

KIC 007187135

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})
007187135-01	OBS	No	0.683355	131.711529	15.1	2.212	8.4	8.9	1.79	7229	0.84	26367.91
007187135-02	OBS	No	308.273655	183.149632	291.9	6.307	8.0	8.6	1.79	7229	3.32	7.62

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007187135-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
007187135-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_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.

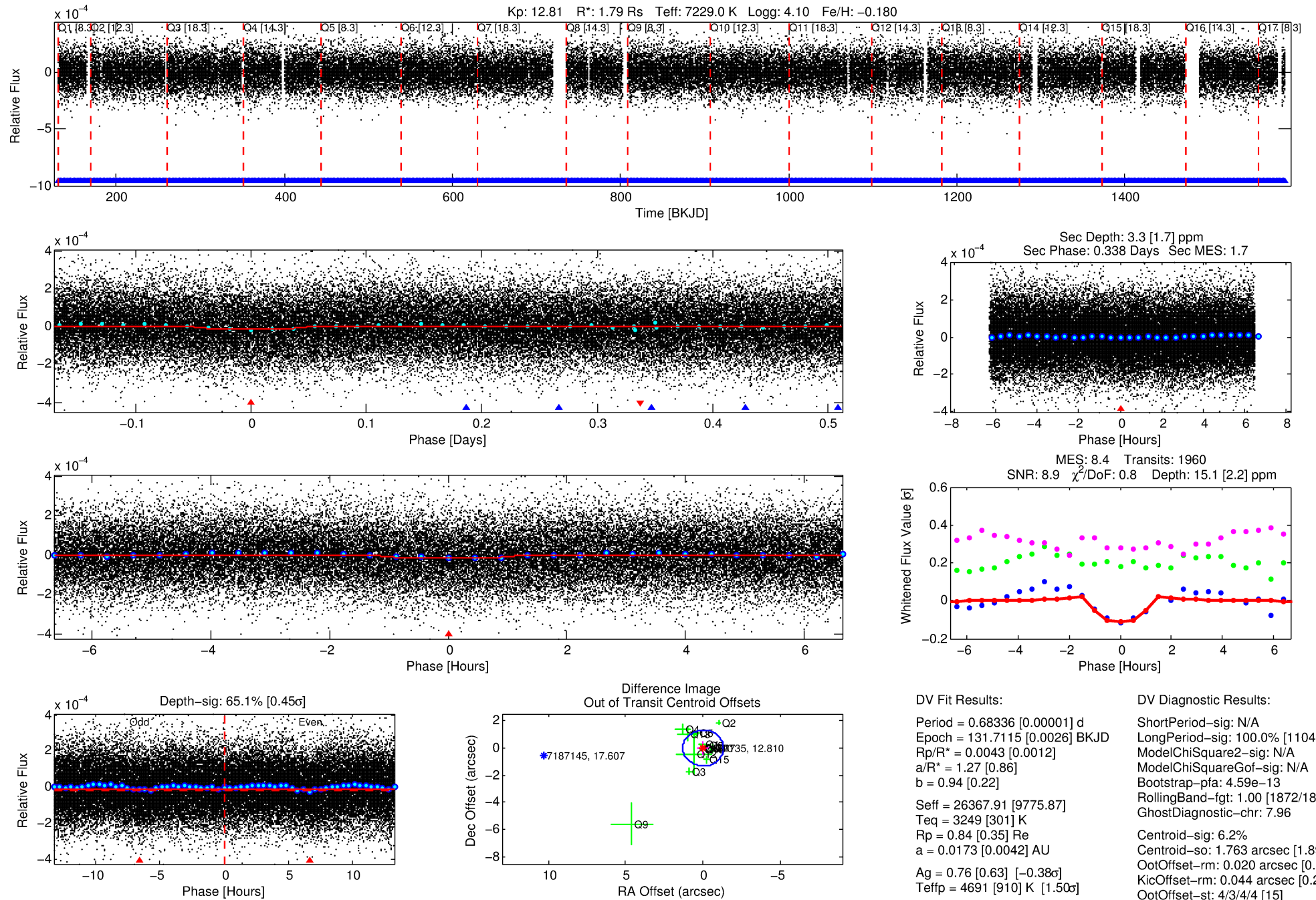
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007187135-01

No Significant Match Found

DV One-Page Summary

KIC: 7187135 Candidate: 1 of 2 Period: 0.683 d



DV Fit Results:

Period = 0.68336 [0.00001] d
Epoch = 131.7115 [0.0026] BKJD
Rp/R* = 0.0043 [0.0012]
a/R* = 1.27 [0.86]
b = 0.94 [0.22]
Seff = 26367.91 [9775.87]
Teq = 3249 [301] K
Rp = 0.84 [0.35] Re
a = 0.0173 [0.0042] AU
Ag = 0.76 [0.63] [-0.38 σ]
Teffp = 4691 [910] K [1.50 σ]

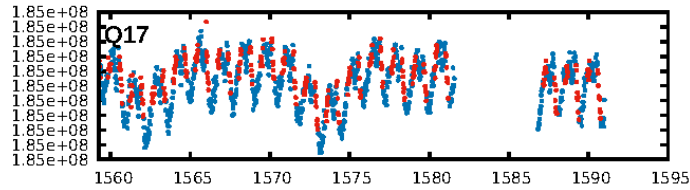
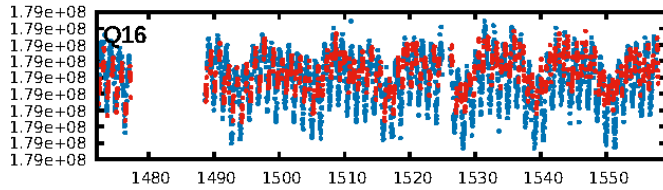
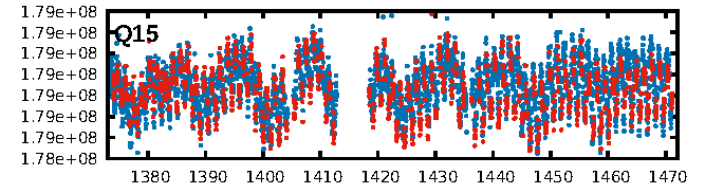
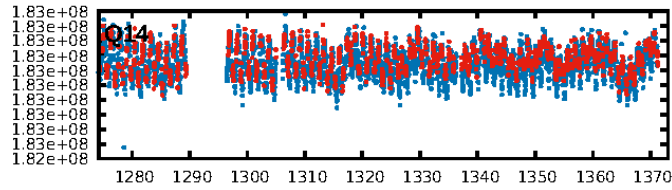
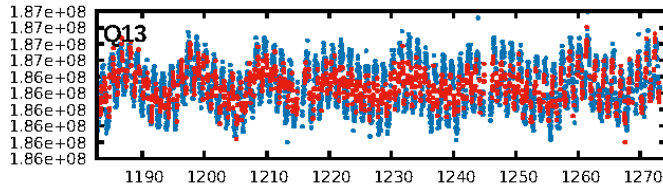
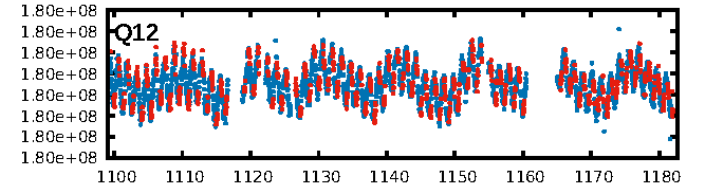
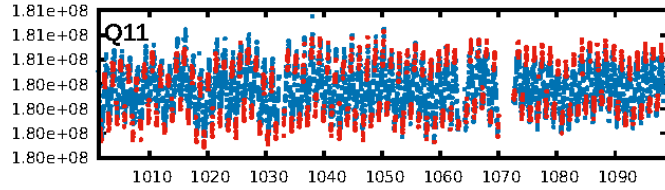
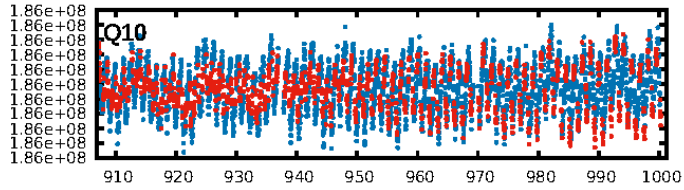
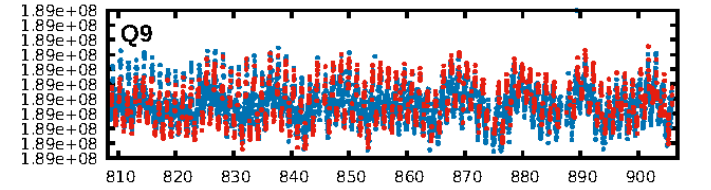
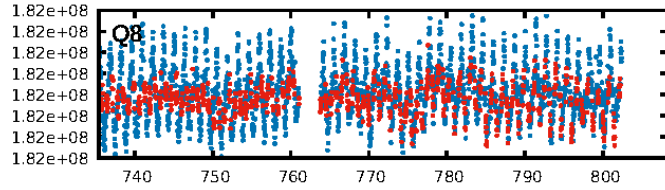
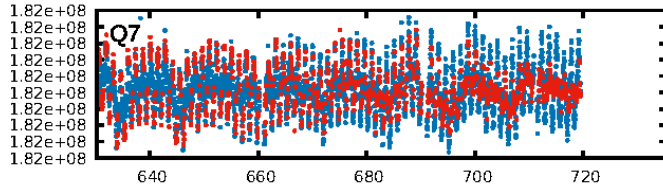
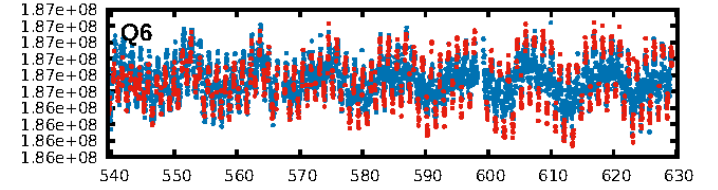
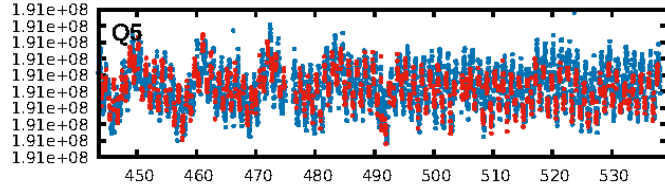
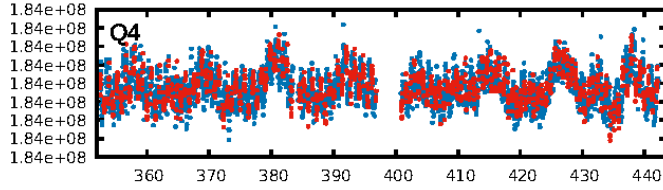
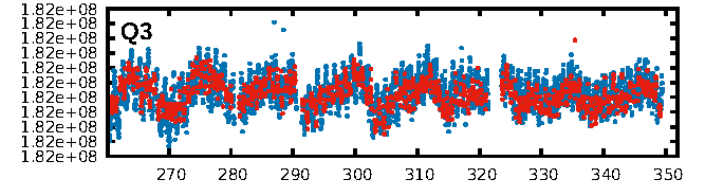
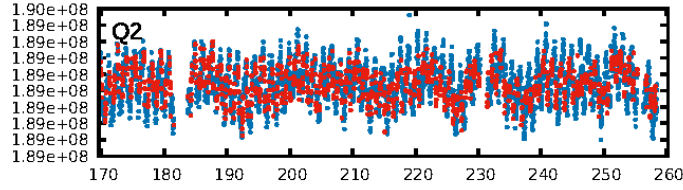
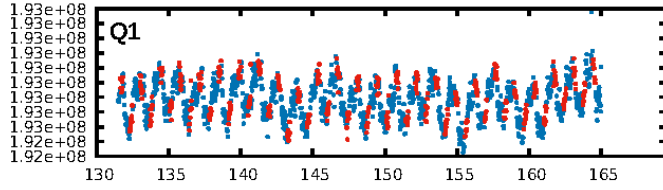
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [1104.45 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.59e-13
RollingBand-fgt: 1.00 [1872/1872]
GhostDiagnostic-chr: 7.96
Centroid-sig: 6.2%
Centroid-so: 1.763 arcsec [1.89 σ]
OotOffset-rm: 0.020 arcsec [0.05 σ]
OotOffset-st: 4/3/4/4 [15]
KicOffset-rm: 0.044 arcsec [0.20 σ]
KicOffset-st: 4/3/4/4 [15]
DiffImageQuality-fgm: 0.73 [11/15]
DiffImageOverlap-fno: 1.00 [17/17]

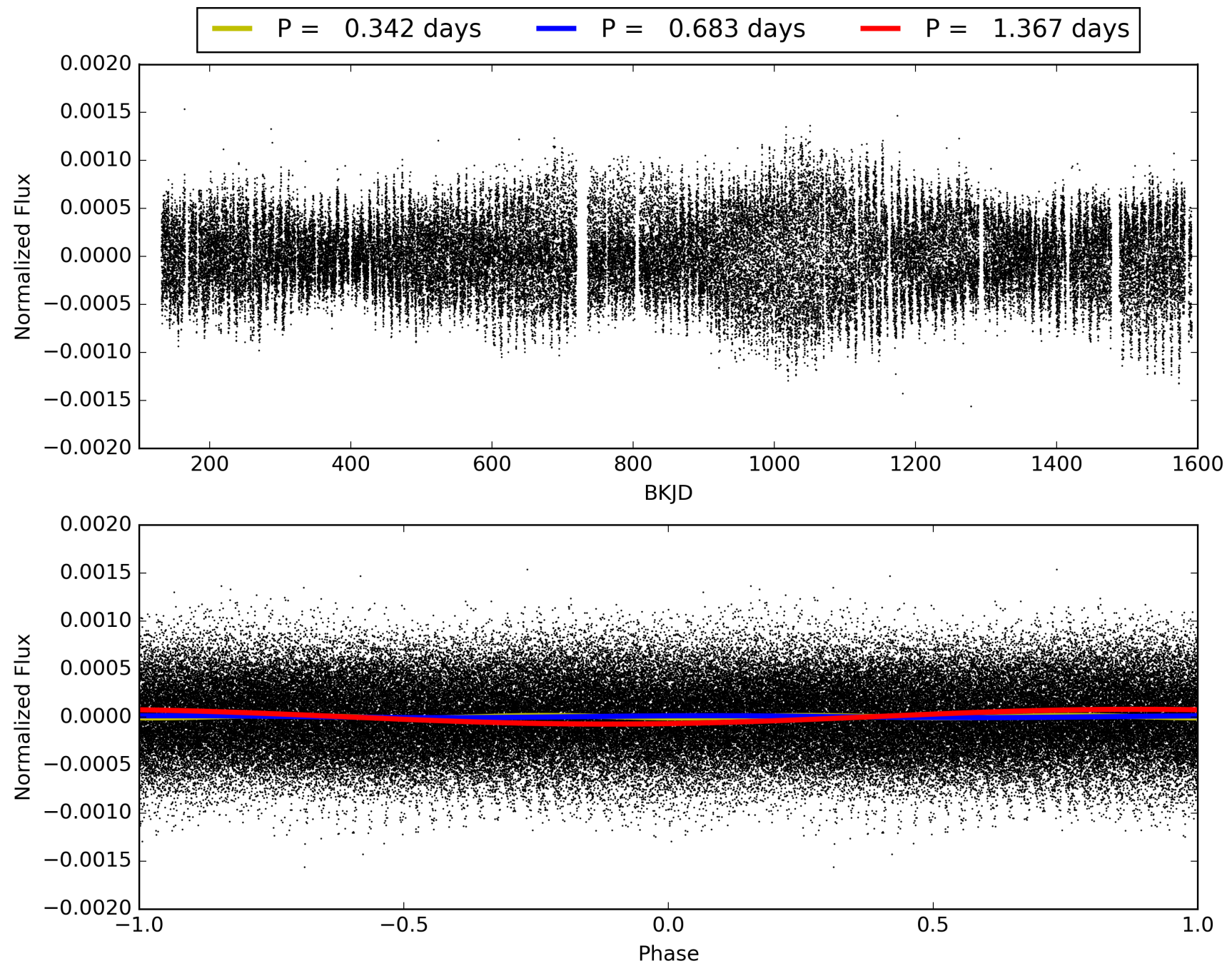
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 007187135-01, PDC Light Curves

