

KIC 005435620

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})
005435620-01	OBS	No	1.396722	131.921268	232.0	4.264	12.9	11.7	1.58	7107	3.26	7460.72
005435620-02	OBS	No	2.361420	132.758557	321.7	27.345	12.6	19.5	1.58	7107	3.63	3704.22

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005435620-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005435620-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—CENT_FEW_DIFFS

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

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

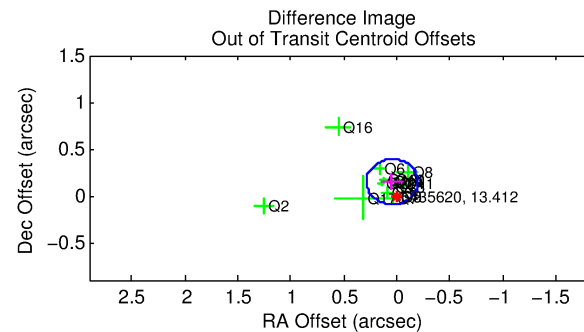
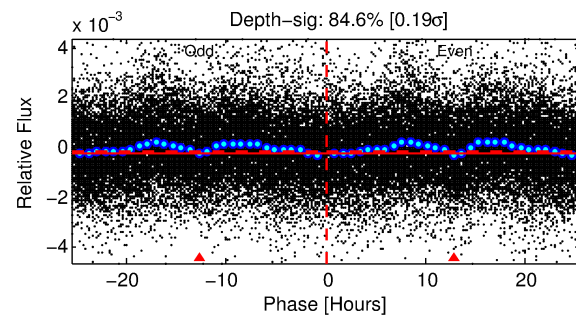
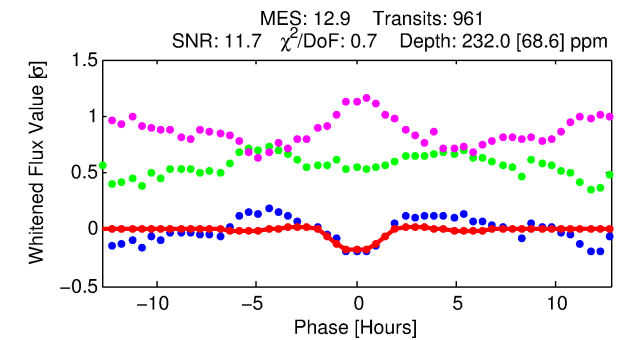
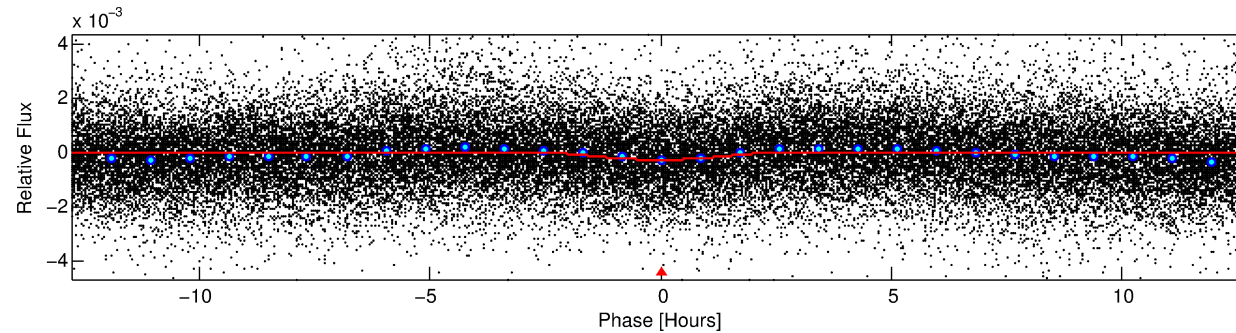
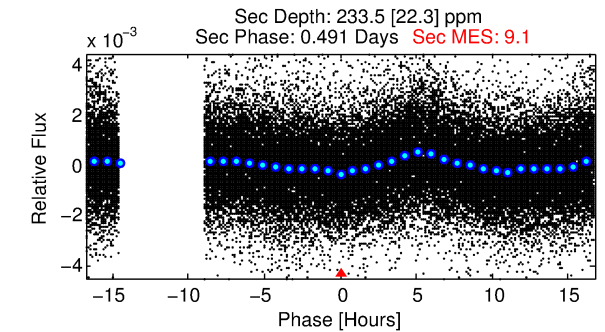
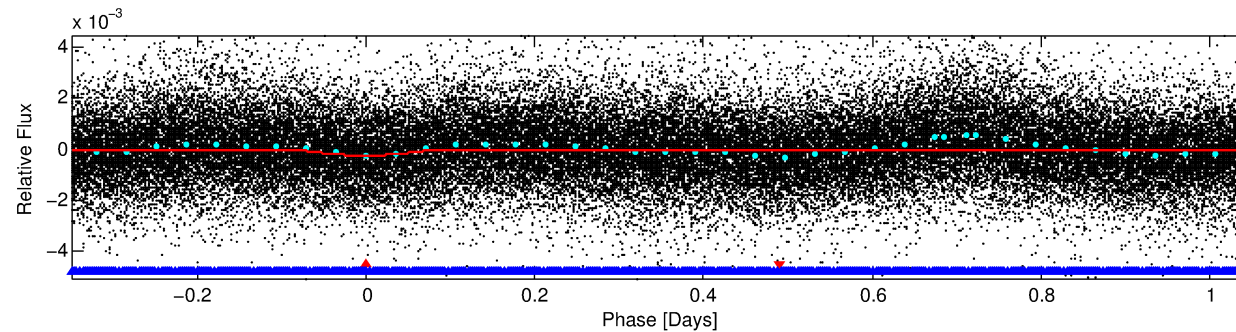
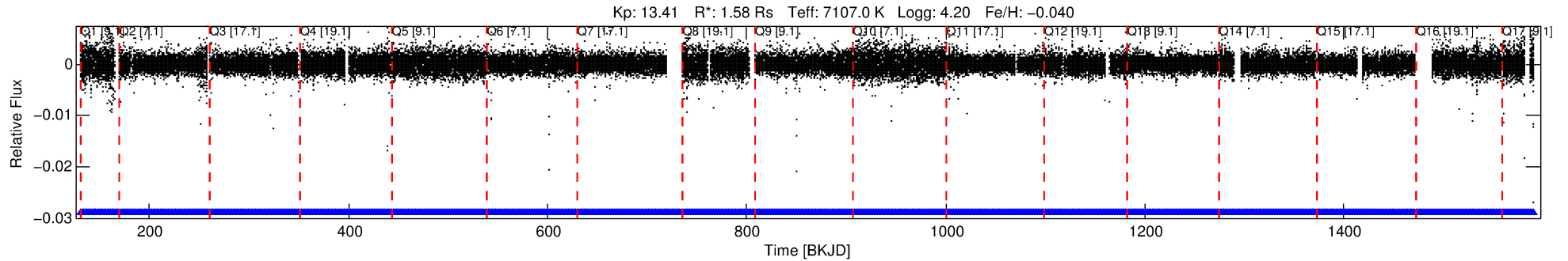
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005435620-01

No Significant Match Found

DV One-Page Summary

KIC: 5435620 Candidate: 1 of 2 Period: 1.397 d



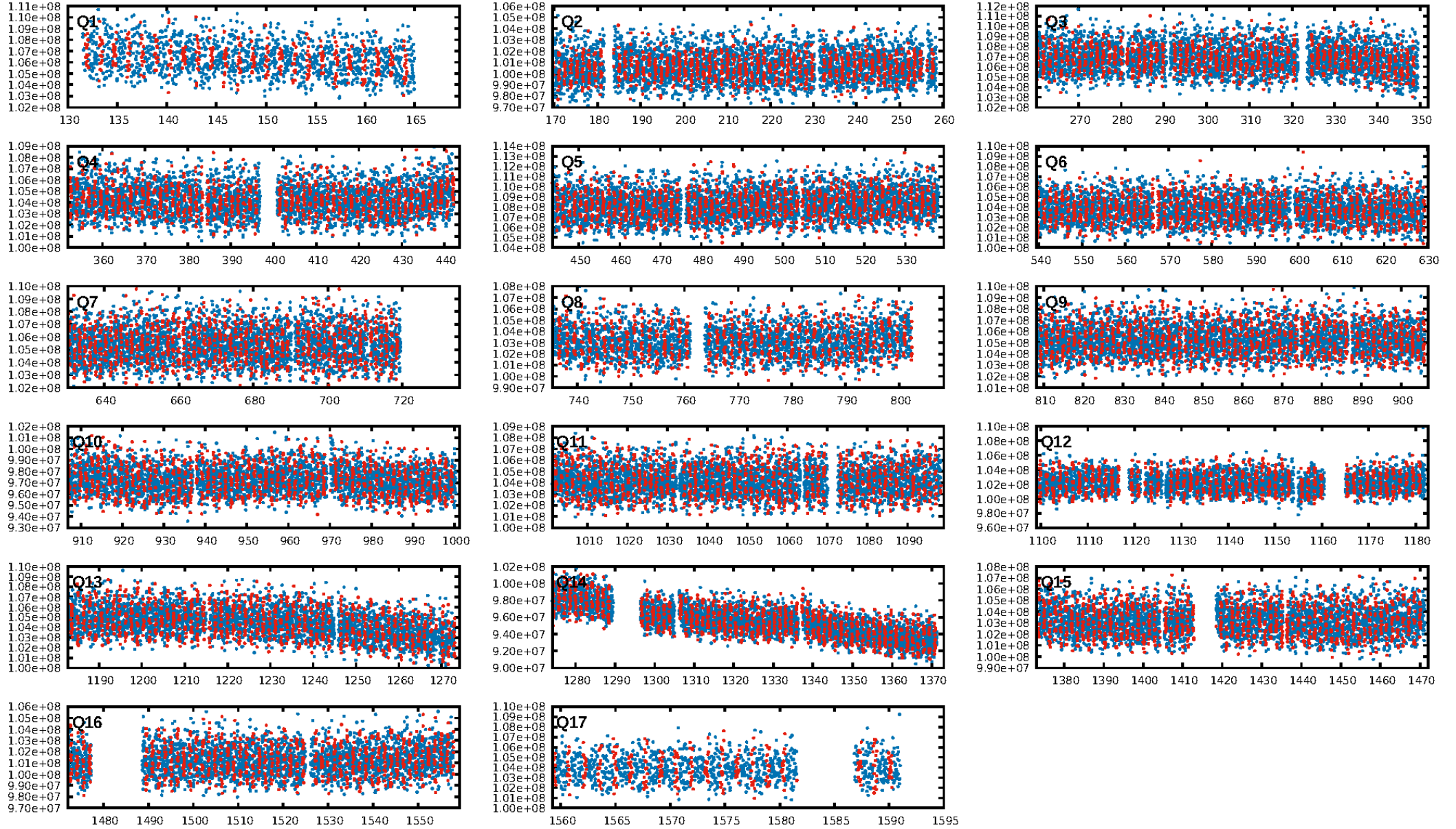
DV Fit Results:

Period = 1.39672 [0.00001] d
Epoch = 131.9213 [0.0047] BKJD
Rp/R* = 0.0189 [0.0050]
a/R* = 1.20 [0.07]
b = 0.98 [0.02]
Seff = 7460.72 [3048.27]
Teq = 2370 [242] K
Rp = 3.26 [1.39] Re
a = 0.0277 [0.0074] AU
Ag = 9.25 [6.07] [1.36σ]
Teffp = 6390 [905] K [4.29σ]

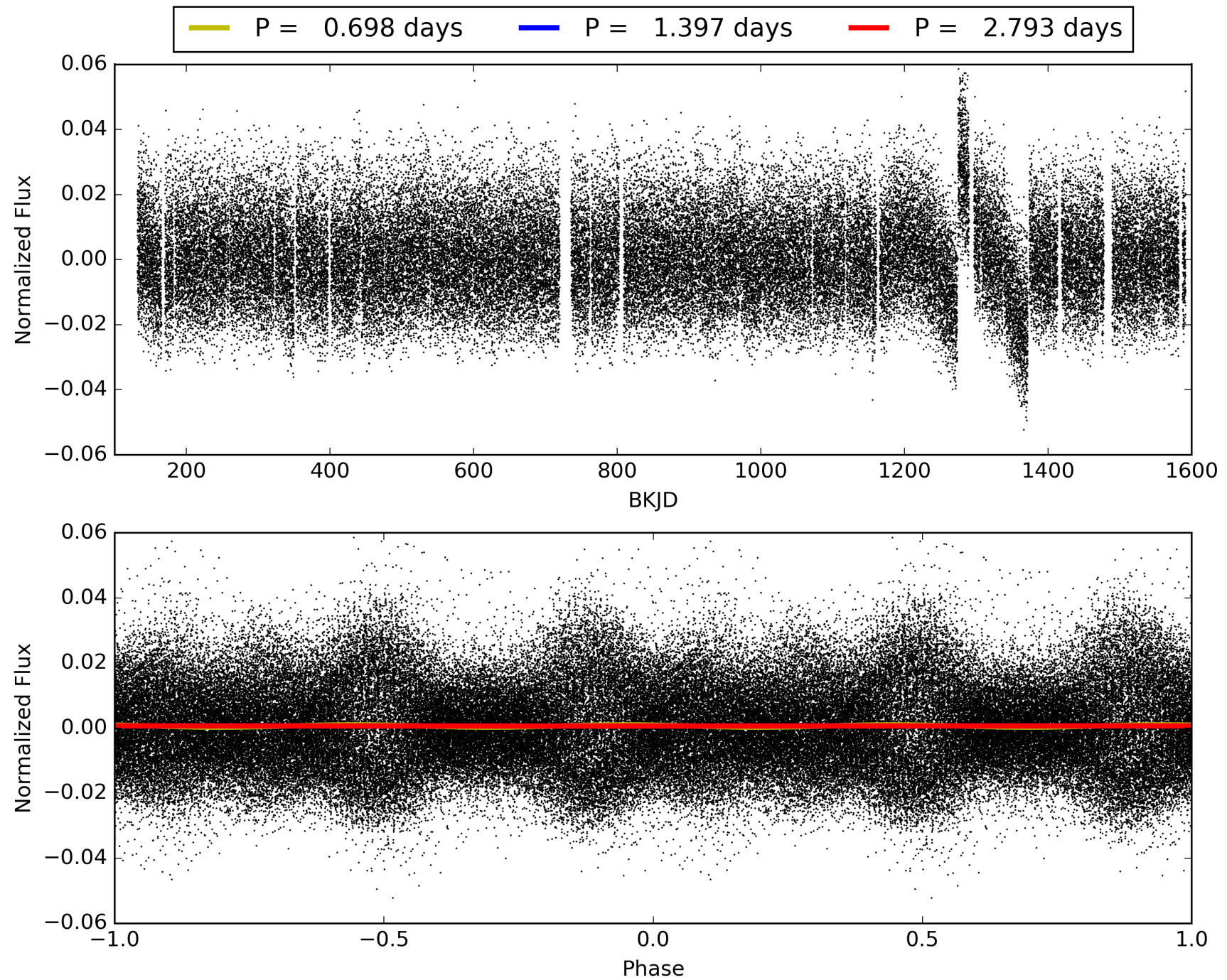
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 59.7% [0.84σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [918/918]
GhostDiagnostic-chr: 1.254
Centroid-sig: 4.1%
Centroid-so: 0.058 arcsec [0.46σ]
OotOffset-rm: 0.155 arcsec [1.91σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 0.200 arcsec [2.26σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.41 [7/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 005435620-01, PDC Light Curves

