

KIC 005281619

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})
005281619-01	OBS	No	6.249256	133.612991	36.9	16.926	9.8	10.3	1.72	7797	1.14	1559.62
005281619-02	OBS	No	6.248720	136.169846	117.5	15.000	8.9	-1.0	1.72	7797	1.89	1559.79
005281619-03	OBS	No	440.629751	203.449933	226.8	19.287	13.0	7.7	1.72	7797	2.73	5.35
005281619-04	OBS	No	3.124080	131.707220	29.0	19.514	9.7	11.9	1.72	7797	0.94	3930.90

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005281619-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
005281619-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_NOFITS
005281619-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005281619-04	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—SAME_NTL_PERIOD

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

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

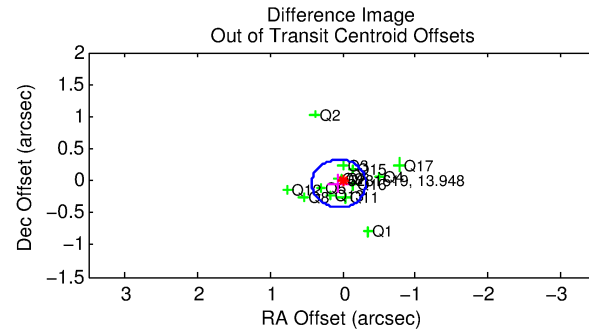
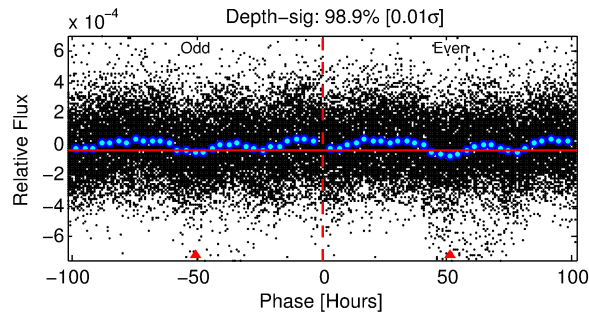
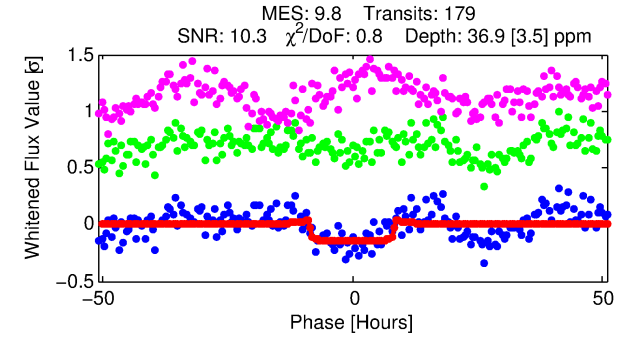
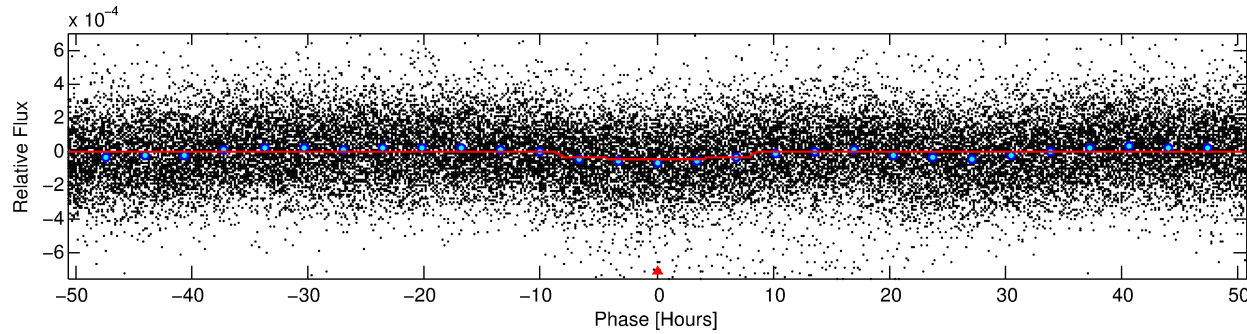
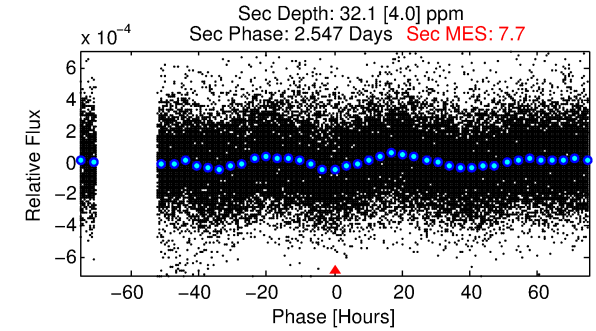
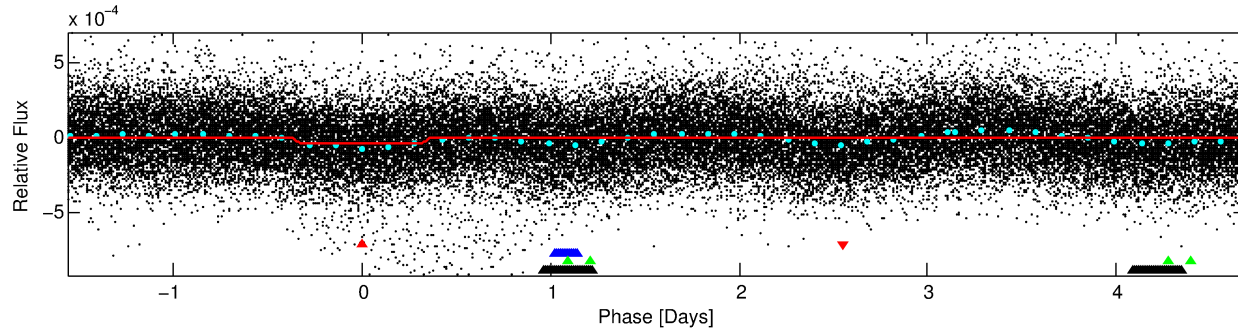
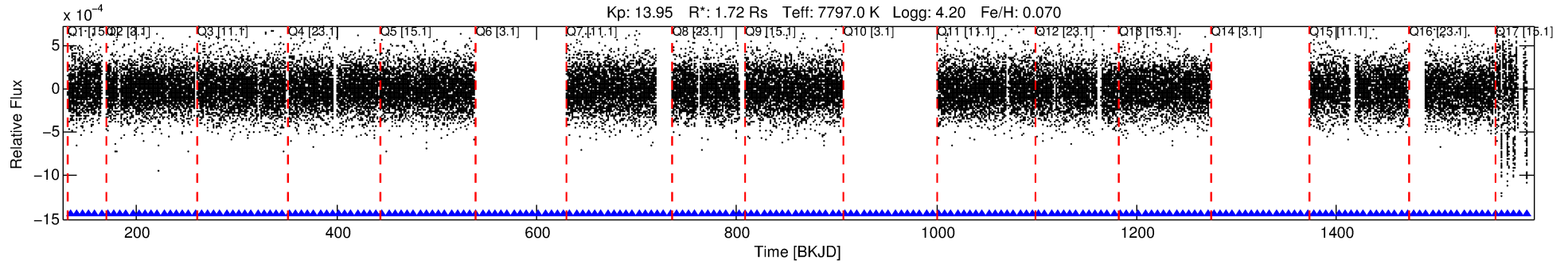
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005281619-01

No Significant Match Found

DV One-Page Summary

KIC: 5281619 Candidate: 1 of 4 Period: 6.249 d



DV Fit Results:

Period = 6.24926 [0.00011] d
Epoch = 133.6130 [0.0129] BKJD
Rp/R* = 0.0061 [0.0012]
a/R* = 2.03 [1.92]
b = 0.77 [0.68]
Seff = 1559.61 [383.70]
Teq = 1602 [99] K
Rp = 1.14 [0.31] Re
a = 0.0792 [0.0128] AU
Ag = 85.76 [41.66] [2.03σ]
Teffp = 7539 [800] K [7.37σ]

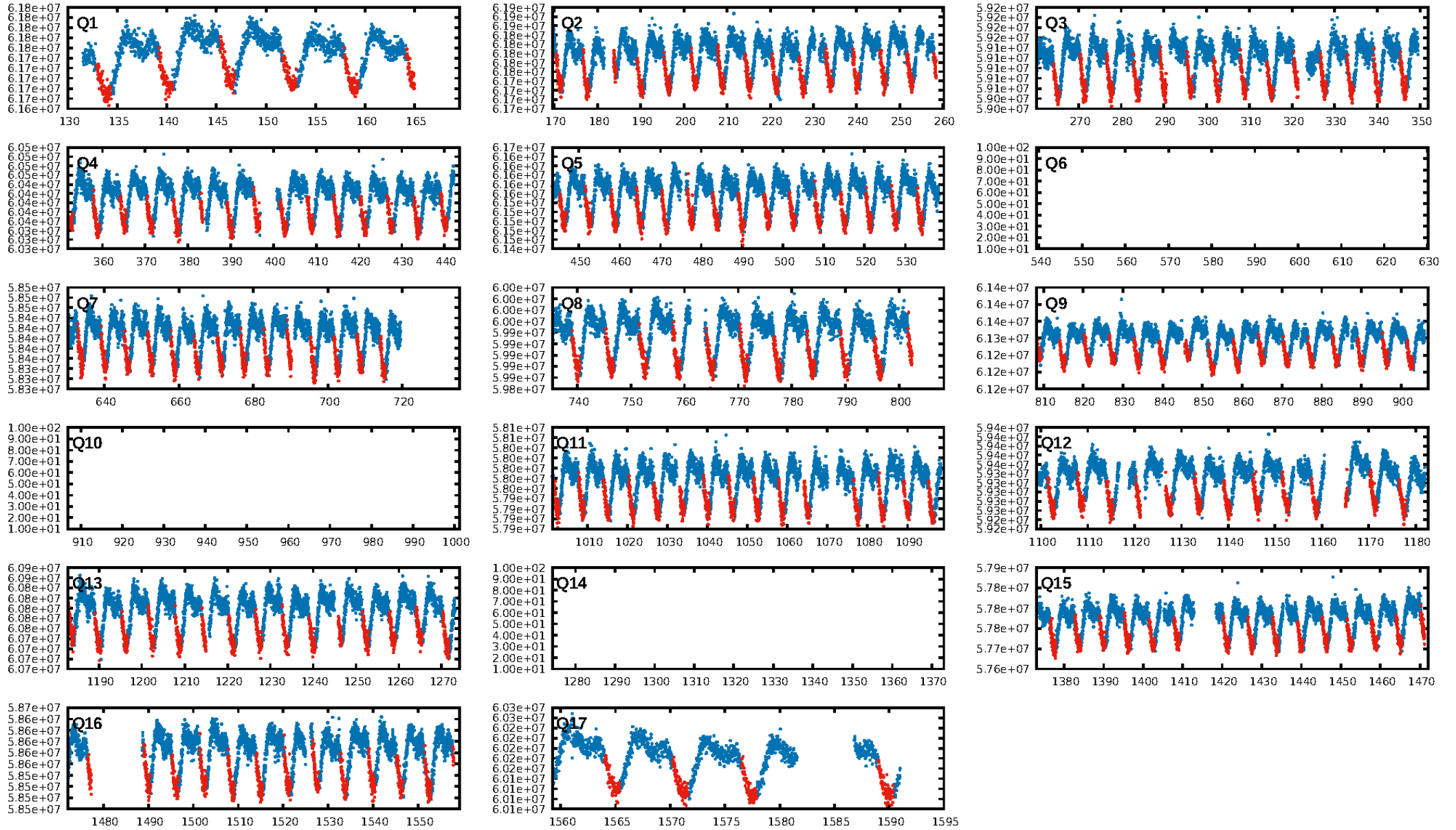
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: 100.0% [406.27σ]
ModelChiSquare2-sig: 99.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [169/169]
GhostDiagnostic-chr: 1.238
Centroid-sig: 10.0%
Centroid-so: 1.416 arcsec [1.42σ]
OotOffset-rm: 0.070 arcsec [0.56σ]
KicOffset-rm: 0.104 arcsec [0.94σ]
OotOffset-st: 1/4/4/5 [14]
KicOffset-st: 1/4/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 0.00 [0/14]

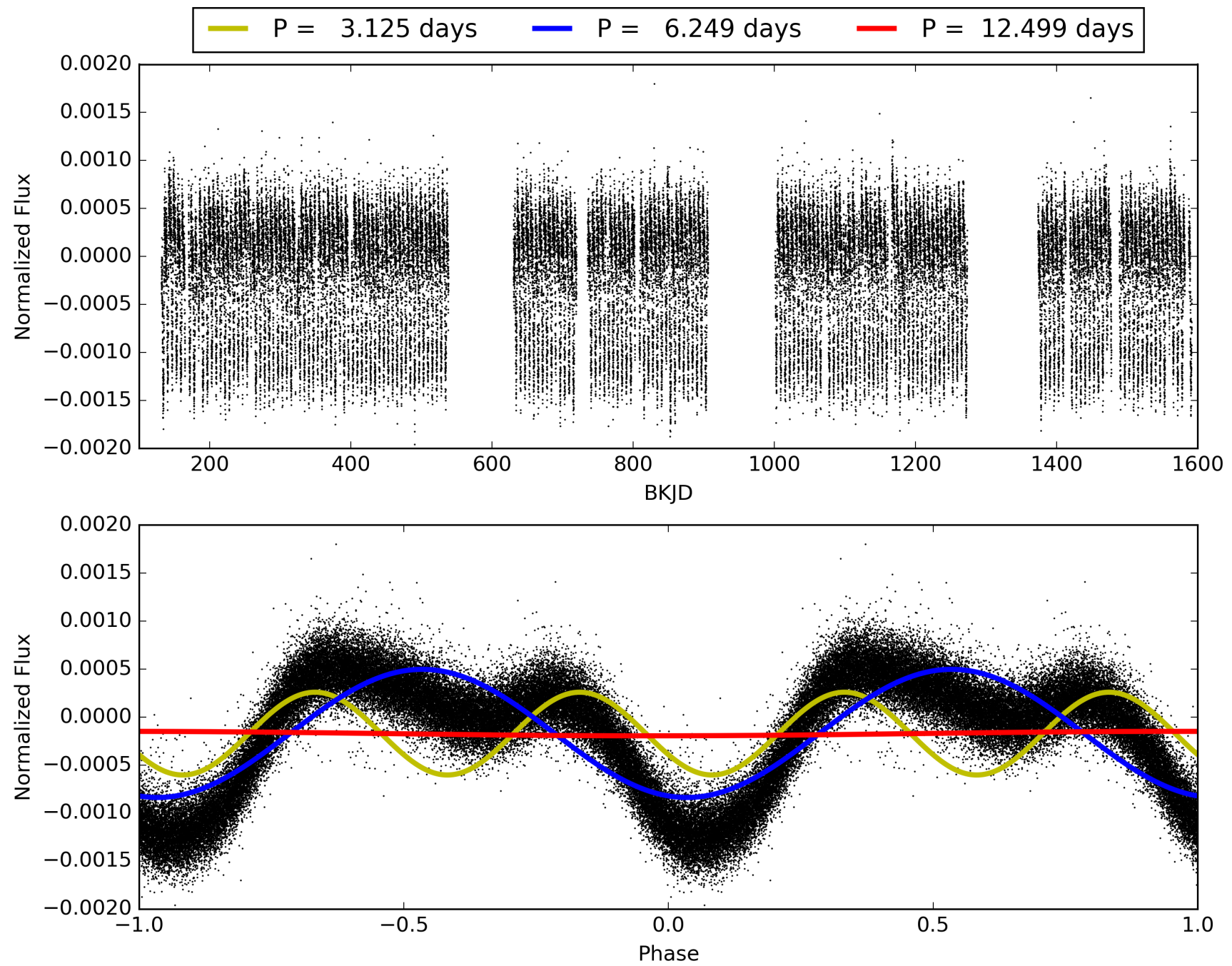
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 15:48:53 Z

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

TCE 005281619-01, PDC Light Curves

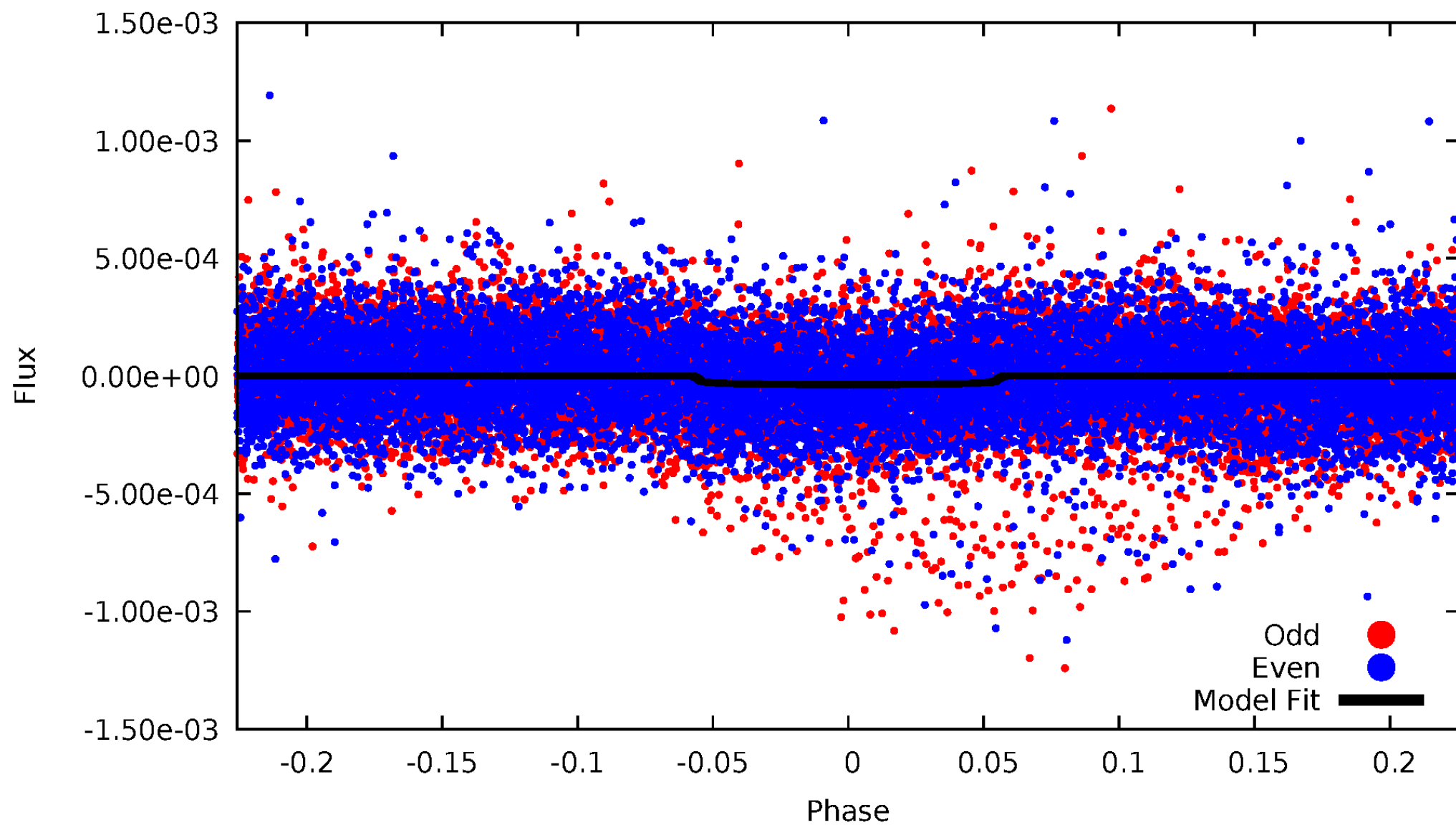


TCE 005281619-01



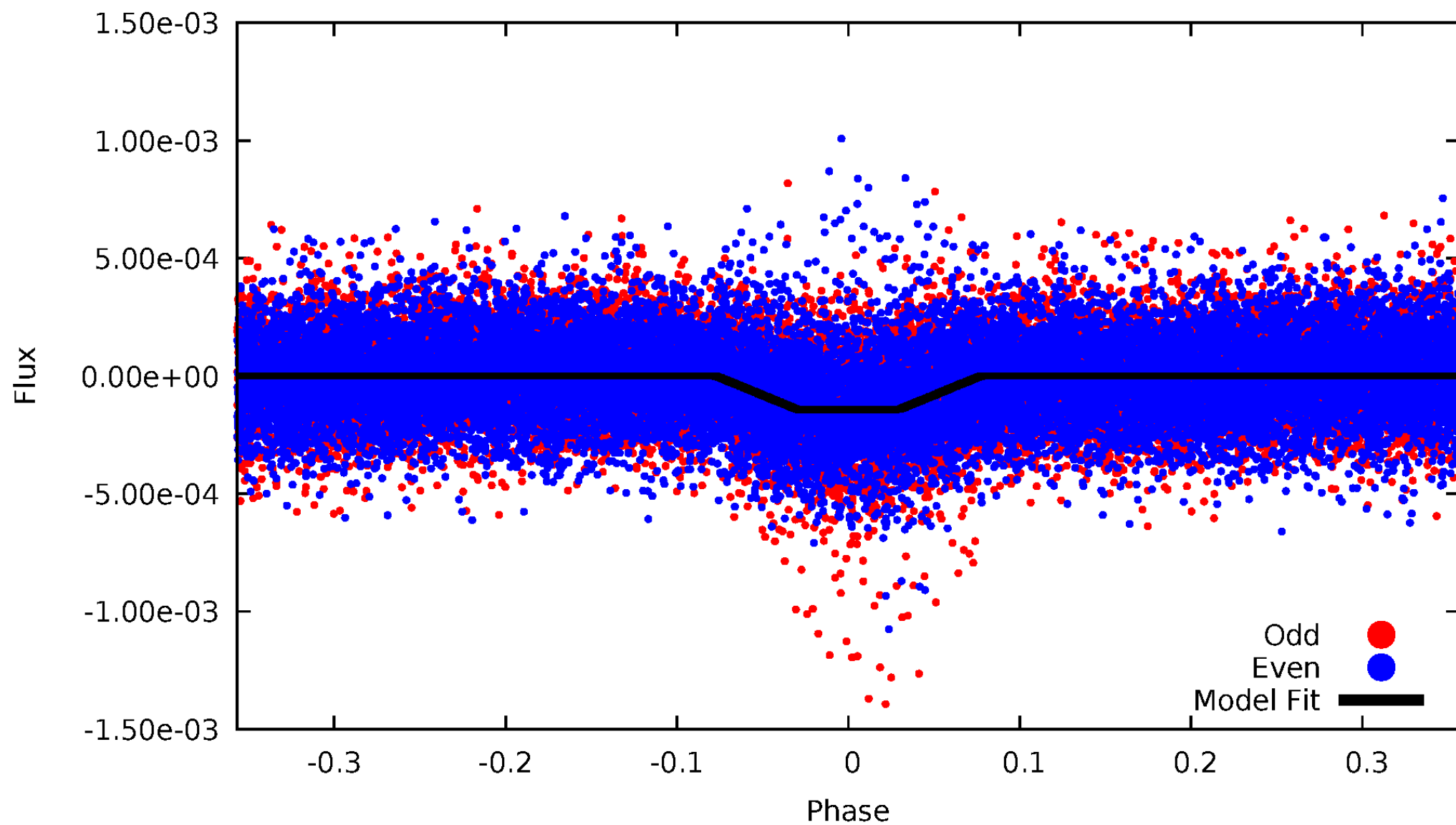
DV Odd/Even

TCE 005281619-01

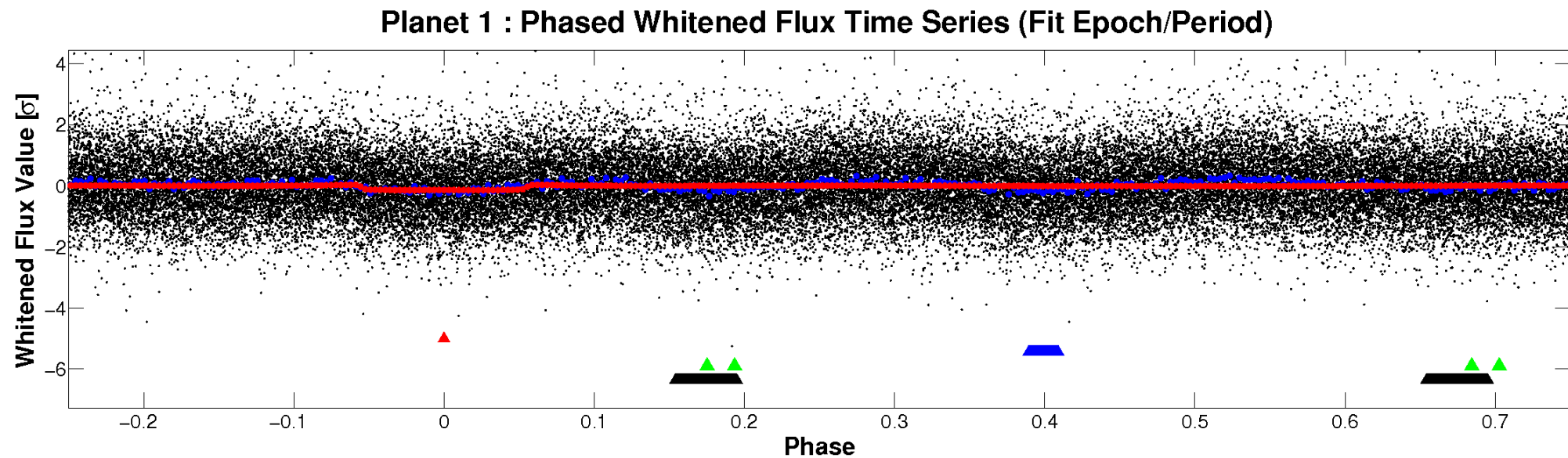
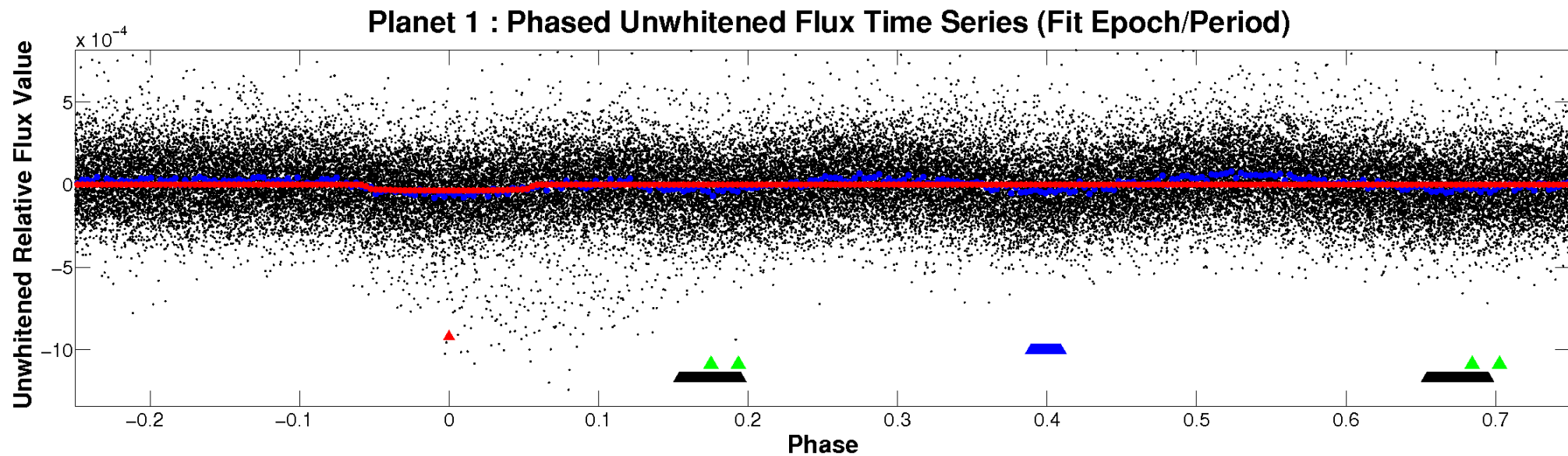


ALT Odd/Even

TCE 005281619-01

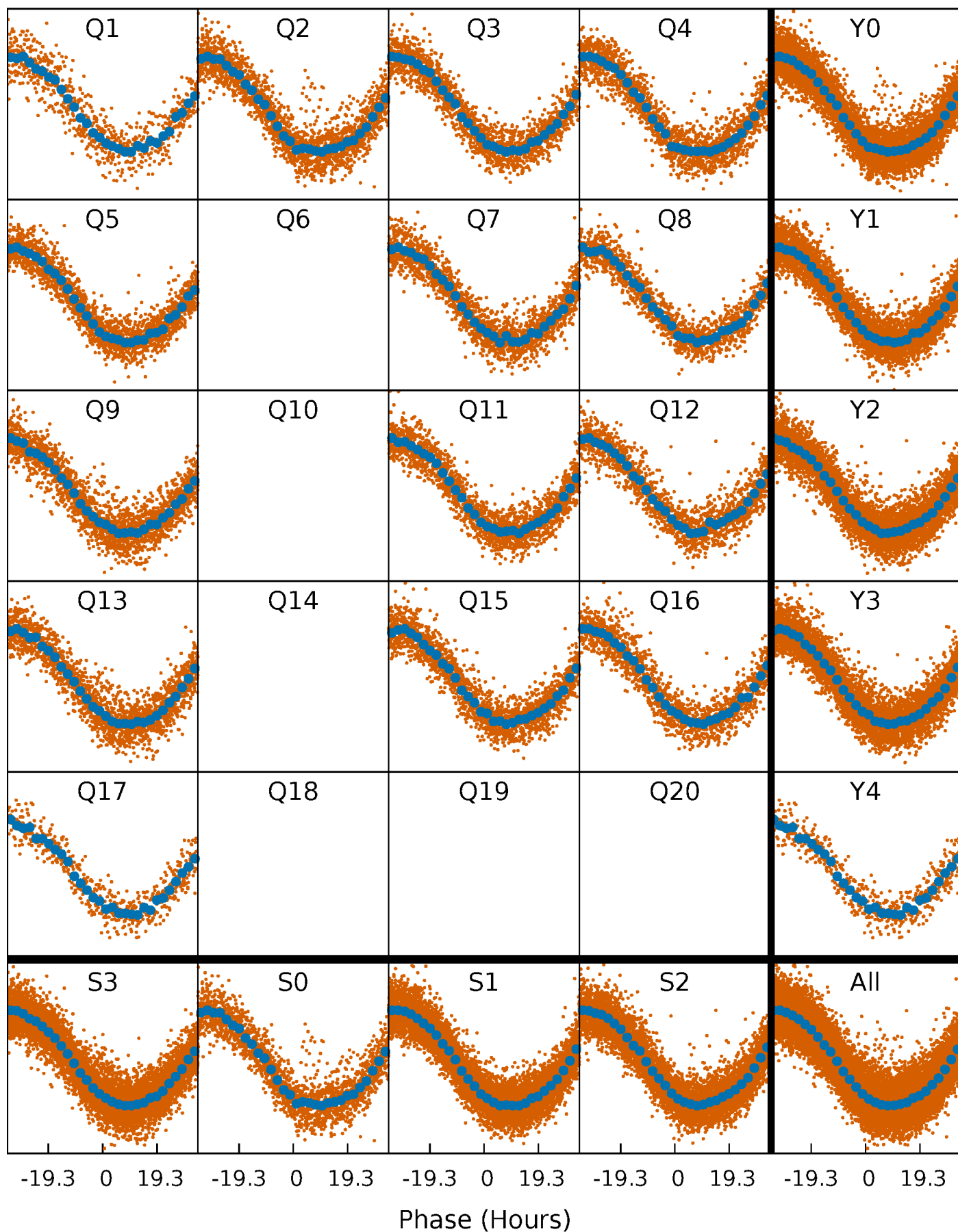


Non-Whitened Vs. Whitened Light Curve



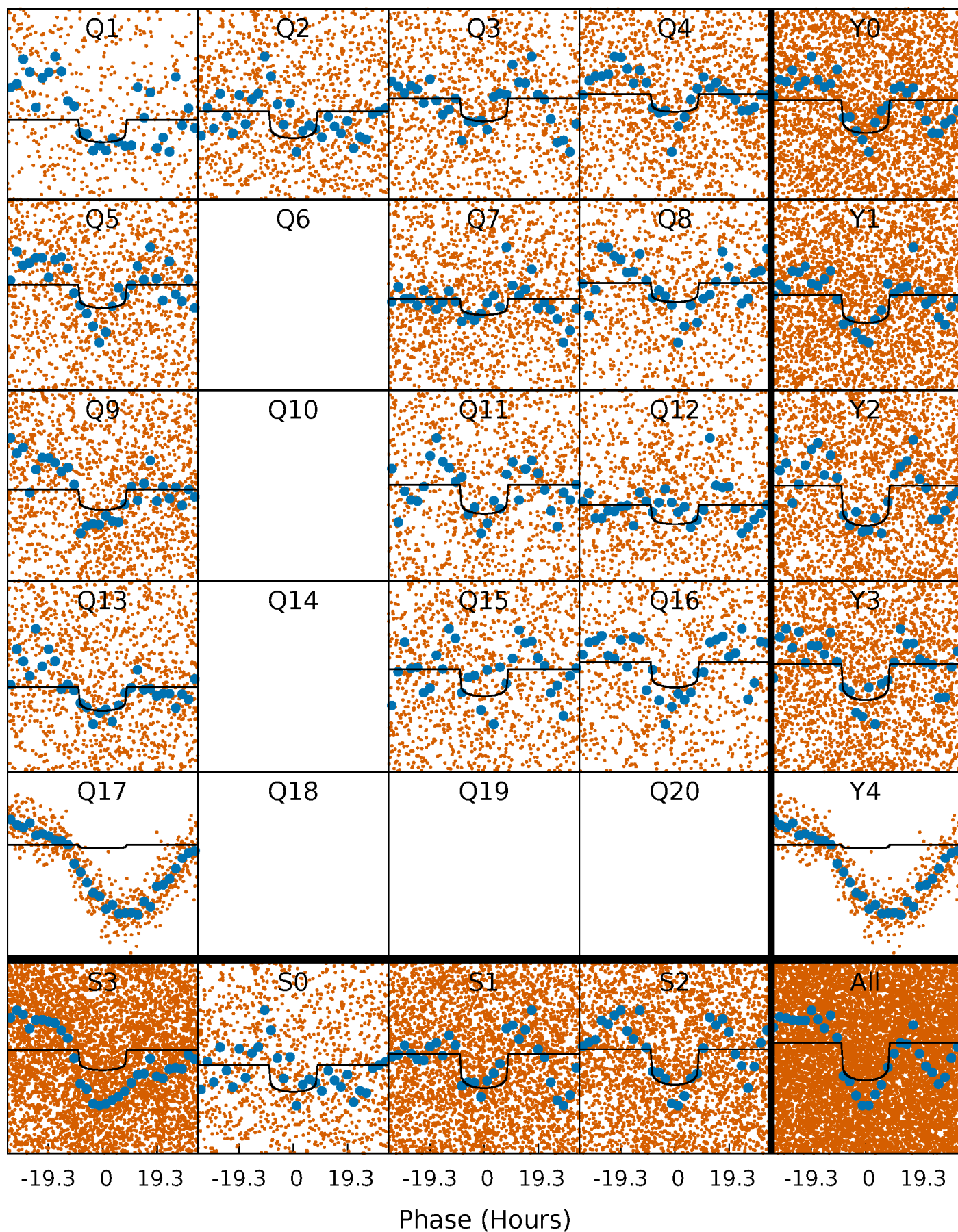
PDC Quarter-Phased Transit Curves

TCE 005281619-01 P= 6.249256 Days $T_0=133.612991$ (BKJD)



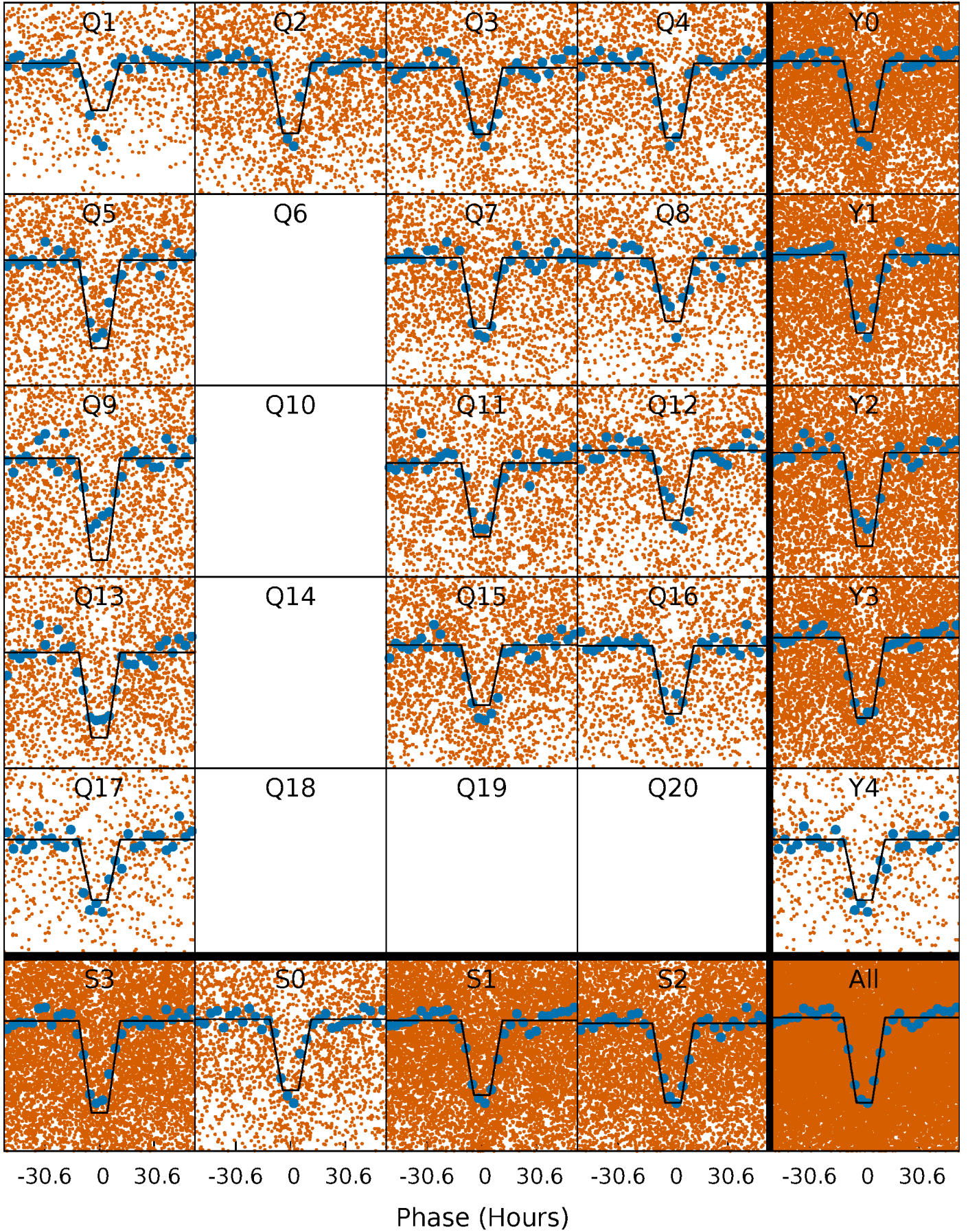
DV Quarter-Phased Transit Curves

TCE 005281619-01 P= 6.249256 Days $T_0=133.612991$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

