

The University of Nottingham

**Mitigating the Scintillation Effect on GPS
Signals Based on Parameters from Standard
Geodetic Receivers**

Appendices

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Philosophy

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Contents (Appendices)

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Appendix 1: Supplementary figures for Chapter 5

Parameters against elevation and azimuth (PEA) plots of parameters (MP1, MP2, ROTI, S4 and σ_ϕ) on each satellite during September, 2017 from the SAOOP and SJCU stations are provided in Appendix 1. In each figure, one parameter is plotted for 30 days. The legend shows the mild (MT) and extreme thresholds (ET), which is used for defining outliers. Table S1 shows the figure and page numbers for each station and parameter. It should be noted that there are 34 and 33 ROTI figures respectively for SAOOP and SJCU stations when there are 32 (number of satellites) figures for the other parameters. This is because ROTI is plotted with and without the extreme value as explained in section 5.2.3.3 of the thesis.

Table S1. Figure and page number range for each station and parameter

Station name	MP1	MP2	ROTI	S4	σ_ϕ
SAOOP	S1-32	S33-64	S65-98	S99-S130	S131-162
	A2-33	A34-65	A66-99	A100-131	A132-163
SJCU	S163-194 A164-195	S195-226 A196-227	S227-259 A228-260	S260-291 A261-292	S292-323 A293-324

PEA plots (G1)

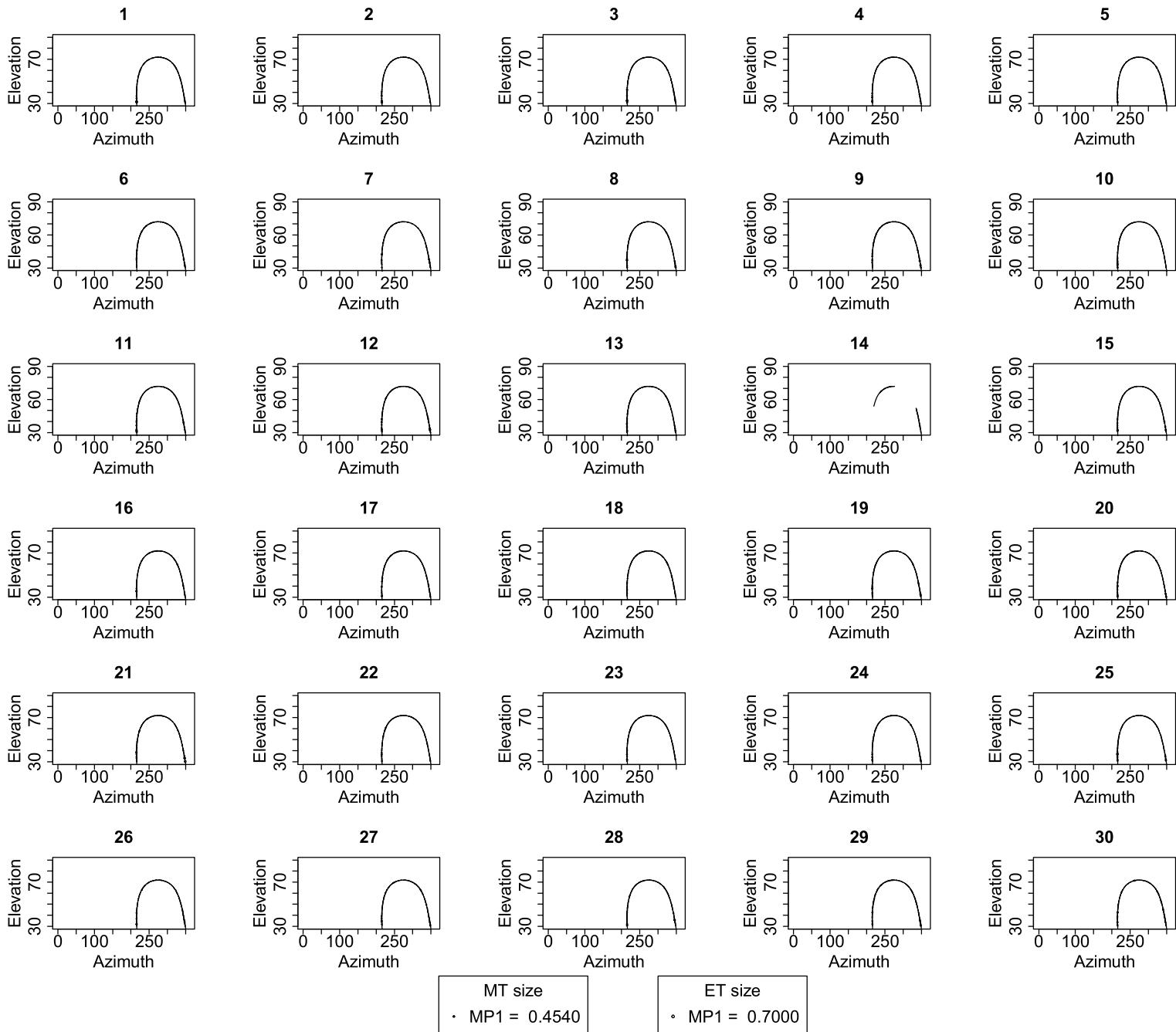


Figure S1 PEA plots comparison of MP1 for G1 on September 1–30, 2017 at SAOOP station

PEA plots (G2)

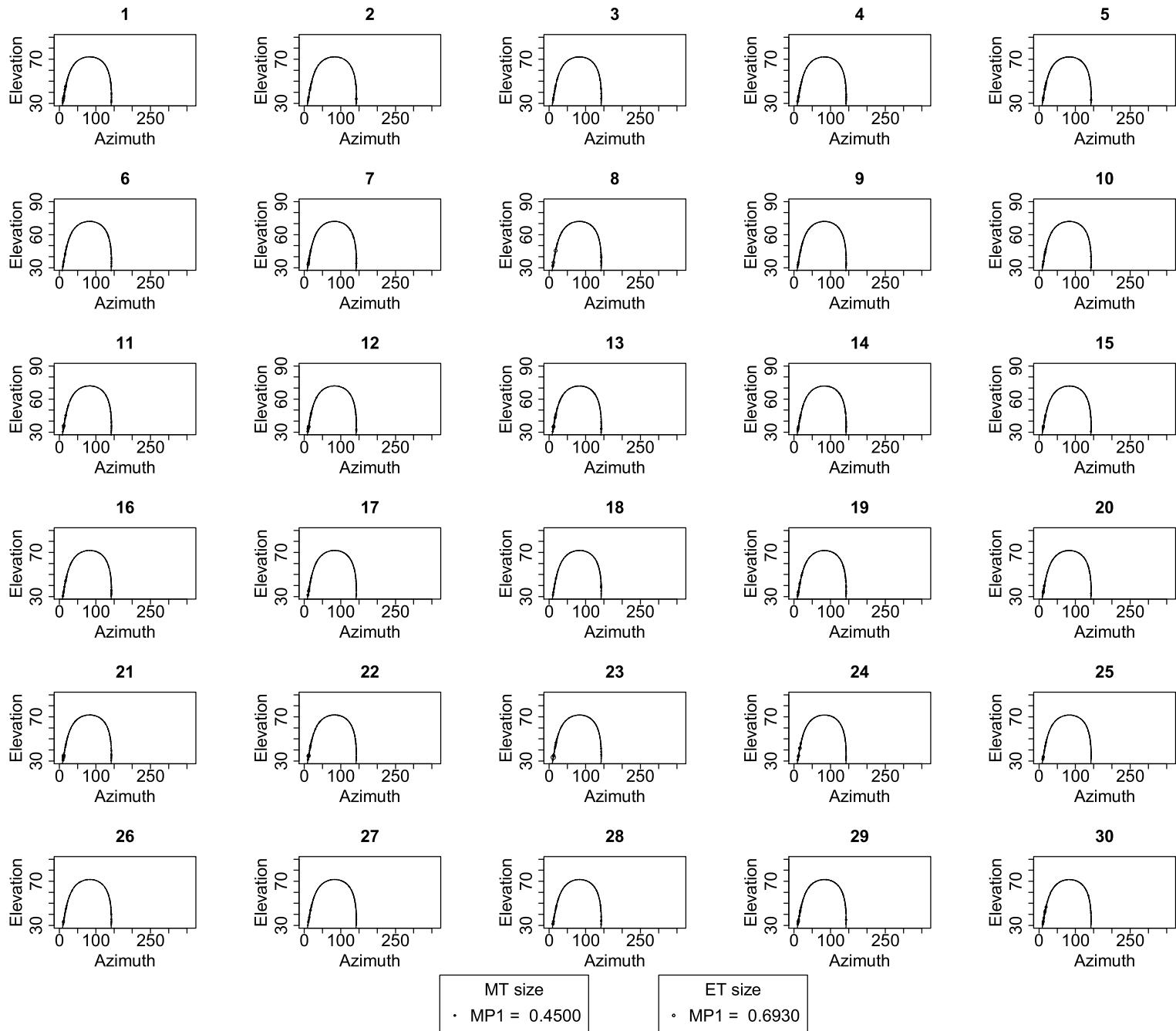


Figure S2 PEA plots comparison of MP1 for G2 on September 1–30, 2017 at SAOOP station

PEA plots (G3)

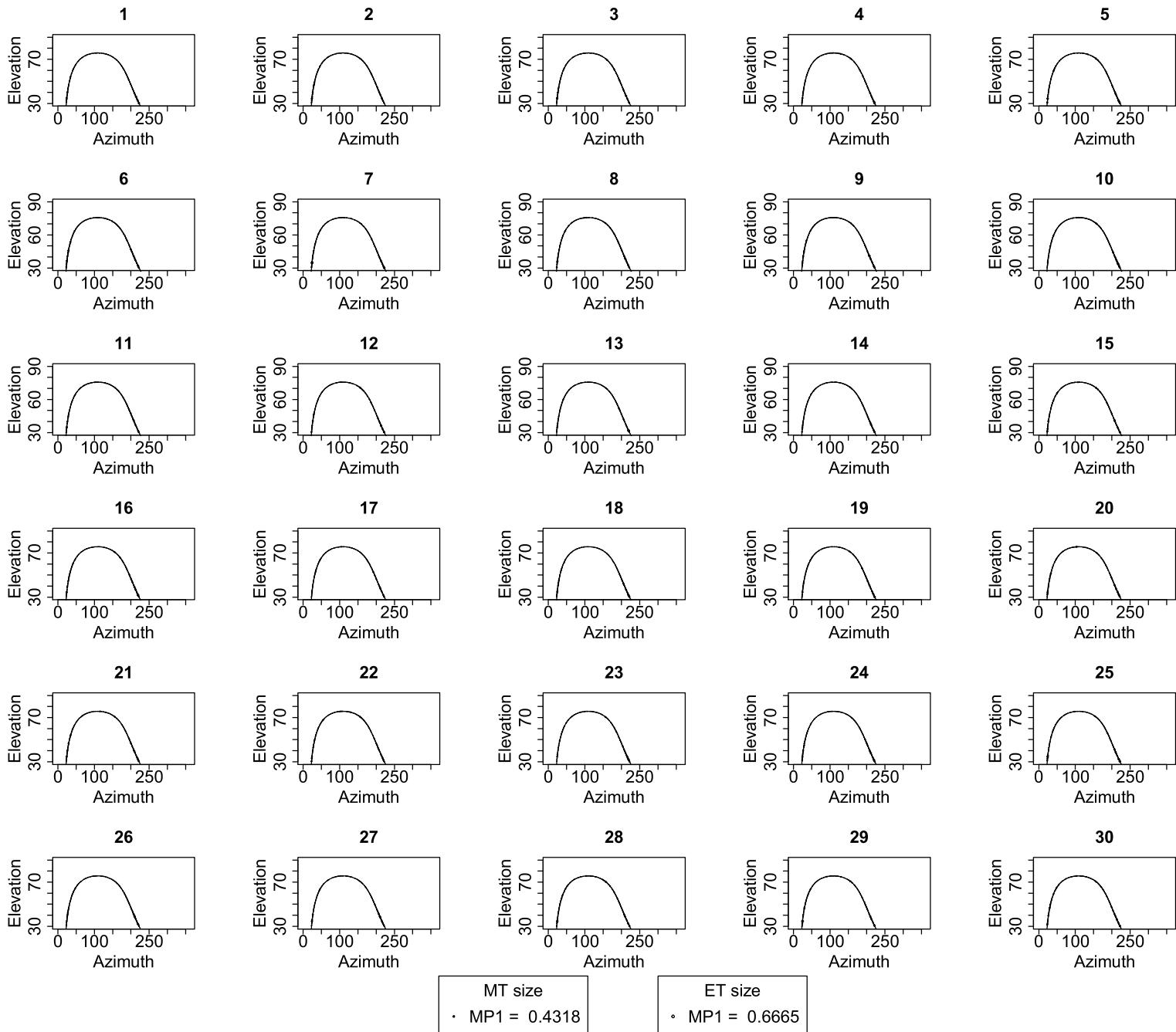


Figure S3 PEA plots comparison of MP1 for G3 on September 1–30, 2017 at SAOOP station

