

KIC 005198337

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})
005198337-01	OBS	No	458.318977	325.869134	930.2	10.705	8.8	7.1	7.41	6897	23.19	42.38
005198337-02	OBS	No	4.232910	135.259797	110.2	14.146	7.9	9.2	7.41	6897	9.07	21872.34
005198337-03	OBS	No	1.338051	132.151001	142.1	7.024	10.5	10.0	7.41	6897	13.28	0.00
005198337-04	OBS	No	64.025988	181.004149	1168.0	8.338	13.0	10.1	7.41	6897	39.32	584.71
005198337-05	OBS	No	49.592274	177.887070	1277.1	8.663	11.6	11.3	7.41	6897	49.24	821.98
005198337-07	OBS	No	75.060649	143.553549	1311.7	9.481	11.2	10.2	7.41	6897	49.81	473.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005198337-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
005198337-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
005198337-03	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005198337-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
005198337-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005198337-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—HALO_GHOST

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

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

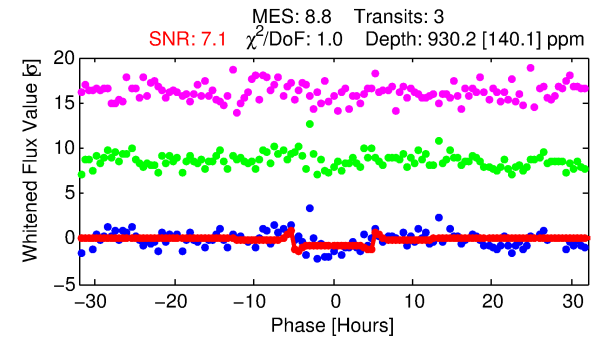
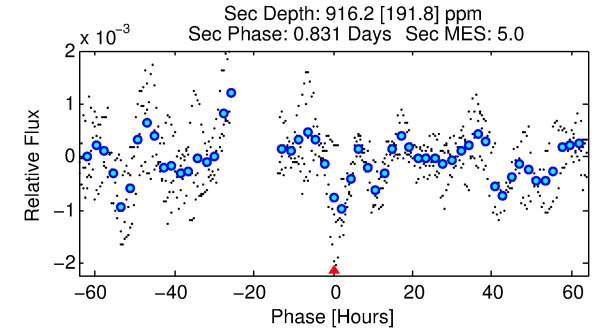
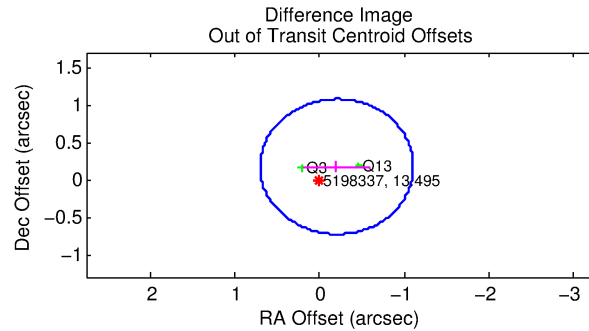
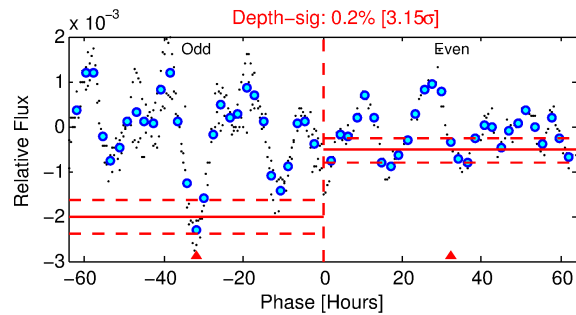
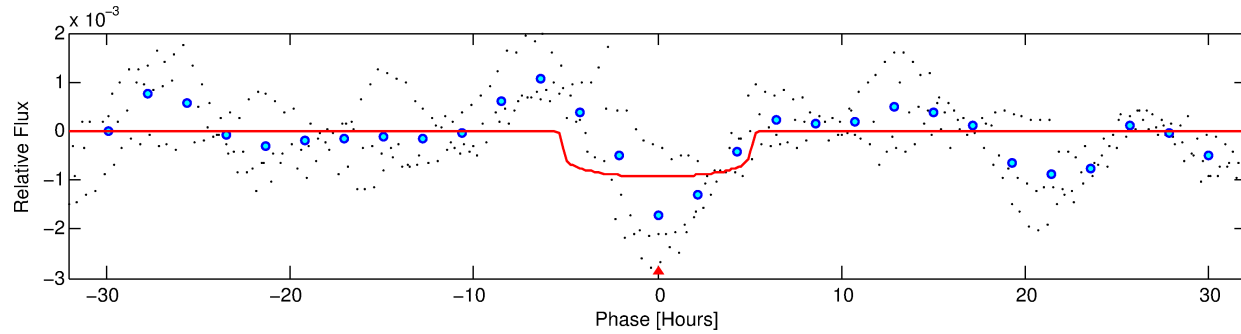
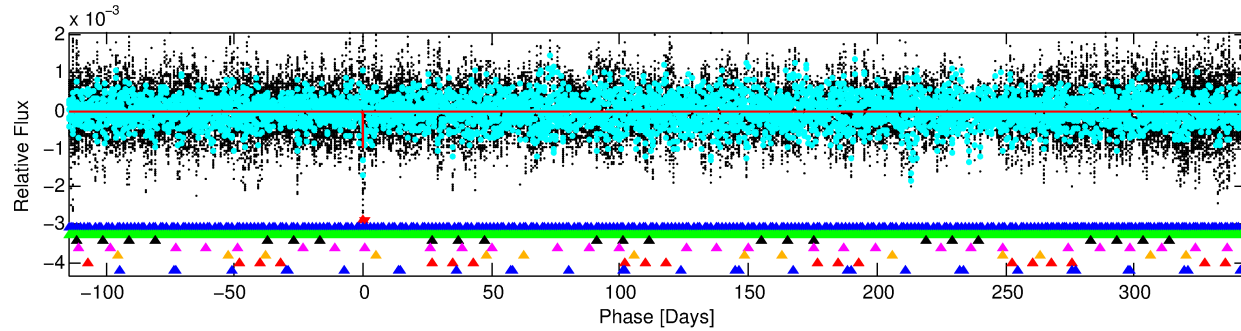
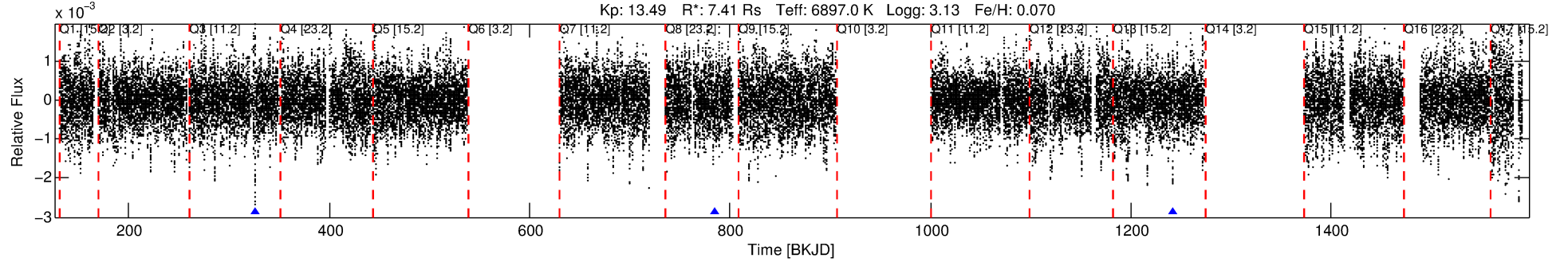
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005198337-01

No Significant Match Found

DV One-Page Summary

KIC: 5198337 Candidate: 1 of 8 Period: 458.319 d



DV Fit Results:

Period = 458.31898 [0.00490] d
Epoch = 325.8691 [0.0053] BKJD
Rp/R* = 0.0287 [0.0054]
a/R* = 307.27 [270.35]
b = 0.42 [1.73]
Seff = 42.38 [38.84]
Teq = 651 [149] K
Rp = 23.19 [13.98] Re
a = 1.6206 [0.9093] AU
Ag = 2461.56 [2474.34] [0.99 σ]
Teffp = 7085 [802] K [7.88 σ]

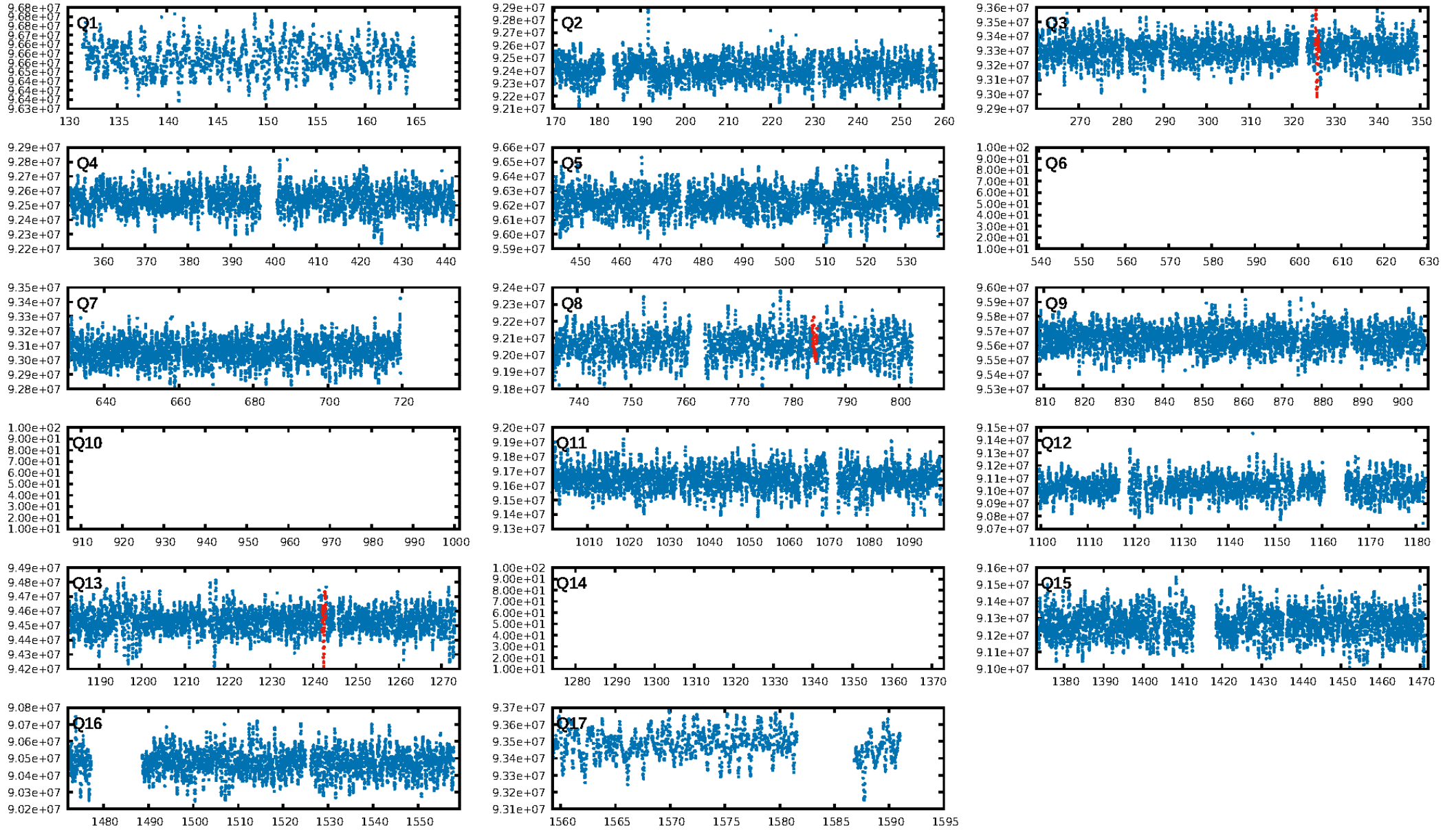
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [517.63 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 10.7%
ModelChiSquareGof-sig: 90.8%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.04864
Centroid-sig: 0.6%
Centroid-so: 0.390 arcsec [1.26 σ]
OotOffset-rm: 0.269 arcsec [0.89 σ]
OotOffset-st: 0/1/0/1 [2]
KicOffset-rm: 0.298 arcsec [1.24 σ]
KicOffset-st: 0/1/0/1 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 0.00 [0/3]

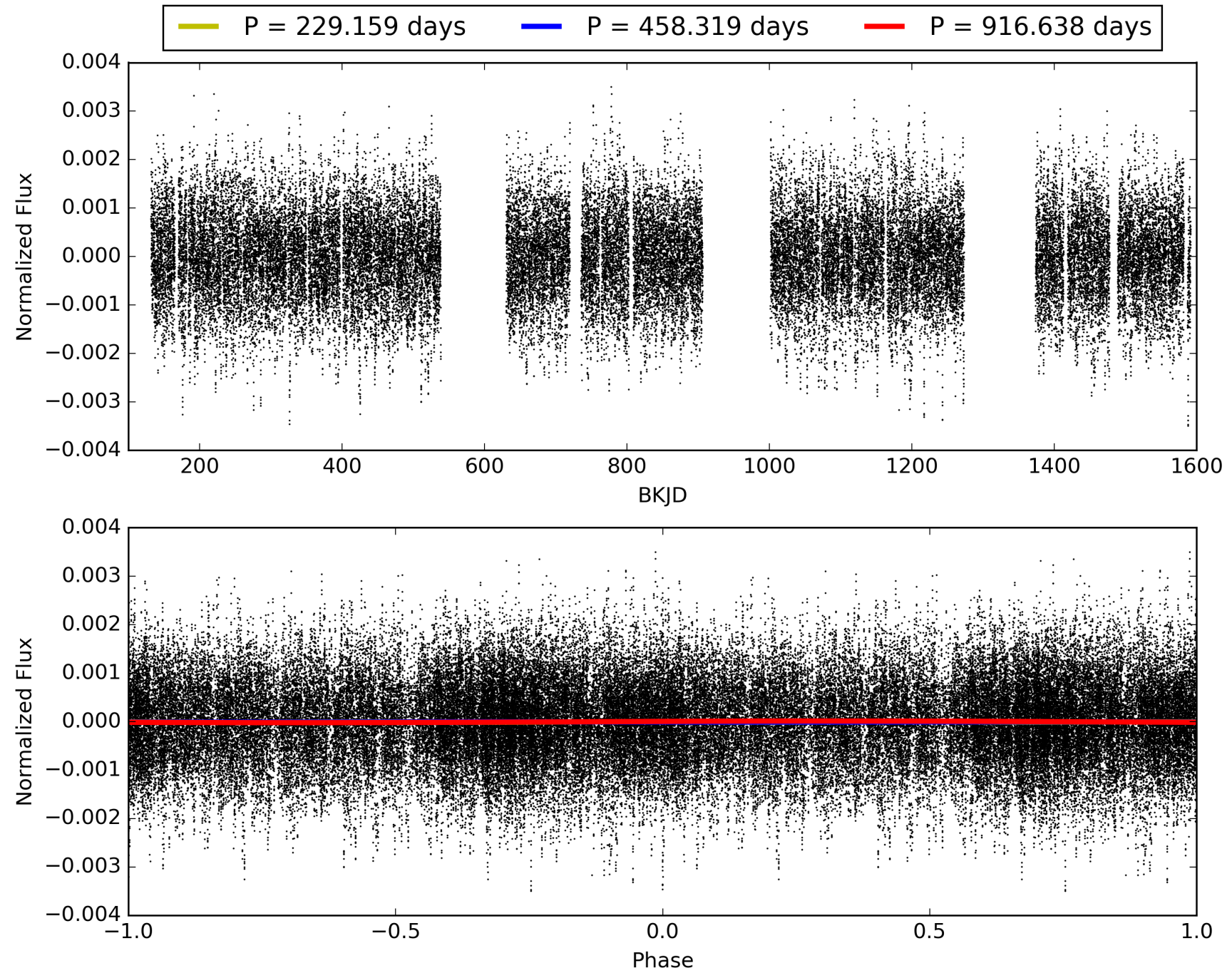
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005198337-01, PDC Light Curves

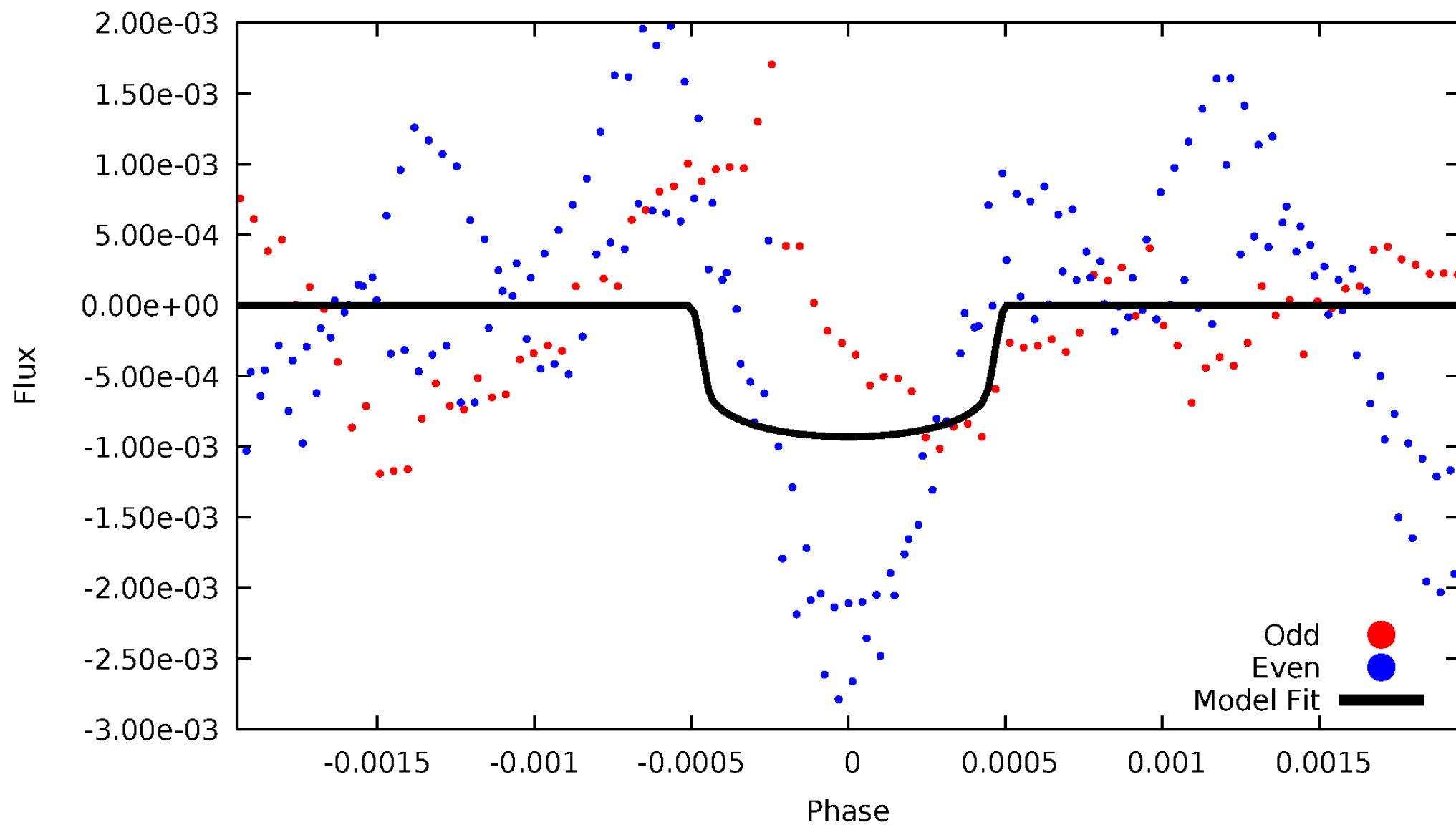


TCE 005198337-01



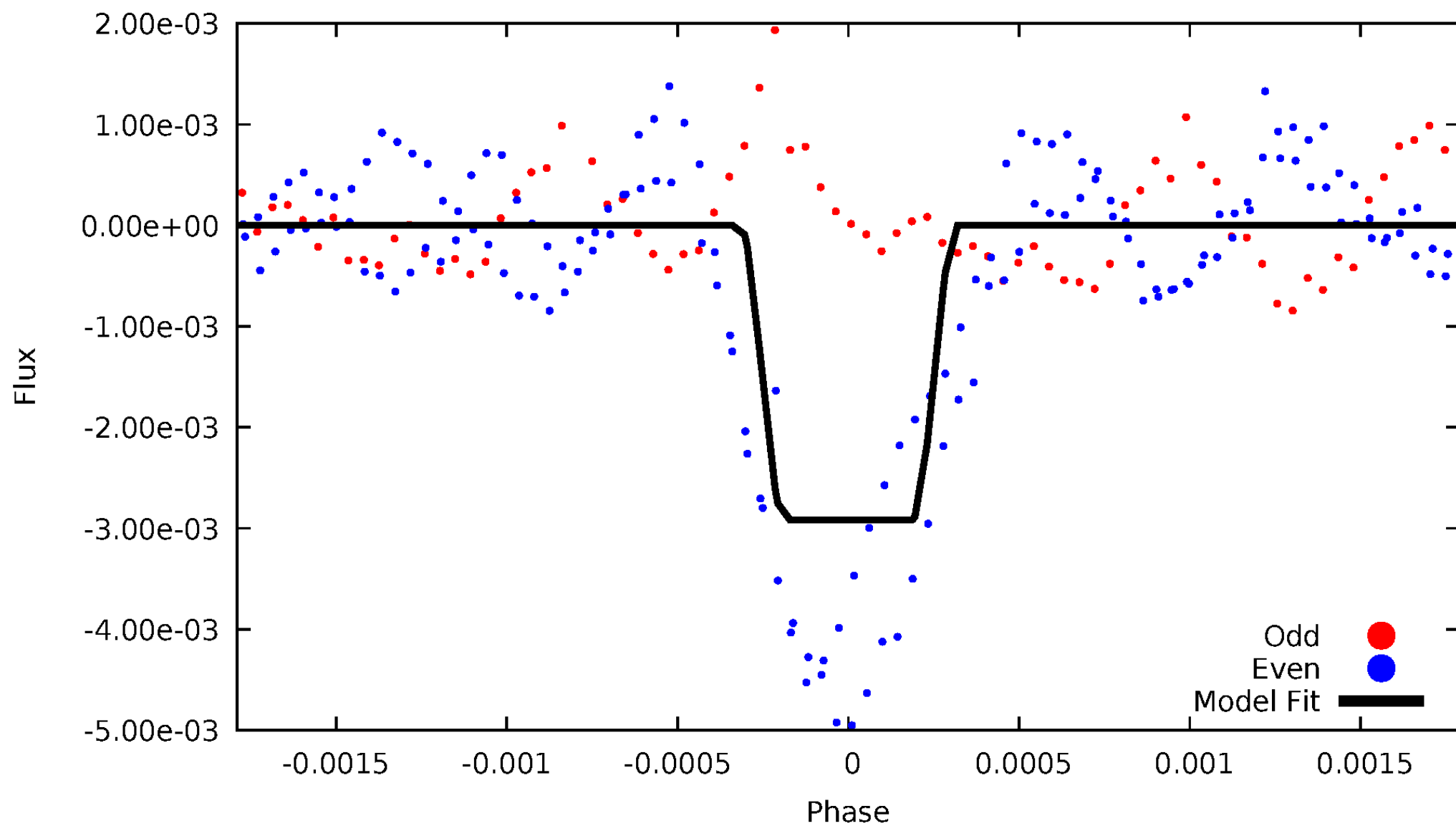
DV Odd/Even

TCE 005198337-01



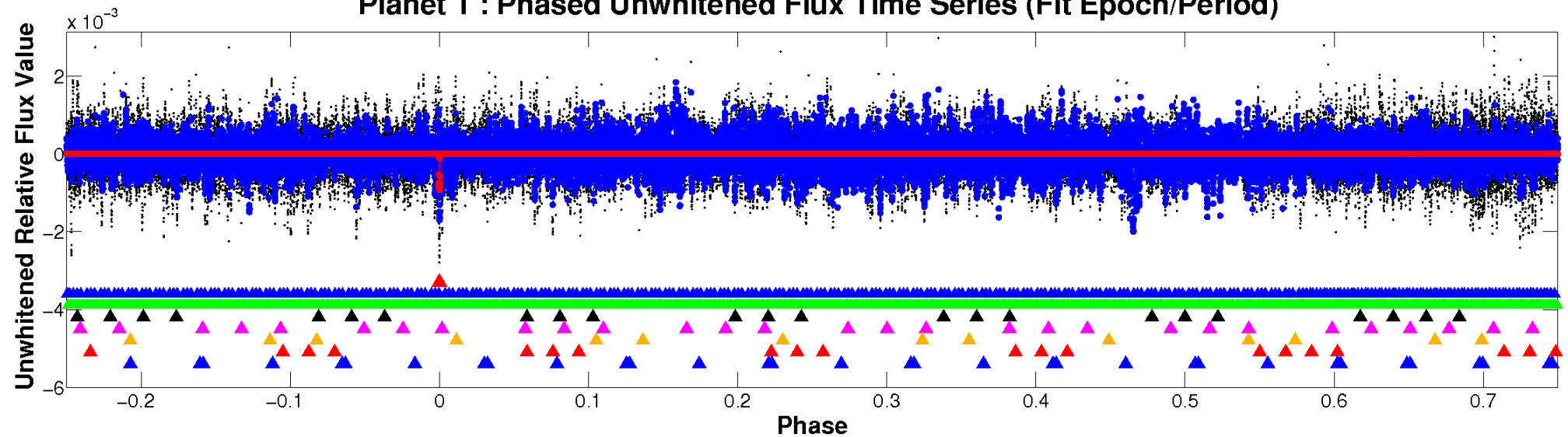
ALT Odd/Even

TCE 005198337-01

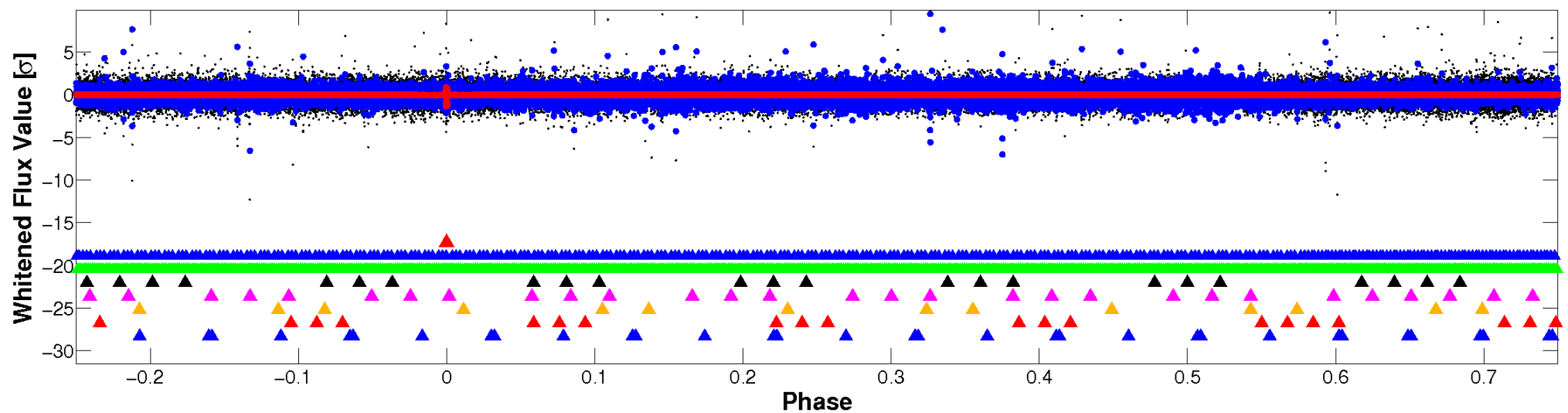


Non-Whitened Vs. Whitened Light Curve

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

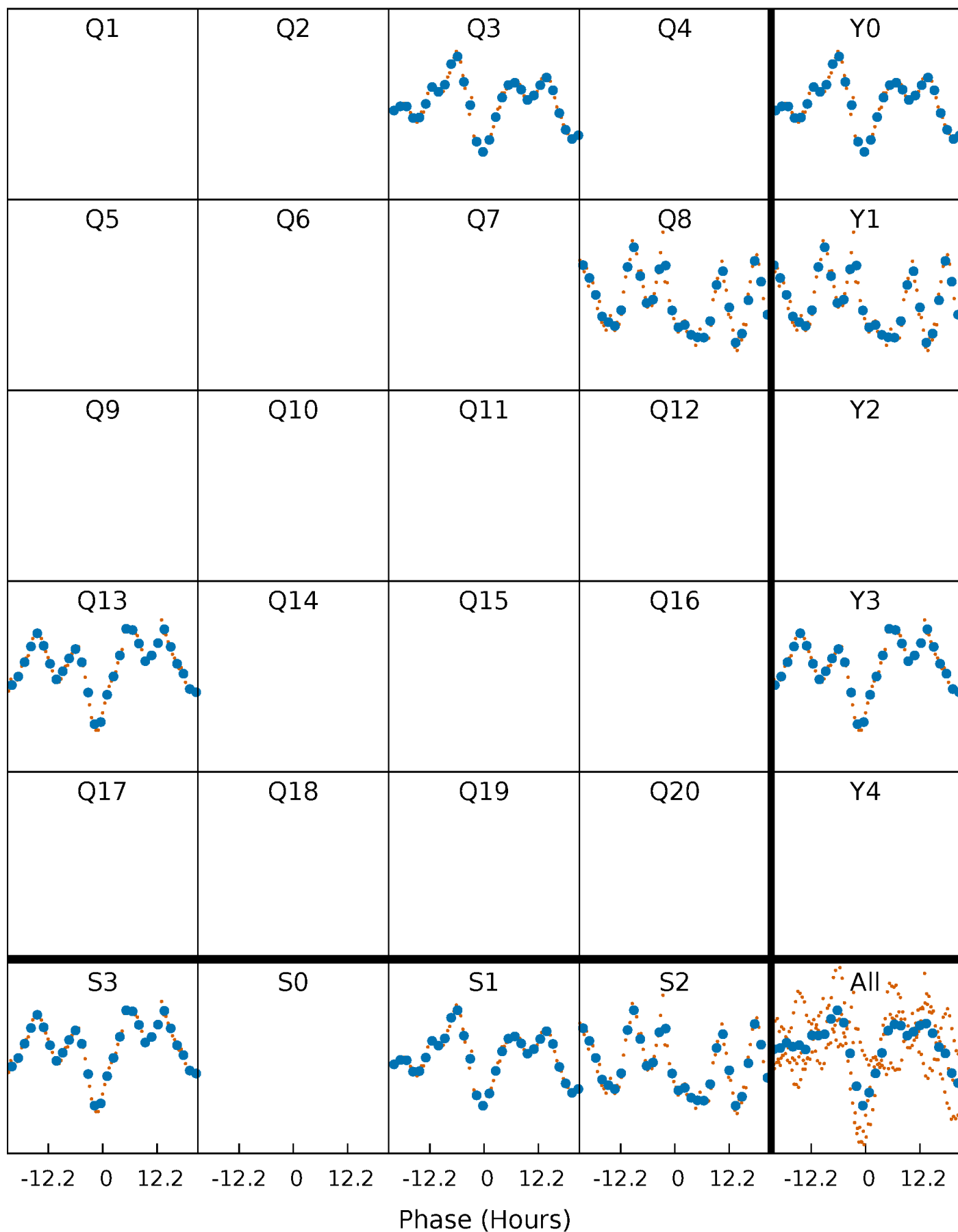


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



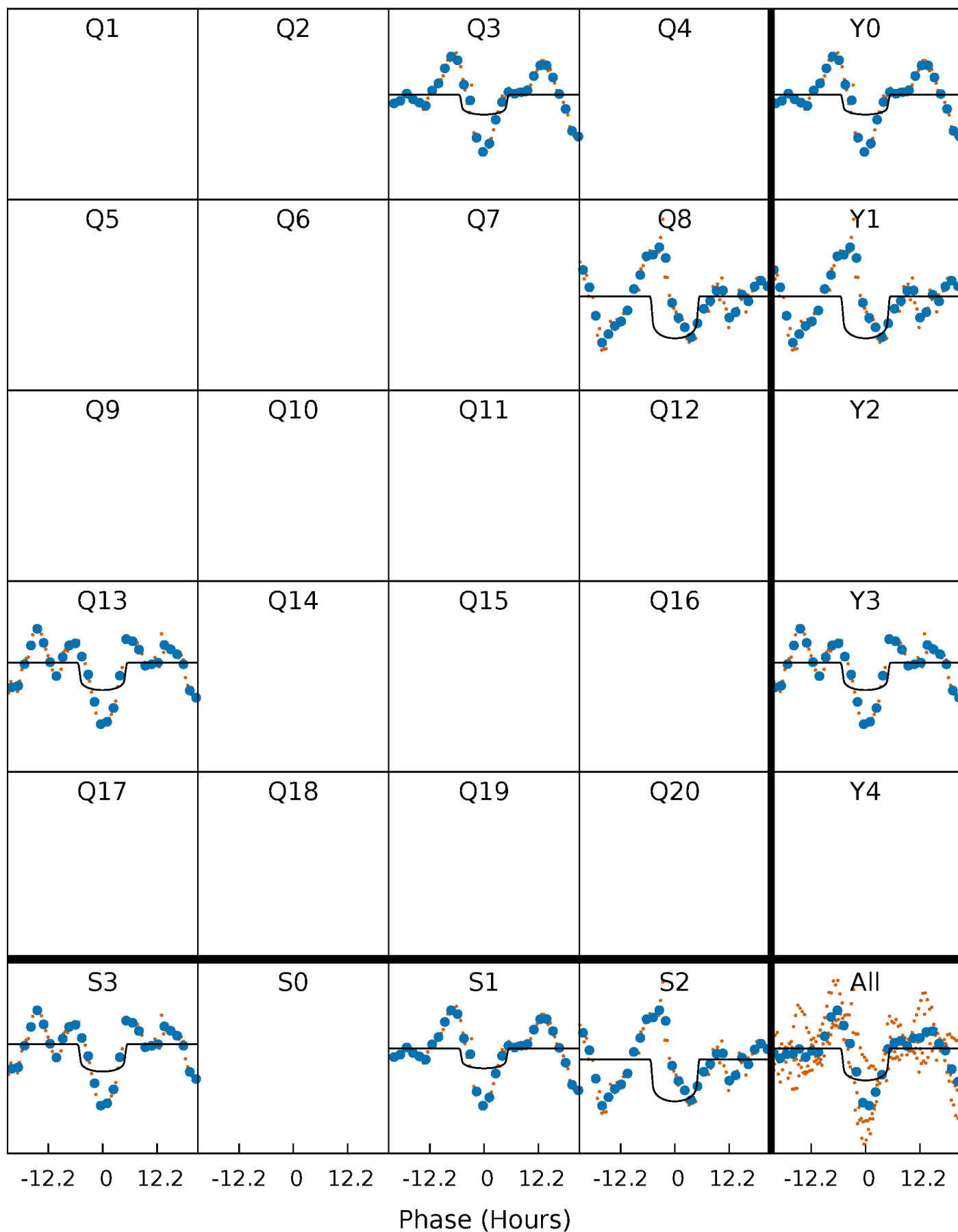
PDC Quarter-Phased Transit Curves

TCE 005198337-01 P=458.318977 Days $T_0=325.869134$ (BKJD)



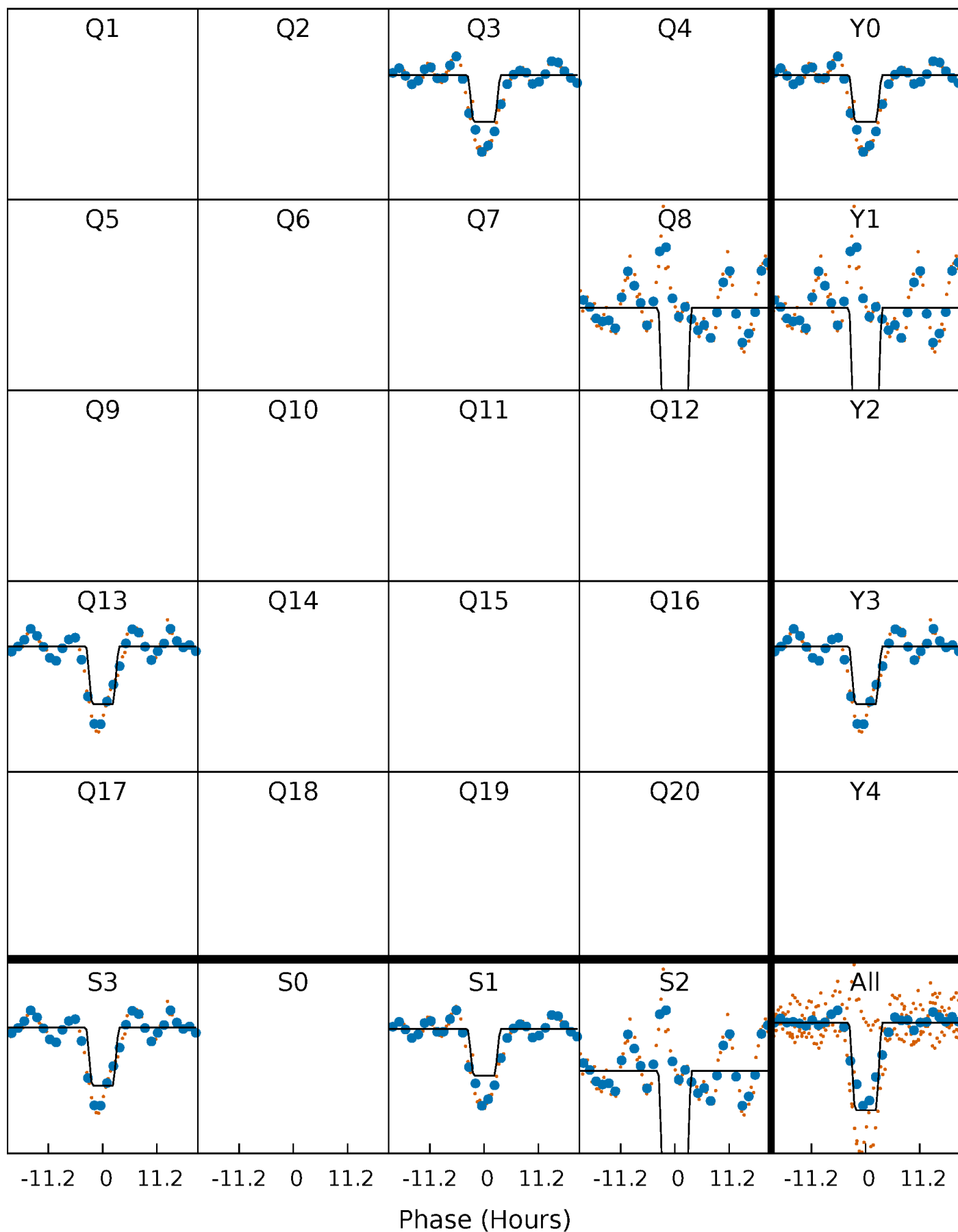
DV Quarter-Phased Transit Curves

TCE 005198337-01 P=458.318977 Days $T_0=325.869134$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

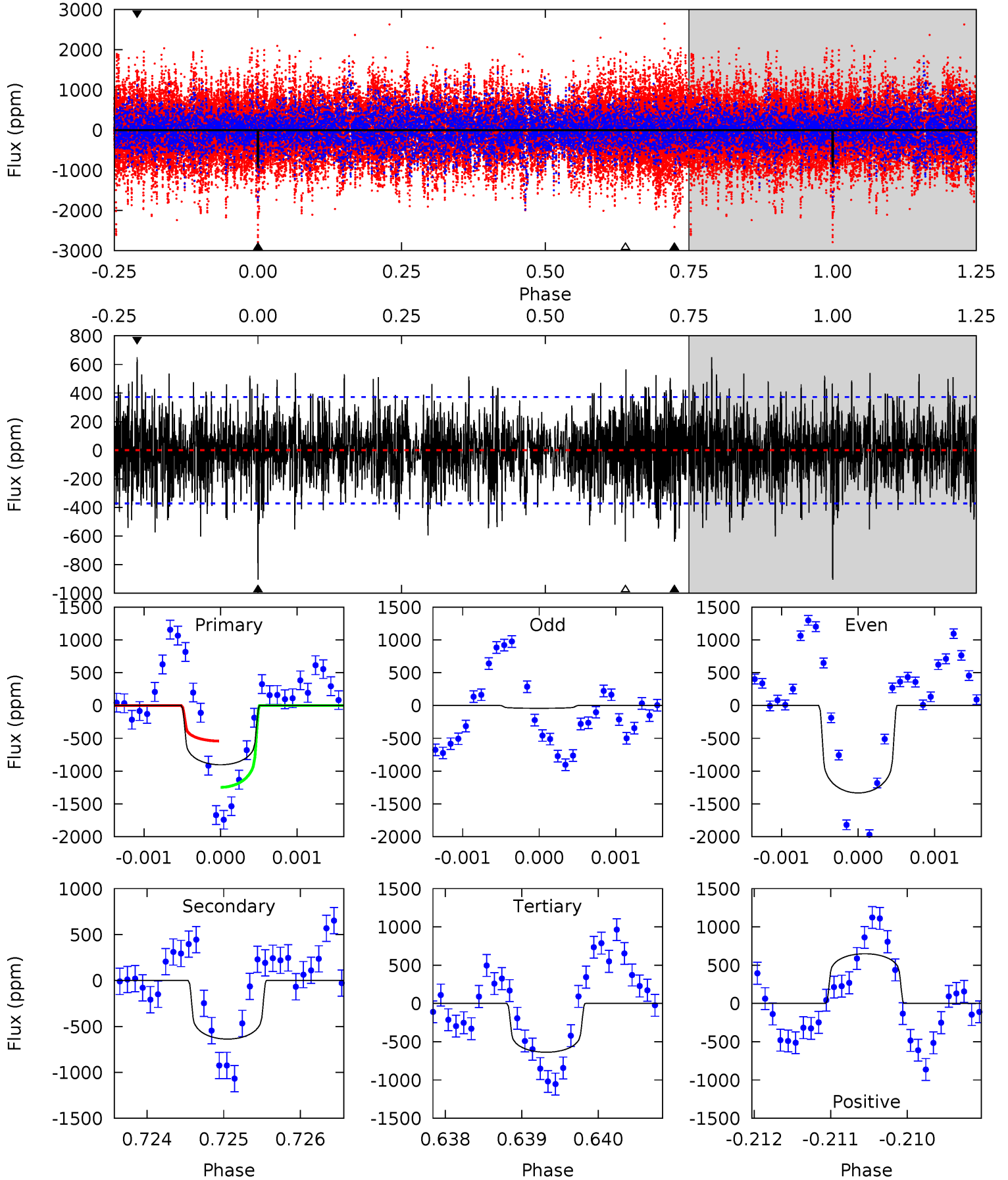
TCE 005198337-01 $P=458.324751$ Days $T_0=325.850180$ (BKJD)



DV Model-Shift Uniqueness Test

005198337-01, P = 458.318977 Days, E = 325.869134 Days

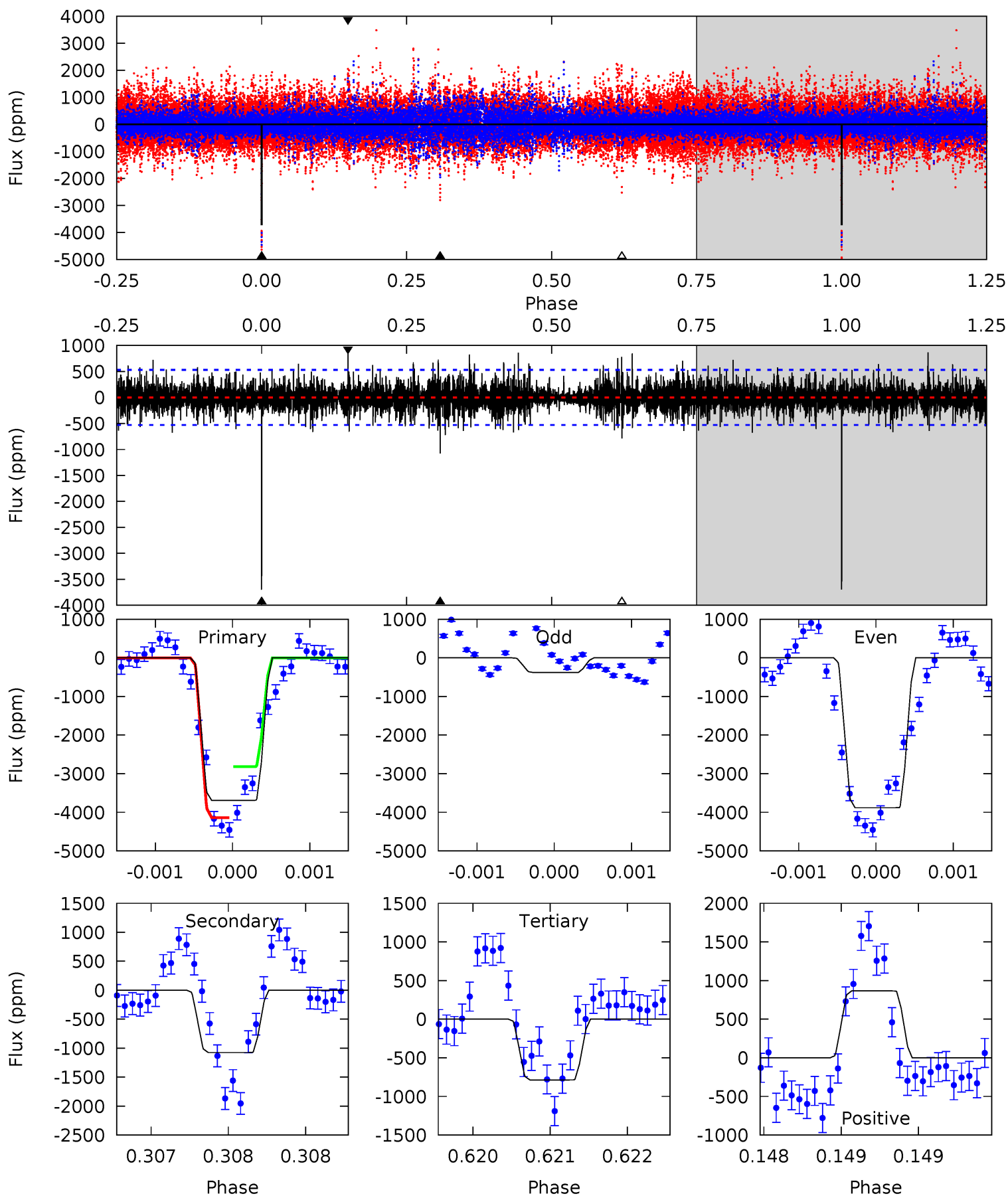
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.3	9.36	9.35	9.53	5.45	3.29	2.70	3.91	3.73	0.01	-0.17	8.70	0.72	0.42	5.17



Alt Model-Shift Uniqueness Test

005198337-01, P = 458.324751 Days, E = 325.850180 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
38.6	11.3	8.23	9.06	5.54	3.42	1.93	30.4	29.6	3.02	2.19	19.4	0.71	0.19	7.06



Stellar Parameters For KIC 005198337

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6897^{+206}_{-227}	$3.130^{+0.536}_{-0.134}$	$0.070^{+0.200}_{-0.350}$	$7.410^{+1.696}_{-4.241}$	$2.703^{+0.293}_{-0.879}$	$0.009^{+0.066}_{-0.004}$
	+3%/-3%	+17%/-4%	+286%/-500%	+23%/-57%	+11%/-33%	+705%/-41%
Source	PHO1	FLK73	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 005198337-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-638 ± 68	$20.97^{+6.51}_{-5.61}$	885^{+72}_{-115}	6425^{+858}_{-599}	2069^{+1681}_{-850}
Alt.	-1075 ± 96	$40.73^{+8.84}_{-10.94}$	886^{+70}_{-126}	5367^{+346}_{-276}	914^{+741}_{-284}

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 $A_{obs} \gg 1.0$

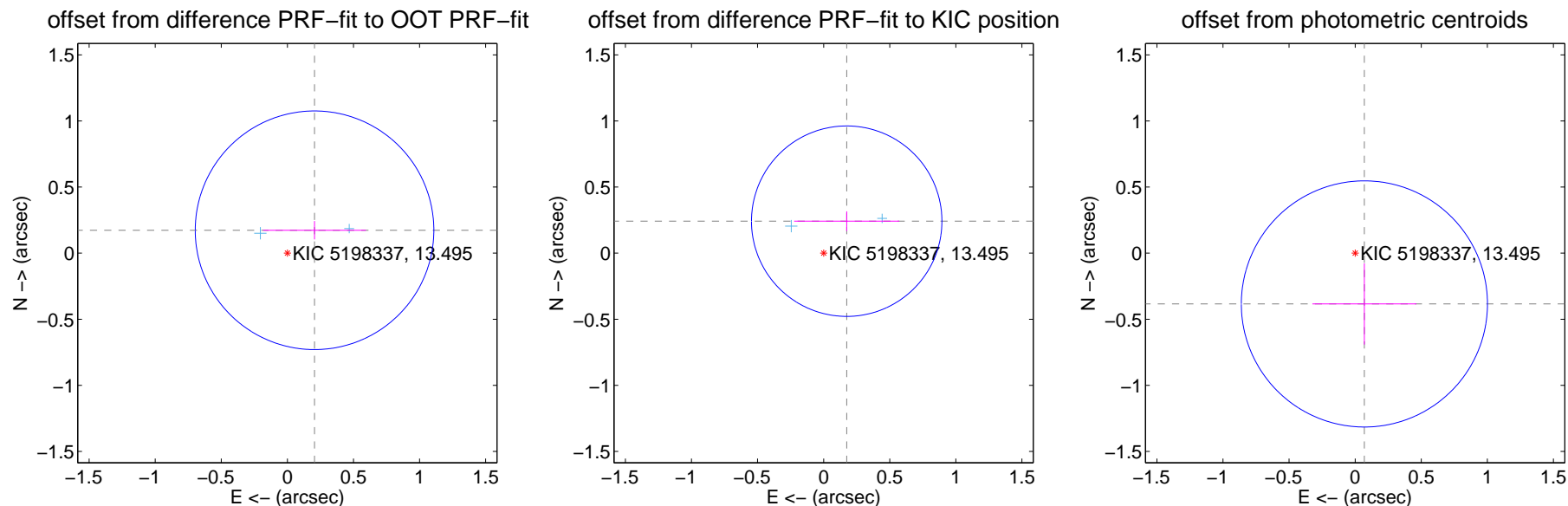
DV Centroid Data

Supplemental centroid analysis for 005198337-01. Kepler magnitude: 13.49. Transit SNR 7.08

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	0.269 ± 0.301	0.89	-0.205 ± 0.389	0.173 ± 0.070
PRF-fit source offset from KIC position	0.298 ± 0.240	1.24	-0.174 ± 0.398	0.242 ± 0.074
photometric centroid source offset	0.39 ± 0.31	1.26	-0.07 ± 0.39	-0.38 ± 0.31



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



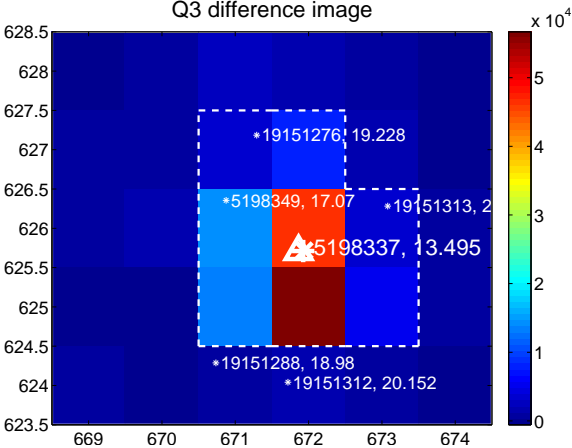
Q2 no difference image



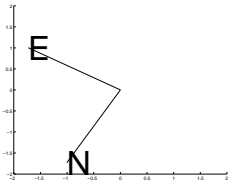
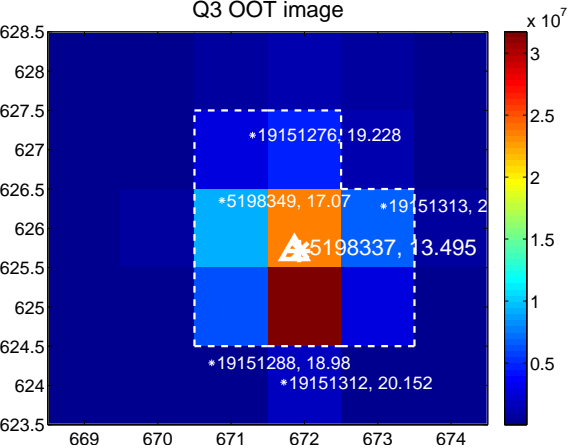
Q2 no OOT image



Q3 difference image



Q3 OOT image



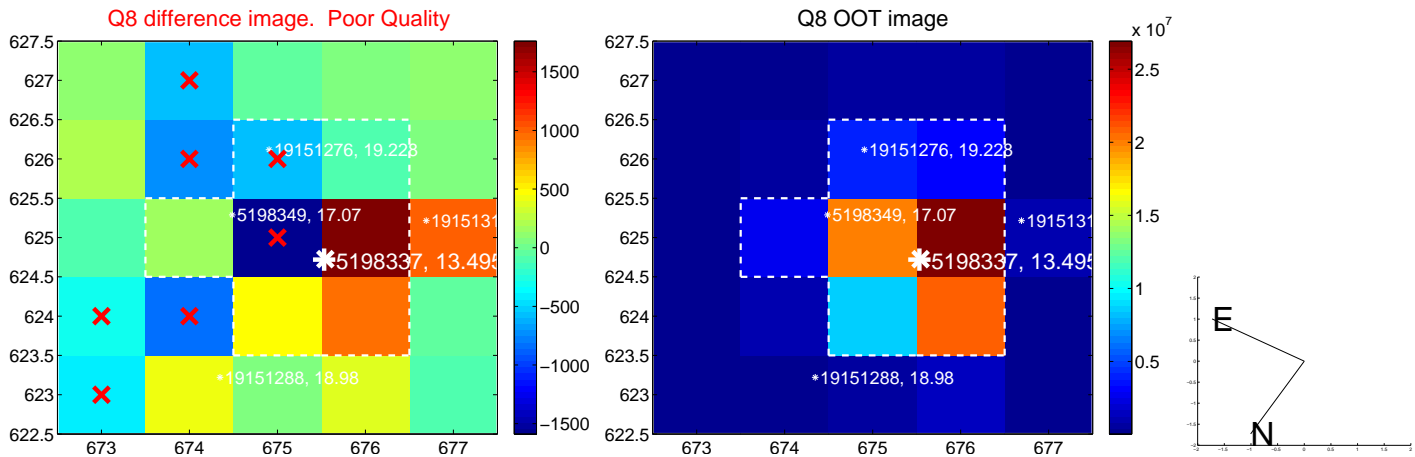
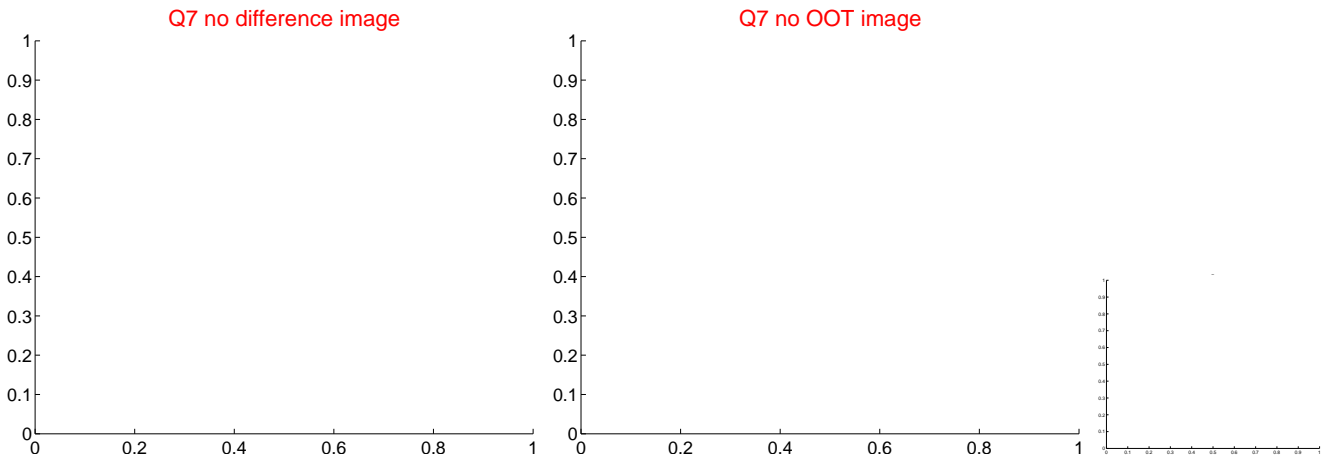
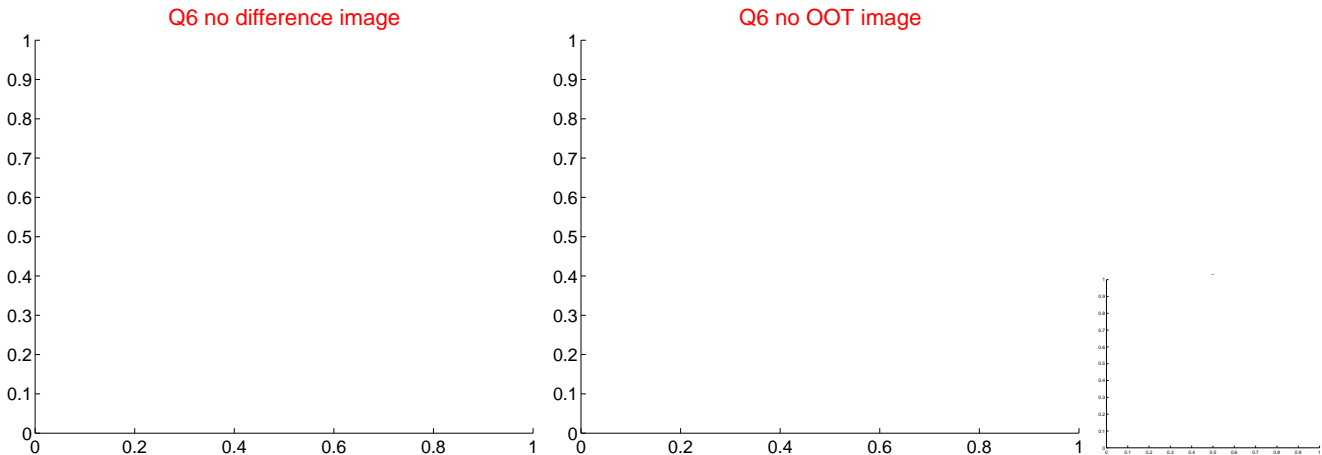
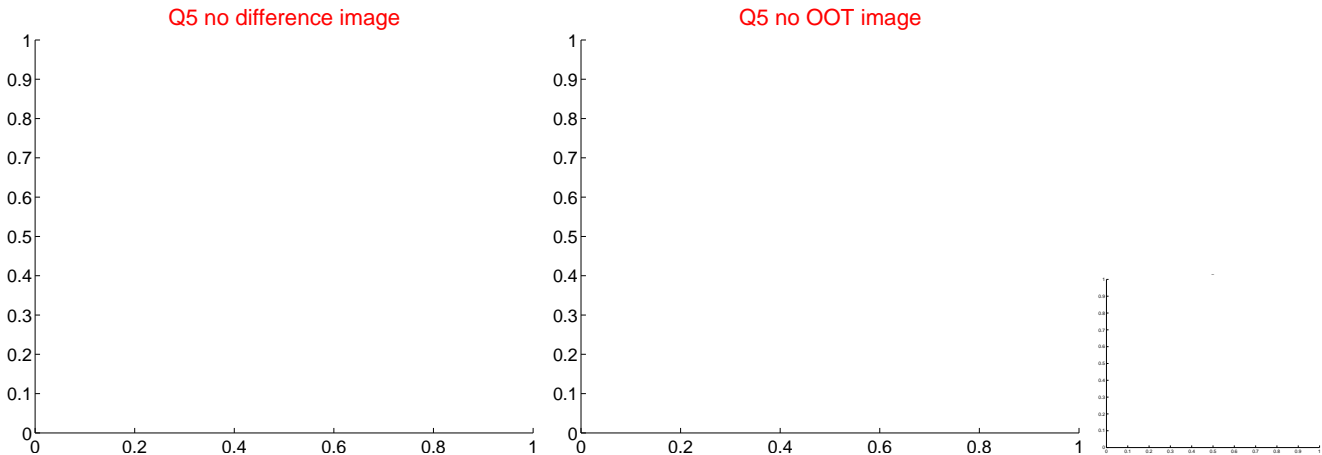
Q4 no difference image



