

KIC 004141210

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})
004141210-01	OBS	No	0.695717	131.886673	2.3	2.951	7.7	6.8	1.77	7377	0.32	27382.90
004141210-02	OBS	No	129.789219	215.221897	44.2	5.281	7.2	6.9	1.77	7377	1.37	25.69

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004141210-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
004141210-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED

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

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

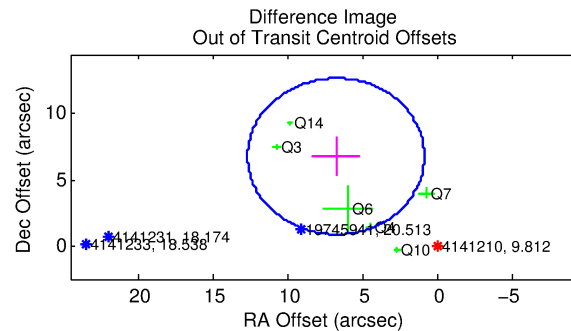
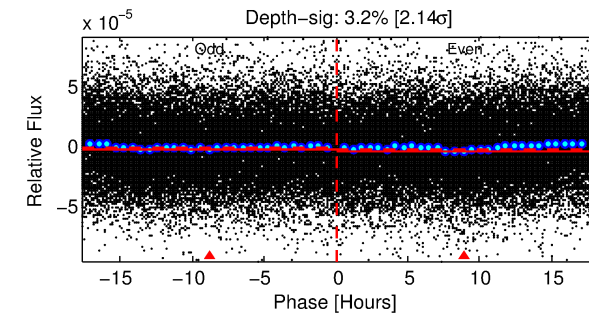
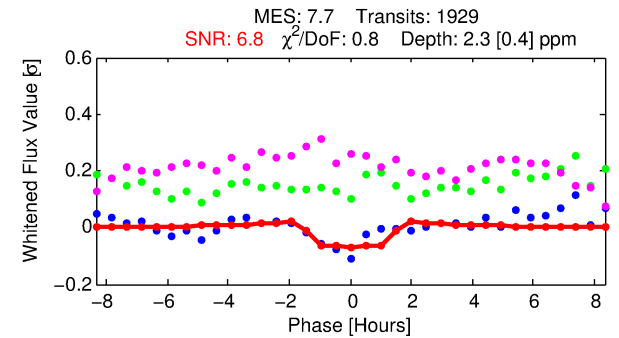
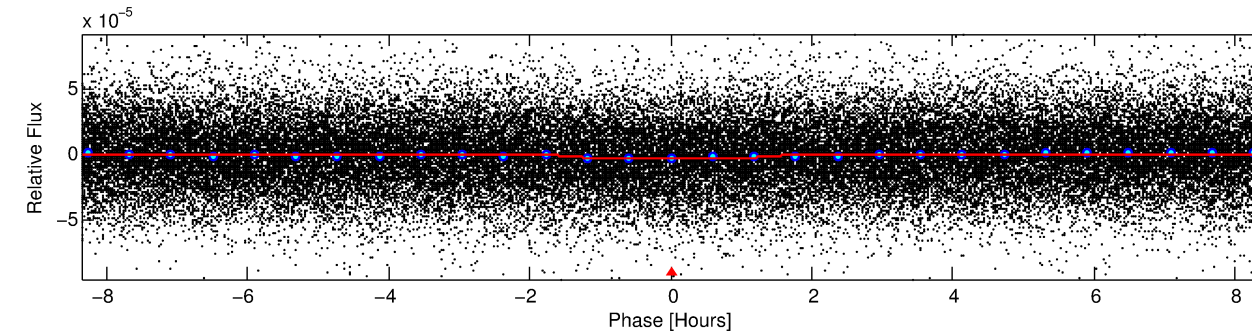
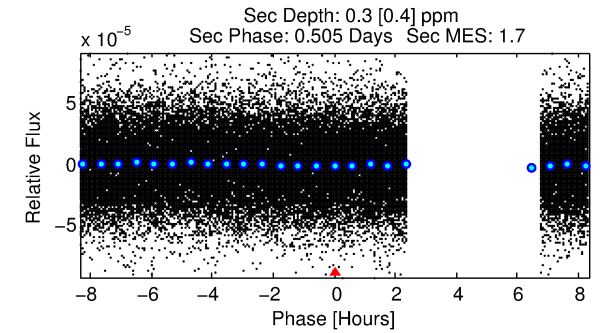
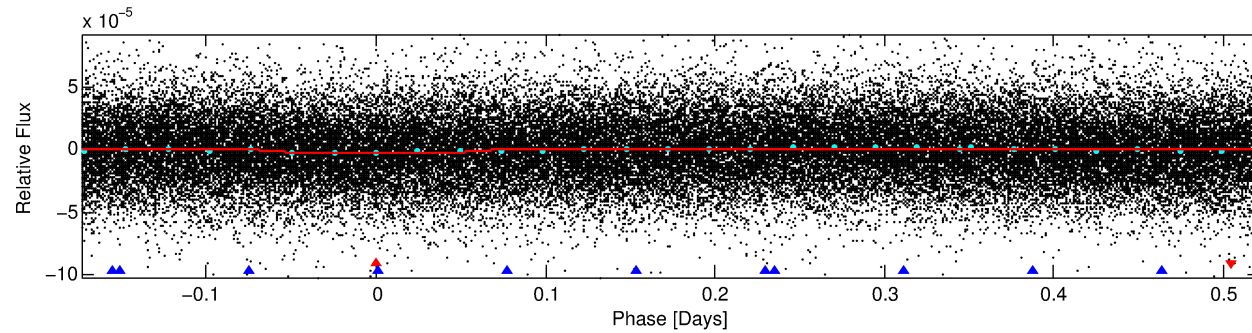
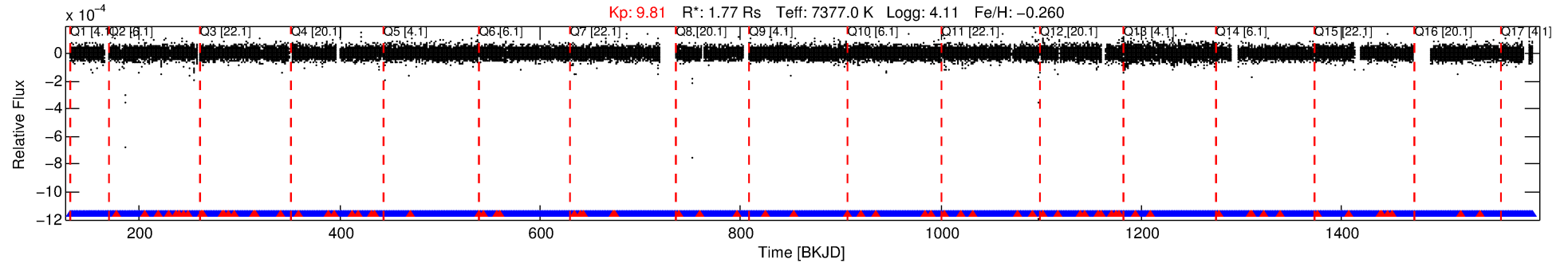
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004141210-01

No Significant Match Found

DV One-Page Summary

KIC: 4141210 Candidate: 1 of 2 Period: 0.696 d



DV Fit Results:

Period = 0.69572 [0.00001] d
Epoch = 131.8867 [0.0040] BKJD
Rp/R* = 0.0016 [0.0002]
a/R* = 1.23 [0.23]
b = 0.90 [0.12]
Seff = 27382.90 [10144.04]
Teq = 3280 [304] K
Rp = 0.32 [0.10] Re
a = 0.0174 [0.0041] AU
Ag = 0.53 [0.74] [-0.63σ]
Teffp = 4325 [1488] K [0.69σ]

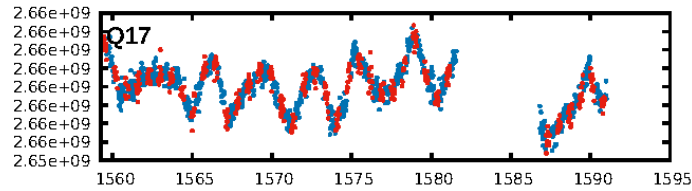
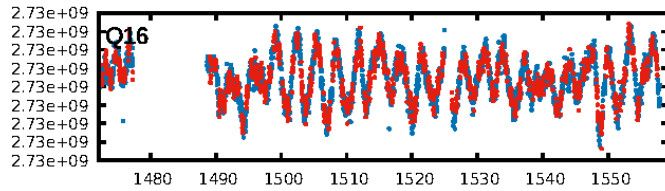
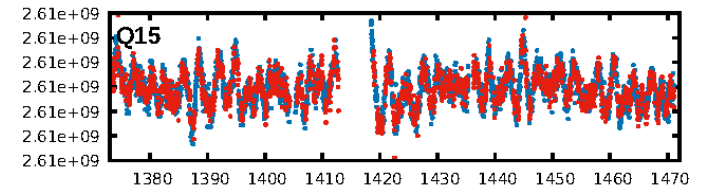
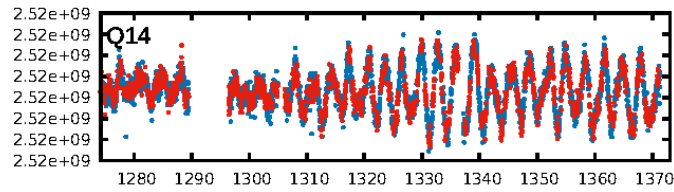
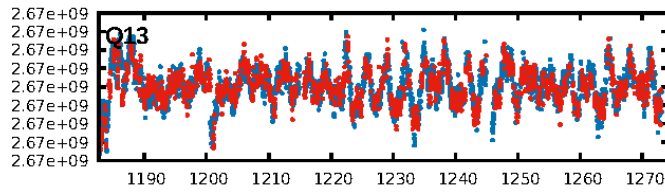
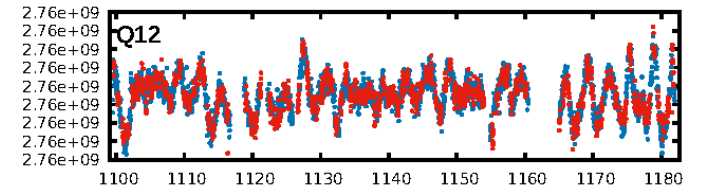
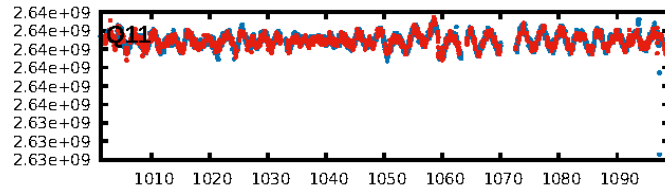
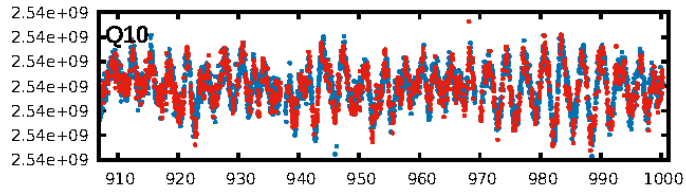
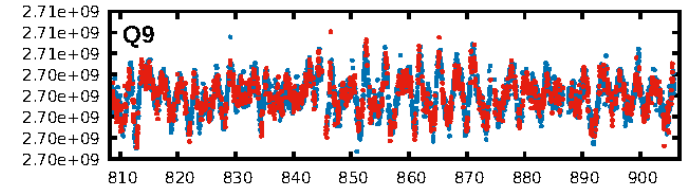
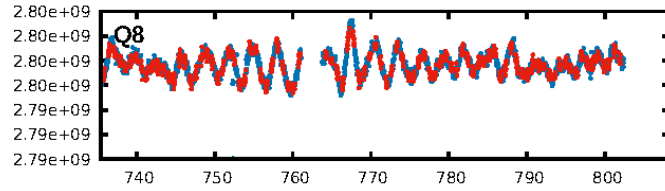
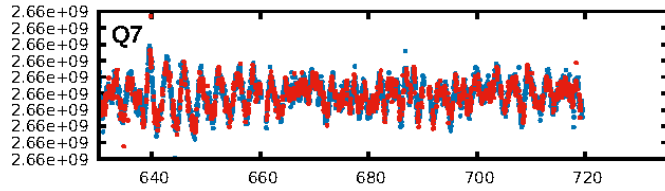
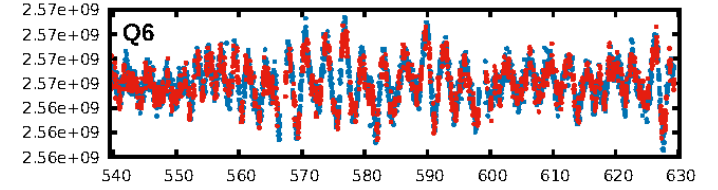
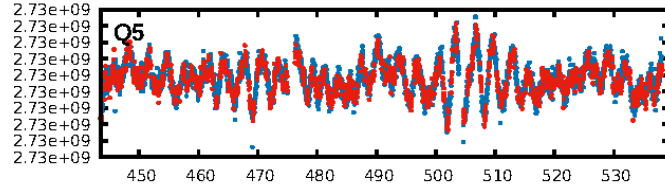
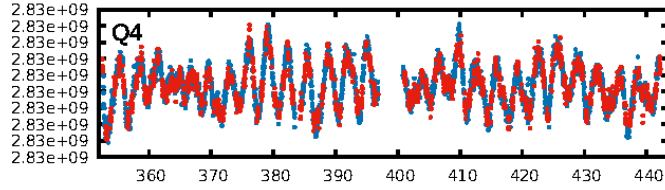
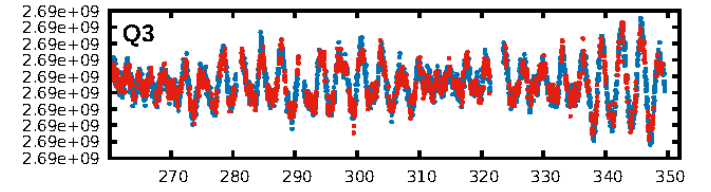
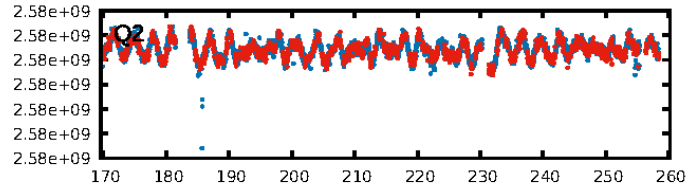
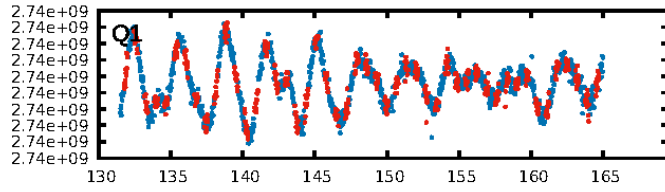
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [512.14σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.02e-15
RollingBand-fgt: 0.96 [1768/1843]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 9.557 arcsec [4.85σ]
KicOffset-rm: 9.939 arcsec [5.44σ]
OotOffset-st: 3/2/1/0 [6]
KicOffset-st: 3/2/1/0 [6]
DiffImageQuality-fgm: 0.00 [0/6]
DiffImageOverlap-fno: 1.00 [17/17]

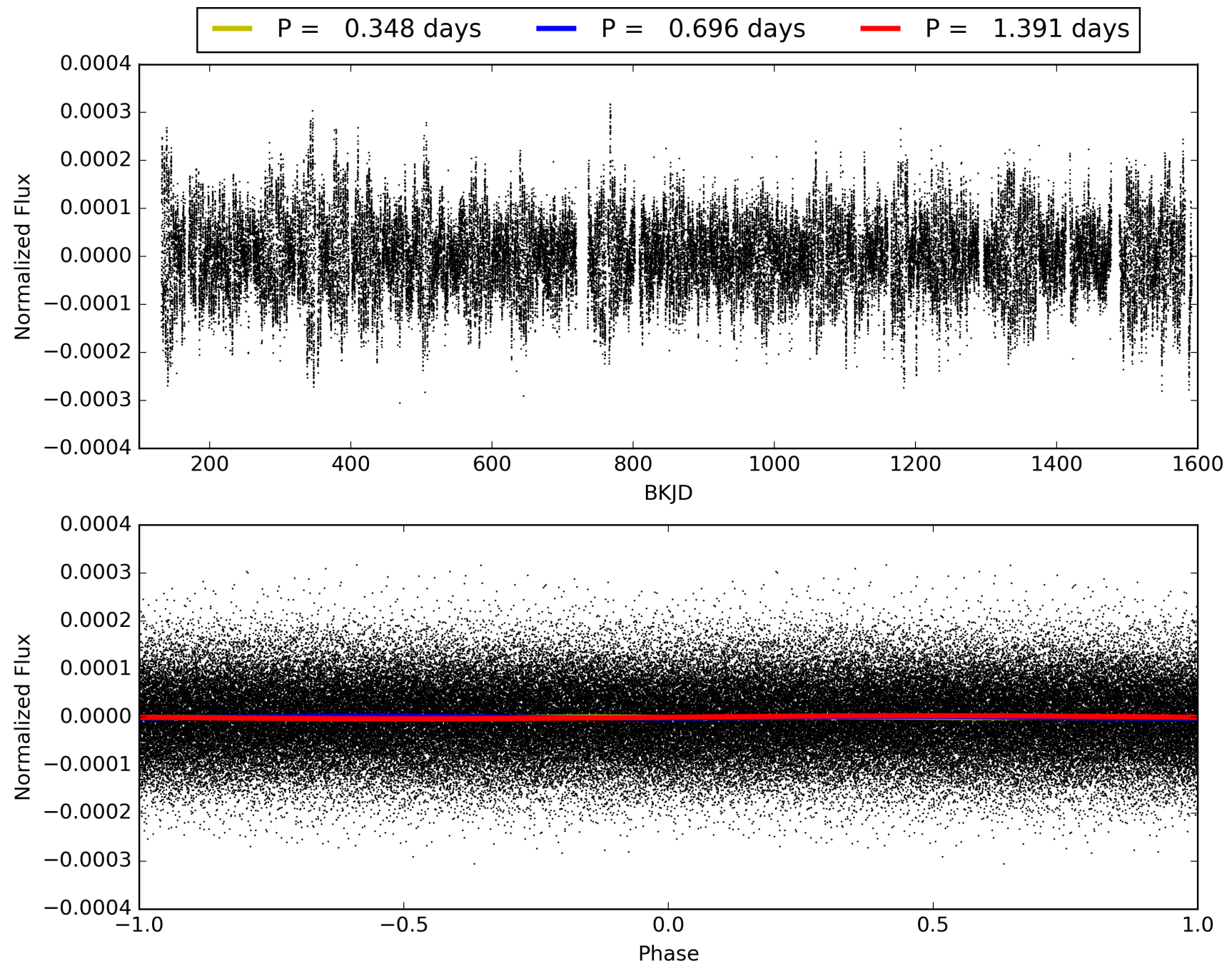
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 17:04:57 Z