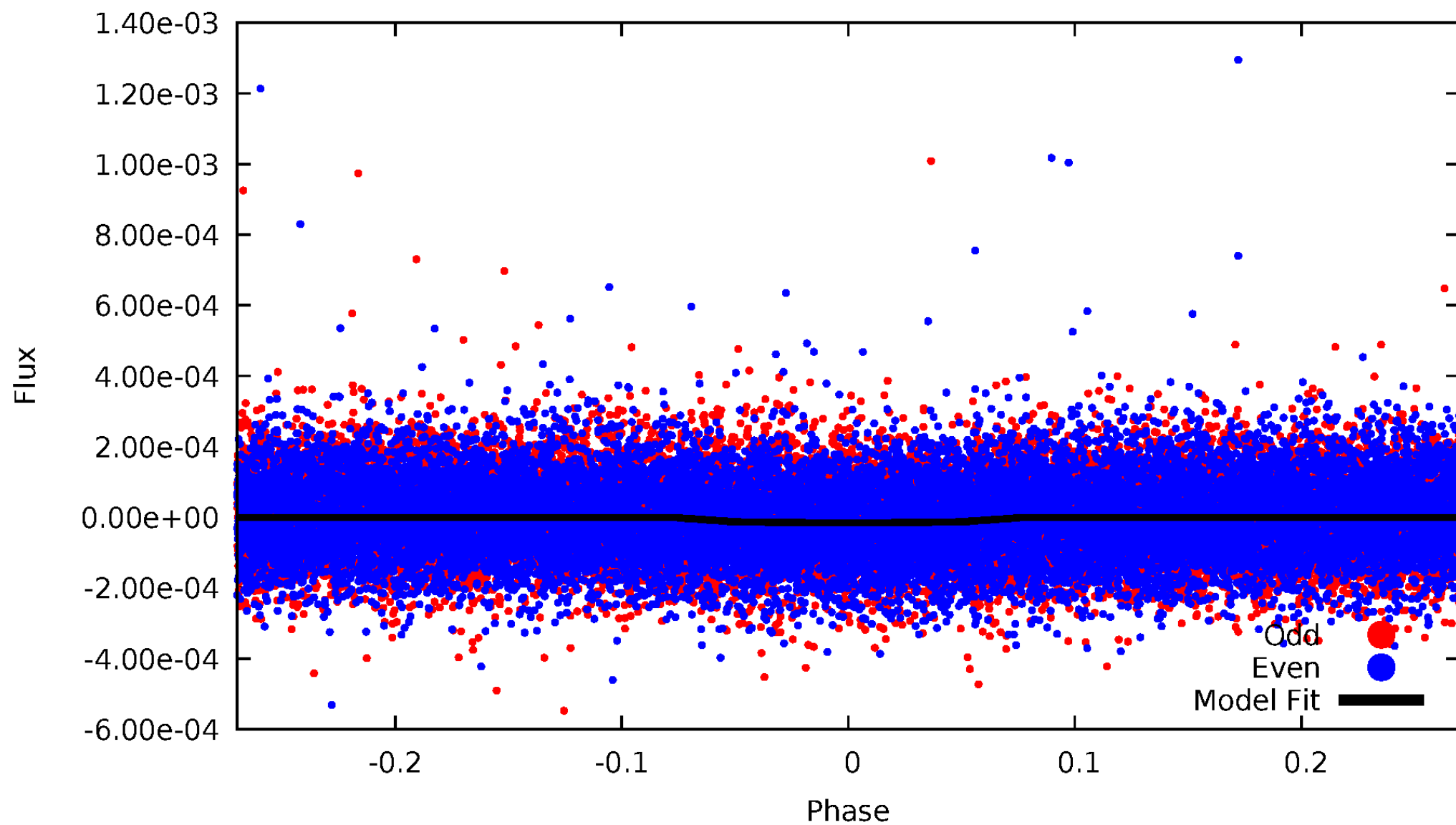


TCE 007187135-01



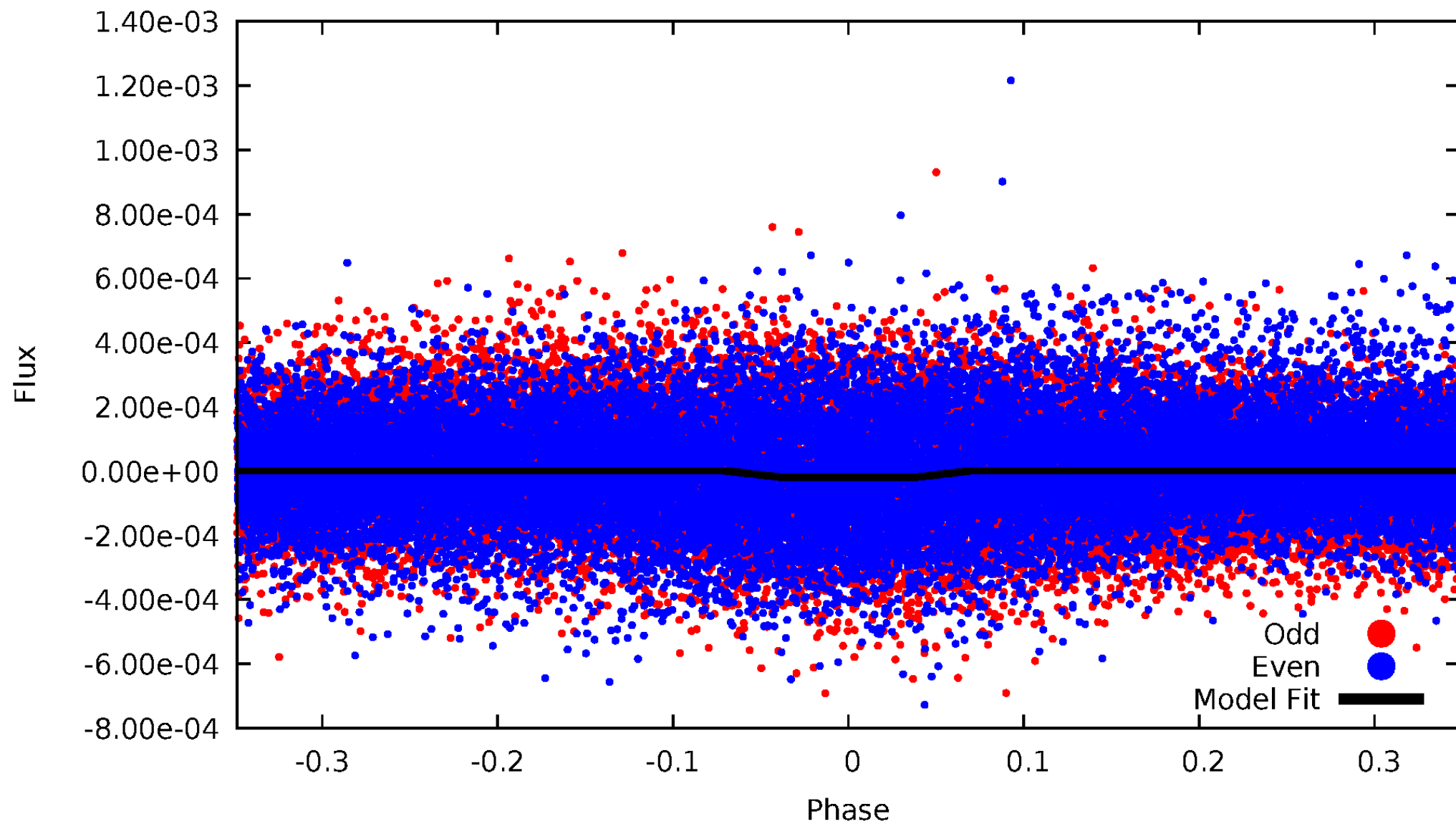
DV Odd/Even

TCE 007187135-01

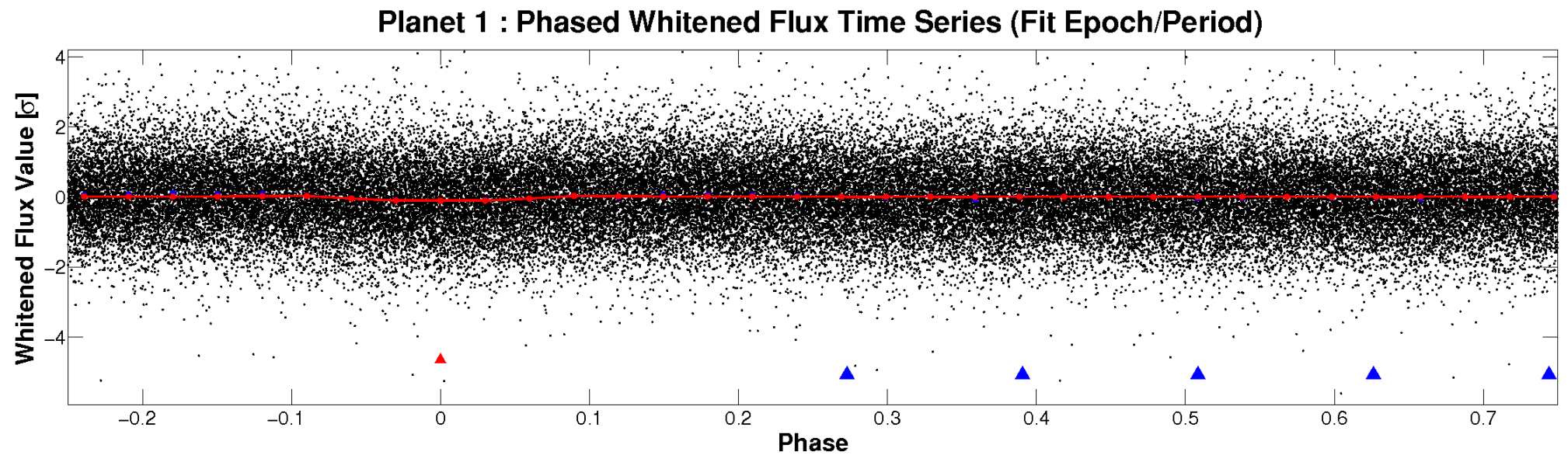
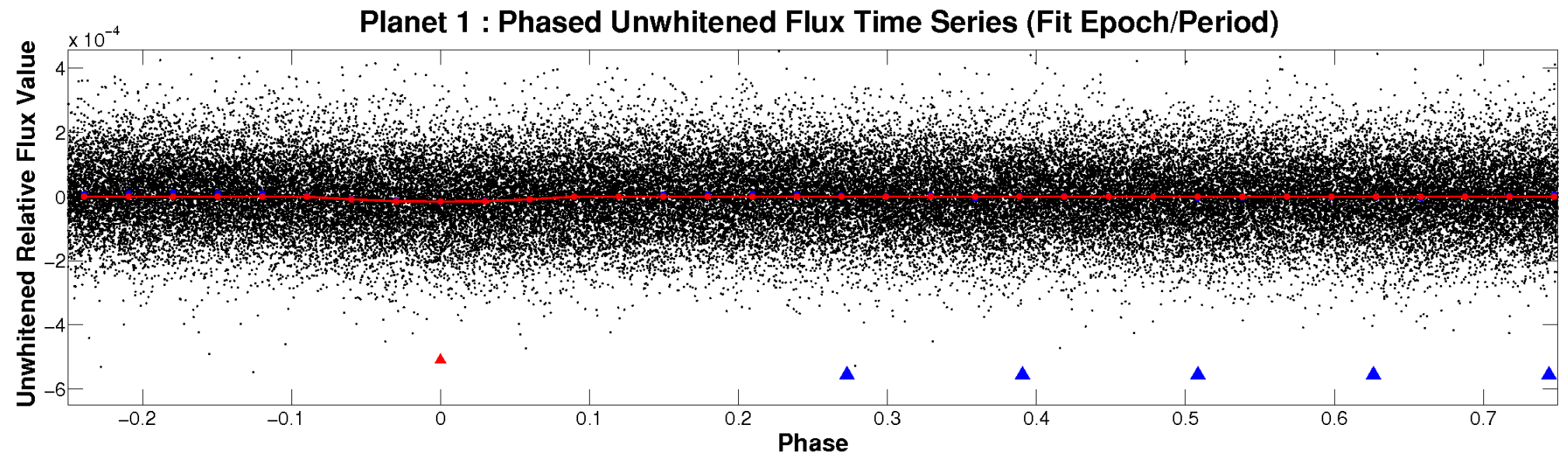


ALT Odd/Even

TCE 007187135-01

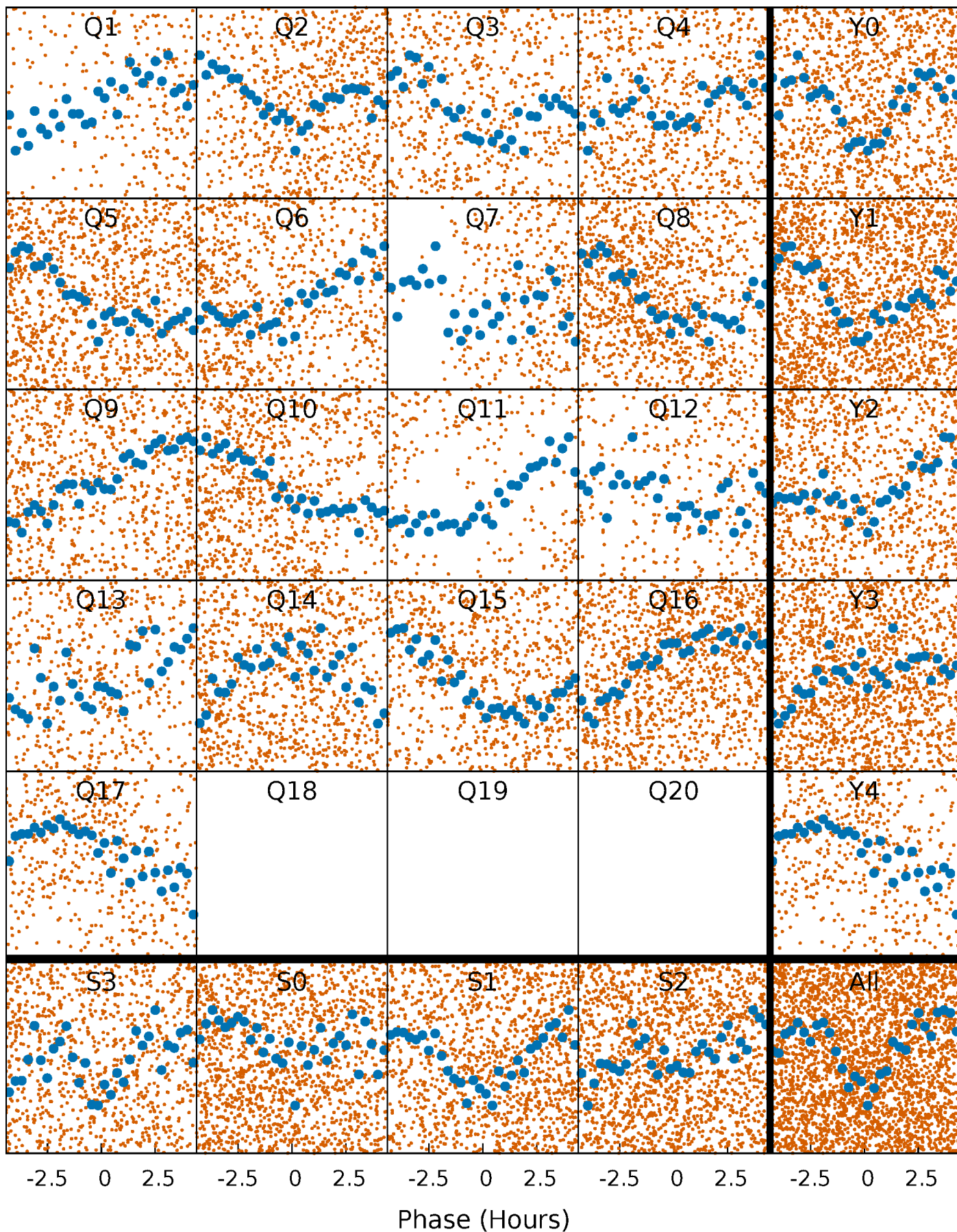


Non-Whitened Vs. Whitened Light Curve



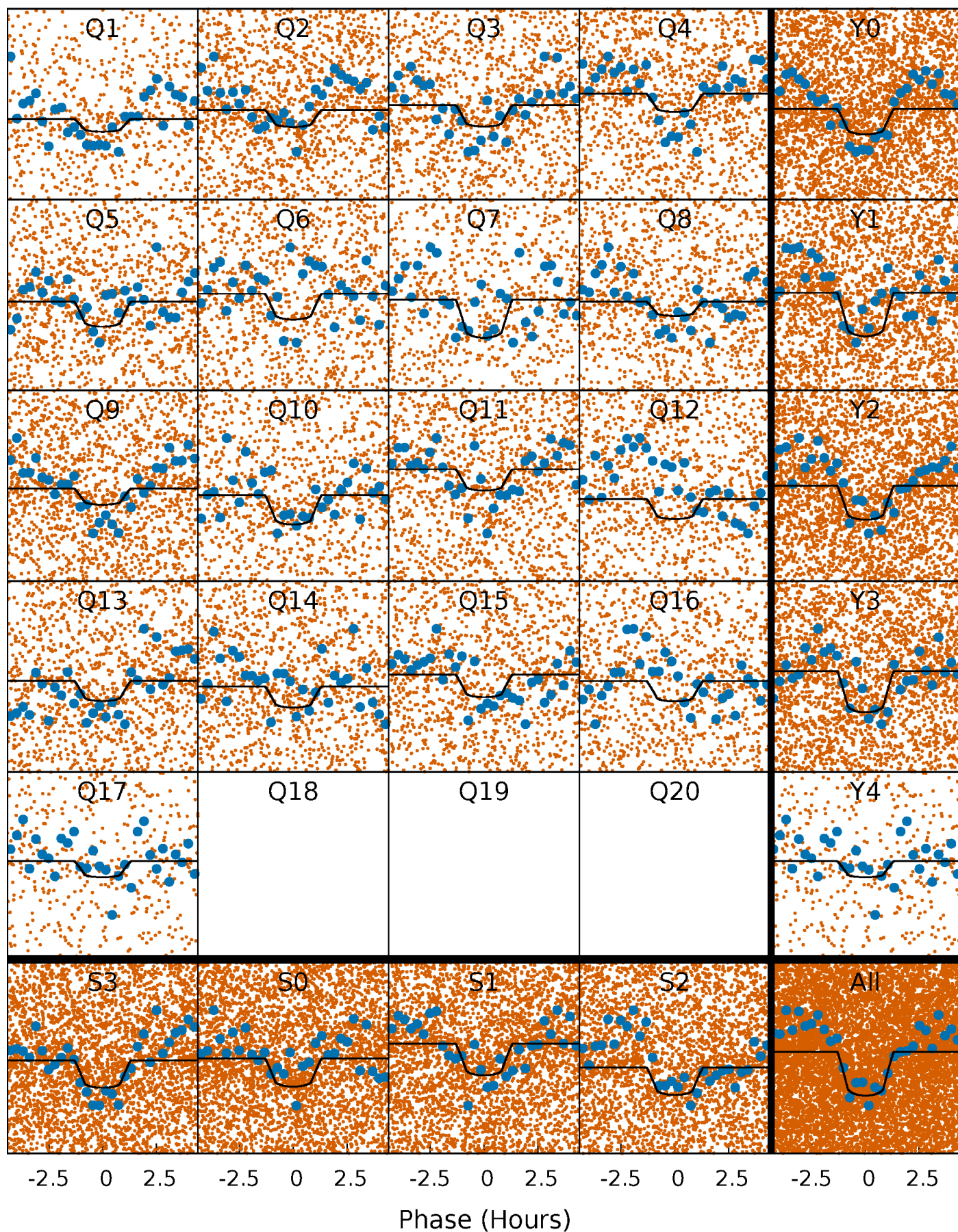
PDC Quarter-Phased Transit Curves

TCE 007187135-01 P= 0.683355 Days $T_0=131.711529$ (BKJD)