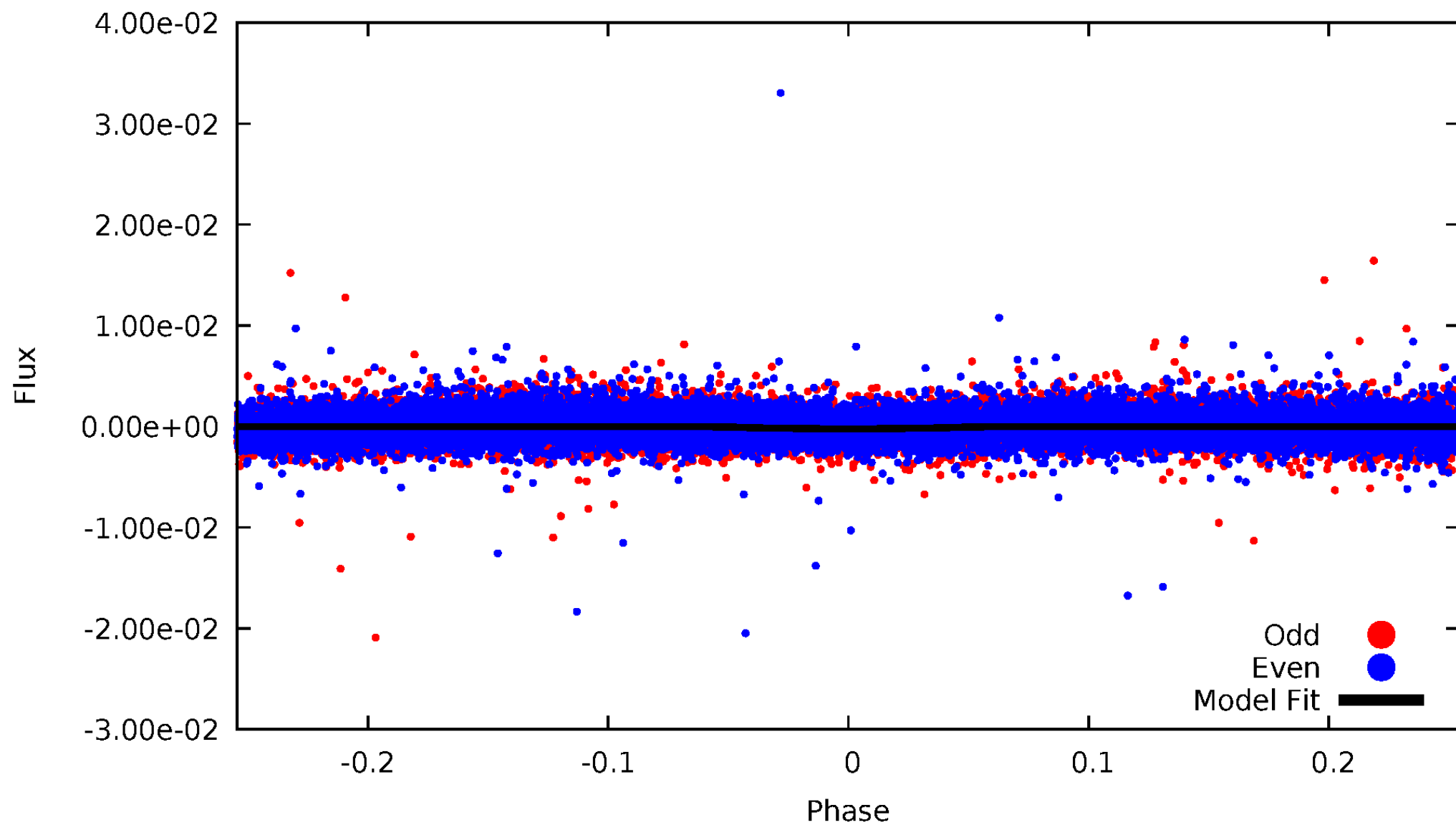


TCE 005435620-01



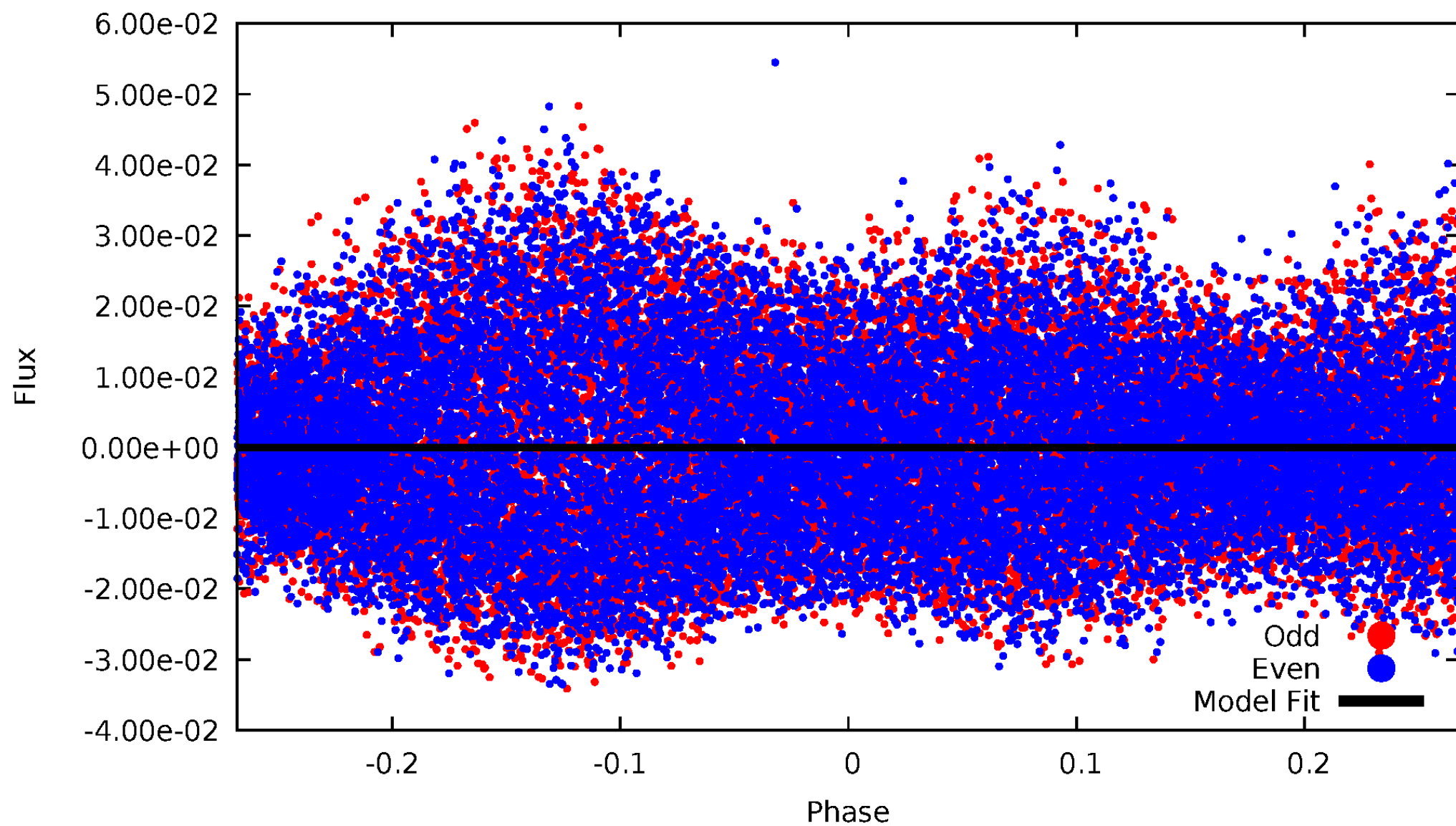
DV Odd/Even

TCE 005435620-01



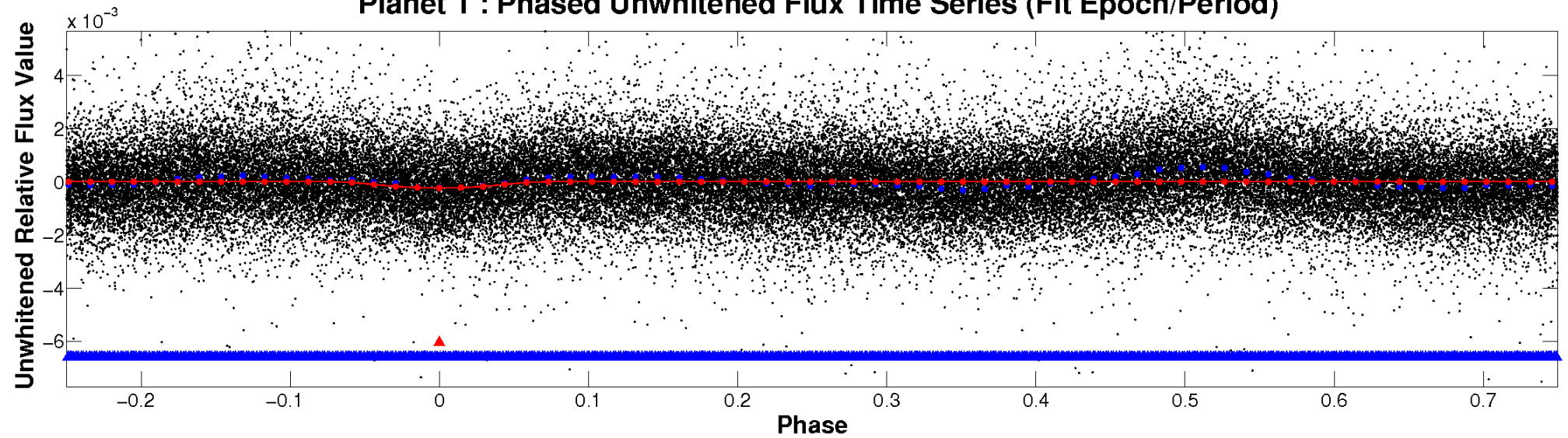
ALT Odd/Even

TCE 005435620-01

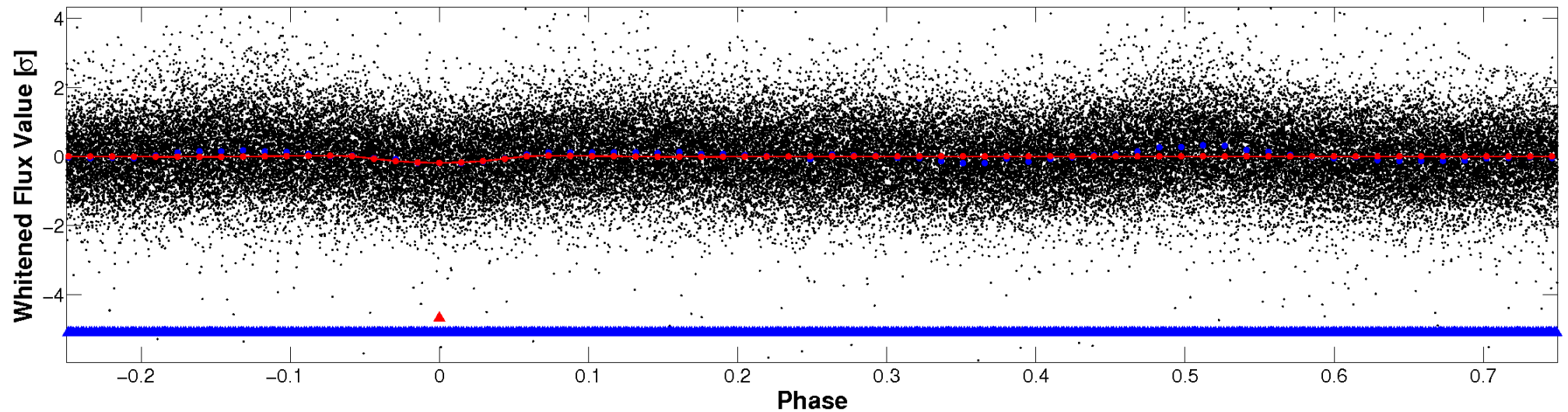


Non-Whitened Vs. Whitened Light Curve

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

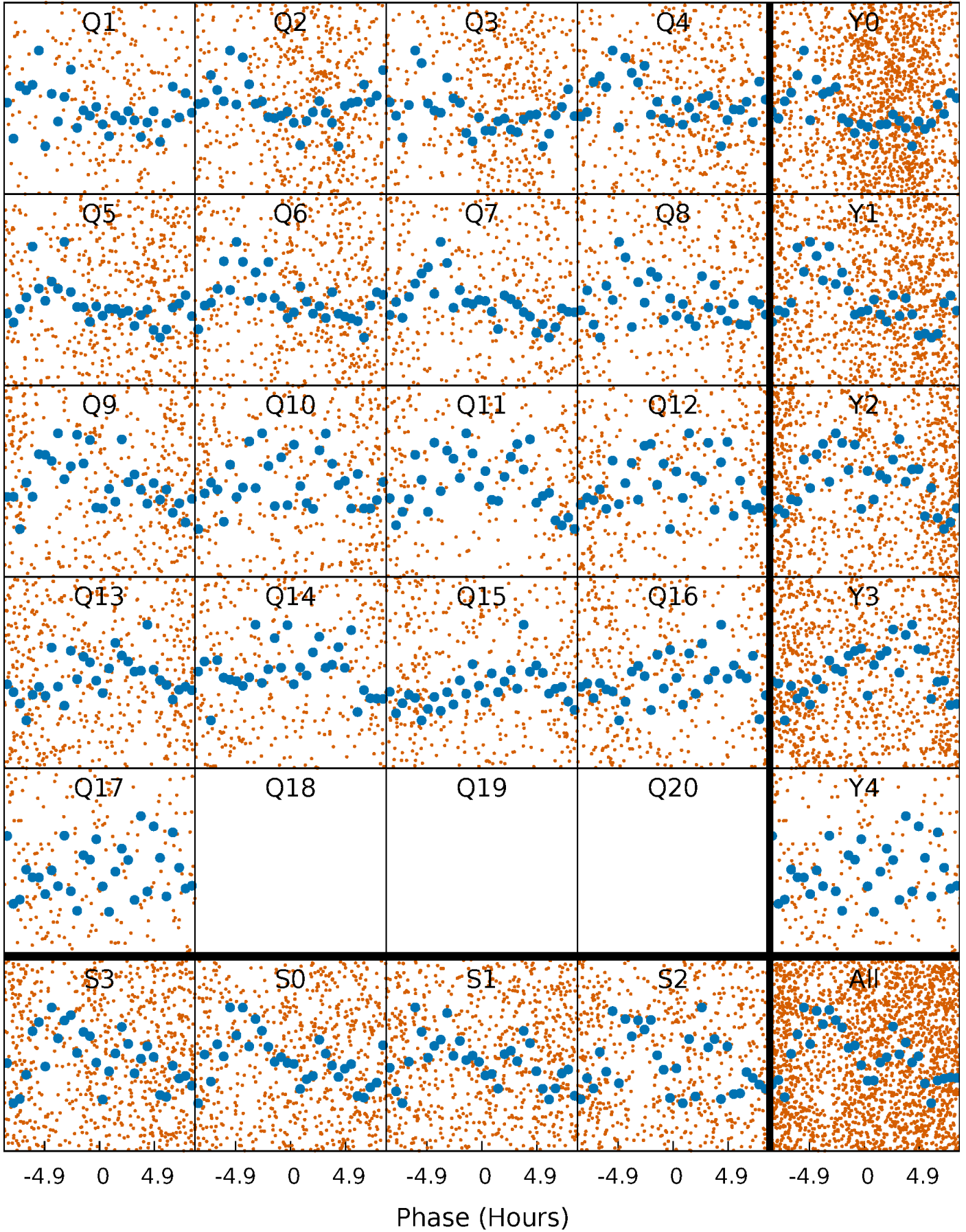


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



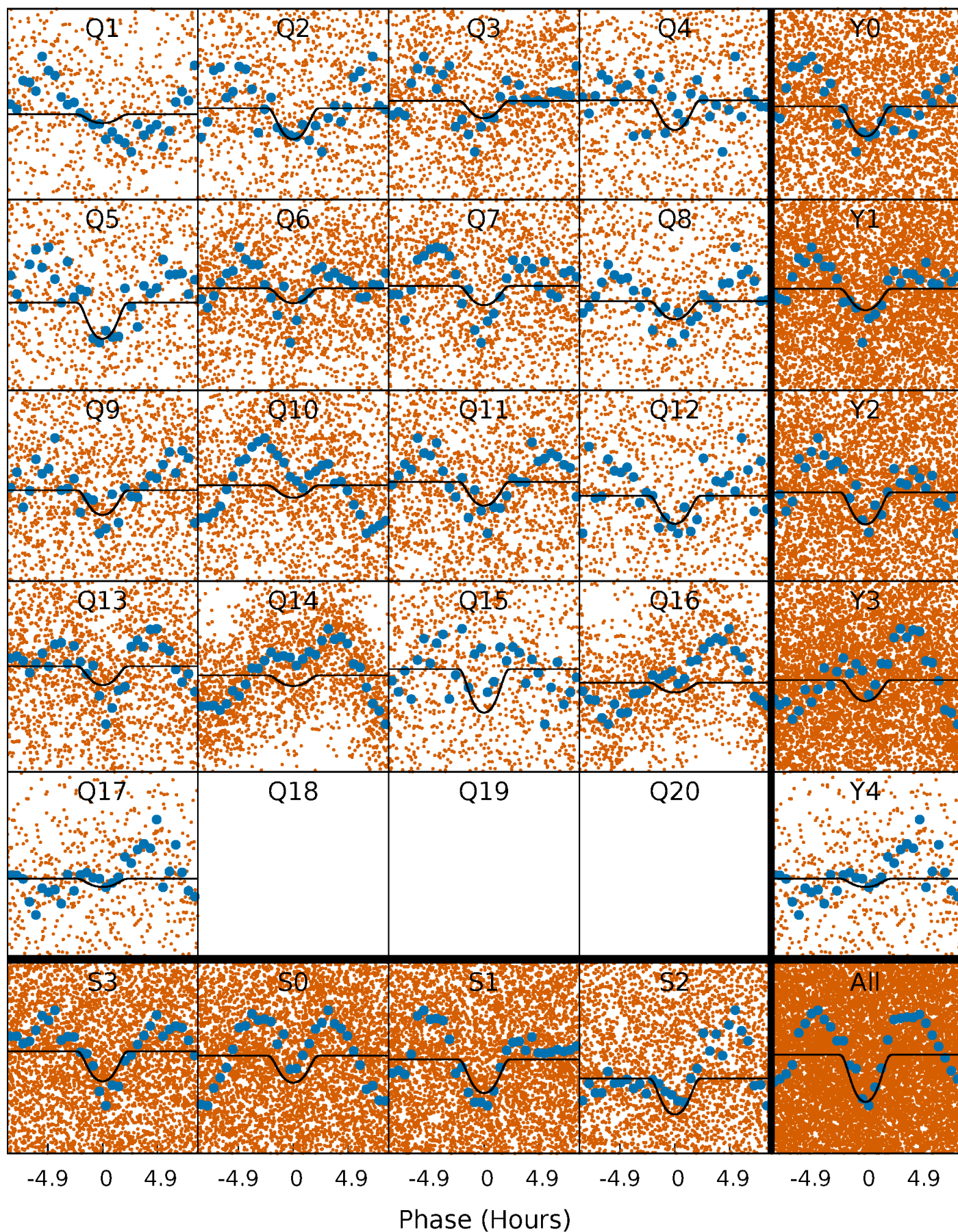
PDC Quarter-Phased Transit Curves

TCE 005435620-01 P= 1.396722 Days $T_0=131.921267$ (BKJD)



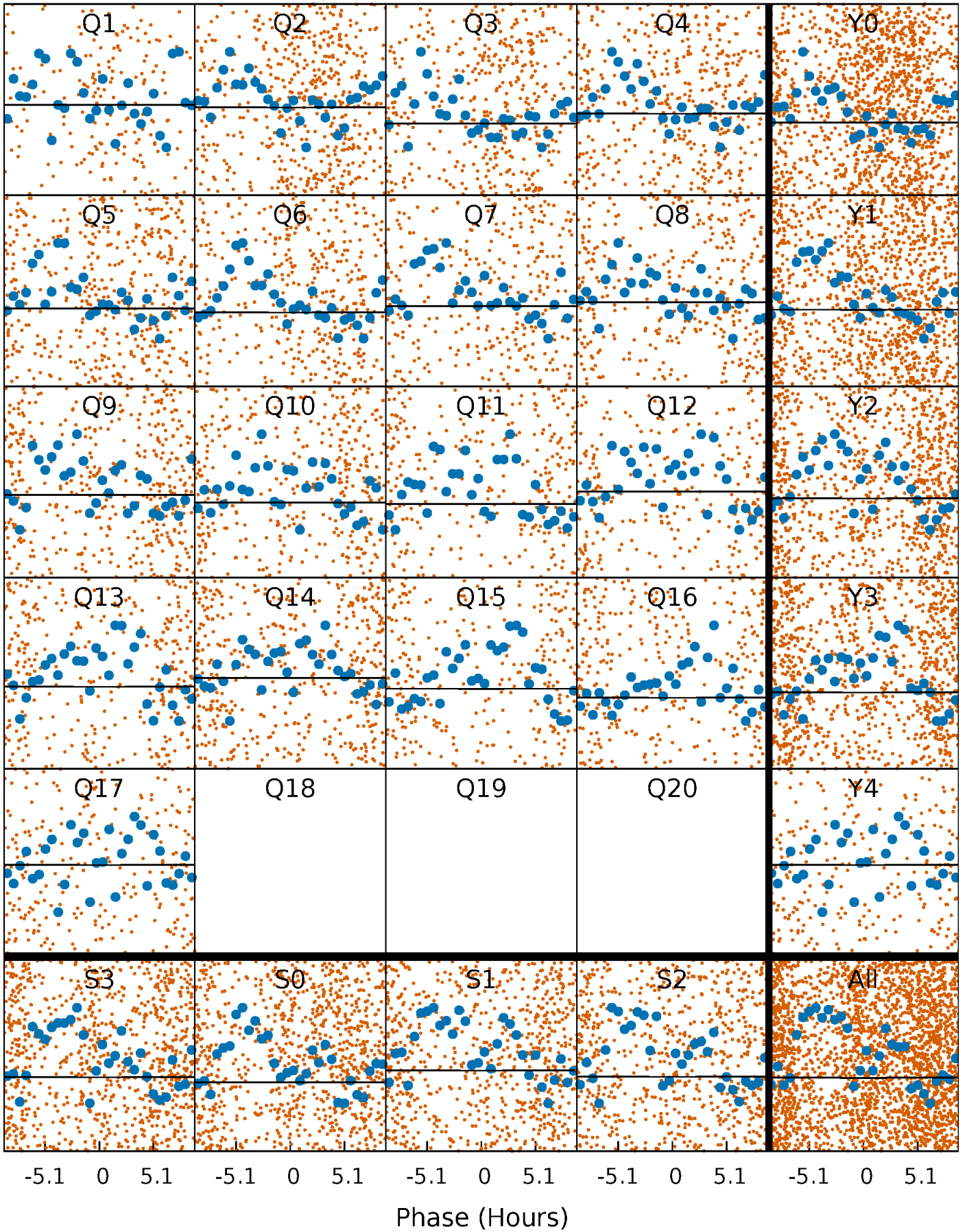
DV Quarter-Phased Transit Curves

TCE 005435620-01 P= 1.396722 Days $T_0=131.921267$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

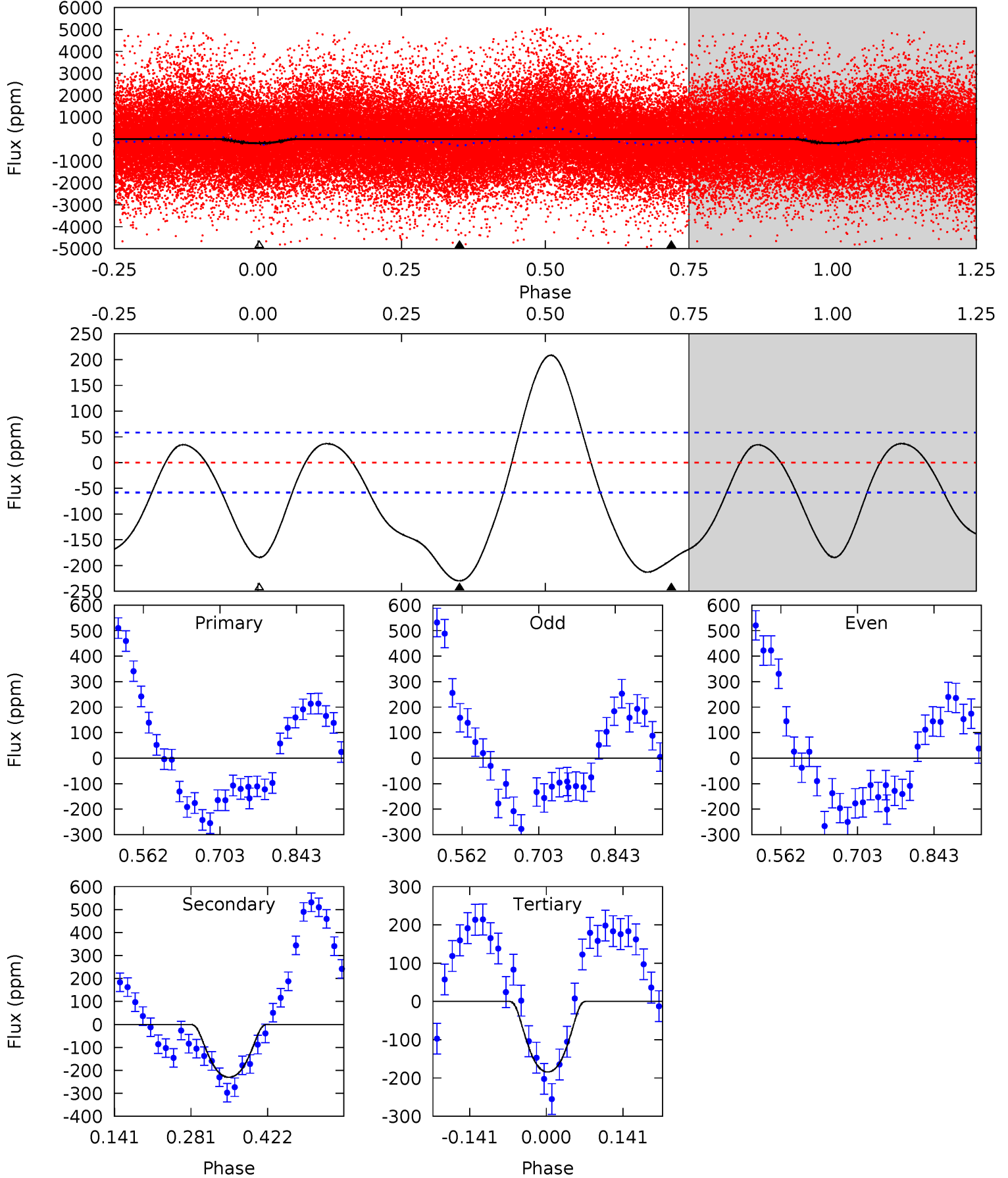
TCE 005435620-01 P= 1.396798 Days $T_0=131.901287$ (BKJD)



DV Model-Shift Uniqueness Test

005435620-01, P = 1.396722 Days, E = 130.524545 Days

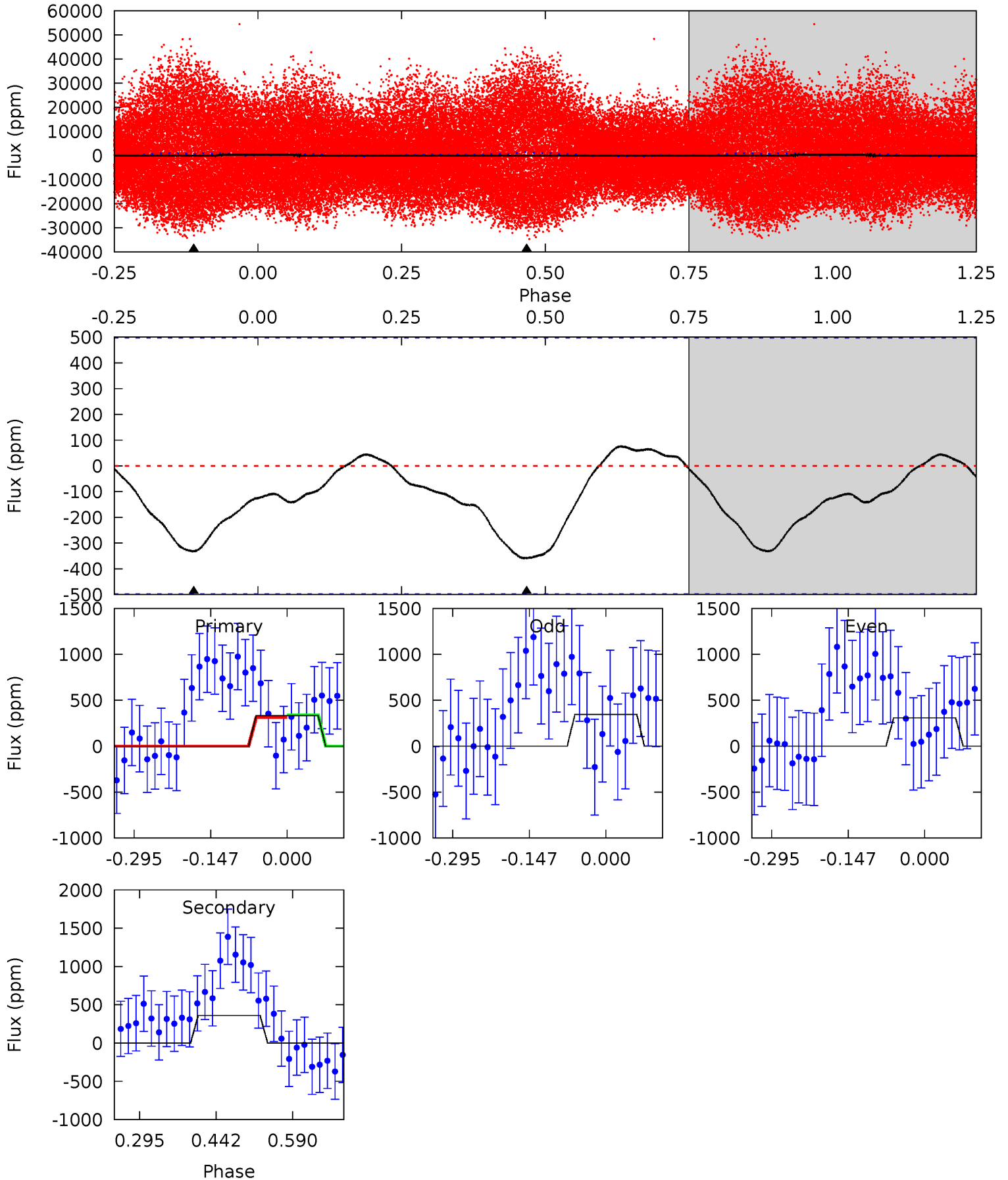
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.6	17.7	14.2	0	4.49	1.47	8.08	0.37	14.6	3.51	17.7	1.93	0.86	0.48	1.84