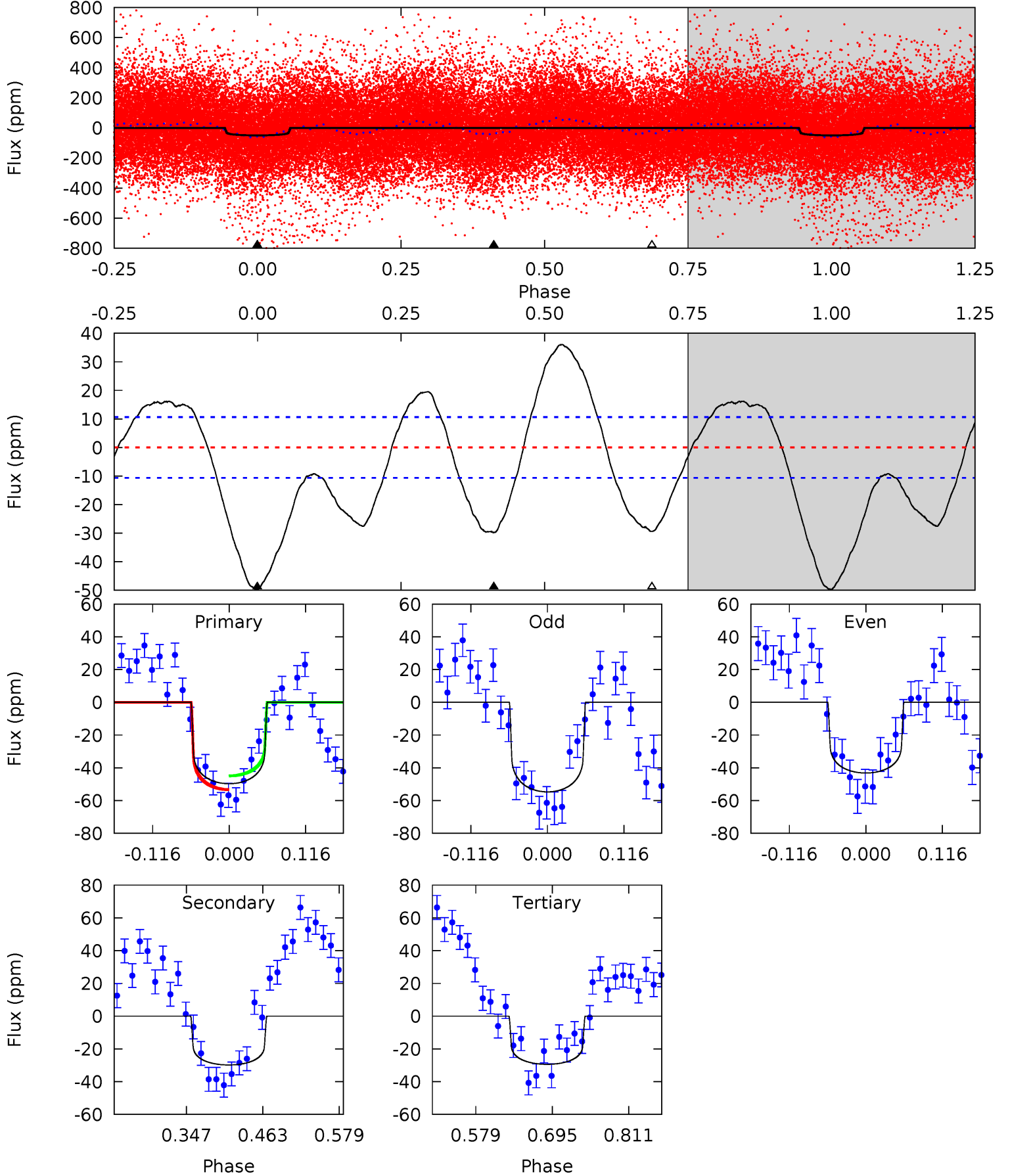
TCE 005281619-01 P= 6.249254 Days $T_0=133.581397$ (BKJD)



DV Model-Shift Uniqueness Test

005281619-01, P = 6.249256 Days, E = 127.363735 Days

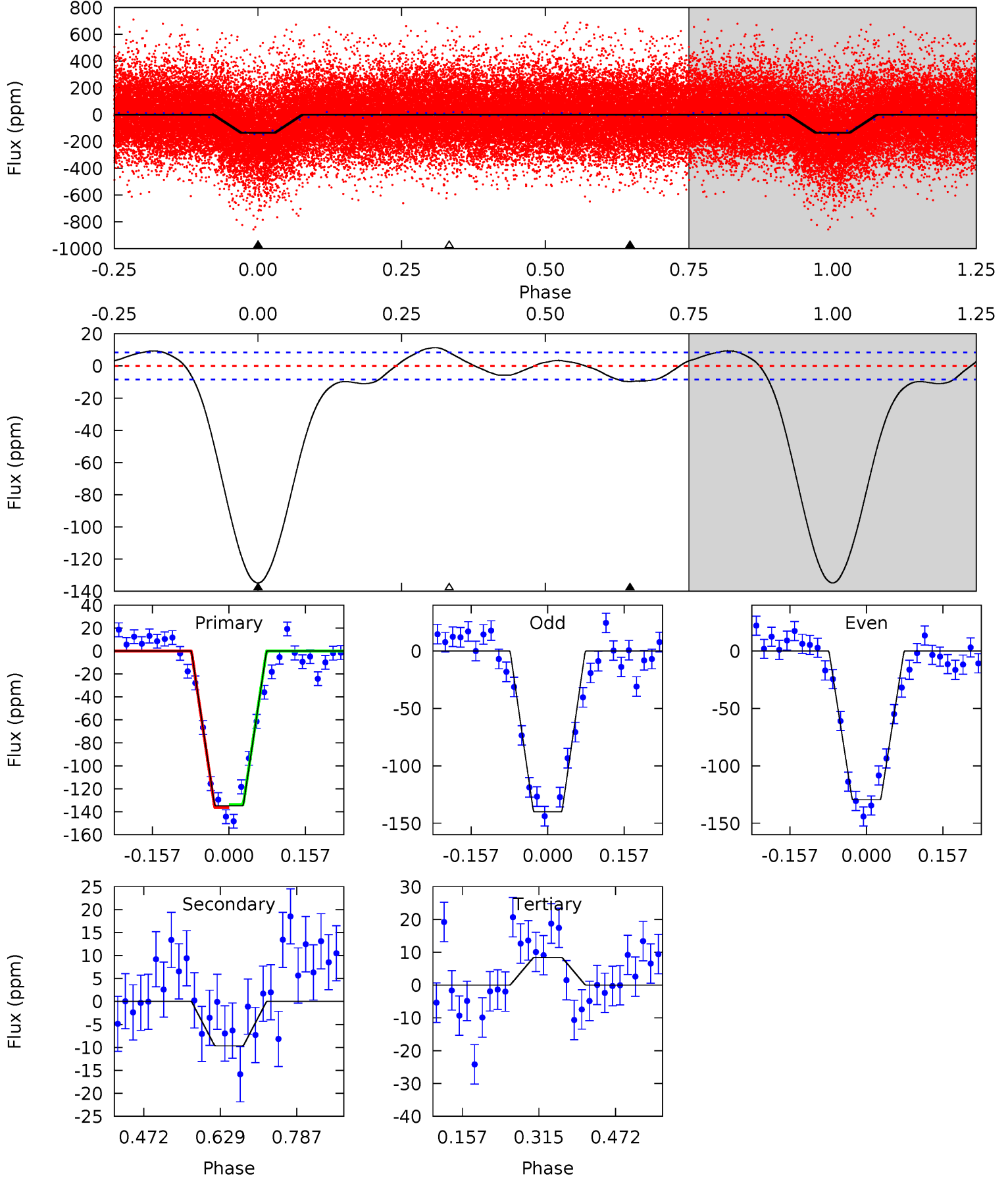
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.2	12.7	12.5	0	4.53	1.57	8.14	8.65	21.2	0.17	12.7	2.44	1.26	0.42	1.79



Alt Model-Shift Uniqueness Test

005281619-01, P = 6.249254 Days, E = 127.332143 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
71.7	5.14	-4.47	0	4.47	1.41	3.81	76.2	71.7	9.61	5.14	2.77	1.13	0.08	0.69



Stellar Parameters For KIC 005281619

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7797^{+69}_{-93}	$4.197^{+0.045}_{-0.135}$	$0.070^{+0.150}_{-0.250}$	$1.719^{+0.319}_{-0.137}$	$1.694^{+0.118}_{-0.132}$	$0.470^{+0.105}_{-0.177}$
	+1%/-1%	+1%/-3%	+214%/-357%	+19%/-8%	+7%/-8%	+22%/-38%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 005281619-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-30 ± 2	$1.14^{+0.28}_{-0.23}$	2256^{+98}_{-60}	7392^{+1067}_{-776}	79^{+43}_{-28}
Alt.	-10 ± 2	$2.32^{+0.29}_{-0.30}$	2261^{+104}_{-62}	4122^{+231}_{-222}	$6.203^{+2.297}_{-1.766}$

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 $A_{obs} \gg 1.0$

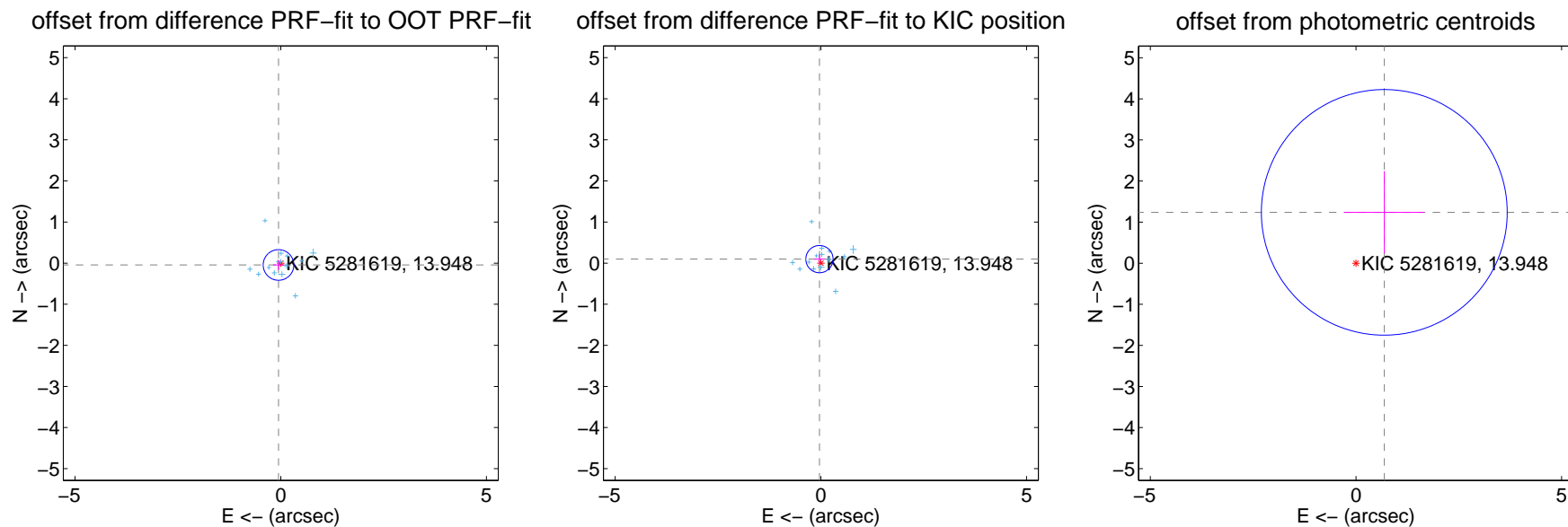
DV Centroid Data

Supplemental centroid analysis for 005281619-01. Kepler magnitude: 13.95. Transit SNR 10.32

There are 14 quarters with good PRF difference image offsets

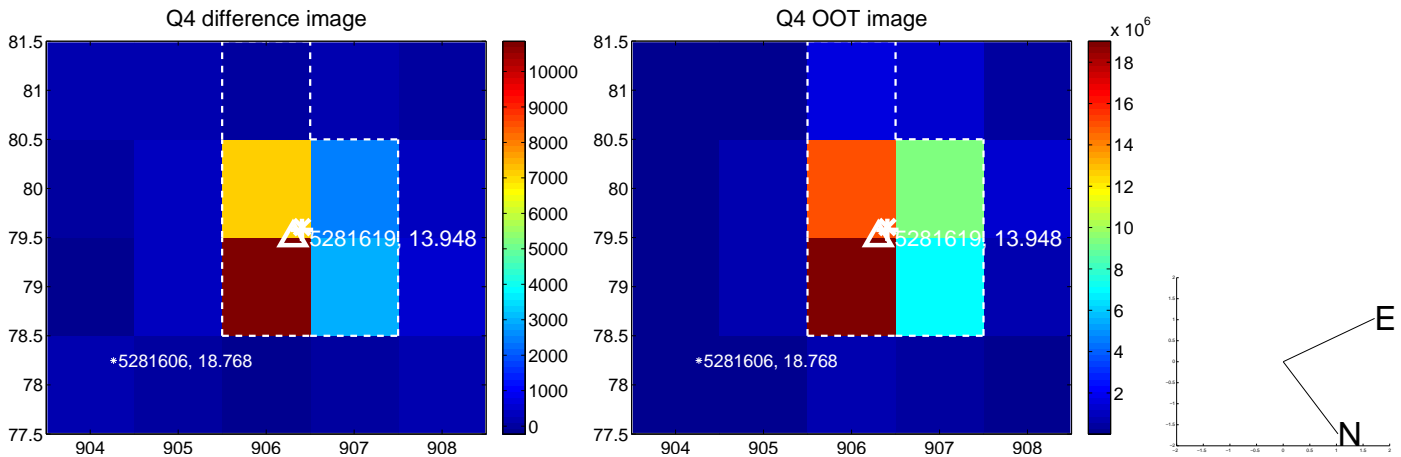
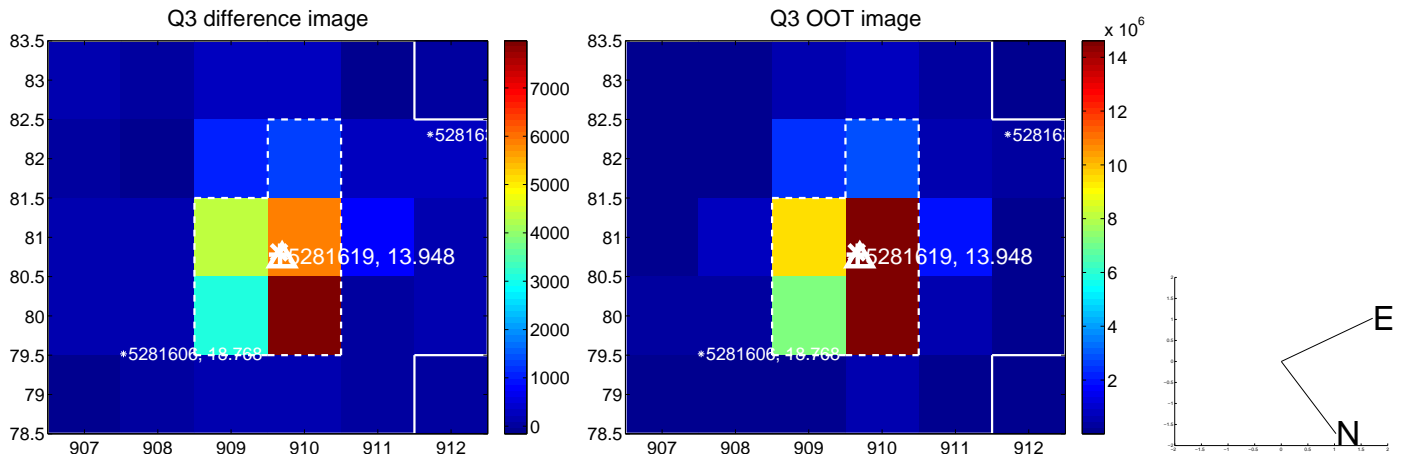
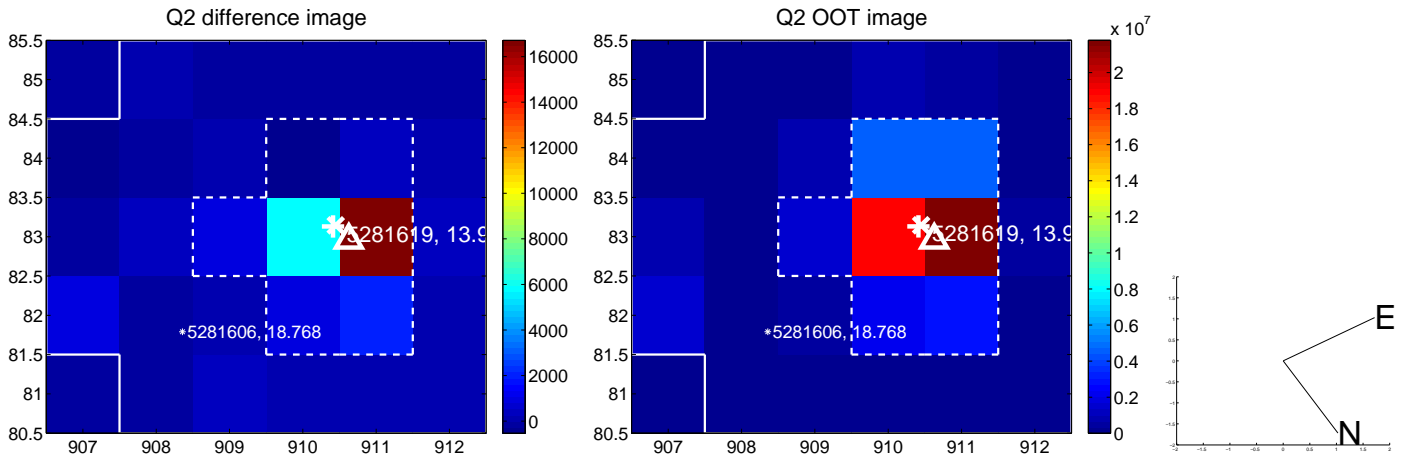
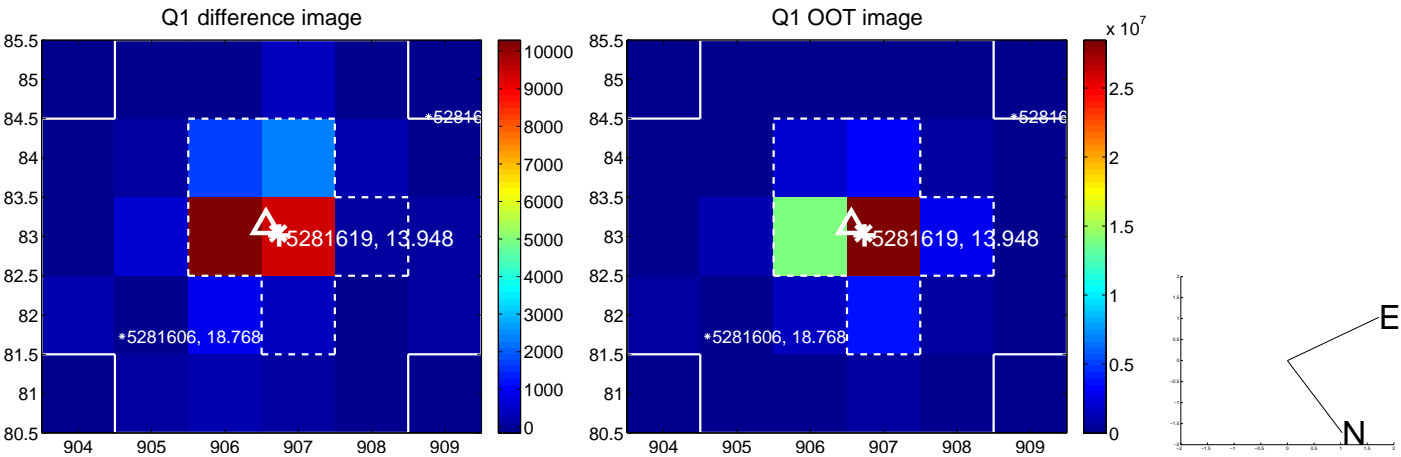
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.070 ± 0.124	0.56	0.054 ± 0.132	-0.044 ± 0.120
PRF-fit source offset from KIC position	0.104 ± 0.110	0.94	0.034 ± 0.124	0.098 ± 0.111
photometric centroid source offset	1.42 ± 1.00	1.42	-0.69 ± 0.98	1.24 ± 1.00

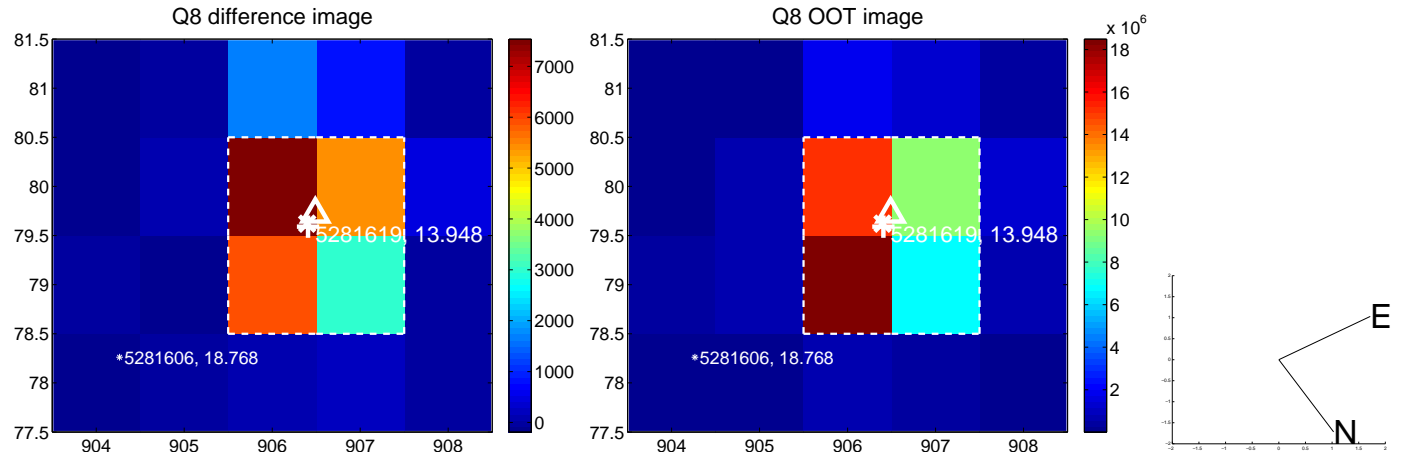
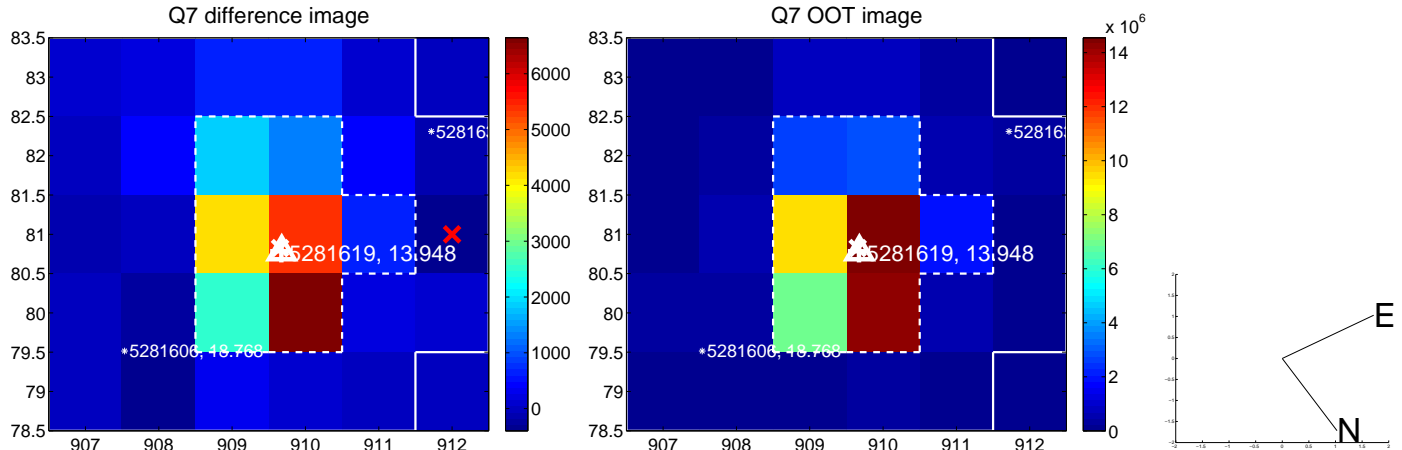
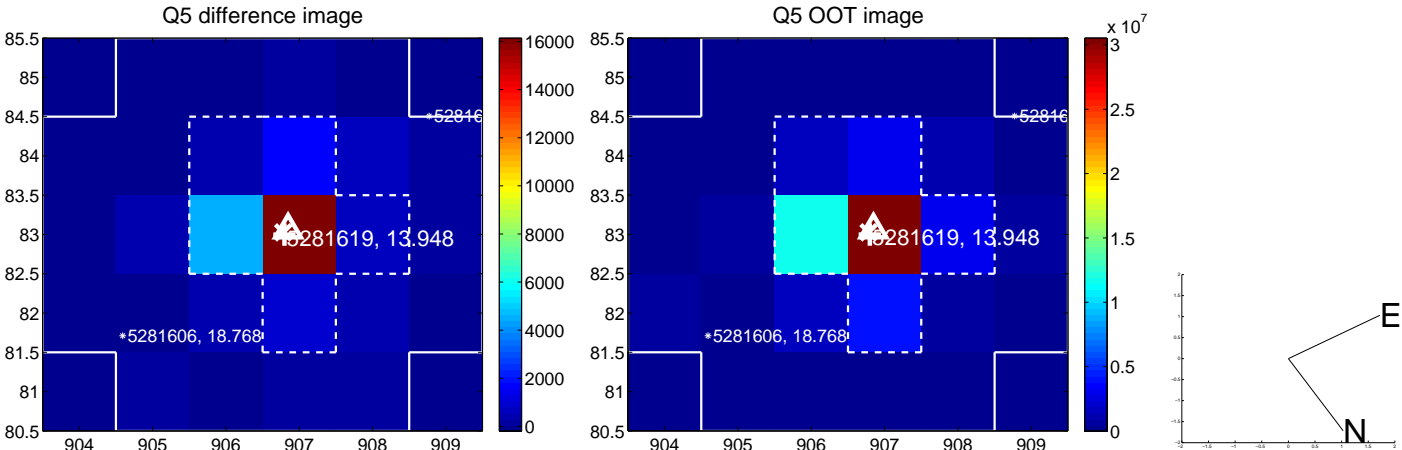


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

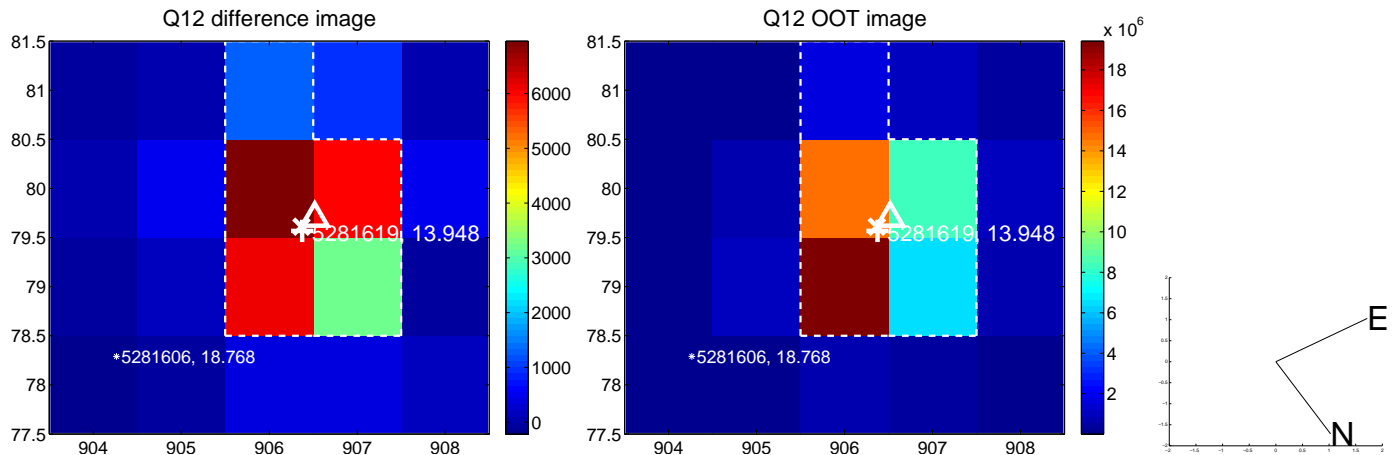
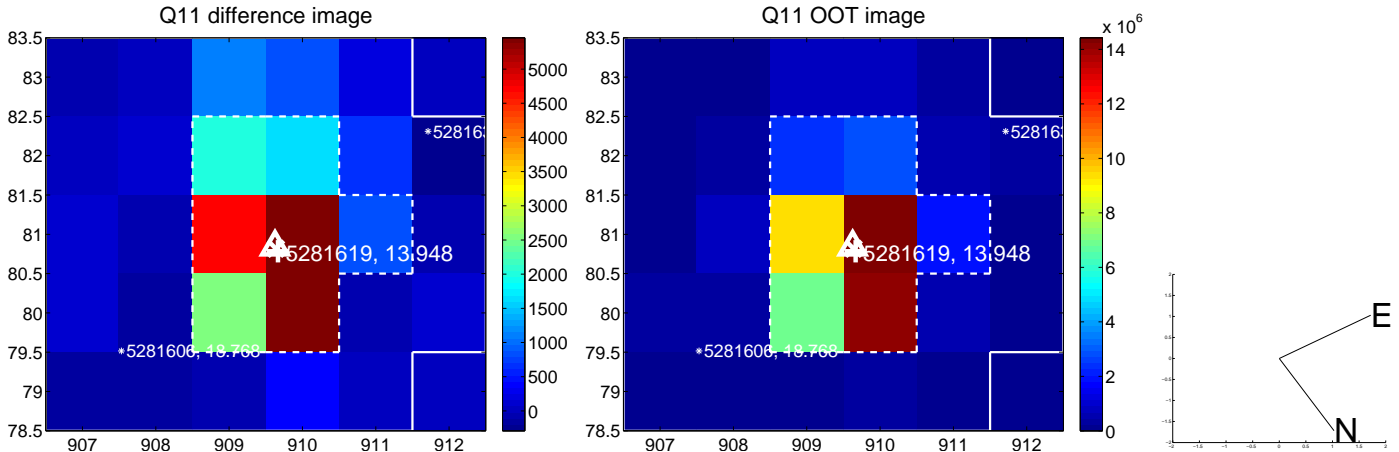
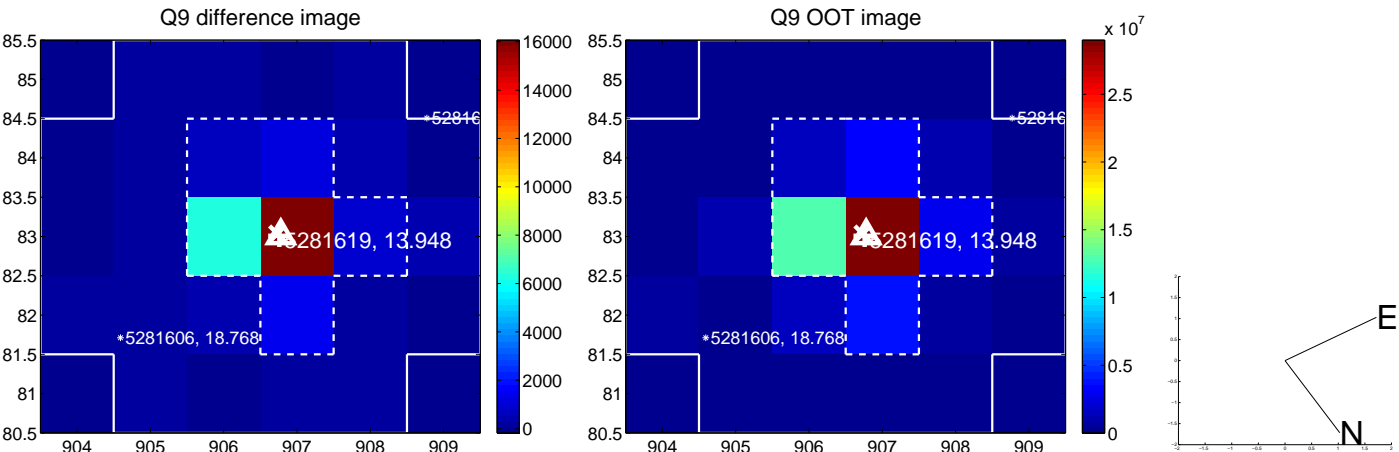
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



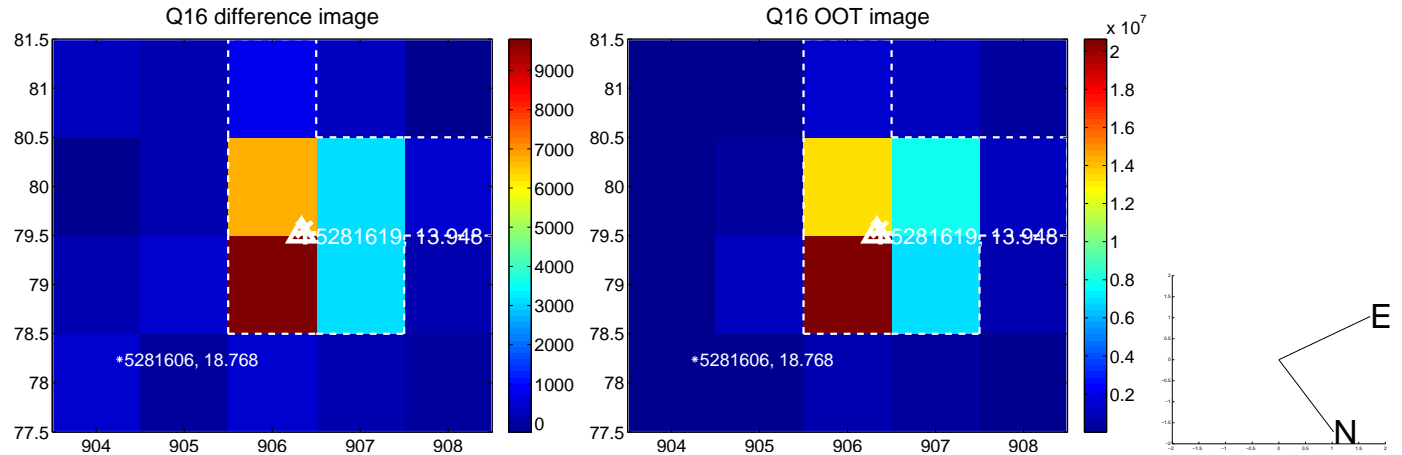
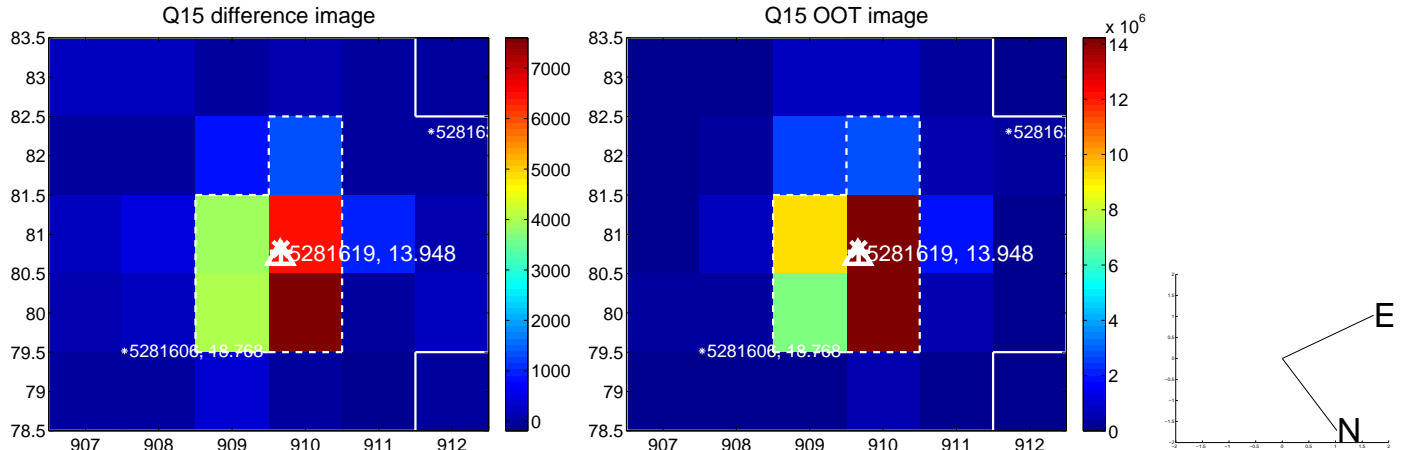
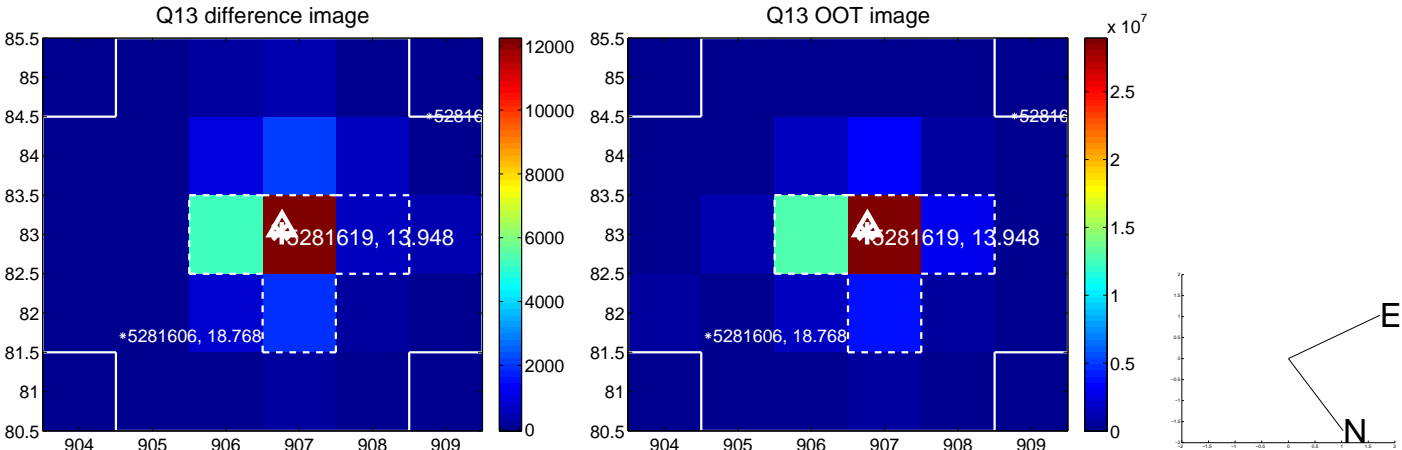
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



This astronomical image shows a field of stars against a dark, noisy background. A blue grid is overlaid on the image, with green numerical labels indicating coordinates. The labels are arranged in two rows: the top row shows values 54.0, 53.0, 52.0, 51.0, and 19:54:56; the bottom row shows 40.0, 30.0, 20.0, 10.0, and 0.0. The stars are concentrated in the upper right portion of the image, with a few brighter stars visible in the lower left.

This astronomical image shows a field of stars against a dark, noisy background. A blue grid is overlaid on the image, with green numerical labels indicating coordinates. The labels are arranged in two rows: the top row shows values 54.0, 53.0, 52.0, 51.0, and 19:54:56; the bottom row shows 40.0, 30.0, 20.0, 10.0, and 0.0. The stars are represented as bright, irregular white and yellow spots of varying sizes and intensities.