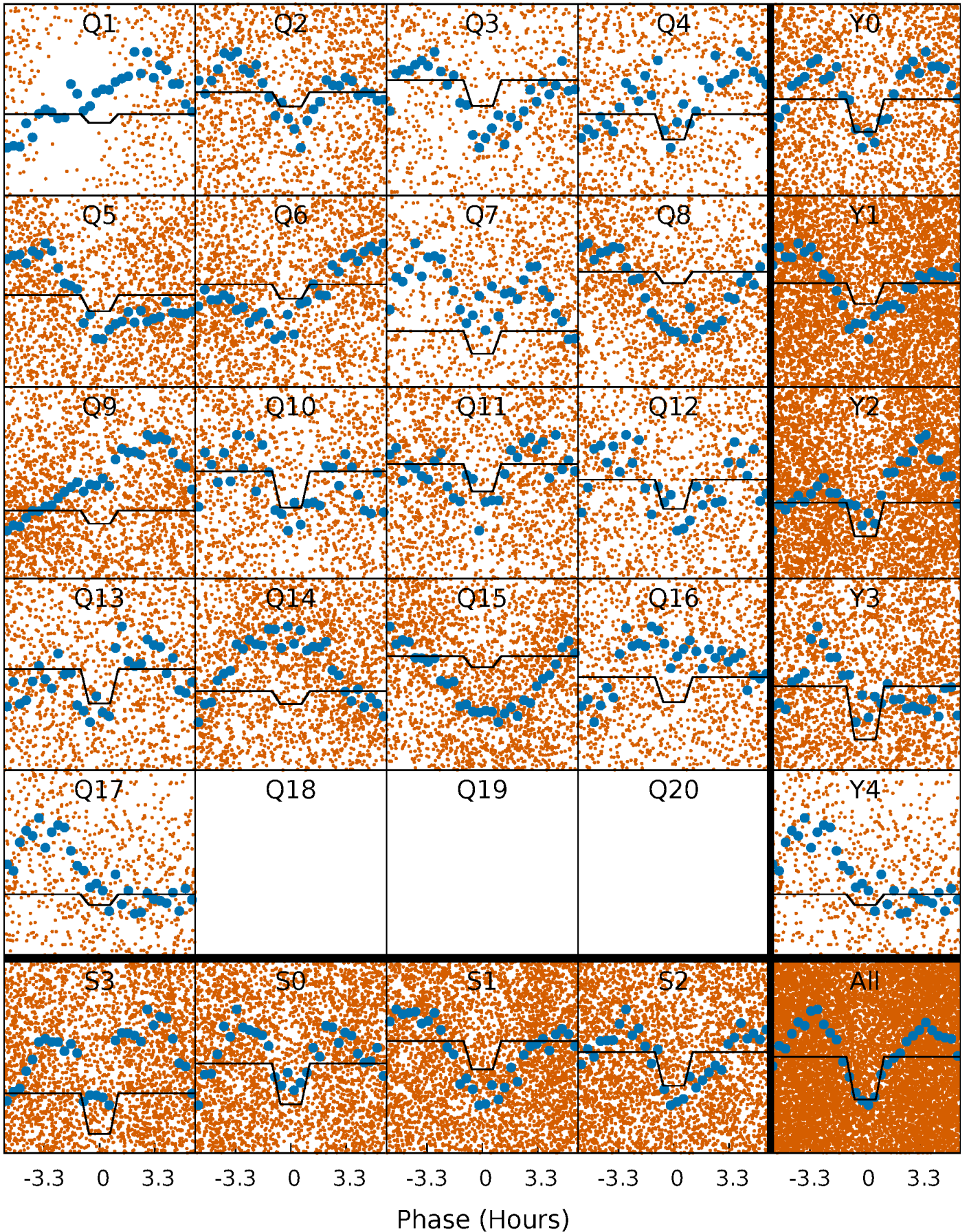
DV Quarter-Phased Transit Curves

TCE 007187135-01 P= 0.683355 Days $T_0=131.711529$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

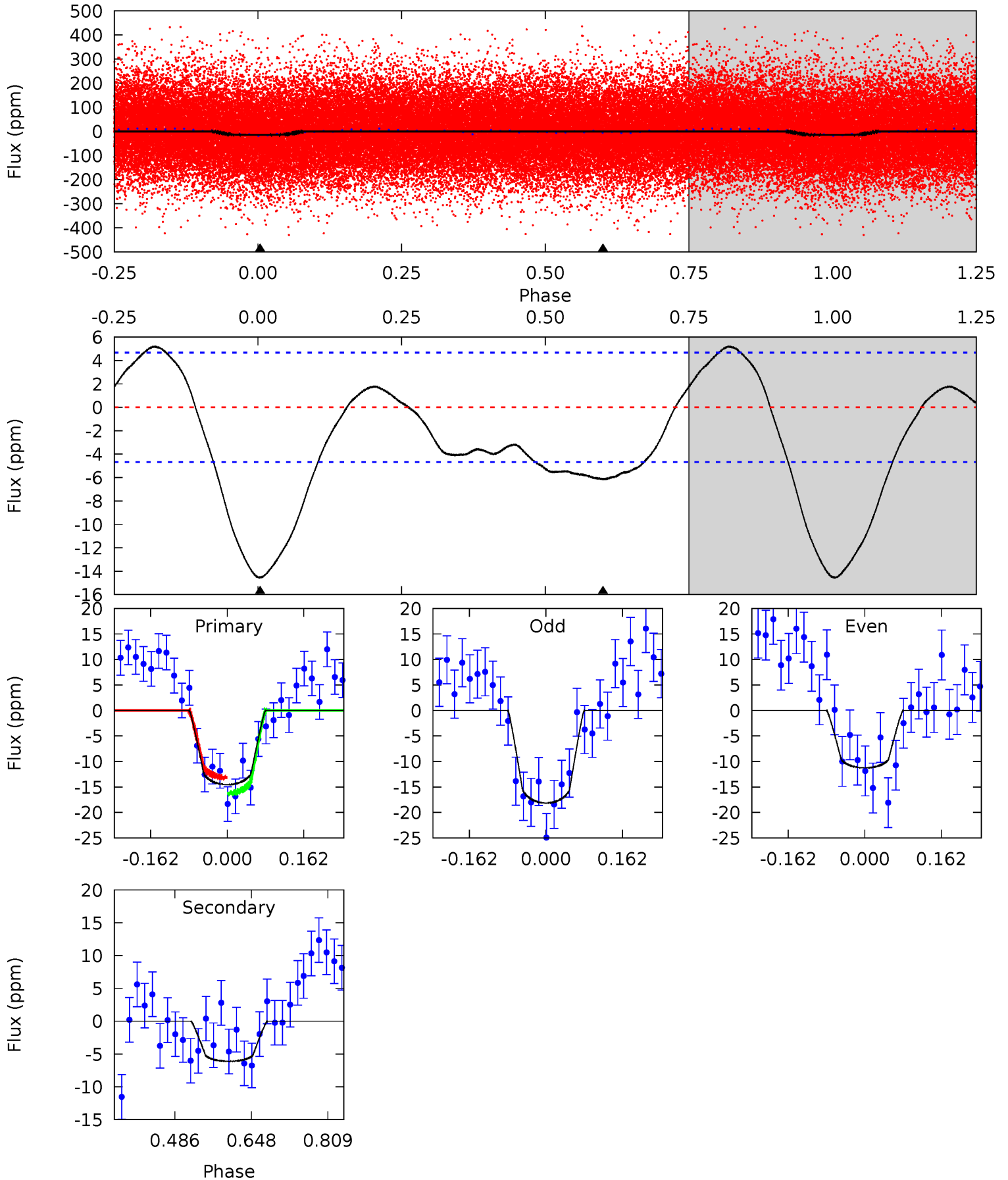
TCE 007187135-01 P= 0.683380 Days $T_0=131.694760$ (BKJD)



DV Model-Shift Uniqueness Test

007187135-01, P = 0.683355 Days, E = 131.028174 Days

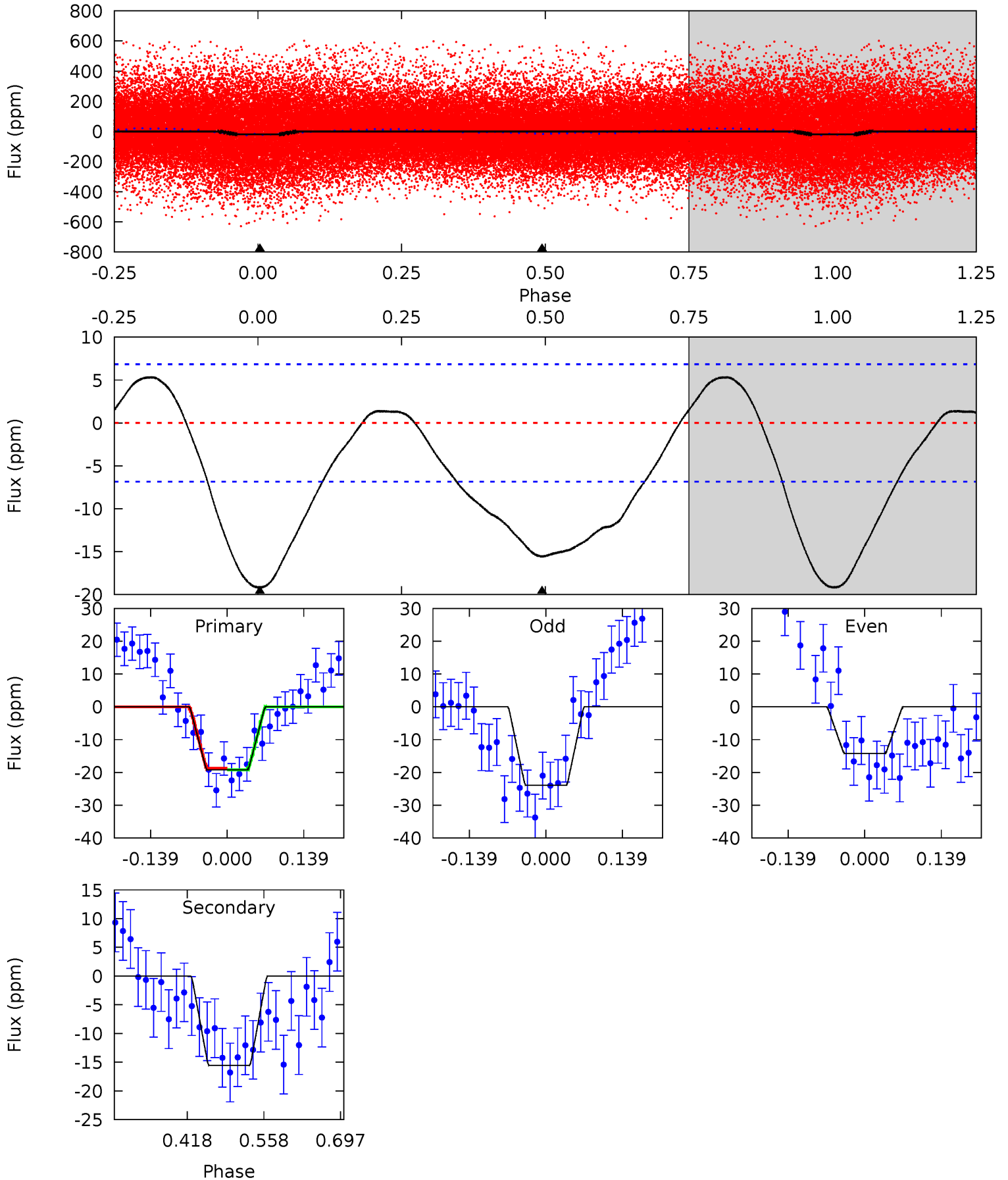
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.9	5.85	0	0	4.46	1.40	3.07	13.9	13.9	5.85	5.85	3.29	0.86	0.26	1.47



Alt Model-Shift Uniqueness Test

007187135-01, P = 0.683380 Days, E = 131.011380 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.6	10.2	0	0	4.49	1.48	2.75	12.6	12.6	10.2	10.2	3.13	0.83	0.22	0.15



Stellar Parameters For KIC 007187135

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7229^{+203}_{-279}	$4.098^{+0.175}_{-0.175}$	$-0.180^{+0.250}_{-0.350}$	$1.791^{+0.547}_{-0.448}$	$1.468^{+0.211}_{-0.257}$	$0.360^{+0.350}_{-0.177}$
	+3%/-4%	+4%/-4%	+139%/-194%	+31%/-25%	+14%/-18%	+97%/-49%
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 007187135-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-6 ± 1	$0.82^{+0.27}_{-0.25}$	4535^{+353}_{-350}	5214^{+1075}_{-751}	$1.470^{+1.506}_{-0.644}$
Alt.	-16 ± 2	$0.85^{+0.28}_{-0.24}$	4545^{+347}_{-333}	6629^{+1466}_{-859}	$3.572^{+3.183}_{-1.607}$

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 $A_{obs} \gg 1.0$

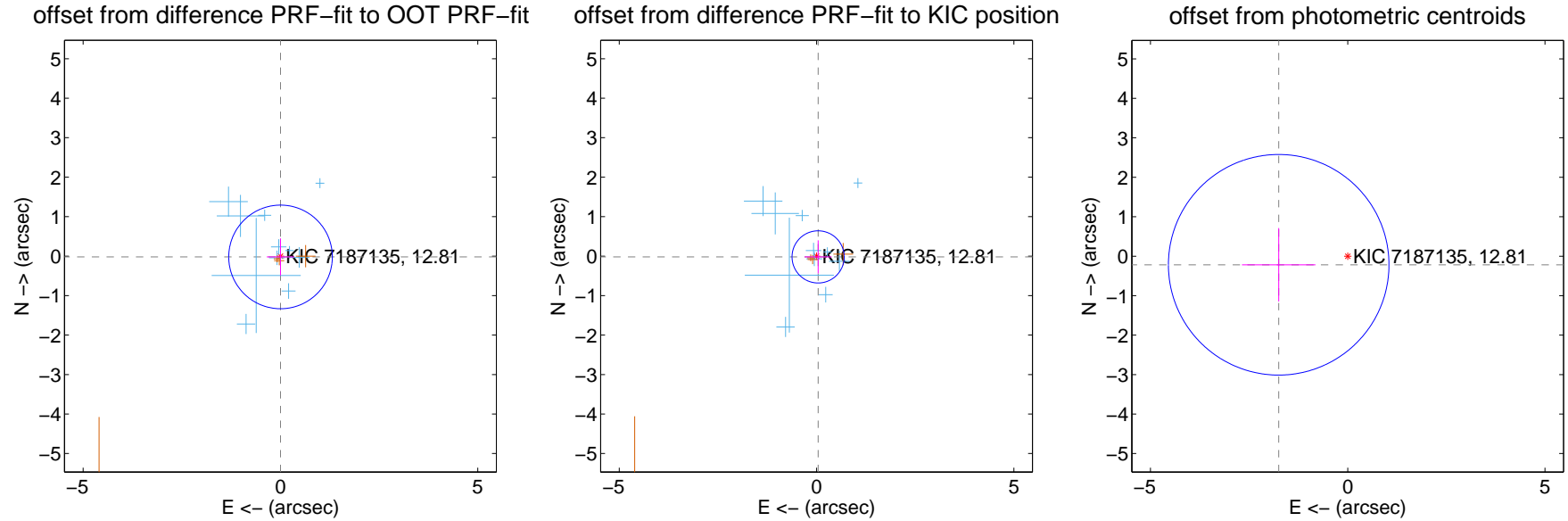
DV Centroid Data

Supplemental centroid analysis for 007187135-01. Kepler magnitude: 12.81. Transit SNR 8.94

There are 11 quarters with good PRF difference image offsets

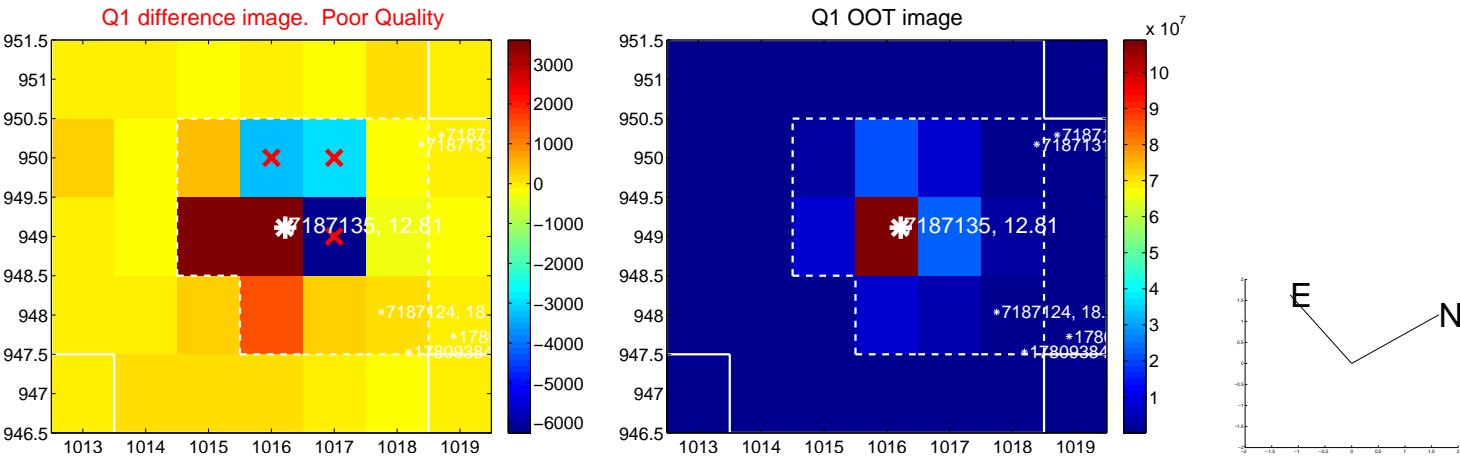
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.020 ± 0.437	0.05	-0.002 ± 0.347	-0.020 ± 0.468
PRF-fit source offset from KIC position	0.044 ± 0.220	0.20	-0.039 ± 0.342	-0.020 ± 0.420
photometric centroid source offset	1.76 ± 0.93	1.89	1.75 ± 0.93	-0.22 ± 0.93