PEA plots (G4)

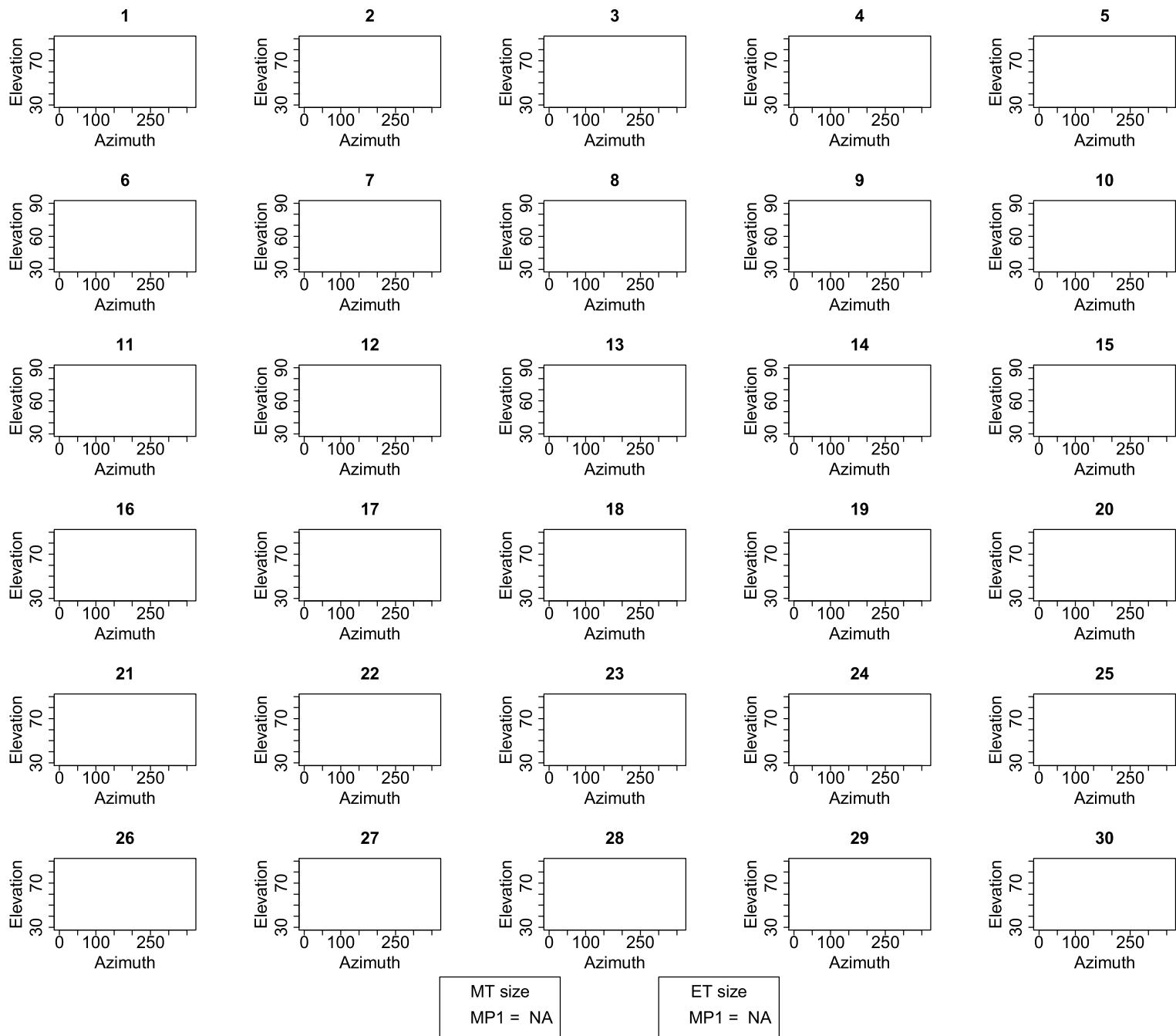


Figure S4 PEA plots comparison of MP1 for G4 on September 1–30, 2017 at SAOOP station

PEA plots (G5)

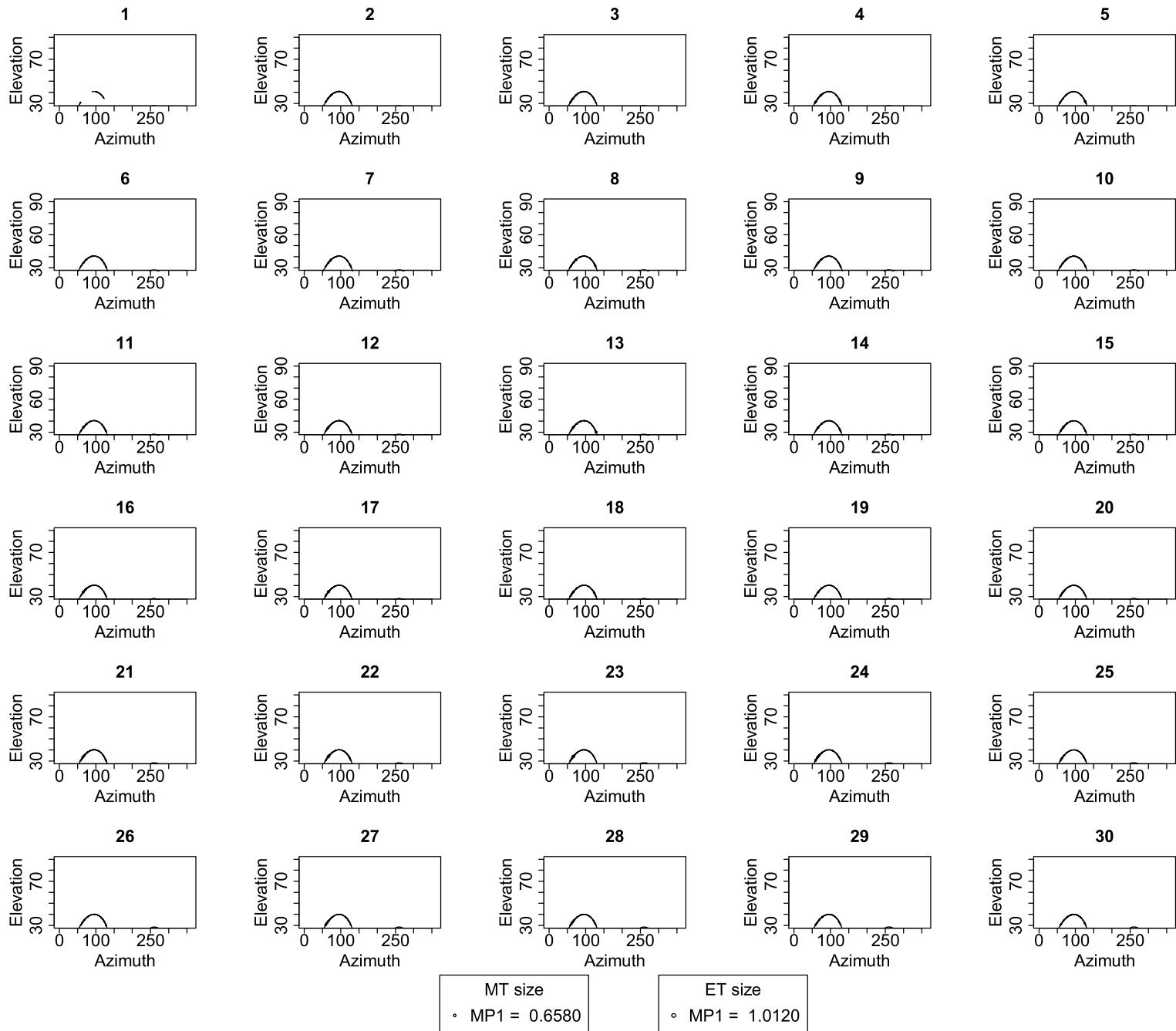


Figure S5 PEA plots comparison of MP1 for G5 on September 1–30, 2017 at SAOOP station

PEA plots (G6)

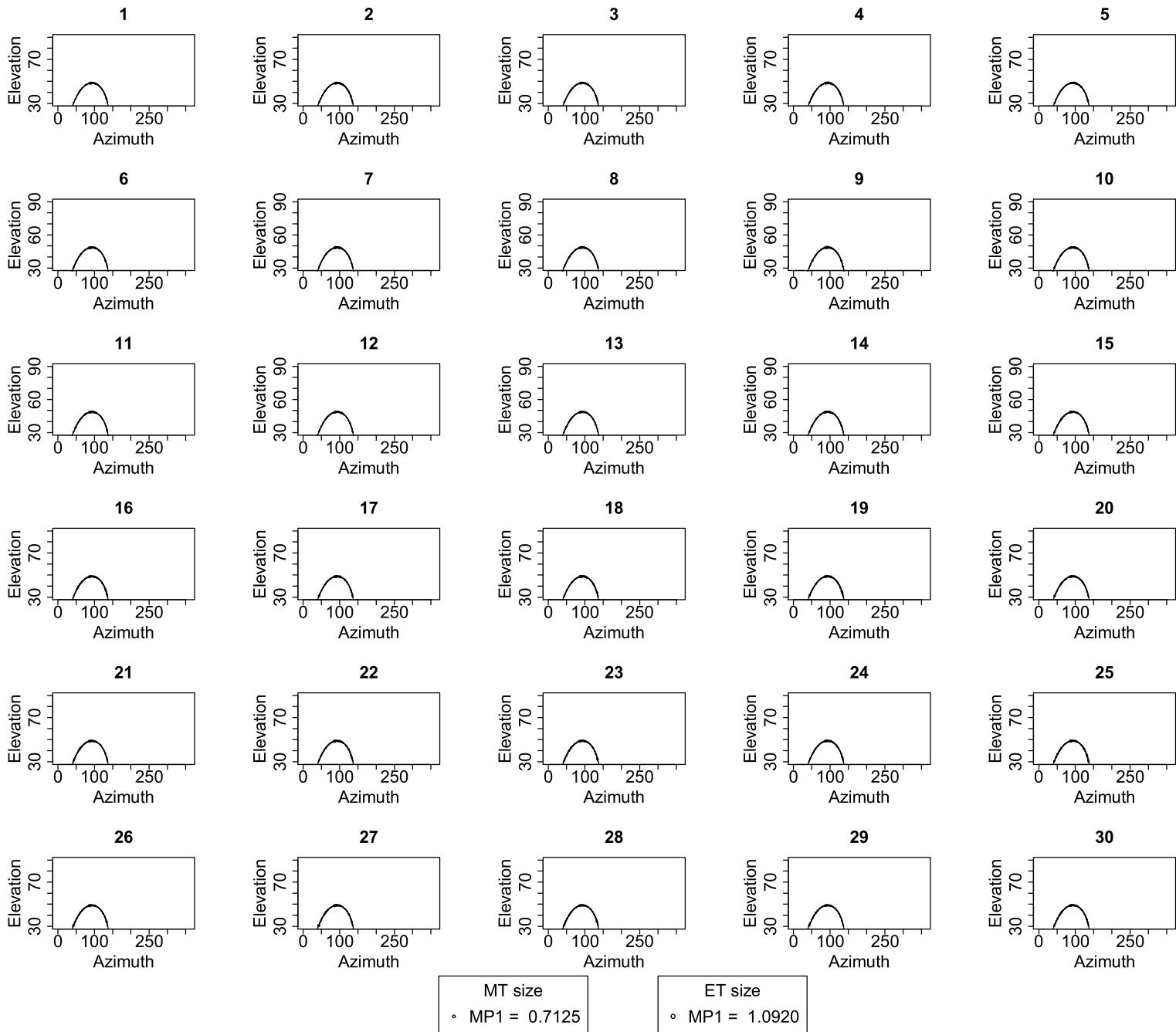


Figure S6 PEA plots comparison of MP1 for G6 on September 1–30, 2017 at SAOOP station

PEA plots (G7)