Q4 no OOT image



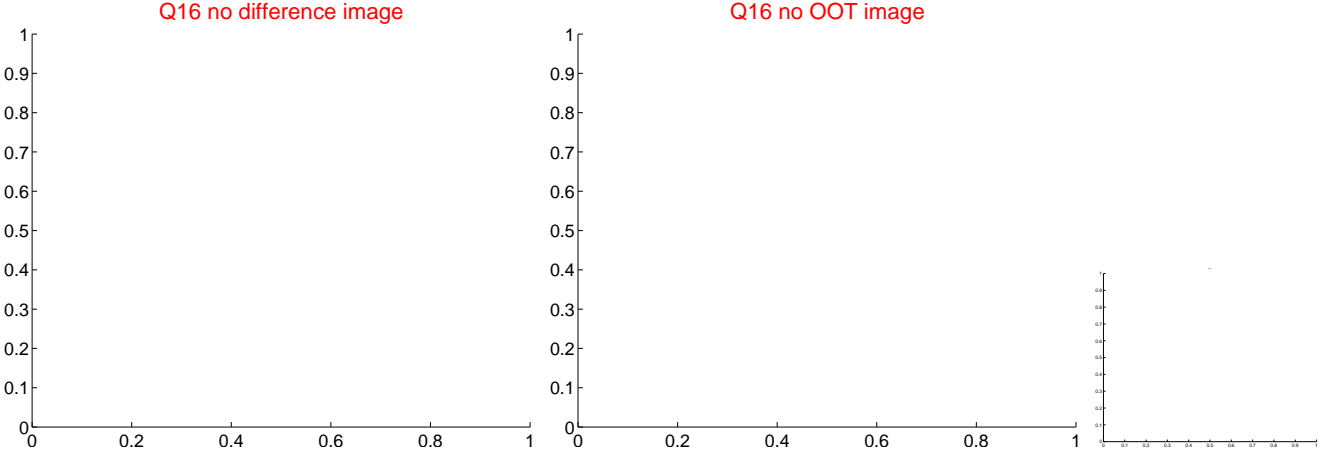
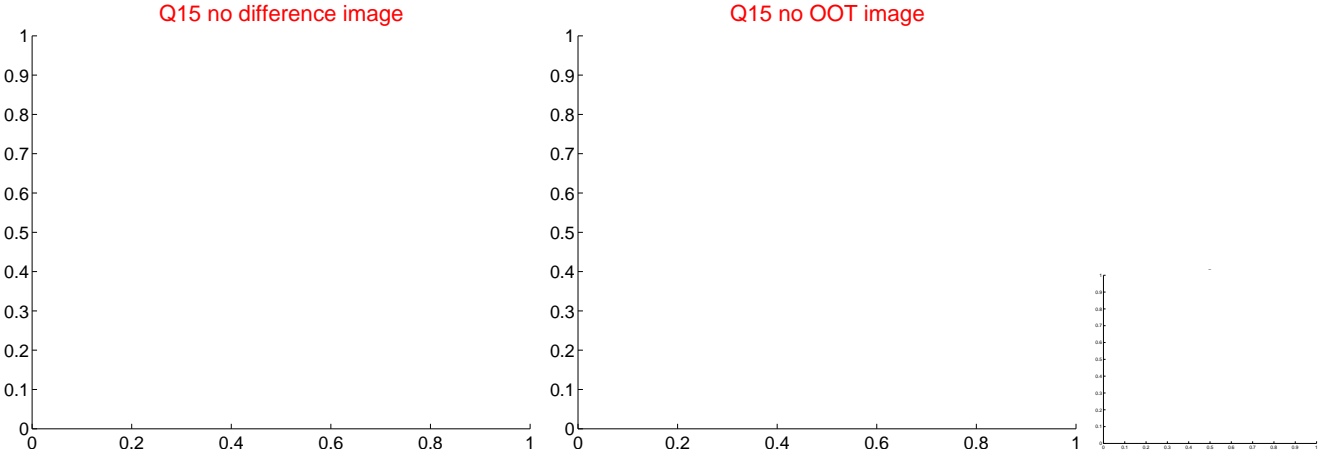
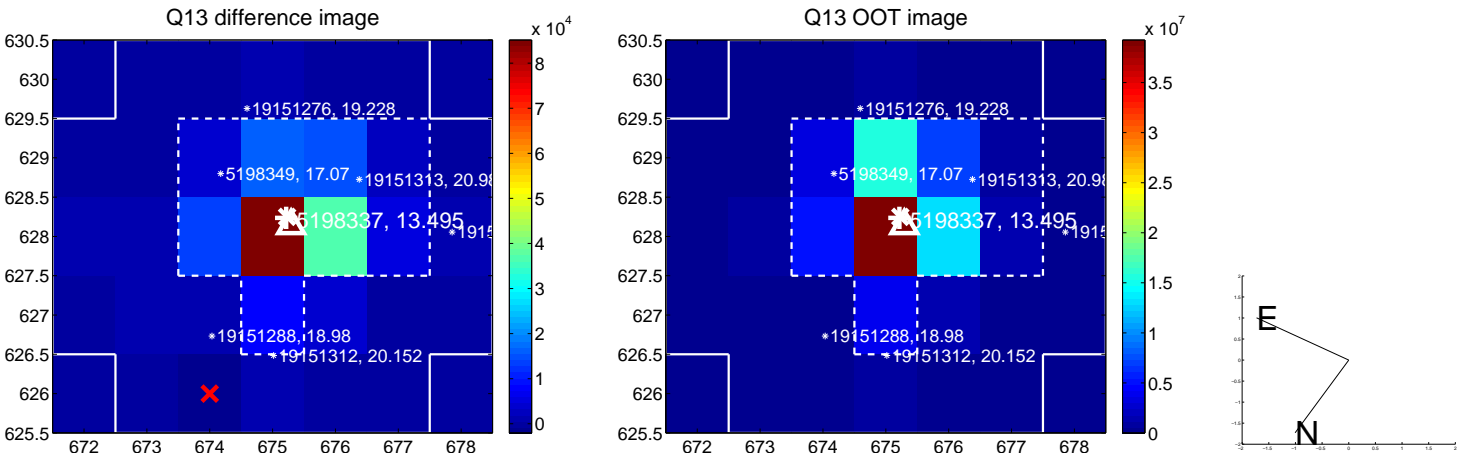
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



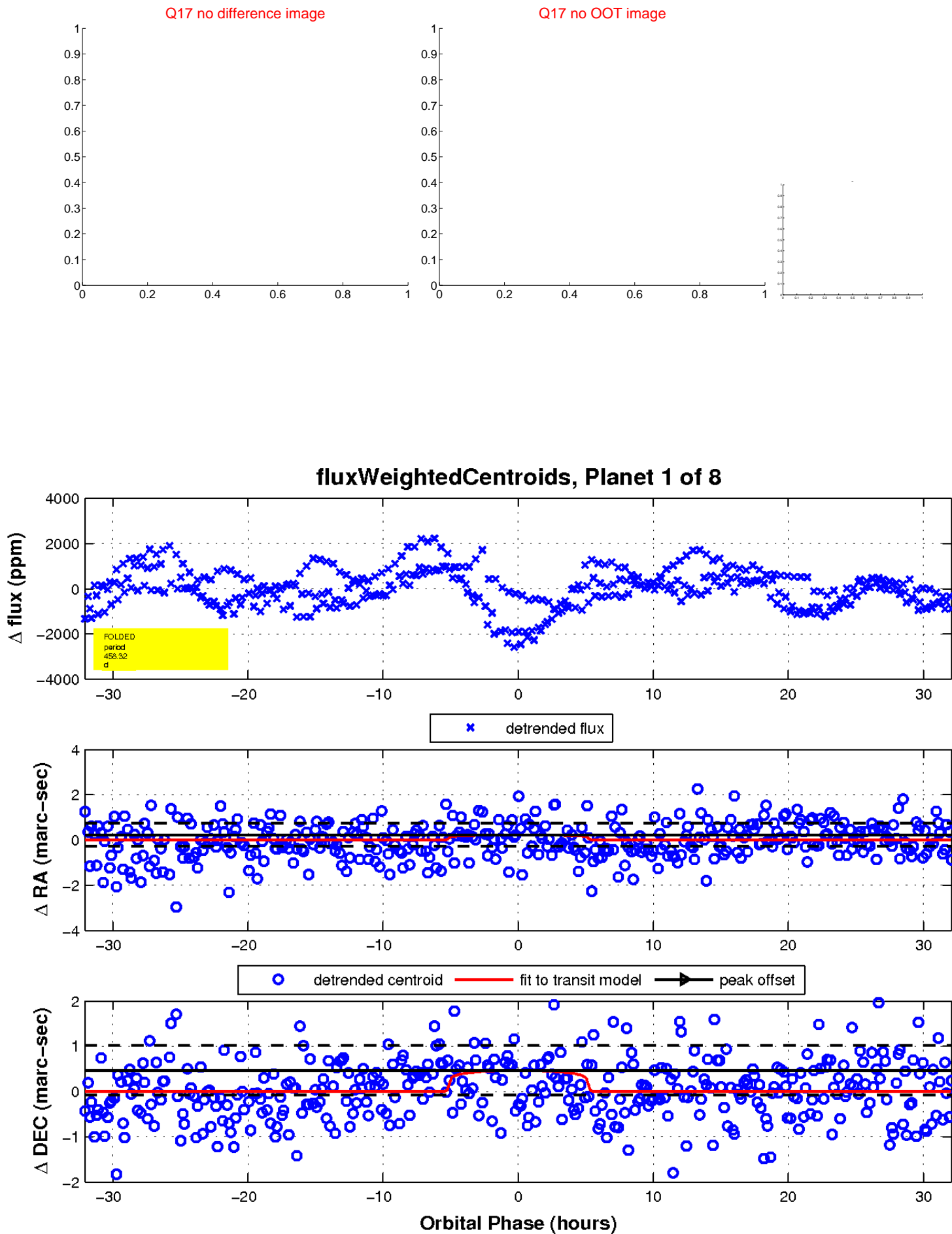
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white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

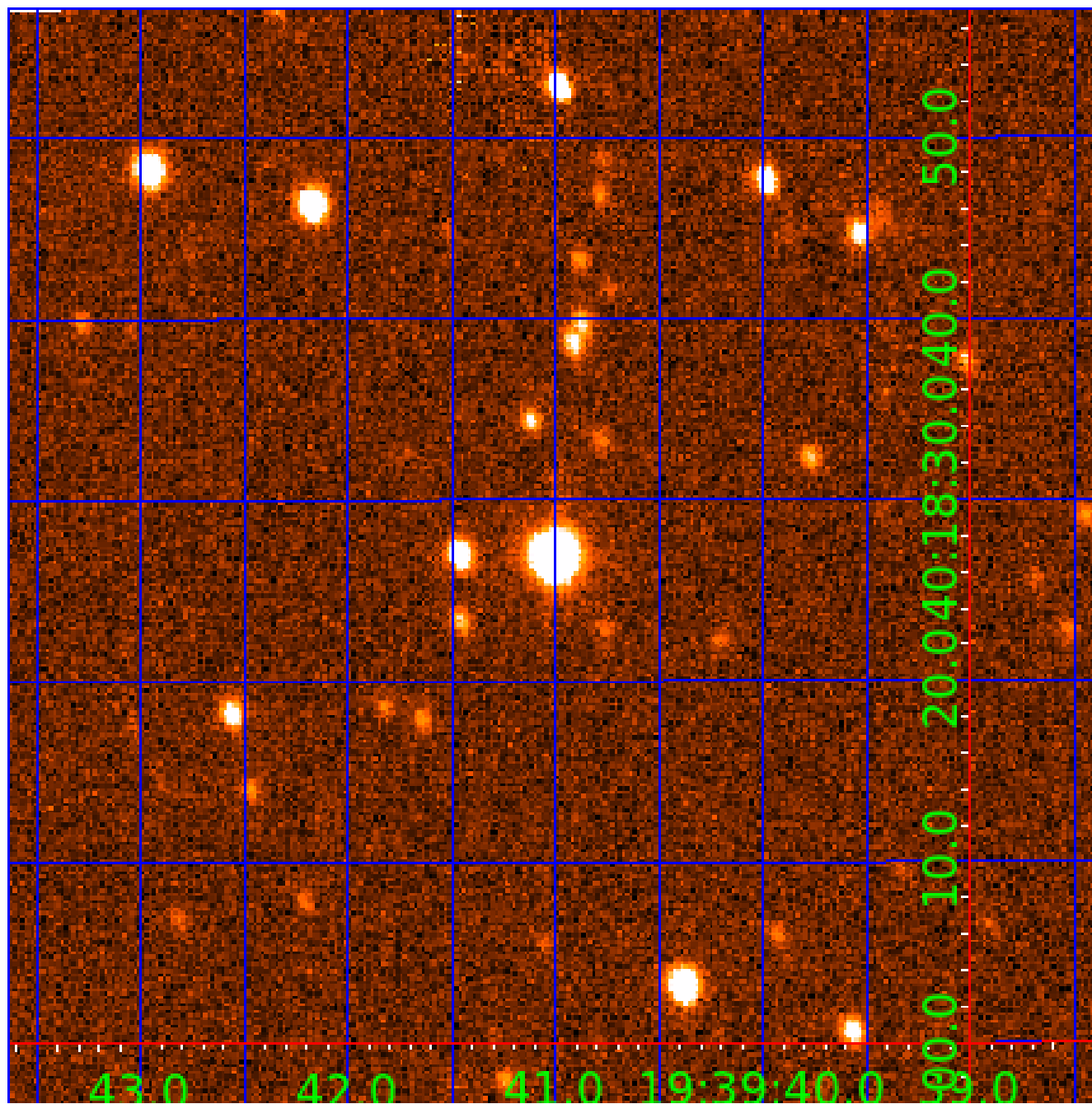


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005198337

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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005198337-05	OBS	No	49.592274	177.887070	1277.1	8.663	11.6	11.3	7.41	6897	49.24	821.98
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Robovetter Results

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005198337-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
005198337-03	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005198337-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
005198337-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005198337-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—HALO_GHOST

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

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

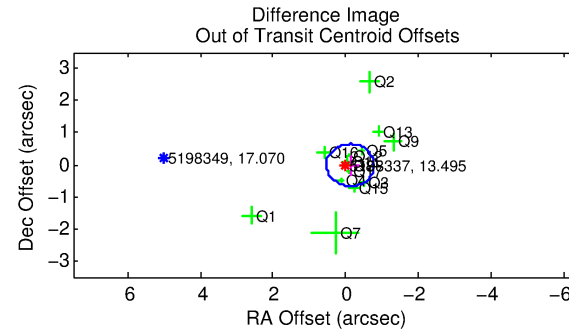
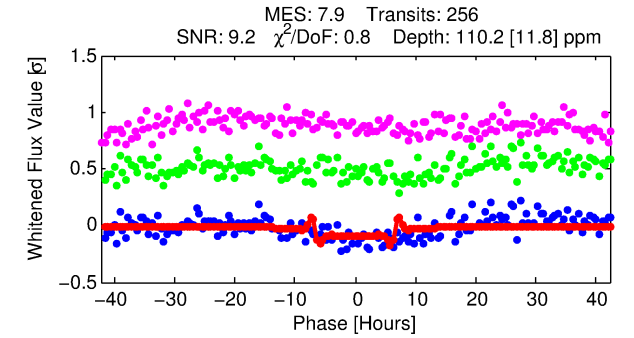
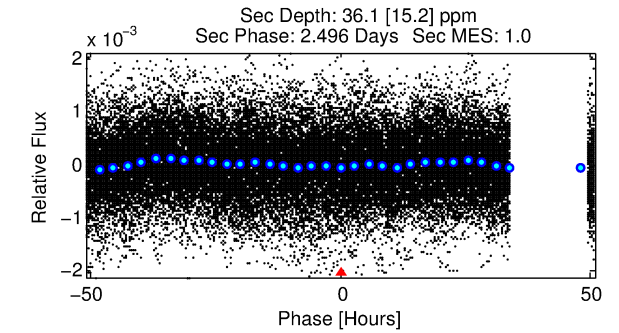
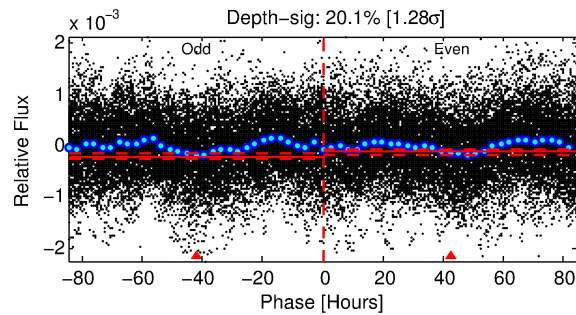
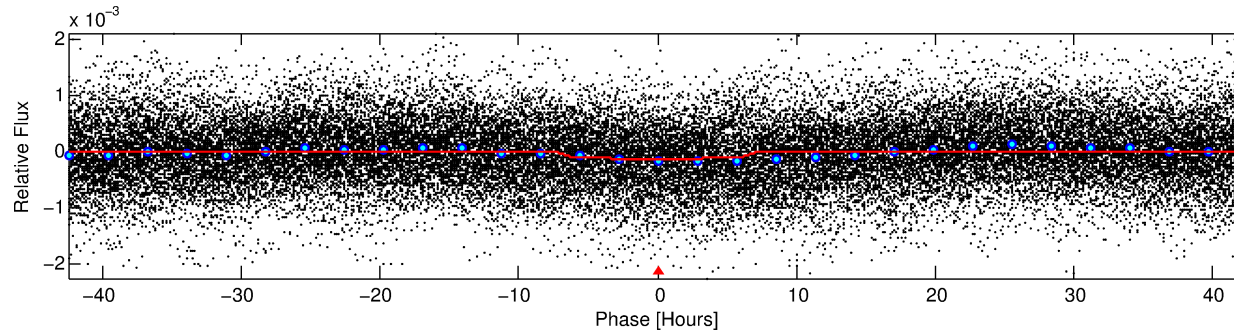
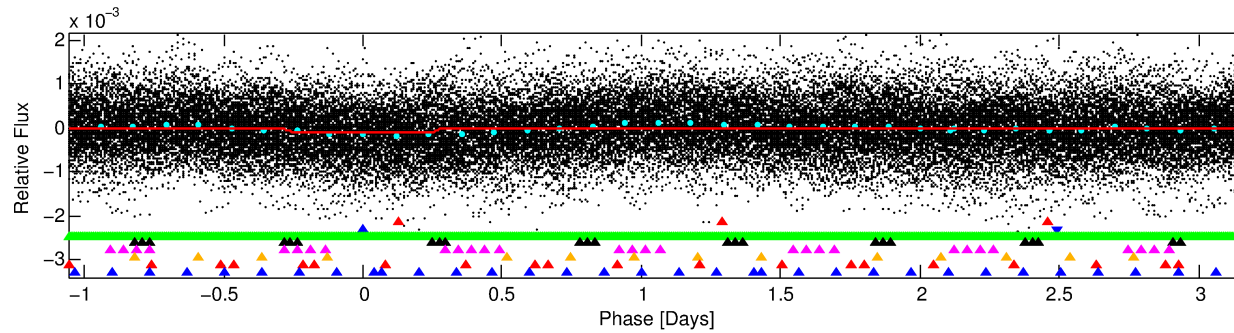
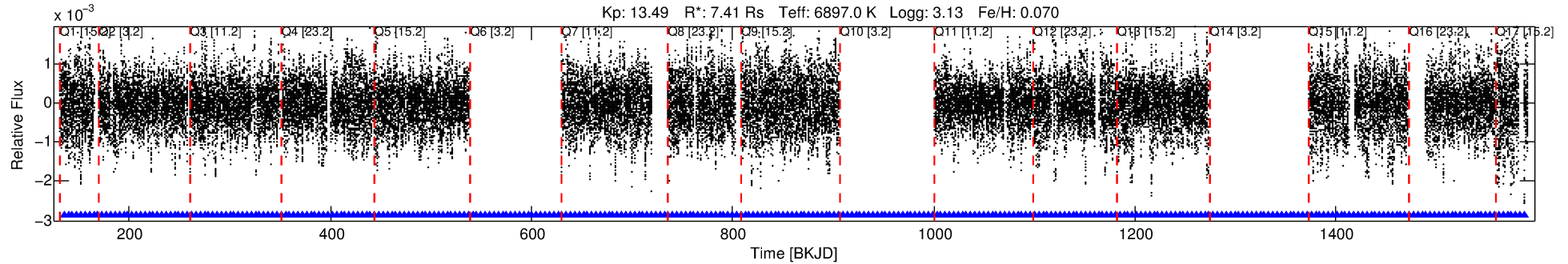
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005198337-02

No Significant Match Found

DV One-Page Summary

KIC: 5198337 Candidate: 2 of 8 Period: 4.233 d



DV Fit Results:

Period = 4.23291 [0.00003] d
Epoch = 135.2598 [0.0048] BKJD
Rp/R* = 0.0112 [0.0007]
a/R* = 1.40 [0.13]
b = 0.90 [0.04]
Seff = 21872.34 [20045.16]
Teq = 3101 [710] K
Rp = 9.07 [5.22] Re
a = 0.0713 [0.0400] AU
Ag = 1.23 [1.24] [0.18 σ]
Teffp = 5047 [578] K [2.12 σ]

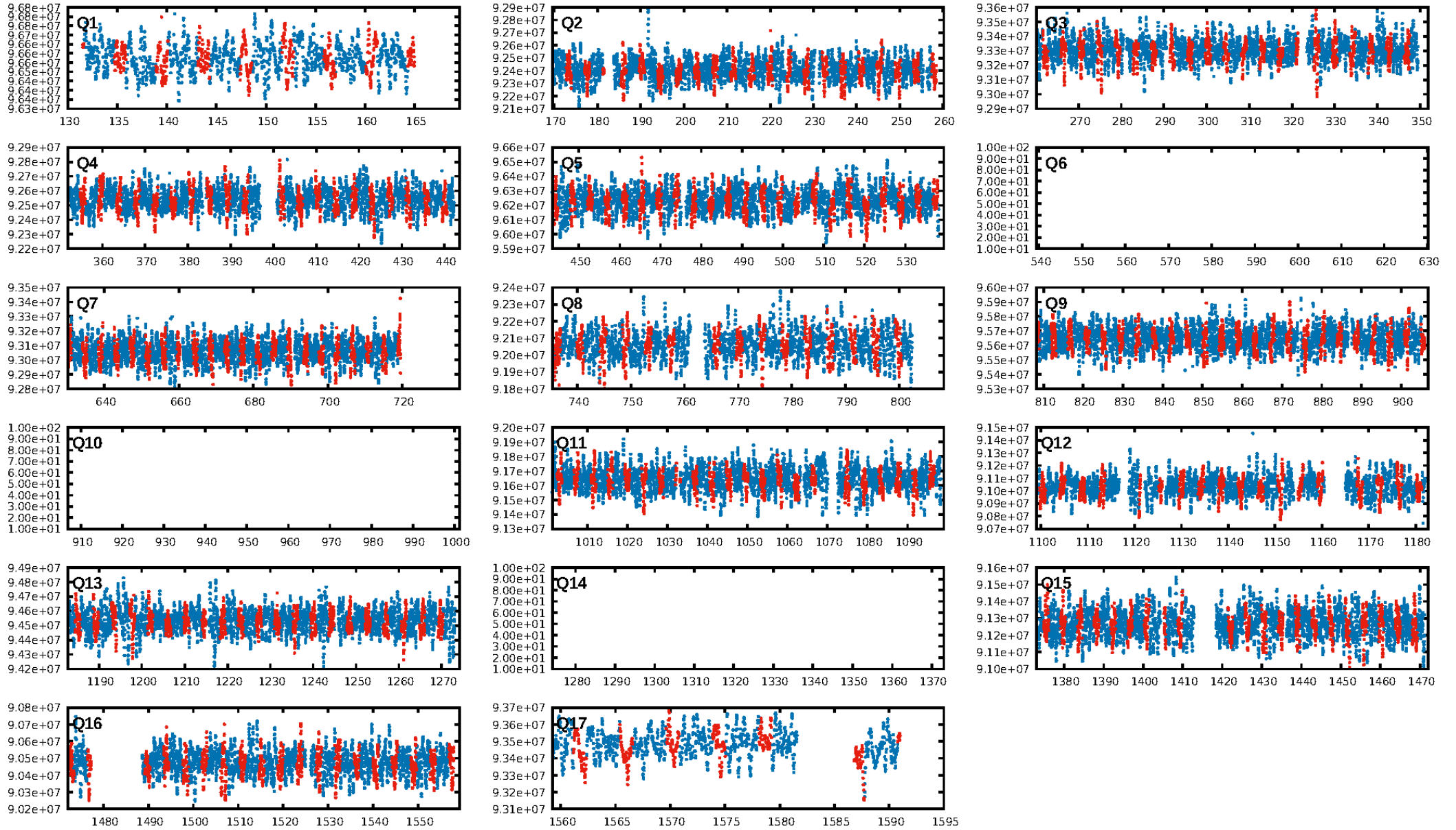
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [4.40 σ]
LongPeriod-sig: 100.0% [63.12 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [242/242]
GhostDiagnostic-chr: 1.011
Centroid-sig: 0.0%
Centroid-so: 0.788 arcsec [2.95 σ]
OotOffset-rm: 0.122 arcsec [0.56 σ]
KicOffset-rm: 0.094 arcsec [0.29 σ]
OotOffset-st: 1/4/4/5 [14]
KicOffset-st: 1/4/4/5 [14]
DiffImageQuality-fgm: 0.71 [10/14]
DiffImageOverlap-fno: 0.00 [0/14]

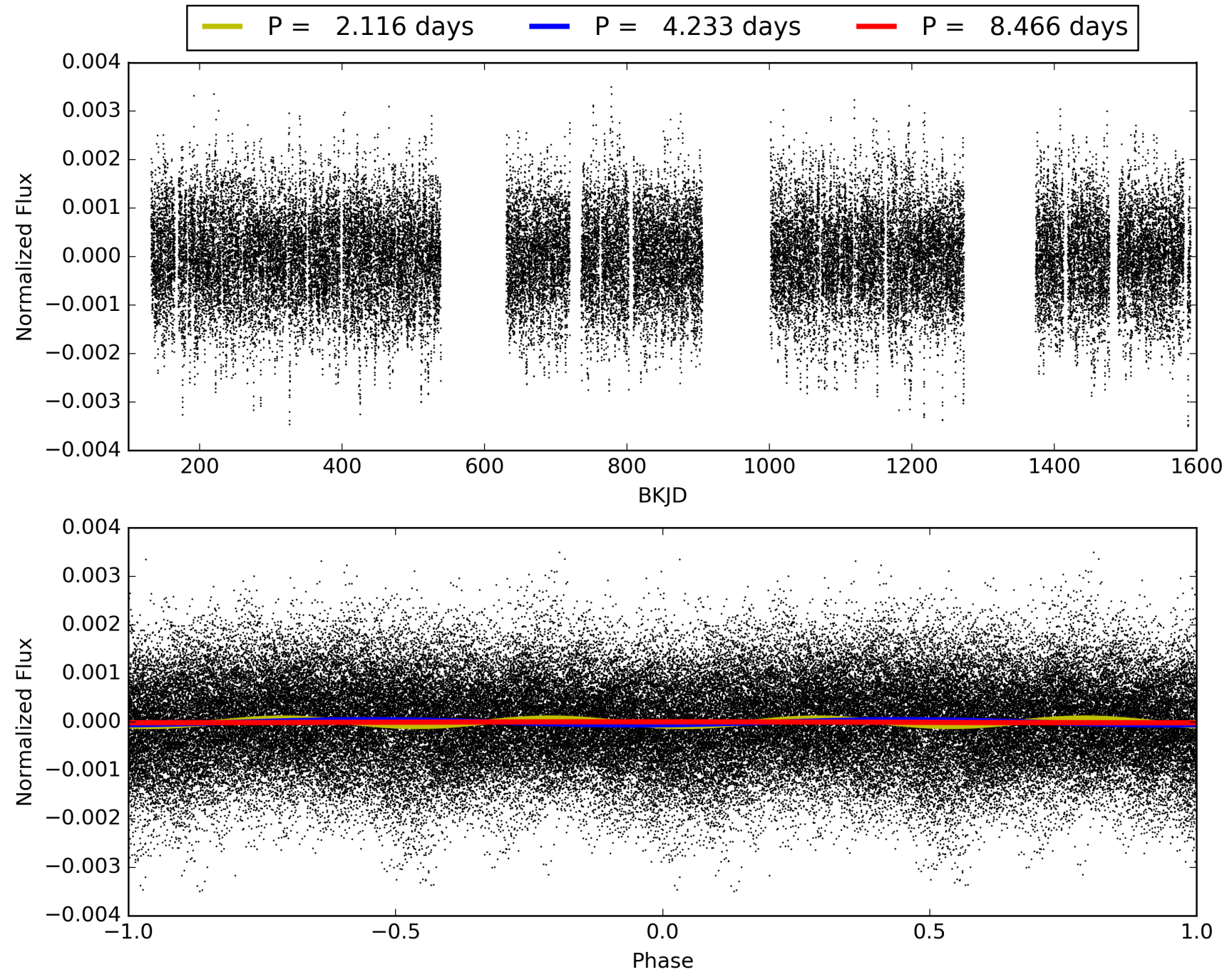
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005198337-02, PDC Light Curves

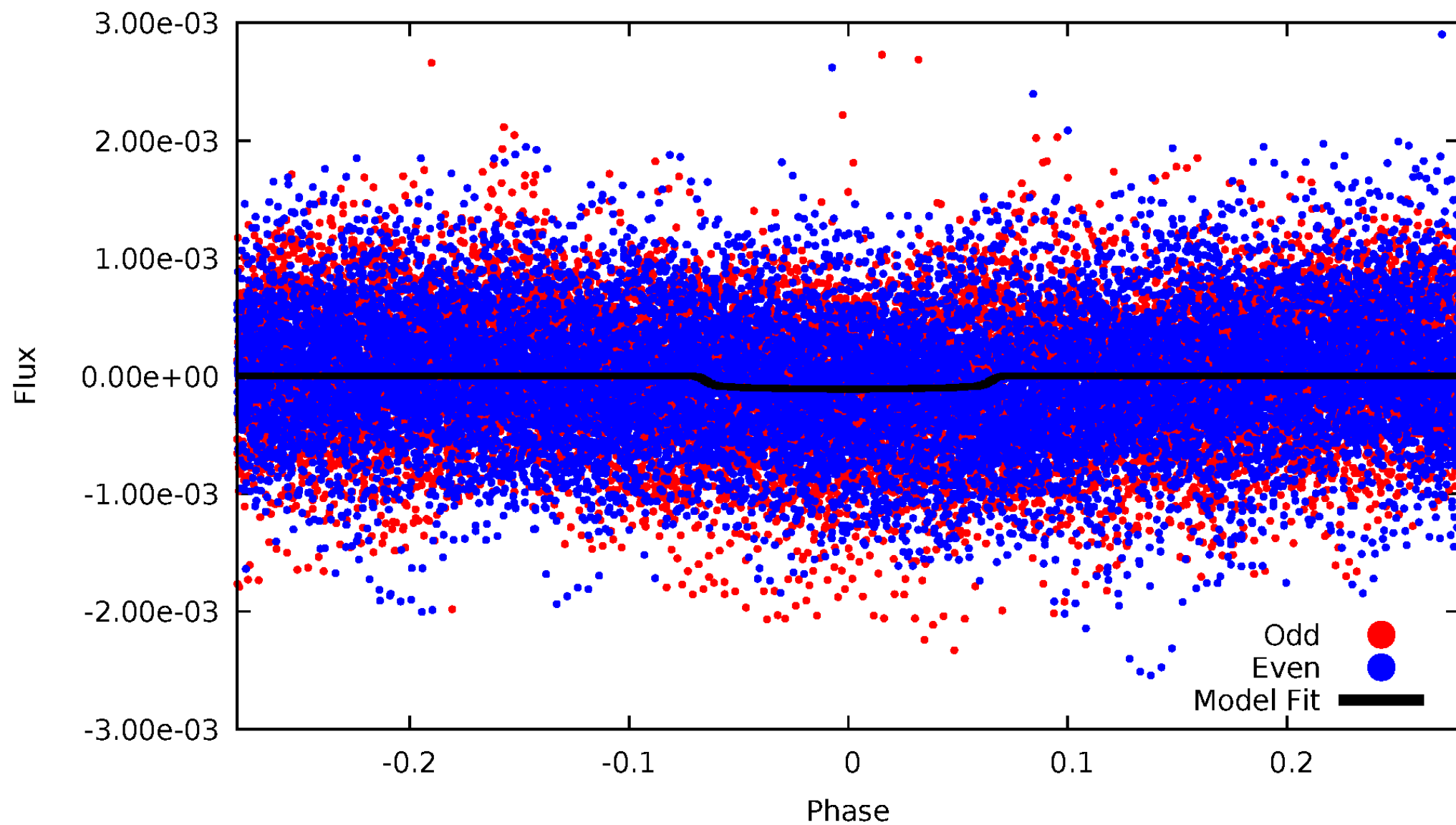


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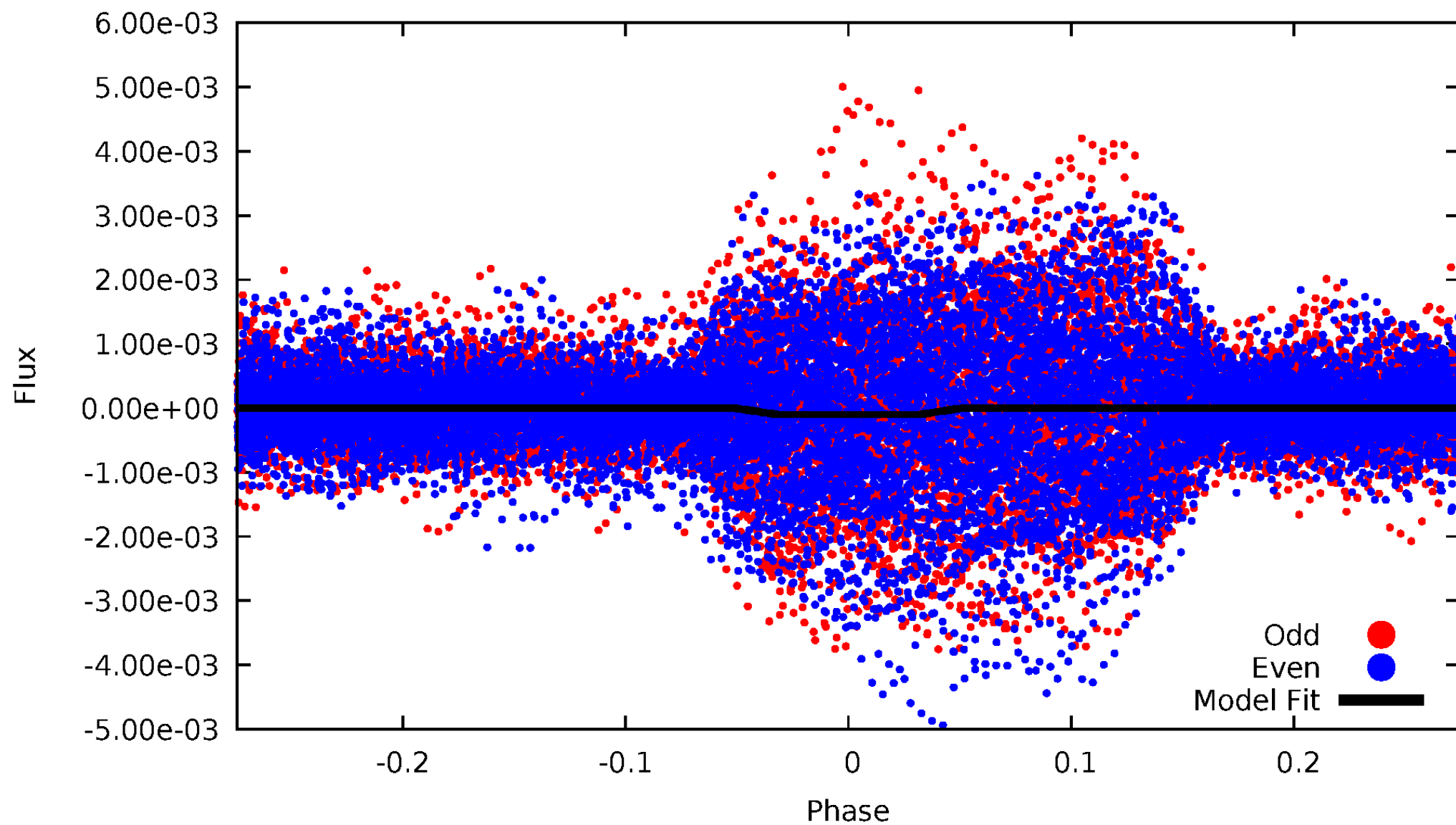
DV Odd/Even

TCE 005198337-02



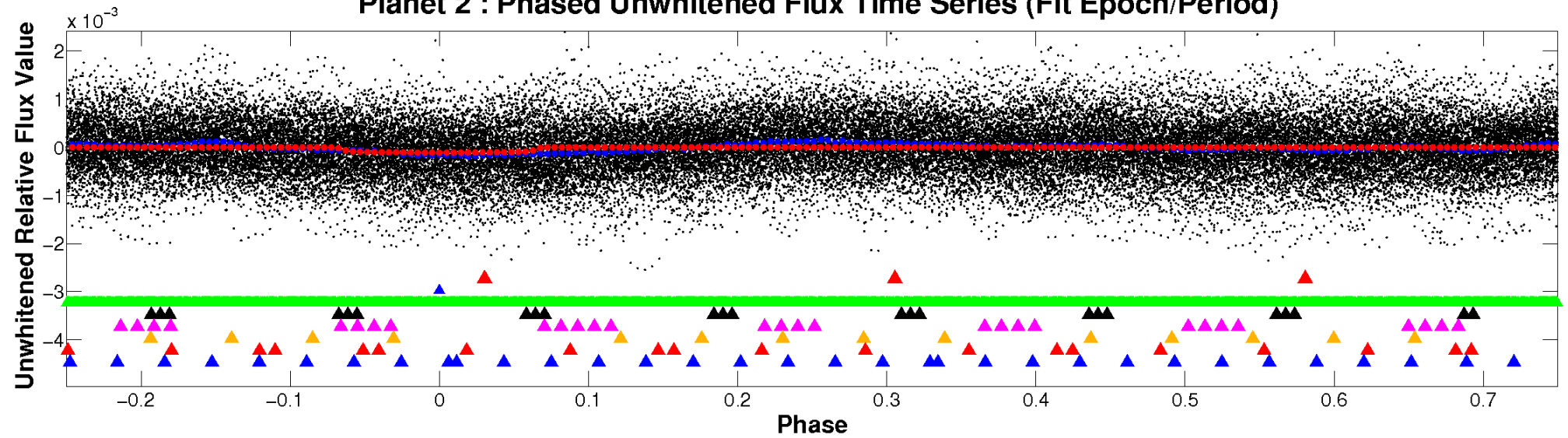
ALT Odd/Even

TCE 005198337-02

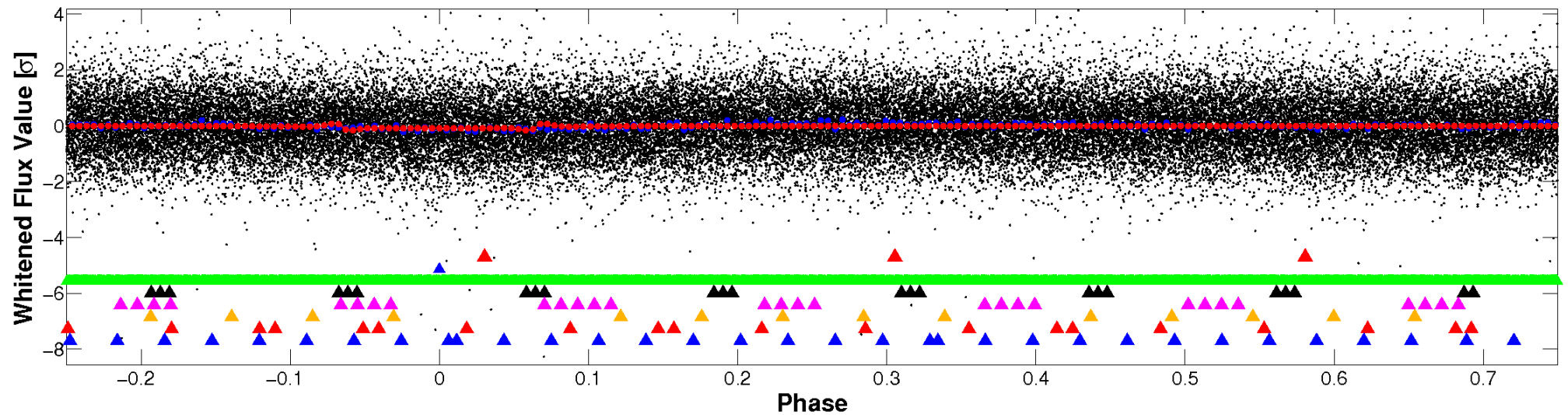


Non-Whitened Vs. Whitened Light Curve

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

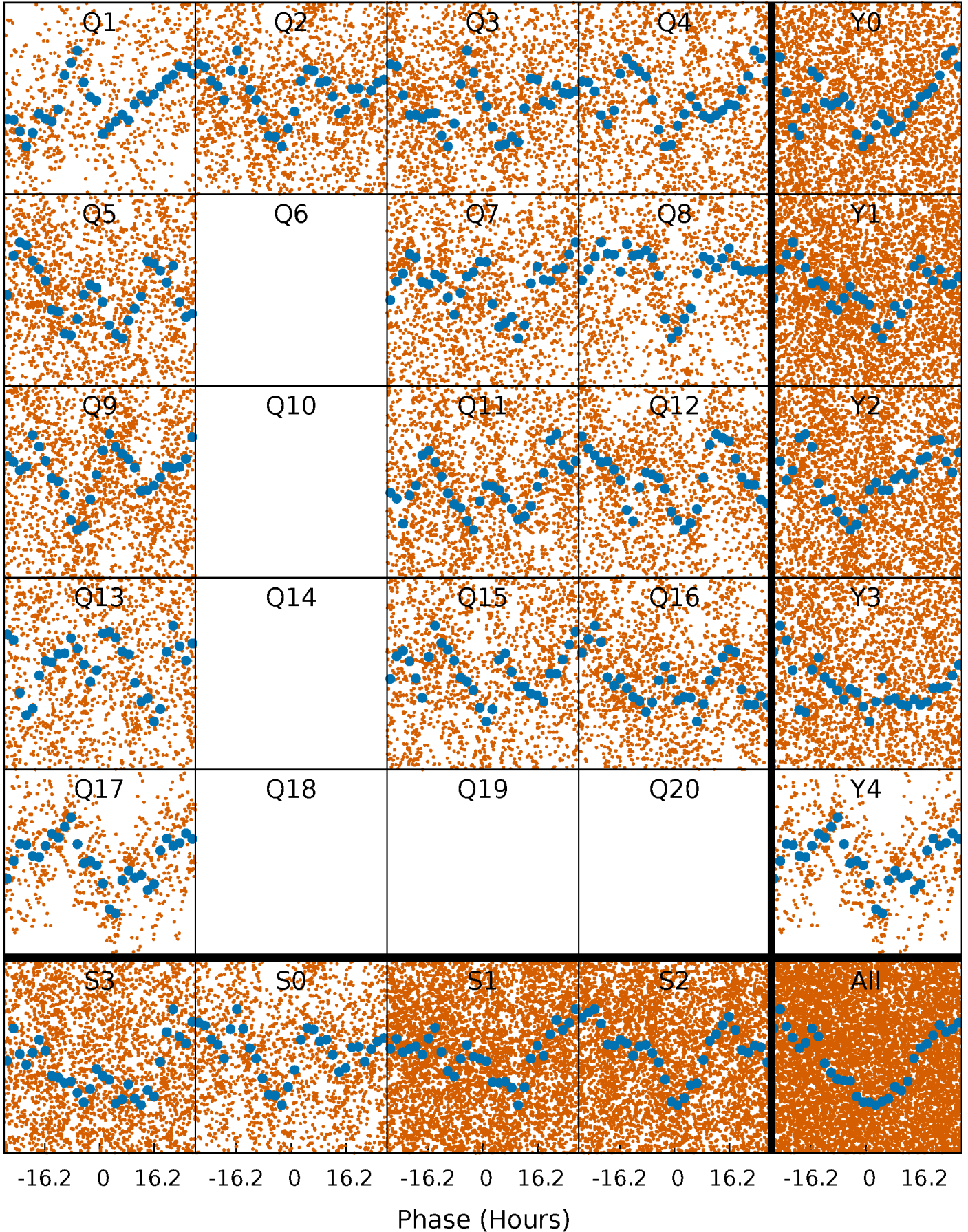


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



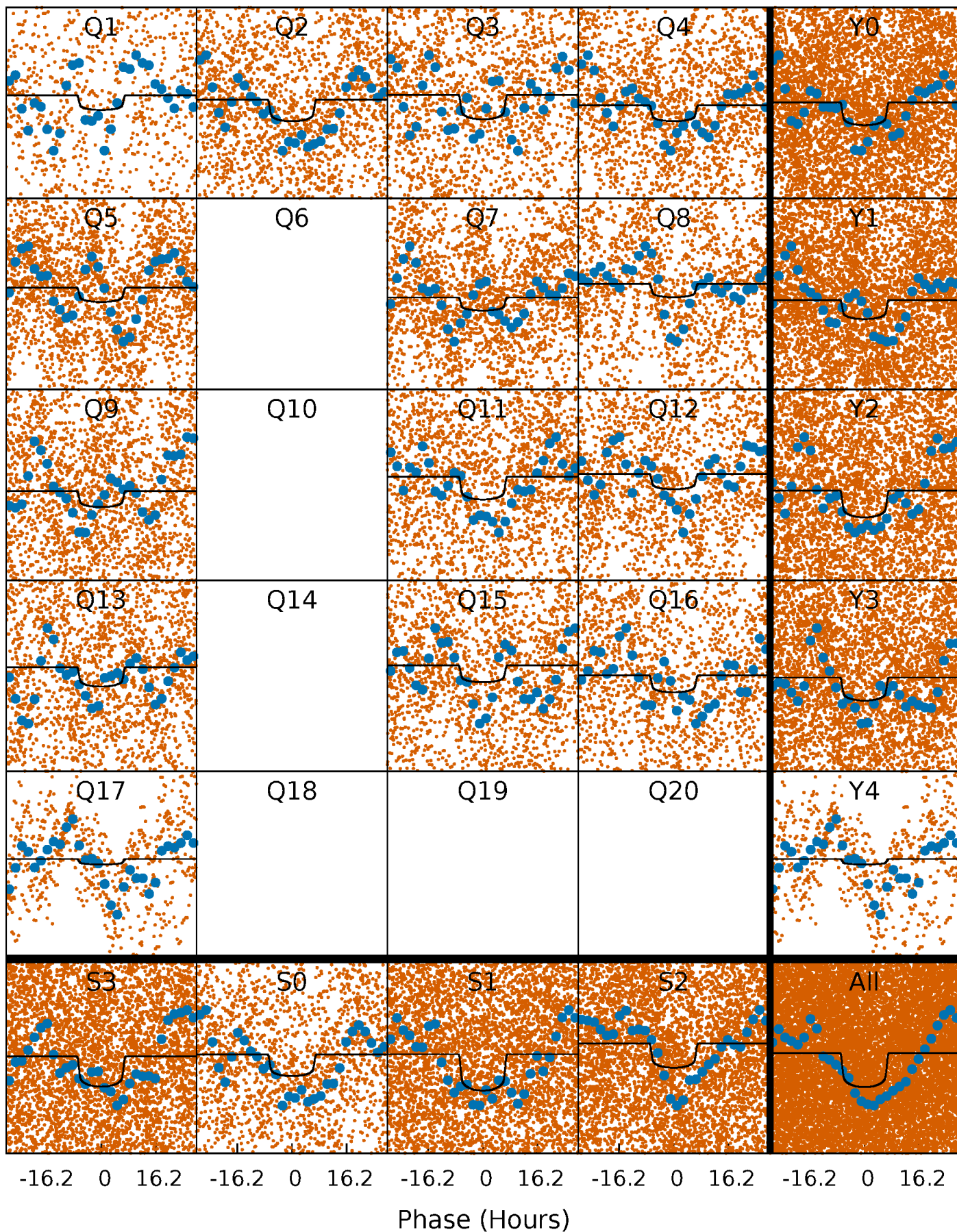
PDC Quarter-Phased Transit Curves

TCE 005198337-02 P= 4.232910 Days $T_0=135.259797$ (BKJD)



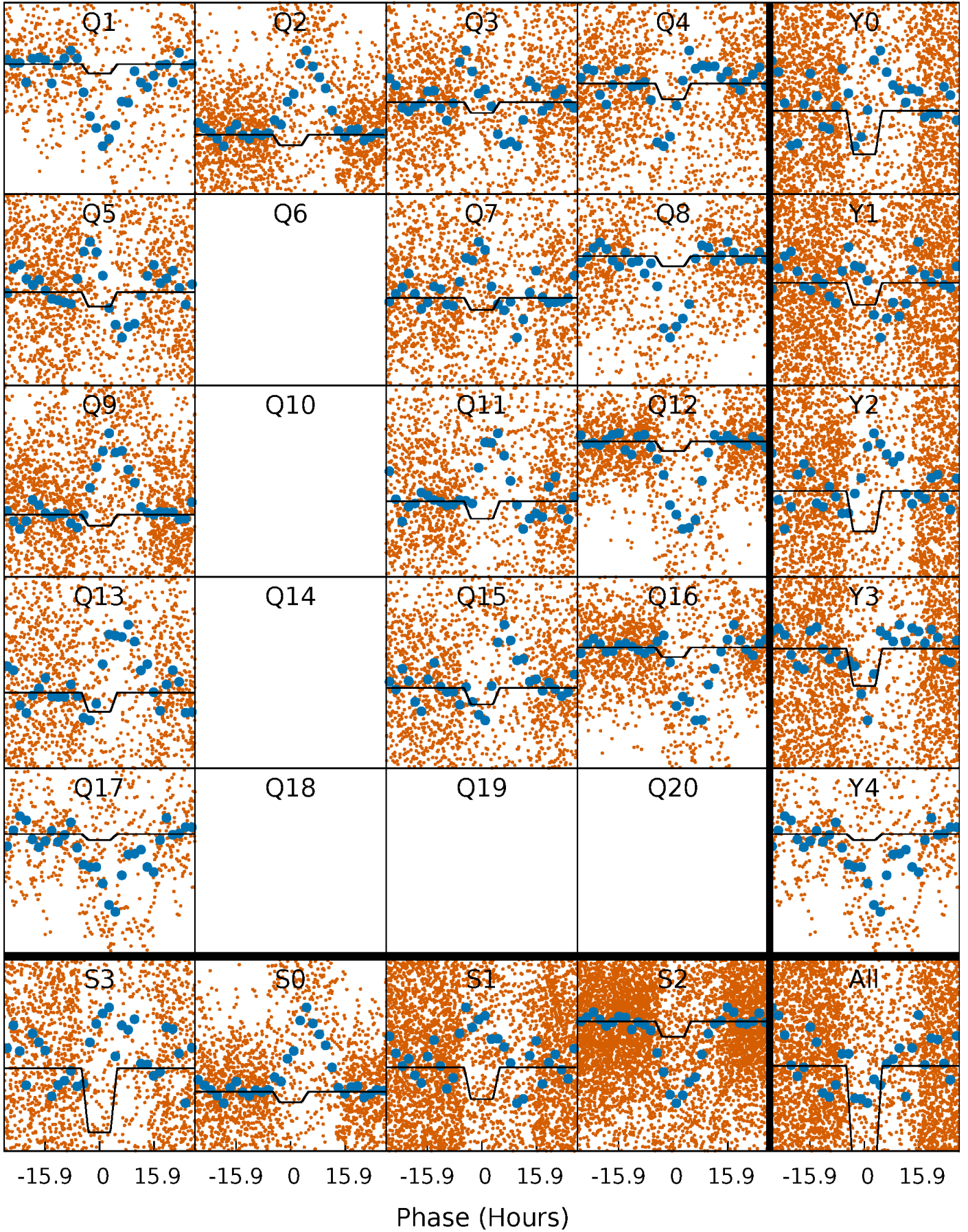
DV Quarter-Phased Transit Curves

TCE 005198337-02 P= 4.232910 Days $T_0=135.259797$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

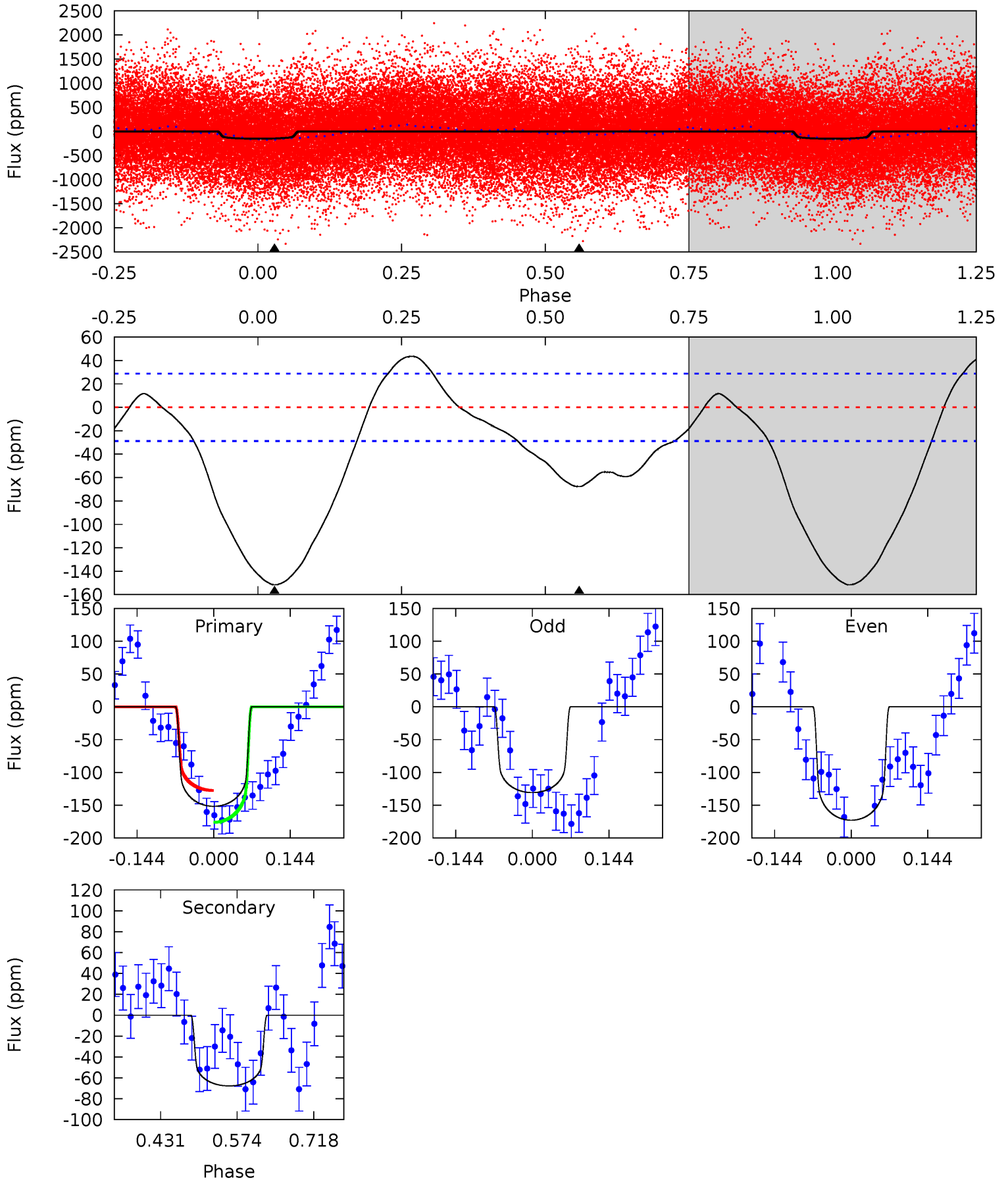
TCE 005198337-02 P= 4.232881 Days $T_0=135.262191$ (BKJD)



DV Model-Shift Uniqueness Test

005198337-02, P = 4.232910 Days, E = 131.026887 Days

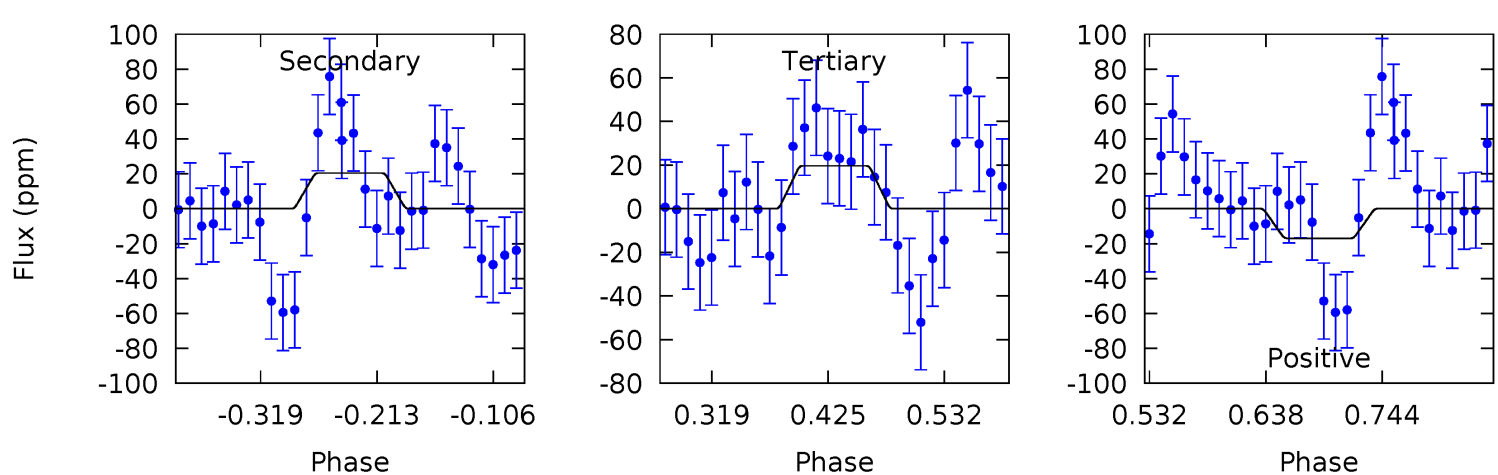
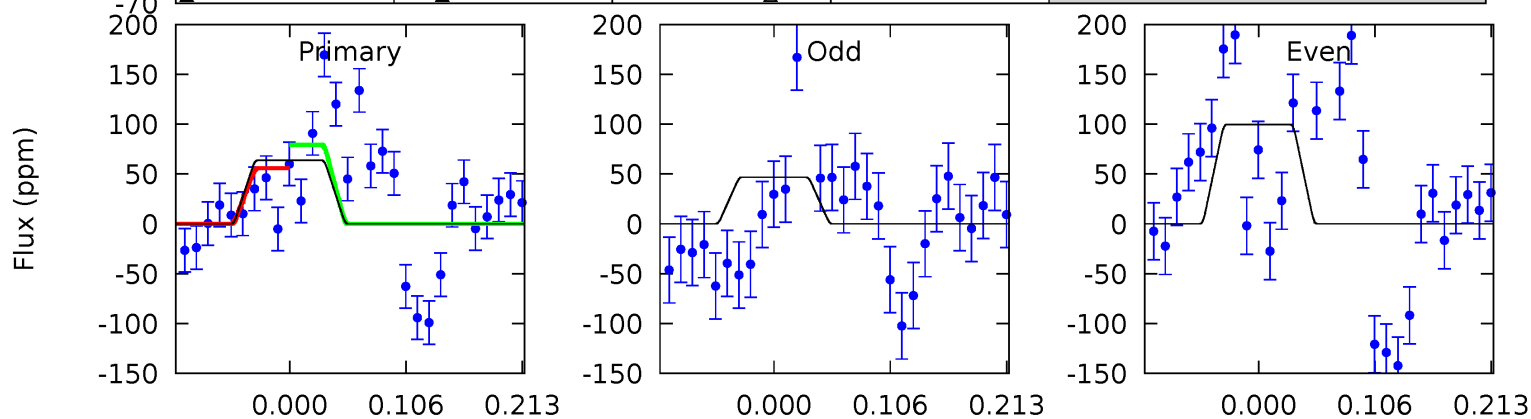
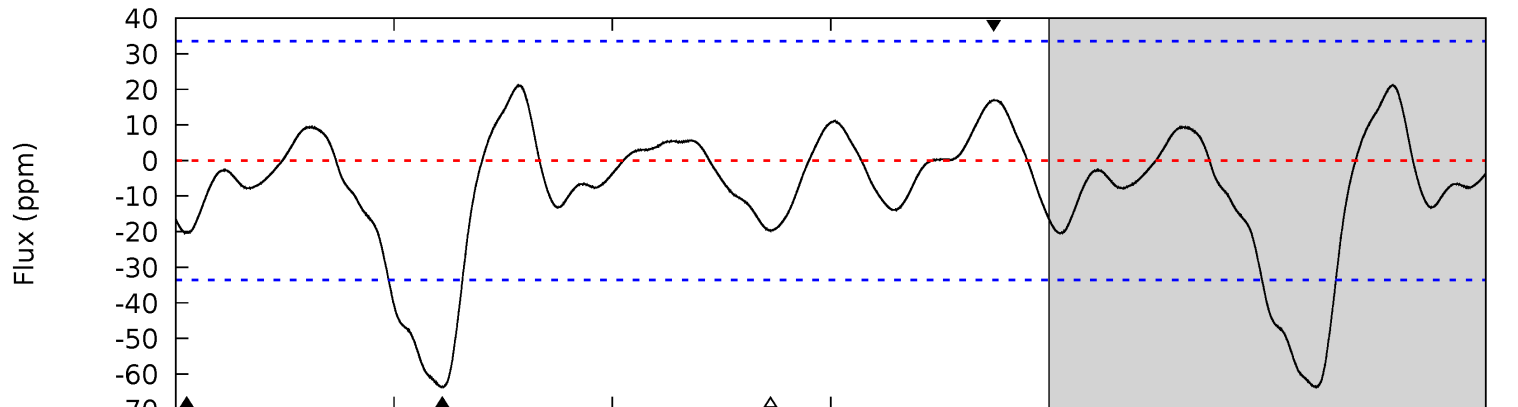
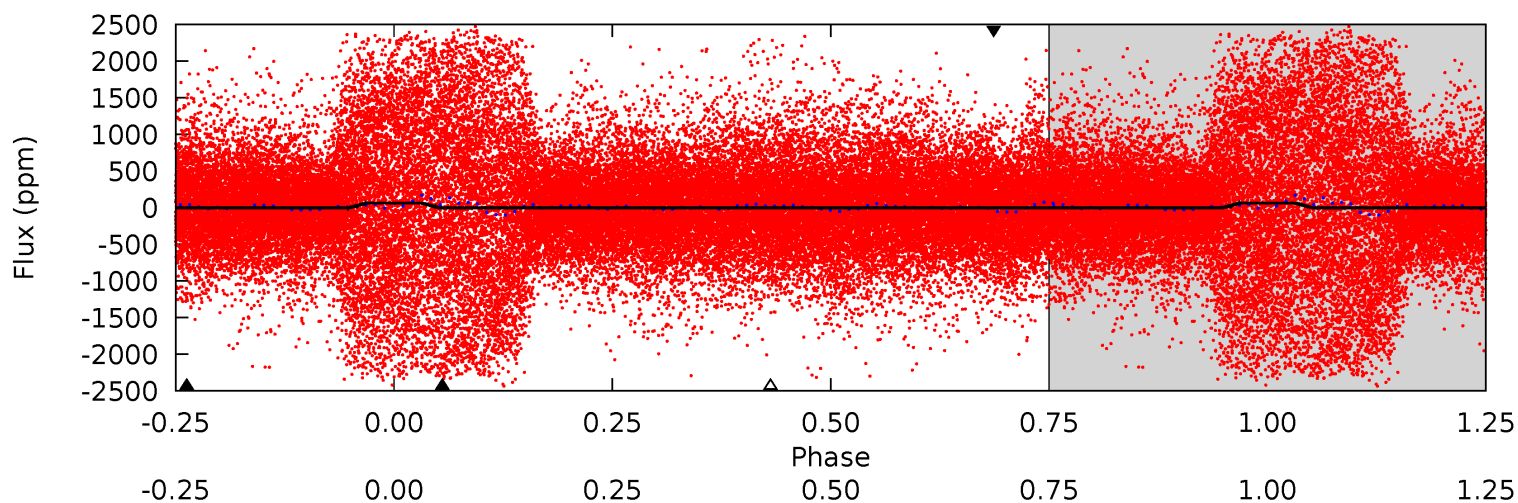
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.6	10.5	0	0	4.49	1.46	3.36	23.6	23.6	10.5	10.5	3.25	1.20	0.22	3.78



