

KIC 007115671

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})
007115671-01	OBS	5355.01	0.566795	131.804944	595.4	2.000	13.1	-1.0	1.49	6413	3.66	15805.39
007115671-02	OBS	No	131.254845	148.434338	287.2	5.678	10.3	4.4	1.49	6413	2.84	11.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007115671-01	OBS	FP	0.00	1	0	1	1	MOD_NONUNIQ_ALT—CENT_NOFITS—HALO_GHOST—EPHEM_MATCH
007115671-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—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 007115671-01

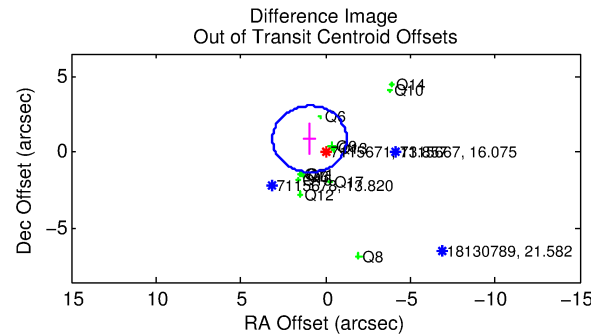
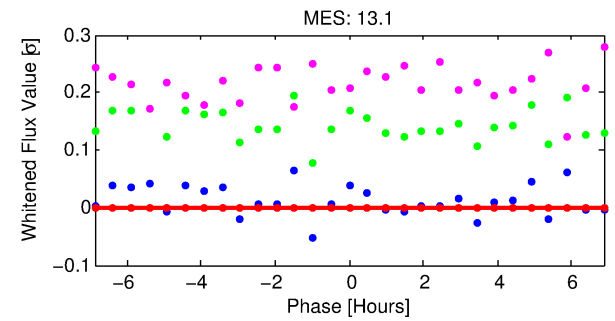
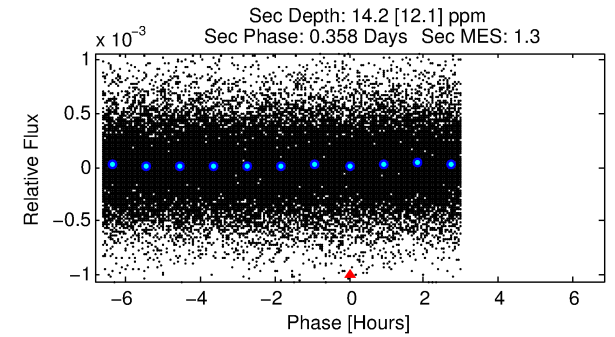
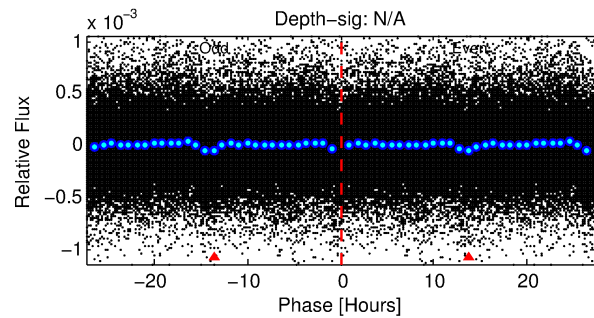
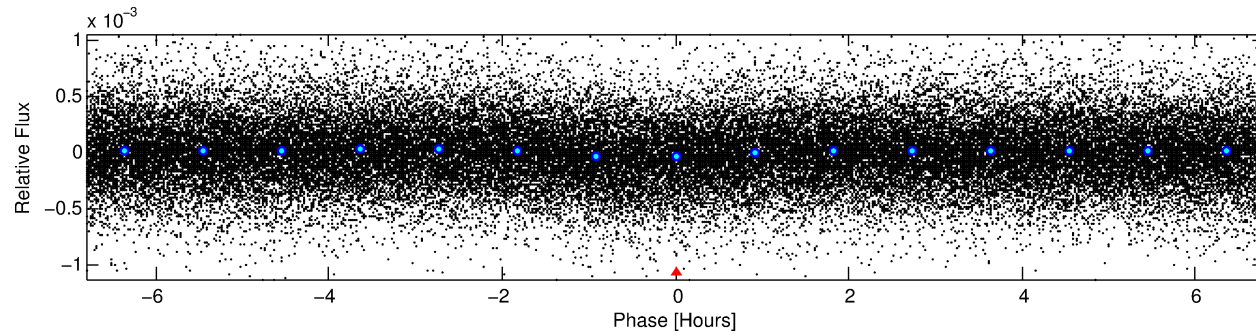
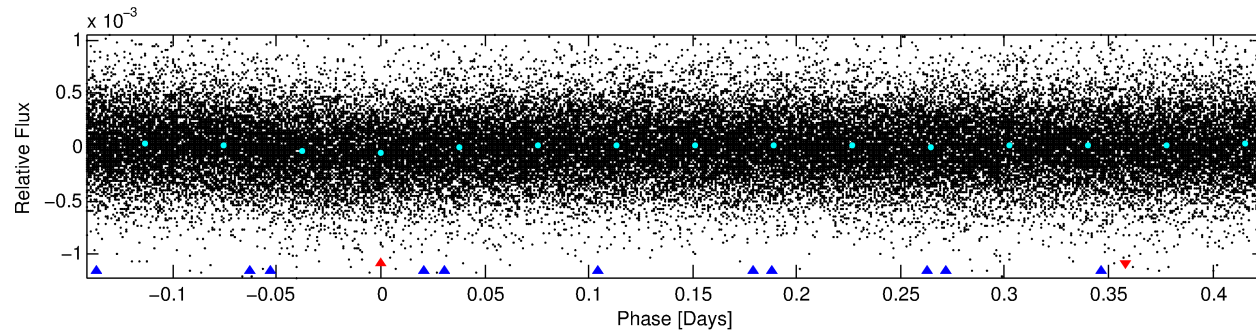
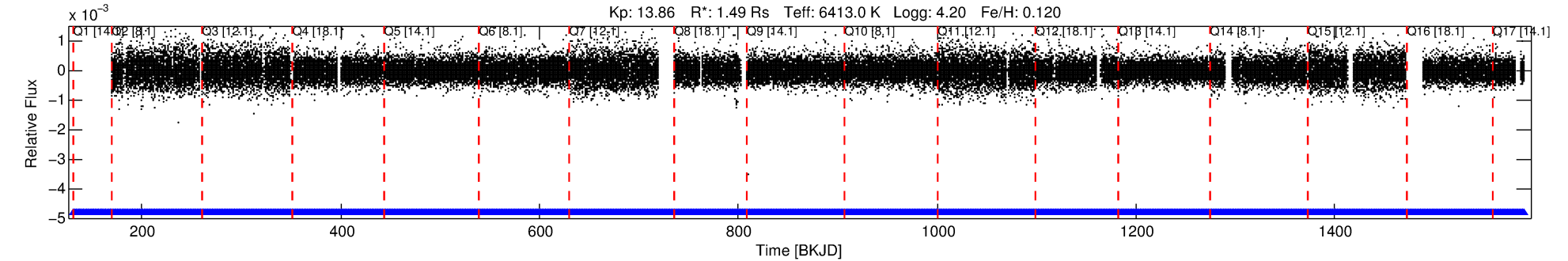
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
007115671-01	7115671	RR-Lyr-pri	7198959	1:1	855.9	36	-213	7.86	13.85	1047.60	Direct-PRF	0	0.62	20.89

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 7115671 Candidate: 1 of 2 Period: 0.567 d
KOI: K05355 Corr: No Ephemeris Match

Kp: 13.86 R*: 1.49 Rs Teff: 6413.0 K Logg: 4.20 Fe/H: 0.120



TPS TCE Results:

Period = 0.56679 d
Epoch = 131.8049 BKJD

DV fit results are unavailable

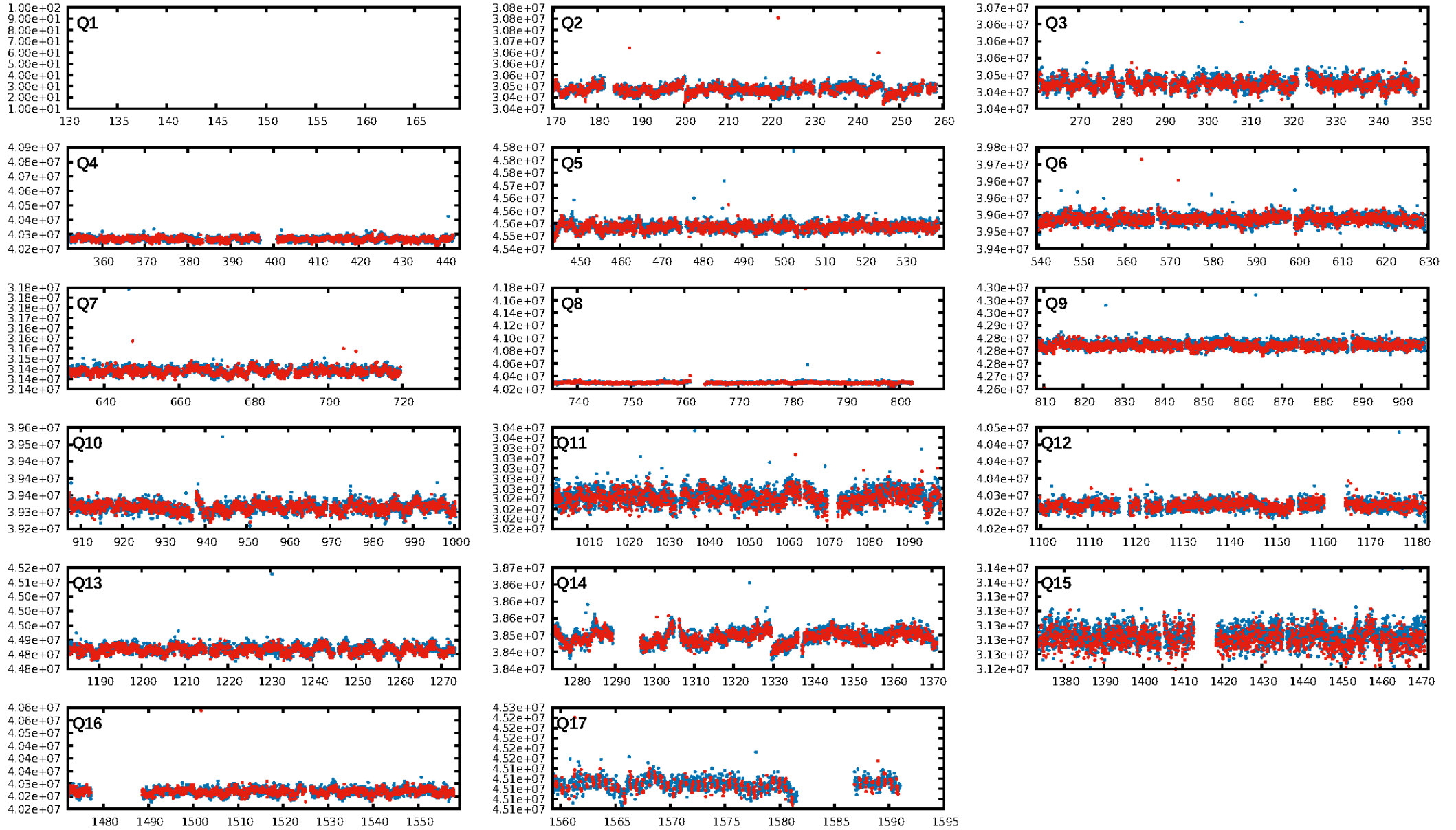
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [521.05σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.33e-35
RollingBand-fgt: 1.00 [2272/2272]
GhostDiagnostic-chr: 0.2351
Centroid-sig: 0.1%
Centroid-so: 0.489 arcsec [1.47σ]
OotOffset-rm: 1.287 arcsec [1.77σ]
KicOffset-rm: 2.308 arcsec [5.00σ]
OotOffset-st: 3/4/2/3 [12]
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DiffImageQuality-fgm: 0.67 [8/12]
DiffImageOverlap-fno: 1.00 [16/16]

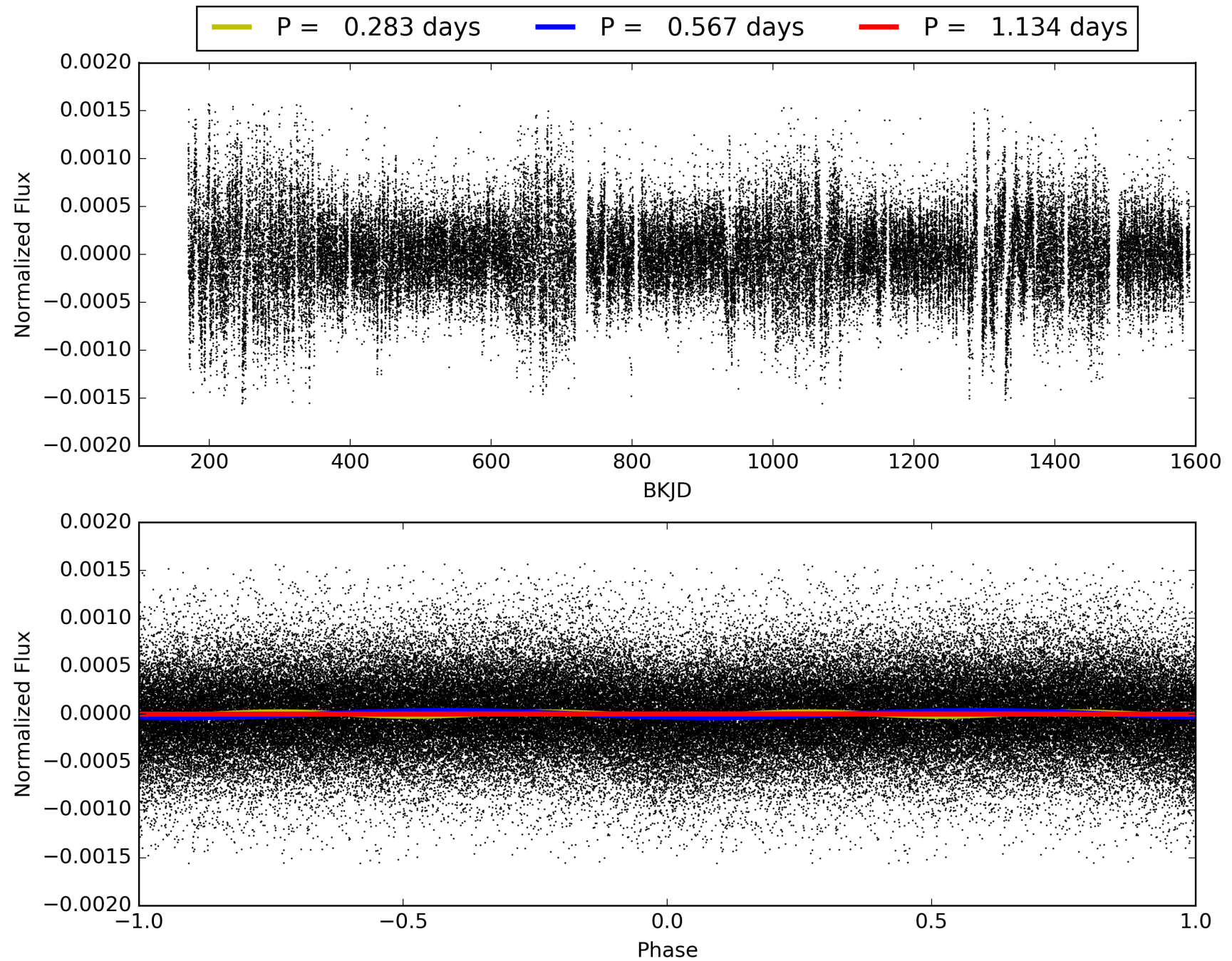
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 11:25:26 Z