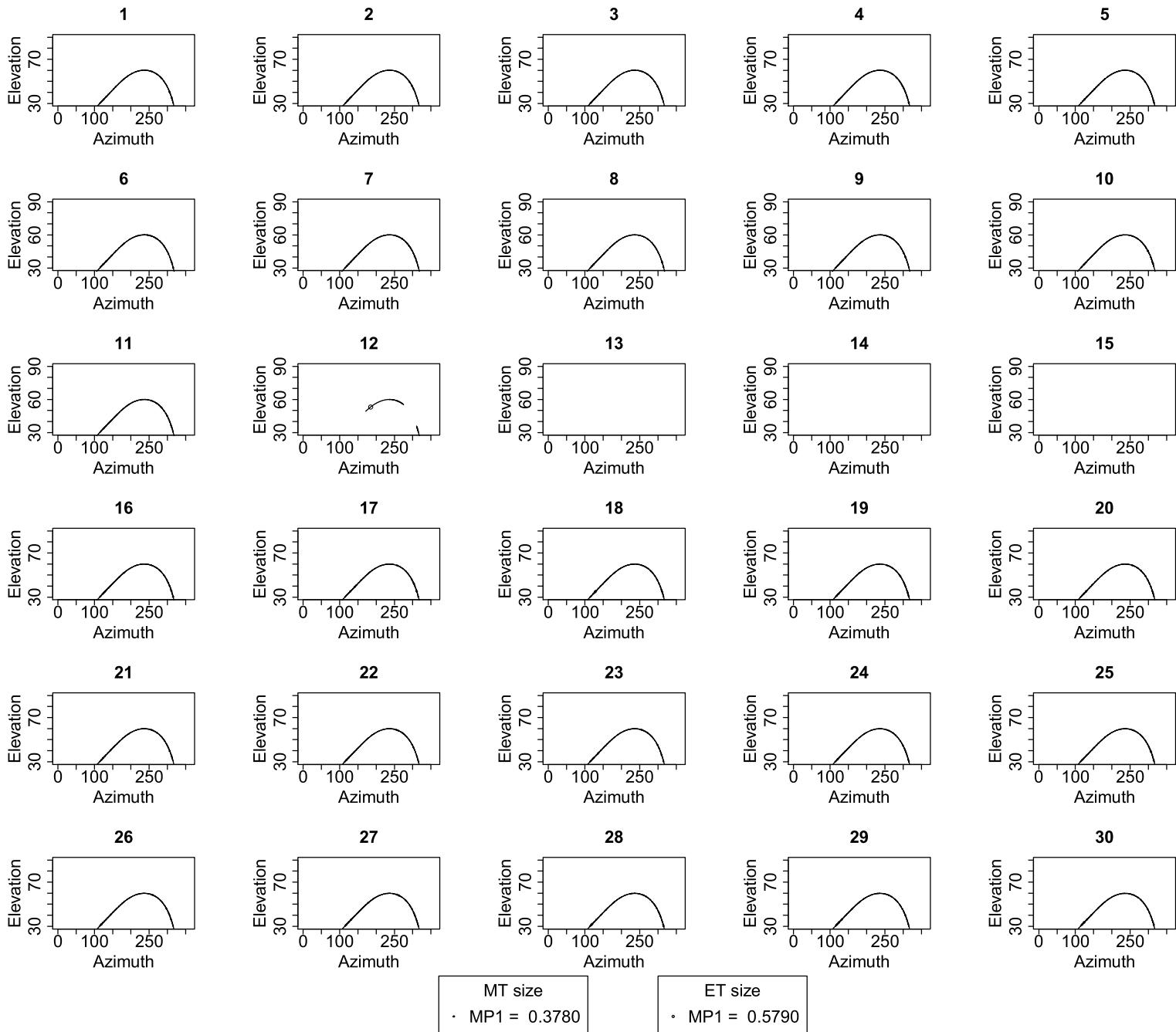


Figure S7 PEA plots comparison of MP1 for G7 on September 1–30, 2017 at SAOOP station

PEA plots (G8)

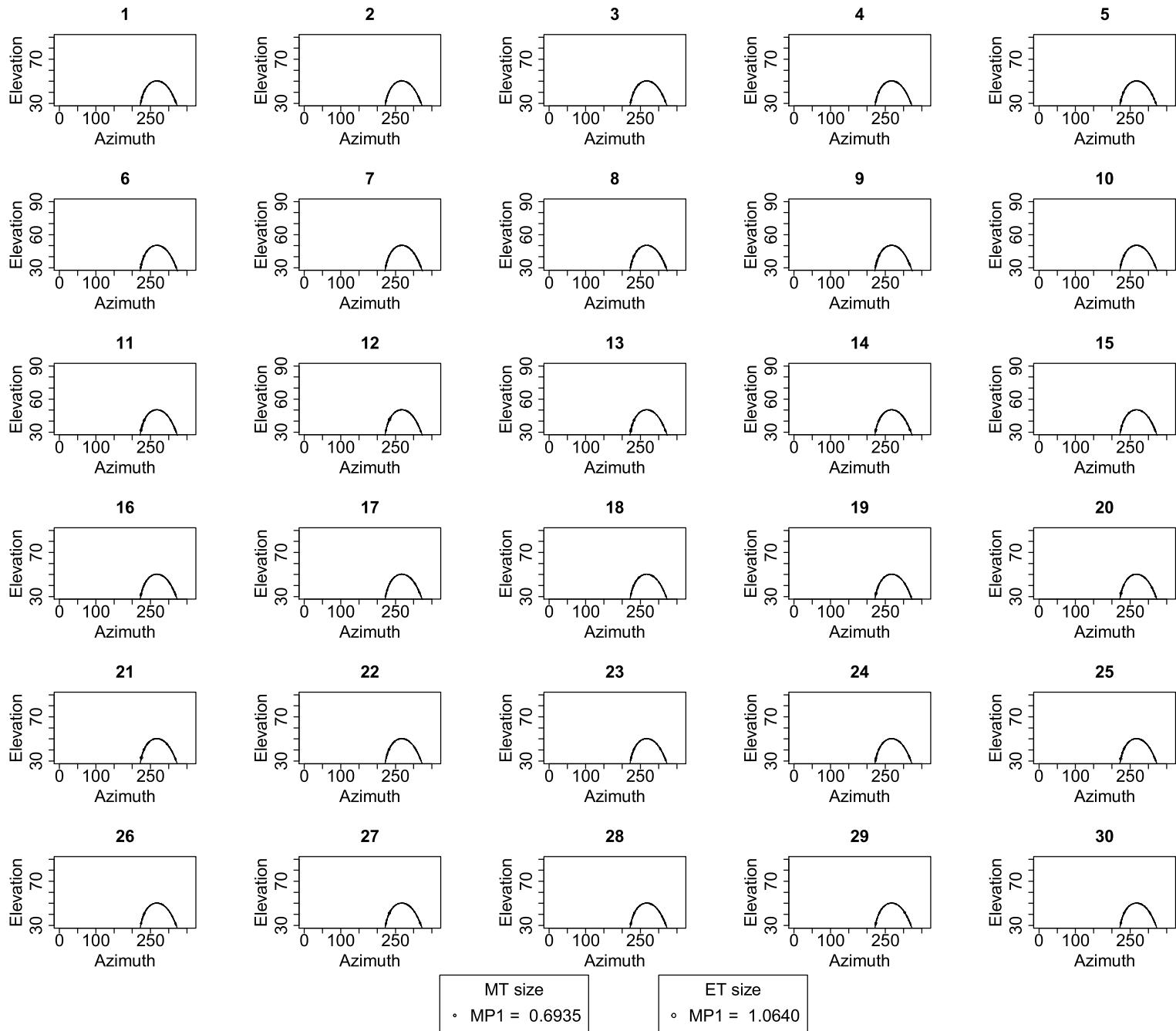


Figure S8 PEA plots comparison of MP1 for G8 on September 1–30, 2017 at SAOOP station

PEA plots (G9)

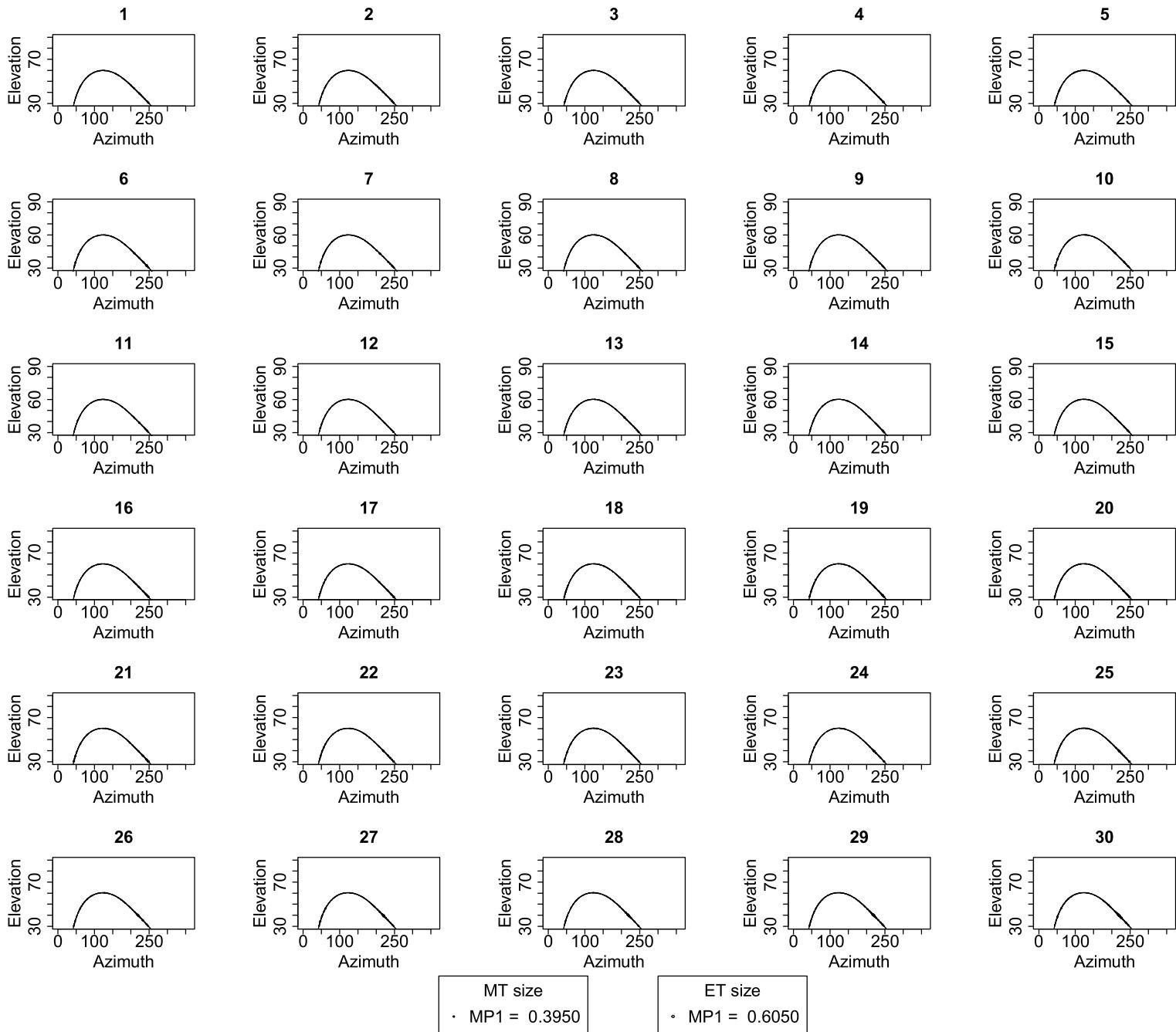


Figure S9 PEA plots comparison of MP1 for G9 on September 1–30, 2017 at SAOOP station

PEA plots (G10)

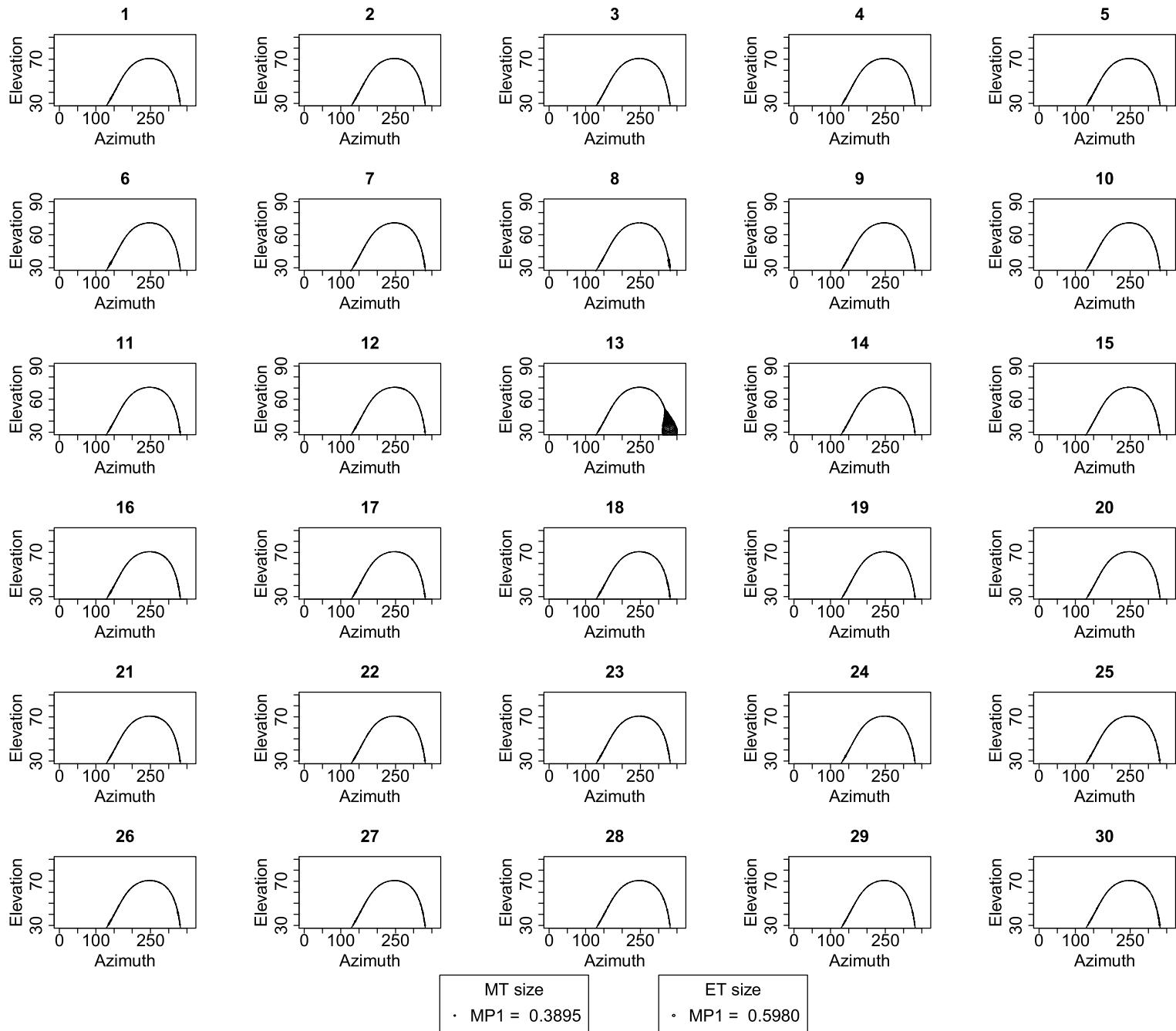


Figure S10 PEA plots comparison of MP1 for G10 on September 1–30, 2017 at SAOOP station