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

TCE 004141210-01, PDC Light Curves

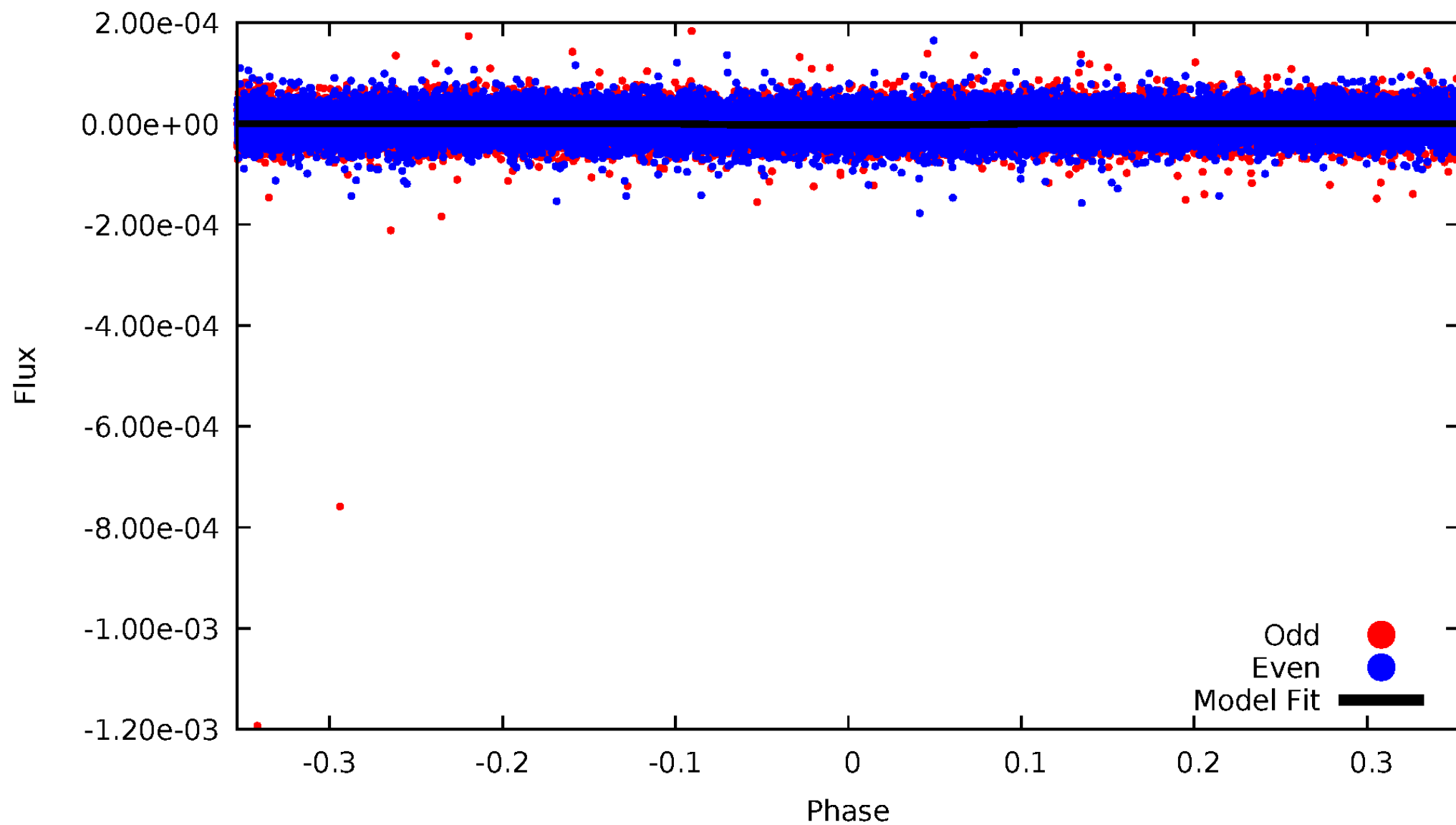


TCE 004141210-01



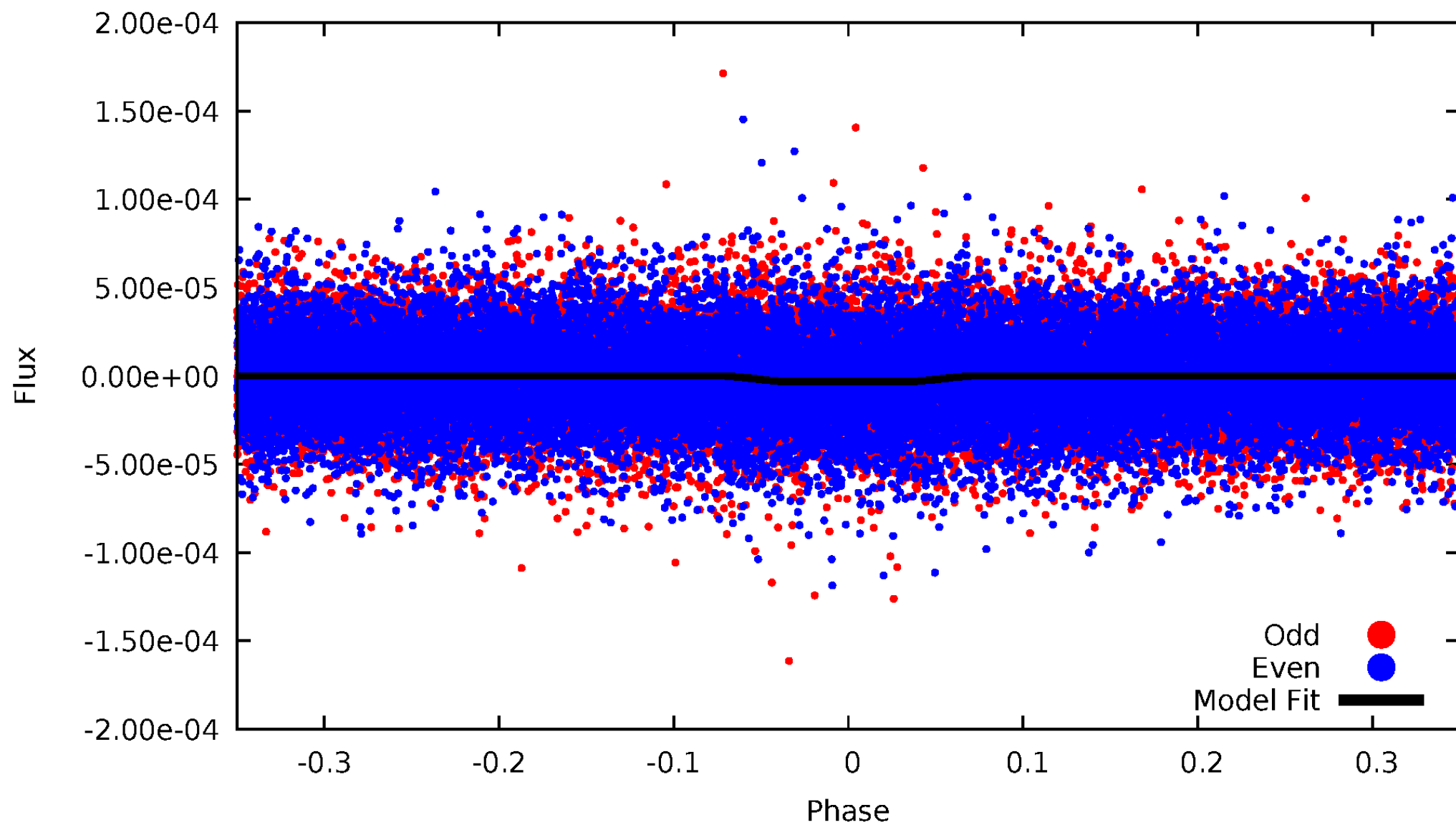
DV Odd/Even

TCE 004141210-01



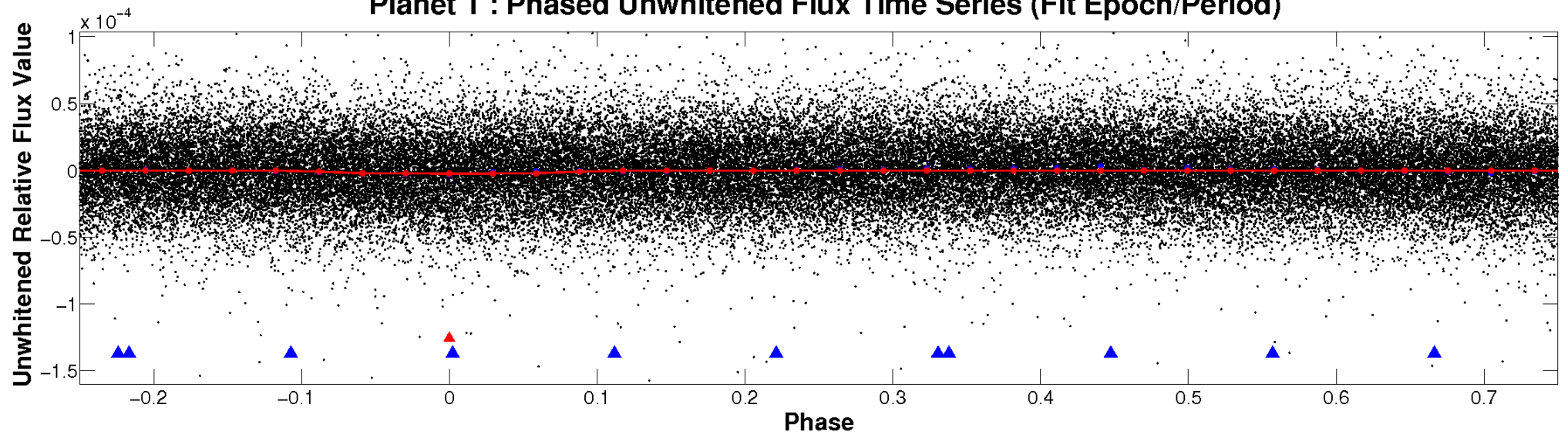
ALT Odd/Even

TCE 004141210-01

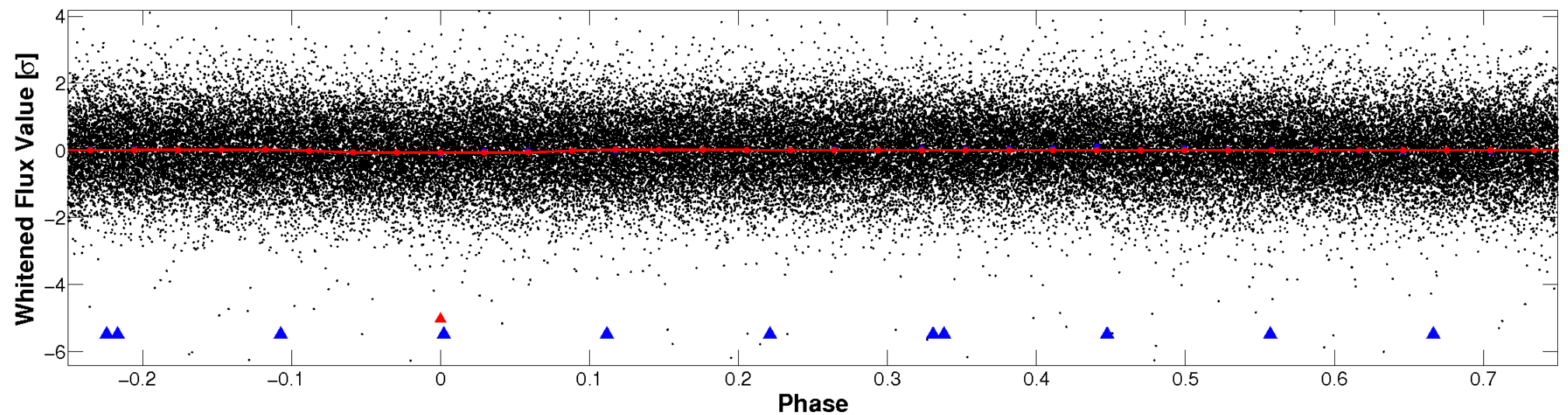


Non-Whitened Vs. Whitened Light Curve

Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

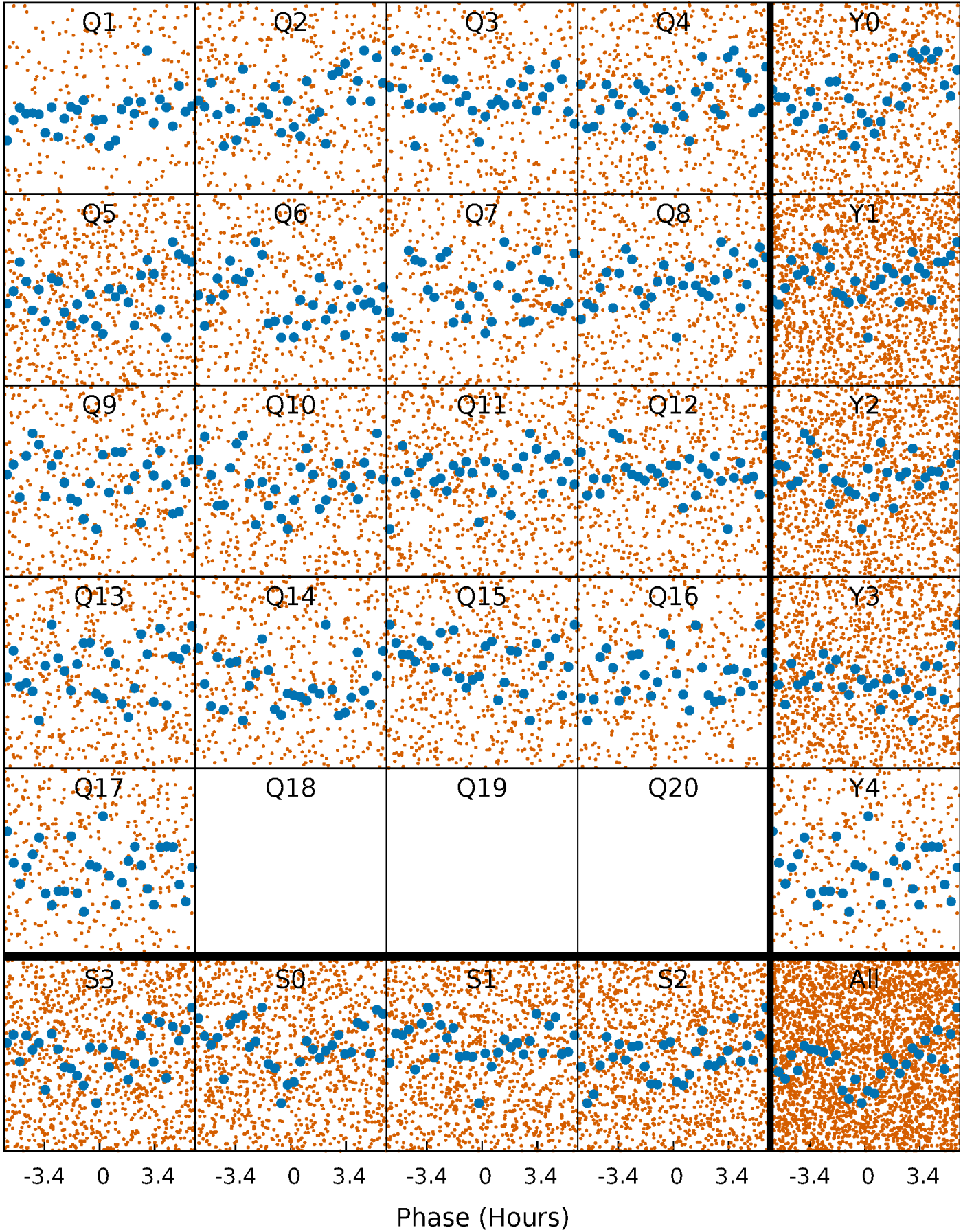


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



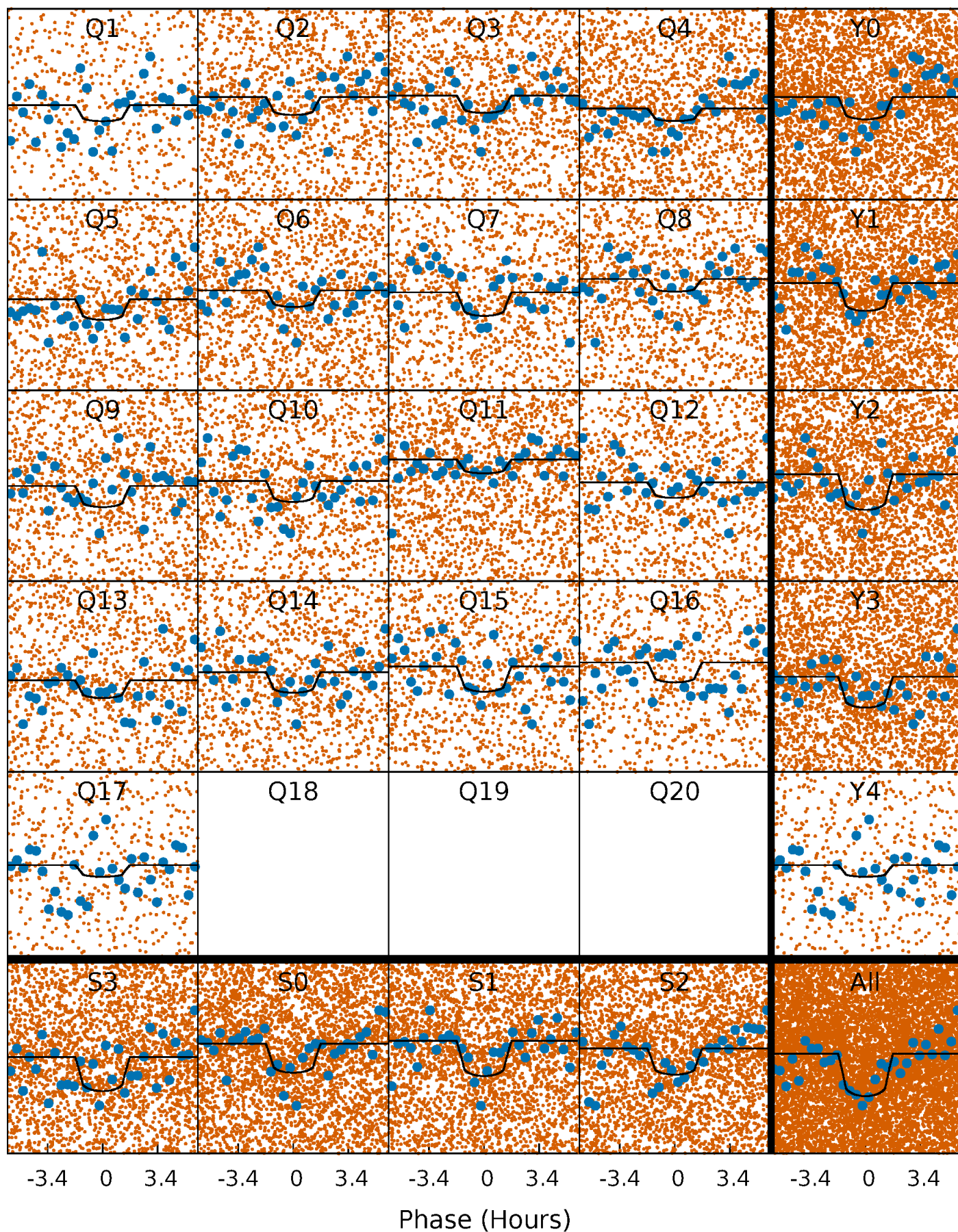
PDC Quarter-Phased Transit Curves

TCE 004141210-01 P= 0.695717 Days $T_0=131.886673$ (BKJD)



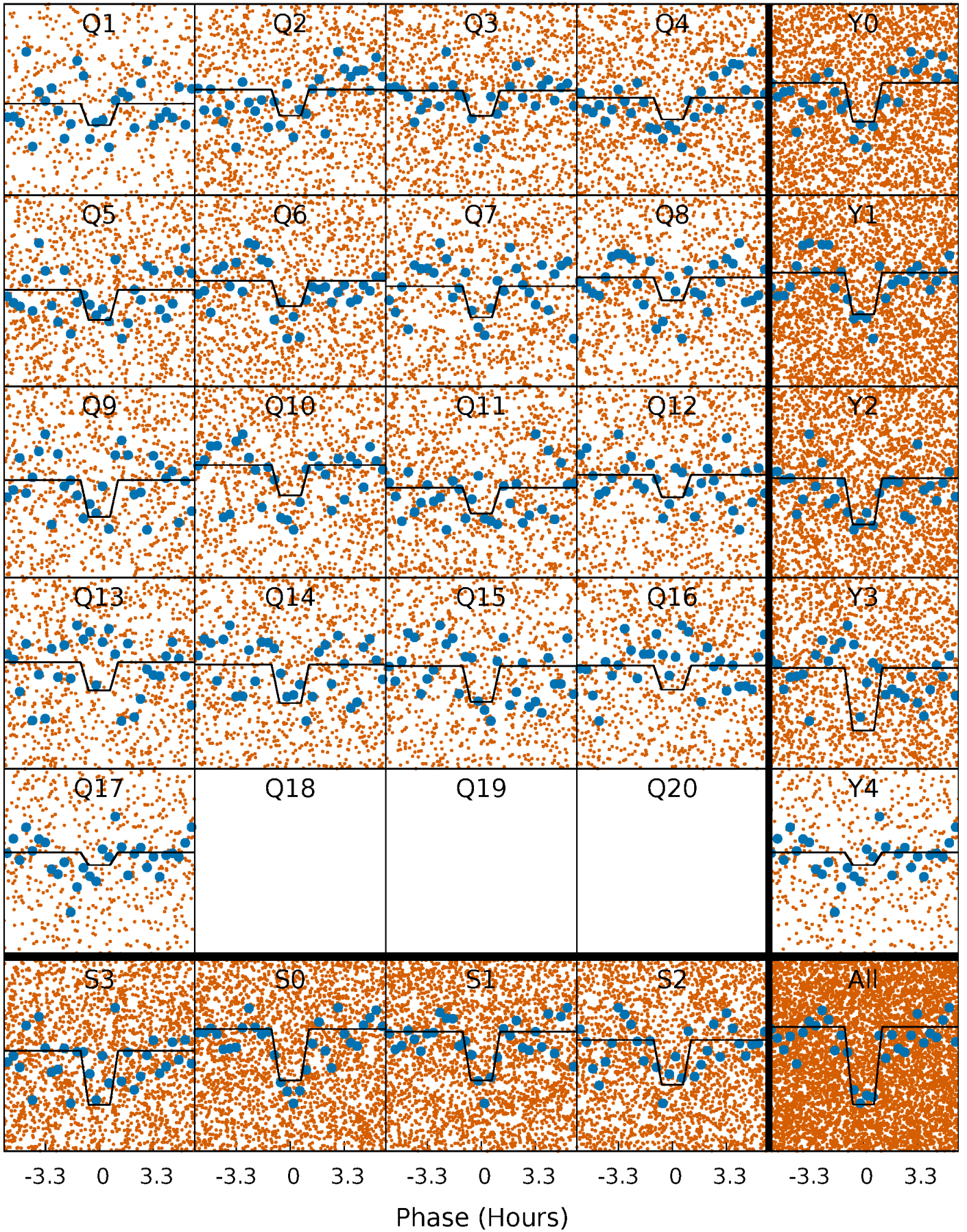
DV Quarter-Phased Transit Curves

TCE 004141210-01 P= 0.695717 Days $T_0=131.886673$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

