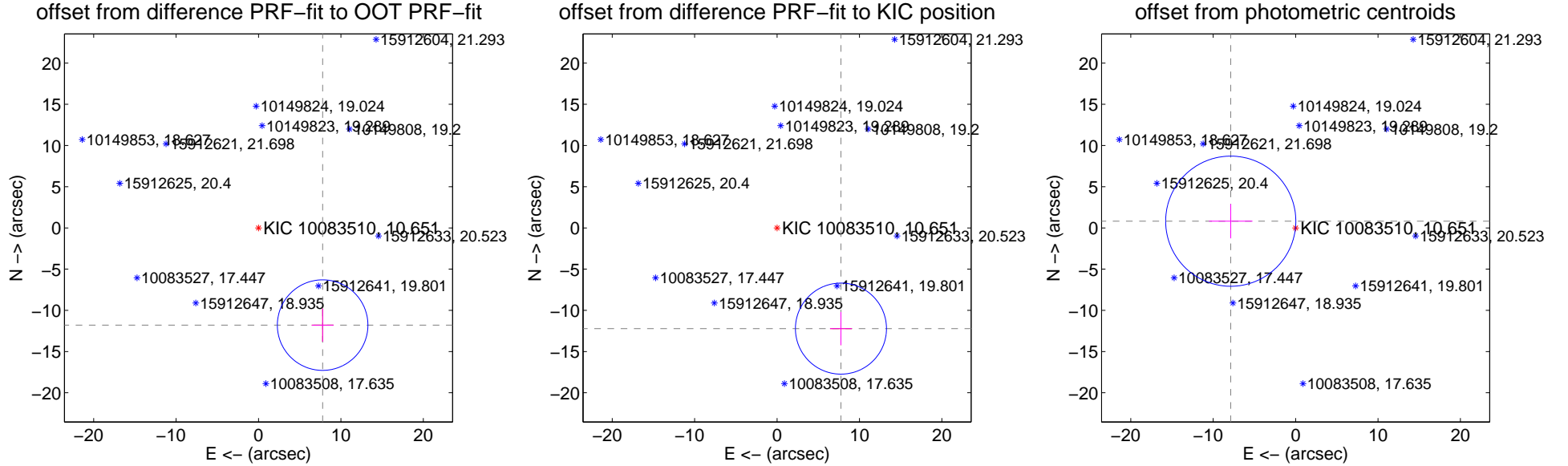
DV Centroid Data

Supplemental centroid analysis for 010083510-03. **Kepler magnitude: 10.65.** Transit SNR 7.24

There are 0 quarters with good PRF difference image offsets

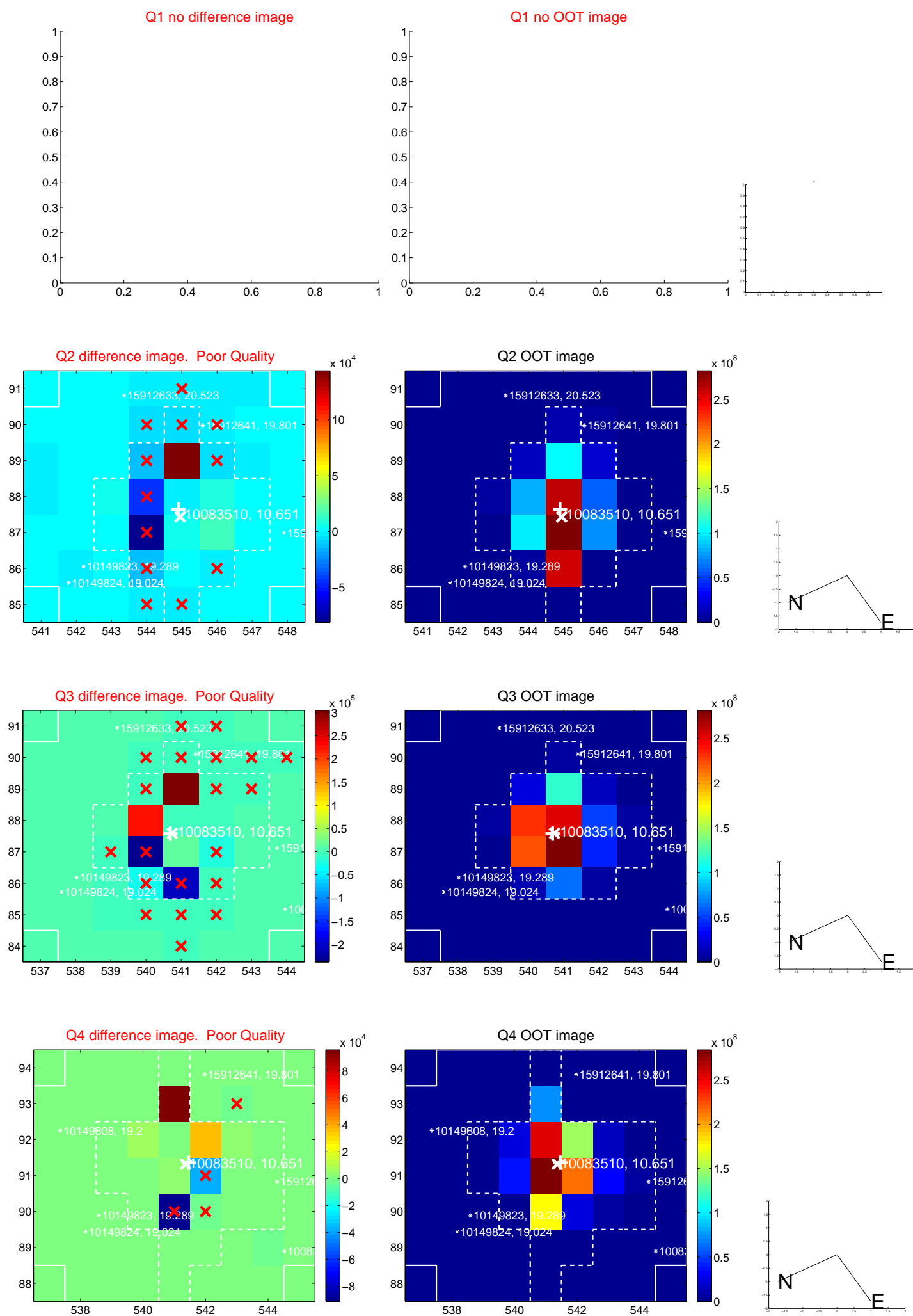
The direct PRF centroid is offset from the target star catalog position by about 0.43 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	14.126 \pm 1.831	7.71	-7.780 \pm 1.324	-11.791 \pm 2.012
PRF-fit source offset from KIC position	14.468 \pm 1.841	7.86	-7.753 \pm 1.324	-12.216 \pm 2.012
photometric centroid source offset	7.91 \pm 2.63	3.01	7.87 \pm 2.64	0.82 \pm 2.08

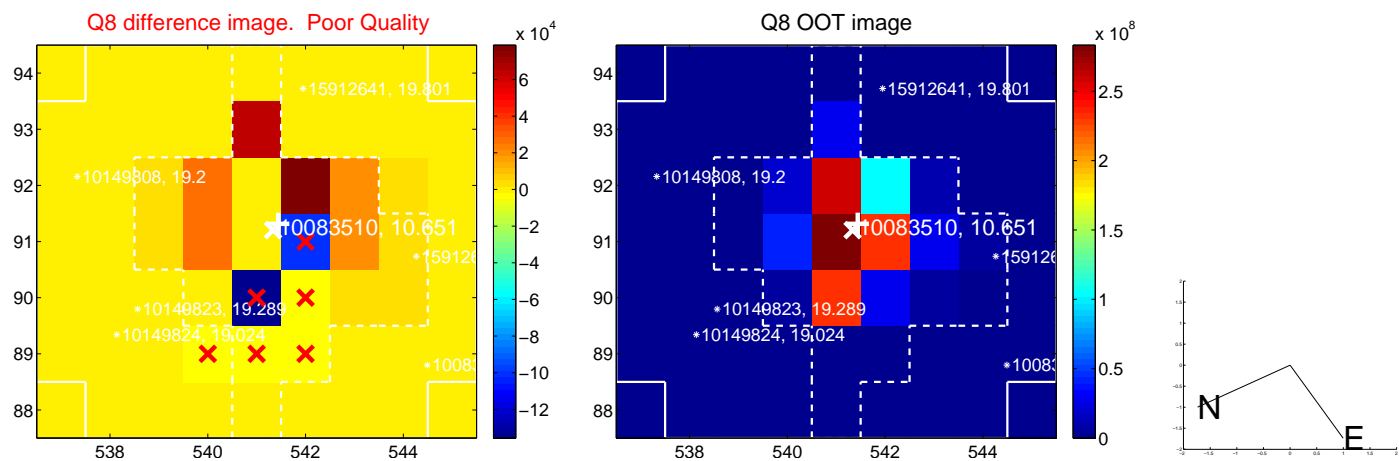
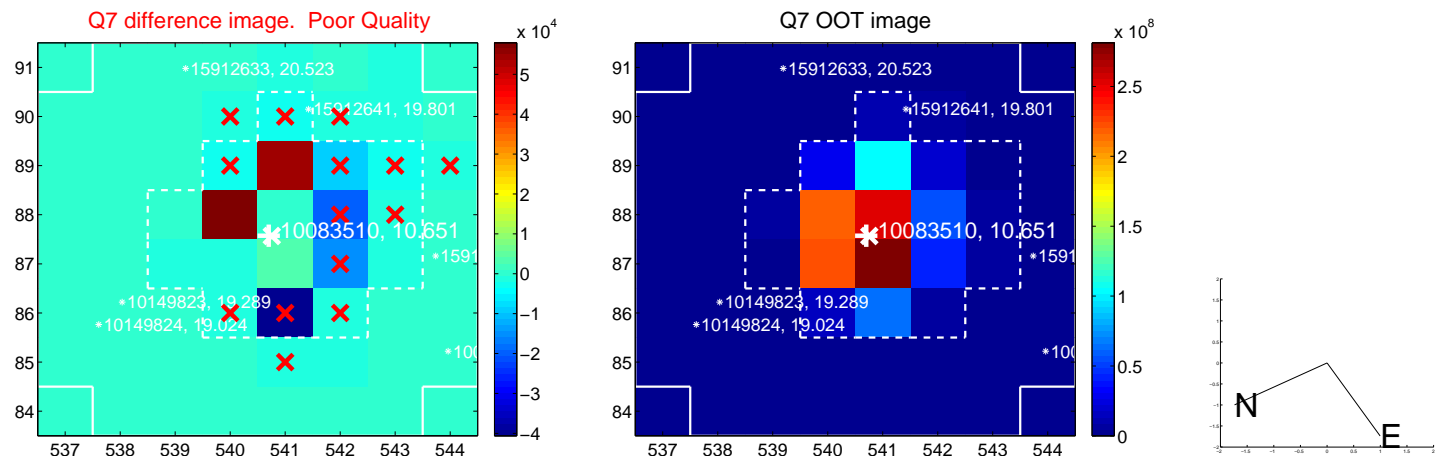
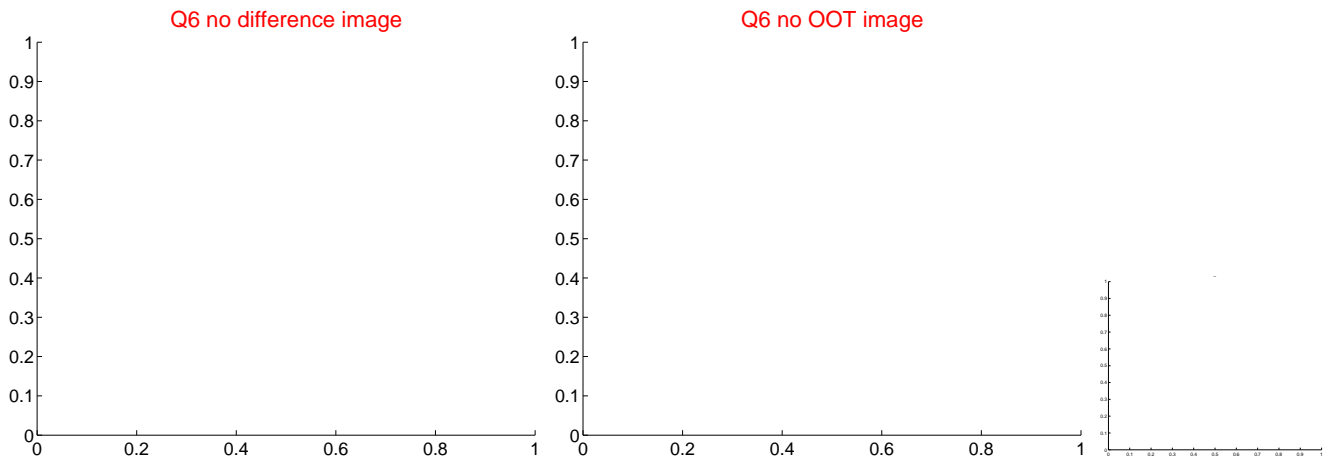
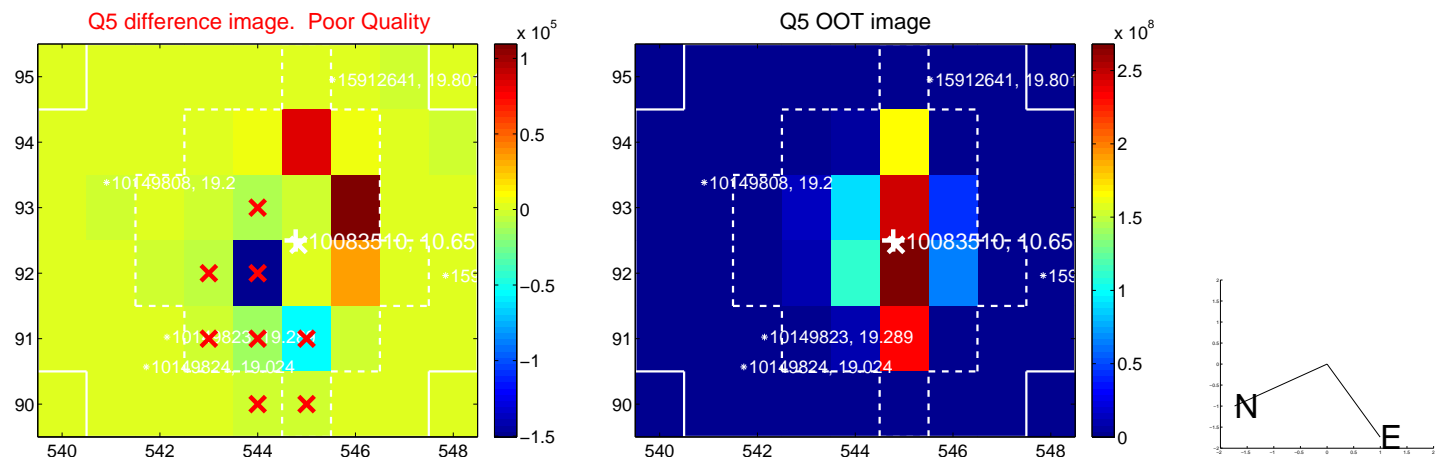


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

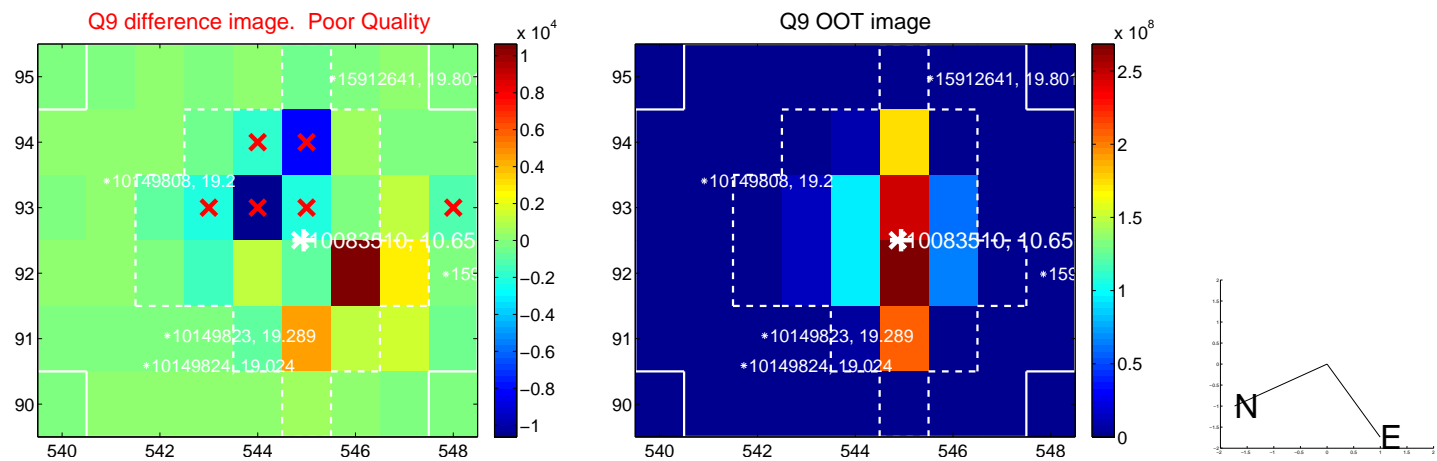
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



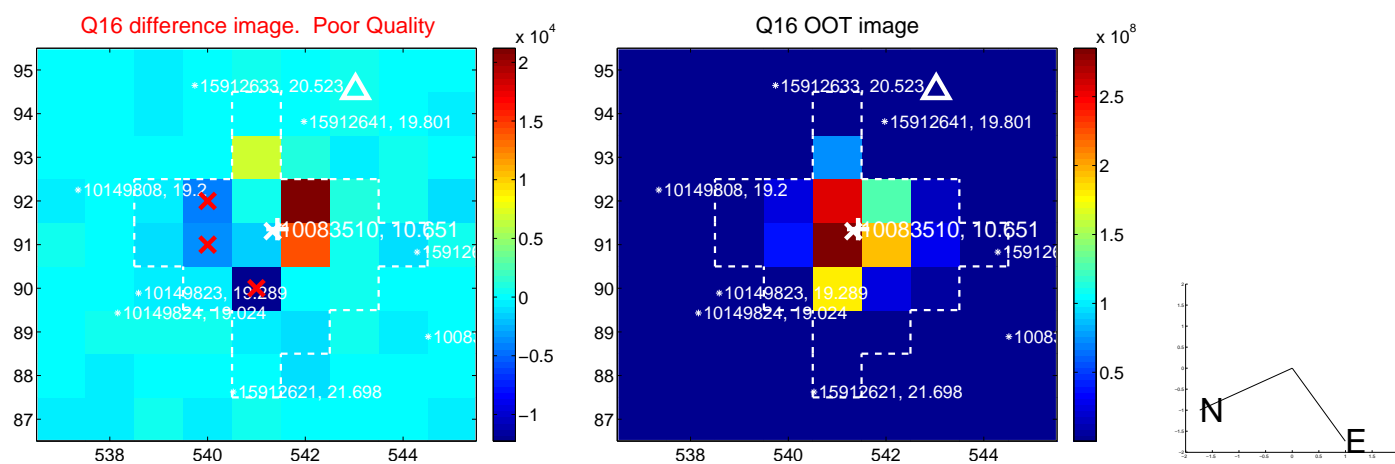
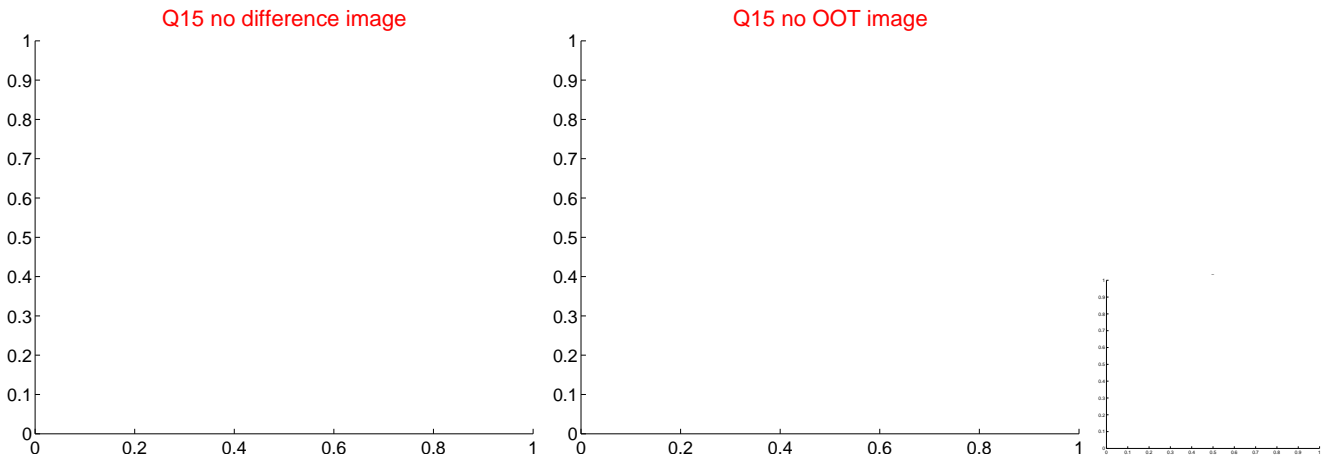
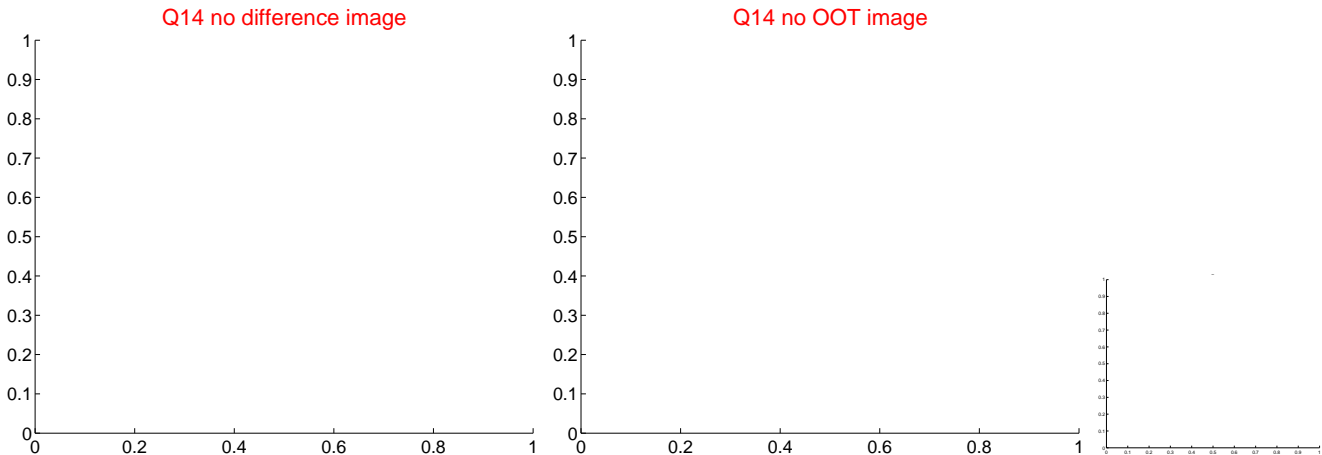
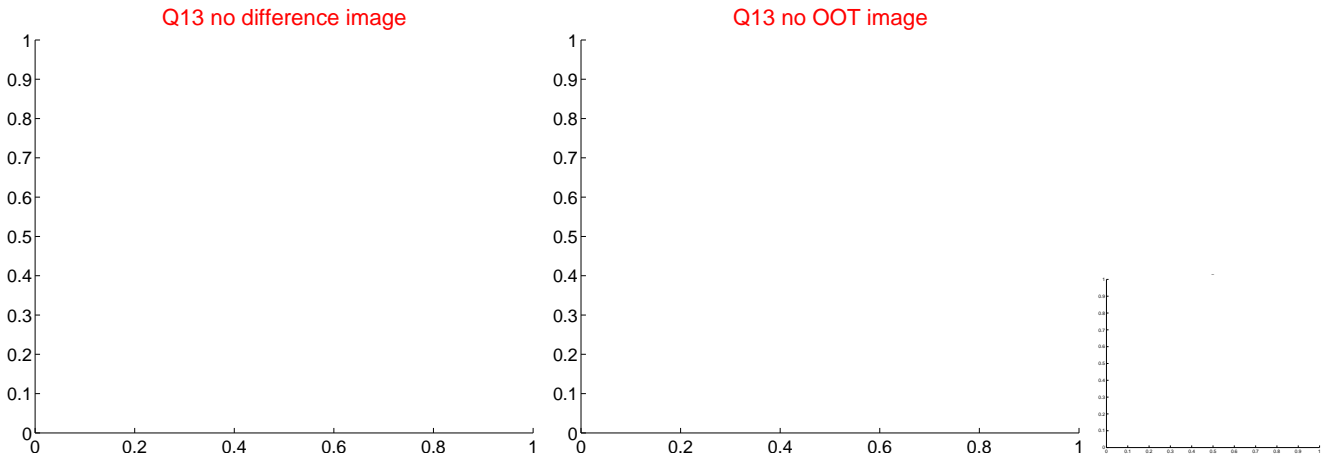
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