PEA plots (G11)

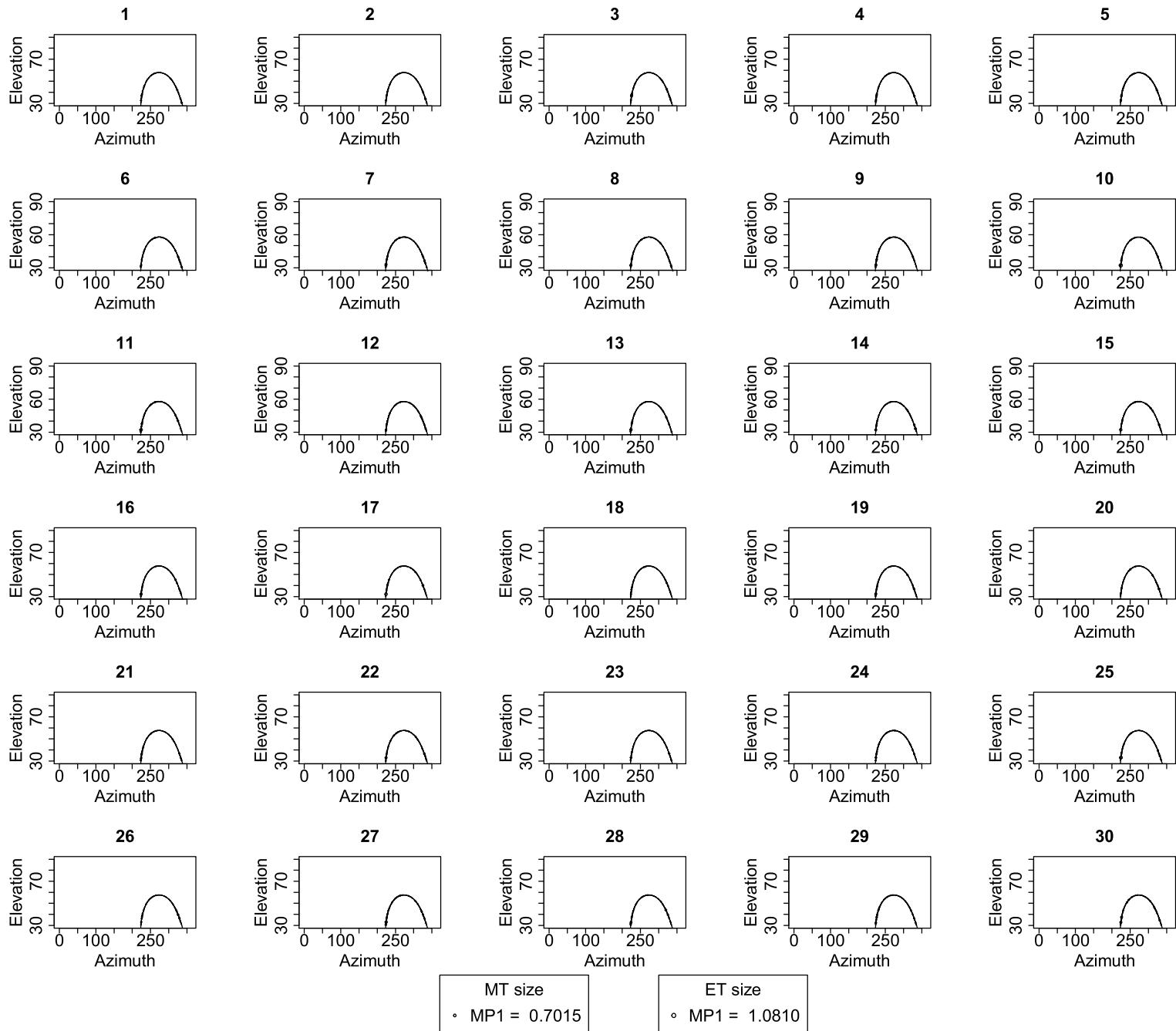


Figure S11 PEA plots comparison of MP1 for G11 on September 1–30, 2017 at SAOOP station

PEA plots (G12)

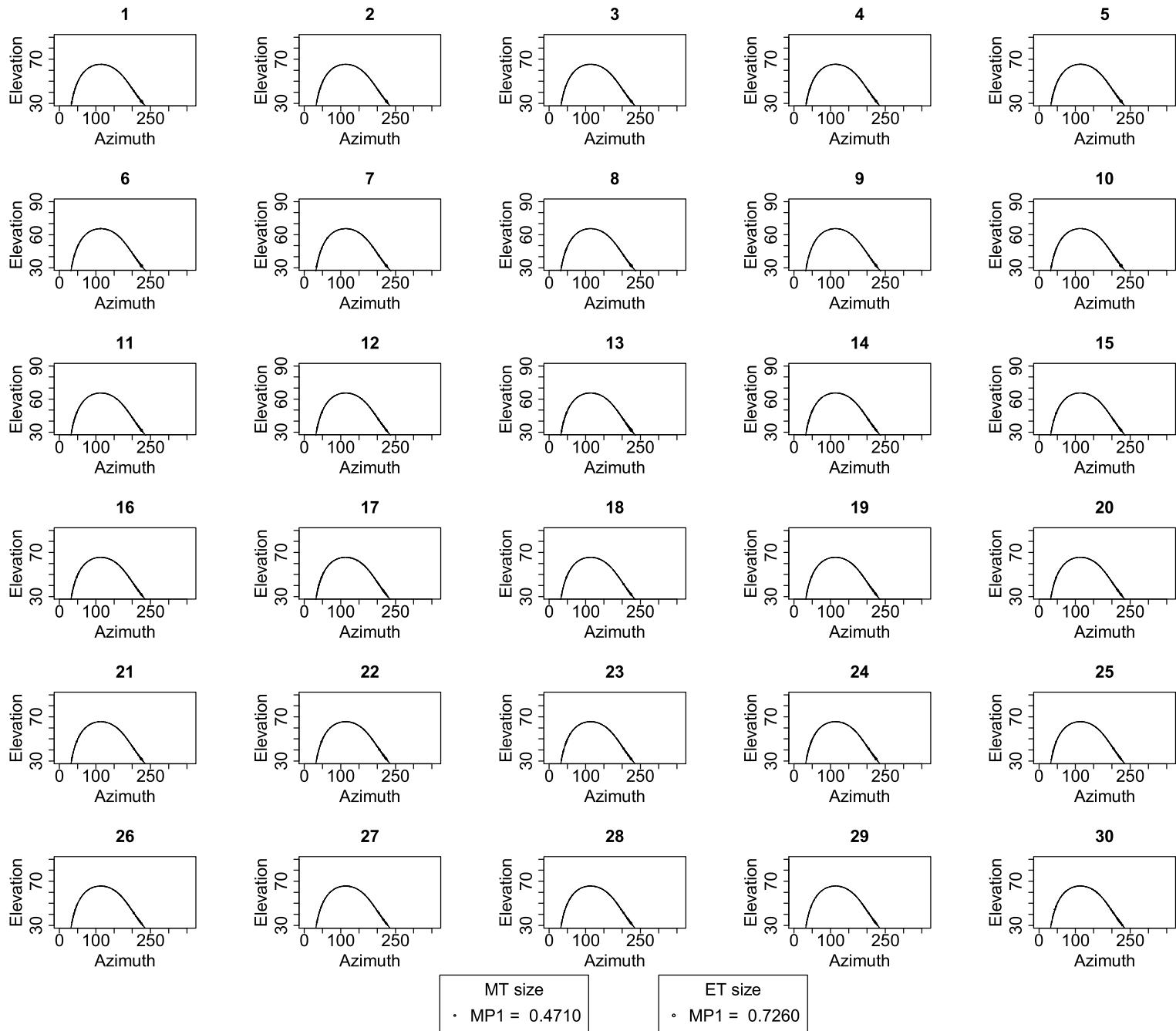


Figure S12 PEA plots comparison of MP1 for G12 on September 1–30, 2017 at SAOOP station

PEA plots (G13)

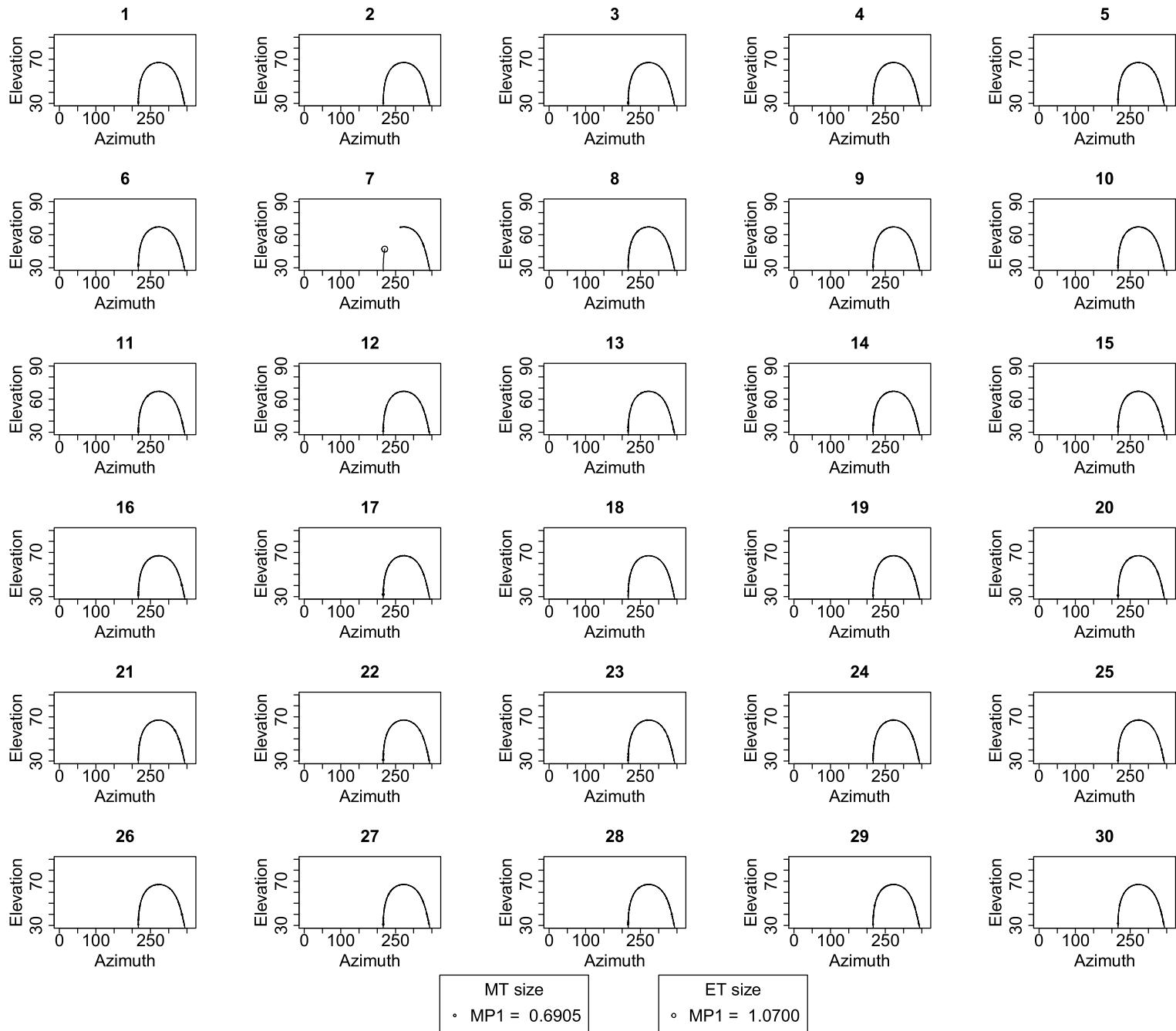


Figure S13 PEA plots comparison of MP1 for G13 on September 1–30, 2017 at SAOOP station