Alt Model-Shift Uniqueness Test

005198337-02, P = 4.232881 Days, E = 131.029310 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.63	2.77	2.67	2.29	4.55	1.61	1.18	5.96	6.34	0.10	0.48	3.57	-0.29	0.25	1.49



Stellar Parameters For KIC 005198337

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6897^{+206}_{-227}	$3.130^{+0.536}_{-0.134}$	$0.070^{+0.200}_{-0.350}$	$7.410^{+1.696}_{-4.241}$	$2.703^{+0.293}_{-0.879}$	$0.009^{+0.066}_{-0.004}$
	+3%/-3%	+17%/-4%	+286%/-500%	+23%/-57%	+11%/-33%	+705%/-41%
Source	PHO1	FLK73	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 005198337-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-68 ± 6	$8.74^{+1.56}_{-2.60}$	4242^{+344}_{-642}	5711^{+288}_{-295}	$2.531^{+2.114}_{-0.735}$
Alt.	-20 ± 7	$7.70^{+1.50}_{-2.42}$	4233^{+350}_{-628}	4402^{+474}_{-649}	$0.996^{+0.881}_{-0.450}$

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

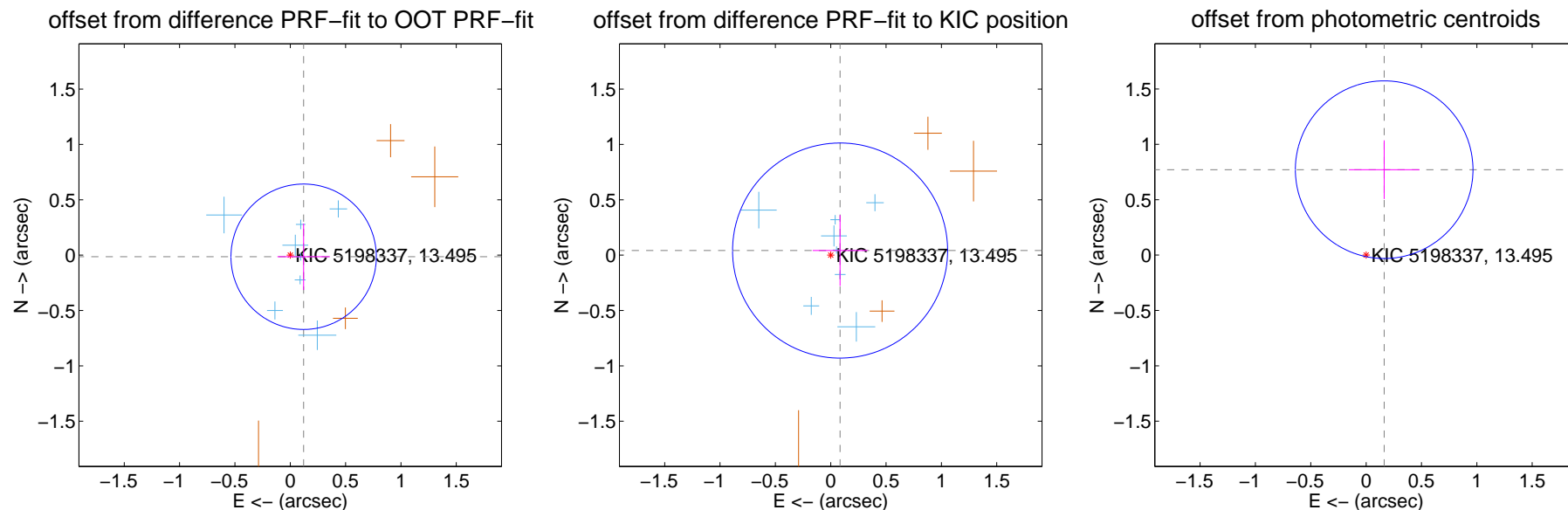
DV Centroid Data

Supplemental centroid analysis for 005198337-02. Kepler magnitude: 13.49. Transit SNR 9.22

There are 10 quarters with good PRF difference image offsets

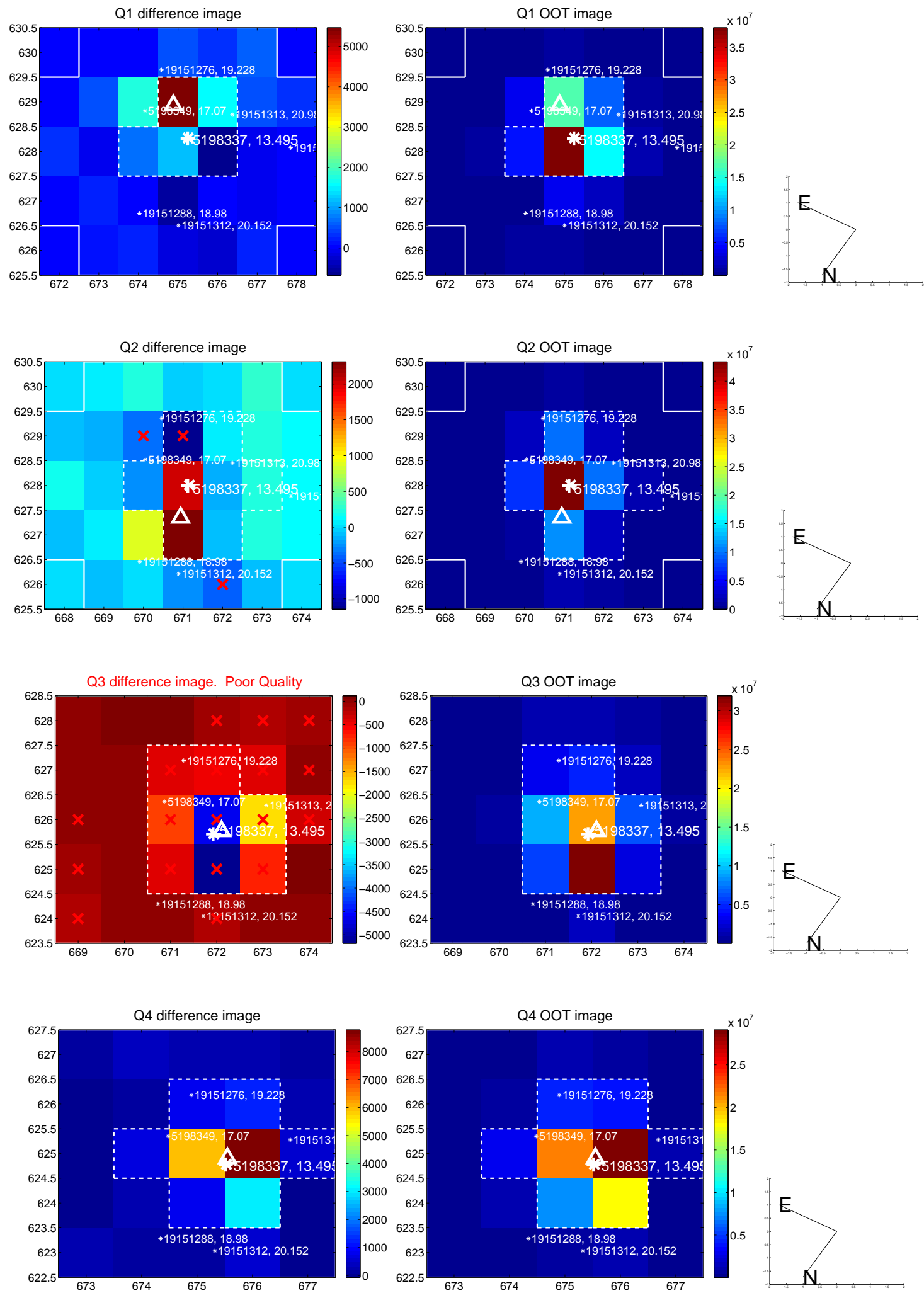
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.122 ± 0.219	0.56	-0.121 ± 0.237	-0.014 ± 0.300
PRF-fit source offset from KIC position	0.094 ± 0.324	0.29	-0.085 ± 0.247	0.042 ± 0.320
photometric centroid source offset	0.79 ± 0.27	2.95	-0.16 ± 0.32	0.77 ± 0.26

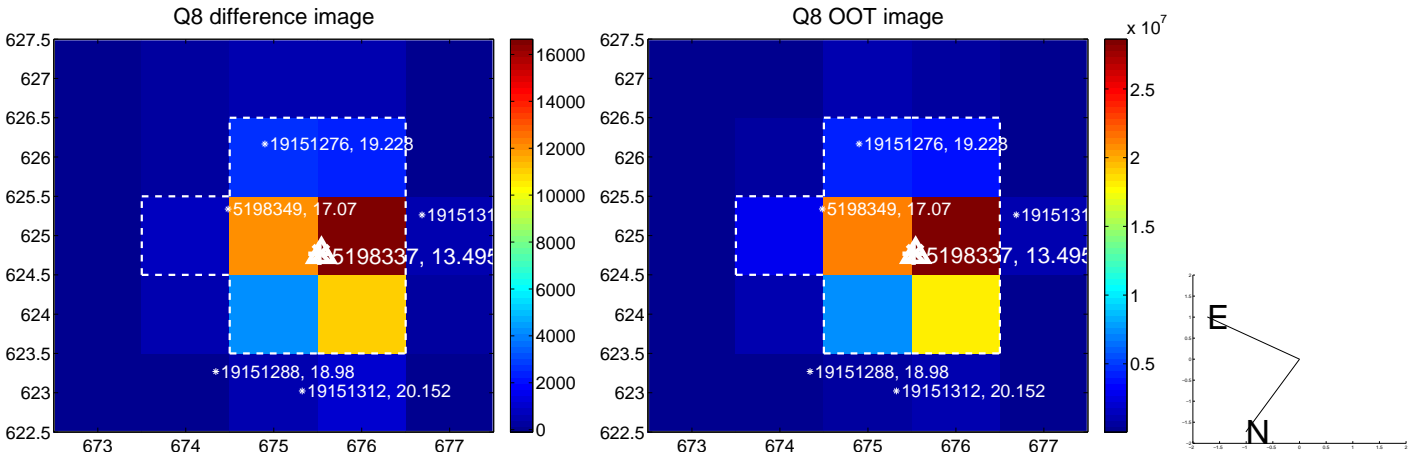
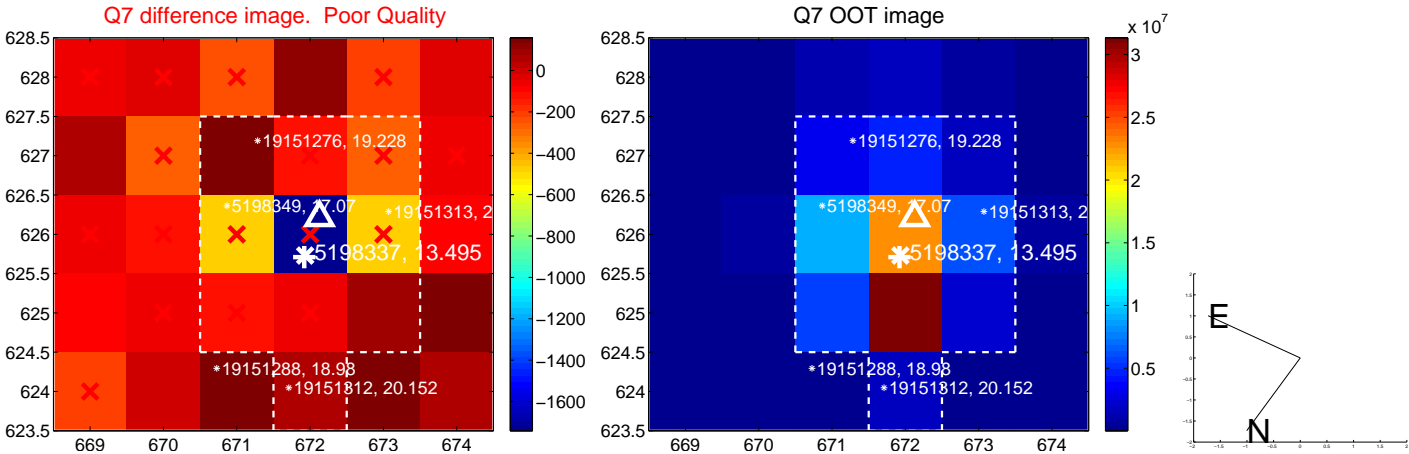
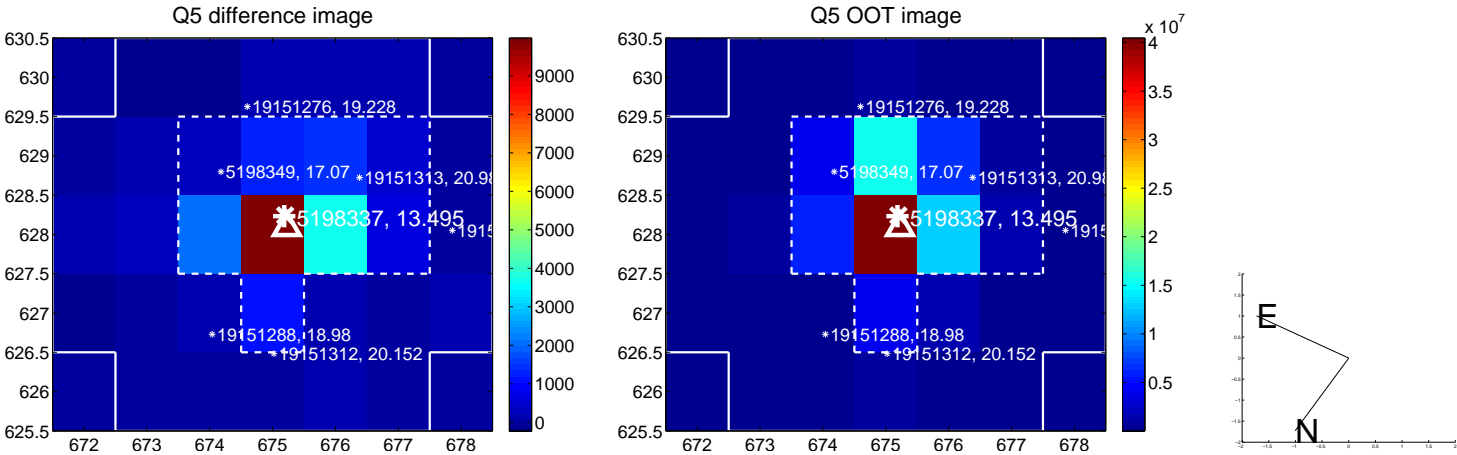


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

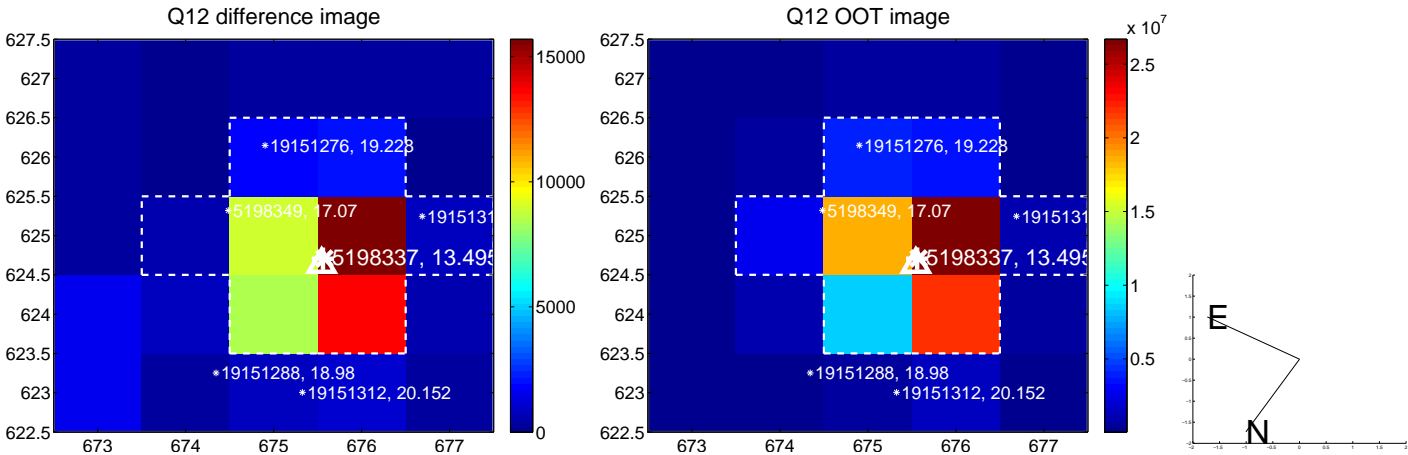
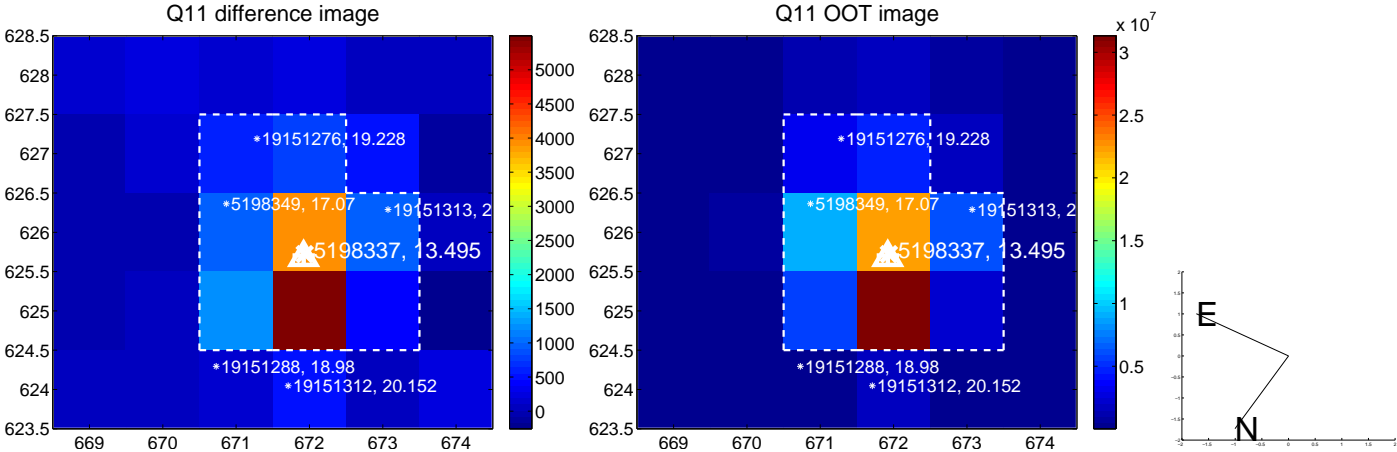
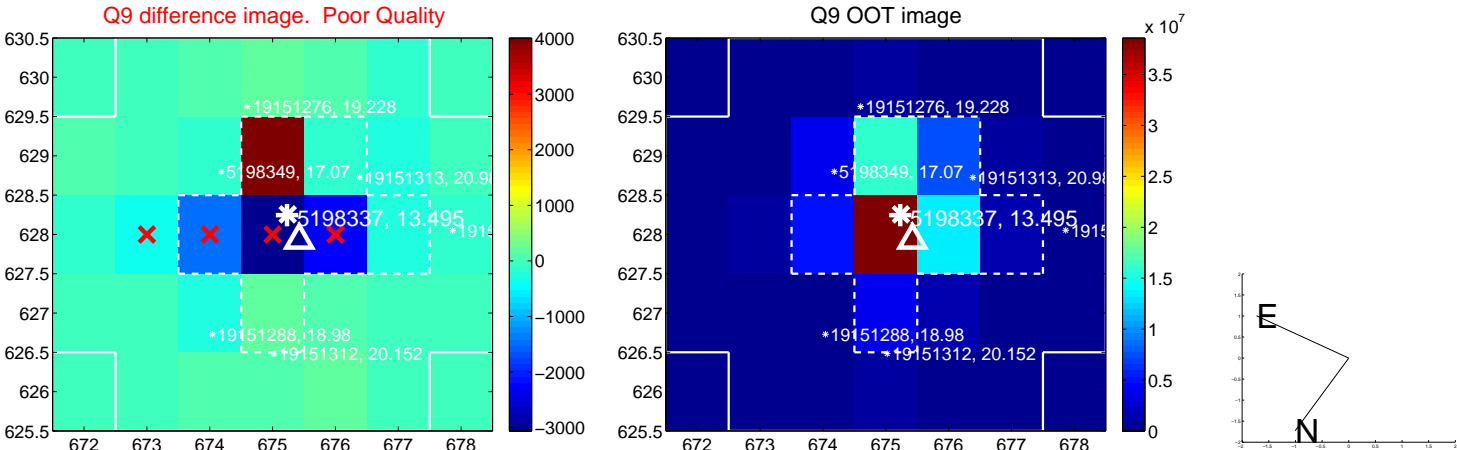
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



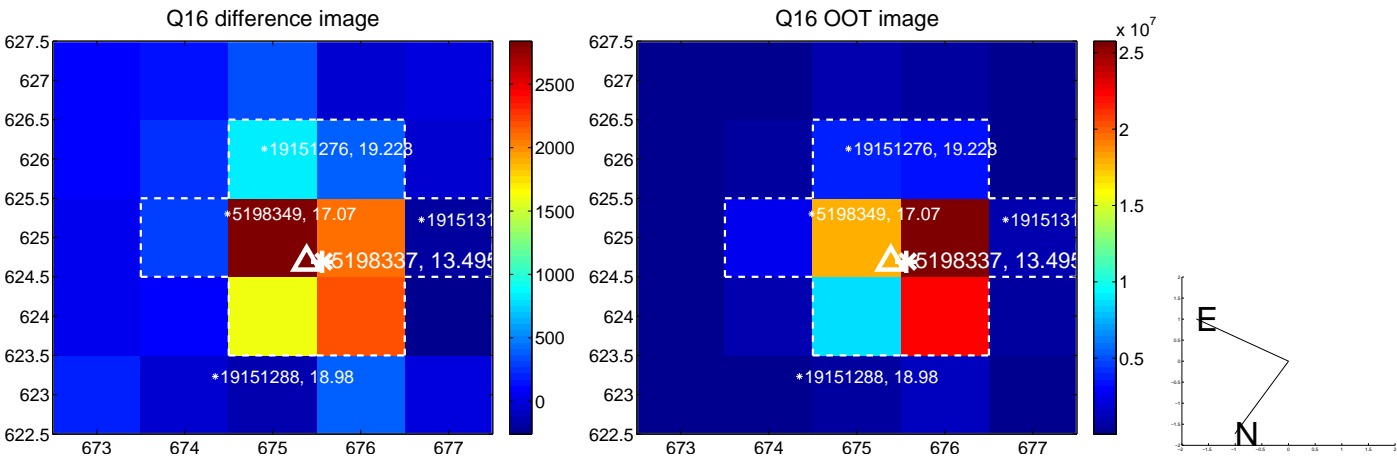
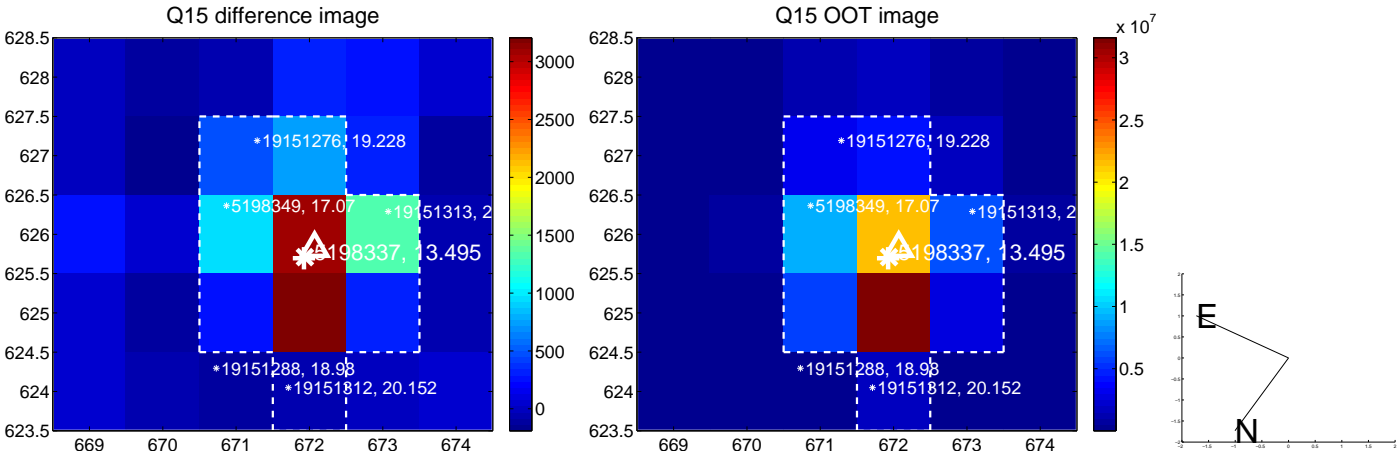
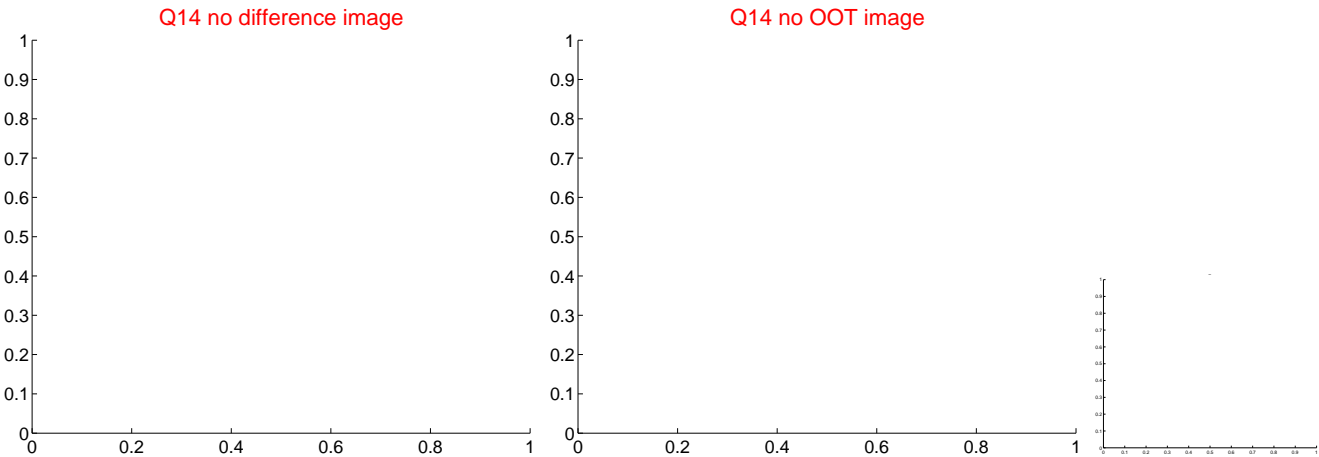
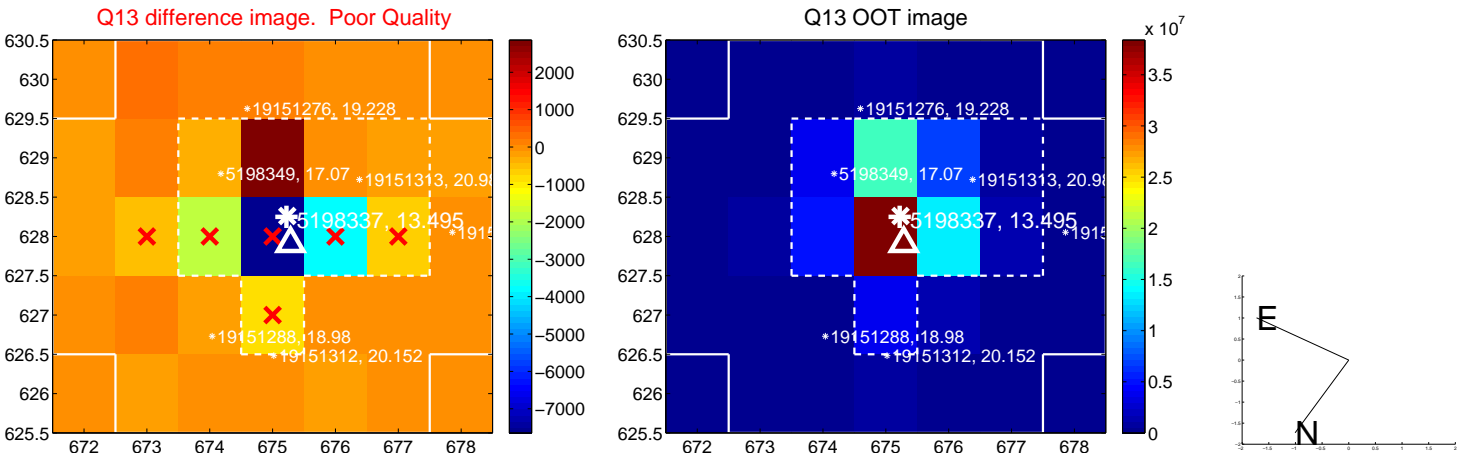
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



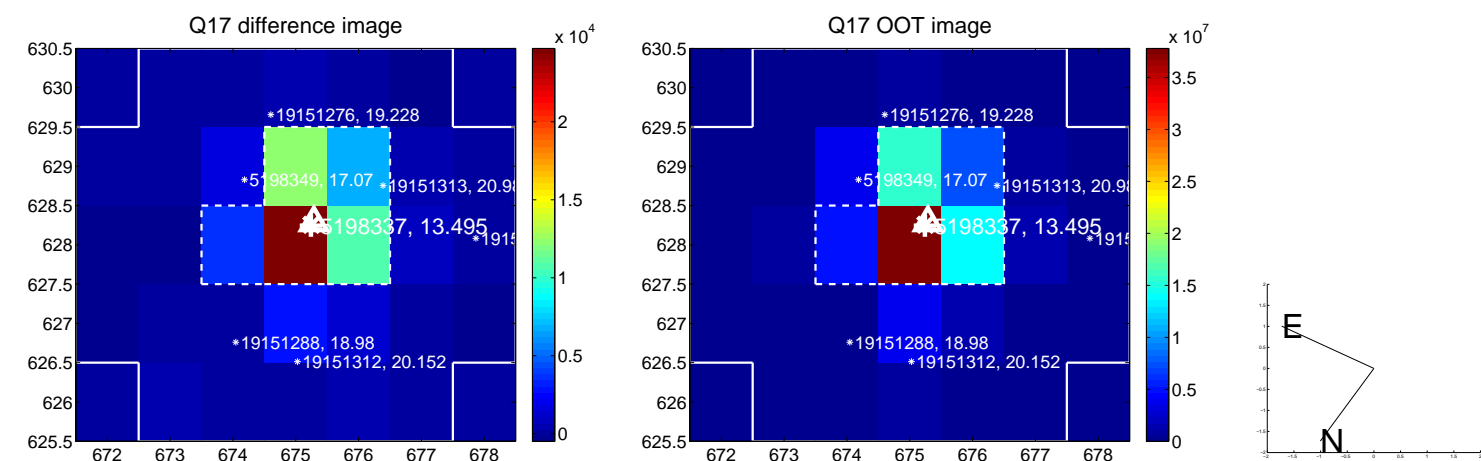
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



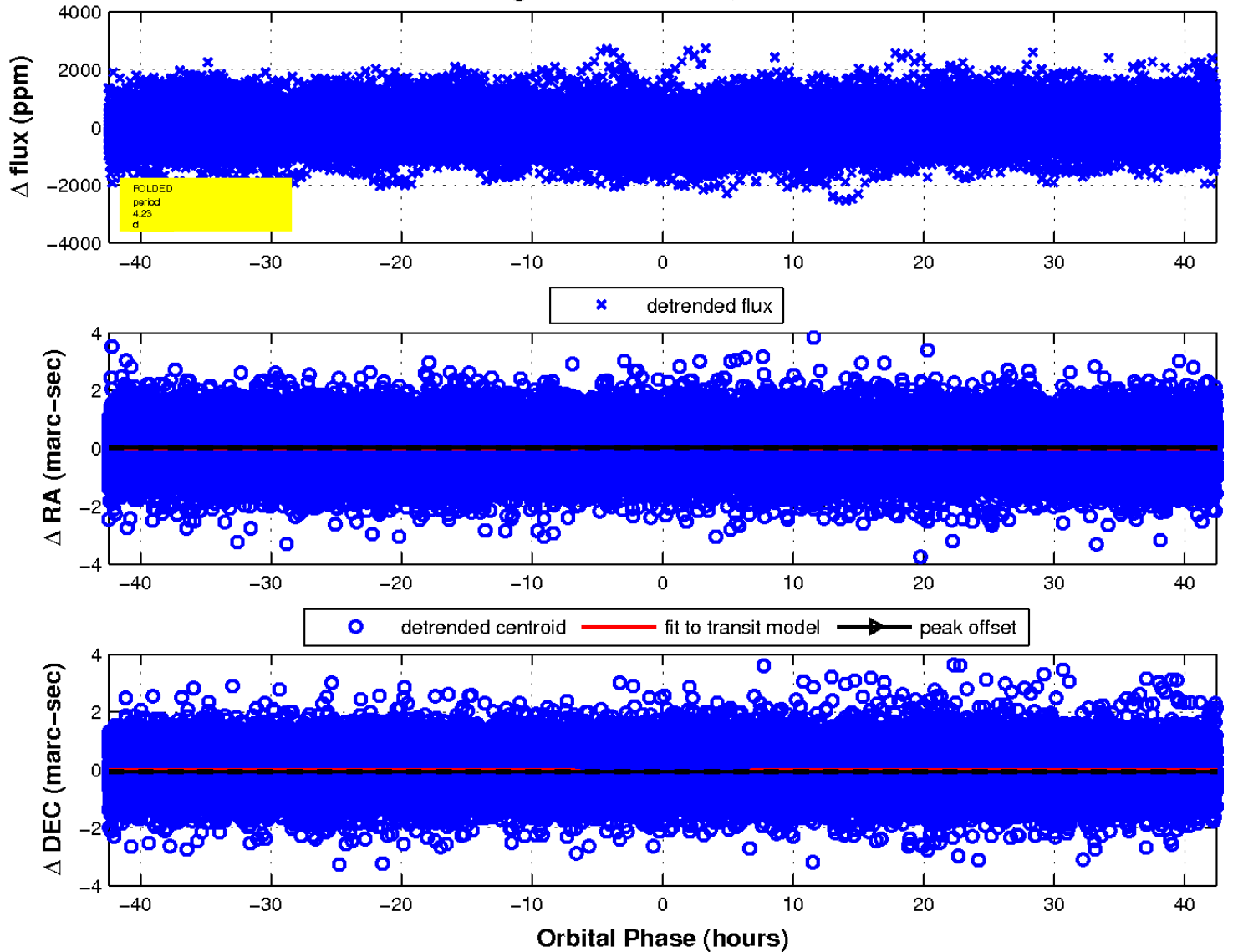
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

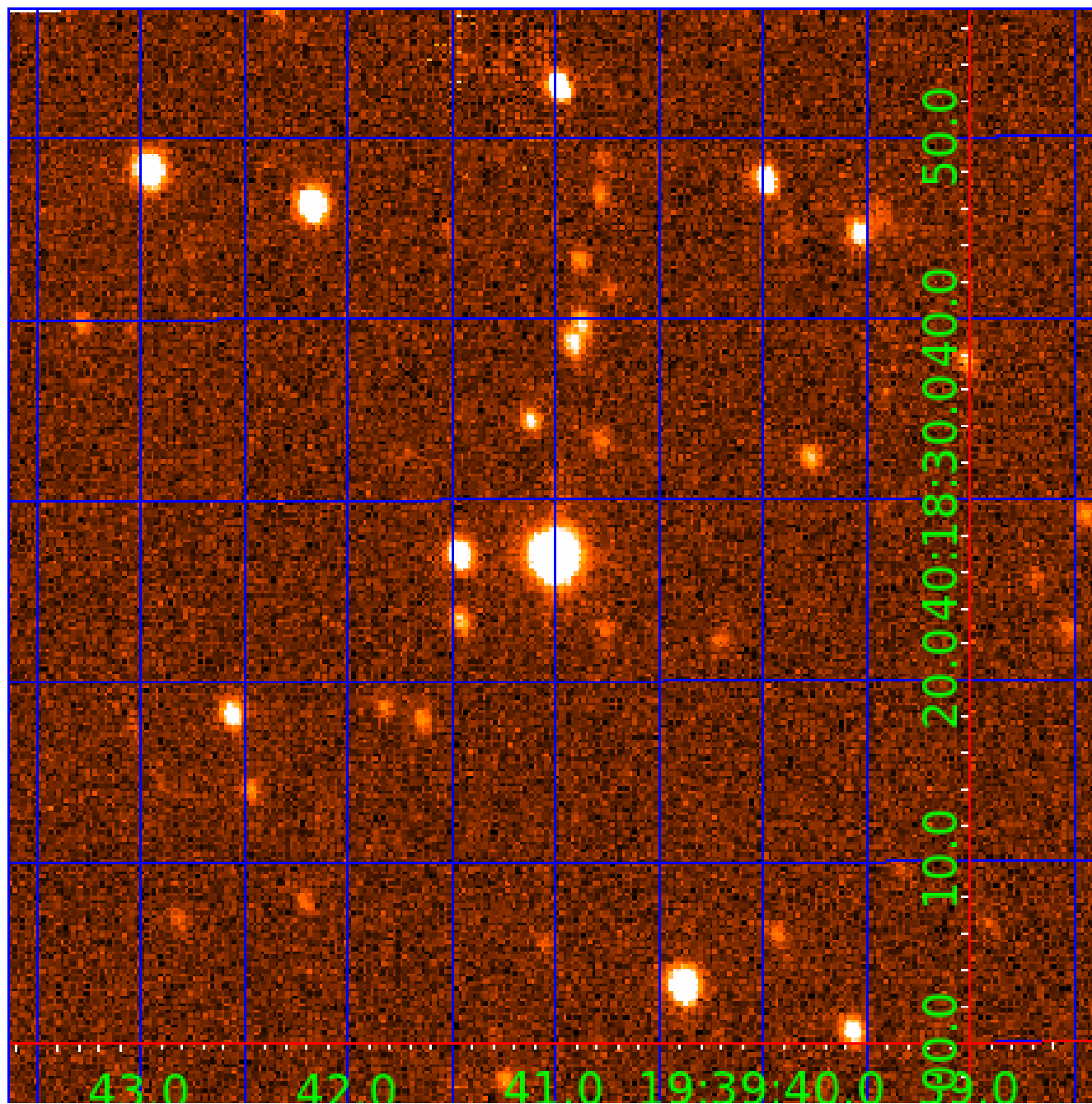


fluxWeightedCentroids, Planet 2 of 8



UKIRT Image

Declination



KIC 005198337

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})
005198337-01	OBS	No	458.318977	325.869134	930.2	10.705	8.8	7.1	7.41	6897	23.19	42.38
005198337-02	OBS	No	4.232910	135.259797	110.2	14.146	7.9	9.2	7.41	6897	9.07	21872.34
005198337-03	OBS	No	1.338051	132.151001	142.1	7.024	10.5	10.0	7.41	6897	13.28	0.00
005198337-04	OBS	No	64.025988	181.004149	1168.0	8.338	13.0	10.1	7.41	6897	39.32	584.71
005198337-05	OBS	No	49.592274	177.887070	1277.1	8.663	11.6	11.3	7.41	6897	49.24	821.98
005198337-07	OBS	No	75.060649	143.553549	1311.7	9.481	11.2	10.2	7.41	6897	49.81	473.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005198337-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
005198337-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
005198337-03	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005198337-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
005198337-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005198337-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—HALO_GHOST

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

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

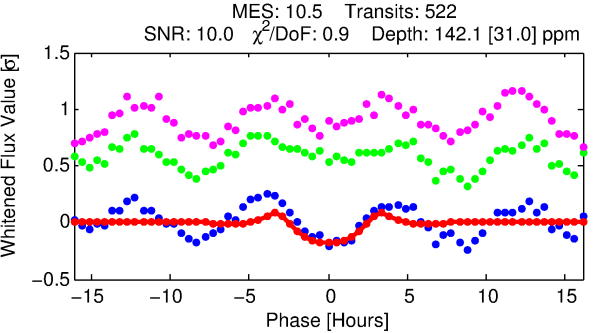
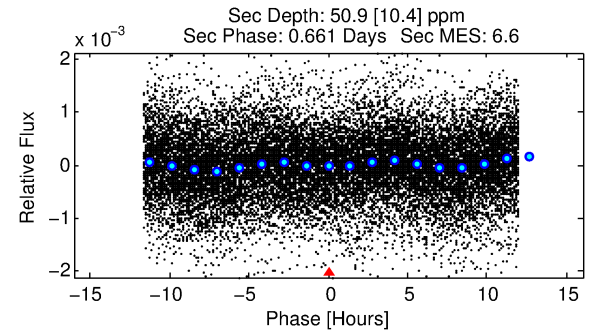
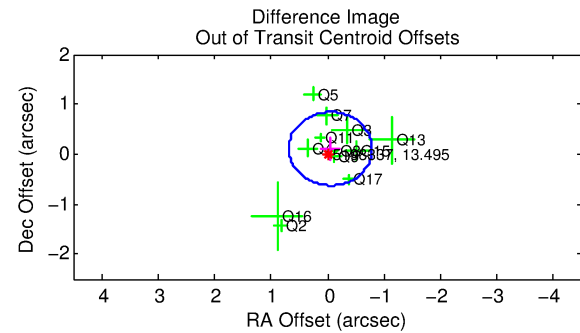
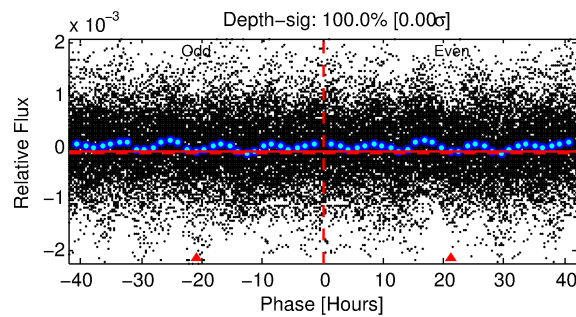
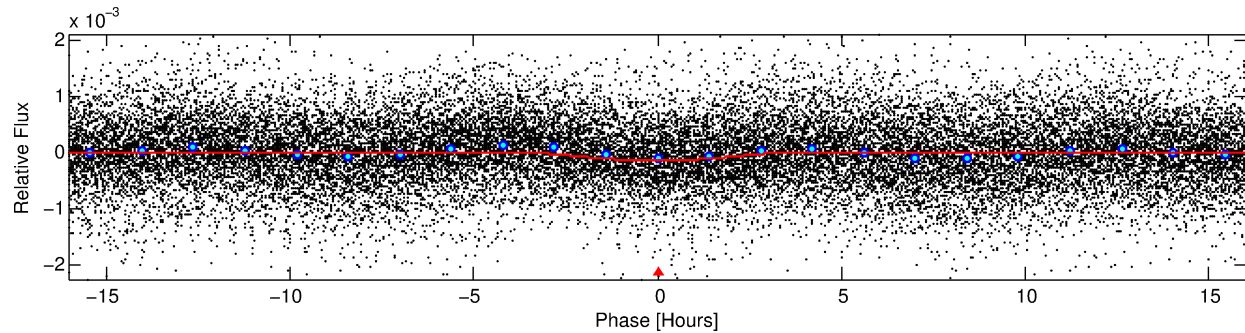
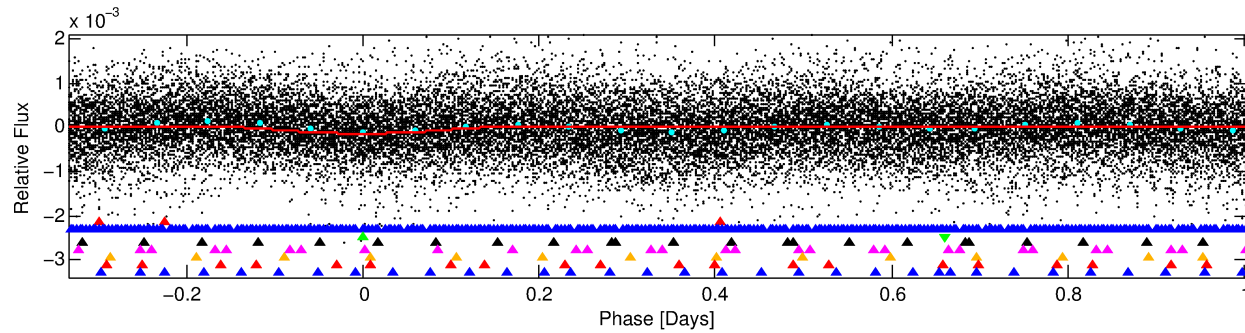
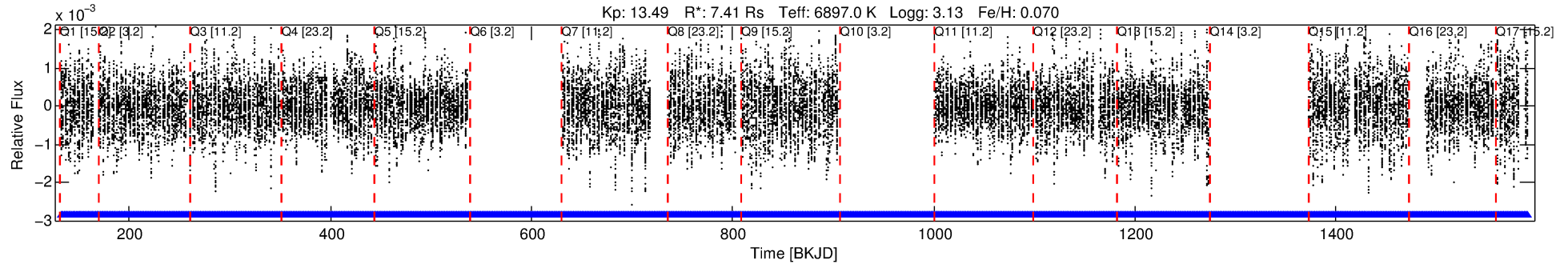
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005198337-03

No Significant Match Found

DV One-Page Summary

KIC: 5198337 Candidate: 3 of 8 Period: 1.338 d



DV Fit Results:

Period = 1.33805 [0.00002] d
Epoch = 132.1510 [0.0065] BKJD
Rp/R* = 0.0164 [0.0049]
a/R* = 1.05 [0.01]
b = 0.99 [0.01]
Seff = N/A
Teq = N/A
Rp = 13.28 [8.56] Re
a = N/A
Ag = N/A
Teffp = N/A

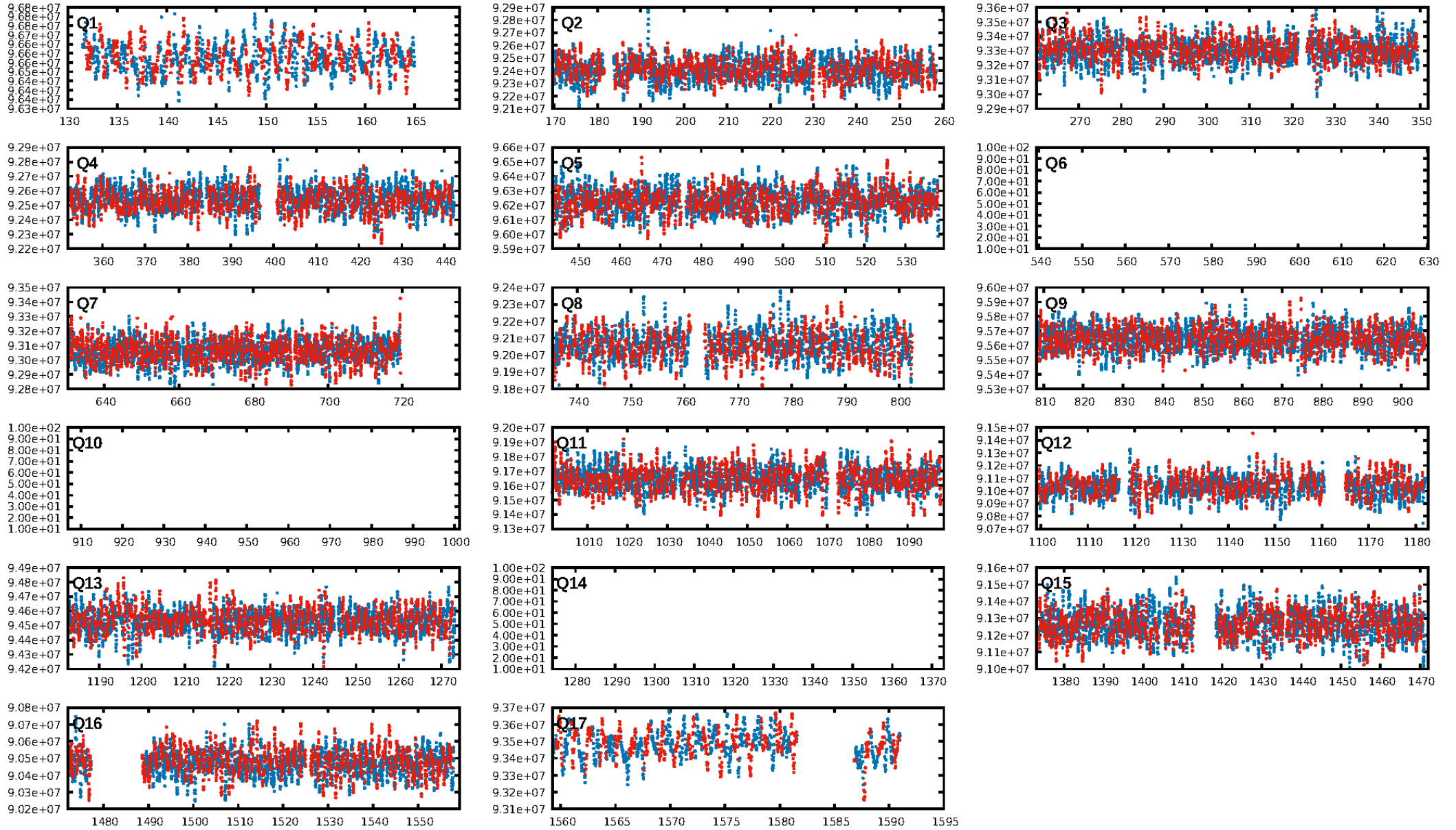
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [4.40 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [491/491]
GhostDiagnostic-chr: 2.249
Centroid-sig: 0.9%
Centroid-so: 0.653 arcsec [2.72 σ]
OotOffset-rm: 0.118 arcsec [0.48 σ]
KicOffset-rm: 0.178 arcsec [0.83 σ]
OotOffset-st: 1/4/3/4 [12]
KicOffset-st: 1/4/3/4 [12]
DiffImageQuality-fgm: 0.67 [8/12]
DiffImageOverlap-fno: 1.00 [14/14]

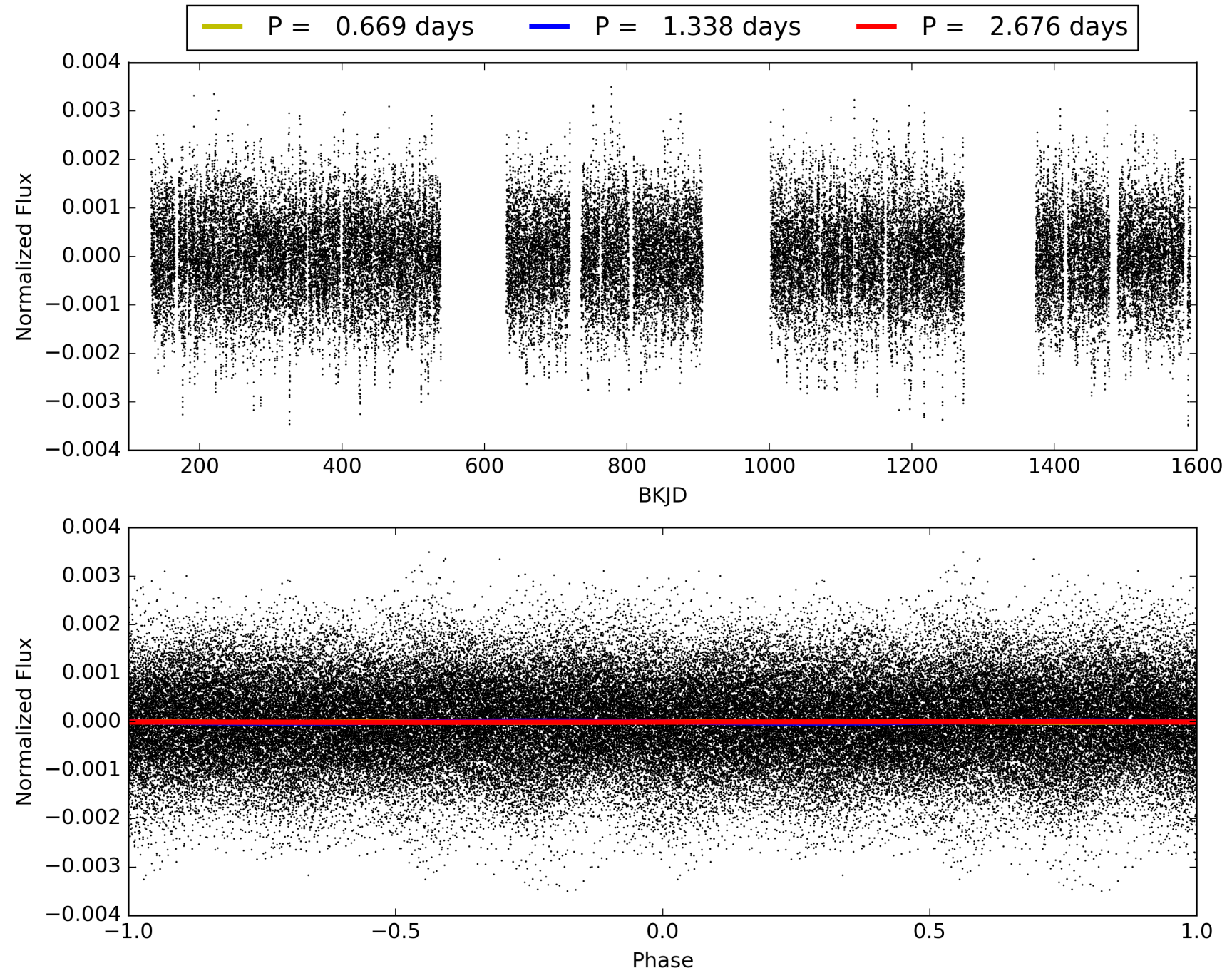
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:45:24 Z