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

TCE 007115671-01, PDC Light Curves

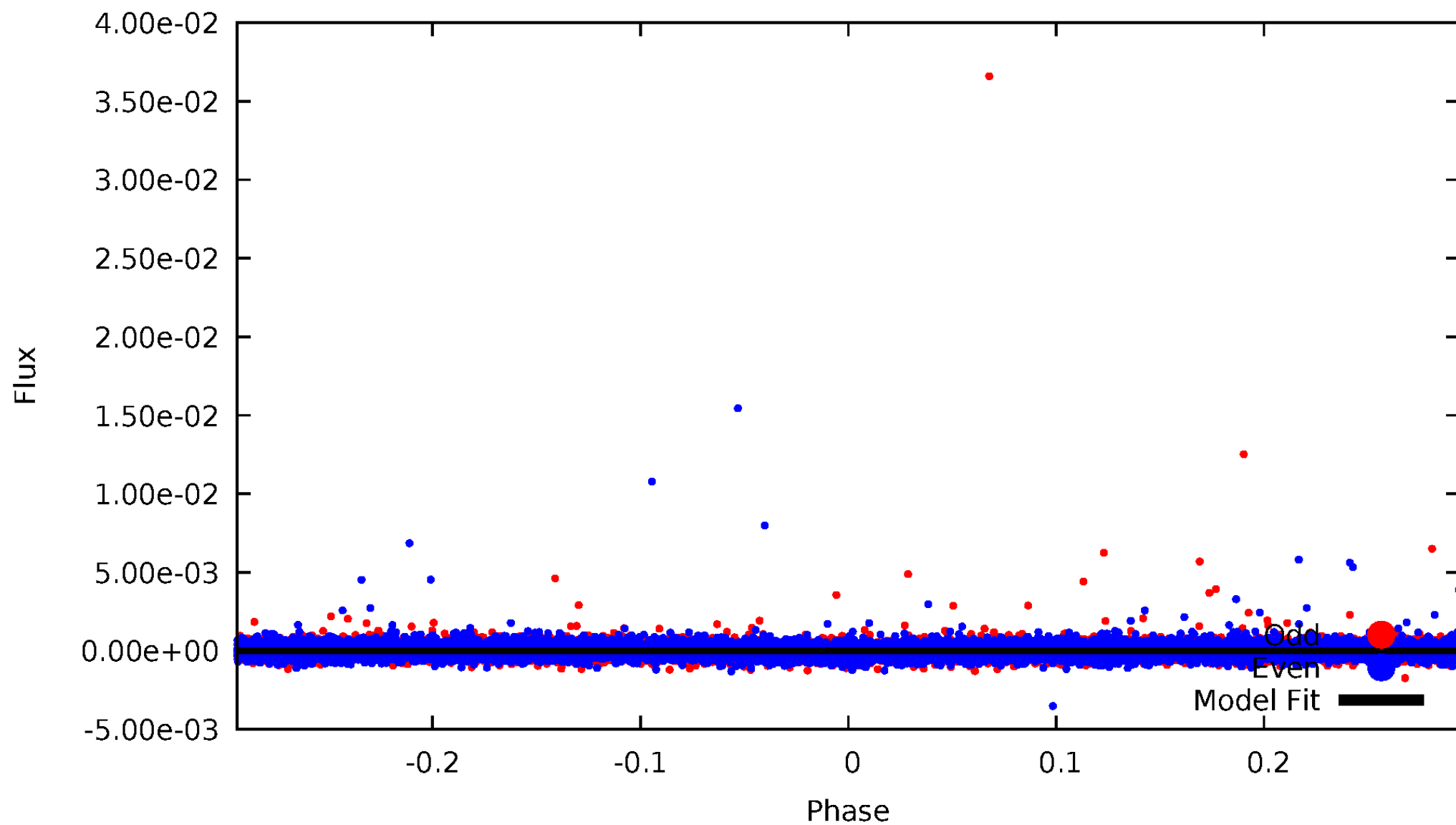


TCE 007115671-01



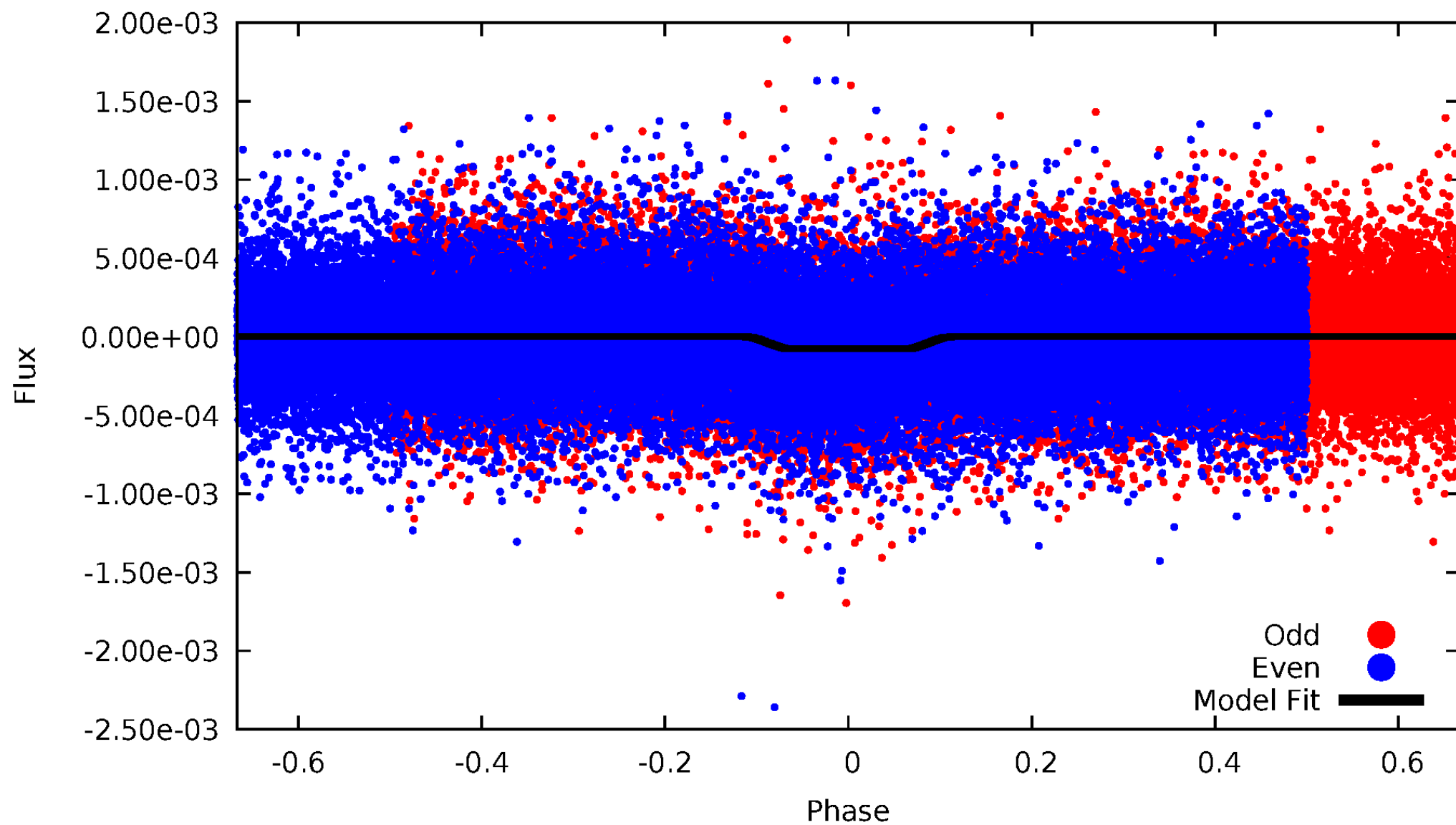
DV Odd/Even

TCE 007115671-01

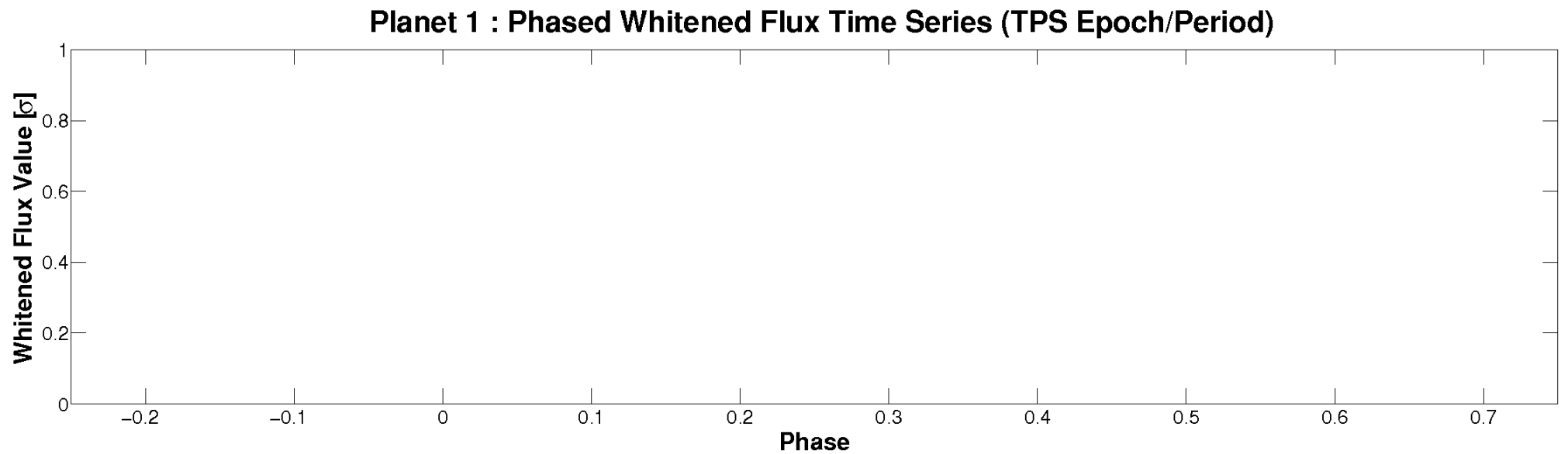
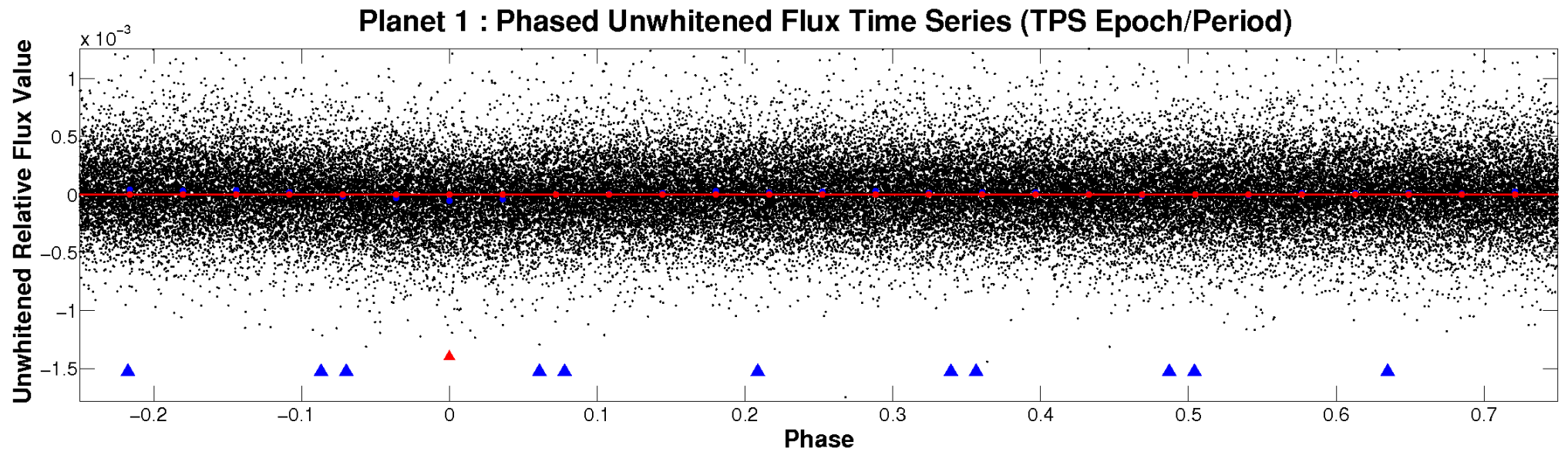


ALT Odd/Even

TCE 007115671-01

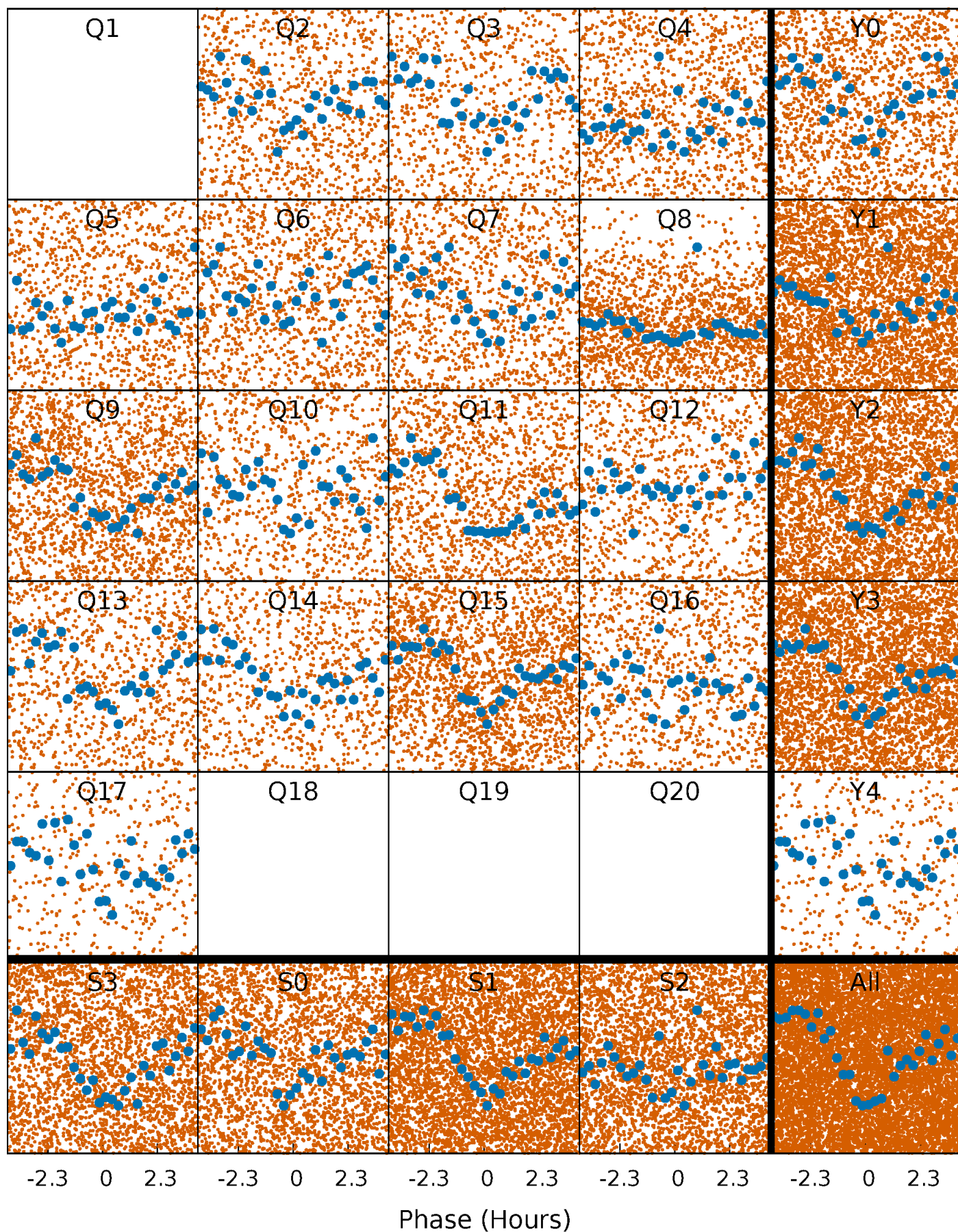


Non-Whitened Vs. Whitened Light Curve



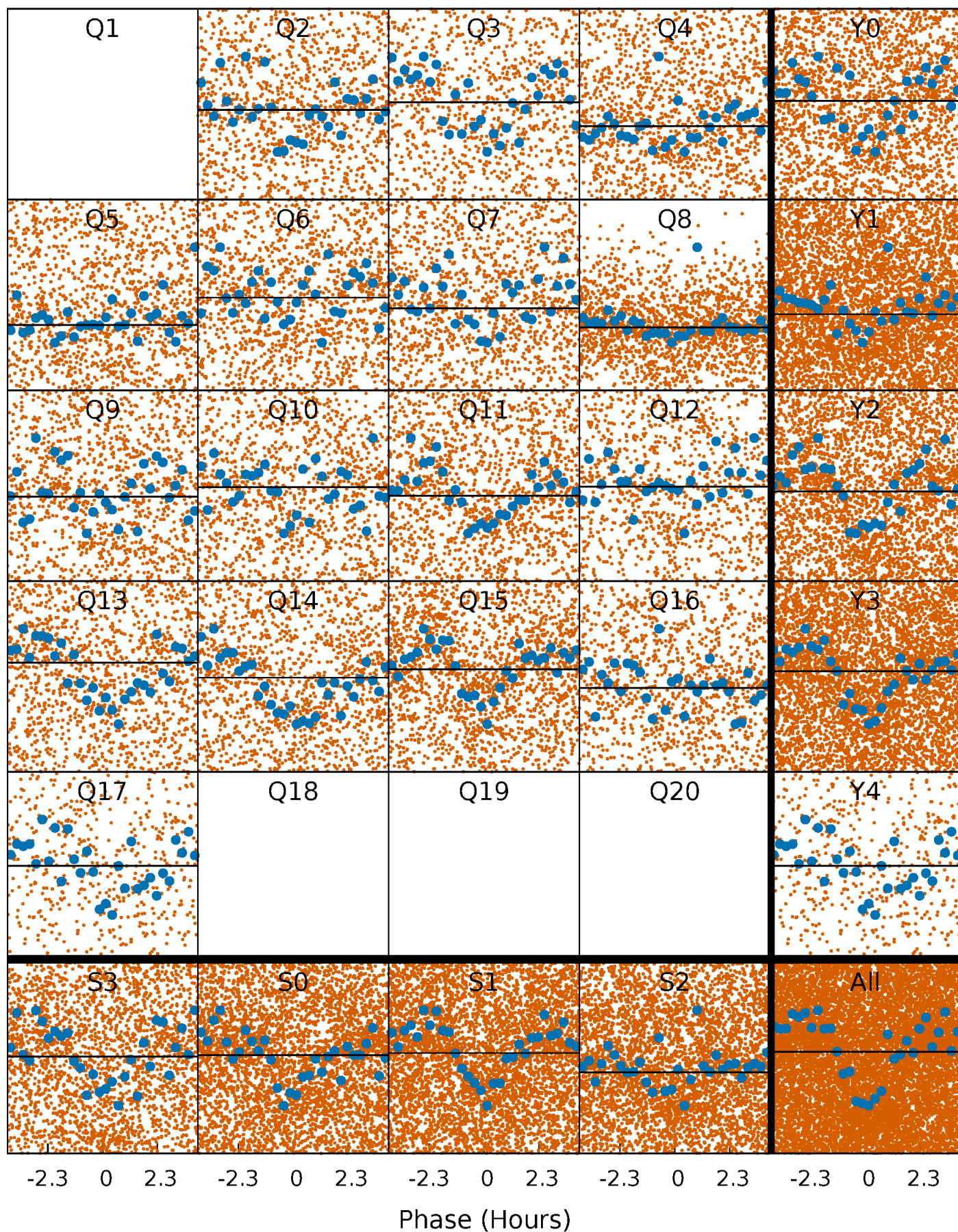
PDC Quarter-Phased Transit Curves

TCE 007115671-01 P= 0.566795 Days $T_0=131.804944$ (BKJD)



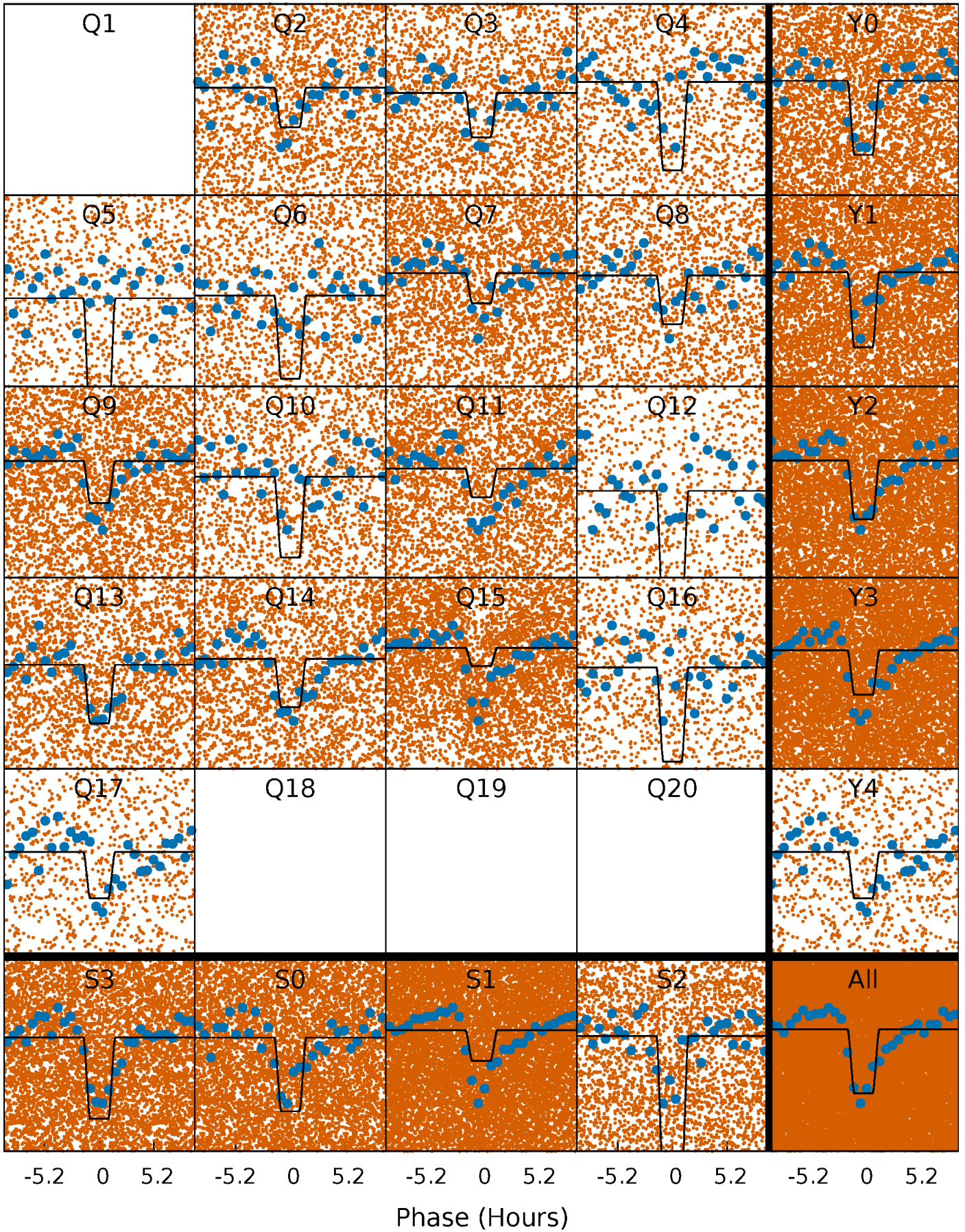
DV Quarter-Phased Transit Curves

TCE 007115671-01 P= 0.566795 Days $T_0=131.804944$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

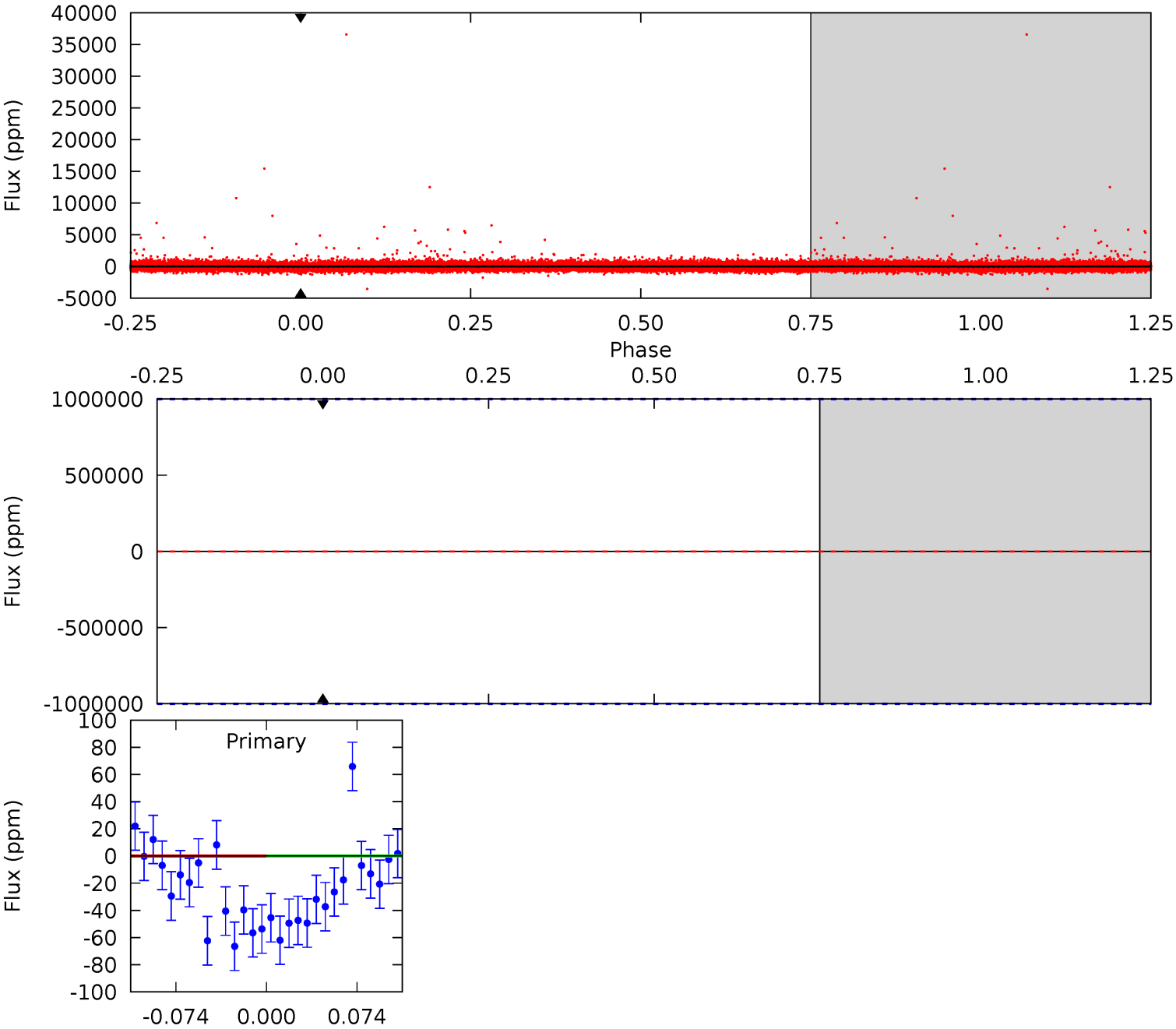
TCE 007115671-01 P= 0.566795 Days $T_0=131.818677$ (BKJD)