PEA plots (G14)

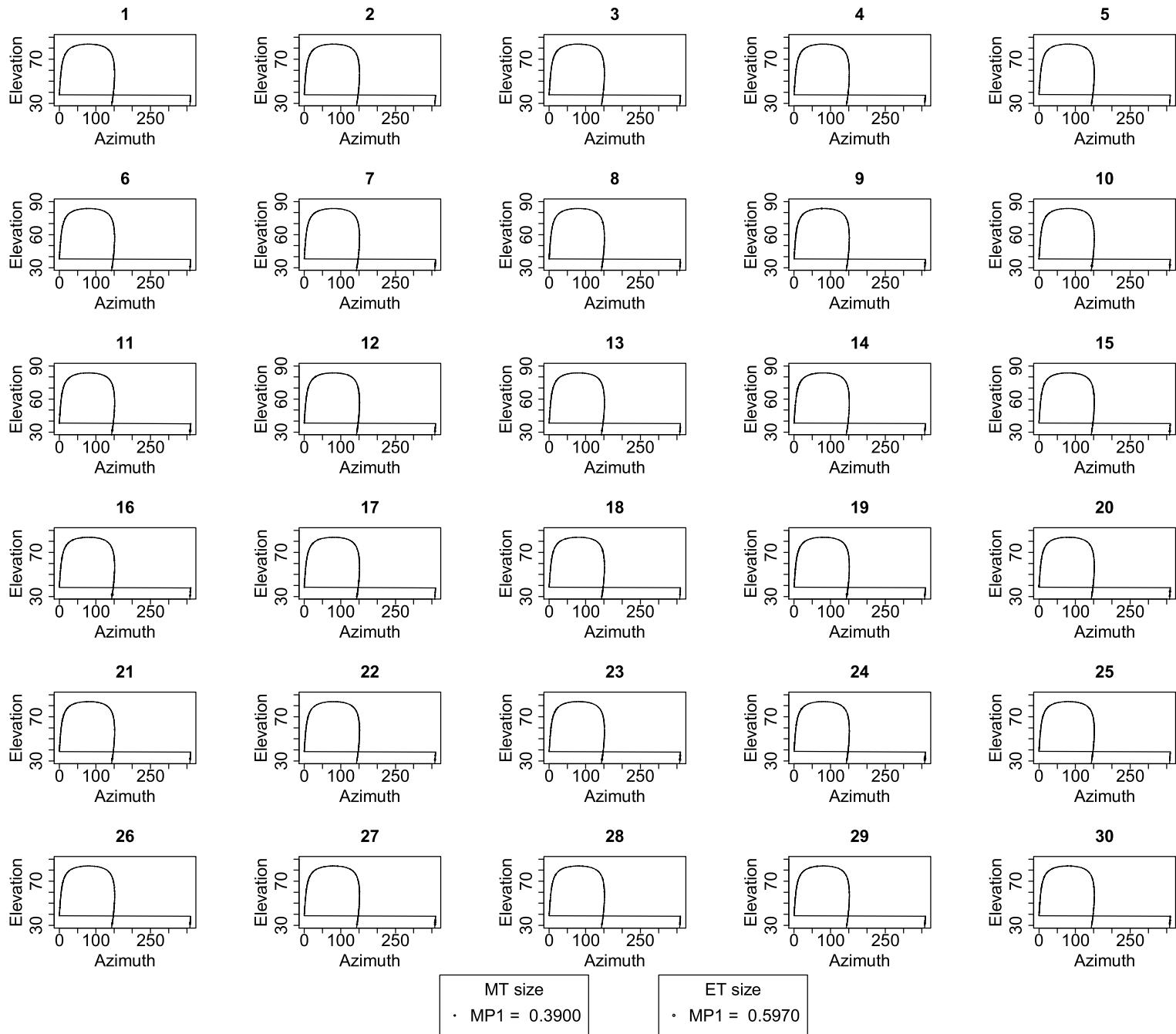


Figure S14 PEA plots comparison of MP1 for G14 on September 1–30, 2017 at SAOOP station

PEA plots (G15)

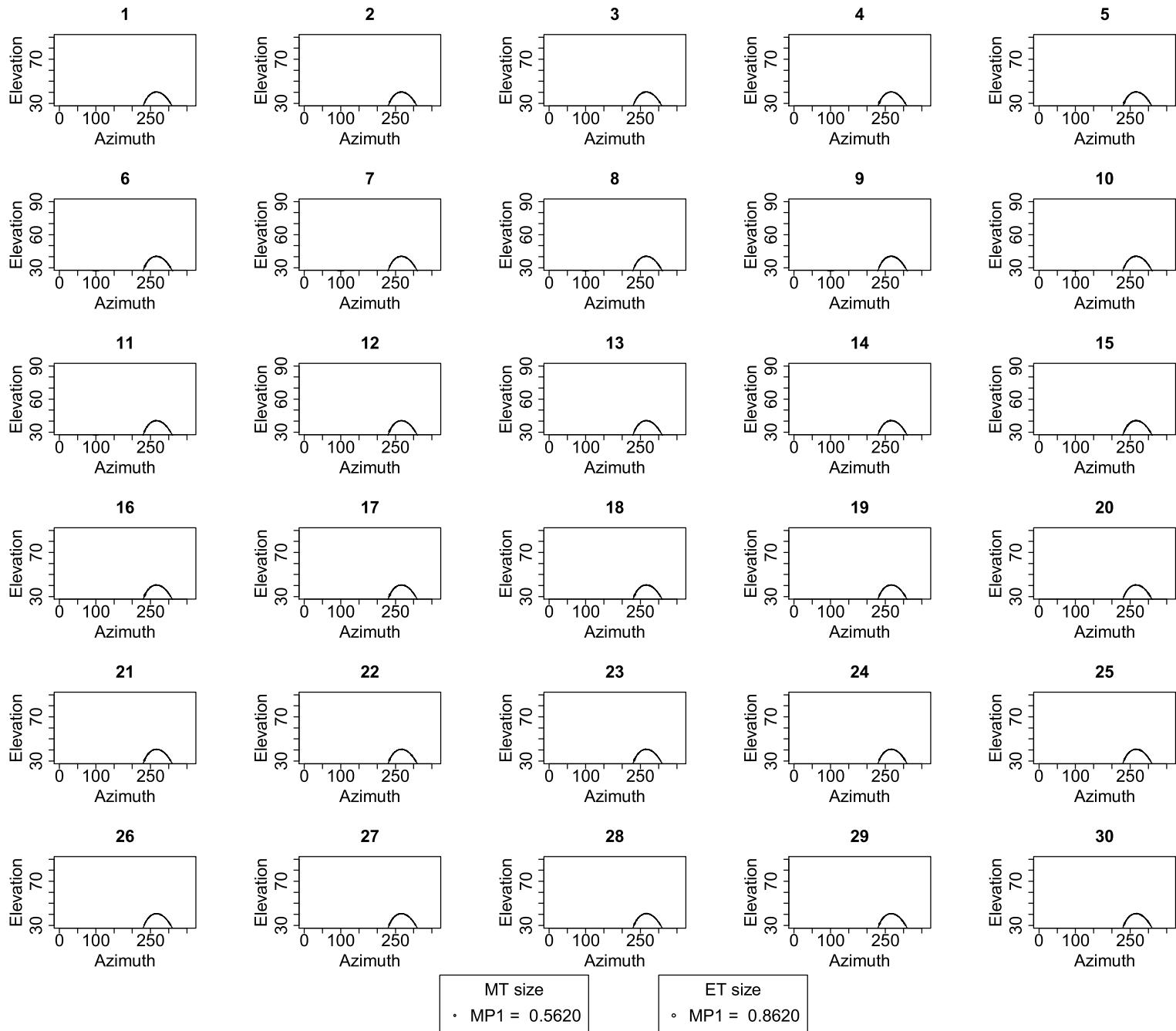


Figure S15 PEA plots comparison of MP1 for G15 on September 1–30, 2017 at SAOOP station

PEA plots (G16)

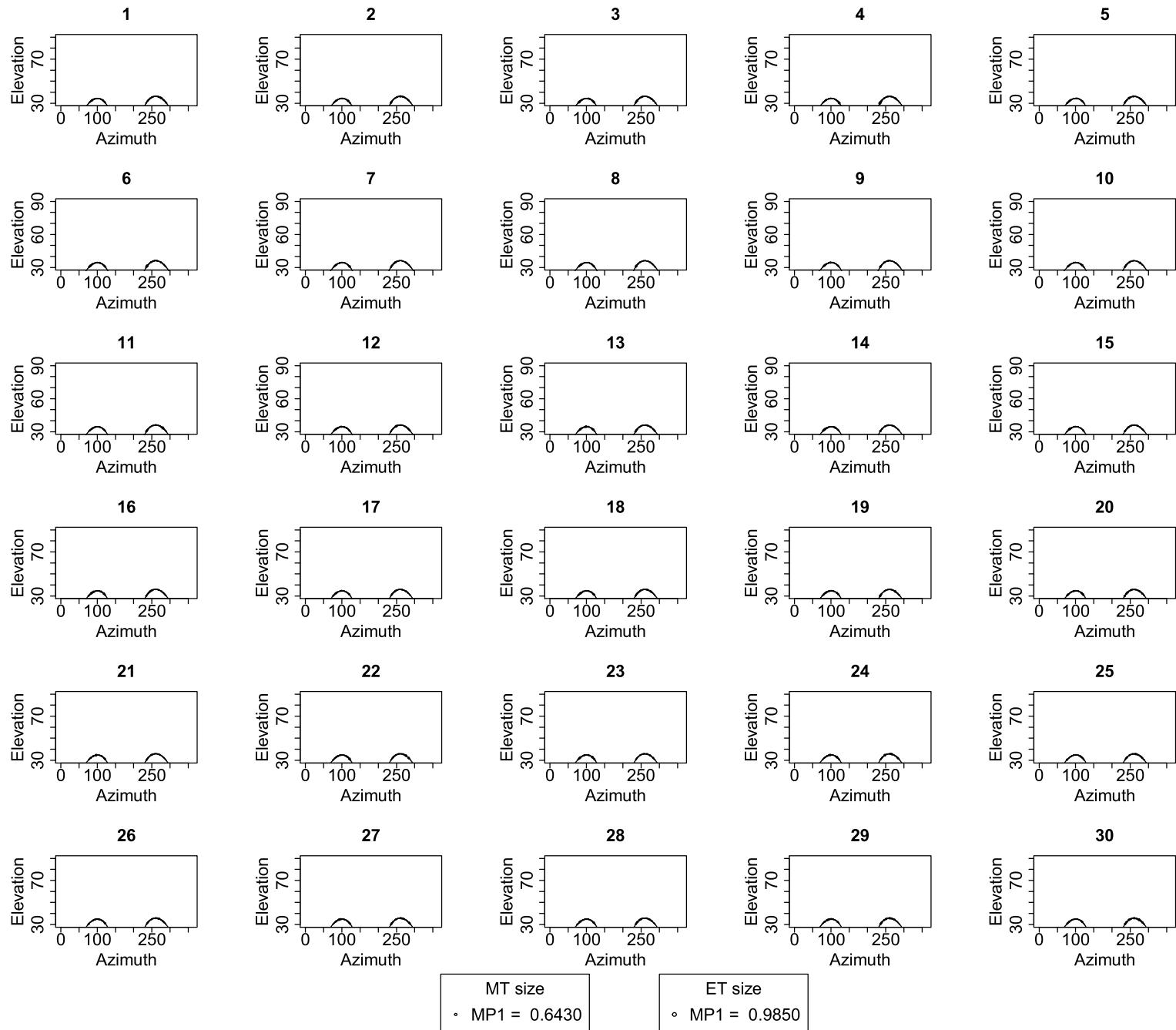


Figure S16 PEA plots comparison of MP1 for G16 on September 1–30, 2017 at SAOOP station

PEA plots (G17)