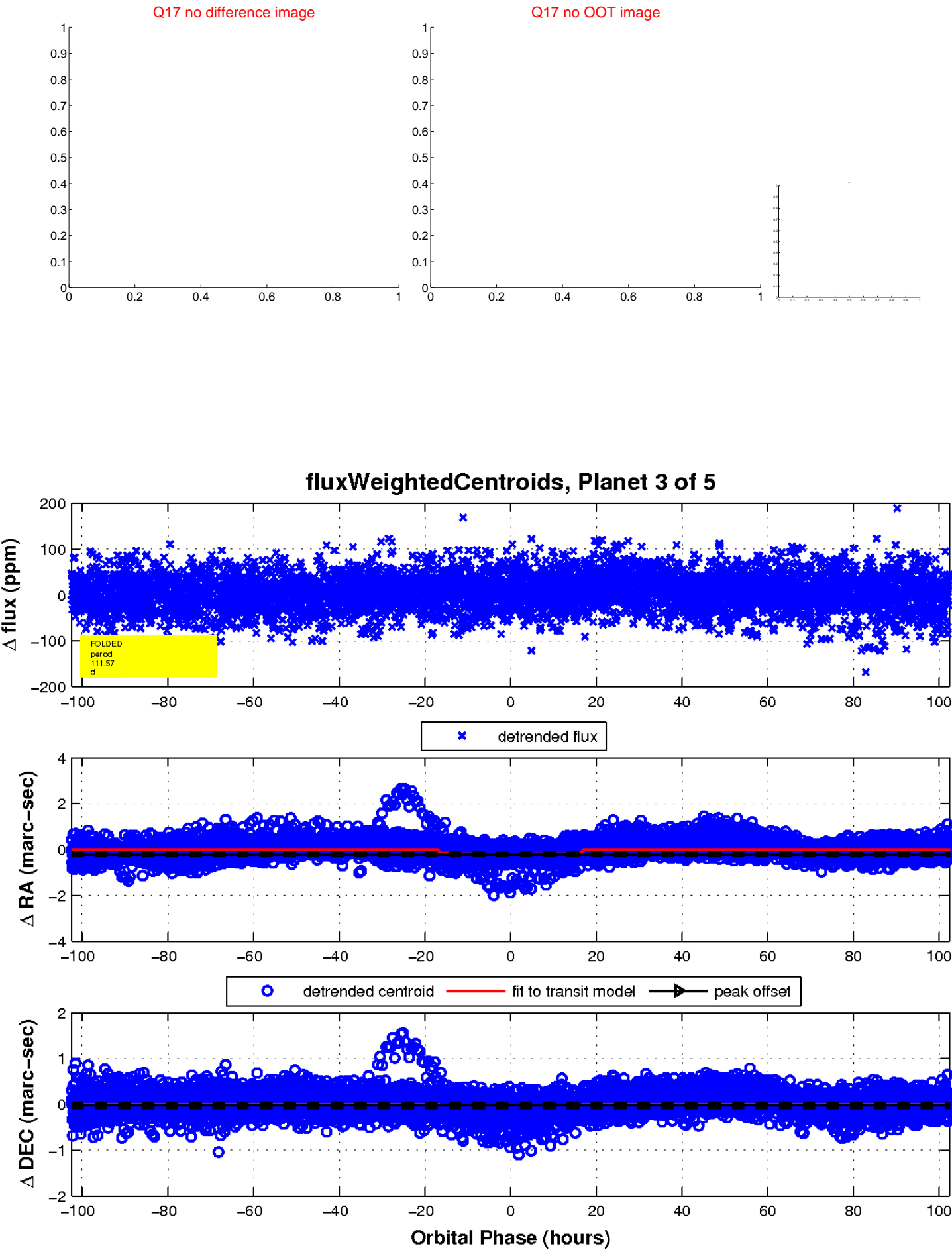
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

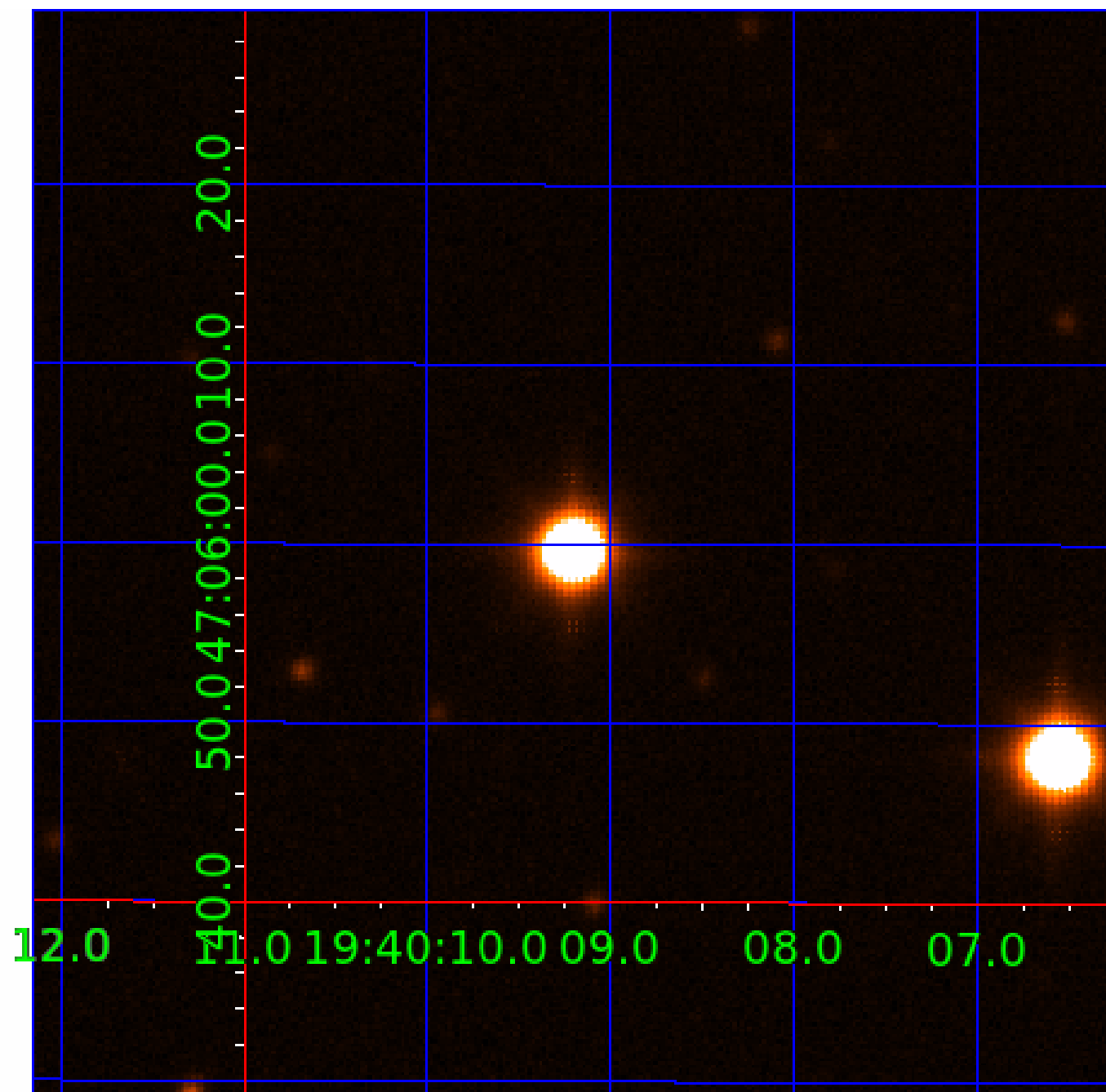


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010083510

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})
010083510-01	OBS	No	2.470525	131.575700	37.5	9.000	13.6	-1.0	2.32	7500	1.44	7856.81
010083510-02	OBS	No	2.470392	132.191459	6.2	11.492	9.7	10.5	2.32	7500	0.67	7857.37
010083510-03	OBS	No	111.574704	191.906577	26.4	34.160	15.0	7.2	2.32	7500	1.33	48.85
010083510-04	OBS	No	103.503763	145.988243	41.8	4.726	8.1	7.8	2.32	7500	1.71	53.99
010083510-05	OBS	No	86.711756	140.203891	24.2	23.198	9.3	6.7	2.32	7500	1.31	68.37

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010083510-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_SATURATED
010083510-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
010083510-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—INCONSISTENT_TRANS—CENT_SATURATED
010083510-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—CENT_SATURATED
010083510-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_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.

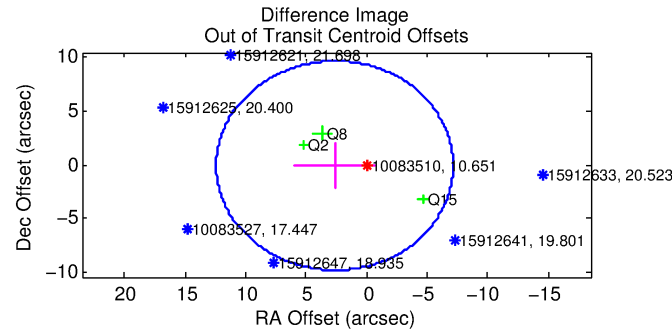
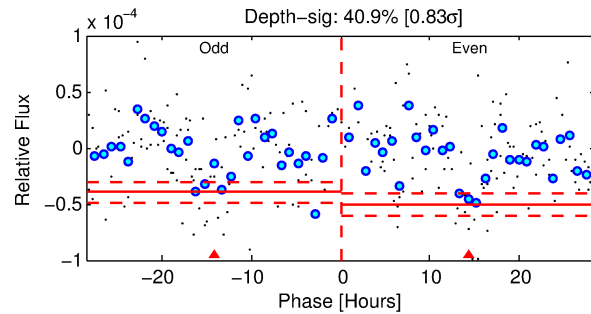
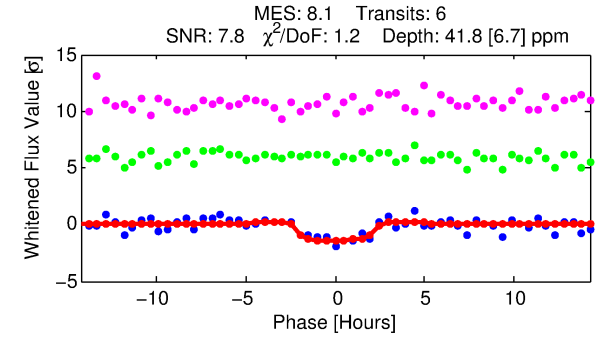
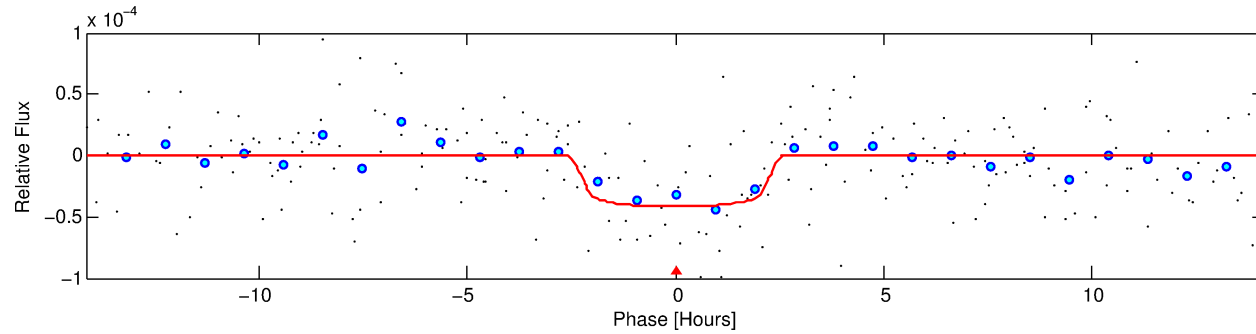
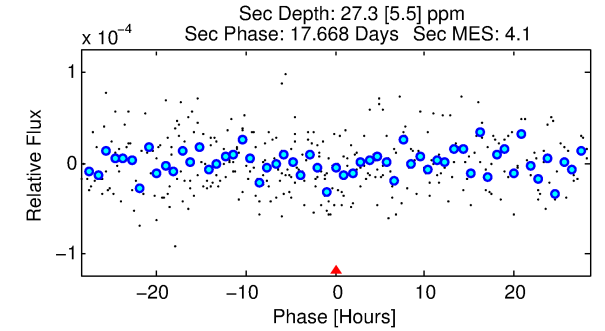
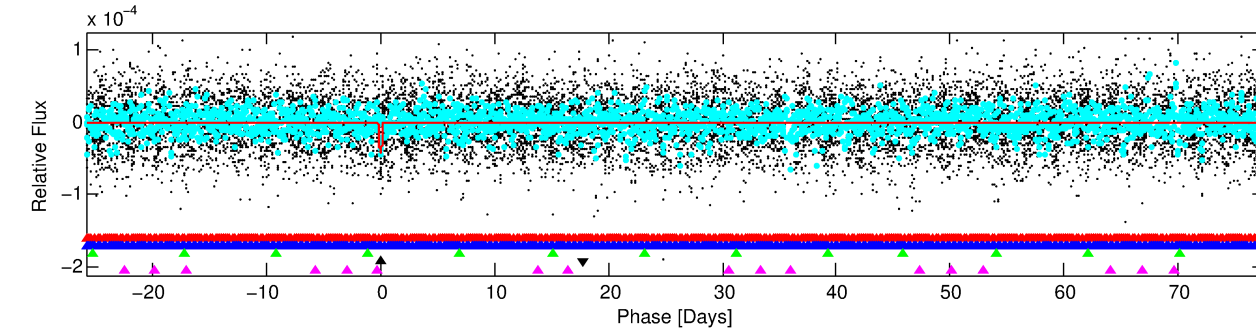
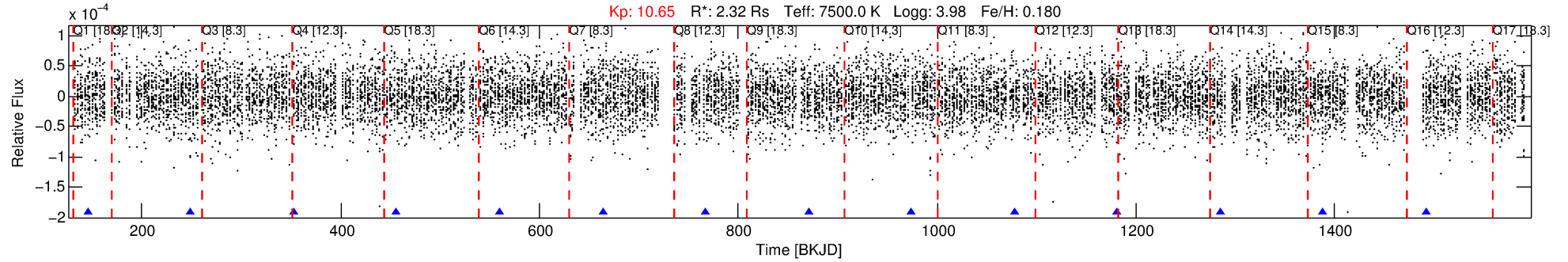
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010083510-04

No Significant Match Found

DV One-Page Summary

KIC: 10083510 Candidate: 4 of 5 Period: 103.504 d



DV Fit Results:

Period = 103.50376 [0.00142] d
Epoch = 145.9882 [0.0135] BKJD
 $R_p/R^* = 0.0068$ [0.0039]
 $a/R^* = 81.28$ [313.73]
 $b = 0.88$ [0.98]
Seff = 54.00 [20.81]
 $T_{\text{eq}} = 691$ [67] K
 $R_p = 1.71$ [1.10] R_e
 $a = 0.5307$ [0.1242] AU
 $A_g = 1446.72$ [1782.48] [0.81 σ]
 $T_{\text{eff}} = 6591$ [1973] K [2.99 σ]

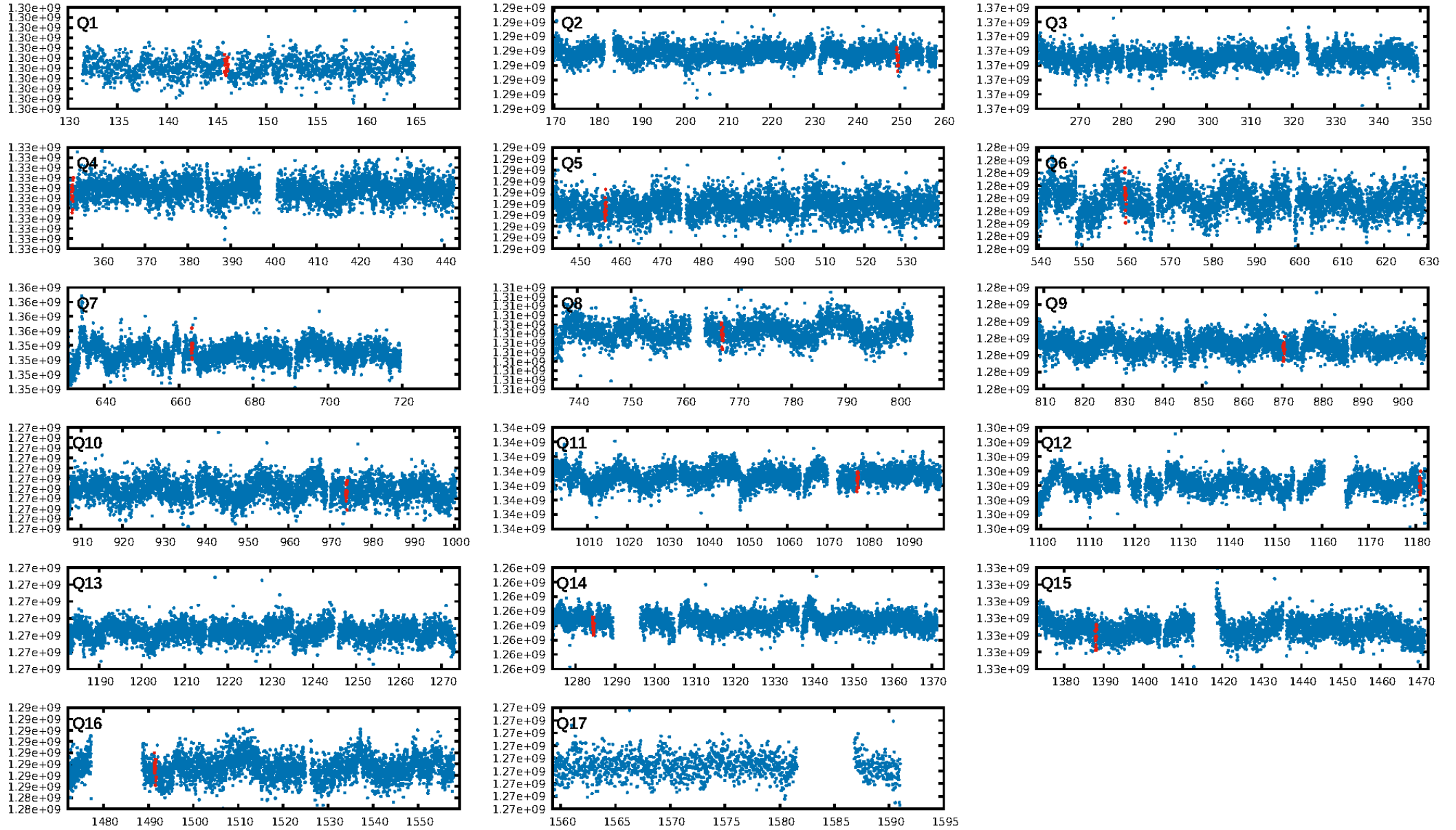
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [17.02 σ]
LongPeriod-sig: 100.0% [5.62 σ]
ModelChiSquare2-sig: 3.0%
ModelChiSquareGof-sig: 98.9%
Bootstrap-pfa: 4.42e-09
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: -1.968
Centroid-sig: 3.4%
Centroid-so: 2.016 arcsec [1.37 σ]
OotOffset-rm: 2.643 arcsec [0.81 σ]
KicOffset-rm: 1.812 arcsec [0.62 σ]
OotOffset-st: 1/1/1/0 [3]
KicOffset-st: 1/1/1/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 0.15 [2/13]

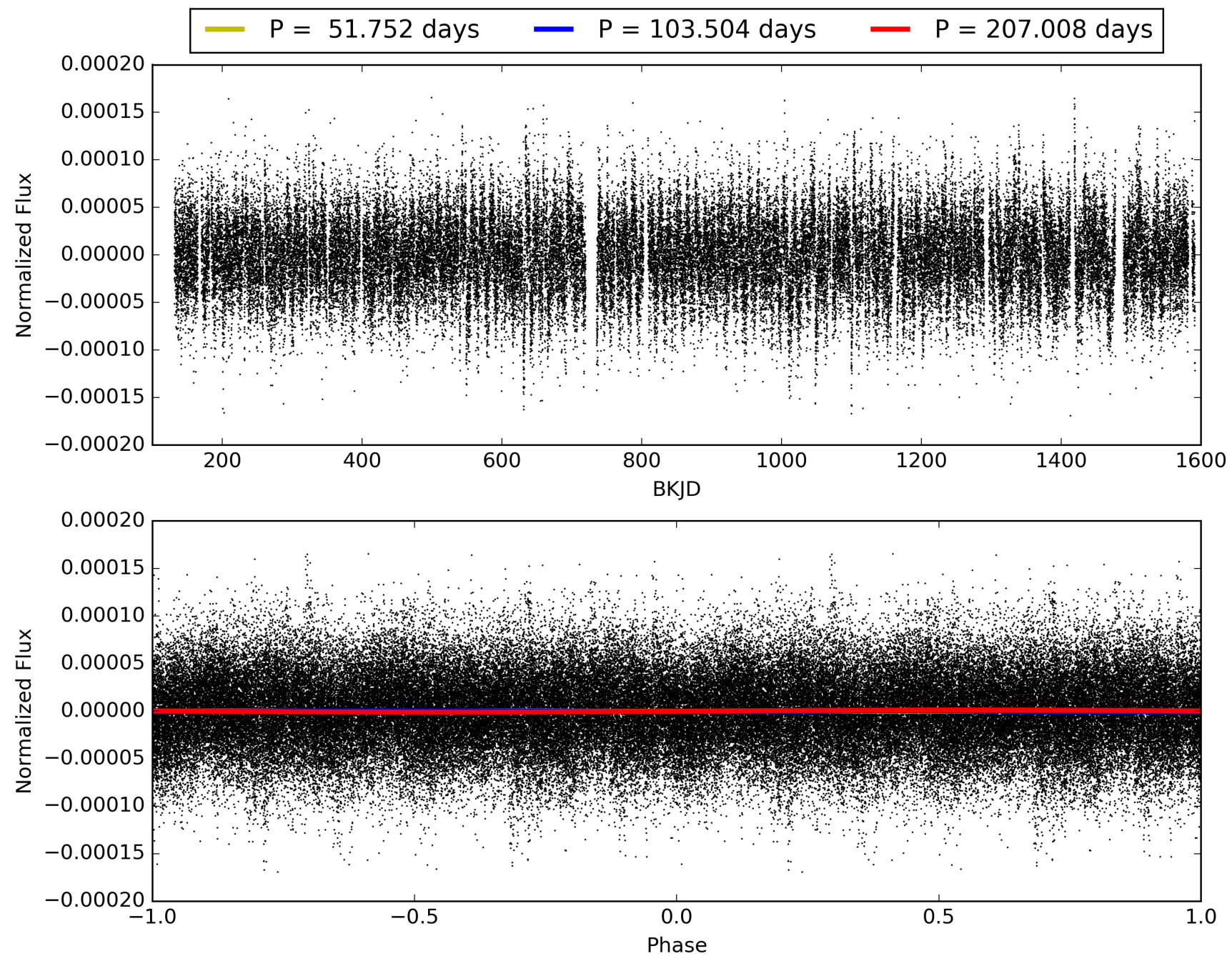
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 10:17:17 Z