DV Model-Shift Uniqueness Test

007115671-01, P = 0.566795 Days, E = 131.804944 Days

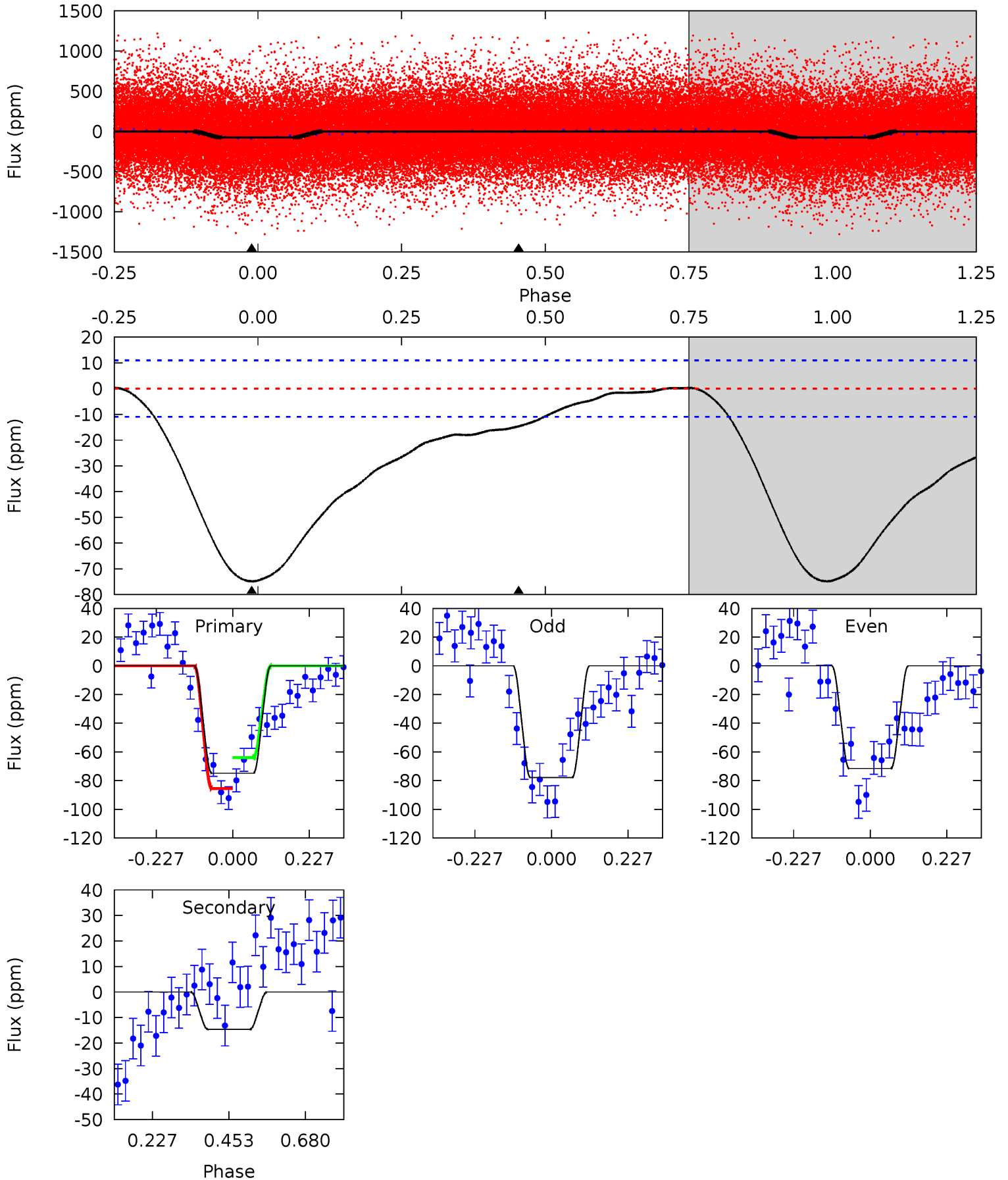
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

007115671-01, P = 0.566795 Days, E = 131.818677 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.0	5.88	0	0	4.39	1.21	4.26	30.0	30.0	5.88	5.88	1.28	1.11	0.00	4.38



Stellar Parameters For KIC 007115671

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6413^{+177}_{-243}	$4.203^{+0.153}_{-0.187}$	$0.120^{+0.200}_{-0.350}$	$1.494^{+0.489}_{-0.326}$	$1.299^{+0.196}_{-0.215}$	$0.549^{+0.418}_{-0.270}$
	+3%/-4%	+4%/-4%	+167%/-292%	+33%/-22%	+15%/-17%	+76%/-49%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 007115671-01 / KOI 5355.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$12.47^{+12.90}_{-8.89}$	4004^{+321}_{-291}	-4692^{+32451}_{-20453}	$-0.935^{+143.565}_{-133.013}$
Alt.	-15 ± 2	$11.82^{+13.78}_{-8.31}$	3986^{+295}_{-250}	-3611^{+347}_{-208}	$0.012^{+0.117}_{-0.010}$

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

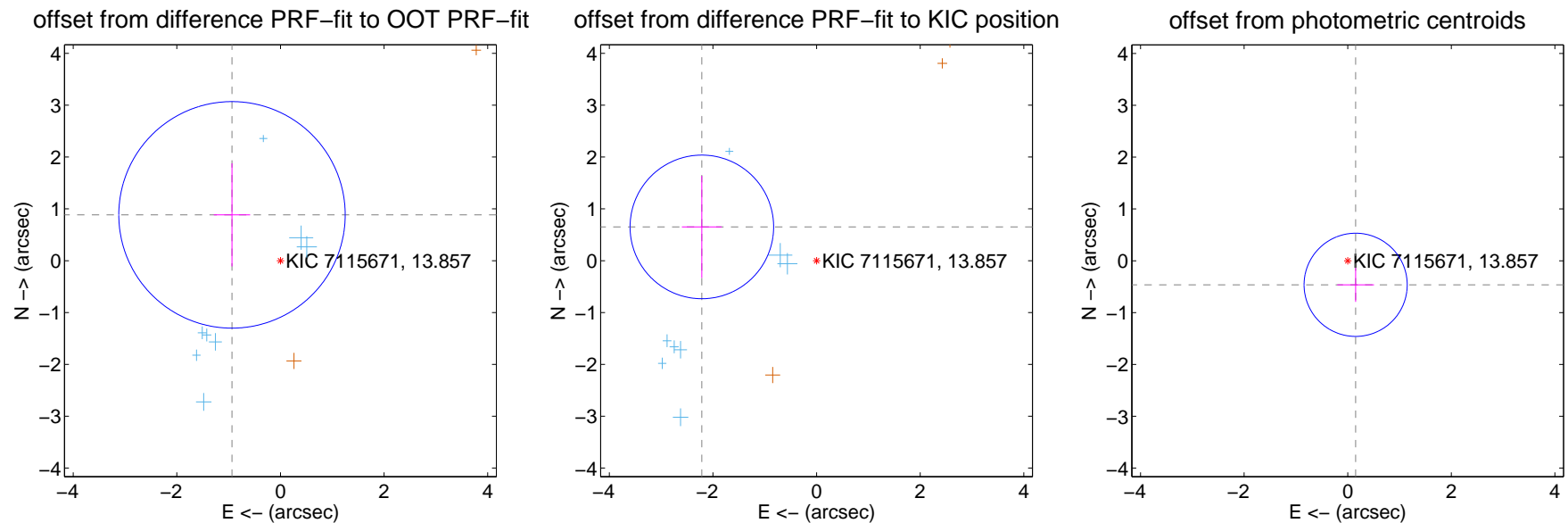
DV Centroid Data

Supplemental centroid analysis for 007115671-01. Kepler magnitude: 13.86. Transit SNR -1.00

There are 8 quarters with good PRF difference image offsets

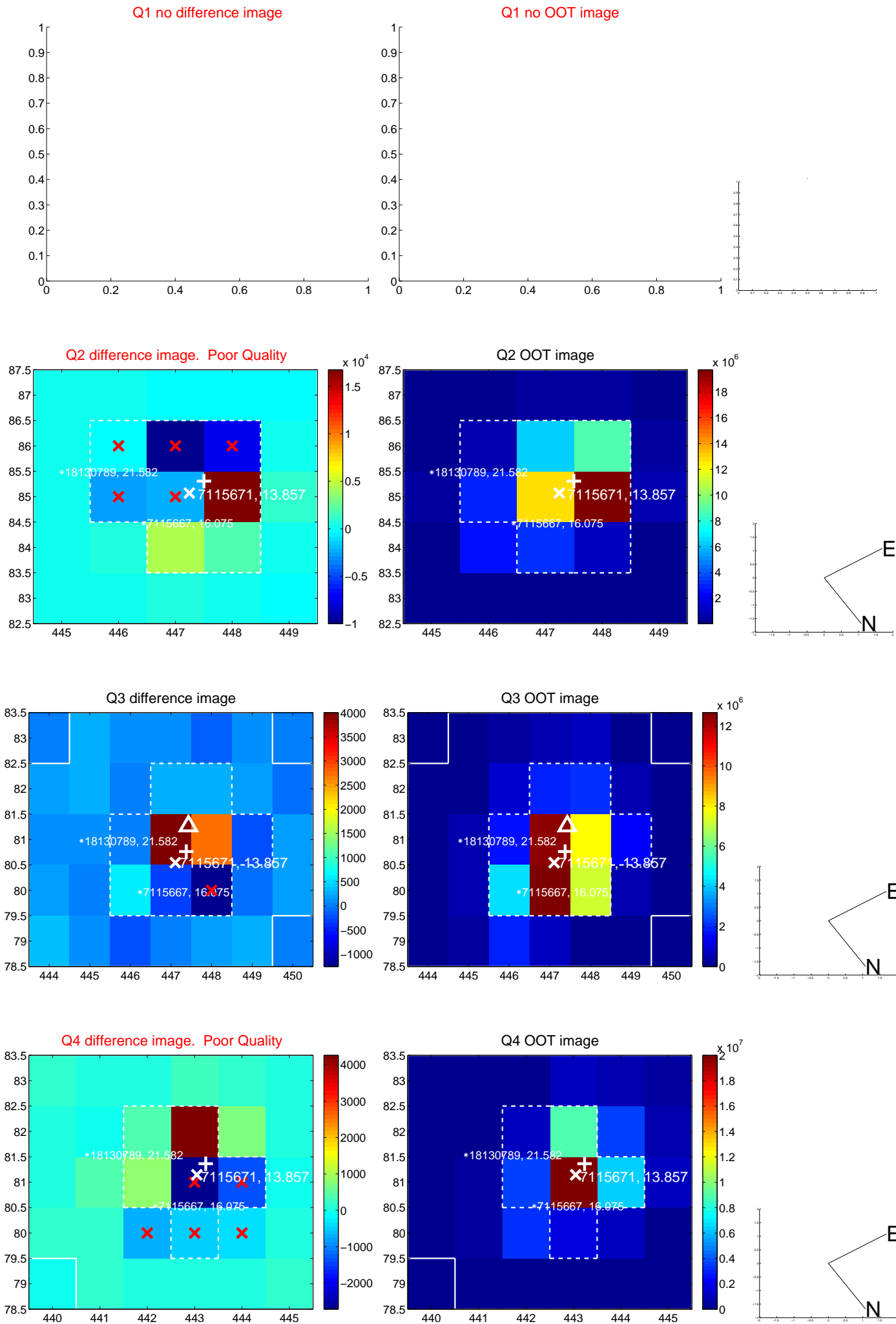
The direct PRF centroid is offset from the target star catalog position by about 1.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.287 ± 0.728	1.77	0.935 ± 0.351	0.884 ± 0.993
PRF-fit source offset from KIC position	2.308 ± 0.462	5.00	2.214 ± 0.385	0.652 ± 0.983
photometric centroid source offset	0.49 ± 0.33	1.47	-0.15 ± 0.35	-0.46 ± 0.33

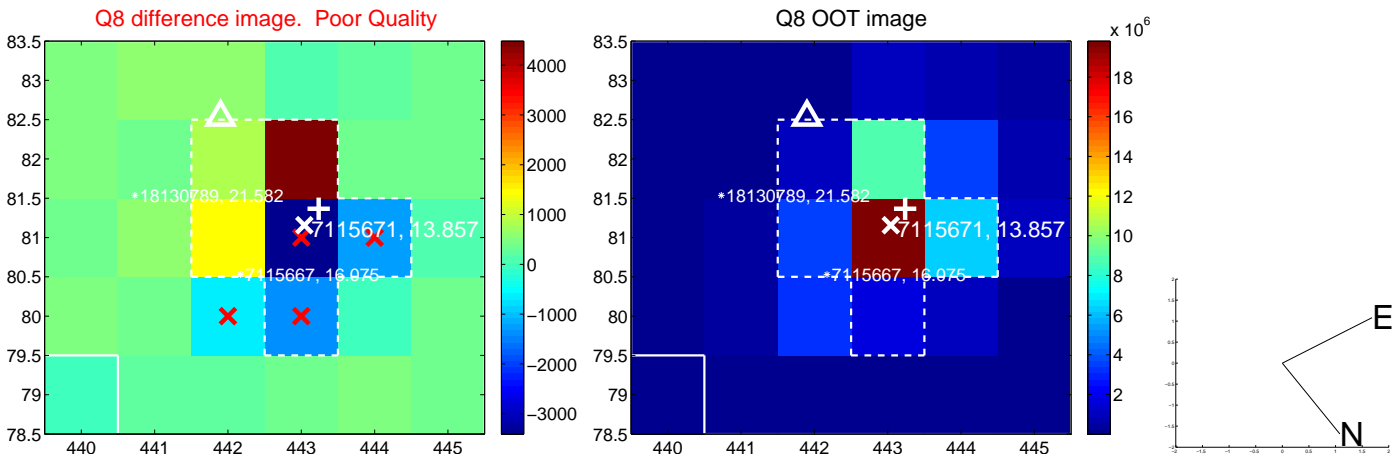
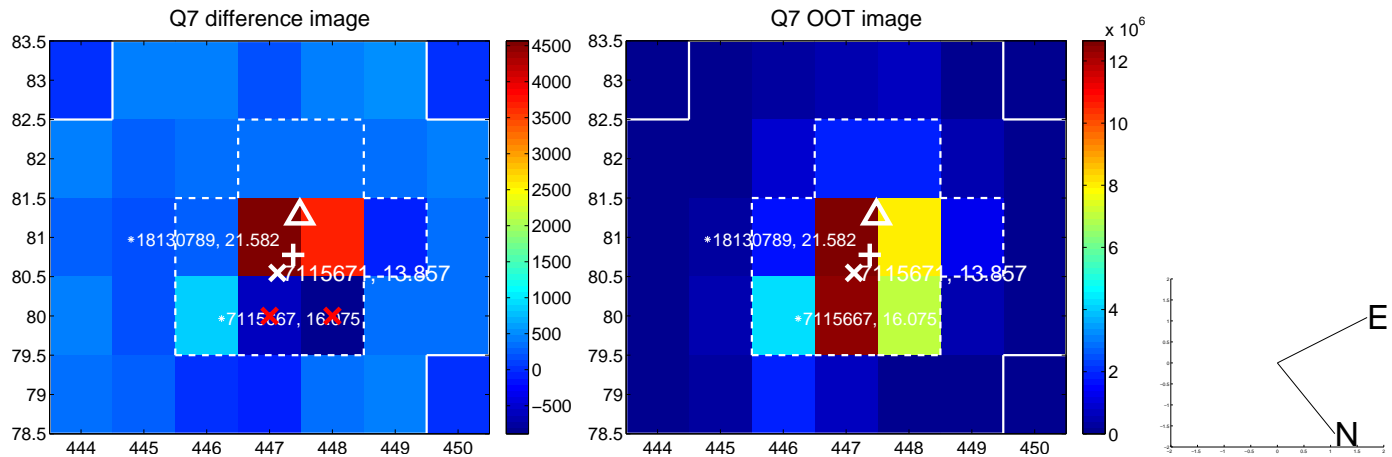
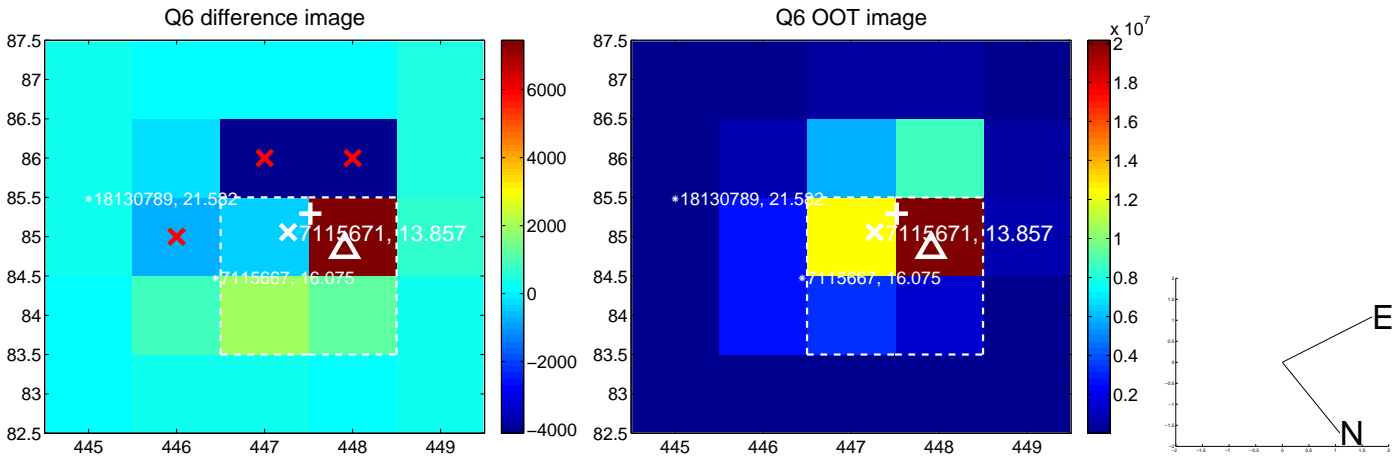
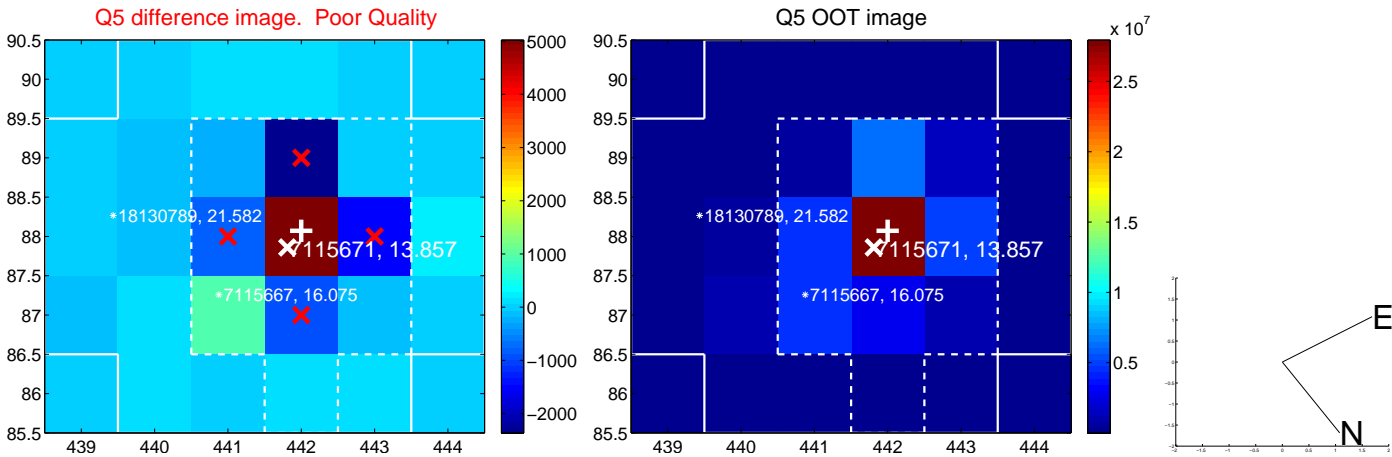