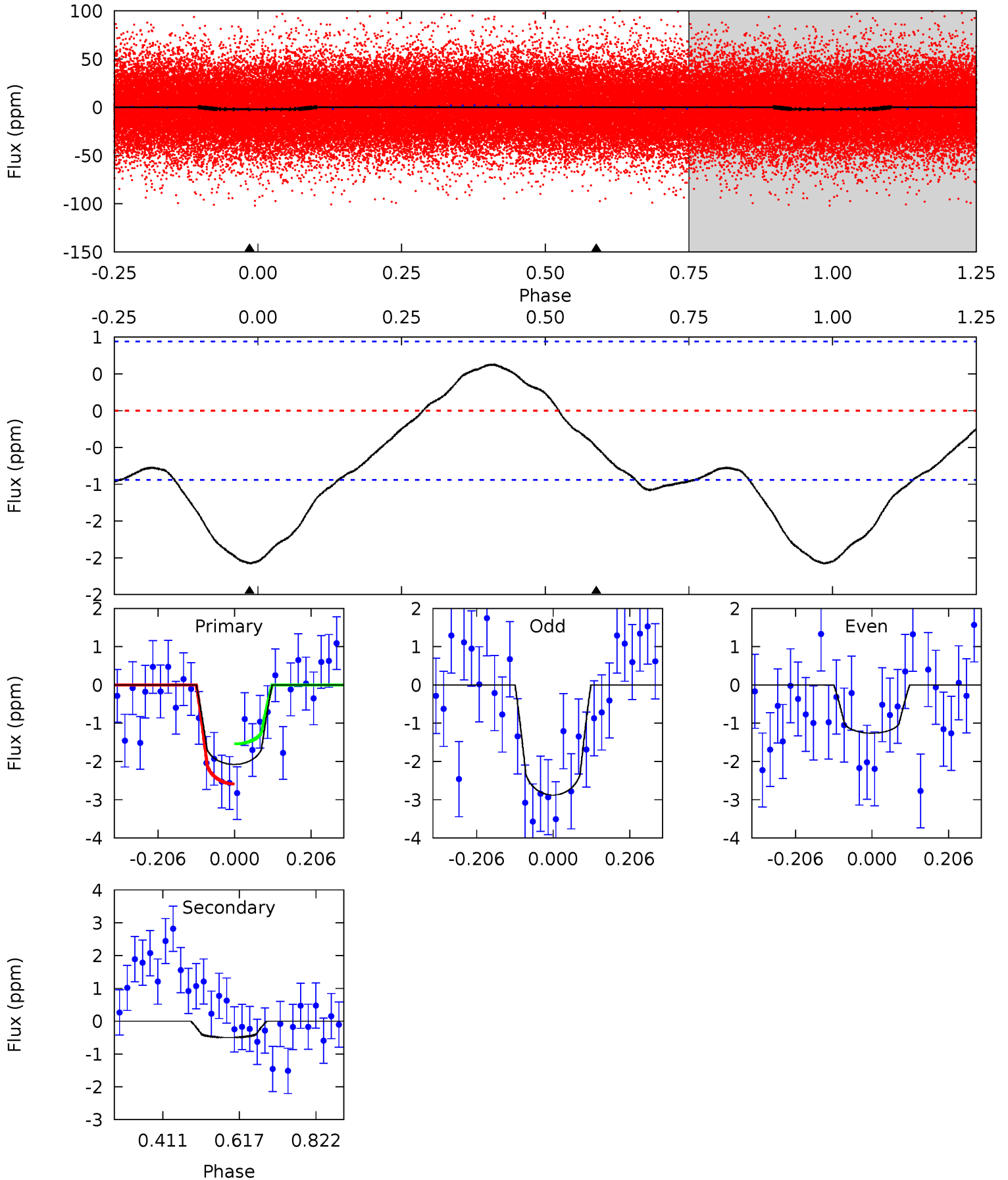
TCE 004141210-01 P= 0.695699 Days $T_0=131.886700$ (BKJD)



DV Model-Shift Uniqueness Test

004141210-01, $P = 0.695717$ Days, $E = 131.190956$ Days

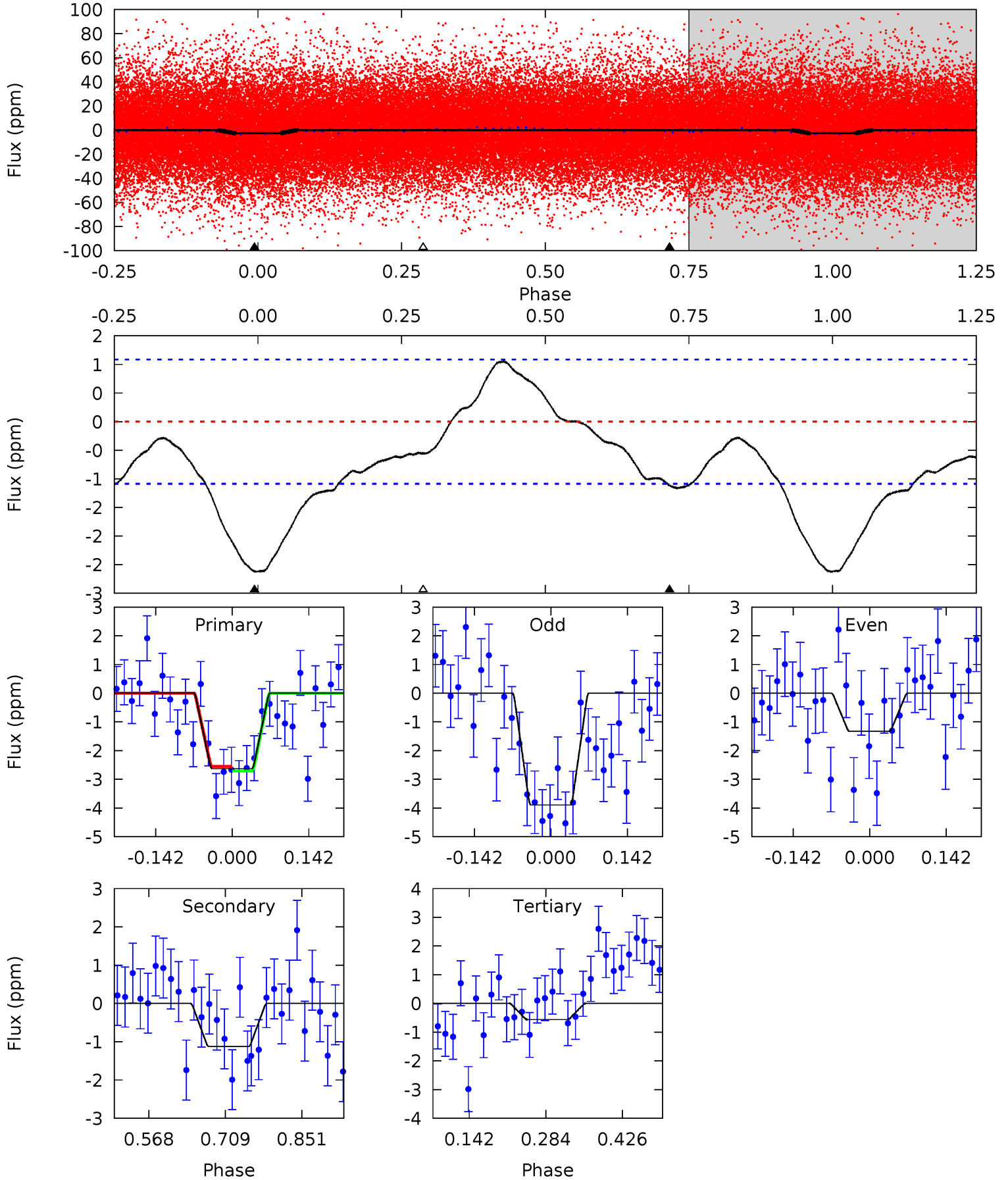
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.73	2.34	0	0	4.41	1.27	1.72	9.73	9.73	2.34	2.34	3.82	0.93	0.23	2.43



Alt Model-Shift Uniqueness Test

004141210-01, P = 0.695699 Days, E = 131.191001 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.9	4.65	2.33	0	4.49	1.47	2.63	8.55	10.9	2.32	4.65	5.27	0.86	0.29	0.32



Stellar Parameters For KIC 004141210

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7377^{+232}_{-310}	$4.106^{+0.175}_{-0.175}$	$-0.260^{+0.250}_{-0.350}$	$1.772^{+0.510}_{-0.418}$	$1.458^{+0.216}_{-0.237}$	$0.369^{+0.338}_{-0.175}$
	+3%/-4%	+4%/-4%	+96%/-135%	+29%/-24%	+15%/-16%	+91%/-47%
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 004141210-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-0 ± 0	$0.32^{+0.07}_{-0.06}$	4583^{+347}_{-324}	4438^{+677}_{-858}	$0.810^{+0.601}_{-0.378}$
Alt.	-1 ± 0	$0.34^{+0.07}_{-0.06}$	4570^{+357}_{-344}	5356^{+537}_{-493}	$1.603^{+0.849}_{-0.583}$

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 $A_{obs} \gg 1.0$

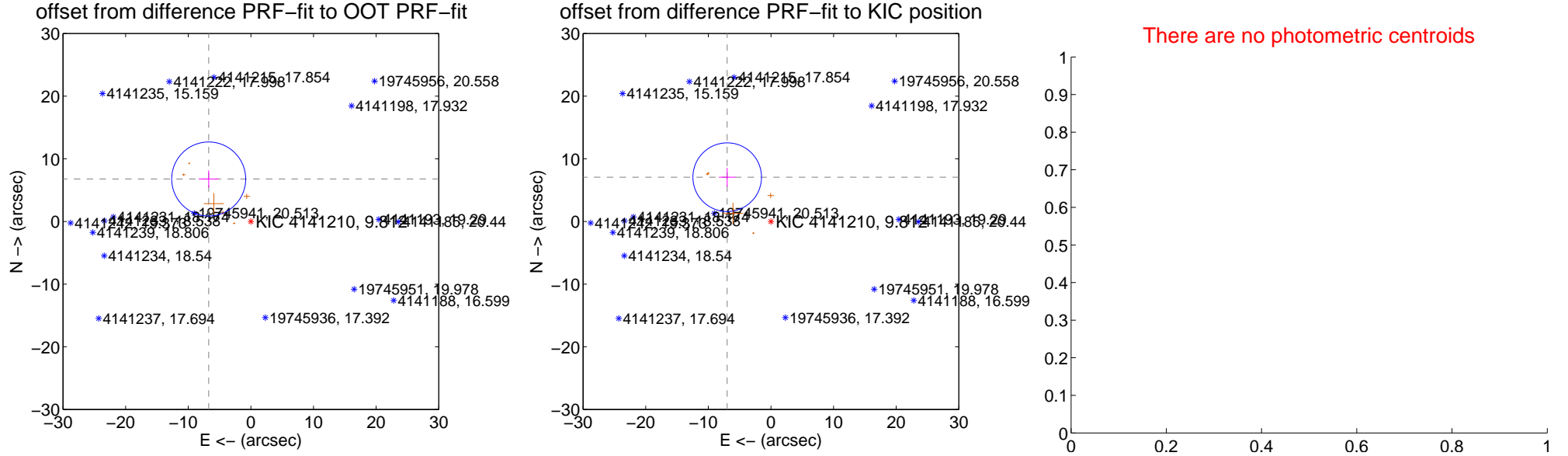
DV Centroid Data

Supplemental centroid analysis for 004141210-01. **Kepler magnitude: 9.81.** Transit SNR 6.84

There are 0 quarters with good PRF difference image offsets

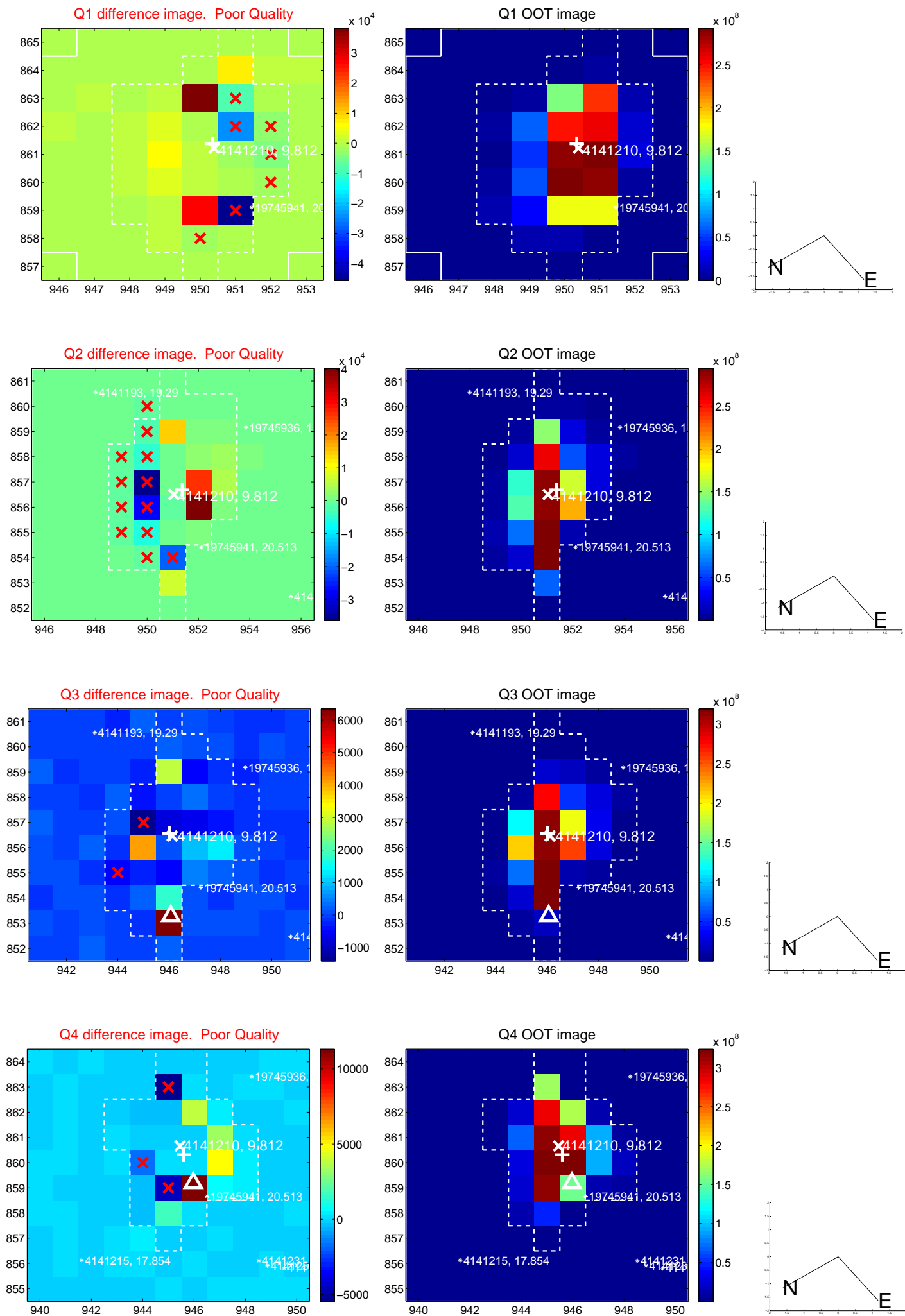
The direct PRF centroid is offset from the target star catalog position by about 1.56 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	9.557 \pm 1.969	4.85	6.737 \pm 1.575	6.778 \pm 1.382
PRF-fit source offset from KIC position	9.939 \pm 1.826	5.44	6.987 \pm 1.310	7.069 \pm 1.490
photometric centroid source offset	—	—	—	—