KIC 005281619

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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005281619-04	OBS	No	3.124080	131.707220	29.0	19.514	9.7	11.9	1.72	7797	0.94	3930.90

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005281619-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
005281619-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_NOFITS
005281619-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005281619-04	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—SAME_NTL_PERIOD

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

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

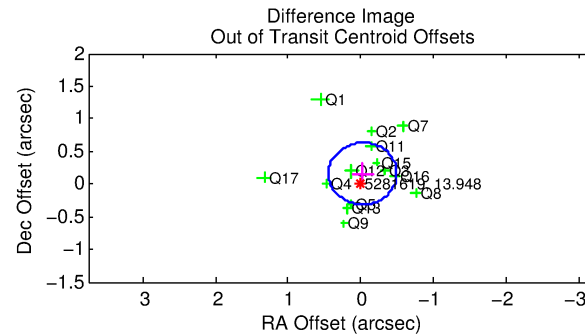
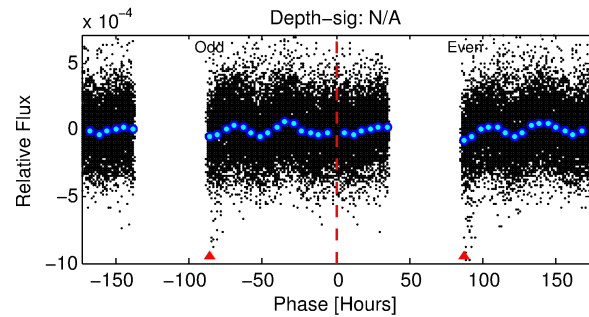
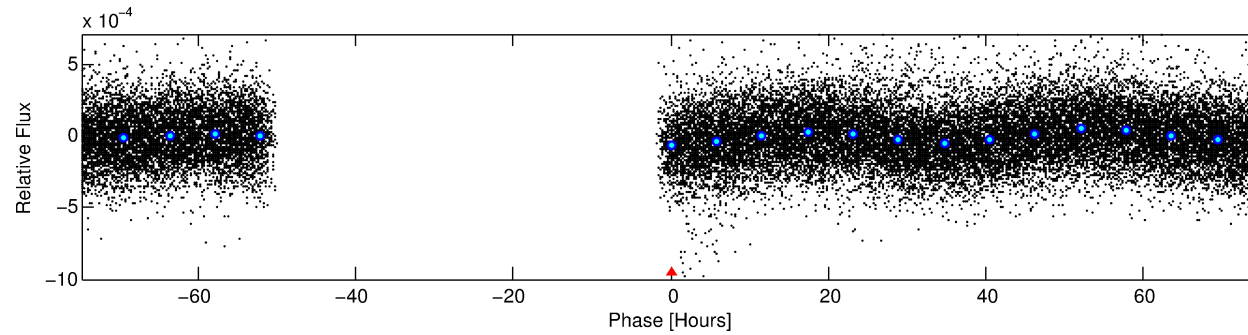
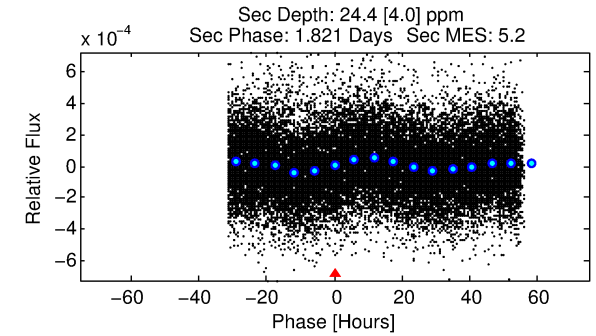
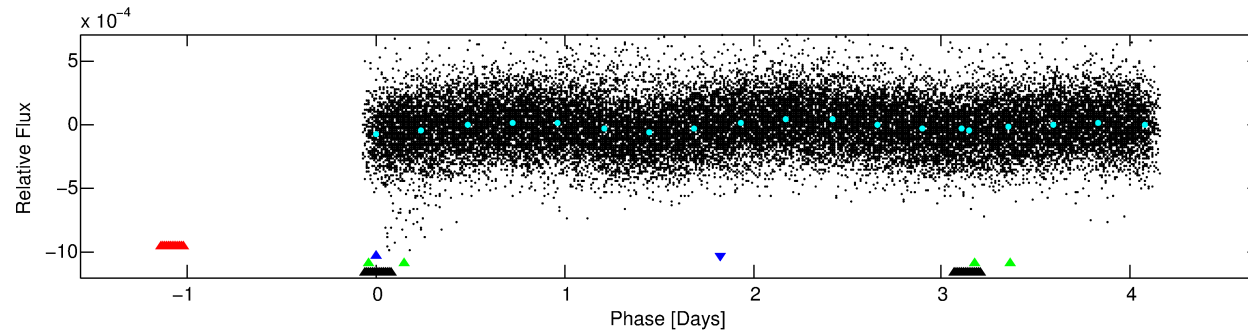
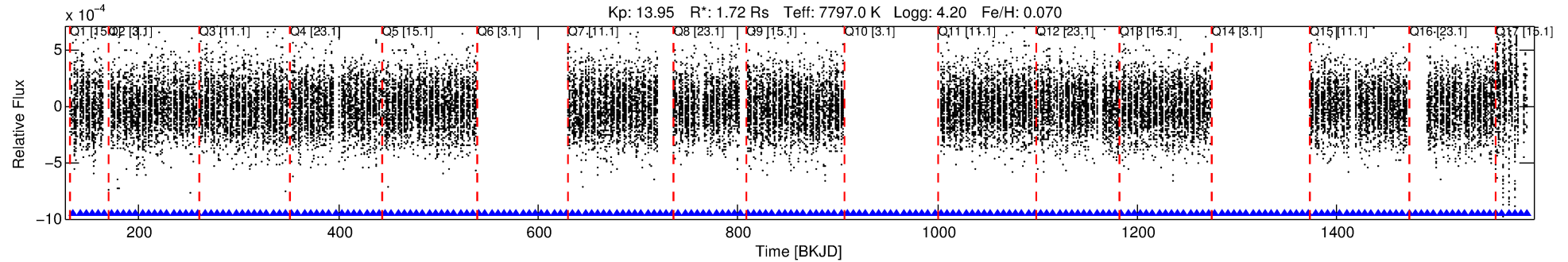
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005281619-02

No Significant Match Found

DV One-Page Summary

KIC: 5281619 Candidate: 2 of 4 Period: 6.249 d



TPS TCE Results:

Period = 6.24872 d
Epoch = 136.1698 BKJD

DV fit results are unavailable

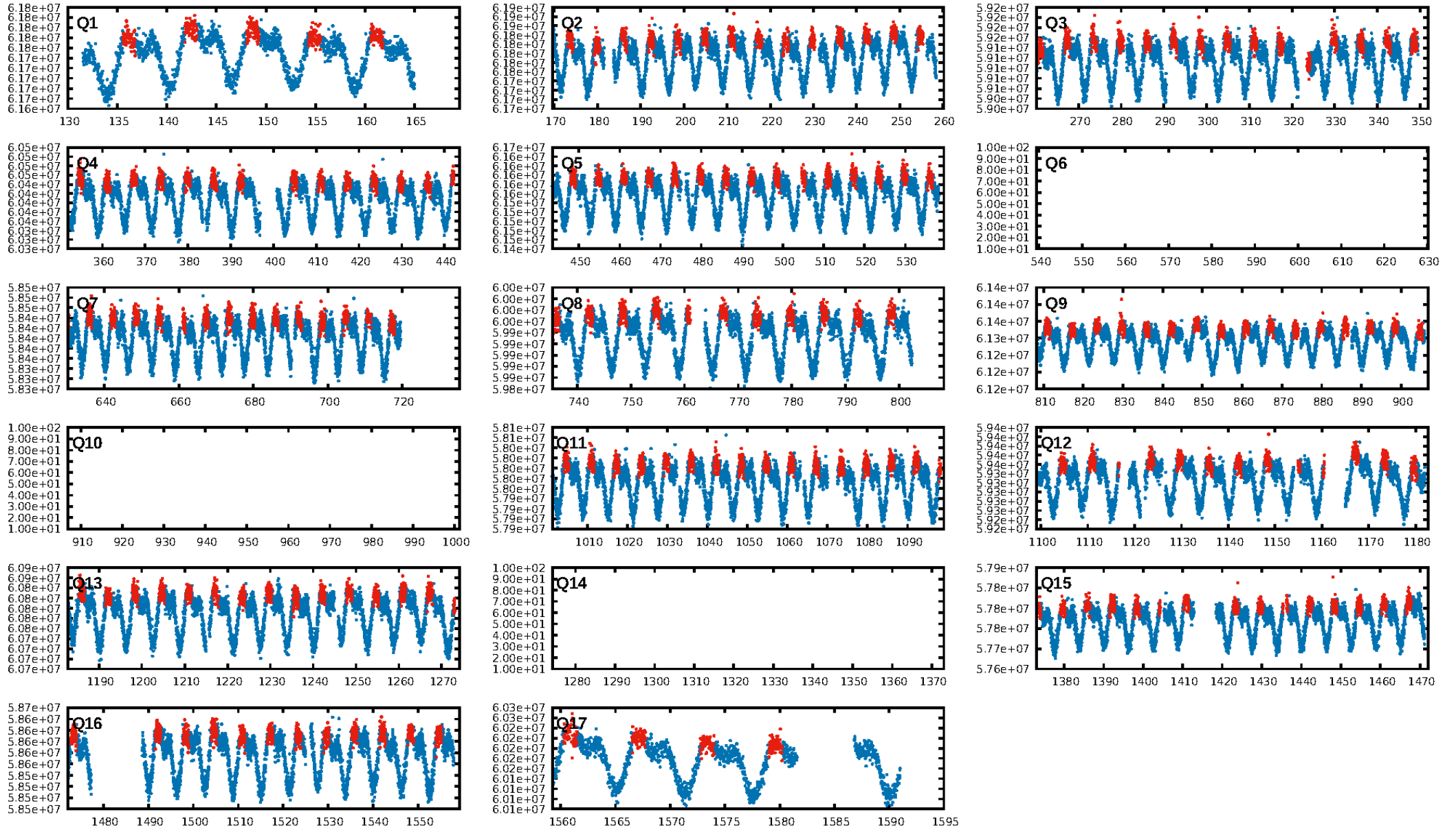
DV Diagnostic Results:

ShortPeriod-sig: 99.8% [3.05 σ]
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [166/166]
GhostDiagnostic-chr: 0.4161
Centroid-sig: 0.2%
Centroid-so: 0.250 arcsec [3.19 σ]
OotOffset-rm: 0.163 arcsec [1.04 σ]
KicOffset-rm: 0.250 arcsec [1.60 σ]
OotOffset-st: 1/4/4/5 [14]
KicOffset-st: 1/4/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 0.00 [0/14]

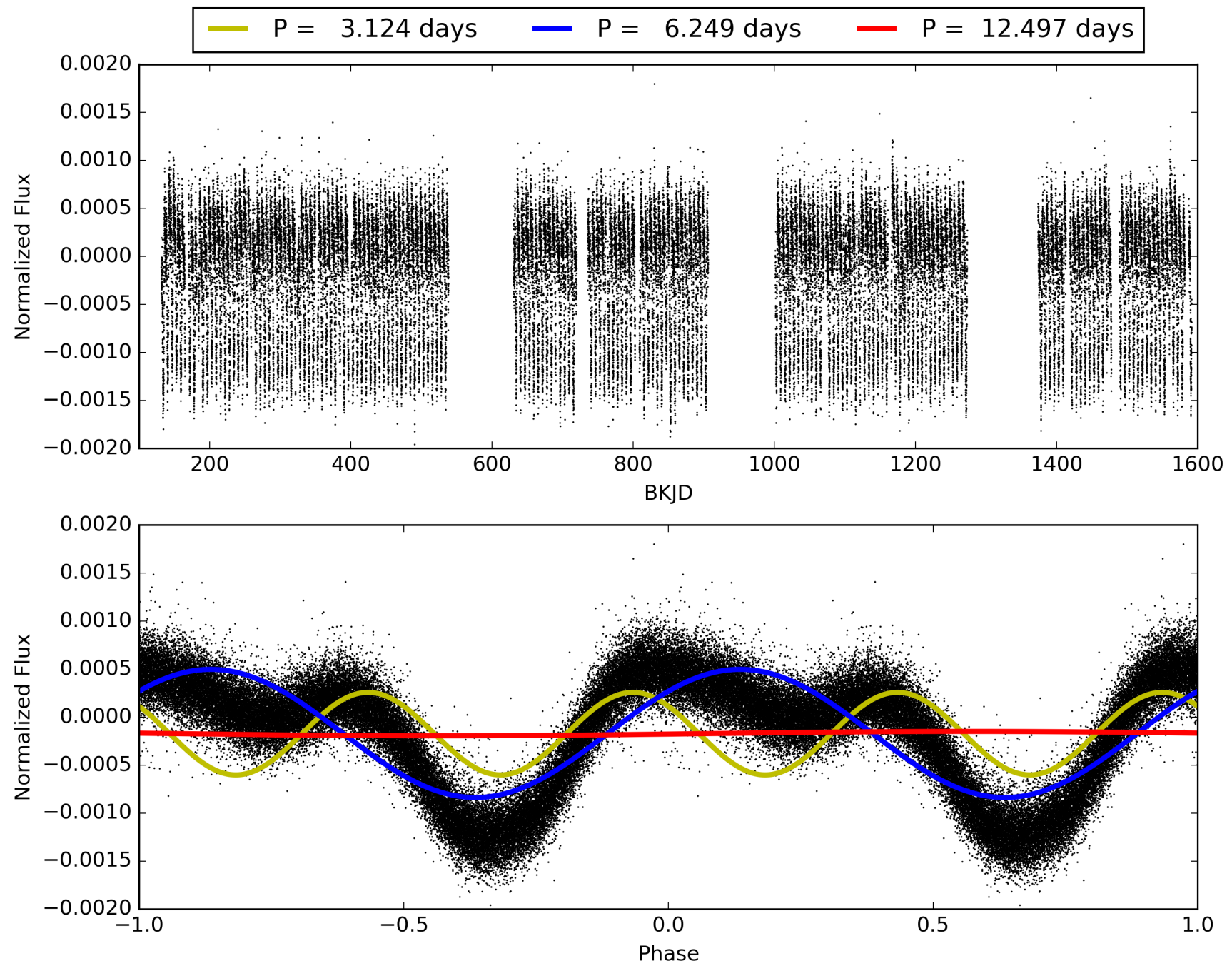
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 15:49:03 Z

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

TCE 005281619-02, PDC Light Curves

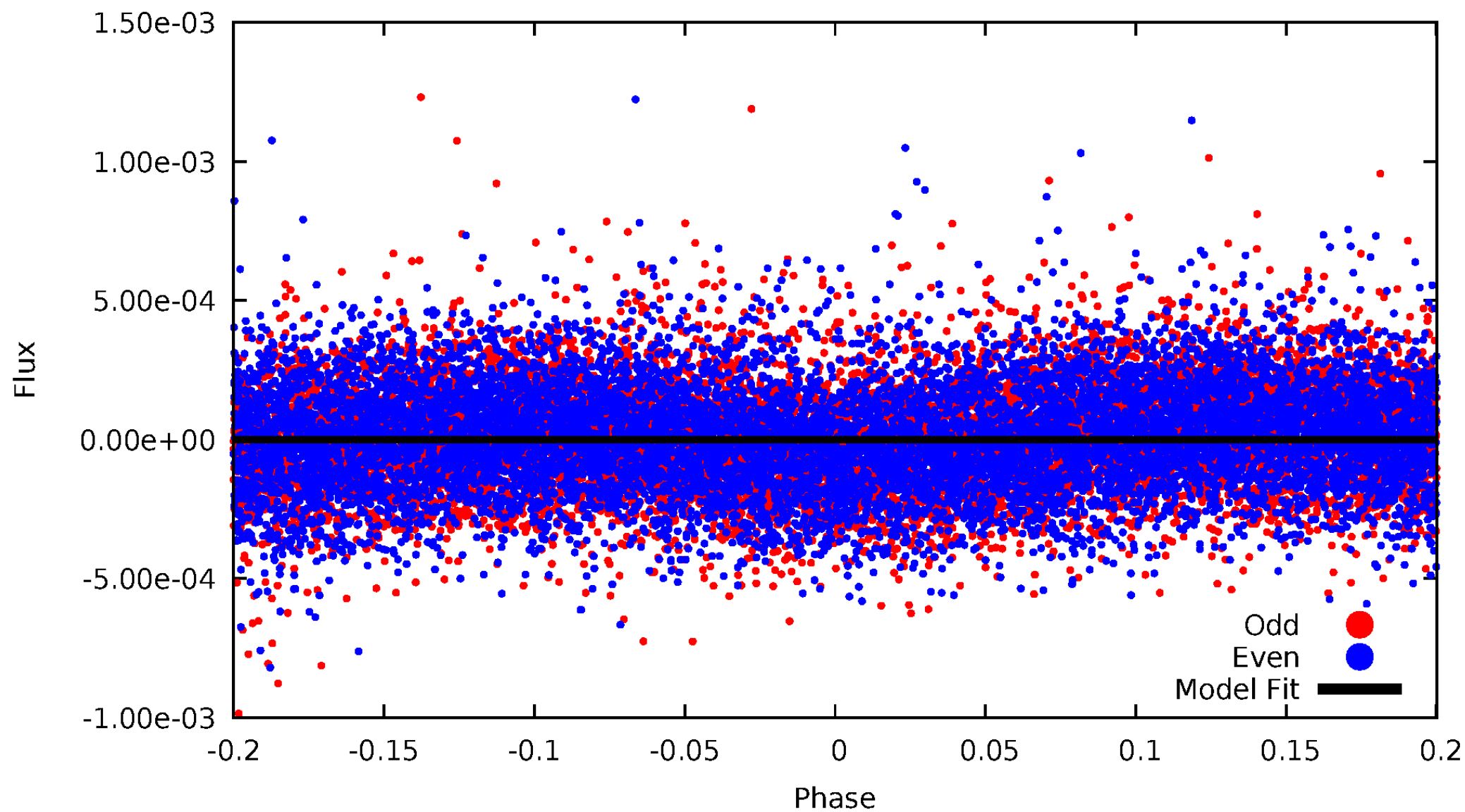


TCE 005281619-02



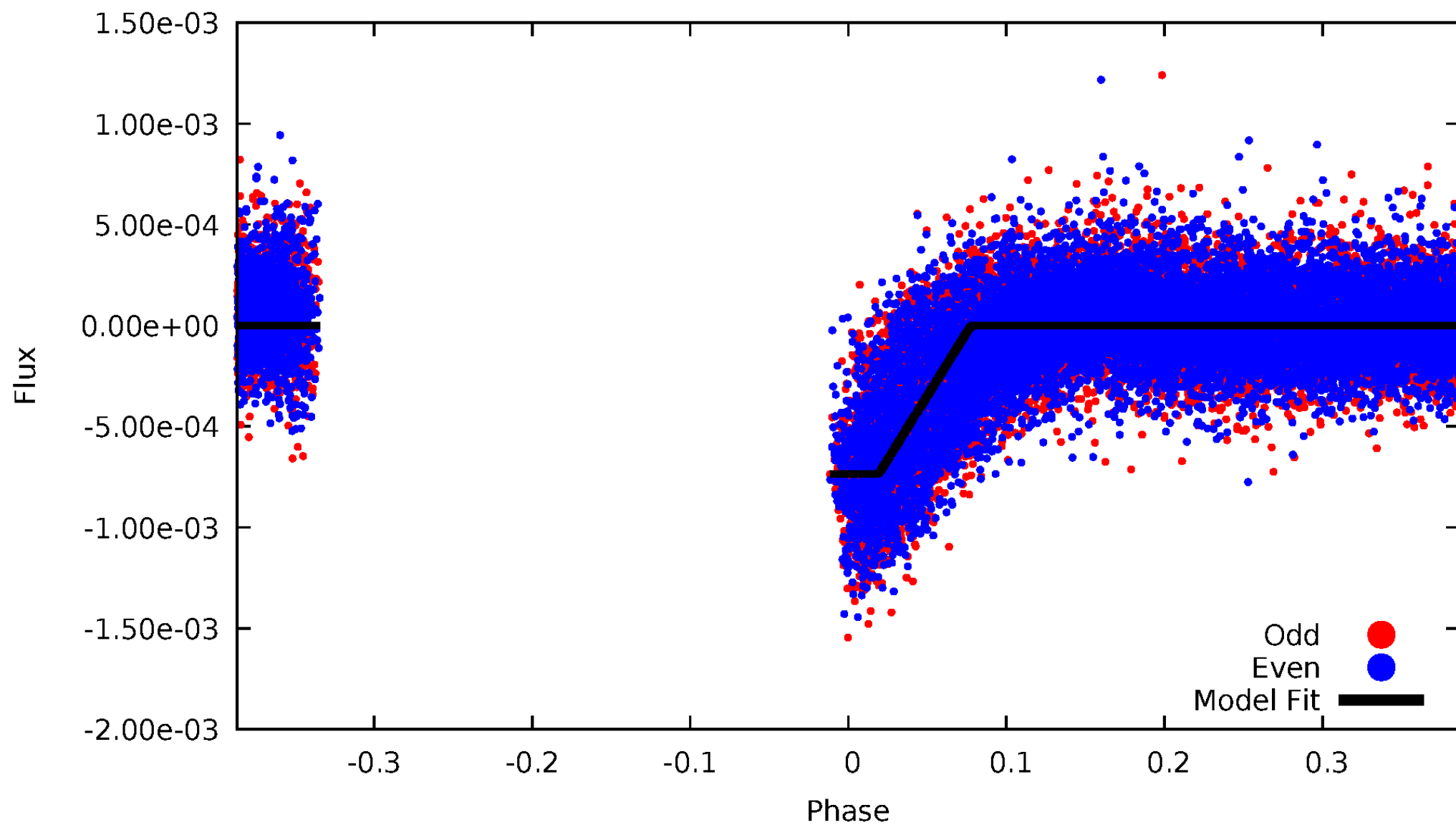
DV Odd/Even

TCE 005281619-02



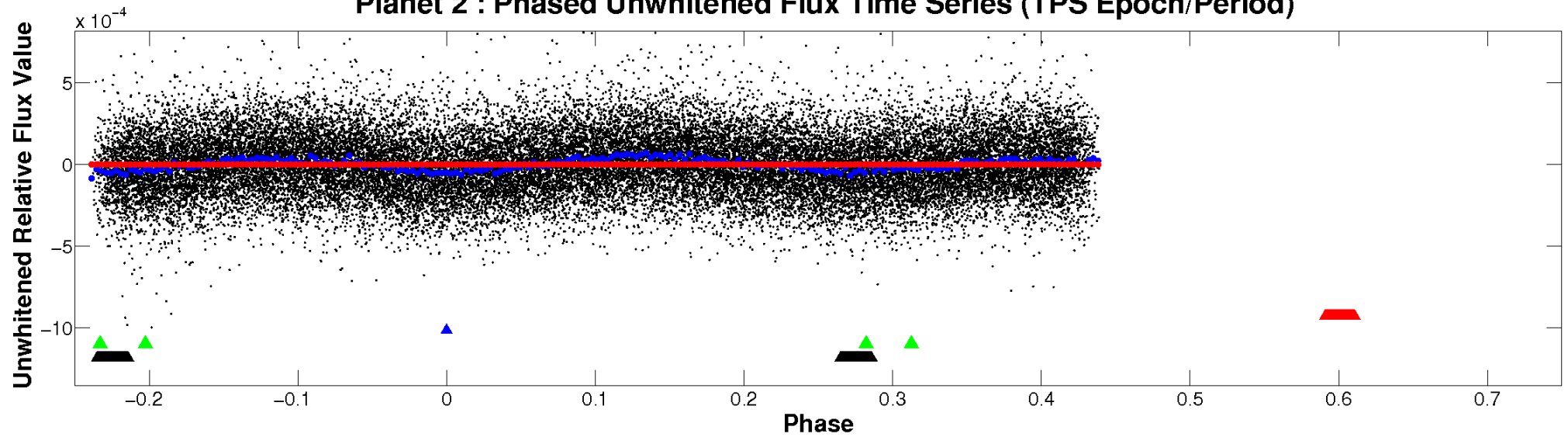
ALT Odd/Even

TCE 005281619-02

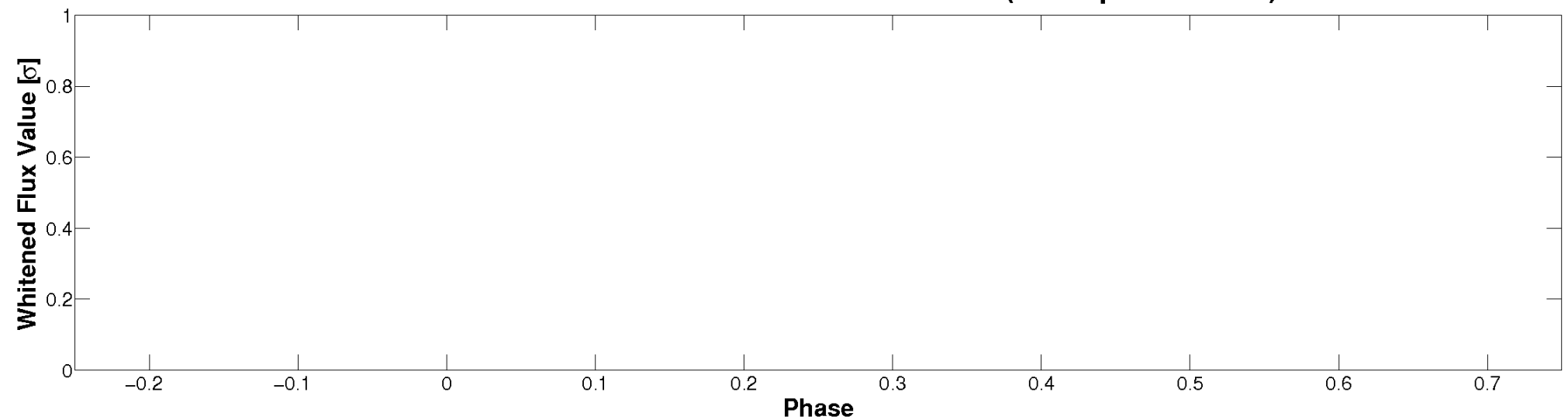


Non-Whitened Vs. Whitened Light Curve

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

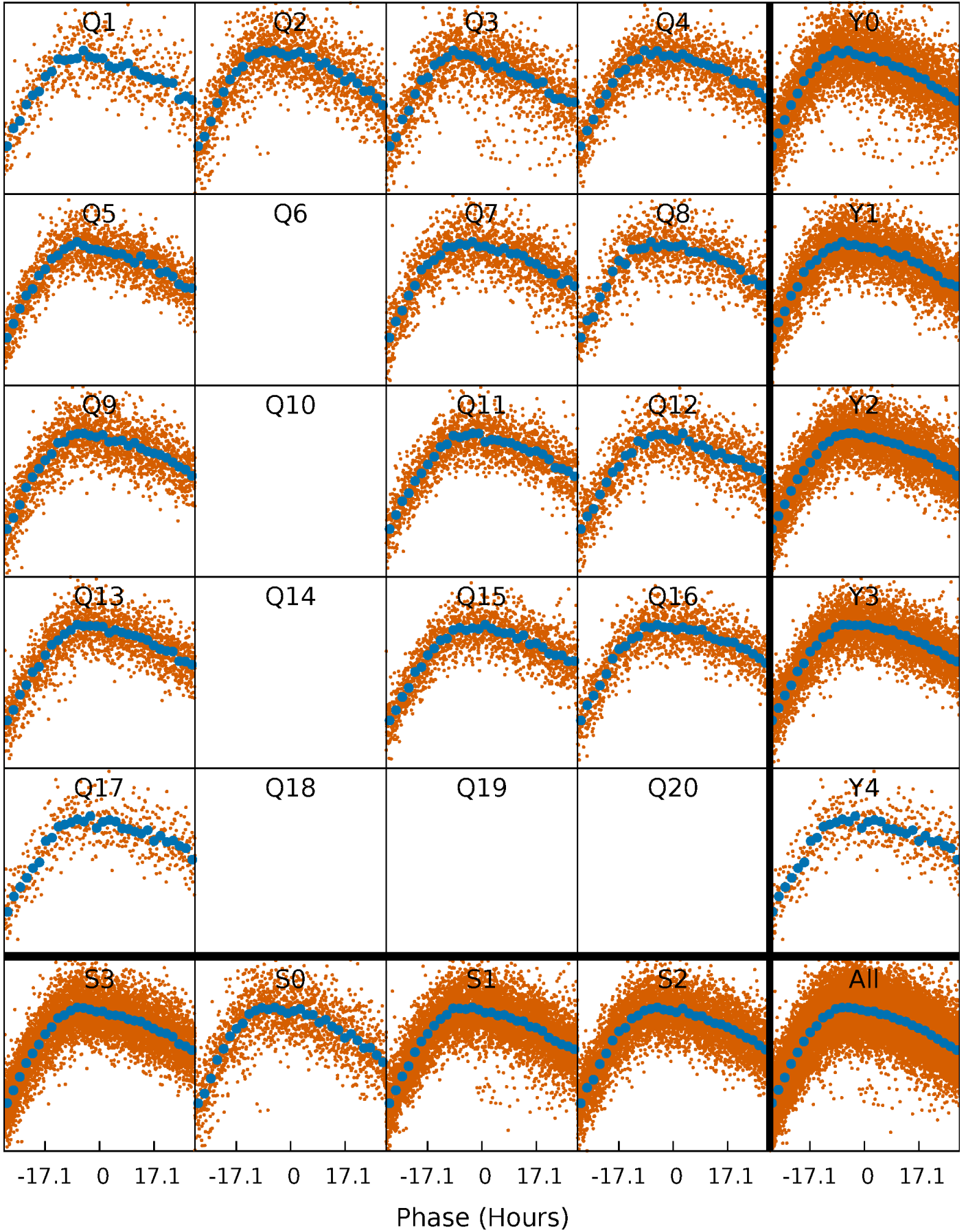


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



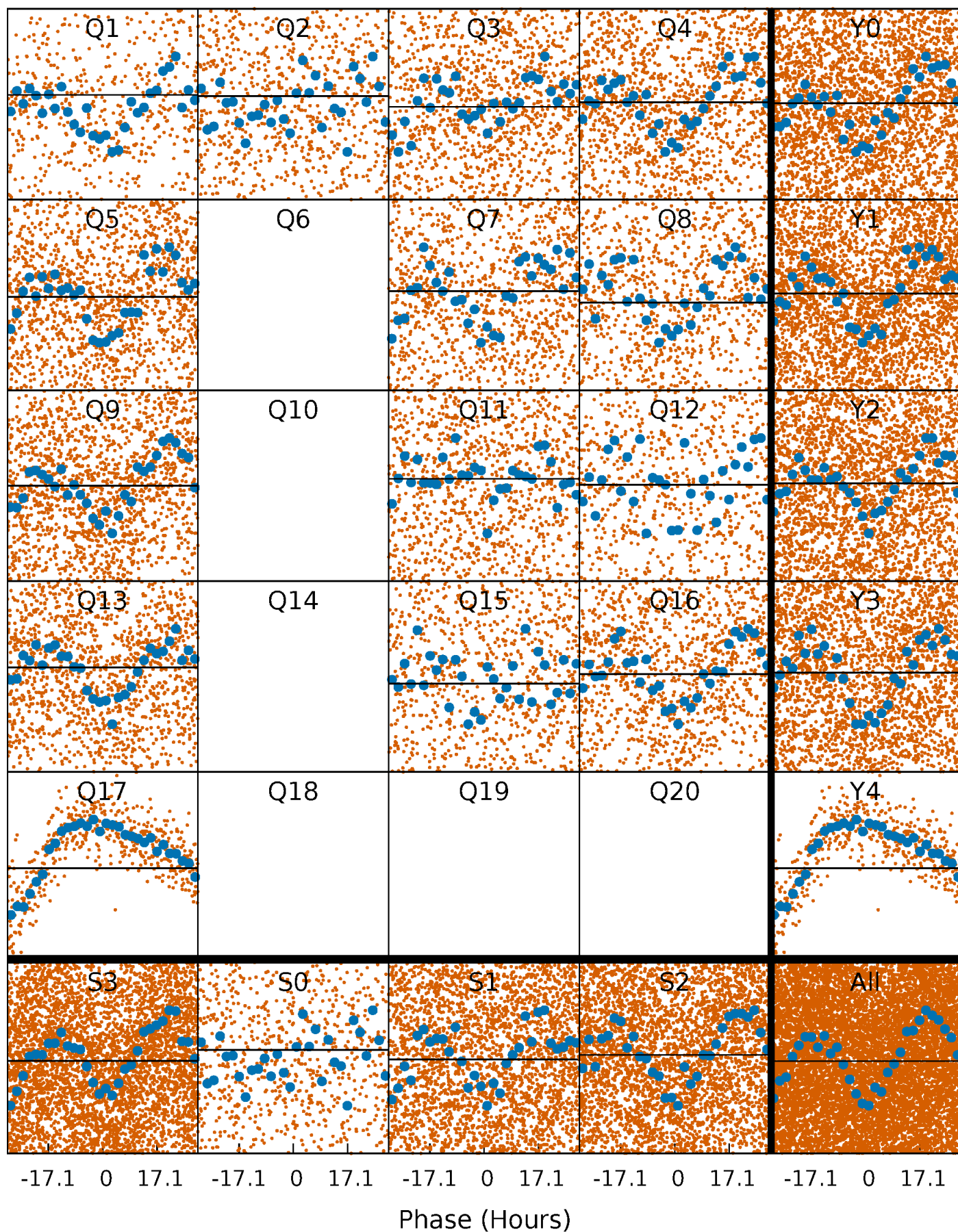
PDC Quarter-Phased Transit Curves

TCE 005281619-02 P= 6.248720 Days $T_0=136.169846$ (BKJD)



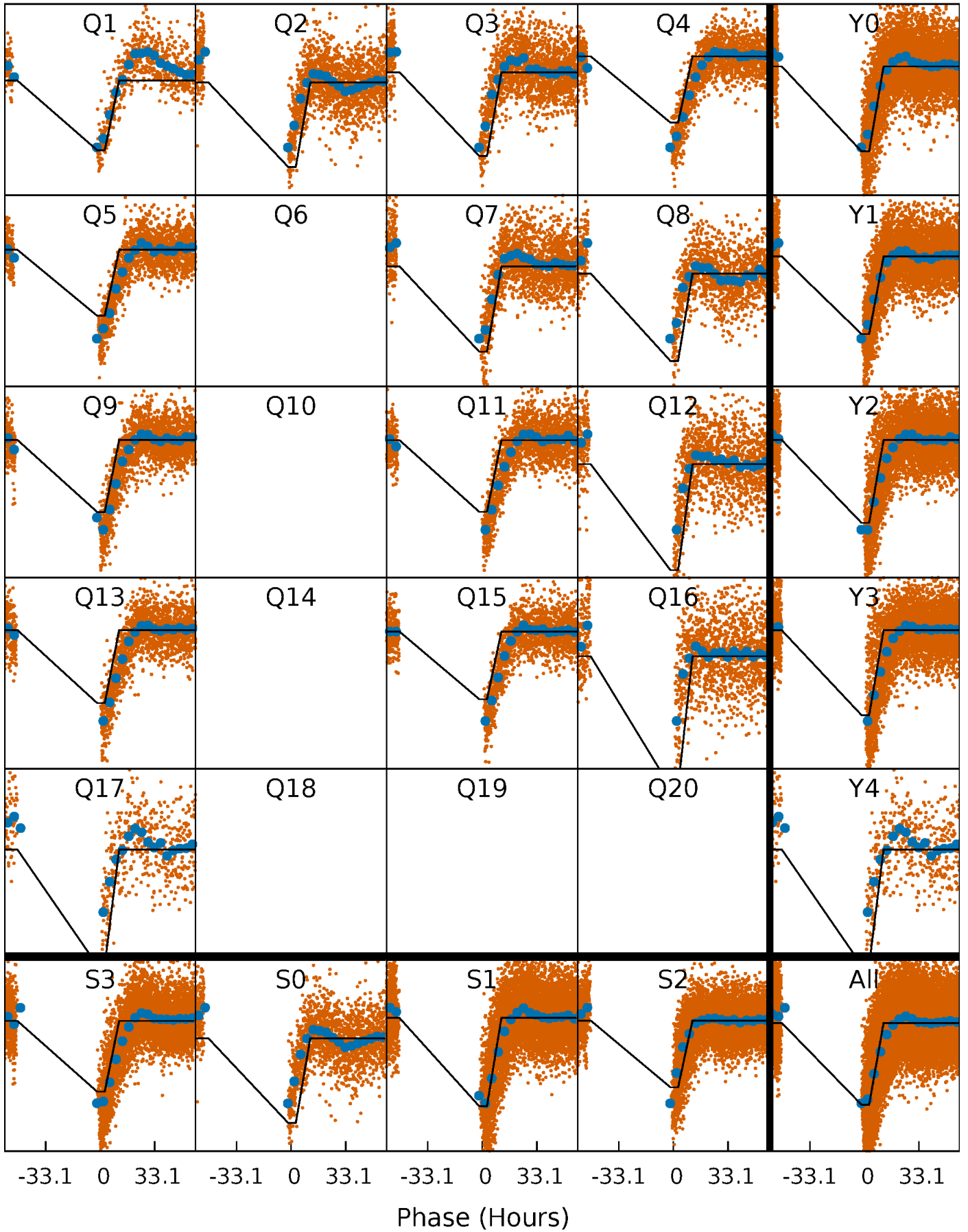
DV Quarter-Phased Transit Curves

TCE 005281619-02 P= 6.248720 Days $T_0=136.169846$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

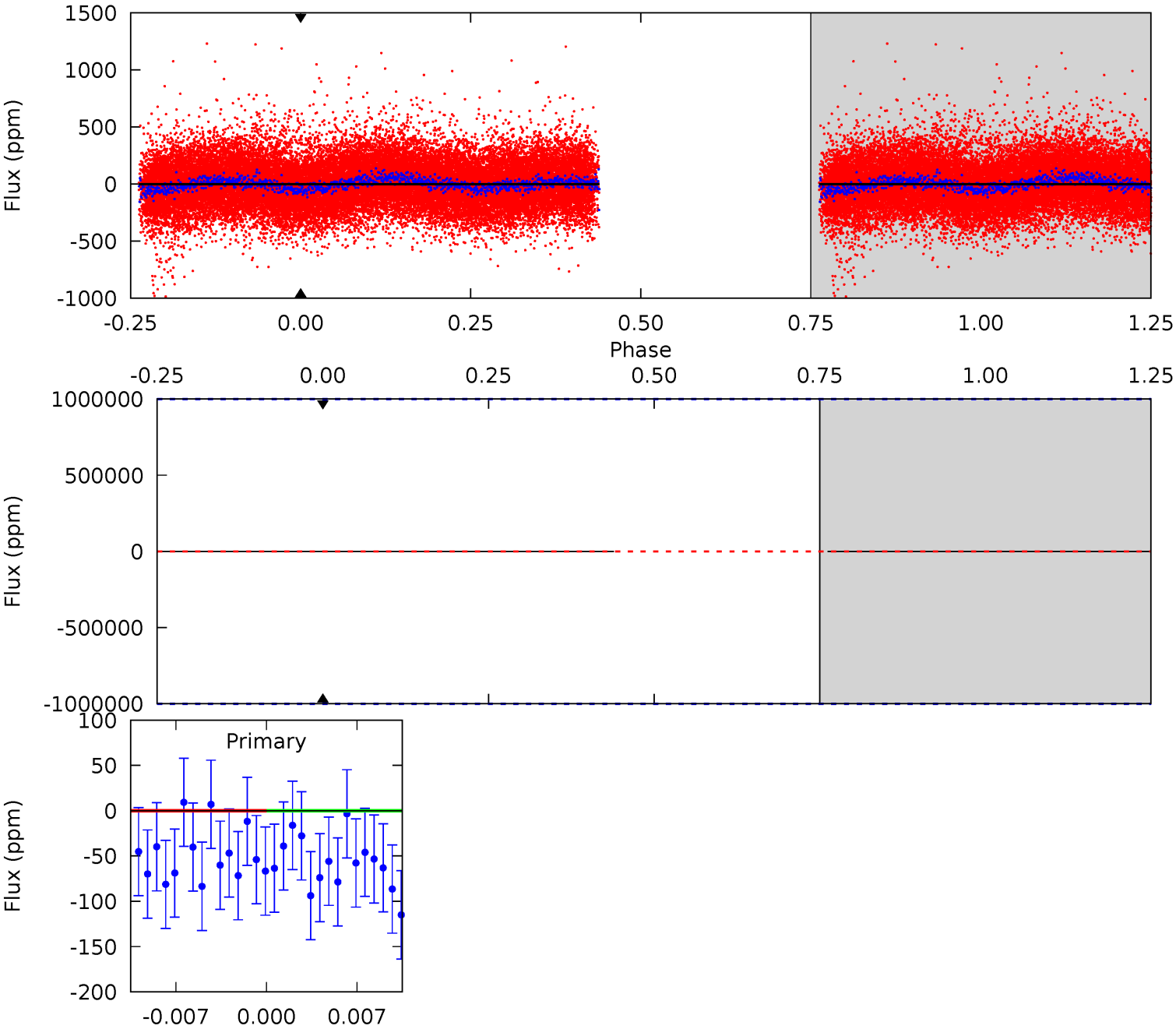
TCE 005281619-02 P= 6.248720 Days $T_0=134.756107$ (BKJD)



DV Model-Shift Uniqueness Test

005281619-02, P = 6.248720 Days, E = 129.921126 Days

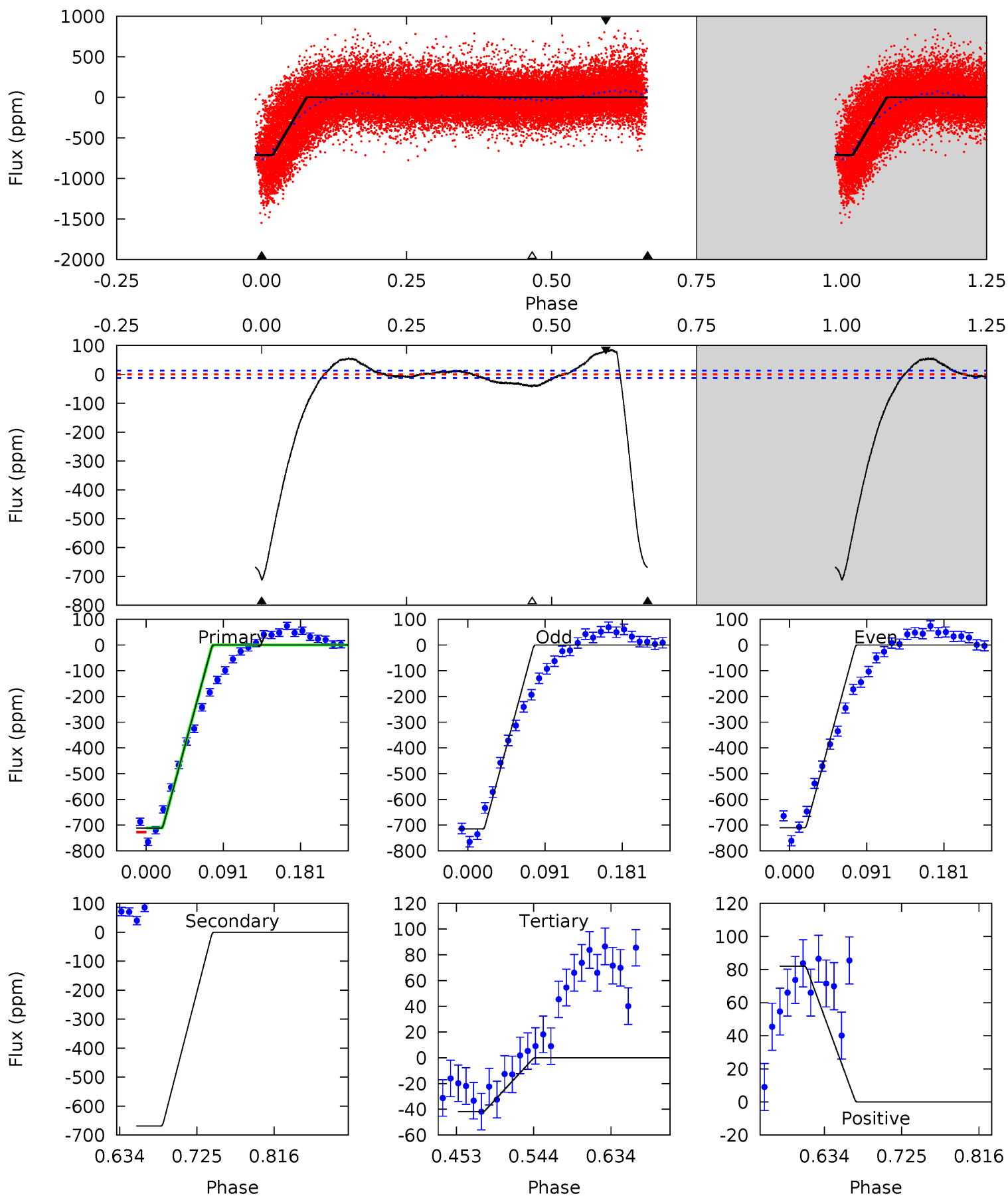
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