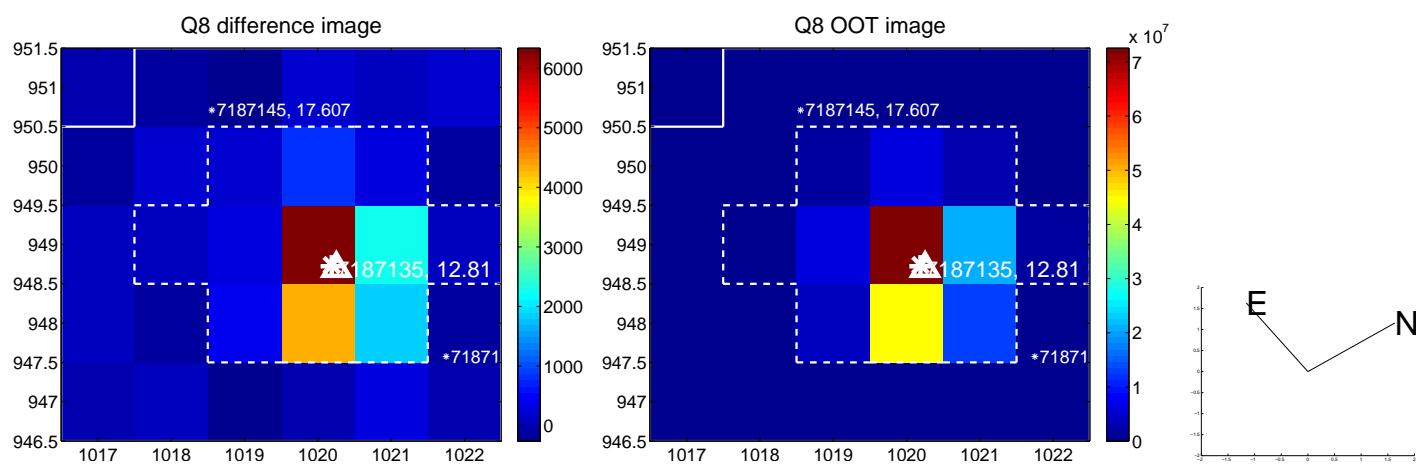
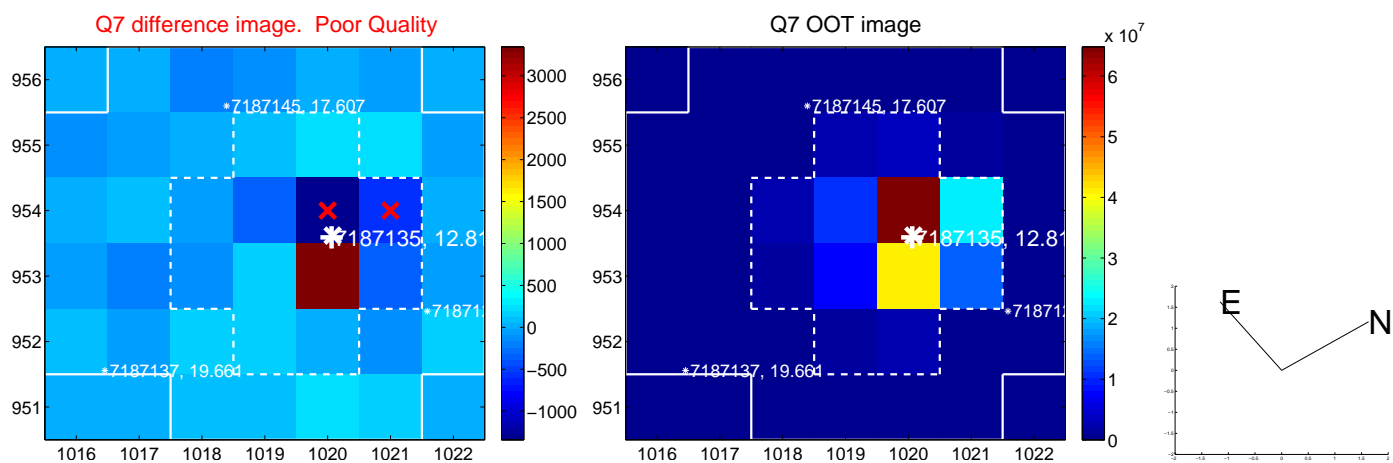
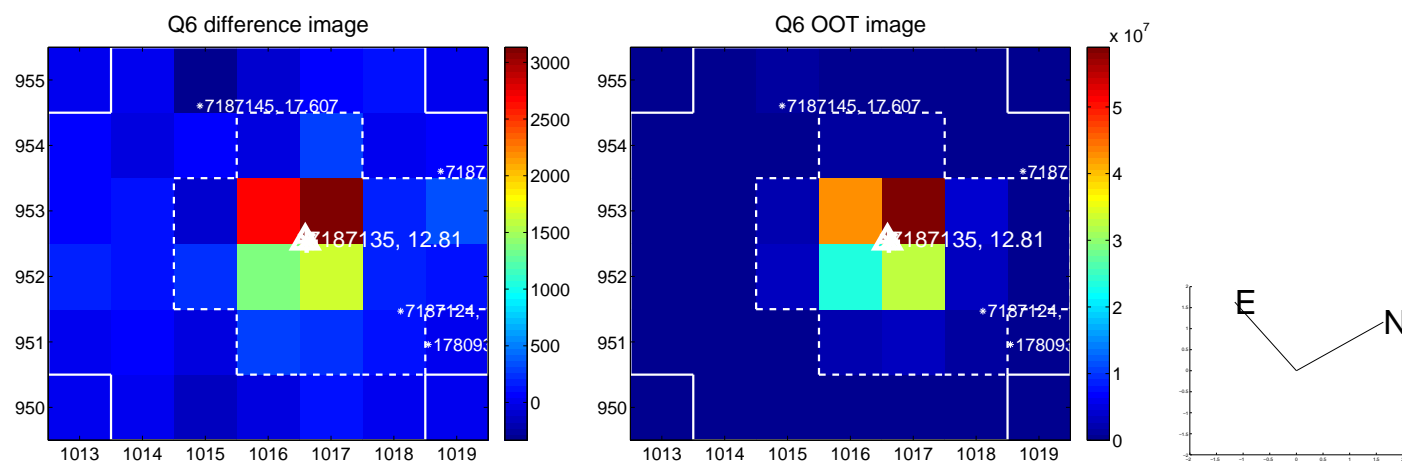
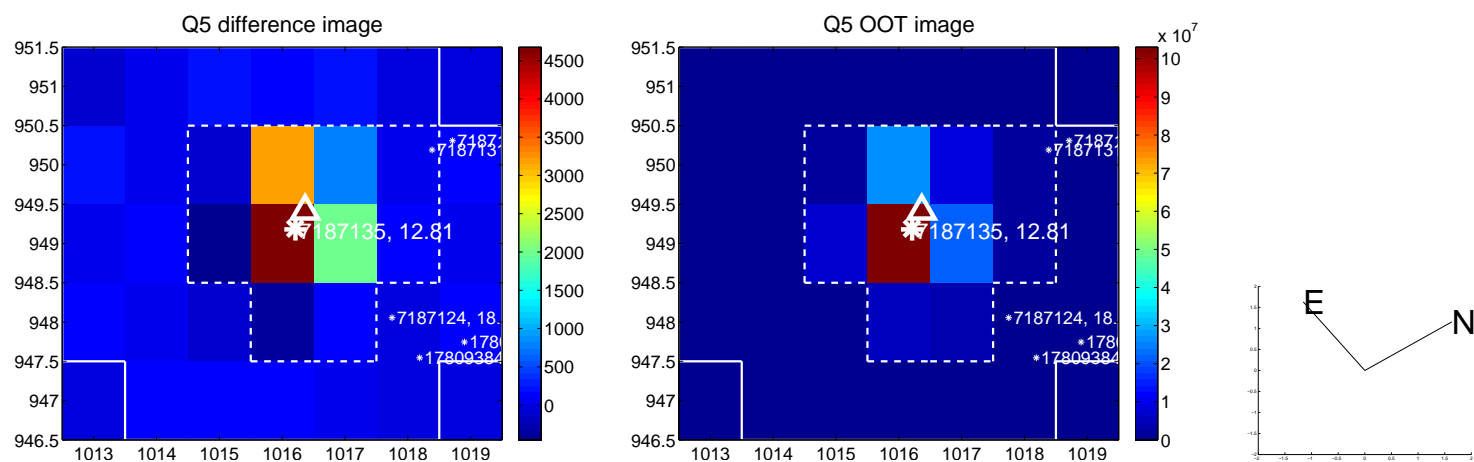


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

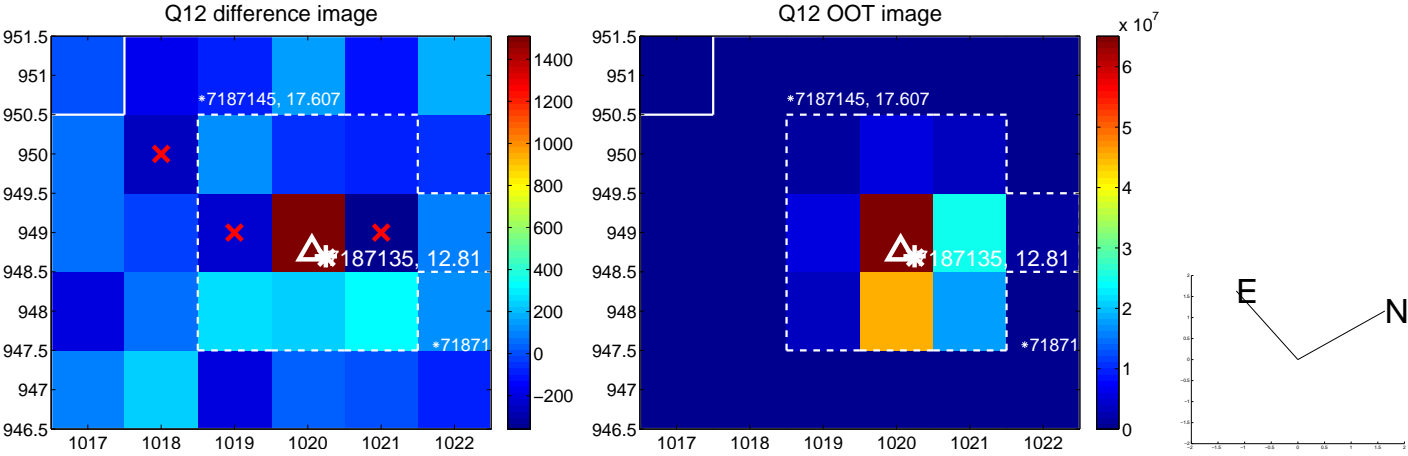
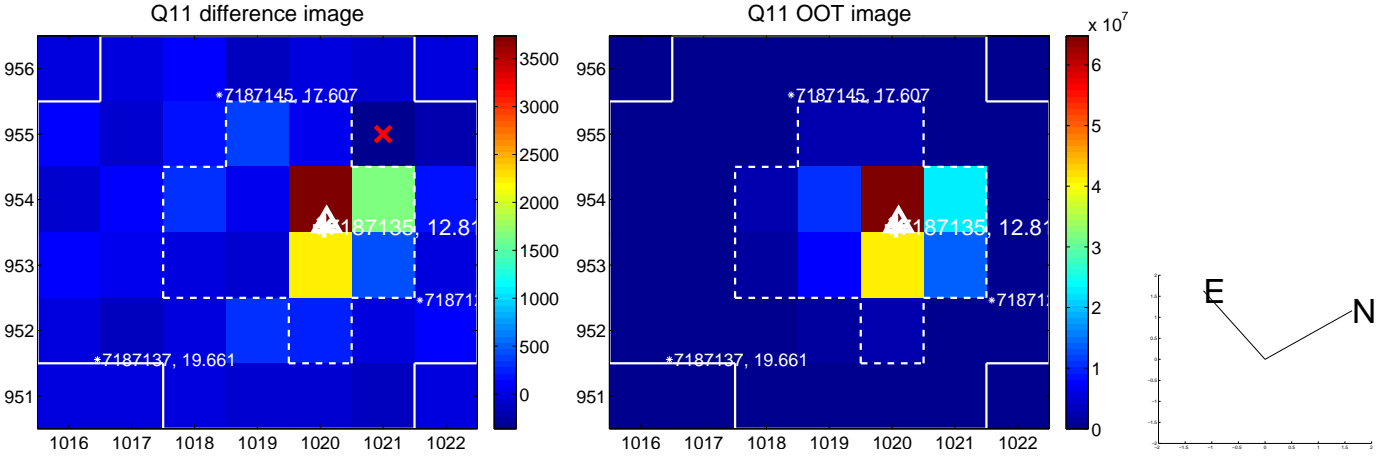
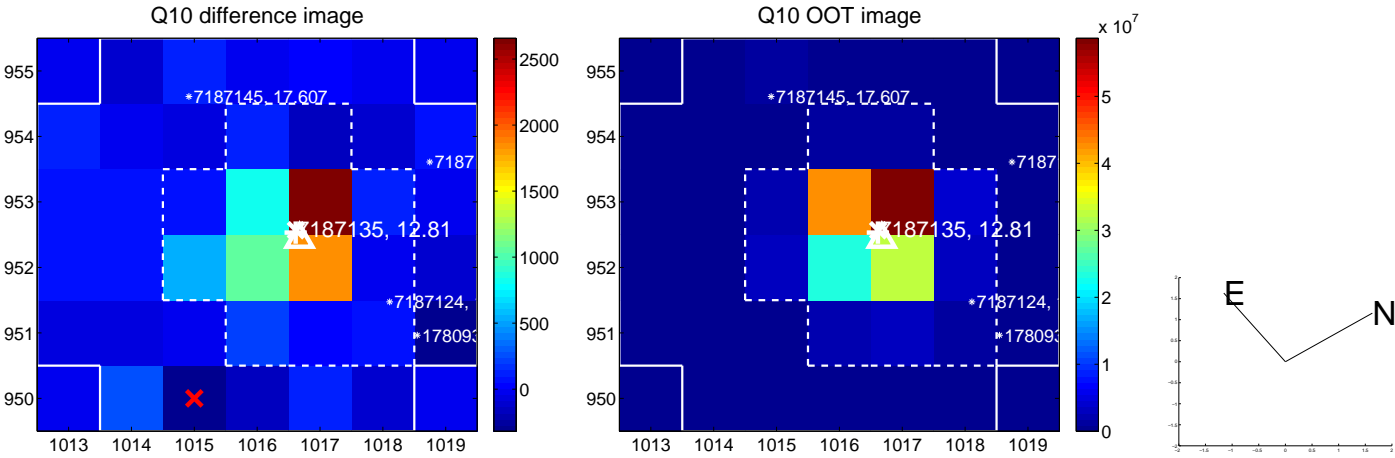
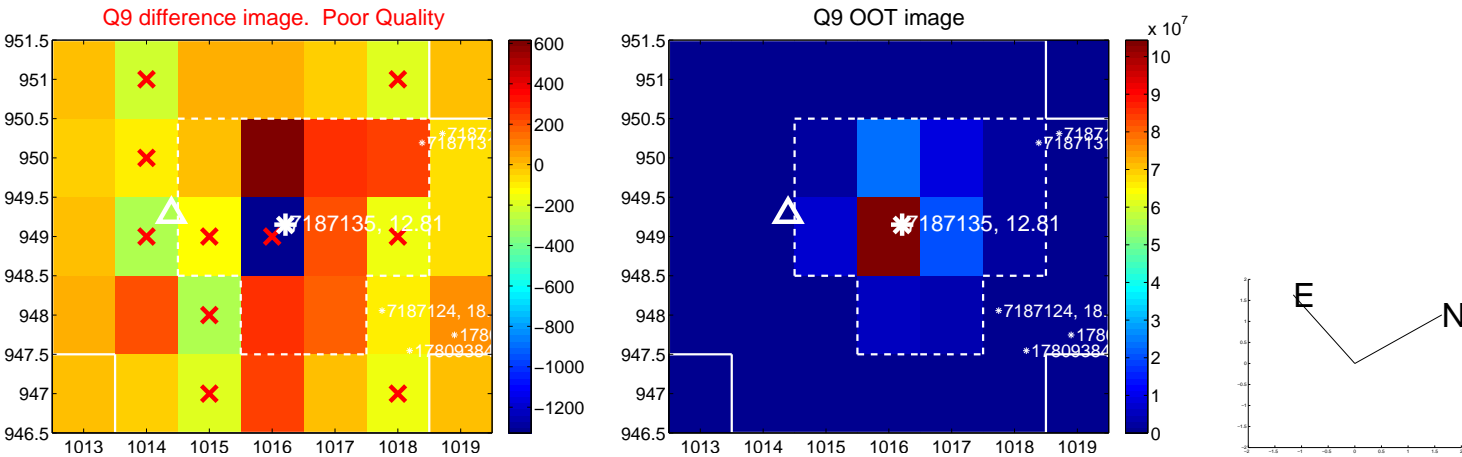
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



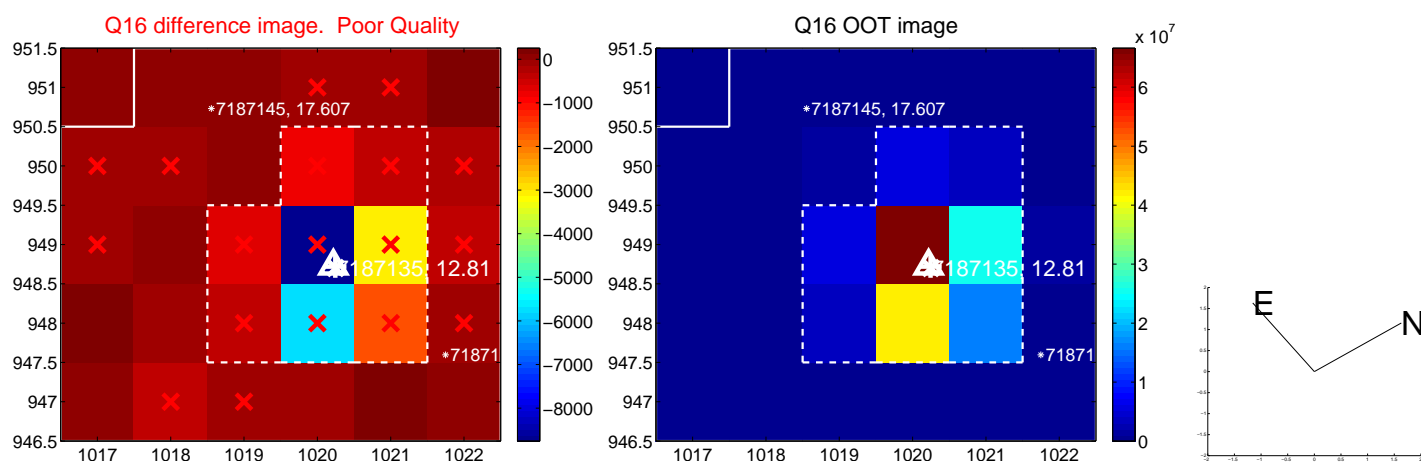
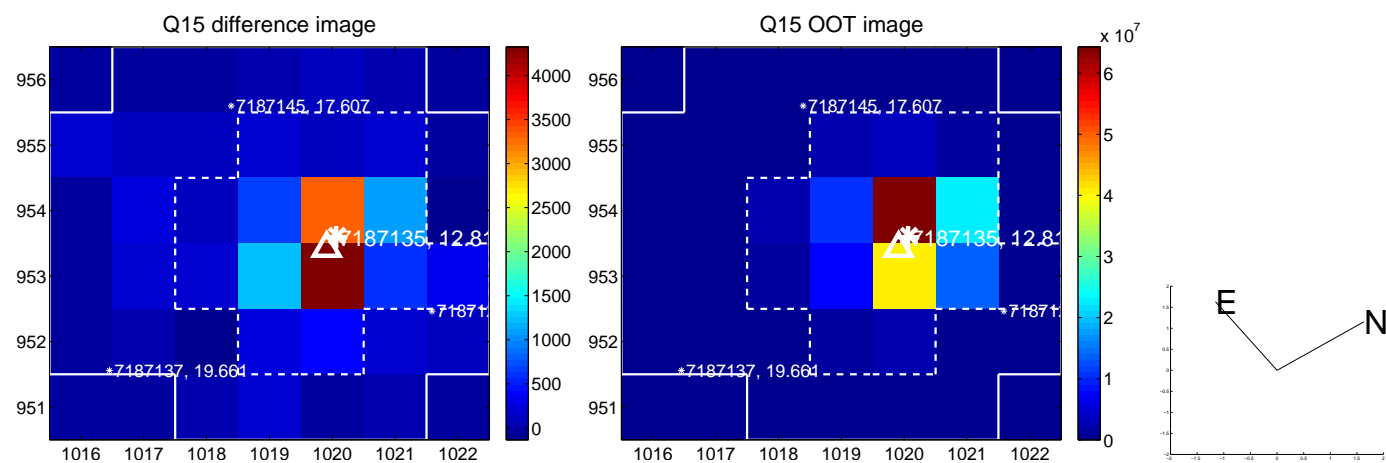
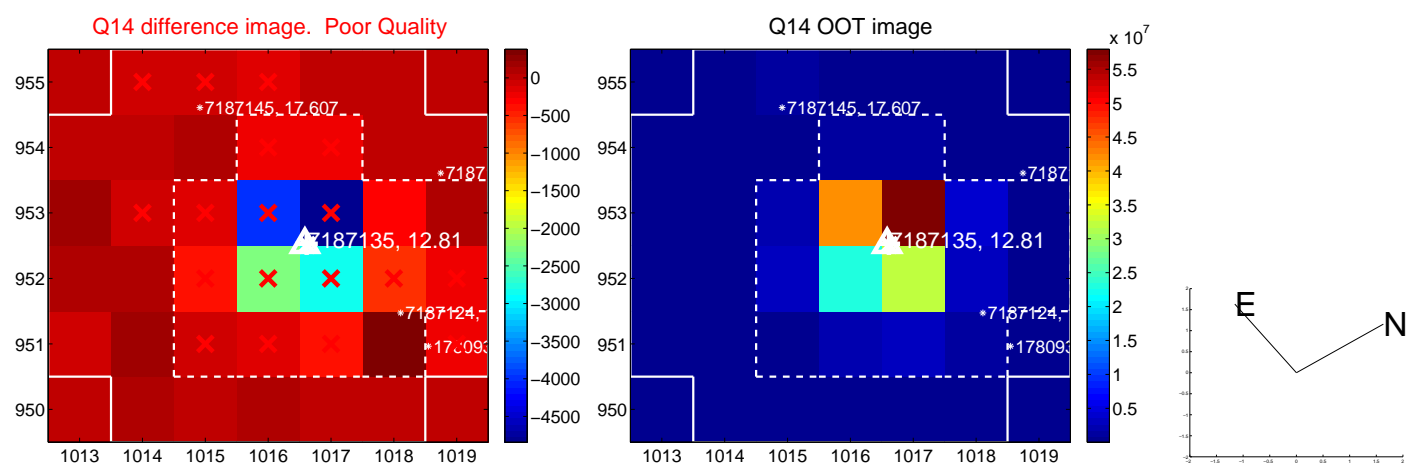
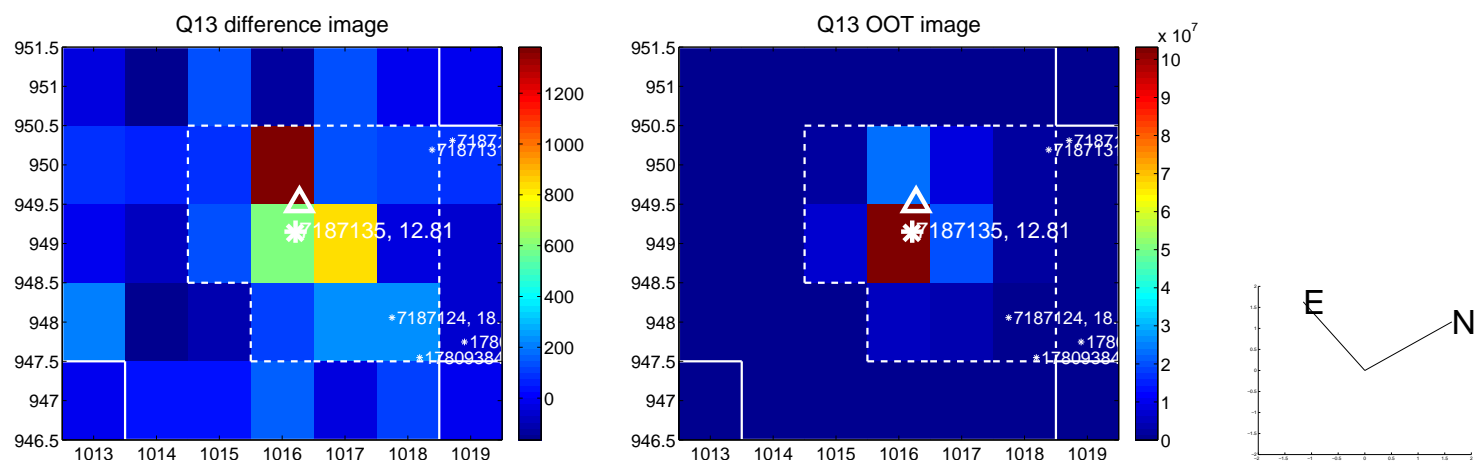
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