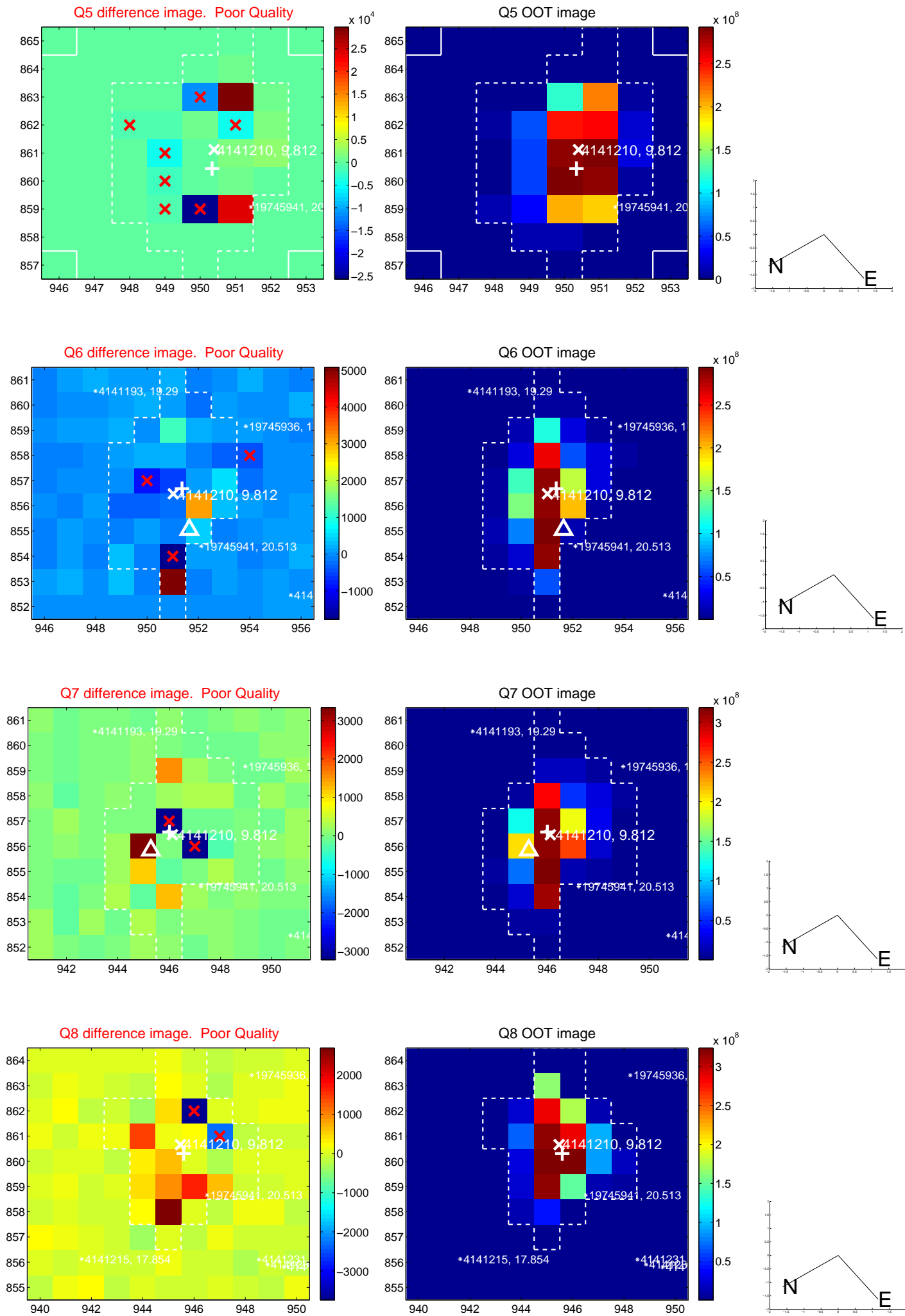


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

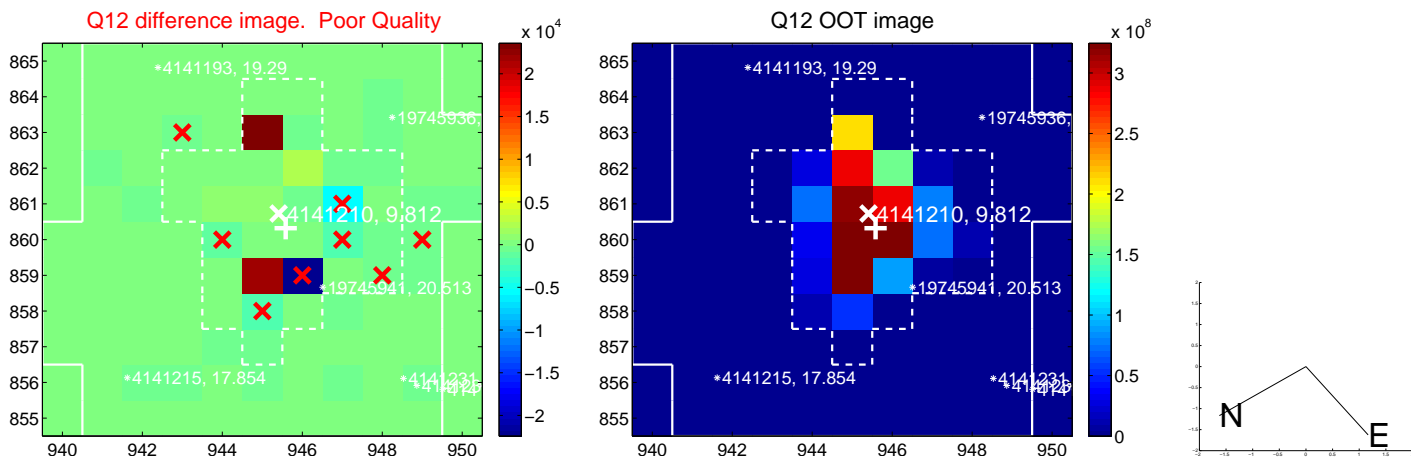
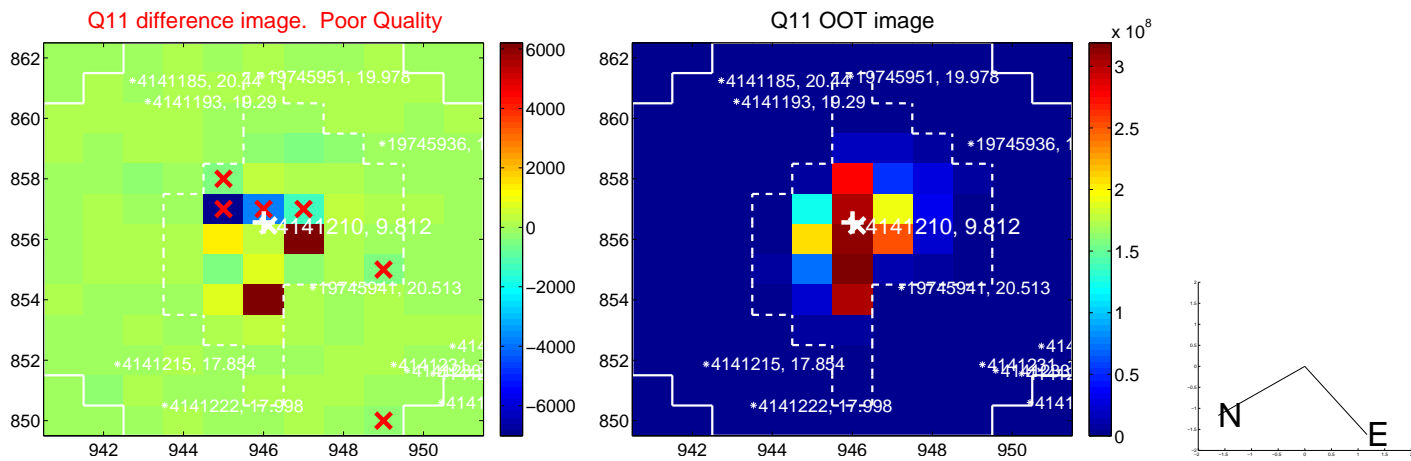
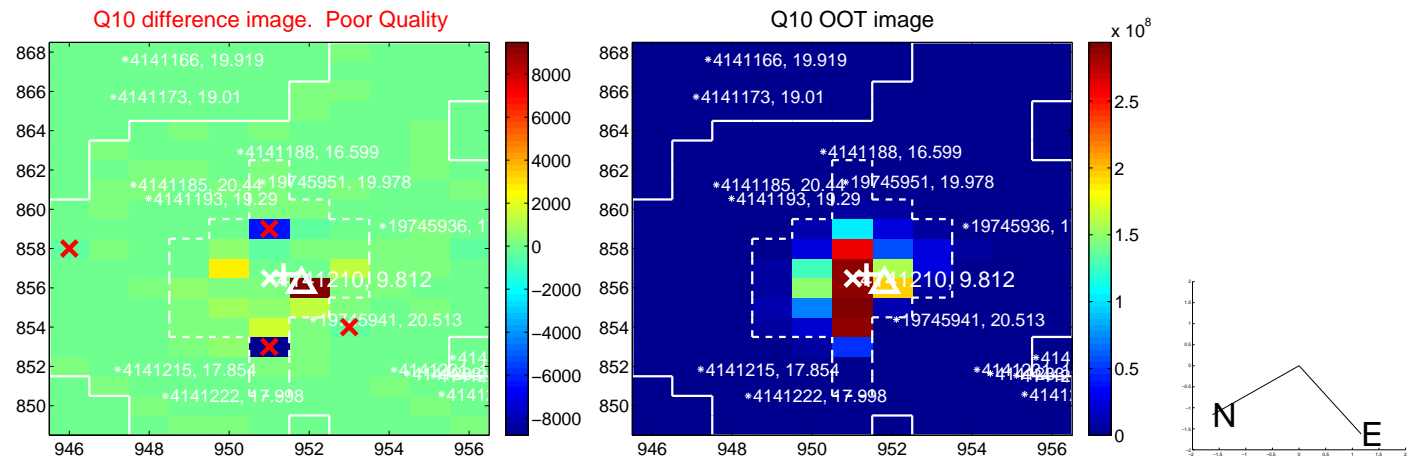
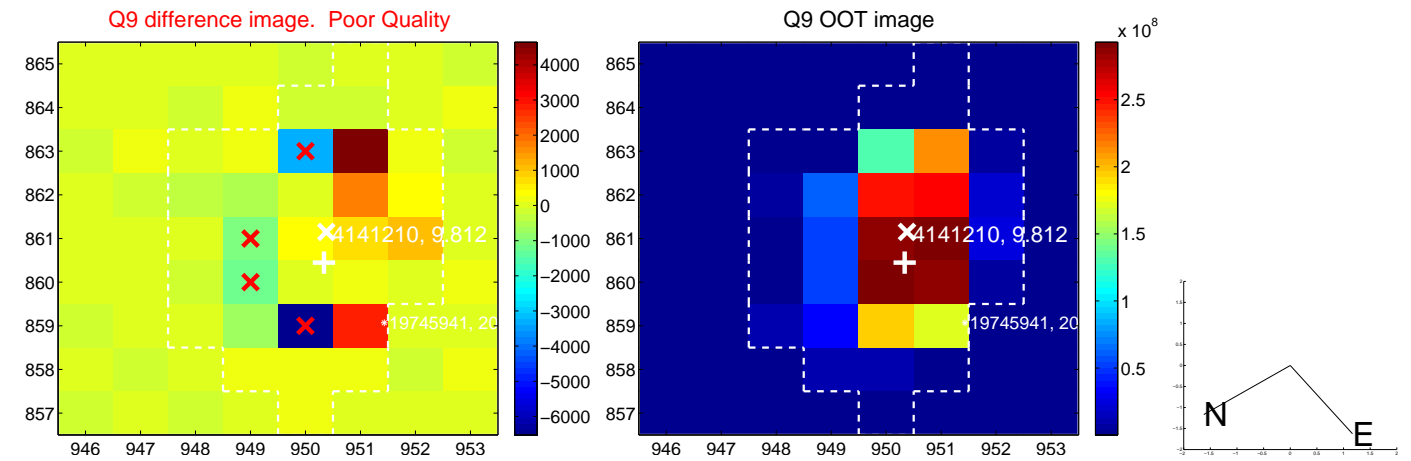
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



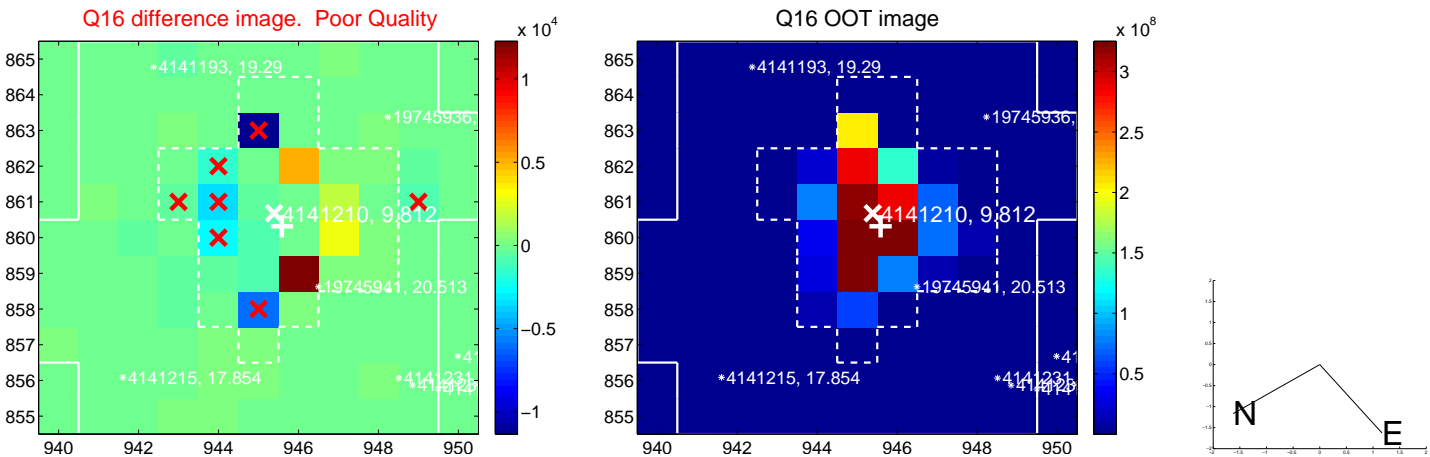
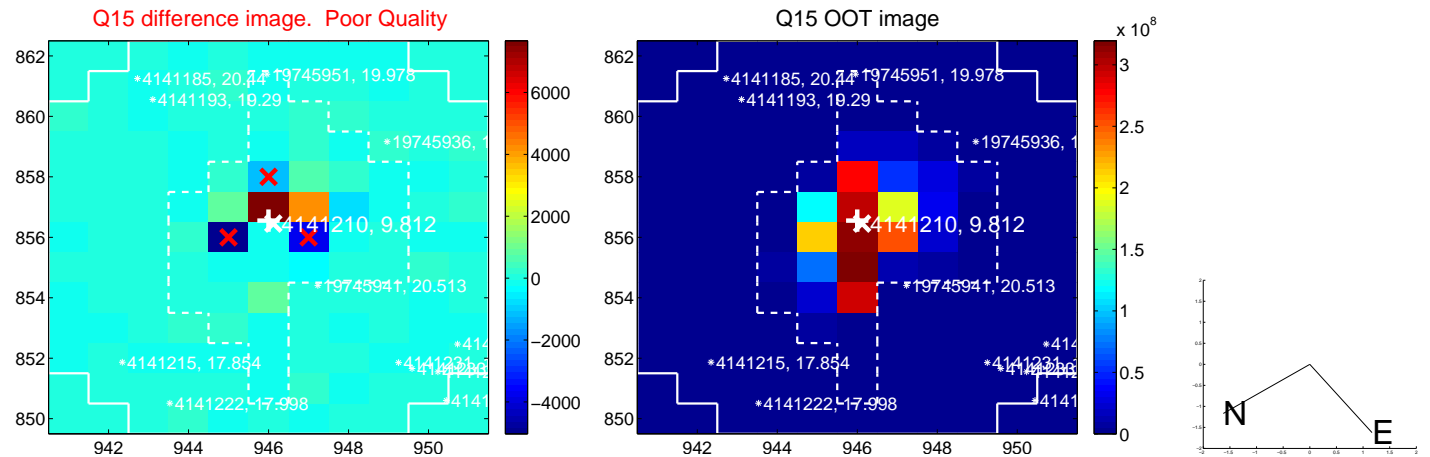
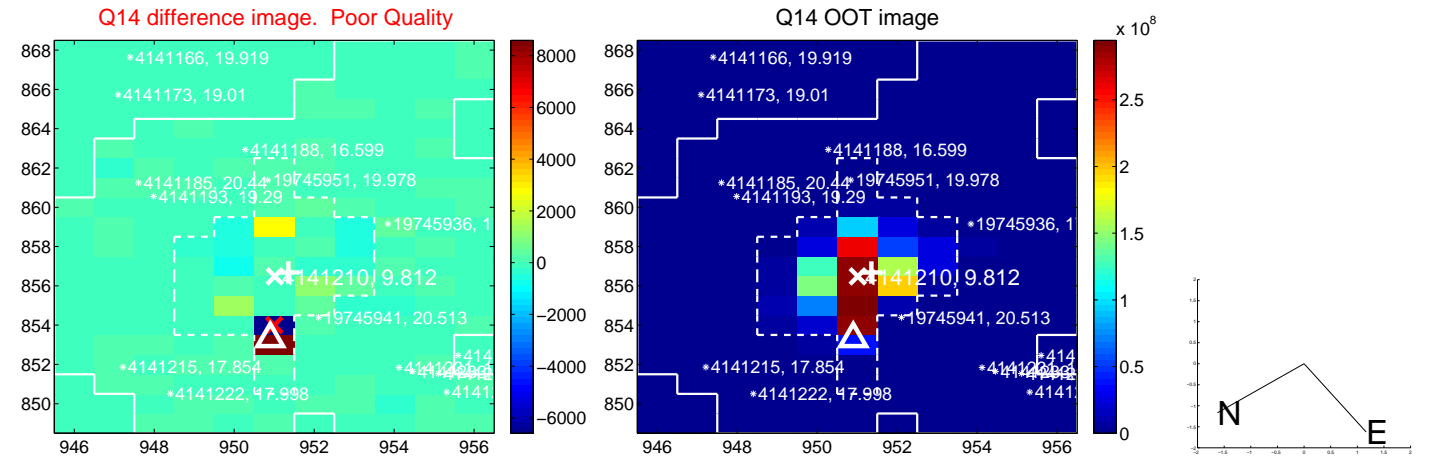
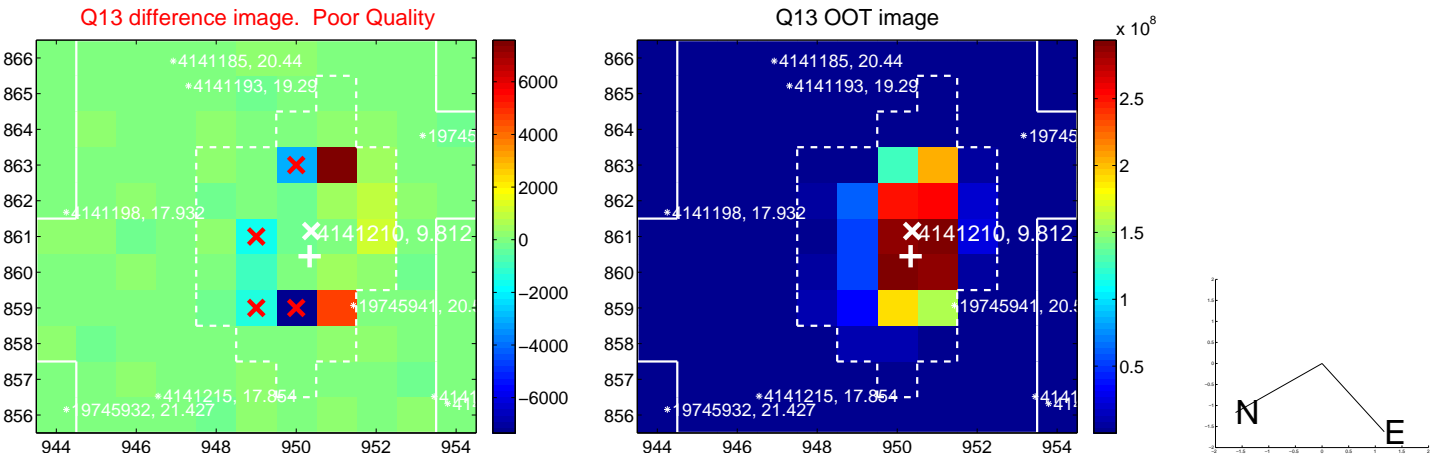
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



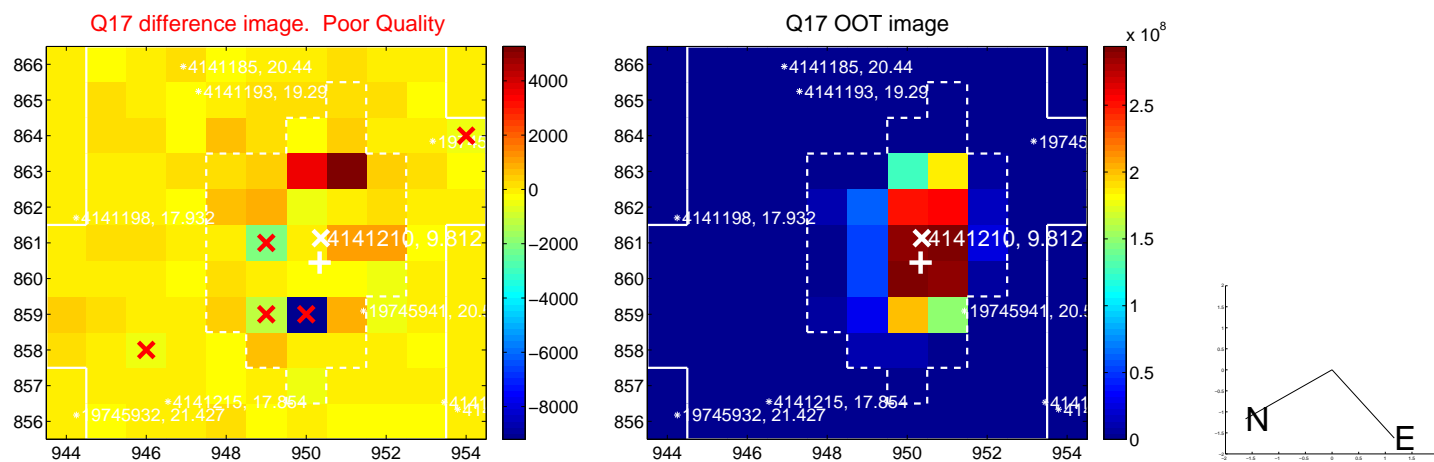
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