005281619-02, P = 6.248720 Days, E = 128.507387 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
249.9	234.7	14.7	28.8	4.59	1.69	22.7	235.2	221.1	220.1	205.9	0.91	0.90	0.11	0.85



Stellar Parameters For KIC 005281619

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	7797^{+69}_{-93}	$4.197^{+0.045}_{-0.135}$	$0.070^{+0.150}_{-0.250}$	$1.719^{+0.319}_{-0.137}$	$1.694^{+0.118}_{-0.132}$	$0.470^{+0.105}_{-0.177}$
	+1%/-1%	+1%/-3%	+214%/-357%	+19%/-8%	+7%/-8%	+22%/-38%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 005281619-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$13.27^{+15.77}_{-8.86}$	2256^{+101}_{-61}	2645^{+44881}_{-46748}	$0.679^{+3329.625}_{-3019.222}$
Alt.	-668 ± 3	$15.29^{+15.57}_{-10.41}$	2256^{+103}_{-60}	4527^{+3341}_{-1060}	$9.940^{+83.951}_{-7.519}$

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

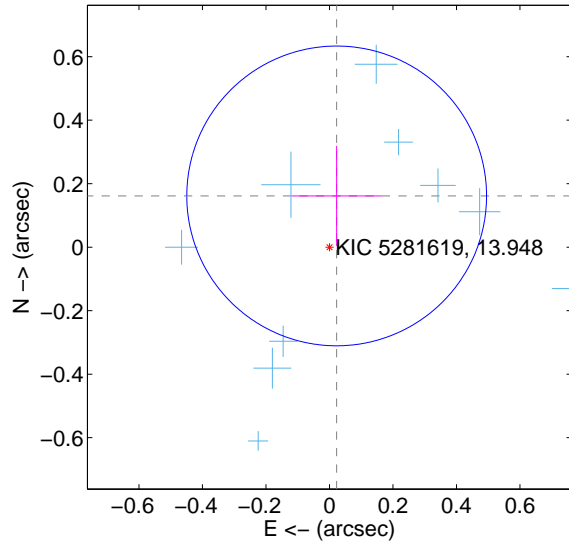
Supplemental centroid analysis for 005281619-02. Kepler magnitude: 13.95. Transit SNR -1.00

There are 14 quarters with good PRF difference image offsets

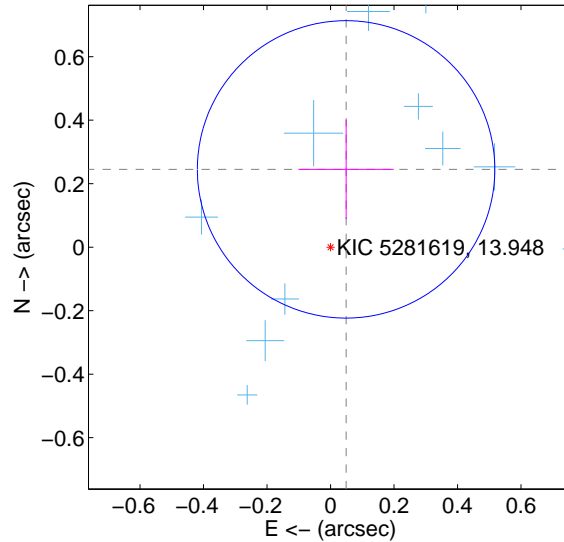
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.163 ± 0.157	1.04	-0.023 ± 0.142	0.161 ± 0.158
PRF-fit source offset from KIC position	0.250 ± 0.156	1.60	-0.049 ± 0.150	0.245 ± 0.156
photometric centroid source offset	0.25 ± 0.08	3.19	0.03 ± 0.08	0.25 ± 0.08

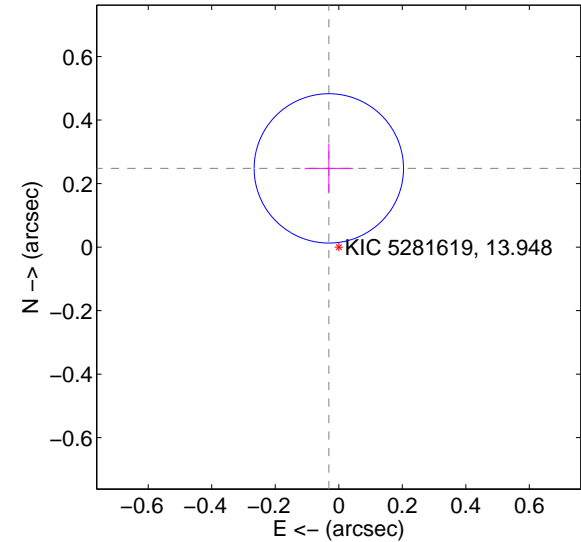
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

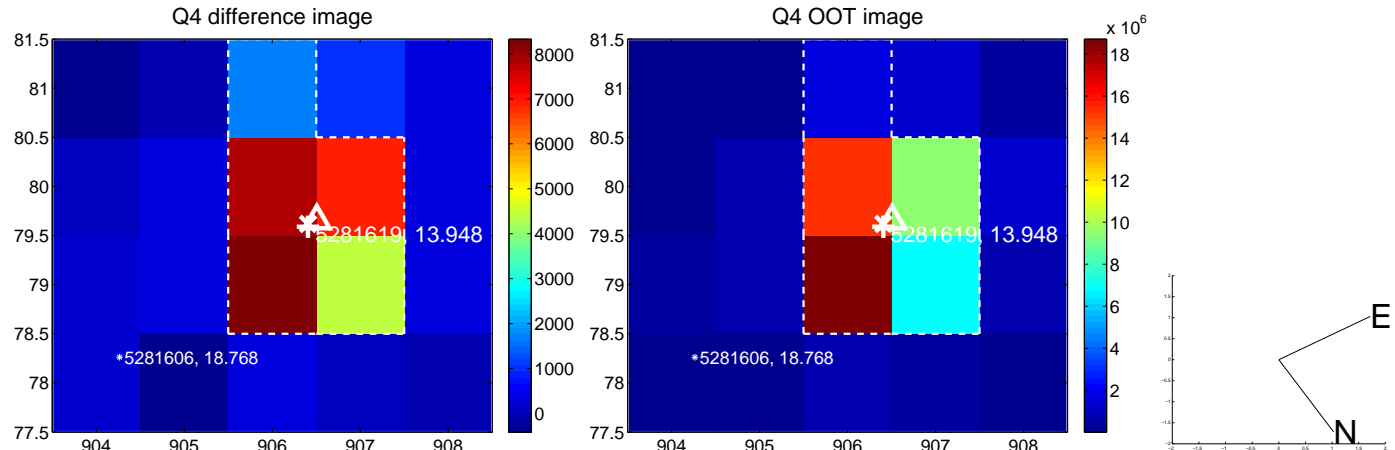
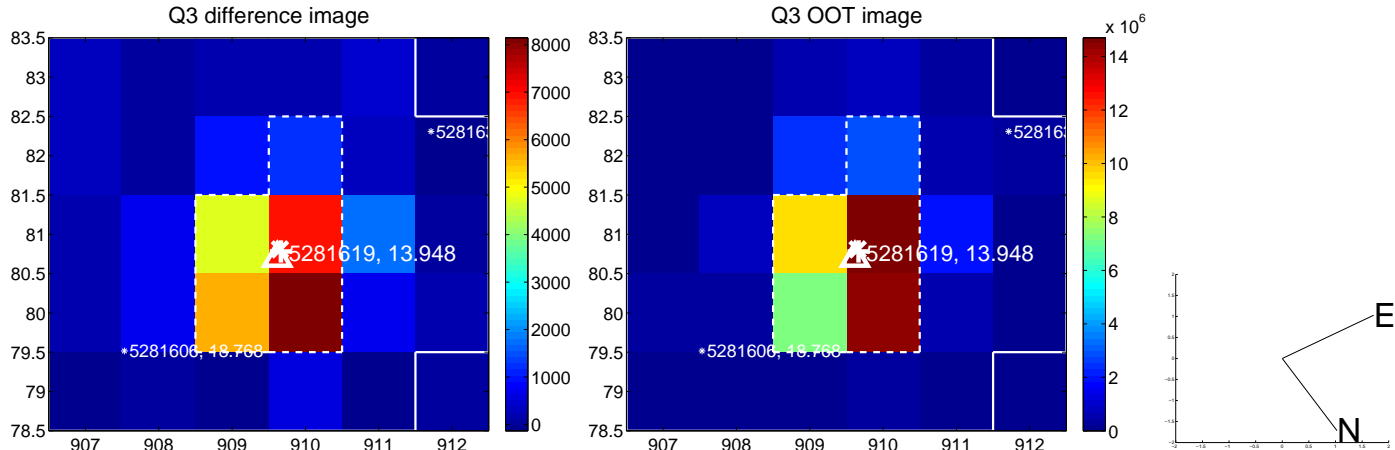
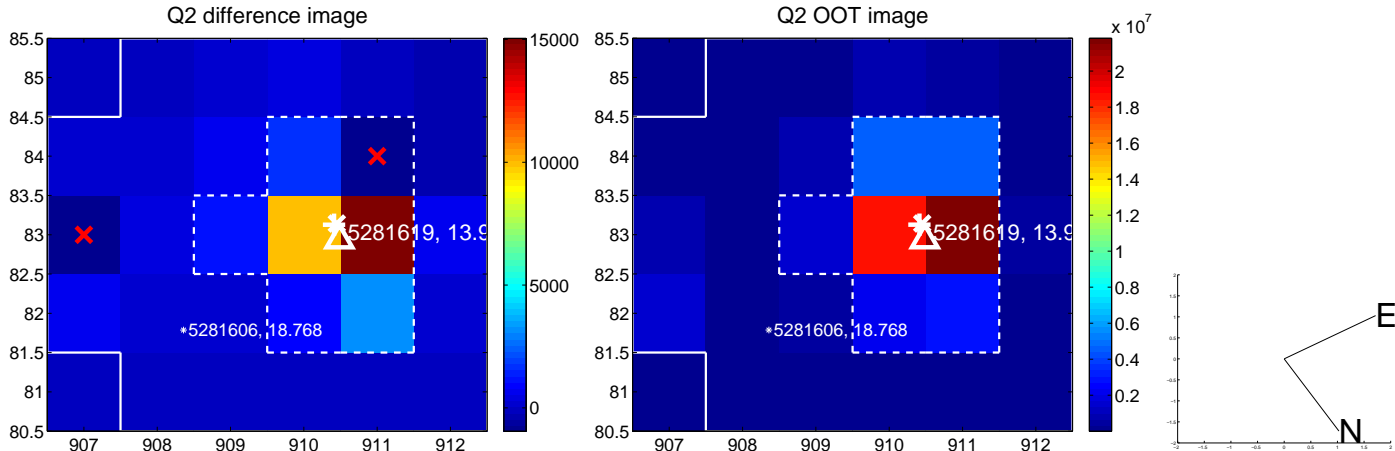
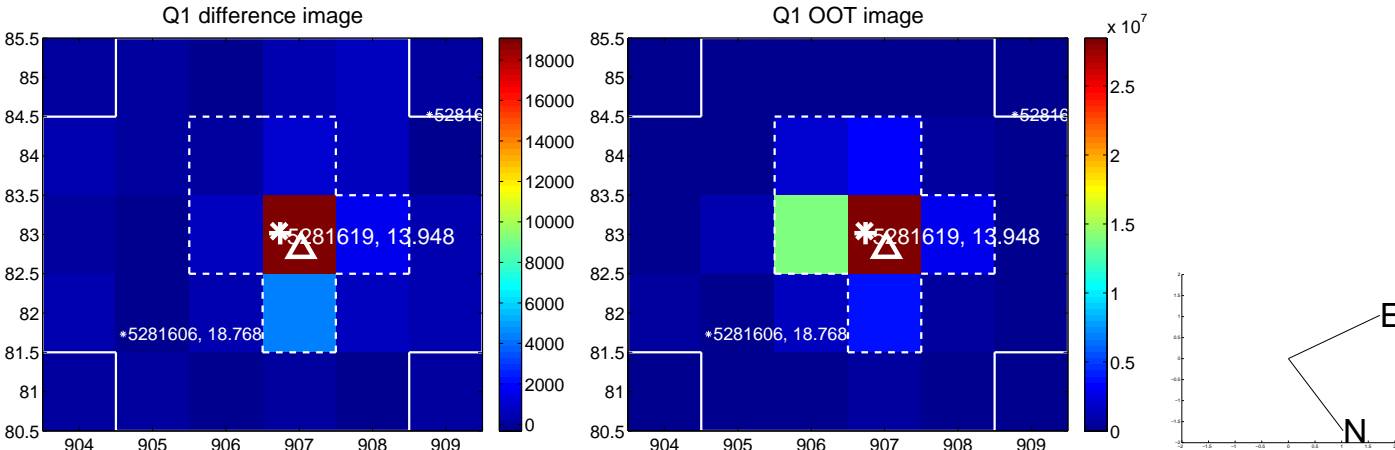


offset from photometric centroids

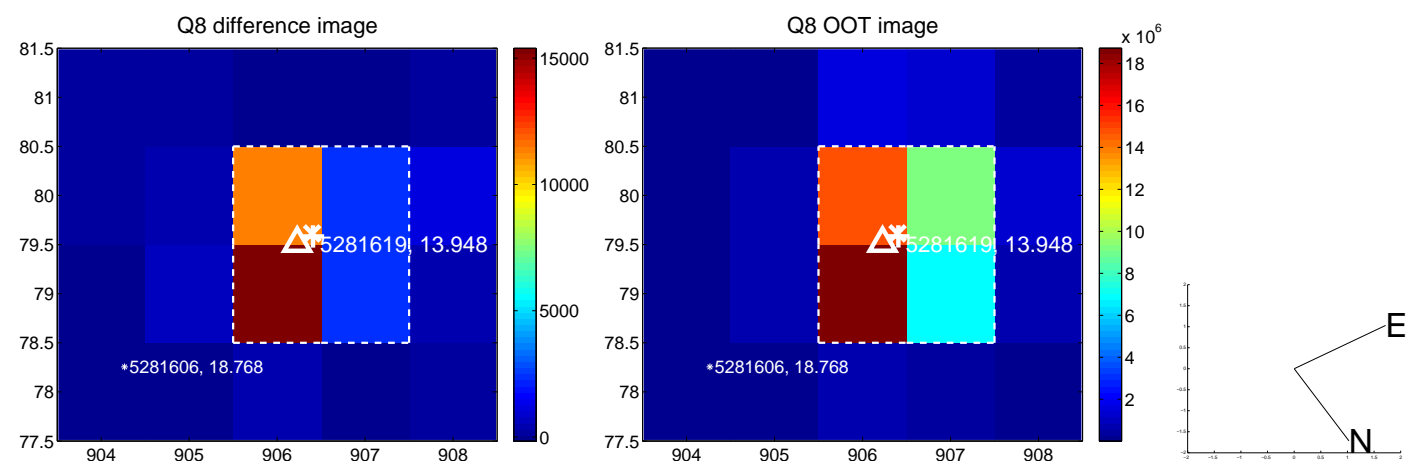
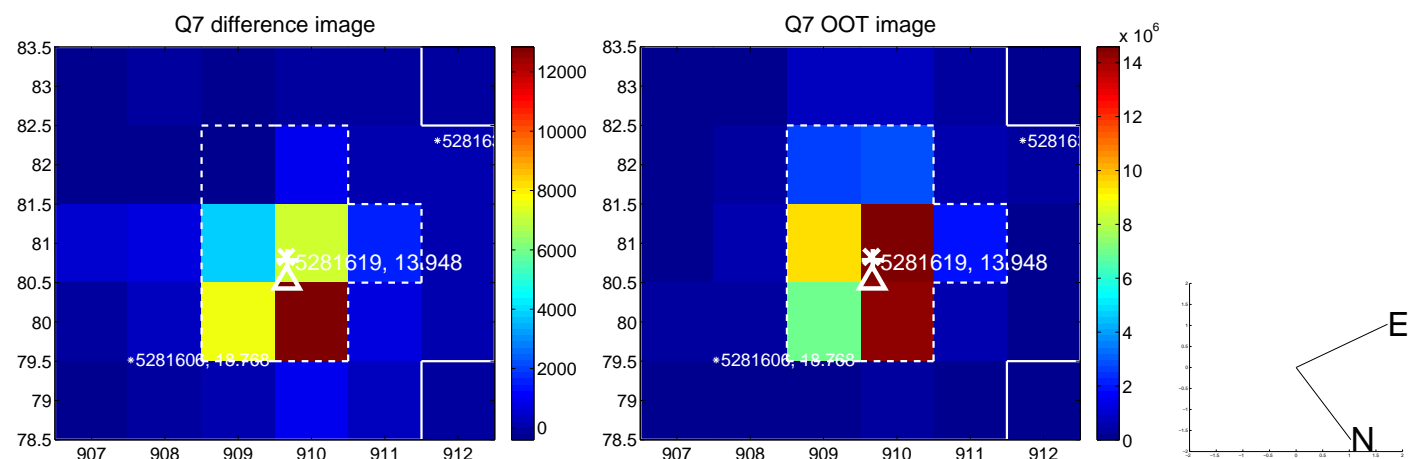
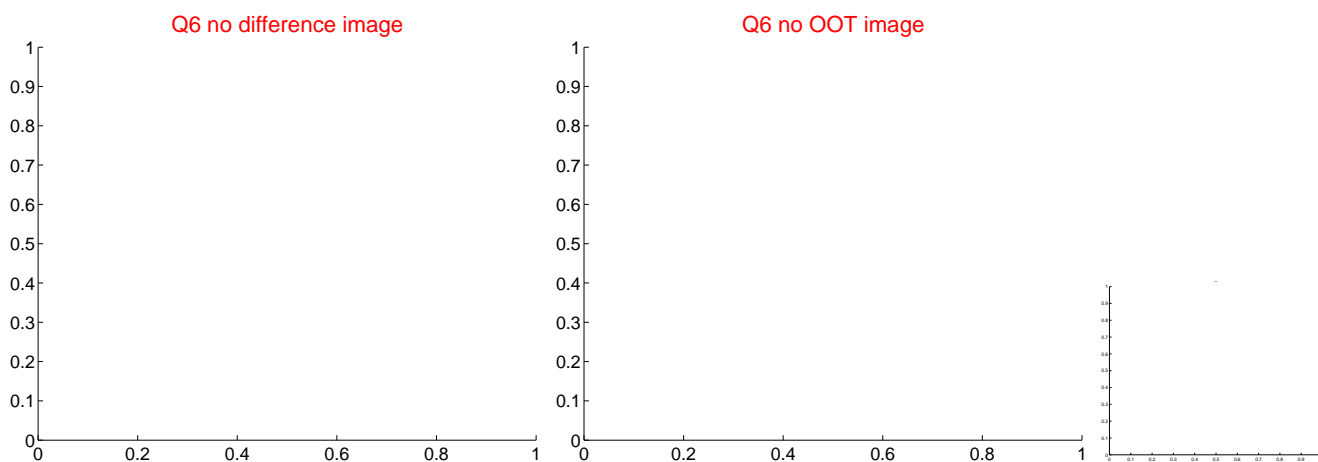
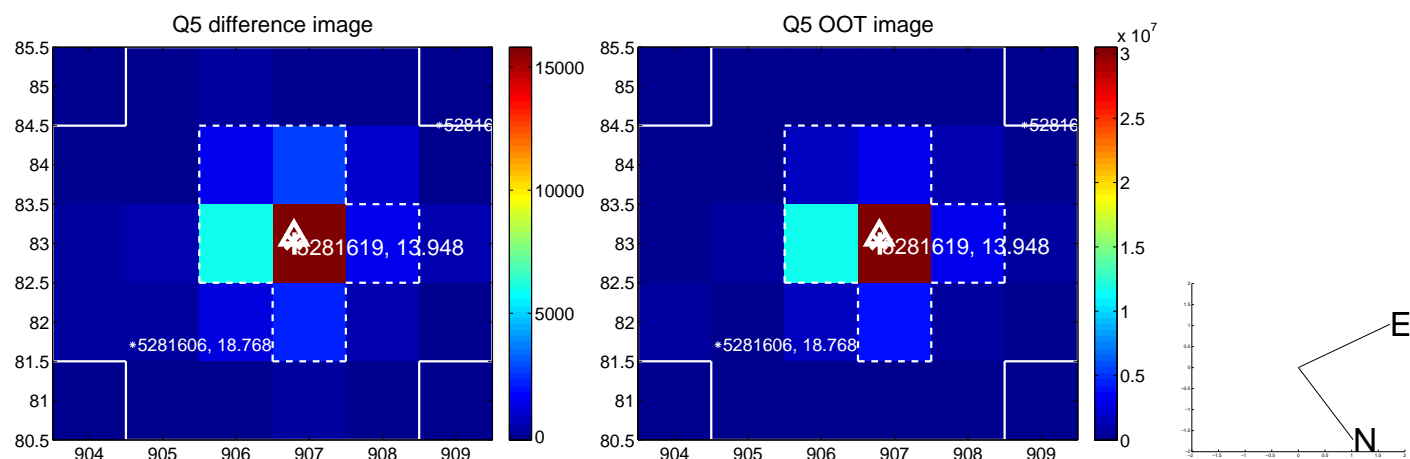


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

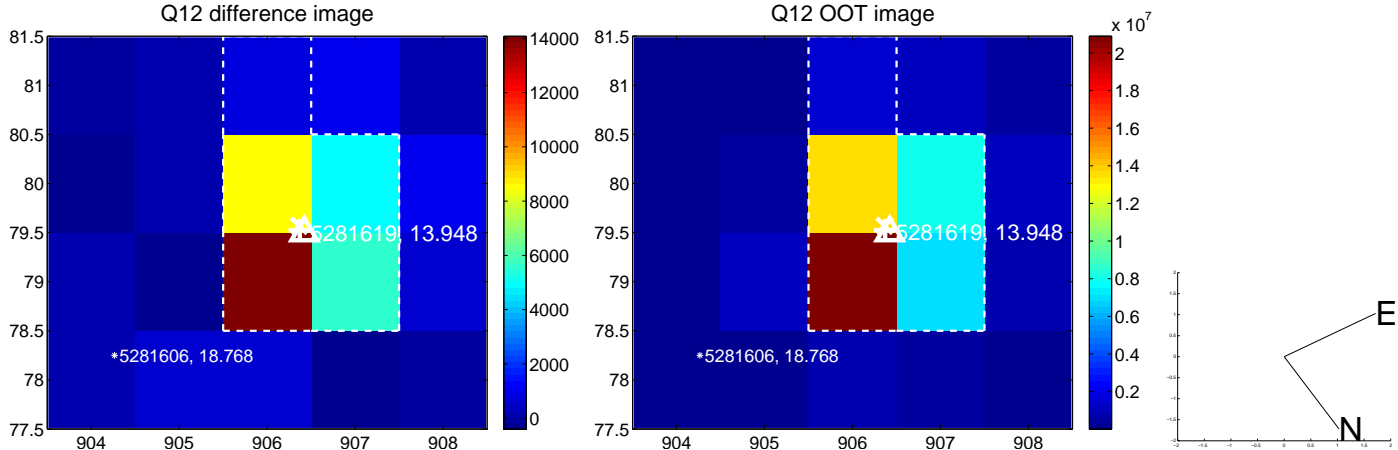
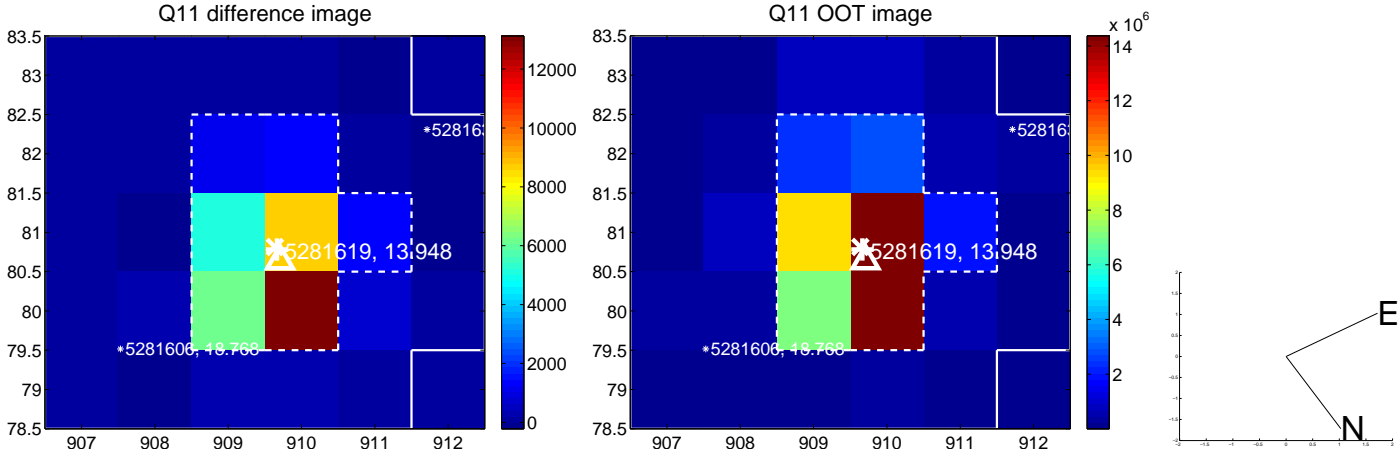
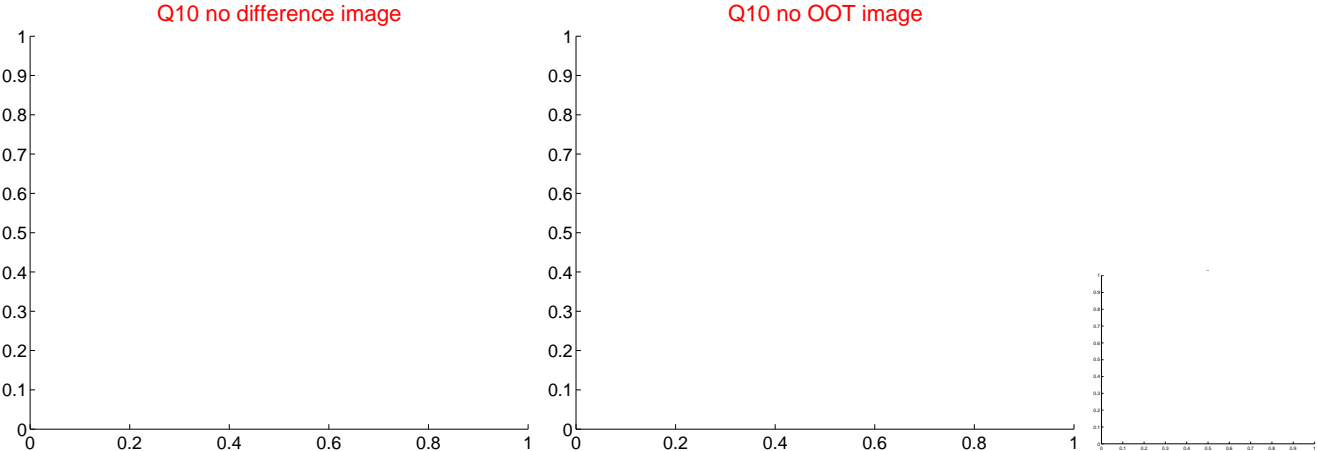
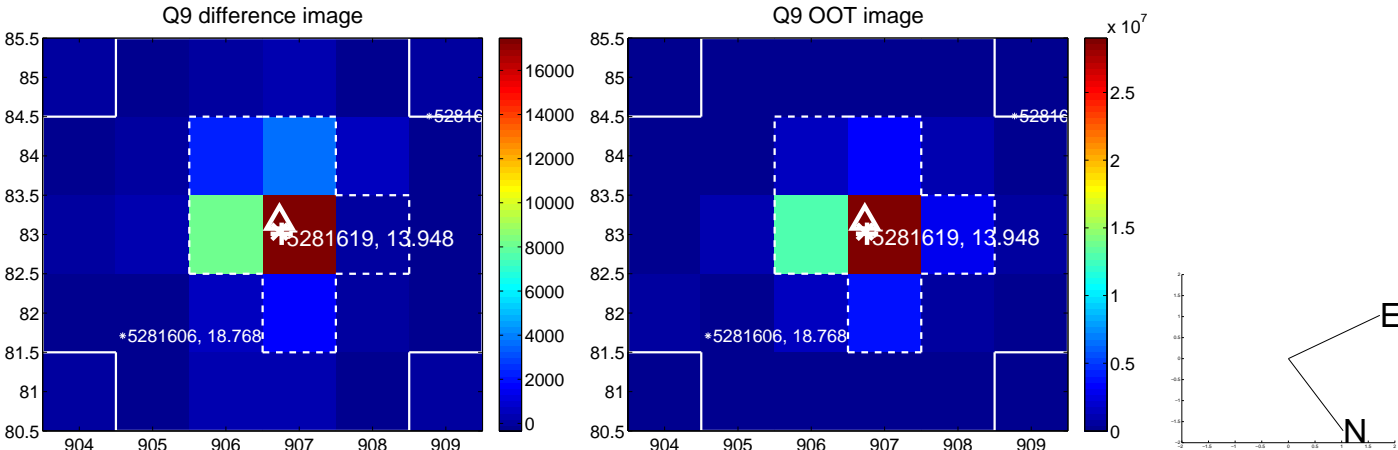
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



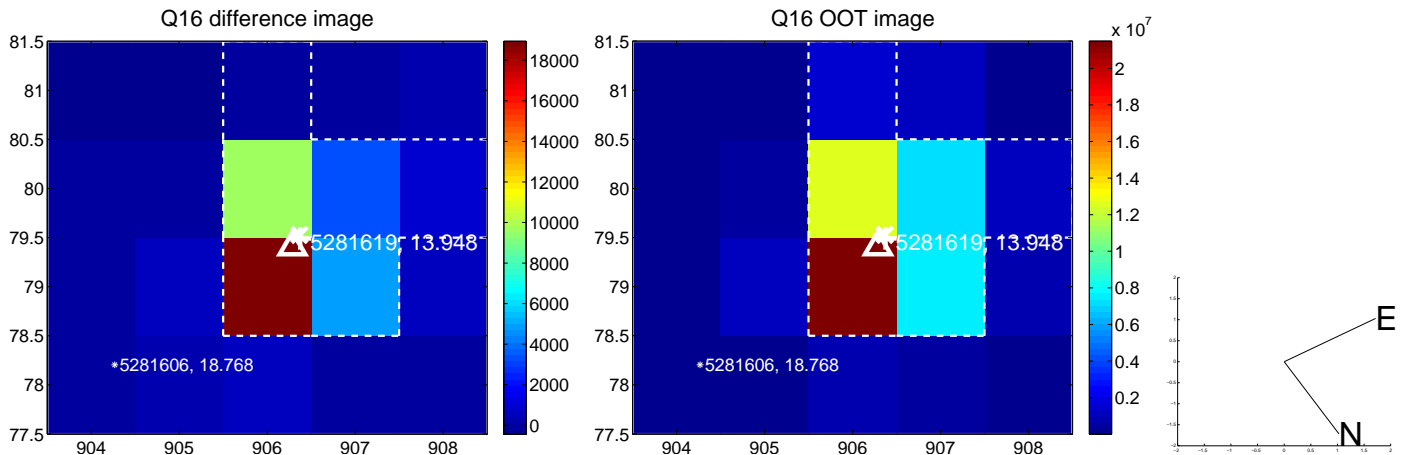
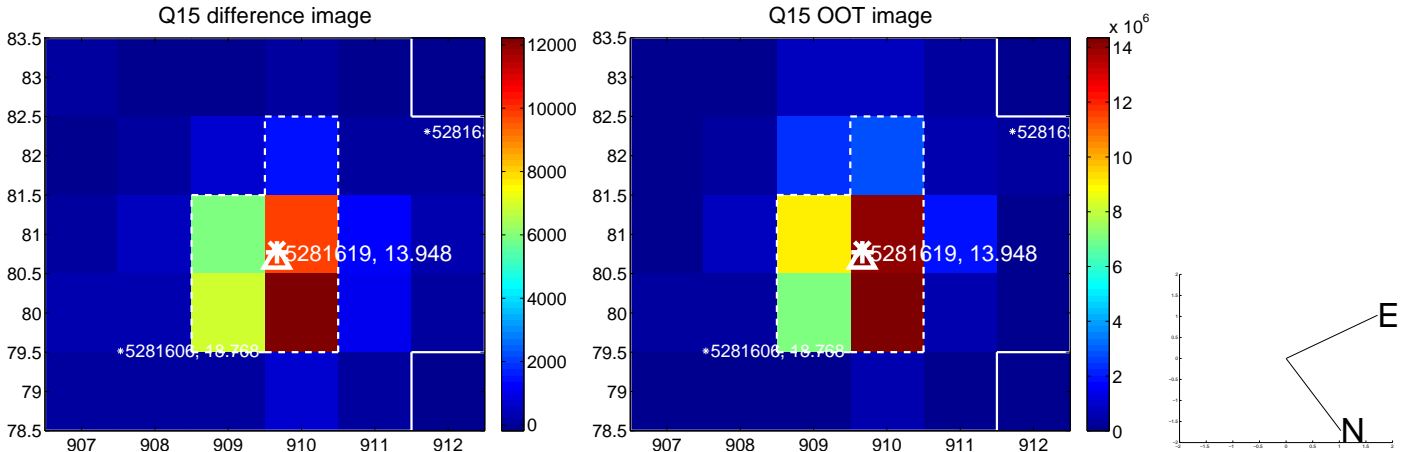
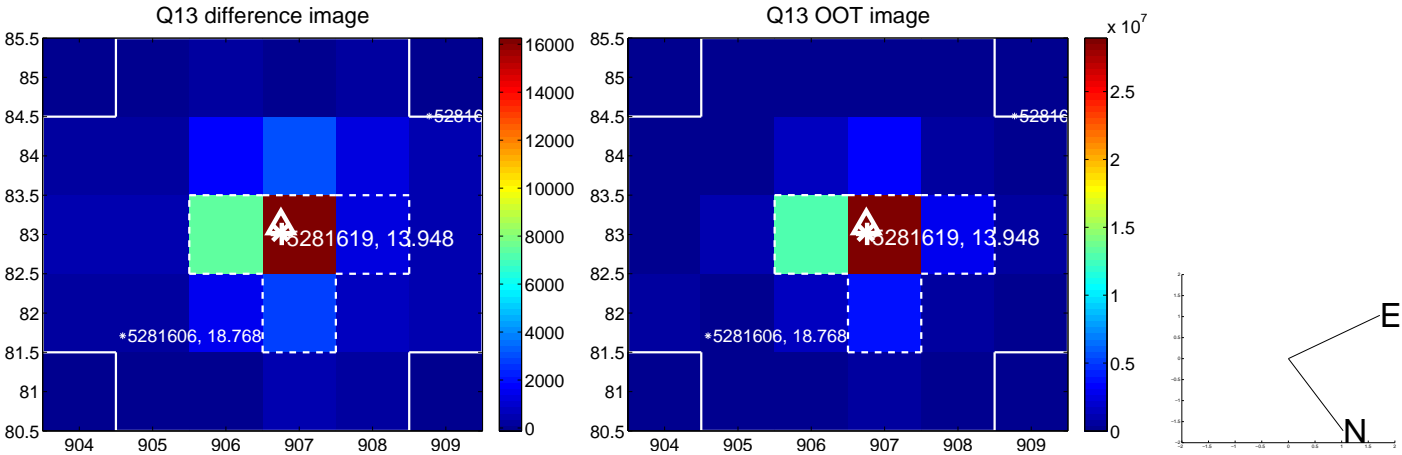
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



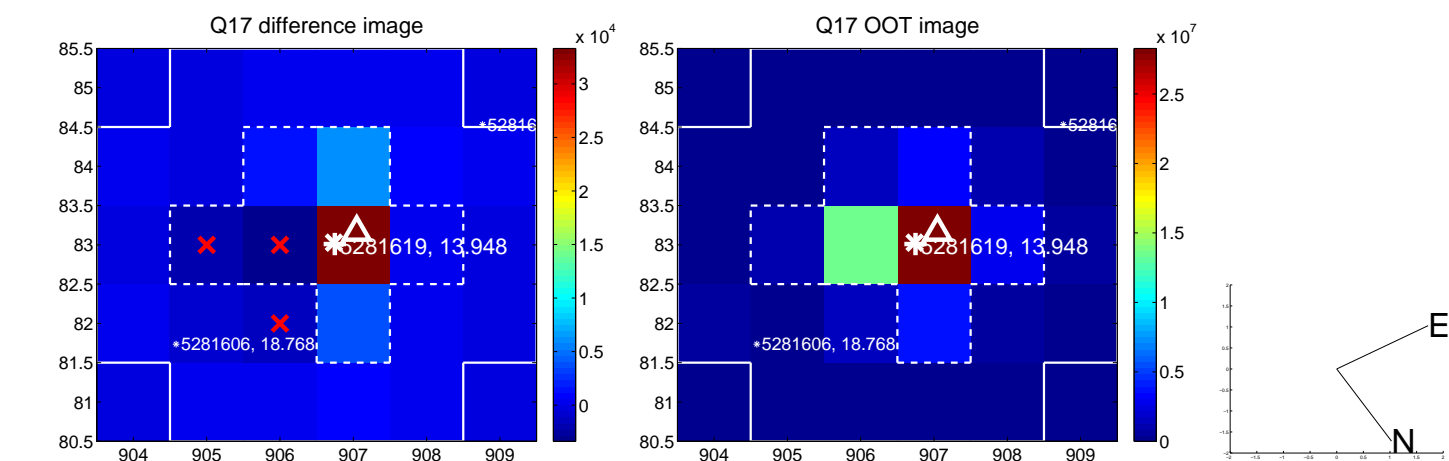
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



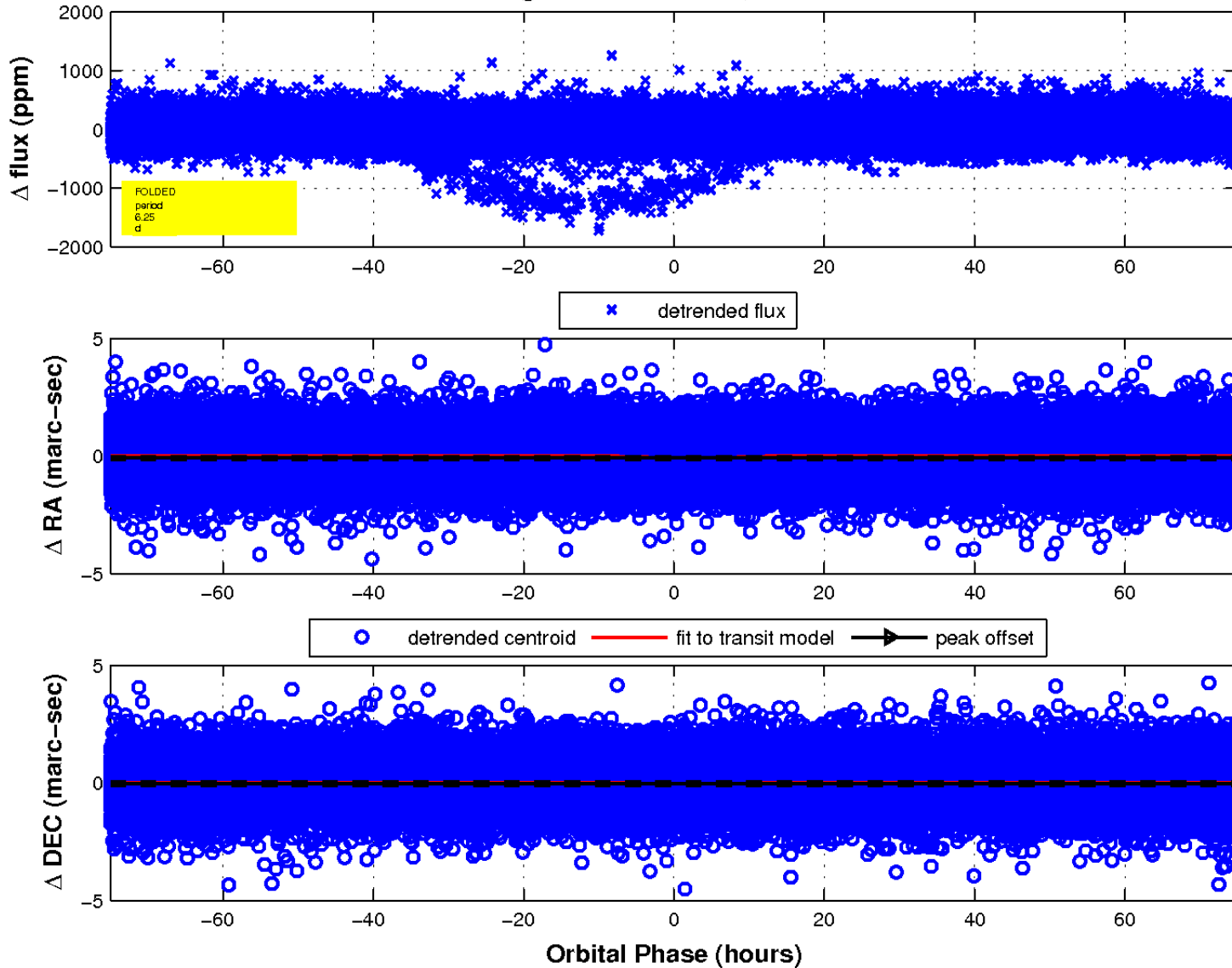
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 4



This astronomical image shows a field of stars against a dark background. A blue grid is overlaid on the image, with green text labels indicating coordinates. The labels are arranged in two rows: the top row shows '54.0', '53.0', '52.0', '51.0', and '19:54:50', while the bottom row shows '30.0', '40.0', '50.0', and '040:28:00.0'. The stars are of varying brightness, with some appearing as distinct points of light and others as more diffuse, glowing regions.