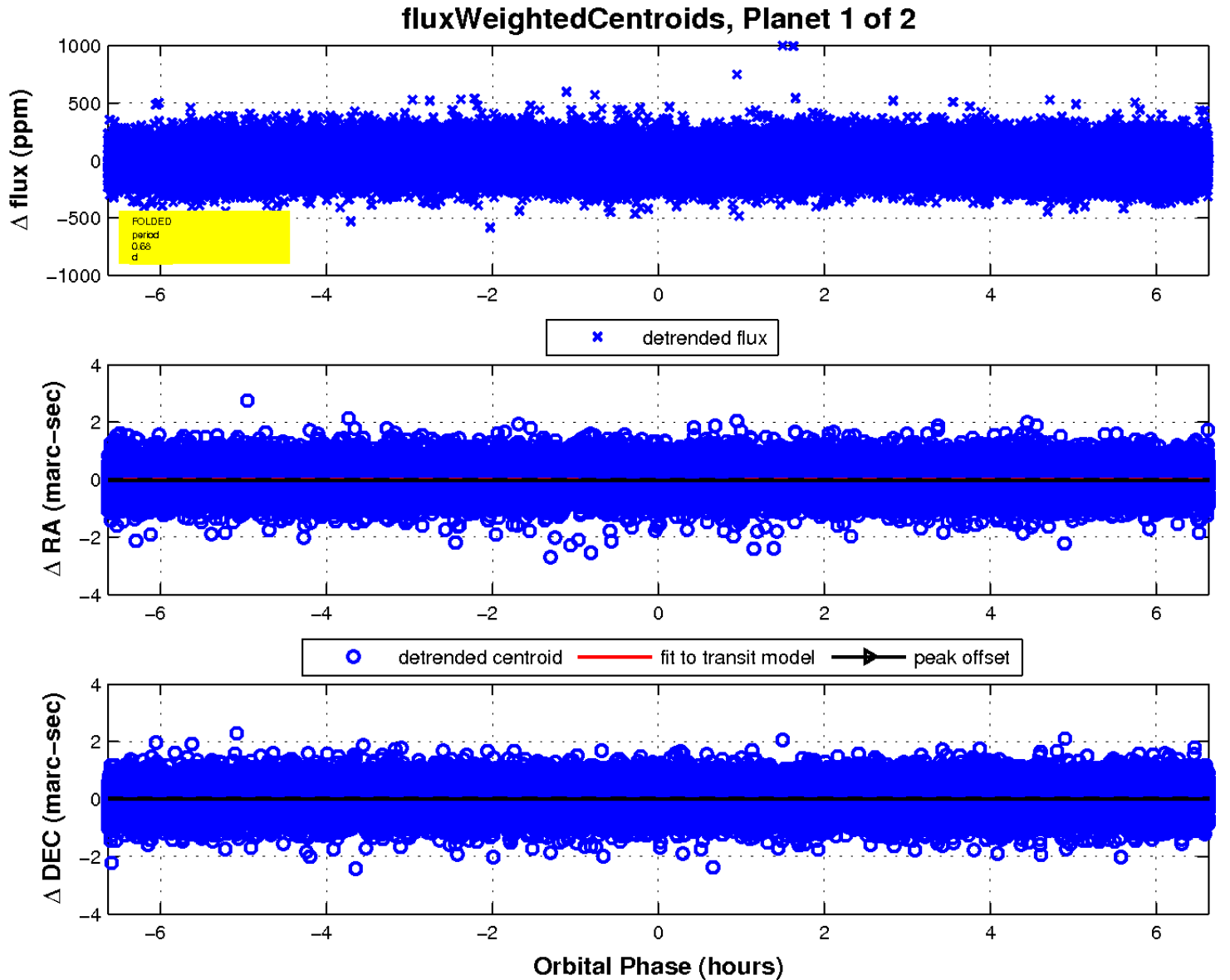
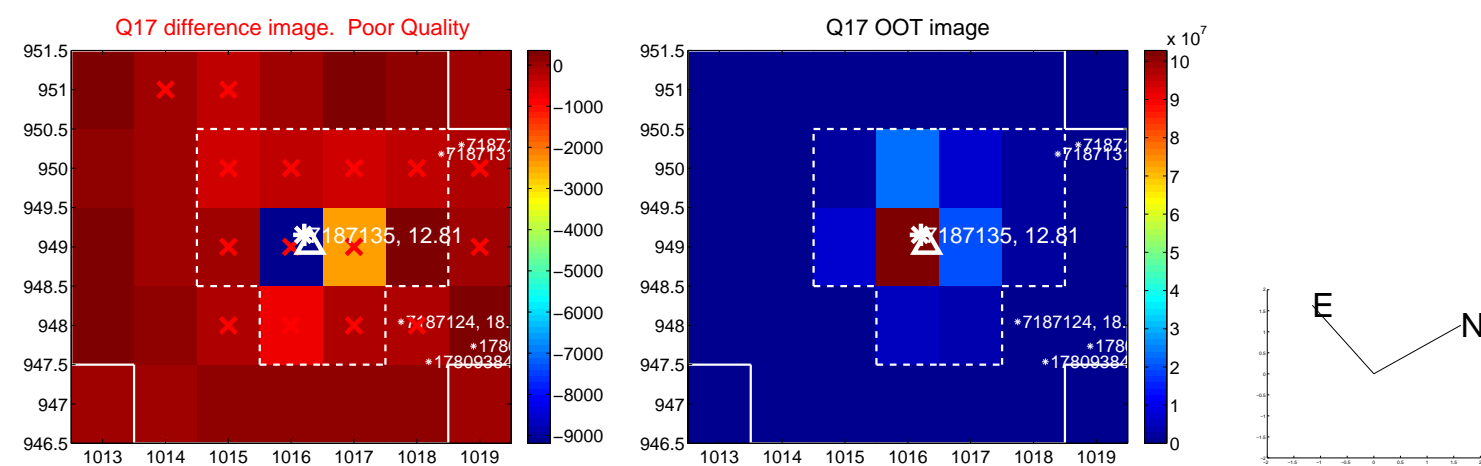
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

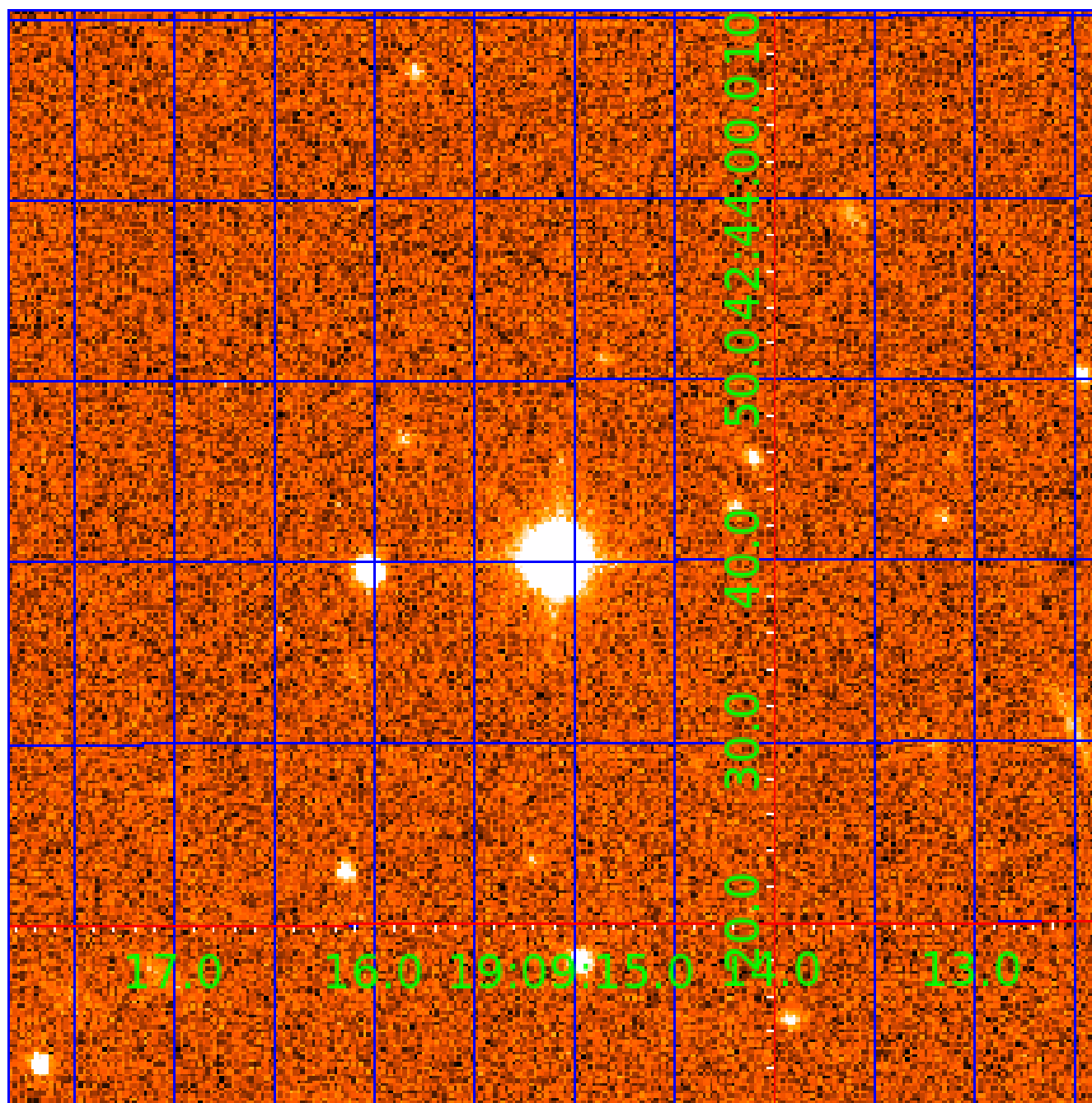


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007187135

Q1-17 DR25 TCE Parameters

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Robovetter Results

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007187135-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_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.

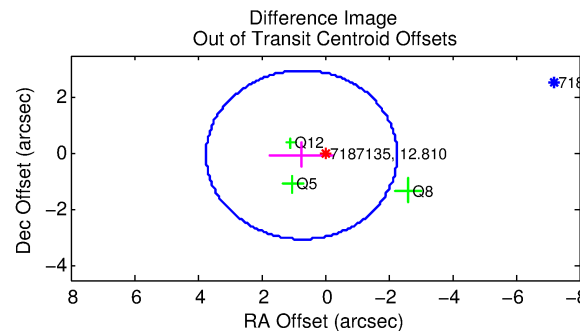
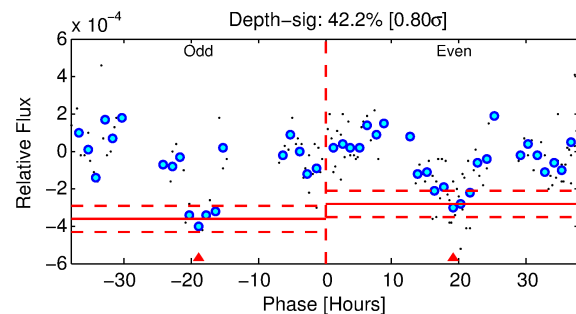
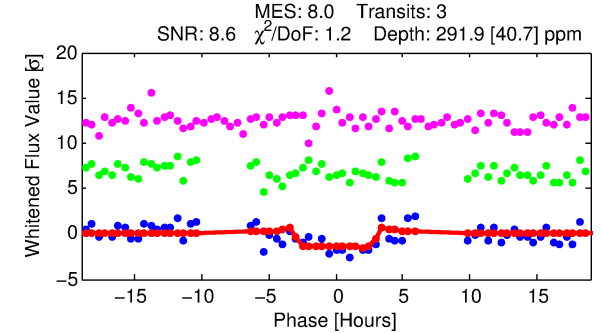
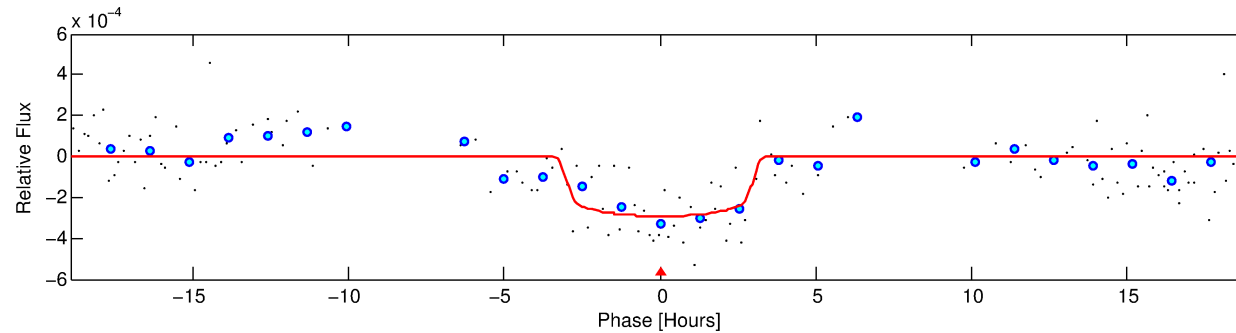
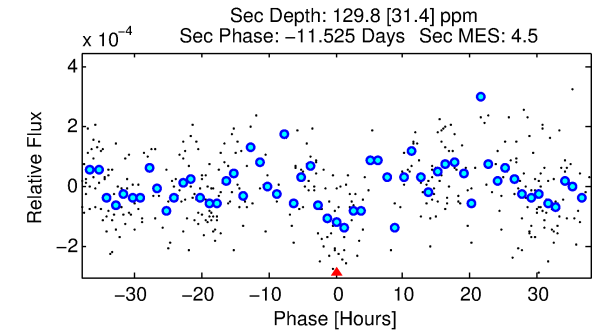
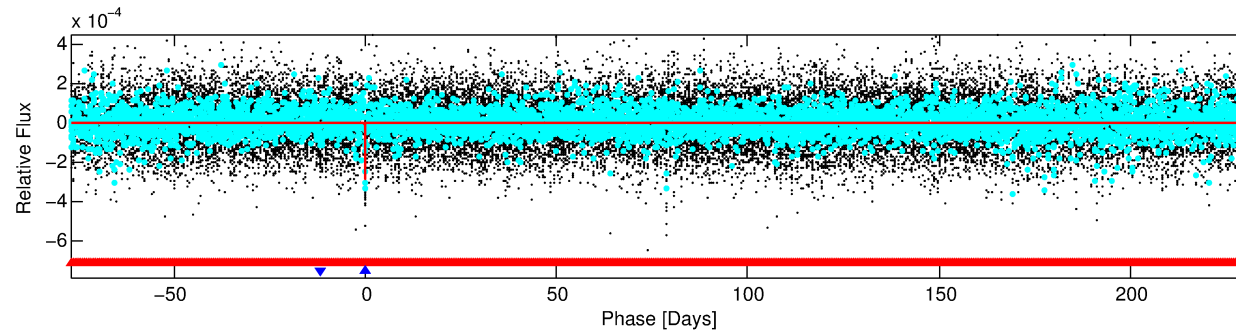
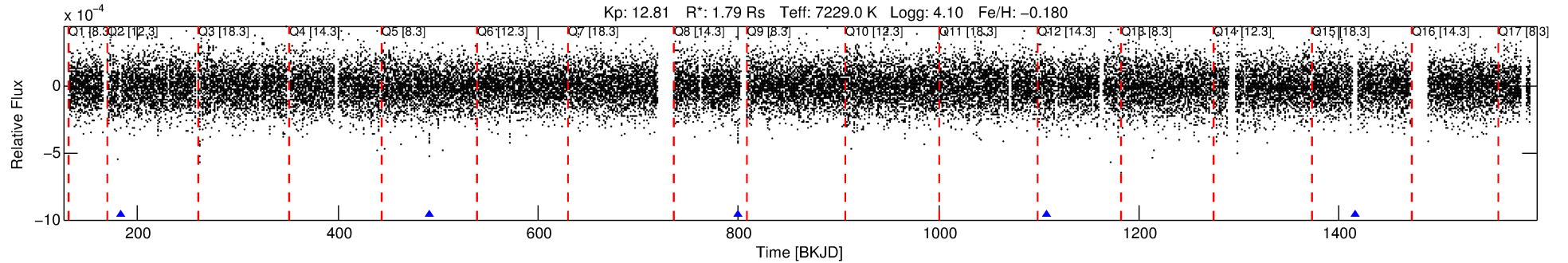
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007187135-02