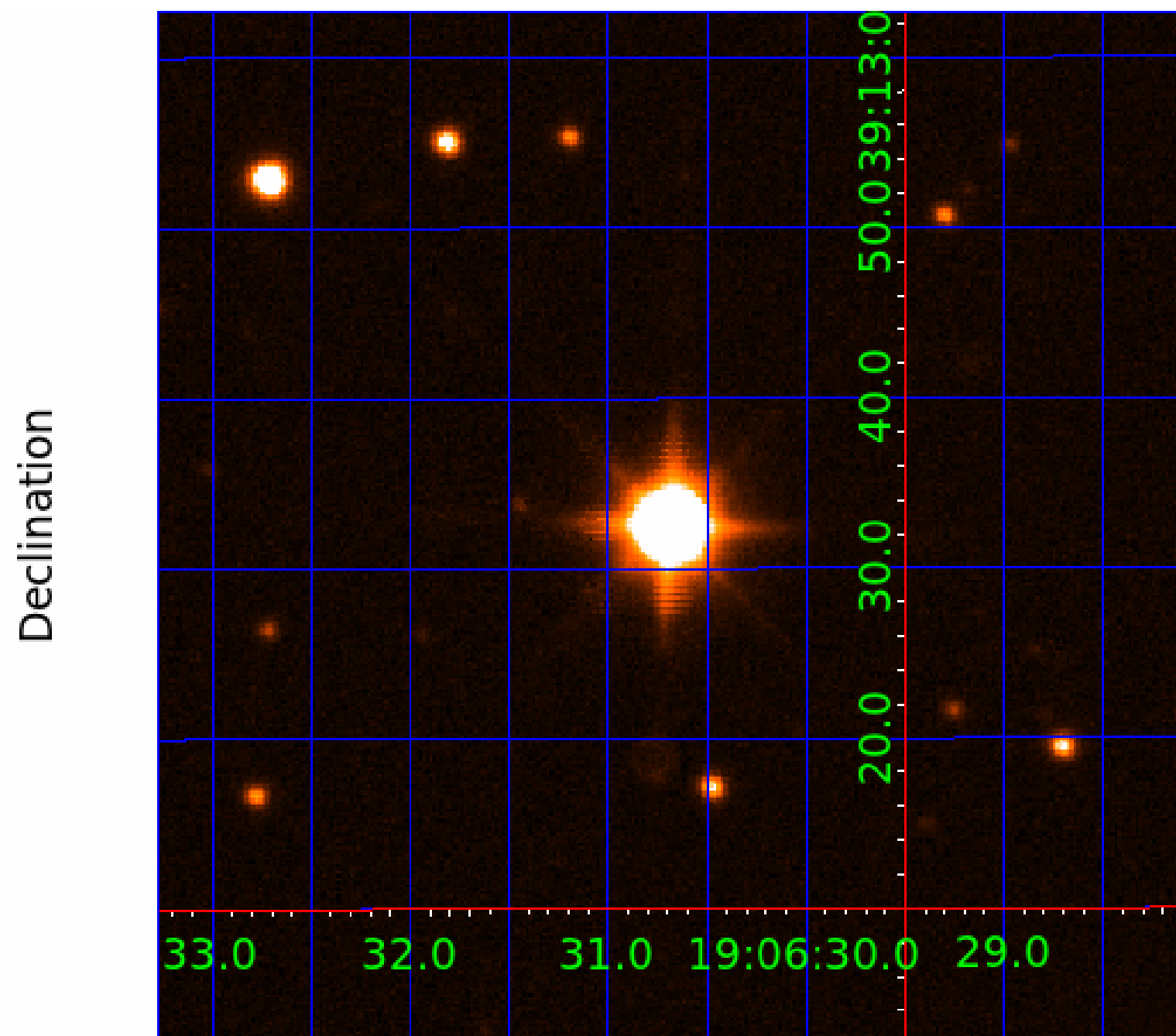
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



folded centroid time series figure for this object.



UKIRT Image



KIC 004141210

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})
004141210-01	OBS	No	0.695717	131.886673	2.3	2.951	7.7	6.8	1.77	7377	0.32	27382.90
004141210-02	OBS	No	129.789219	215.221897	44.2	5.281	7.2	6.9	1.77	7377	1.37	25.69

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004141210-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
004141210-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED

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

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

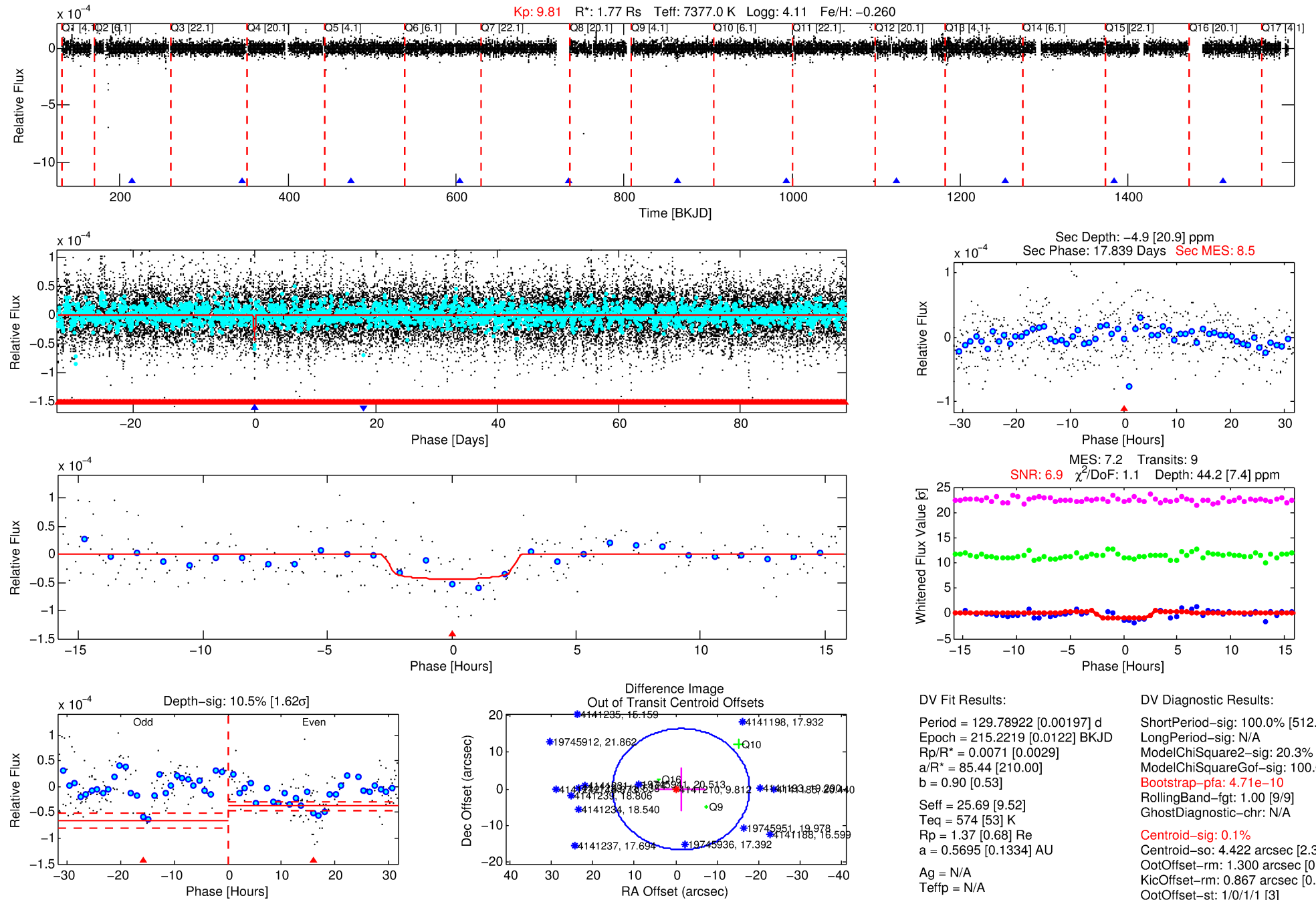
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004141210-02

No Significant Match Found

DV One-Page Summary

KIC: 4141210 Candidate: 2 of 2 Period: 129.789 d



DV Fit Results:

Period = 129.78922 [0.00197] d
 Epoch = 215.2219 [0.0122] BKJD
 Rp/R* = 0.0071 [0.0029]
 a/R* = 85.44 [210.00]
 b = 0.90 [0.53]
 Seff = 25.69 [9.52]
 Teq = 574 [53] K
 Rp = 1.37 [0.68] Re
 a = 0.5695 [0.1334] AU
 Ag = N/A
 Tefp = N/A

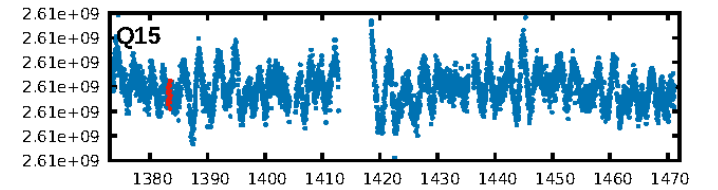
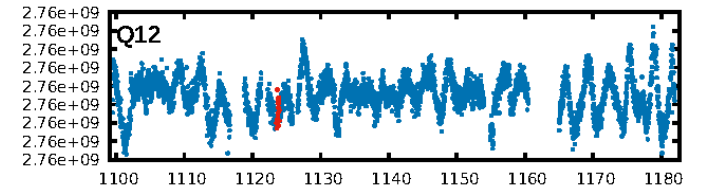
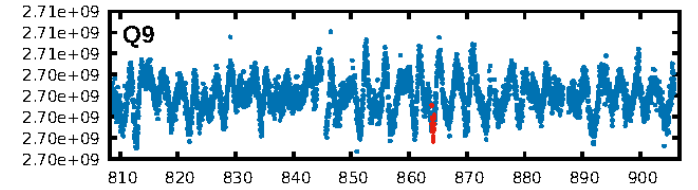
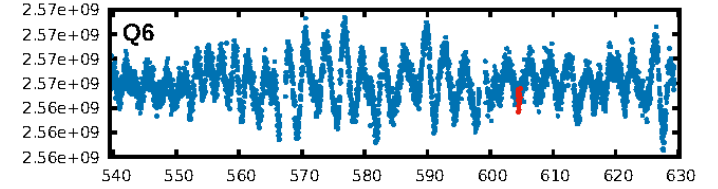
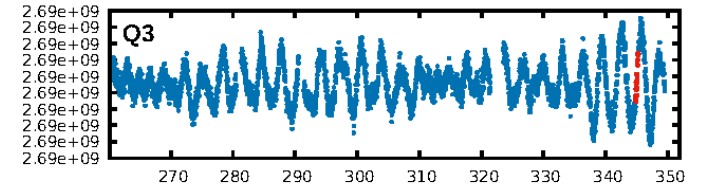
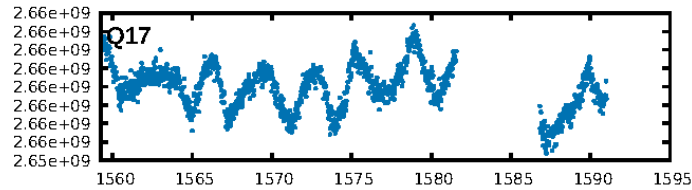
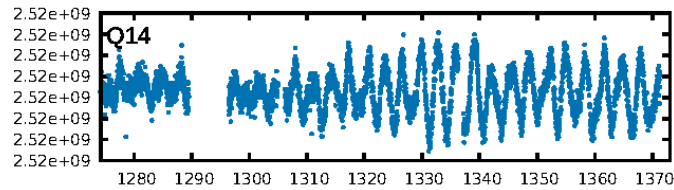
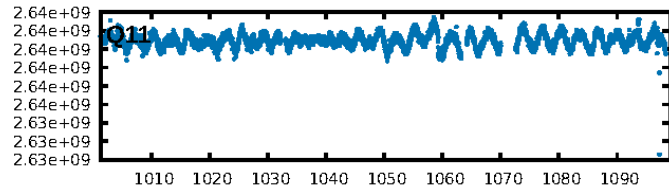
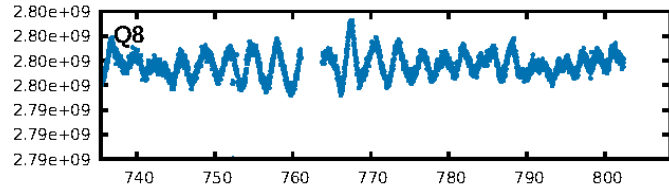
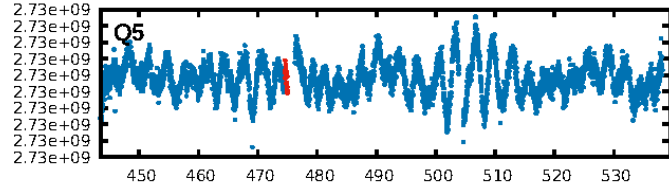
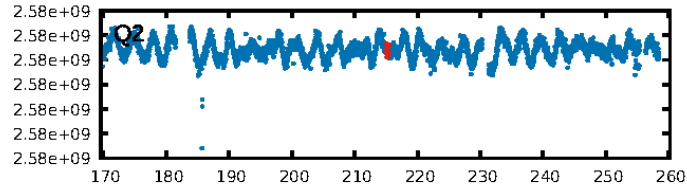
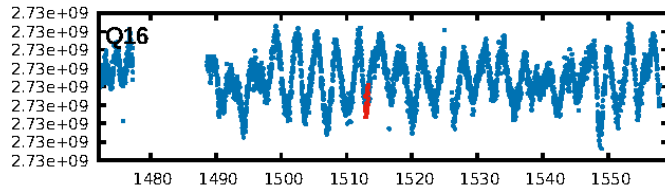
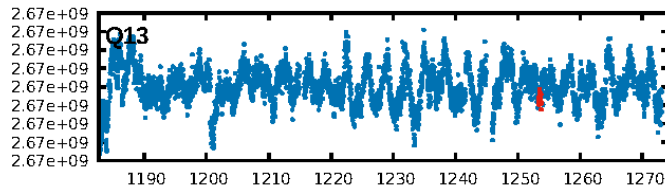
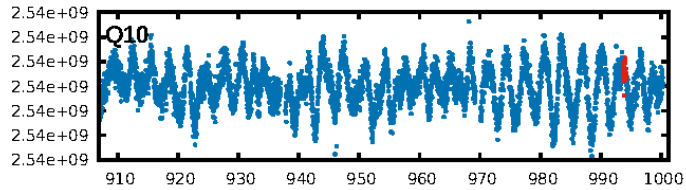
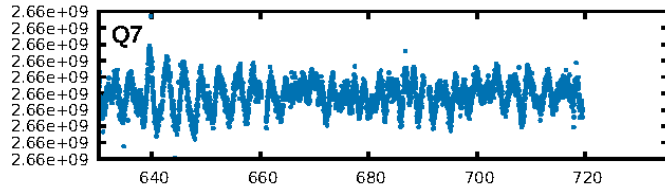
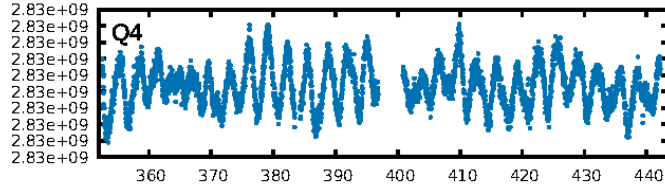
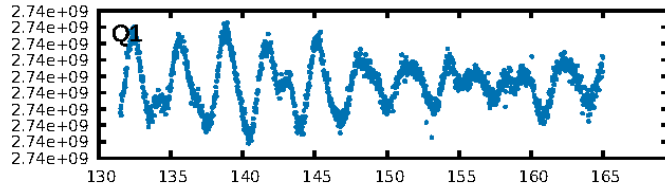
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [512.14 σ]
 LongPeriod-sig: N/A
 ModelChiSquare2-sig: 20.3%
 ModelChiSquareGof-sig: 100.0%
 Bootstrap-pfa: 4.71e-10
 RollingBand-fgt: 1.00 [9/9]
 GhostDiagnostic-chr: N/A
 Centroid-sig: 0.1%
 Centroid-so: 4.422 arcsec [2.30 σ]
 OotOffset-rm: 1.300 arcsec [0.24 σ]
 KicOffset-rm: 0.867 arcsec [0.23 σ]
 OotOffset-st: 1/0/1/1 [3]
 KicOffset-st: 1/0/1/1 [3]
 DiffImageQuality-fgm: 0.33 [1/3]
 DiffImageOverlap-fno: 0.00 [0/8]

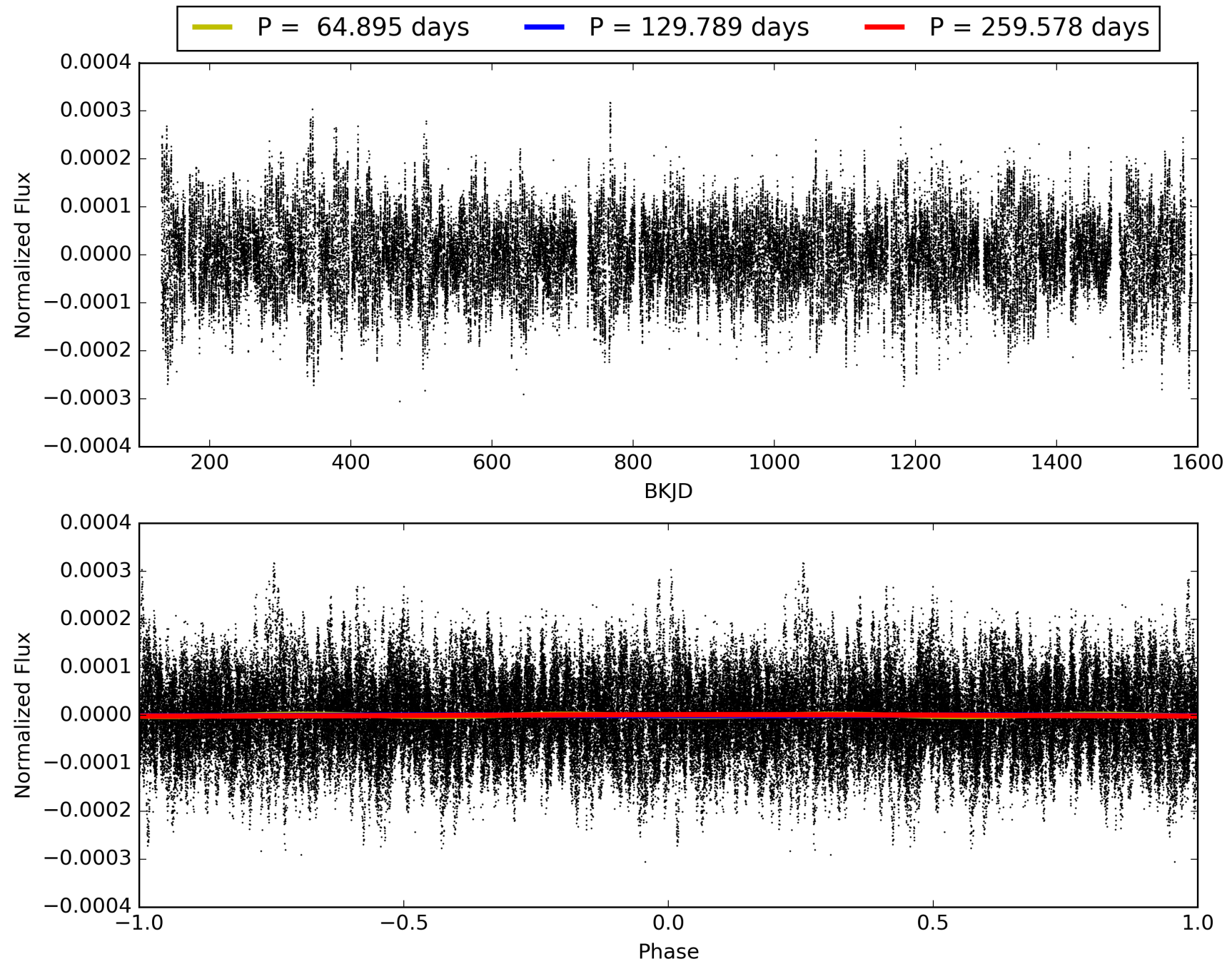
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 17:05:08 Z