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

TCE 010083510-04, PDC Light Curves

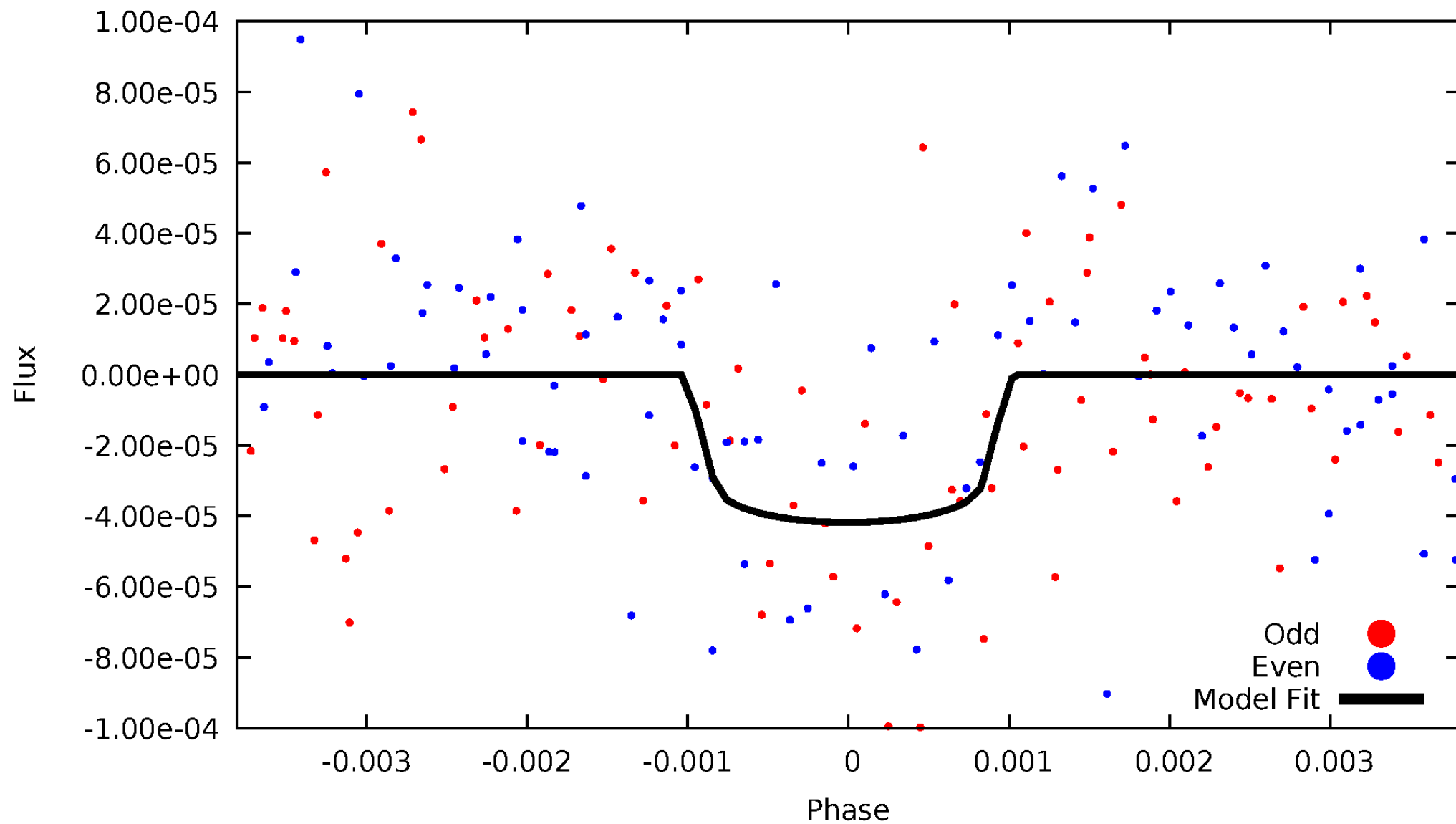


TCE 010083510-04



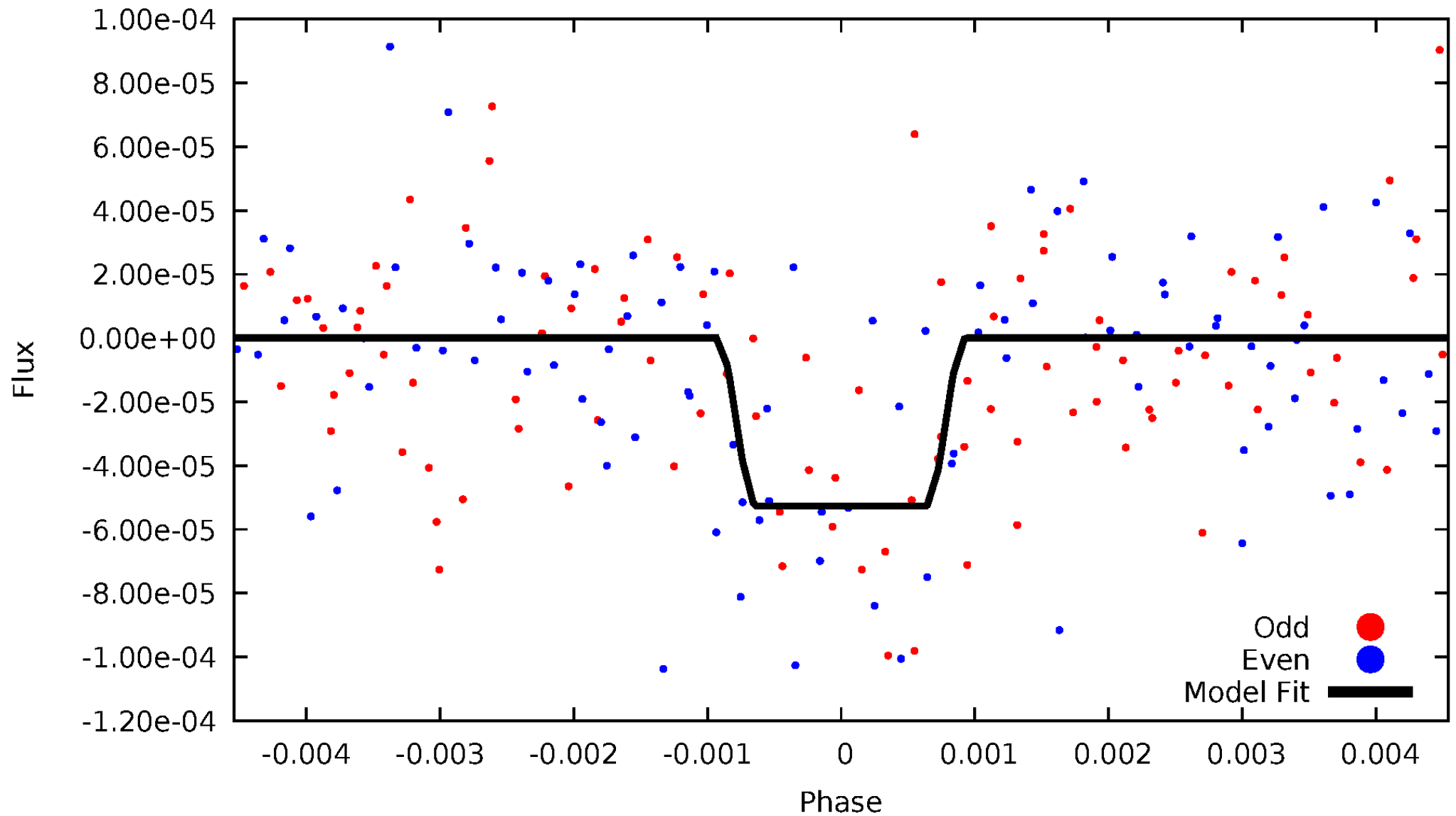
DV Odd/Even

TCE 010083510-04



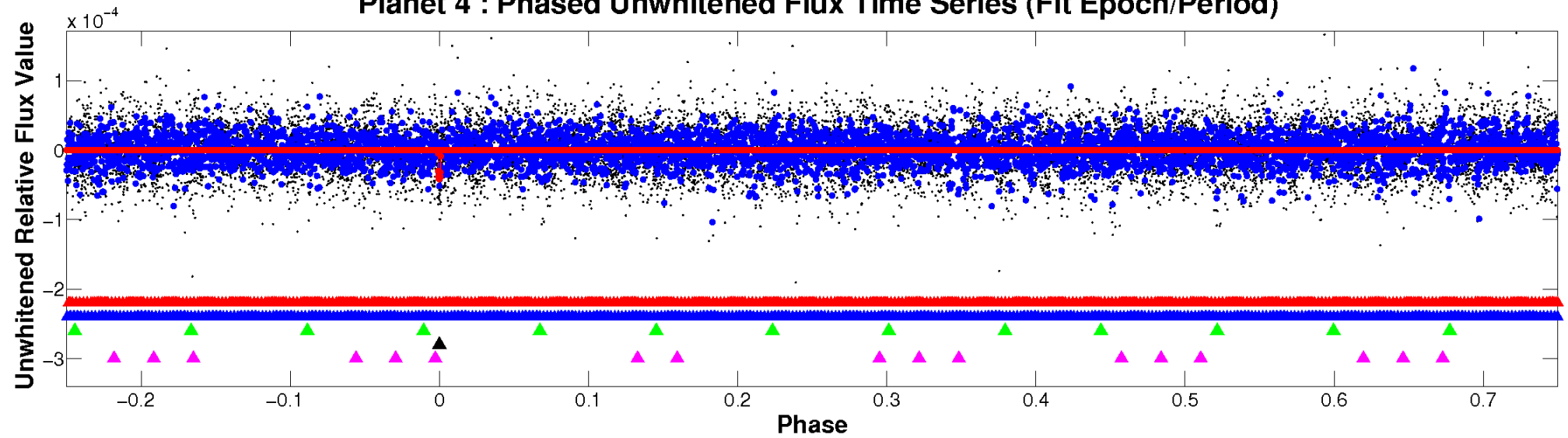
ALT Odd/Even

TCE 010083510-04

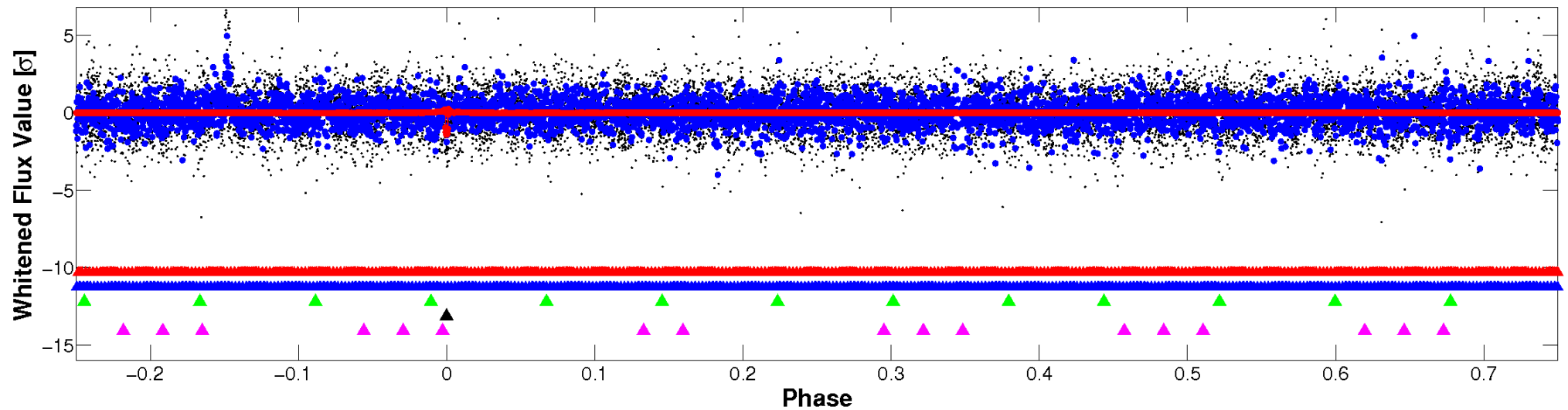


Non-Whitened Vs. Whitened Light Curve

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

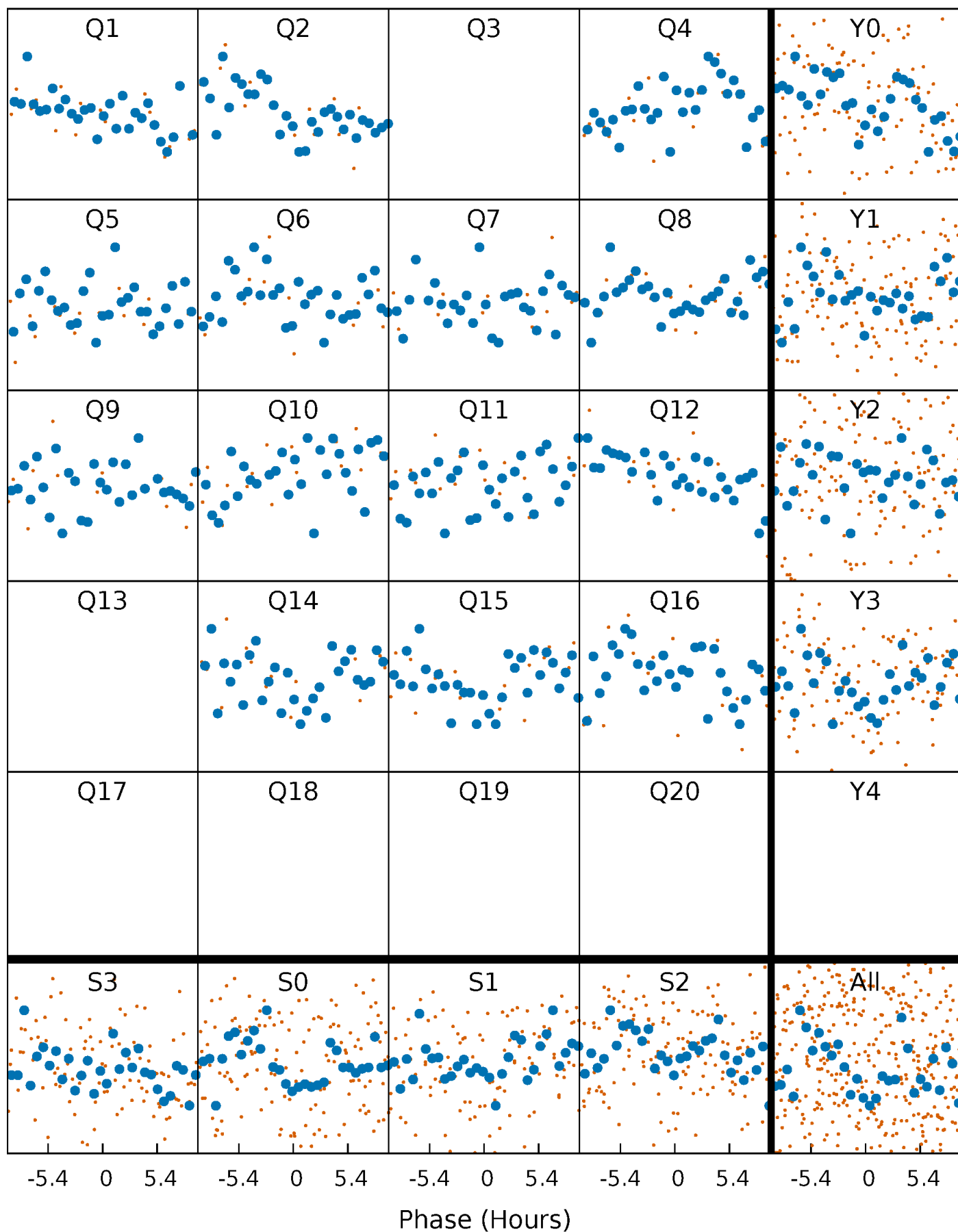


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



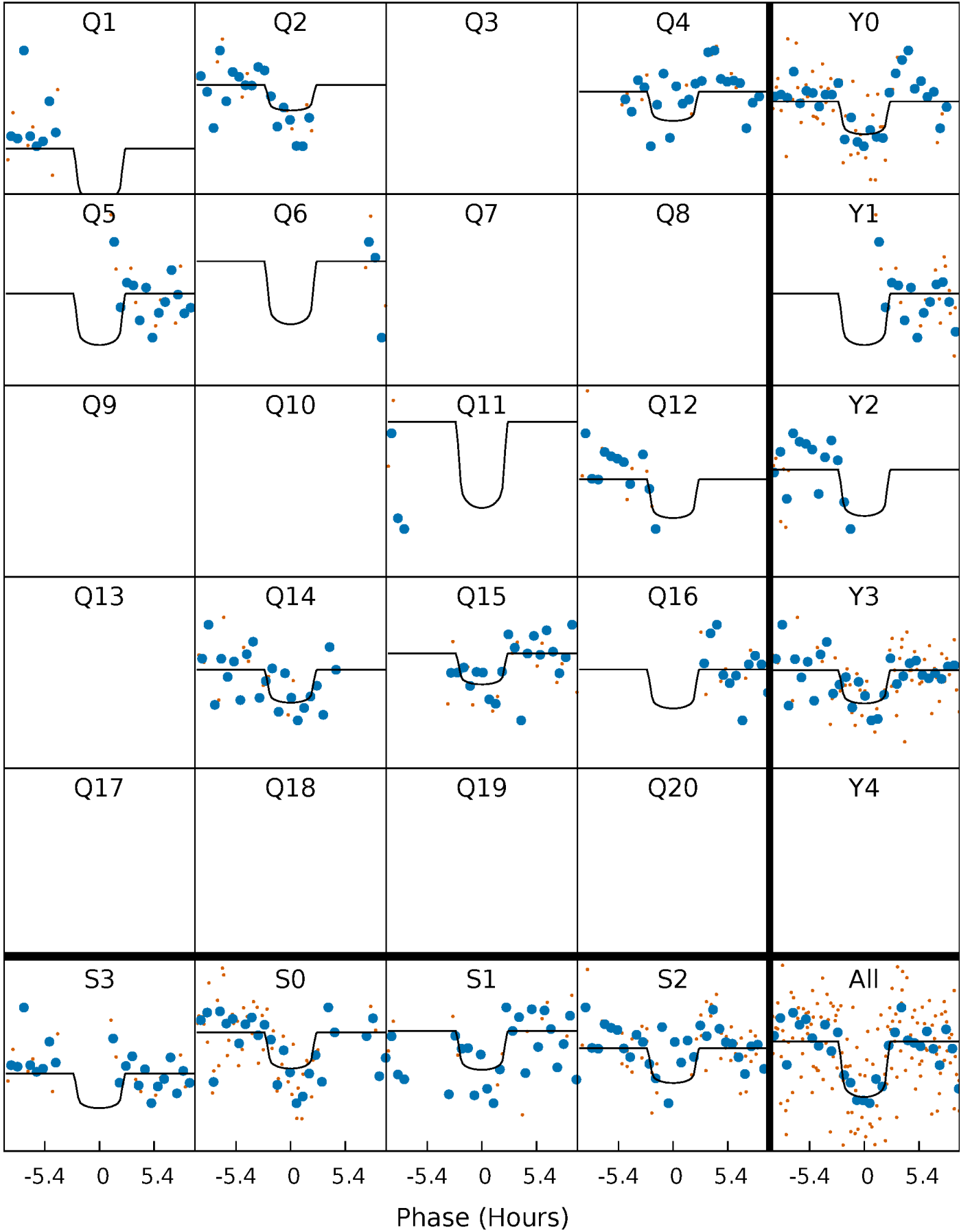
PDC Quarter-Phased Transit Curves

TCE 010083510-04 P=103.503763 Days $T_0=145.988243$ (BKJD)



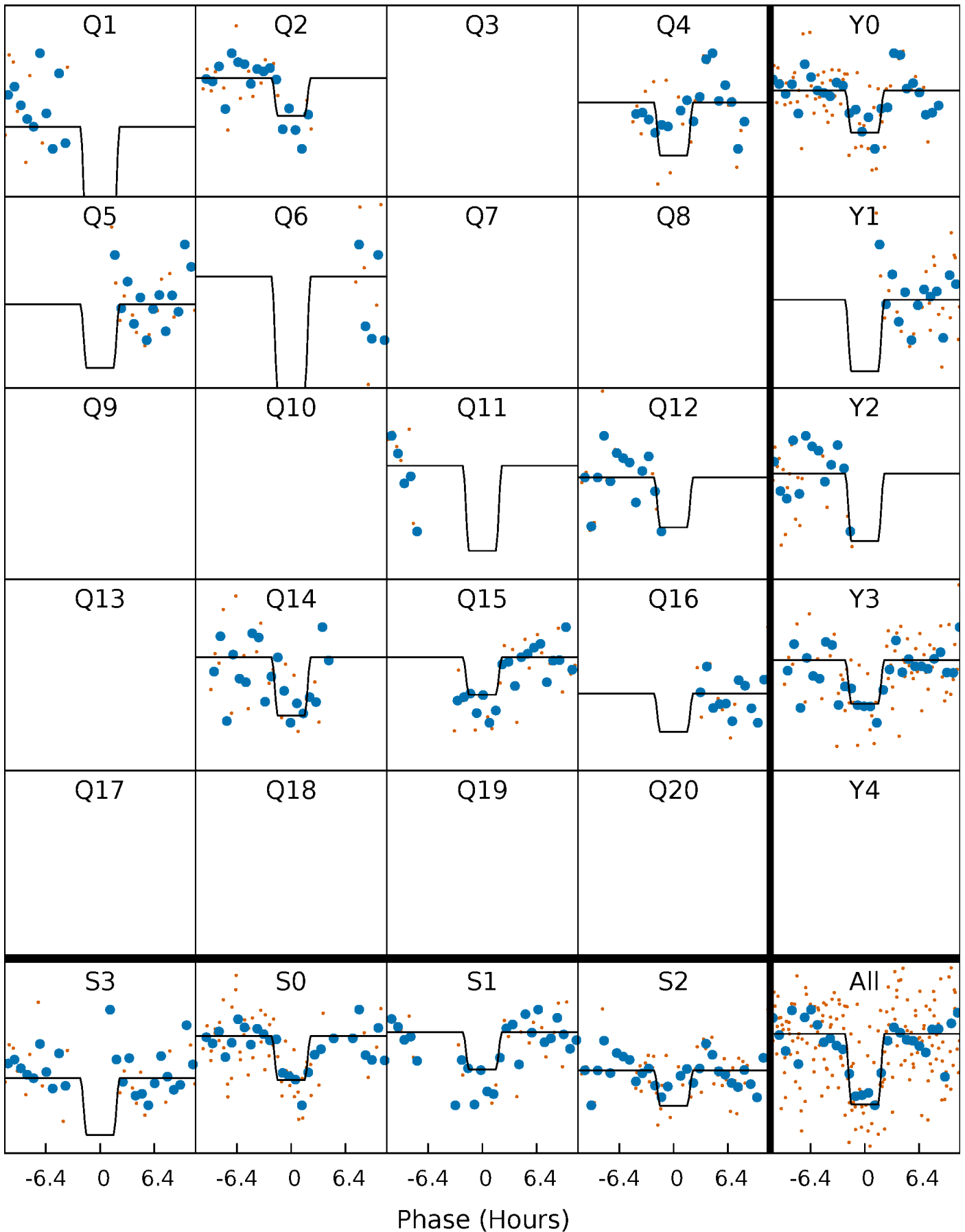
DV Quarter-Phased Transit Curves

TCE 010083510-04 P=103.503763 Days $T_0=145.988243$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

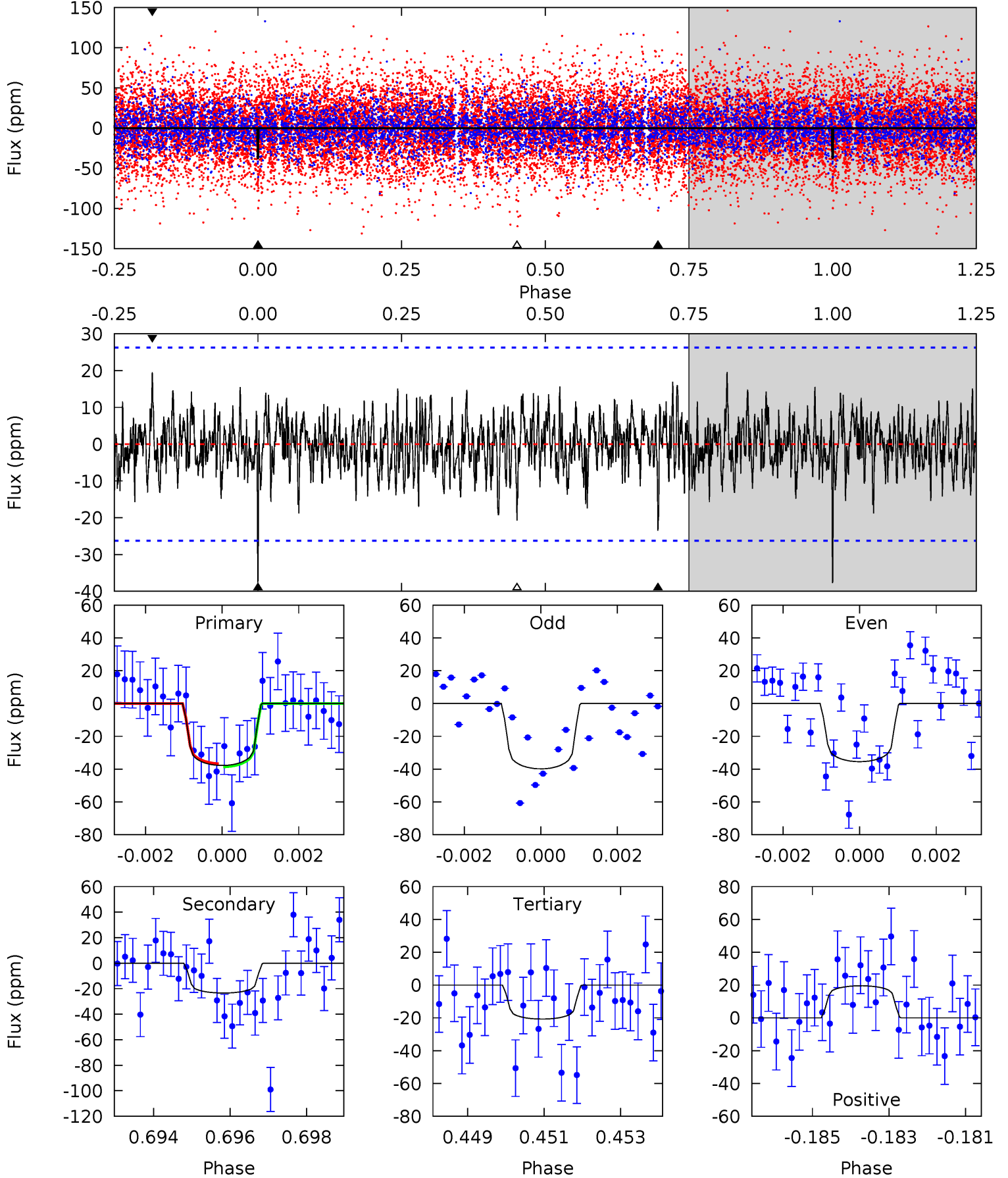
TCE 010083510-04 P=103.504509 Days $T_0=145.977046$ (BKJD)