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

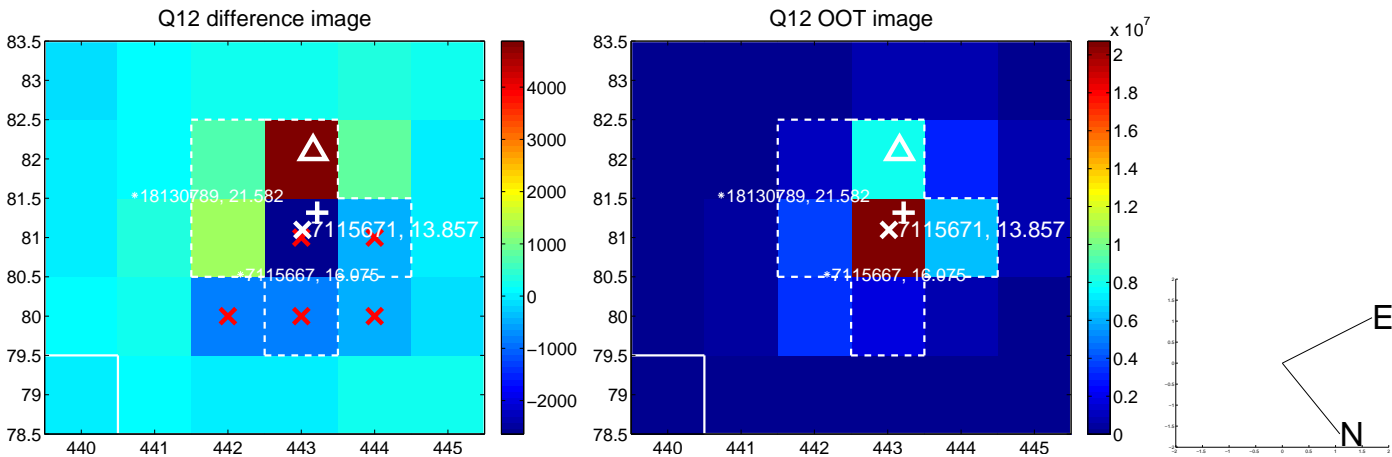
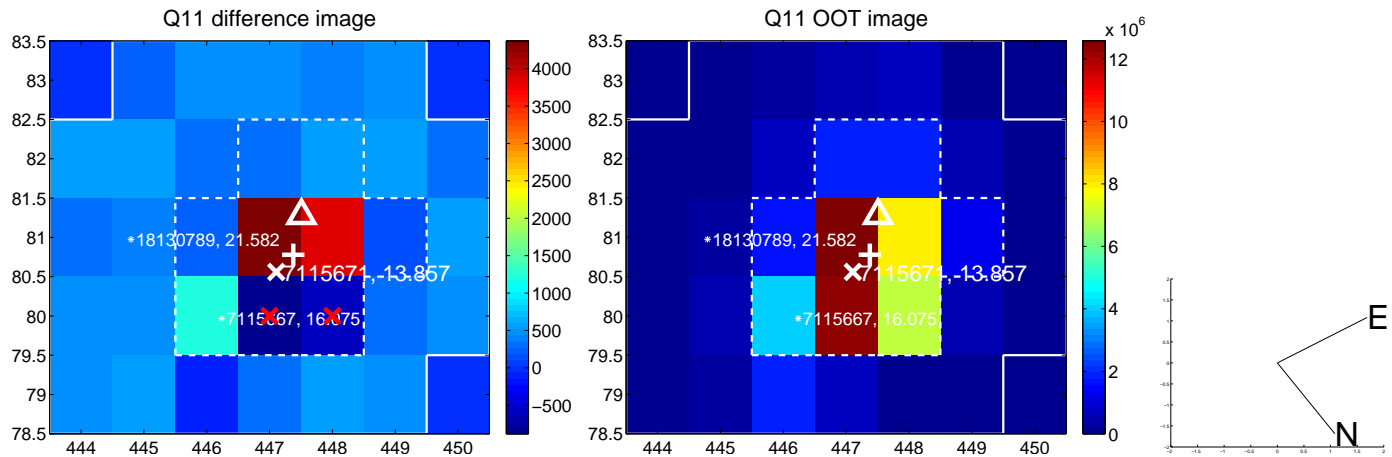
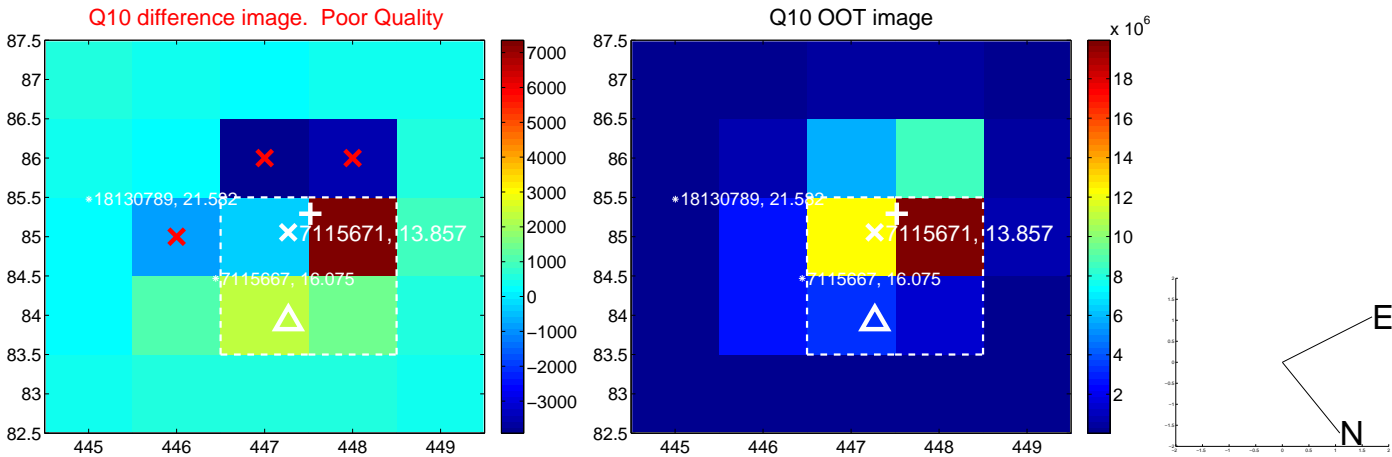
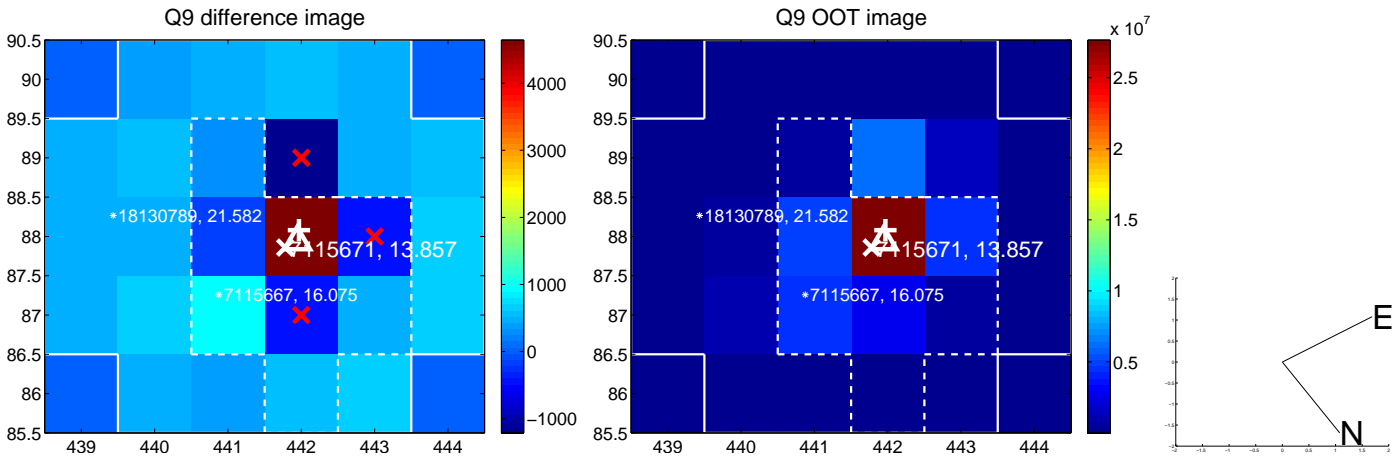
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



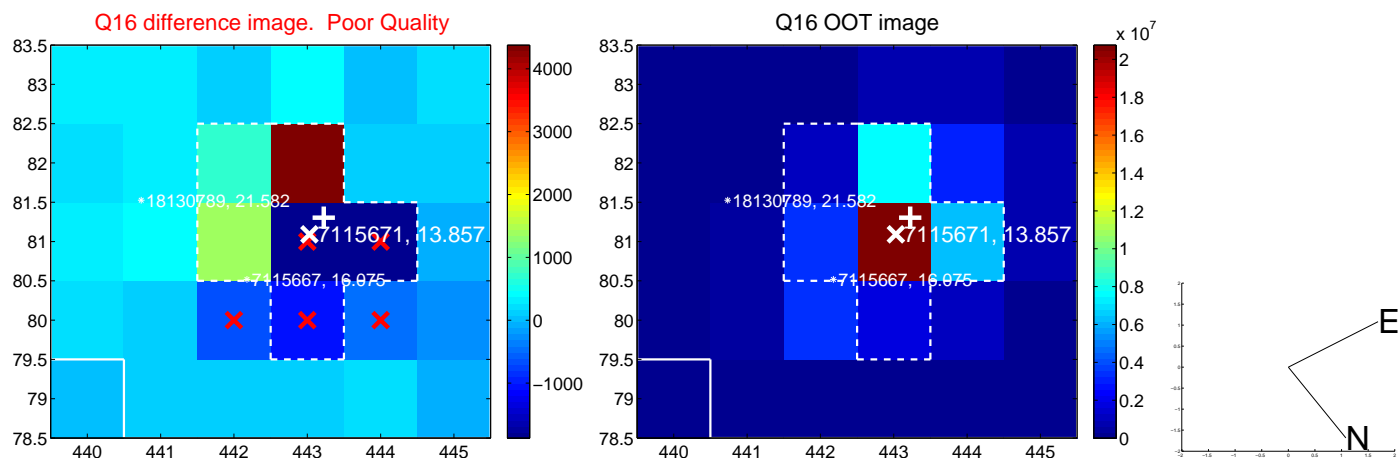
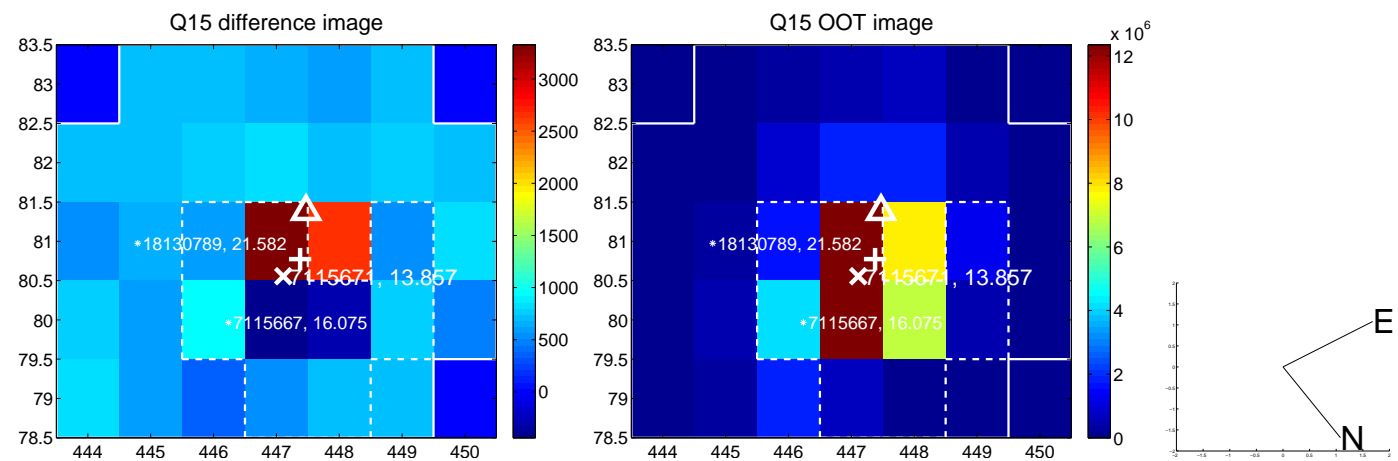
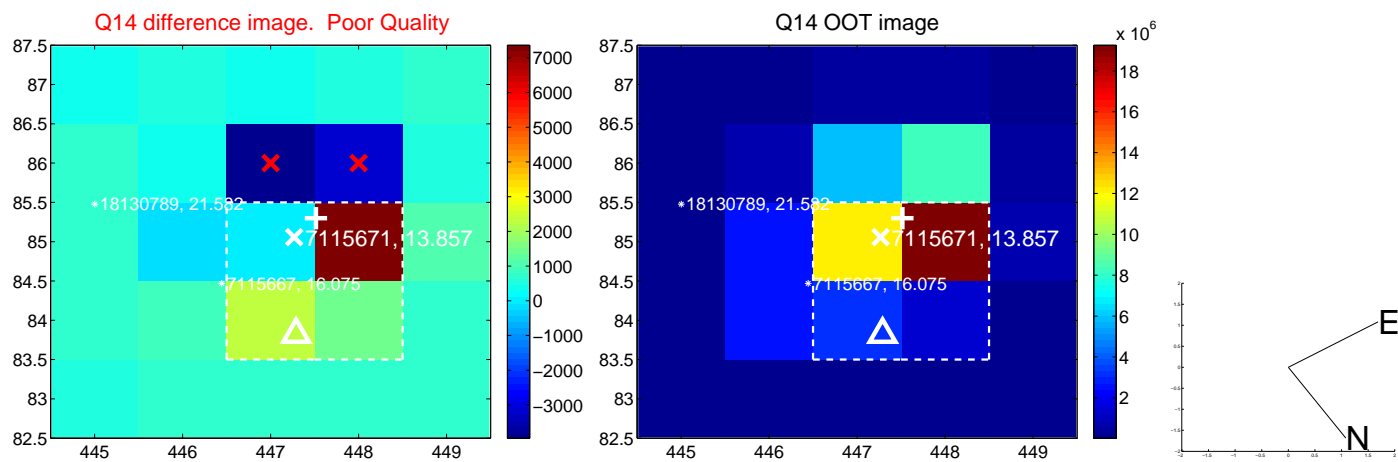
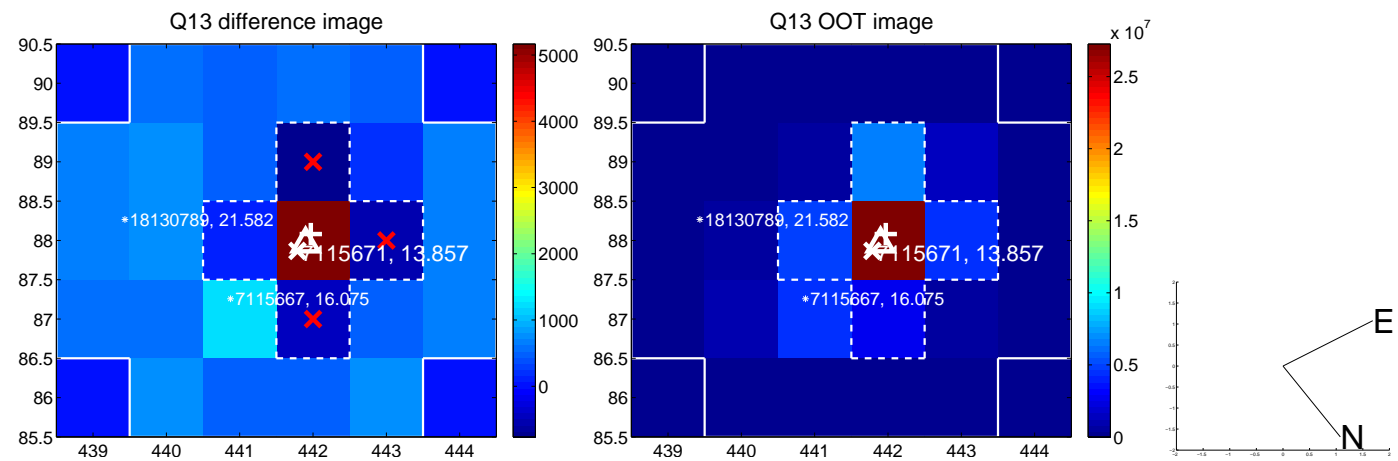
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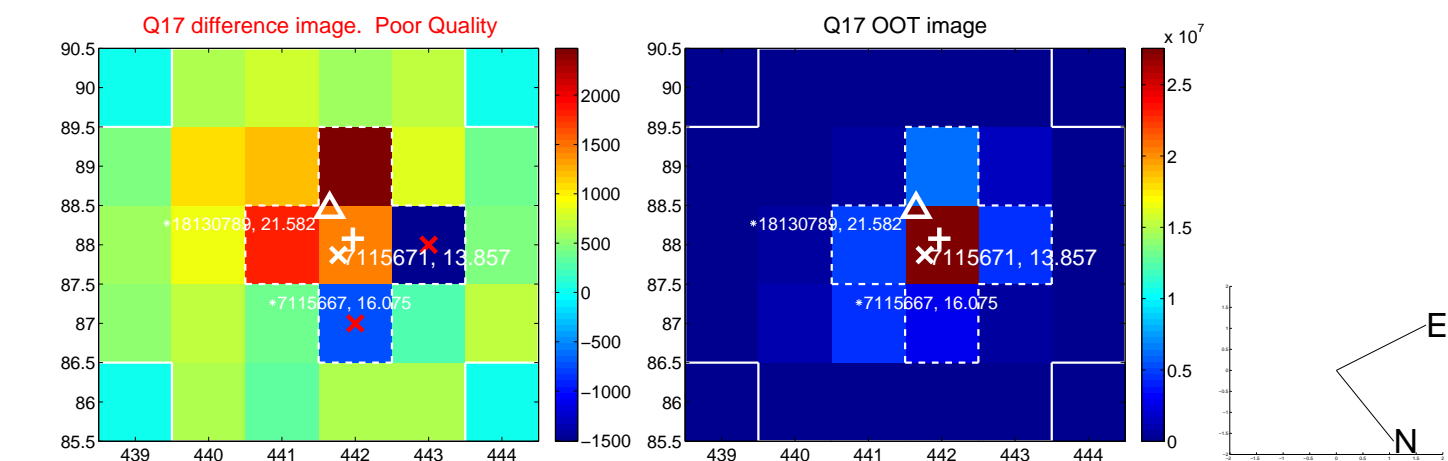
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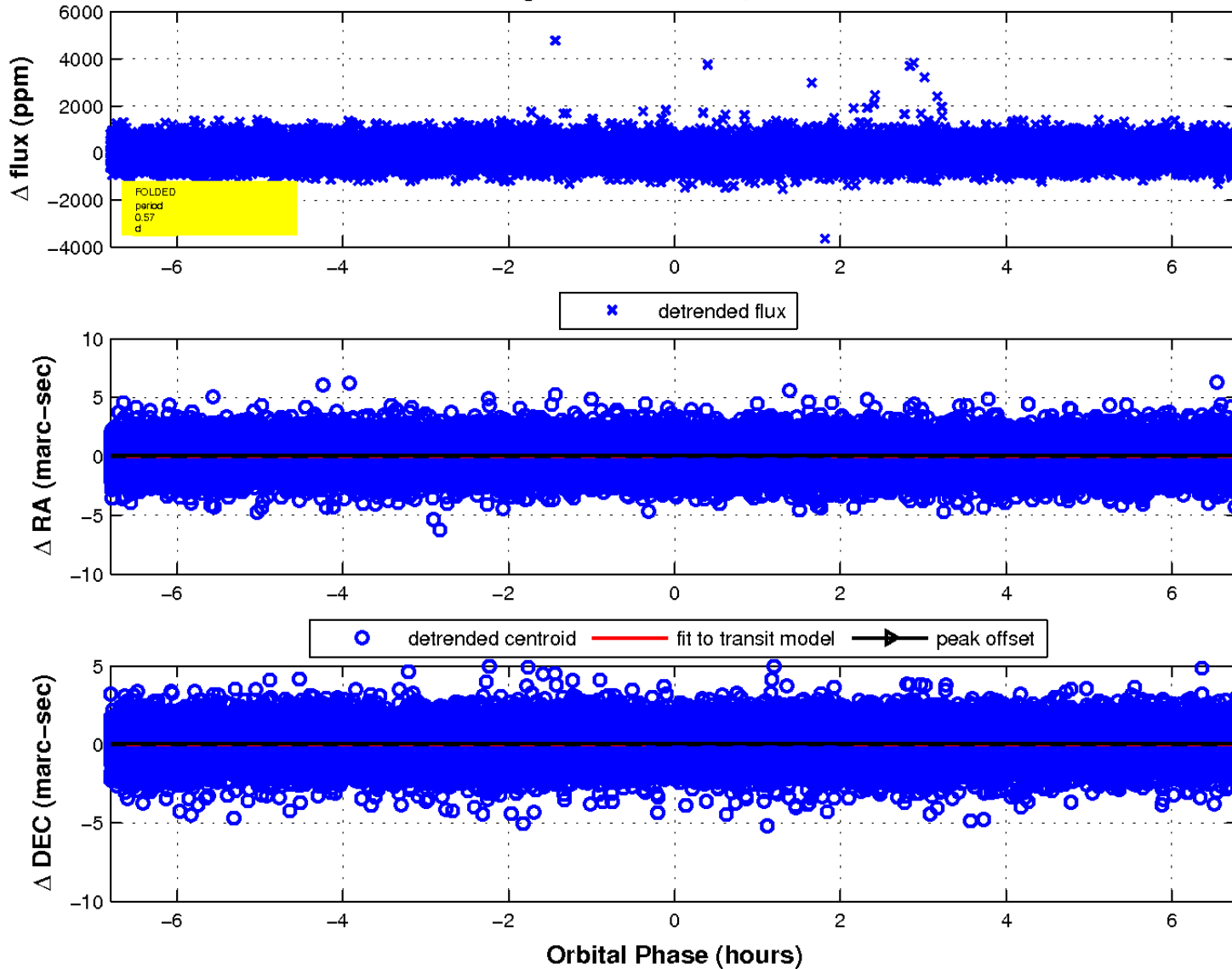
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