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

TCE 004141210-02, PDC Light Curves

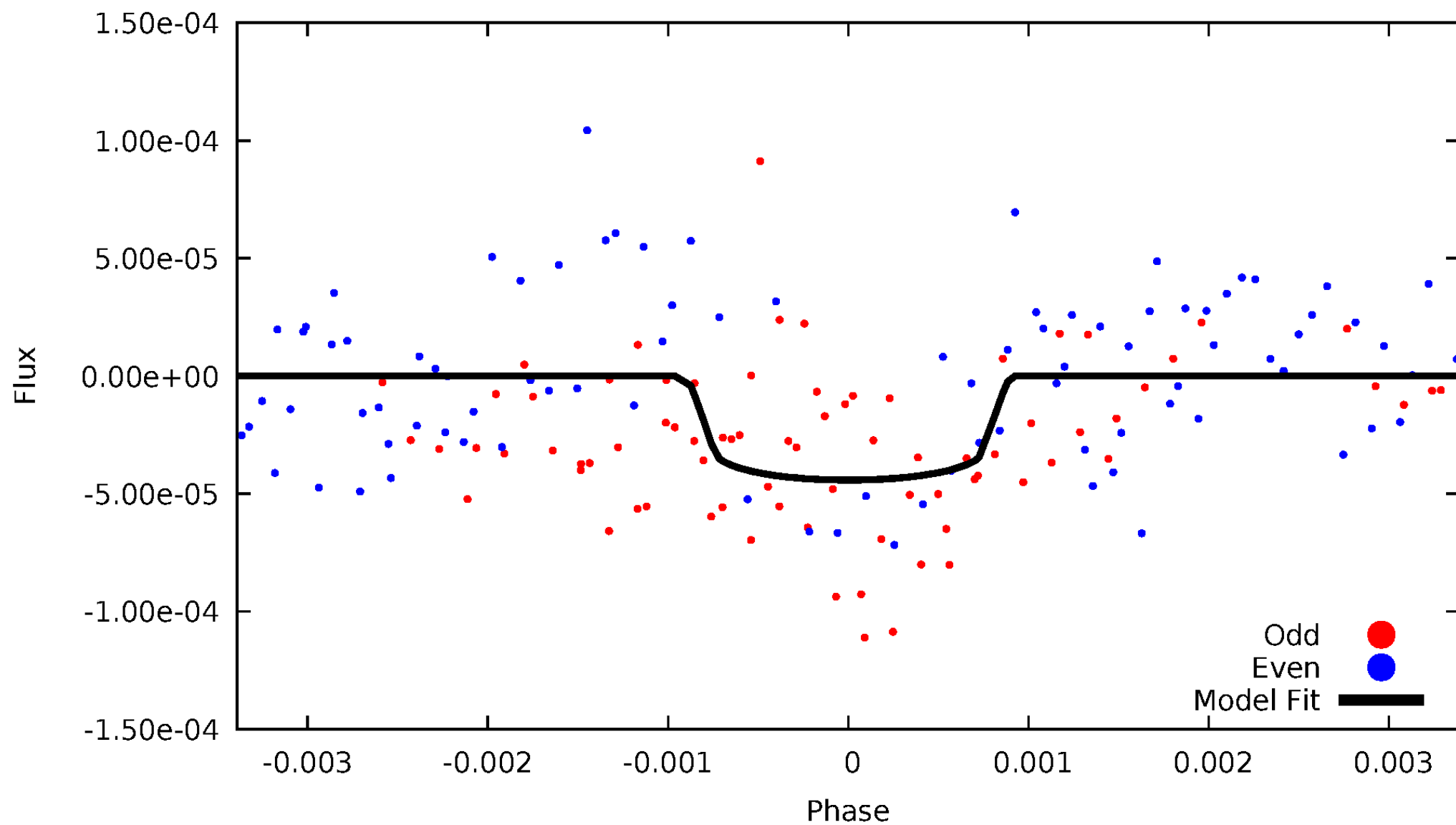


TCE 004141210-02



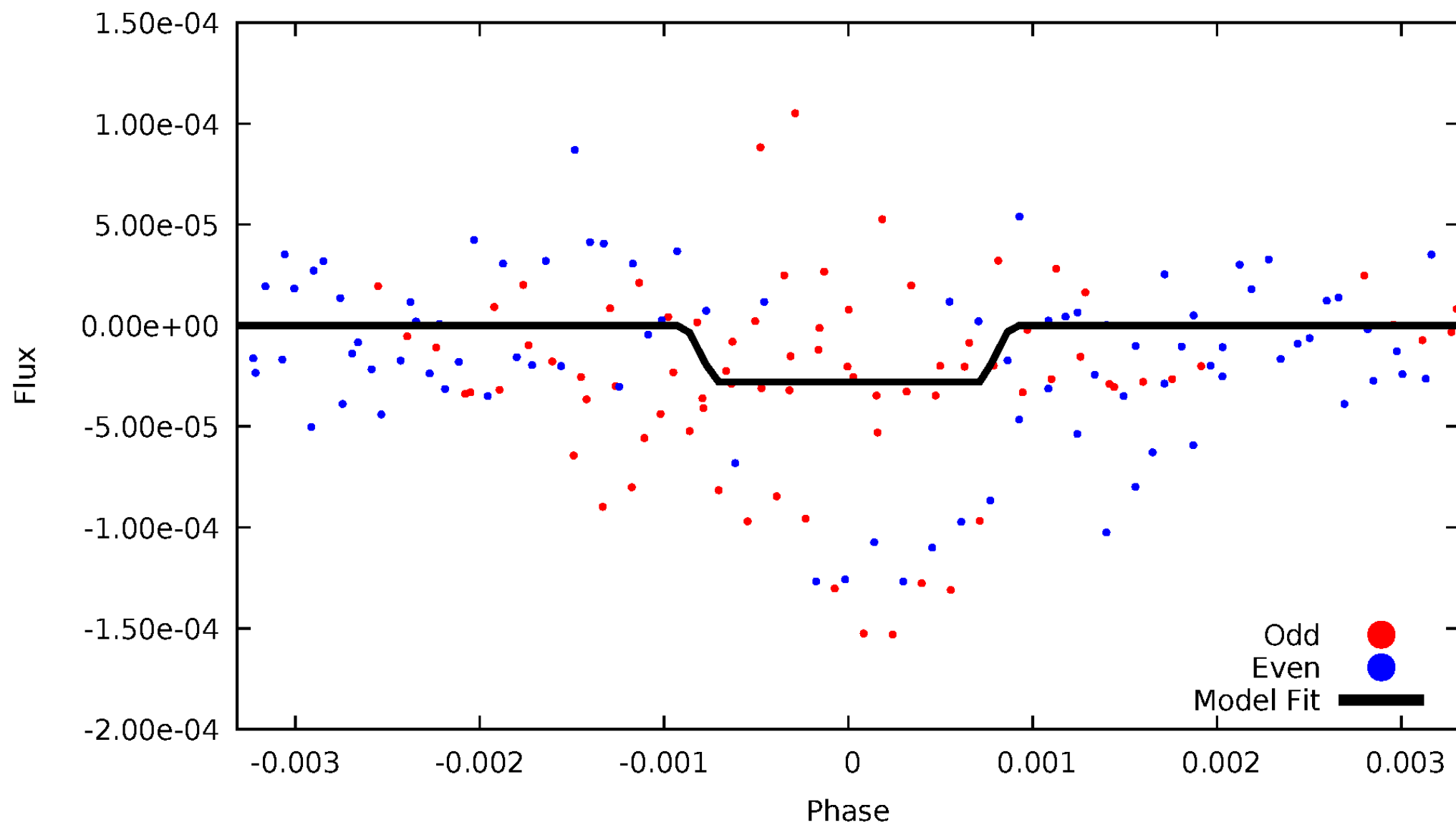
DV Odd/Even

TCE 004141210-02



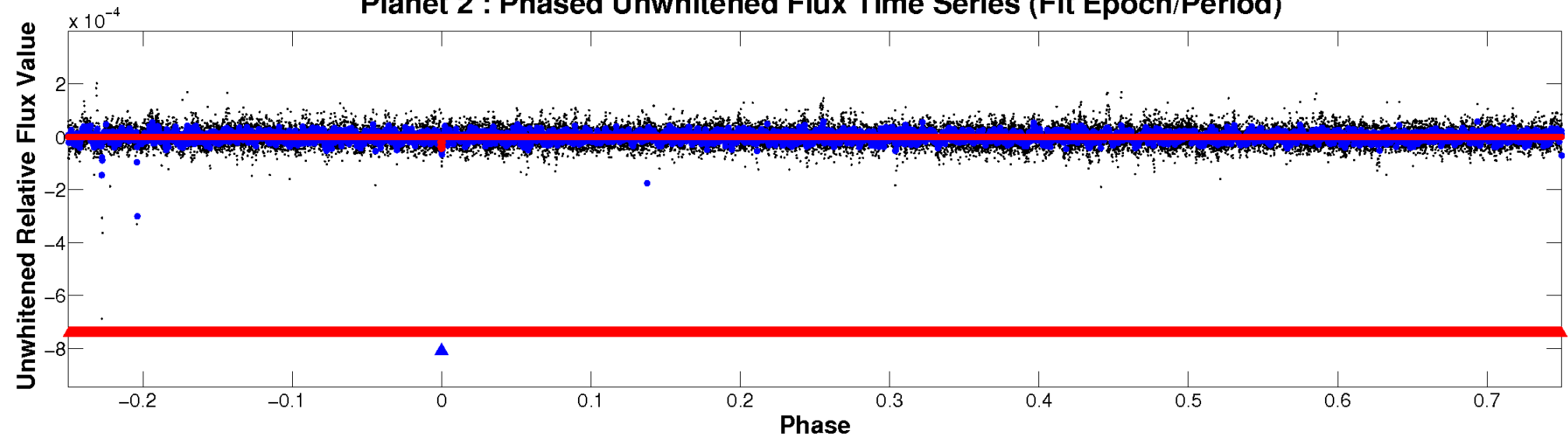
ALT Odd/Even

TCE 004141210-02

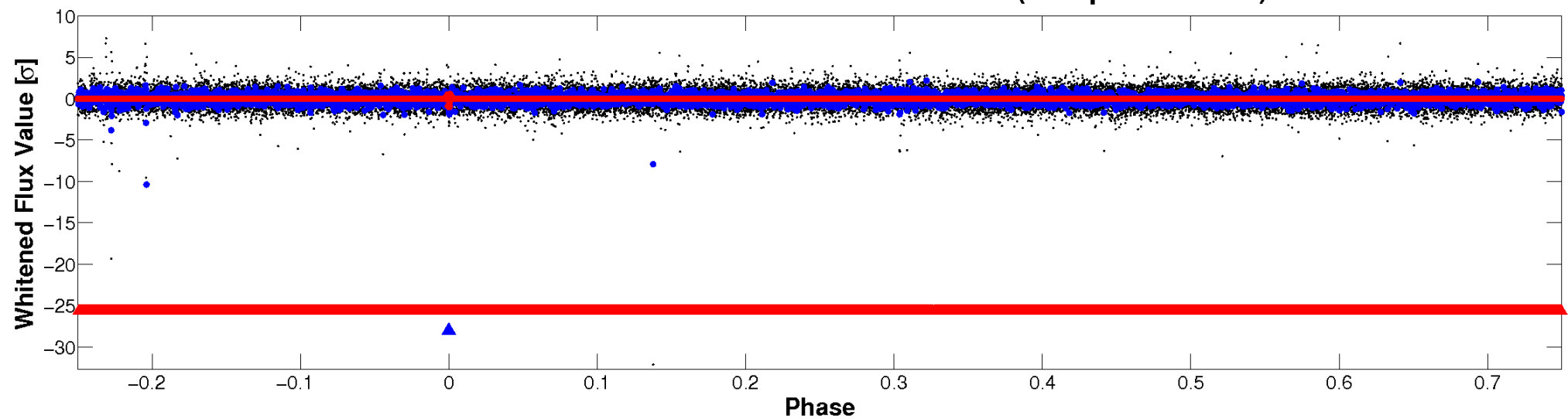


Non-Whitened Vs. Whitened Light Curve

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

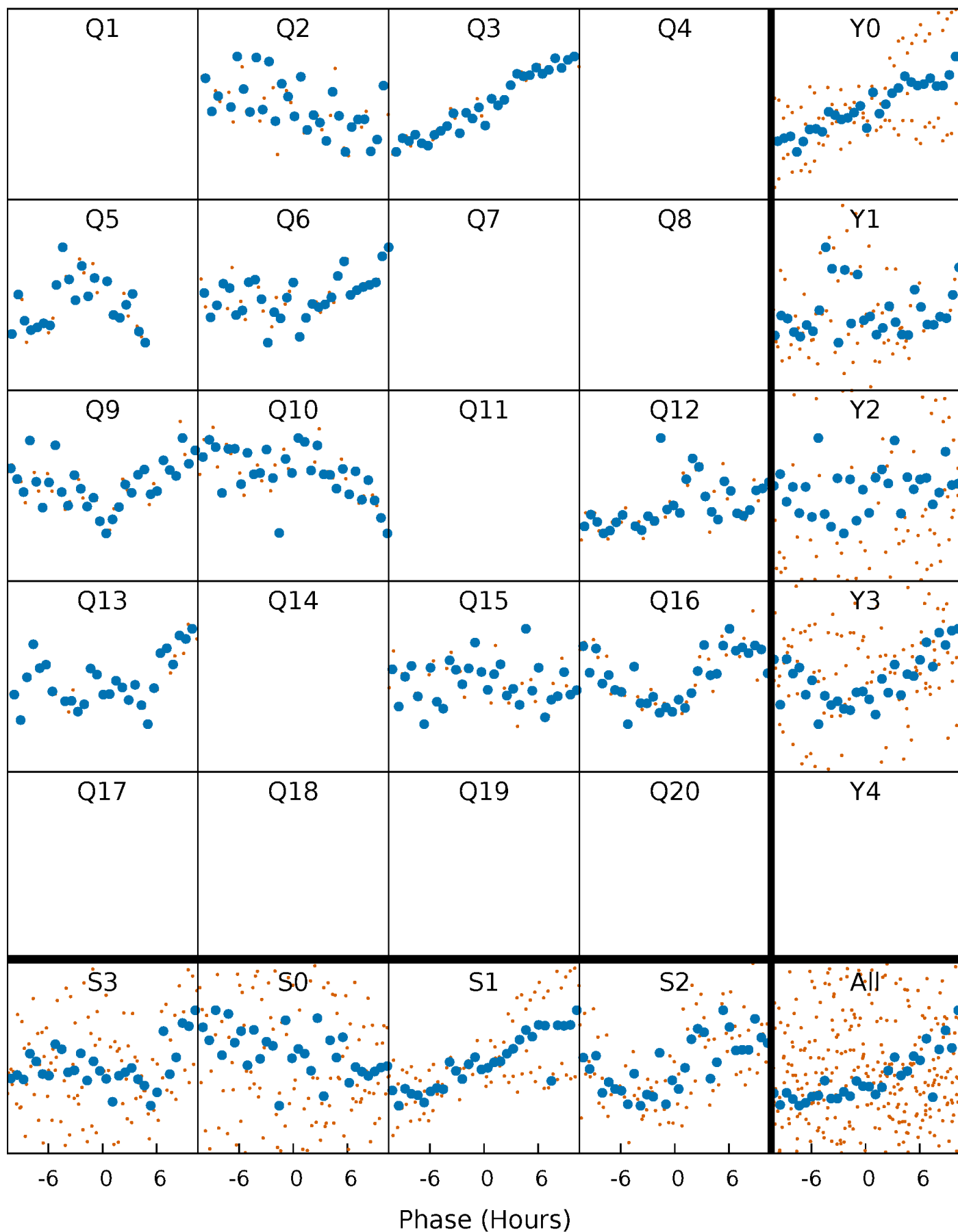


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



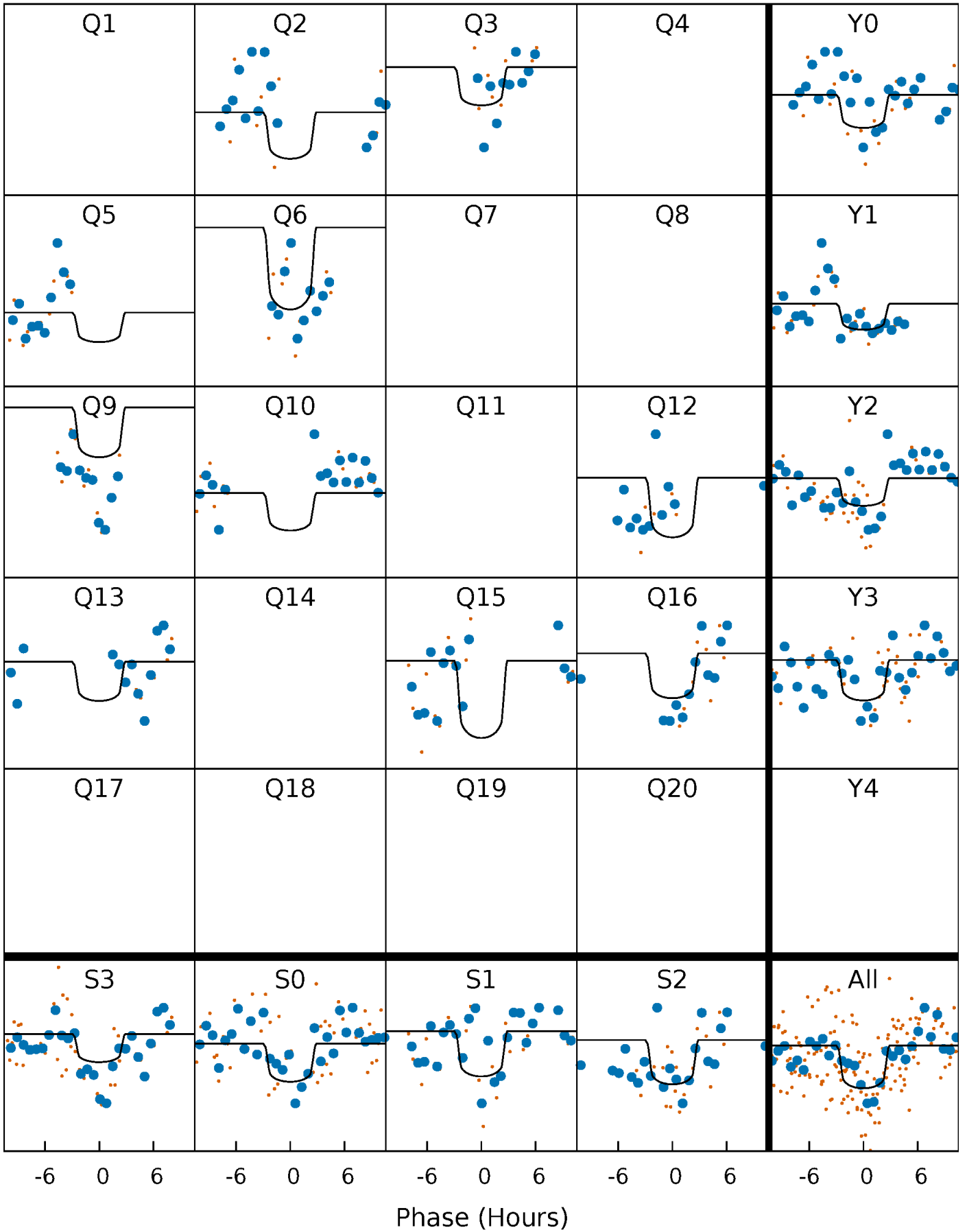
PDC Quarter-Phased Transit Curves

TCE 004141210-02 $P=129.789219$ Days $T_0=215.221897$ (BKJD)