DV Model-Shift Uniqueness Test

010083510-04, $P = 103.503763$ Days, $E = 42.484480$ Days

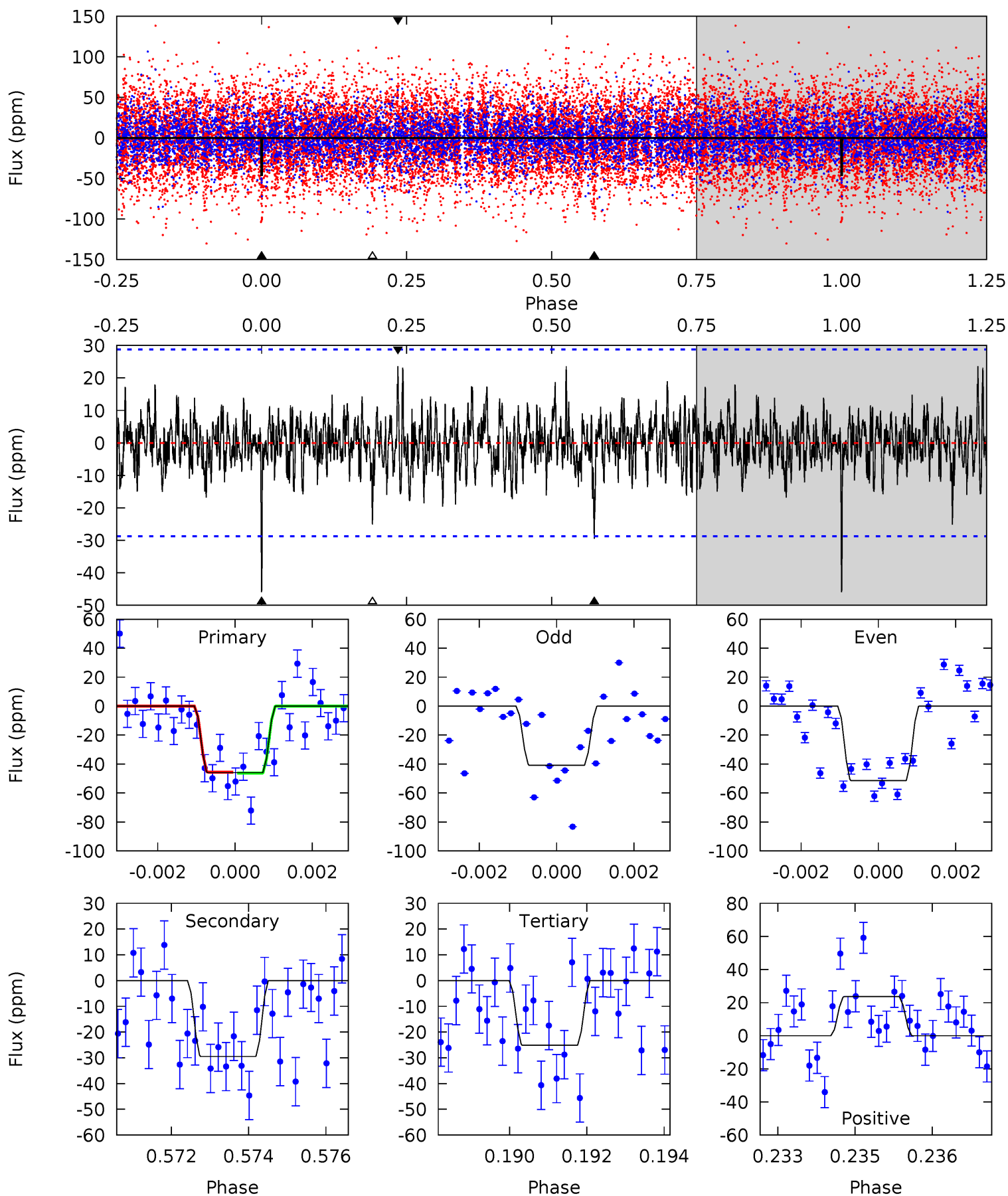
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.67	4.75	4.21	3.97	5.33	3.09	1.22	3.46	3.70	0.54	0.78	0.45	0.74	0.34	0.19



Alt Model-Shift Uniqueness Test

010083510-04, P = 103.504509 Days, E = 42.472537 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.54	5.48	4.68	4.39	5.35	3.13	1.23	3.87	4.15	0.81	1.09	0.99	0.70	0.34	0.06



Stellar Parameters For KIC 010083510

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7500^{+206}_{-335}	$3.978^{+0.187}_{-0.153}$	$0.180^{+0.150}_{-0.350}$	$2.316^{+0.525}_{-0.642}$	$1.859^{+0.148}_{-0.346}$	$0.211^{+0.229}_{-0.088}$
	+3%/-4%	+5%/-4%	+83%/-194%	+23%/-28%	+8%/-19%	+108%/-42%
Source	KIC0	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 010083510-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-23 ± 5	$1.68^{+1.04}_{-0.83}$	959^{+72}_{-73}	6141^{+3188}_{-1189}	1243^{+3690}_{-786}
Alt.	-29 ± 5	$1.82^{+1.08}_{-0.89}$	960^{+67}_{-76}	6241^{+3056}_{-1203}	1308^{+3978}_{-793}

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 $A_{obs} \gg 1.0$

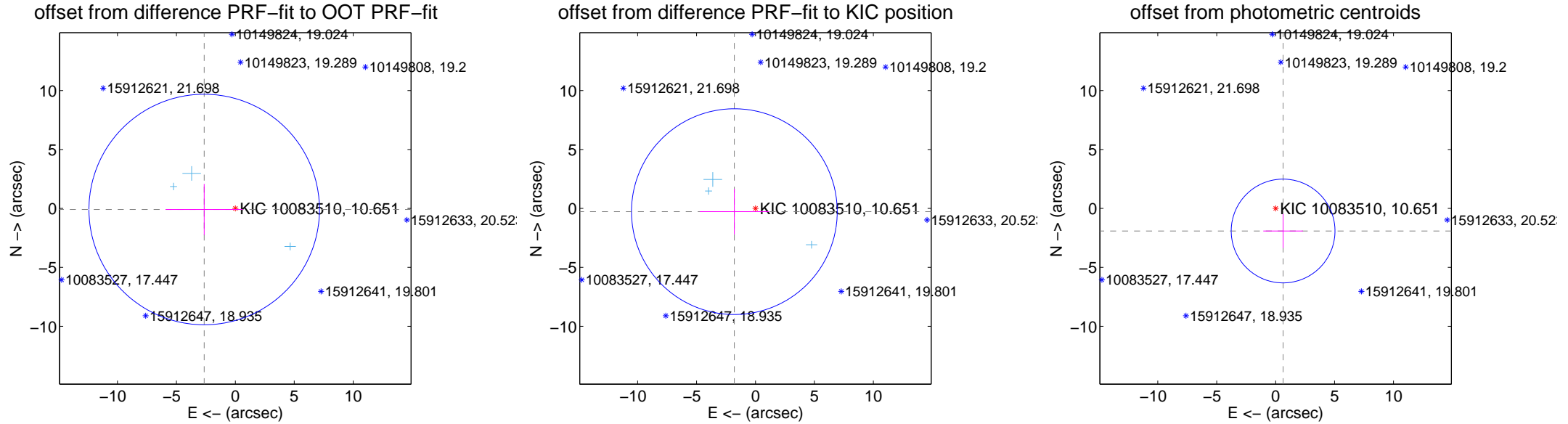
DV Centroid Data

Supplemental centroid analysis for 010083510-04. **Kepler magnitude: 10.65.** Transit SNR 7.77

There are 3 quarters with good PRF difference image offsets

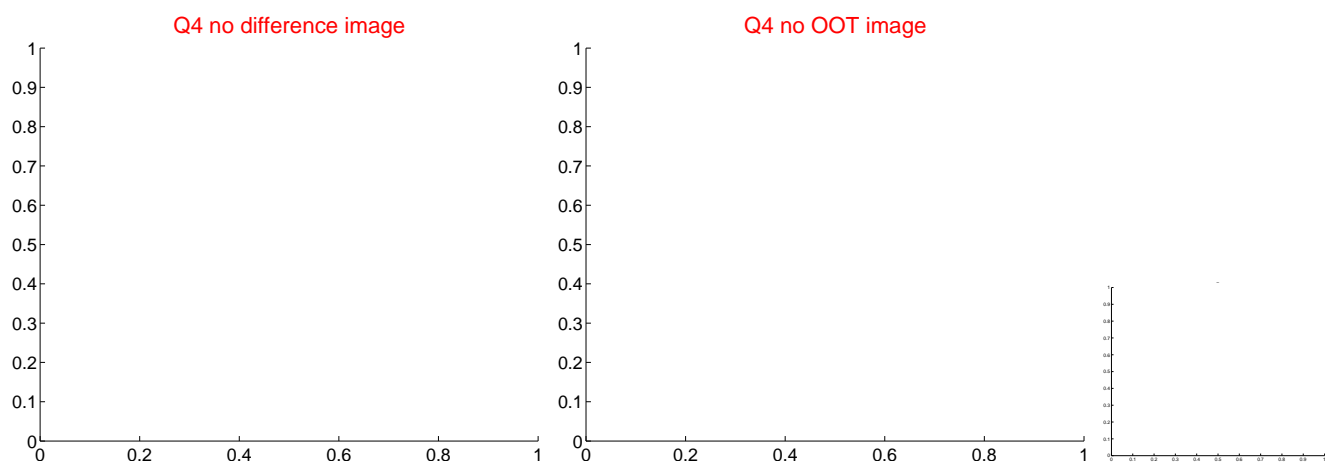
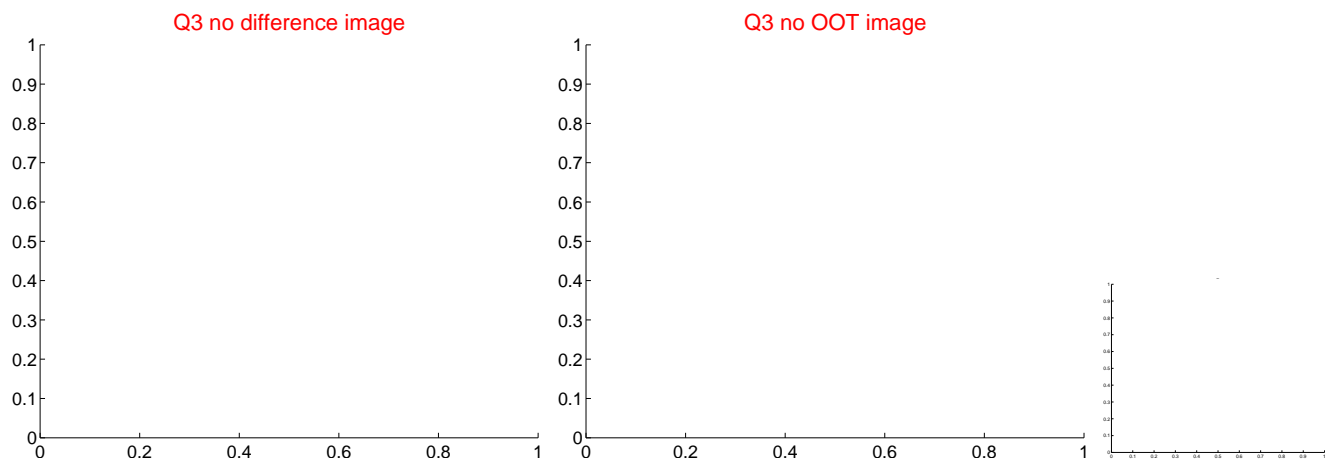
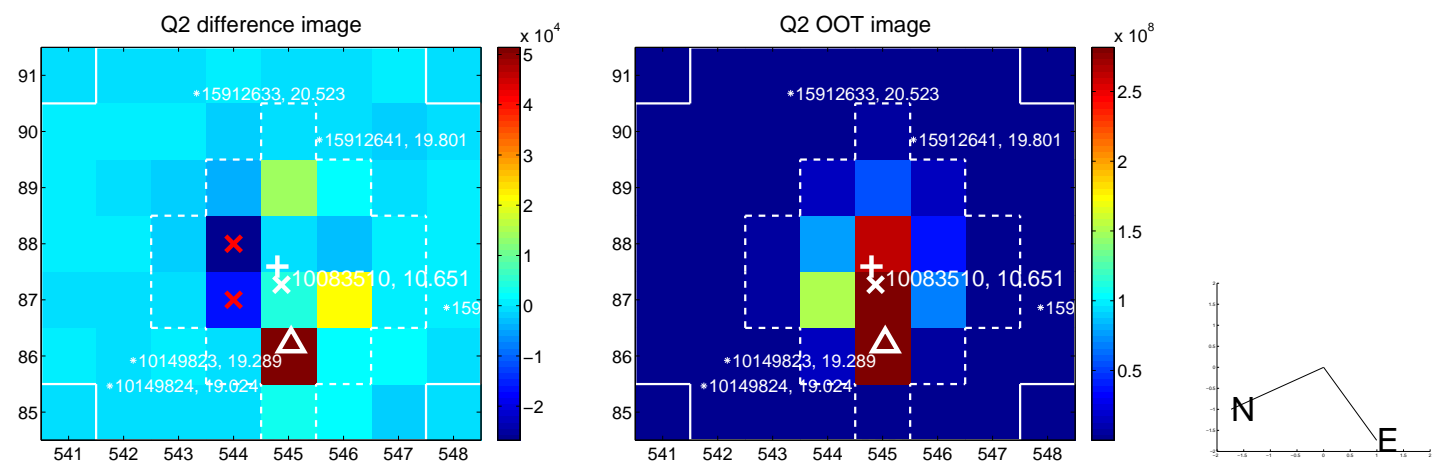
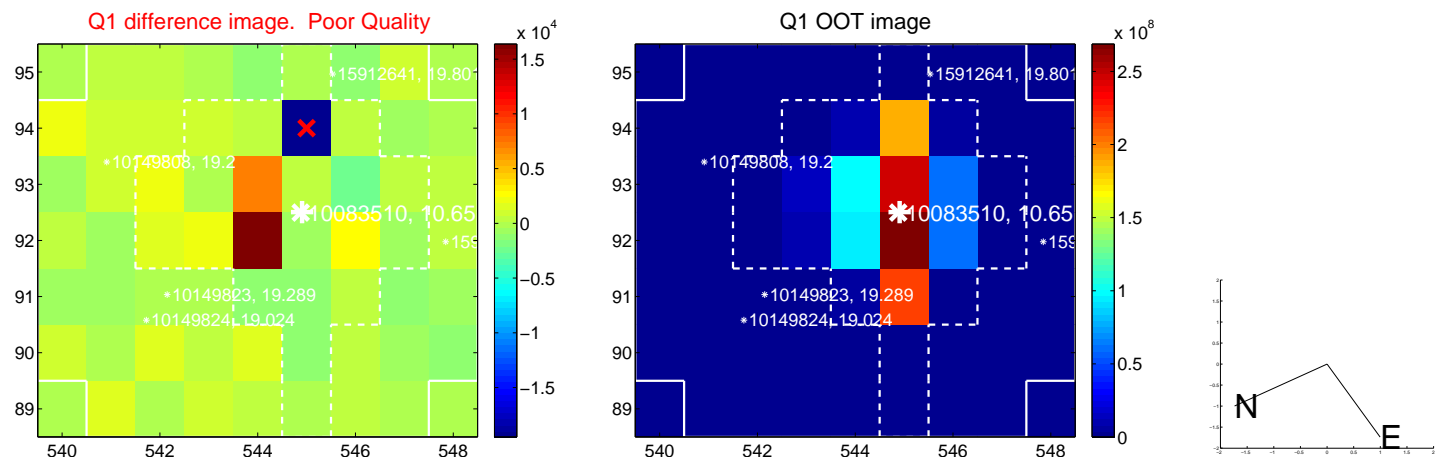
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.643 ± 3.259	0.81	2.641 ± 3.260	-0.091 ± 2.166
PRF-fit source offset from KIC position	1.812 ± 2.909	0.62	1.792 ± 2.927	-0.271 ± 1.936
photometric centroid source offset	2.02 ± 1.47	1.37	-0.63 ± 1.68	-1.91 ± 1.44

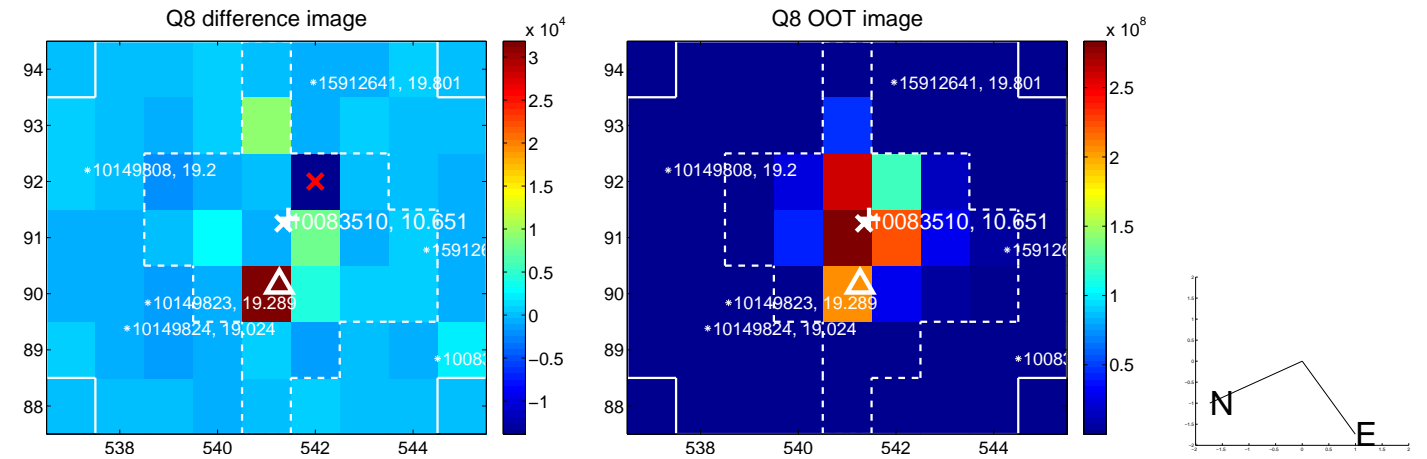
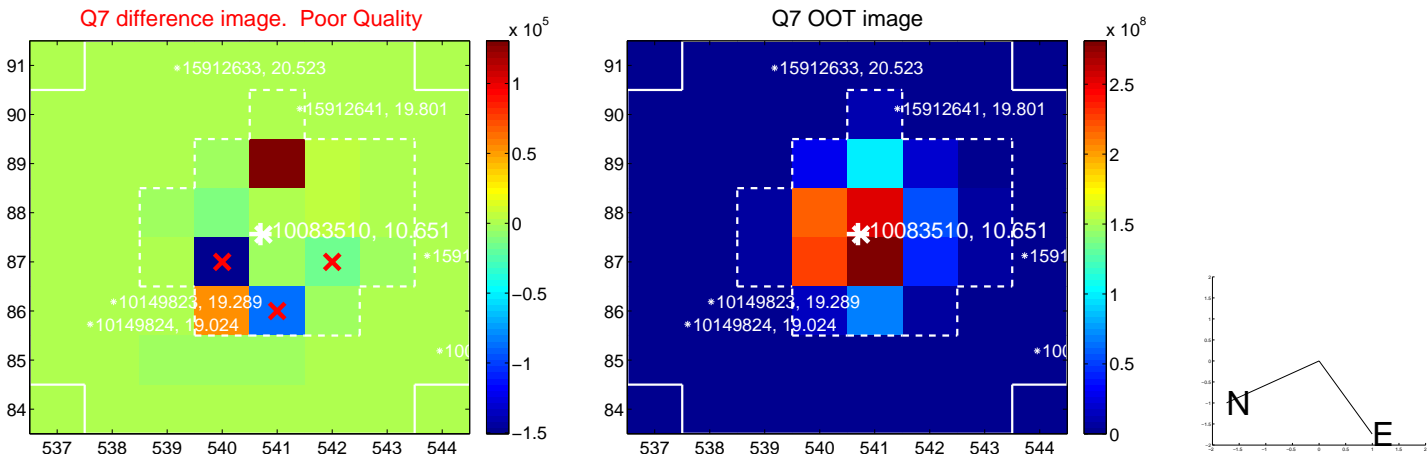
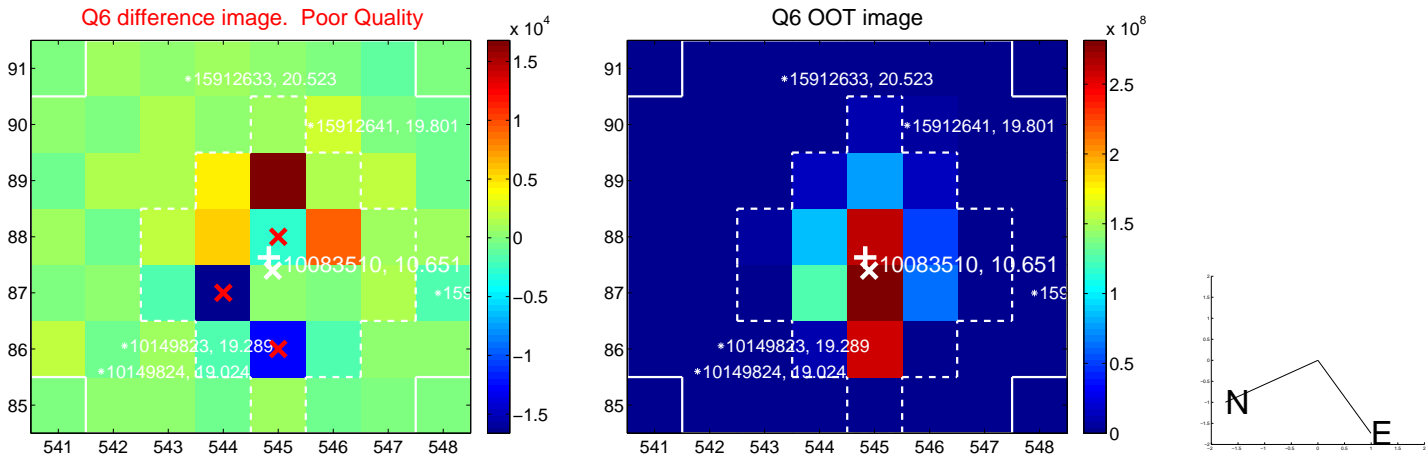
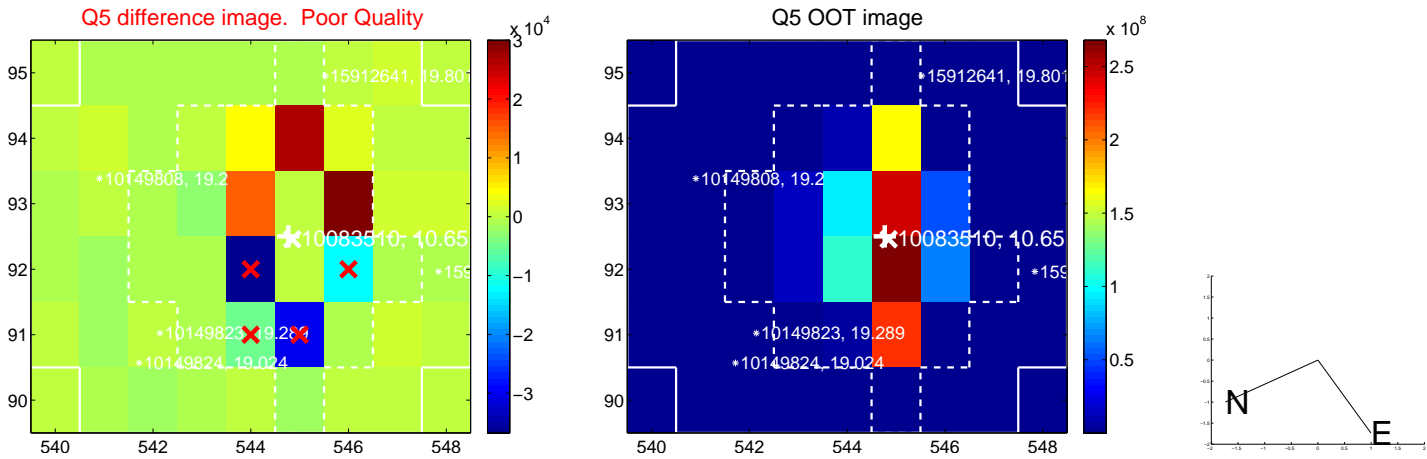