This astronomical image shows a field of stars against a dark background. A blue grid is overlaid on the image, with green text labels indicating coordinates. The labels are arranged in two rows: the top row shows '54.0', '53.0', '52.0', '51.0', and '19:54:50', while the bottom row shows '30.0', '40.0', '50.0', and '040:28:00.0'. The stars are of varying brightness, with some appearing as distinct points of light and others as more diffuse, glowing regions.

KIC 005281619

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})
005281619-01	OBS	No	6.249256	133.612991	36.9	16.926	9.8	10.3	1.72	7797	1.14	1559.62
005281619-02	OBS	No	6.248720	136.169846	117.5	15.000	8.9	-1.0	1.72	7797	1.89	1559.79
005281619-03	OBS	No	440.629751	203.449933	226.8	19.287	13.0	7.7	1.72	7797	2.73	5.35
005281619-04	OBS	No	3.124080	131.707220	29.0	19.514	9.7	11.9	1.72	7797	0.94	3930.90

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005281619-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
005281619-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_NOFITS
005281619-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005281619-04	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—SAME_NTL_PERIOD

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

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

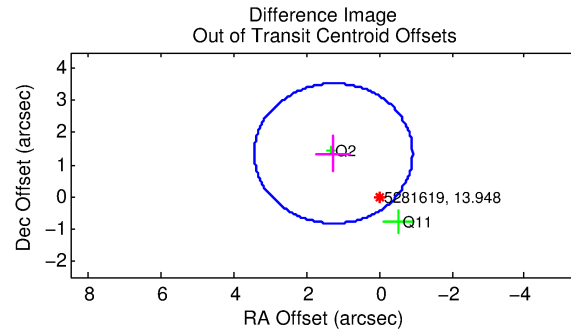
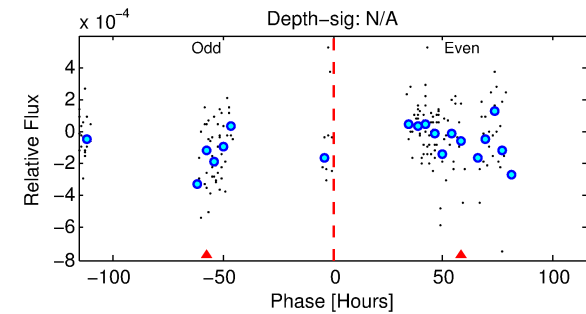
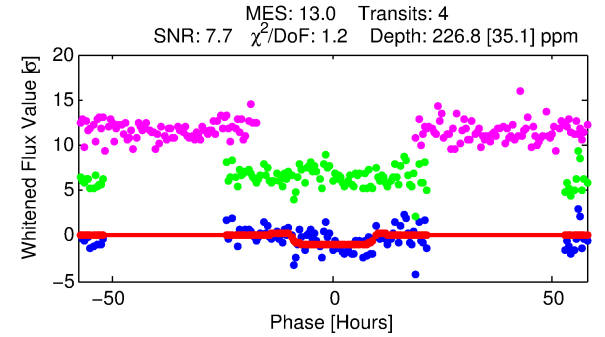
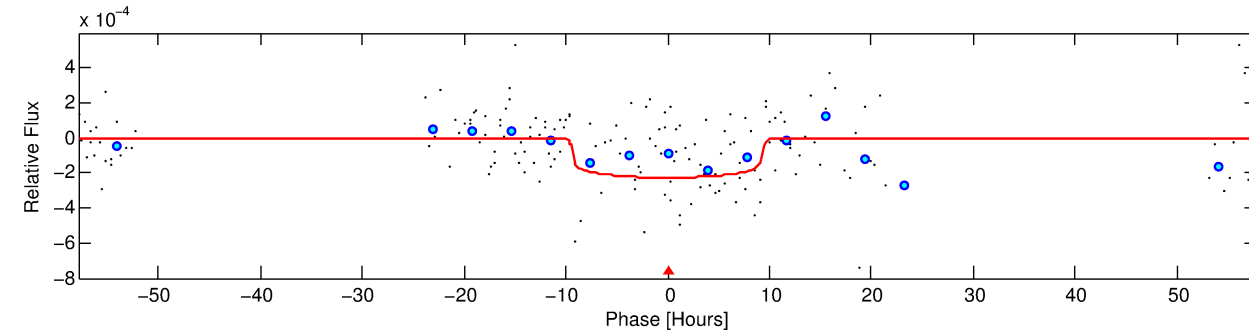
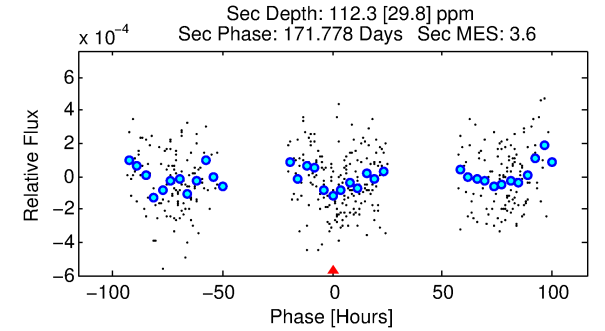
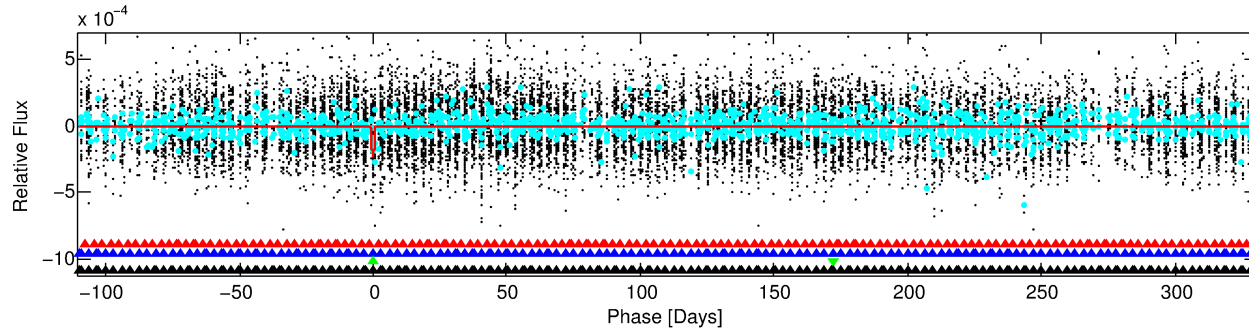
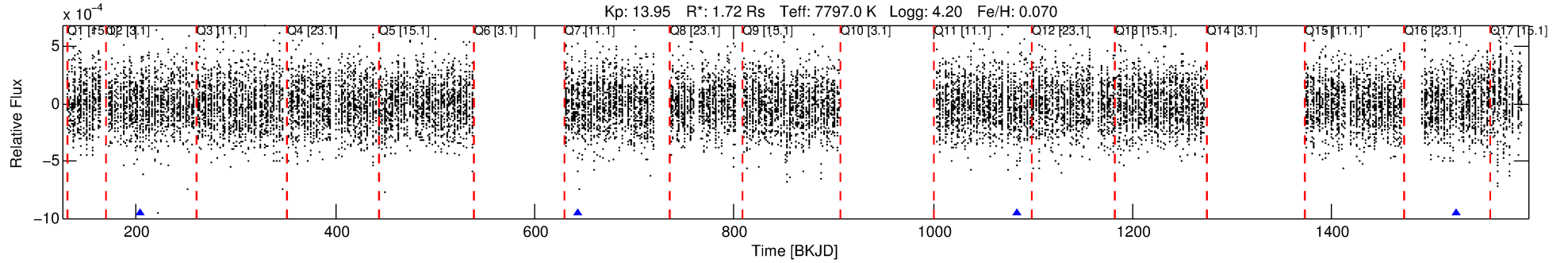
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005281619-03

No Significant Match Found

DV One-Page Summary

KIC: 5281619 Candidate: 3 of 4 Period: 440.630 d



DV Fit Results:

Period = 440.62975 [0.02278] d
Epoch = 203.4499 [0.0336] BKJD
Rp/R* = 0.0146 [0.0053]
a/R* = 140.73 [302.74]
b = 0.62 [2.18]
Seff = 5.35 [1.32]
Teq = 388 [24] K
Rp = 2.73 [1.11] Re
a = 1.3519 [0.2182] AU
Ag = 15138.76 [12218.89] [1.24σ]
Teffp = 6652 [1283] K [4.88σ]

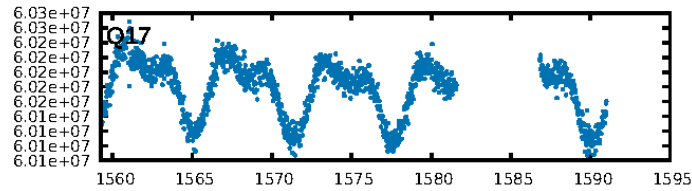
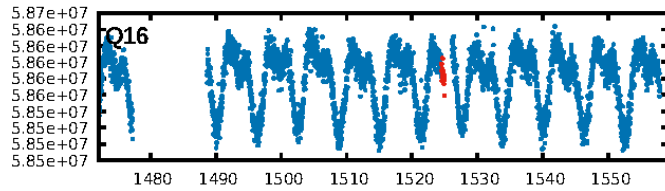
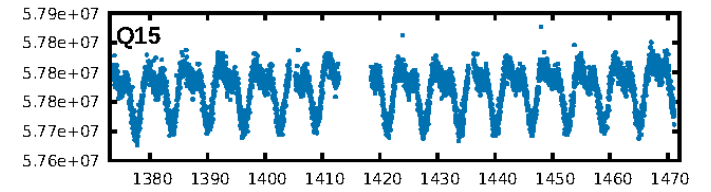
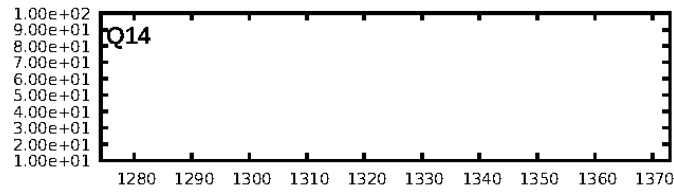
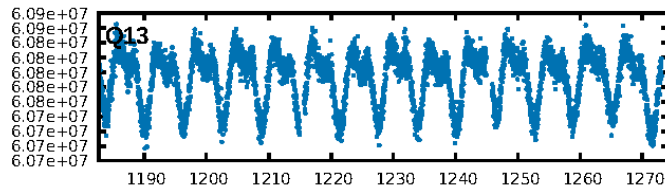
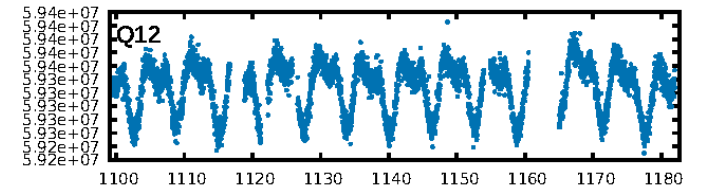
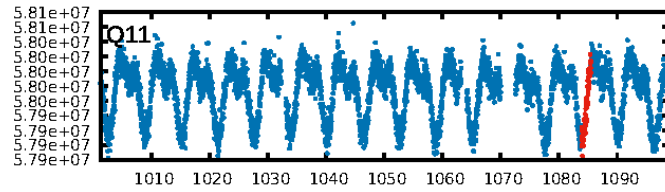
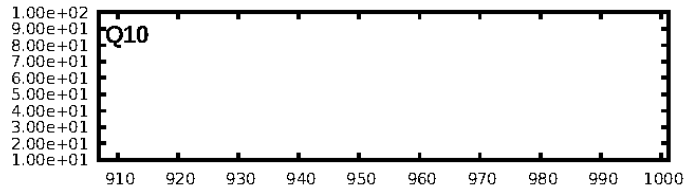
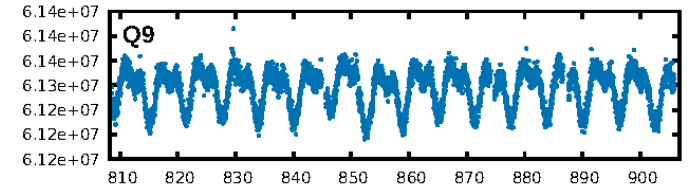
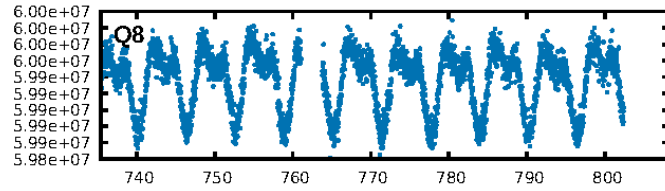
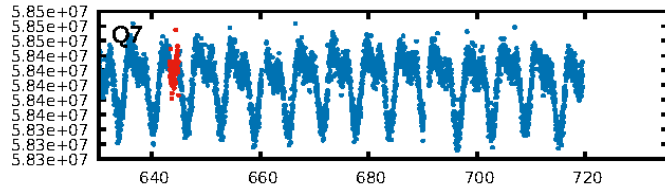
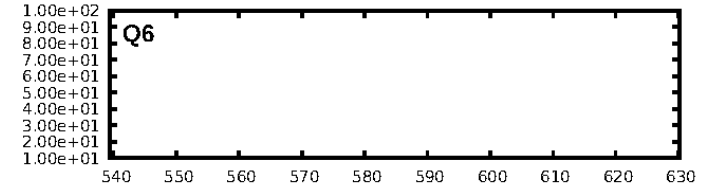
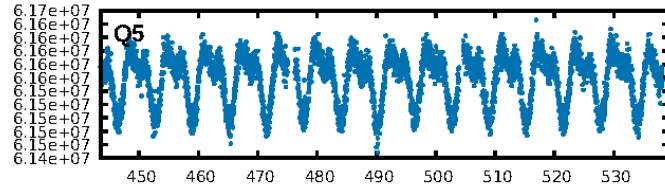
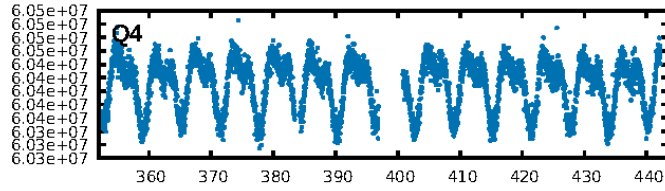
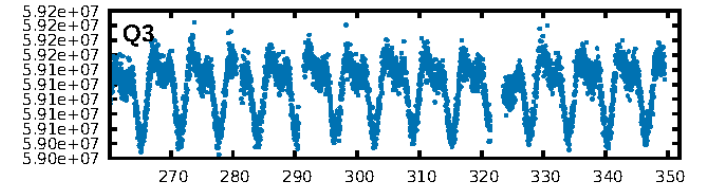
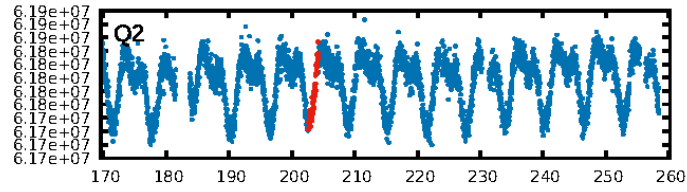
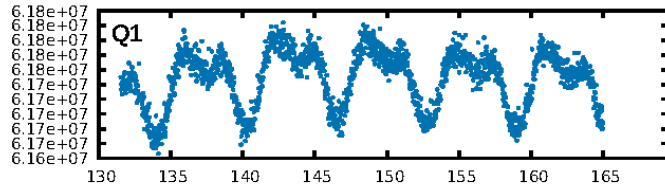
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [406.27σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 2.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 1.052
Centroid-sig: 16.8%
Centroid-so: 1.294 arcsec [0.90σ]
OotOffset-rm: 1.842 arcsec [2.53σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-rm: 1.746 arcsec [2.26σ]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 0.00 [0/2]

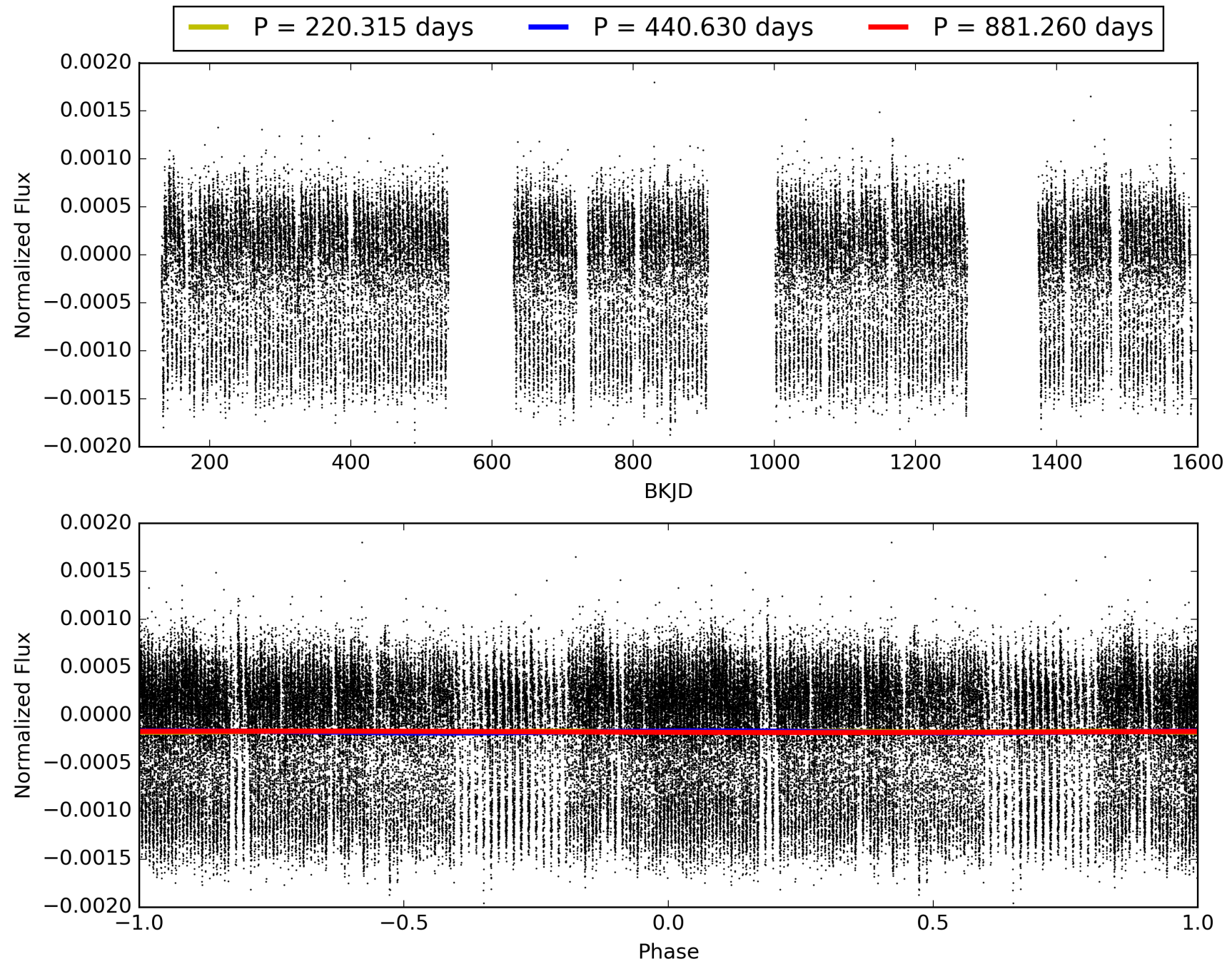
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 15:49:11 Z

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

TCE 005281619-03, PDC Light Curves

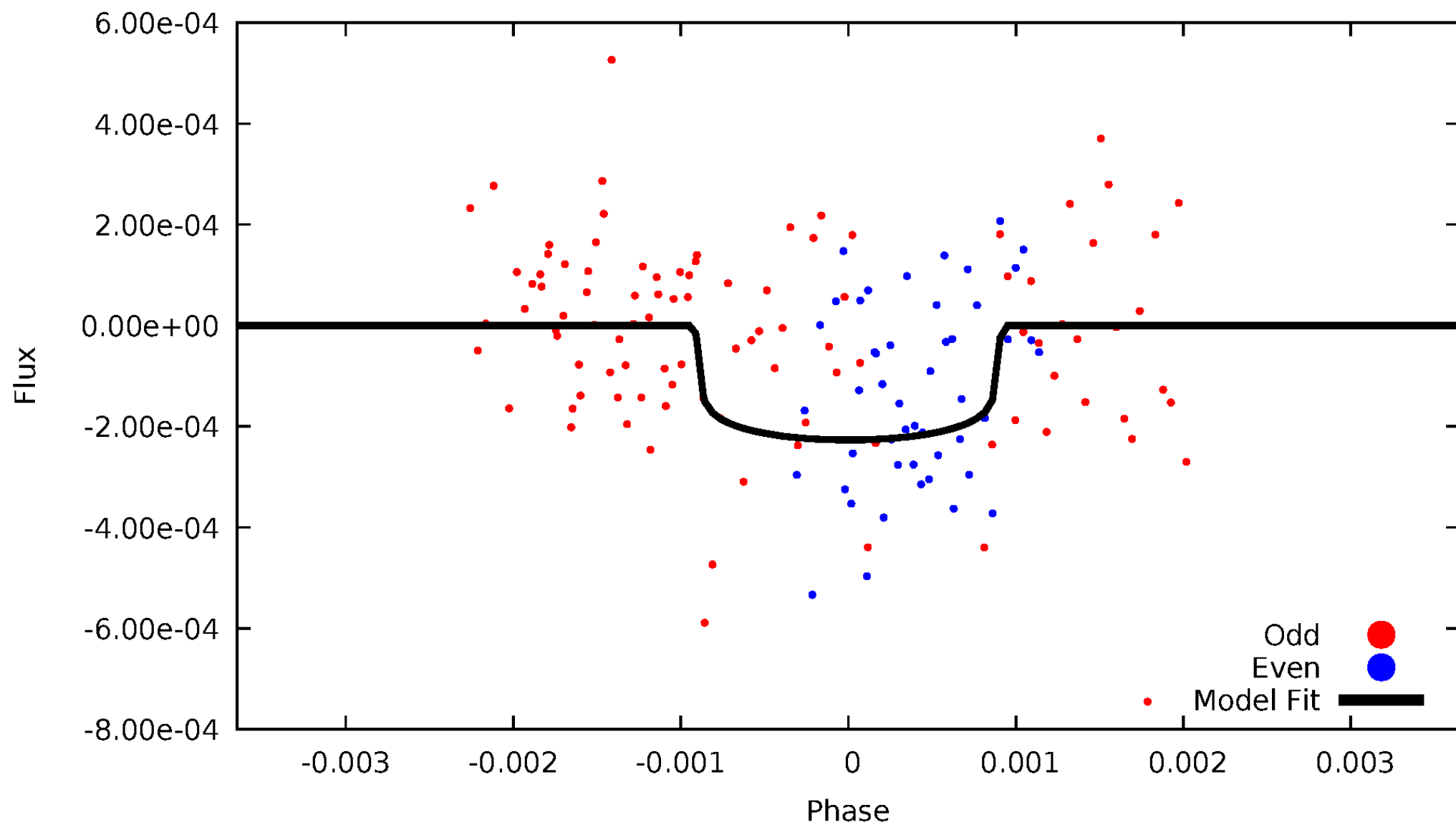


TCE 005281619-03



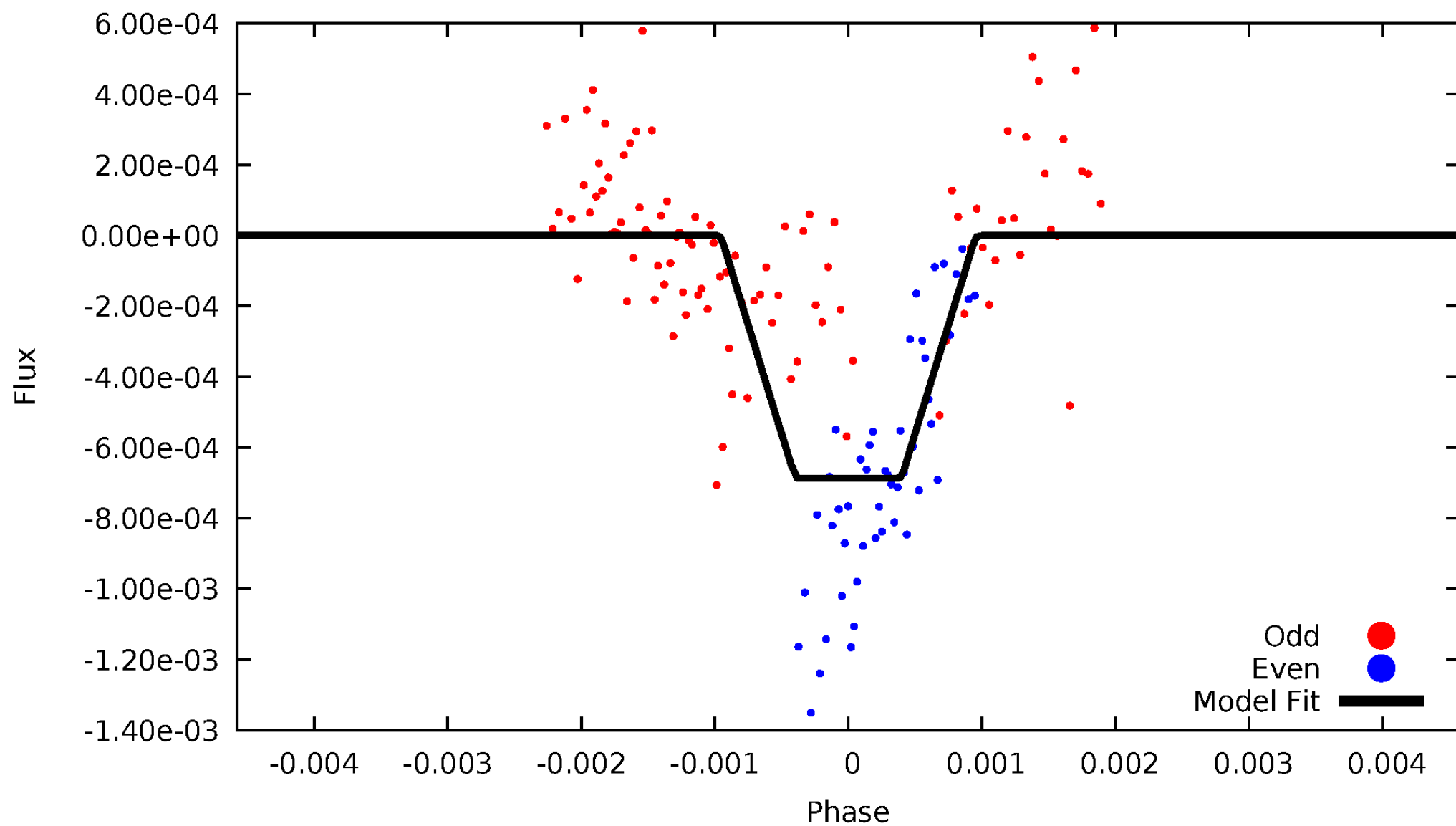
DV Odd/Even

TCE 005281619-03



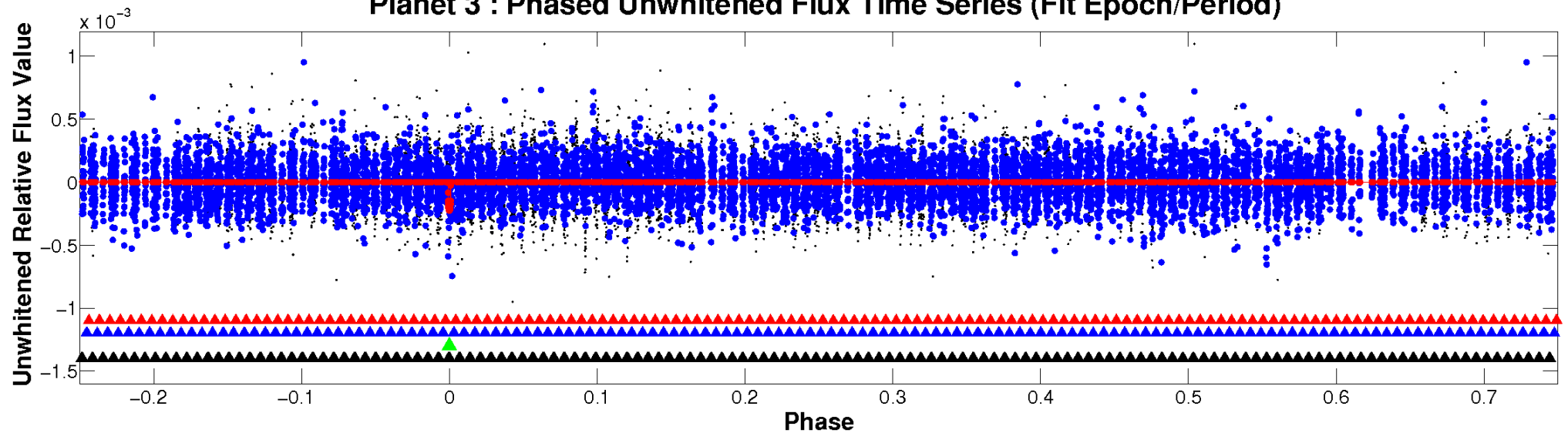
ALT Odd/Even

TCE 005281619-03

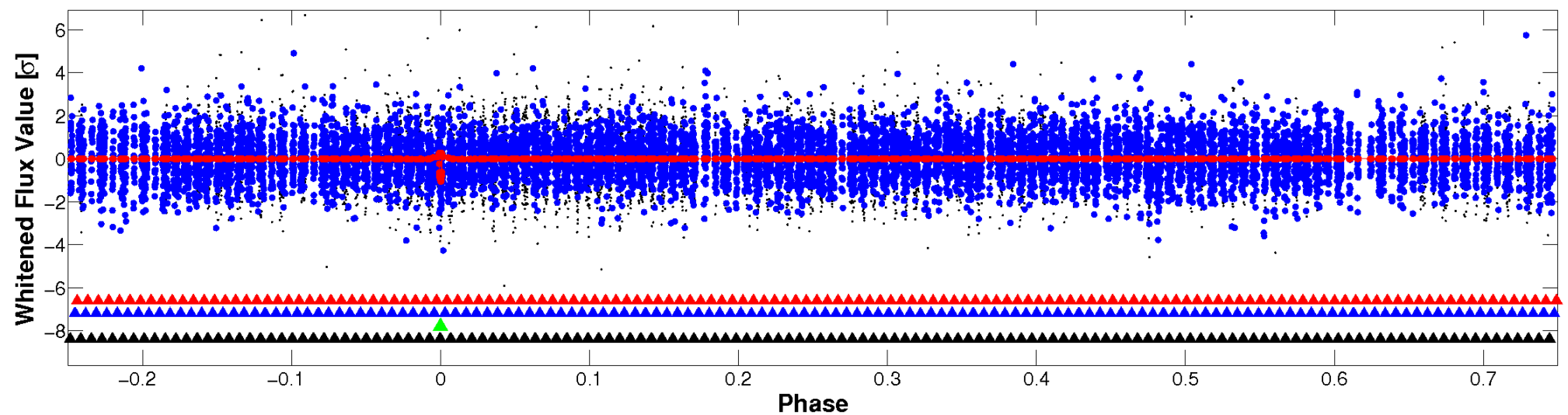


Non-Whitened Vs. Whitened Light Curve

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

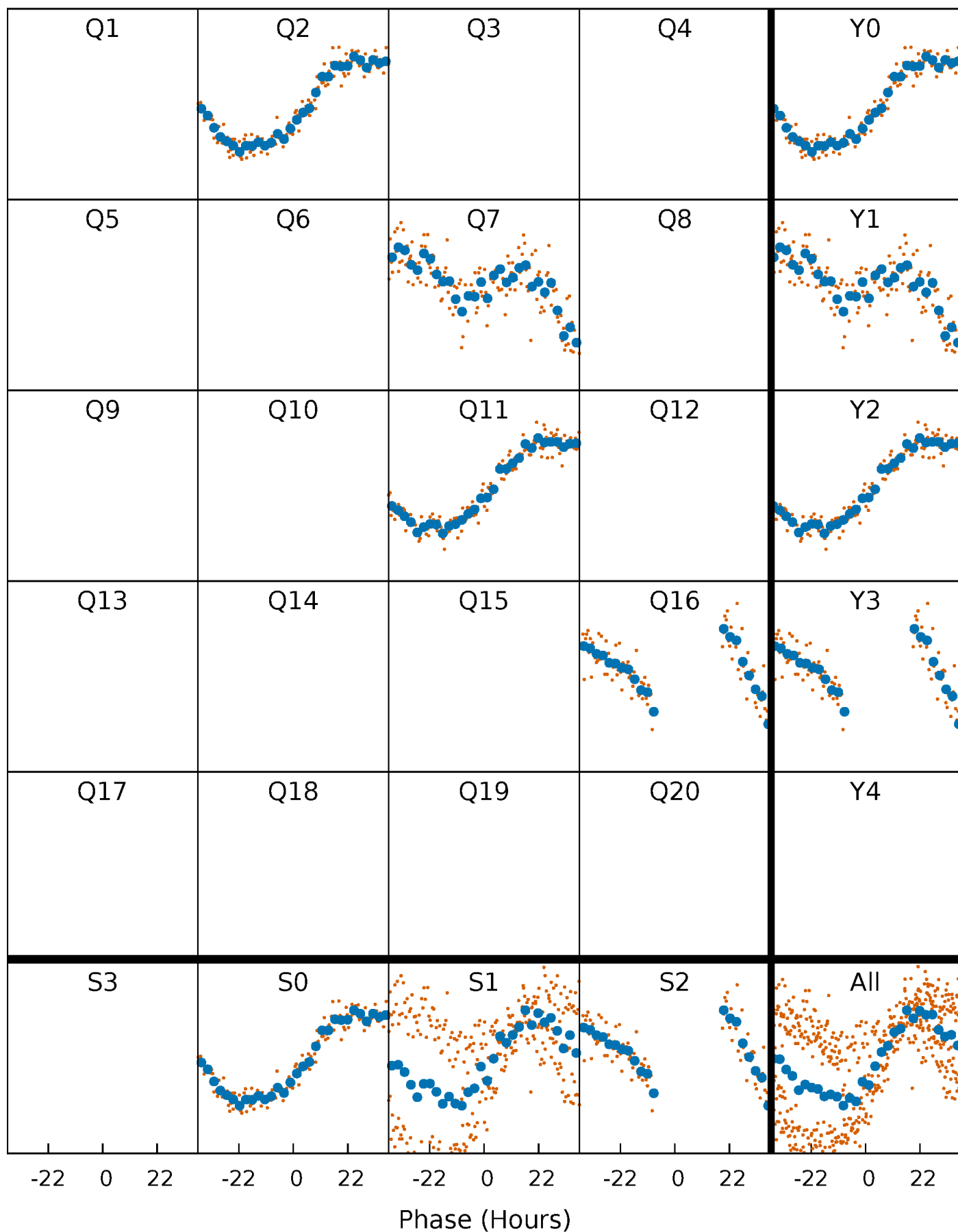


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



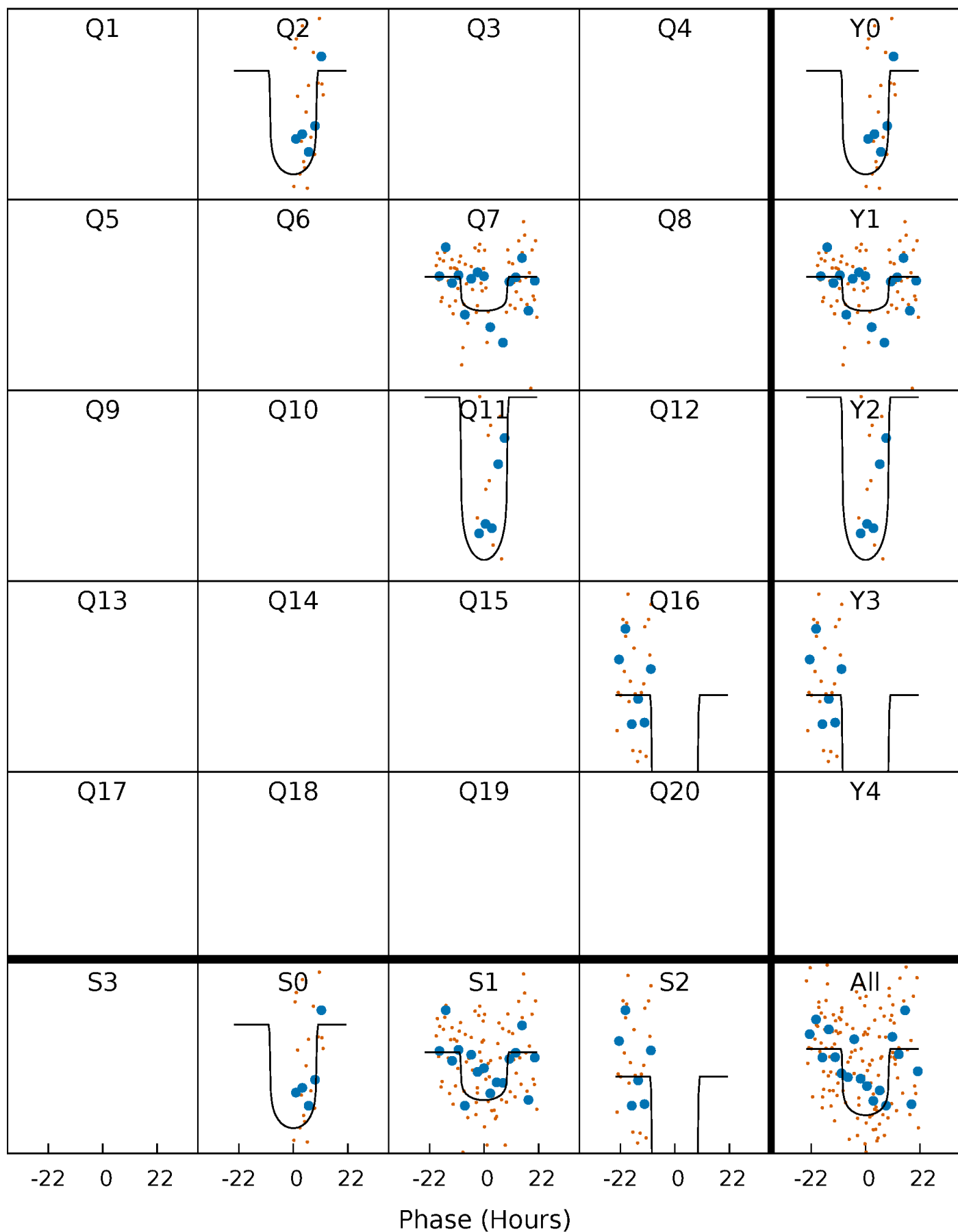
PDC Quarter-Phased Transit Curves

TCE 005281619-03 P=440.629751 Days $T_0=203.449933$ (BKJD)