Alt Model-Shift Uniqueness Test

005435620-01, P = 1.396798 Days, E = 130.504489 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.99	3.23	0	0	4.48	1.45	0.63	2.99	2.99	3.23	3.23	0.16	1.11	0.18	0.14



Stellar Parameters For KIC 005435620

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7107^{+175}_{-300}	$4.201^{+0.105}_{-0.195}$	$-0.040^{+0.200}_{-0.350}$	$1.581^{+0.524}_{-0.282}$	$1.453^{+0.218}_{-0.218}$	$0.518^{+0.295}_{-0.266}$
	+2%/-4%	+2%/-5%	+500%/-875%	+33%/-18%	+15%/-15%	+57%/-51%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 005435620-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-230 ± 13	$3.29^{+1.07}_{-0.96}$	3321^{+270}_{-201}	6281^{+1181}_{-819}	$8.930^{+8.081}_{-3.874}$
Alt.	-359 ± 111	$0.72^{+0.75}_{-0.47}$	3323^{+286}_{-188}	$25825^{+108139}_{-13996}$	273^{+1940}_{-212}

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

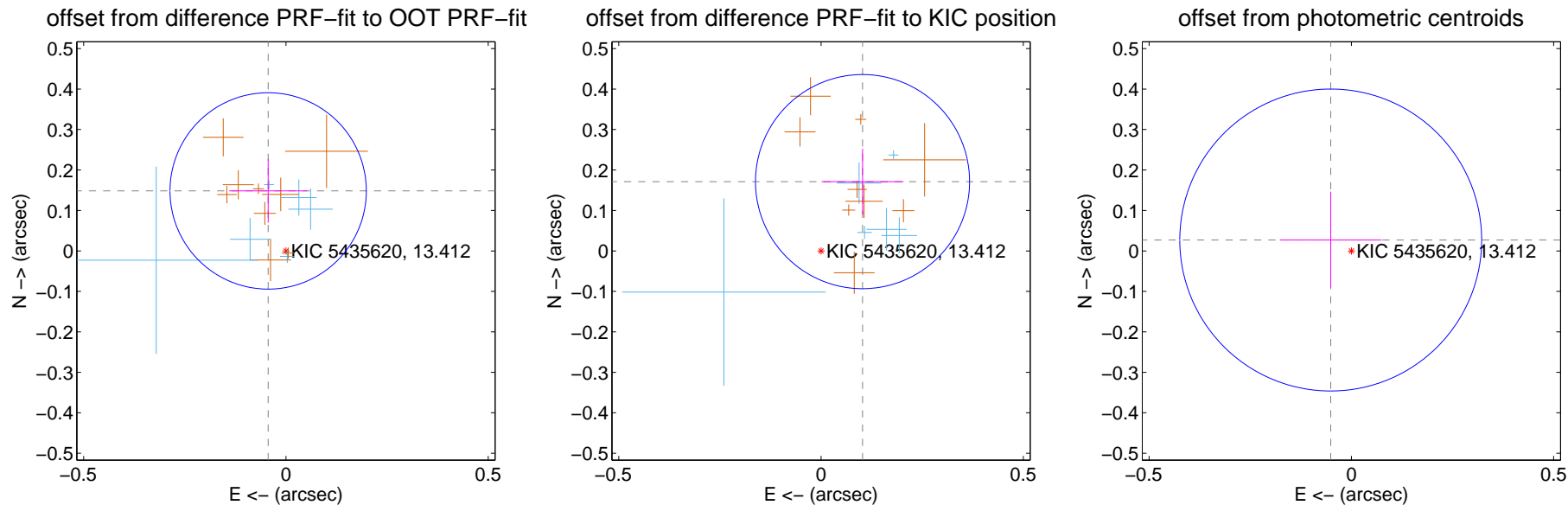
DV Centroid Data

Supplemental centroid analysis for 005435620-01. Kepler magnitude: 13.41. Transit SNR 11.66

There are 7 quarters with good PRF difference image offsets

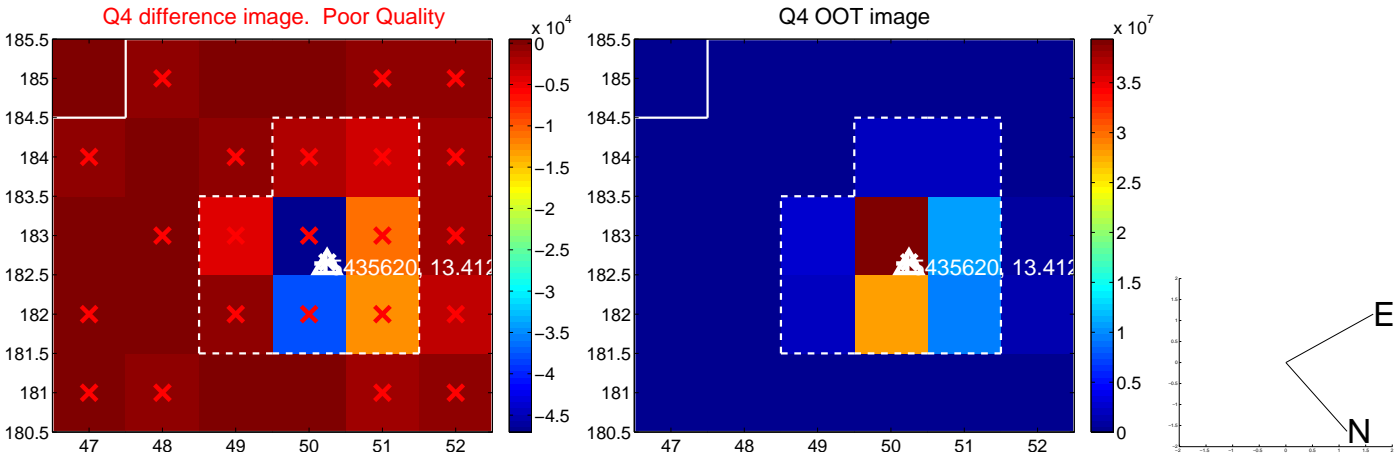
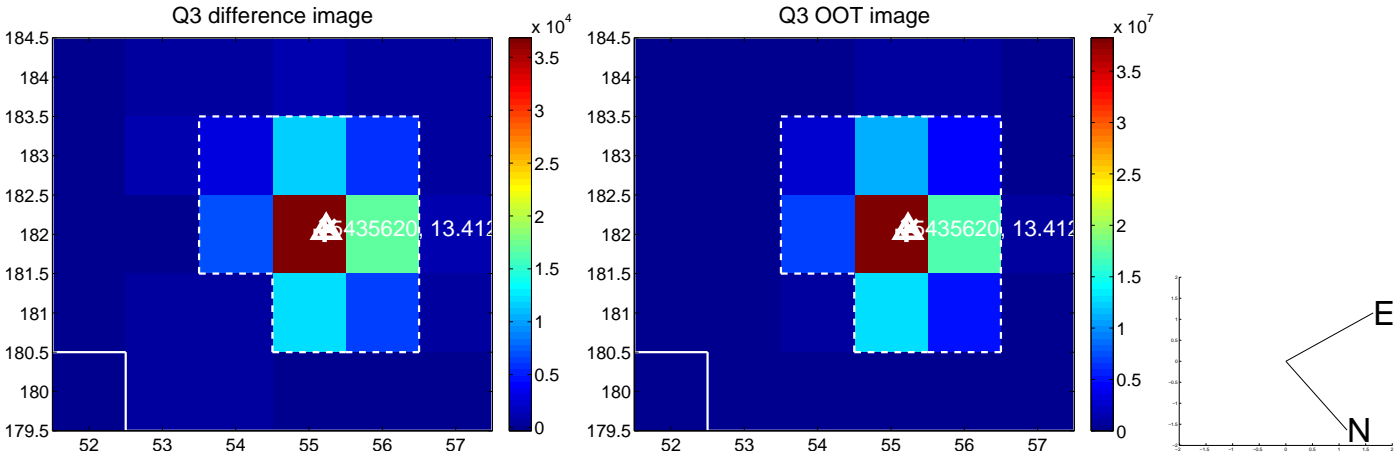
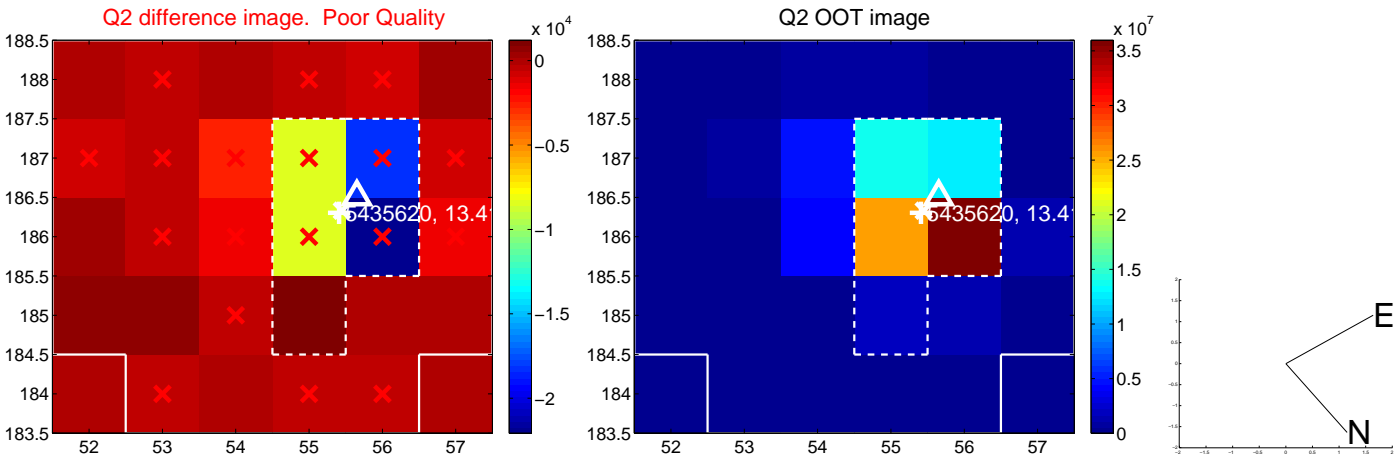
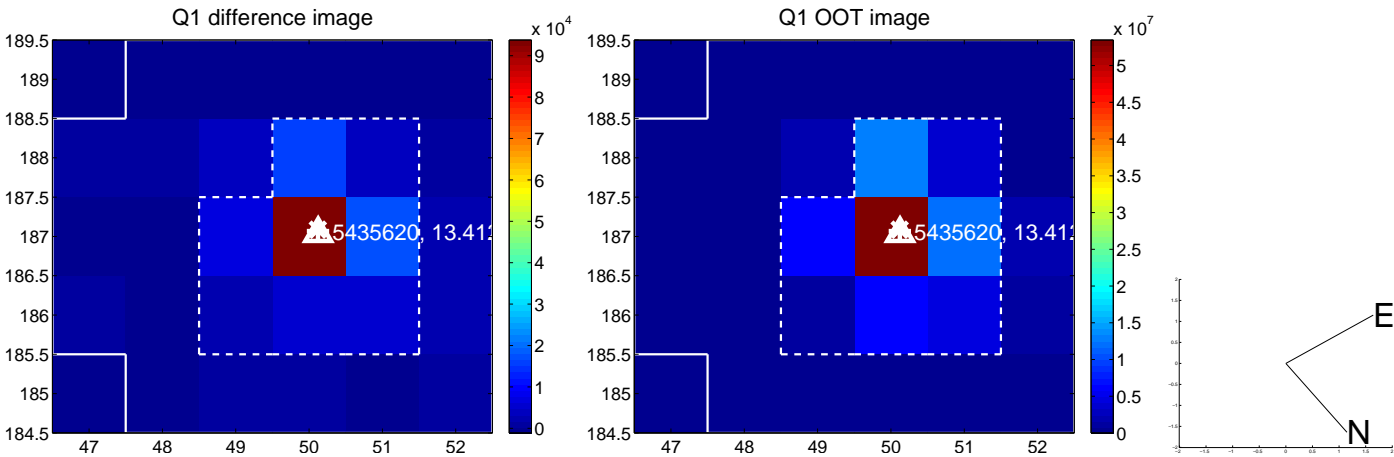
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.155 ± 0.081	1.91	0.044 ± 0.096	0.148 ± 0.079
PRF-fit source offset from KIC position	0.200 ± 0.088	2.26	-0.103 ± 0.101	0.171 ± 0.081
photometric centroid source offset	0.06 ± 0.12	0.46	0.05 ± 0.13	0.03 ± 0.12

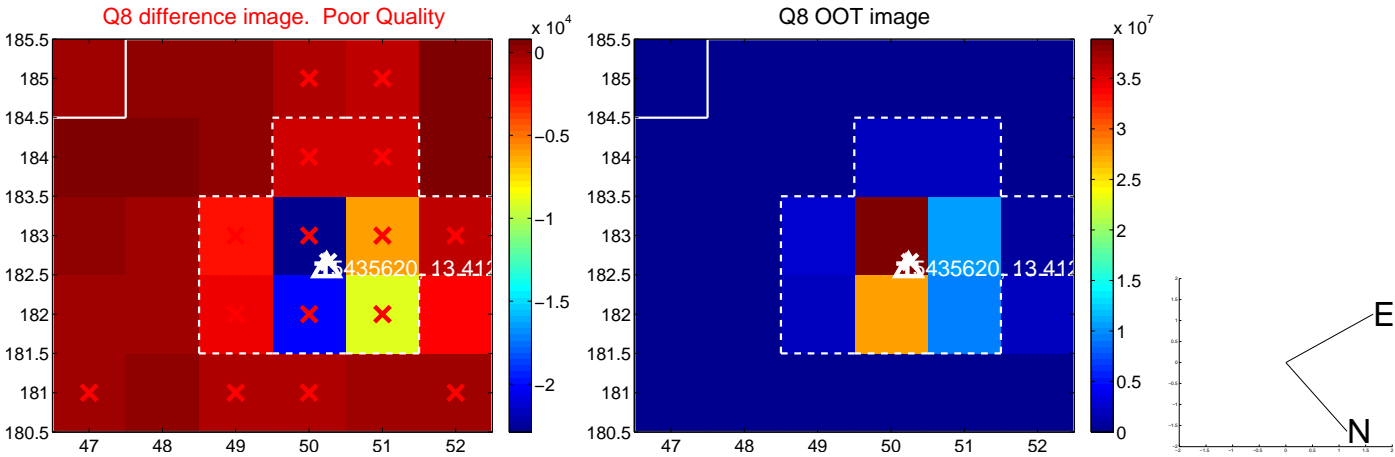
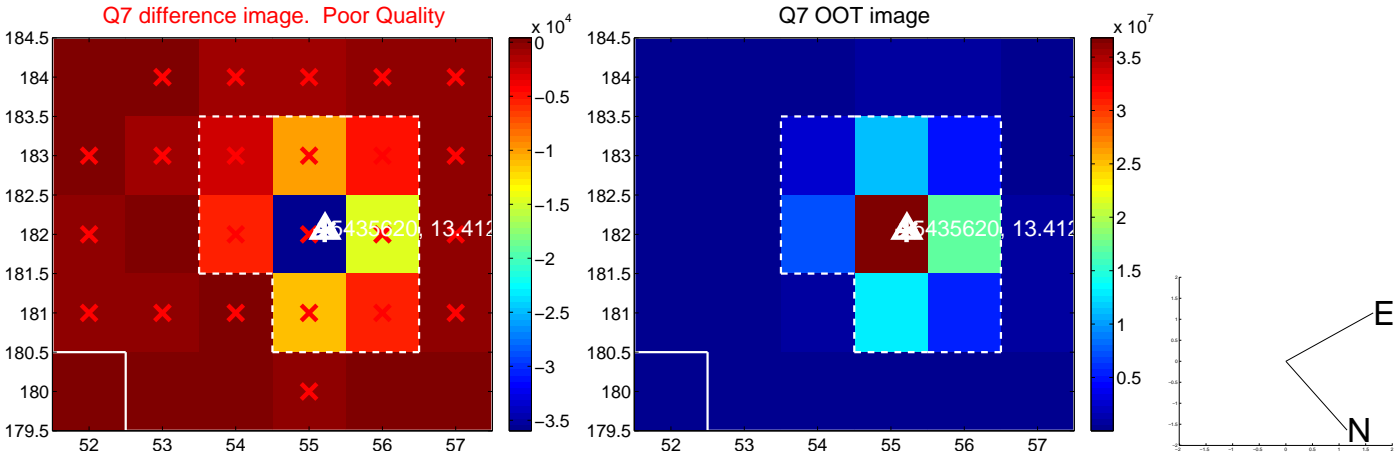
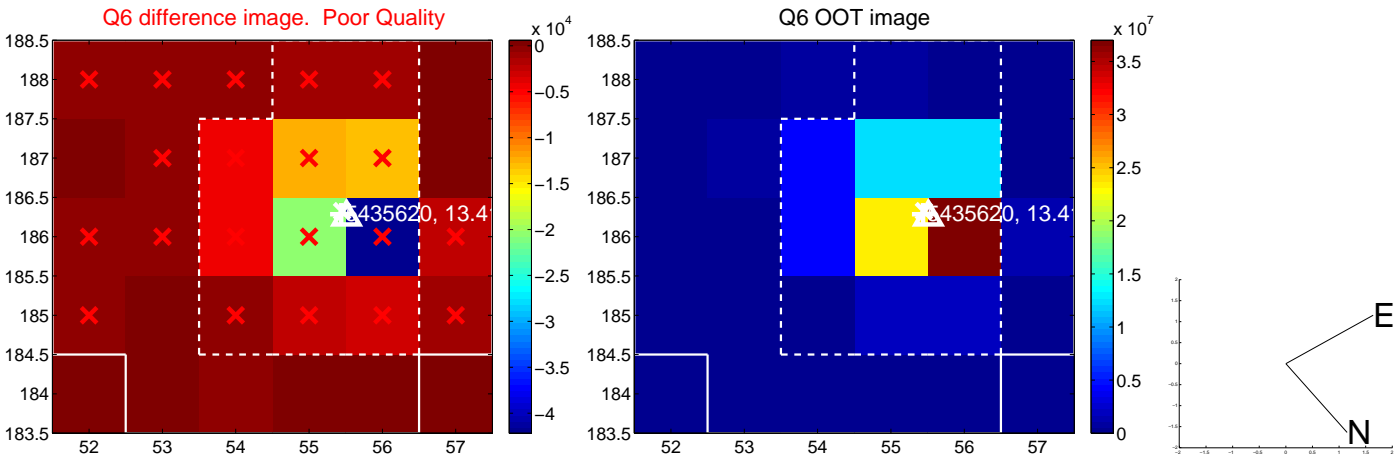
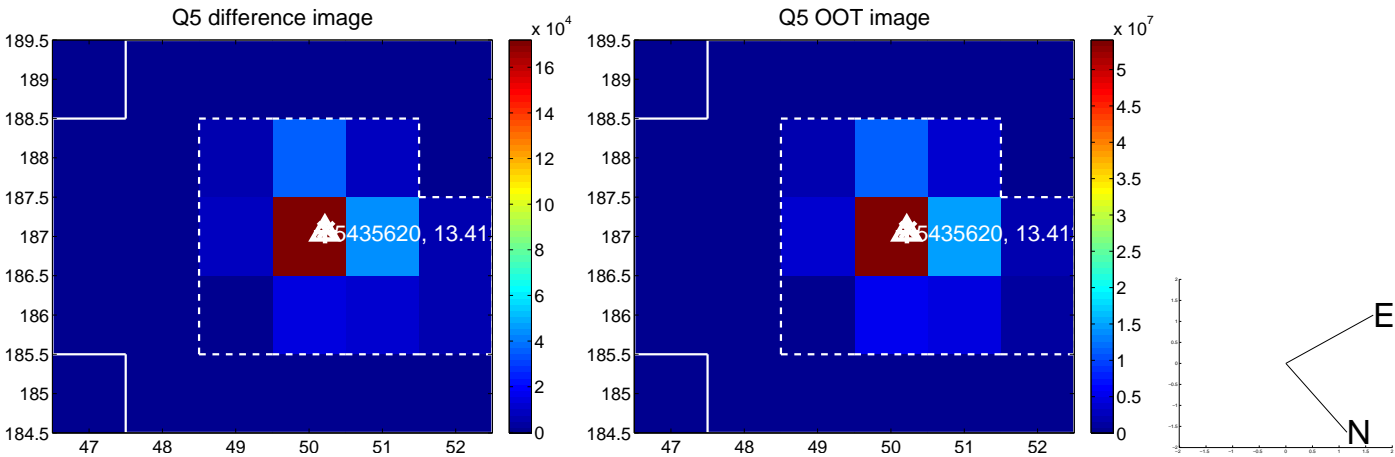