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

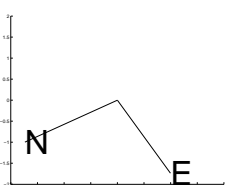
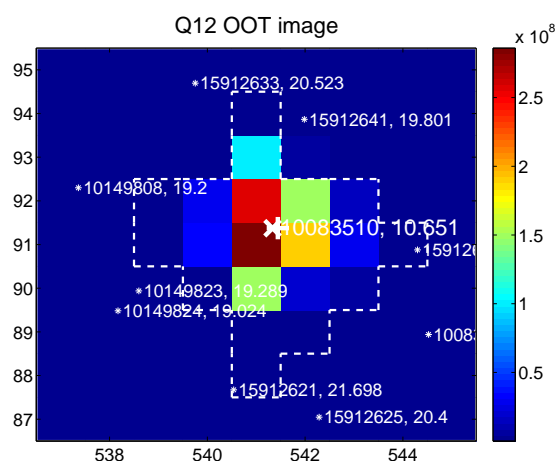
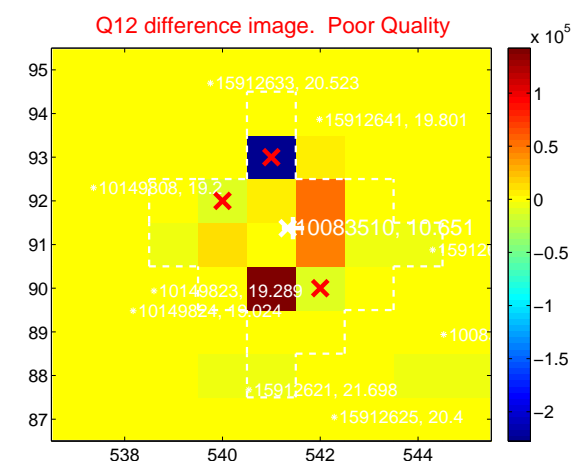
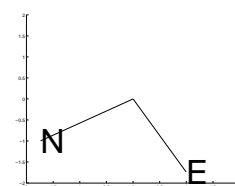
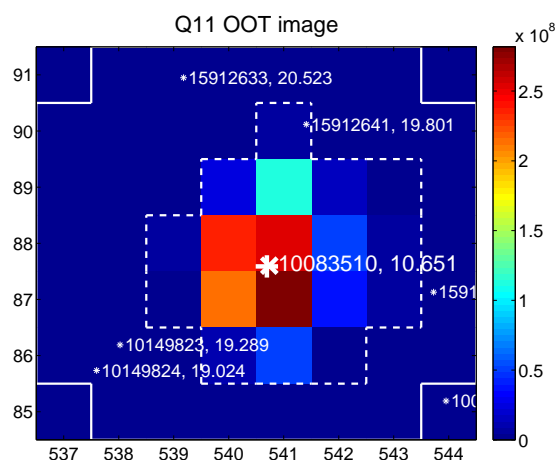
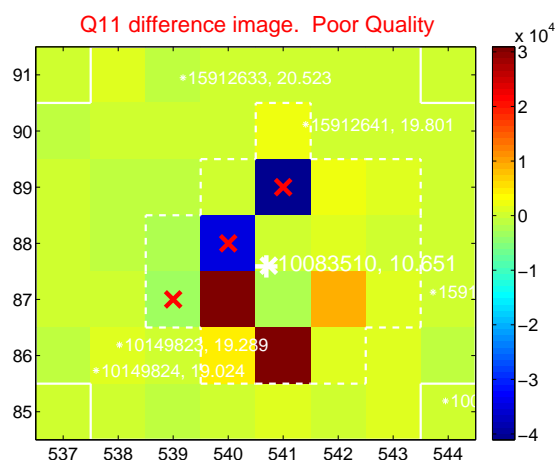
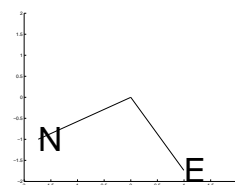
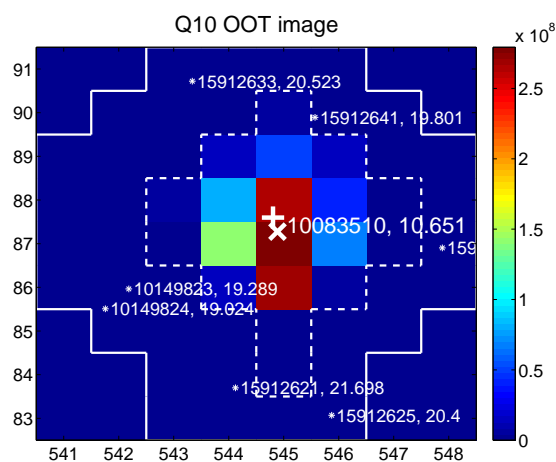
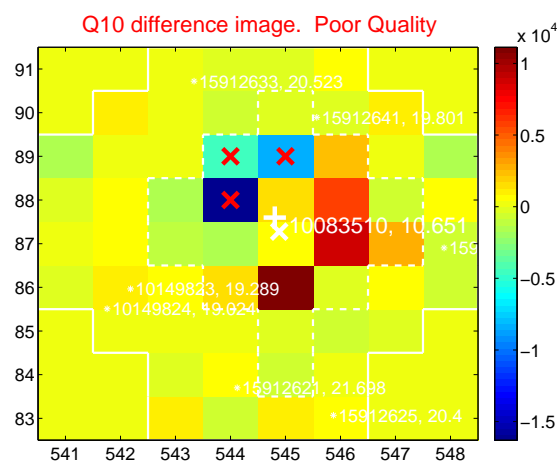
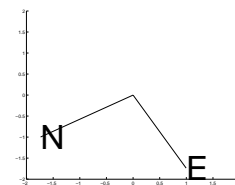
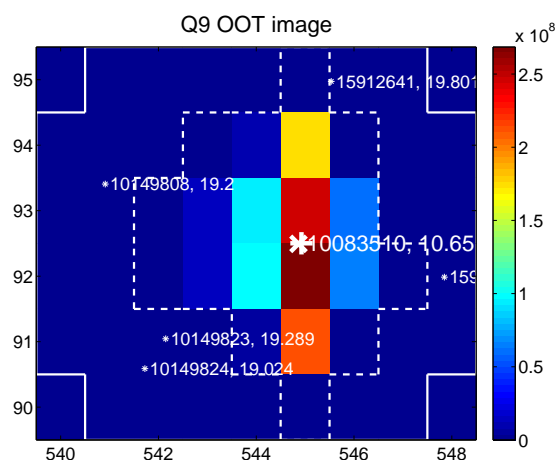
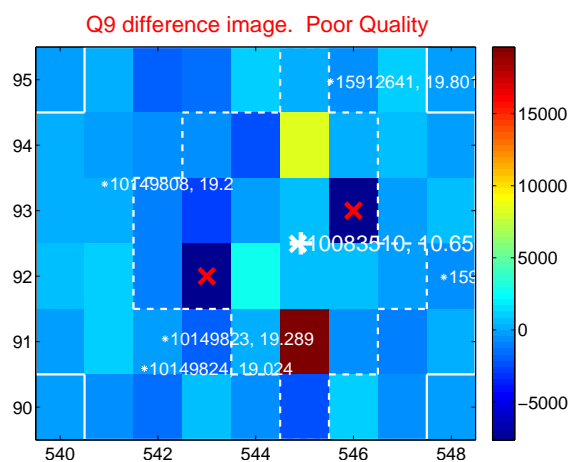
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

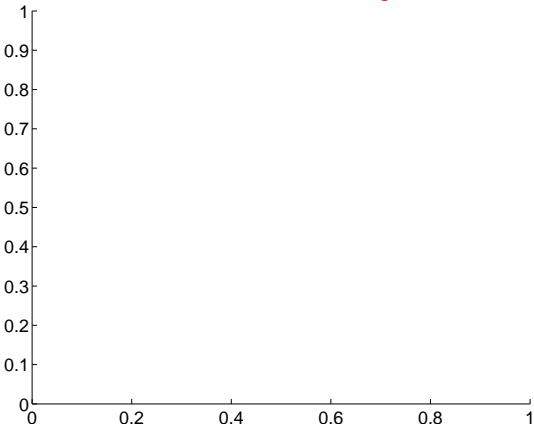


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

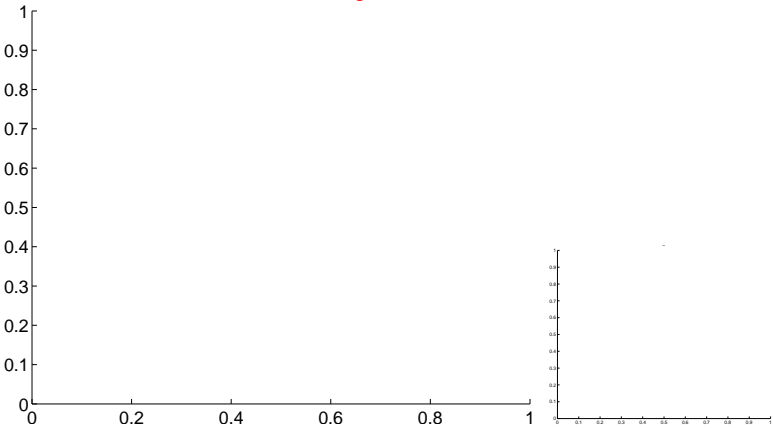


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

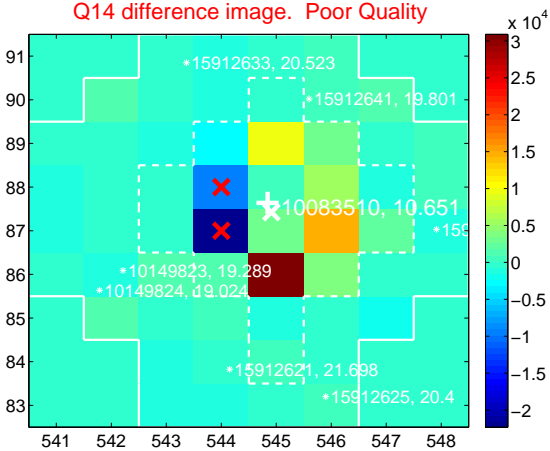
Q13 no difference image



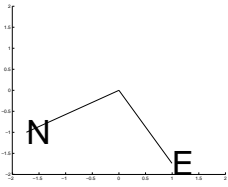
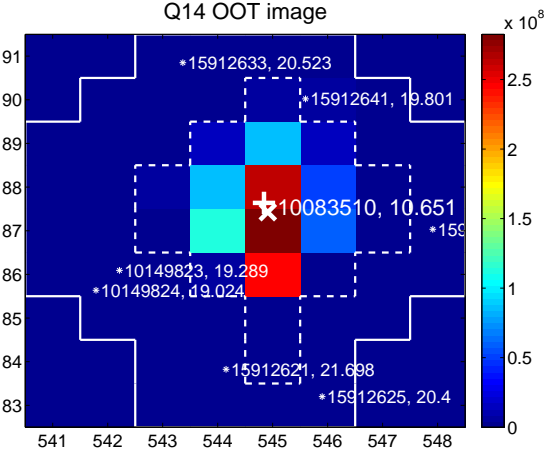
Q13 no OOT image



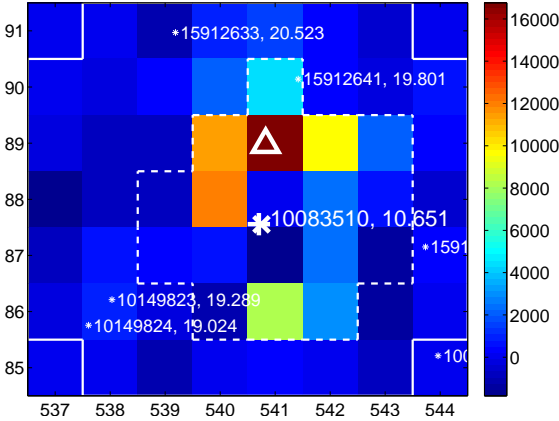
Q14 difference image. Poor Quality



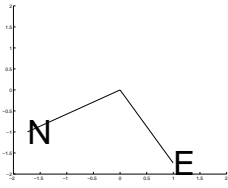
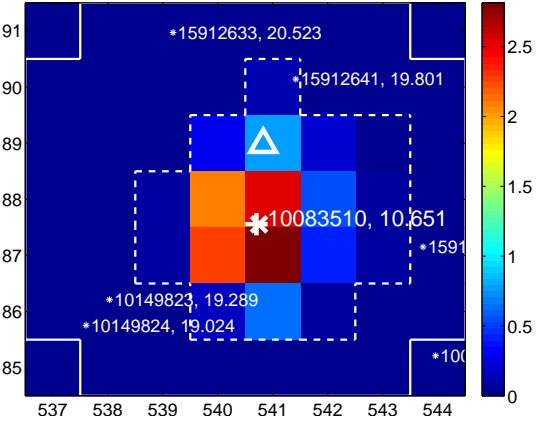
Q14 OOT image



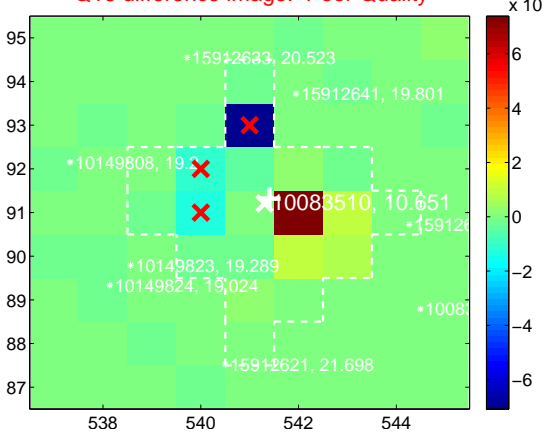
Q15 difference image



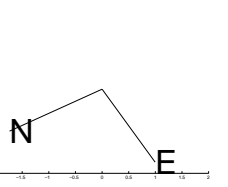
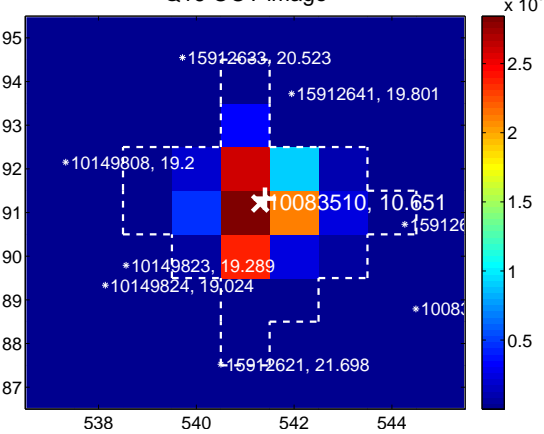
Q15 OOT image



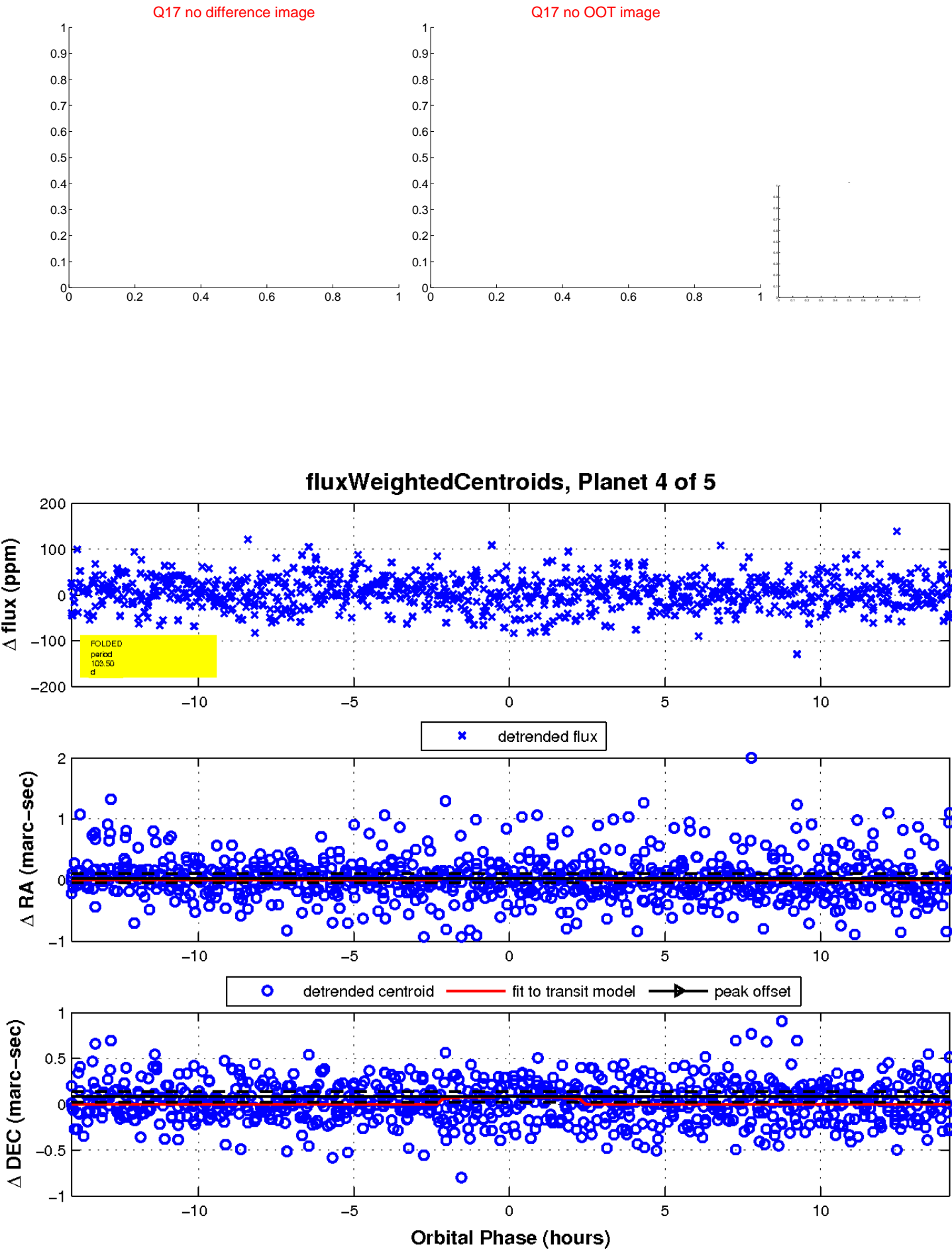
Q16 difference image. Poor Quality



Q16 OOT image

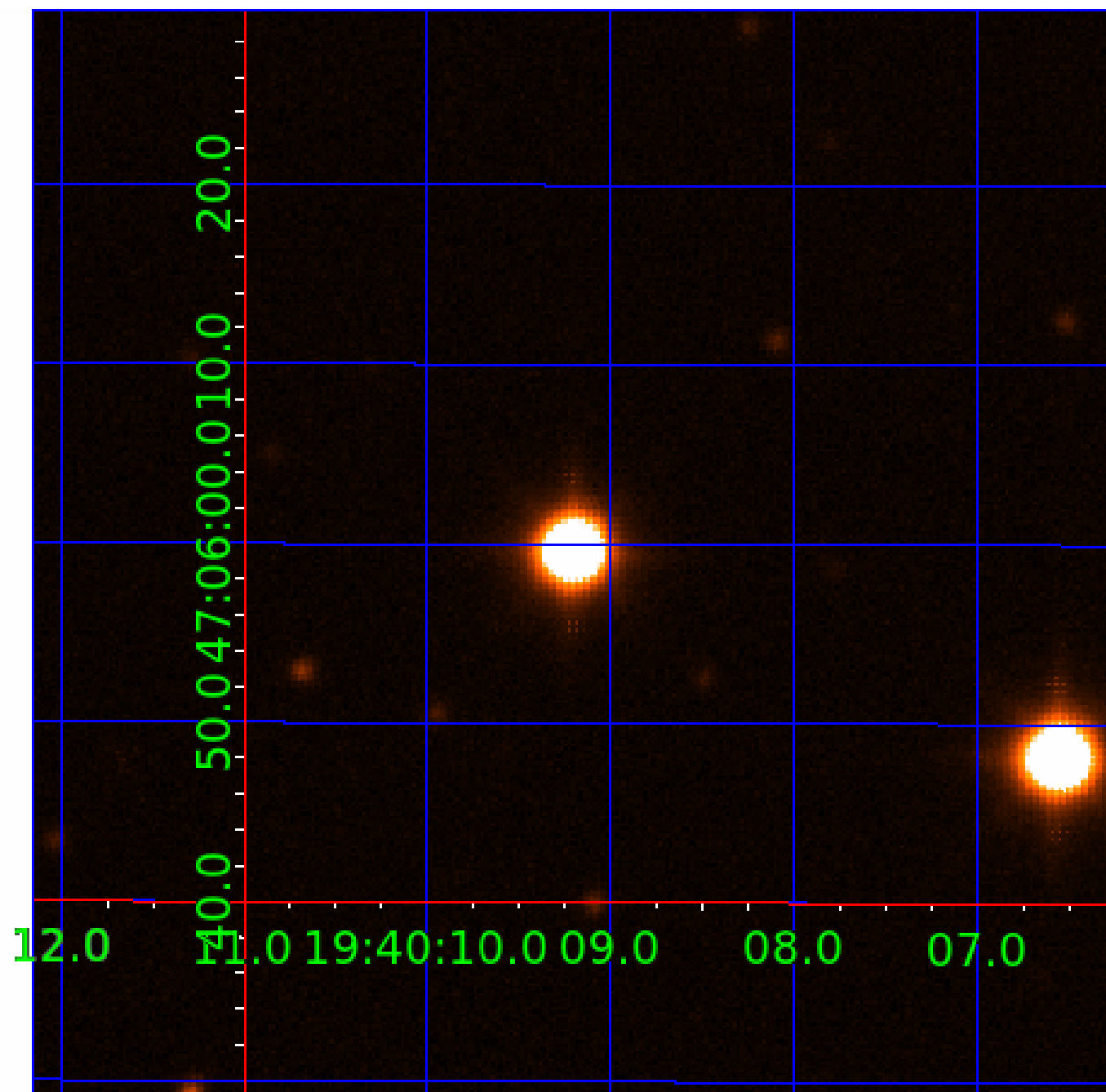


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010083510

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})
010083510-01	OBS	No	2.470525	131.575700	37.5	9.000	13.6	-1.0	2.32	7500	1.44	7856.81
010083510-02	OBS	No	2.470392	132.191459	6.2	11.492	9.7	10.5	2.32	7500	0.67	7857.37
010083510-03	OBS	No	111.574704	191.906577	26.4	34.160	15.0	7.2	2.32	7500	1.33	48.85
010083510-04	OBS	No	103.503763	145.988243	41.8	4.726	8.1	7.8	2.32	7500	1.71	53.99
010083510-05	OBS	No	86.711756	140.203891	24.2	23.198	9.3	6.7	2.32	7500	1.31	68.37

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010083510-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_SATURATED
010083510-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_SATURATED
010083510-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—INCONSISTENT_TRANS—CENT_SATURATED
010083510-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_ALT—CENT_SATURATED
010083510-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_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.