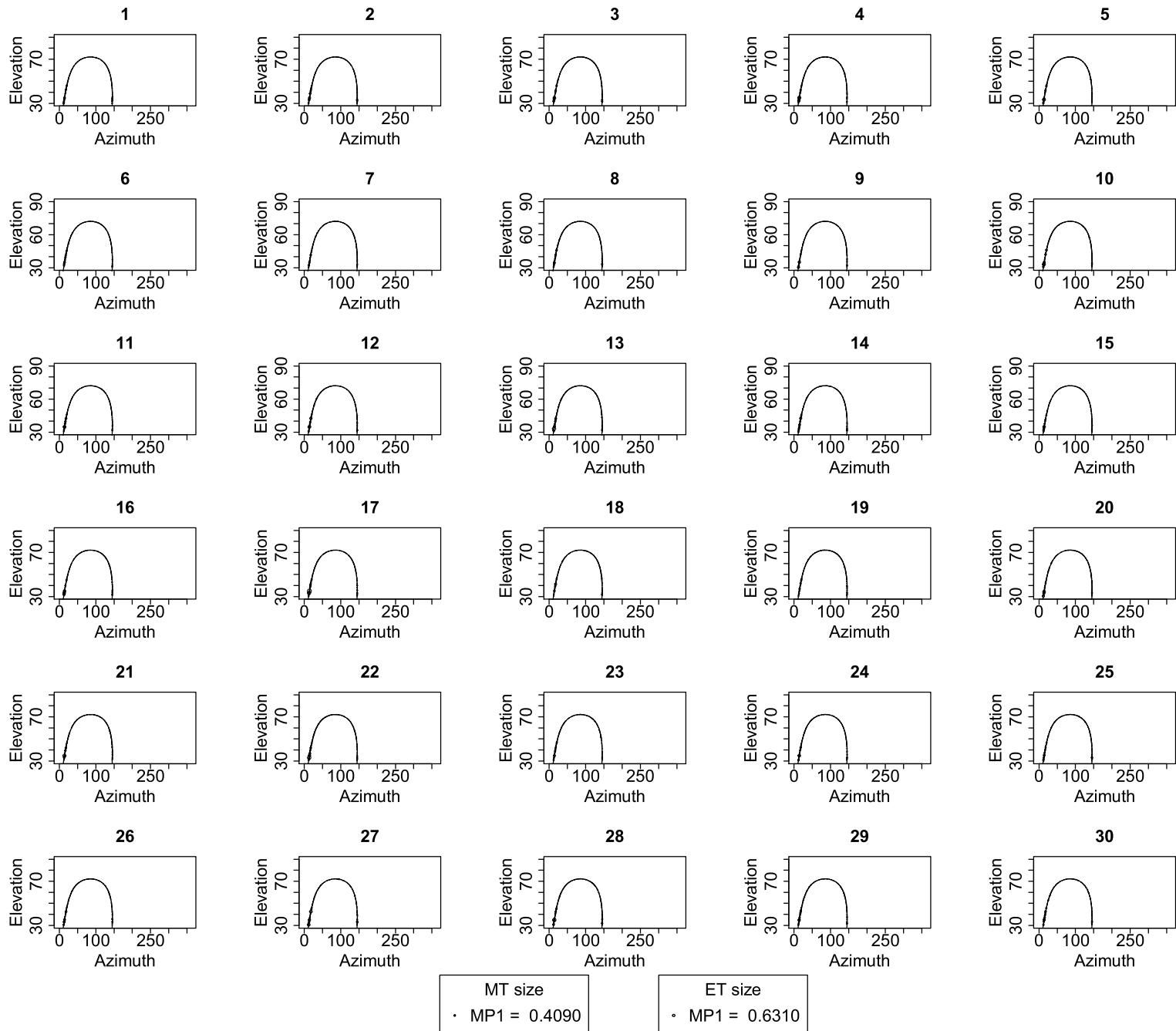


Figure S17 PEA plots comparison of MP1 for G17 on September 1–30, 2017 at SAOOP station

PEA plots (G18)

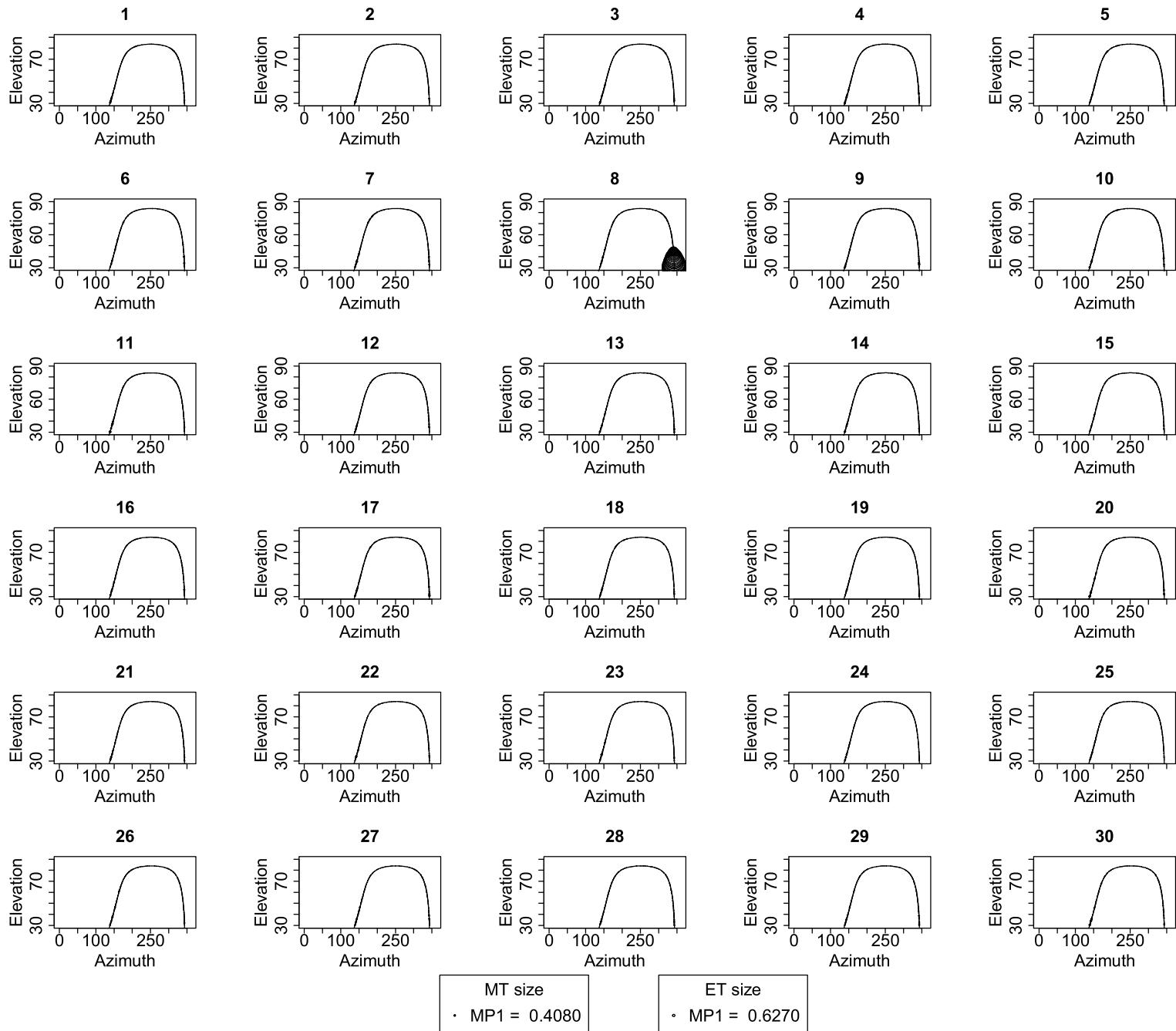


Figure S18 PEA plots comparison of MP1 for G18 on September 1–30, 2017 at SAOOP station

PEA plots (G19)

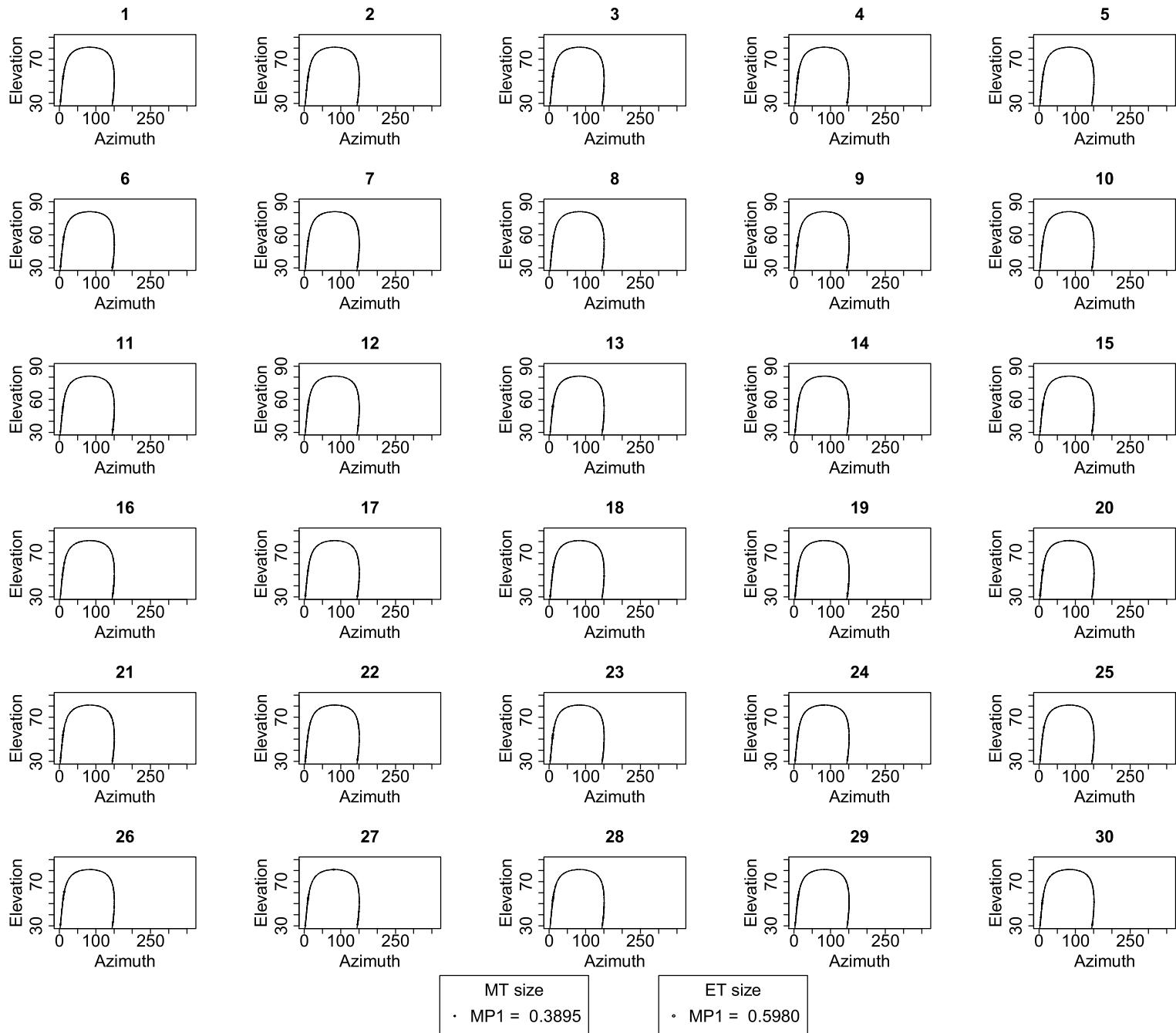


Figure S19 PEA plots comparison of MP1 for G19 on September 1–30, 2017 at SAOOP station

PEA plots (G20)