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

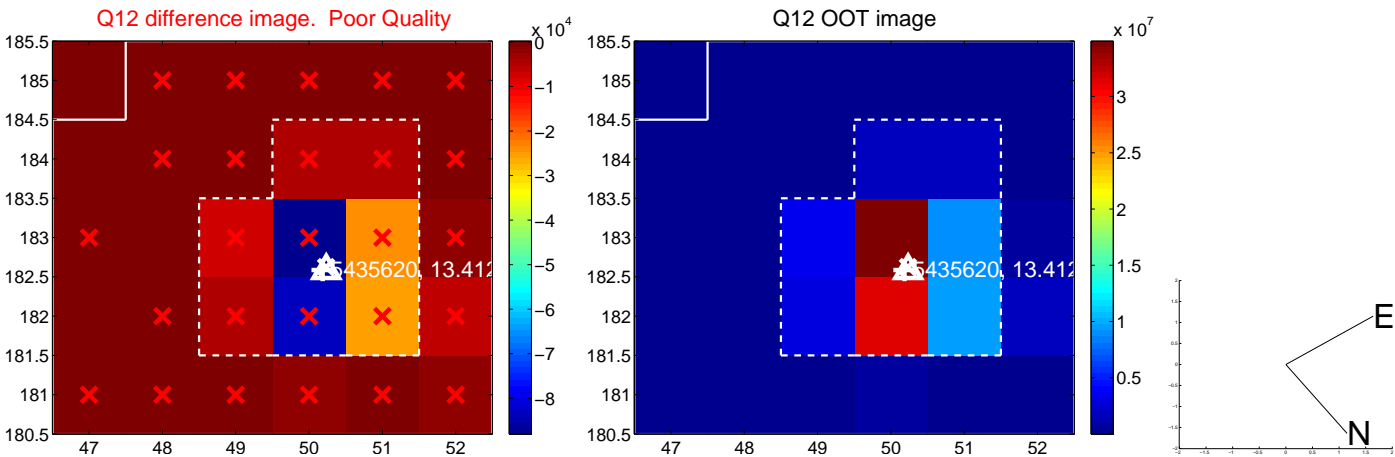
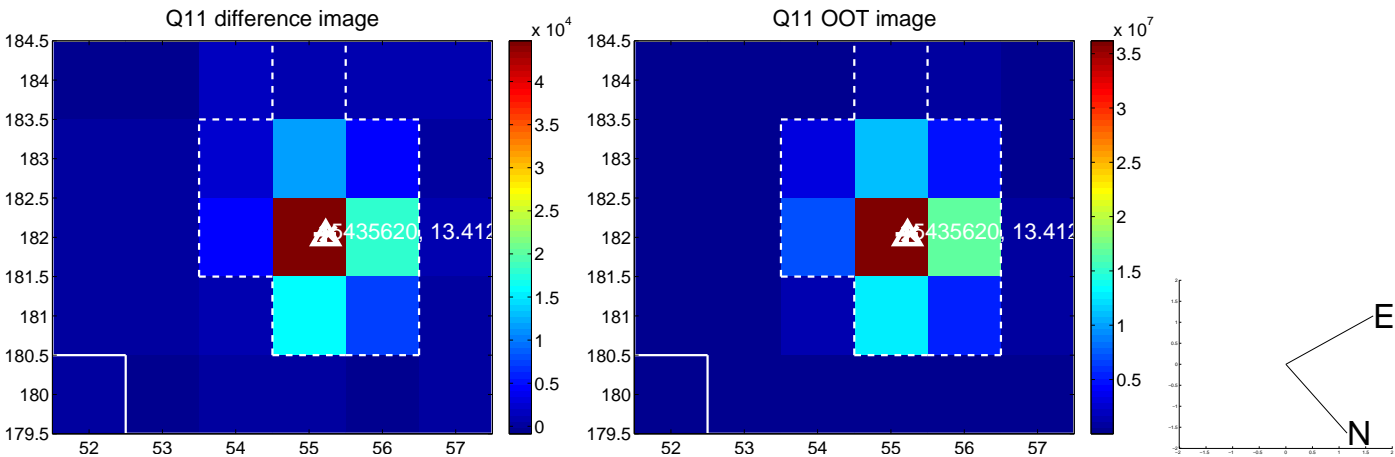
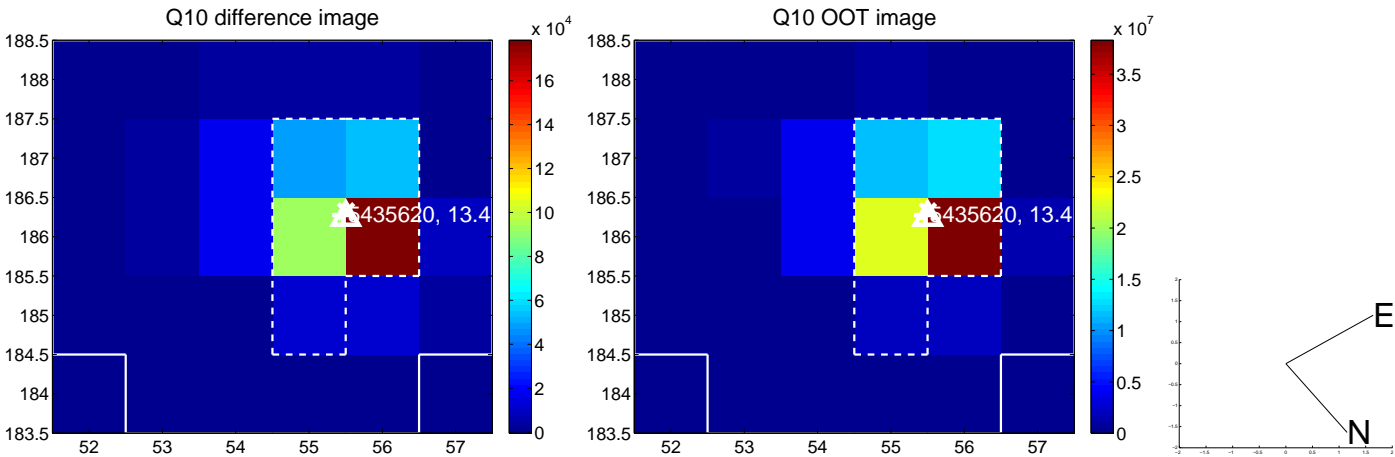
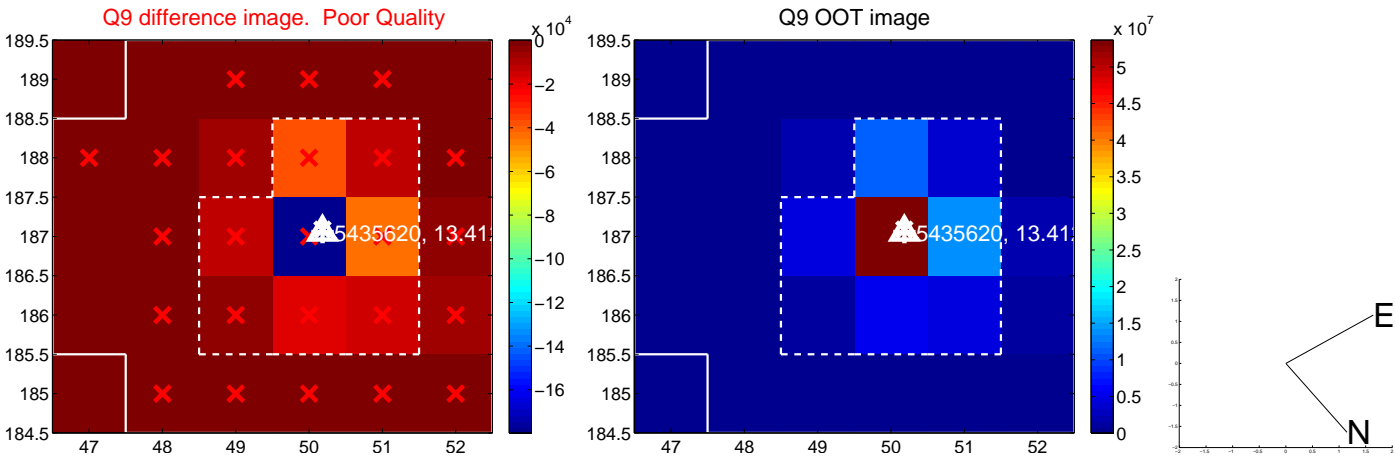
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



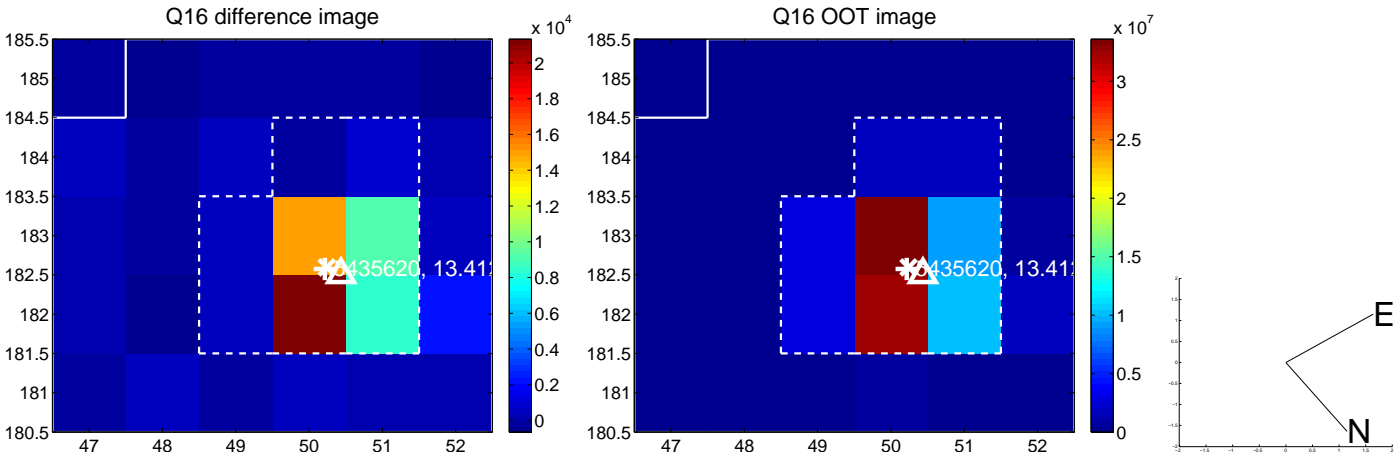
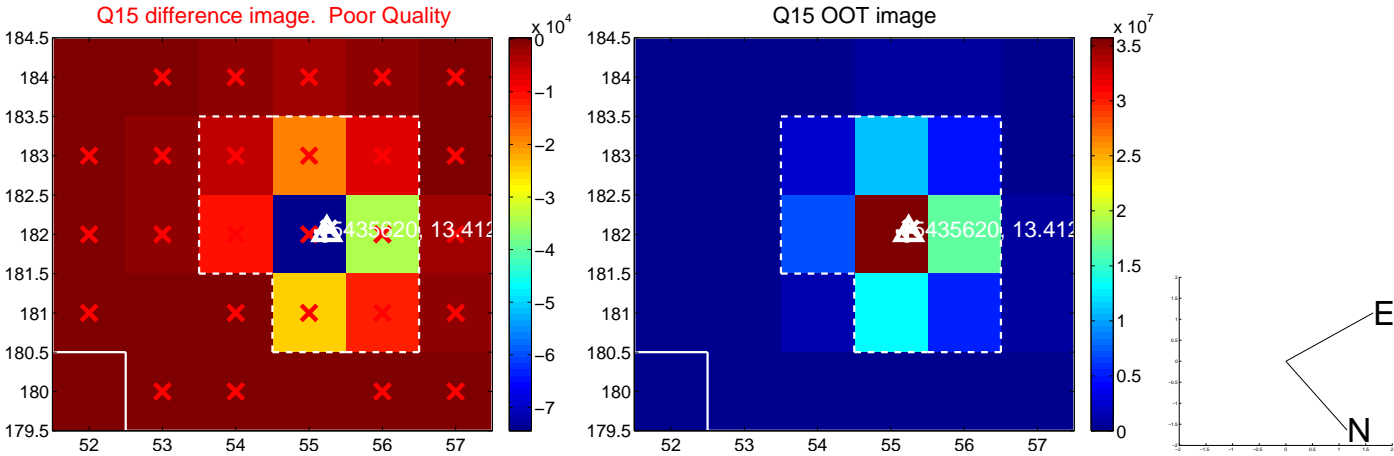
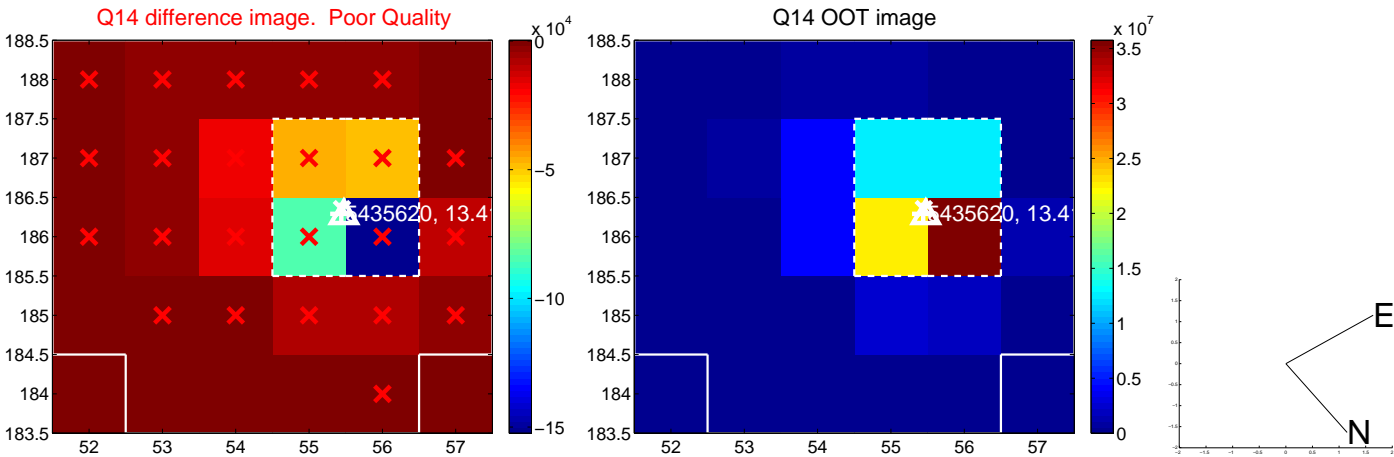
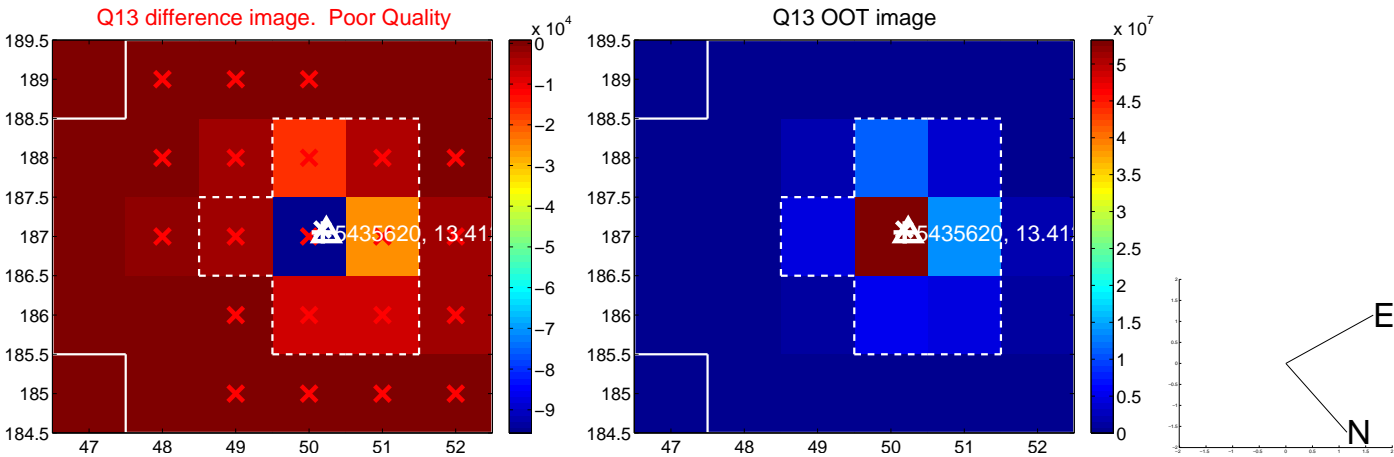
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



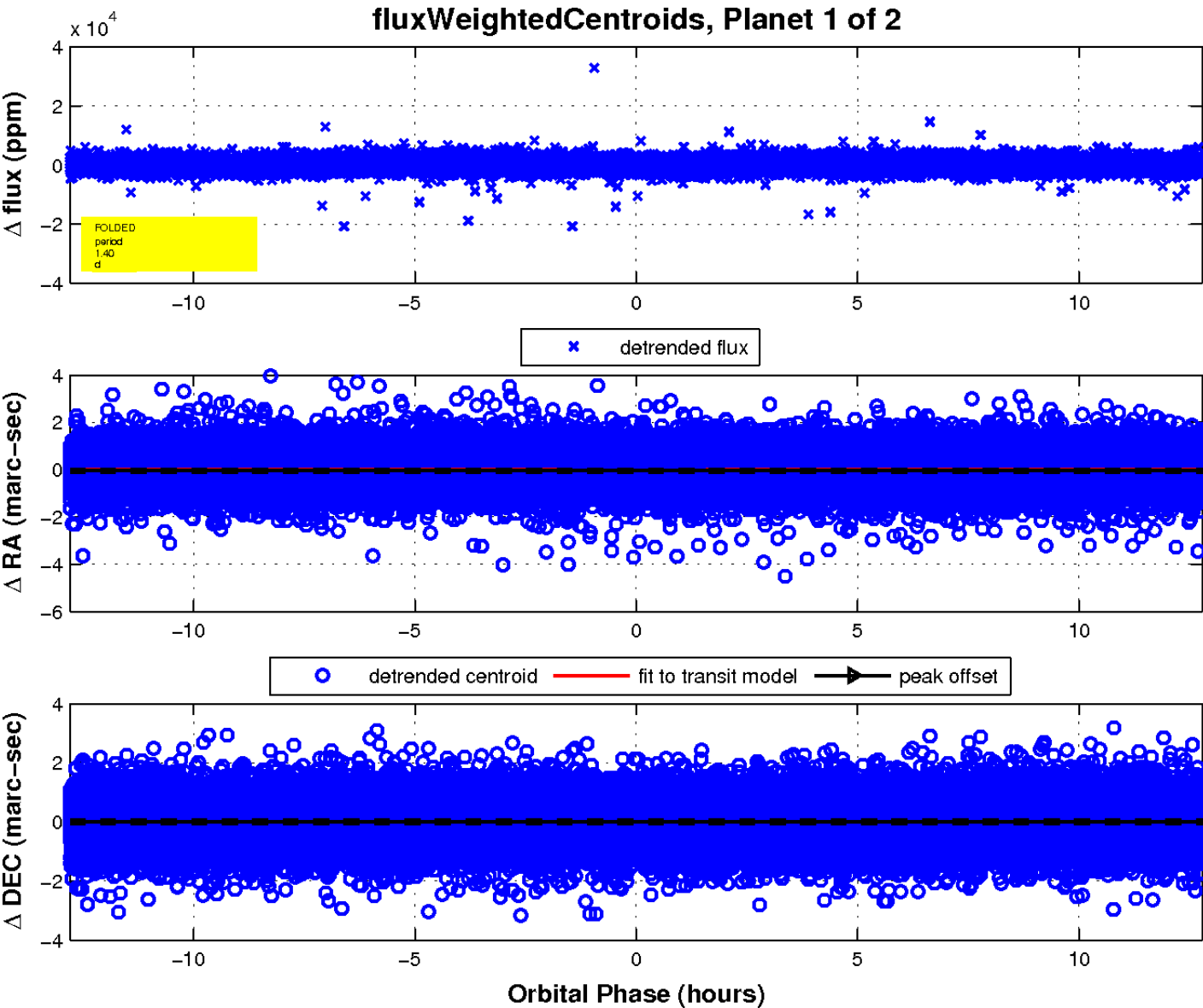
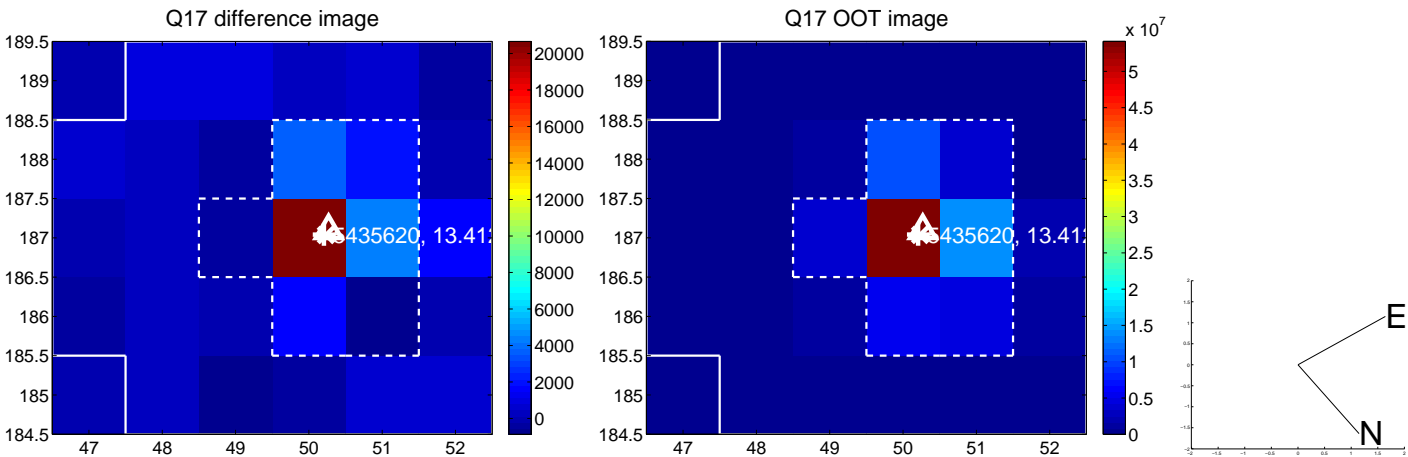
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

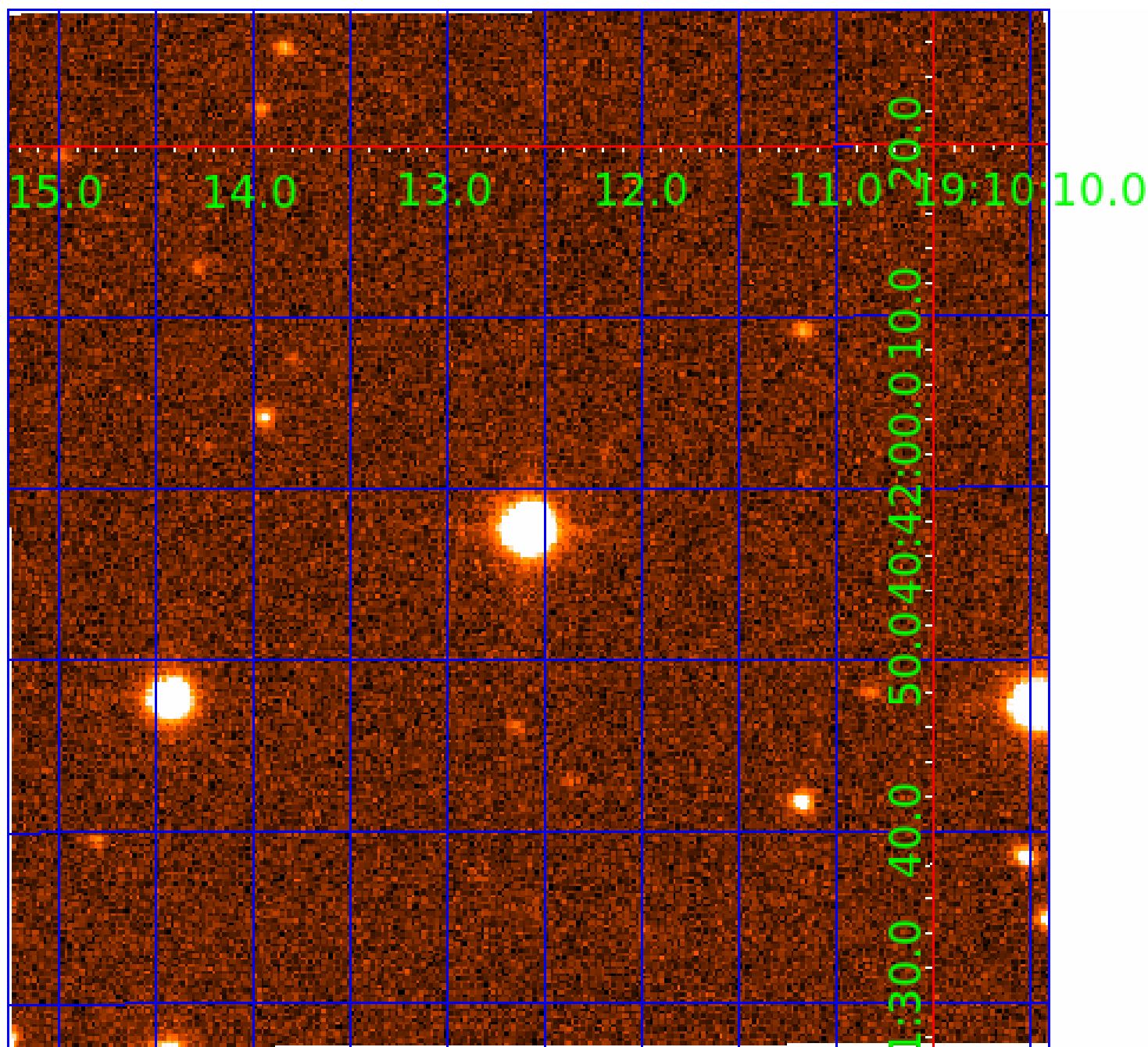


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005435620

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})
005435620-01	OBS	No	1.396722	131.921268	232.0	4.264	12.9	11.7	1.58	7107	3.26	7460.72
005435620-02	OBS	No	2.361420	132.758557	321.7	27.345	12.6	19.5	1.58	7107	3.63	3704.22