No Significant Match Found

DV One-Page Summary

KIC: 7187135 Candidate: 2 of 2 Period: 308.274 d



DV Fit Results:

Period = 308.27366 [0.00742] d
Epoch = 183.1496 [0.0155] BKJD
Rp/R* = 0.0170 [0.0085]
a/R* = 255.32 [775.31]
b = 0.75 [1.74]
Seff = 7.62 [2.83]
Teq = 424 [39] K
Rp = 3.32 [1.94] Re
a = 1.0148 [0.2475] AU
Ag = 6660.25 [7185.30] [0.93σ]
Teffp = 5918 [1533] K [3.58σ]

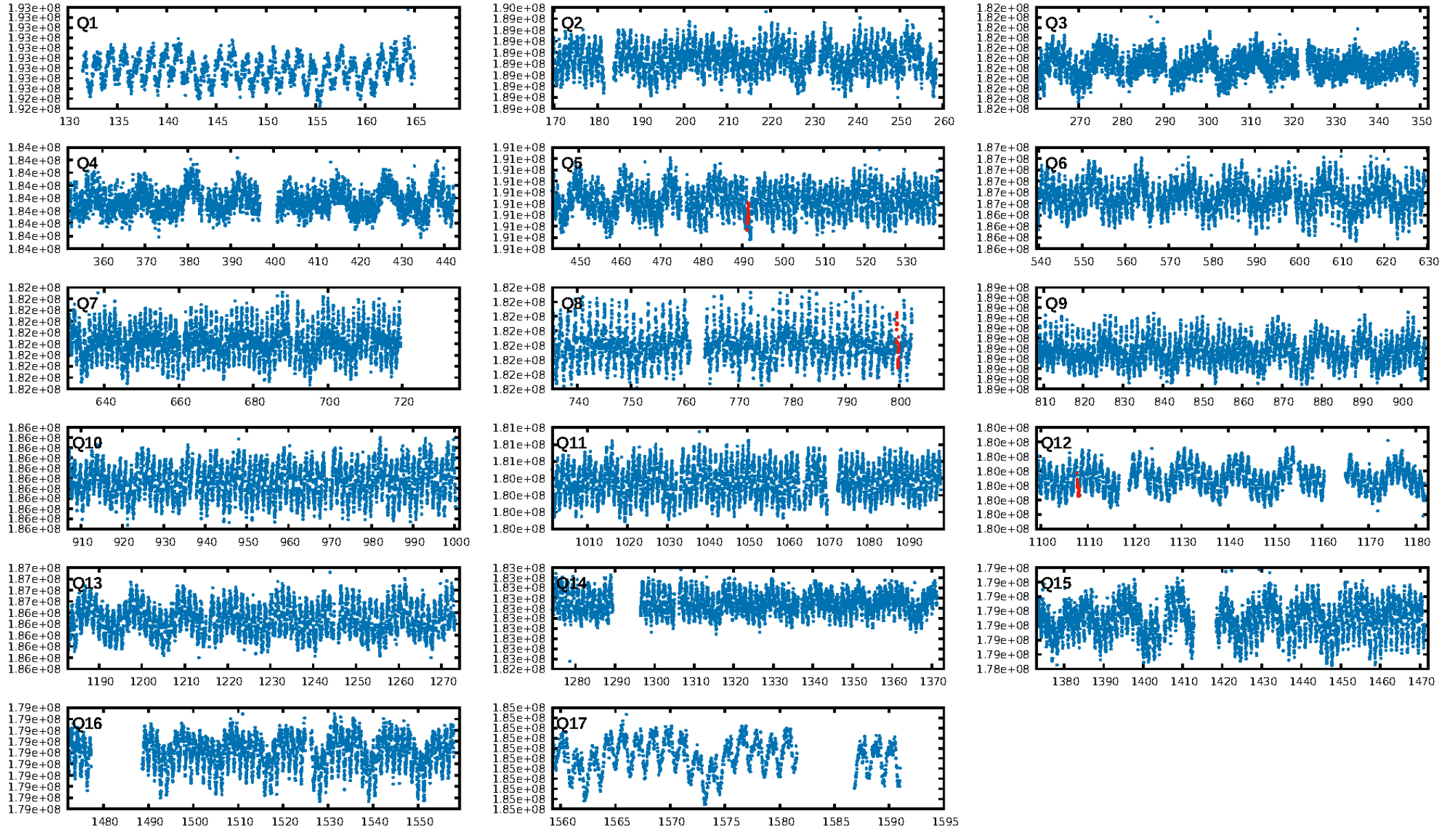
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1104.45σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 55.9%
ModelChiSquareGof-sig: 57.8%
Bootstrap-pfa: 1.63e-11
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.6322
Centroid-sig: 54.3%
Centroid-so: 0.570 arcsec [0.74σ]
OotOffset-rm: 0.731 arcsec [0.73σ]
OotOffset-st: 0/0/2/1 [3]
KicOffset-rm: 0.766 arcsec [0.73σ]
KicOffset-st: 0/0/2/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 0.00 [0/3]

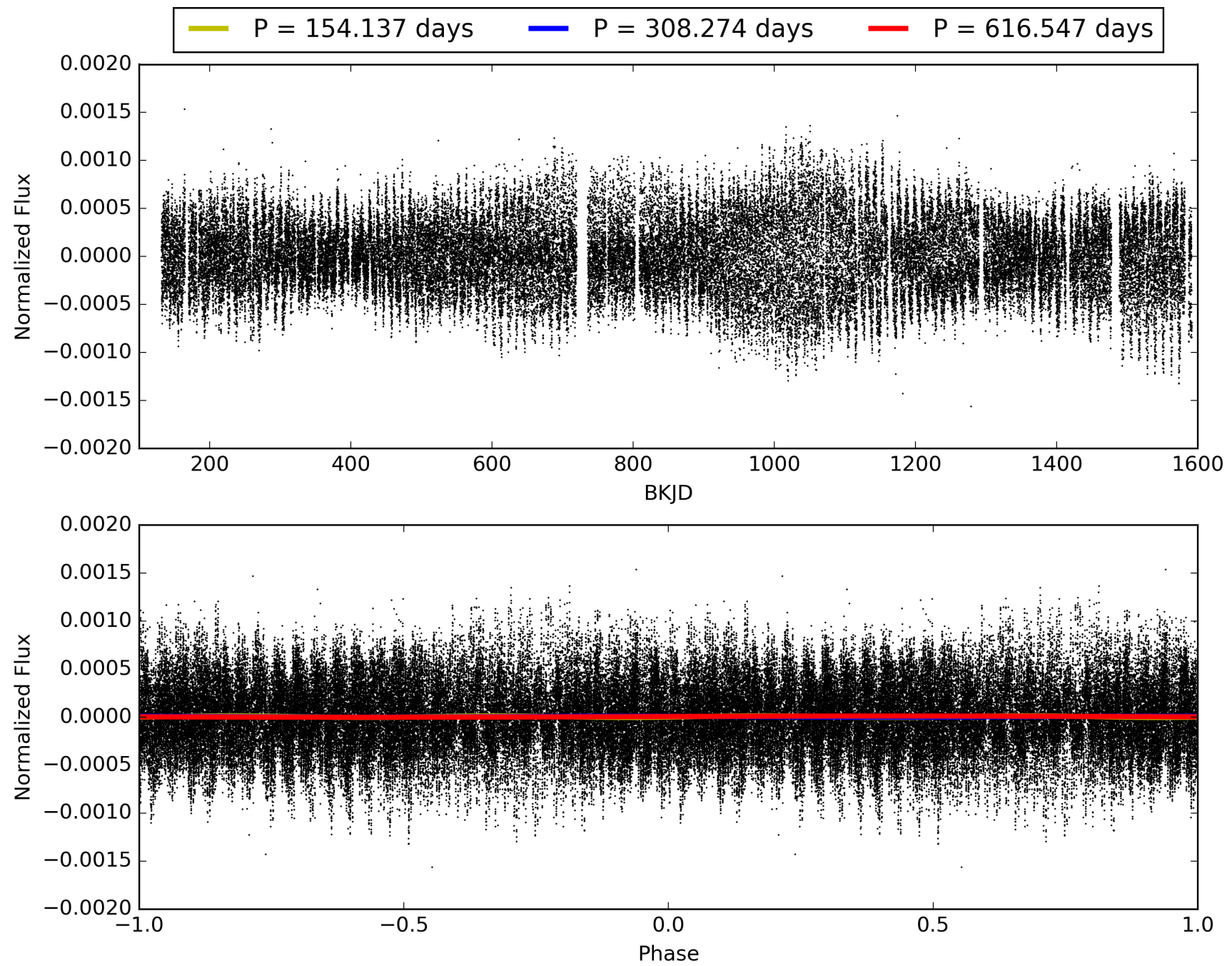
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TCE 007187135-02, PDC Light Curves

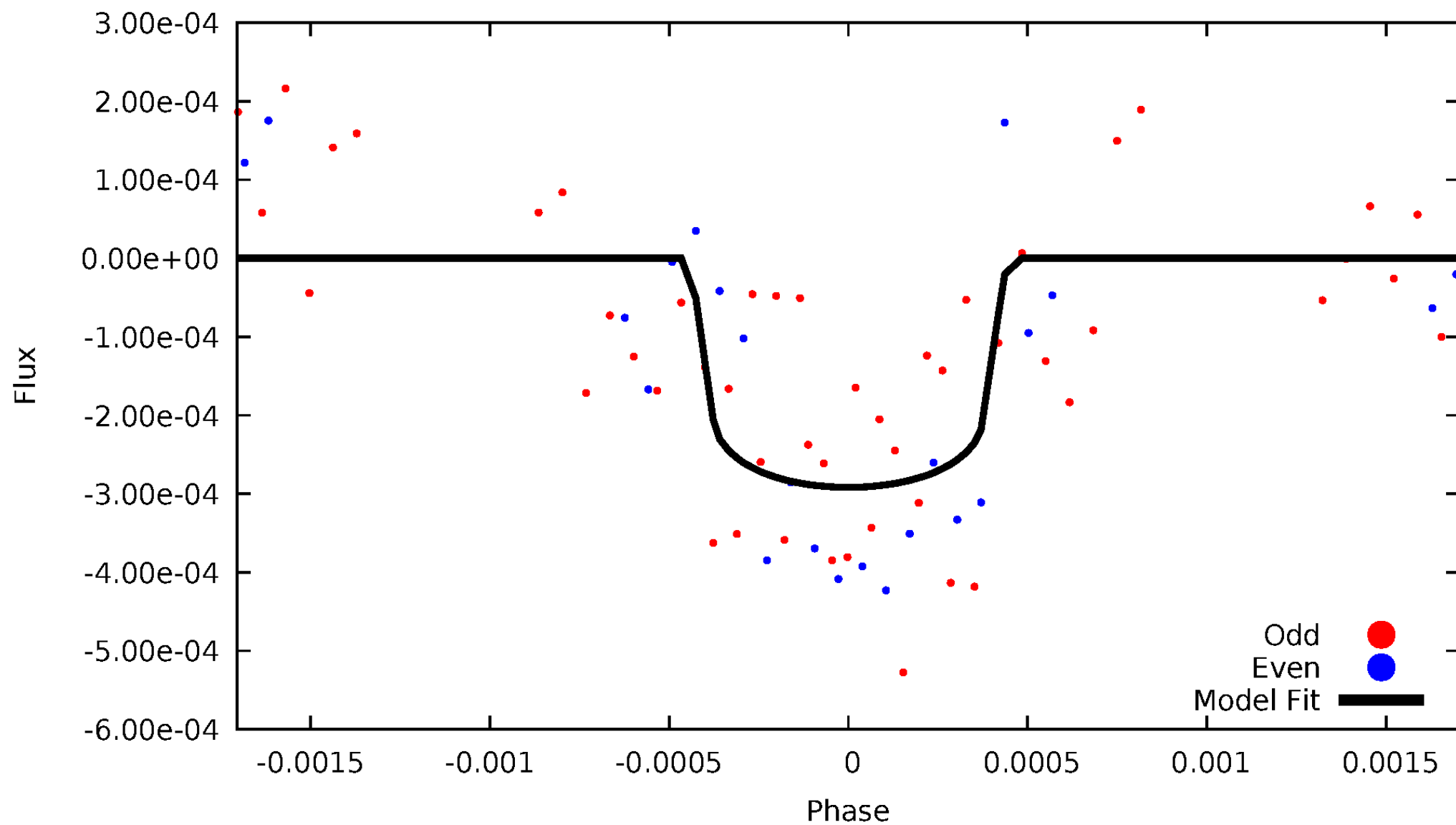


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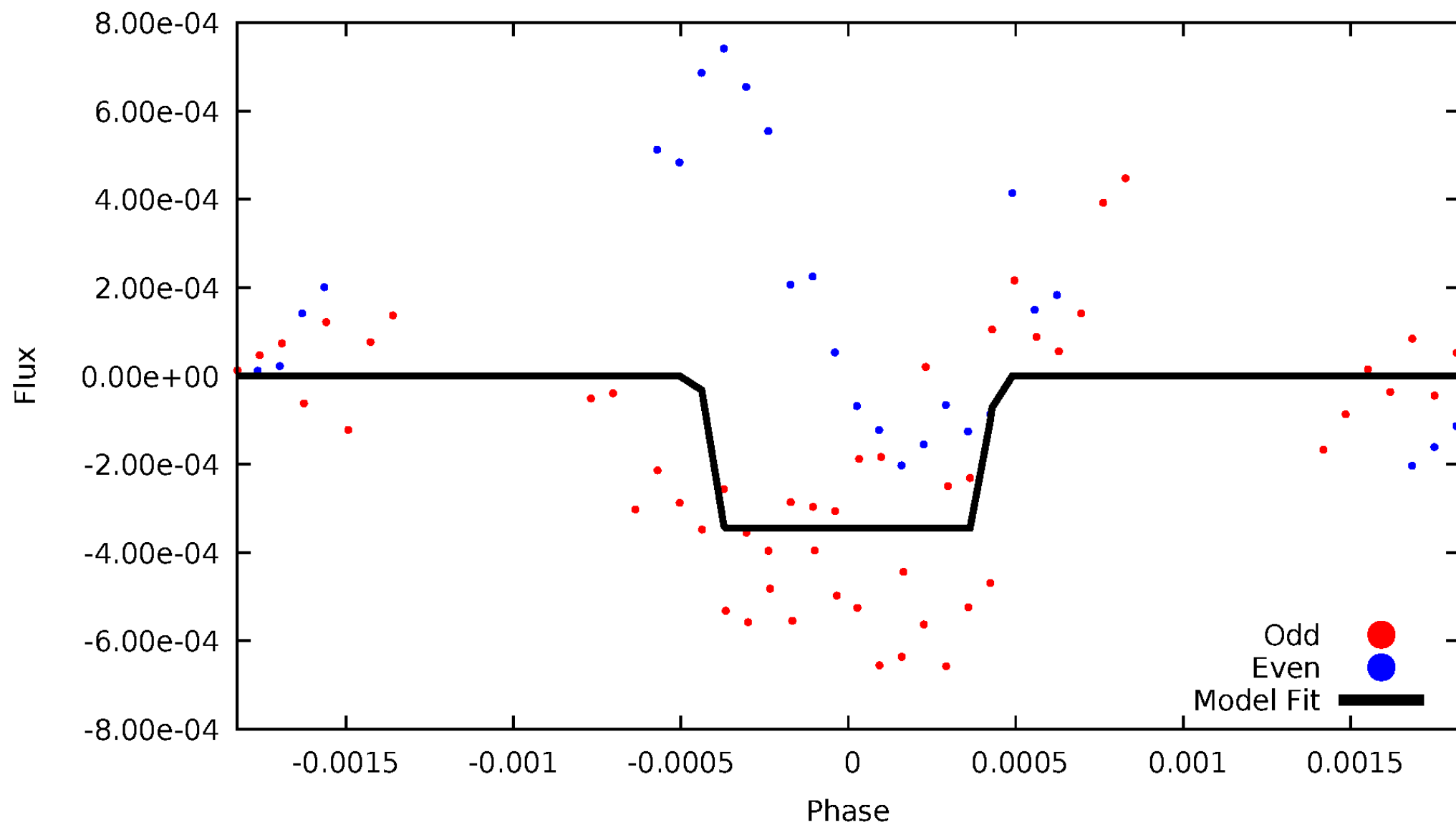
DV Odd/Even