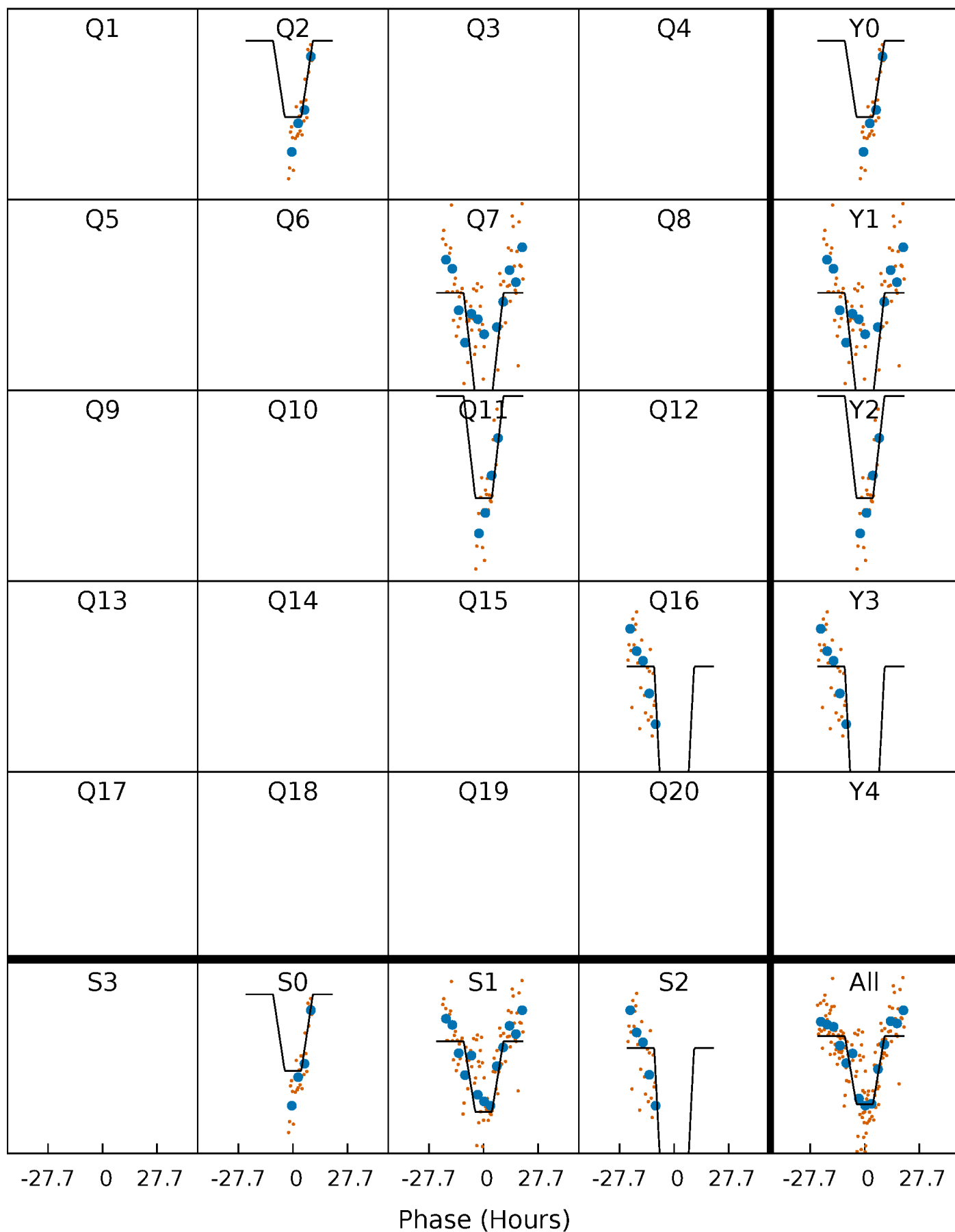
DV Quarter-Phased Transit Curves

TCE 005281619-03 P=440.629751 Days $T_0=203.449933$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

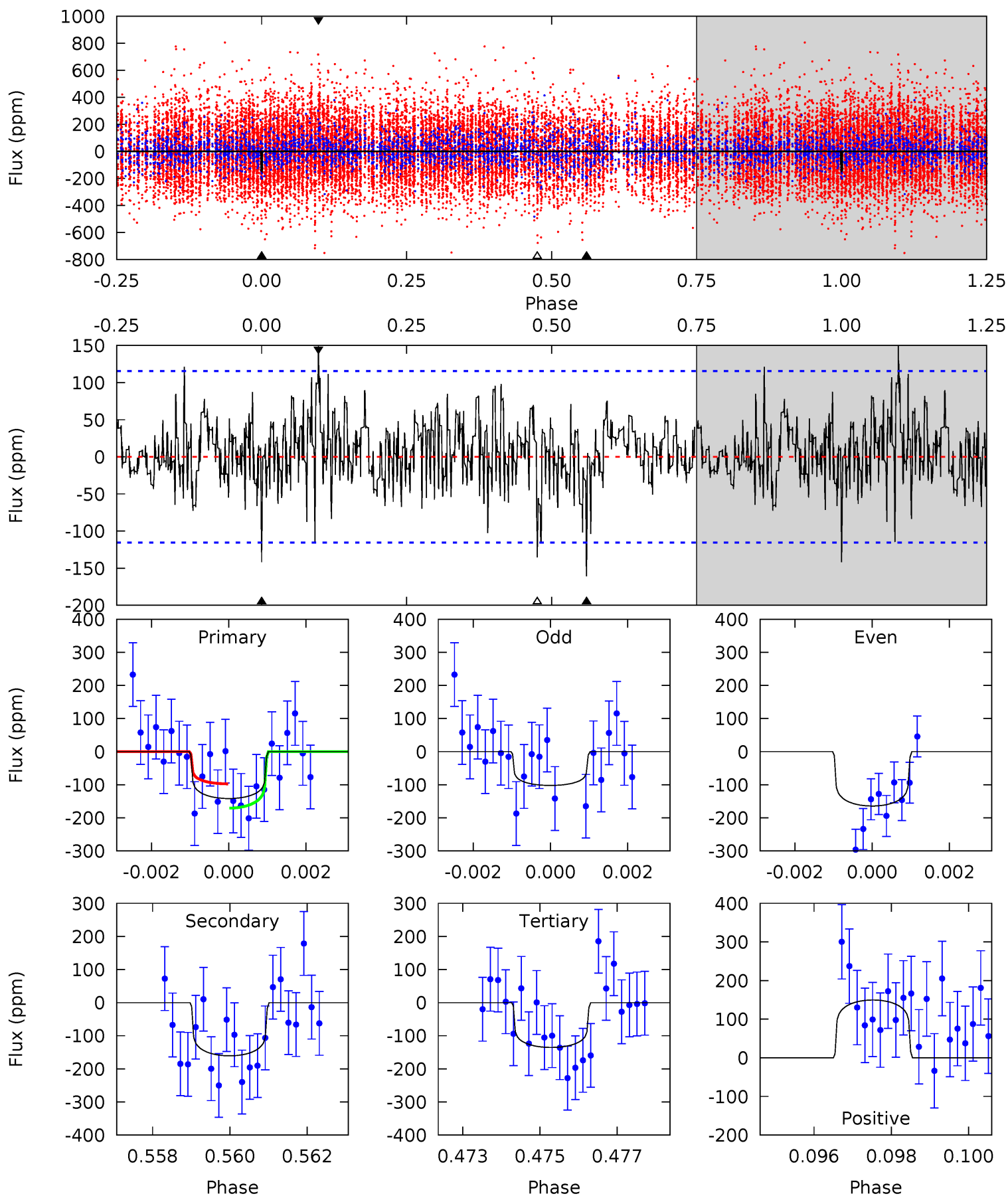
TCE 005281619-03 P=440.602043 Days $T_0=203.534331$ (BKJD)



DV Model-Shift Uniqueness Test

005281619-03, P = 440.629751 Days, E = 203.449933 Days

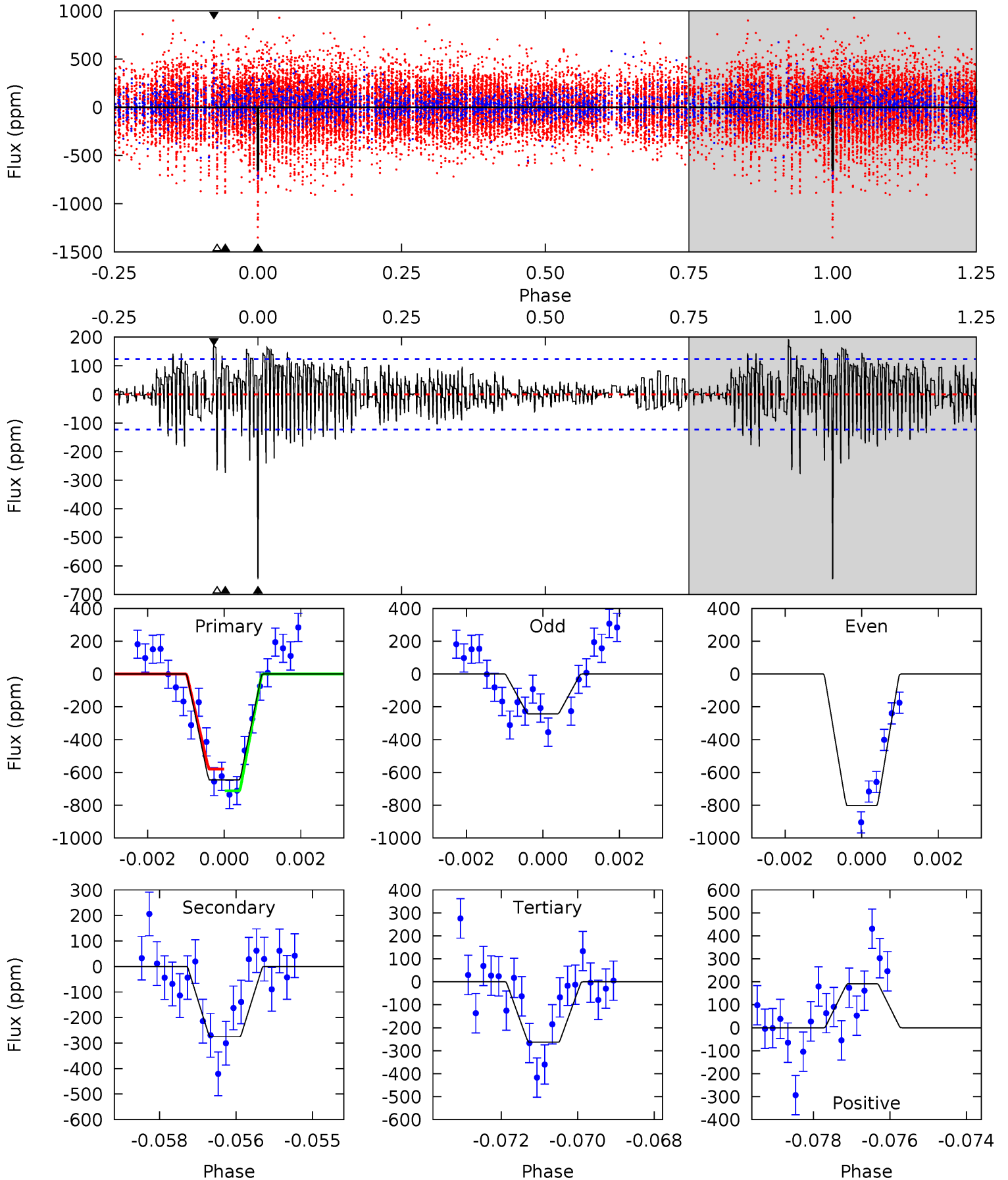
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.55	7.43	6.26	6.92	5.34	3.11	1.67	0.29	-0.37	1.17	0.51	1.40	0.97	0.48	1.67



Alt Model-Shift Uniqueness Test

005281619-03, P = 440.602043 Days, E = 203.534331 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.0	11.9	11.4	8.28	5.33	3.10	2.74	16.6	19.7	0.51	3.64	11.9	1.40	0.23	2.85



Stellar Parameters For KIC 005281619

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	7797^{+69}_{-93}	$4.197^{+0.045}_{-0.135}$	$0.070^{+0.150}_{-0.250}$	$1.719^{+0.319}_{-0.137}$	$1.694^{+0.118}_{-0.132}$	$0.470^{+0.105}_{-0.177}$
	+1%/-1%	+1%/-3%	+214%/-357%	+19%/-8%	+7%/-8%	+22%/-38%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 005281619-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-161 ± 22	$2.69^{+1.09}_{-0.91}$	547^{+24}_{-14}	7281^{+2331}_{-1129}	21637^{+29678}_{-10559}
Alt.	-275 ± 23	$4.99^{+1.20}_{-1.02}$	548^{+23}_{-14}	6087^{+779}_{-576}	10861^{+6933}_{-3777}

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

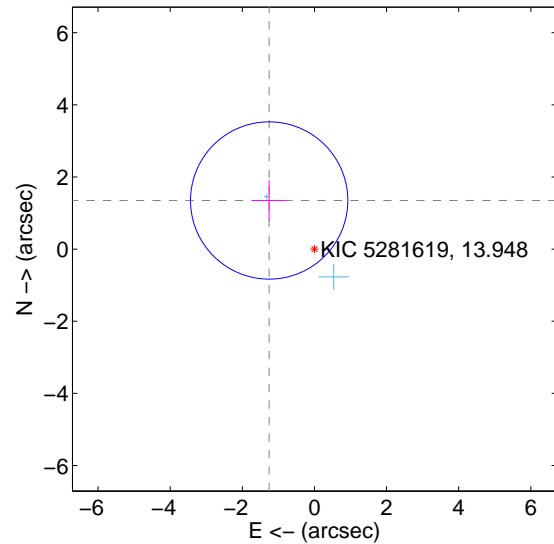
Supplemental centroid analysis for 005281619-03. Kepler magnitude: 13.95. Transit SNR 7.71

There are 2 quarters with good PRF difference image offsets

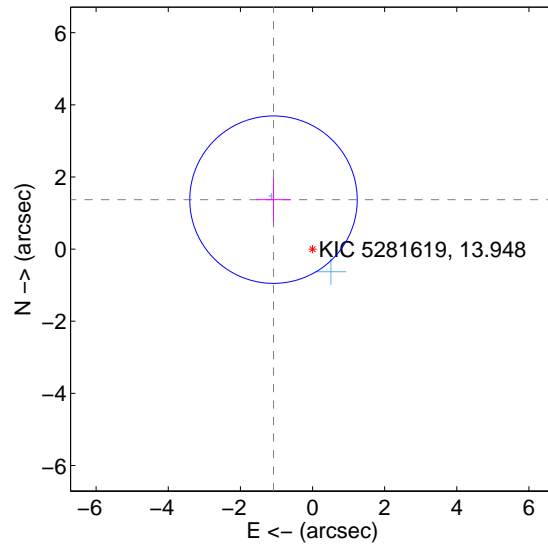
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.842 ± 0.727	2.53	1.255 ± 0.469	1.348 ± 0.560
PRF-fit source offset from KIC position	1.746 ± 0.774	2.26	1.082 ± 0.481	1.371 ± 0.610
photometric centroid source offset	1.29 ± 1.43	0.90	0.84 ± 1.29	-0.99 ± 1.52

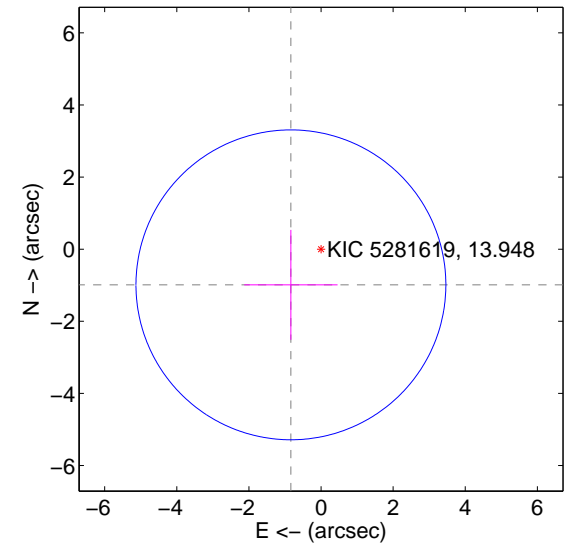
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

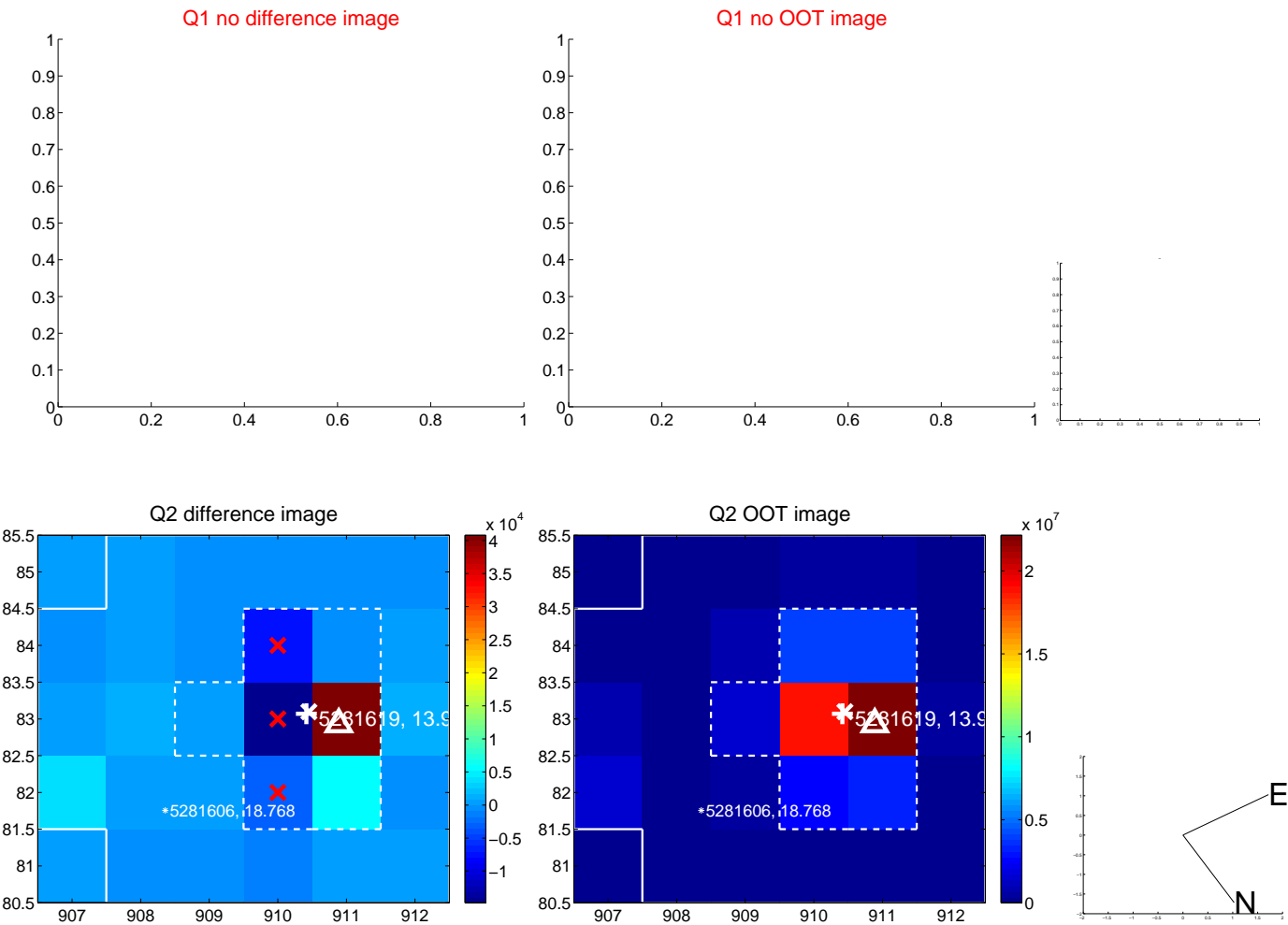


offset from photometric centroids

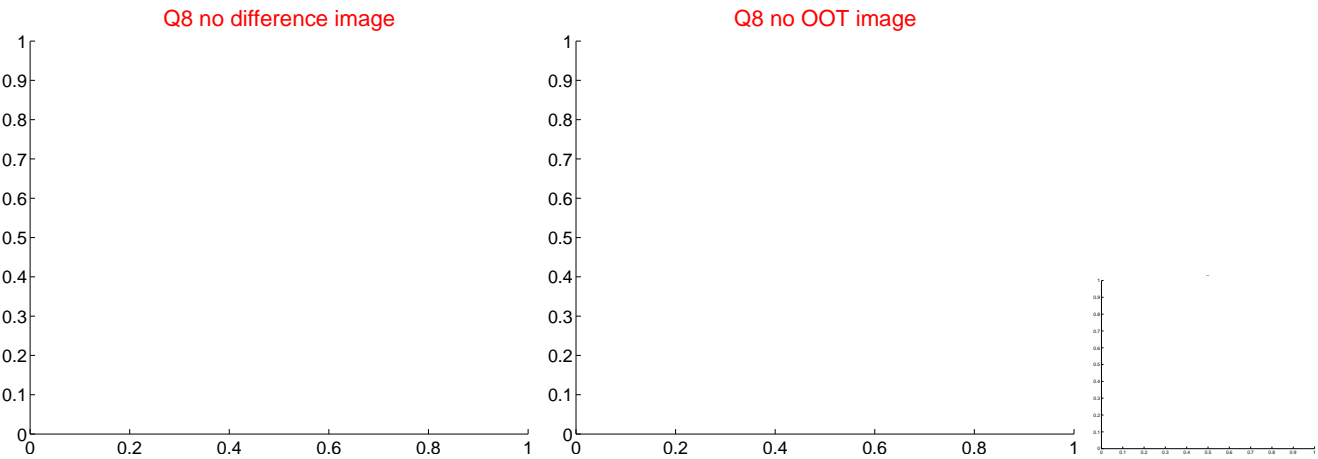
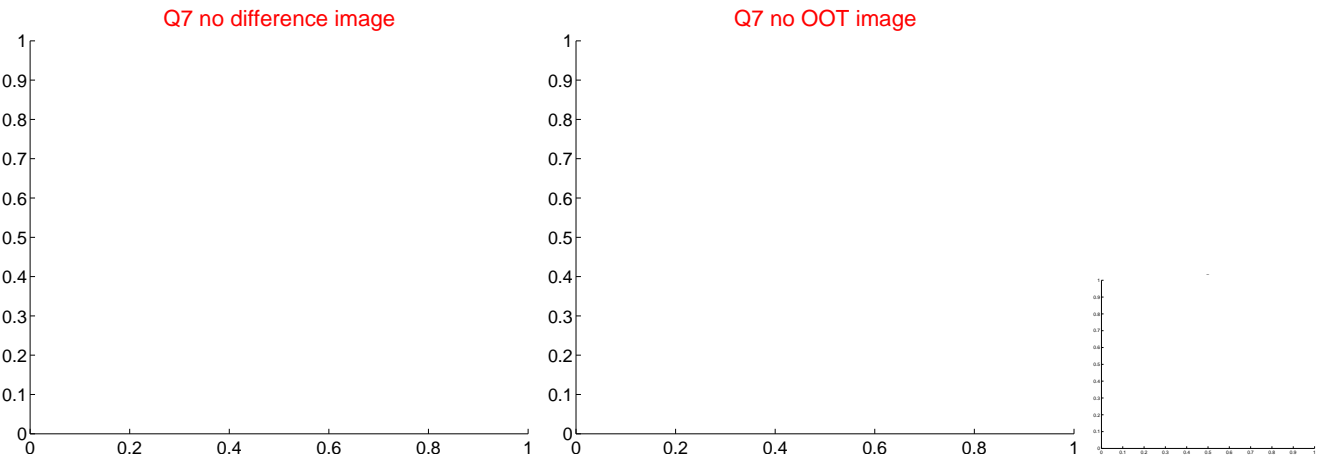
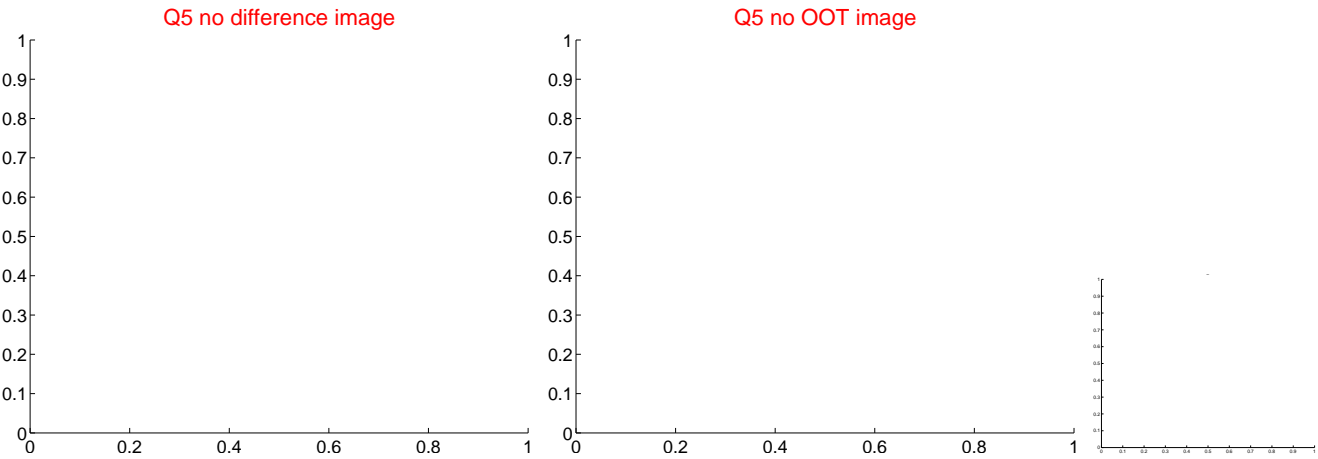


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

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

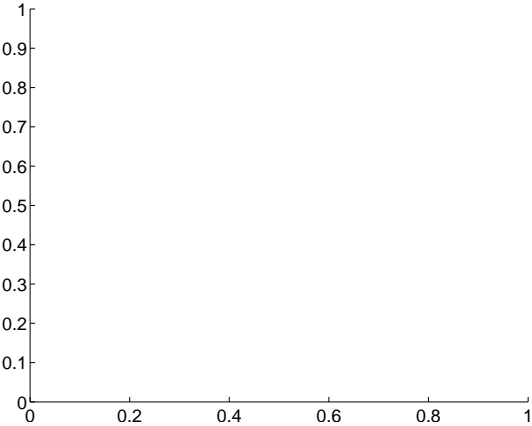


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

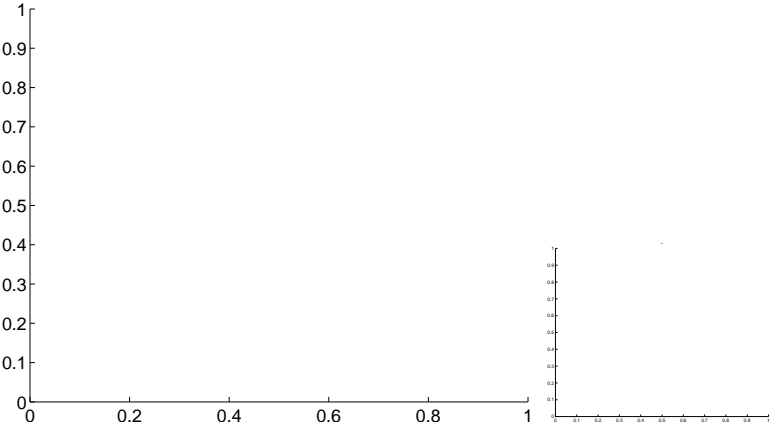


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

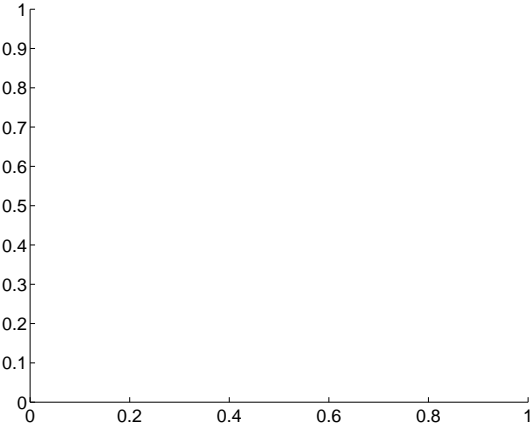
Q9 no difference image



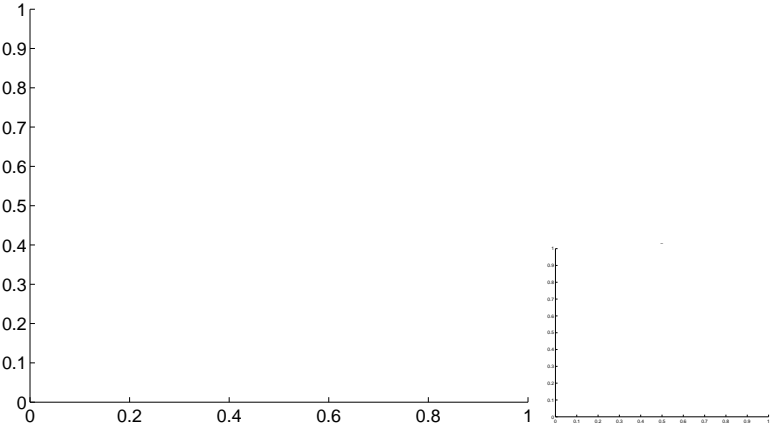
Q9 no OOT image



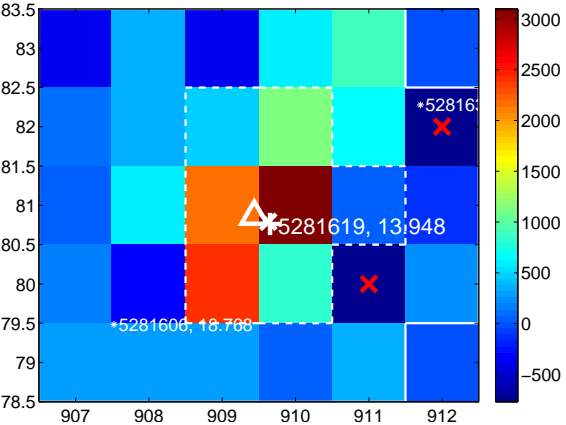
Q10 no difference image



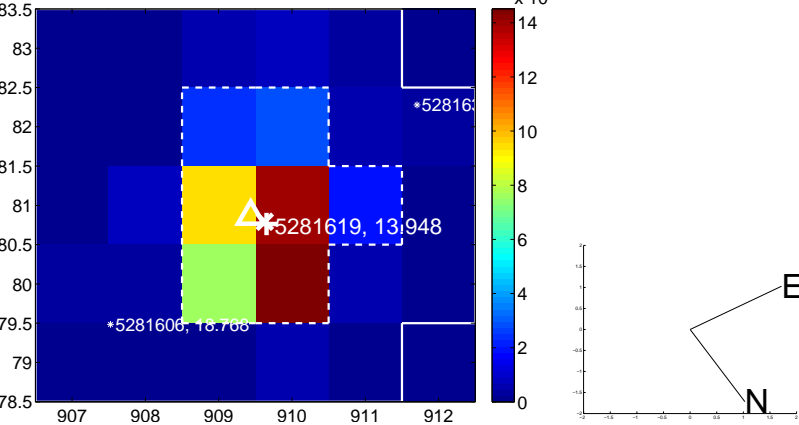
Q10 no OOT image



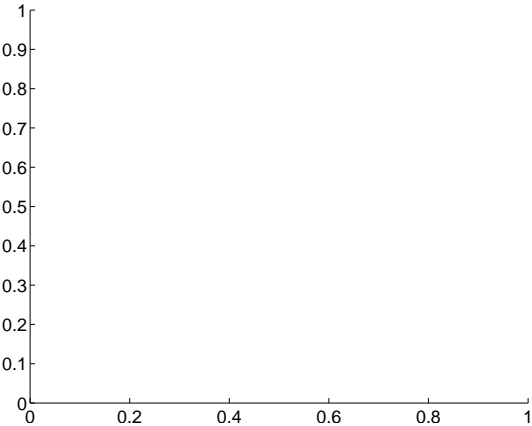
Q11 difference image



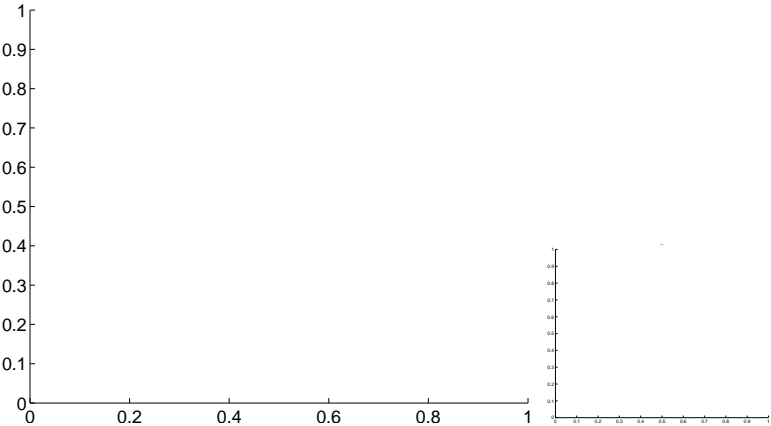
Q11 OOT image



Q12 no difference image



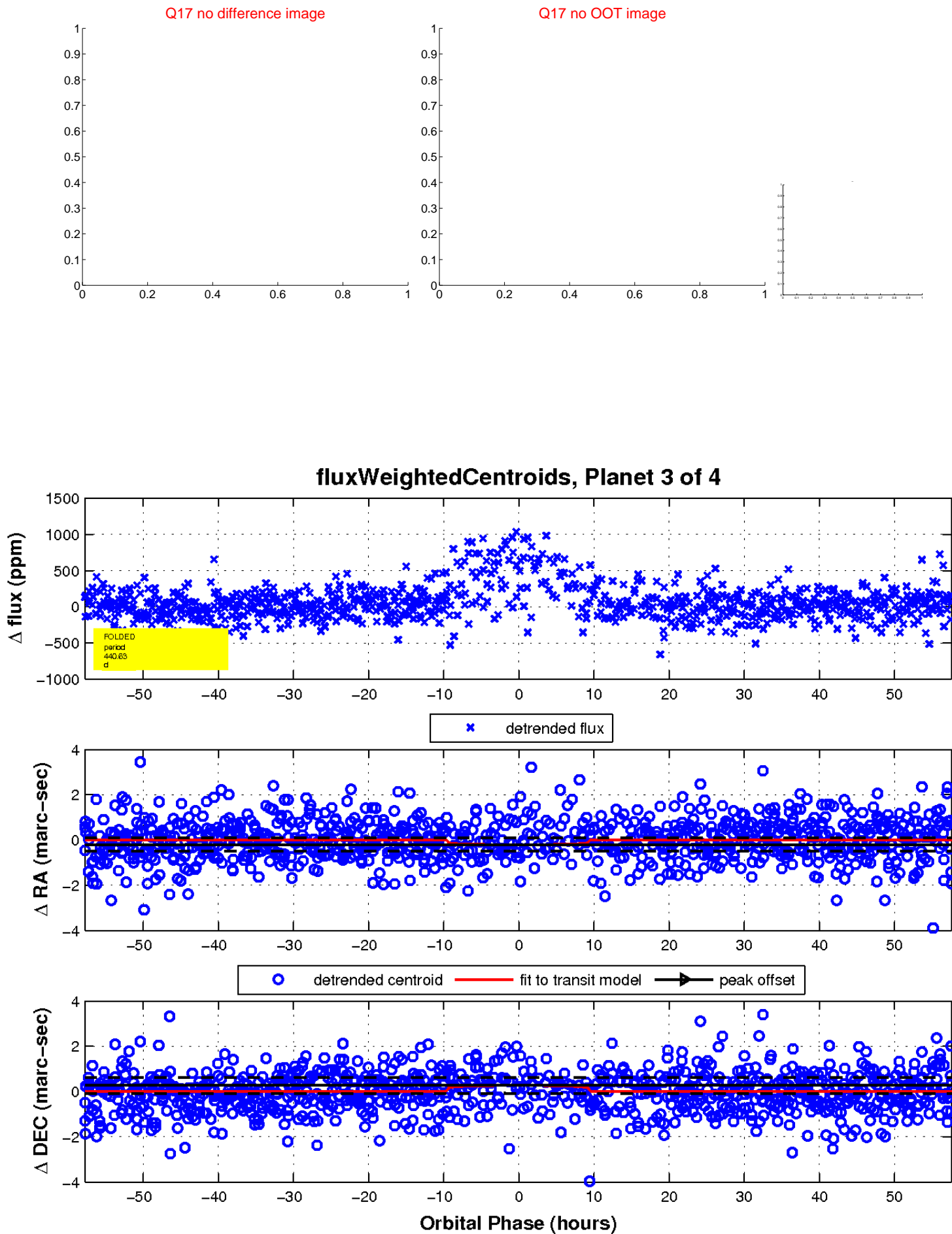
Q12 no OOT image



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



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



This astronomical image shows a field of stars against a dark background. A blue grid is overlaid on the image, with green text labels indicating coordinates. The labels are arranged in a grid pattern, with values ranging from 30.0 to 54.0. The labels are oriented vertically, with the top row of labels reading 54.0, 53.0, 52.0, 51.0, and 19:54:50. The bottom row of labels reads 30.0, 40.0, 50.0, 40:28:00.0, and 19:54:50.0. The grid lines are blue, and the labels are green.

This astronomical image shows a field of stars against a dark background. A blue grid is overlaid on the image, with green numerical labels indicating coordinates. The labels are arranged in two rows: the top row shows values 54.0, 53.0, 52.0, 51.0, and 19:54:50; the bottom row shows values 40.0, 30.0, 20.0, 10.0, and 0.0. The stars are represented as bright, out-of-focus points of light.