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

TCE 005198337-03, PDC Light Curves

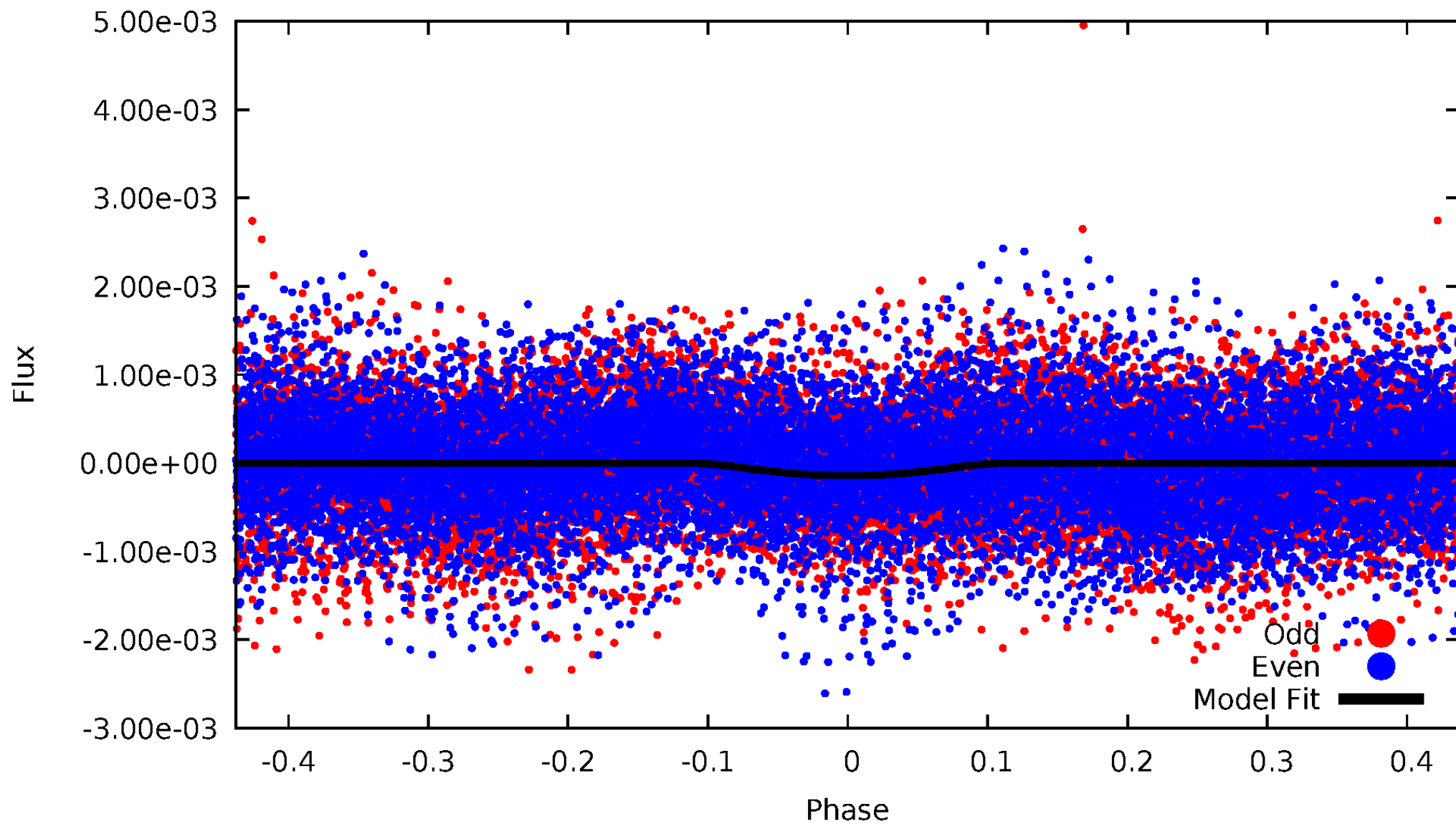


TCE 005198337-03



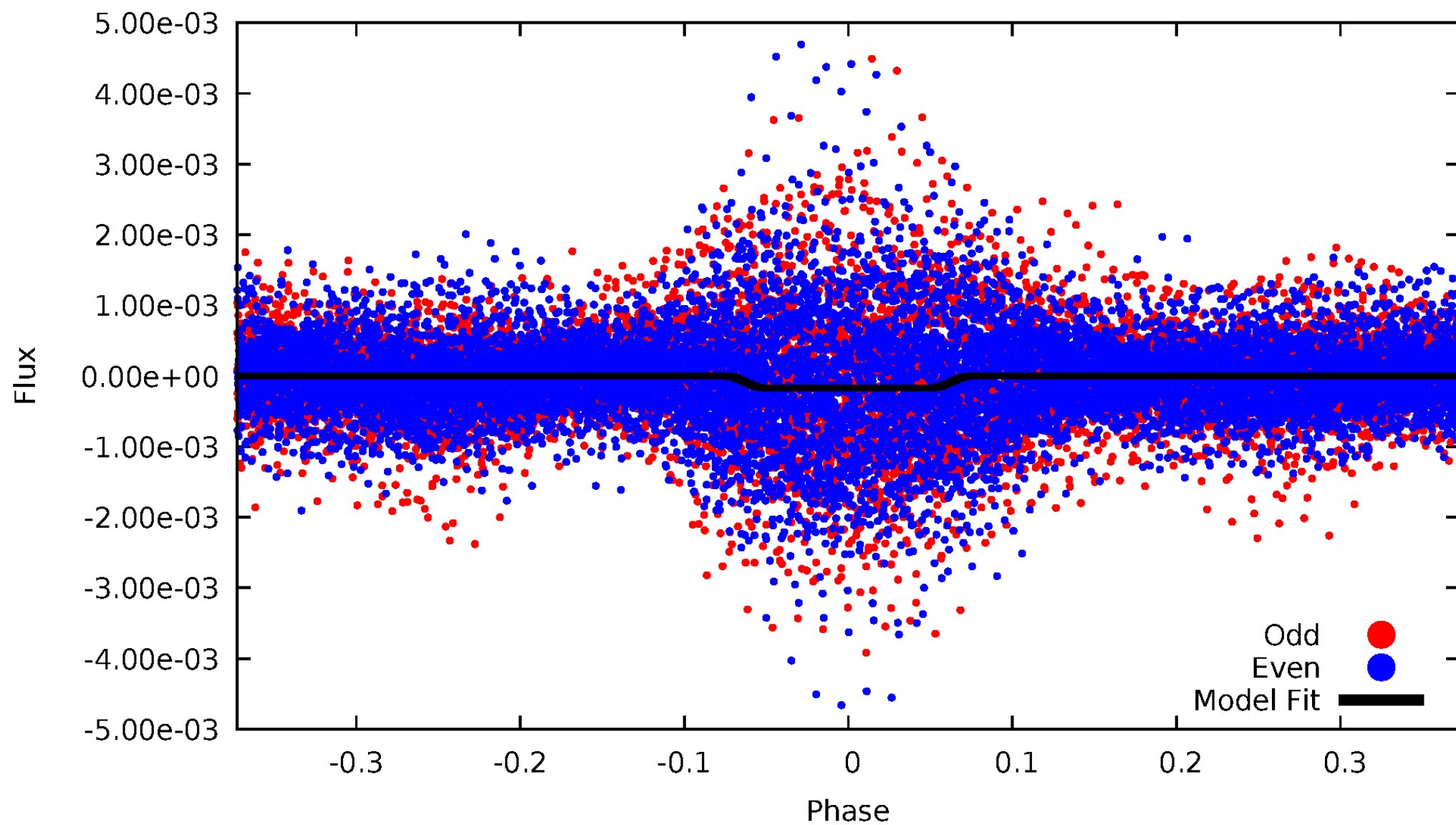
DV Odd/Even

TCE 005198337-03



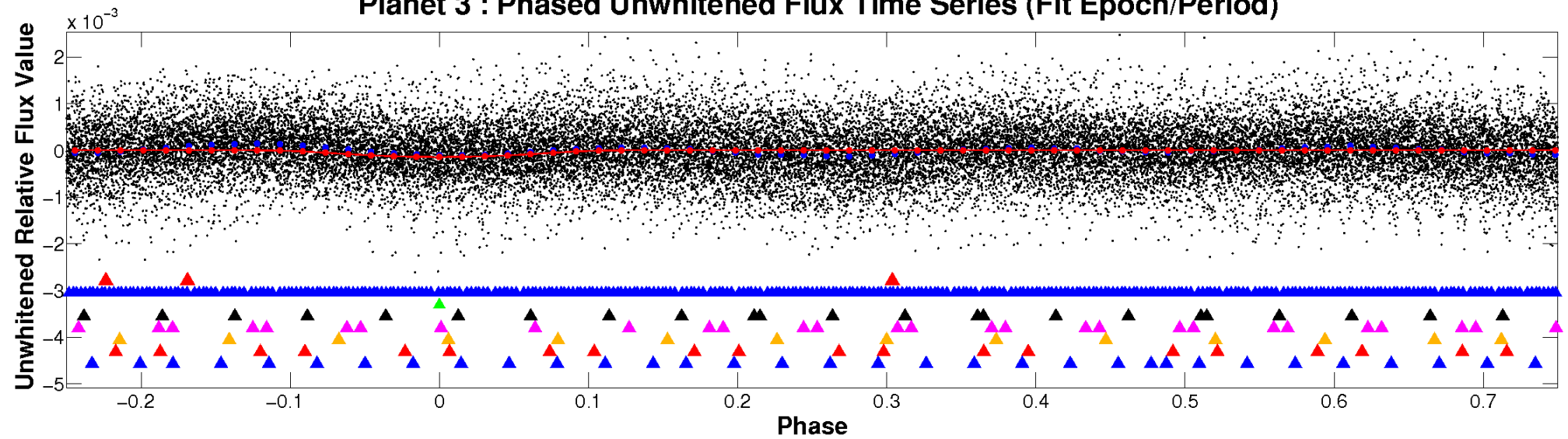
ALT Odd/Even

TCE 005198337-03

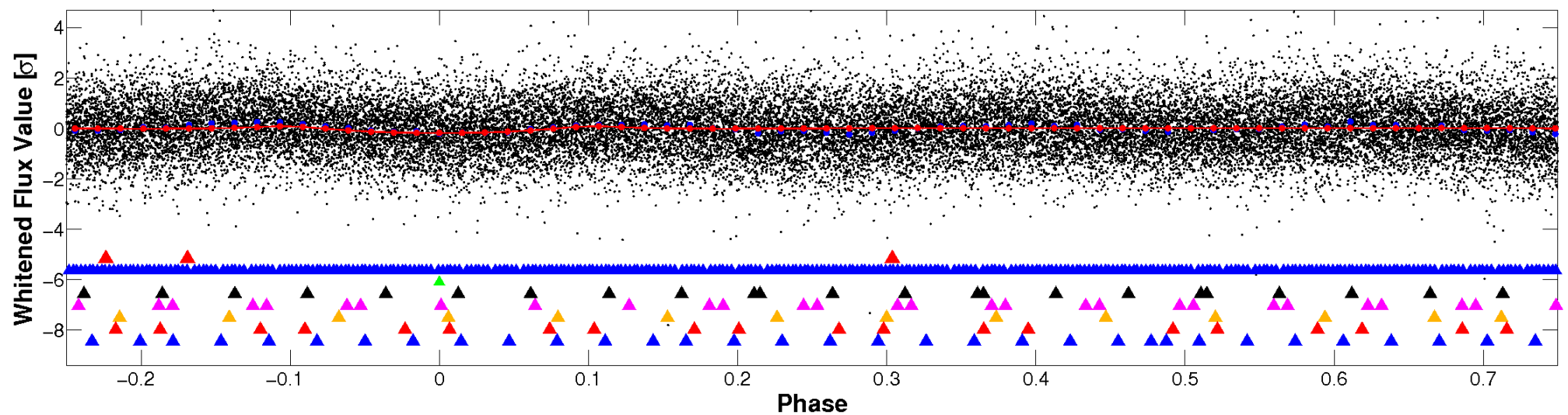


Non-Whitened Vs. Whitened Light Curve

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

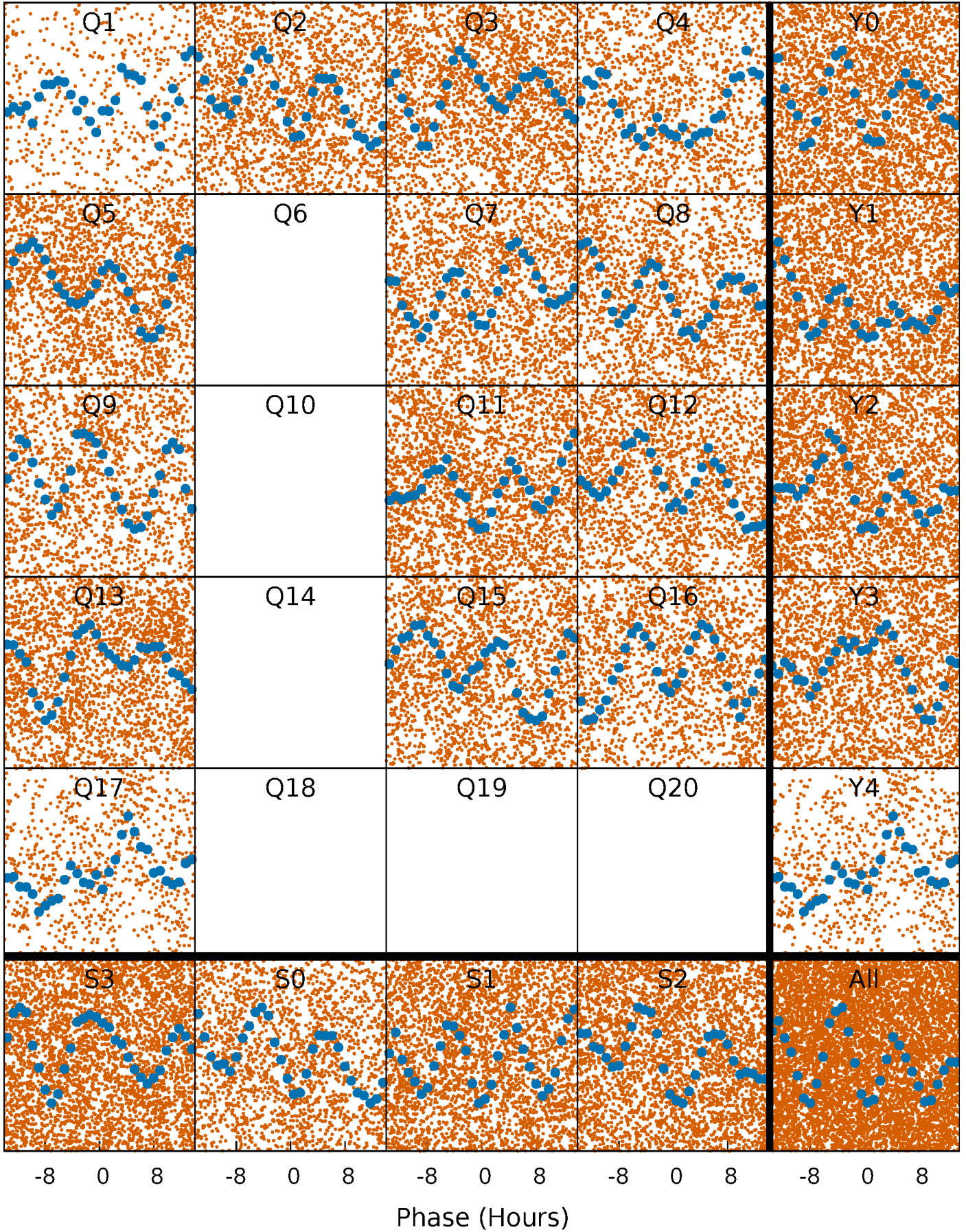


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



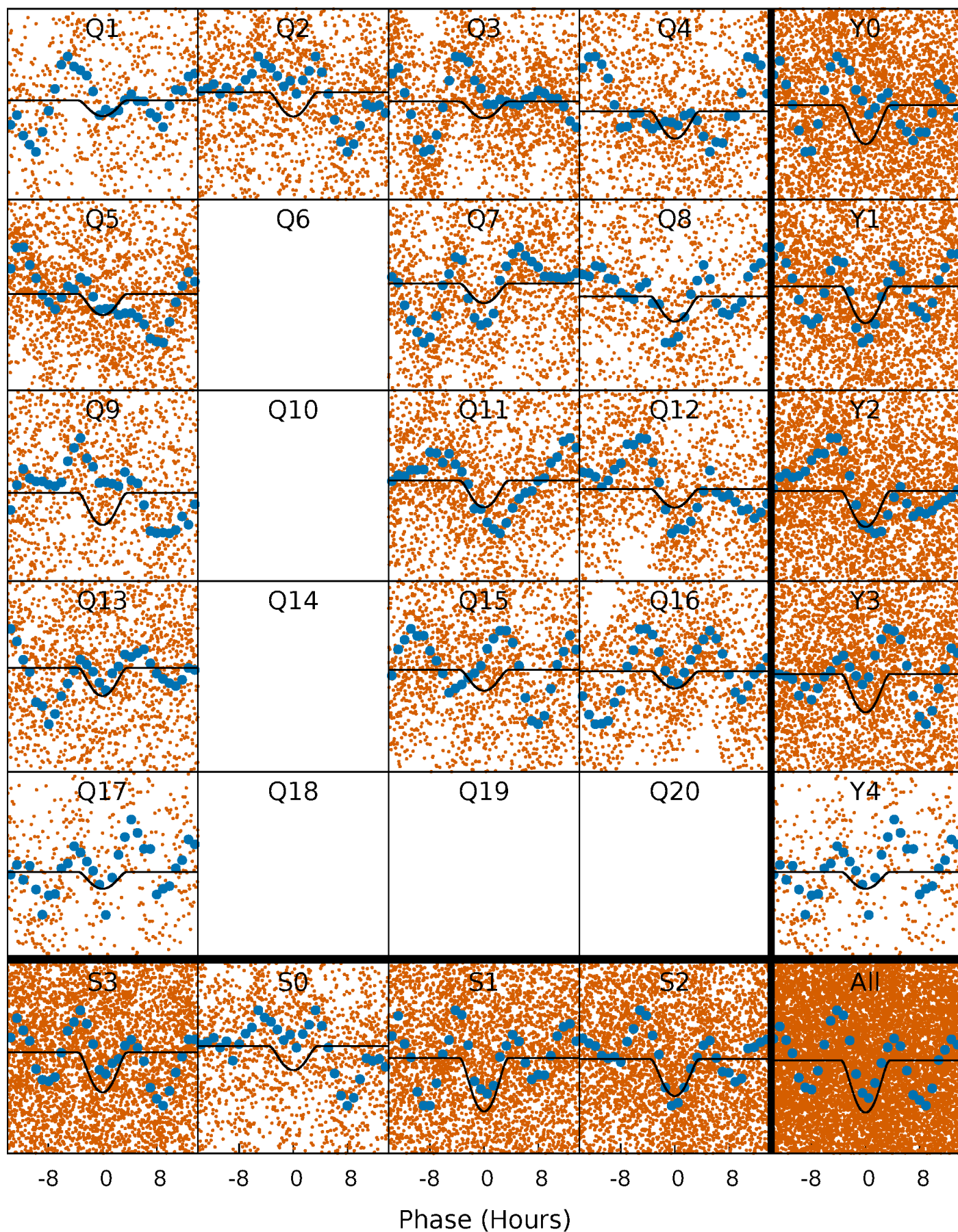
PDC Quarter-Phased Transit Curves

TCE 005198337-03 P= 1.338051 Days $T_0=132.151001$ (BKJD)



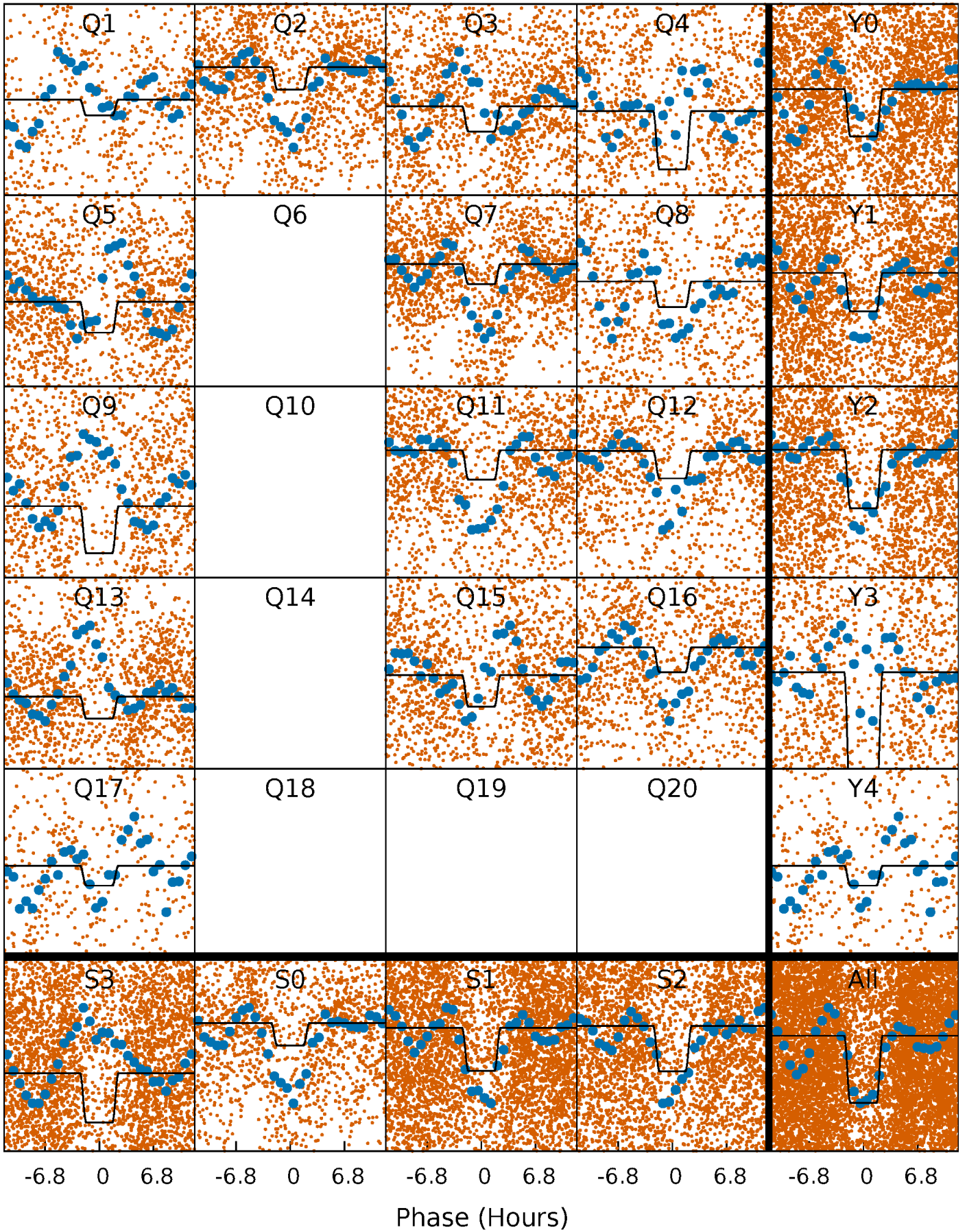
DV Quarter-Phased Transit Curves

TCE 005198337-03 P= 1.338051 Days $T_0=132.151001$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

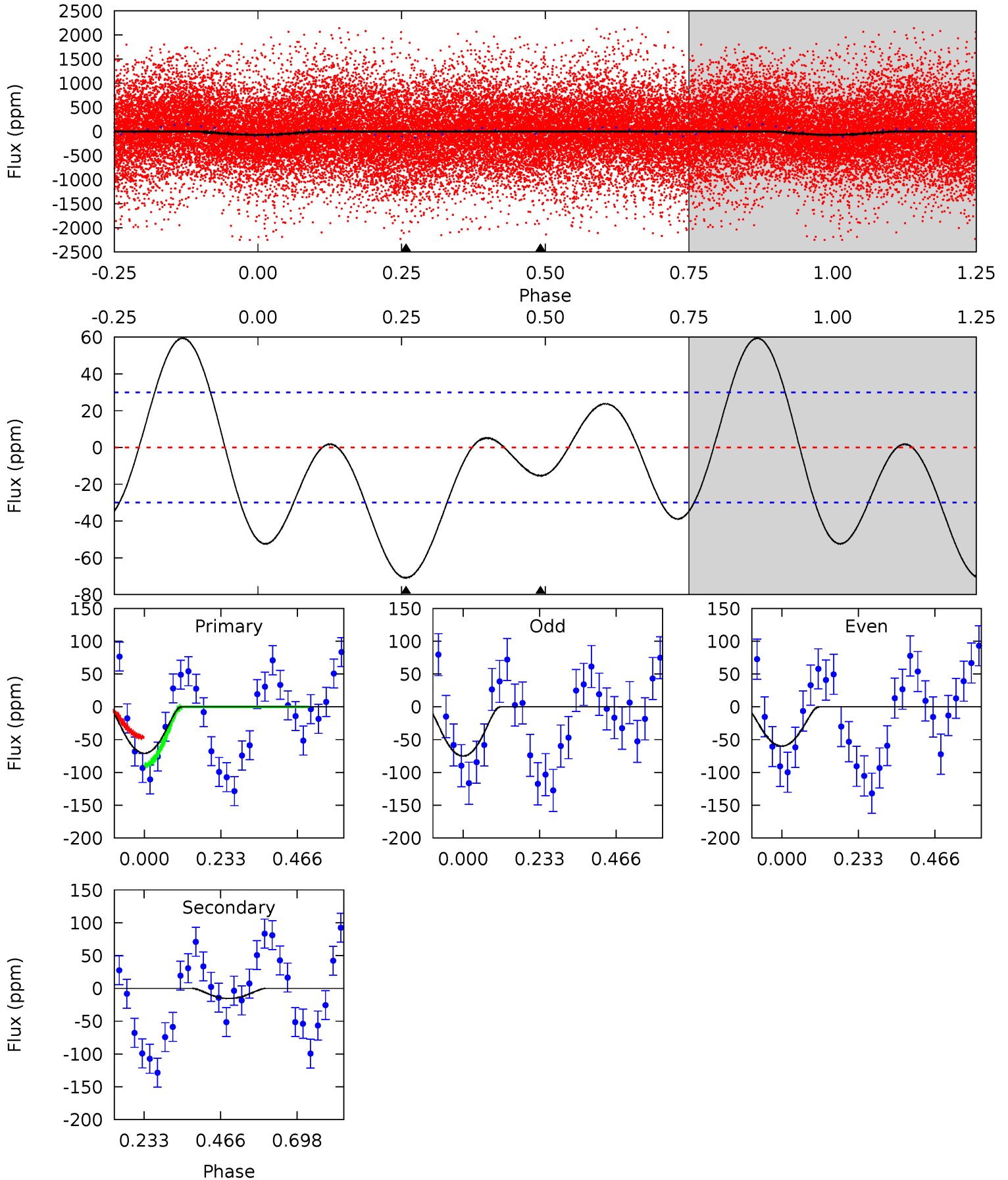
TCE 005198337-03 P= 1.338070 Days $T_0=132.136410$ (BKJD)



DV Model-Shift Uniqueness Test

005198337-03, P = 1.338051 Days, E = 130.812950 Days

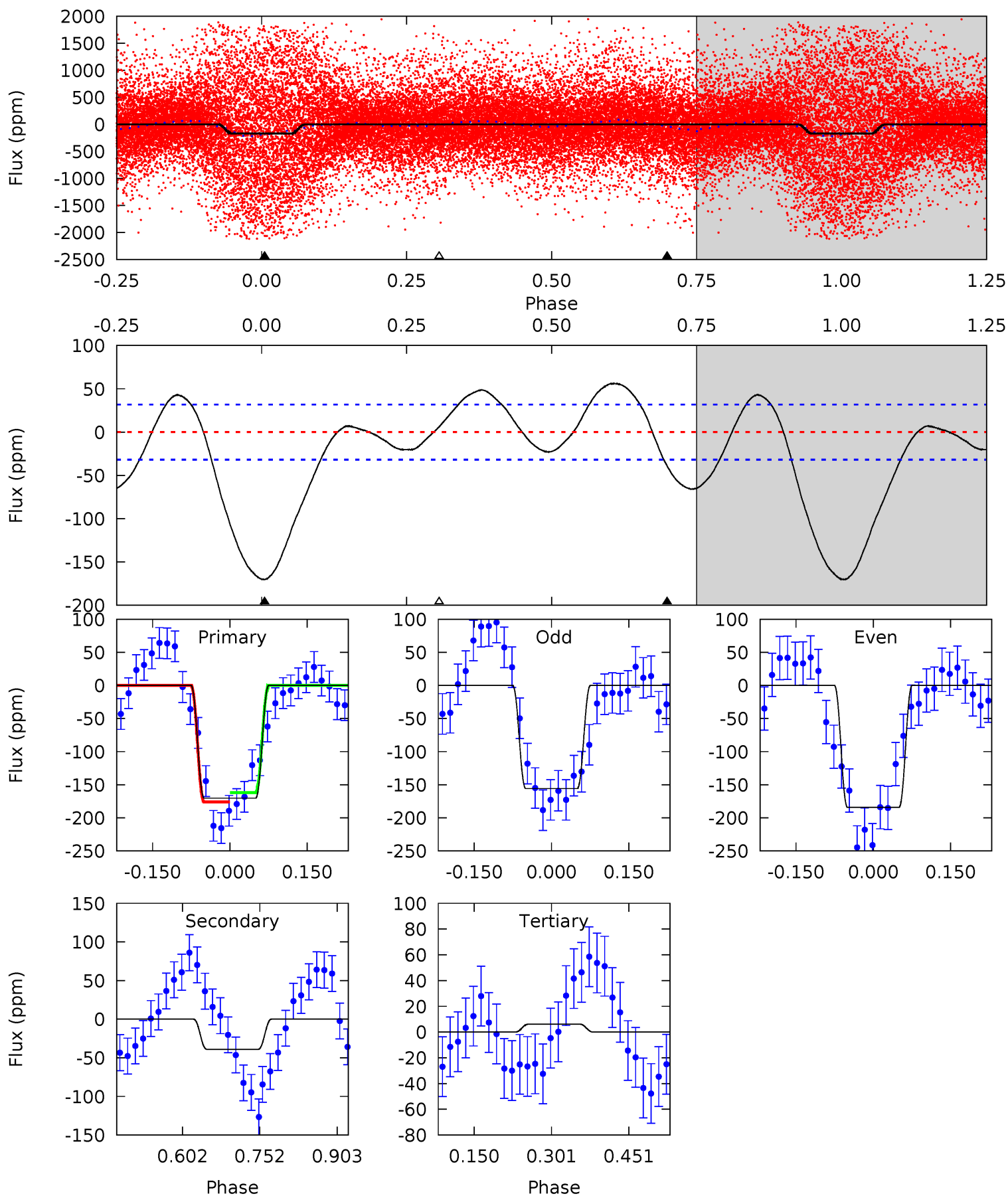
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.4	2.25	0	0	4.38	1.19	5.63	10.4	10.4	2.25	2.25	1.11	1.01	0.46	3.18



Alt Model-Shift Uniqueness Test

005198337-03, P = 1.338070 Days, E = 130.798340 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.0	5.49	-0.86	0	4.48	1.44	3.20	24.9	24.0	6.35	5.49	2.00	0.78	0.25	0.99



Stellar Parameters For KIC 005198337

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6897^{+206}_{-227}	$3.130^{+0.536}_{-0.134}$	$0.070^{+0.200}_{-0.350}$	$7.410^{+1.696}_{-4.241}$	$2.703^{+0.293}_{-0.879}$	$0.009^{+0.066}_{-0.004}$
	+3%/-3%	+17%/-4%	+286%/-500%	+23%/-57%	+11%/-33%	+705%/-41%
Source	PHO1	FLK73	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 005198337-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-15 ± 7	$12.00^{+4.96}_{-4.78}$	6224^{+497}_{-880}	-4866^{+1012}_{-453}	$0.057^{+0.117}_{-0.035}$
Alt.	-39 ± 7	$9.09^{+4.74}_{-3.77}$	6205^{+487}_{-889}	-3049^{+8291}_{-1726}	$0.277^{+0.529}_{-0.158}$

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 $A_{obs} \gg 1.0$

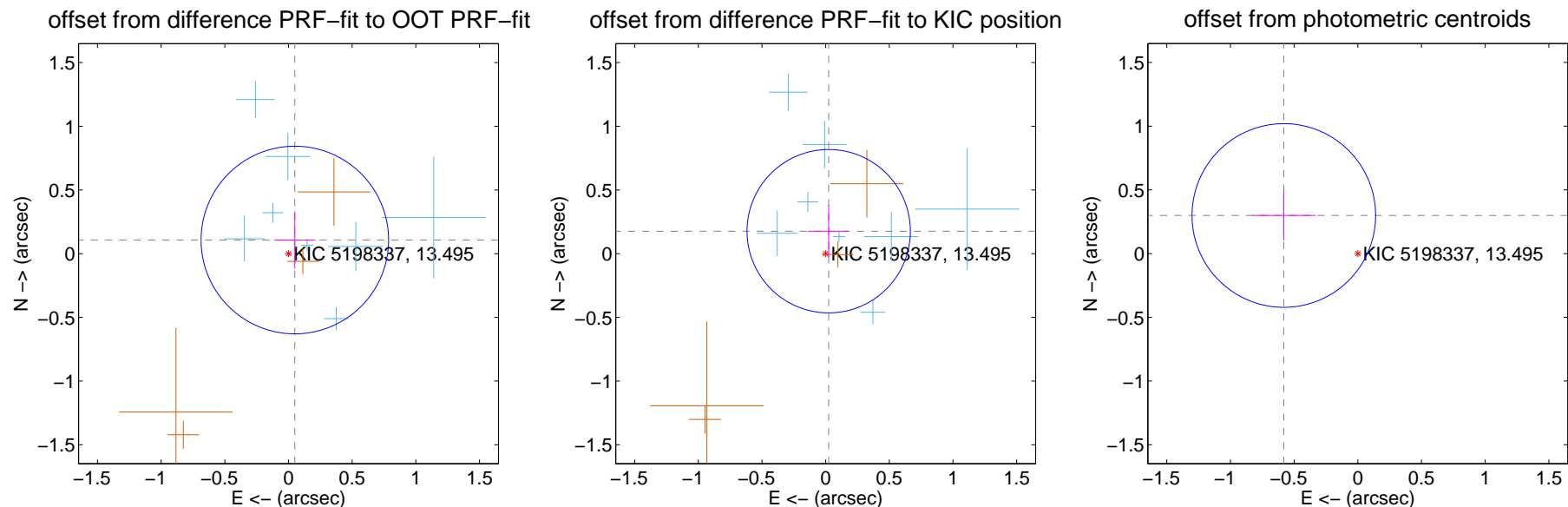
DV Centroid Data

Supplemental centroid analysis for 005198337-03. Kepler magnitude: 13.49. Transit SNR 9.98

There are 8 quarters with good PRF difference image offsets

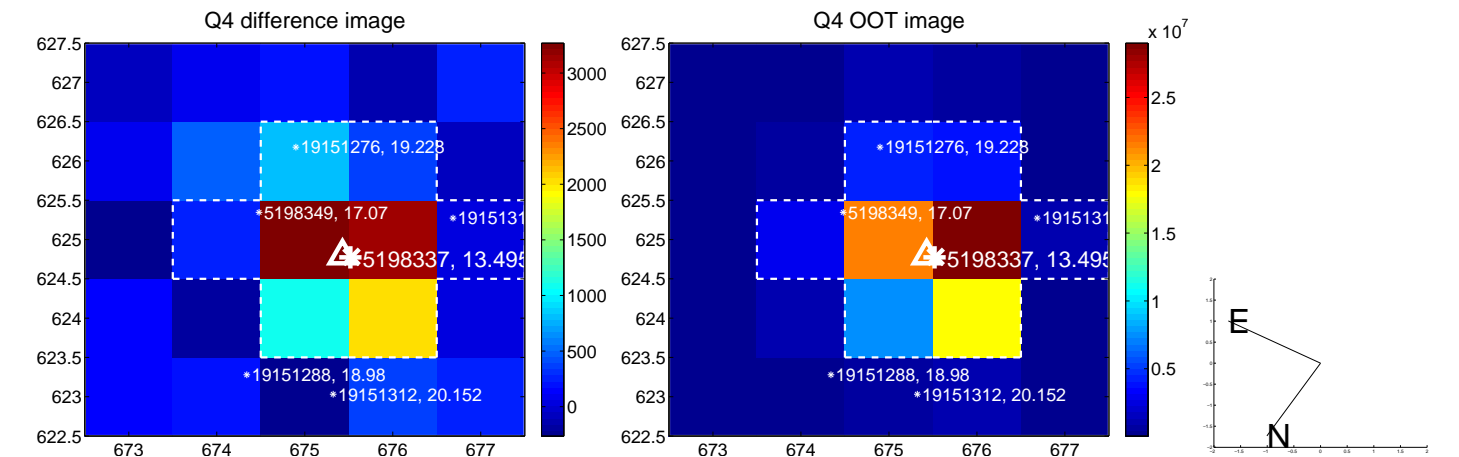
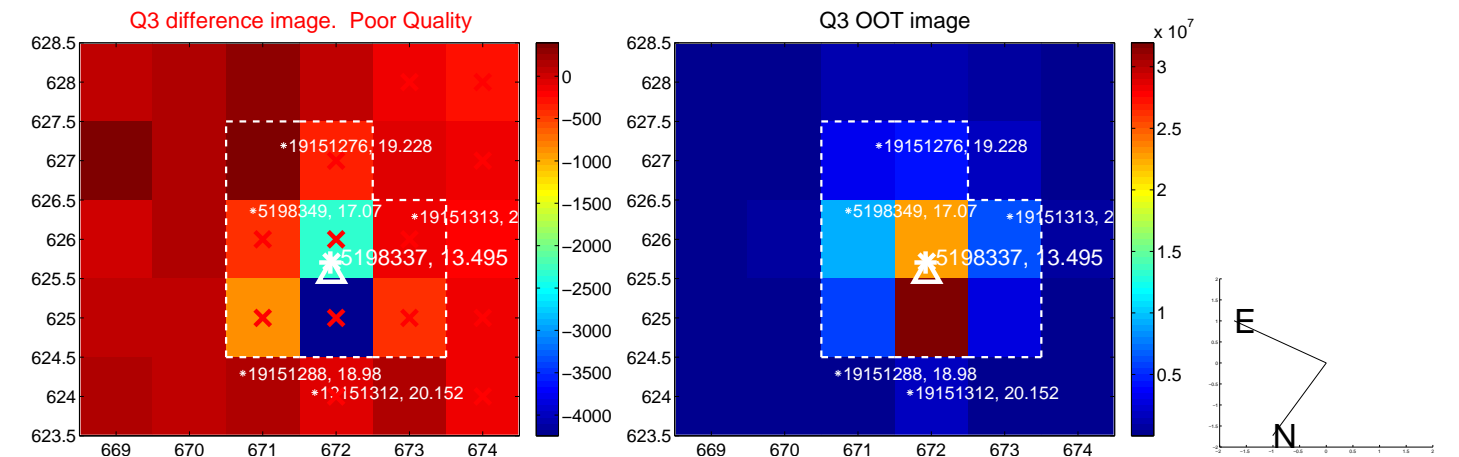
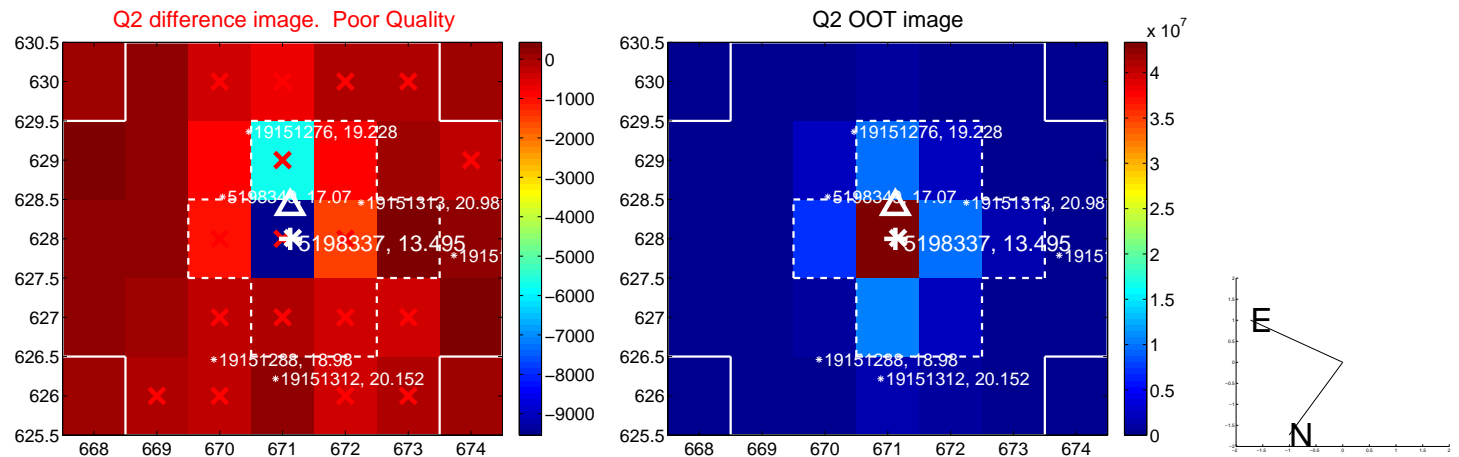
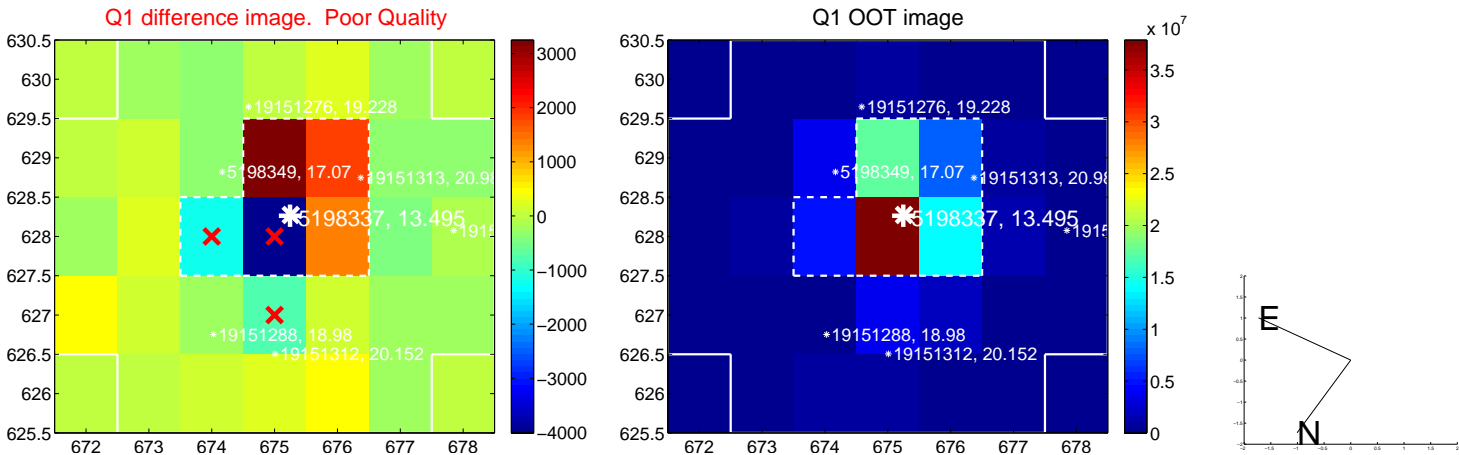
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.118 ± 0.245	0.48	-0.050 ± 0.162	0.107 ± 0.225
PRF-fit source offset from KIC position	0.178 ± 0.214	0.83	-0.024 ± 0.161	0.176 ± 0.206
photometric centroid source offset	0.65 ± 0.24	2.72	0.58 ± 0.25	0.30 ± 0.20

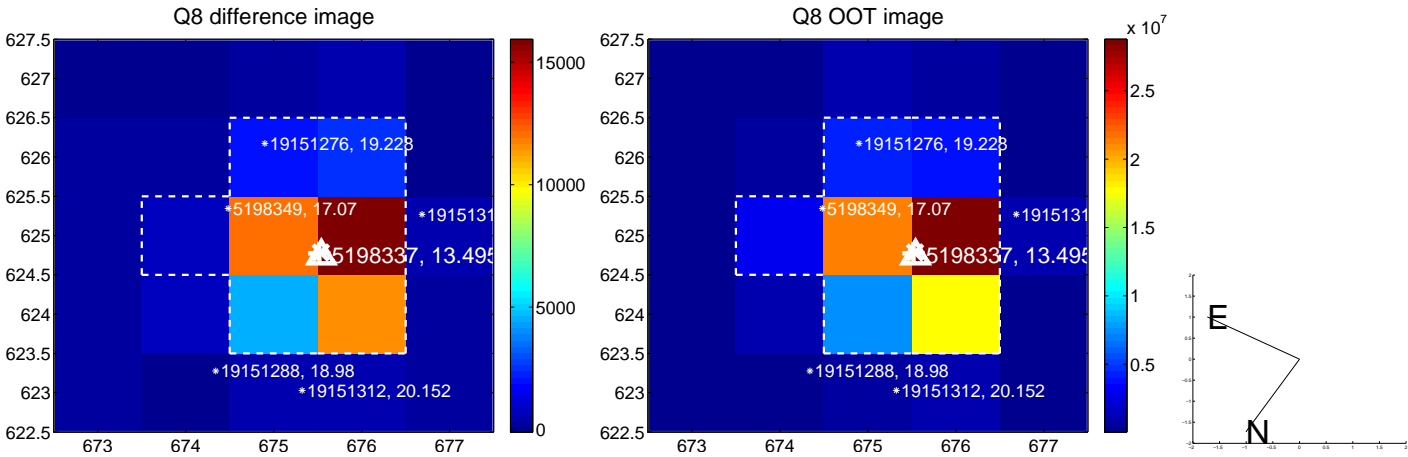
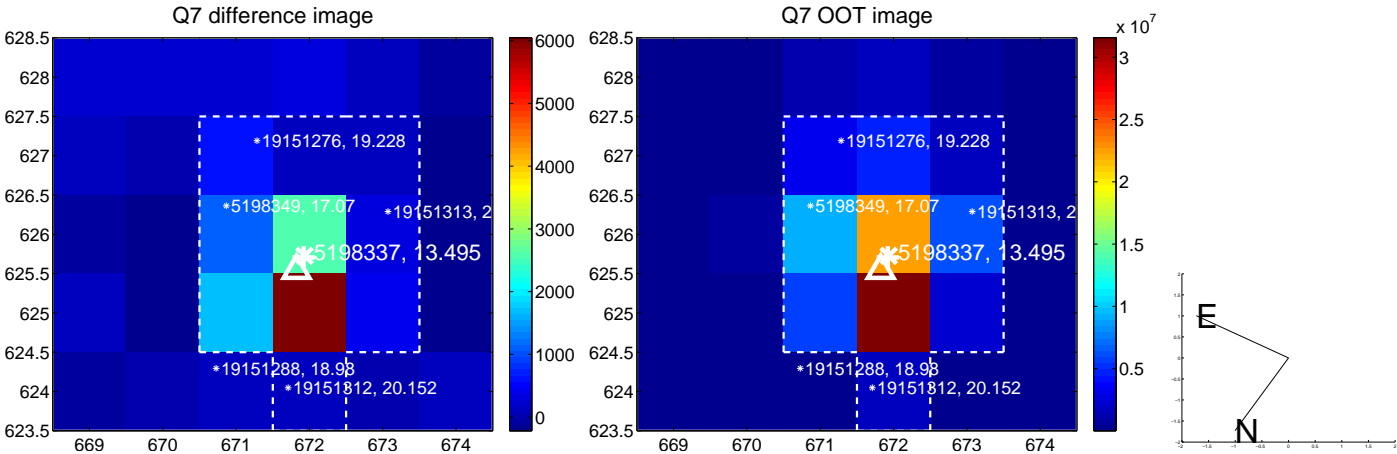
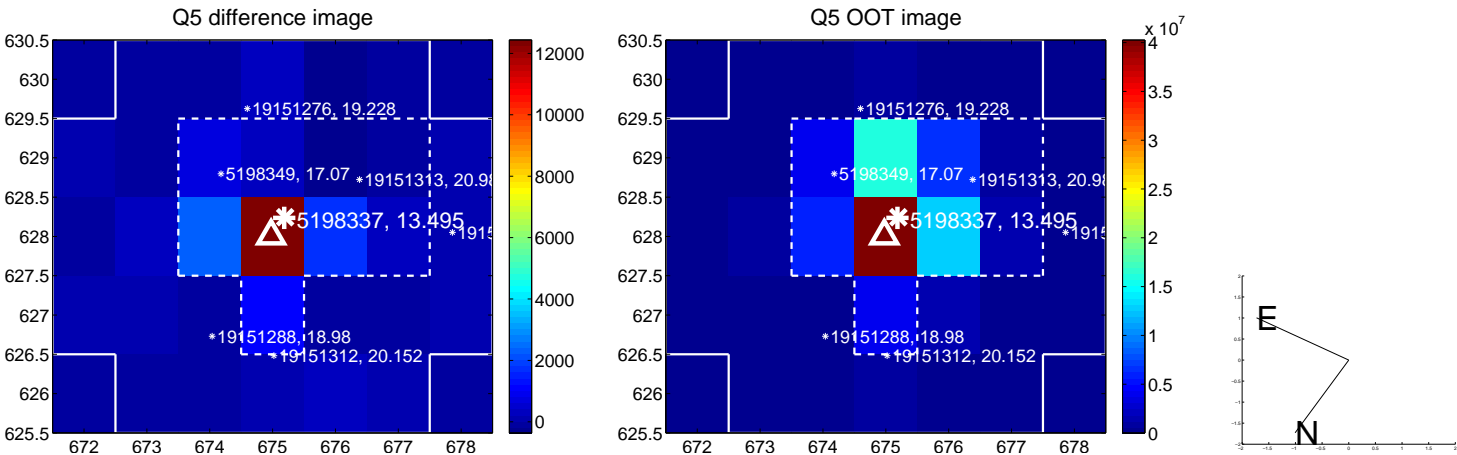


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

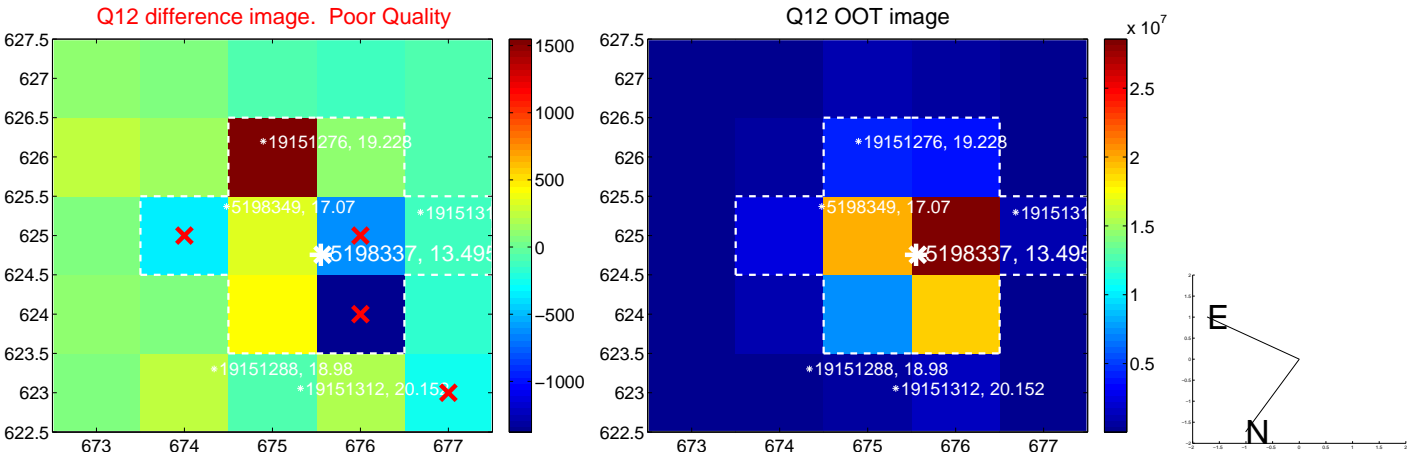
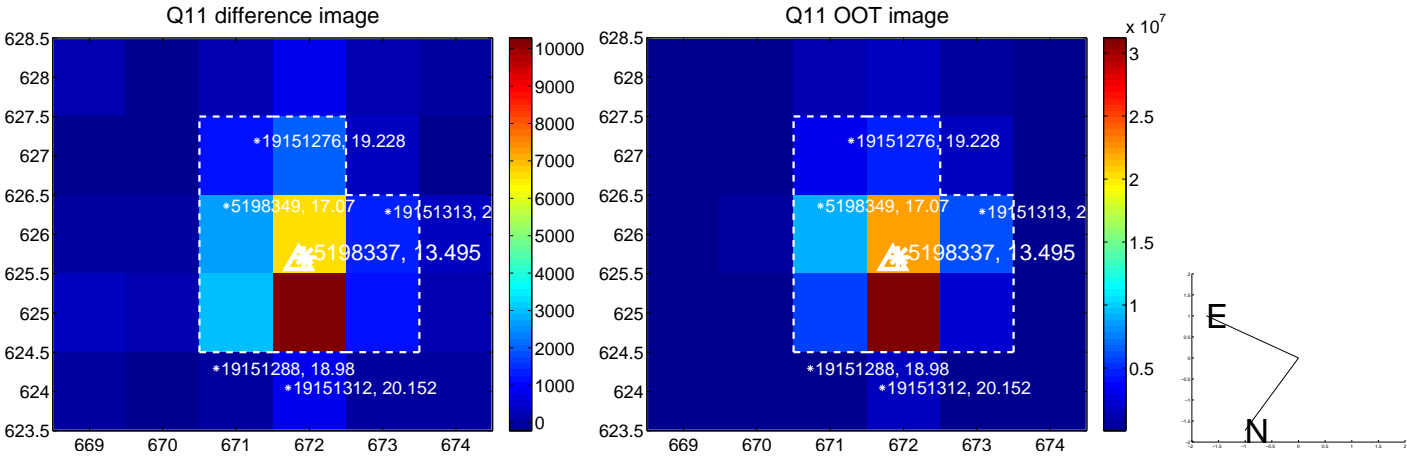
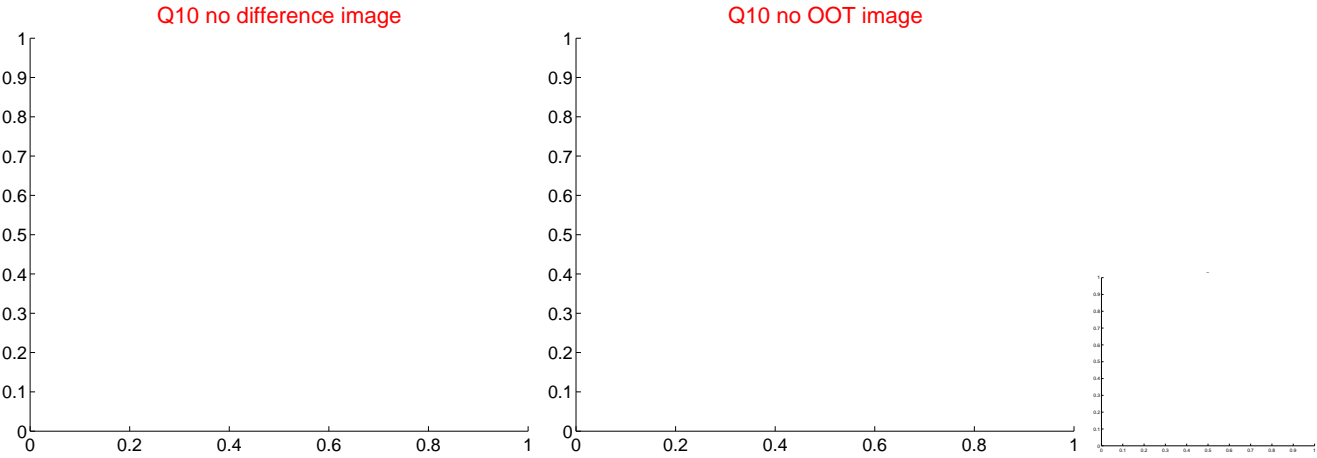
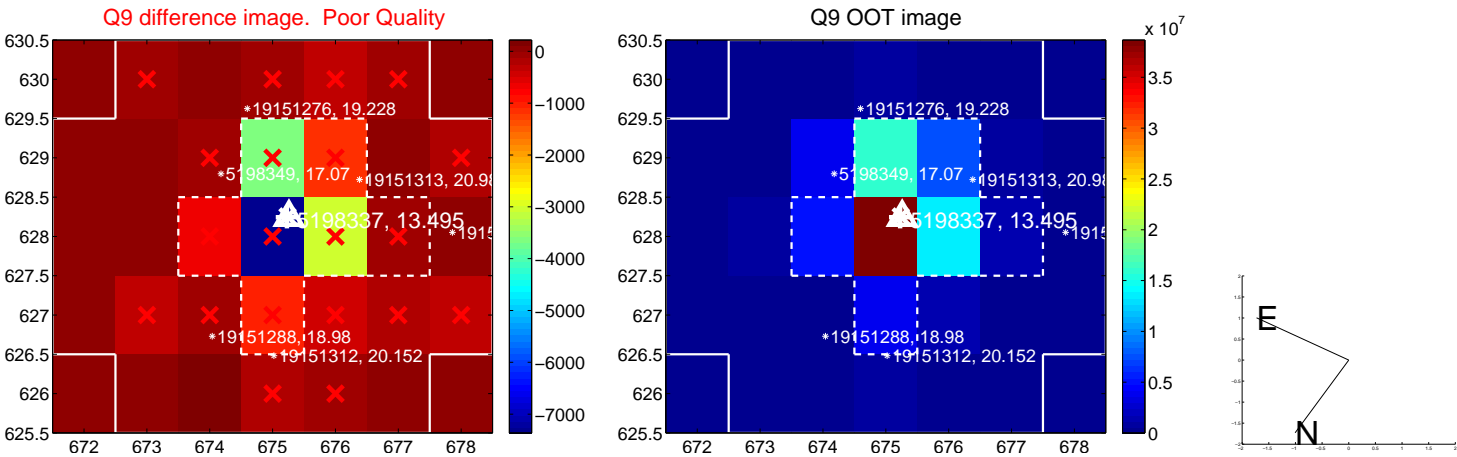
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



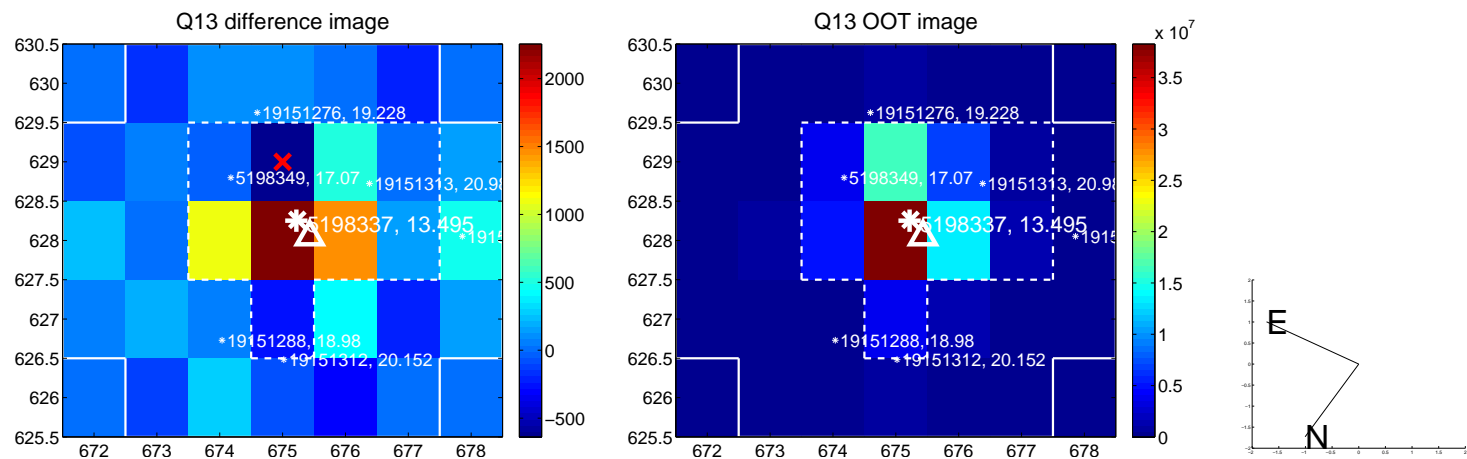
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



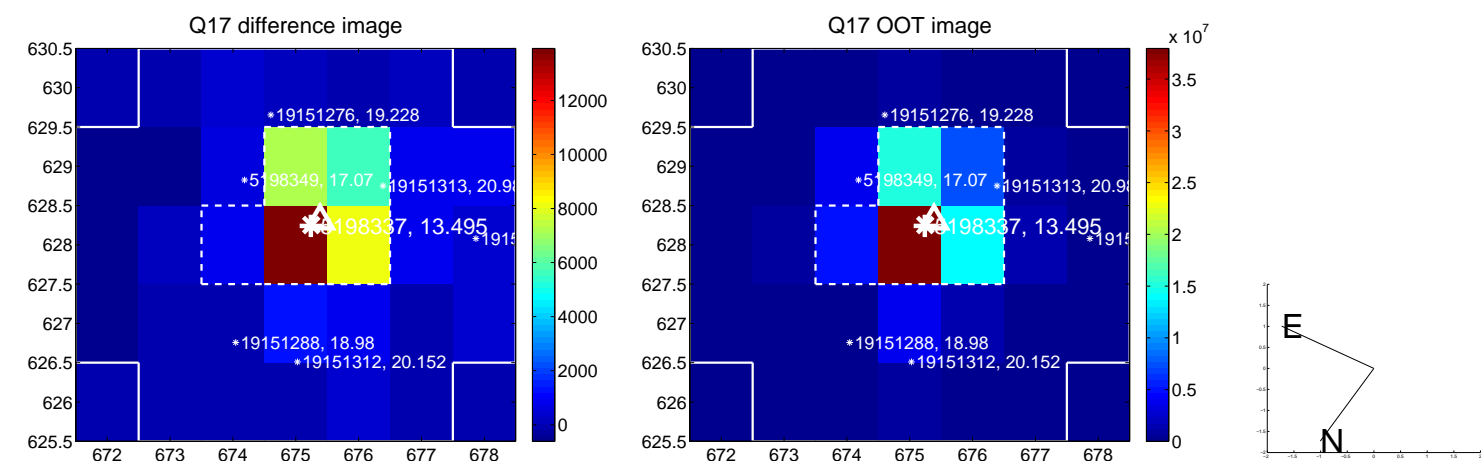
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



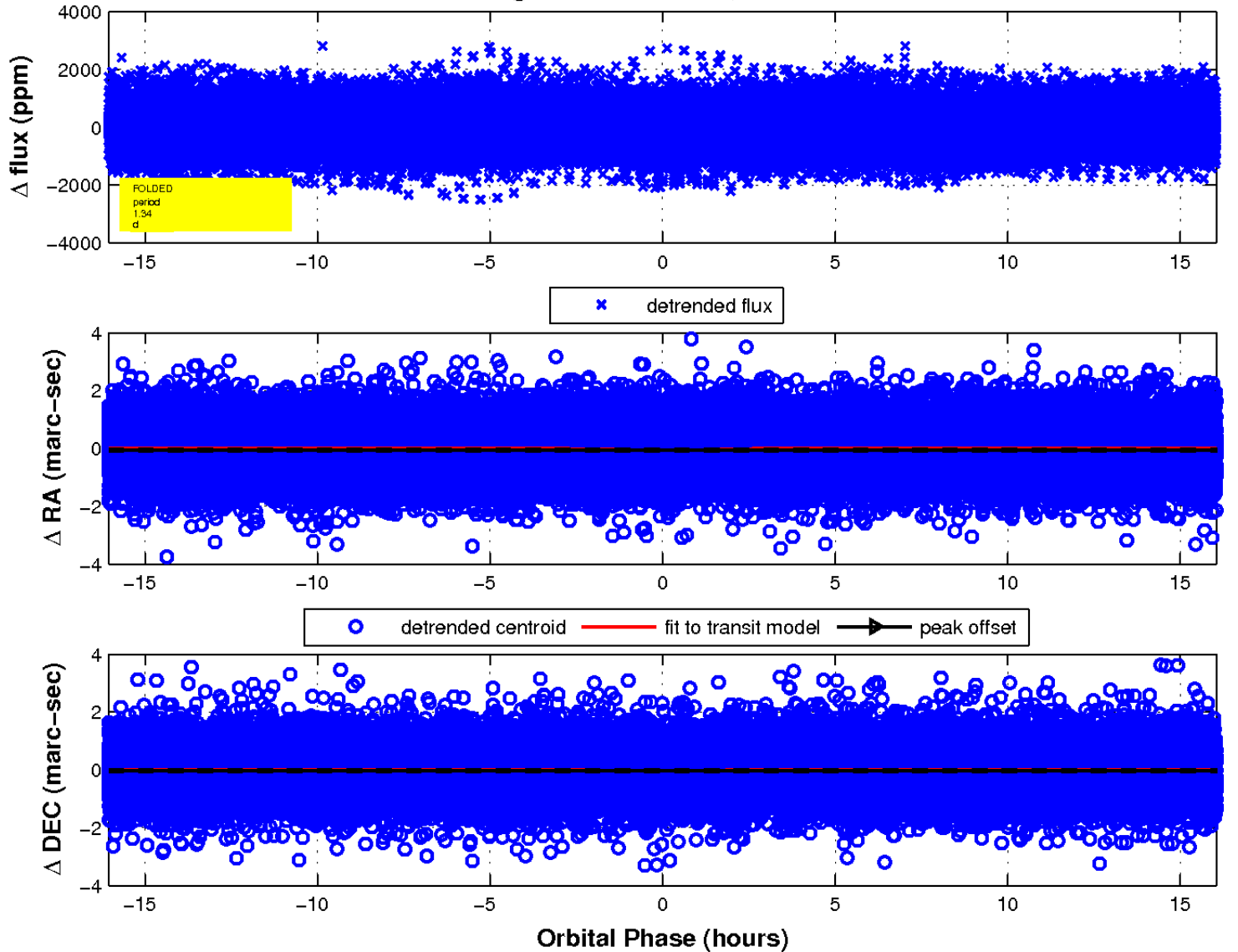
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

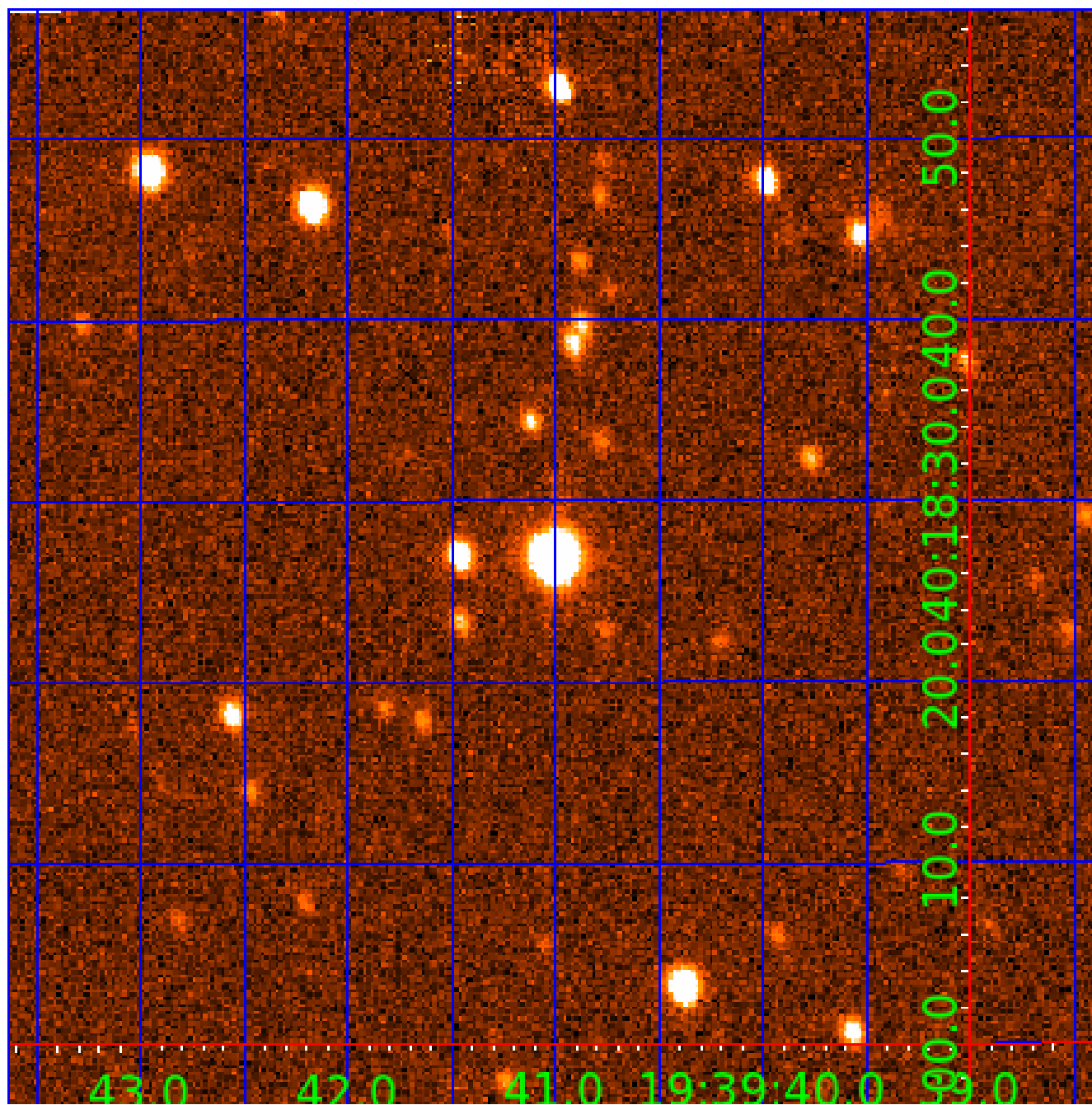


fluxWeightedCentroids, Planet 3 of 8



UKIRT Image

Declination



KIC 005198337

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})
005198337-01	OBS	No	458.318977	325.869134	930.2	10.705	8.8	7.1	7.41	6897	23.19	42.38
005198337-02	OBS	No	4.232910	135.259797	110.2	14.146	7.9	9.2	7.41	6897	9.07	21872.34
005198337-03	OBS	No	1.338051	132.151001	142.1	7.024	10.5	10.0	7.41	6897	13.28	0.00
005198337-04	OBS	No	64.025988	181.004149	1168.0	8.338	13.0	10.1	7.41	6897	39.32	584.71
005198337-05	OBS	No	49.592274	177.887070	1277.1	8.663	11.6	11.3	7.41	6897	49.24	821.98
005198337-07	OBS	No	75.060649	143.553549	1311.7	9.481	11.2	10.2	7.41	6897	49.81	473.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005198337-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
005198337-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
005198337-03	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005198337-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
005198337-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005198337-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—HALO_GHOST