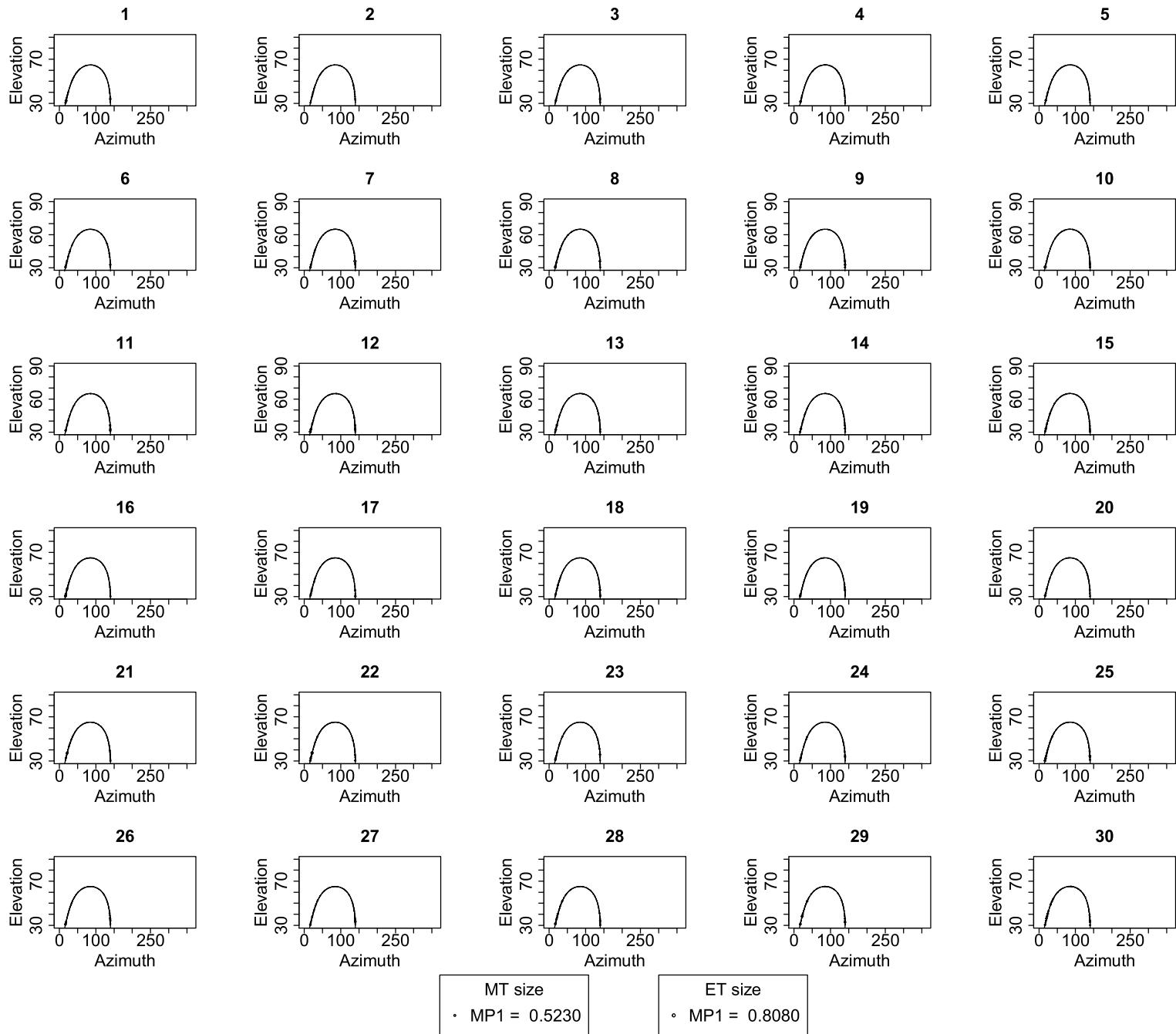


Figure S20 PEA plots comparison of MP1 for G20 on September 1–30, 2017 at SAOOP station

PEA plots (G21)

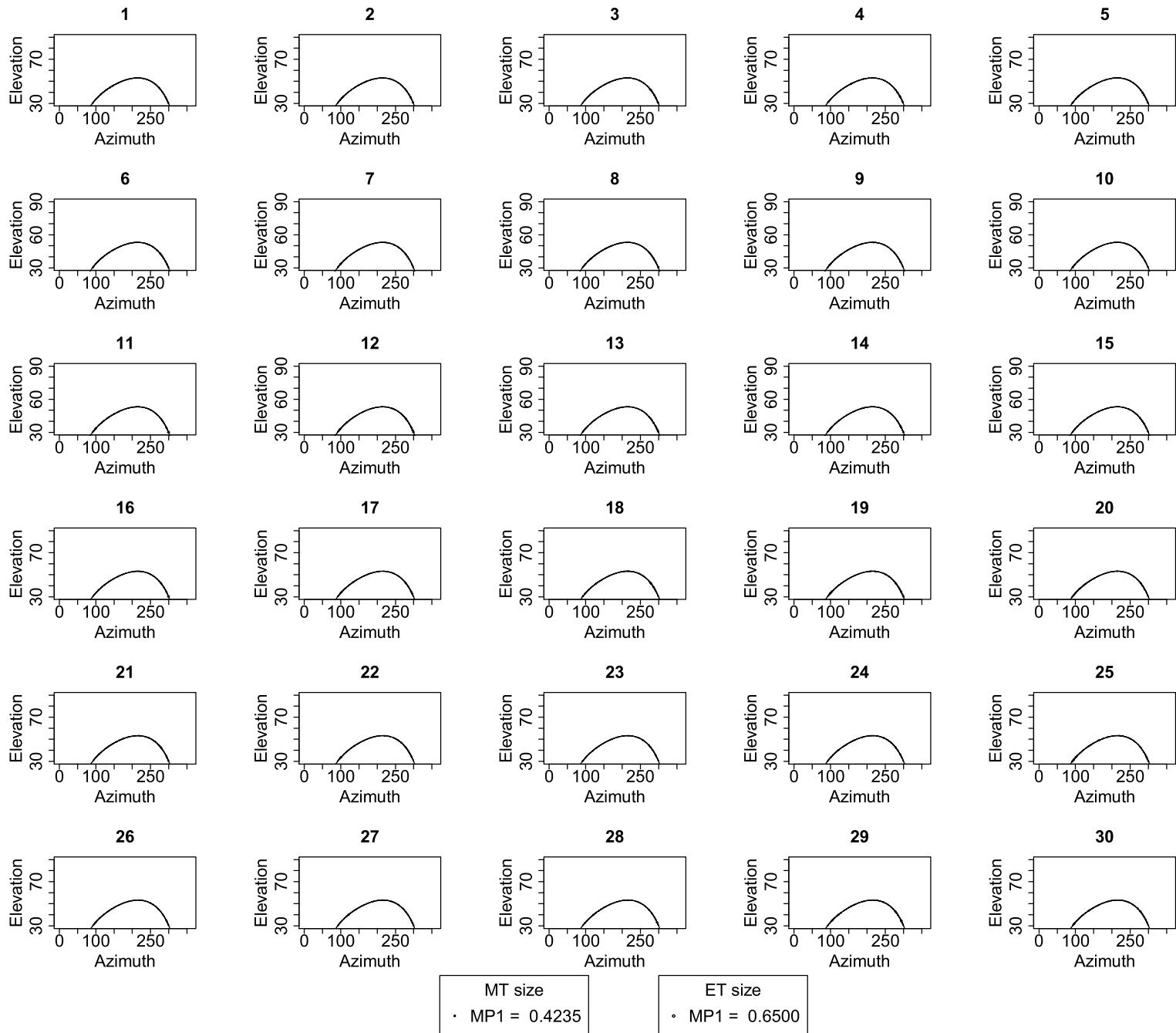


Figure S21 PEA plots comparison of MP1 for G21 on September 1–30, 2017 at SAOOP station

PEA plots (G22)

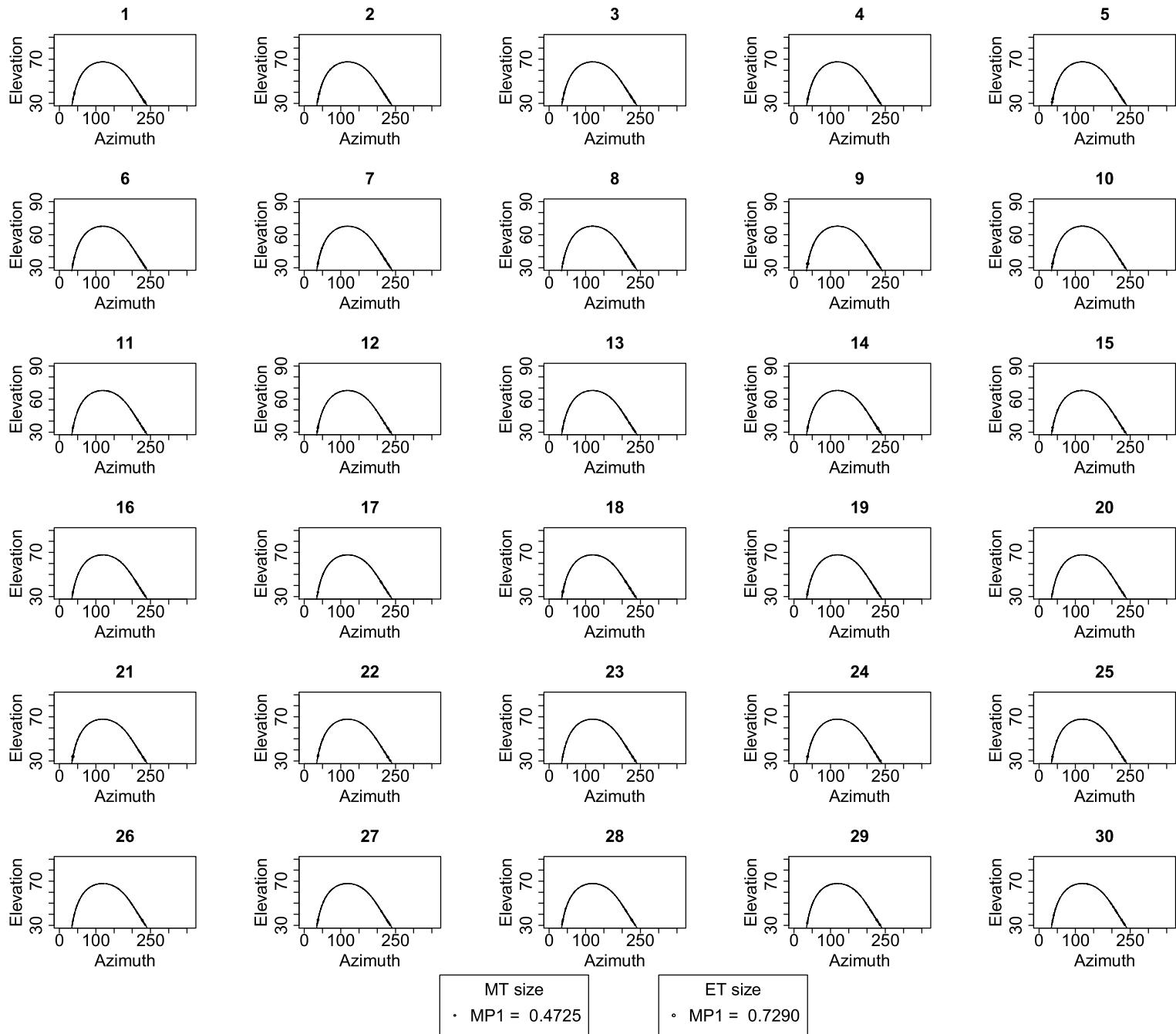


Figure S22 PEA plots comparison of MP1 for G22 on September 1–30, 2017 at SAOOP station

PEA plots (G23)

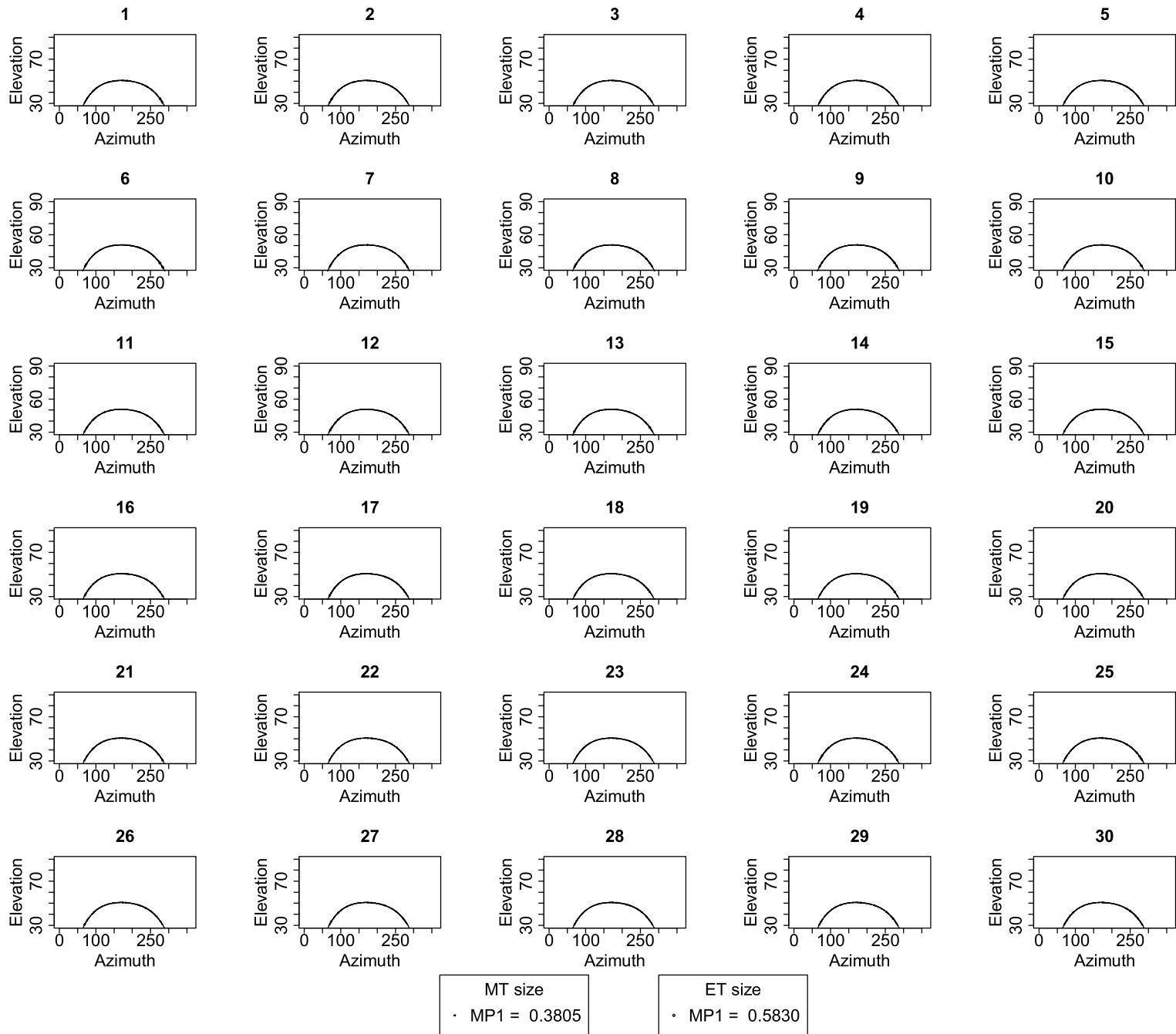


Figure S23 PEA plots comparison of MP1 for G23 on September 1–30, 2017 at SAOOP station