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005435620-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005435620-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—CENT_FEW_DIFS

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

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

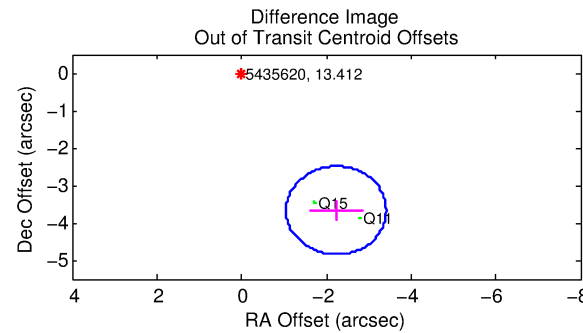
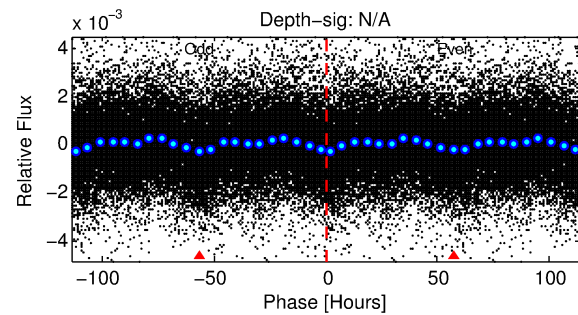
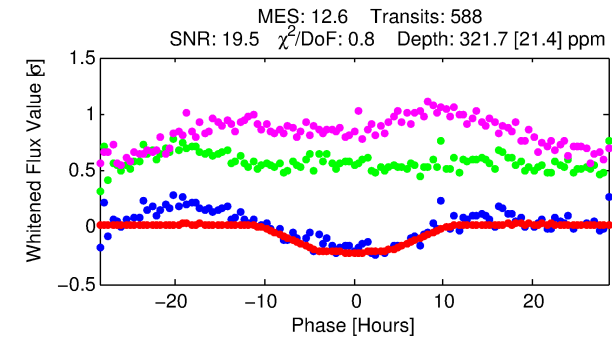
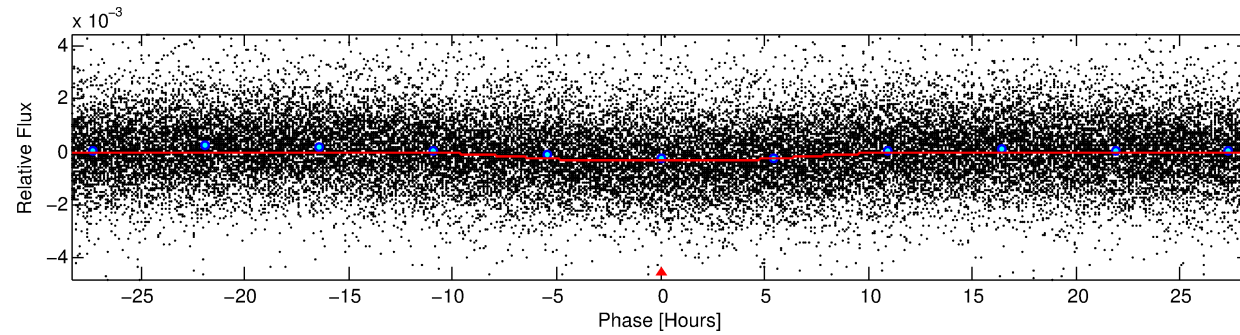
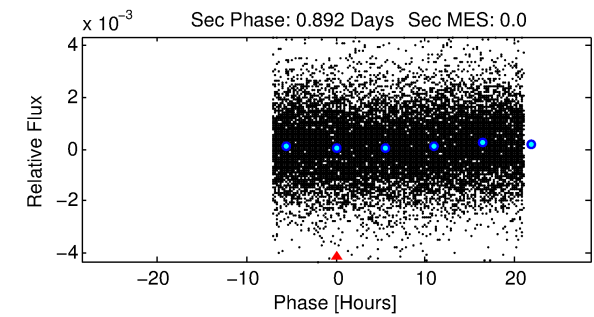
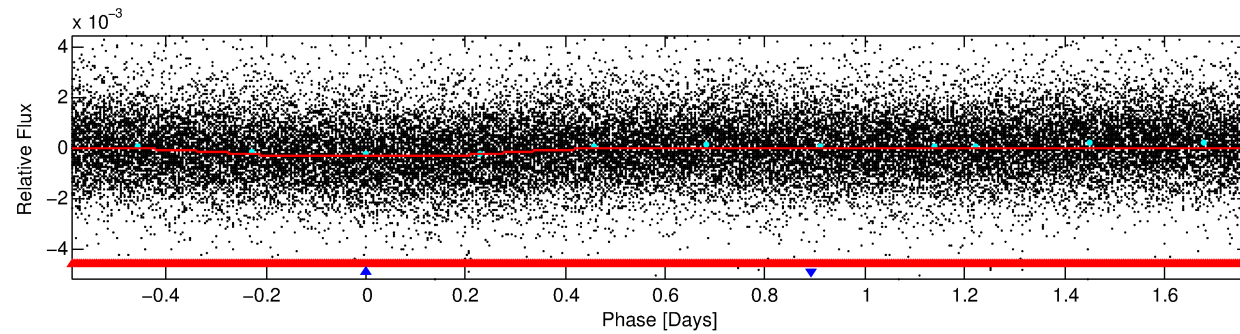
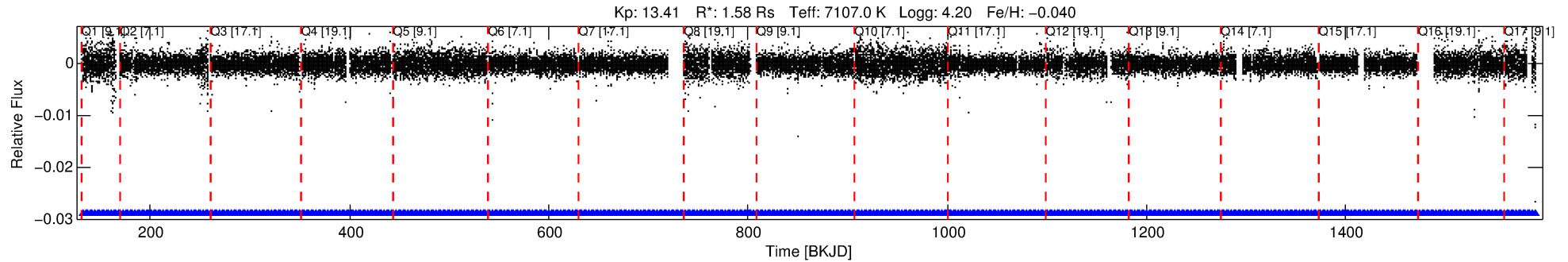
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005435620-02

No Significant Match Found

DV One-Page Summary

KIC: 5435620 Candidate: 2 of 2 Period: 2.361 d



DV Fit Results:

Period = 2.36142 [0.00008] d
Epoch = 132.7586 [0.0258] BKJD
Rp/R* = 0.0210 [0.0009]
a/R* = 1.02 [0.00]
b = 0.97 [0.01]
Seff = 3704.22 [1513.45]
Teff = 1989 [203] K
Rp = 3.63 [1.21] Re
a = 0.0393 [0.0105] AU
Ag = N/A
Teffp = N/A

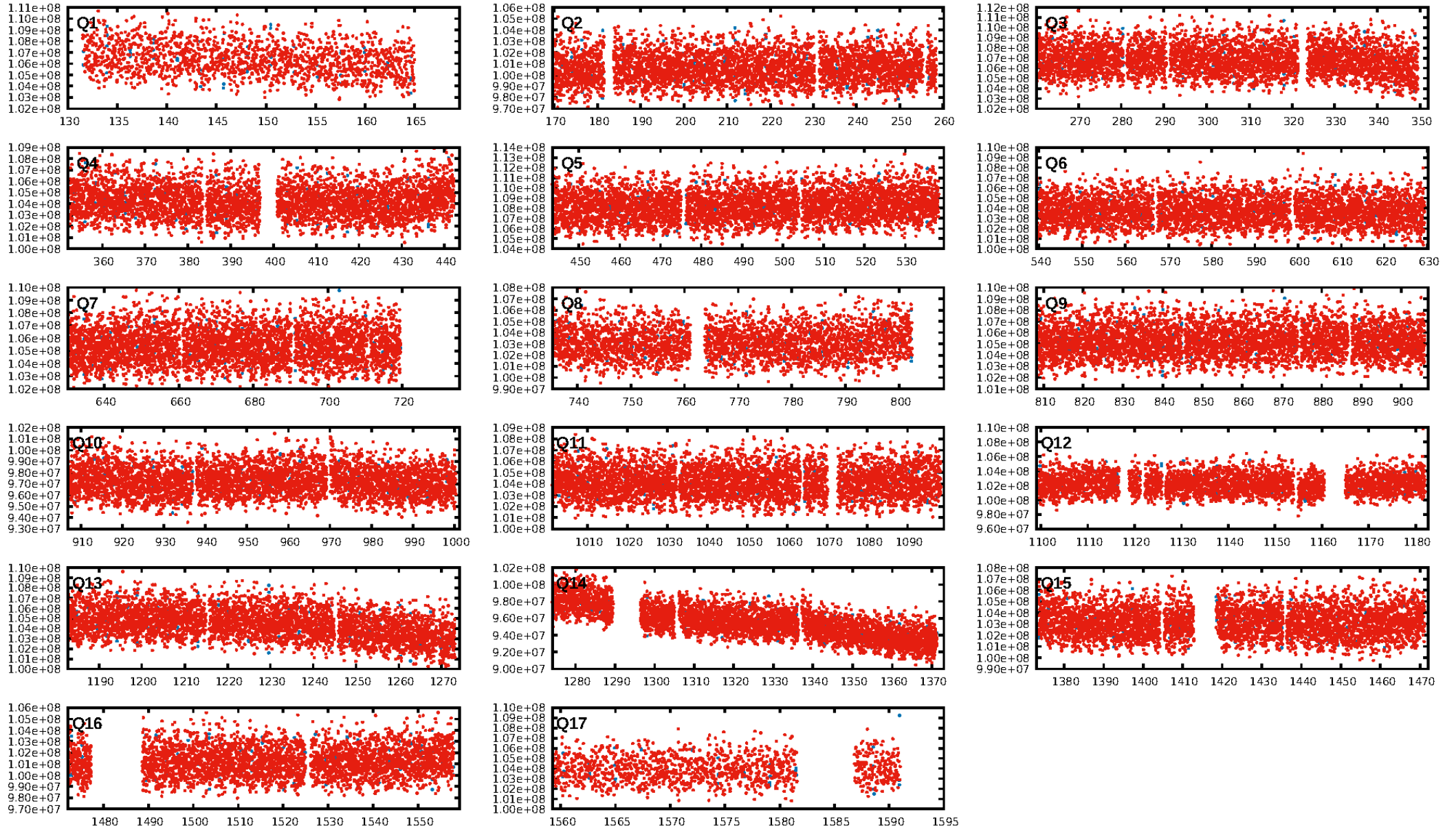
DV Diagnostic Results:

ShortPeriod-sig: 59.7% [0.84σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGoF-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [563/563]
GhostDiagnostic-chr: 1.131
Centroid-sig: 75.0%
Centroid-so: 0.165 arcsec [2.97σ]
OotOffset-rm: 4.295 arcsec [10.92σ]
KicOffset-rm: 4.450 arcsec [9.52σ]
OotOffset-st: 0/2/0/0 [2]
KicOffset-st: 0/2/0/0 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 0.00 [0/17]

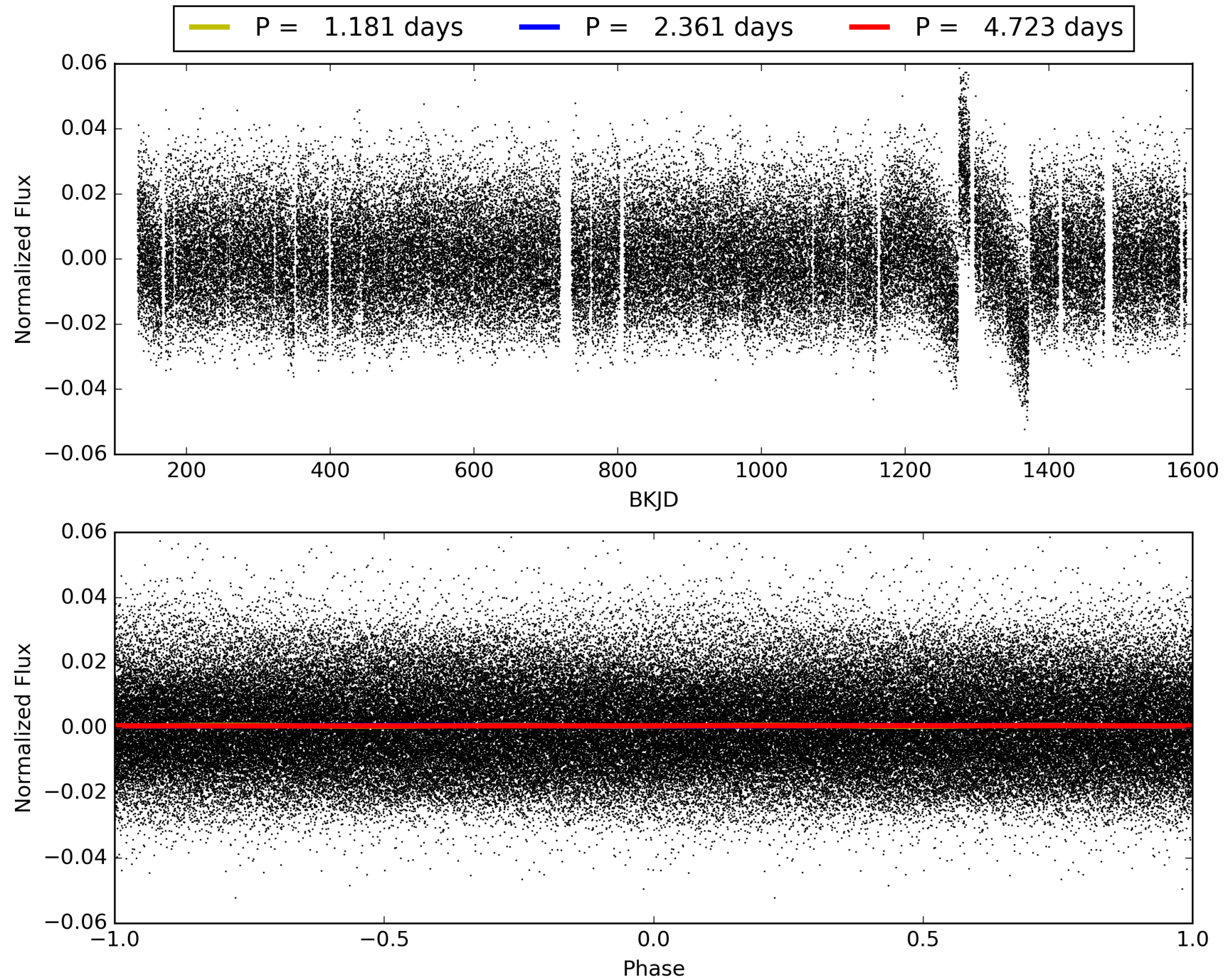
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 01:27:03 Z