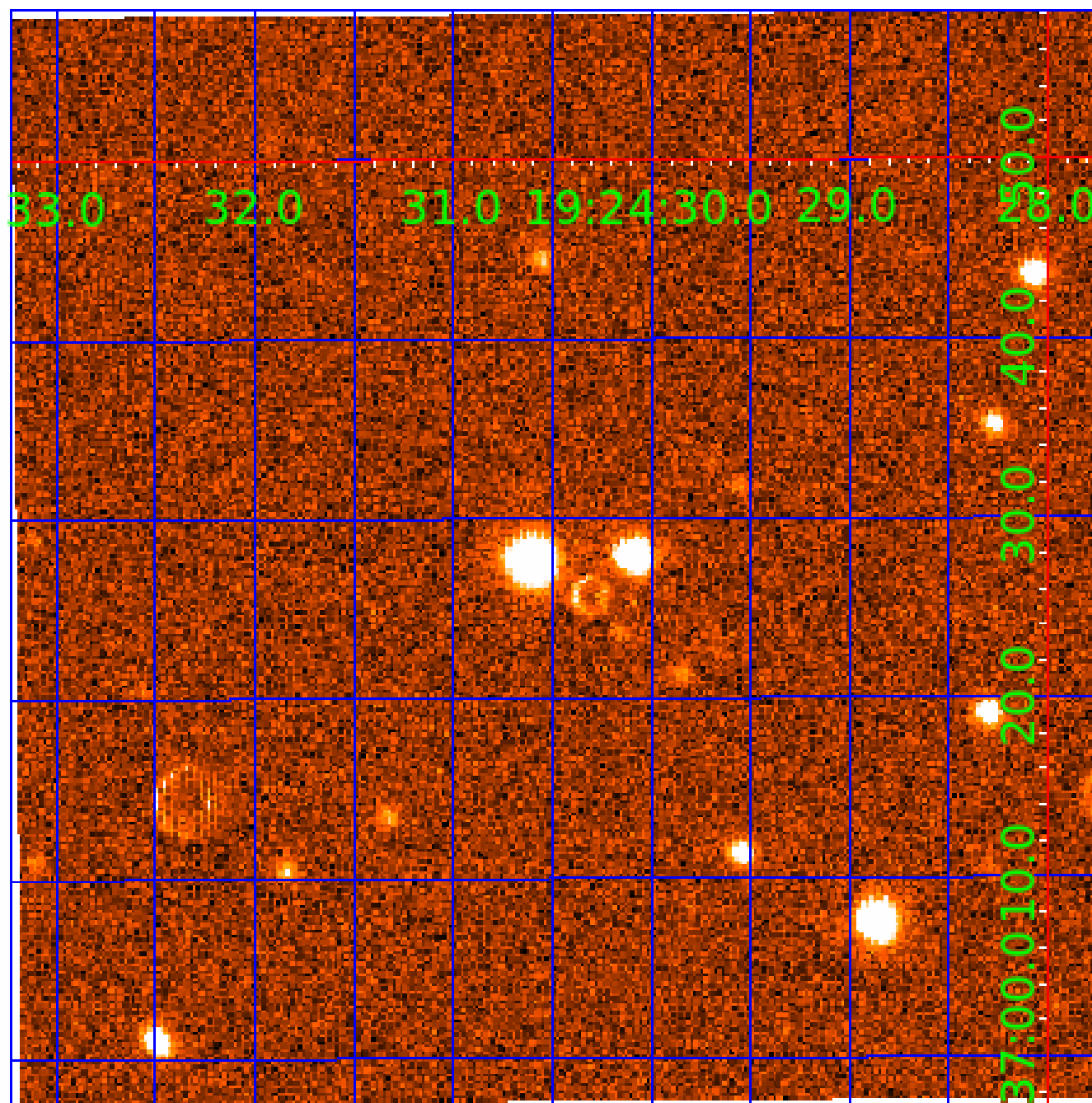


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 007115671

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})
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007115671-02	OBS	No	131.254845	148.434338	287.2	5.678	10.3	4.4	1.49	6413	2.84	11.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007115671-01	OBS	FP	0.00	1	0	1	1	MOD_NONUNIQ_ALT—CENT_NOFITS—HALO_GHOST—EPHEM_MATCH
007115671-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—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 007115671-02

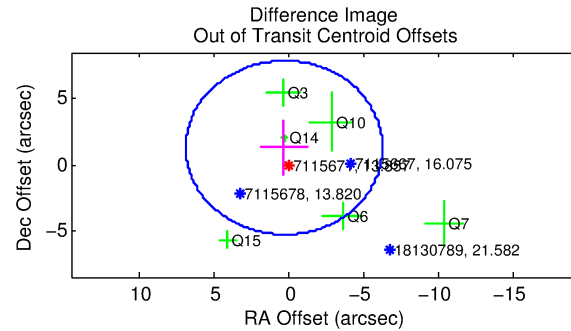
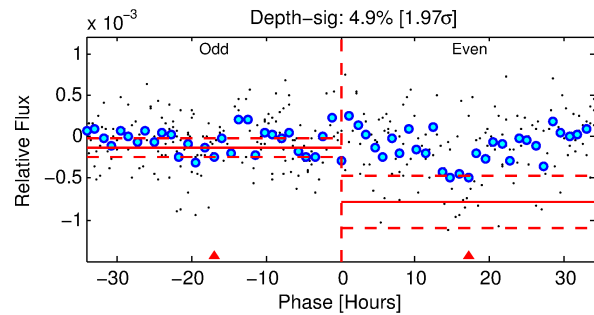
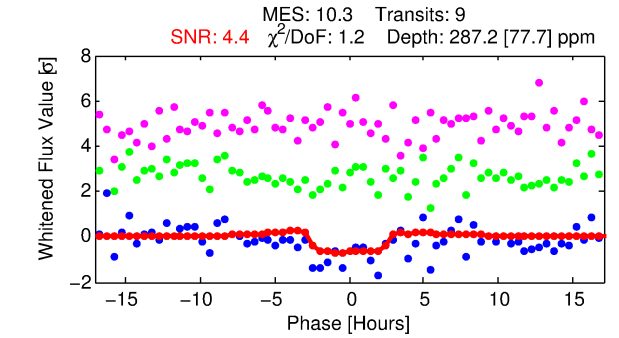
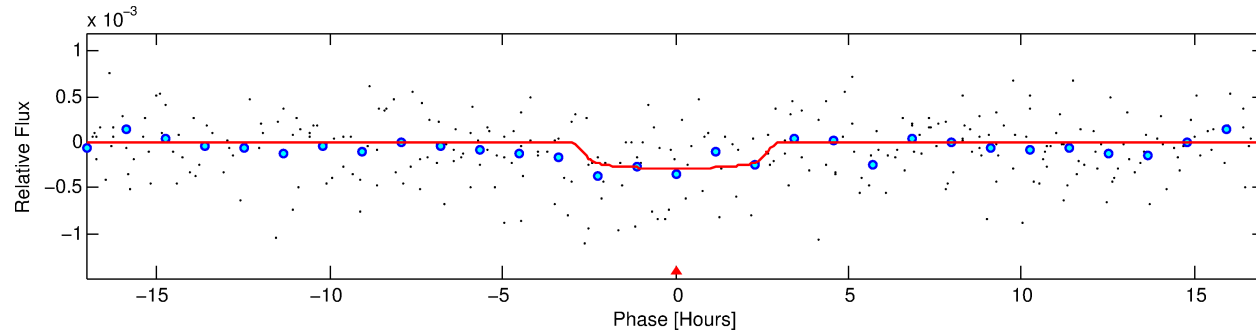
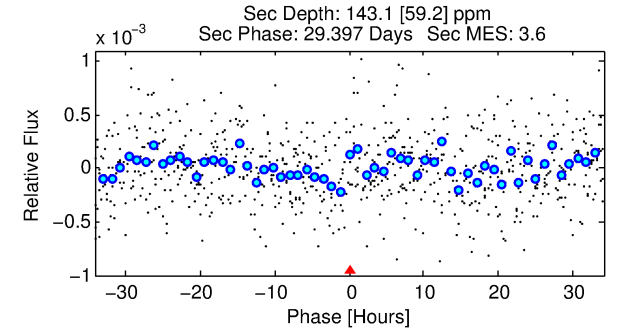
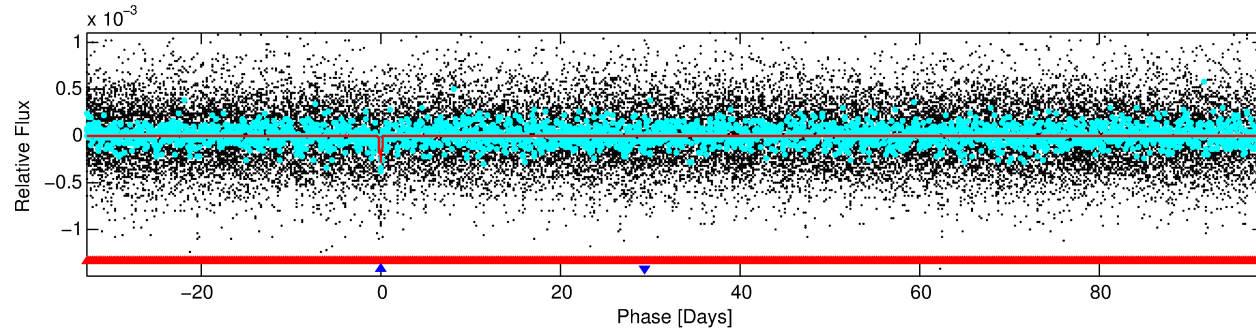
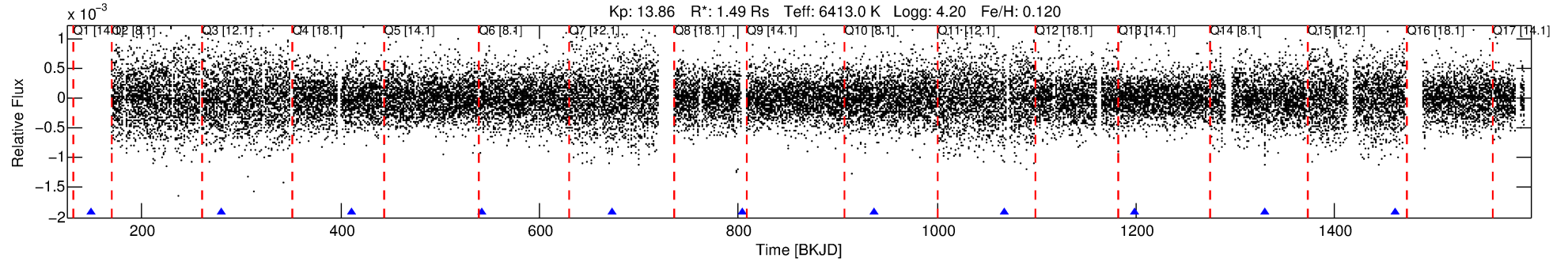
No Significant Match Found

DV One-Page Summary

KIC: 7115671 Candidate: 2 of 2 Period: 131.255 d

KOI: K05355 Corr: No Ephemeris Match

Kp: 13.86 R*: 1.49 Rs Teff: 6413.0 K Logg: 4.20 Fe/H: 0.120



DV Fit Results:

Period = 131.25485 [0.00335] d
Epoch = 148.4343 [0.0215] BKJD
Rp/R* = 0.0174 [0.0137]
a/R* = 102.72 [417.49]
b = 0.83 [1.49]
Seff = 11.11 [4.35]
Teff = 466 [46] K
Rp = 2.84 [2.42] Re
a = 0.5517 [0.1441] AU
Ag = 2961.89 [4918.77] [0.60σ]
Teffp = 5310 [2162] K [2.24σ]

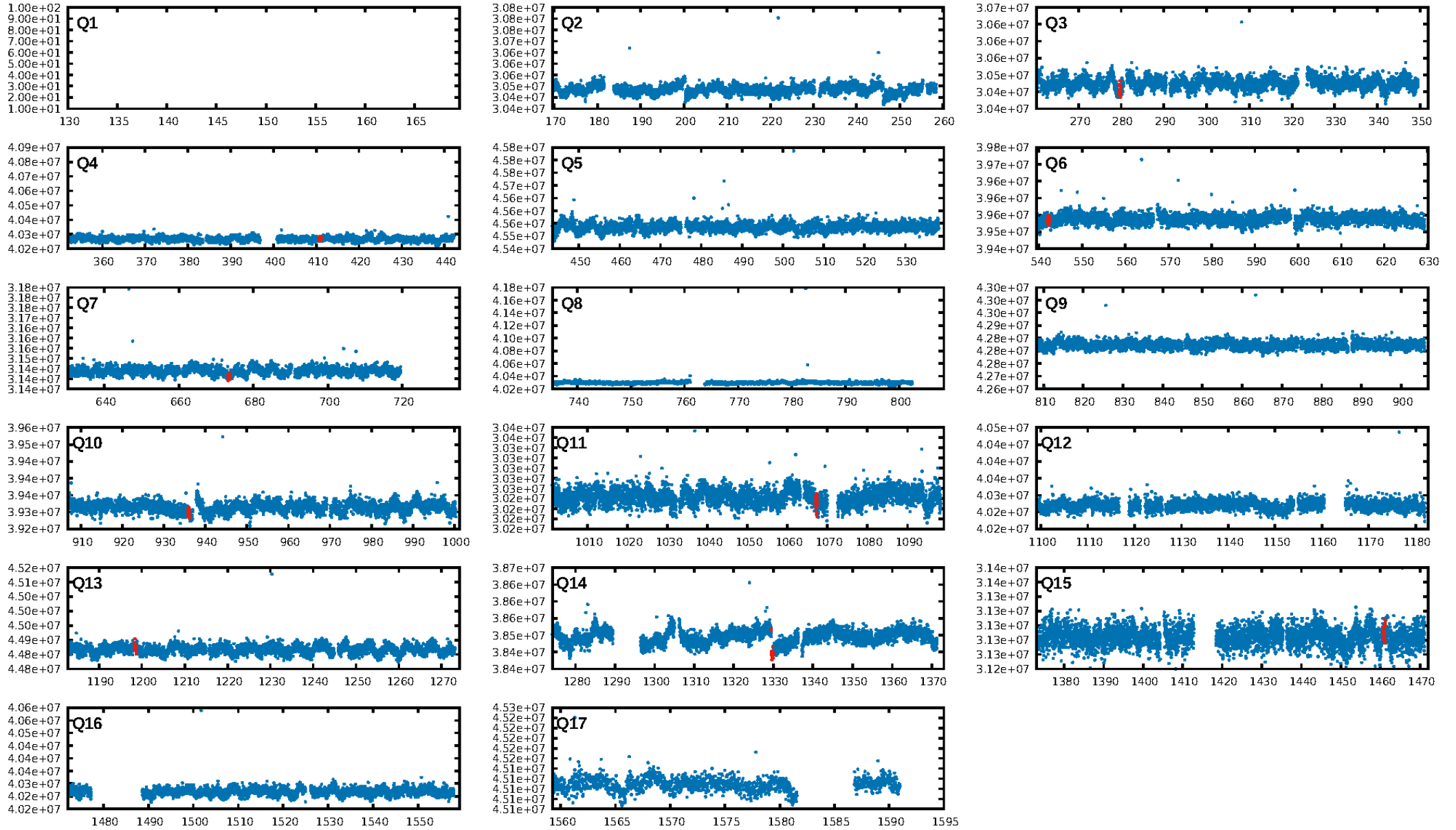
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [521.05σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.97e-17
RollingBand-fgt: 1.00 [9/9]
GhostDiagnostic-chr: -4.33
Centroid-sig: 3.8%
Centroid-so: 2.618 arcsec [2.39σ]
OotOffset-rm: 1.312 arcsec [0.60σ]
KicOffset-rm: 1.903 arcsec [0.94σ]
OotOffset-st: 3/3/0/0 [6]
KicOffset-st: 3/3/0/0 [6]
DiffImageQuality-fgm: 0.17 [1/6]
DiffImageOverlap-fno: 0.00 [0/9]

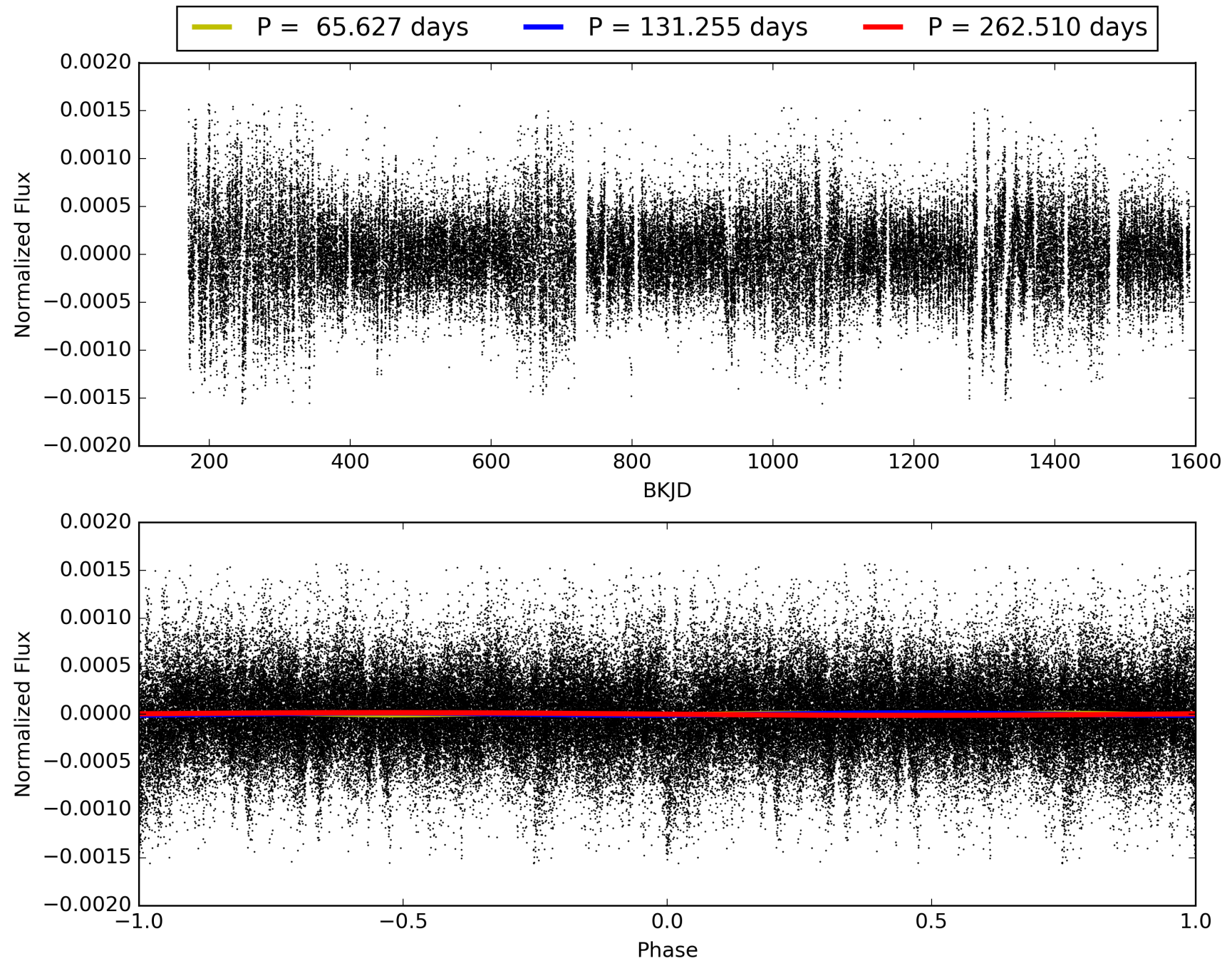
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 11:25:38 Z