TCE 007187135-02



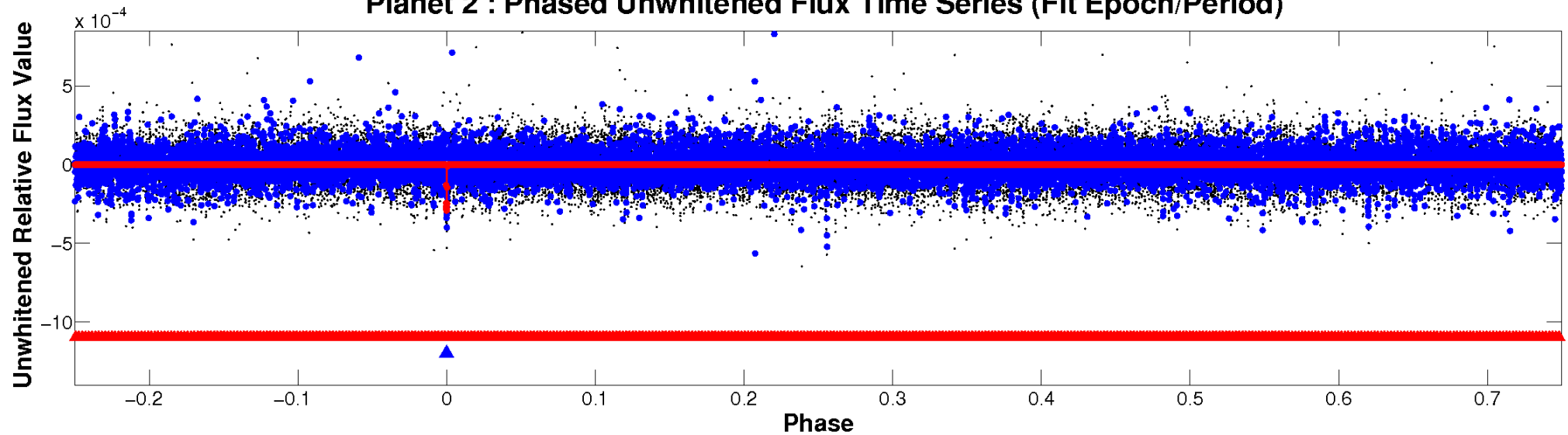
ALT Odd/Even

TCE 007187135-02

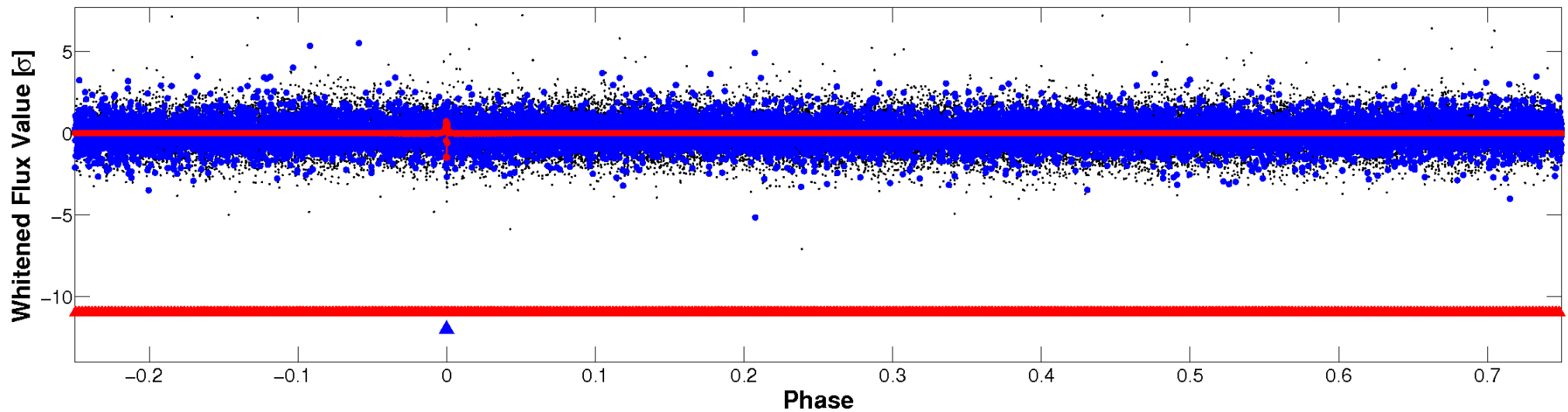


Non-Whitened Vs. Whitened Light Curve

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

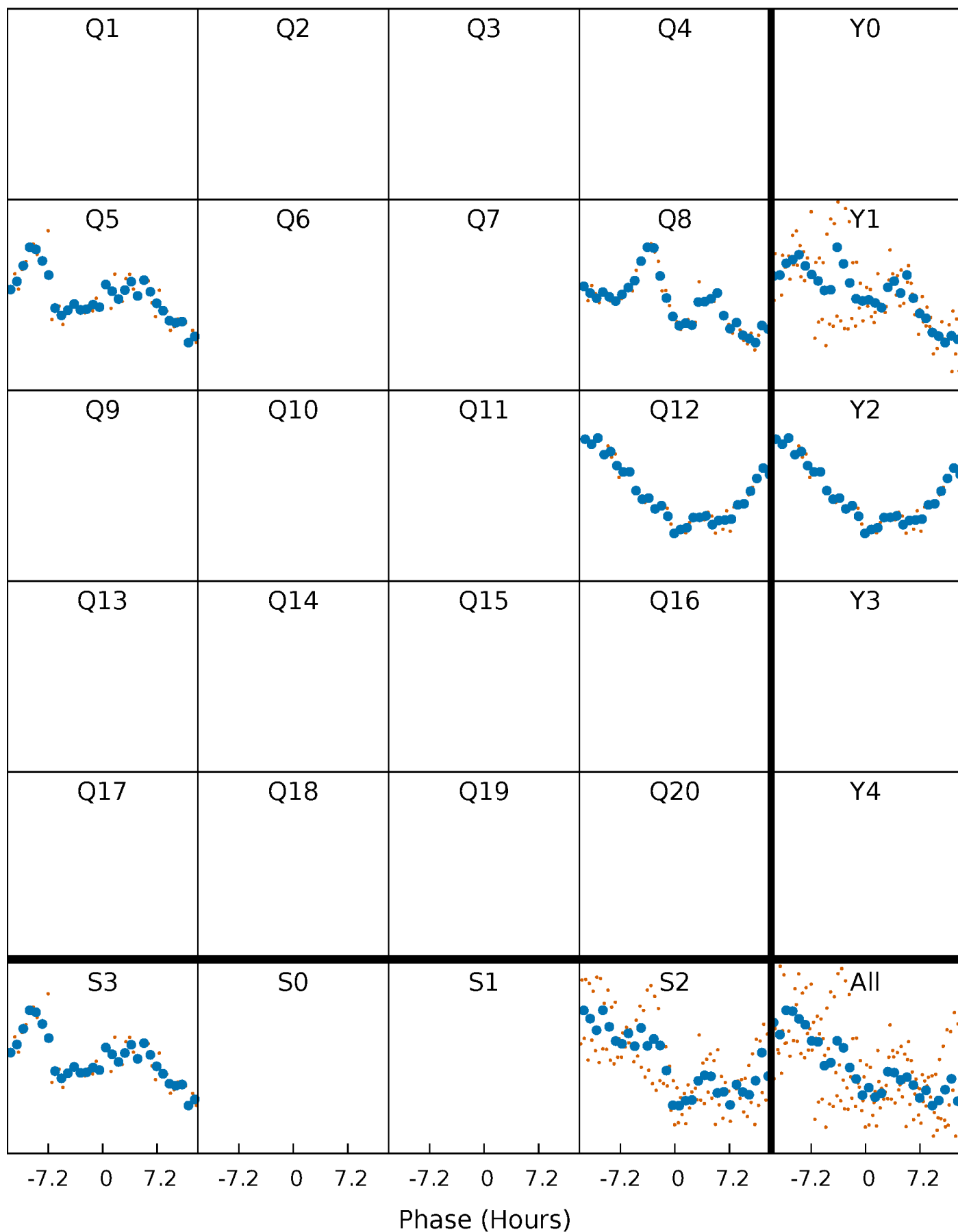


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 007187135-02 P=308.273656 Days $T_0=183.149632$ (BKJD)



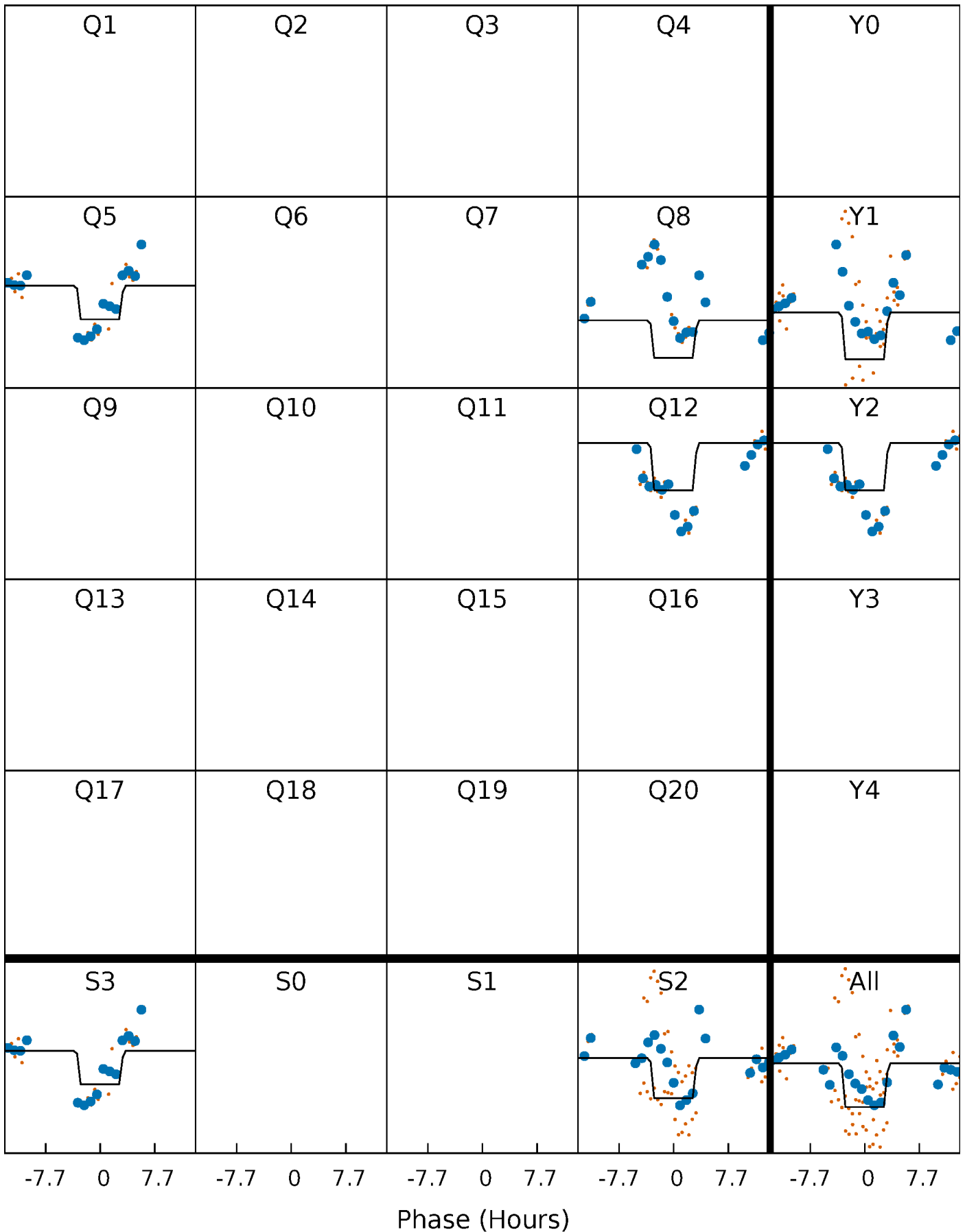
DV Quarter-Phased Transit Curves

TCE 007187135-02 $P=308.273656$ Days $T_0=183.149632$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

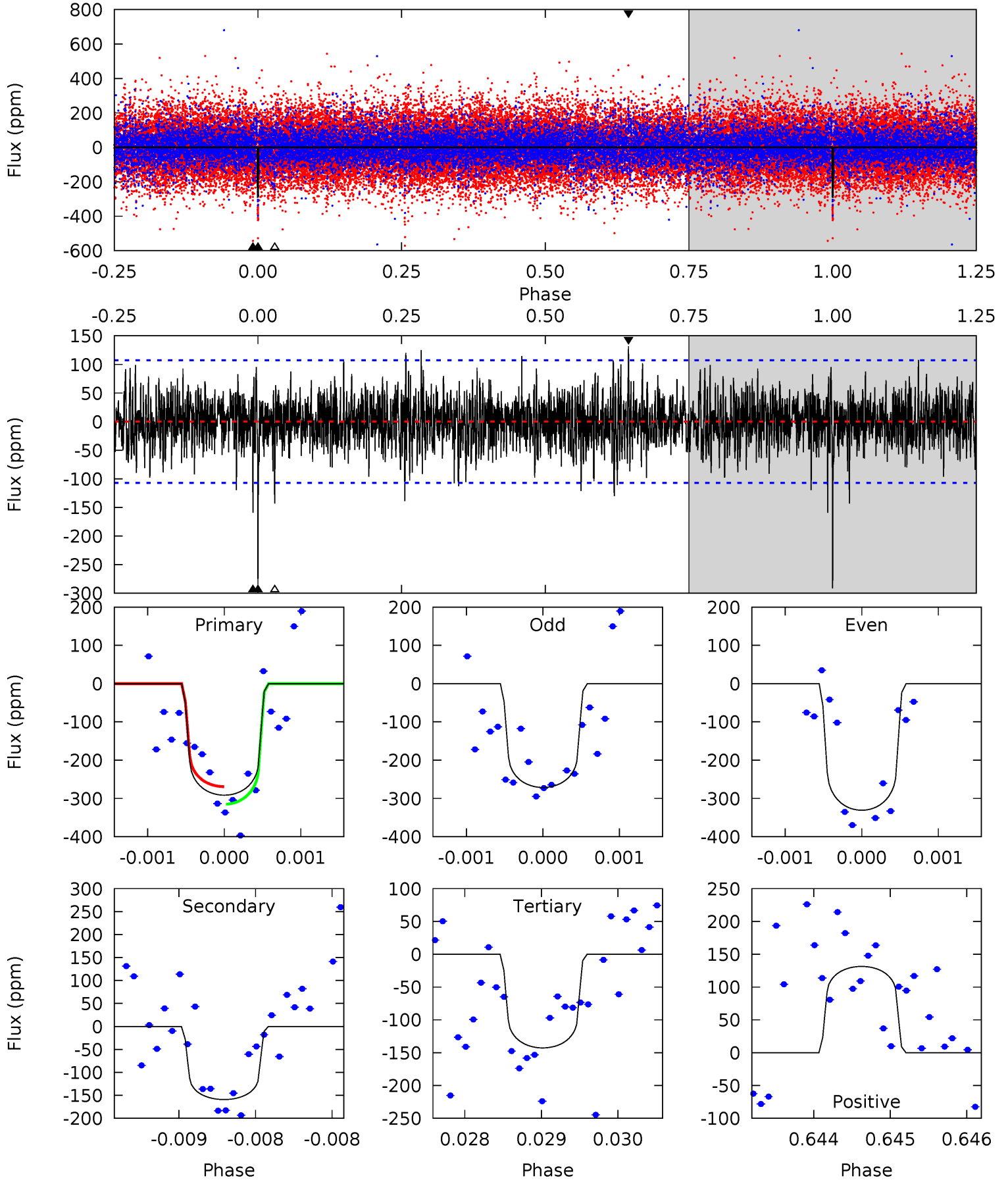
TCE 007187135-02 P=308.260686 Days $T_0=183.159102$ (BKJD)



DV Model-Shift Uniqueness Test

007187135-02, P = 308.273656 Days, E = 183.149632 Days

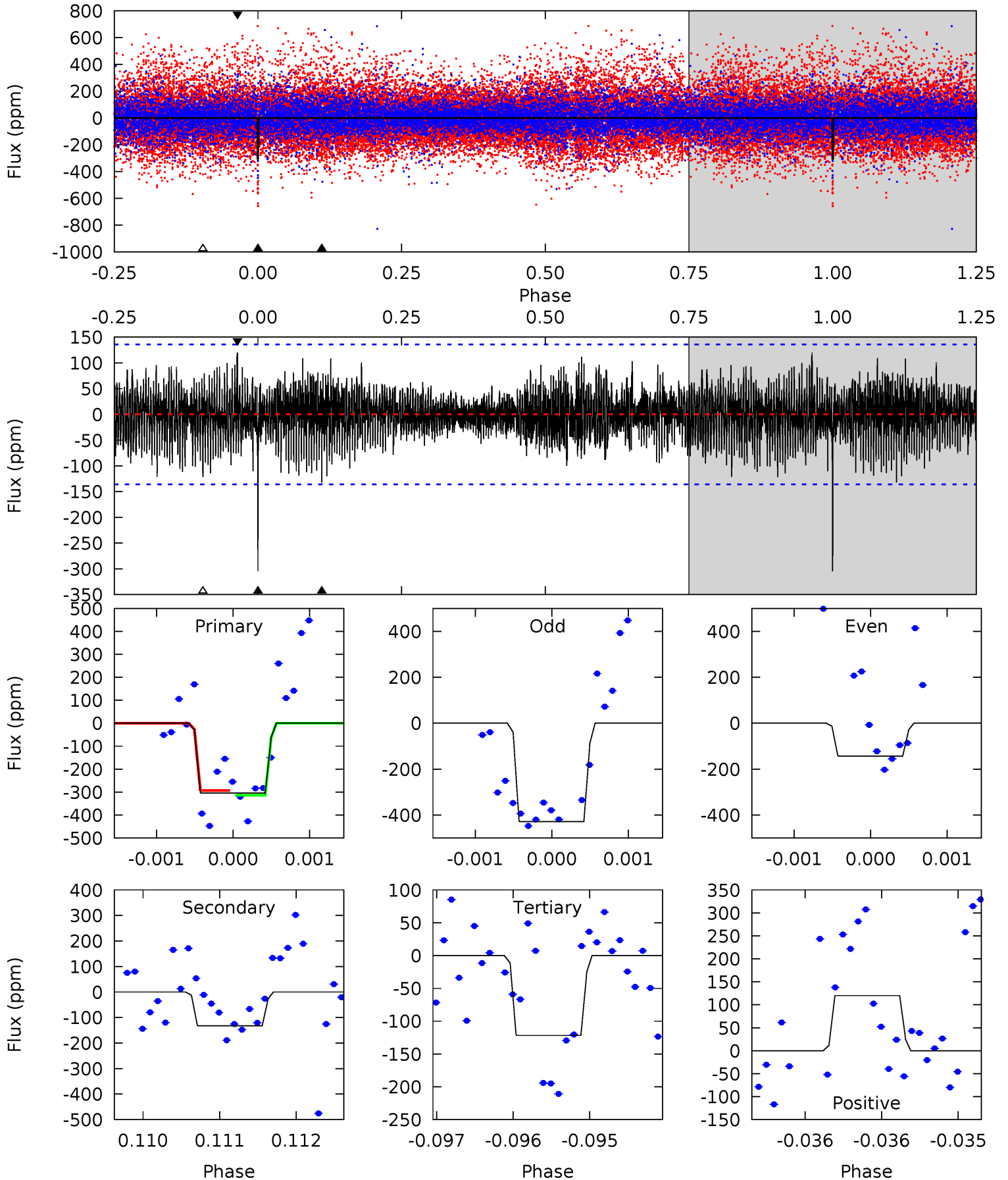
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.9	8.14	7.30	6.72	5.48	3.34	1.75	7.60	8.18	0.84	1.42	1.43	0.88	0.31	1.17



Alt Model-Shift Uniqueness Test

007187135-02, P = 308.260686 Days, E = 183.159102 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.3	5.33	4.91	4.84	5.48	3.33	1.38	7.36	7.43	0.42	0.49	5.48	0.64	0.28	0.40



Stellar Parameters For KIC 007187135

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7229^{+203}_{-279}	$4.098^{+0.175}_{-0.175}$	$-0.180^{+0.250}_{-0.350}$	$1.791^{+0.547}_{-0.448}$	$1.468^{+0.211}_{-0.257}$	$0.360^{+0.350}_{-0.177}$
	+3%/-4%	+4%/-4%	+139%/-194%	+31%/-25%	+14%/-18%	+97%/-49%
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 007187135-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-159 ± 20	$3.30^{+1.83}_{-1.68}$	591^{+48}_{-45}	6121^{+3033}_{-1067}	8007^{+25463}_{-4628}
Alt.	-132 ± 25	$3.65^{+1.78}_{-1.60}$	590^{+49}_{-40}	5579^{+1794}_{-842}	5355^{+11261}_{-2938}