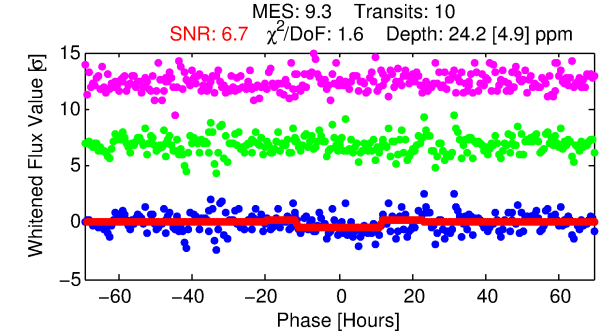
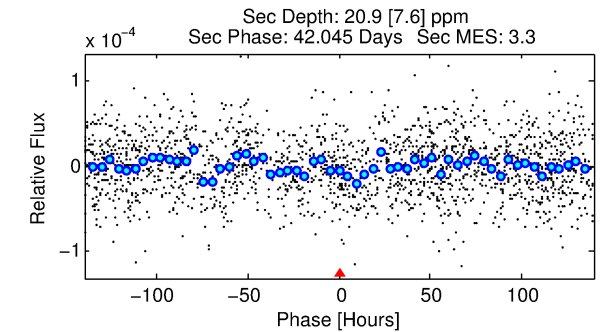
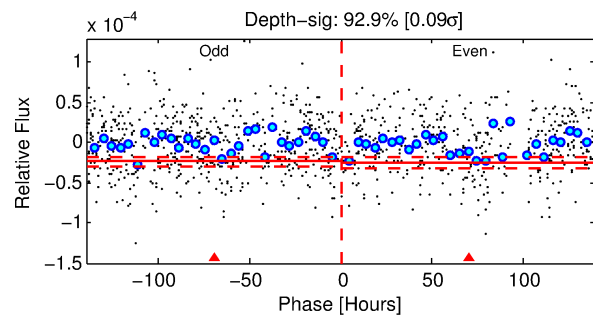
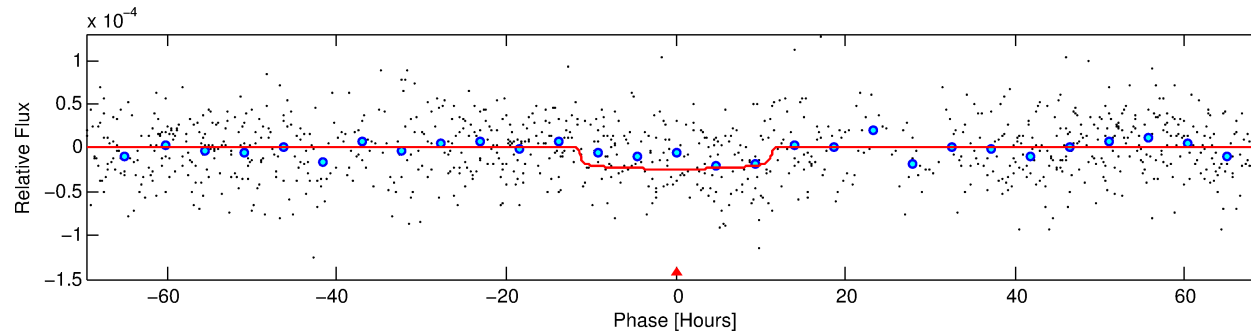
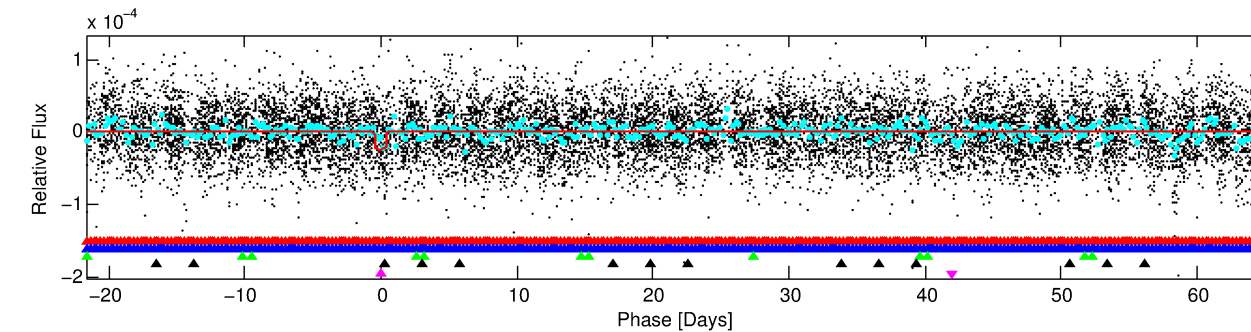
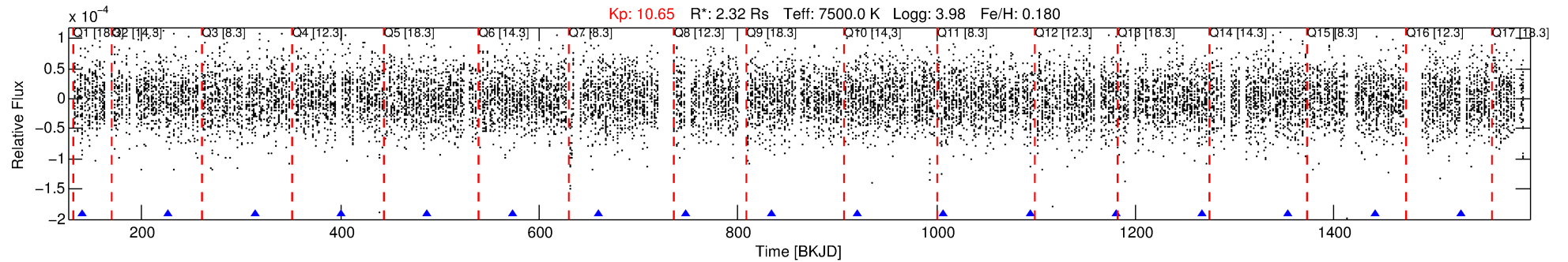
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010083510-05

No Significant Match Found

DV One-Page Summary

KIC: 10083510 Candidate: 5 of 5 Period: 86.712 d



DV Fit Results:

Period = 86.71176 [0.00444] d
Epoch = 140.2039 [0.0450] BKJD
 $R_p/R^* = 0.0052$ [0.0010]
 $a/R^* = 13.38$ [13.29]
 $b = 0.89$ [0.23]
 $\text{Seff} = 68.37$ [26.34]
 $\text{Teq} = 733$ [71] K
 $R_p = 1.31$ [0.44] R_e
 $a = 0.4716$ [0.1104] AU
 $\text{Ag} = 1493.49$ [930.23] [1.60 σ]
 $\text{Teffp} = 7047$ [970] K [6.49 σ]

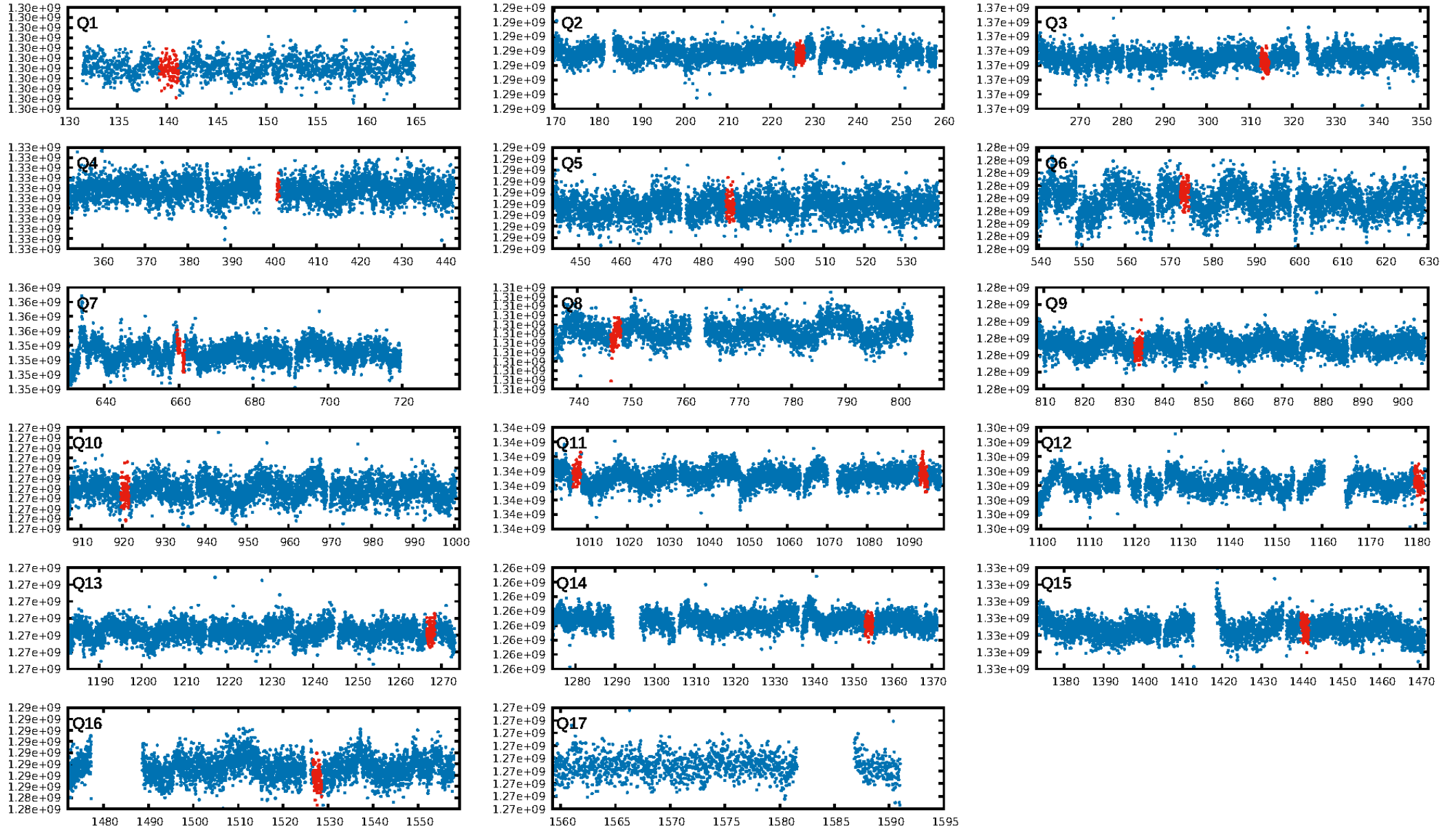
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [81.25 σ]
LongPeriod-sig: 100.0% [17.02 σ]
ModelChiSquare2-sig: 3.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.66e-13
RollingBand-fgt: 1.00 [9/9]
GhostDiagnostic-chr: 0.3937
Centroid-sig: 14.1%
Centroid-so: 2.693 arcsec [1.28 σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0/0 [0]
KicOffset-st: 0/0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 0.00 [0/10]

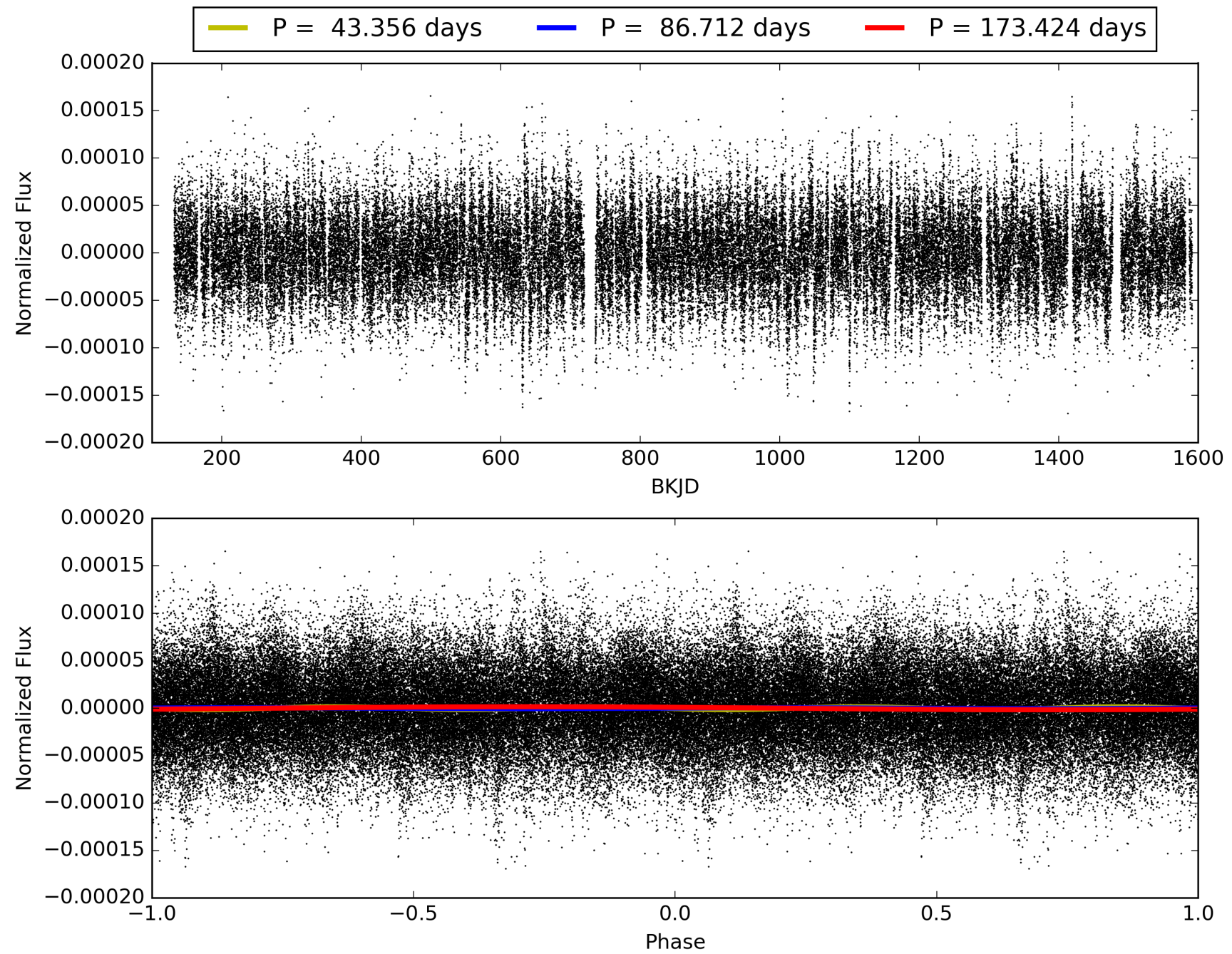
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 10:17:21 Z