KIC 005281619

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})
005281619-01	OBS	No	6.249256	133.612991	36.9	16.926	9.8	10.3	1.72	7797	1.14	1559.62
005281619-02	OBS	No	6.248720	136.169846	117.5	15.000	8.9	-1.0	1.72	7797	1.89	1559.79
005281619-03	OBS	No	440.629751	203.449933	226.8	19.287	13.0	7.7	1.72	7797	2.73	5.35
005281619-04	OBS	No	3.124080	131.707220	29.0	19.514	9.7	11.9	1.72	7797	0.94	3930.90

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005281619-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
005281619-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_NOFITS
005281619-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005281619-04	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—SAME_NTL_PERIOD

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

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

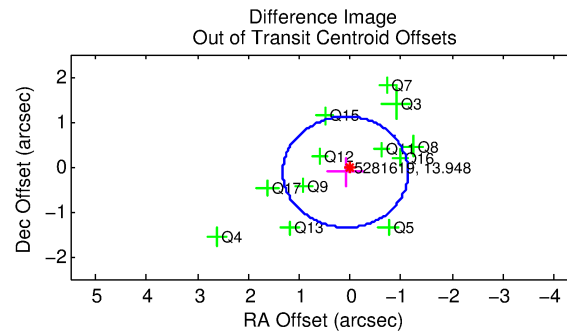
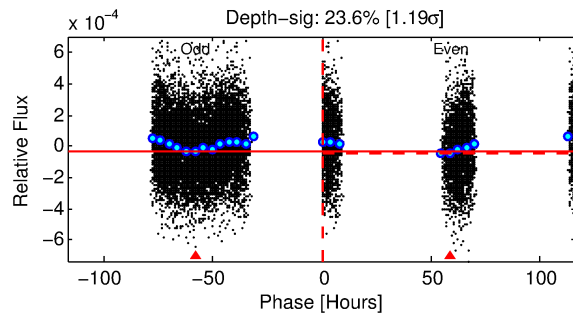
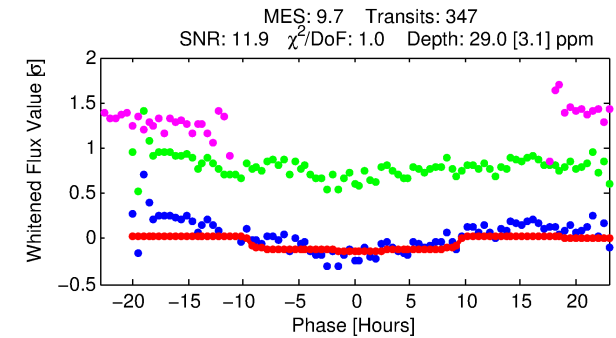
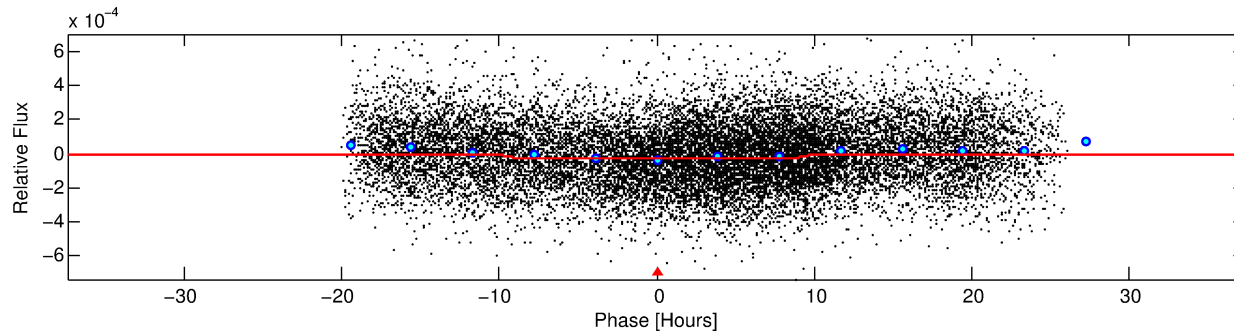
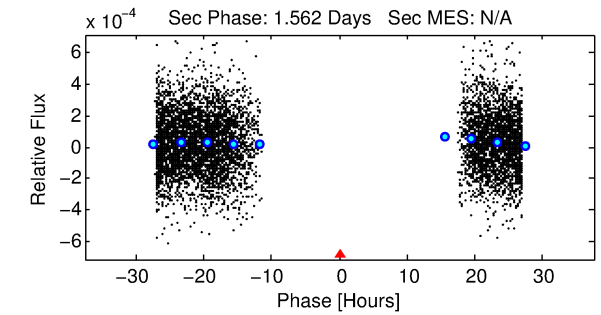
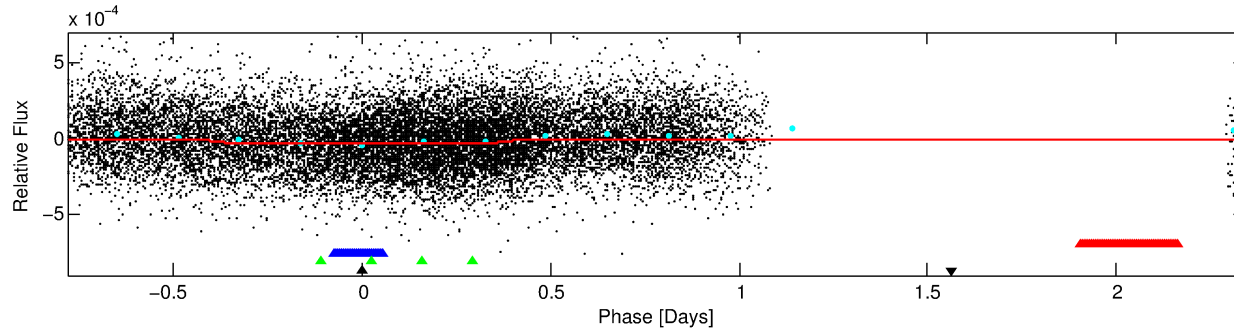
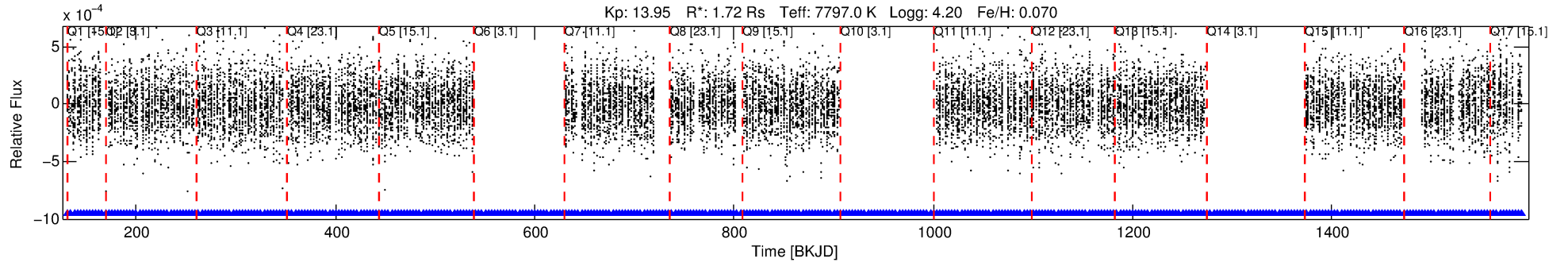
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005281619-04

No Significant Match Found

DV One-Page Summary

KIC: 5281619 Candidate: 4 of 4 Period: 3.124 d



DV Fit Results:

Period = 3.12408 [0.00006] d
Epoch = 131.7072 [0.0125] BKJD
Rp/R* = 0.0050 [0.0048]
a/R* = 1.37 [3.81]
b = 0.15 [39.45]
Seff = 3930.90 [967.09]
Teq = 2019 [124] K
Rp = 0.94 [0.93] Re
a = 0.0499 [0.0081] AU

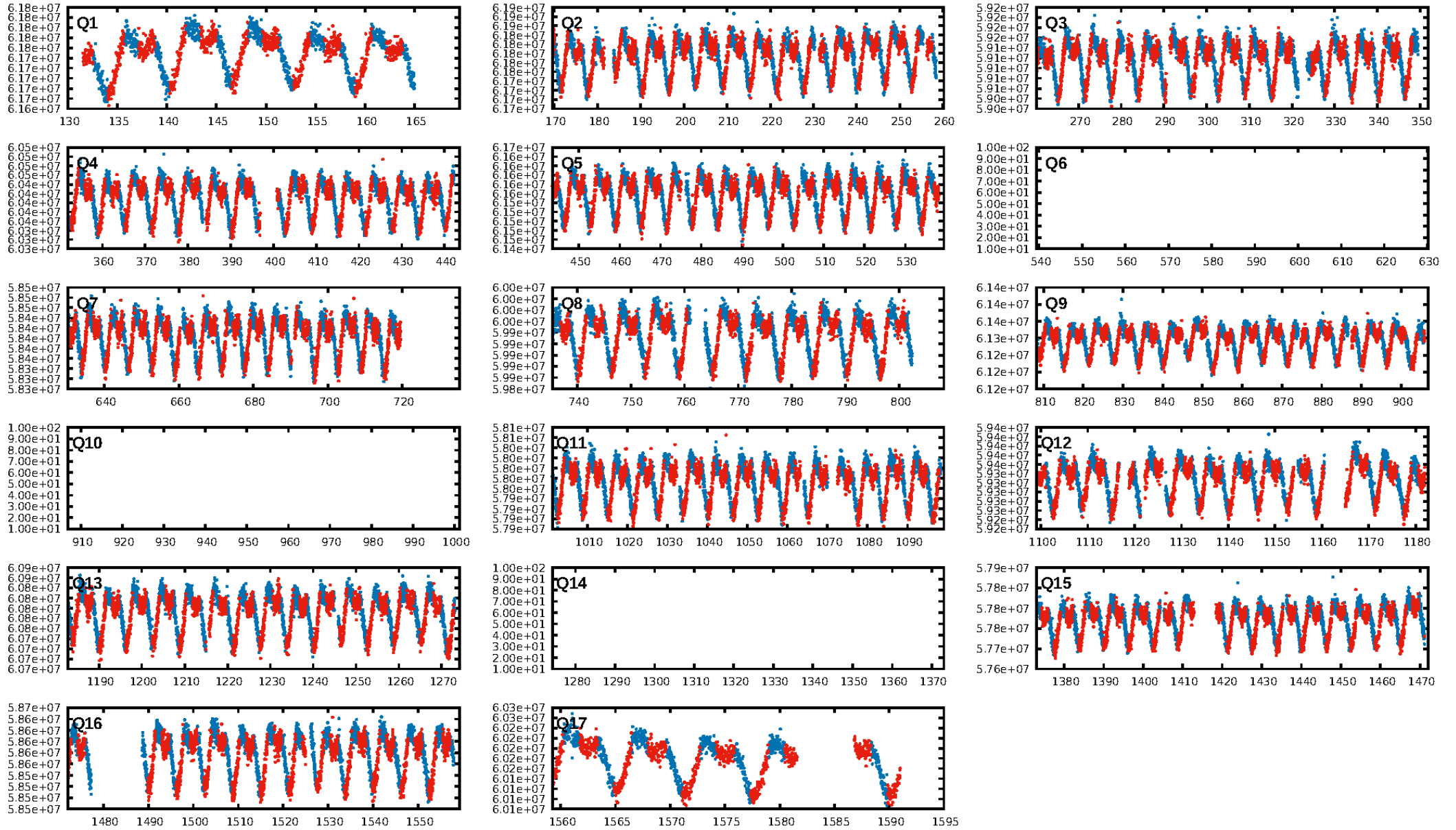
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 99.8% [3.05σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [326/326]
GhostDiagnostic-chr: 0.585
Centroid-sig: 0.5%
Centroid-so: 1.553 arcsec [1.35σ]
OotOffset-rm: 0.149 arcsec [0.36σ]
KicOffset-rm: 0.075 arcsec [0.20σ]
OotOffset-st: 0/4/4/4 [12]
KicOffset-st: 0/4/4/4 [12]
DiffImageQuality-fgm: 1.00 [12/12]
DiffImageOverlap-fno: 1.00 [14/14]

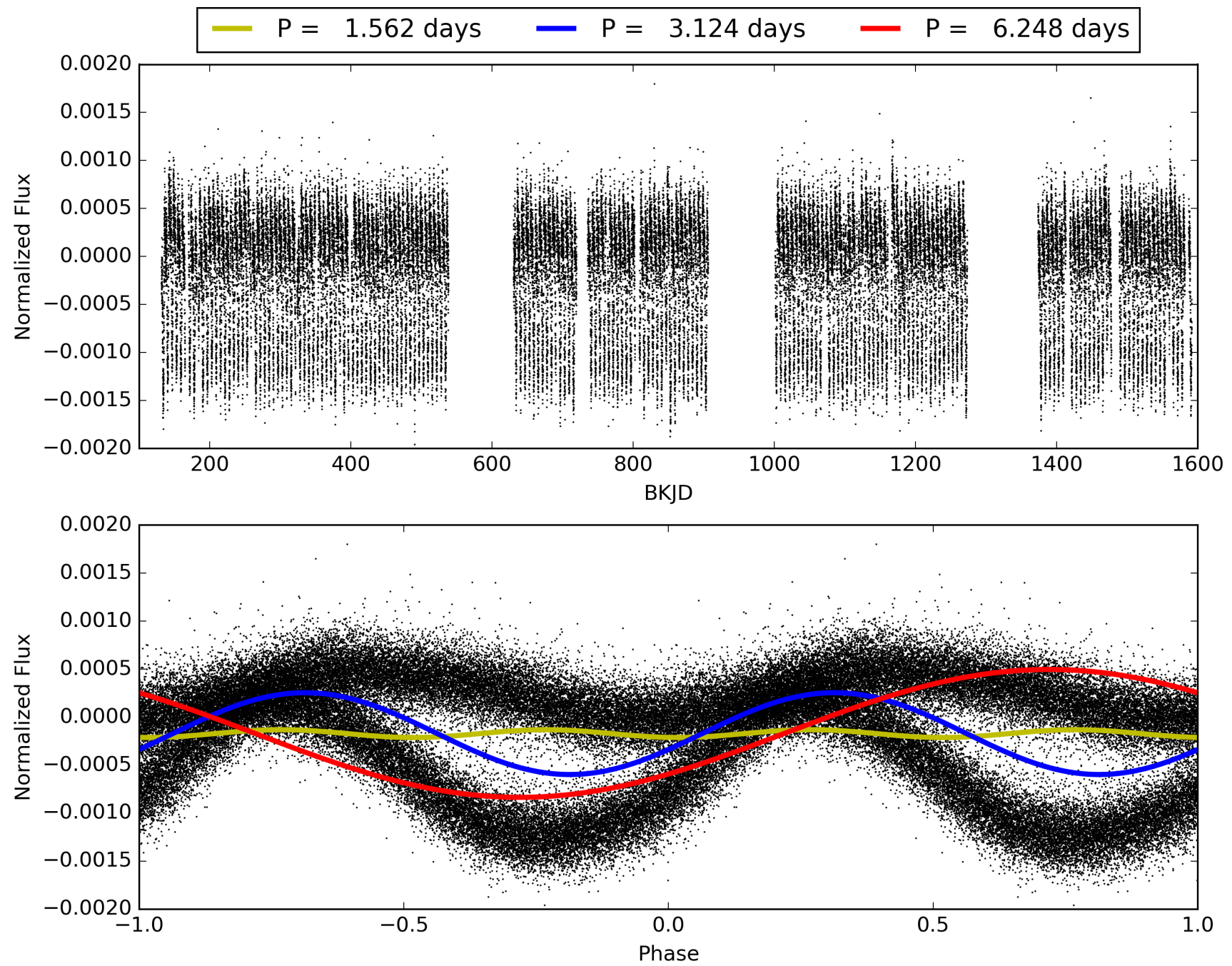
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 15:49:19 Z

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

TCE 005281619-04, PDC Light Curves

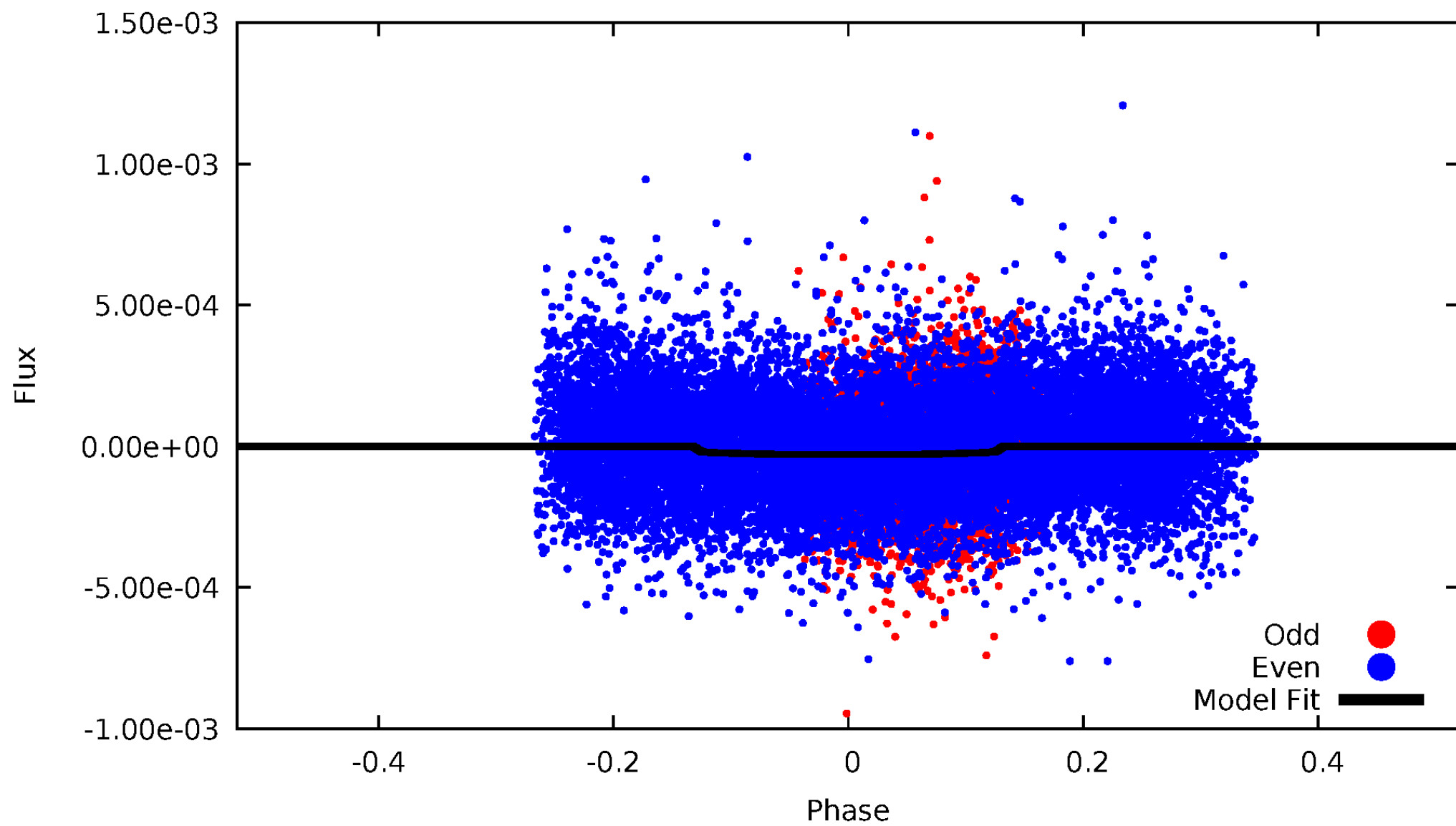


TCE 005281619-04



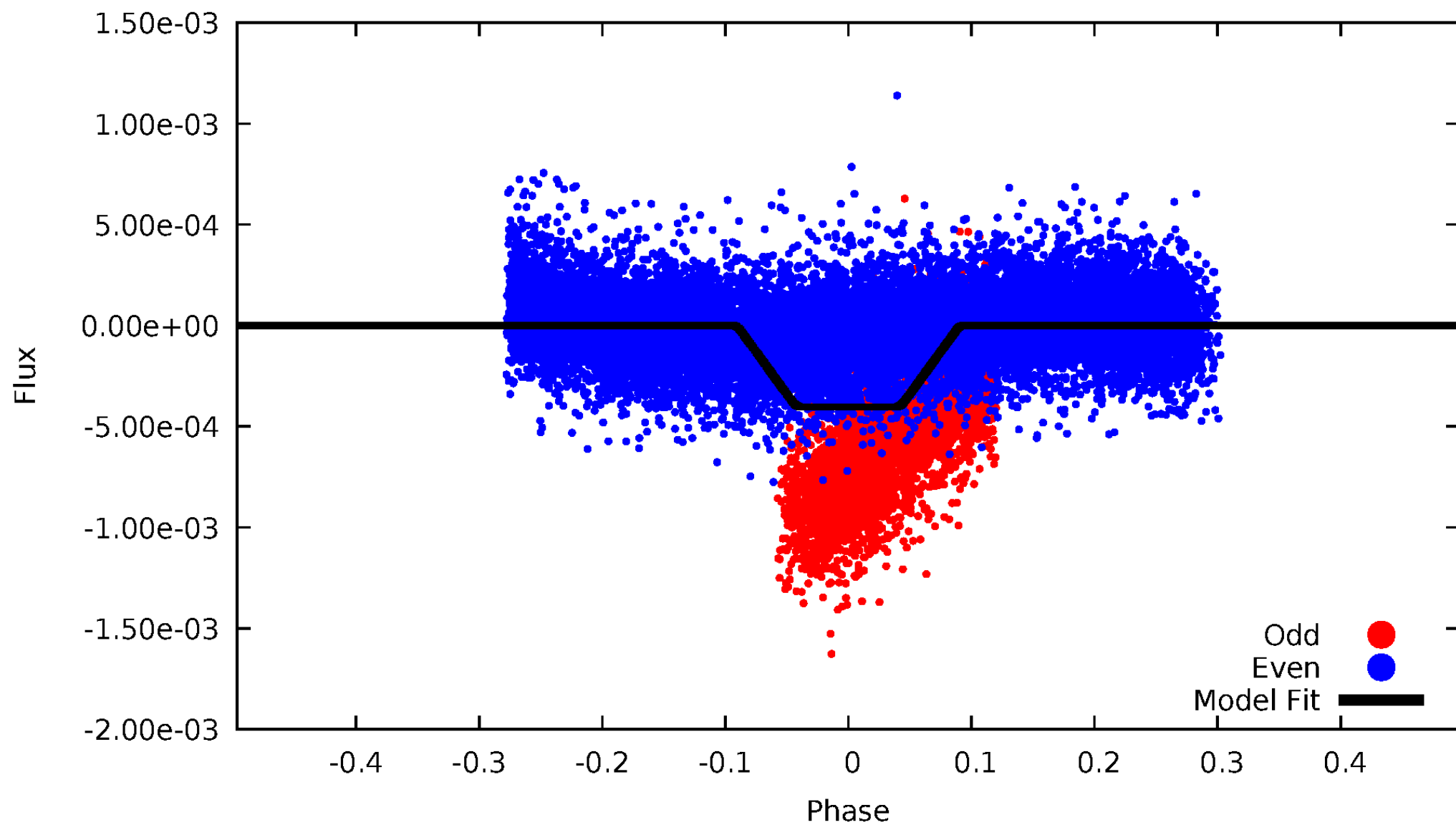
DV Odd/Even

TCE 005281619-04



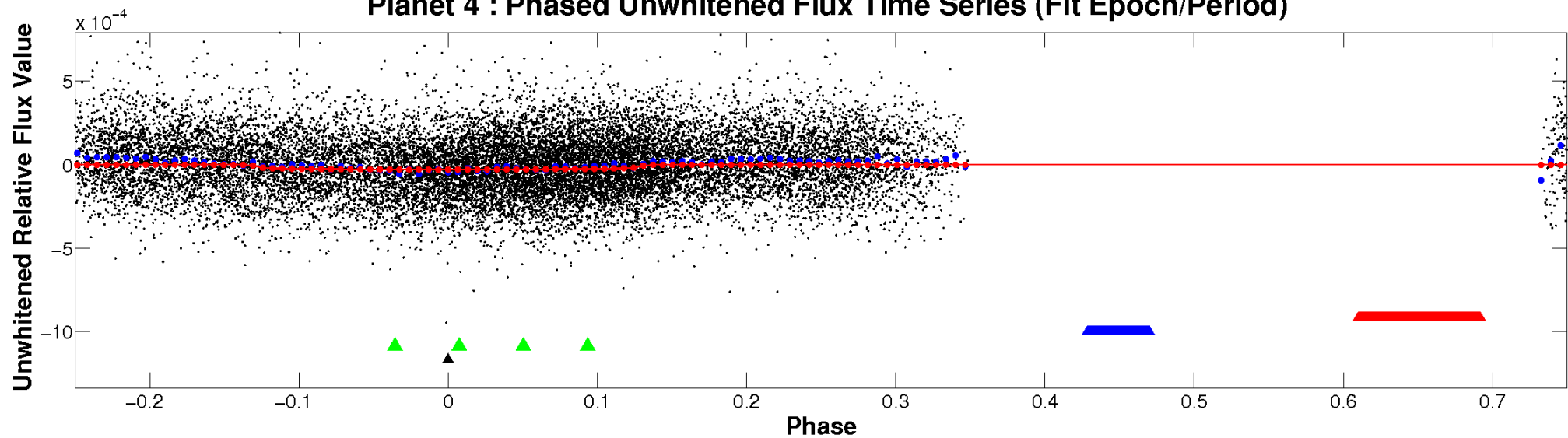
ALT Odd/Even

TCE 005281619-04

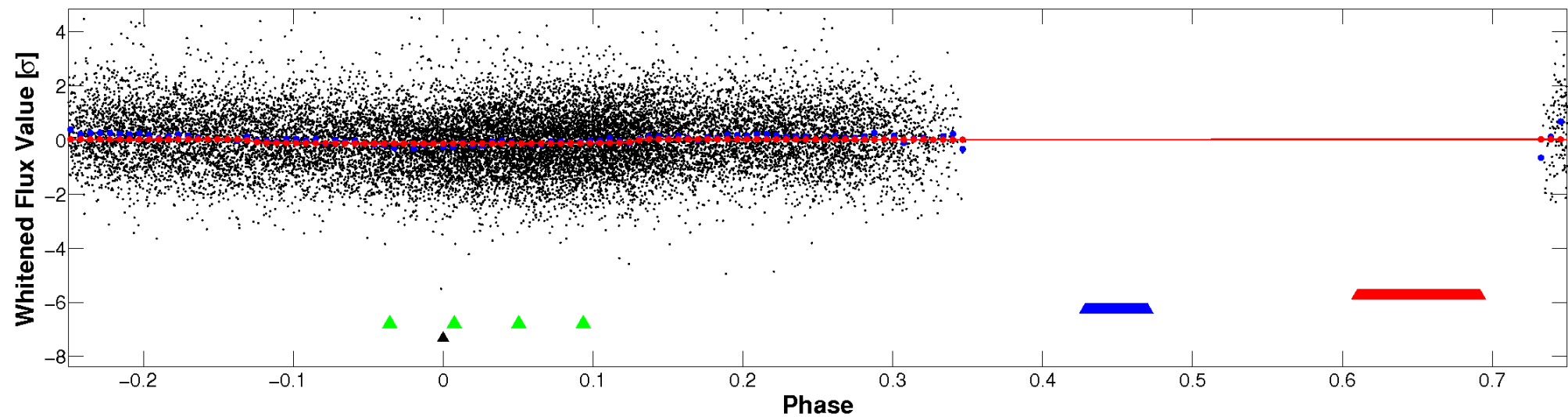


Non-Whitened Vs. Whitened Light Curve

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

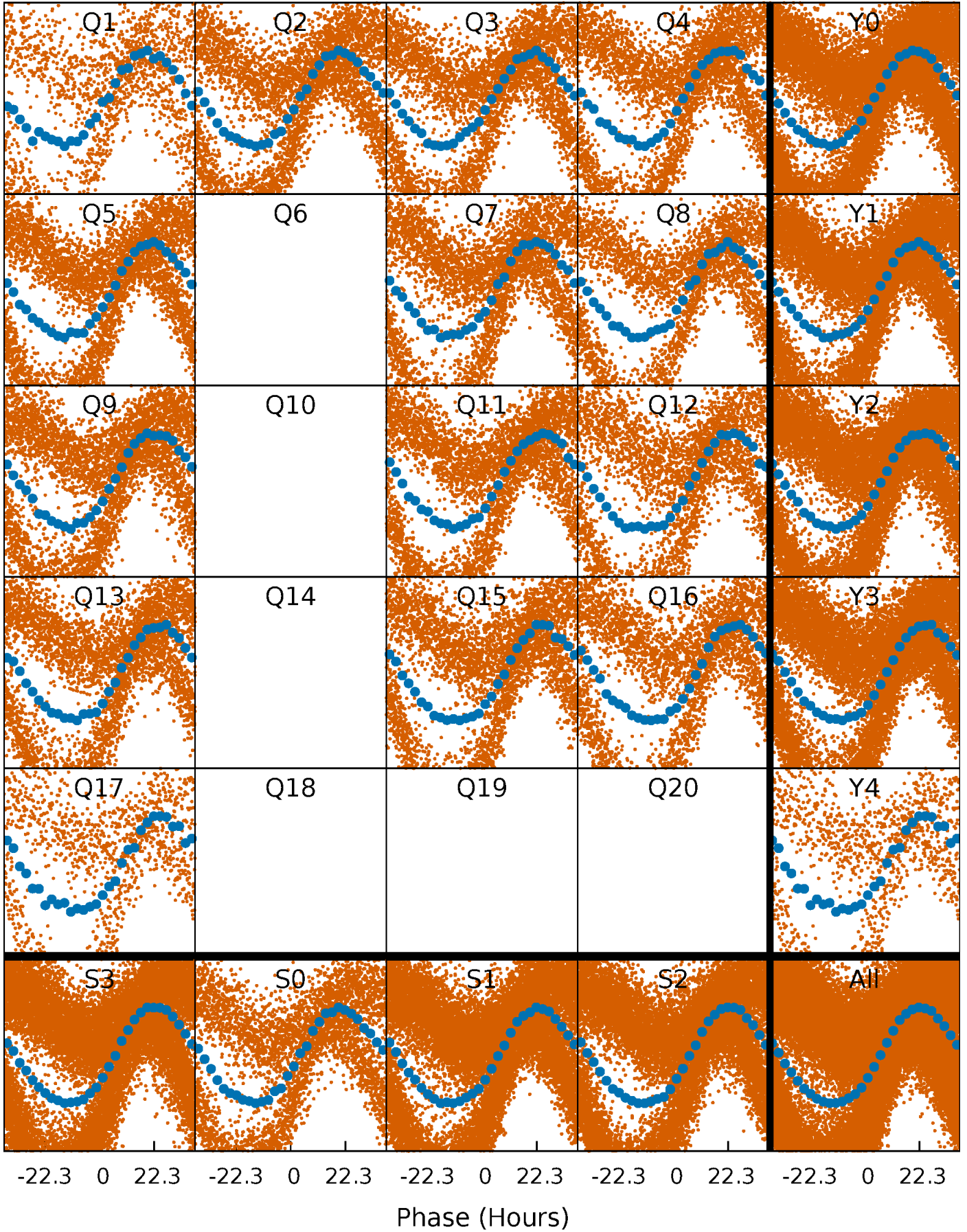


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



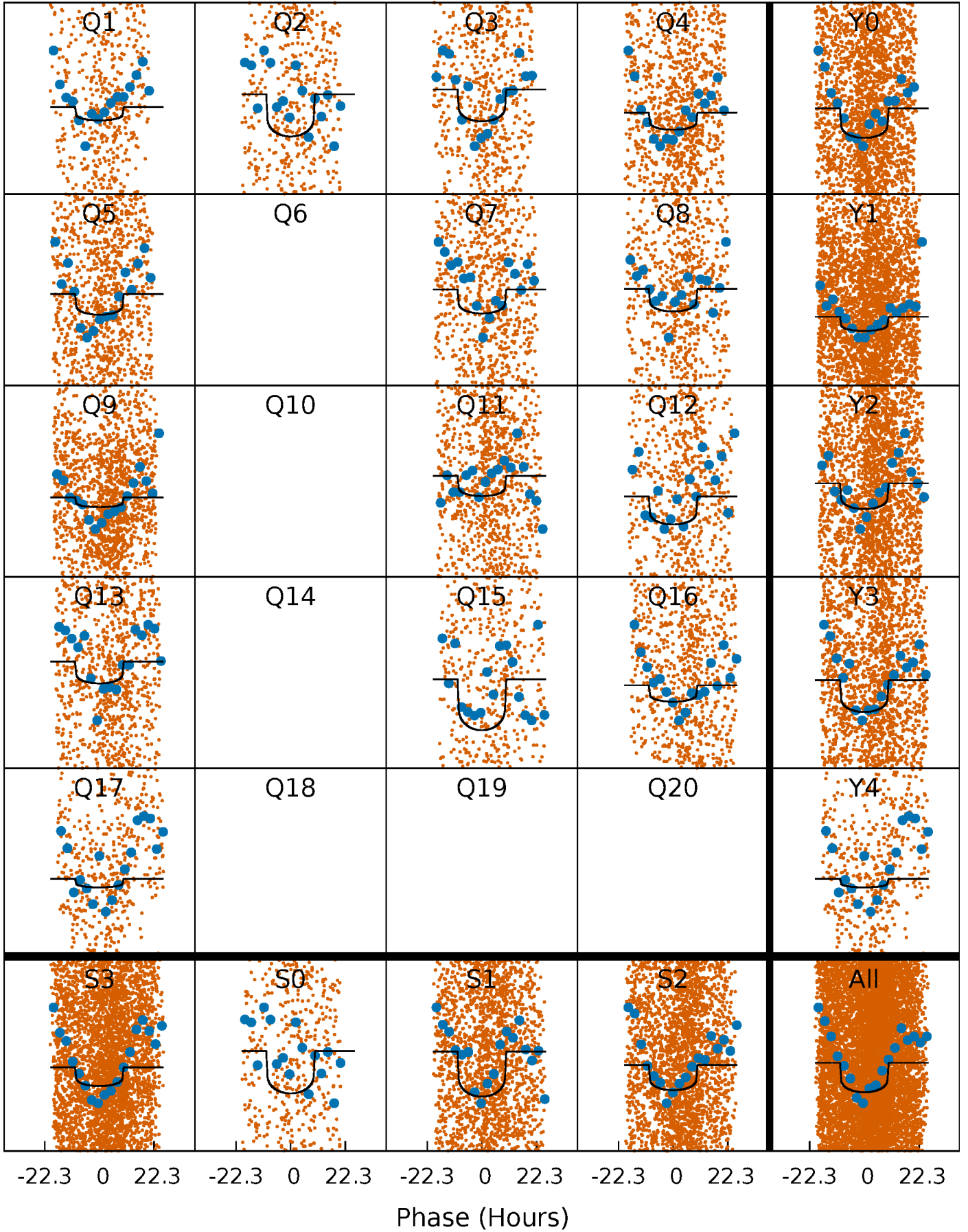
PDC Quarter-Phased Transit Curves

TCE 005281619-04 P= 3.124080 Days $T_0=131.707220$ (BKJD)



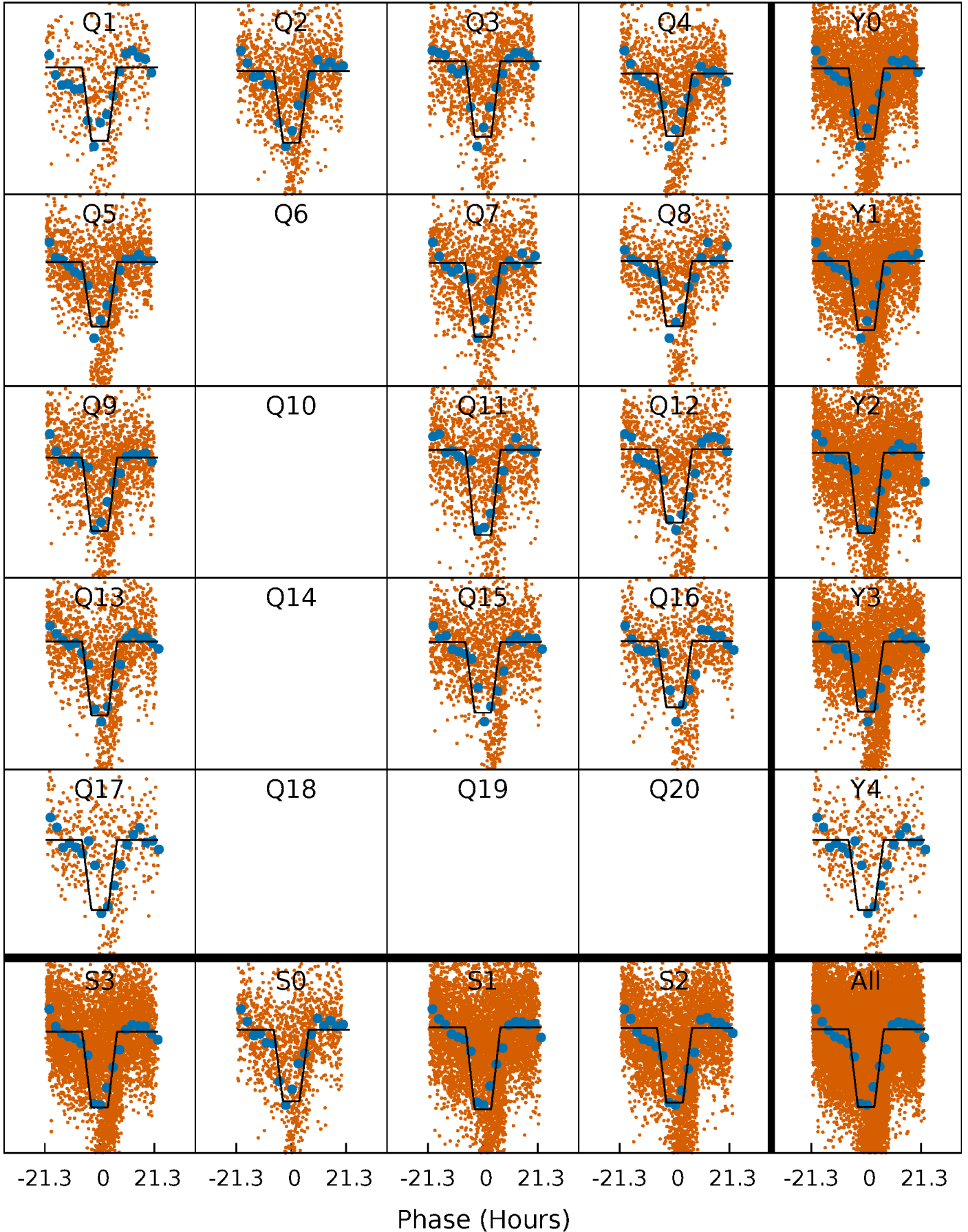
DV Quarter-Phased Transit Curves

TCE 005281619-04 $P = 3.124080$ Days $T_0 = 131.707220$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

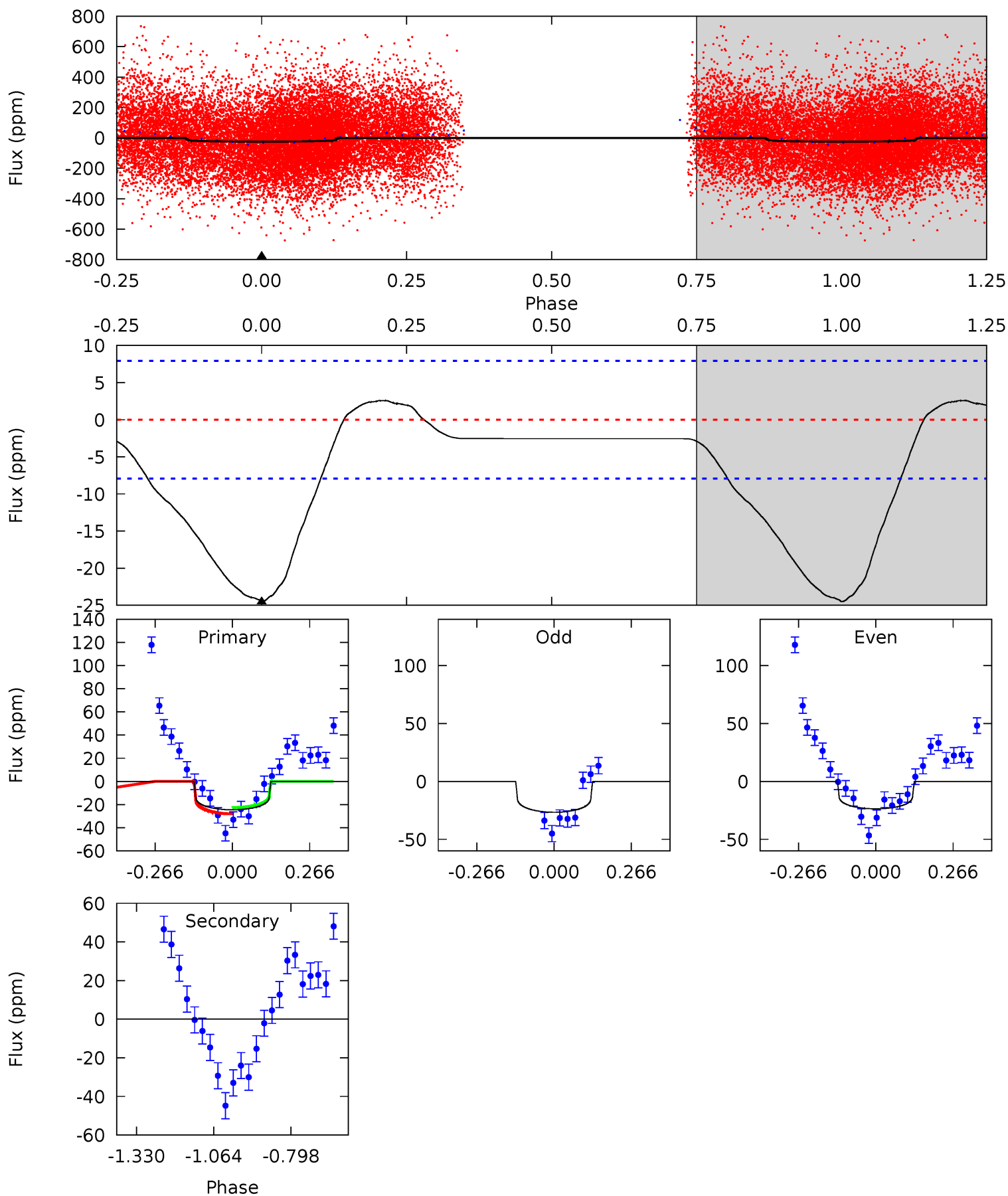
TCE 005281619-04 P= 3.124323 Days $T_0=131.738634$ (BKJD)