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

TCE 005435620-02, PDC Light Curves

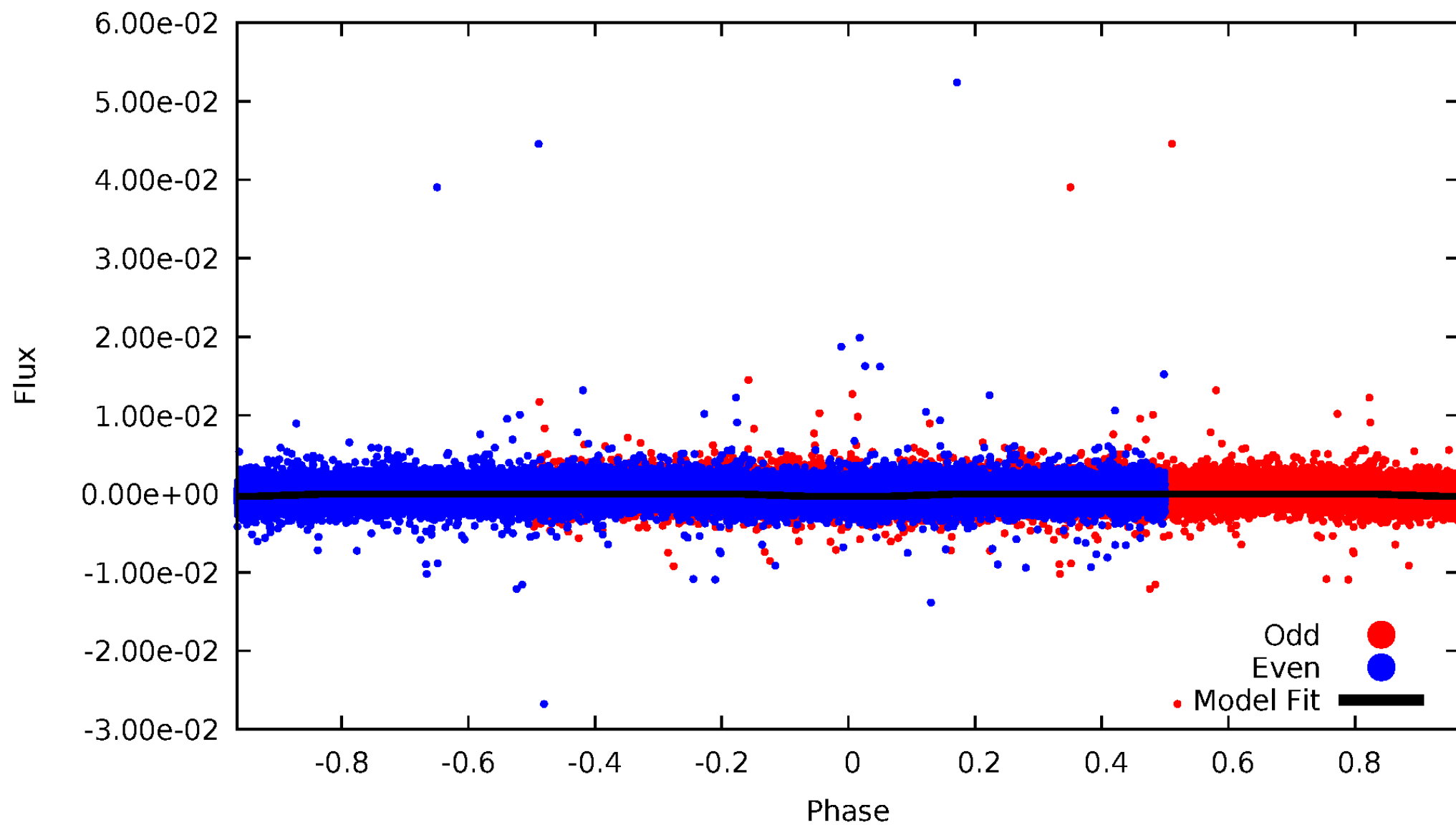


TCE 005435620-02



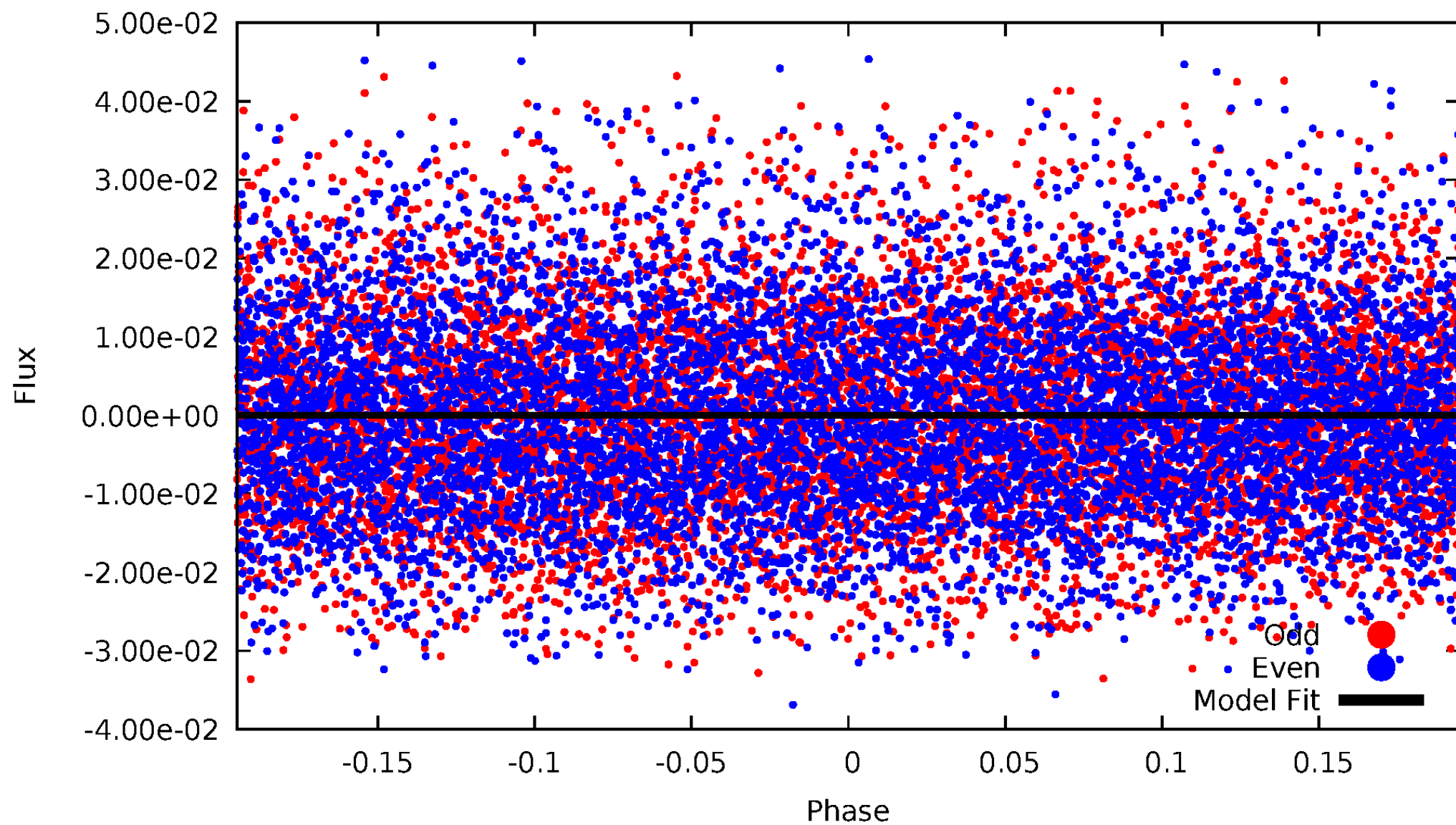
DV Odd/Even

TCE 005435620-02



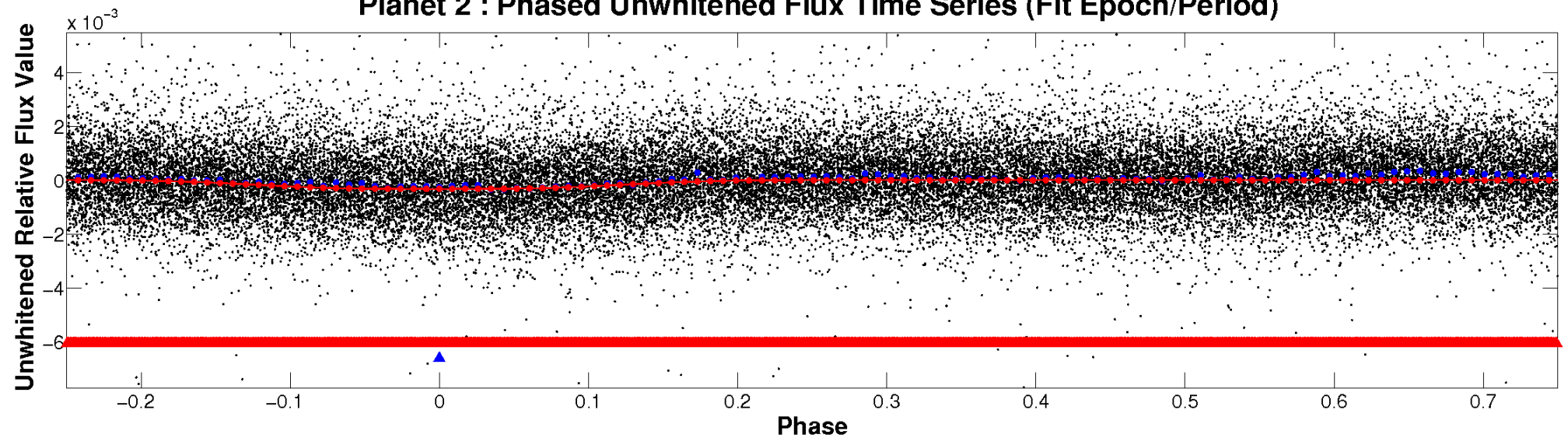
ALT Odd/Even

TCE 005435620-02

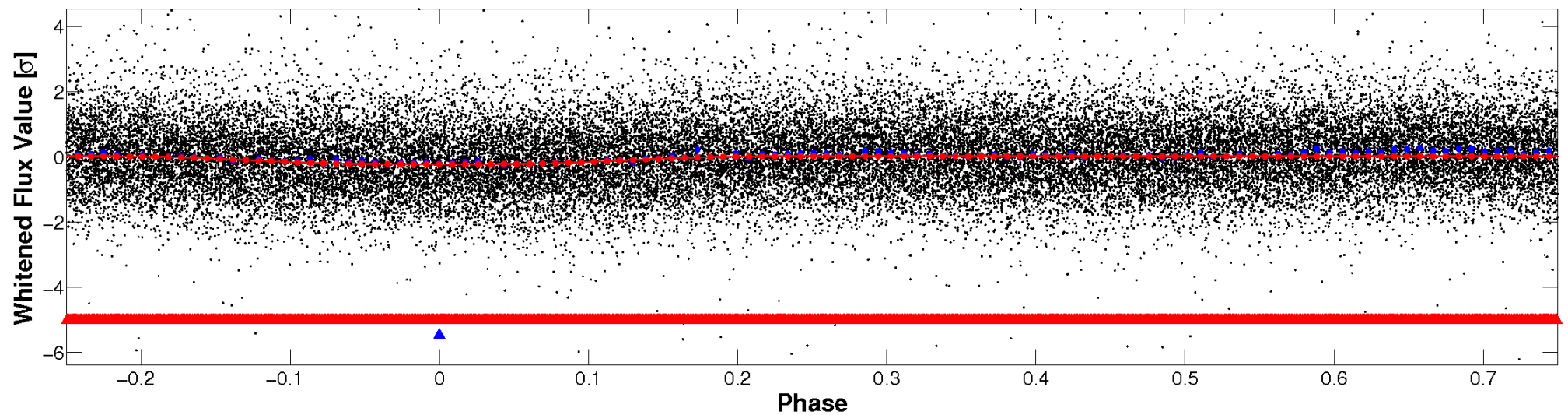


Non-Whitened Vs. Whitened Light Curve

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

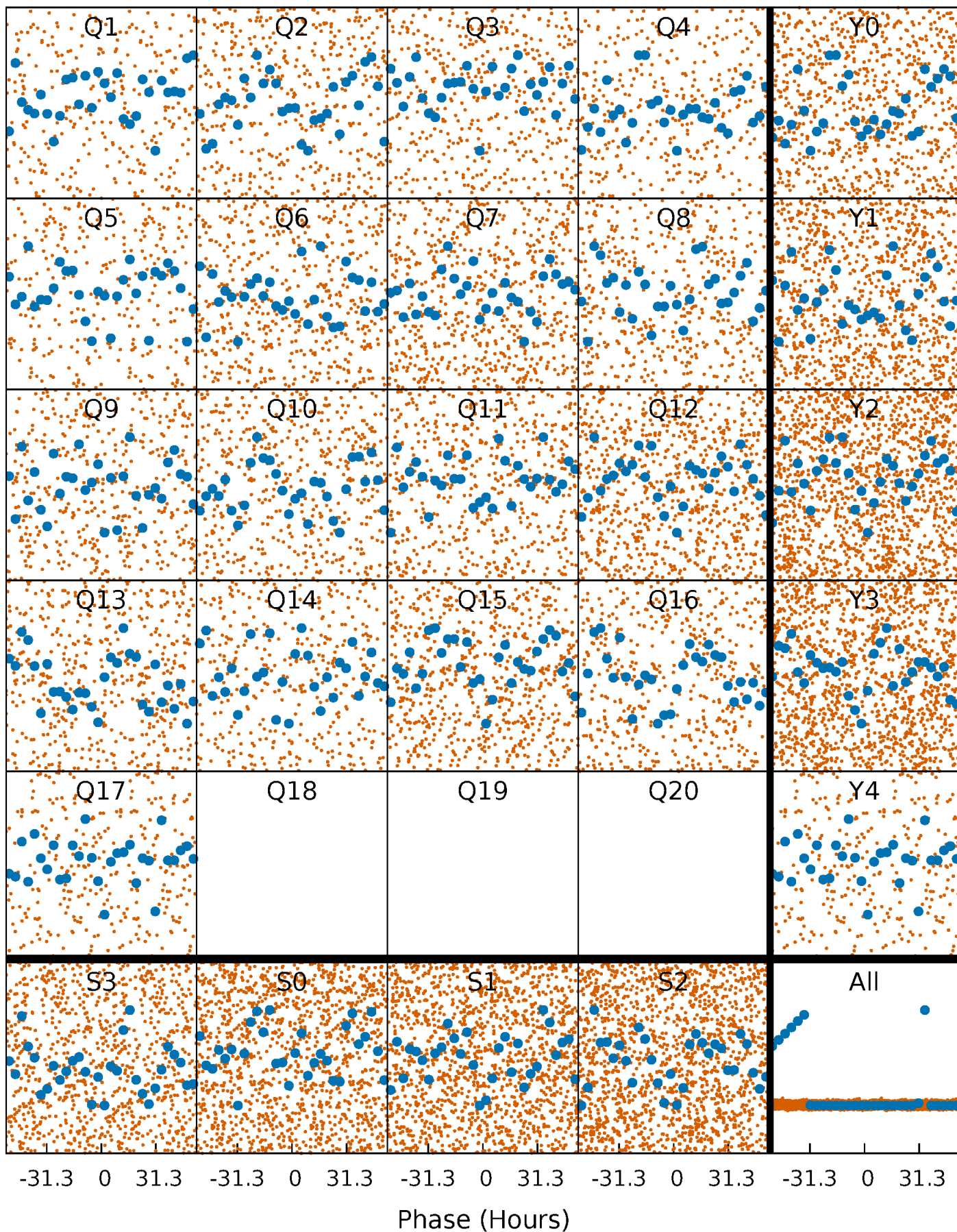


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



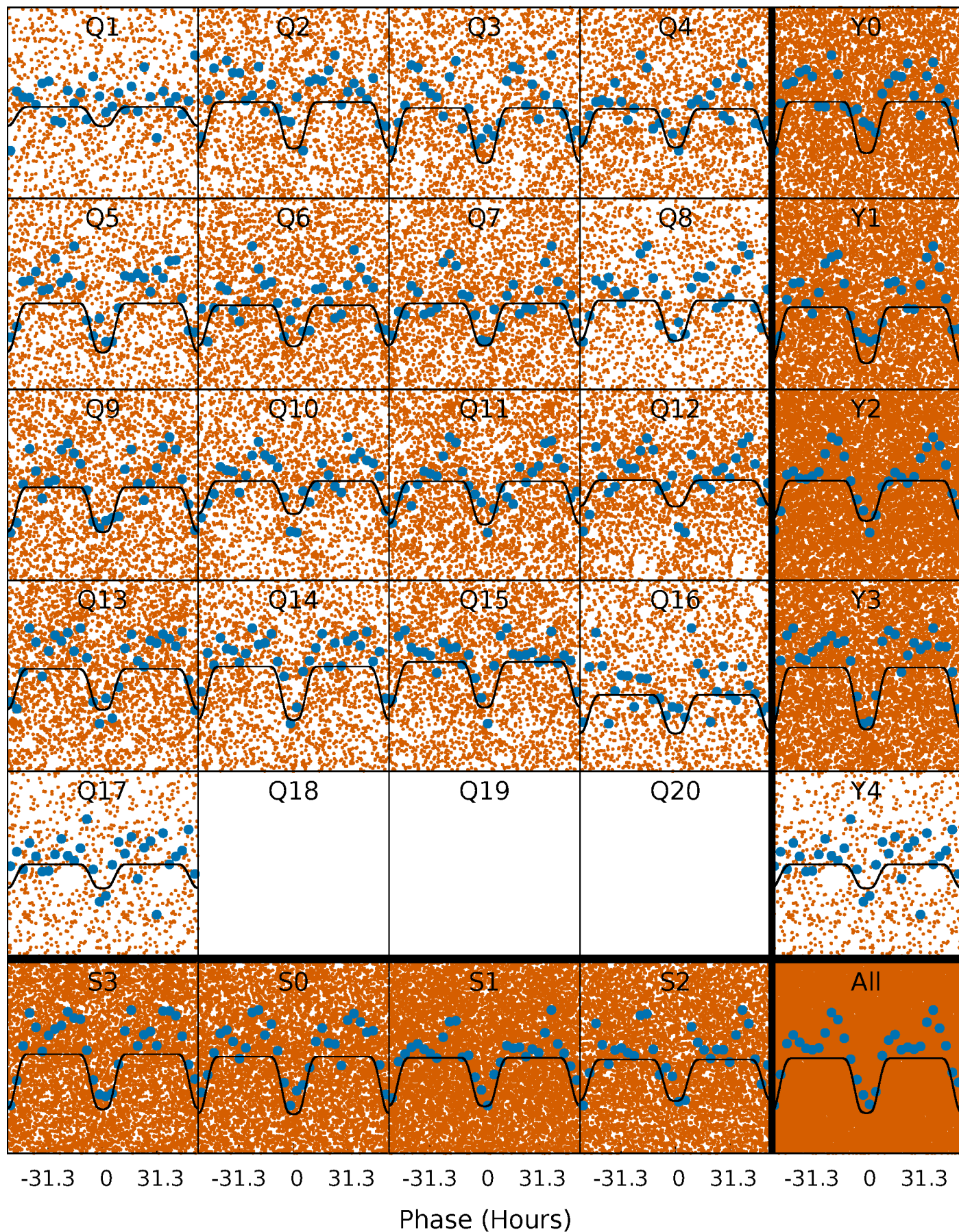
PDC Quarter-Phased Transit Curves

TCE 005435620-02 P= 2.361420 Days $T_0=132.758557$ (BKJD)



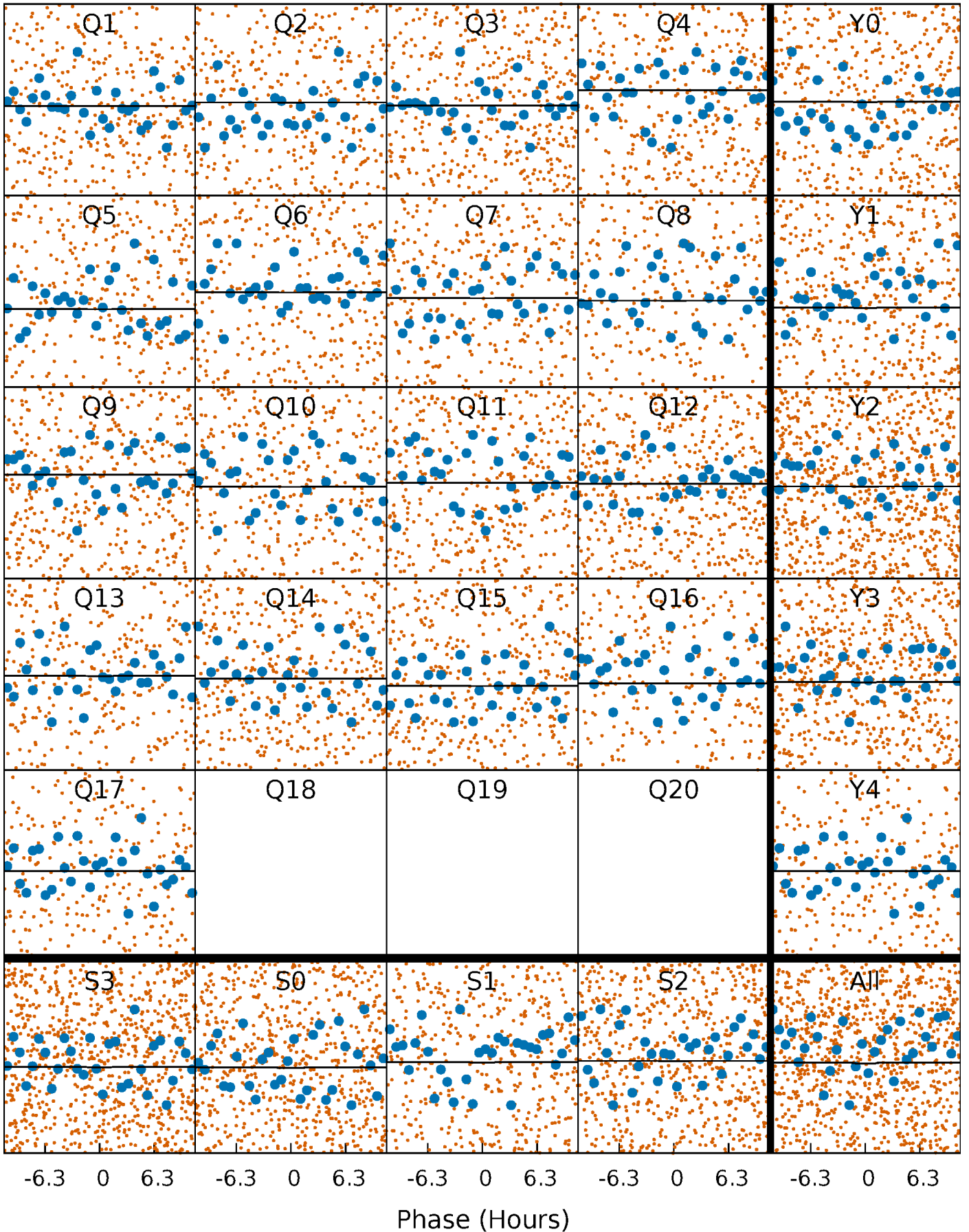
DV Quarter-Phased Transit Curves

TCE 005435620-02 P= 2.361420 Days $T_0=132.758557$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

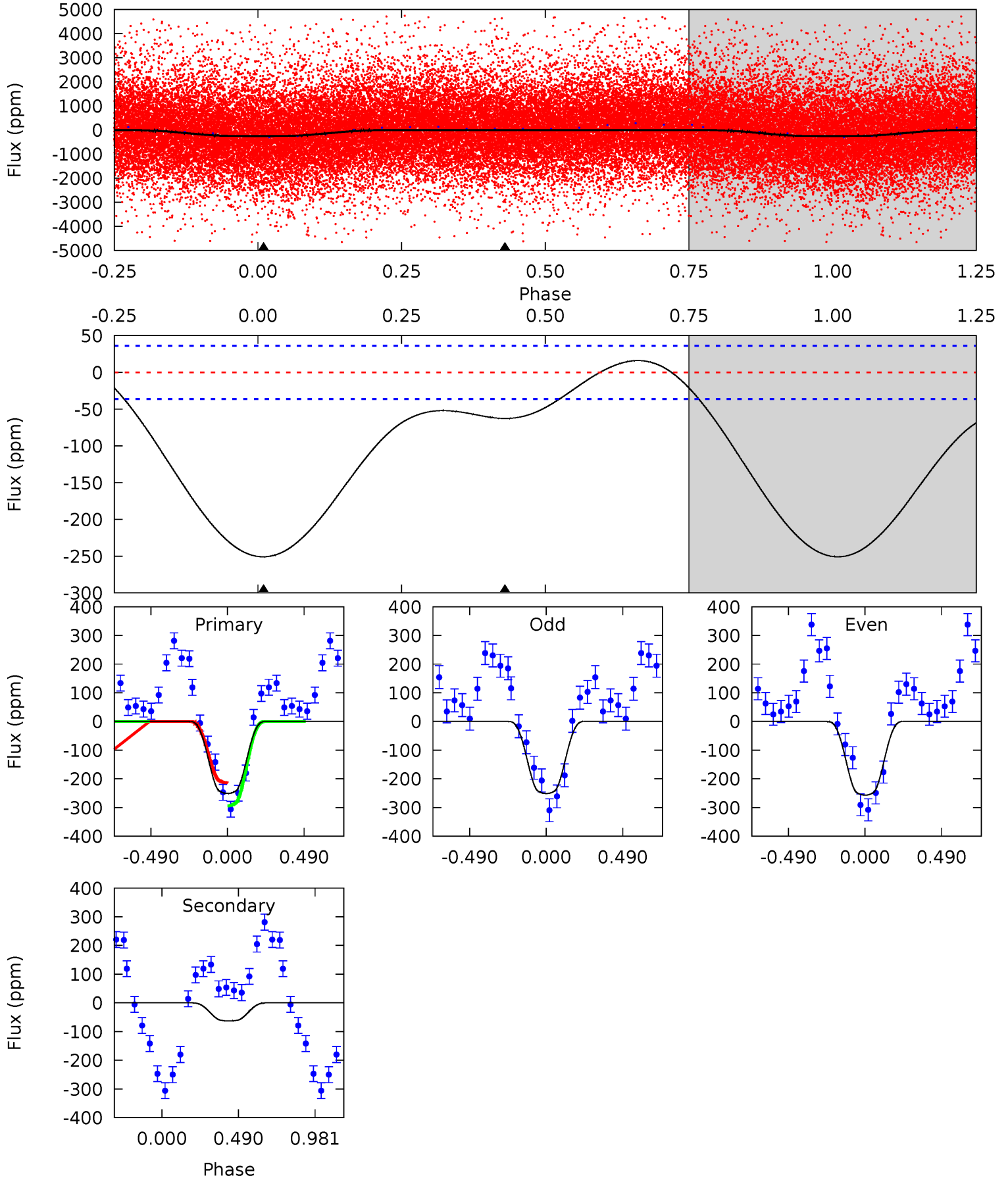
TCE 005435620-02 P= 2.361385 Days $T_0=132.890199$ (BKJD)