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

TCE 010083510-05, PDC Light Curves

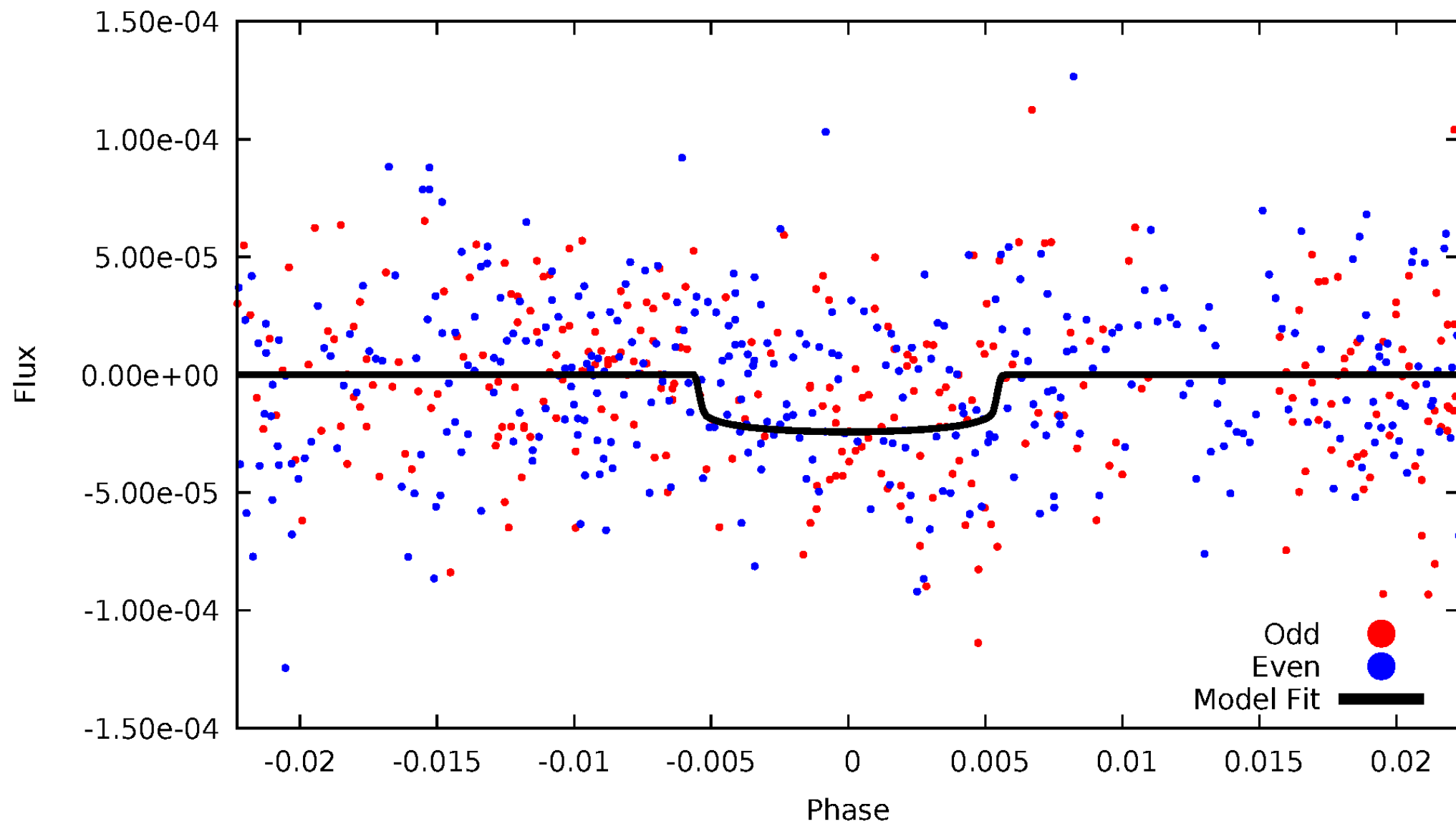


TCE 010083510-05



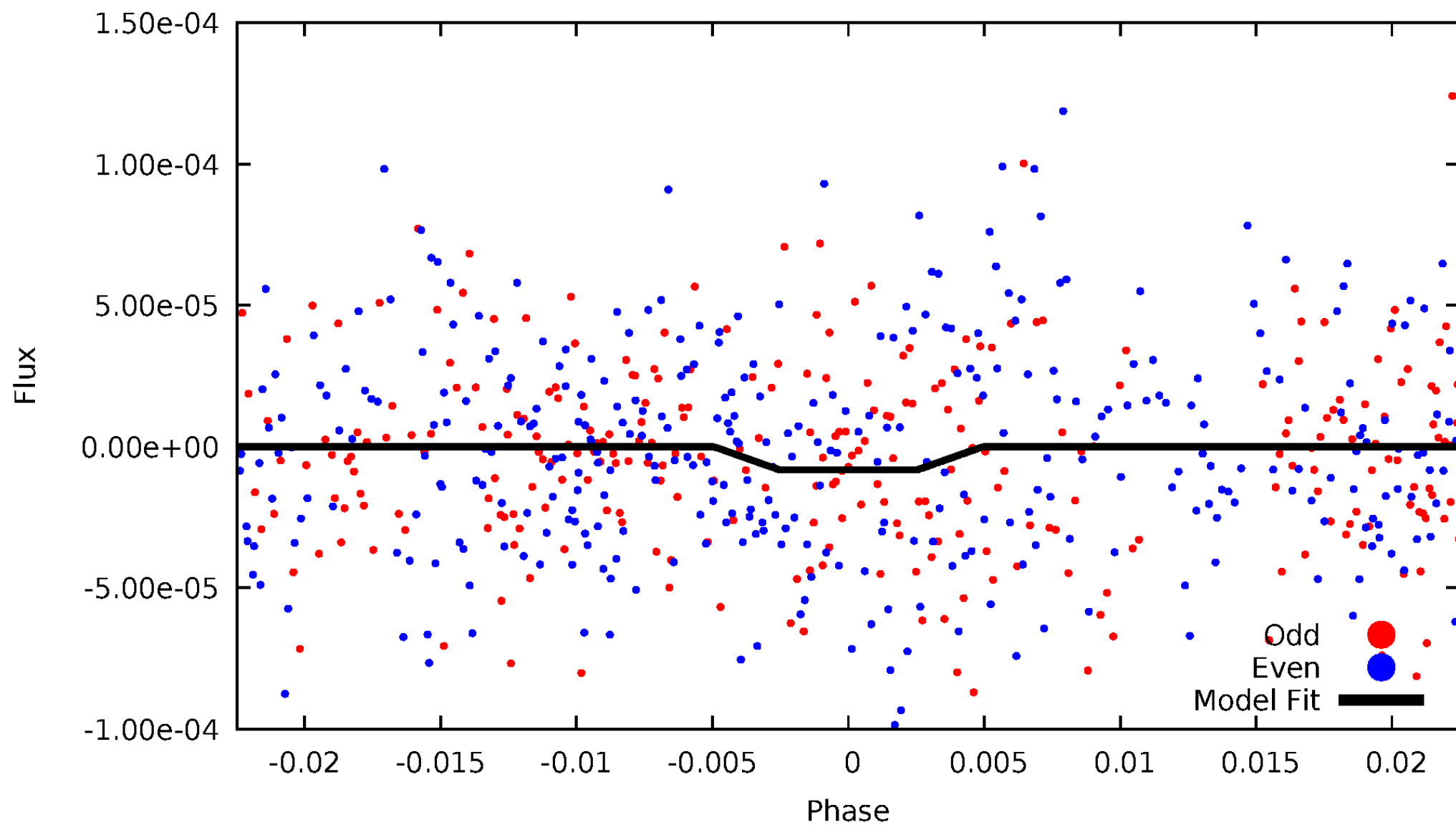
DV Odd/Even

TCE 010083510-05



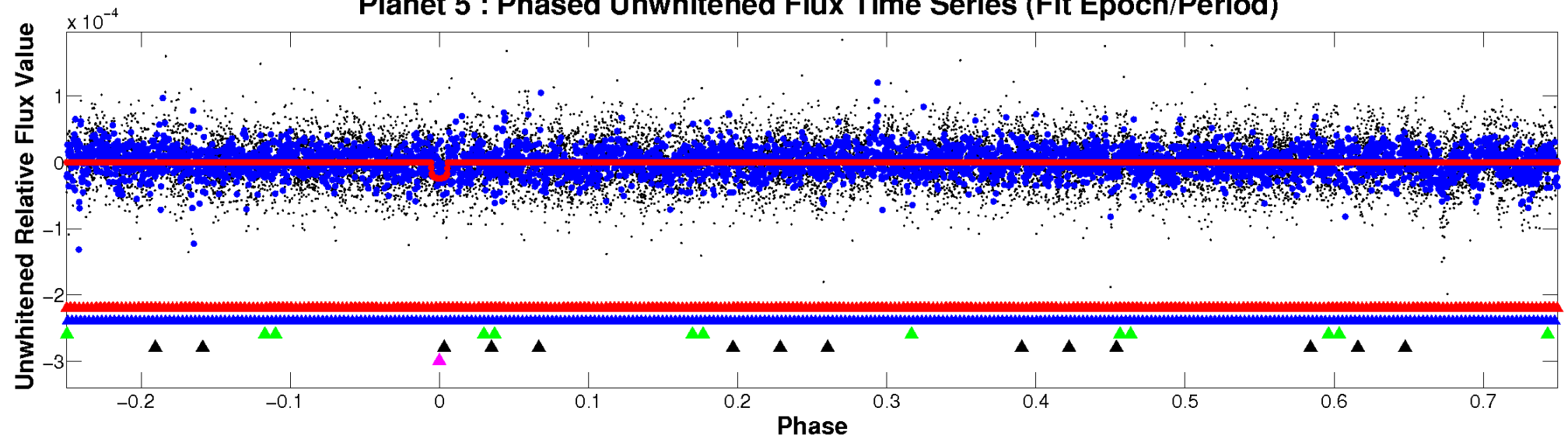
ALT Odd/Even

TCE 010083510-05

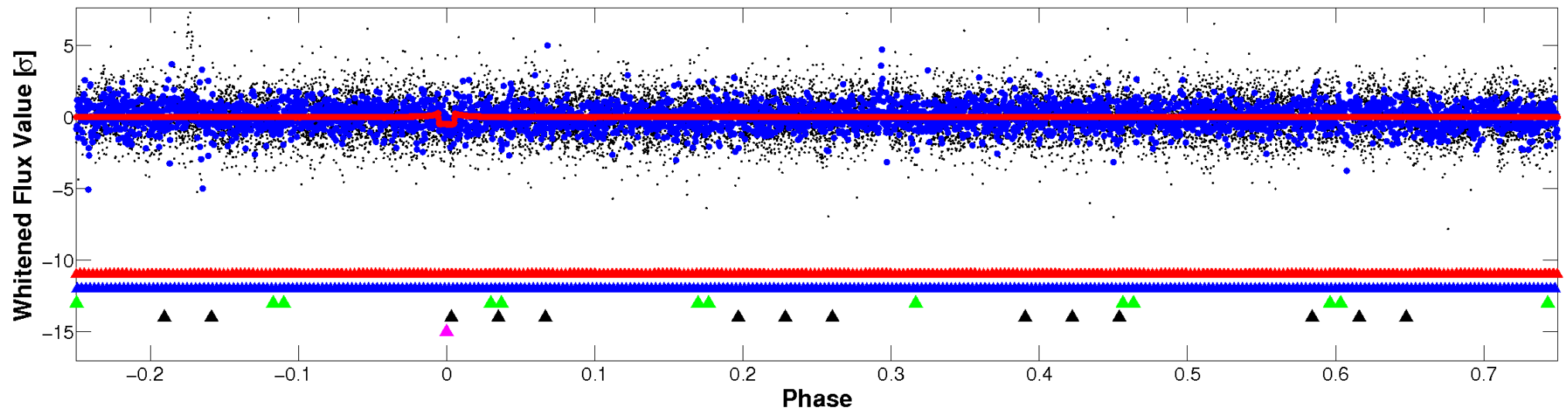


Non-Whitened Vs. Whitened Light Curve

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

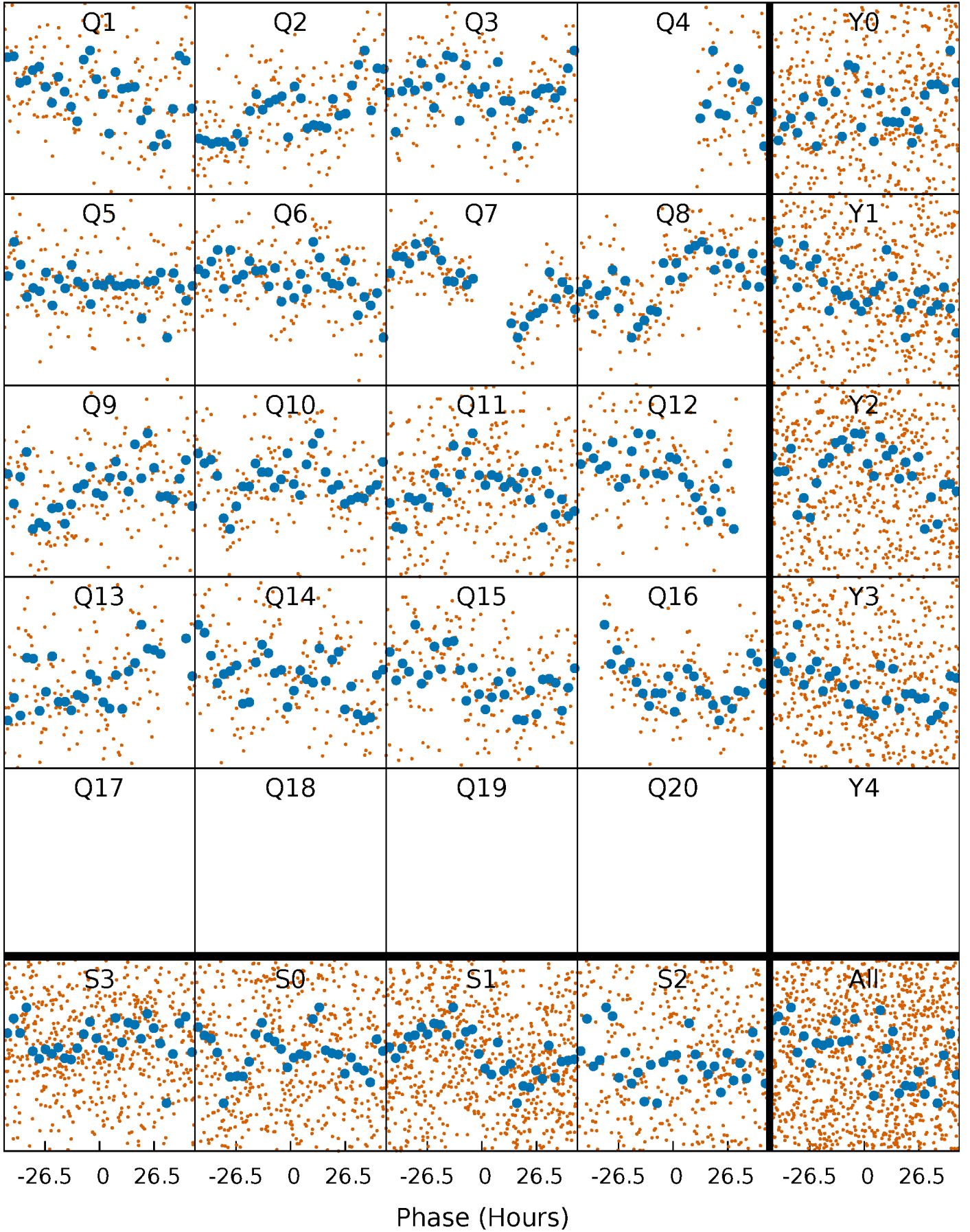


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



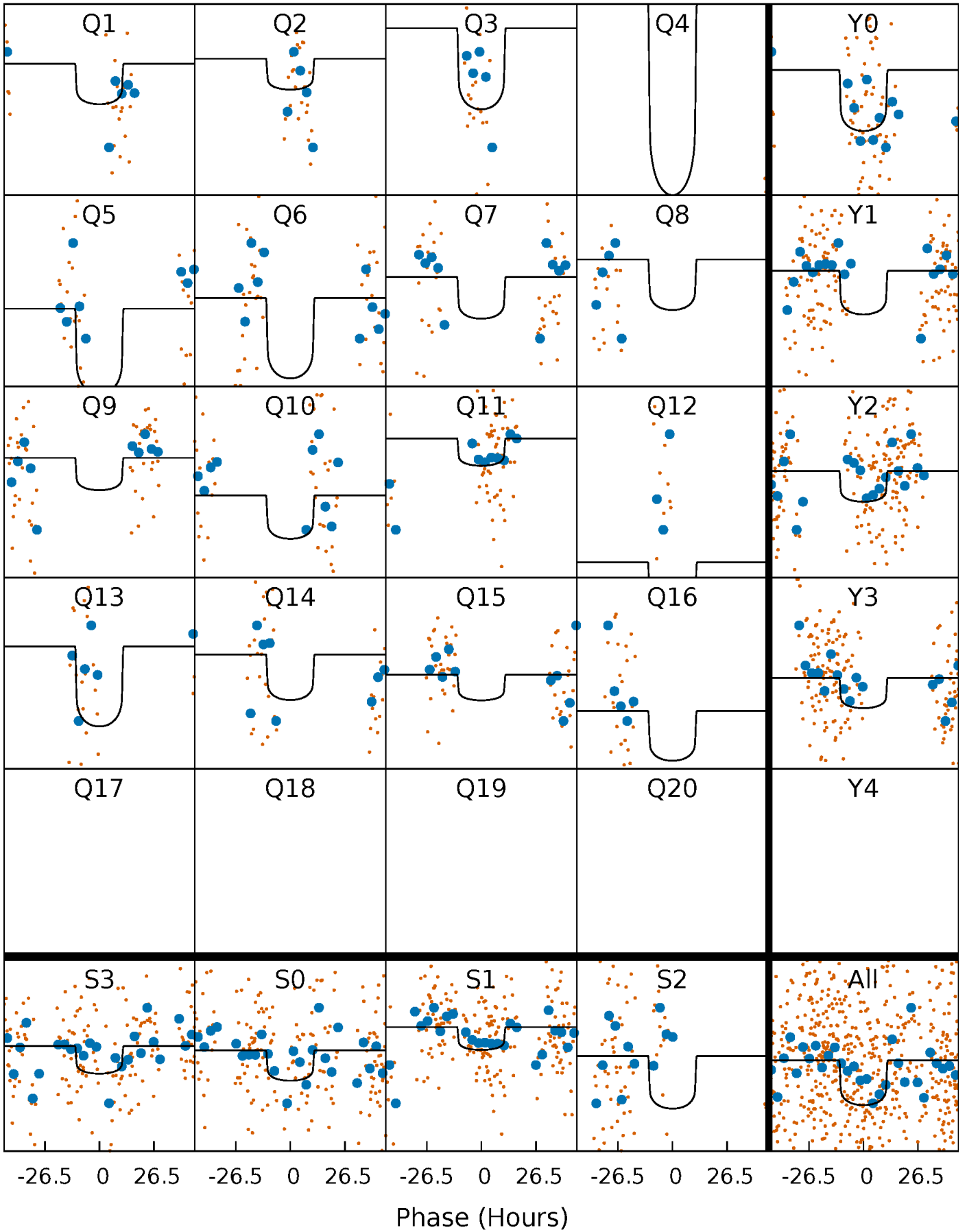
PDC Quarter-Phased Transit Curves

TCE 010083510-05 $P = 86.711756$ Days $T_0 = 140.203891$ (BKJD)



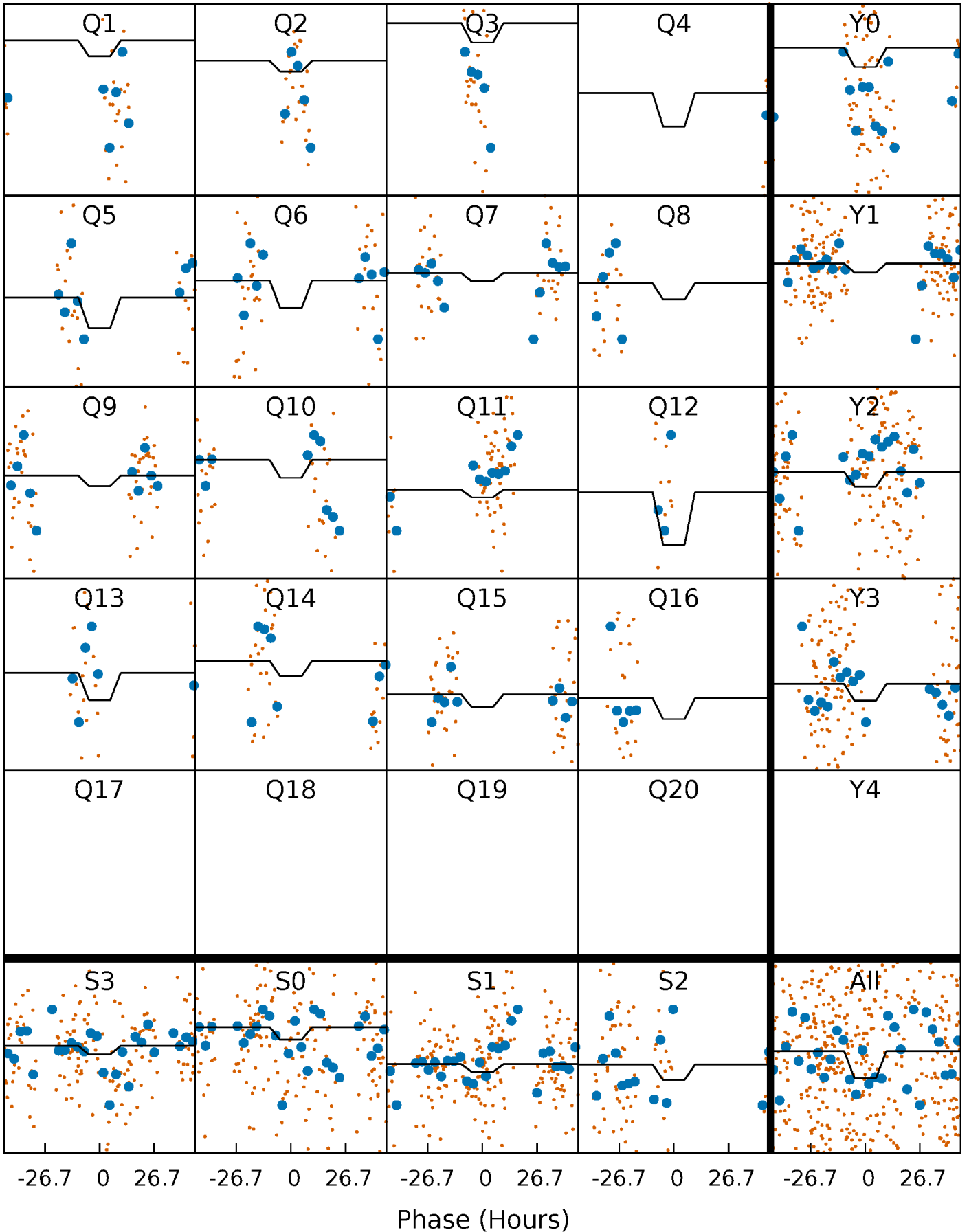
DV Quarter-Phased Transit Curves

TCE 010083510-05 P= 86.711756 Days $T_0=140.203891$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

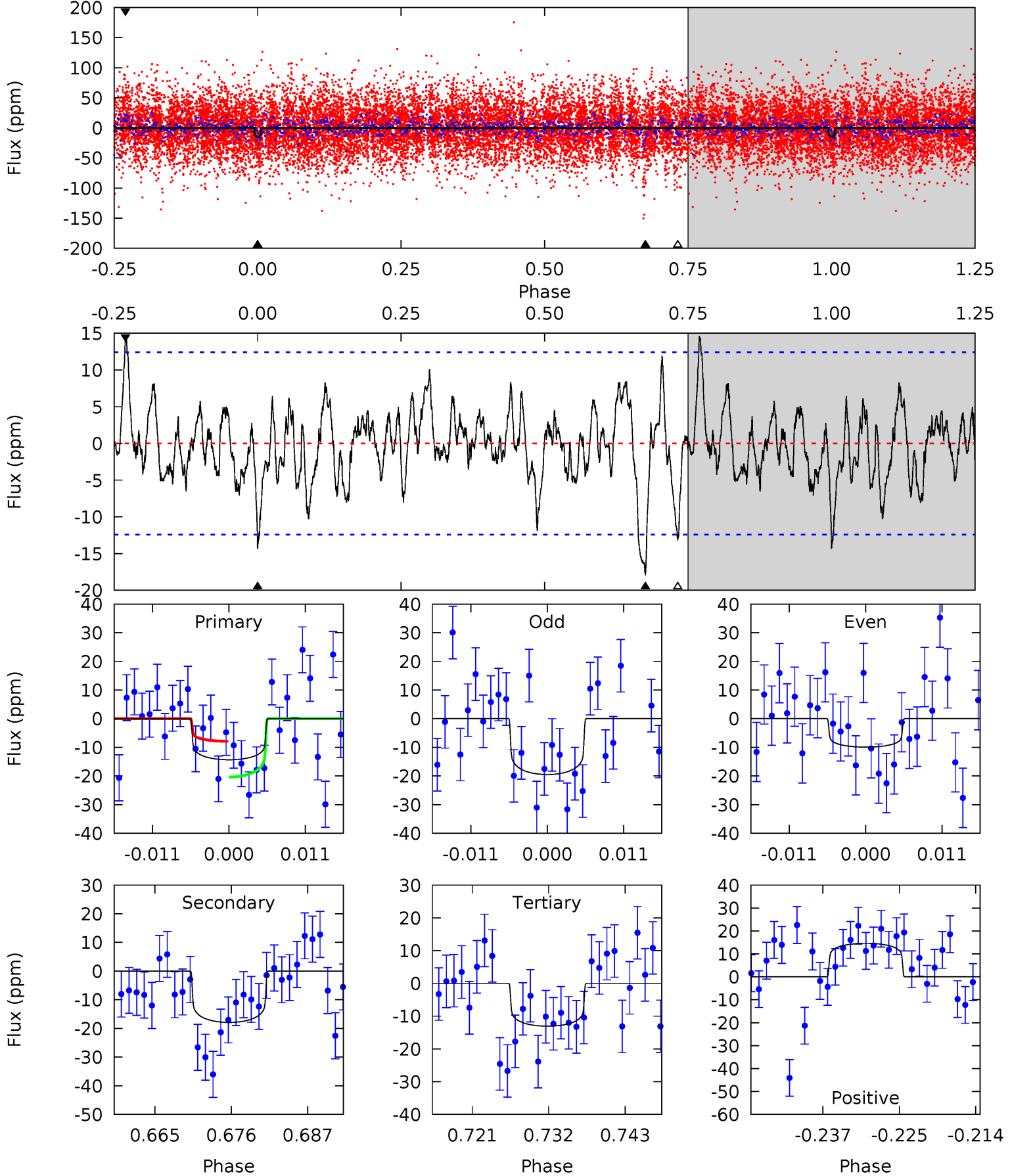
TCE 010083510-05 $P = 86.706406$ Days $T_0 = 140.273431$ (BKJD)



DV Model-Shift Uniqueness Test

010083510-05, P = 86.711756 Days, E = 53.492135 Days

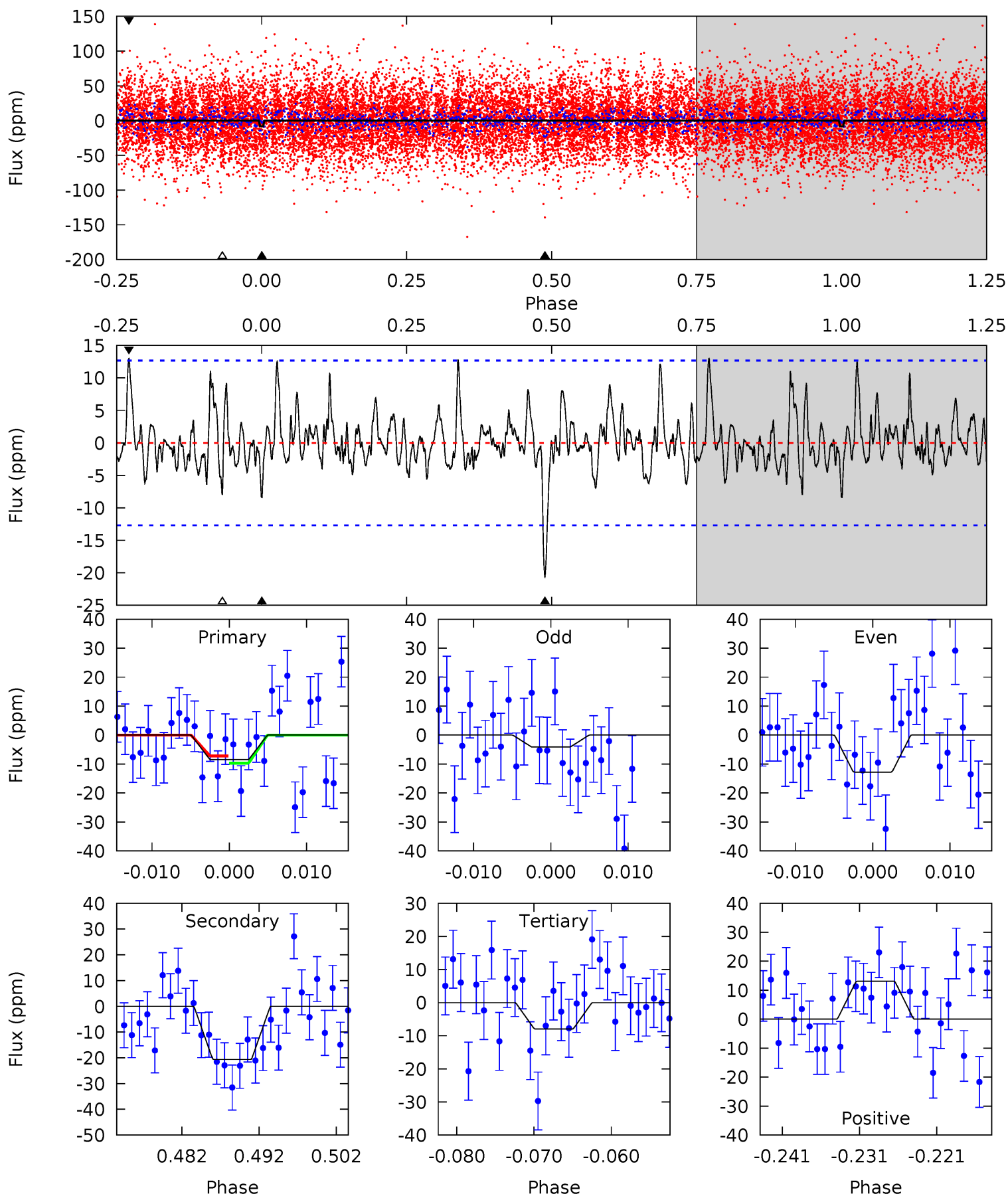
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.78	7.22	5.26	5.89	5.00	2.53	1.67	0.51	-0.12	1.96	1.33	1.92	0.91	0.45	2.52



Alt Model-Shift Uniqueness Test

010083510-05, P = 86.706406 Days, E = 53.567025 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.35	8.18	3.16	5.17	5.03	2.57	1.42	0.19	-1.82	5.02	3.01	1.71	0.97	0.39	0.49



Stellar Parameters For KIC 010083510

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	7500^{+206}_{-335}	$3.978^{+0.187}_{-0.153}$	$0.180^{+0.150}_{-0.350}$	$2.316^{+0.525}_{-0.642}$	$1.859^{+0.148}_{-0.346}$	$0.211^{+0.229}_{-0.088}$
	+3%/-4%	+5%/-4%	+83%/-194%	+23%/-28%	+8%/-19%	+108%/-42%
Source	KIC0	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 010083510-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-18 ± 2	$1.29^{+0.29}_{-0.29}$	1017^{+71}_{-76}	6650^{+831}_{-632}	1302^{+798}_{-479}
Alt.	-21 ± 3	$0.72^{+0.27}_{-0.24}$	1016^{+80}_{-69}	10064^{+3512}_{-1984}	4764^{+5922}_{-2272}

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

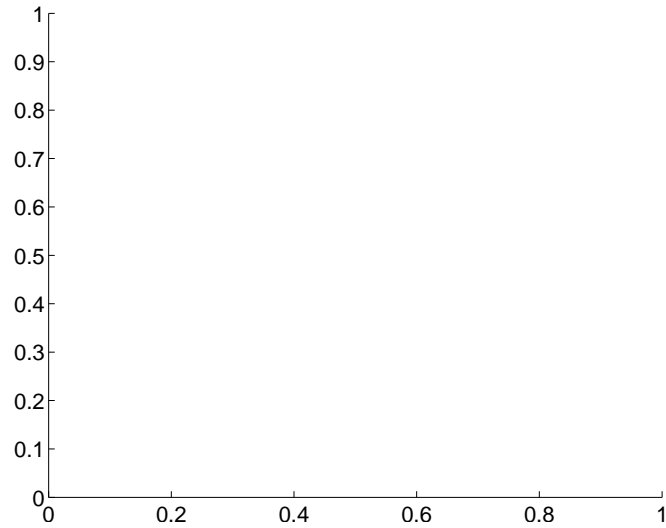
Supplemental centroid analysis for 010083510-05. **Kepler magnitude: 10.65.** Transit SNR 6.68

There are 0 quarters with good PRF difference image offsets

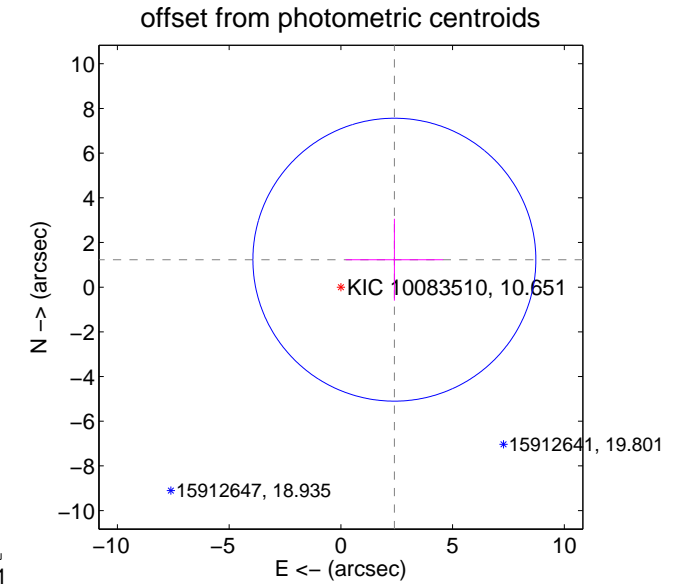
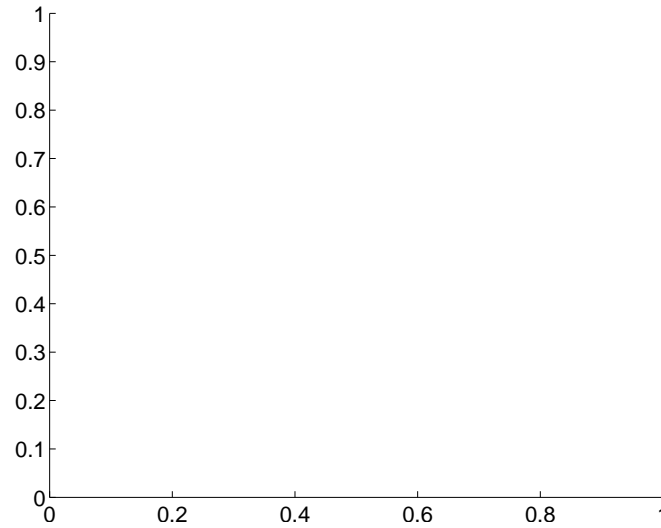
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	2.69 ± 2.11	1.28	-2.40 ± 2.18	1.23 ± 1.83