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

TCE 007115671-02, PDC Light Curves

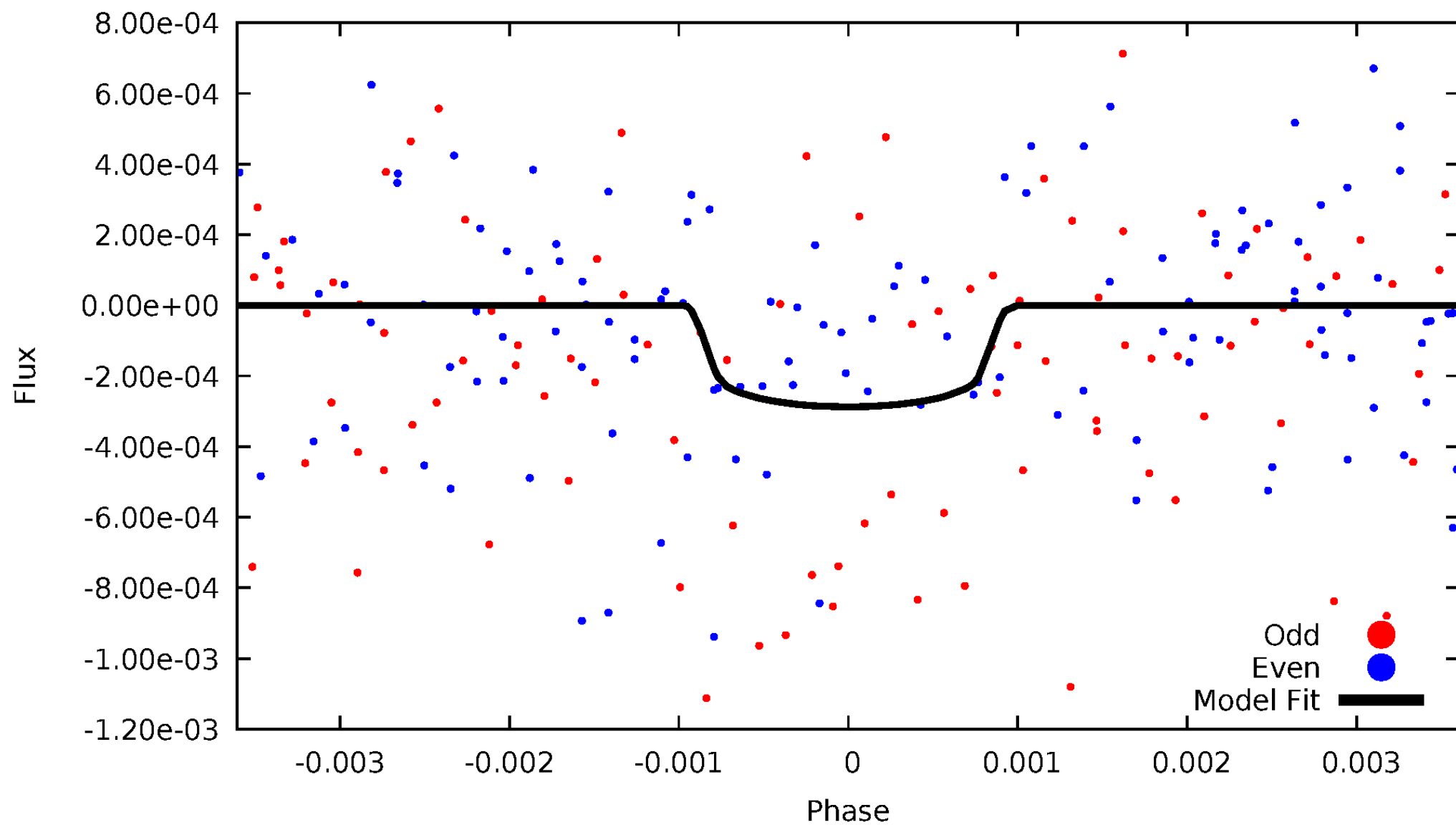


TCE 007115671-02



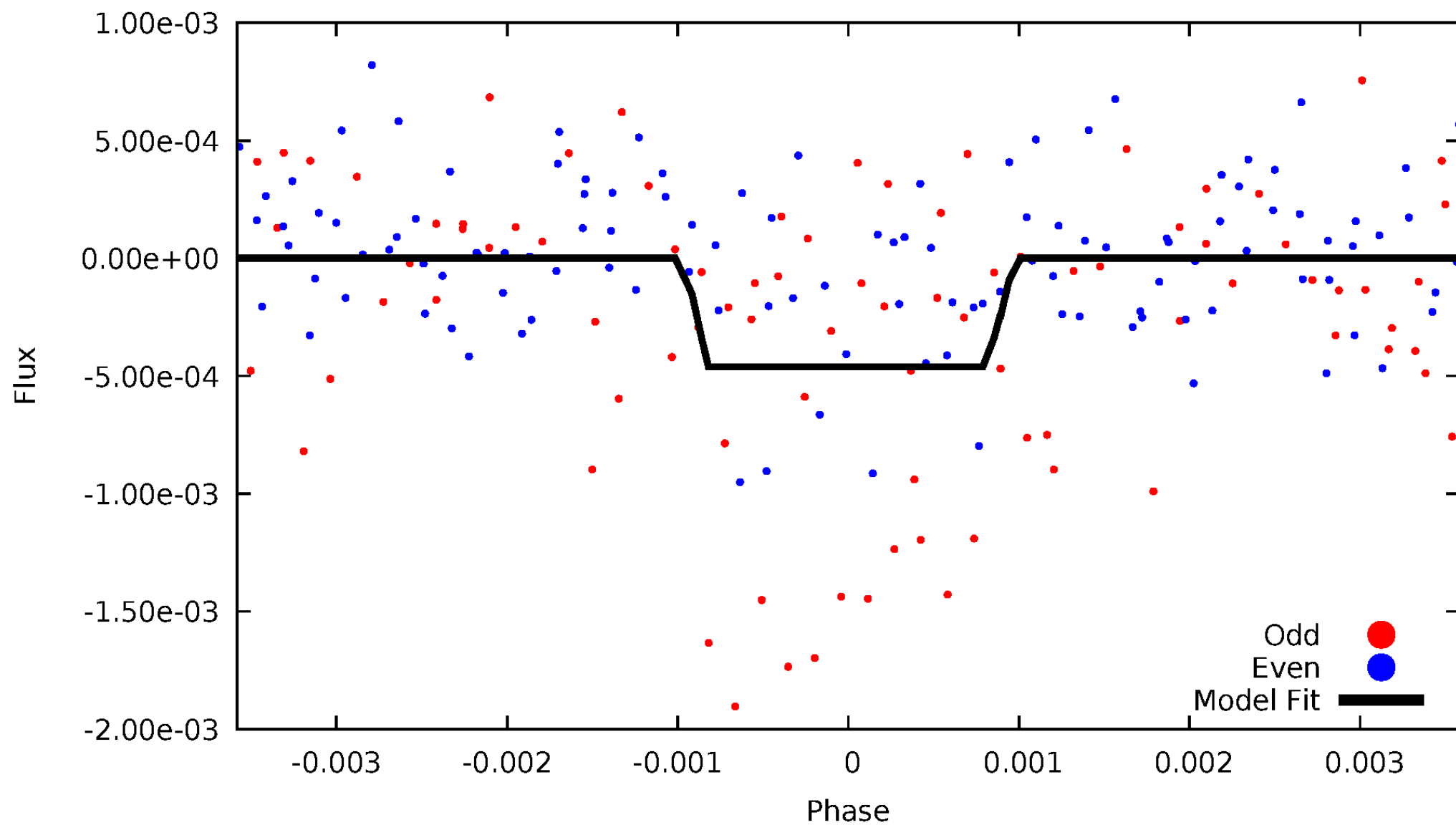
DV Odd/Even

TCE 007115671-02



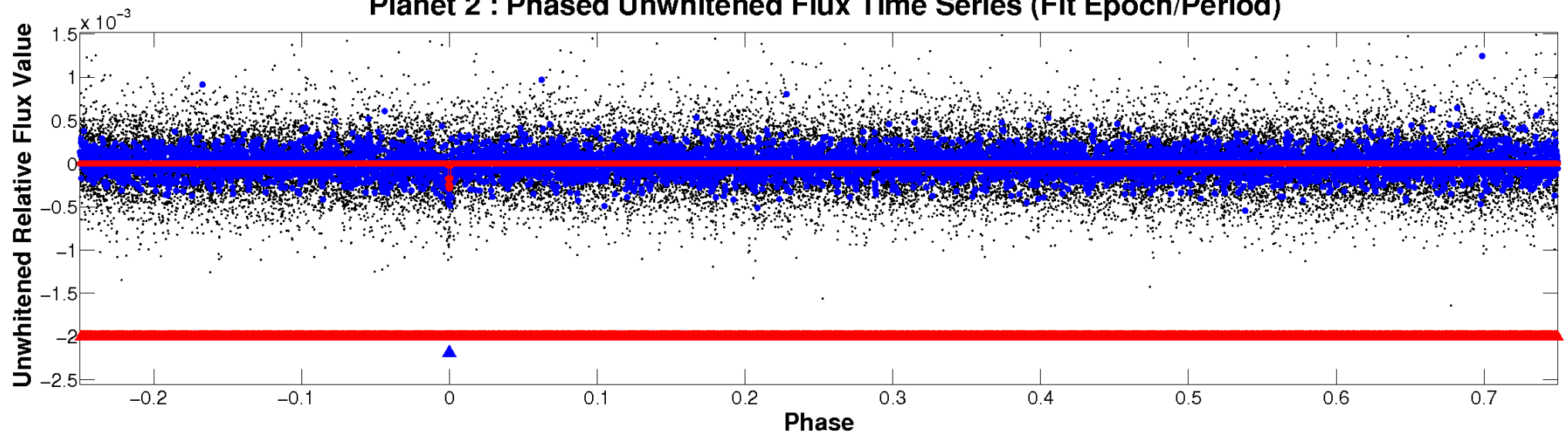
ALT Odd/Even

TCE 007115671-02

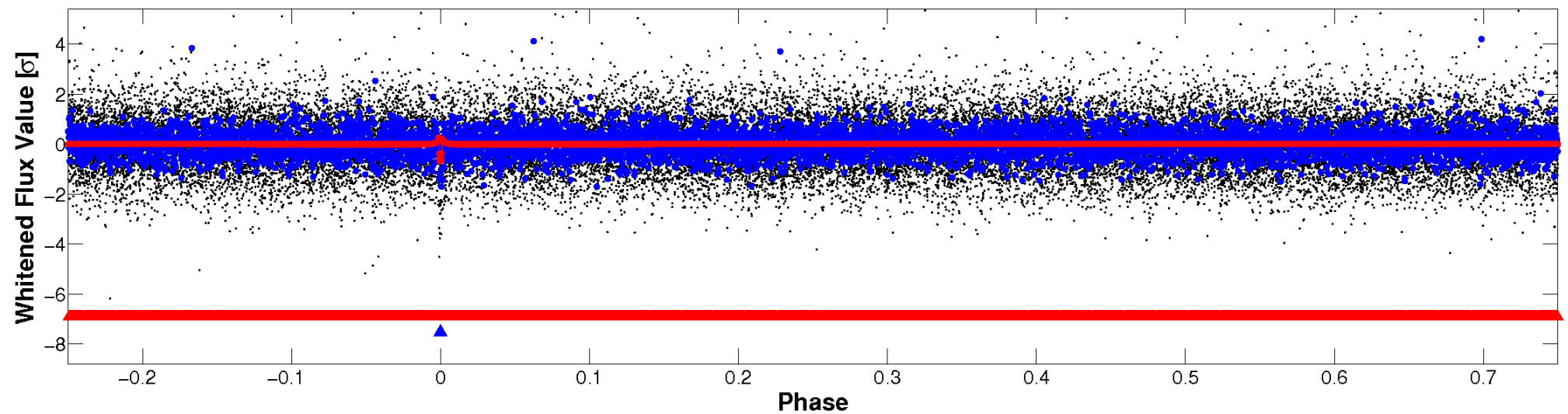


Non-Whitened Vs. Whitened Light Curve

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

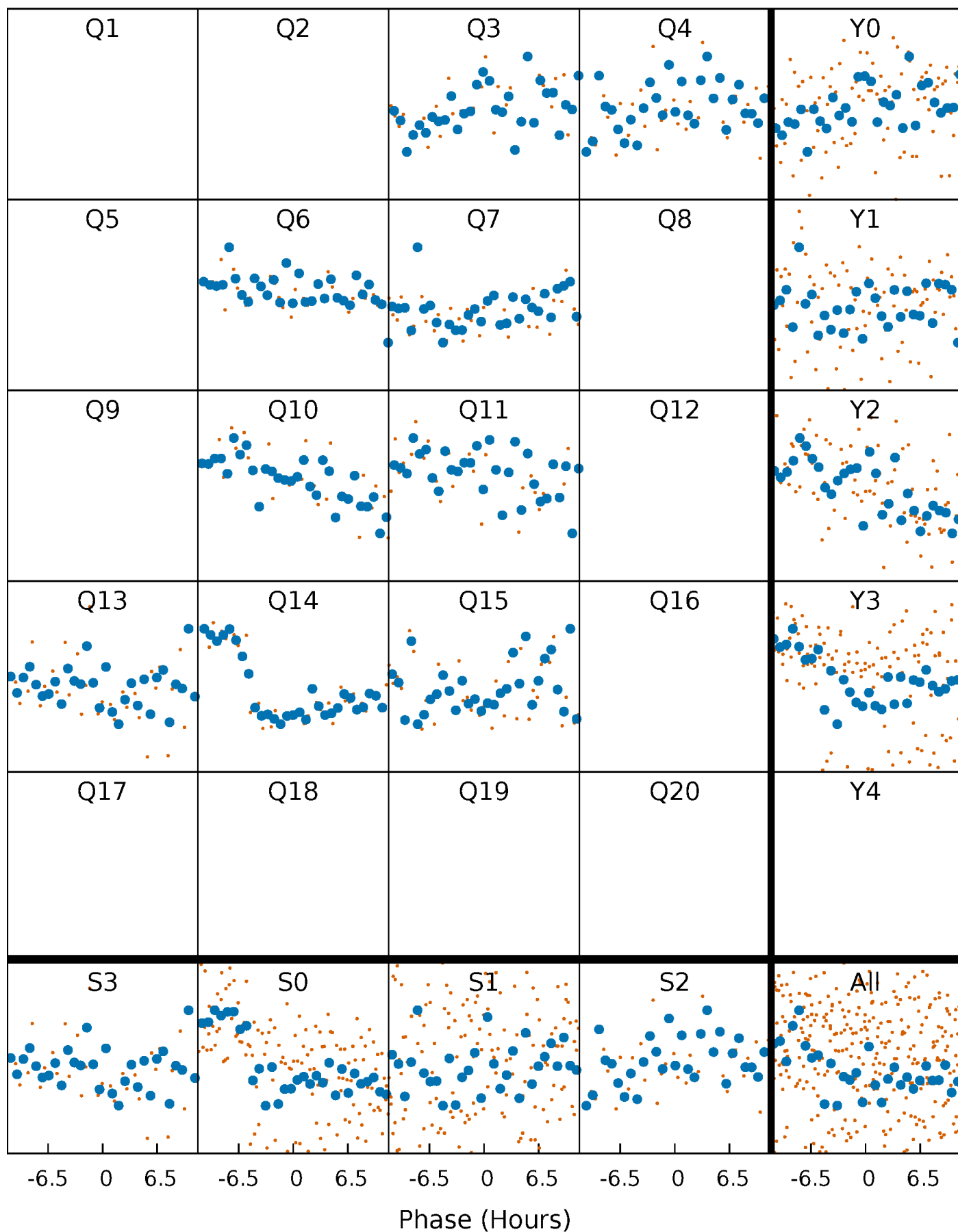


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



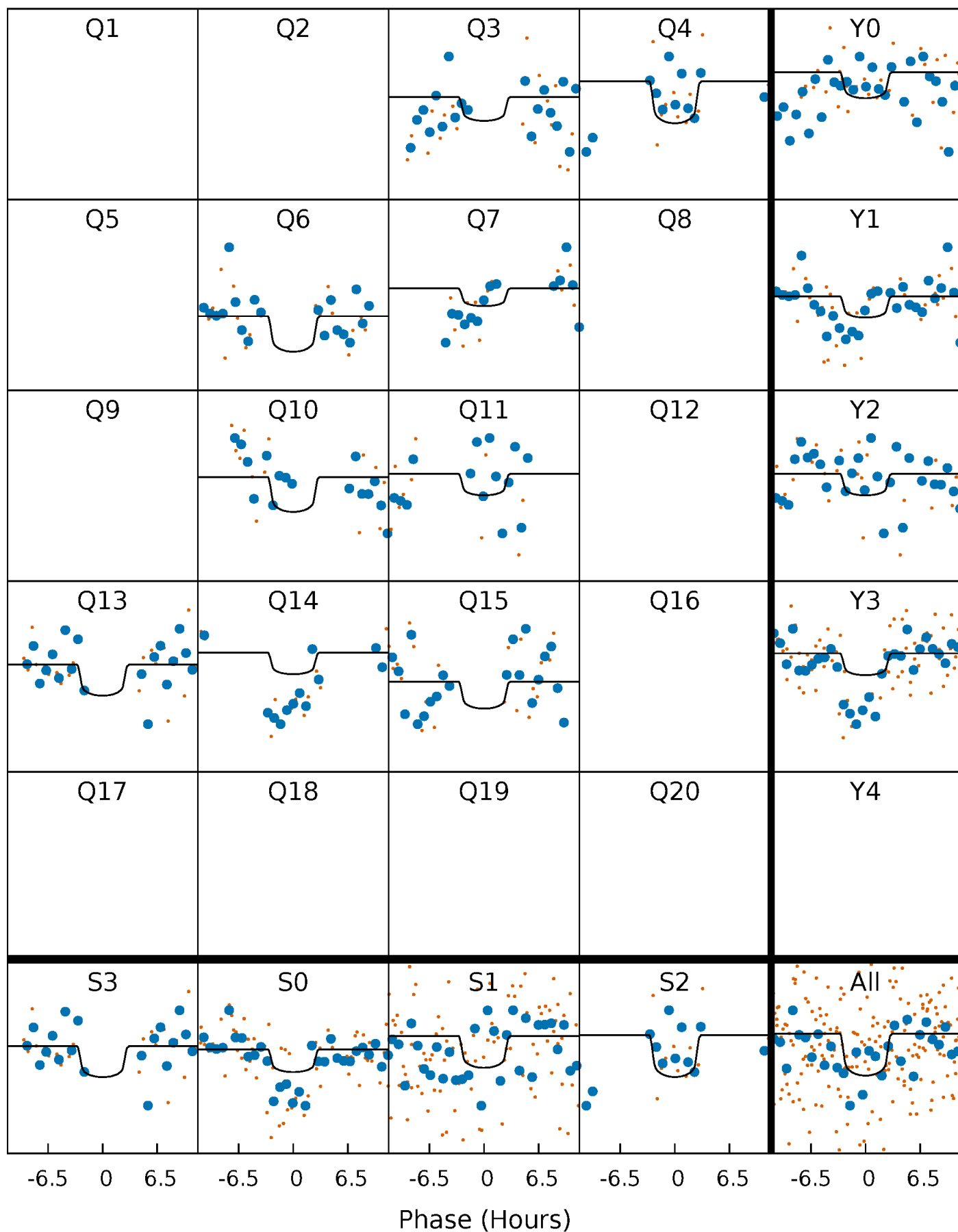
PDC Quarter-Phased Transit Curves

TCE 007115671-02 P=131.254845 Days $T_0=148.434338$ (BKJD)