DV Model-Shift Uniqueness Test

005435620-02, P = 2.361420 Days, E = 130.397137 Days

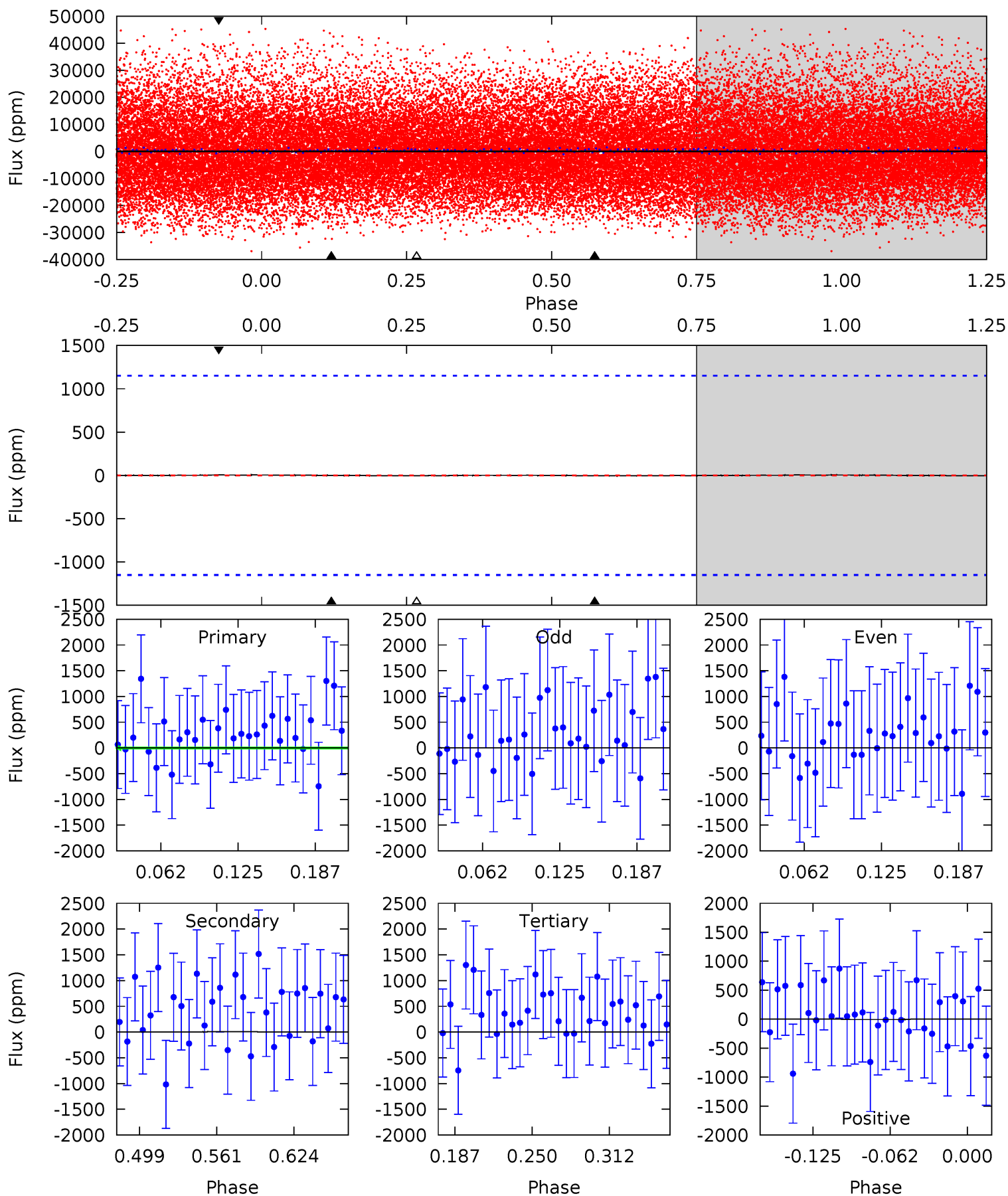
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.3	7.32	0	0	4.22	0.69	1.98	29.3	29.3	7.32	7.32	0.33	2.60	0.06	4.59



Alt Model-Shift Uniqueness Test

005435620-02, P = 2.361385 Days, E = 130.528814 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	0.02	0.02	0.02	4.66	1.86	0.01	-0.02	-0.02	0.00	-0.00	0.00	0.19	0.54	0.01



Stellar Parameters For KIC 005435620

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7107^{+175}_{-300}	$4.201^{+0.105}_{-0.195}$	$-0.040^{+0.200}_{-0.350}$	$1.581^{+0.524}_{-0.282}$	$1.453^{+0.218}_{-0.218}$	$0.518^{+0.295}_{-0.266}$
	+2%/-4%	+2%/-5%	+500%/-875%	+33%/-18%	+15%/-15%	+57%/-51%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 005435620-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-63 ± 9	$3.68^{+0.60}_{-0.44}$	2793^{+211}_{-159}	4415^{+174}_{-182}	$3.754^{+1.239}_{-0.974}$
Alt.	-5 ± 247	$0.53^{+0.20}_{-0.15}$	2790^{+210}_{-169}	7611^{+25423}_{-39977}	34^{+748}_{-861}

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

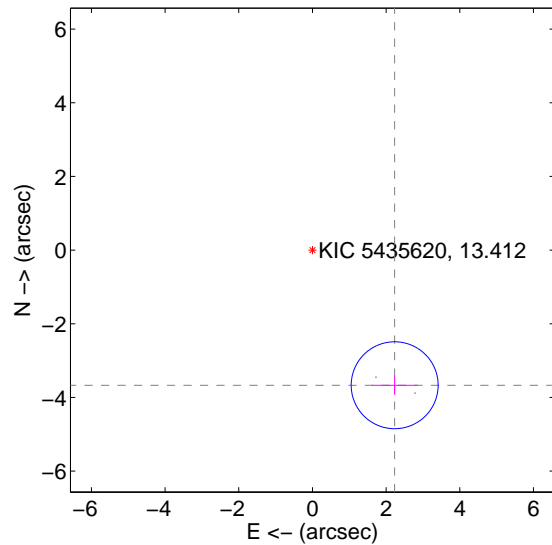
Supplemental centroid analysis for 005435620-02. Kepler magnitude: 13.41. Transit SNR 19.54

There are 0 quarters with good PRF difference image offsets

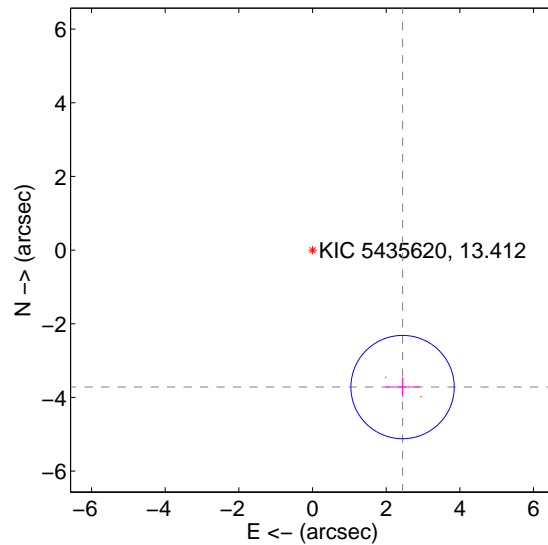
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.295 ± 0.393	10.92	-2.232 ± 0.623	-3.669 ± 0.261
PRF-fit source offset from KIC position	4.450 ± 0.467	9.52	-2.445 ± 0.465	-3.718 ± 0.260
photometric centroid source offset	0.17 ± 0.06	2.97	-0.16 ± 0.06	0.04 ± 0.05

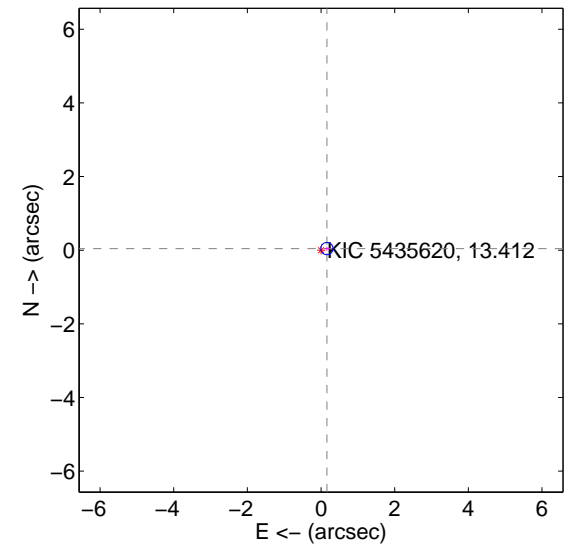
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

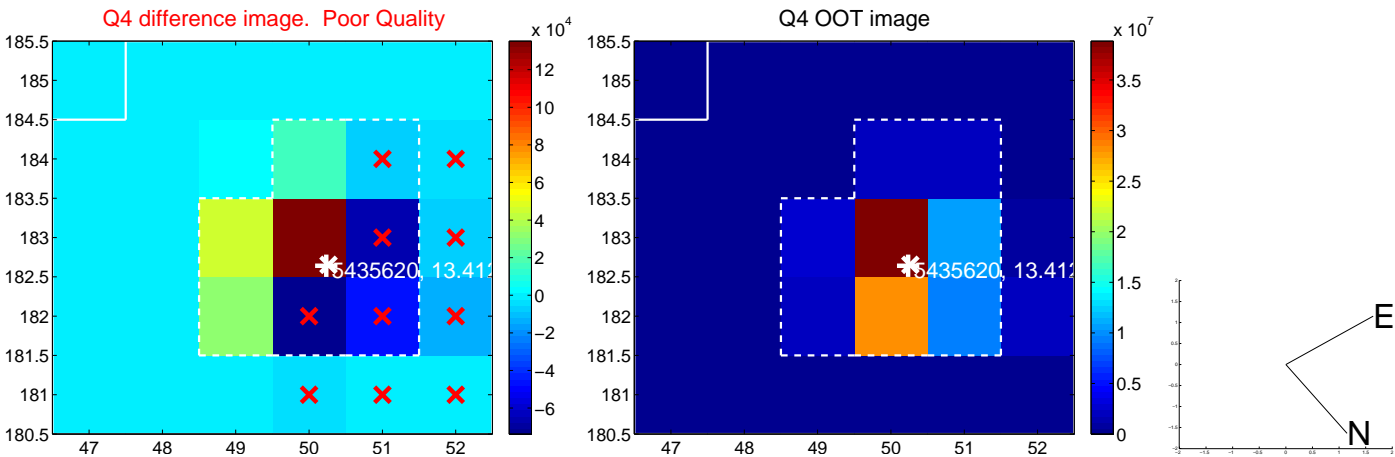
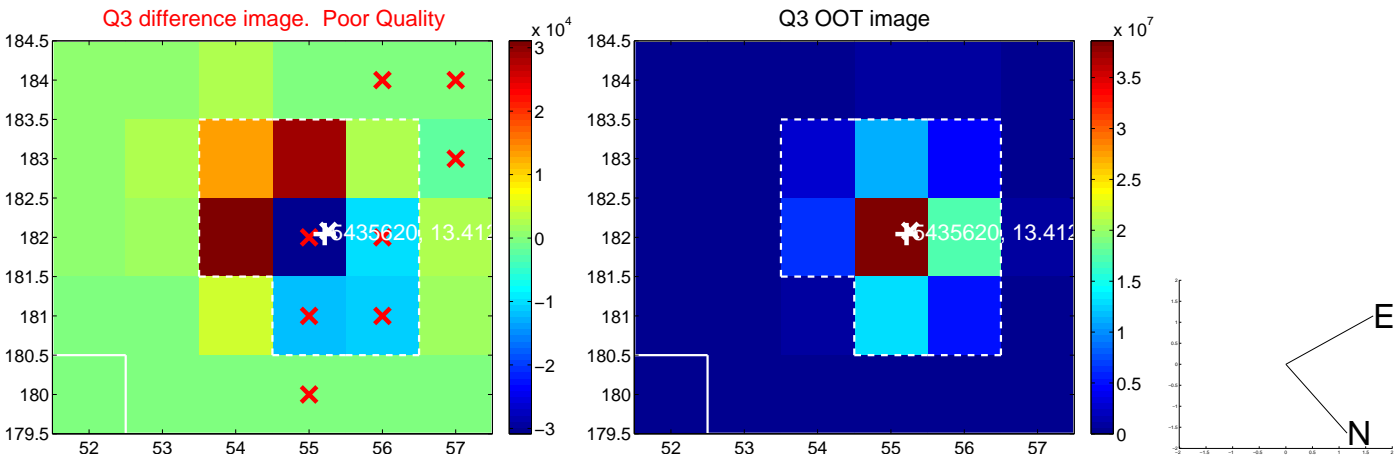
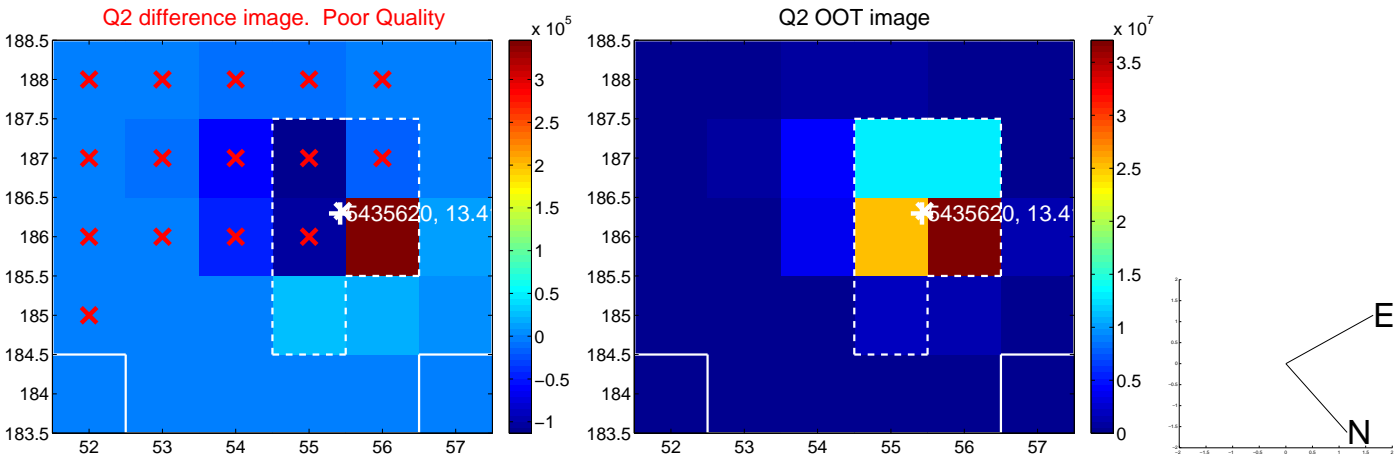
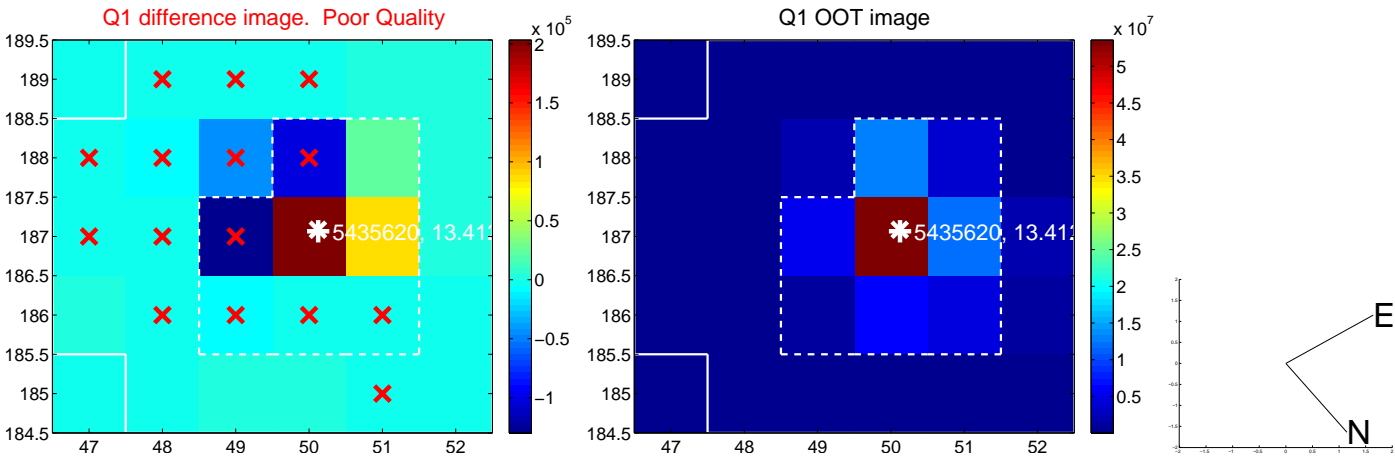


offset from photometric centroids

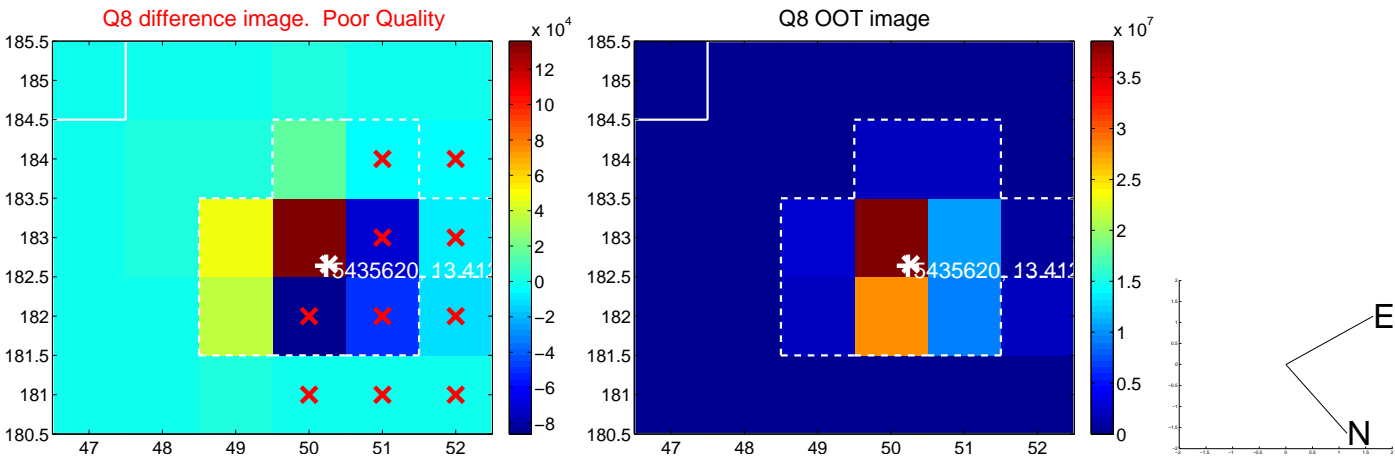
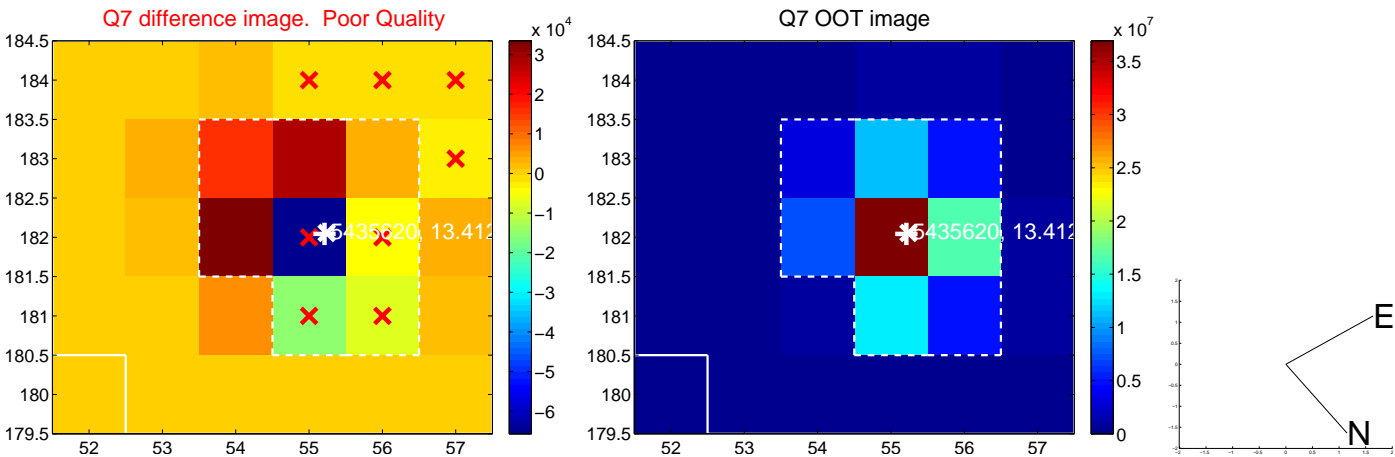
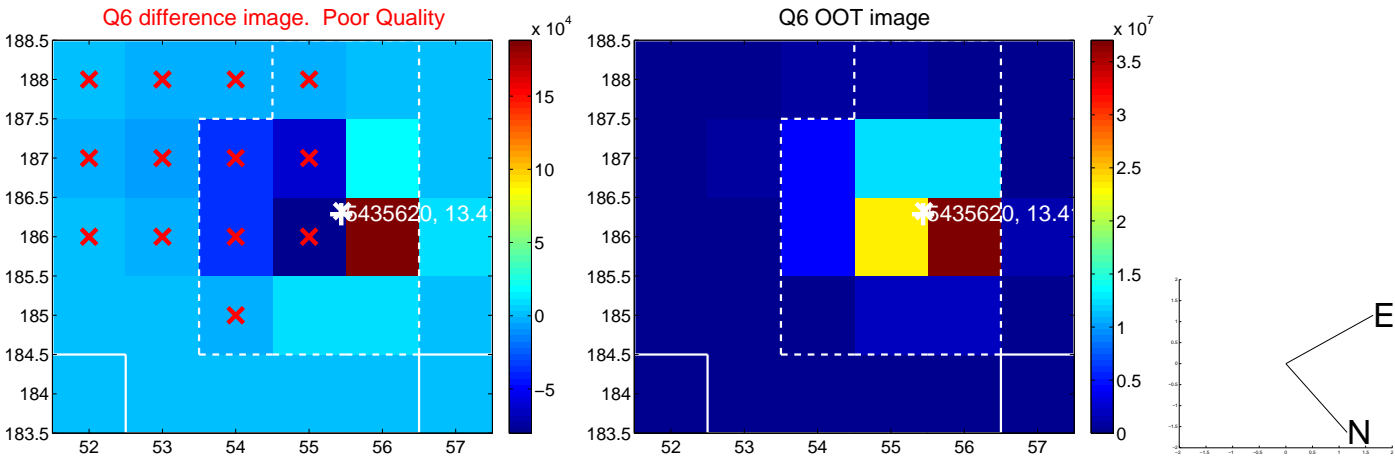
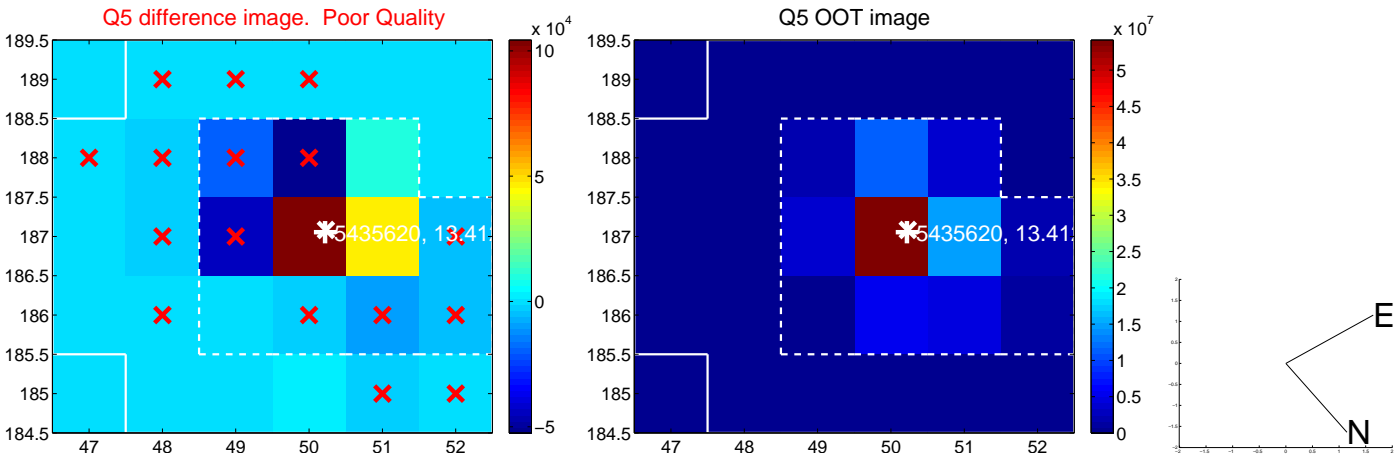