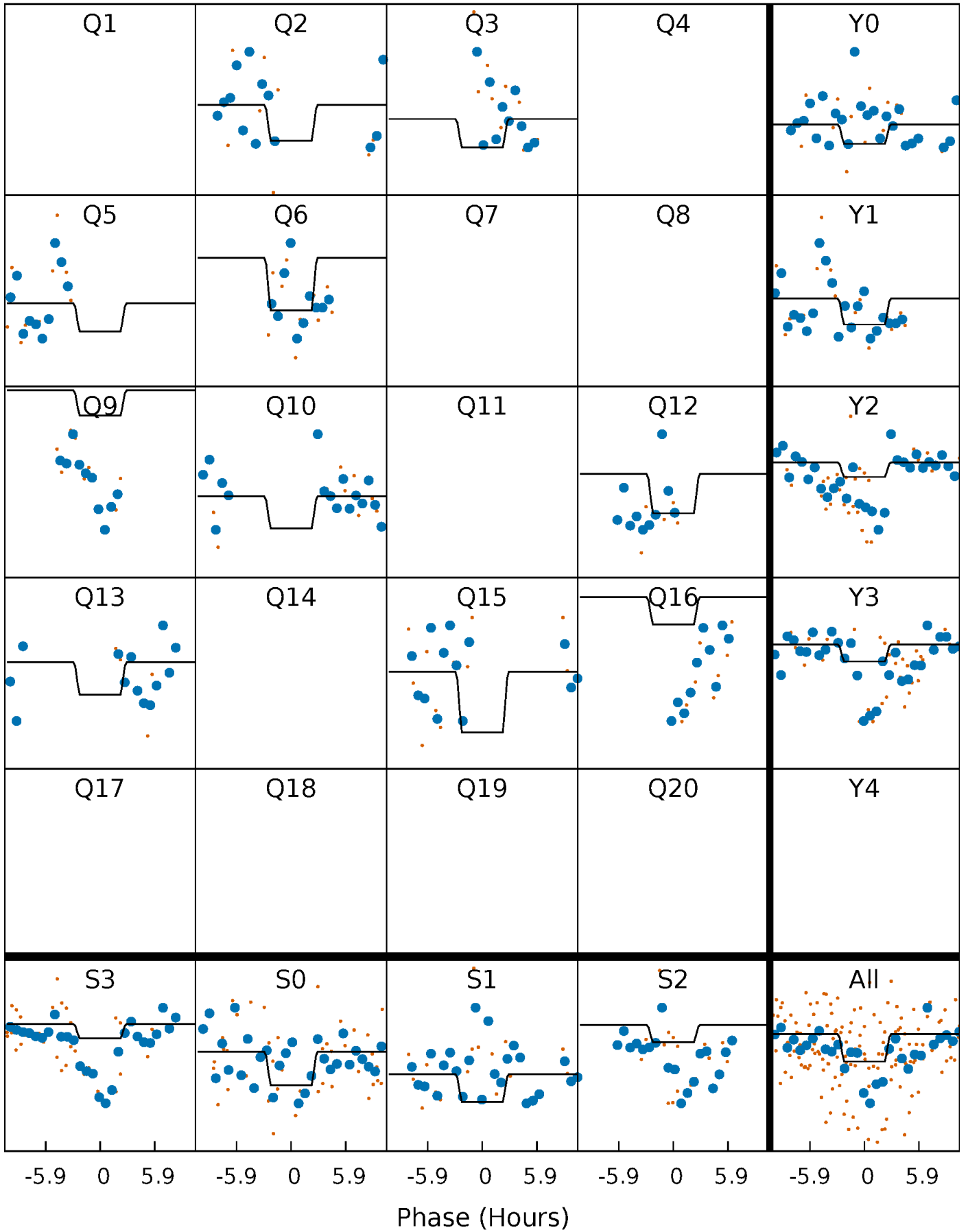
DV Quarter-Phased Transit Curves

TCE 004141210-02 P=129.789219 Days $T_0=215.221897$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

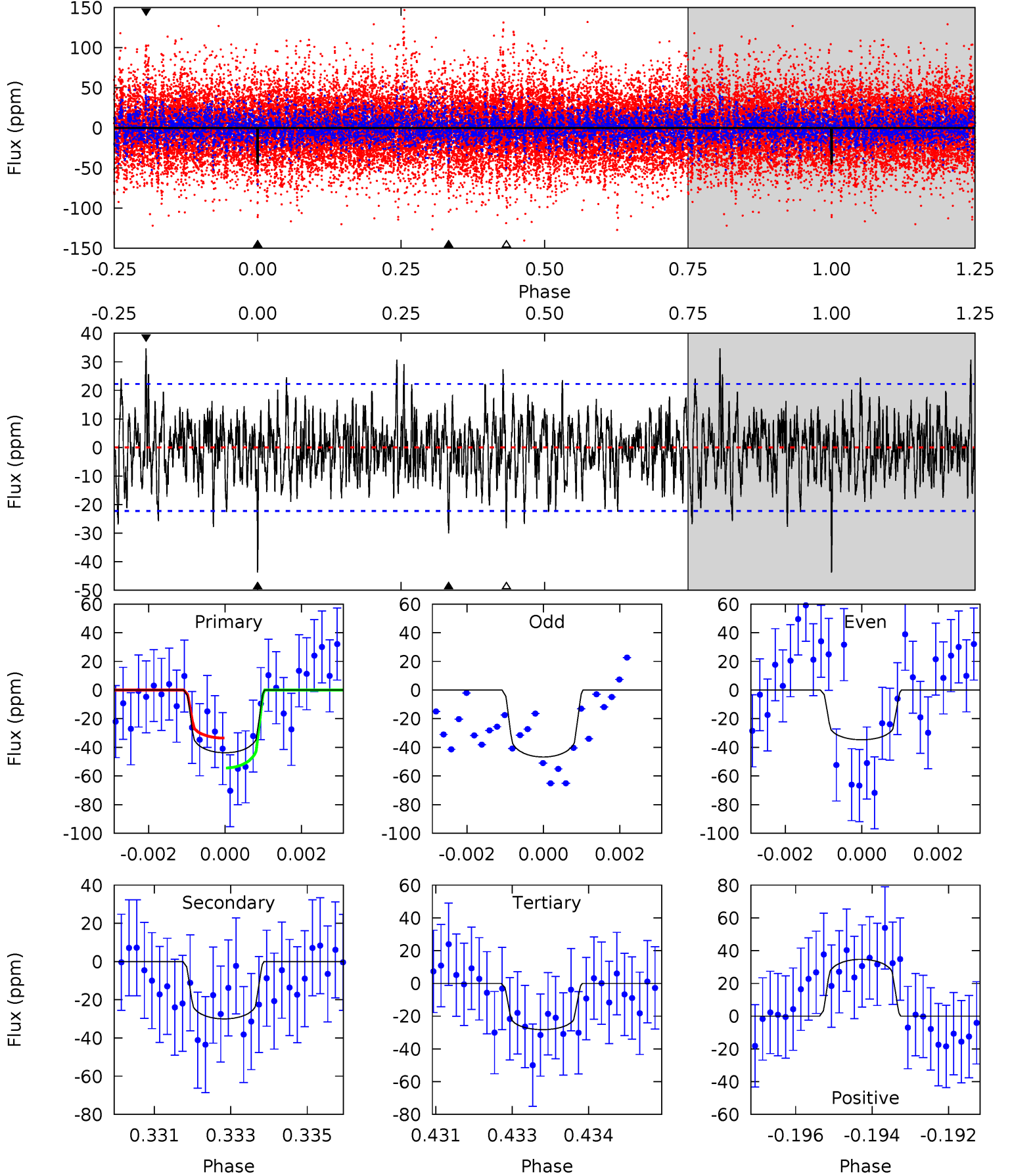
TCE 004141210-02 P=129.787950 Days $T_0=215.228996$ (BKJD)



DV Model-Shift Uniqueness Test

004141210-02, P = 129.789219 Days, E = 85.432678 Days

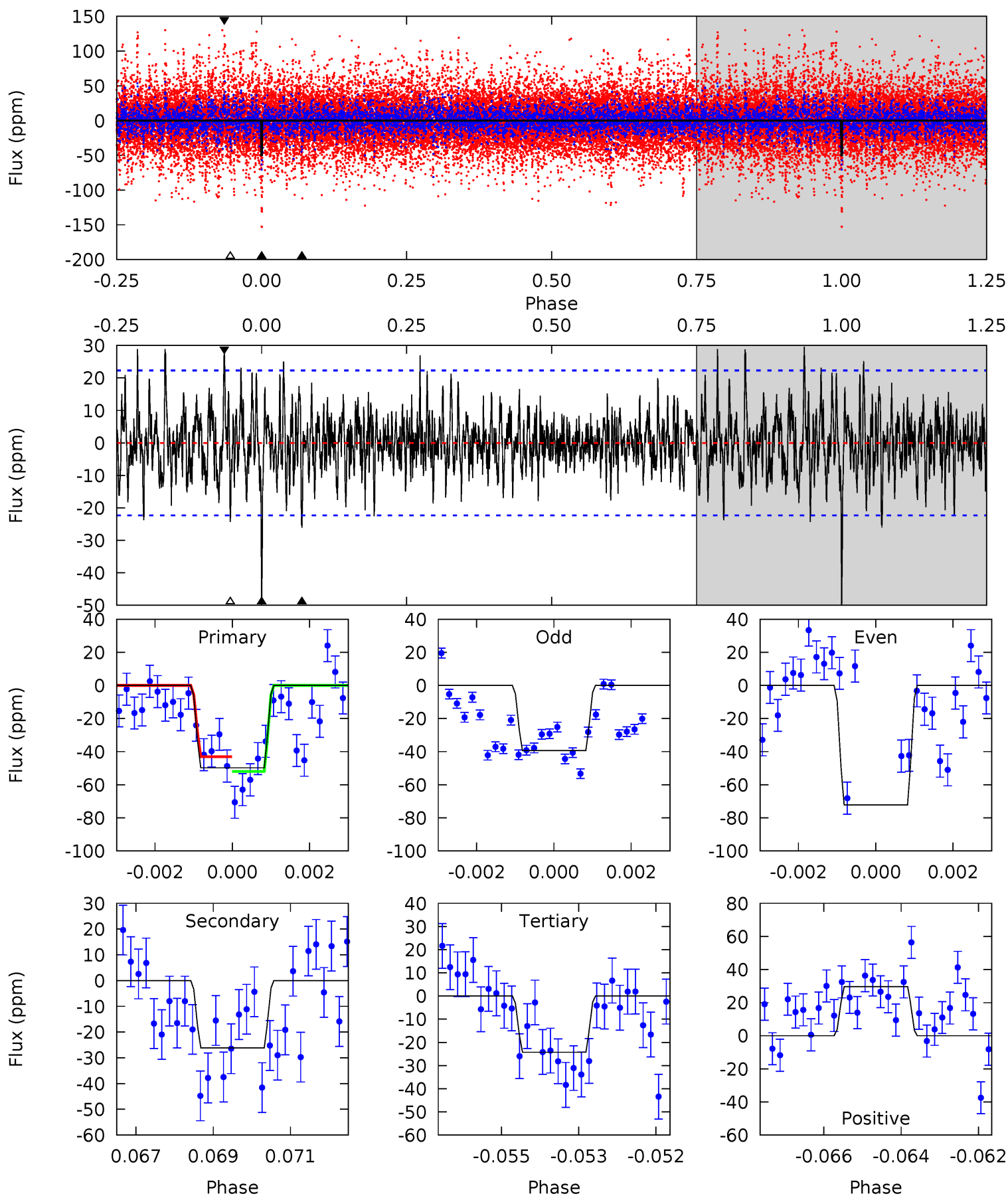
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.5	7.22	6.80	8.34	5.35	3.12	2.11	3.74	2.19	0.43	-1.12	1.27	1.26	0.44	2.51



Alt Model-Shift Uniqueness Test

004141210-02, P = 129.787950 Days, E = 85.441046 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.9	6.26	5.82	7.11	5.35	3.13	1.74	6.13	4.84	0.45	-0.85	3.51	2.11	0.37	1.06



Stellar Parameters For KIC 004141210

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7377^{+232}_{-310}	$4.106^{+0.175}_{-0.175}$	$-0.260^{+0.250}_{-0.350}$	$1.772^{+0.510}_{-0.418}$	$1.458^{+0.216}_{-0.237}$	$0.369^{+0.338}_{-0.175}$
	+3%/-4%	+4%/-4%	+96%/-135%	+29%/-24%	+15%/-16%	+91%/-47%
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 004141210-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-30 ± 4	$1.37^{+0.65}_{-0.57}$	800^{+64}_{-59}	6449^{+2190}_{-1129}	2856^{+5455}_{-1599}
Alt.	-26 ± 4	$1.03^{+0.61}_{-0.53}$	798^{+62}_{-56}	7040^{+4286}_{-1349}	4325^{+13867}_{-2647}

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 $A_{obs} \gg 1.0$

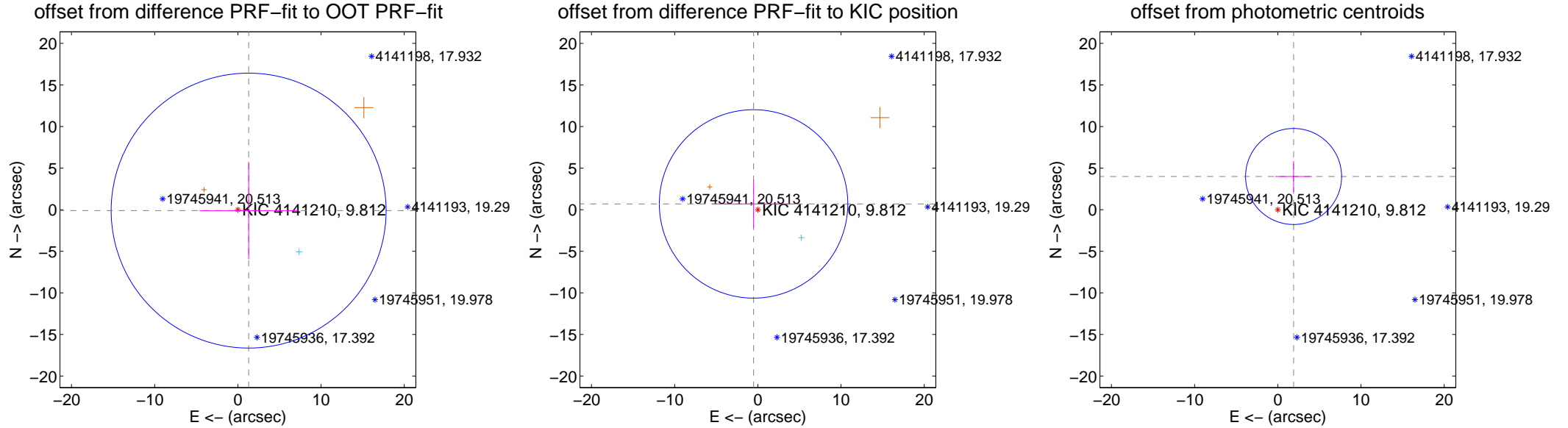
DV Centroid Data

Supplemental centroid analysis for 004141210-02. **Kepler magnitude: 9.81.** Transit SNR 6.92

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 1.75 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.300 ± 5.509	0.24	-1.296 ± 5.912	-0.108 ± 5.846
PRF-fit source offset from KIC position	0.867 ± 3.776	0.23	0.514 ± 5.013	0.698 ± 2.891
photometric centroid source offset	4.42 ± 1.92	2.30	-1.90 ± 2.20	3.99 ± 1.86



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.