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

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

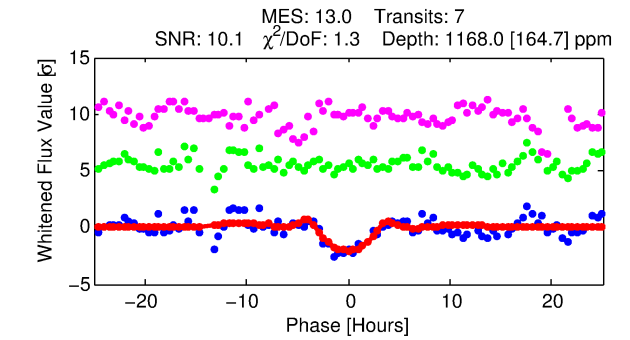
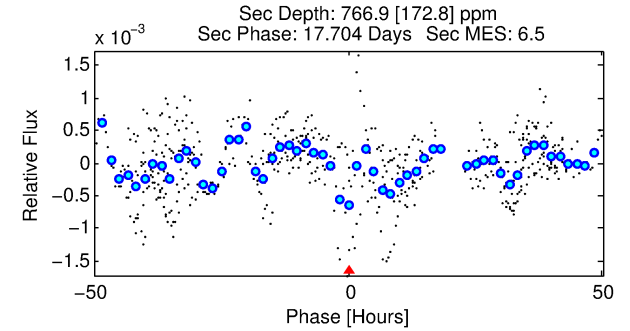
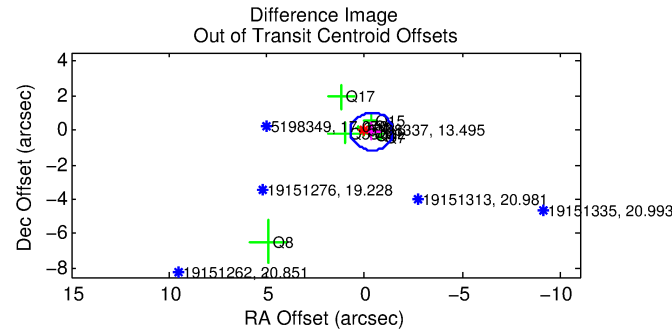
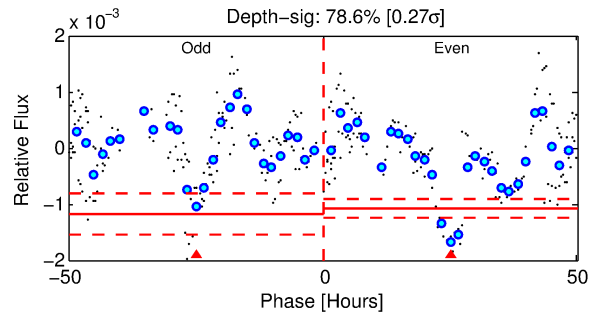
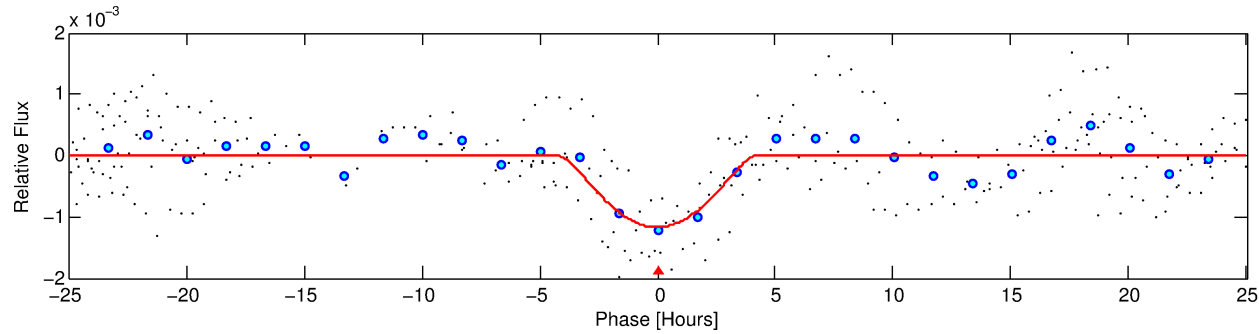
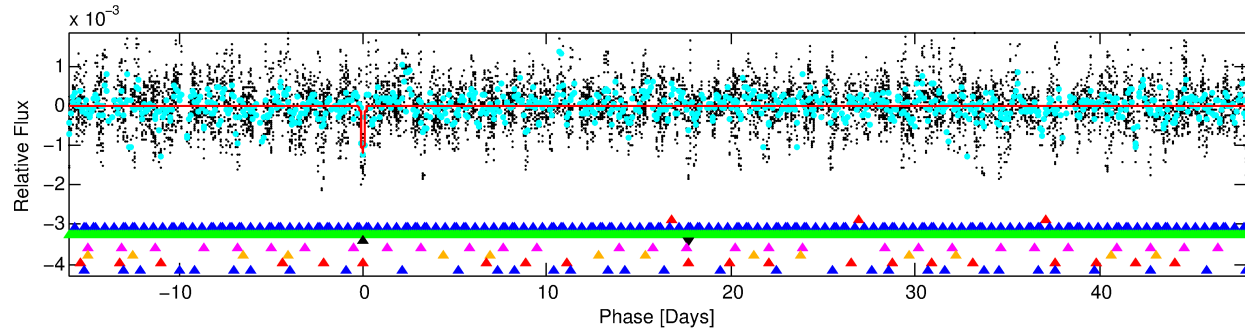
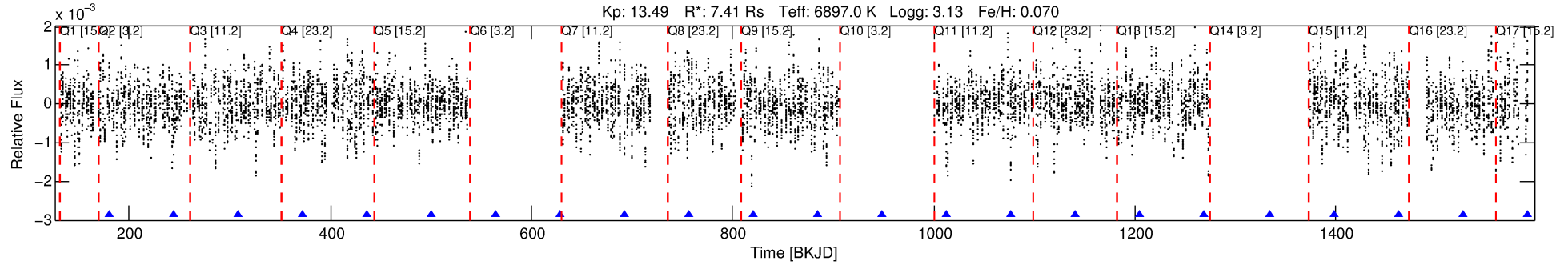
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005198337-04

No Significant Match Found

DV One-Page Summary

KIC: 5198337 Candidate: 4 of 8 Period: 64.026 d



DV Fit Results:

Period = 64.02599 [0.00139] d
Epoch = 181.0041 [0.0197] BKJD
Rp/R* = 0.0486 [0.0440]
a/R* = 21.24 [6.35]
b = 0.98 [0.08]
Seff = 584.71 [535.86]
Teq = 1254 [287] K
Rp = 39.32 [42.06] Re
a = 0.4363 [0.2448] AU
Ag = 51.95 [105.71] [0.48 σ]
Teffp = 5205 [2376] K [1.65 σ]

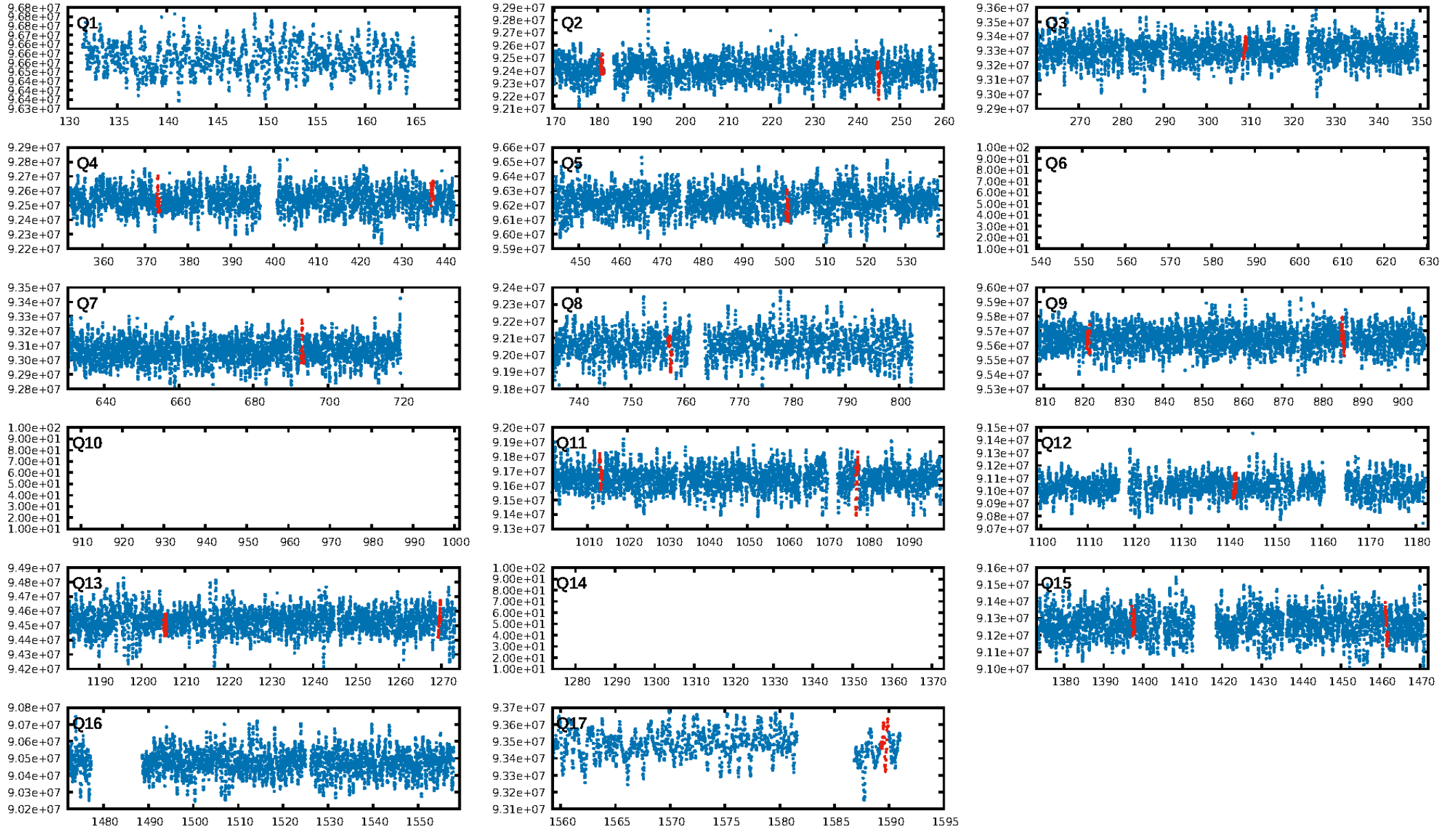
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [28.81 σ]
LongPeriod-sig: 100.0% [20.98 σ]
ModelChiSquare2-sig: 14.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: -0.2149
Centroid-sig: 16.5%
Centroid-so: 0.135 arcsec [0.84 σ]
OotOffset-rm: 0.358 arcsec [0.99 σ]
OotOffset-st: 1/4/3/3 [11]
KicOffset-rm: 0.313 arcsec [0.71 σ]
KicOffset-st: 1/4/3/3 [11]
DiffImageQuality-fgm: 0.45 [5/11]
DiffImageOverlap-fno: 0.00 [0/11]

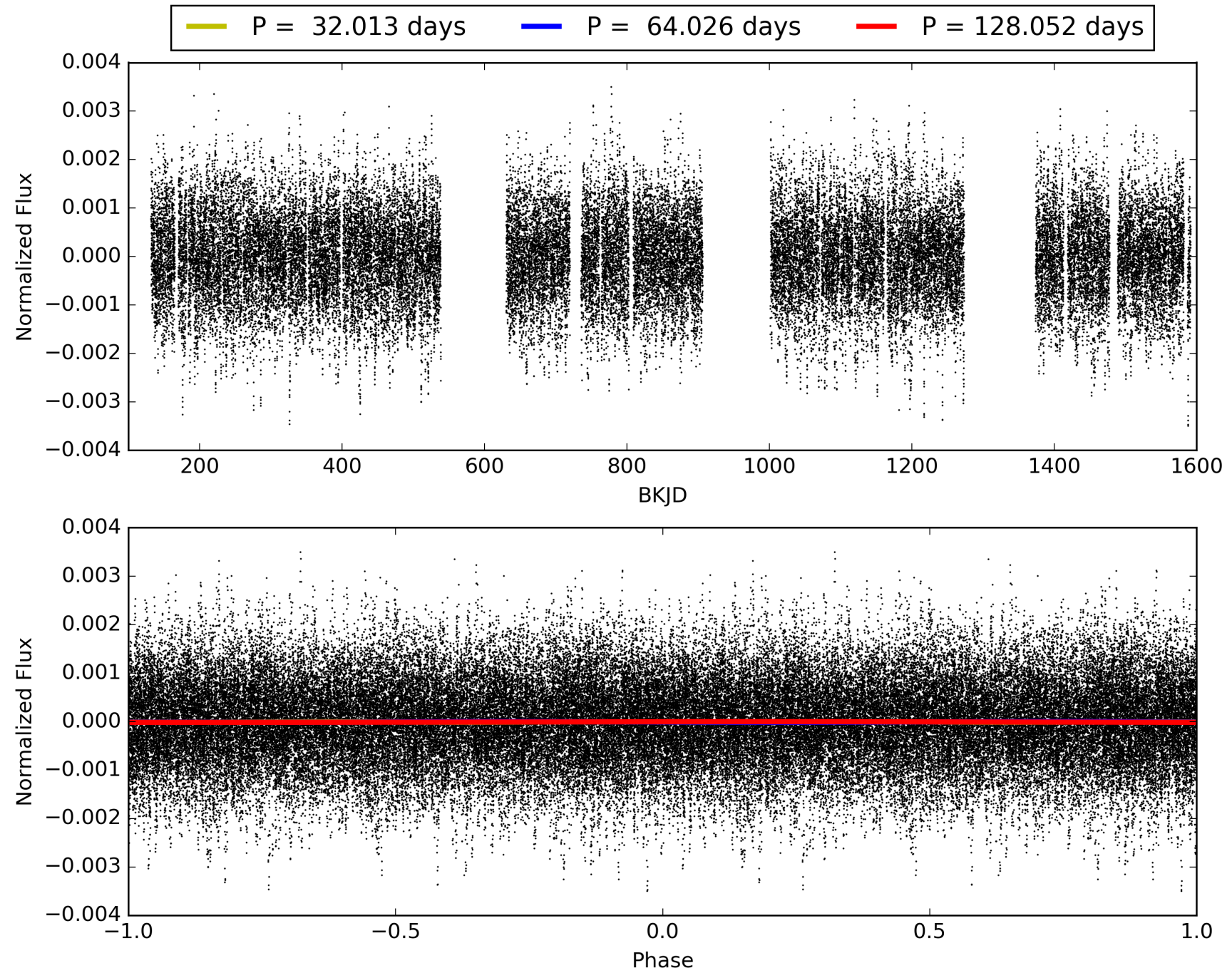
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:45:31 Z

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

TCE 005198337-04, PDC Light Curves

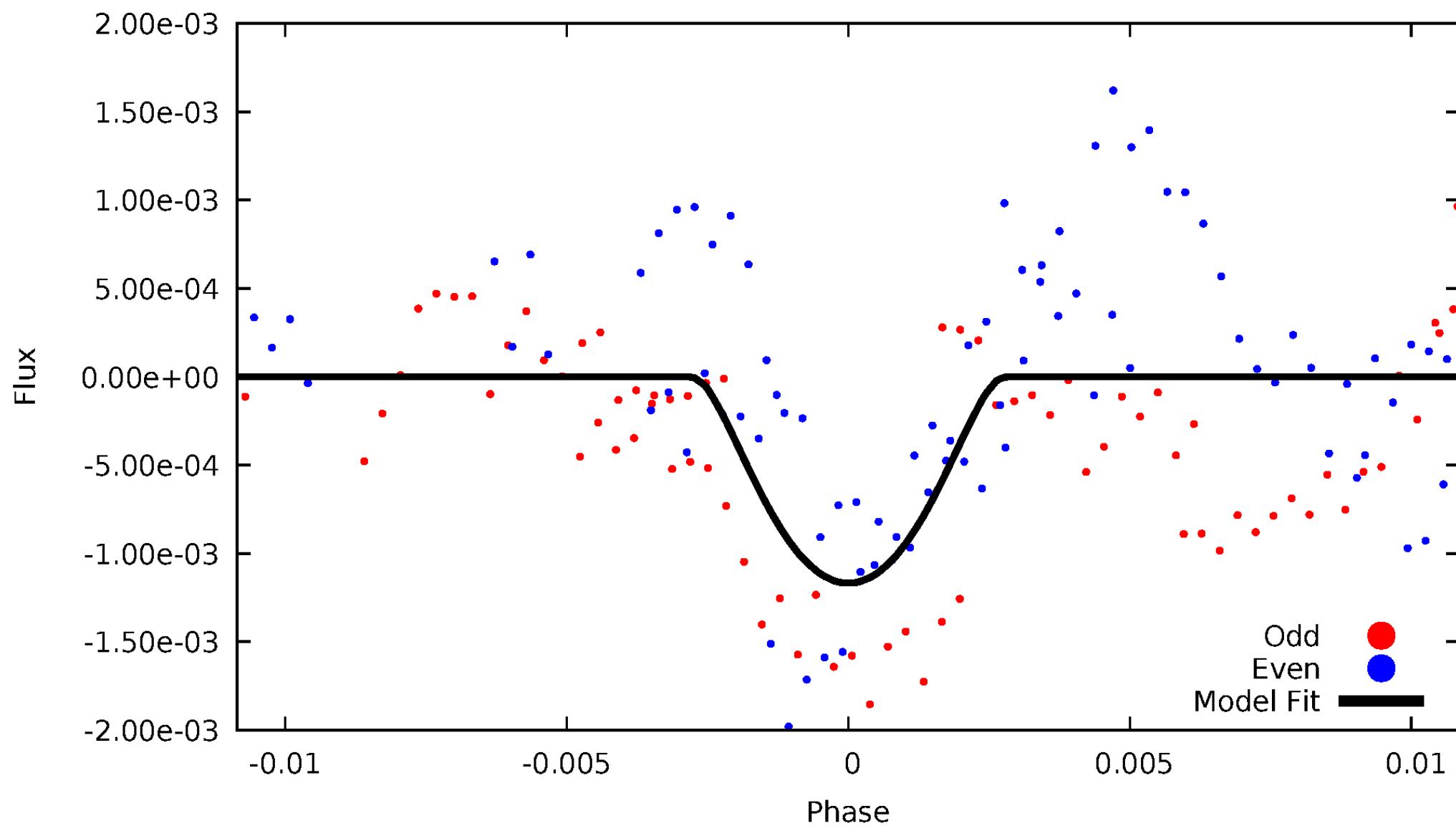


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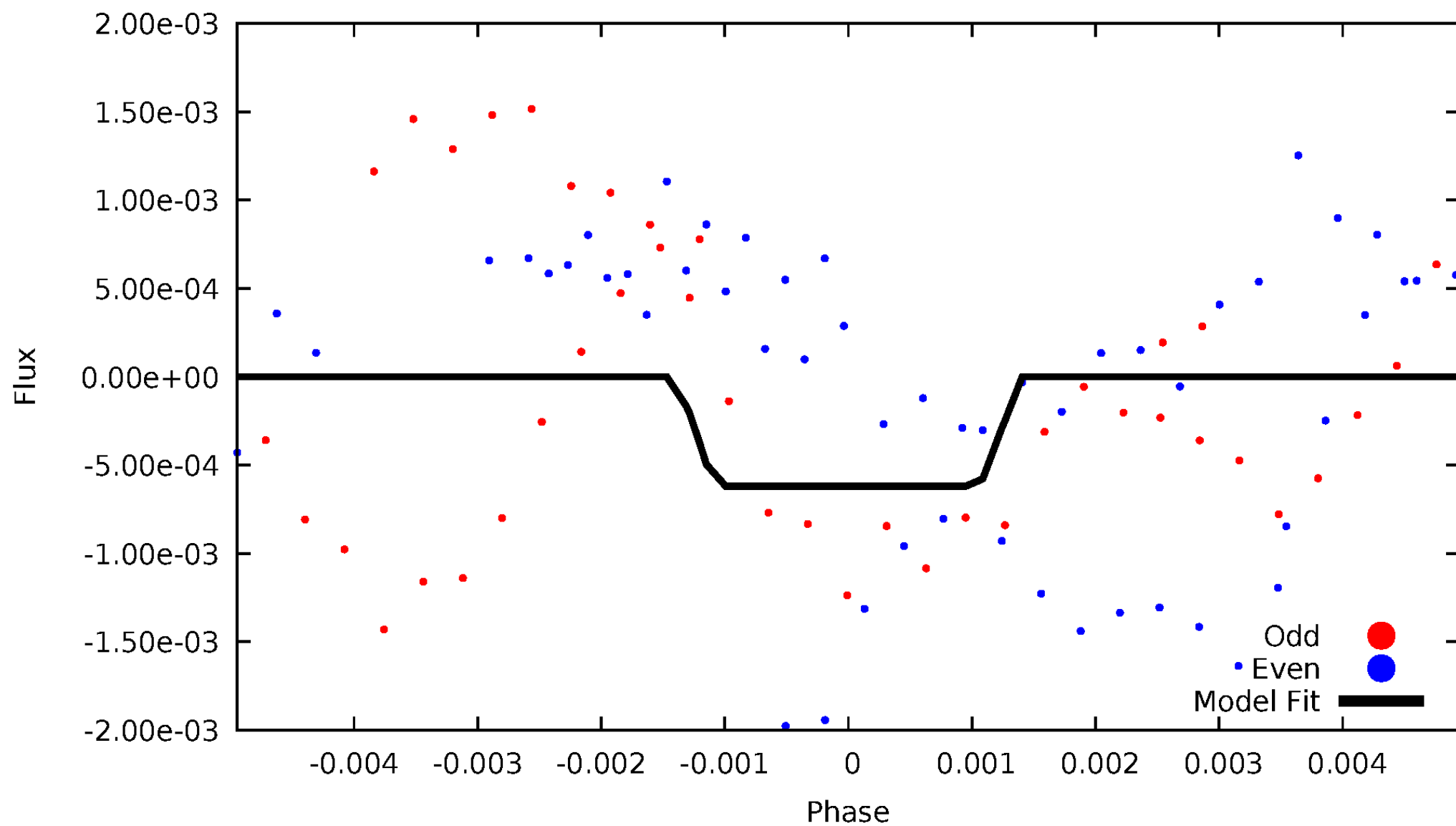
DV Odd/Even

TCE 005198337-04



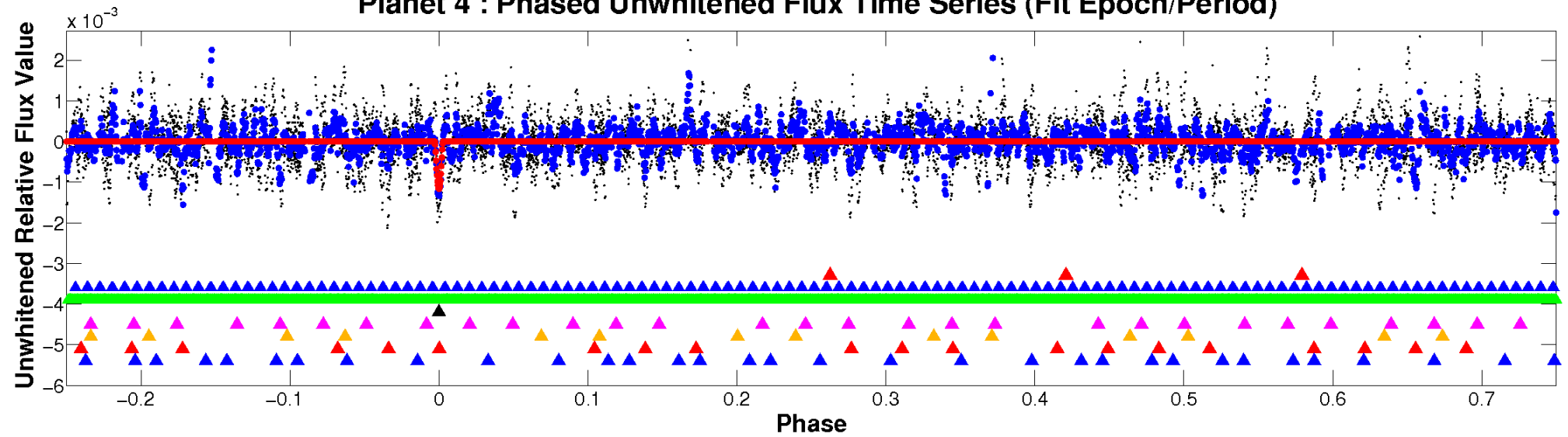
ALT Odd/Even

TCE 005198337-04

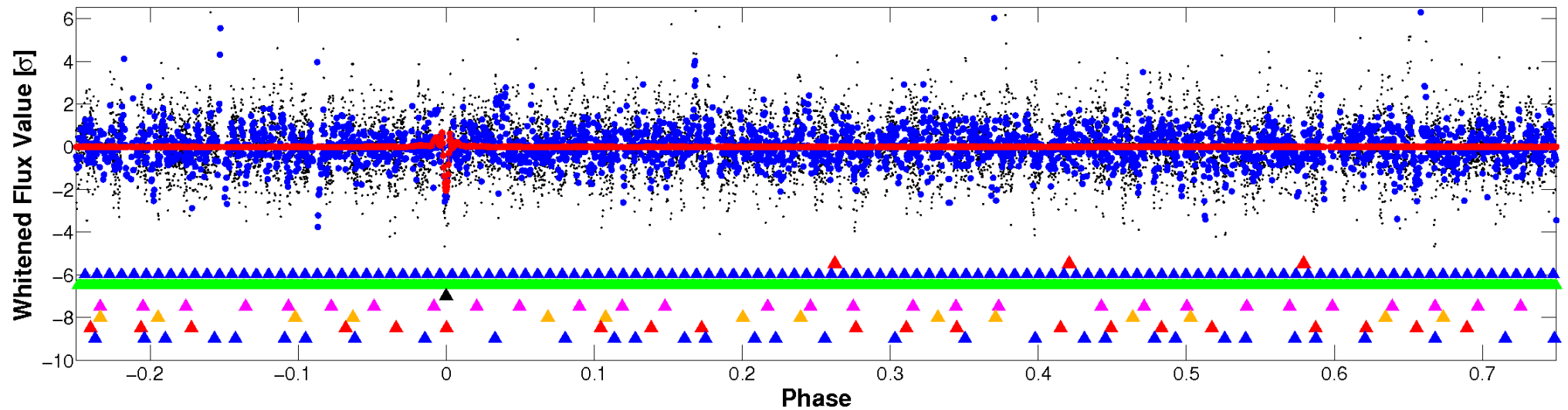


Non-Whitened Vs. Whitened Light Curve

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

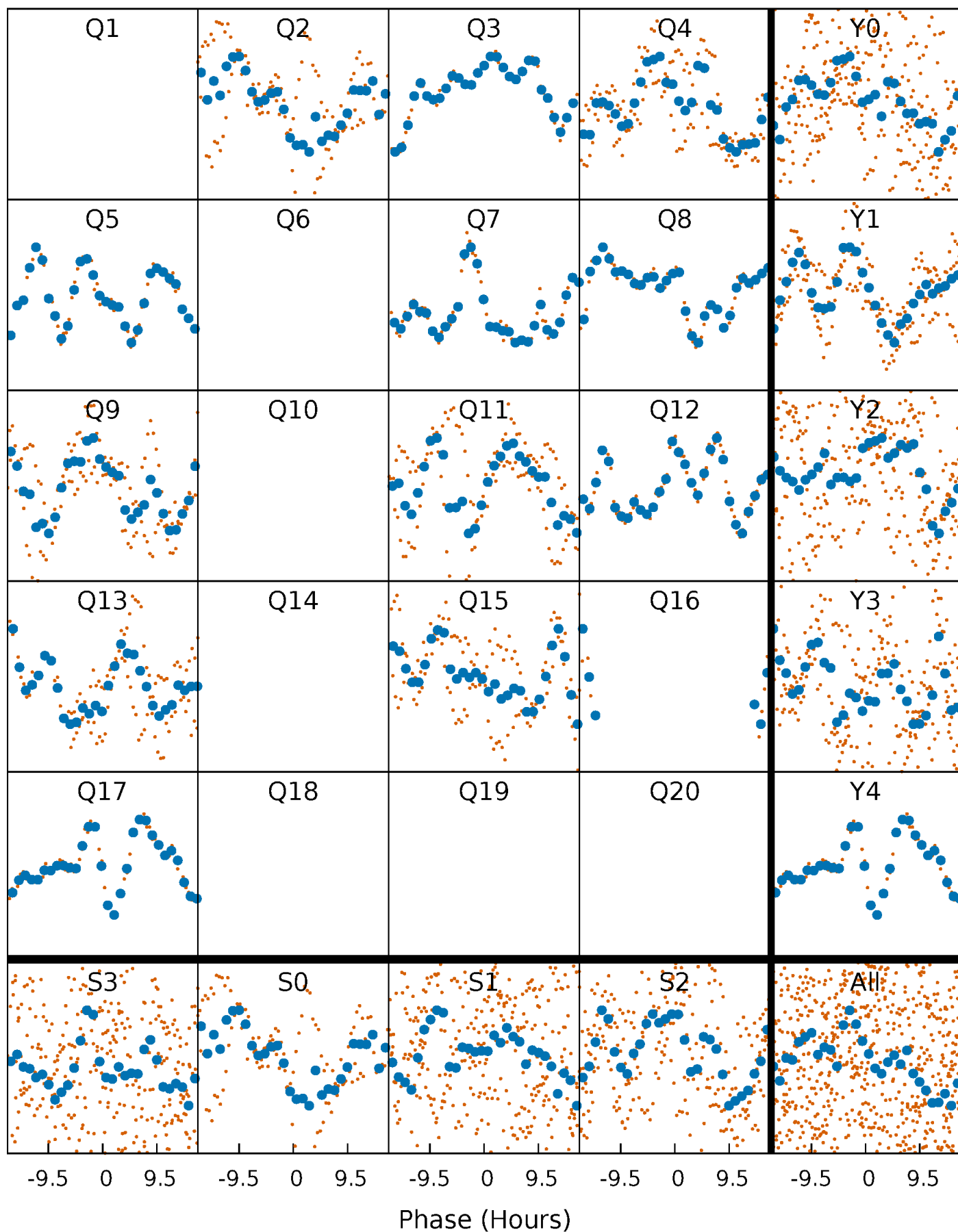


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



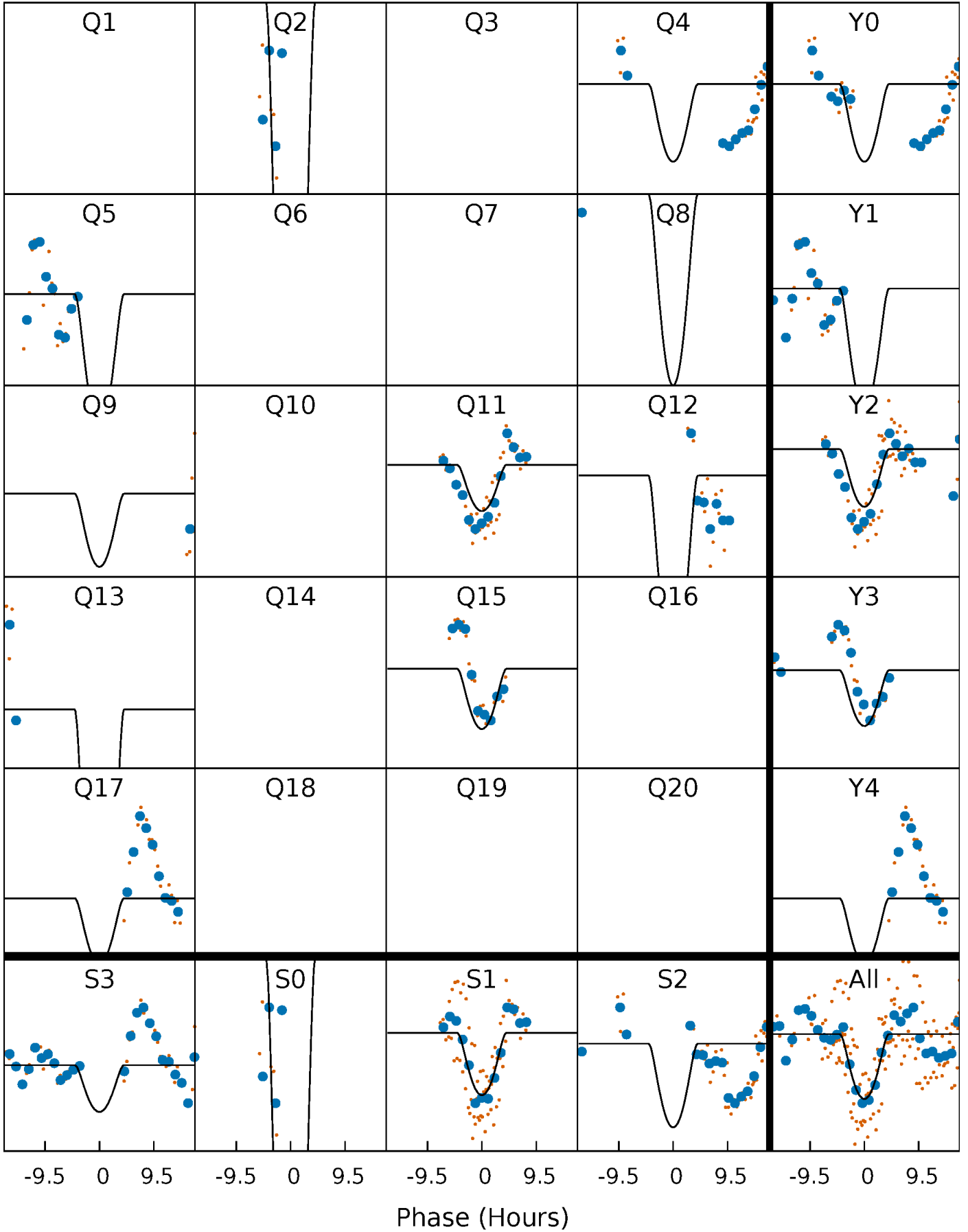
PDC Quarter-Phased Transit Curves

TCE 005198337-04 $P = 64.025988$ Days $T_0 = 181.004149$ (BKJD)



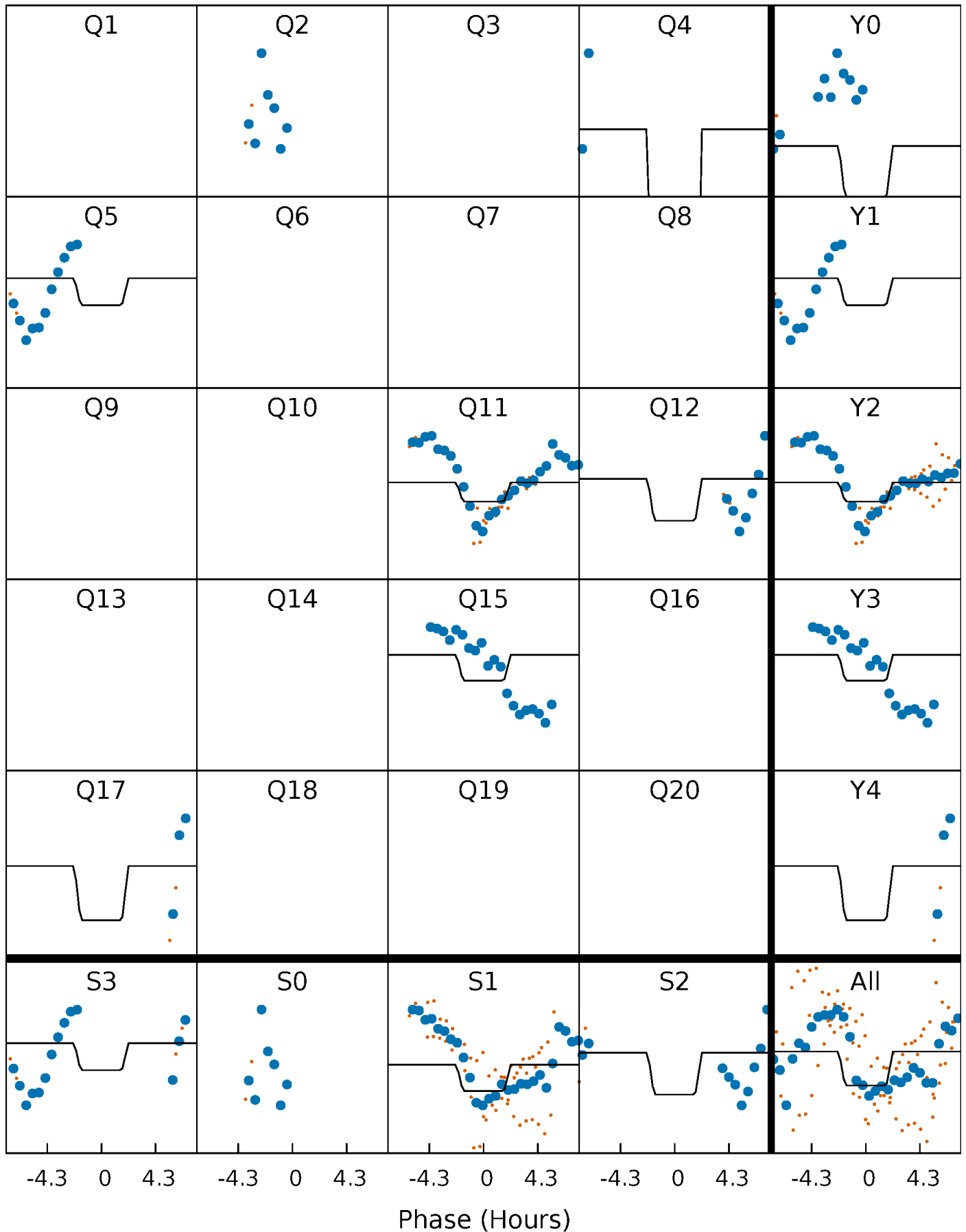
DV Quarter-Phased Transit Curves

TCE 005198337-04 $P = 64.025988$ Days $T_0 = 181.004149$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

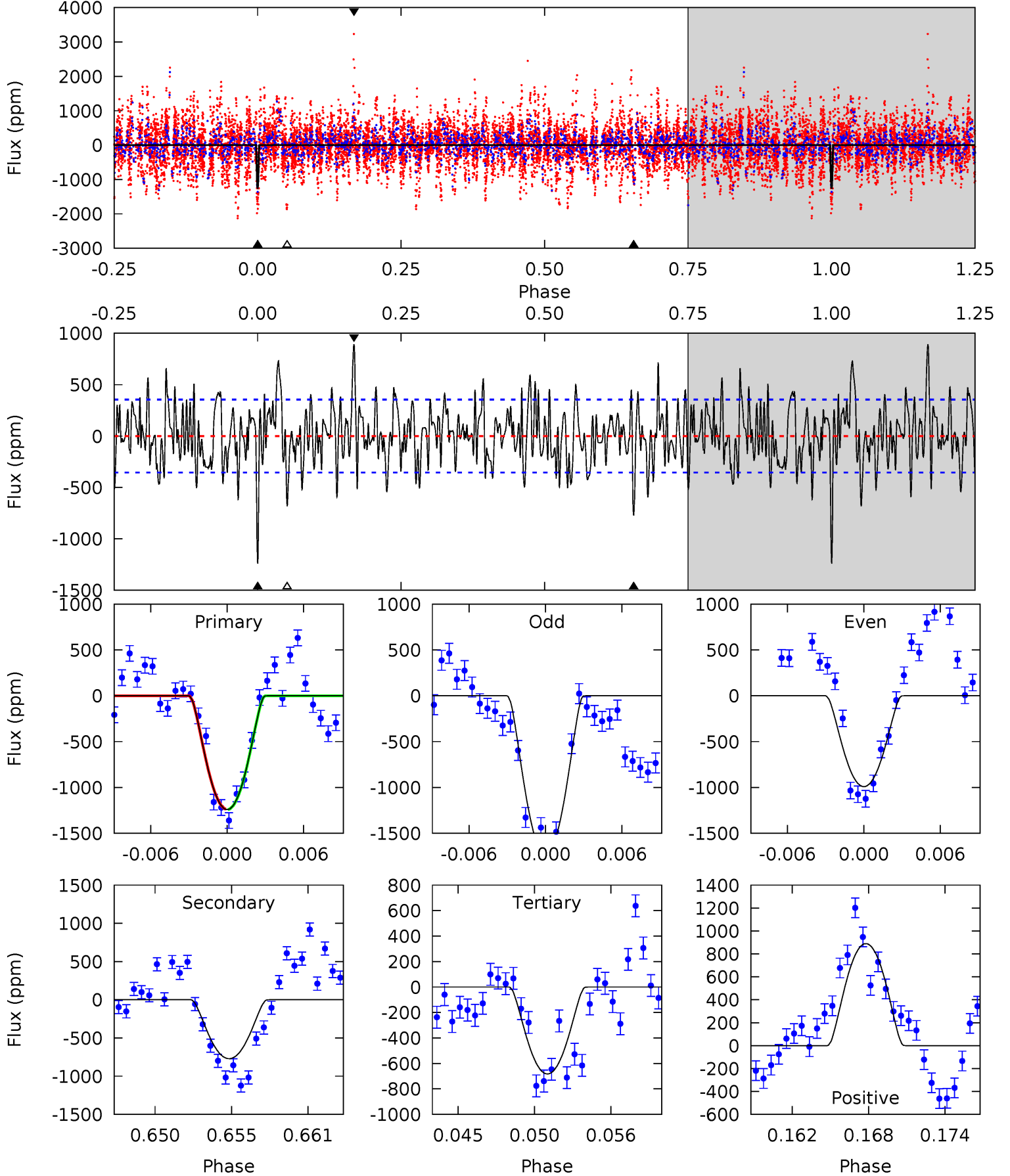
TCE 005198337-04 P= 64.026957 Days $T_0=180.934836$ (BKJD)



DV Model-Shift Uniqueness Test

005198337-04, $P = 64.025988$ Days, $E = 116.978161$ Days

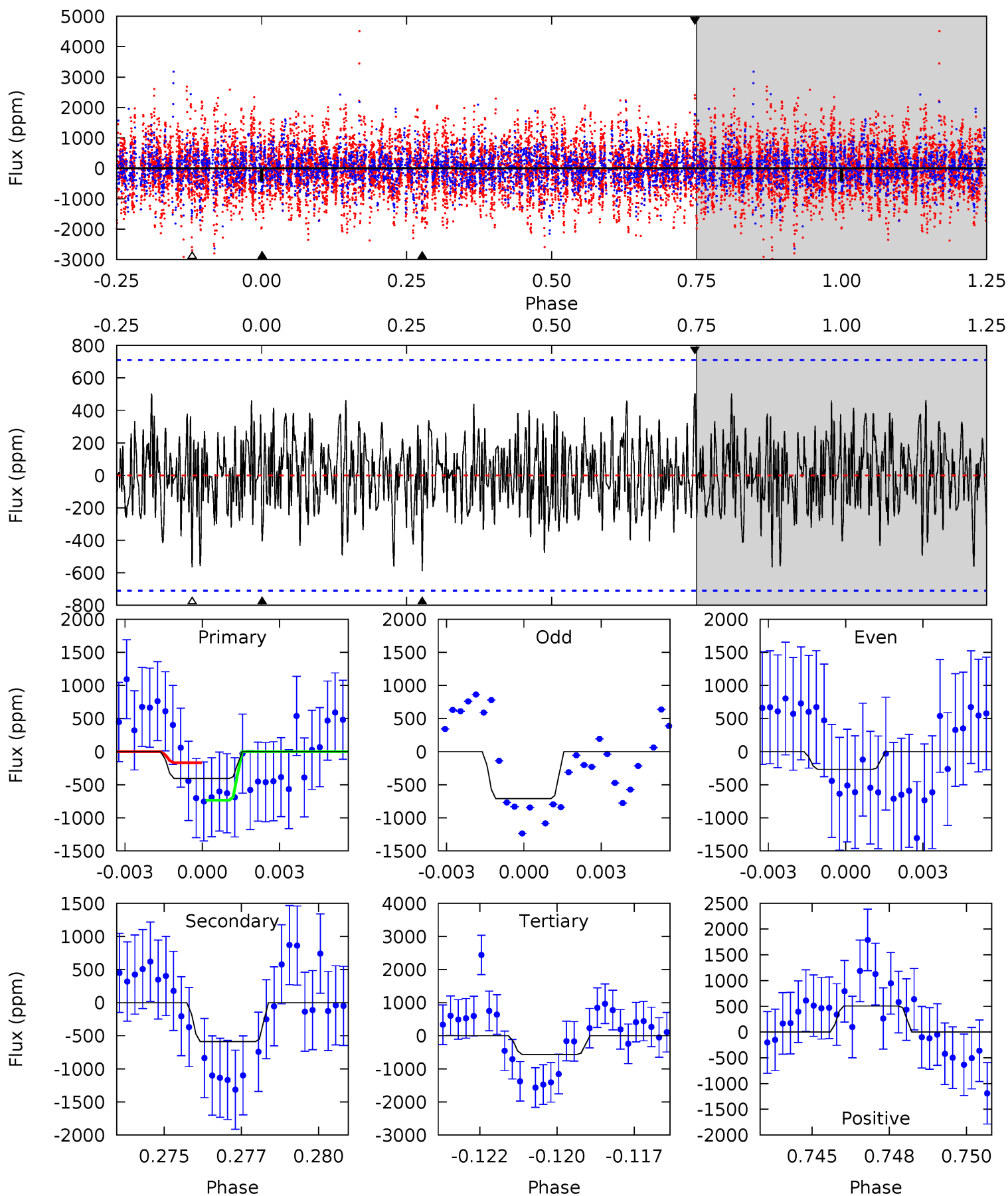
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.0	11.2	9.89	12.9	5.14	2.77	3.51	8.10	5.09	1.28	-1.72	5.14	1.14	0.42	0.03



Alt Model-Shift Uniqueness Test

005198337-04, P = 64.026957 Days, E = 116.907879 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.02	4.38	4.19	3.75	5.27	3.00	1.30	-1.18	-0.74	0.19	0.63	1.58	0.81	0.46	2.10



Stellar Parameters For KIC 005198337

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6897^{+206}_{-227}	$3.130^{+0.536}_{-0.134}$	$0.070^{+0.200}_{-0.350}$	$7.410^{+1.696}_{-4.241}$	$2.703^{+0.293}_{-0.879}$	$0.009^{+0.066}_{-0.004}$
	+3%/-3%	+17%/-4%	+286%/-500%	+23%/-57%	+11%/-33%	+705%/-41%
Source	PHO1	FLK73	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 005198337-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-771 ± 69	$40.62^{+34.84}_{-26.55}$	1707^{+136}_{-250}	4927^{+3223}_{-974}	49^{+351}_{-35}
Alt.	-590 ± 135	$28.94^{+32.59}_{-19.86}$	1715^{+134}_{-250}	5278^{+4055}_{-1266}	70^{+610}_{-54}

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 $A_{obs} \gg 1.0$

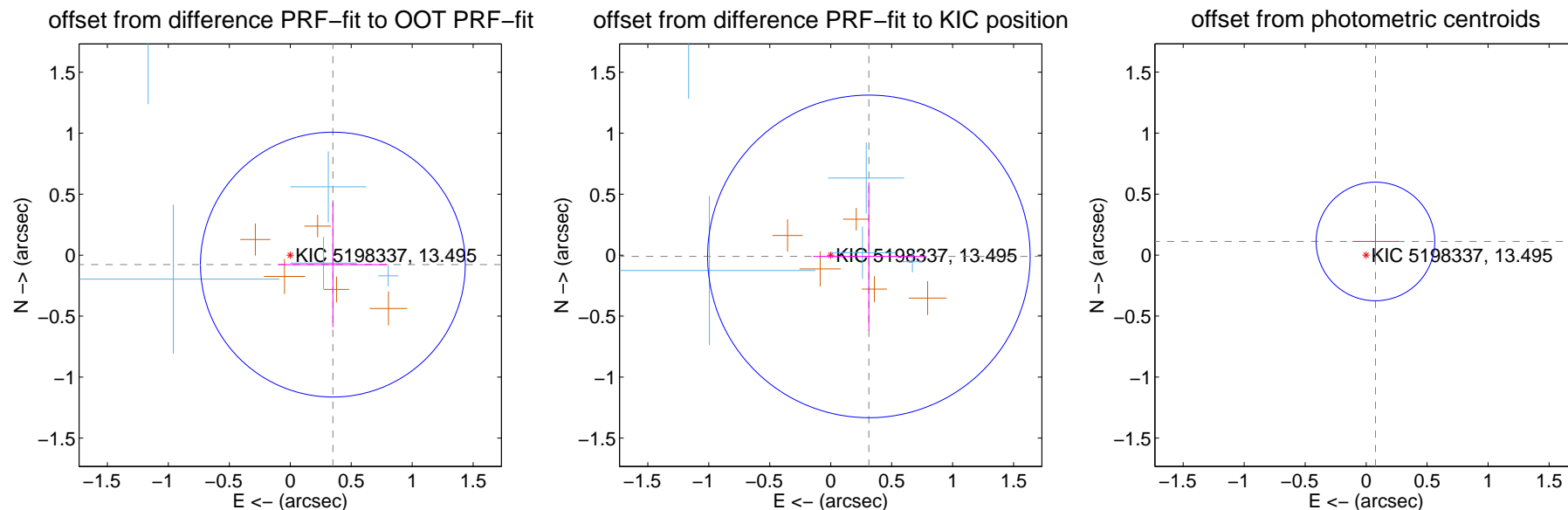
DV Centroid Data

Supplemental centroid analysis for 005198337-04. Kepler magnitude: 13.49. Transit SNR 10.11

There are 5 quarters with good PRF difference image offsets

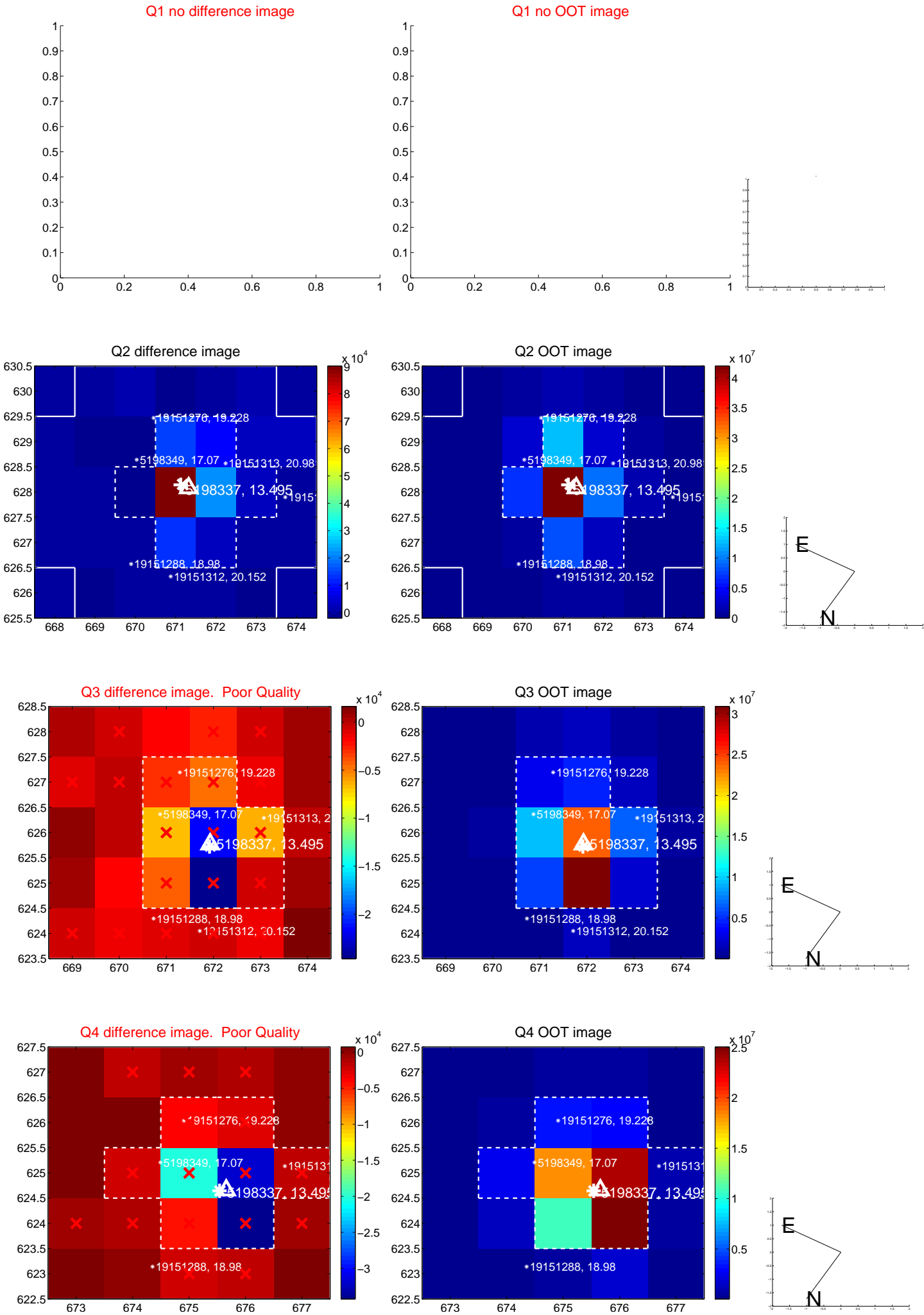
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.358 ± 0.362	0.99	-0.349 ± 0.451	-0.078 ± 0.512
PRF-fit source offset from KIC position	0.313 ± 0.441	0.71	-0.313 ± 0.457	-0.010 ± 0.608
photometric centroid source offset	0.14 ± 0.16	0.84	-0.08 ± 0.19	0.11 ± 0.15

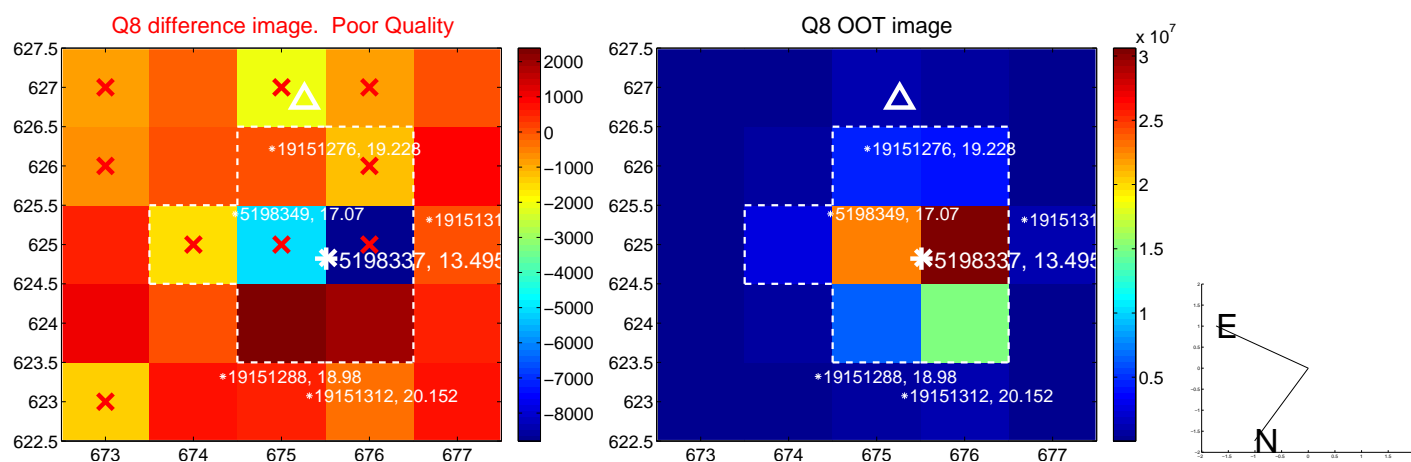
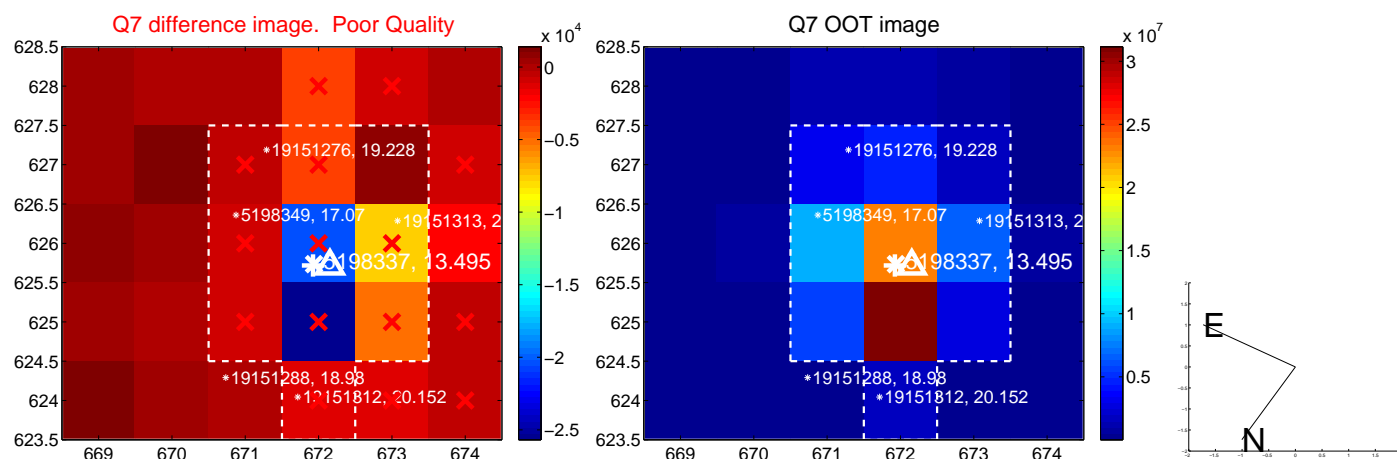
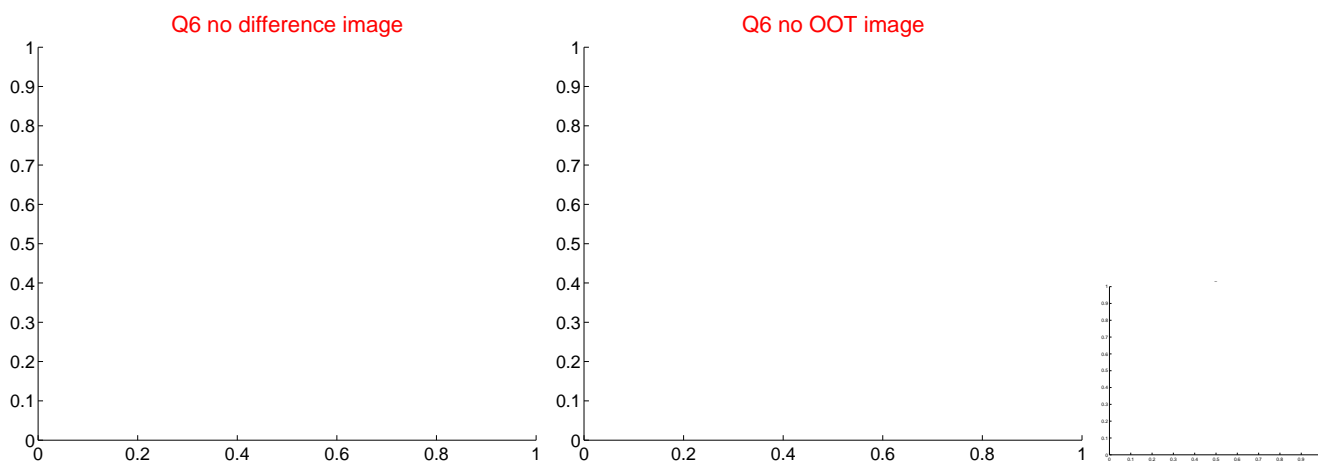
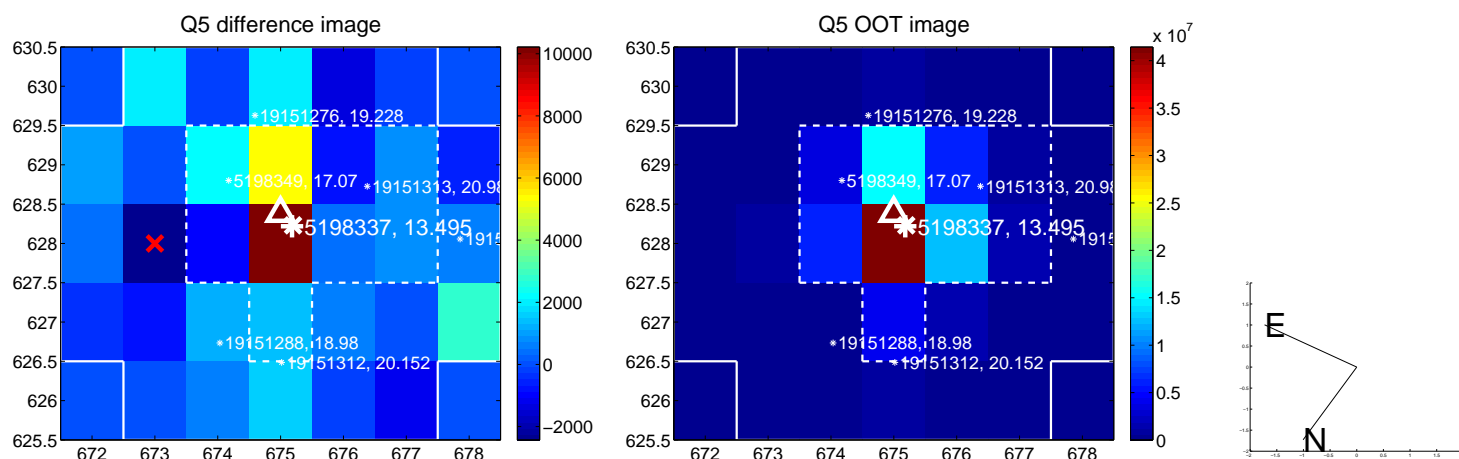