DV Model-Shift Uniqueness Test

005281619-04, P = 3.124080 Days, E = 128.583140 Days

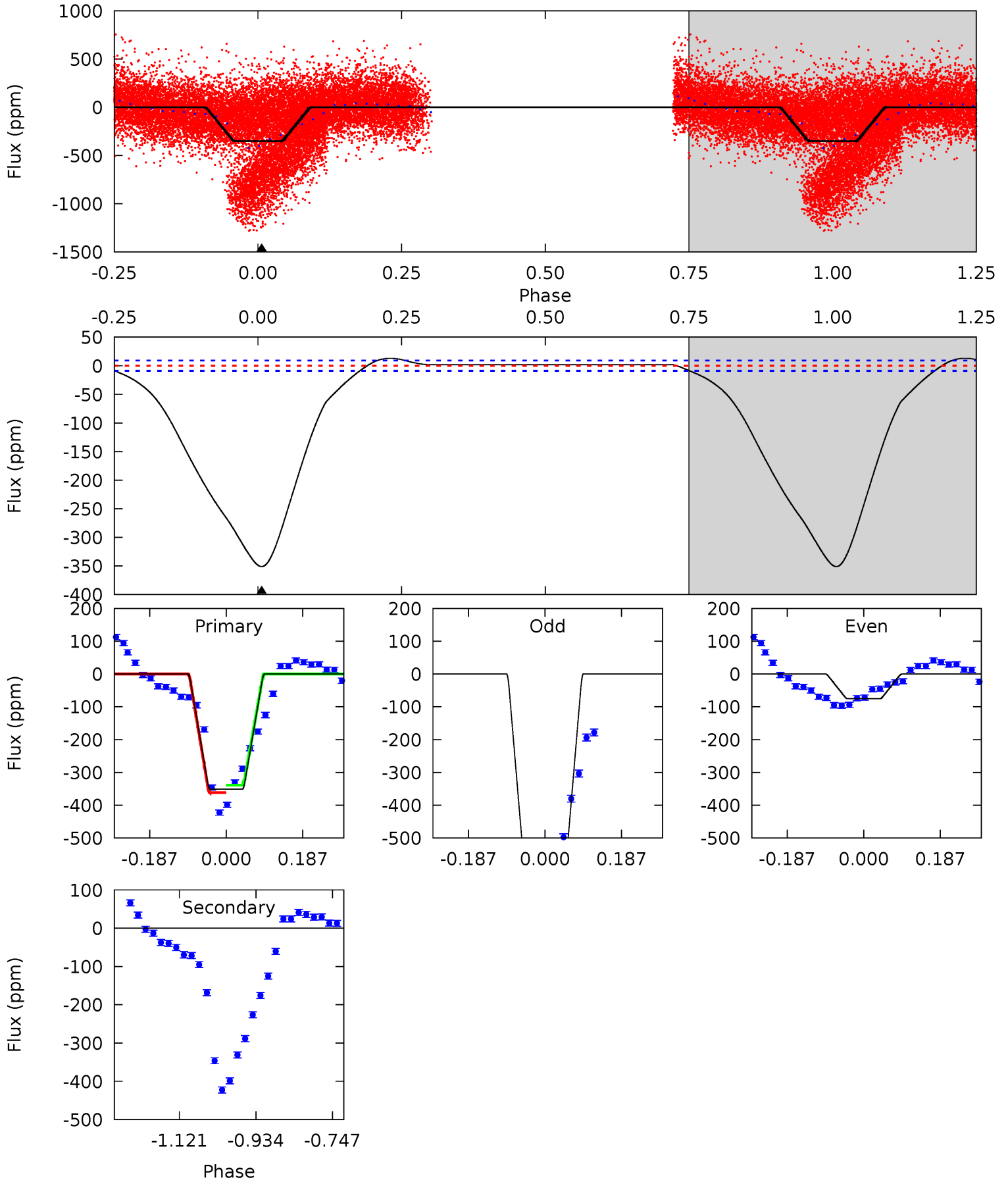
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.5	0	0	0	4.36	1.11	0.95	13.5	13.5	0	0	0.83	1.28	0.10	1.55



Alt Model-Shift Uniqueness Test

005281619-04, P = 3.124323 Days, E = 128.614311 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
175.0	0	0	0	4.43	1.32	9.44	175.0	175.0	0	0	118.9	1.77	0.04	3.46



Stellar Parameters For KIC 005281619

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	7797^{+69}_{-93}	$4.197^{+0.045}_{-0.135}$	$0.070^{+0.150}_{-0.250}$	$1.719^{+0.319}_{-0.137}$	$1.694^{+0.118}_{-0.132}$	$0.470^{+0.105}_{-0.177}$
	+1%/-1%	+1%/-3%	+214%/-357%	+19%/-8%	+7%/-8%	+22%/-38%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 005281619-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 2	$1.20^{+0.81}_{-0.76}$	2849^{+120}_{-80}	-2966^{+7105}_{-1450}	$0.013^{+2.646}_{-2.948}$
Alt.	0 ± 2	$3.83^{+0.98}_{-1.00}$	2844^{+136}_{-71}	-2989^{+419}_{-234}	$-0.003^{+0.201}_{-0.202}$

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 $A_{obs} \gg 1.0$

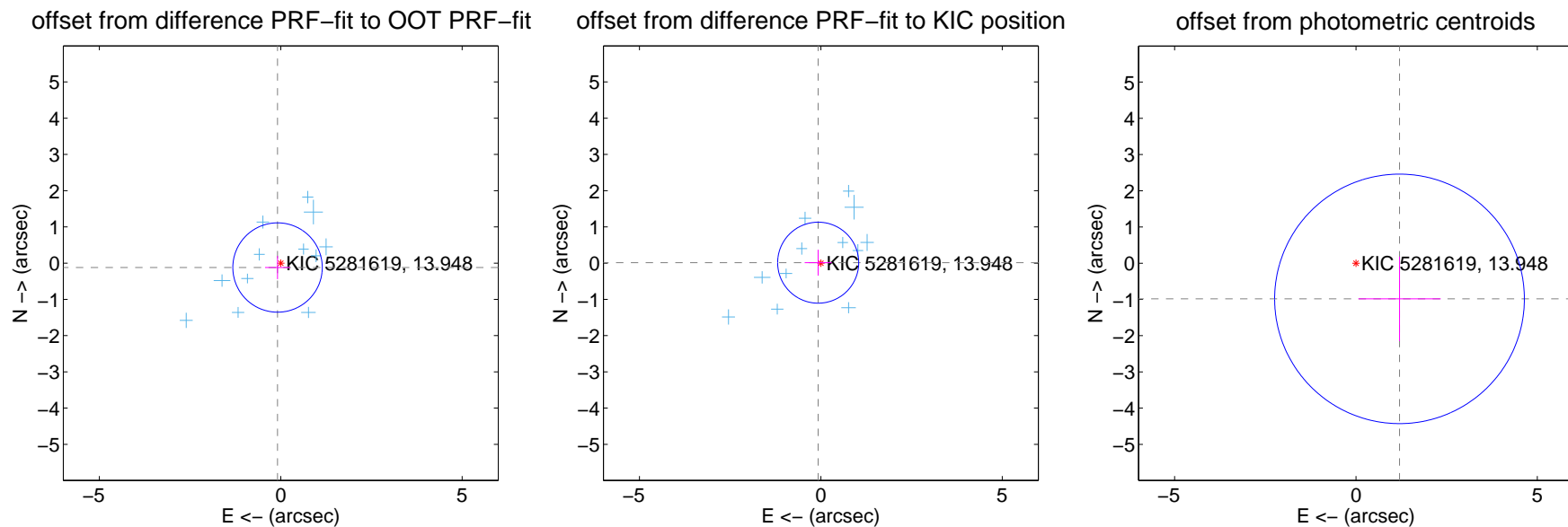
DV Centroid Data

Supplemental centroid analysis for 005281619-04. Kepler magnitude: 13.95. Transit SNR 11.86

There are 12 quarters with good PRF difference image offsets

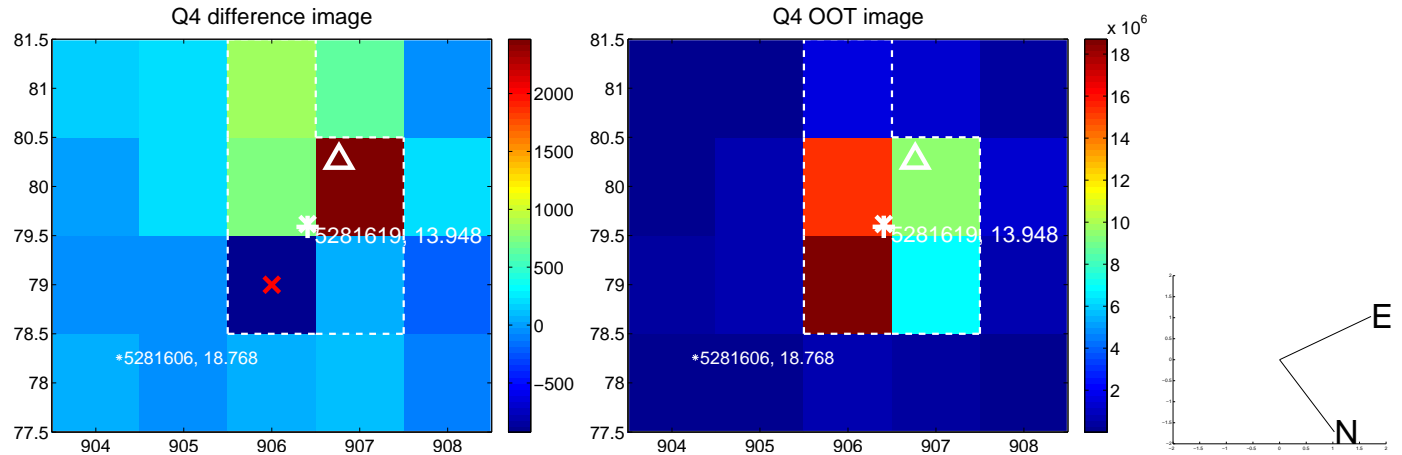
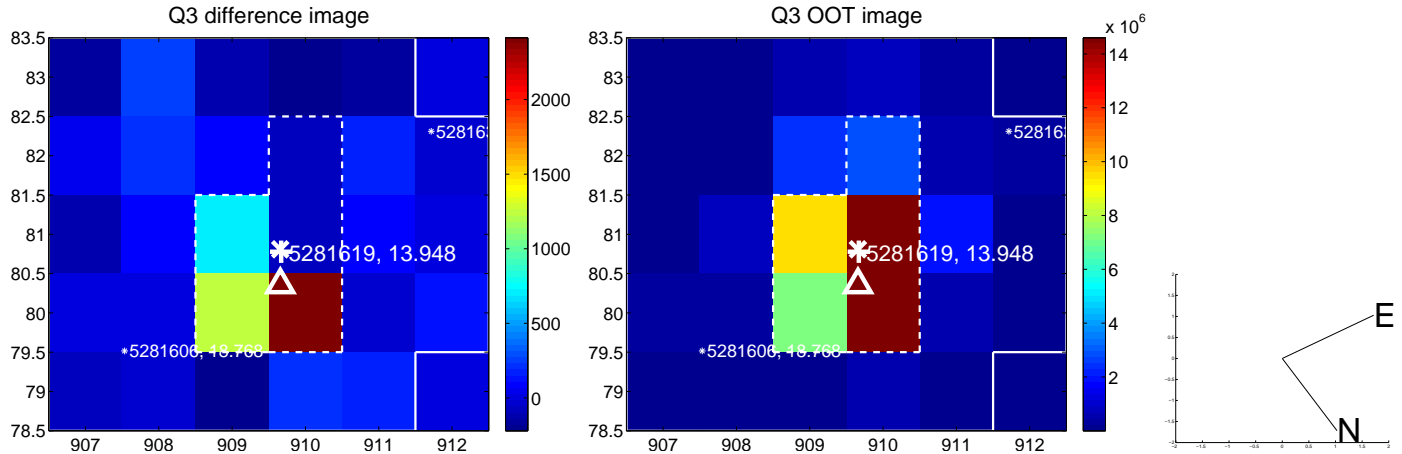
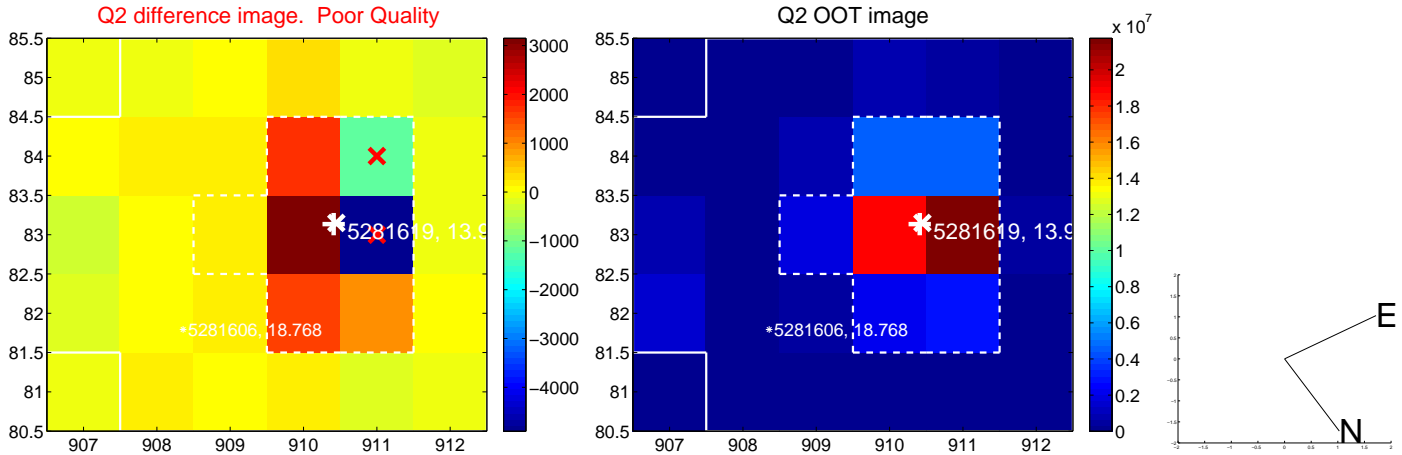
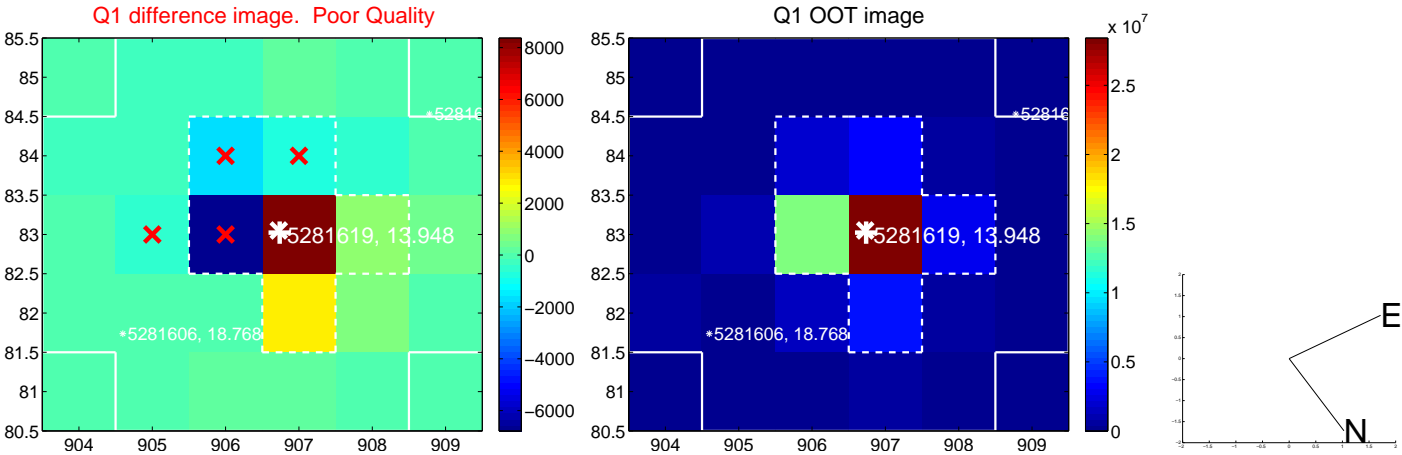
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.149 ± 0.411	0.36	0.088 ± 0.344	-0.121 ± 0.322
PRF-fit source offset from KIC position	0.075 ± 0.373	0.20	0.074 ± 0.373	0.013 ± 0.358
photometric centroid source offset	1.55 ± 1.15	1.35	-1.20 ± 1.13	-0.98 ± 1.17

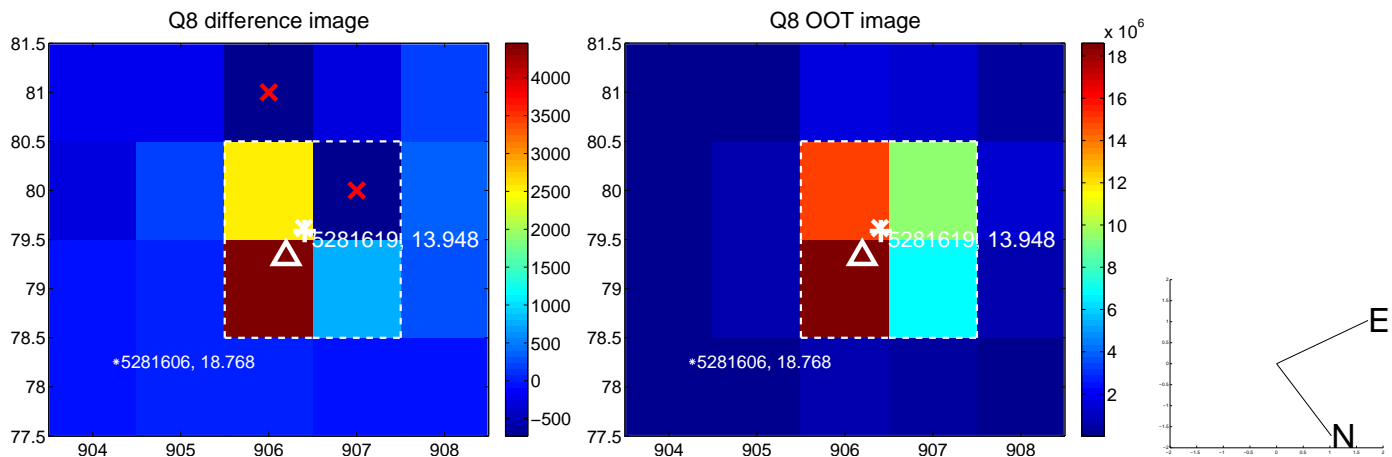
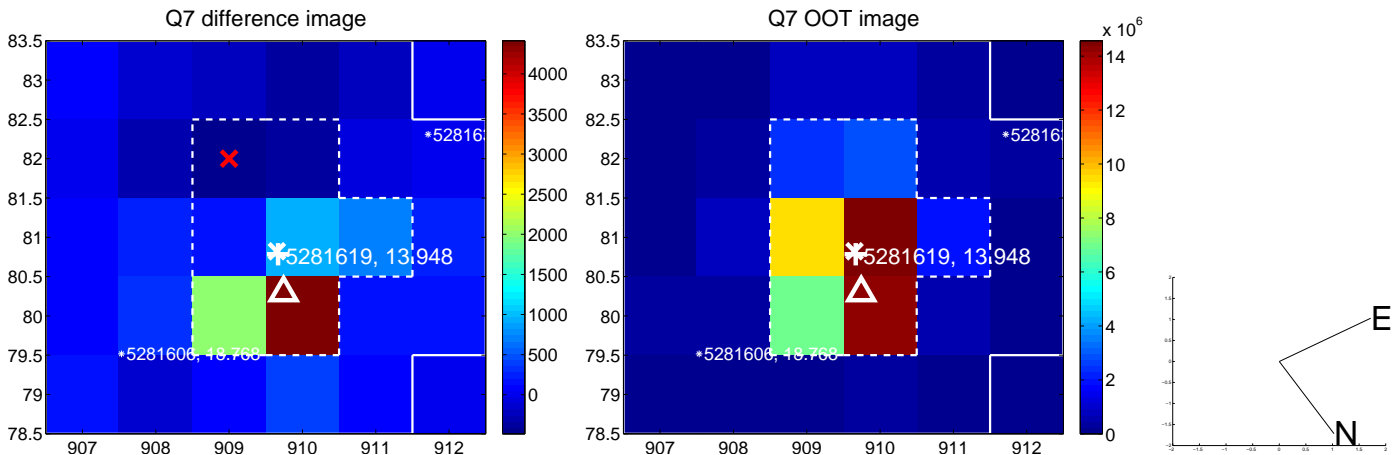
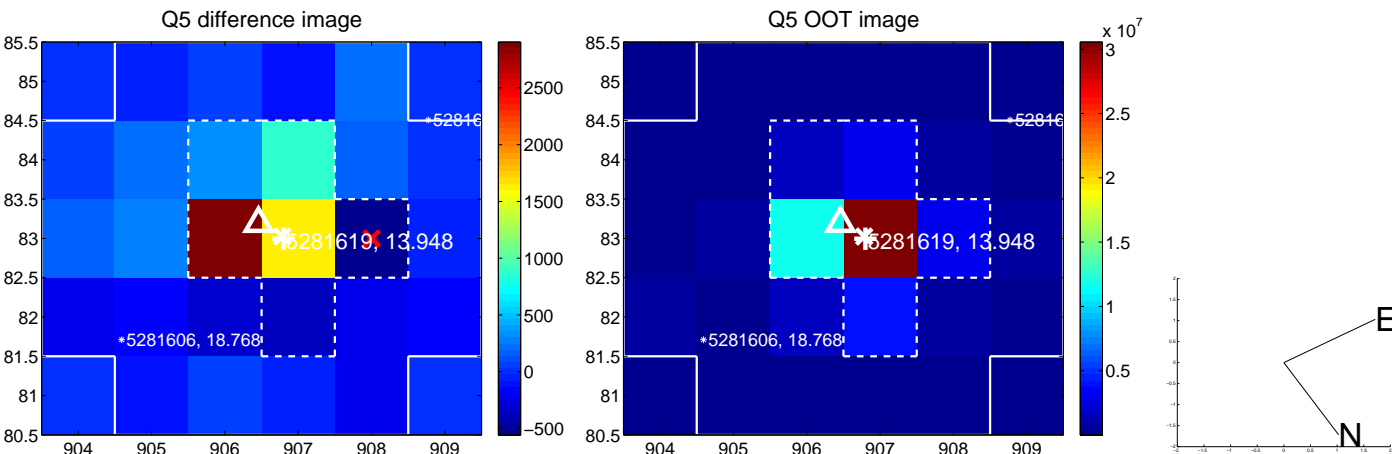


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

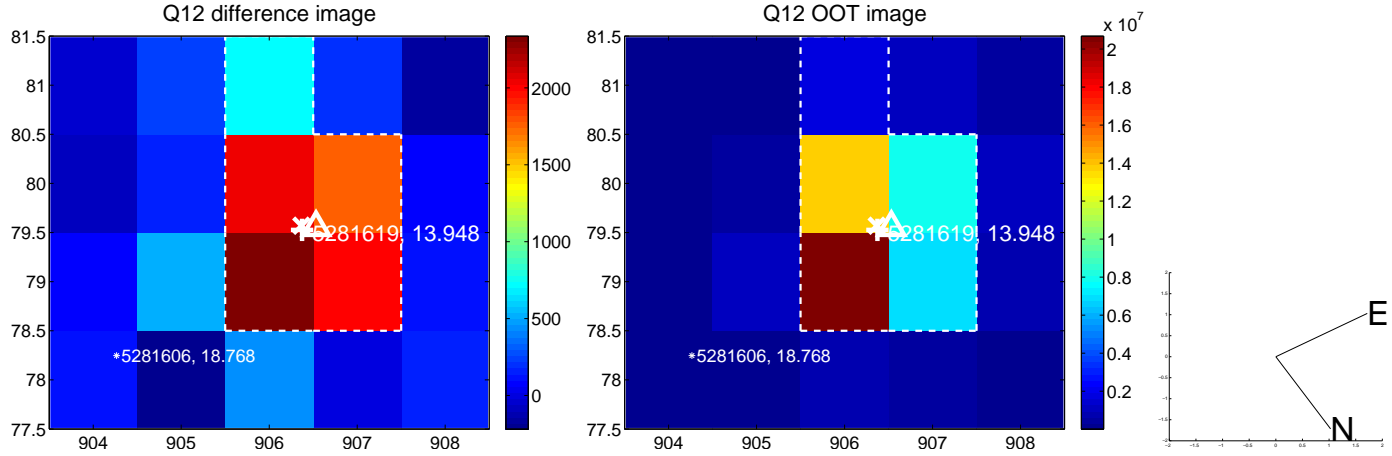
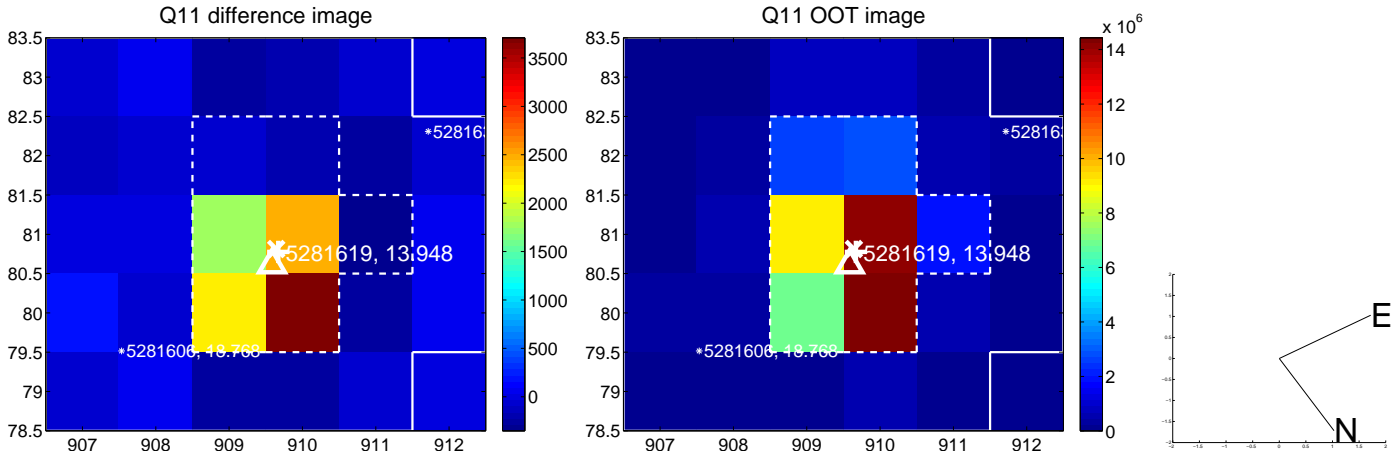
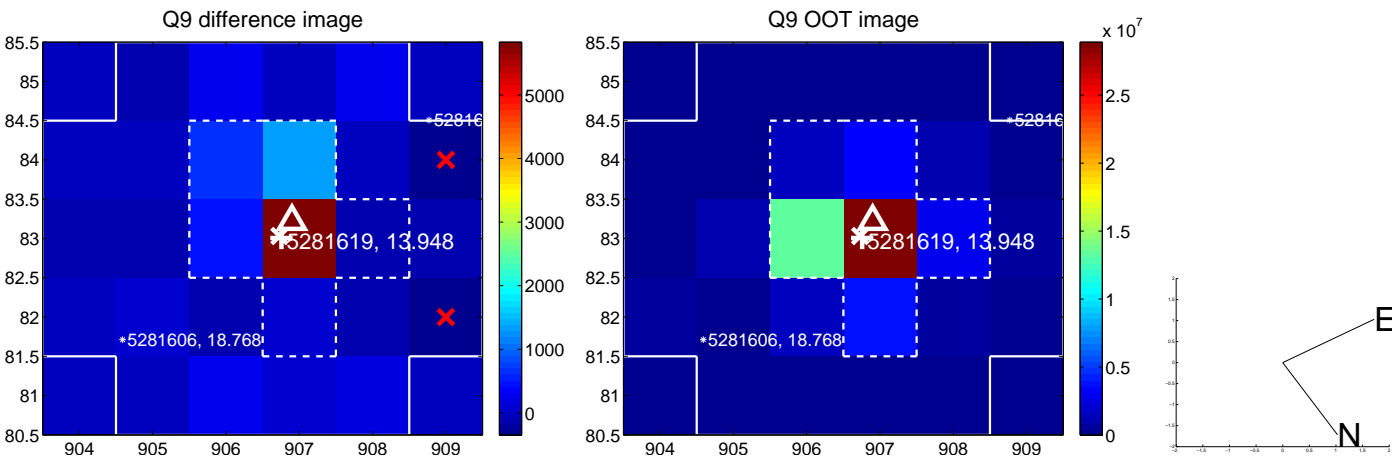
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



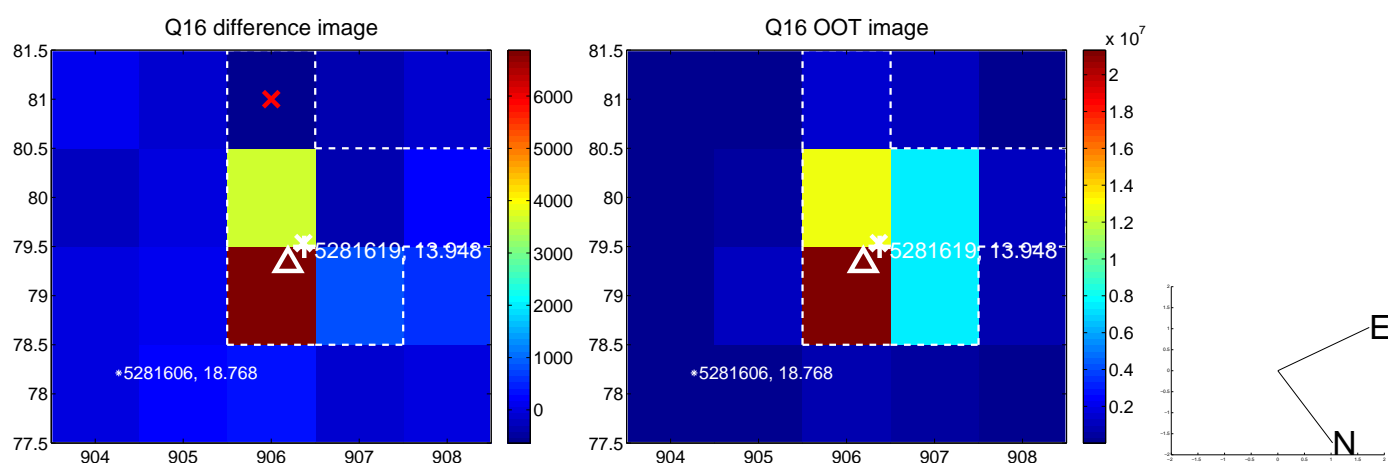
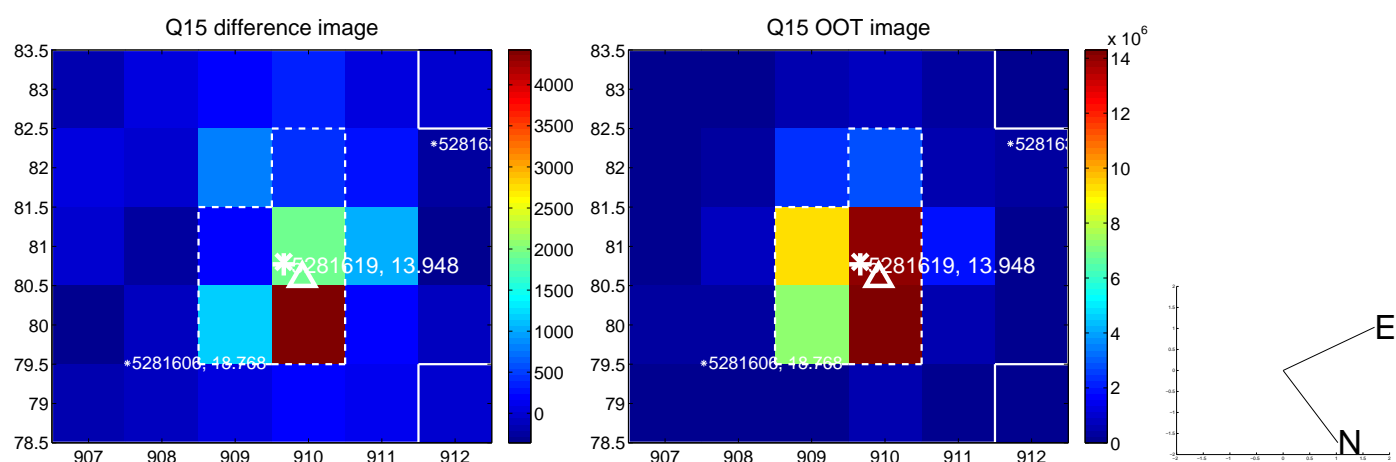
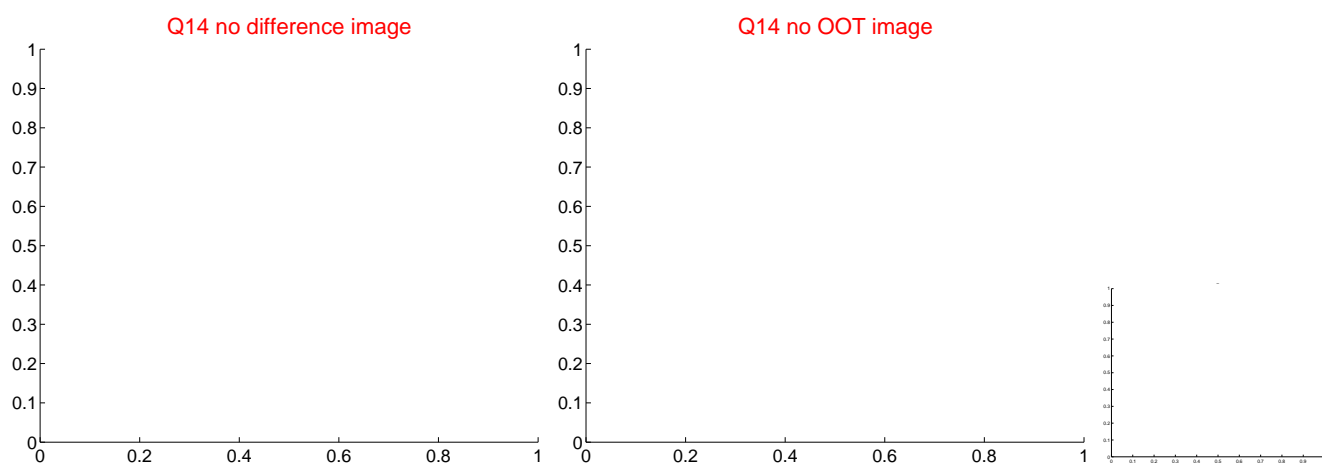
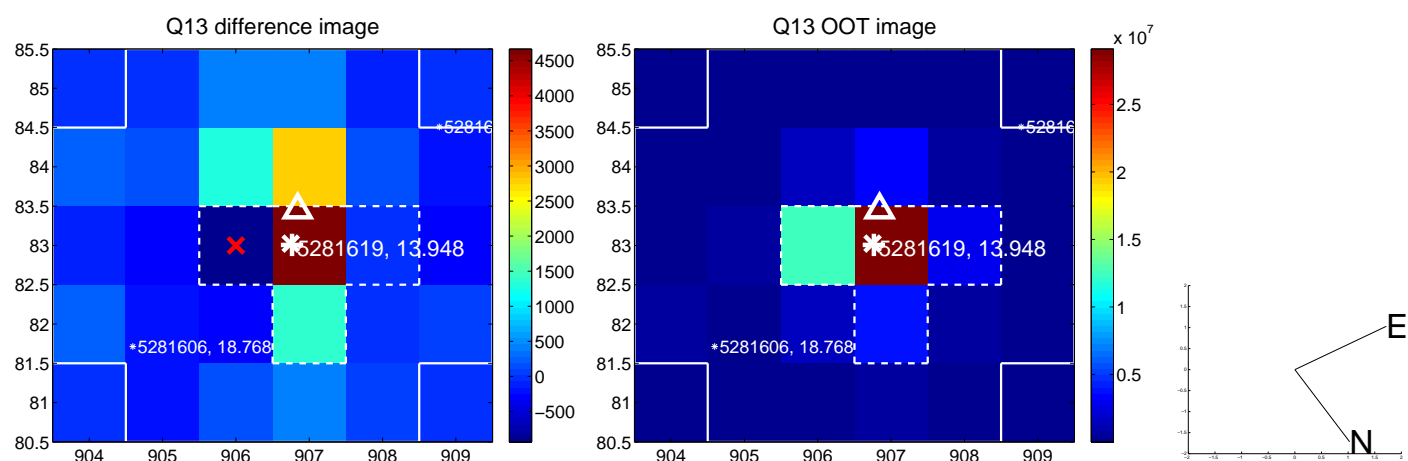
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



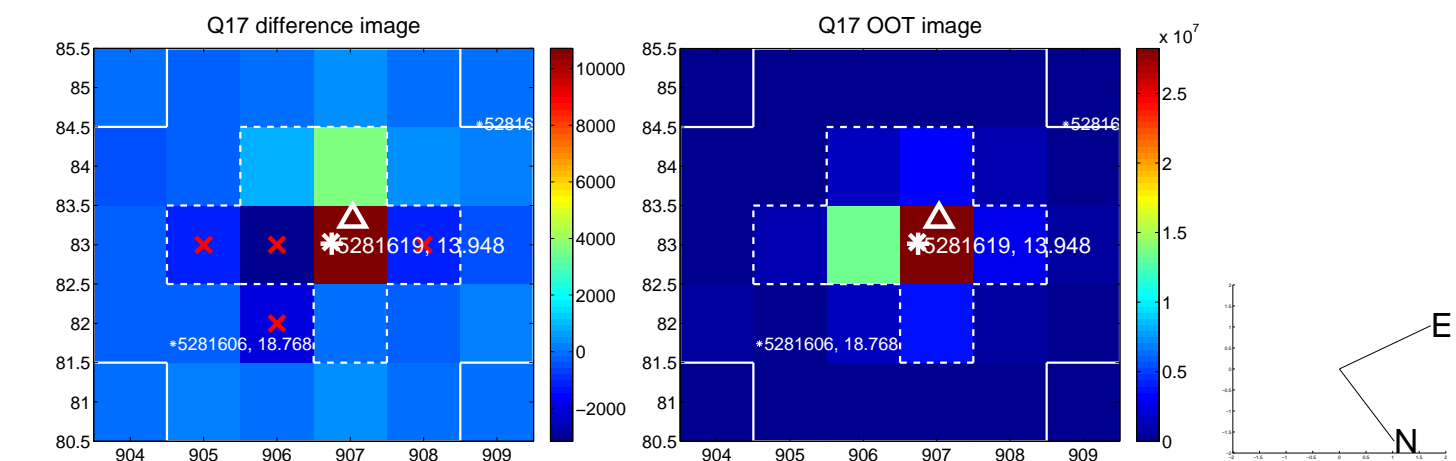
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



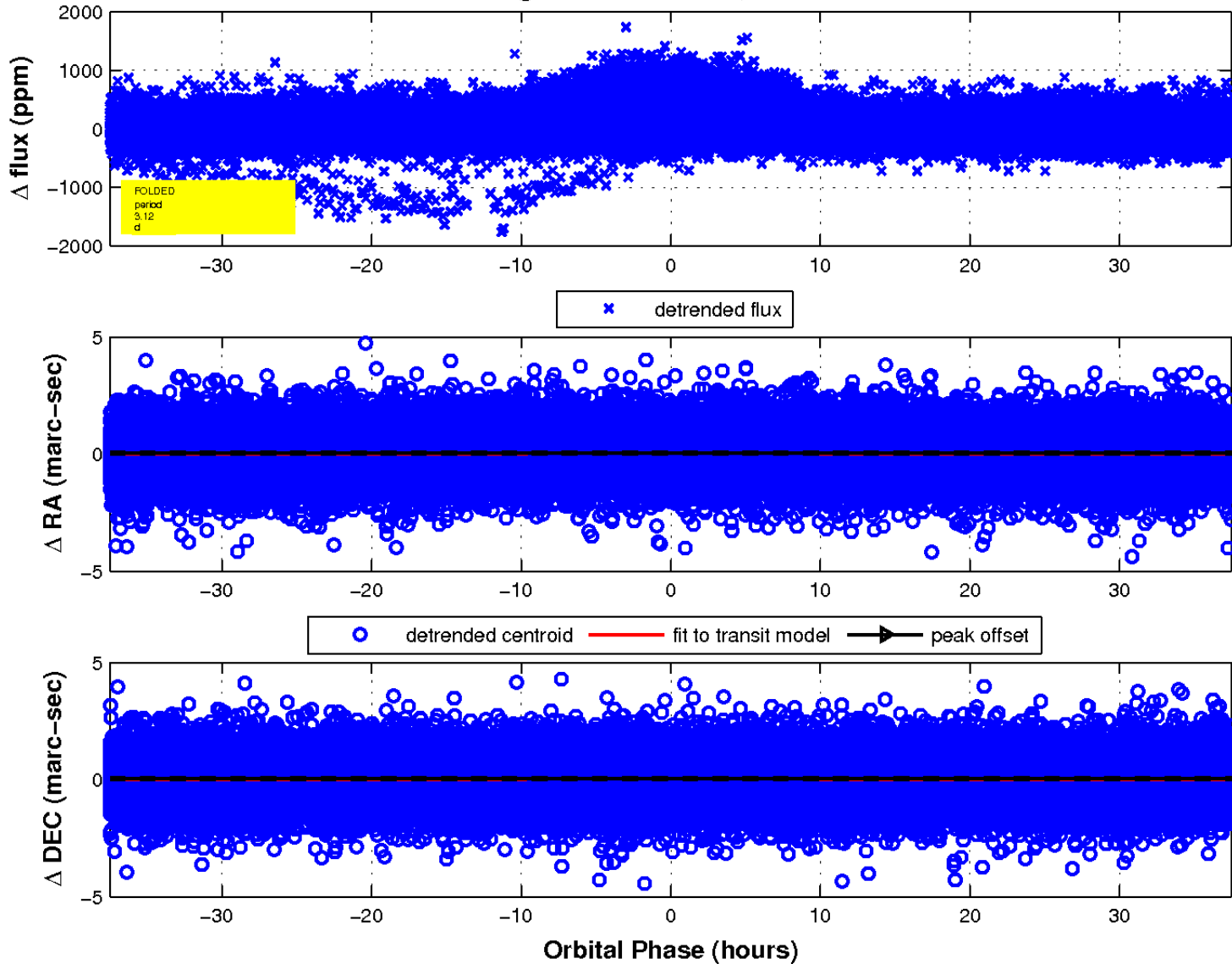
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 4 of 4



UKIRT Image

Declination