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

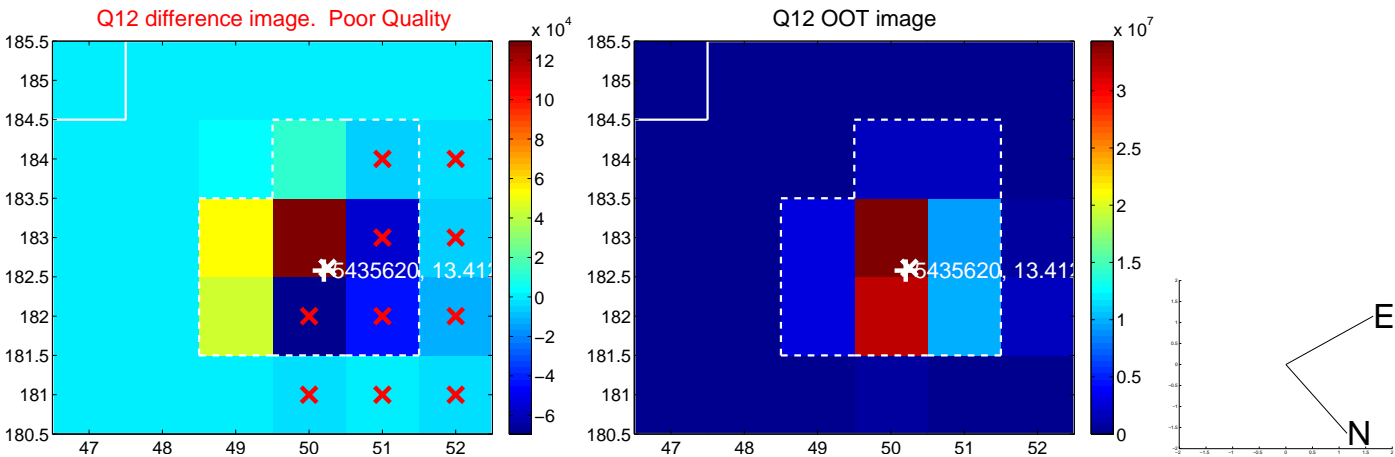
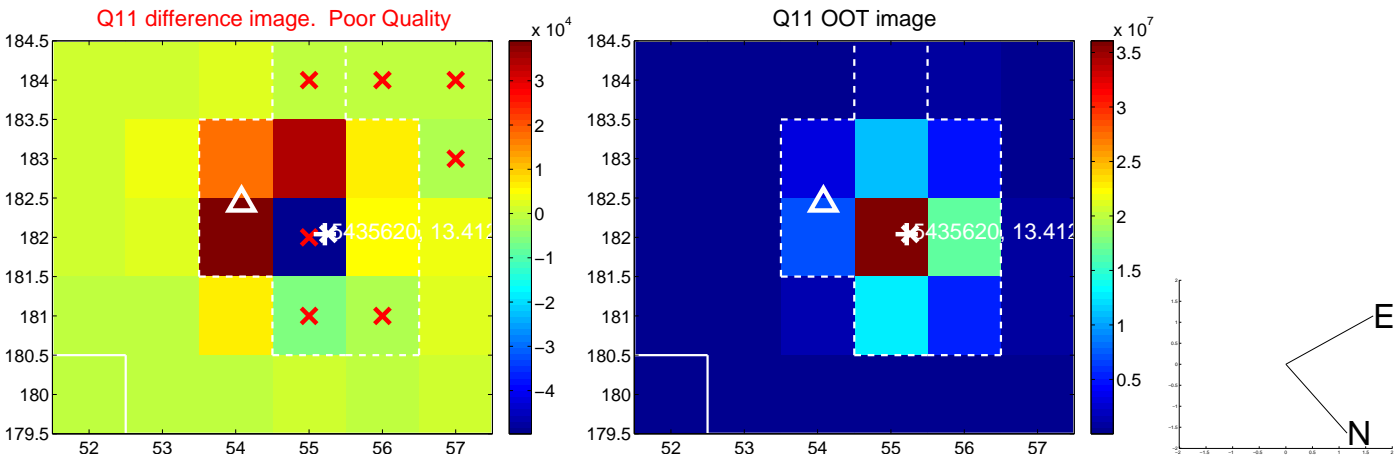
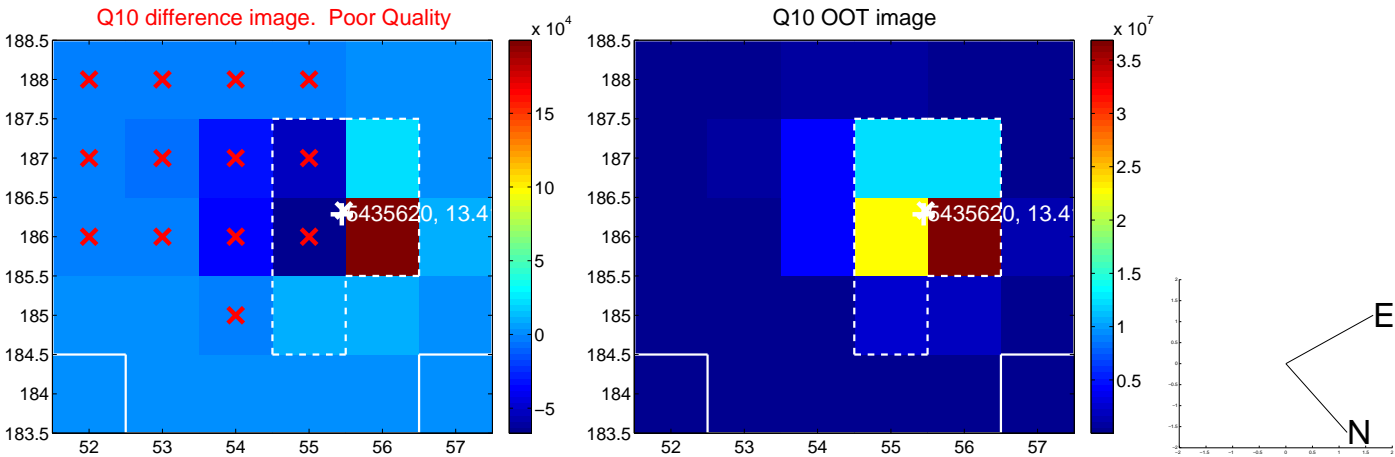
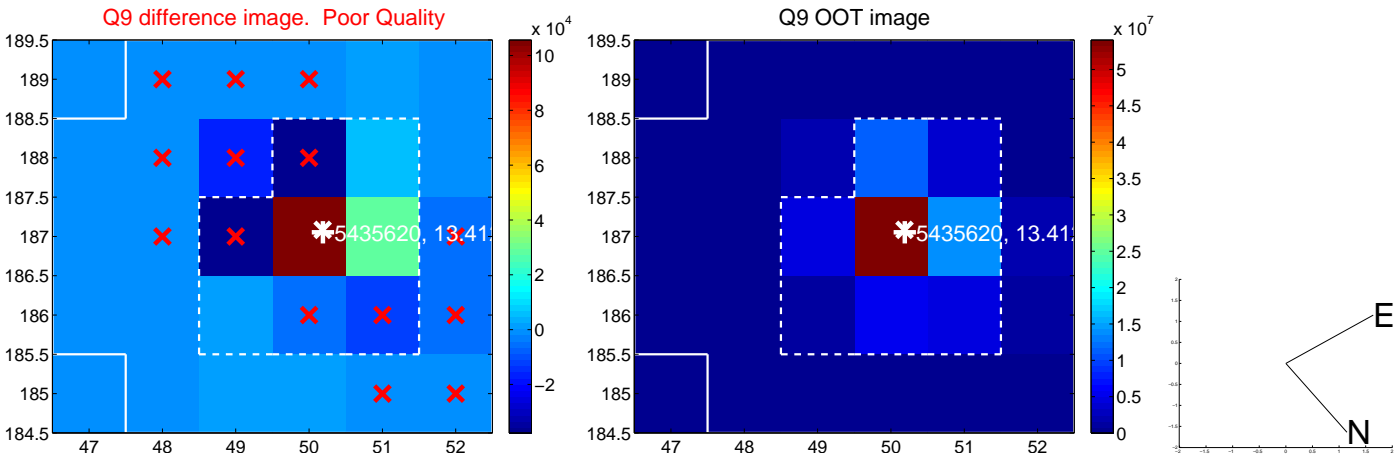
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



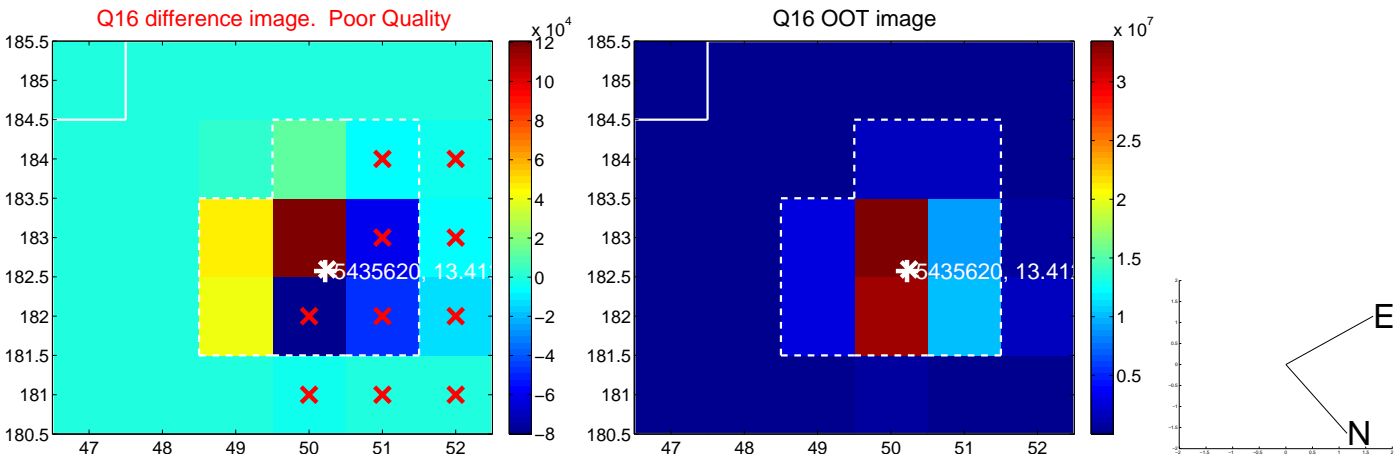
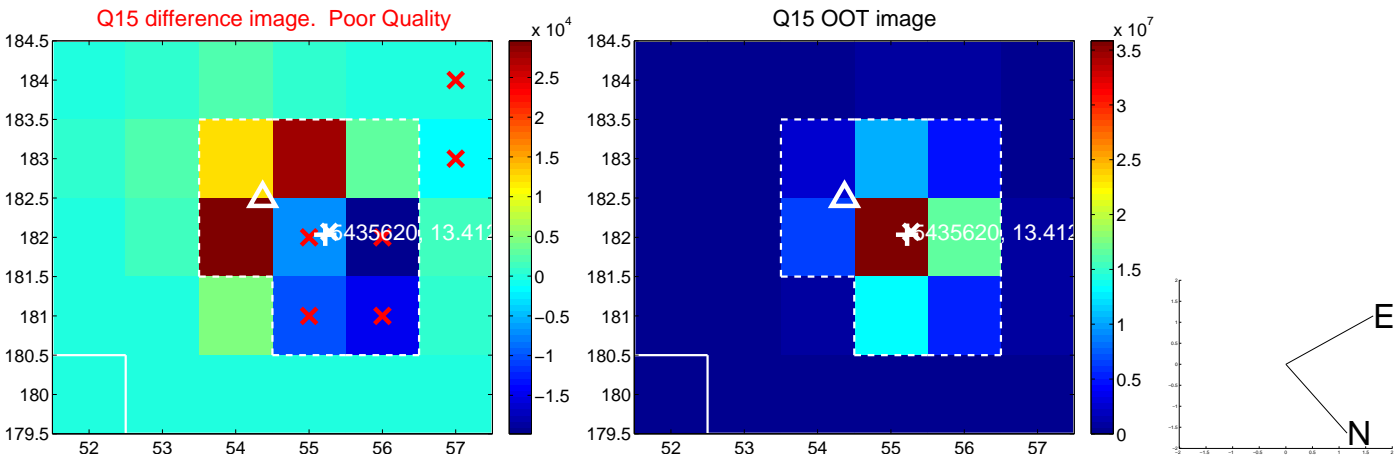
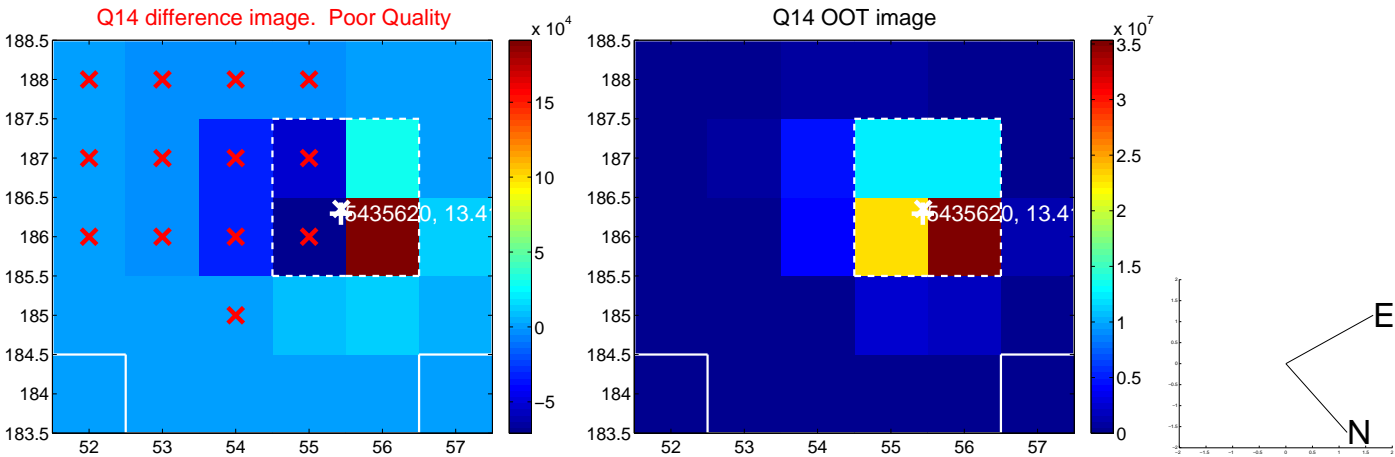
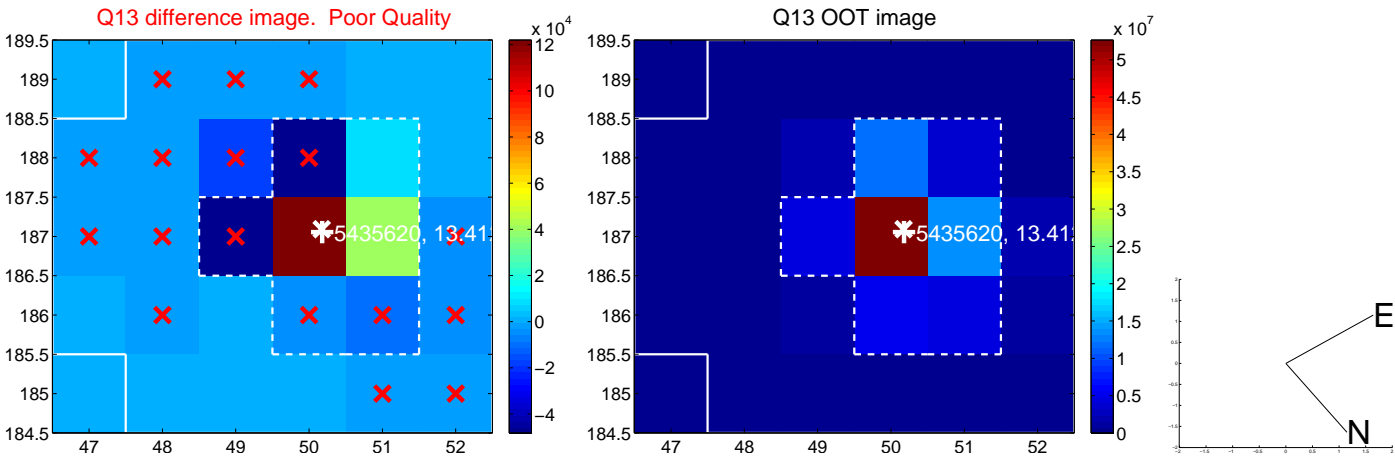
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



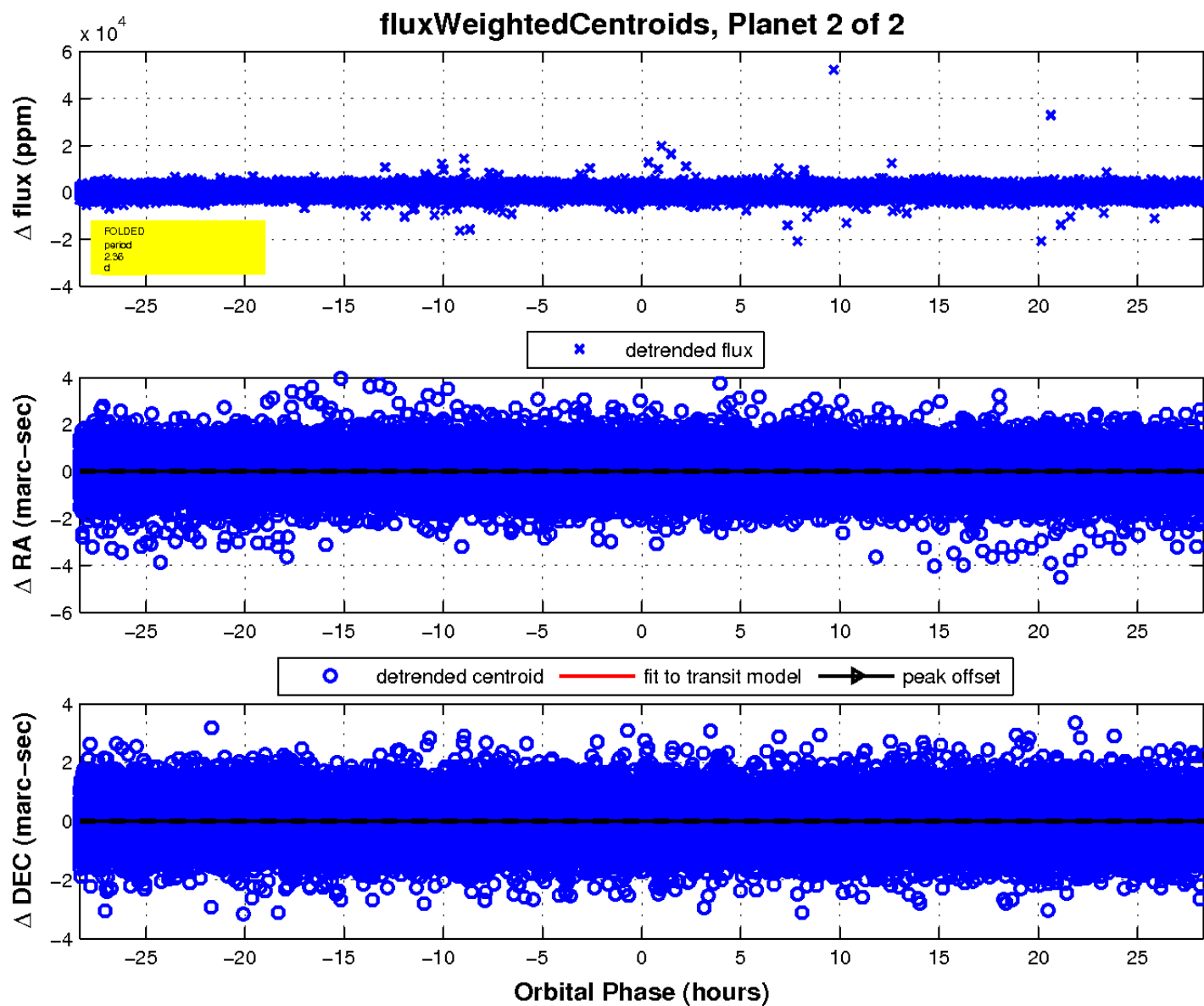
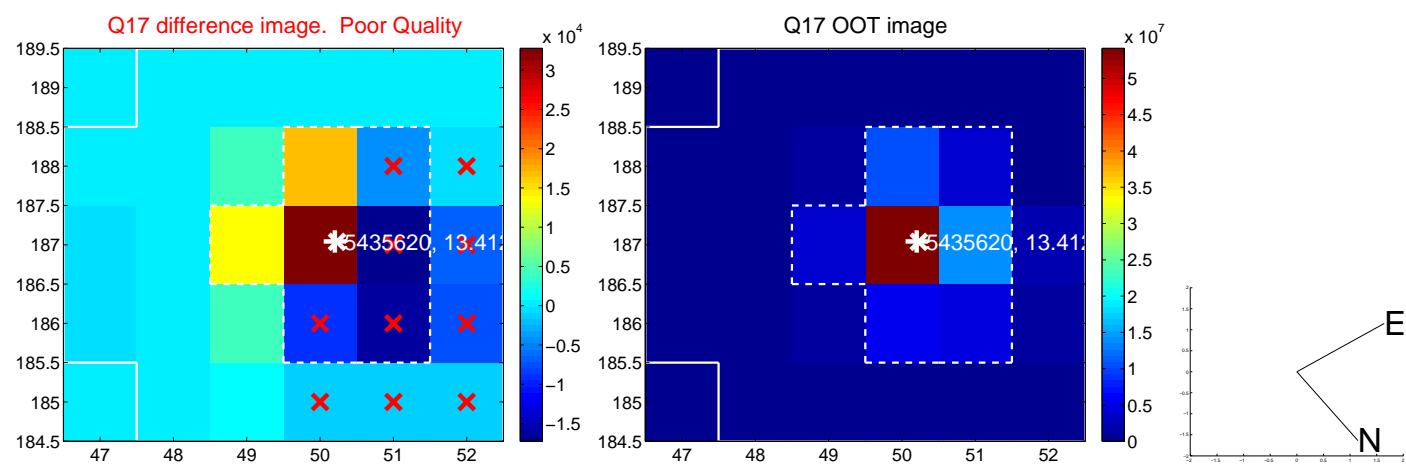
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