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

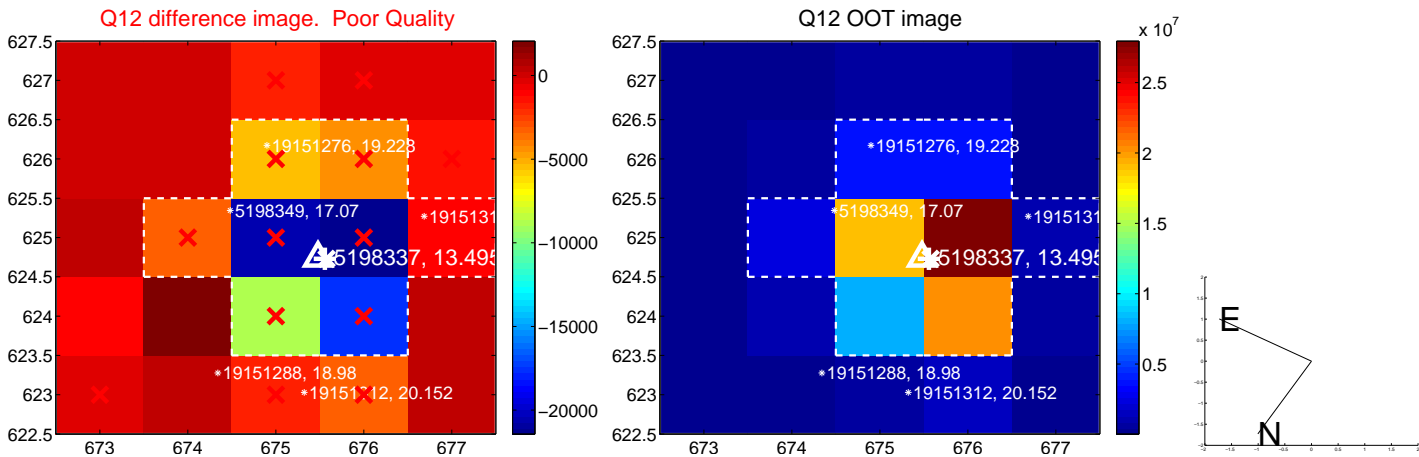
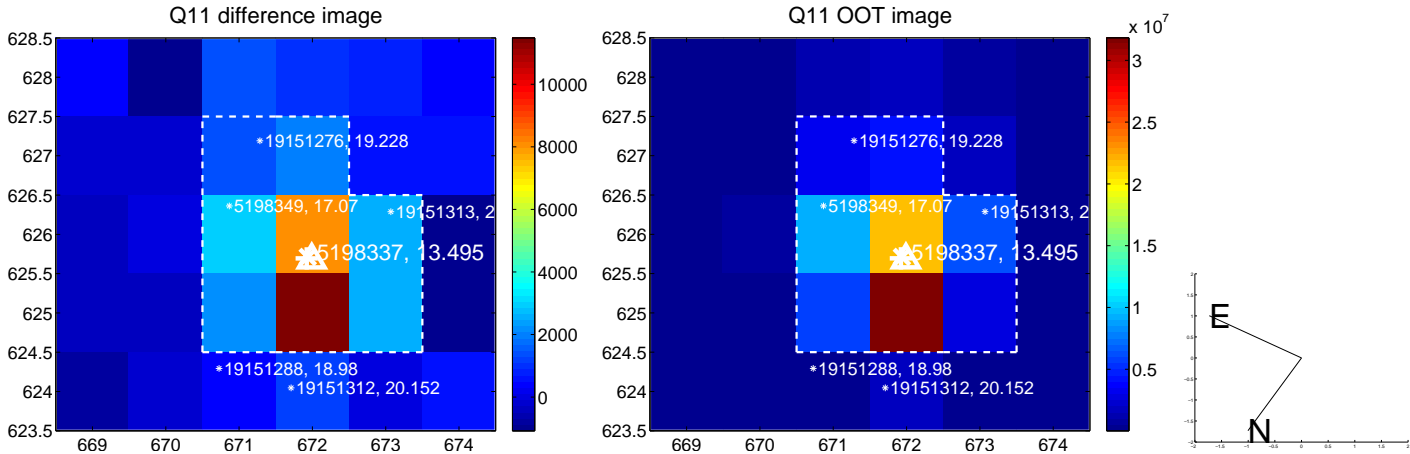
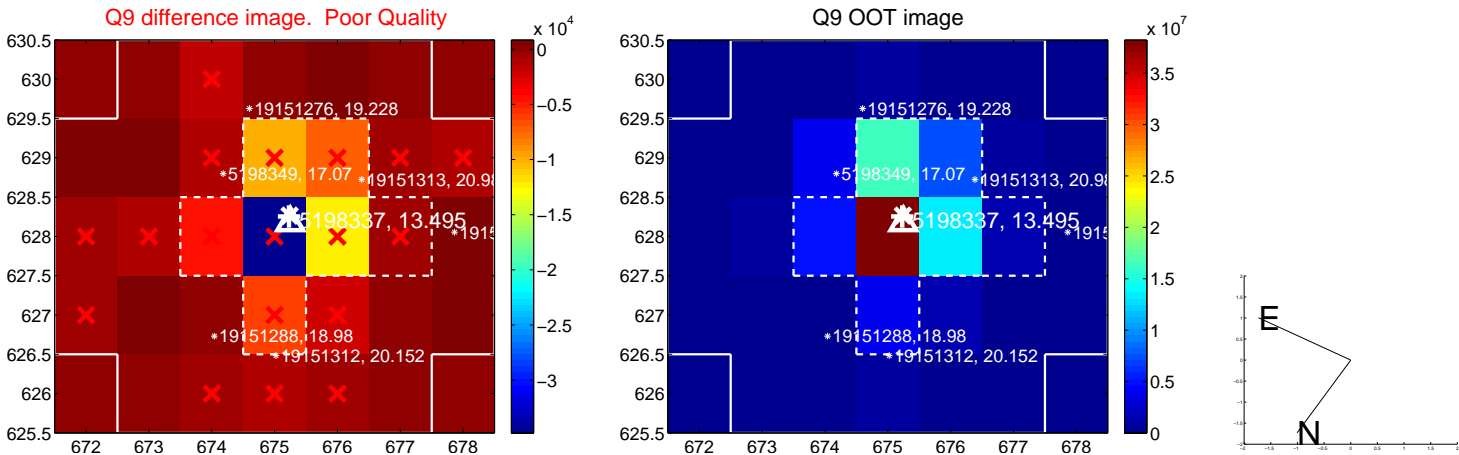
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



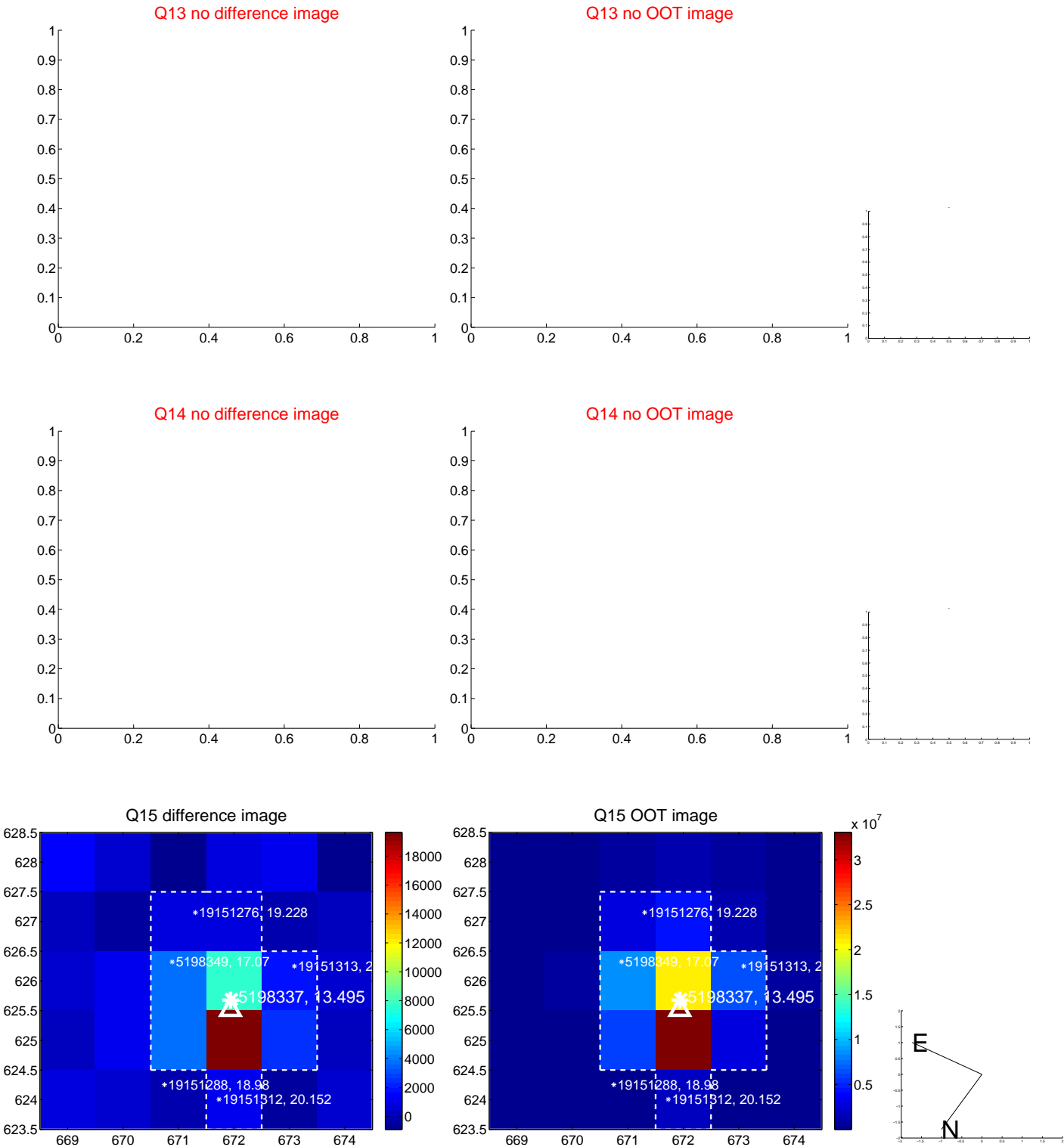
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



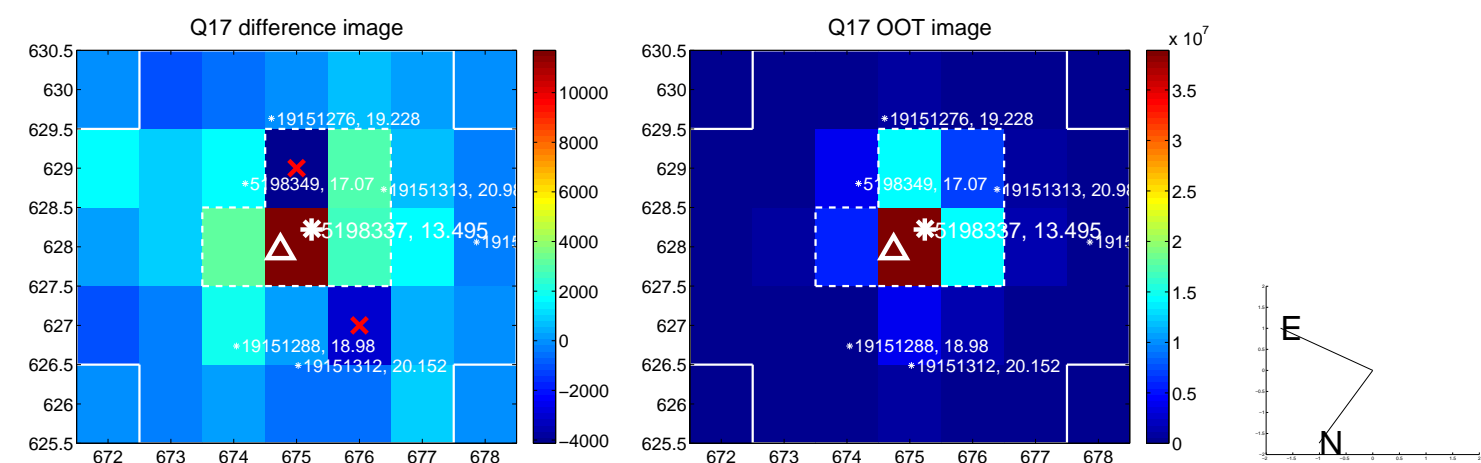
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



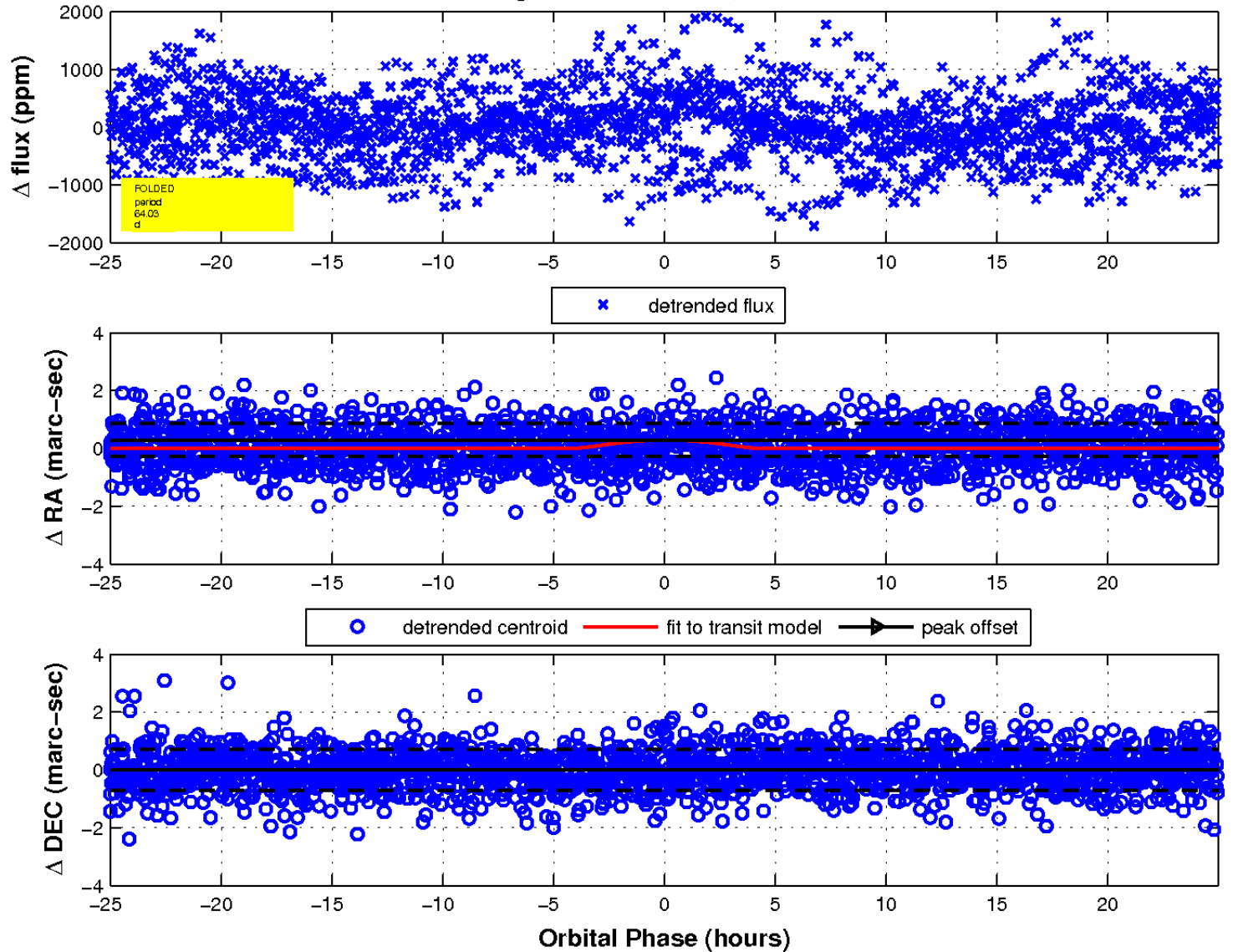
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

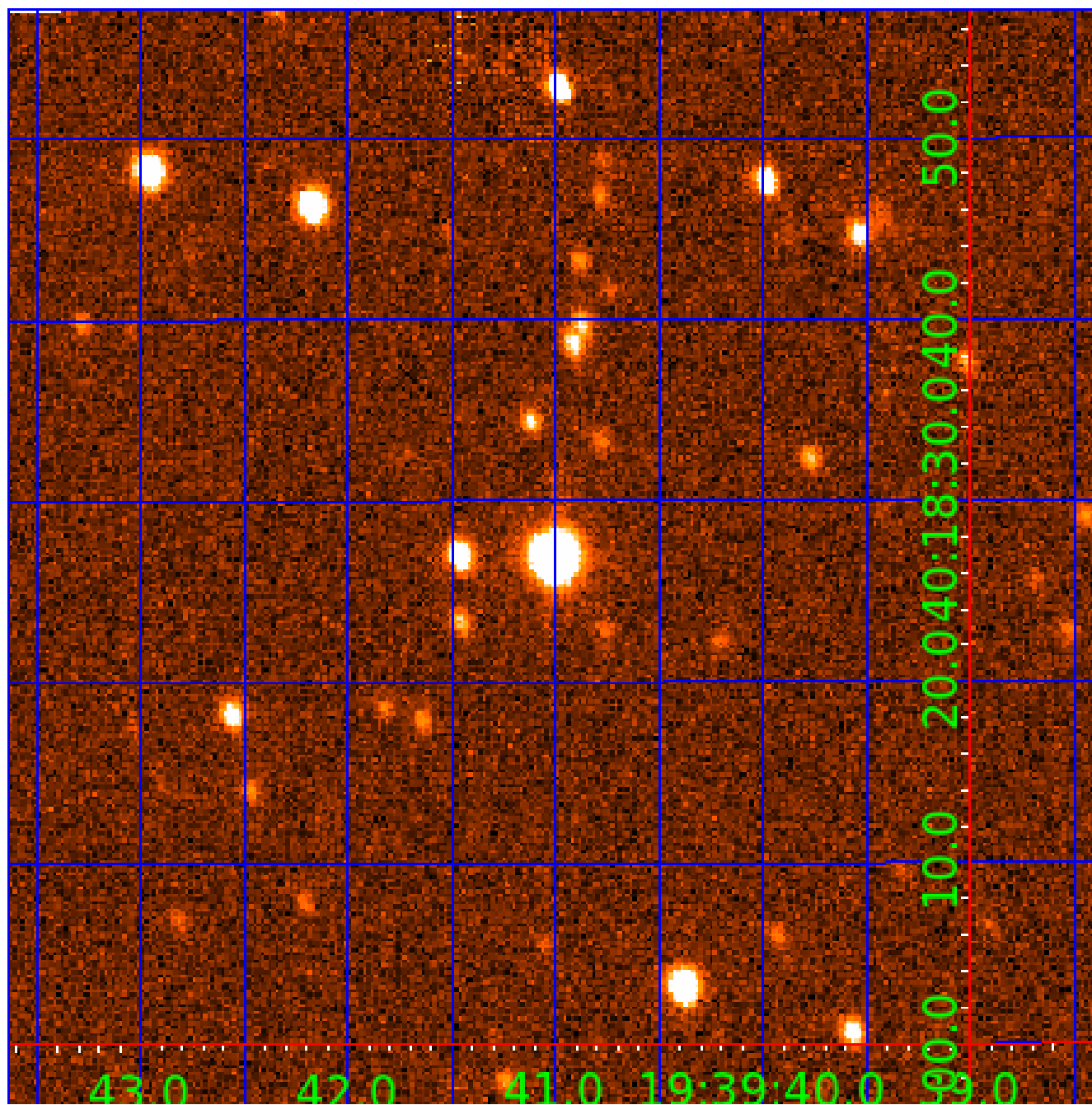


fluxWeightedCentroids, Planet 4 of 8



UKIRT Image

Declination



KIC 005198337

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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005198337-03	OBS	No	1.338051	132.151001	142.1	7.024	10.5	10.0	7.41	6897	13.28	0.00
005198337-04	OBS	No	64.025988	181.004149	1168.0	8.338	13.0	10.1	7.41	6897	39.32	584.71
005198337-05	OBS	No	49.592274	177.887070	1277.1	8.663	11.6	11.3	7.41	6897	49.24	821.98
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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005198337-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
005198337-03	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005198337-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
005198337-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005198337-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—HALO_GHOST

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

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

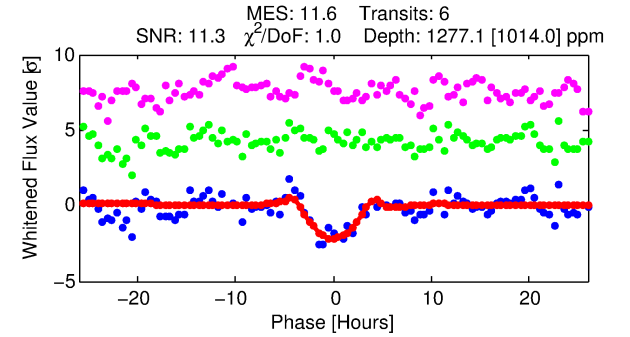
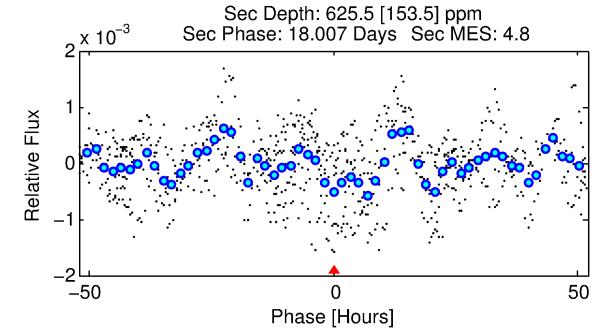
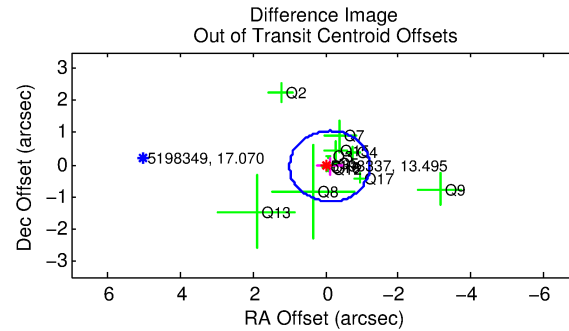
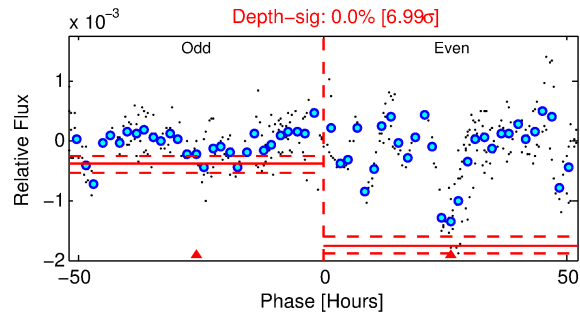
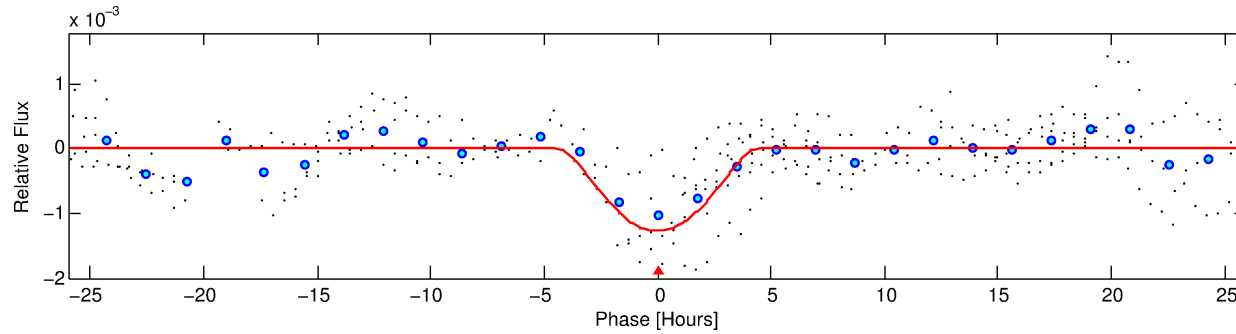
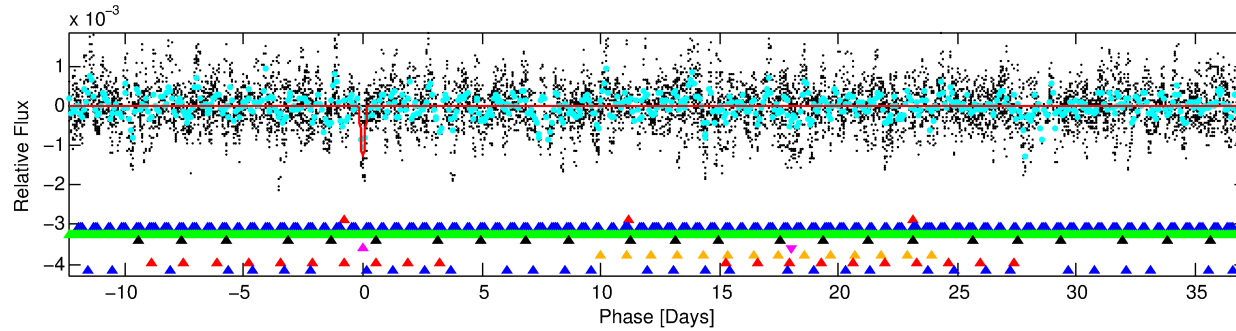
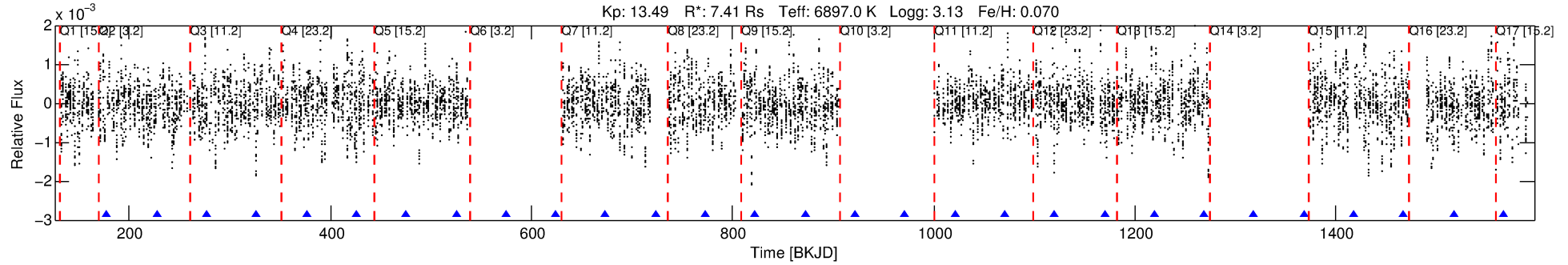
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005198337-05

No Significant Match Found

DV One-Page Summary

KIC: 5198337 Candidate: 5 of 8 Period: 49.592 d



DV Fit Results:

Period = 49.59227 [0.00103] d
Epoch = 177.8871 [0.0170] BKJD
Rp/R* = 0.0609 [0.1003]
a/R* = 15.53 [5.98]
b = 1.00 [0.11]
Seff = 821.98 [753.31]
Teq = 1365 [313] K
Rp = 49.24 [85.86] Re
a = 0.3680 [0.2065] AU
Ag = 19.22 [65.85] [0.28 σ]
Teffp = 4420 [3653] K [0.83 σ]

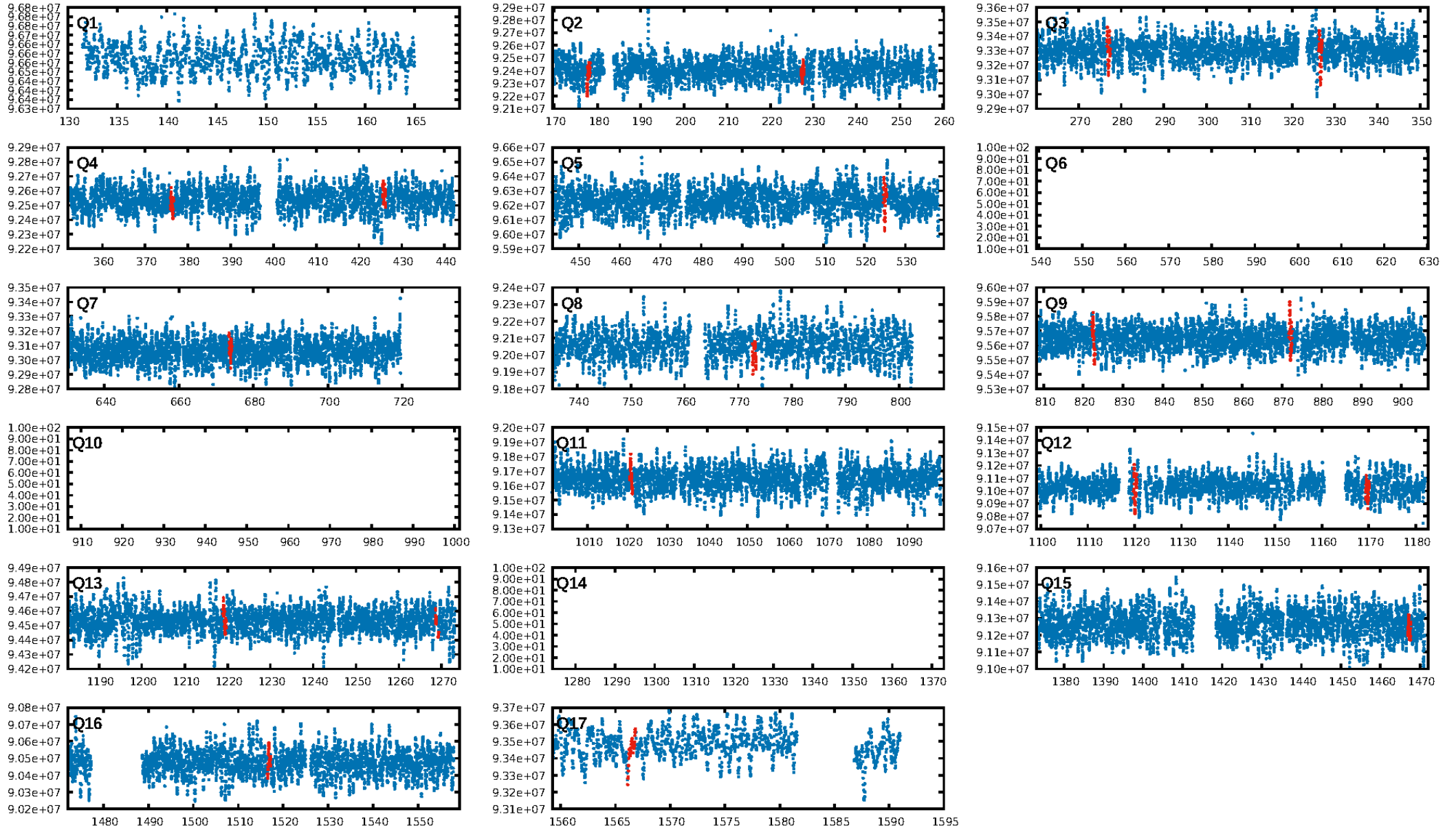
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [14.15 σ]
LongPeriod-sig: 100.0% [28.81 σ]
ModelChiSquare2-sig: 0.4%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: -3.153
Centroid-sig: 4.4%
Centroid-so: 0.313 arcsec [2.21 σ]
OotOffset-rm: 0.124 arcsec [0.34 σ]
OotOffset-st: 1/3/4/4 [12]
KicOffset-rm: 0.057 arcsec [0.17 σ]
KicOffset-st: 1/3/4/4 [12]
DiffImageQuality-fgm: 0.58 [7/12]
DiffImageOverlap-fno: 0.00 [0/12]

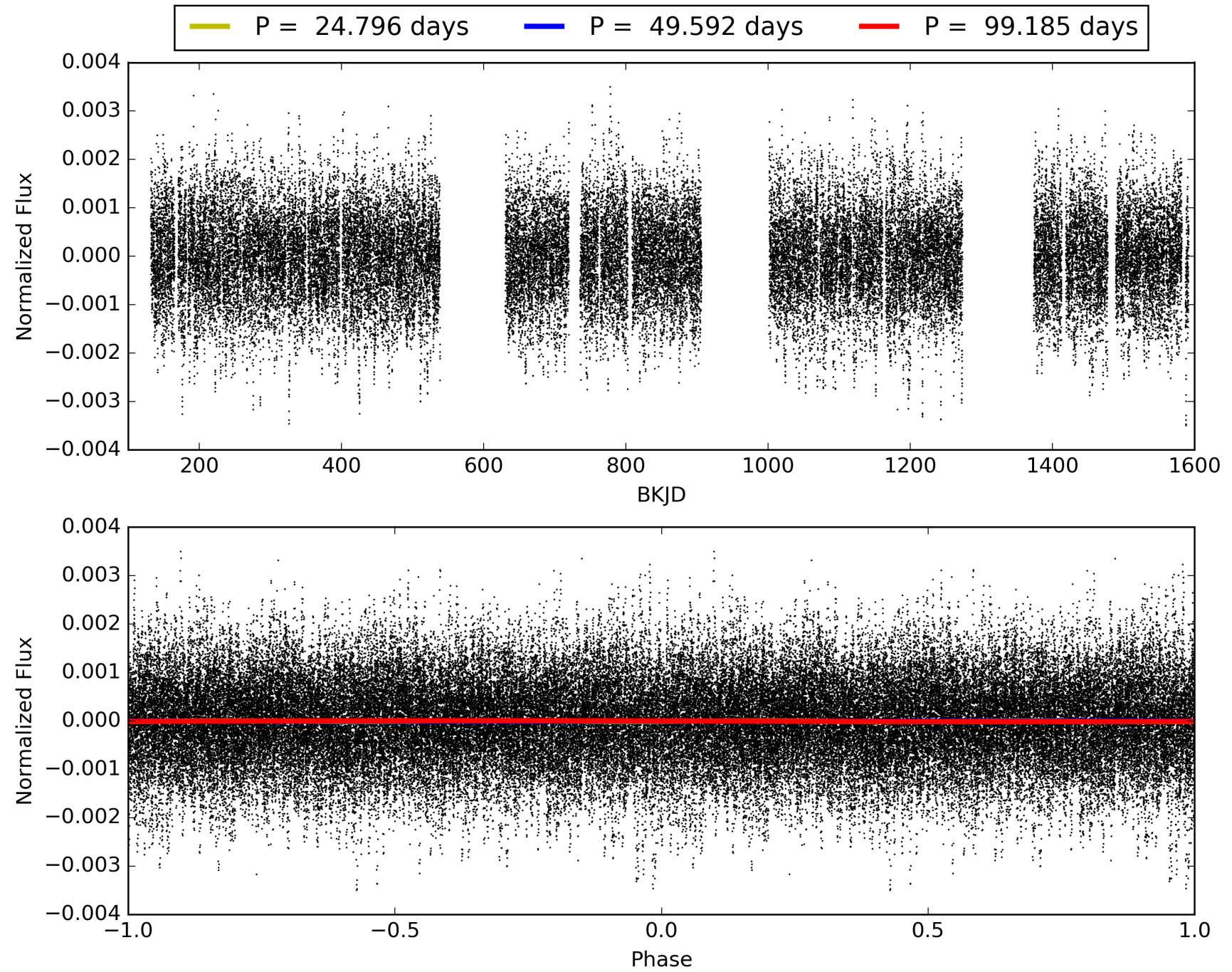
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:45:35 Z

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

TCE 005198337-05, PDC Light Curves

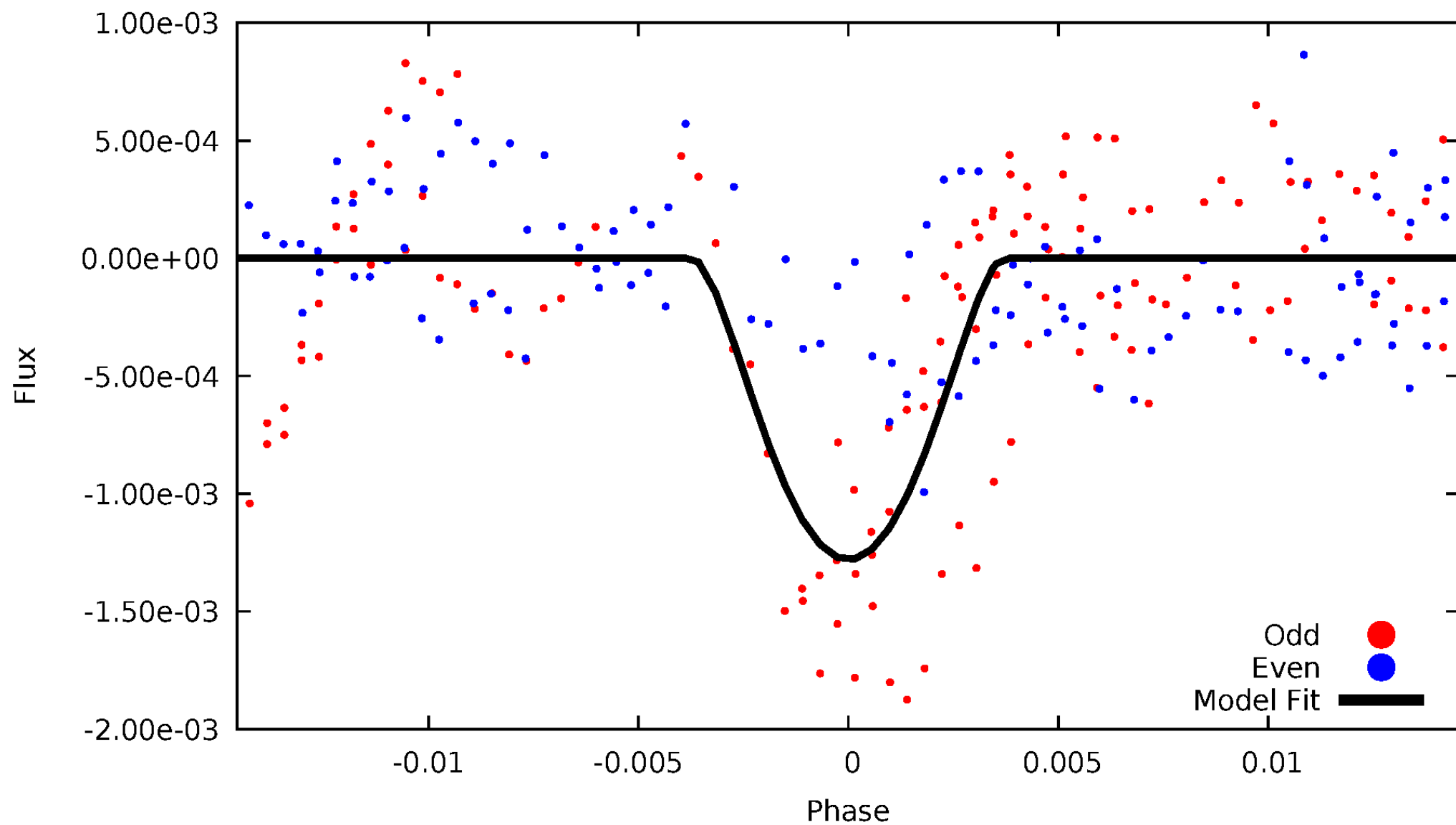


TCE 005198337-05



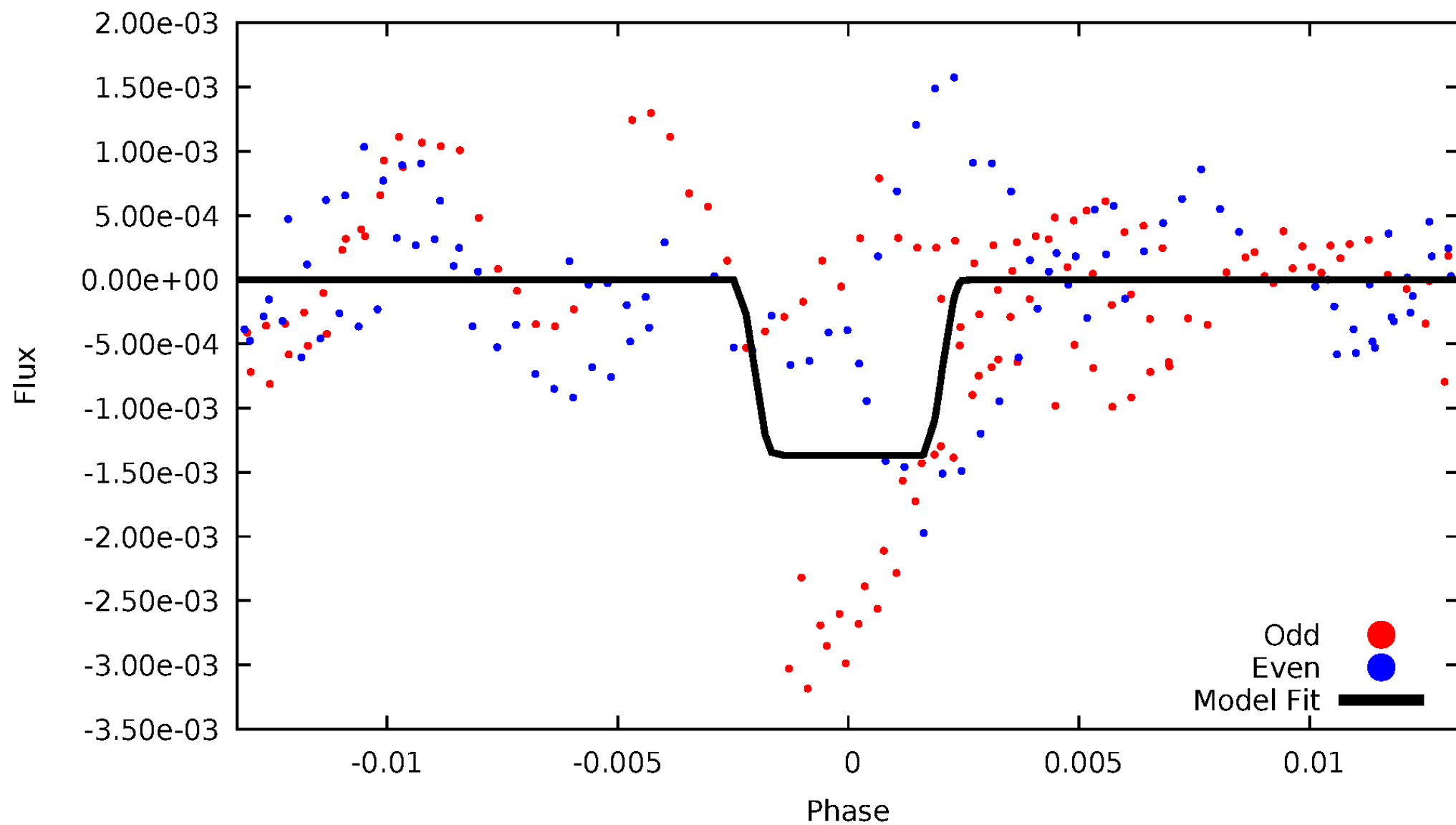
DV Odd/Even

TCE 005198337-05



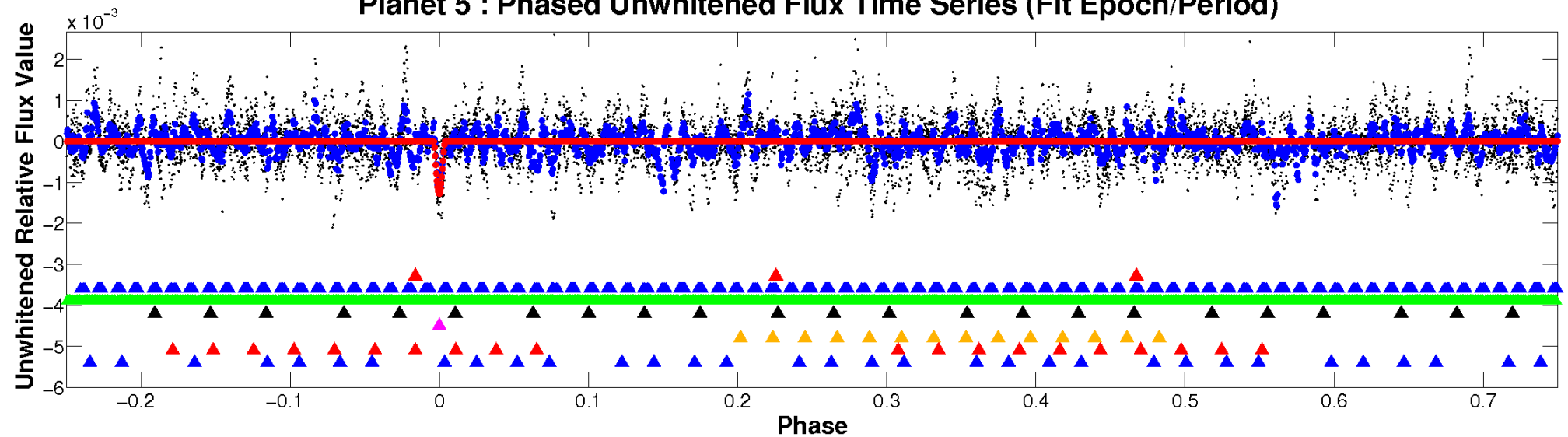
ALT Odd/Even

TCE 005198337-05

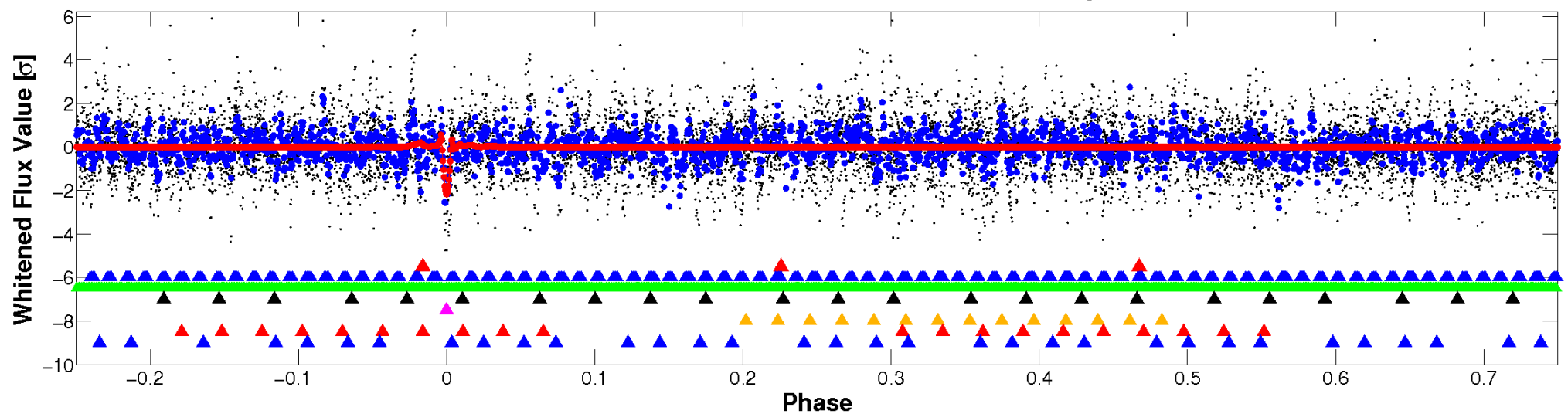


Non-Whitened Vs. Whitened Light Curve

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

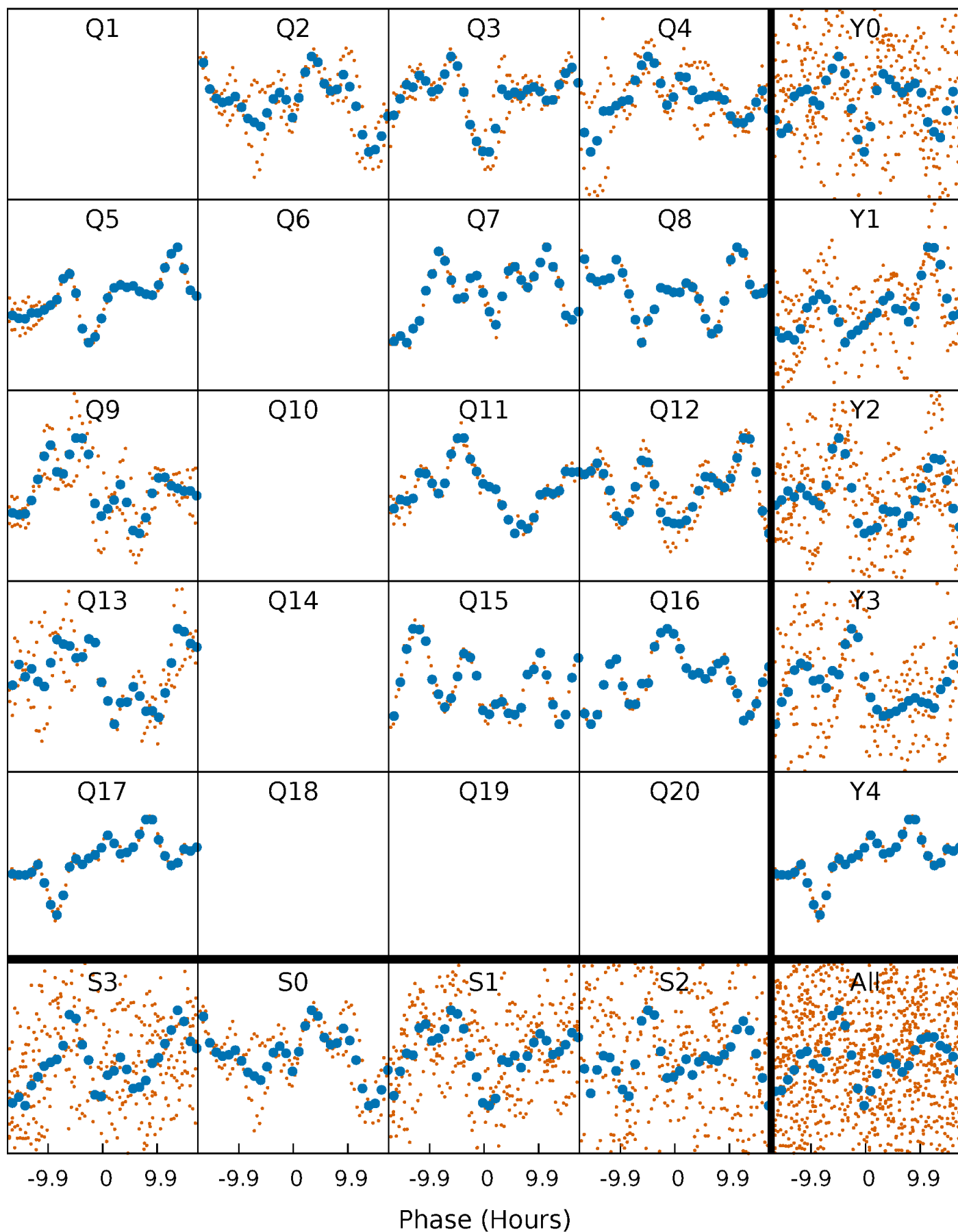


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



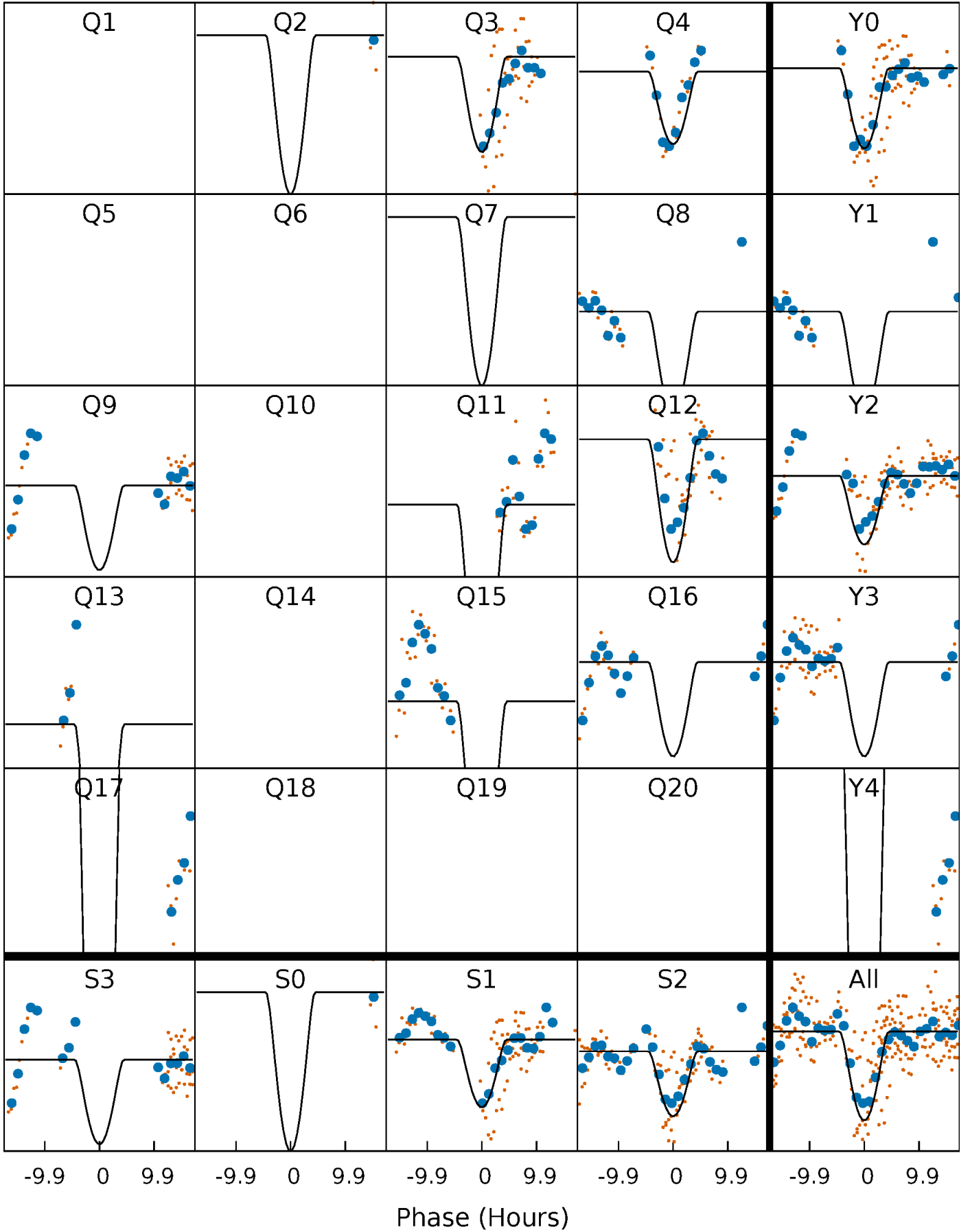
PDC Quarter-Phased Transit Curves

TCE 005198337-05 P= 49.592274 Days $T_0=177.887070$ (BKJD)



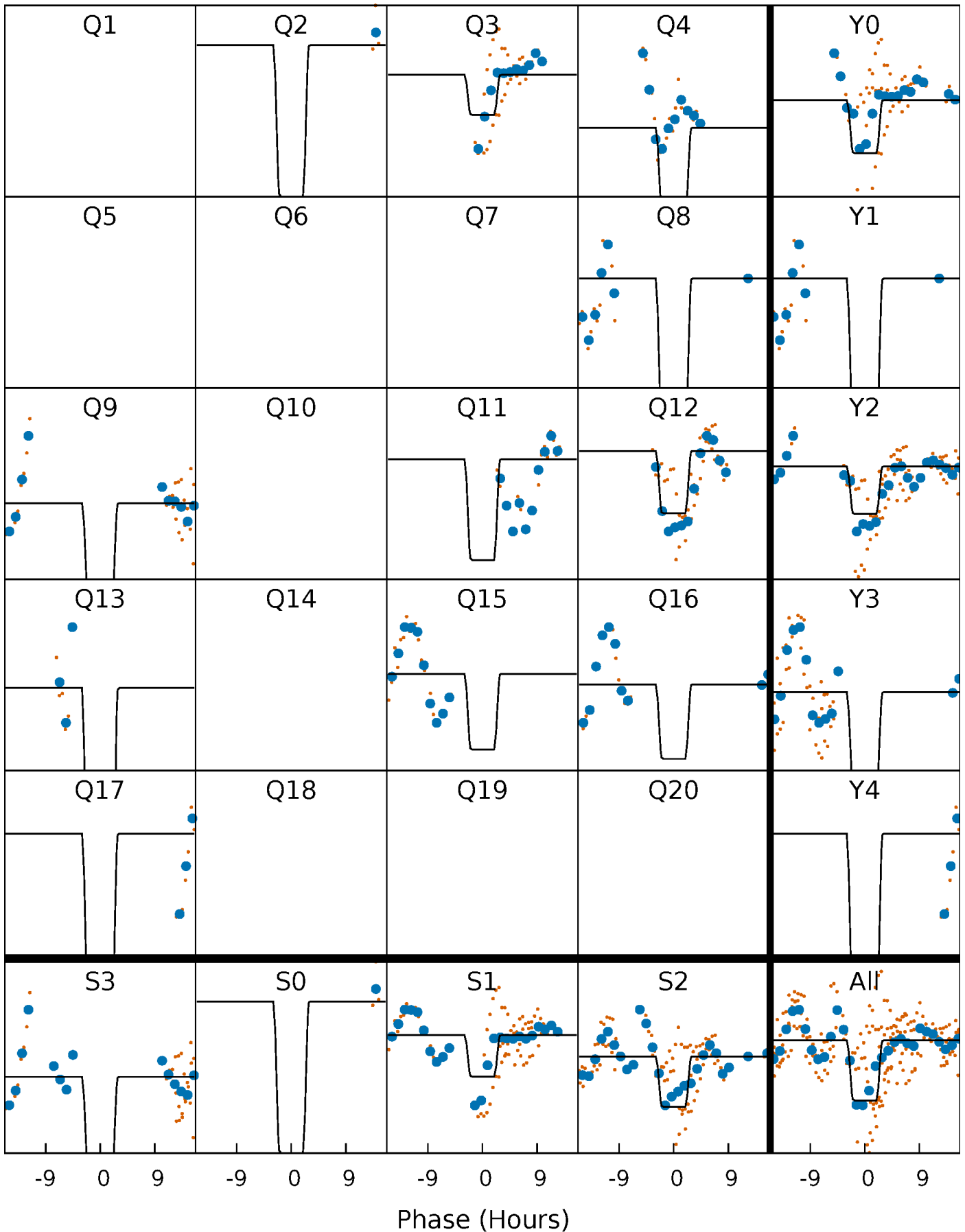
DV Quarter-Phased Transit Curves

TCE 005198337-05 $P = 49.592274$ Days $T_0 = 177.887070$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

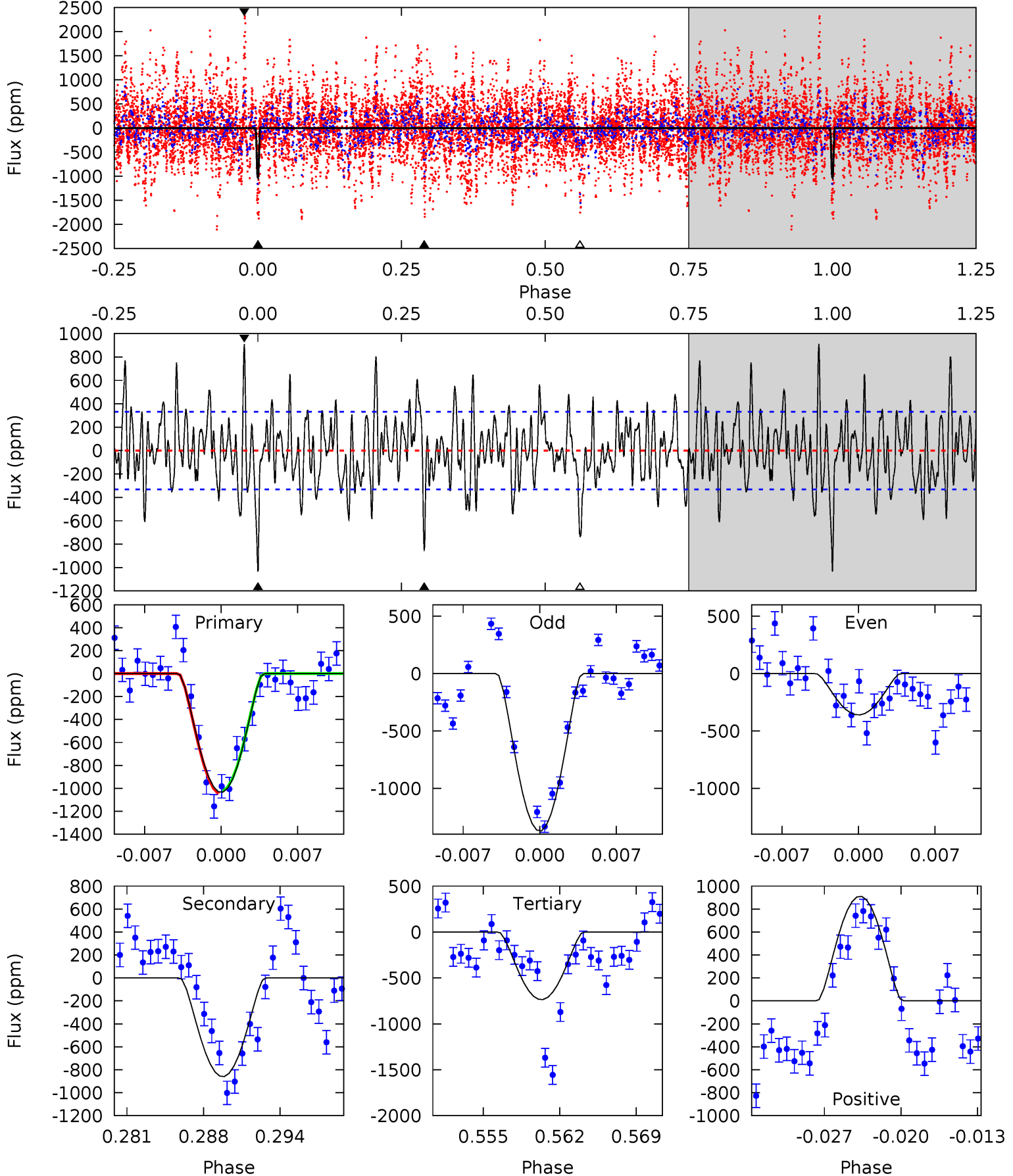
TCE 005198337-05 $P = 49.590529$ Days $T_0 = 177.930651$ (BKJD)