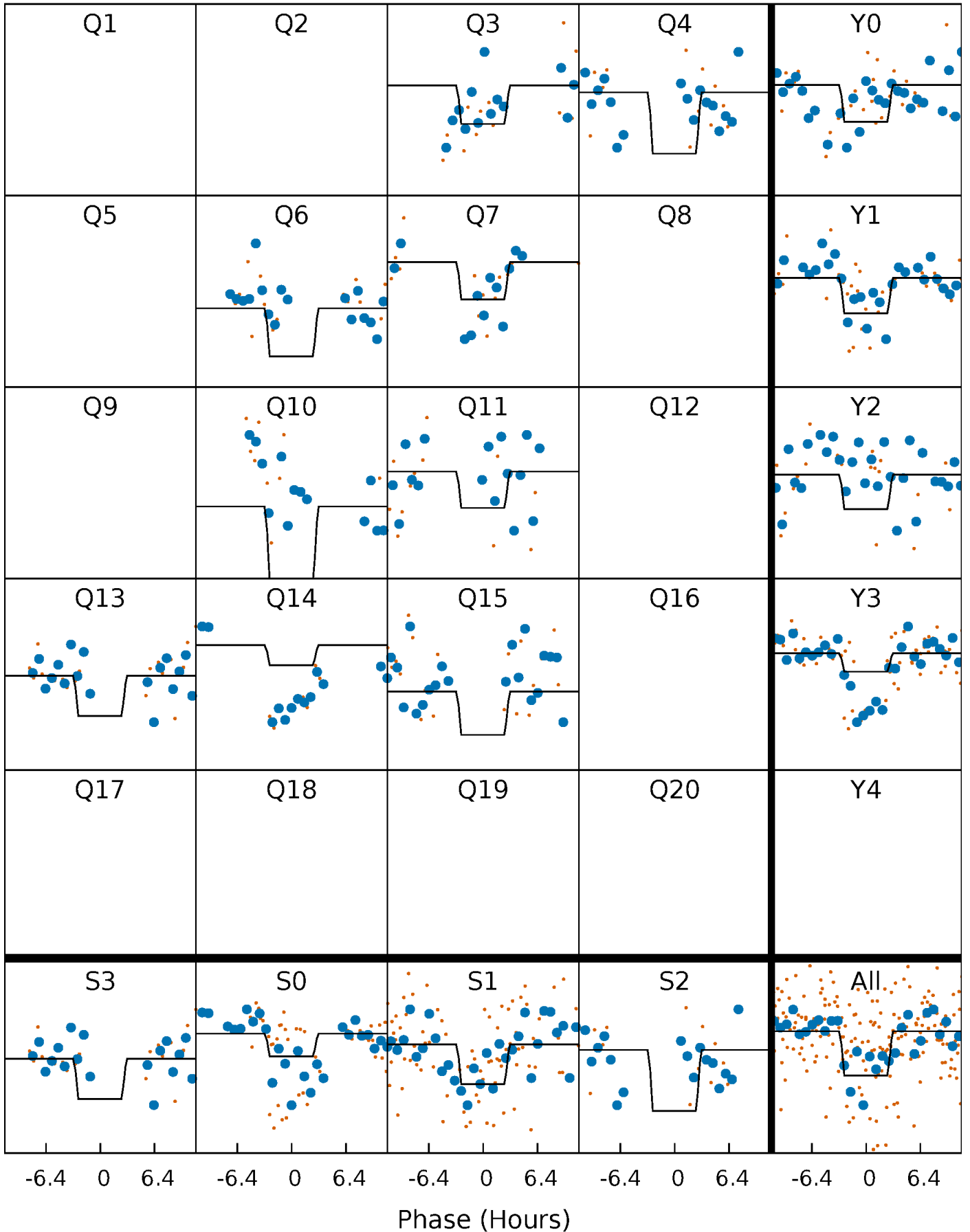
DV Quarter-Phased Transit Curves

TCE 007115671-02 P=131.254845 Days $T_0=148.434338$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

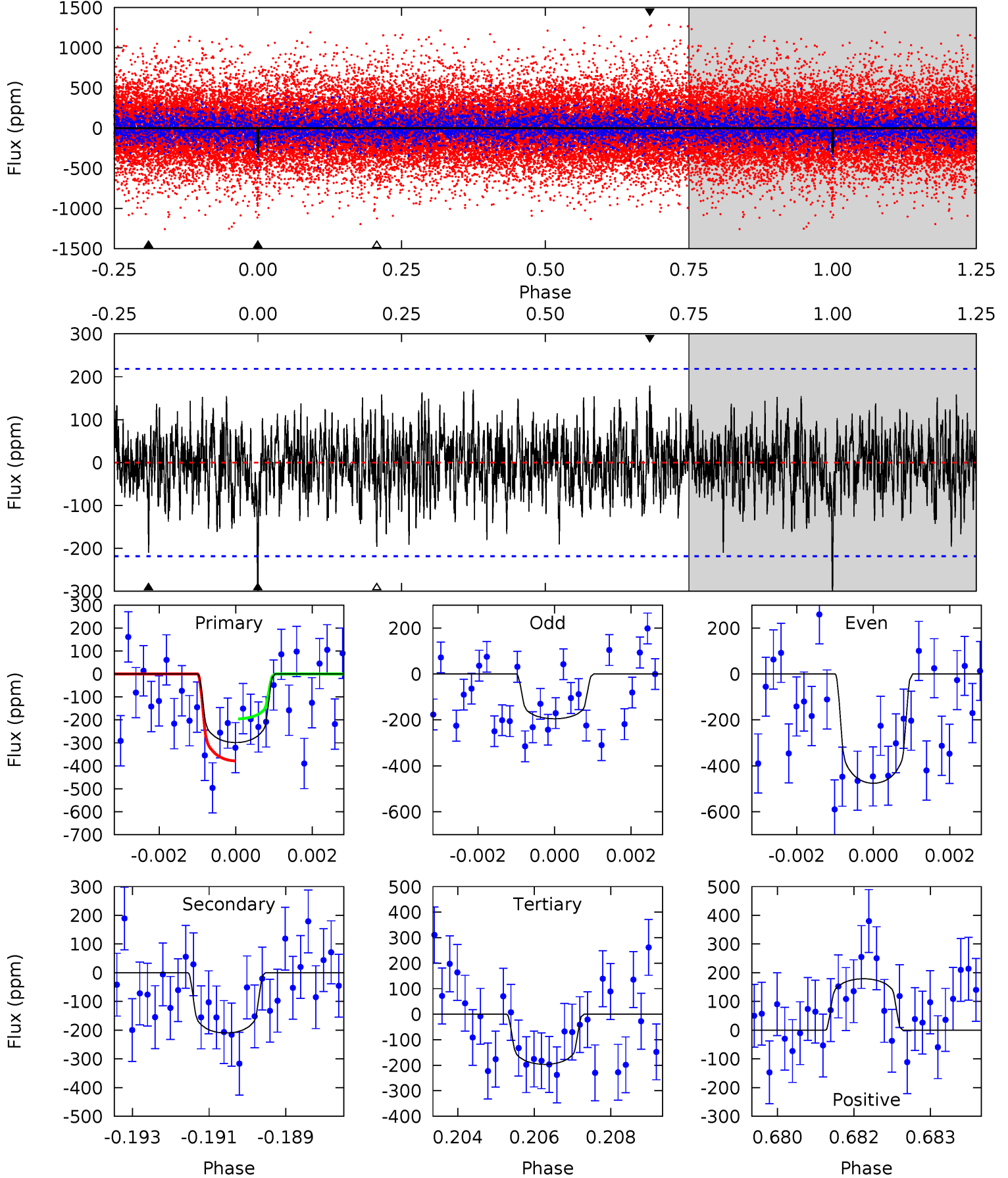
TCE 007115671-02 P=131.274869 Days $T_0=148.231389$ (BKJD)



DV Model-Shift Uniqueness Test

007115671-02, P = 131.254845 Days, E = 148.434338 Days

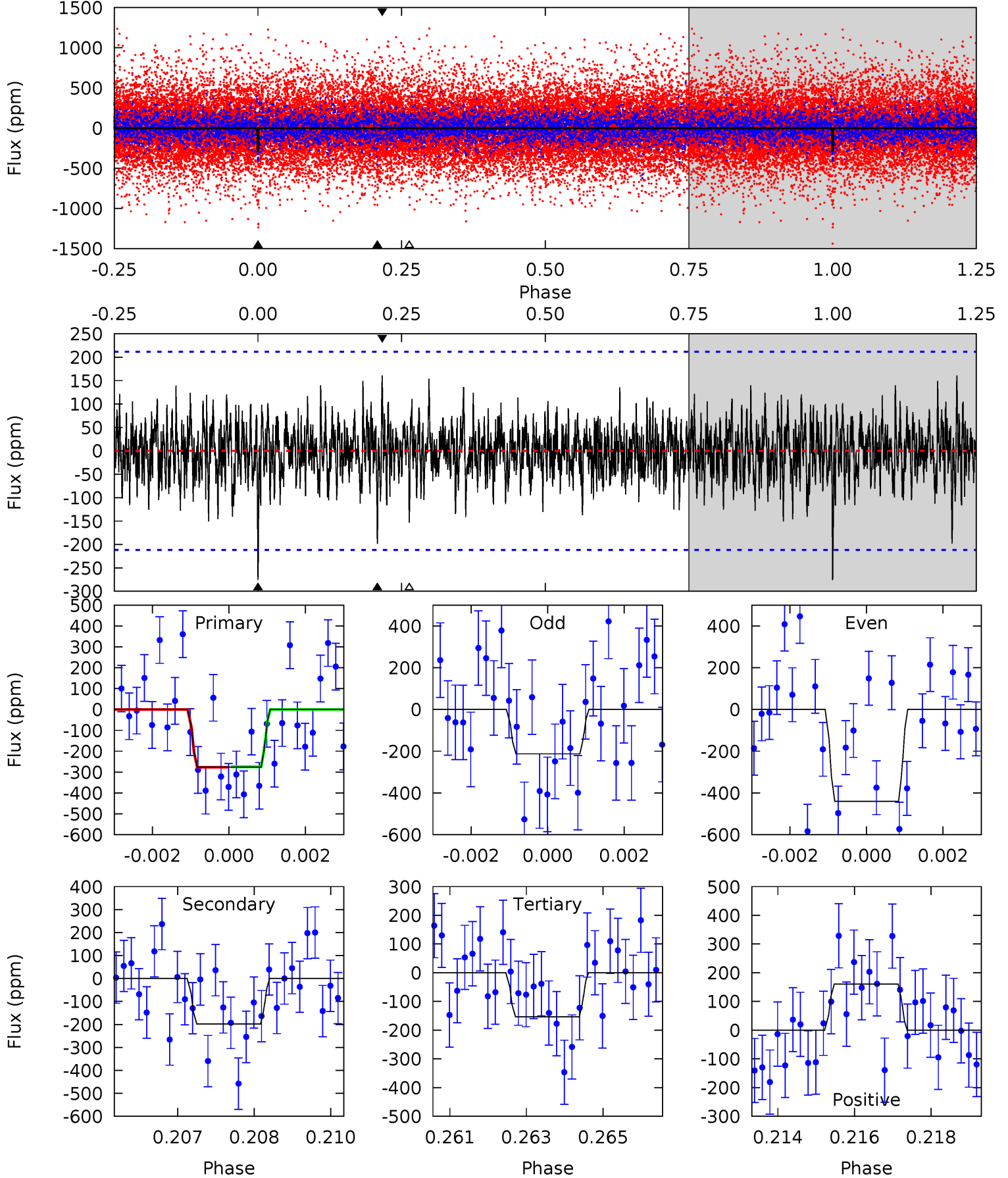
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.30	5.13	4.80	4.37	5.33	3.10	1.42	2.50	2.93	0.33	0.76	3.37	1.15	0.37	2.23



Alt Model-Shift Uniqueness Test

007115671-02, P = 131.274869 Days, E = 148.231389 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.96	5.00	3.87	4.05	5.34	3.11	1.15	3.09	2.91	1.13	0.95	2.93	3.68	0.37	0.03



Stellar Parameters For KIC 007115671

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6413^{+177}_{-243}	$4.203^{+0.153}_{-0.187}$	$0.120^{+0.200}_{-0.350}$	$1.494^{+0.489}_{-0.326}$	$1.299^{+0.196}_{-0.215}$	$0.549^{+0.418}_{-0.270}$
	+3%/-4%	+4%/-4%	+167%/-292%	+33%/-22%	+15%/-17%	+76%/-49%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 007115671-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-210 ± 41	$3.15^{+2.16}_{-1.94}$	649^{+57}_{-40}	5552^{+4265}_{-1127}	3547^{+20519}_{-2400}
Alt.	-198 ± 40	$3.69^{+2.18}_{-1.98}$	652^{+51}_{-46}	5151^{+2308}_{-898}	2330^{+8479}_{-1408}

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 $A_{obs} \gg 1.0$

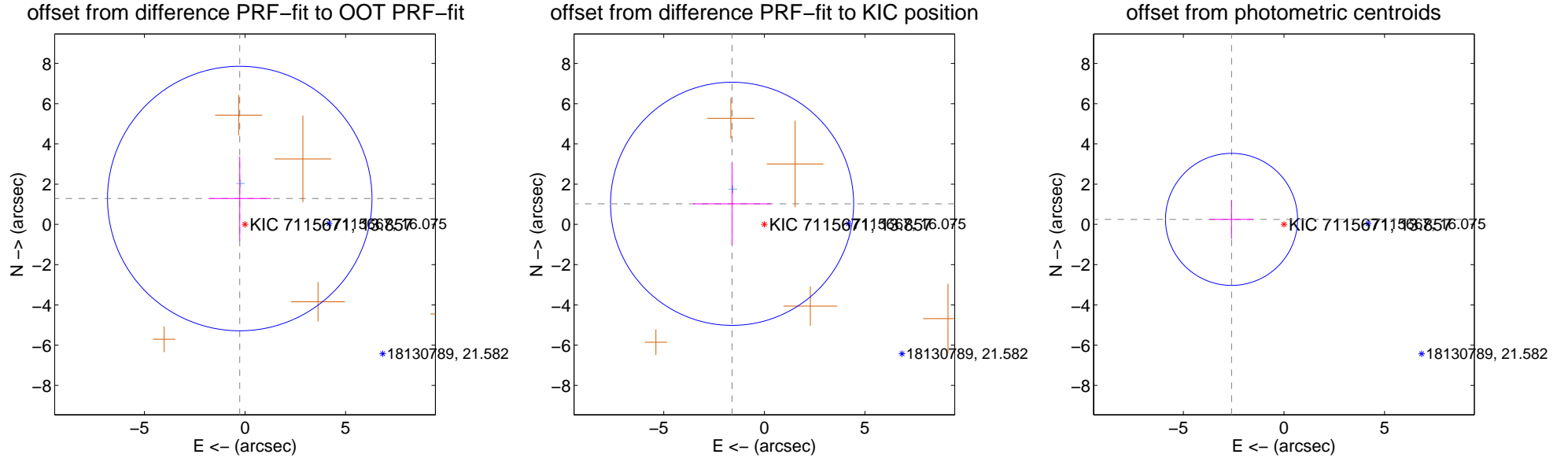
DV Centroid Data

Supplemental centroid analysis for 007115671-02. Kepler magnitude: 13.86. Transit SNR 4.38

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 1.38 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.312 ± 2.191	0.60	0.261 ± 1.534	1.286 ± 2.099
PRF-fit source offset from KIC position	1.903 ± 2.014	0.94	1.603 ± 1.939	1.024 ± 2.040
photometric centroid source offset	2.62 ± 1.09	2.39	2.61 ± 1.10	0.25 ± 0.97