There is no PRF-fit offset from OOT-fit

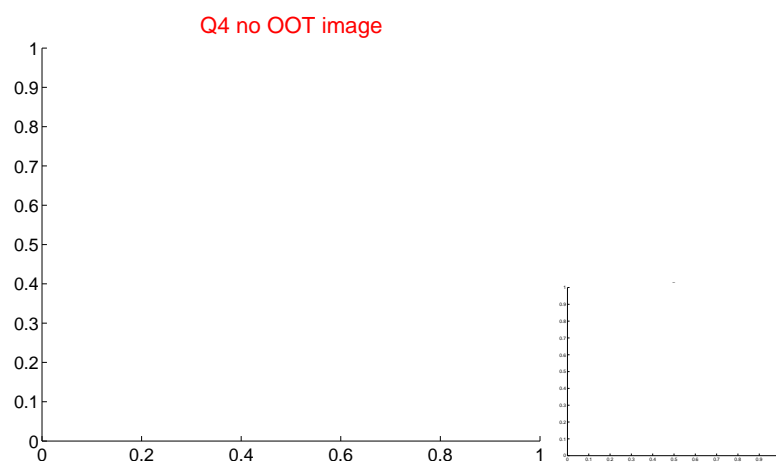
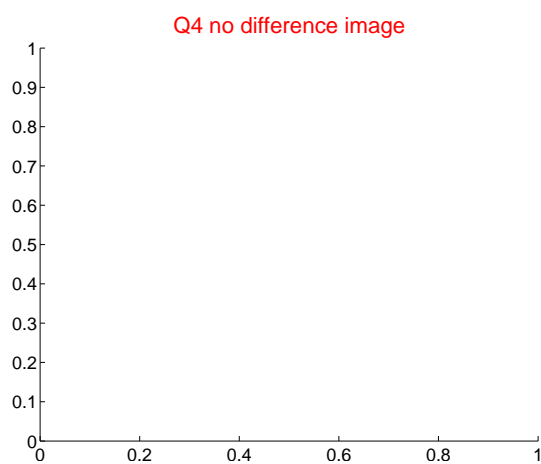
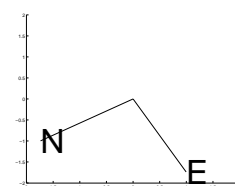
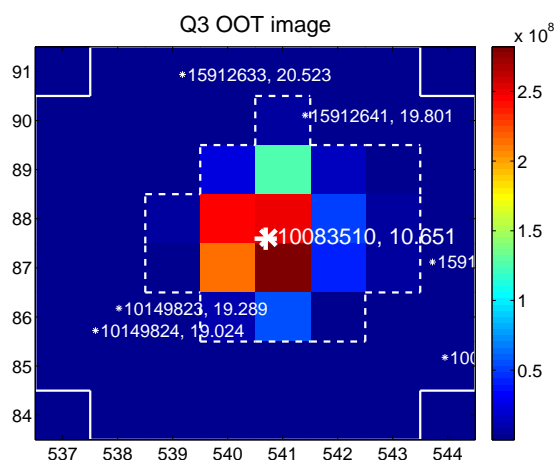
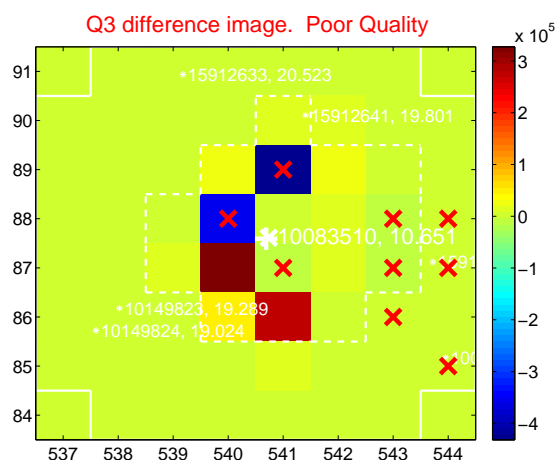
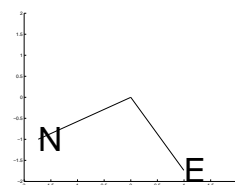
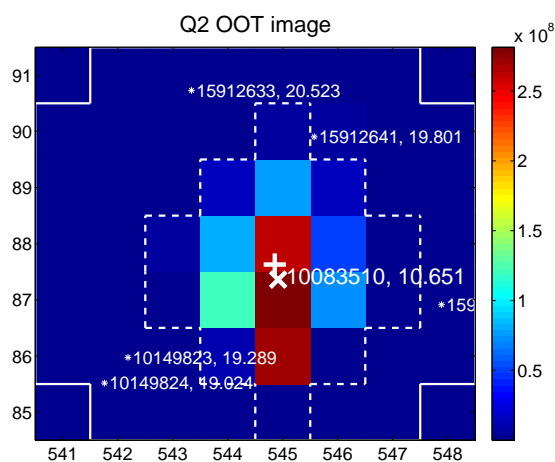
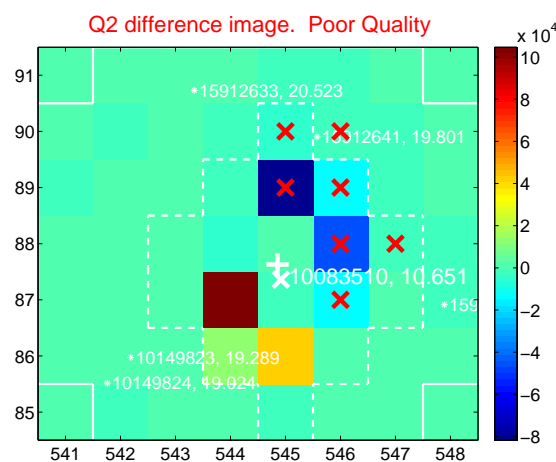
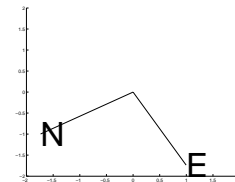
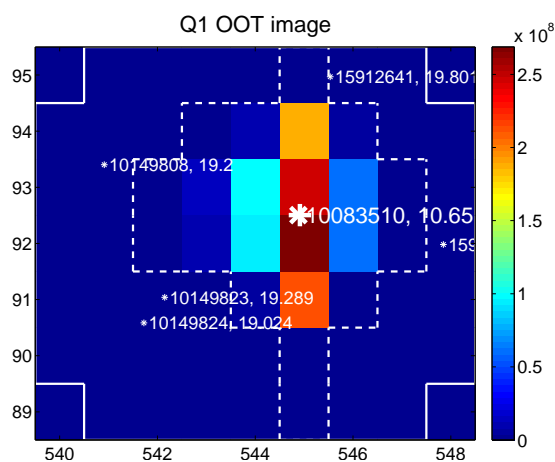
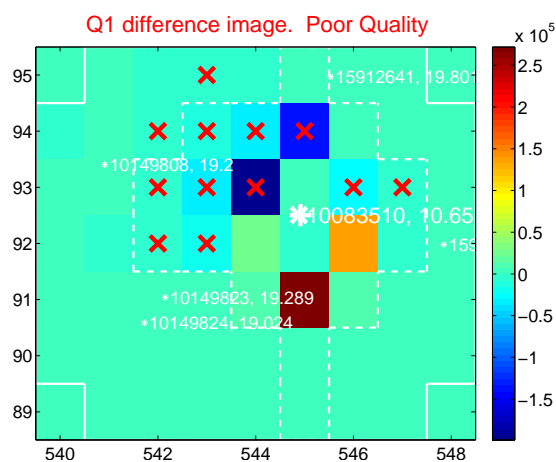


There is no PRF-fit offset from KIC

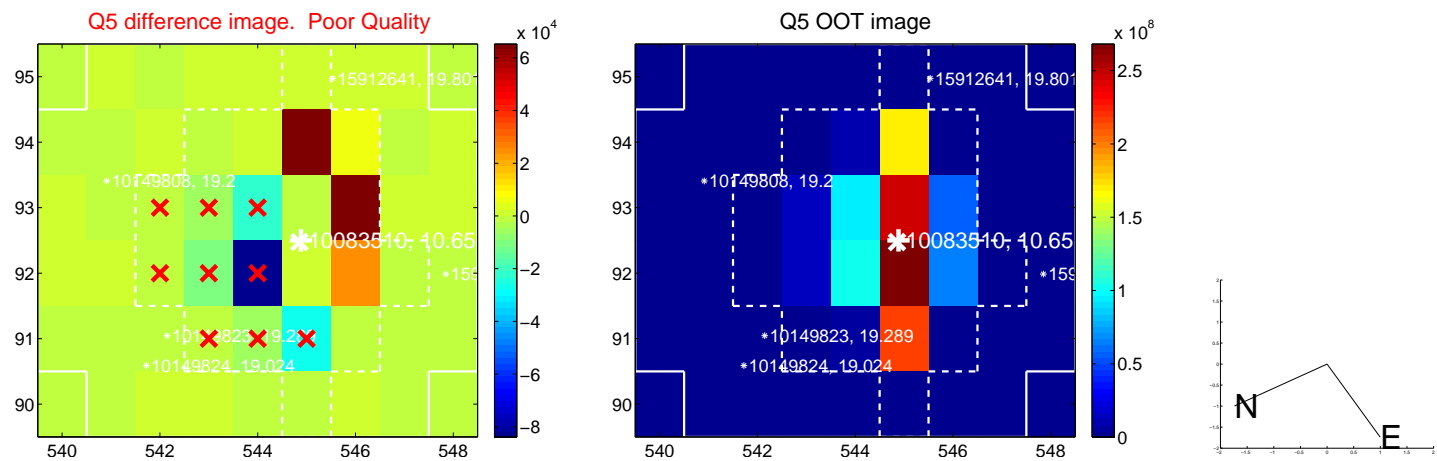


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

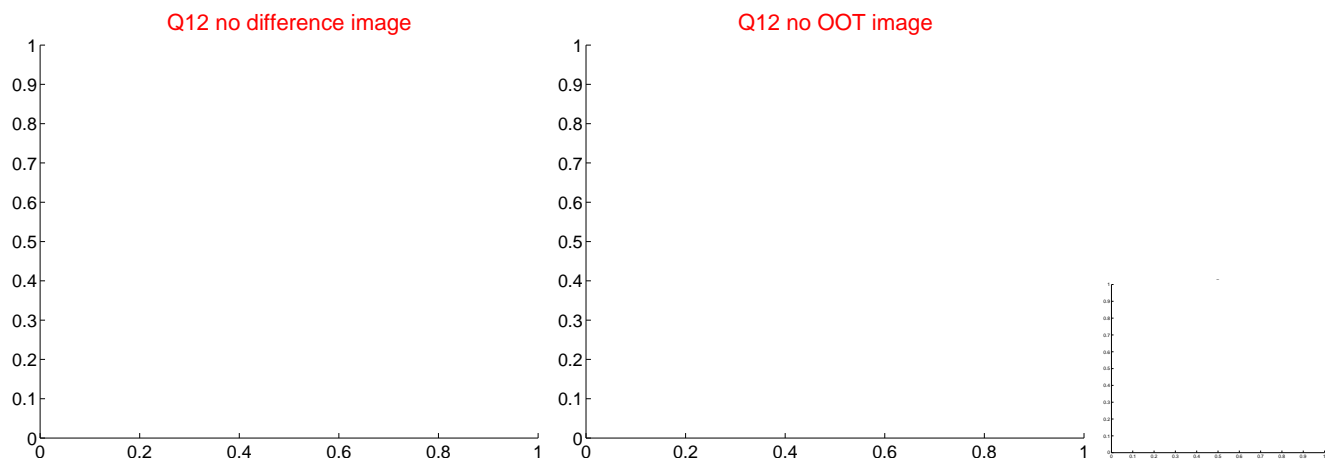
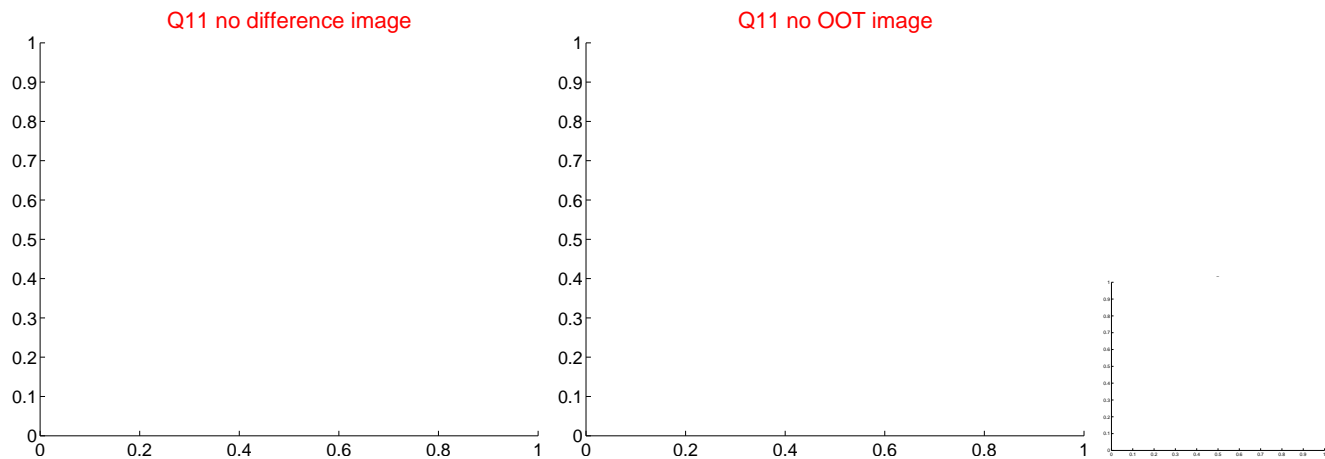
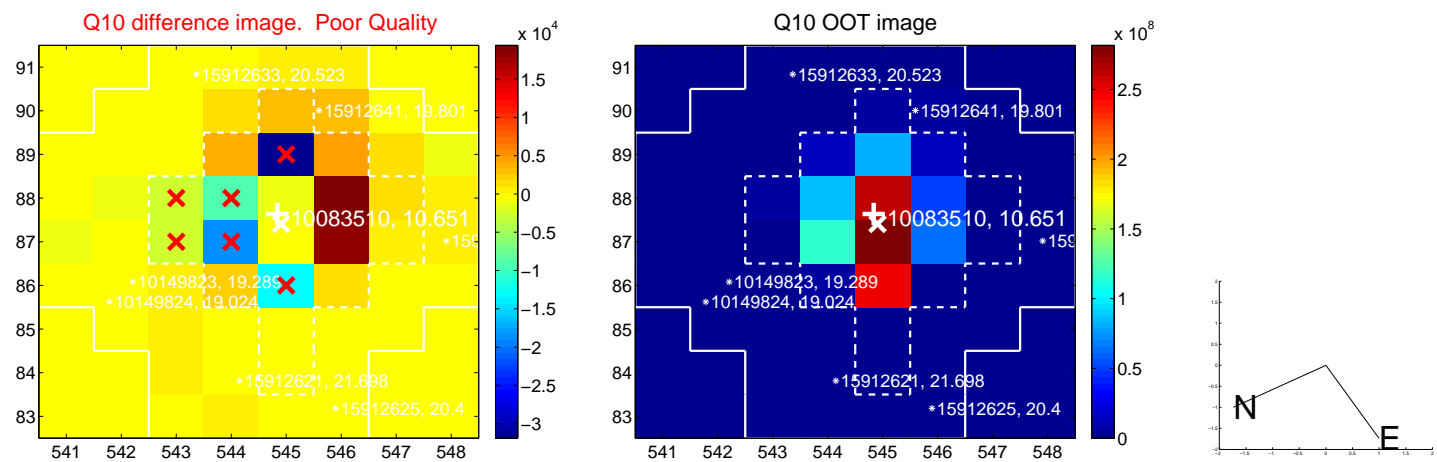
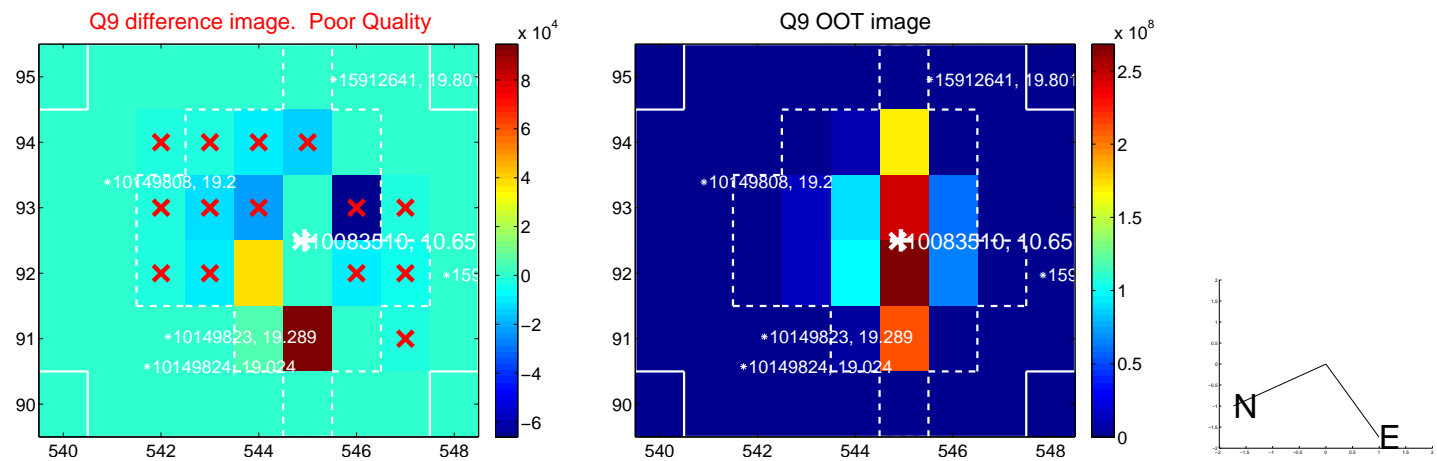
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.

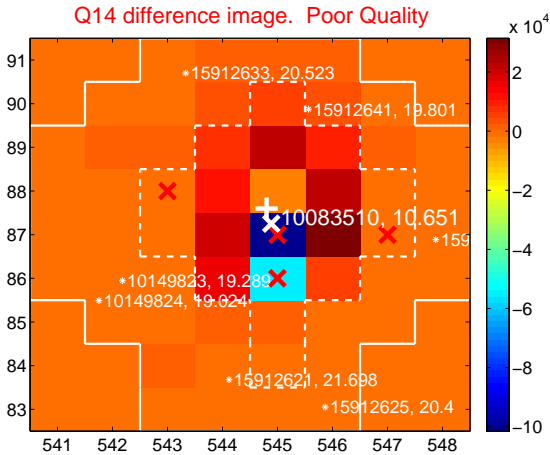
Q13 no difference image



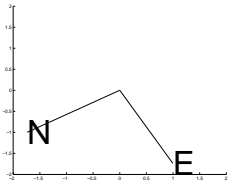
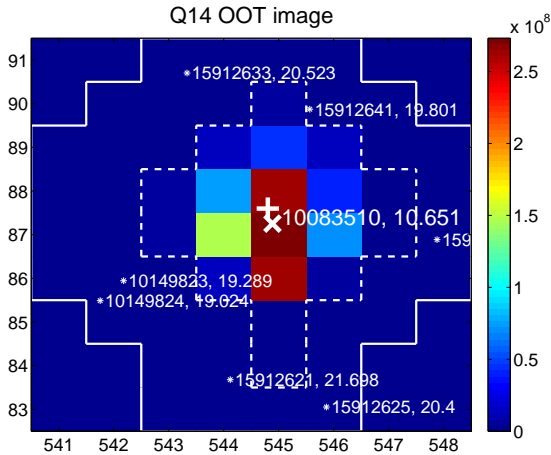
Q13 no OOT image



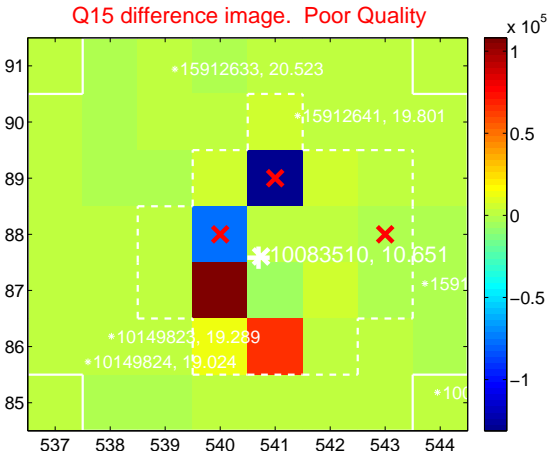
Q14 difference image. Poor Quality



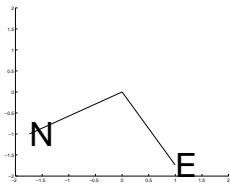
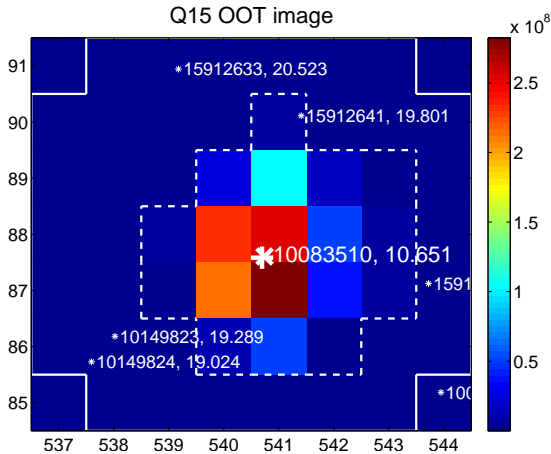
Q14 OOT image



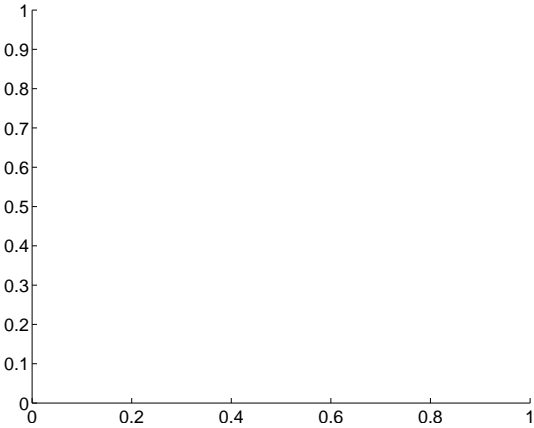
Q15 difference image. Poor Quality



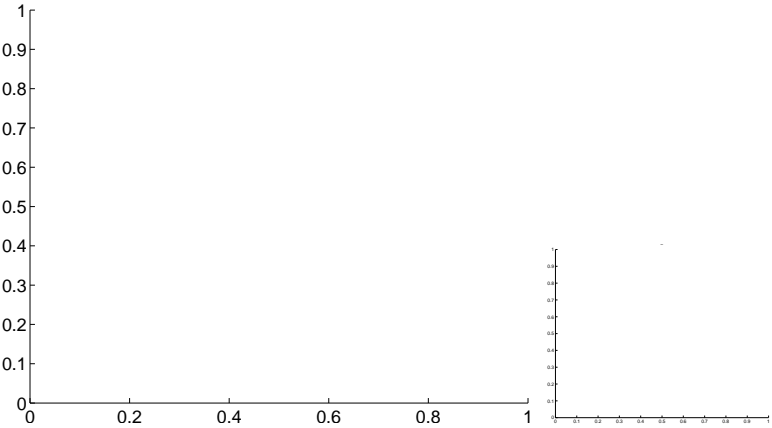
Q15 OOT image



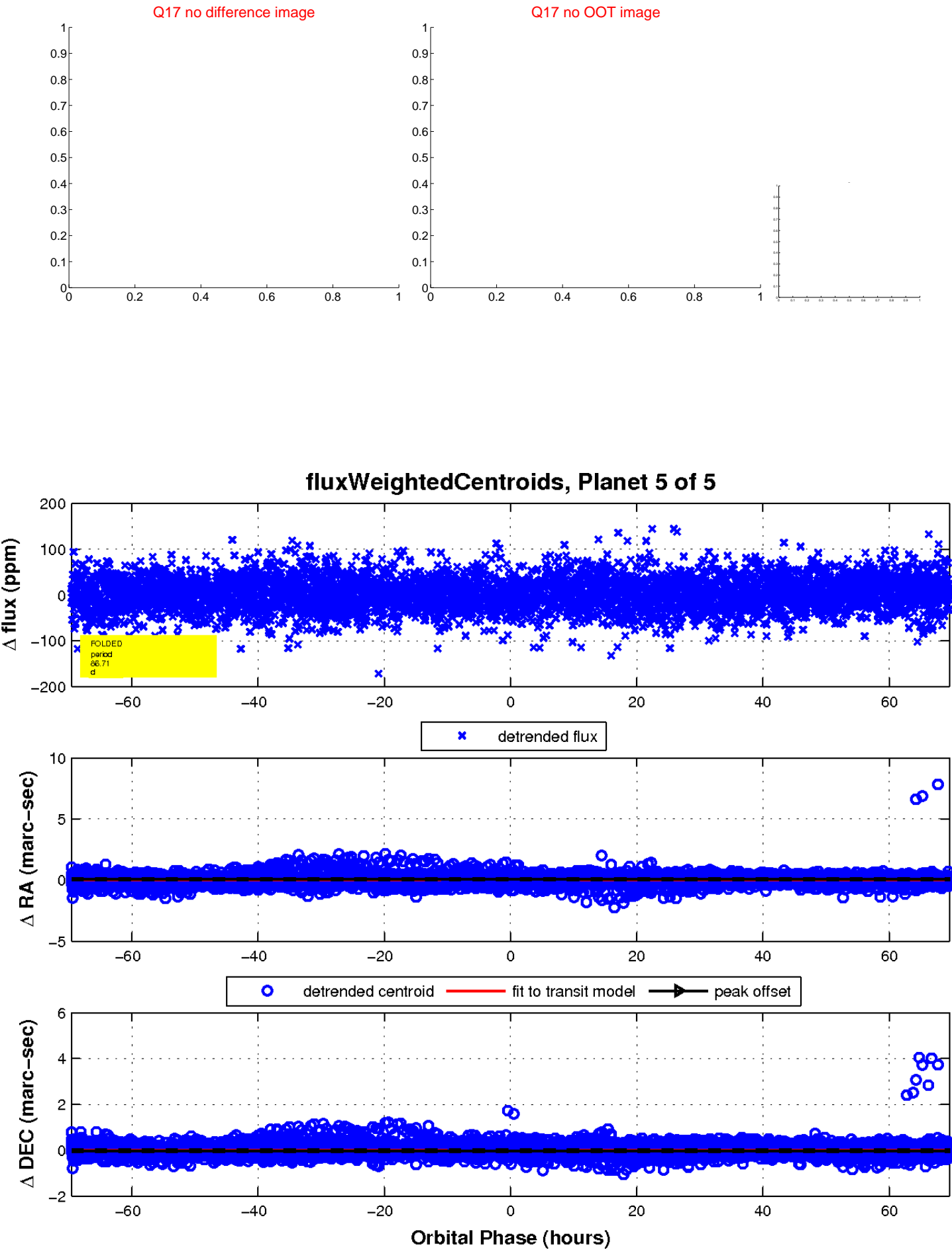
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