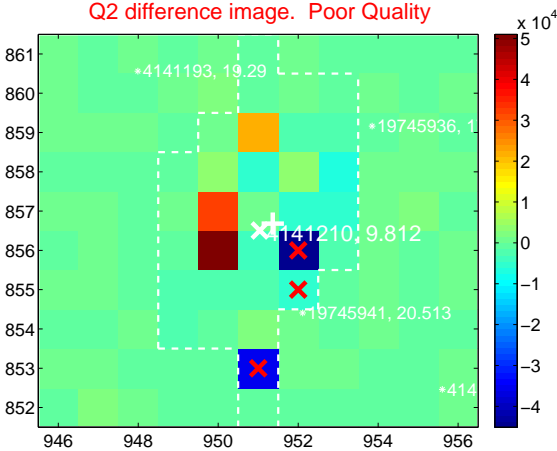
Q1 no difference image



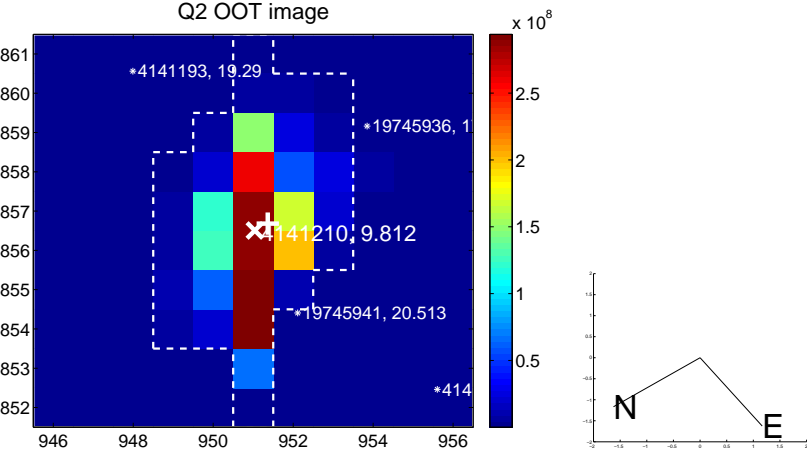
Q1 no OOT image



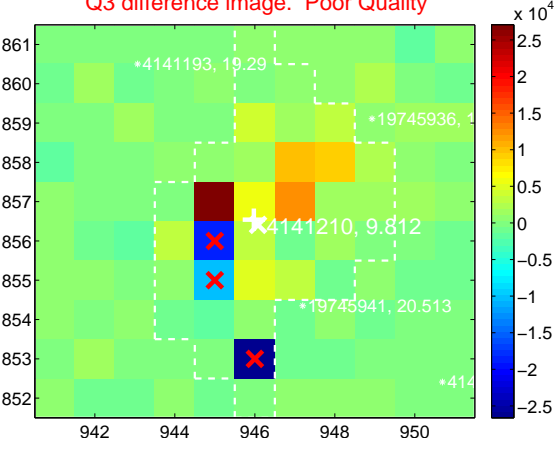
Q2 difference image. Poor Quality



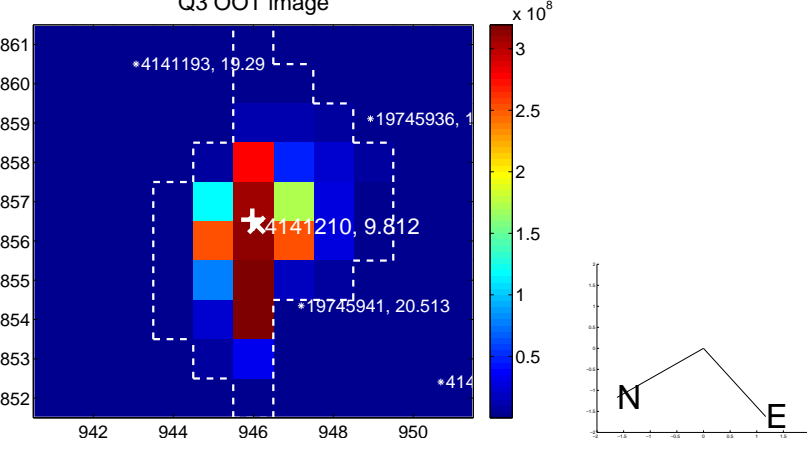
Q2 OOT image



Q3 difference image. Poor Quality



Q3 OOT image



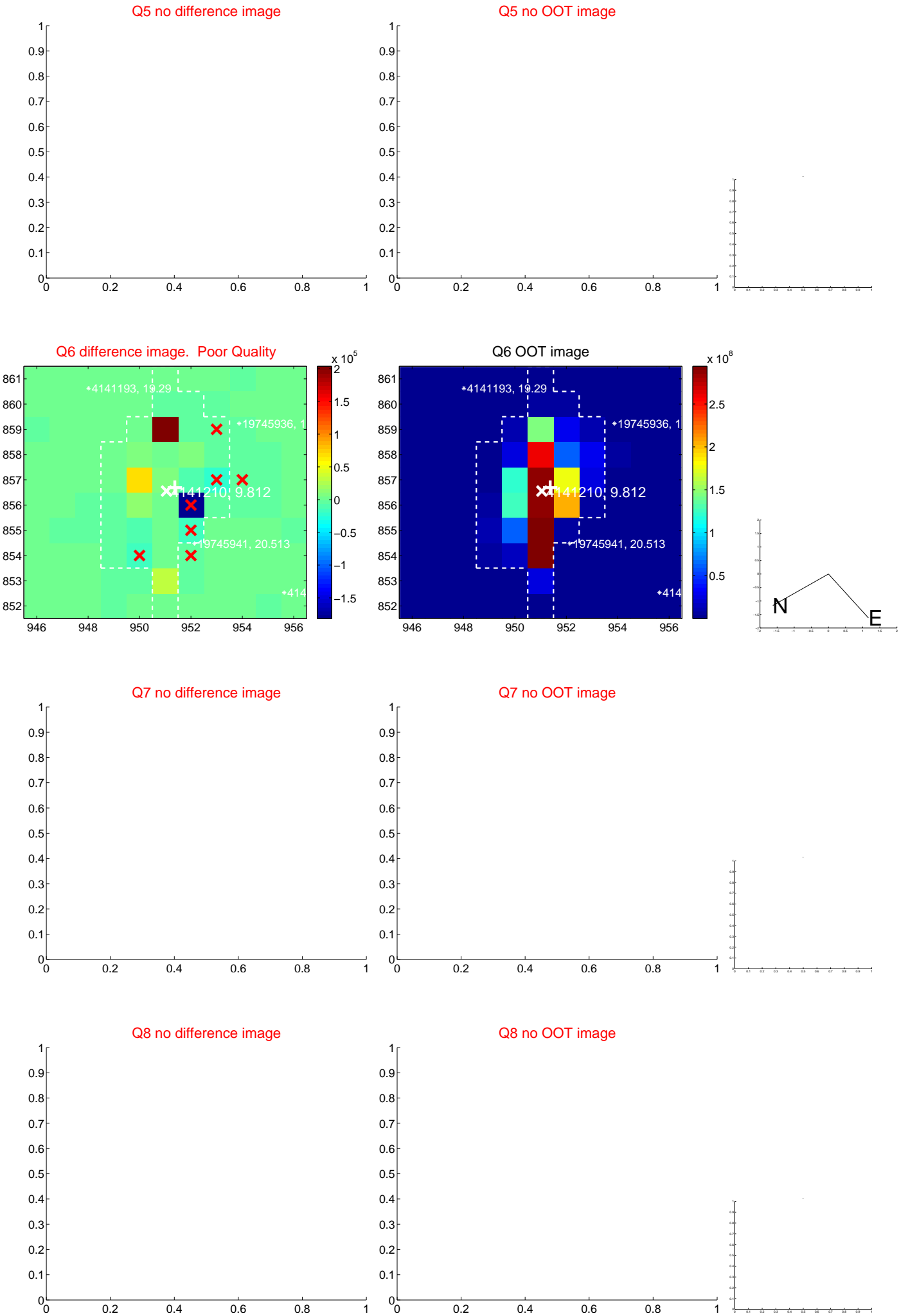
Q4 no difference image



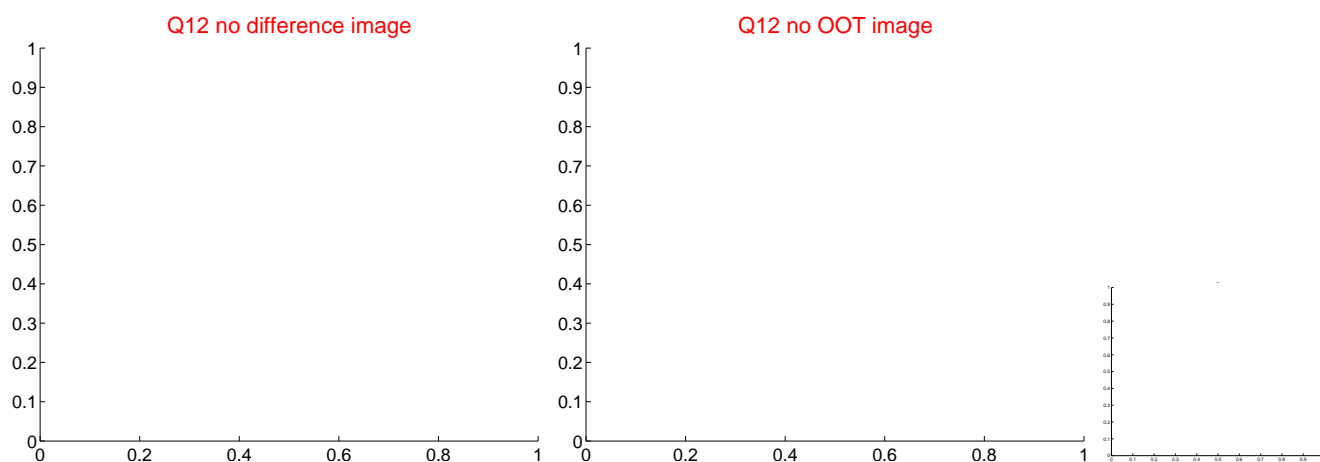
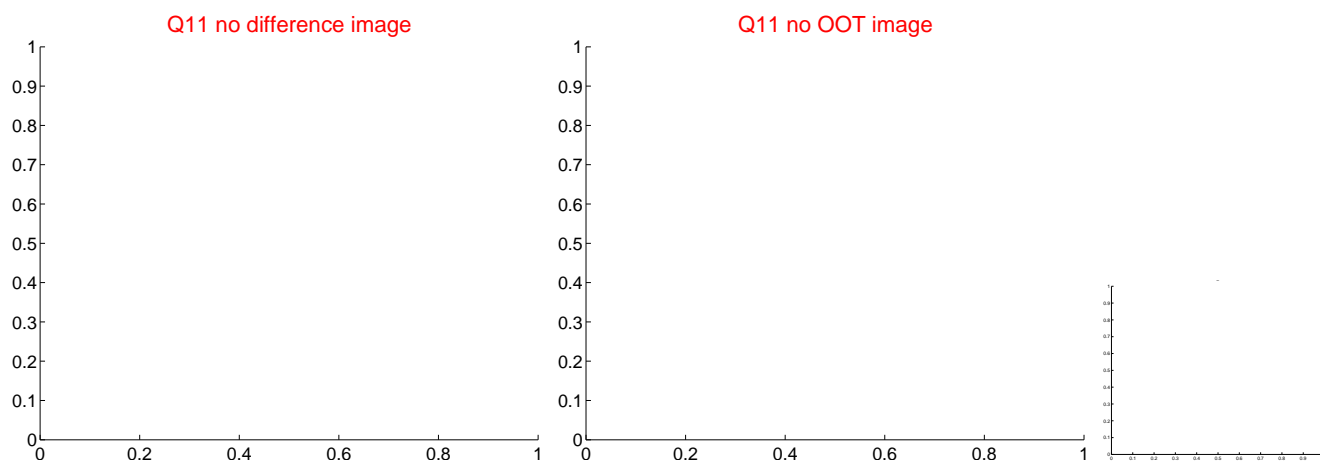
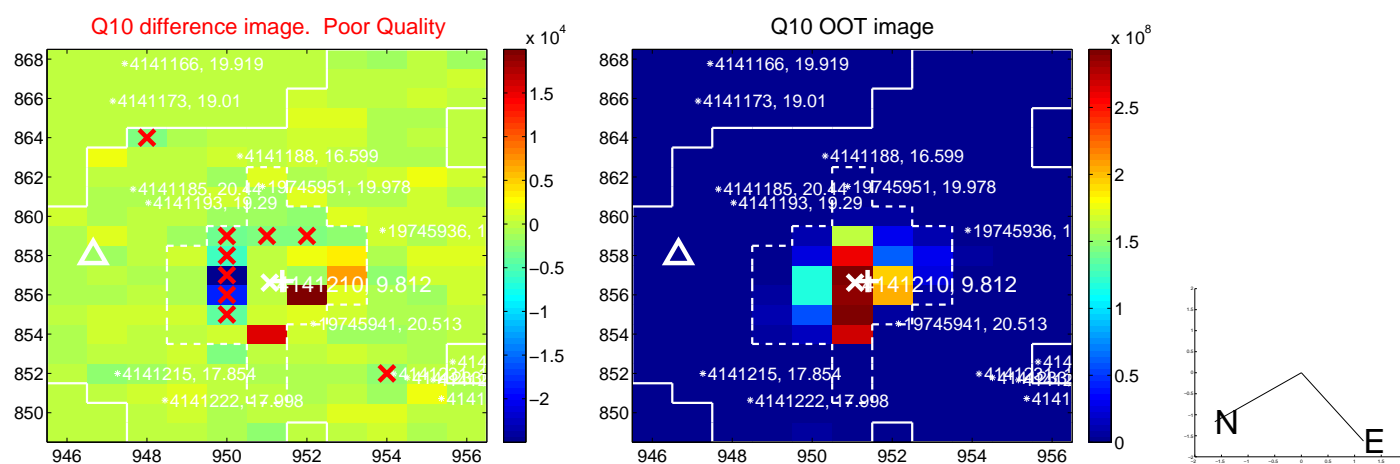
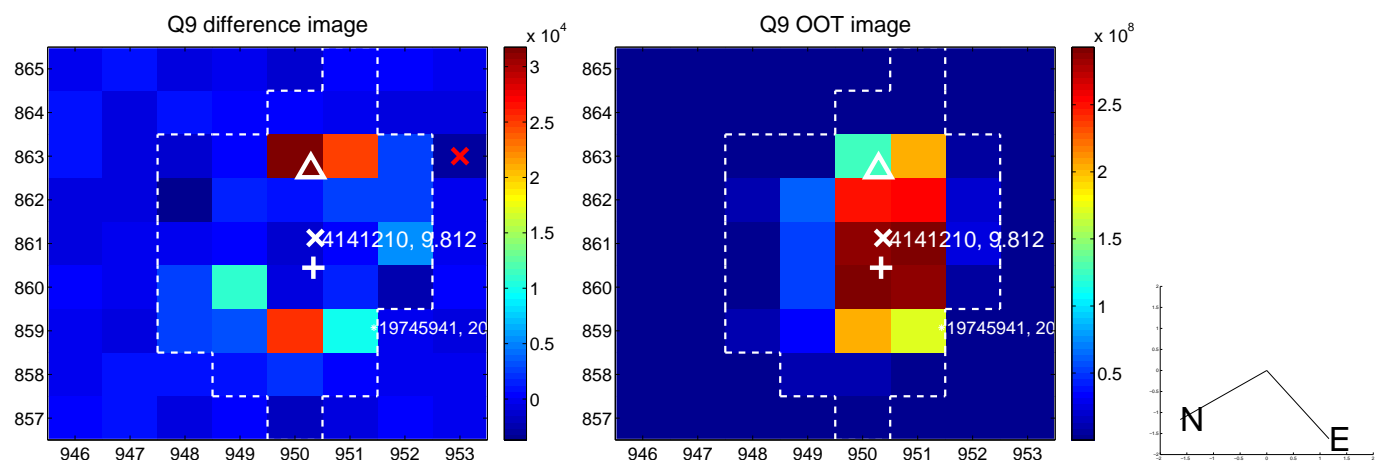
Q4 no OOT image



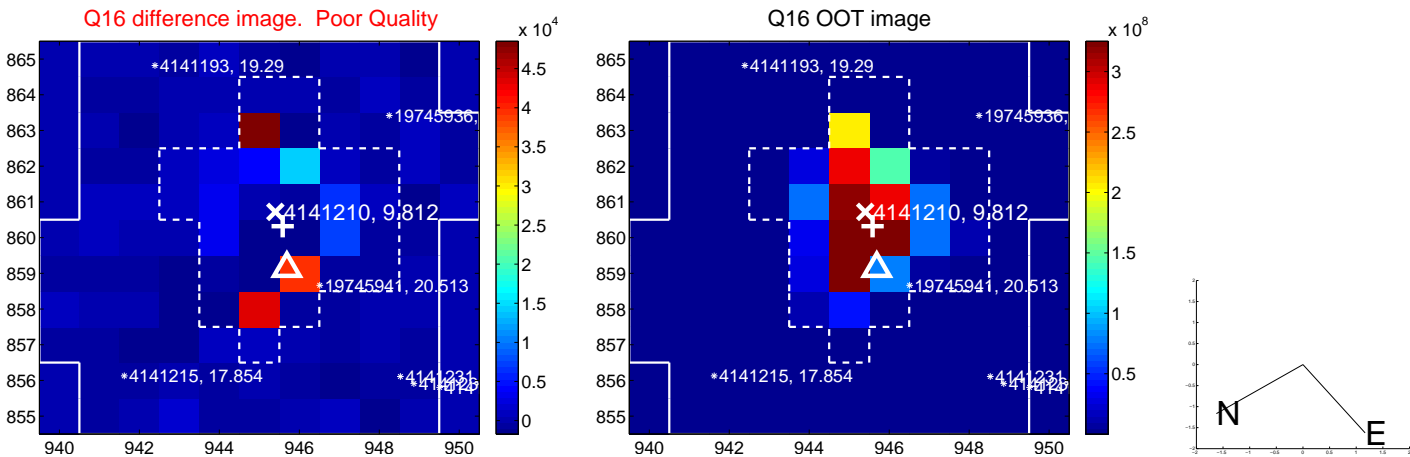
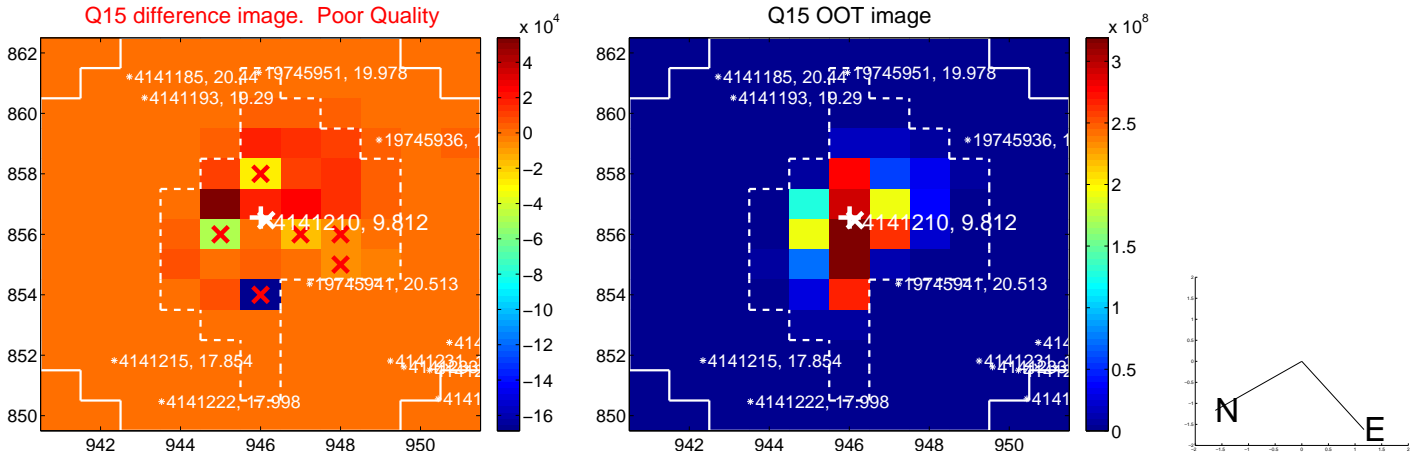
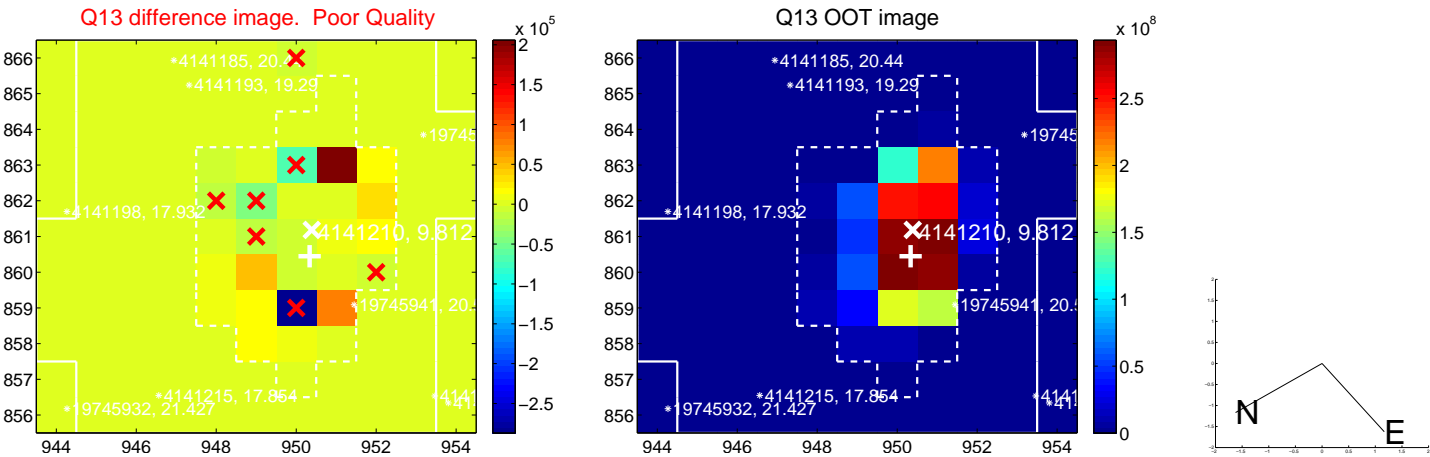
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



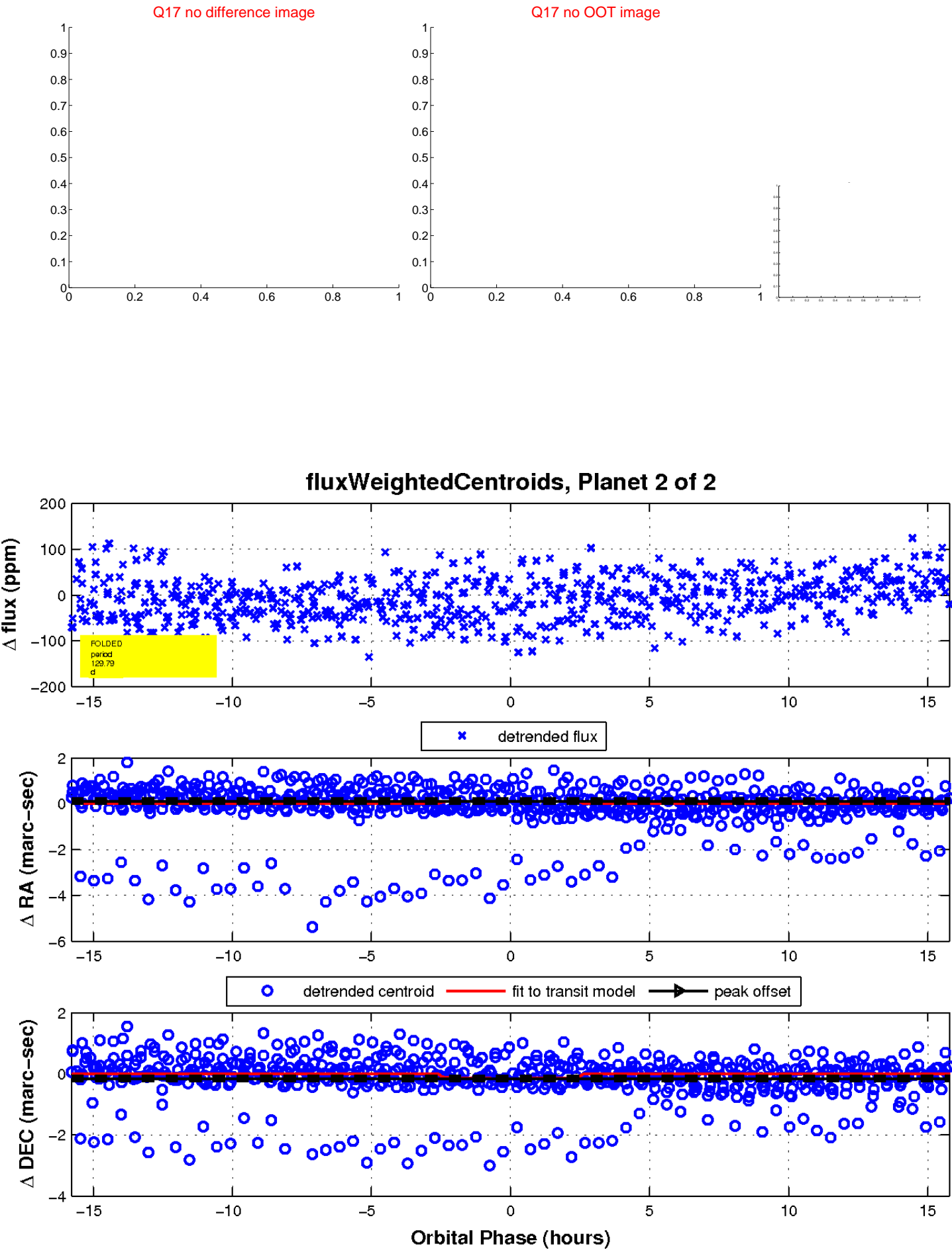
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