DV Model-Shift Uniqueness Test

005198337-05, P = 49.592274 Days, E = 128.294796 Days

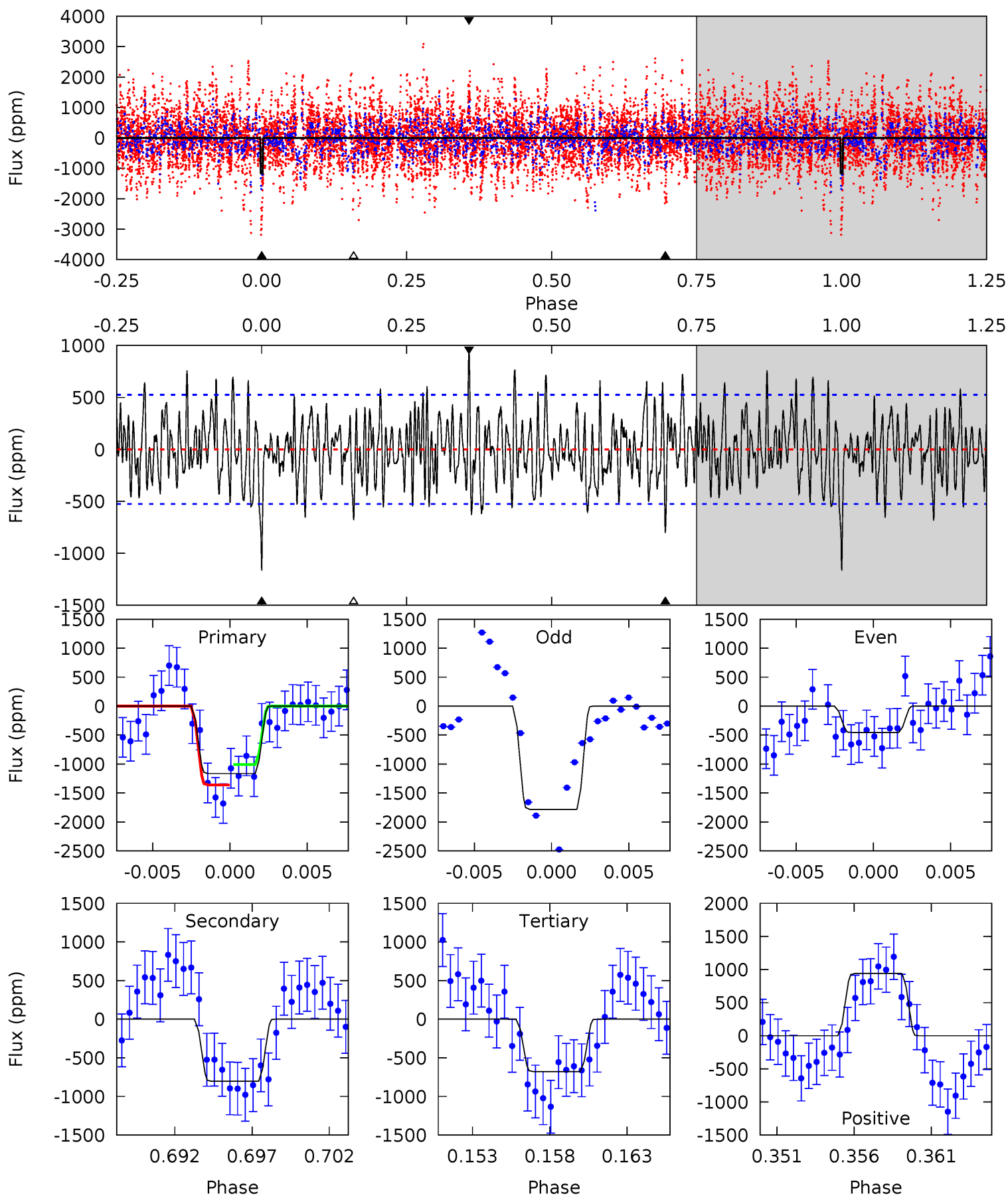
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.9	13.2	11.3	14.0	5.10	2.71	3.82	4.58	1.89	1.90	-0.78	7.28	1.05	0.47	0.14



Alt Model-Shift Uniqueness Test

005198337-05, P = 49.590529 Days, E = 128.340122 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.4	7.91	6.66	9.23	5.16	2.81	2.62	4.77	2.20	1.24	-1.33	6.19	1.41	0.45	1.68



Stellar Parameters For KIC 005198337

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6897^{+206}_{-227}	$3.130^{+0.536}_{-0.134}$	$0.070^{+0.200}_{-0.350}$	$7.410^{+1.696}_{-4.241}$	$2.703^{+0.293}_{-0.879}$	$0.009^{+0.066}_{-0.004}$
	+3%/-3%	+17%/-4%	+286%/-500%	+23%/-57%	+11%/-33%	+705%/-41%
Source	PHO1	FLK73	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 005198337-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-859 ± 65	$68.10^{+71.72}_{-45.06}$	1868^{+144}_{-249}	4053^{+2404}_{-796}	13^{+106}_{-10}
Alt.	-805 ± 102	$57.32^{+61.01}_{-39.97}$	1866^{+160}_{-253}	4258^{+3219}_{-926}	18^{+167}_{-14}

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 $A_{obs} \gg 1.0$

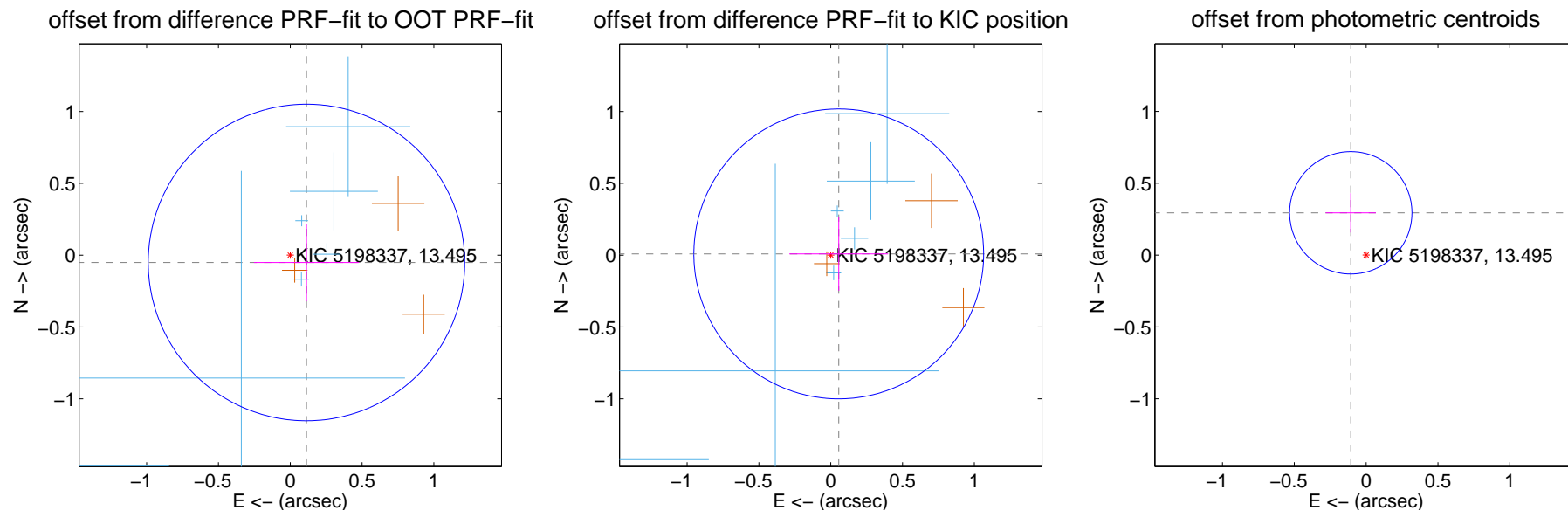
DV Centroid Data

Supplemental centroid analysis for 005198337-05. Kepler magnitude: 13.49. Transit SNR 11.31

There are 7 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.124 ± 0.367	0.34	-0.113 ± 0.366	-0.051 ± 0.270
PRF-fit source offset from KIC position	0.057 ± 0.336	0.17	-0.056 ± 0.344	0.009 ± 0.256
photometric centroid source offset	0.31 ± 0.14	2.21	0.11 ± 0.17	0.29 ± 0.14



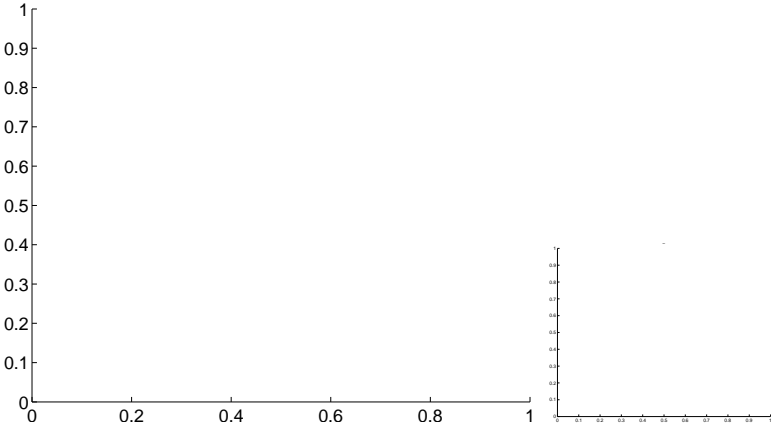
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

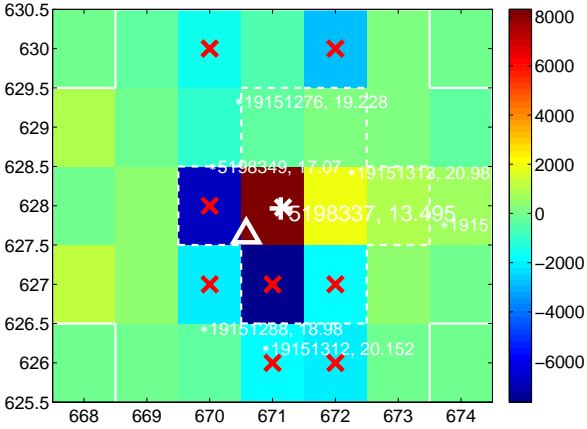
Q1 no difference image



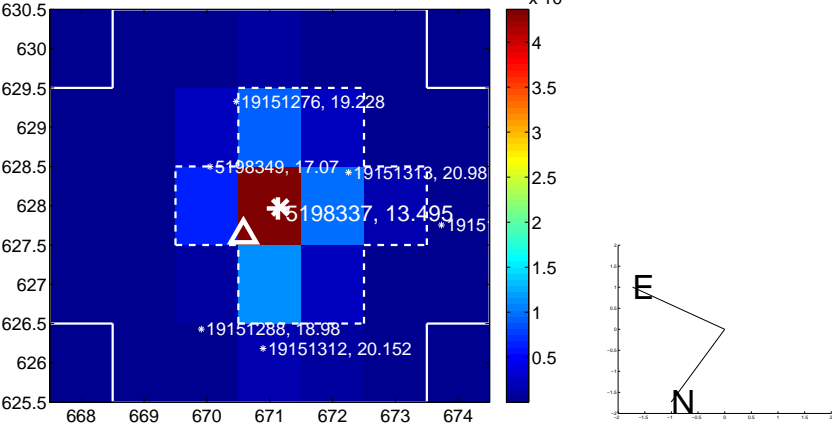
Q1 no OOT image



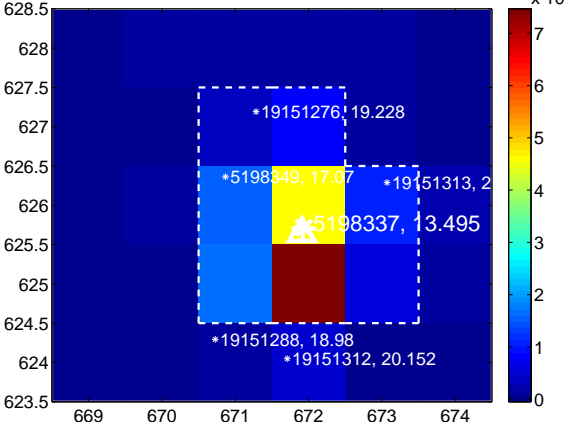
Q2 difference image. Poor Quality



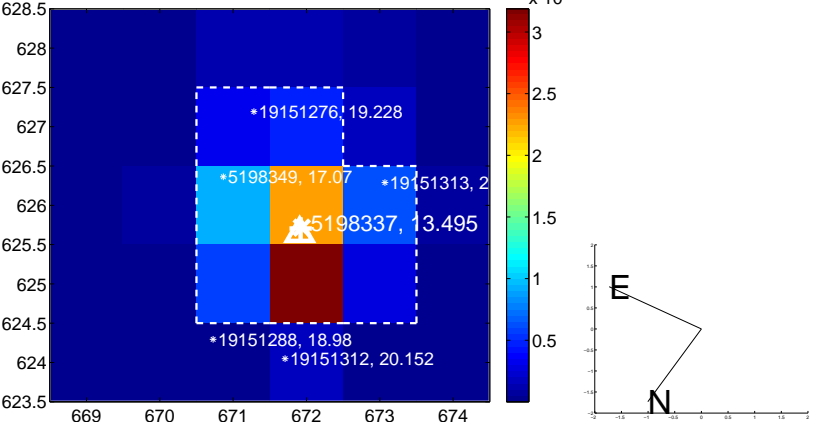
Q2 OOT image



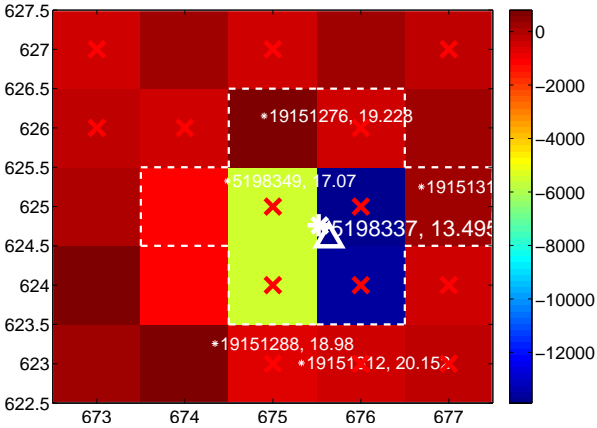
Q3 difference image



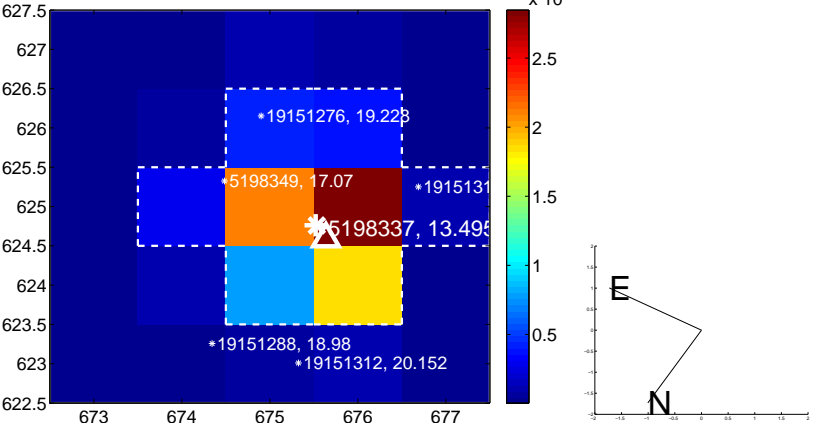
Q3 OOT image



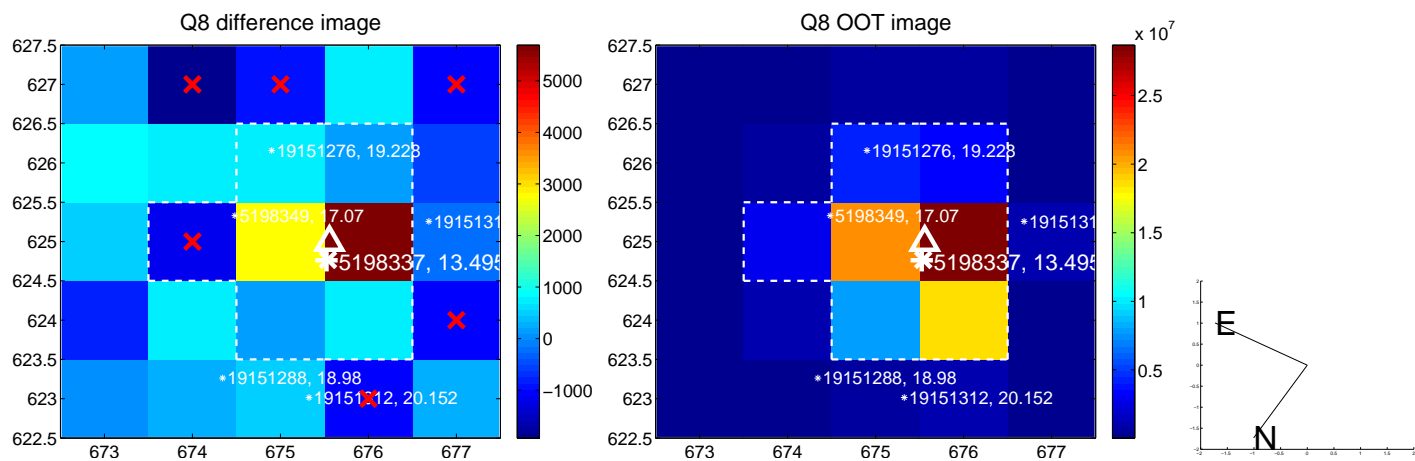
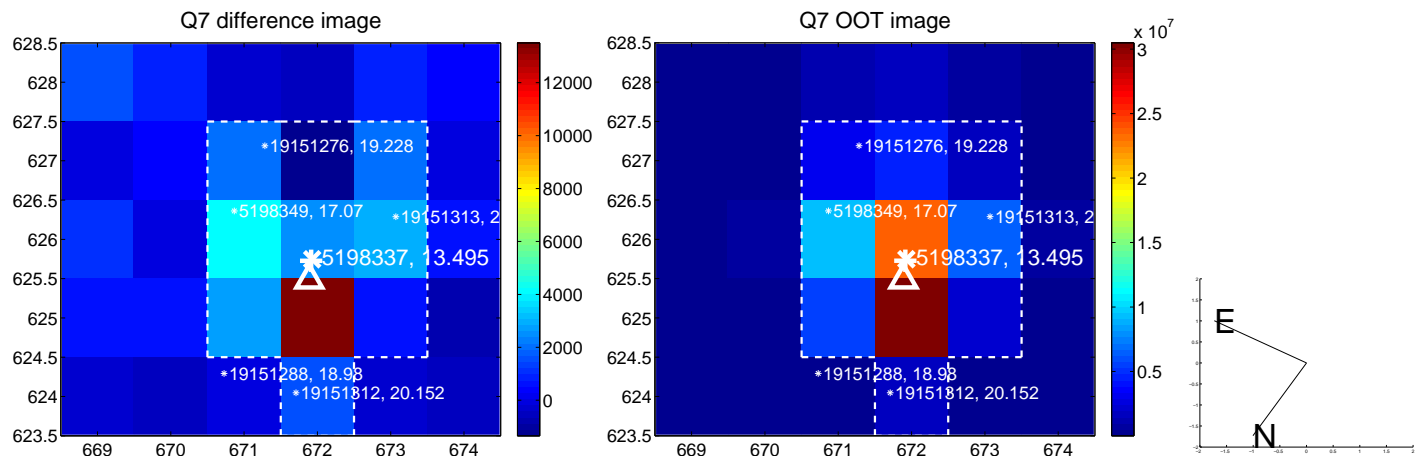
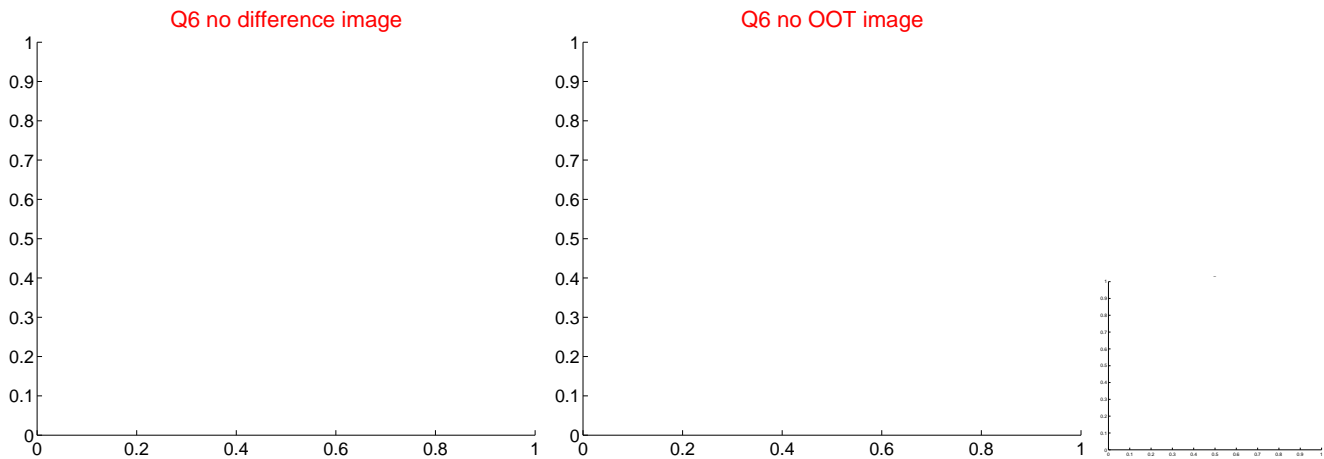
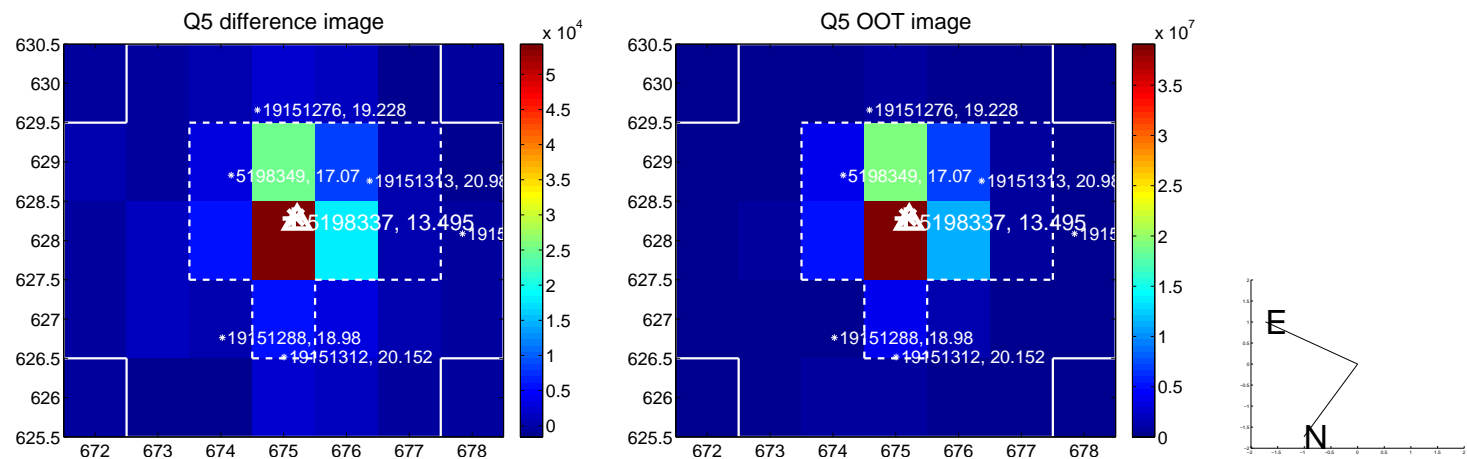
Q4 difference image. Poor Quality



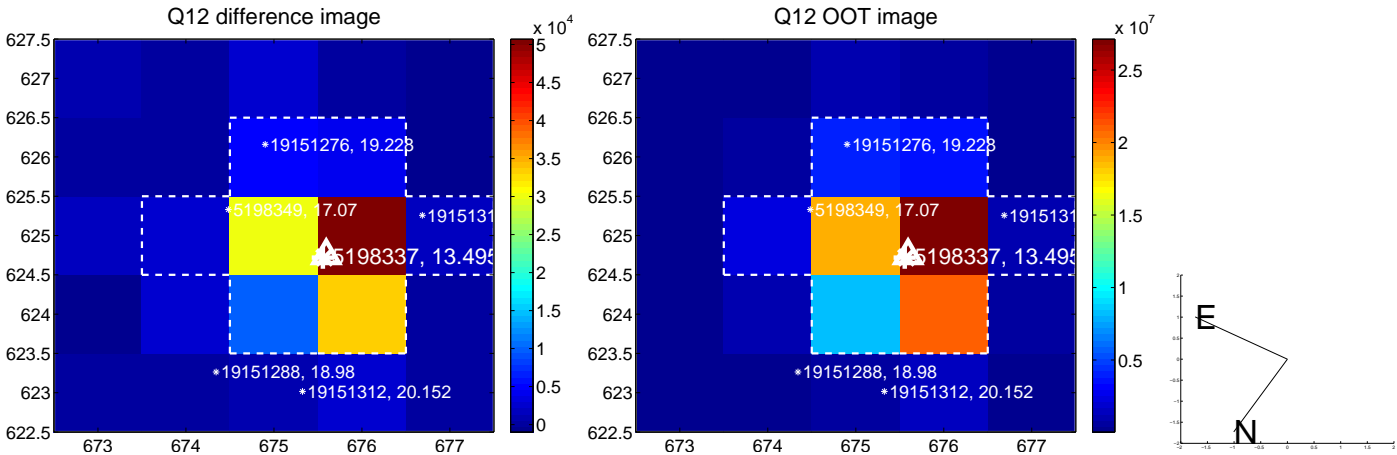
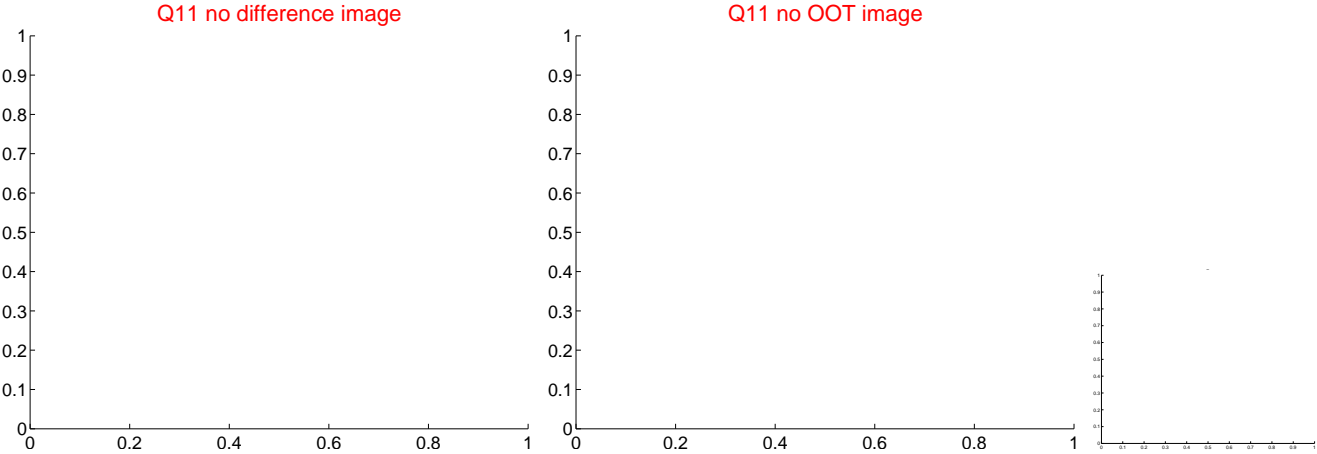
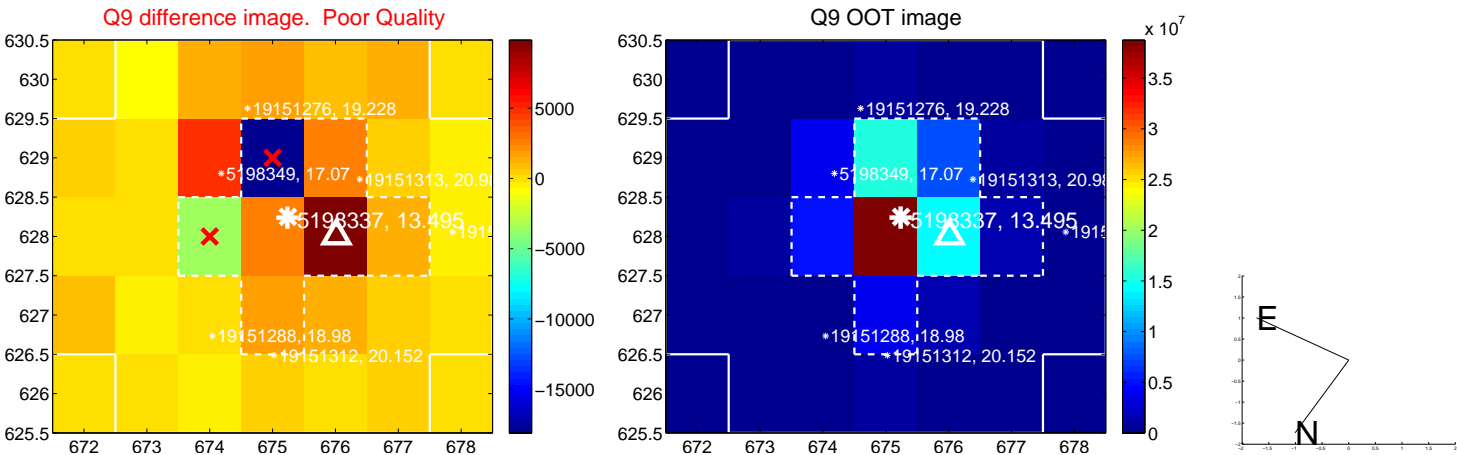
Q4 OOT image



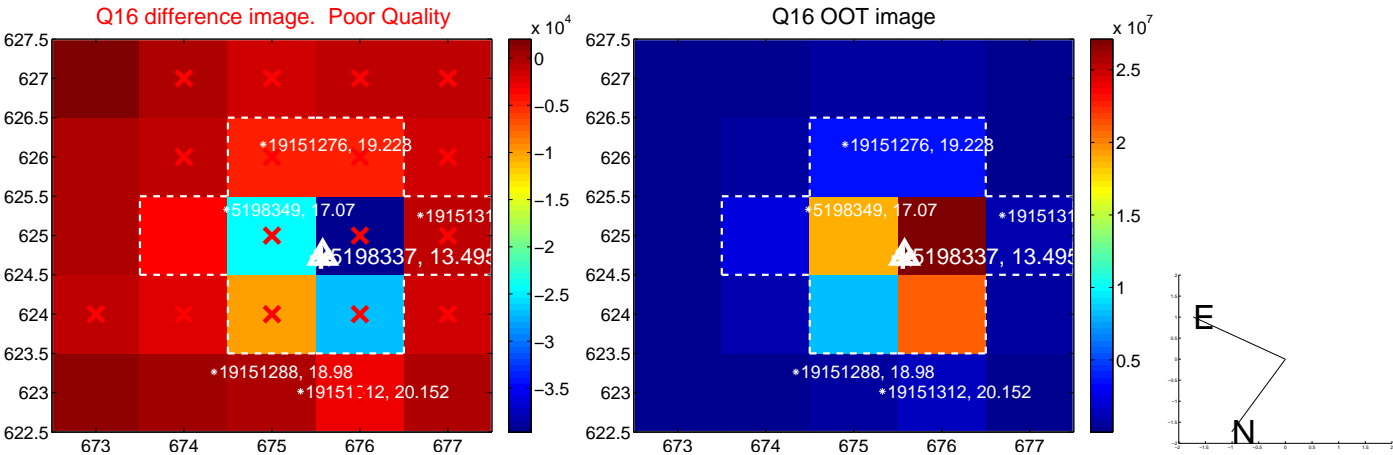
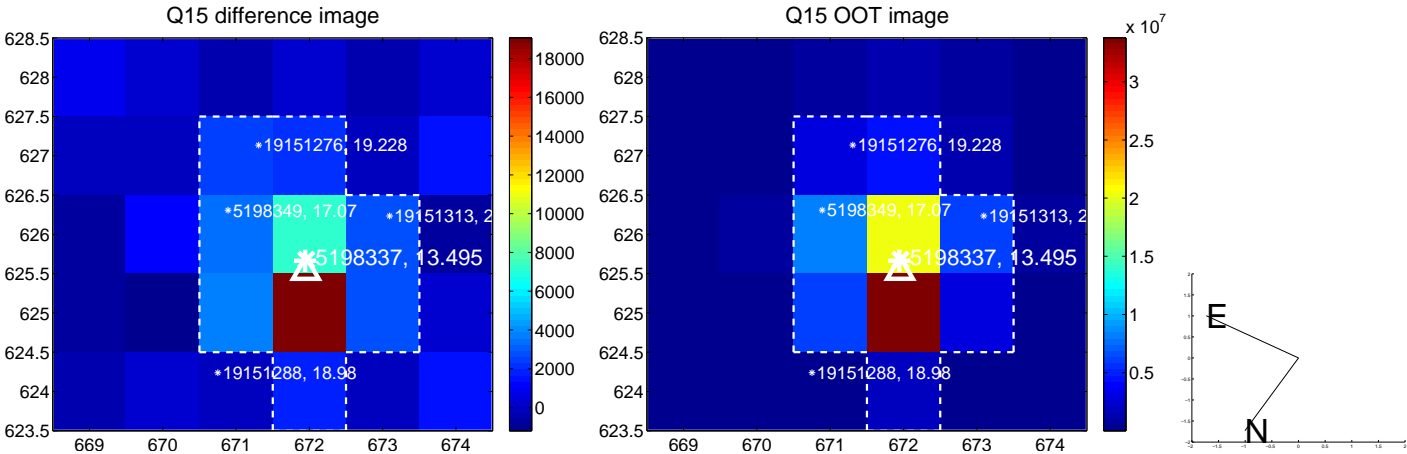
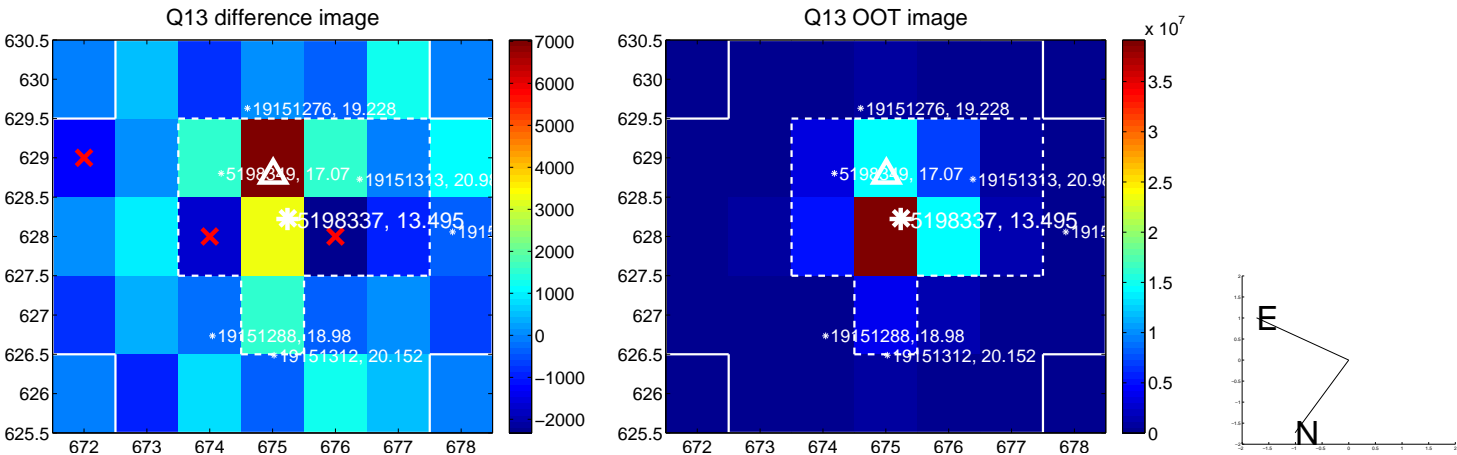
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



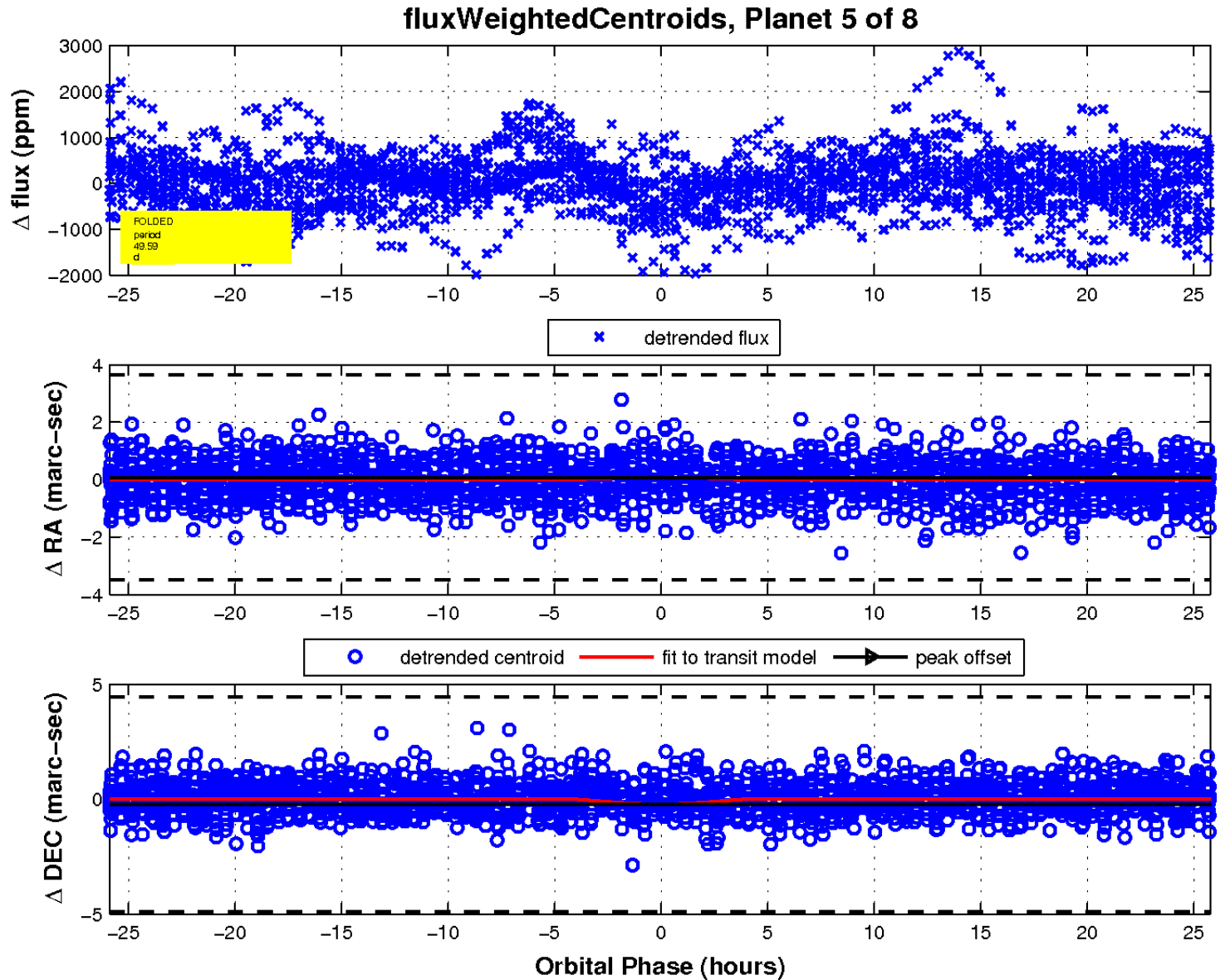
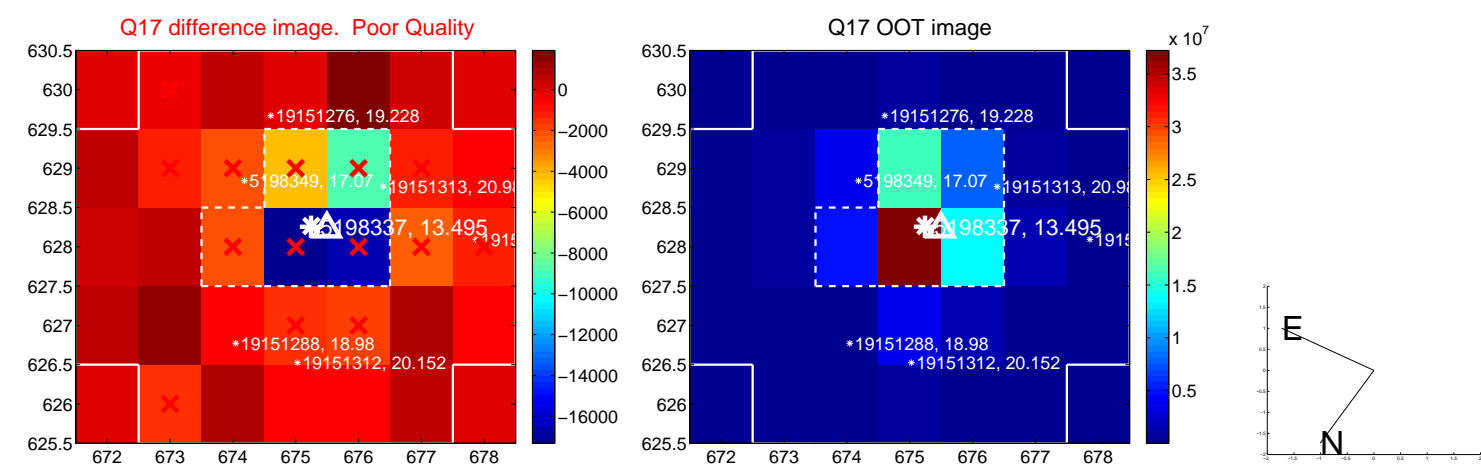
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

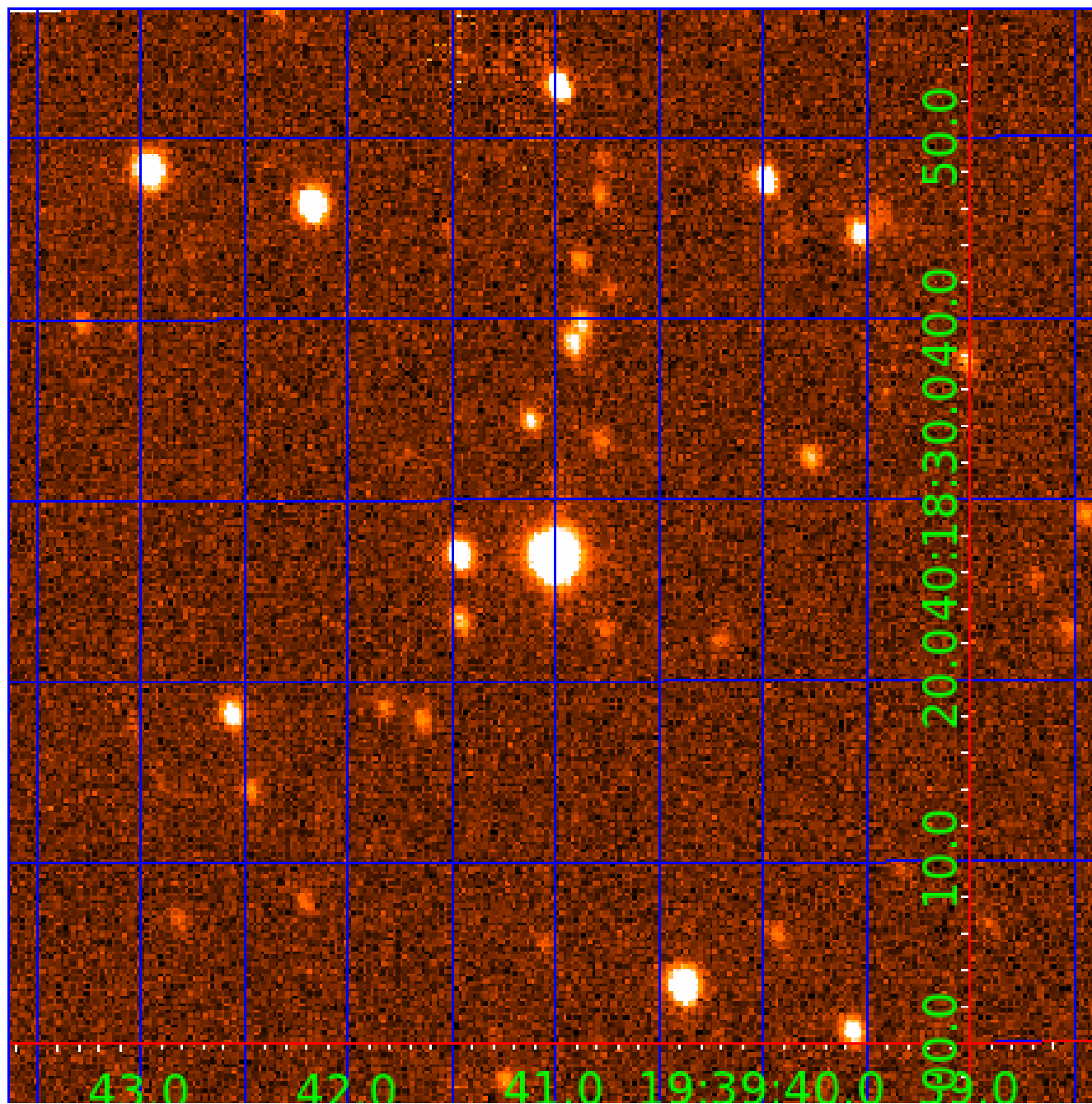


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005198337

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})
005198337-01	OBS	No	458.318977	325.869134	930.2	10.705	8.8	7.1	7.41	6897	23.19	42.38
005198337-02	OBS	No	4.232910	135.259797	110.2	14.146	7.9	9.2	7.41	6897	9.07	21872.34
005198337-03	OBS	No	1.338051	132.151001	142.1	7.024	10.5	10.0	7.41	6897	13.28	0.00
005198337-04	OBS	No	64.025988	181.004149	1168.0	8.338	13.0	10.1	7.41	6897	39.32	584.71
005198337-05	OBS	No	49.592274	177.887070	1277.1	8.663	11.6	11.3	7.41	6897	49.24	821.98
005198337-07	OBS	No	75.060649	143.553549	1311.7	9.481	11.2	10.2	7.41	6897	49.81	473.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005198337-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
005198337-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT
005198337-03	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005198337-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
005198337-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005198337-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—HALO_GHOST

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

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

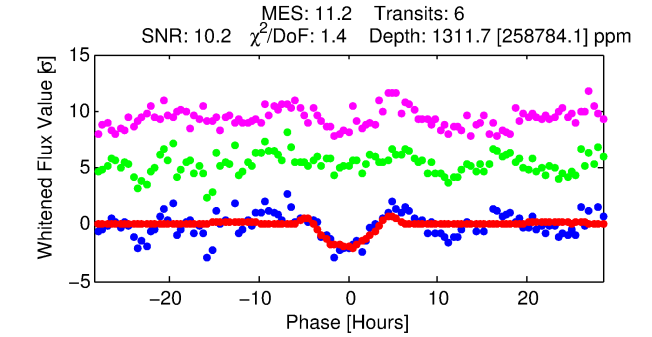
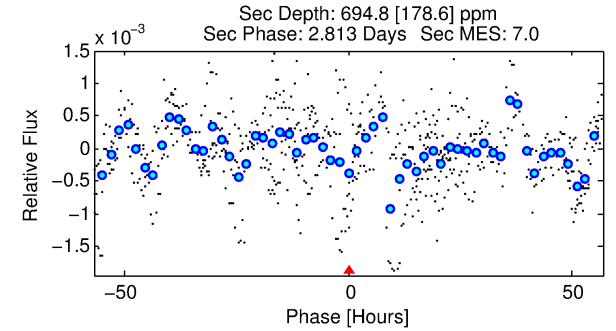
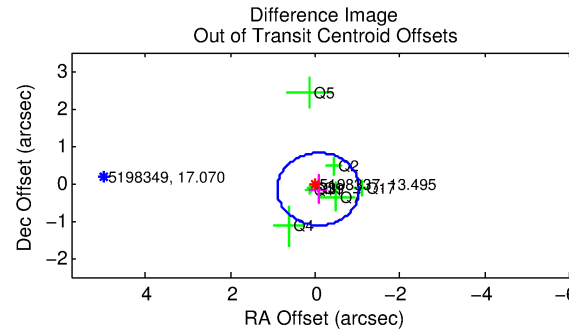
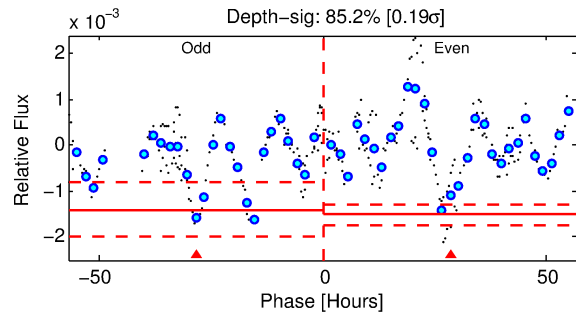
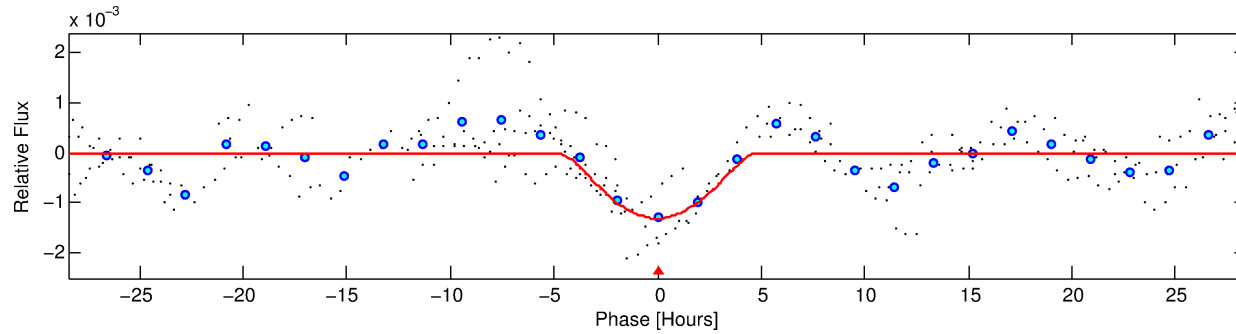
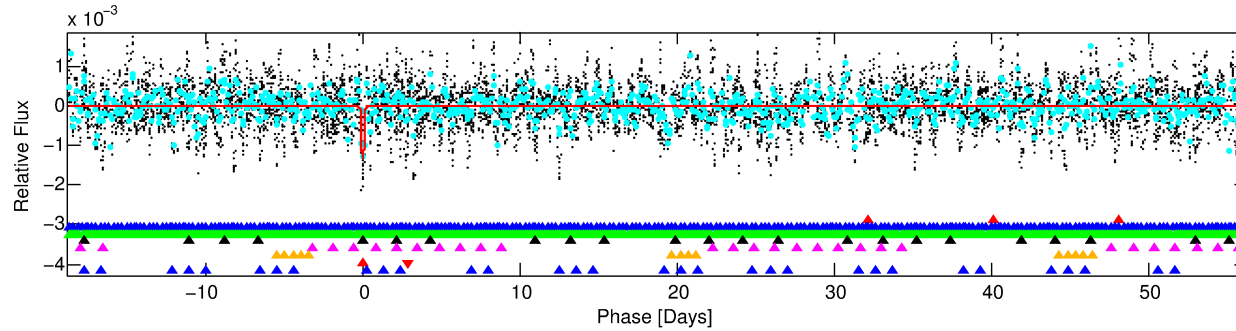
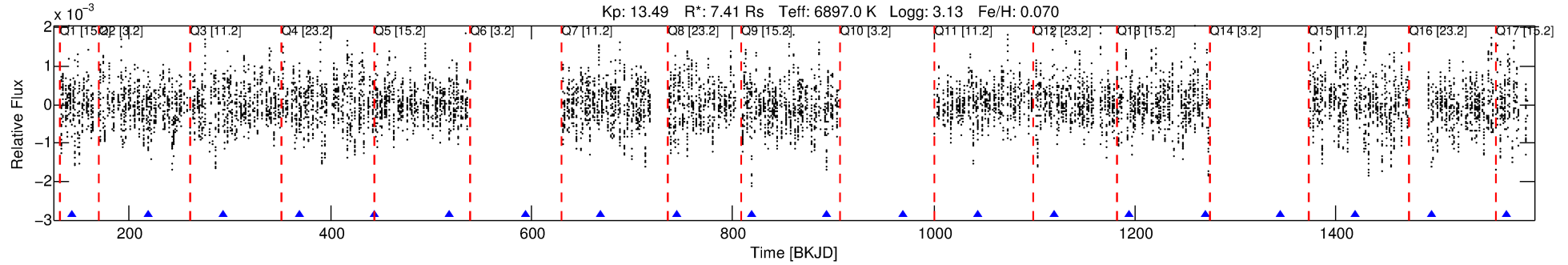
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005198337-07

No Significant Match Found

DV One-Page Summary

KIC: 5198337 Candidate: 7 of 8 Period: 75.061 d



DV Fit Results:

Period = 75.06065 [0.00226] d
Epoch = 143.5535 [0.0219] BKJD
Rp/R* = 0.0616 [0.1173]
a/R* = 21.58 [9.31]
b = 1.00 [8.48]
Seff = 473.00 [433.49]
Teq = 1189 [272] K
Rp = 49.81 [99.04] Re
a = 0.4851 [0.2722] AU
Ag = 36.25 [142.20] [0.25 σ]
Teffp = 4511 [4307] K [0.77 σ]

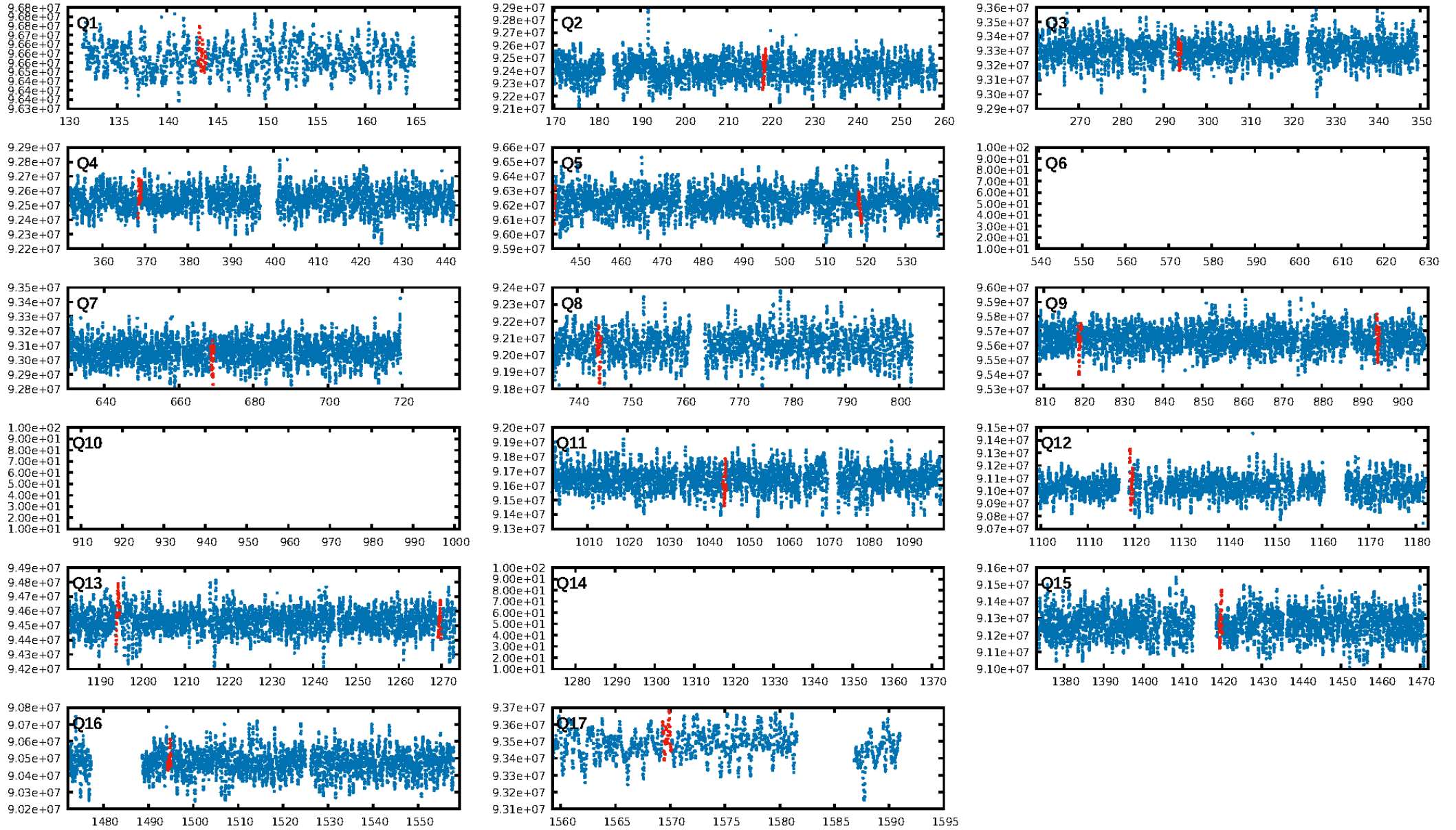
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [20.98 σ]
LongPeriod-sig: 100.0% [38.17 σ]
ModelChiSquare2-sig: 0.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: 0.06711
Centroid-sig: 1.8%
Centroid-so: 0.065 arcsec [0.50 σ]
OotOffset-rm: 0.170 arcsec [0.53 σ]
OotOffset-st: 1/3/1/3 [8]
KicOffset-rm: 0.099 arcsec [0.32 σ]
KicOffset-st: 1/3/1/3 [8]
DiffImageQuality-fgm: 0.62 [5/8]
DiffImageOverlap-fno: 0.00 [0/11]

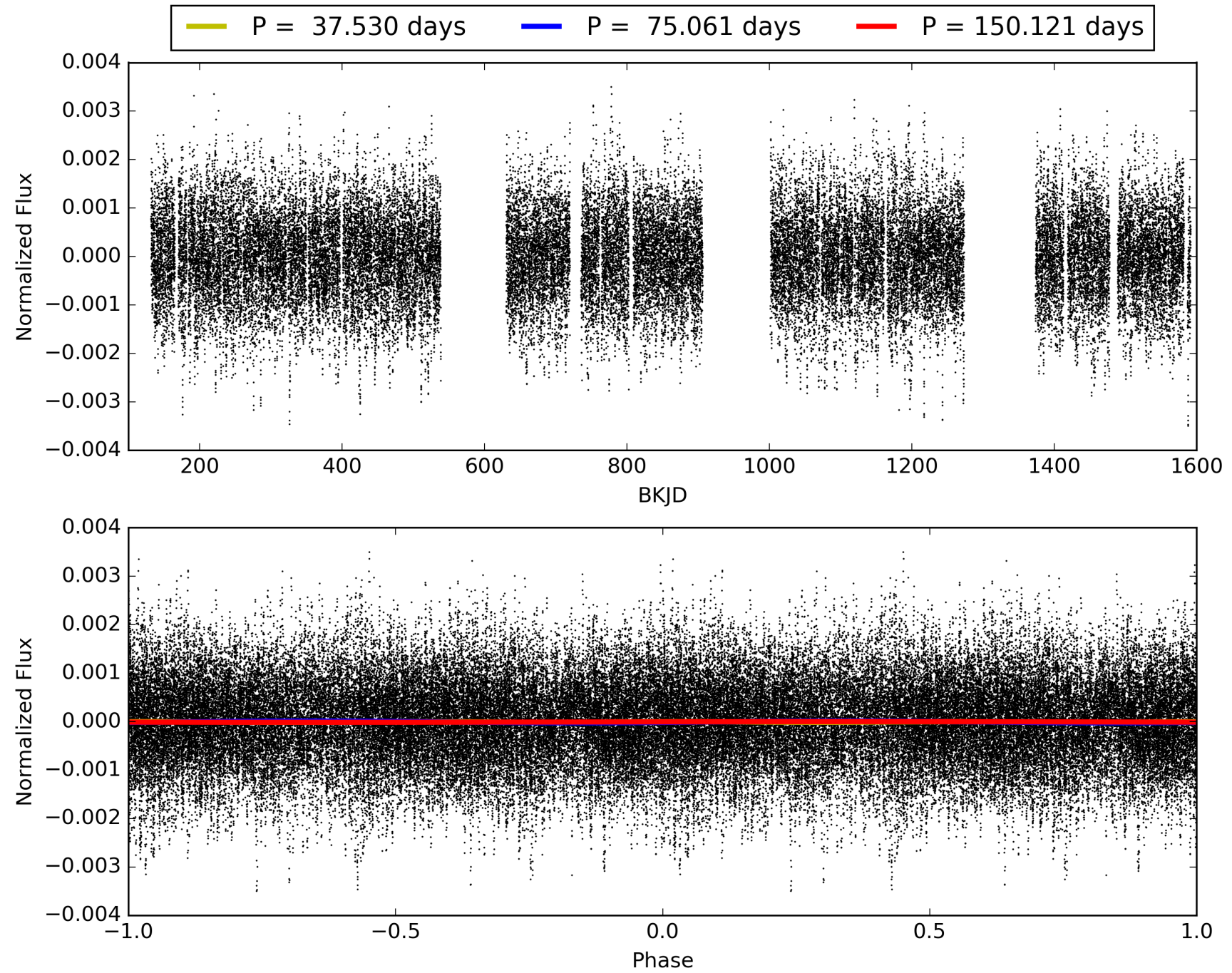
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:45:42 Z