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 $A_{obs} \gg 1.0$

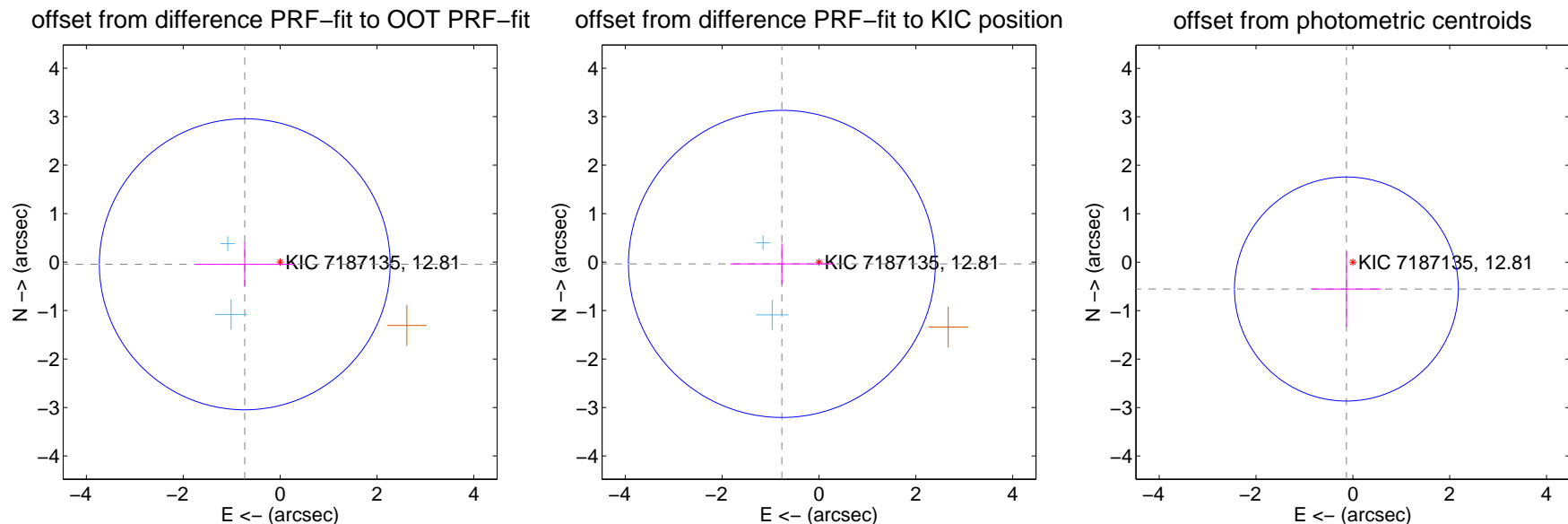
DV Centroid Data

Supplemental centroid analysis for 007187135-02. Kepler magnitude: 12.81. Transit SNR 8.59

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.731 ± 1.001	0.73	0.730 ± 1.023	-0.045 ± 0.453
PRF-fit source offset from KIC position	0.766 ± 1.056	0.73	0.765 ± 1.067	-0.037 ± 0.421
photometric centroid source offset	0.57 ± 0.77	0.74	0.13 ± 0.72	-0.55 ± 0.77

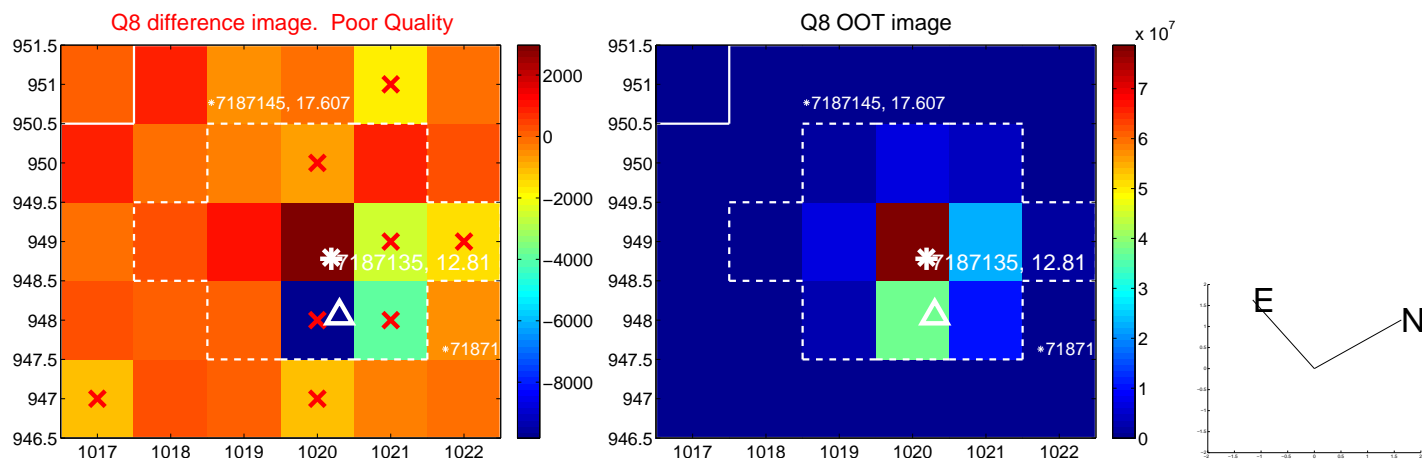
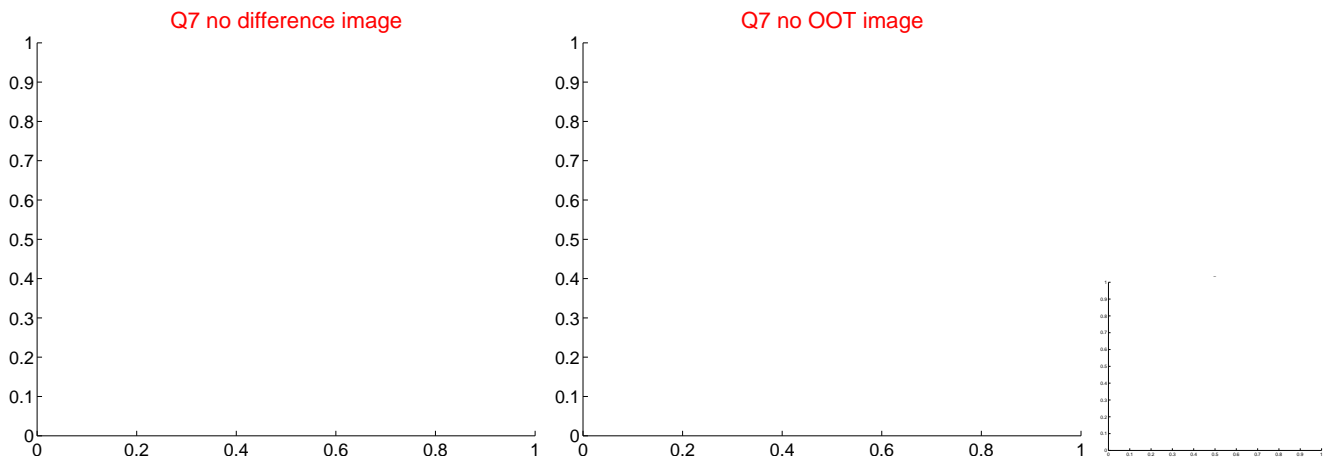
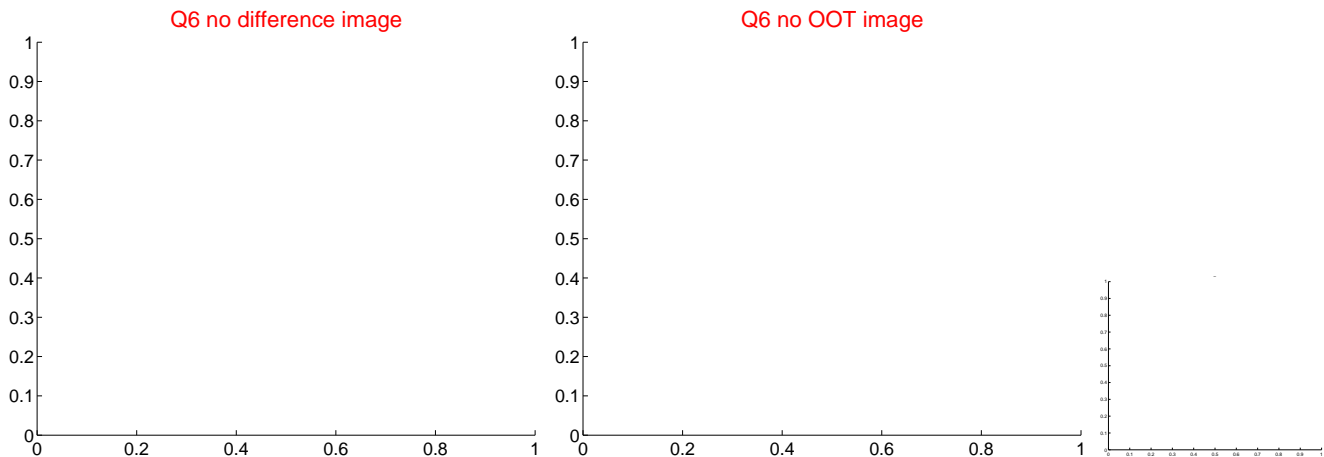
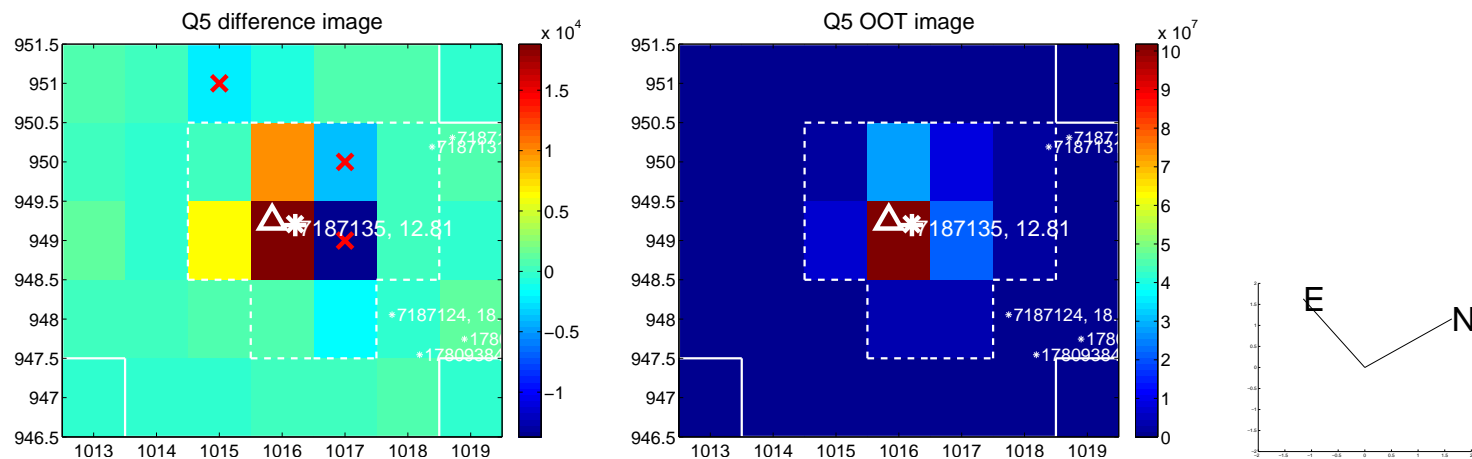


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

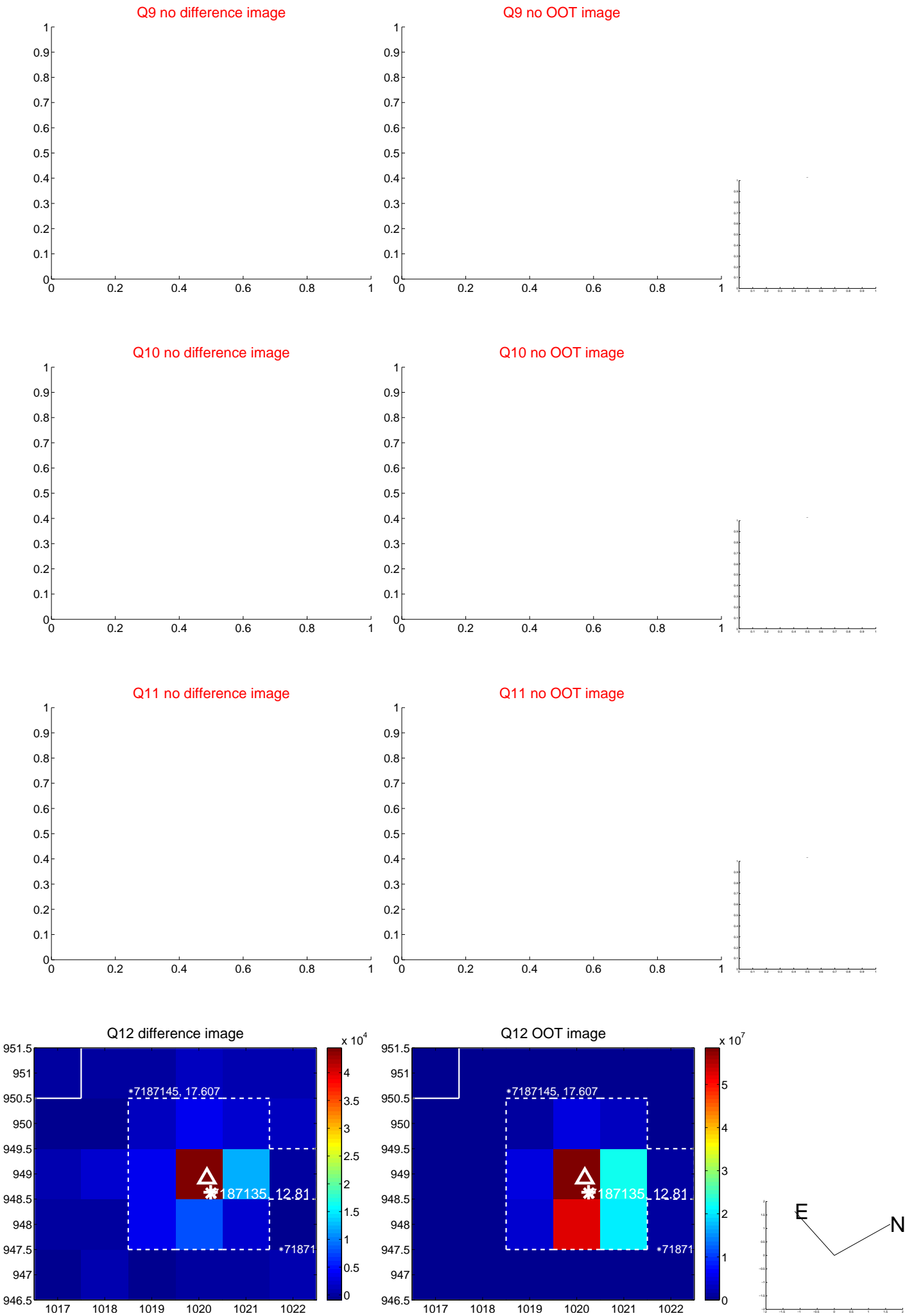
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



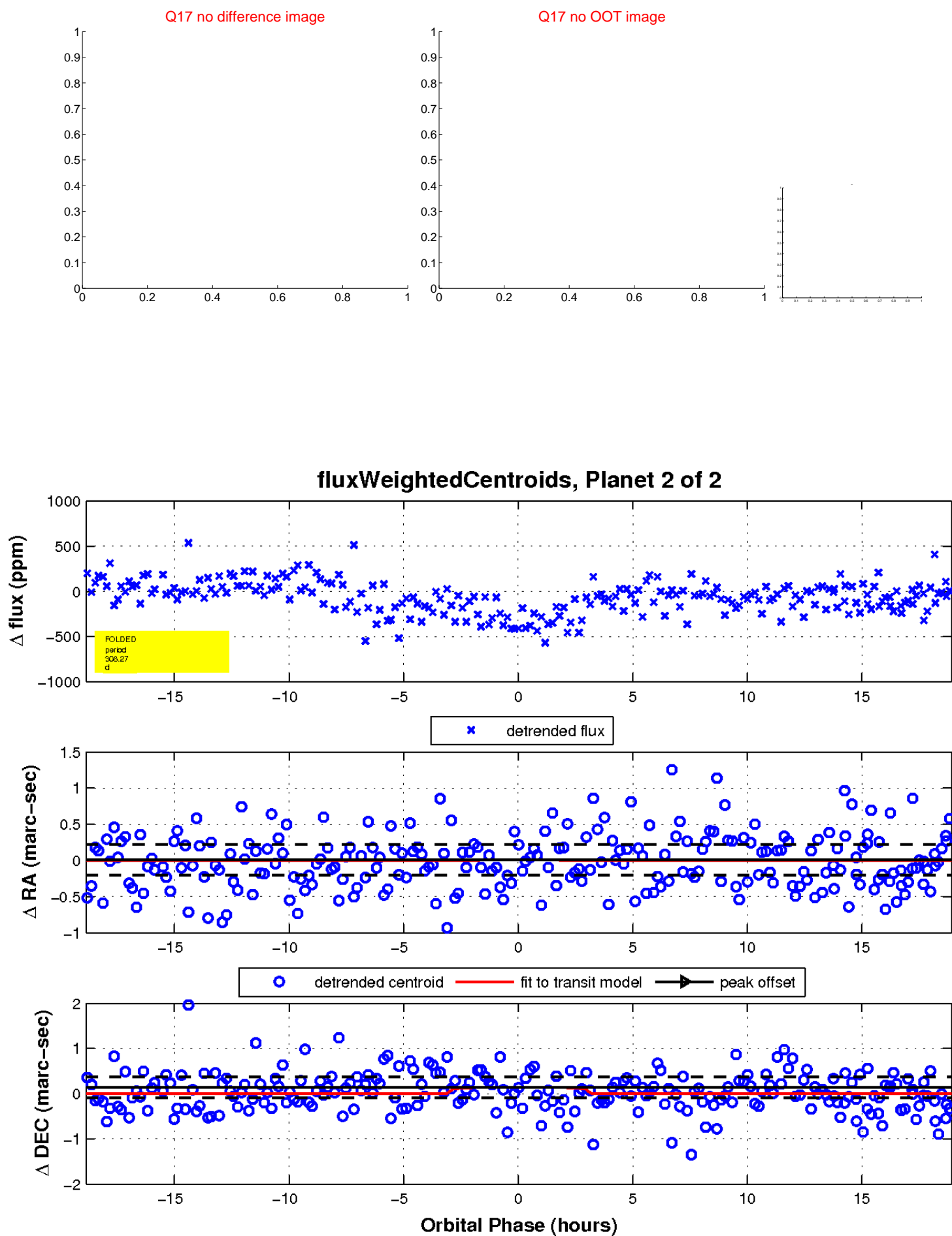
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