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



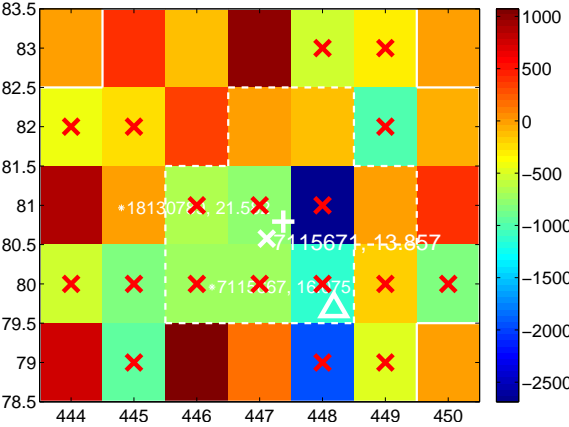
Q2 no difference image



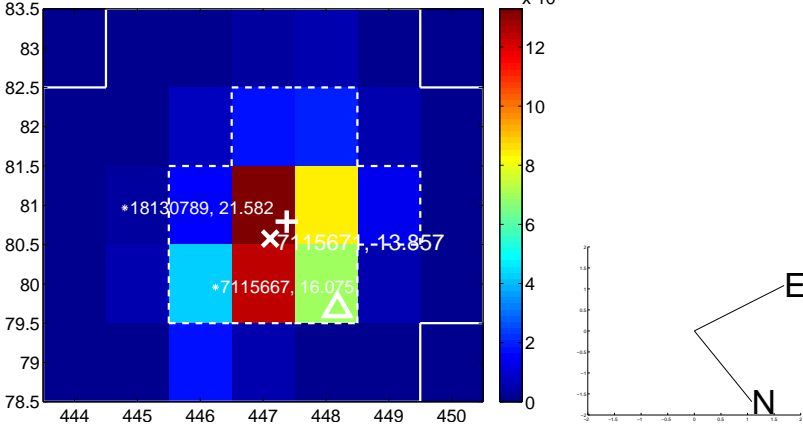
Q2 no OOT image



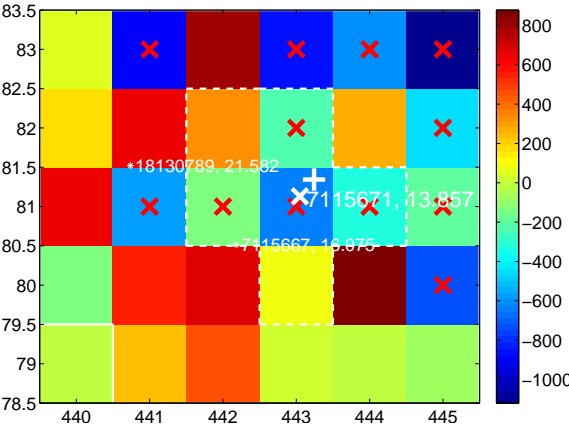
Q3 difference image. Poor Quality



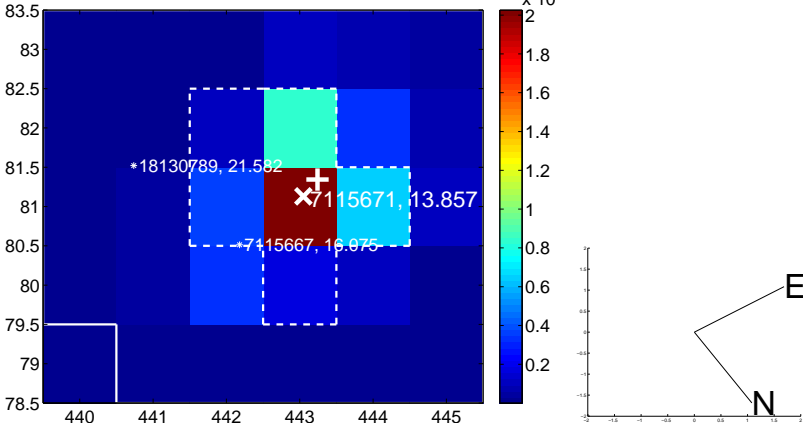
Q3 OOT image



Q4 difference image. Poor Quality



Q4 OOT image



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

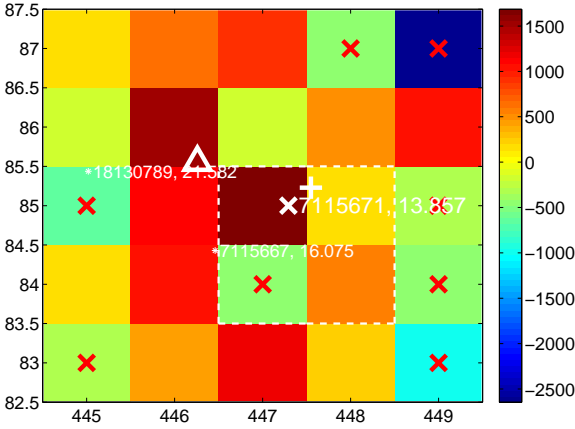
Q5 no difference image



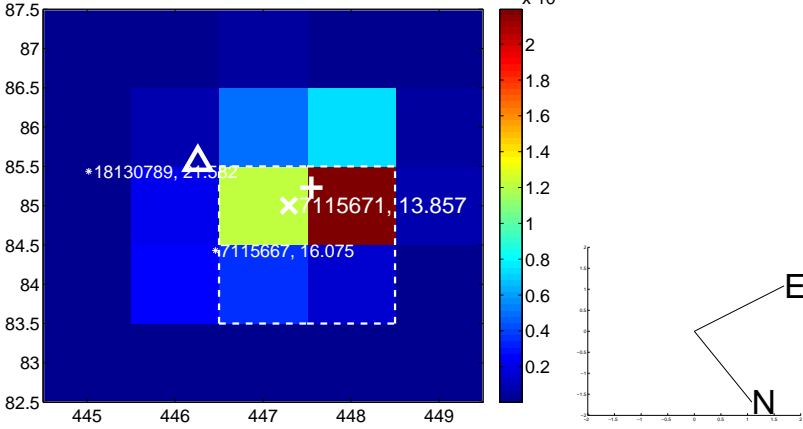
Q5 no OOT image



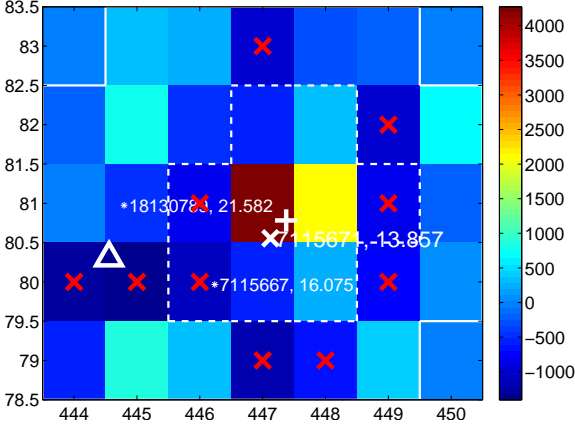
Q6 difference image. Poor Quality



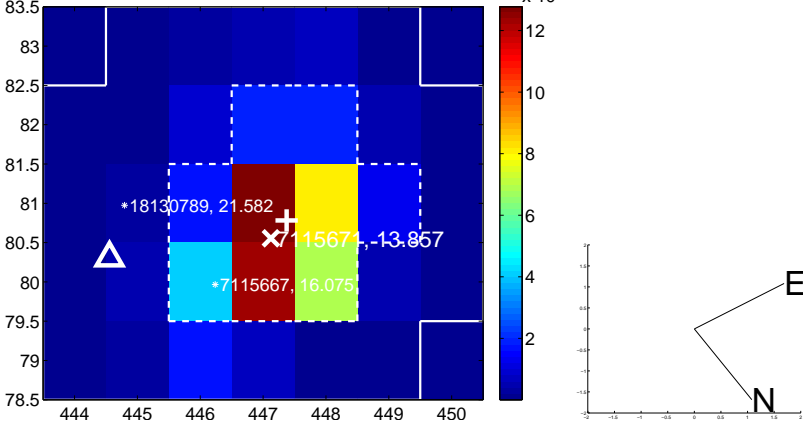
Q6 OOT image



Q7 difference image. Poor Quality



Q7 OOT image



Q8 no difference image

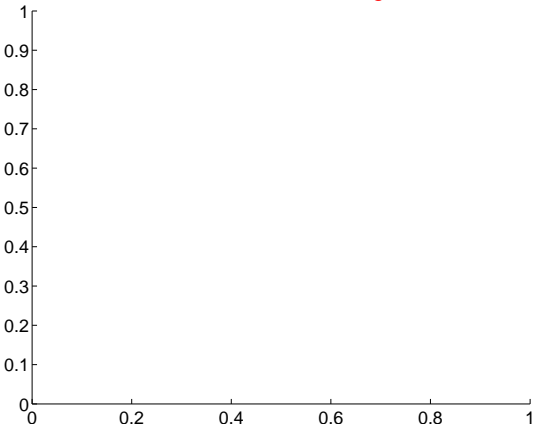


Q8 no OOT image

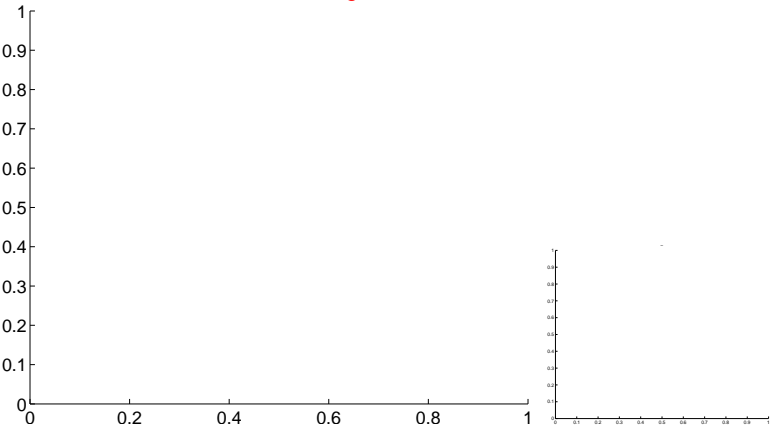


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

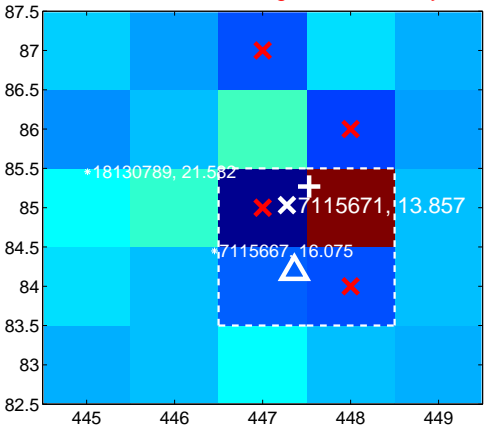
Q9 no difference image



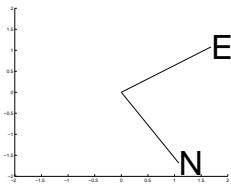
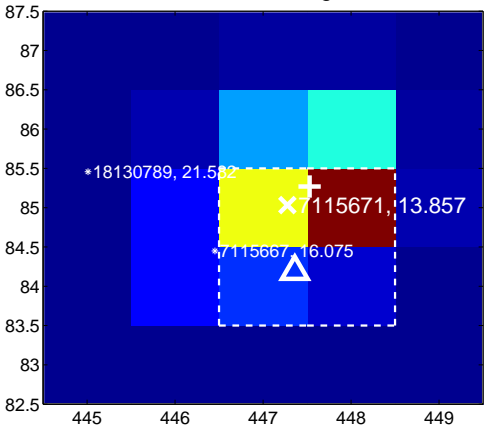
Q9 no OOT image



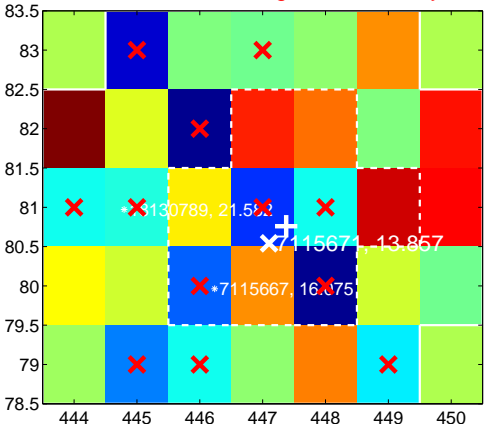
Q10 difference image. Poor Quality



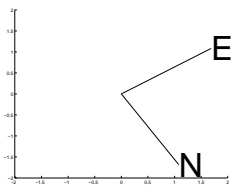
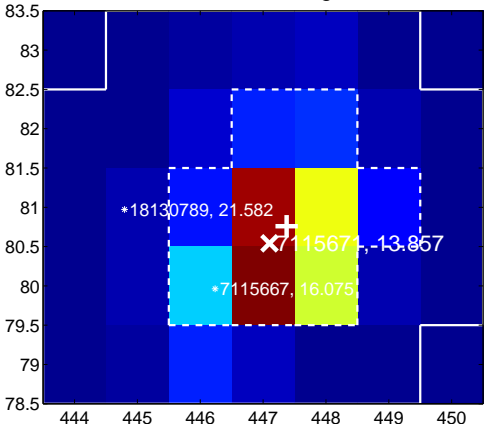
Q10 OOT image



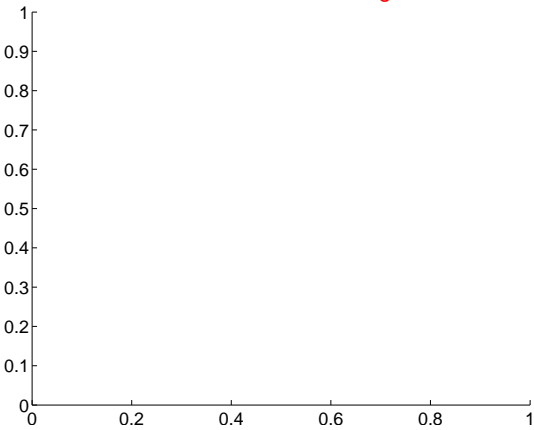
Q11 difference image. Poor Quality



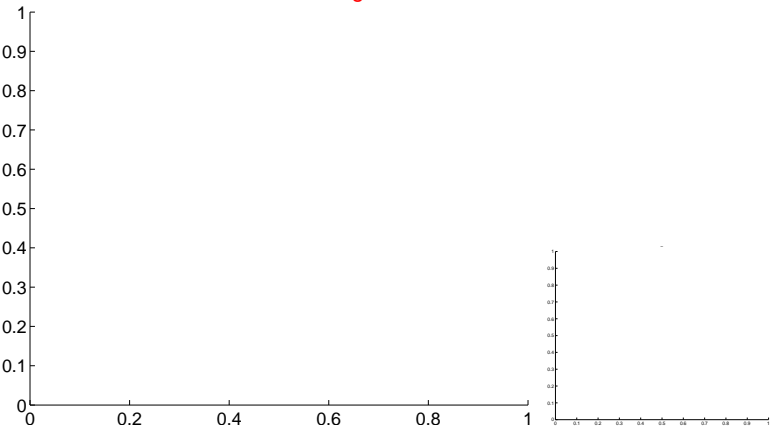
Q11 OOT image



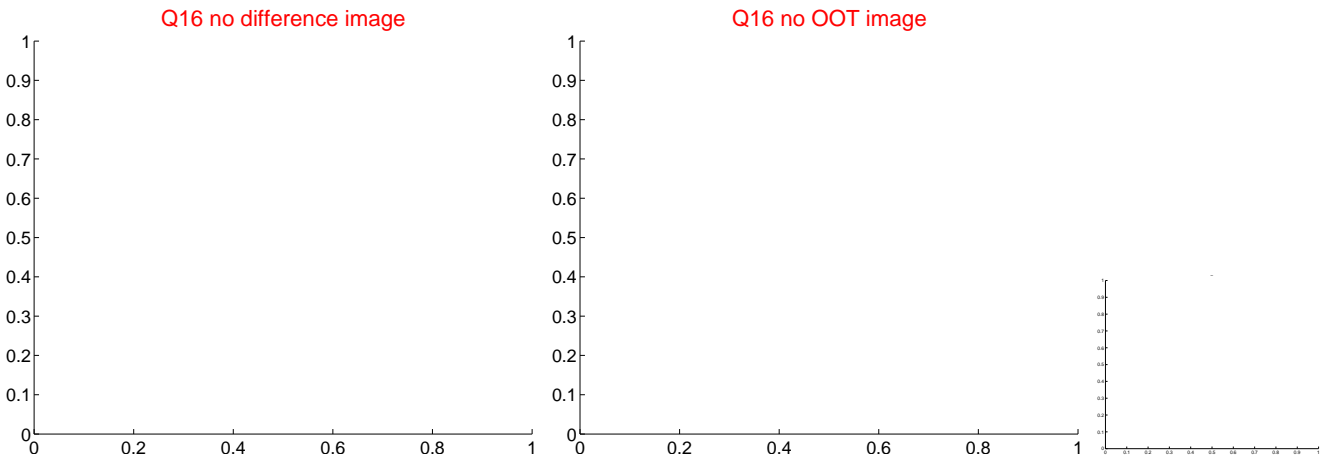
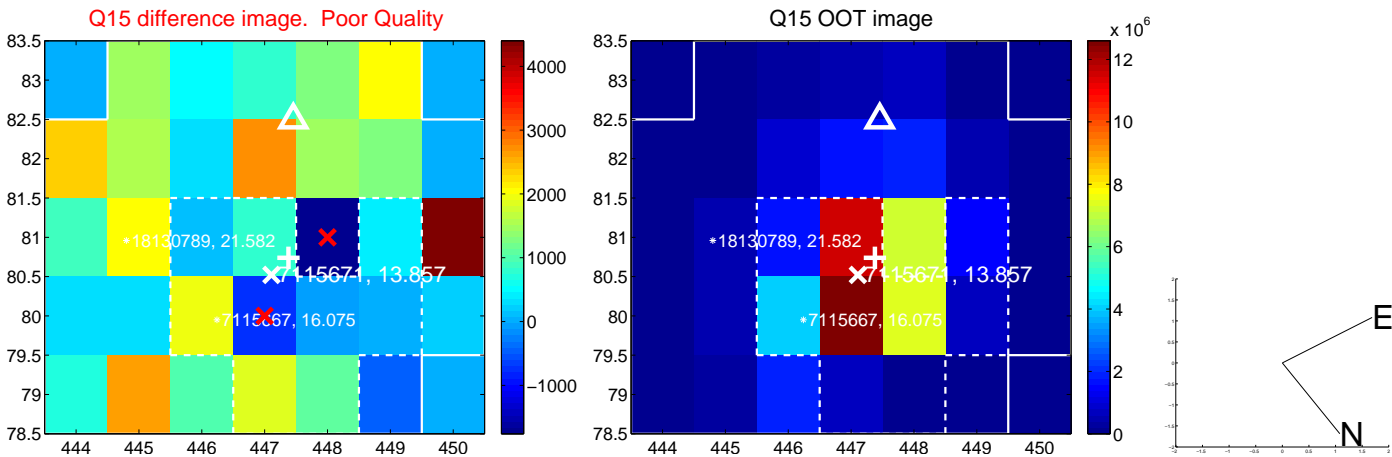
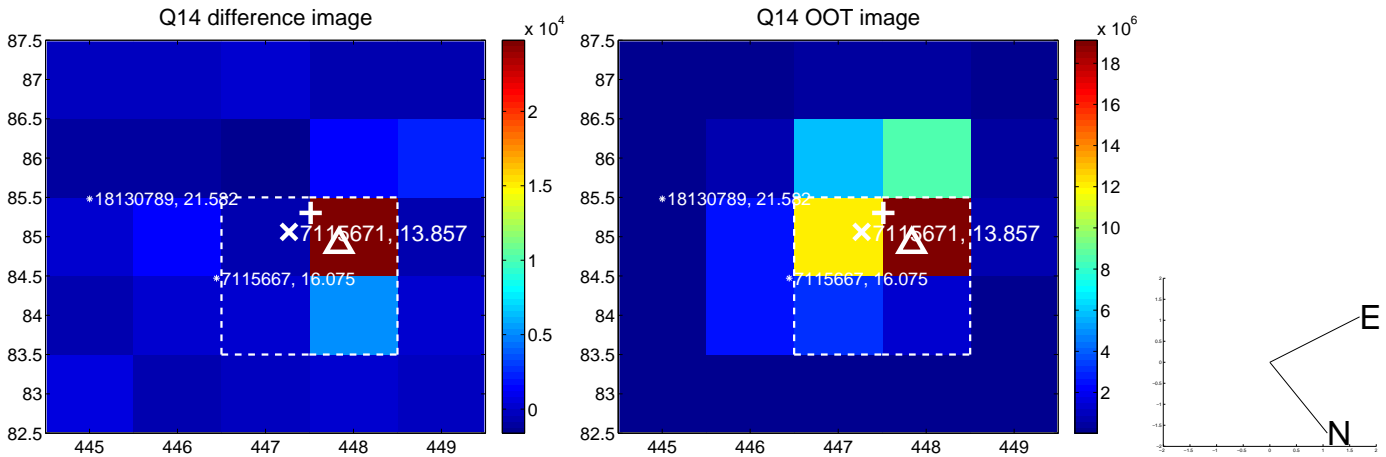
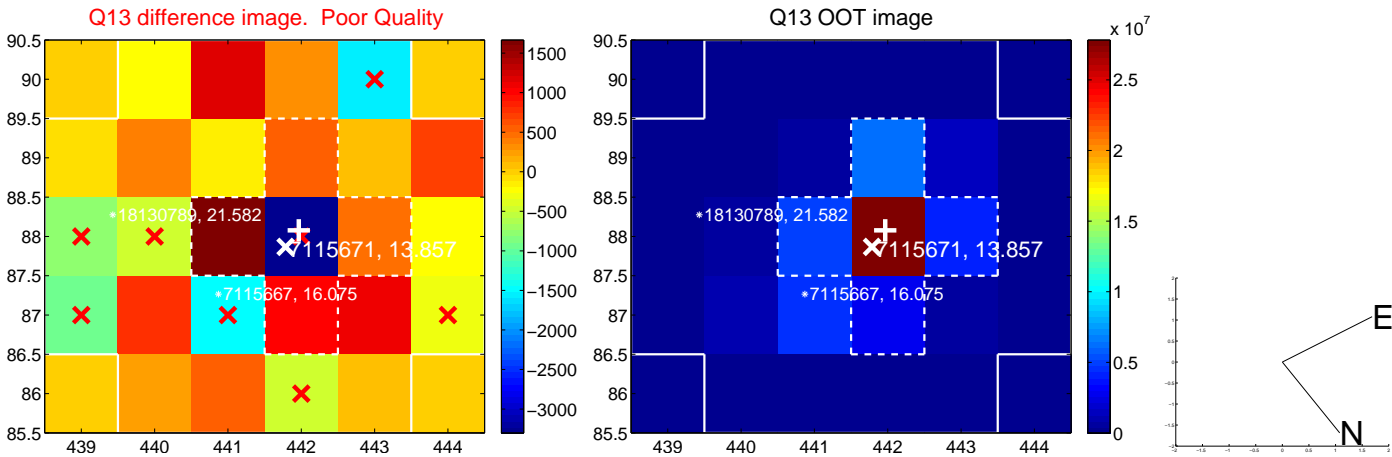
Q12 no difference image



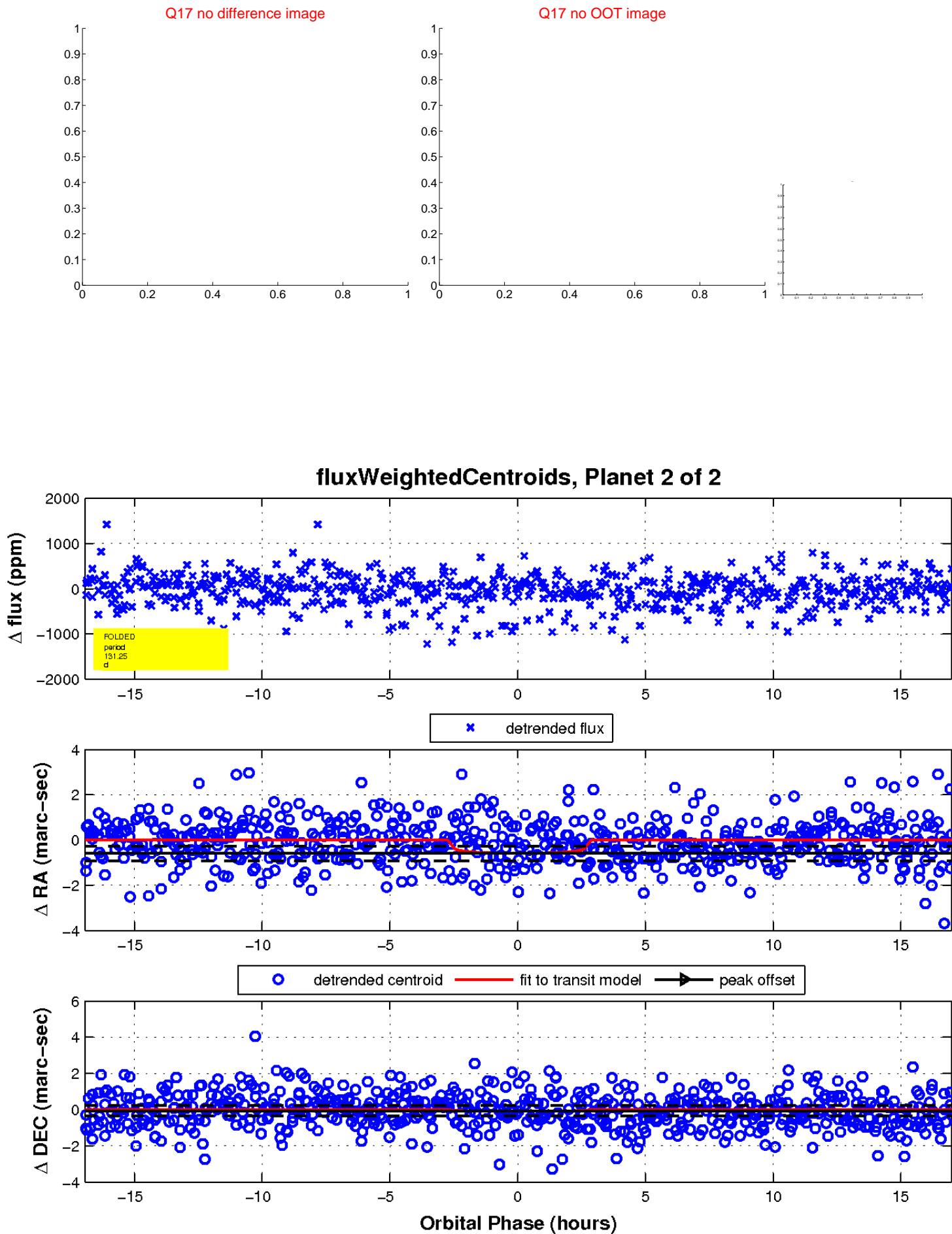
Q12 no OOT image



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.



UKIRT Image

Declination