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

TCE 005198337-07, PDC Light Curves

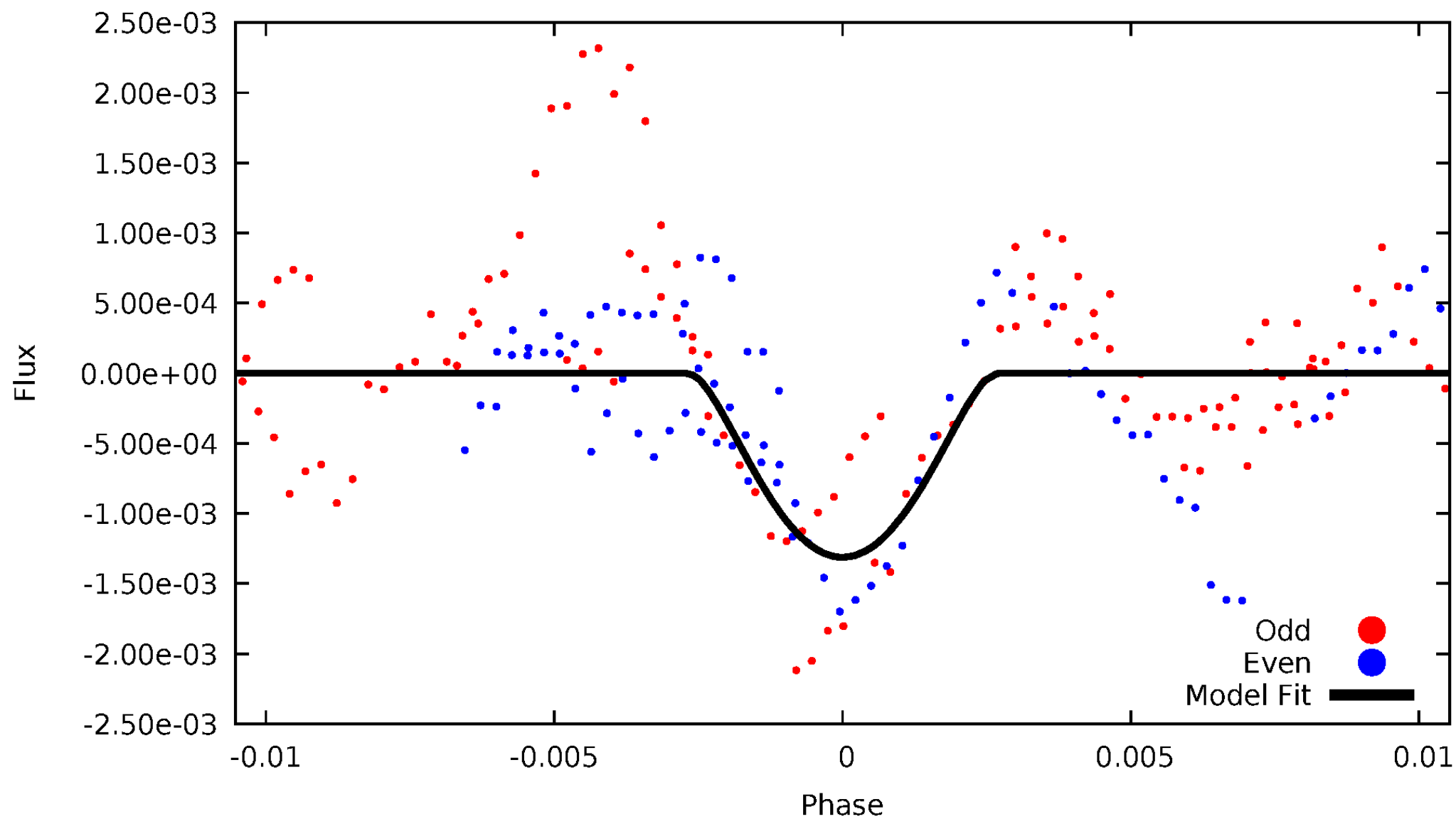


TCE 005198337-07



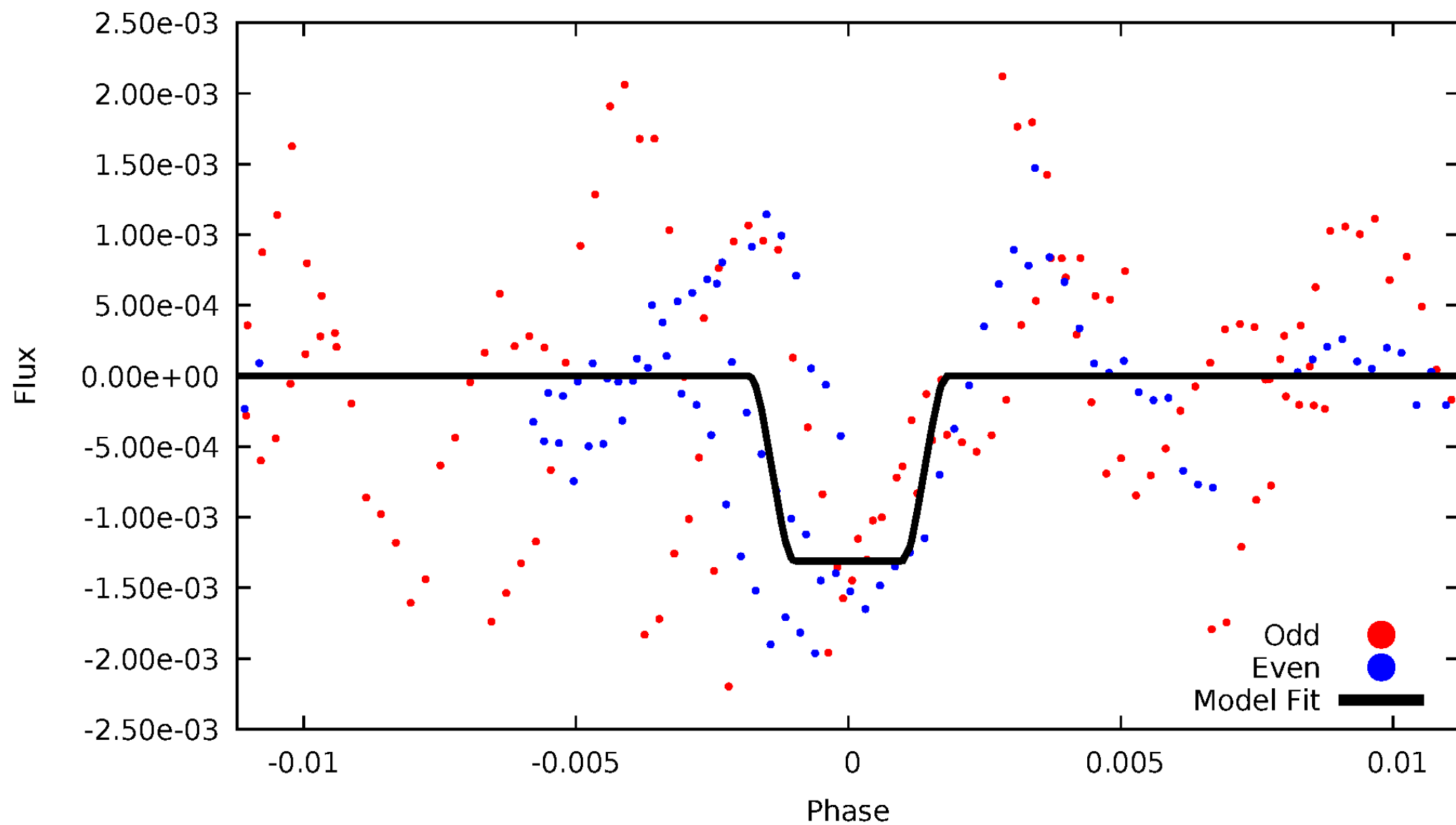
DV Odd/Even

TCE 005198337-07



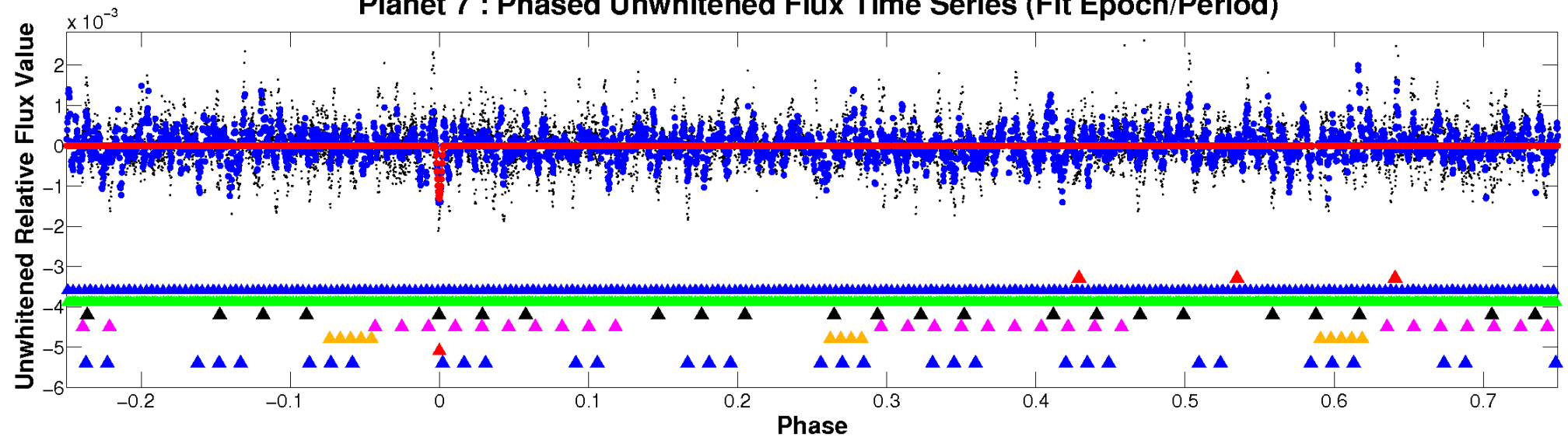
ALT Odd/Even

TCE 005198337-07

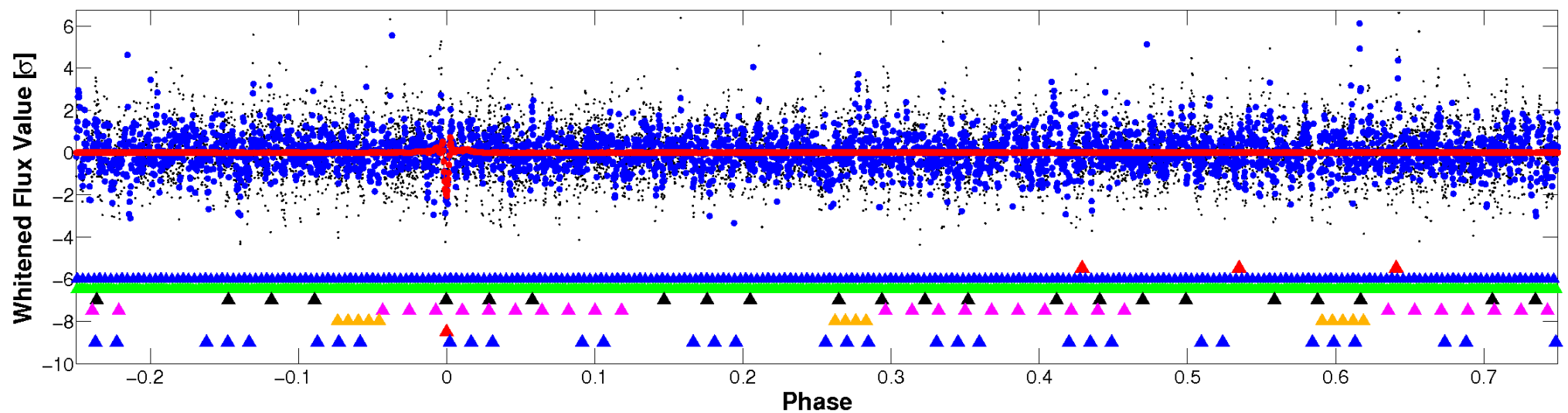


Non-Whitened Vs. Whitened Light Curve

Planet 7 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)



Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



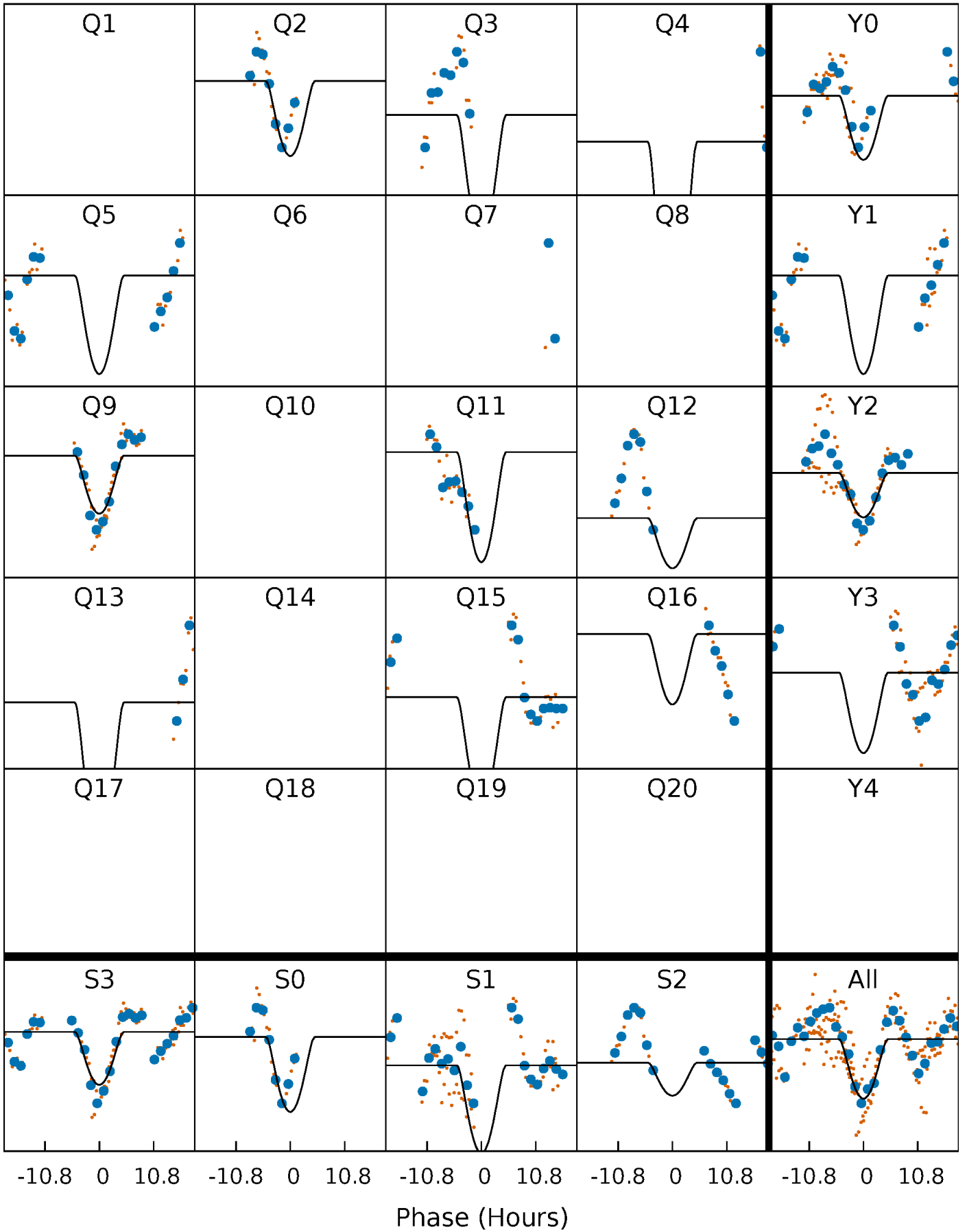
PDC Quarter-Phased Transit Curves

TCE 005198337-07 $P = 75.060649$ Days $T_0 = 143.553549$ (BKJD)



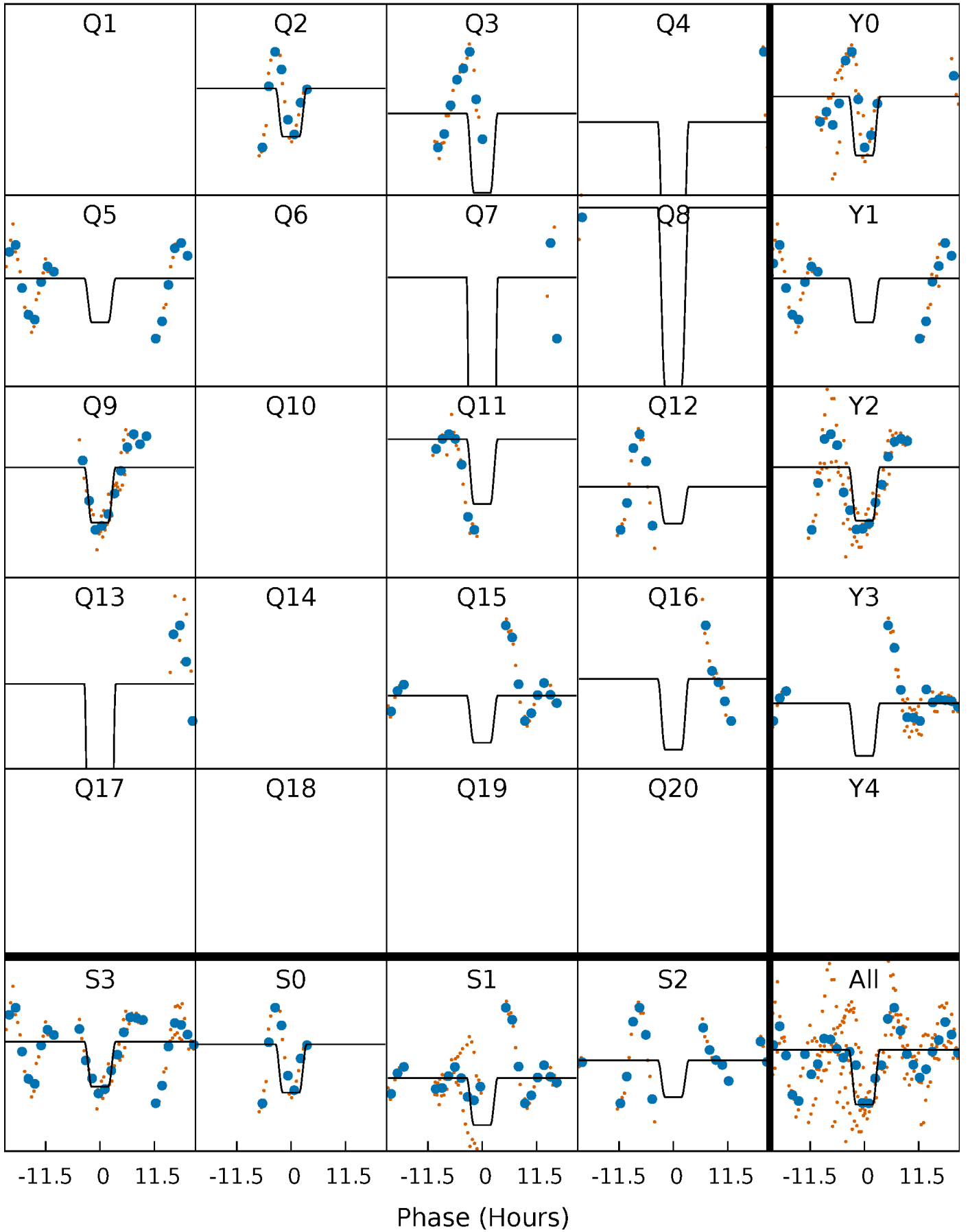
DV Quarter-Phased Transit Curves

TCE 005198337-07 P= 75.060649 Days $T_0=143.553549$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

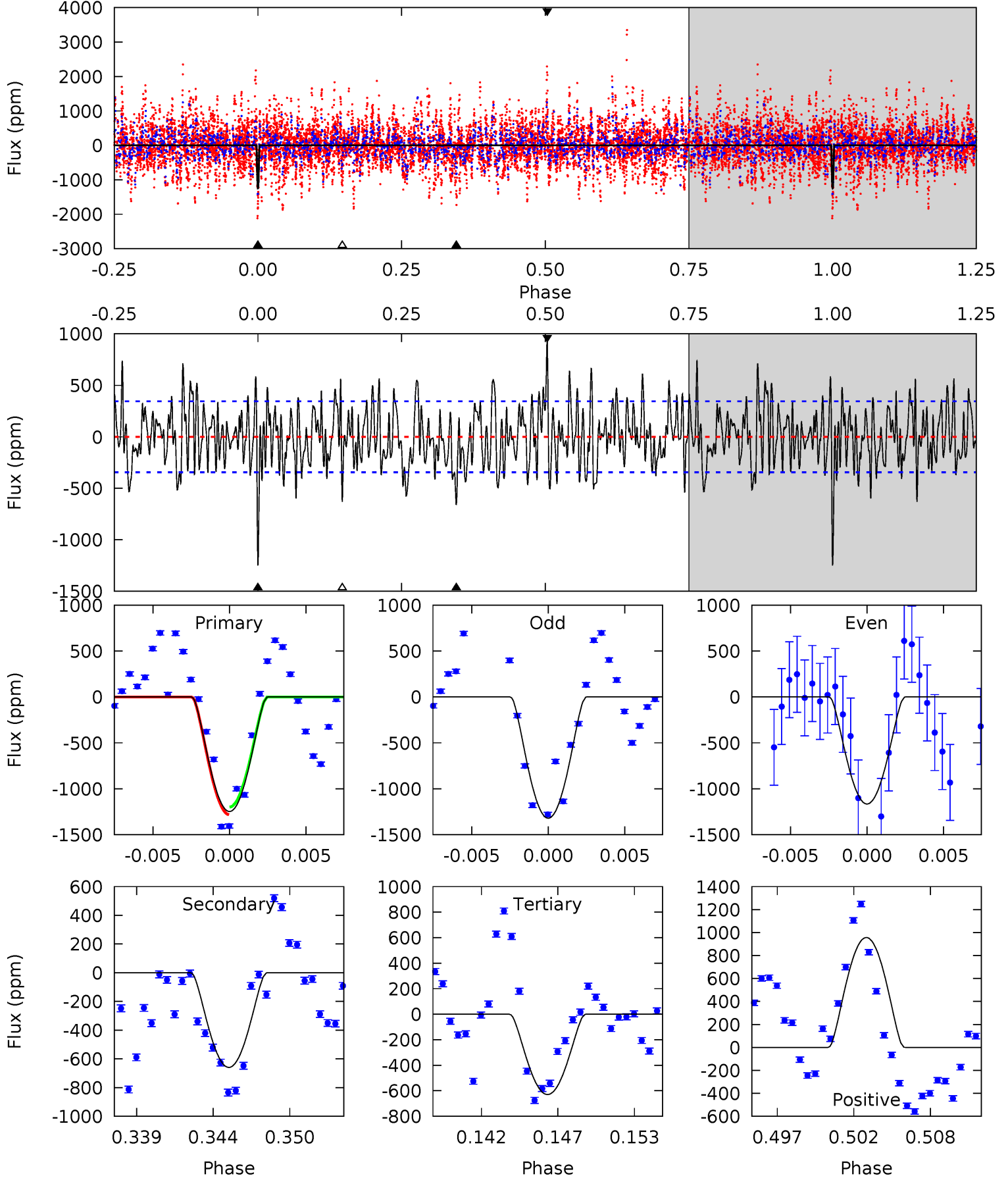
TCE 005198337-07 $P = 75.066325$ Days $T_0 = 143.469717$ (BKJD)



DV Model-Shift Uniqueness Test

005198337-07, P = 75.060649 Days, E = 68.492900 Days

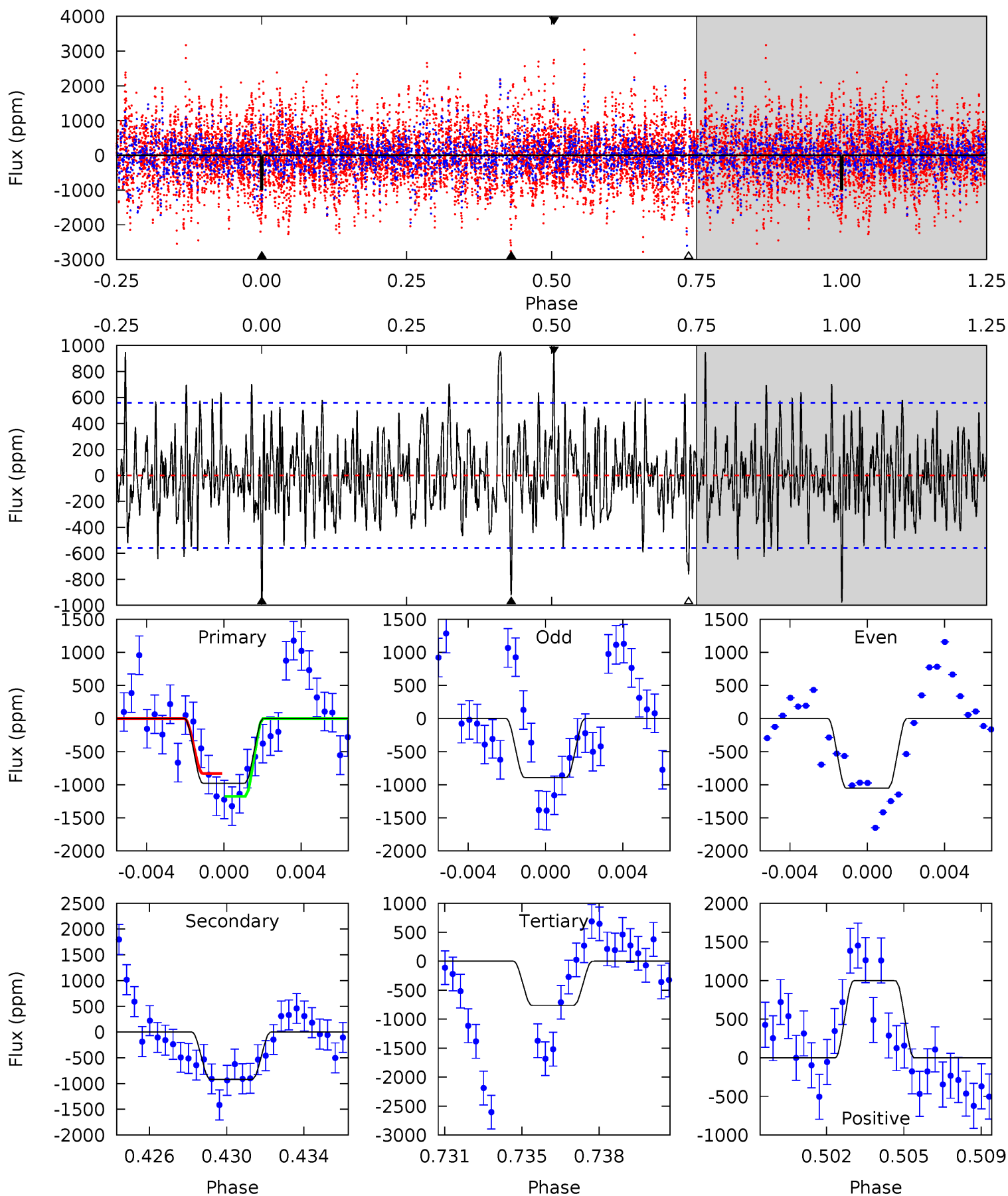
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.6	9.83	9.39	14.3	5.14	2.78	3.66	9.22	4.34	0.45	-4.44	1.15	1.04	0.43	0.60



Alt Model-Shift Uniqueness Test

005198337-07, P = 75.066325 Days, E = 68.403392 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.12	8.56	7.11	9.31	5.22	2.91	2.35	2.01	-0.19	1.46	-0.74	0.74	0.81	0.51	1.61



Stellar Parameters For KIC 005198337

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6897^{+206}_{-227}	$3.130^{+0.536}_{-0.134}$	$0.070^{+0.200}_{-0.350}$	$7.410^{+1.696}_{-4.241}$	$2.703^{+0.293}_{-0.879}$	$0.009^{+0.066}_{-0.004}$
	+3%/-3%	+17%/-4%	+286%/-500%	+23%/-57%	+11%/-33%	+705%/-41%
Source	PHO1	FLK73	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 005198337-07 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-660 ± 67	$74.36^{+77.05}_{-52.76}$	1613^{+138}_{-228}	3746^{+2552}_{-704}	15^{+172}_{-11}
Alt.	-918 ± 107	$66.53^{+76.38}_{-47.27}$	1623^{+123}_{-230}	4202^{+2724}_{-926}	26^{+266}_{-20}

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 $A_{obs} \gg 1.0$

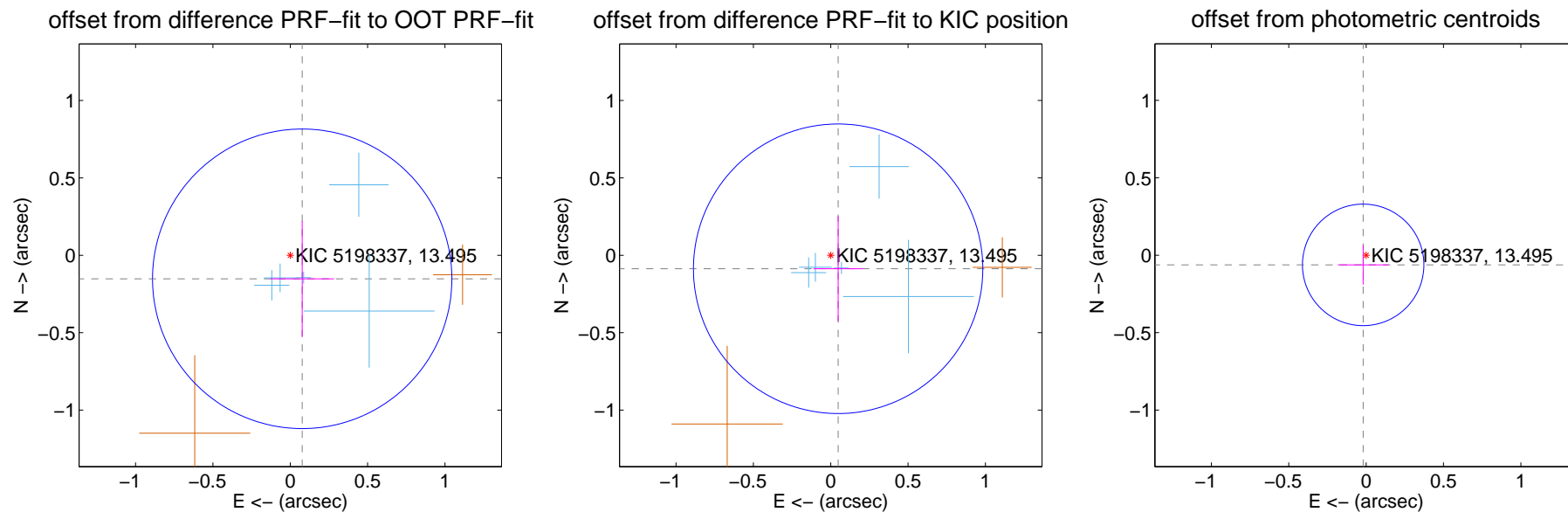
DV Centroid Data

Supplemental centroid analysis for 005198337-07. Kepler magnitude: 13.49. Transit SNR 10.16

There are 5 quarters with good PRF difference image offsets

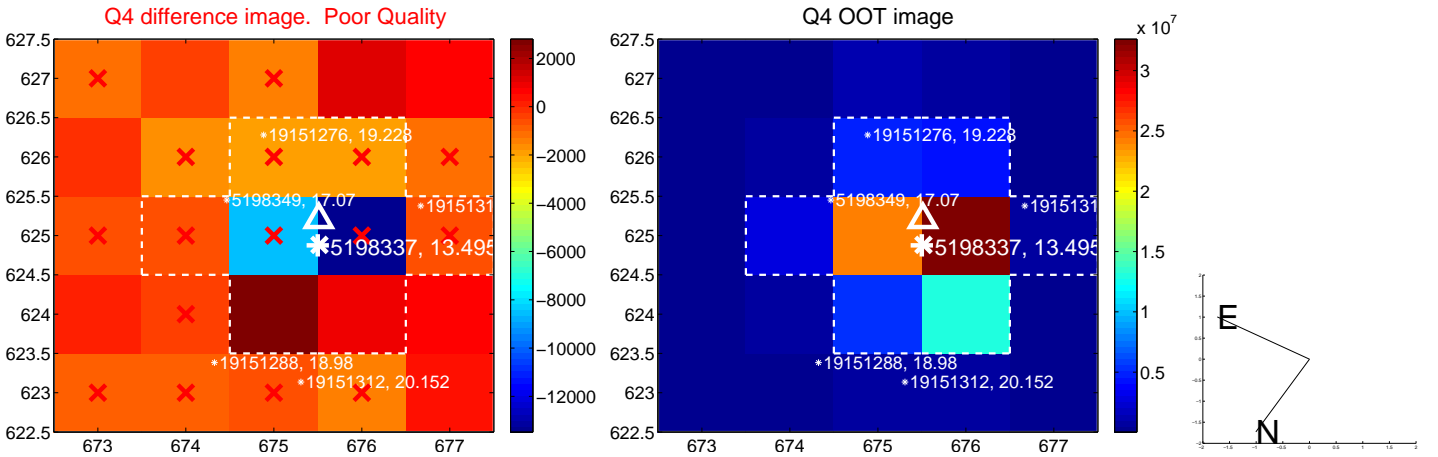
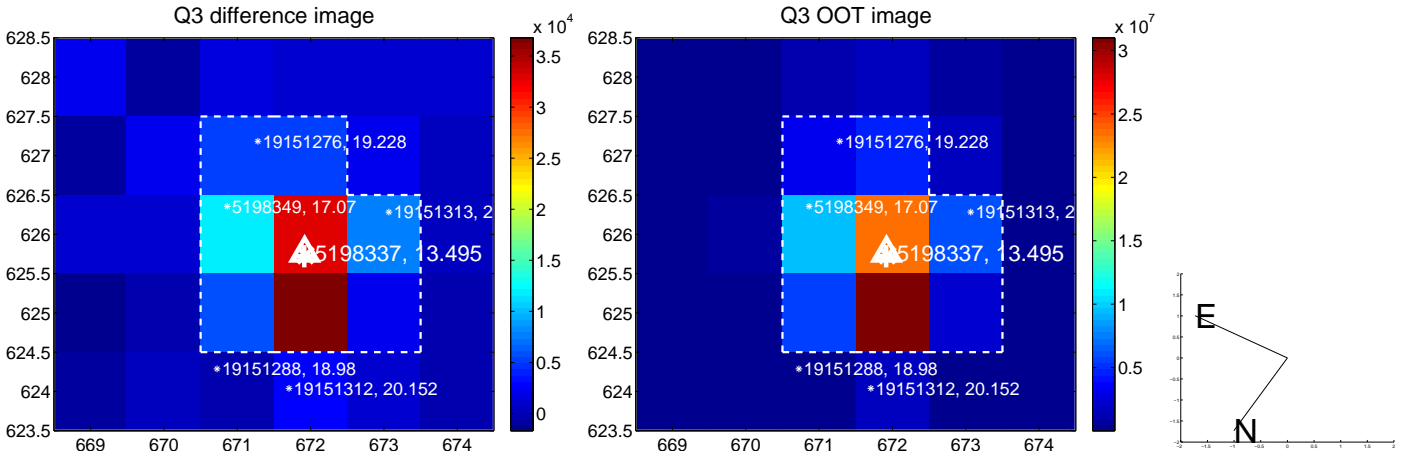
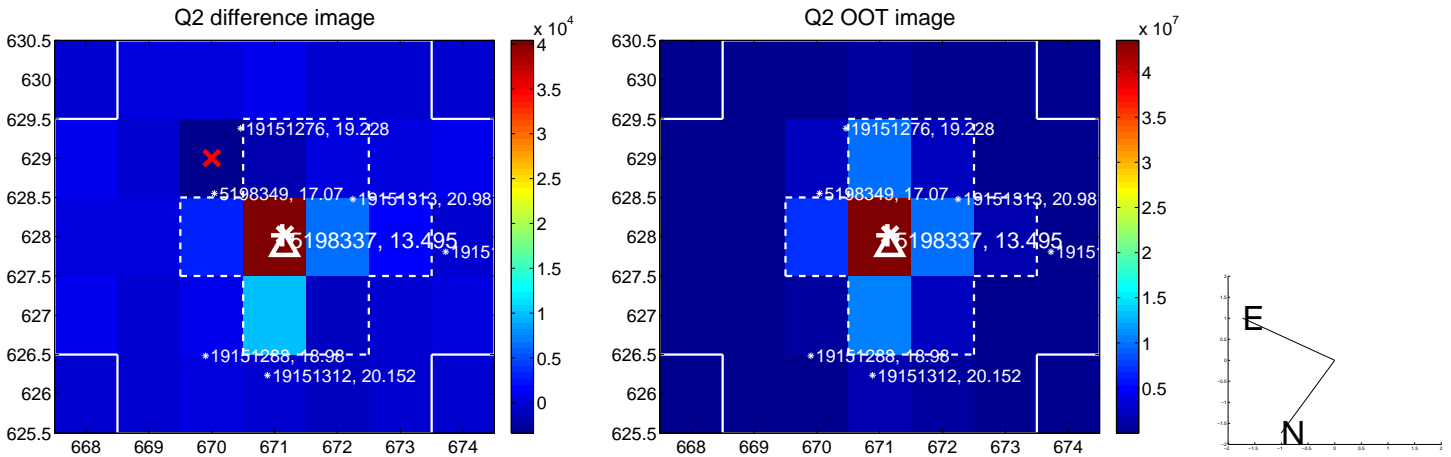
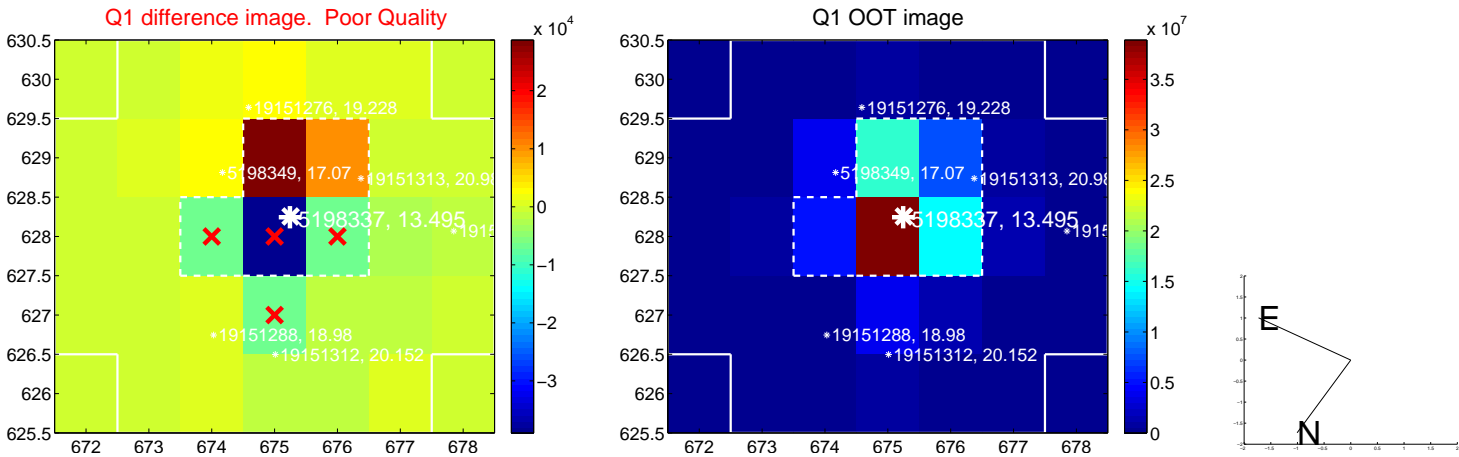
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.170 ± 0.323	0.53	-0.077 ± 0.206	-0.152 ± 0.374
PRF-fit source offset from KIC position	0.099 ± 0.312	0.32	-0.048 ± 0.159	-0.087 ± 0.340
photometric centroid source offset	0.07 ± 0.13	0.50	0.02 ± 0.16	-0.06 ± 0.13

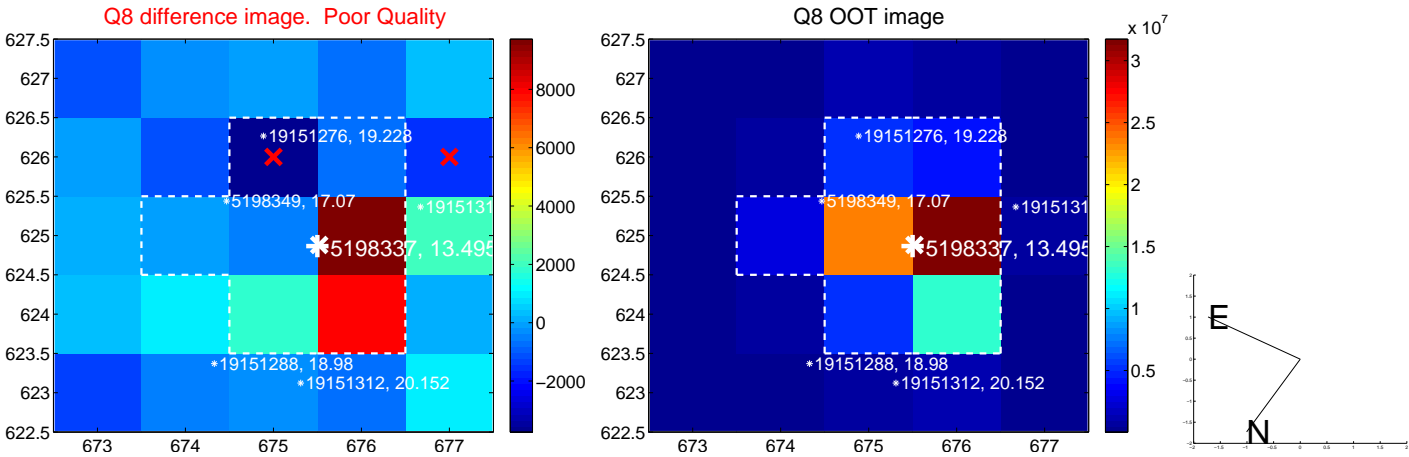
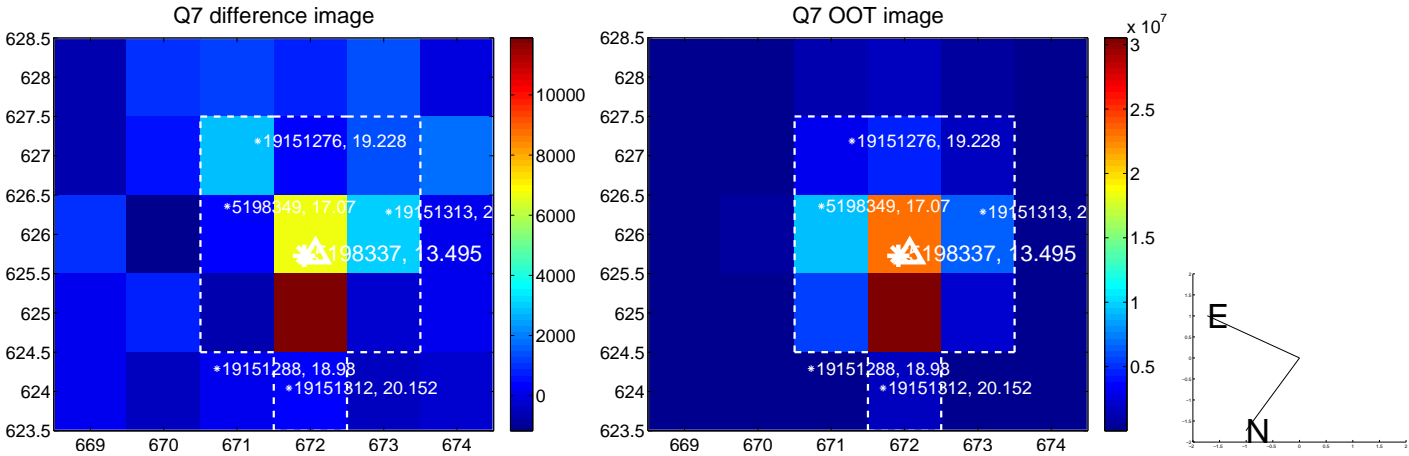
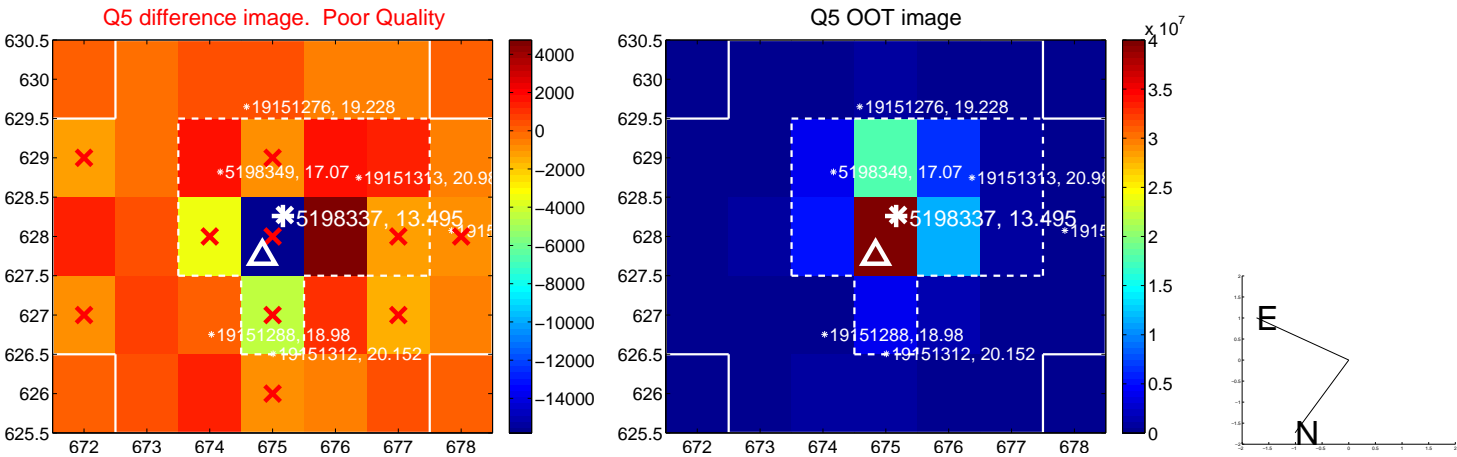


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

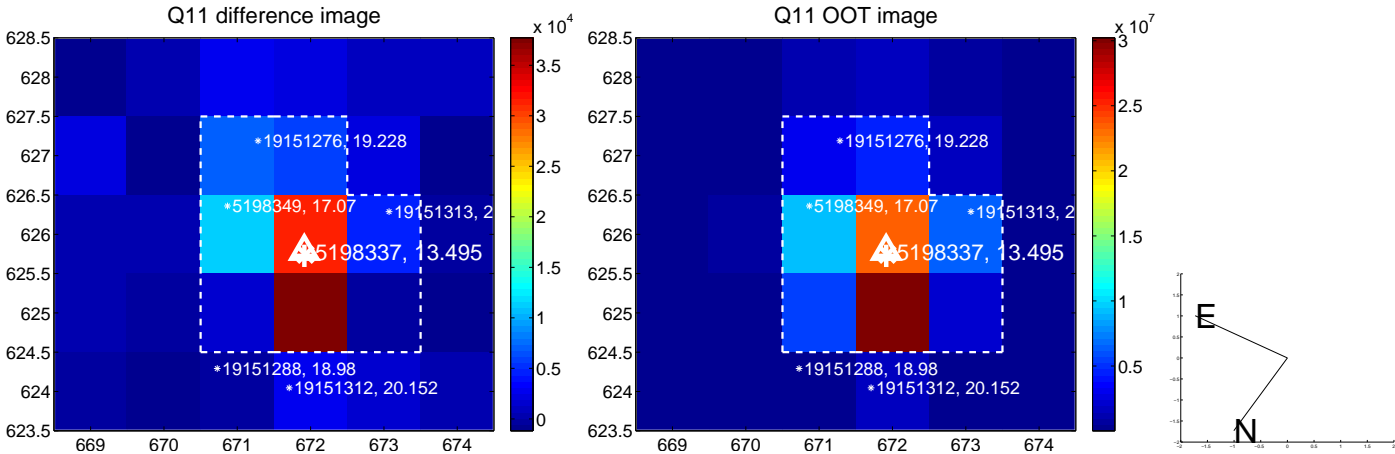
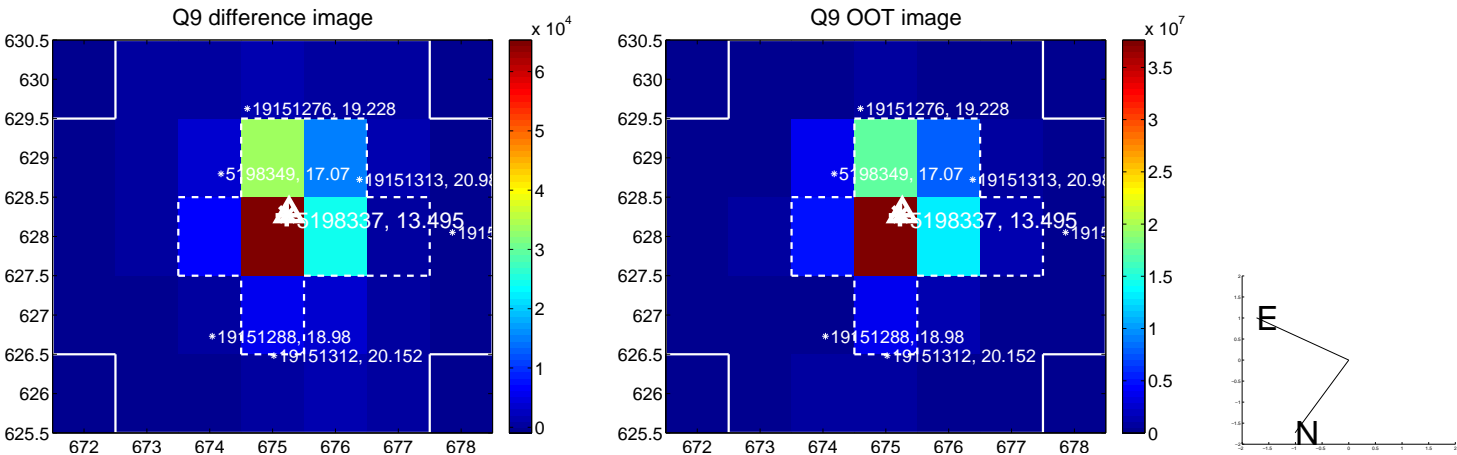
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



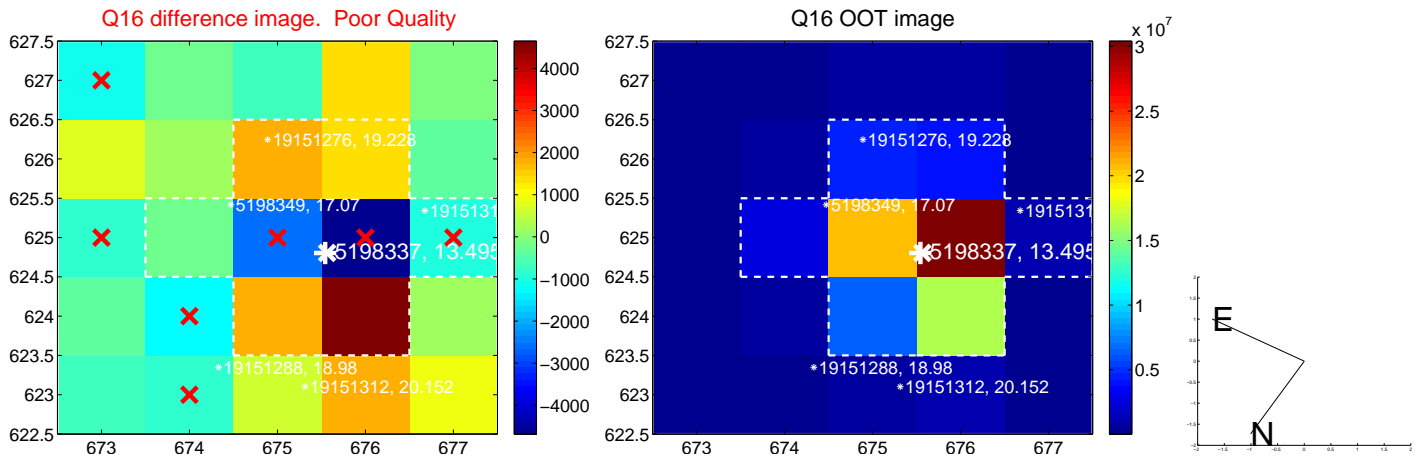
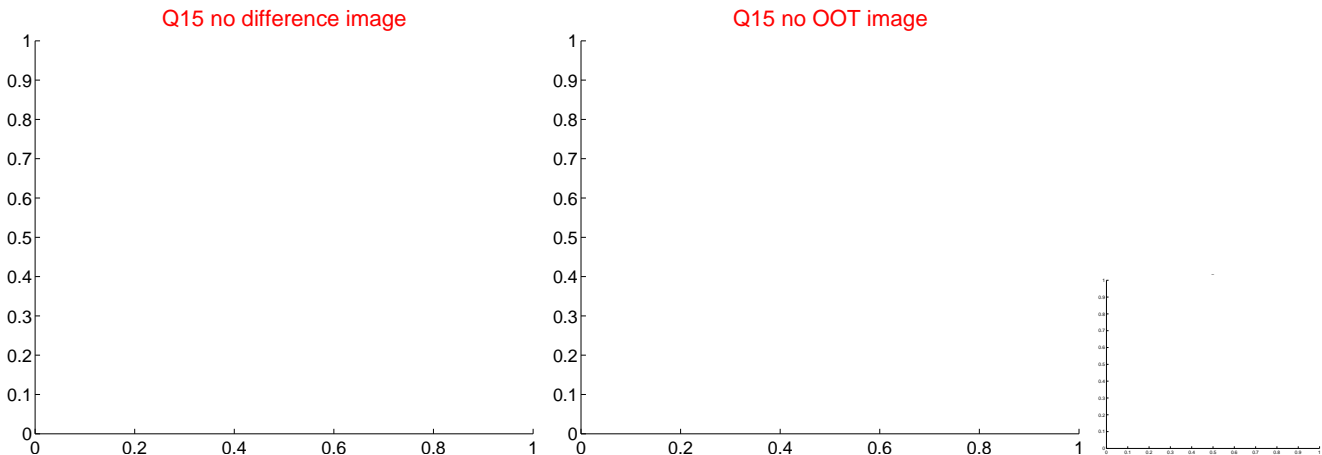
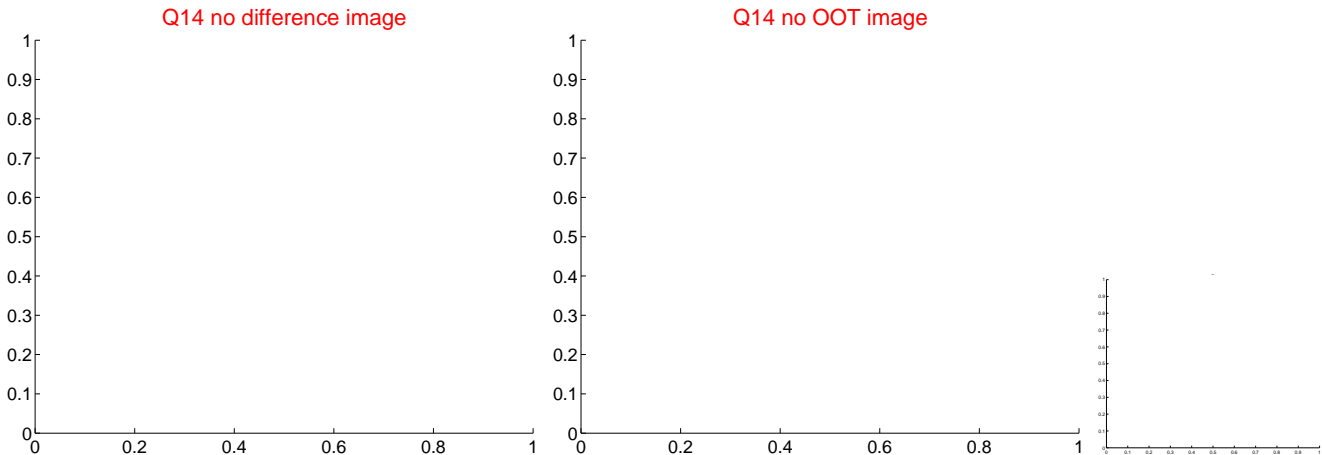
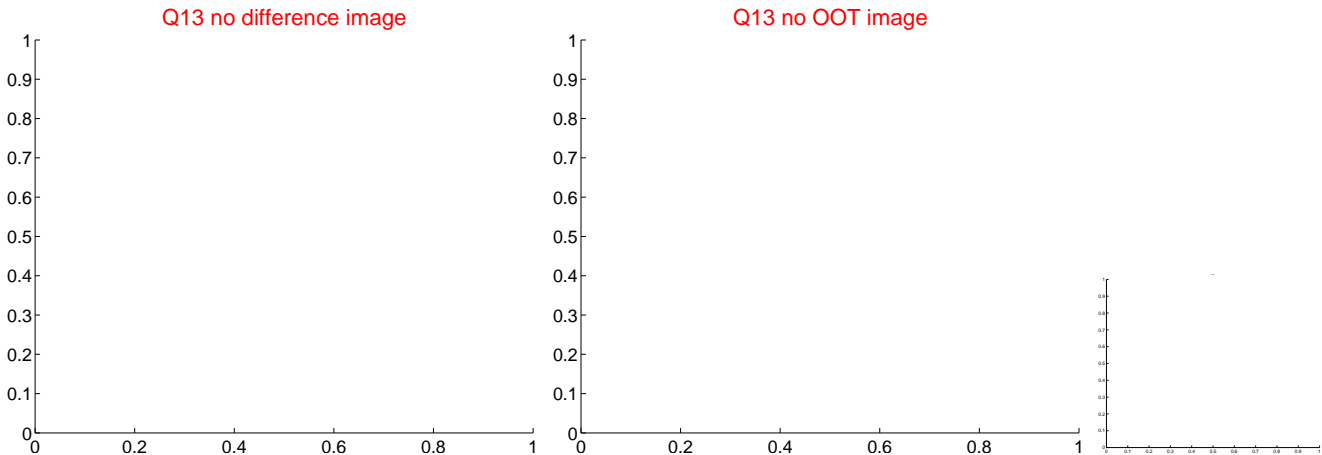
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



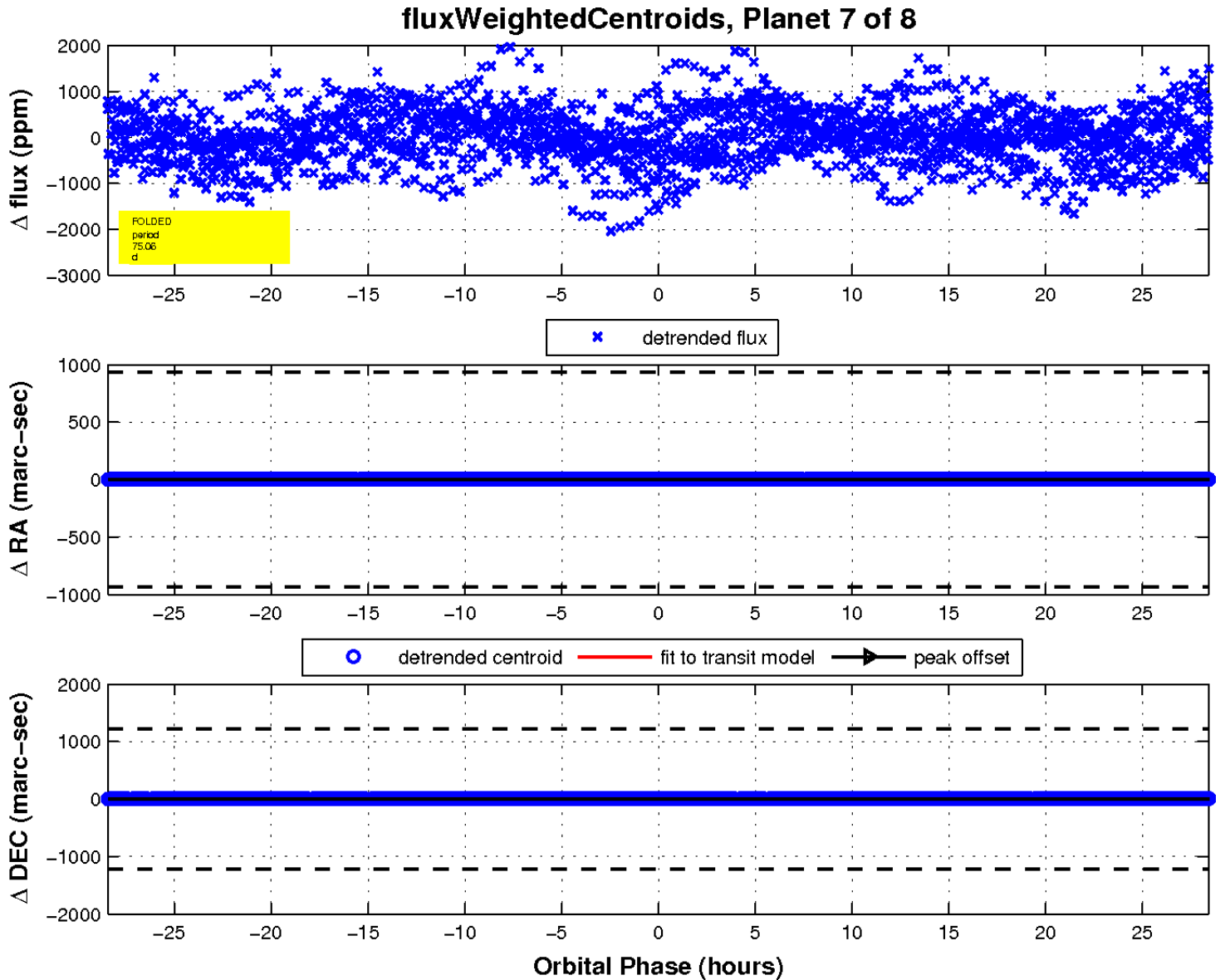
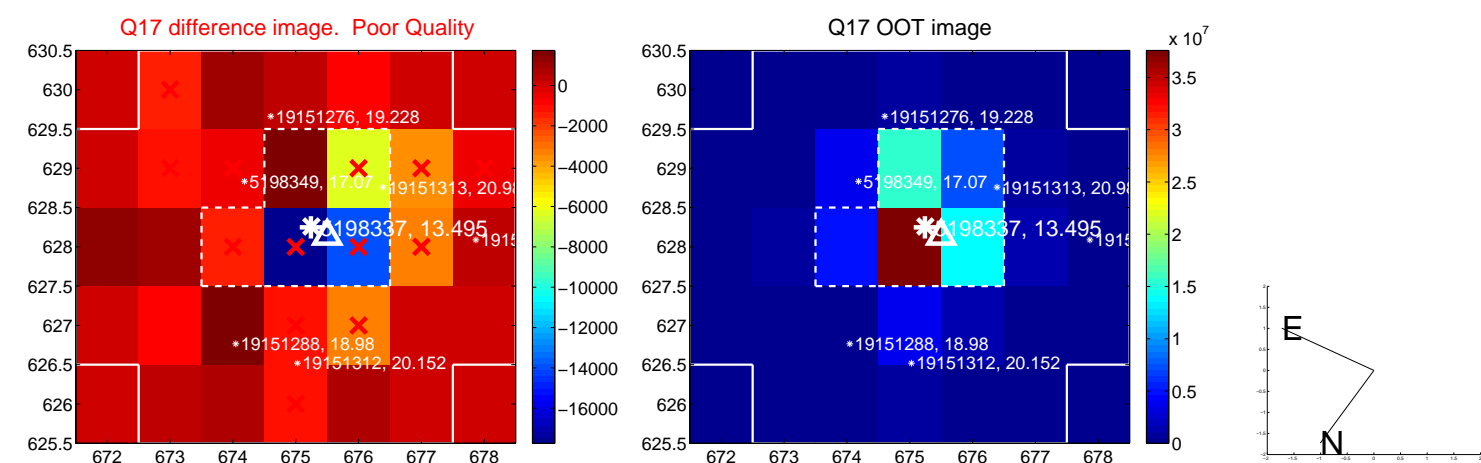
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