PEA plots (G24)

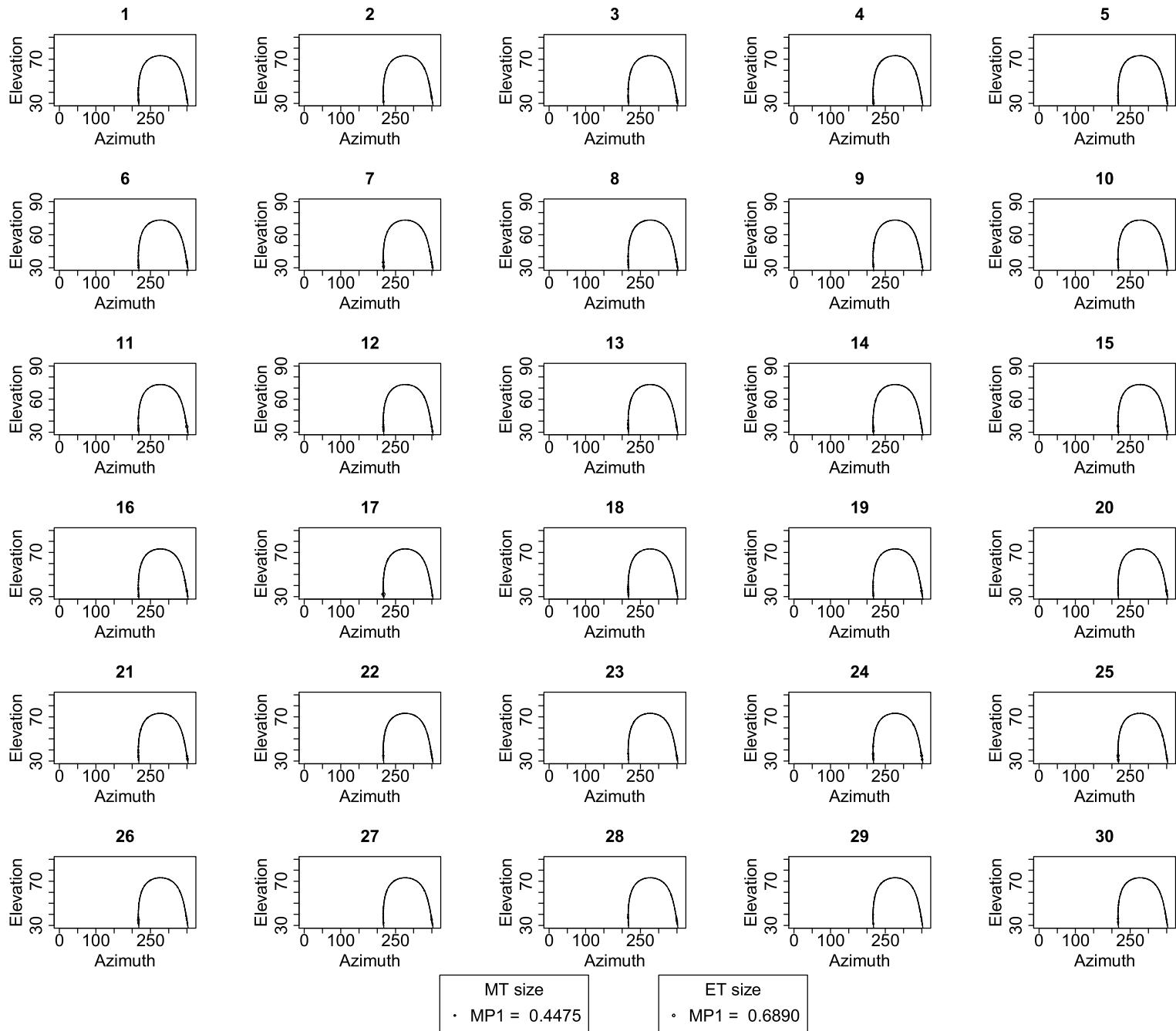


Figure S24 PEA plots comparison of MP1 for G24 on September 1–30, 2017 at SAOOP station

PEA plots (G25)

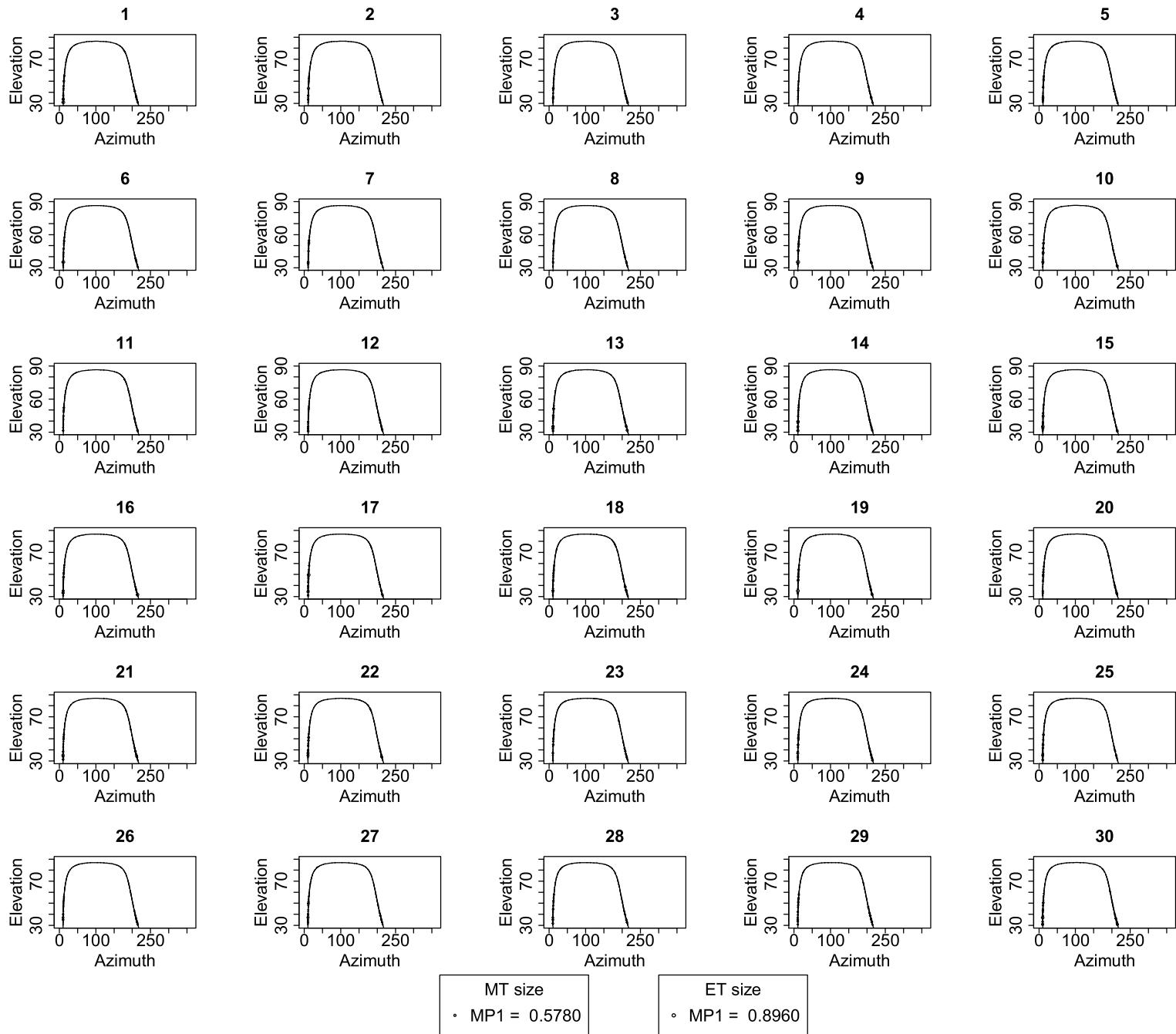


Figure S25 PEA plots comparison of MP1 for G25 on September 1–30, 2017 at SAOOP station

PEA plots (G26)

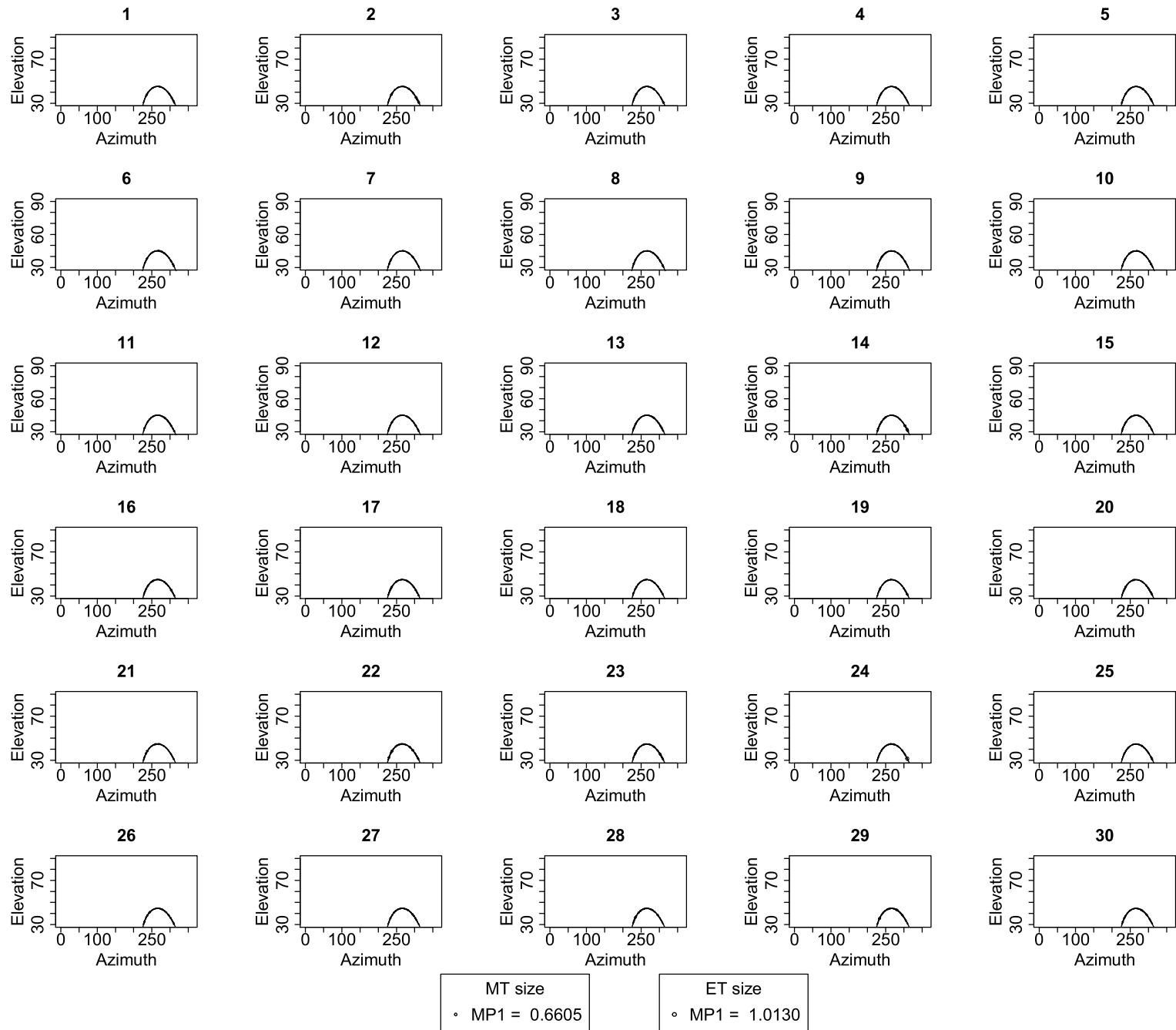


Figure S26 PEA plots comparison of MP1 for G26 on September 1–30, 2017 at SAOOP station

PEA plots (G27)

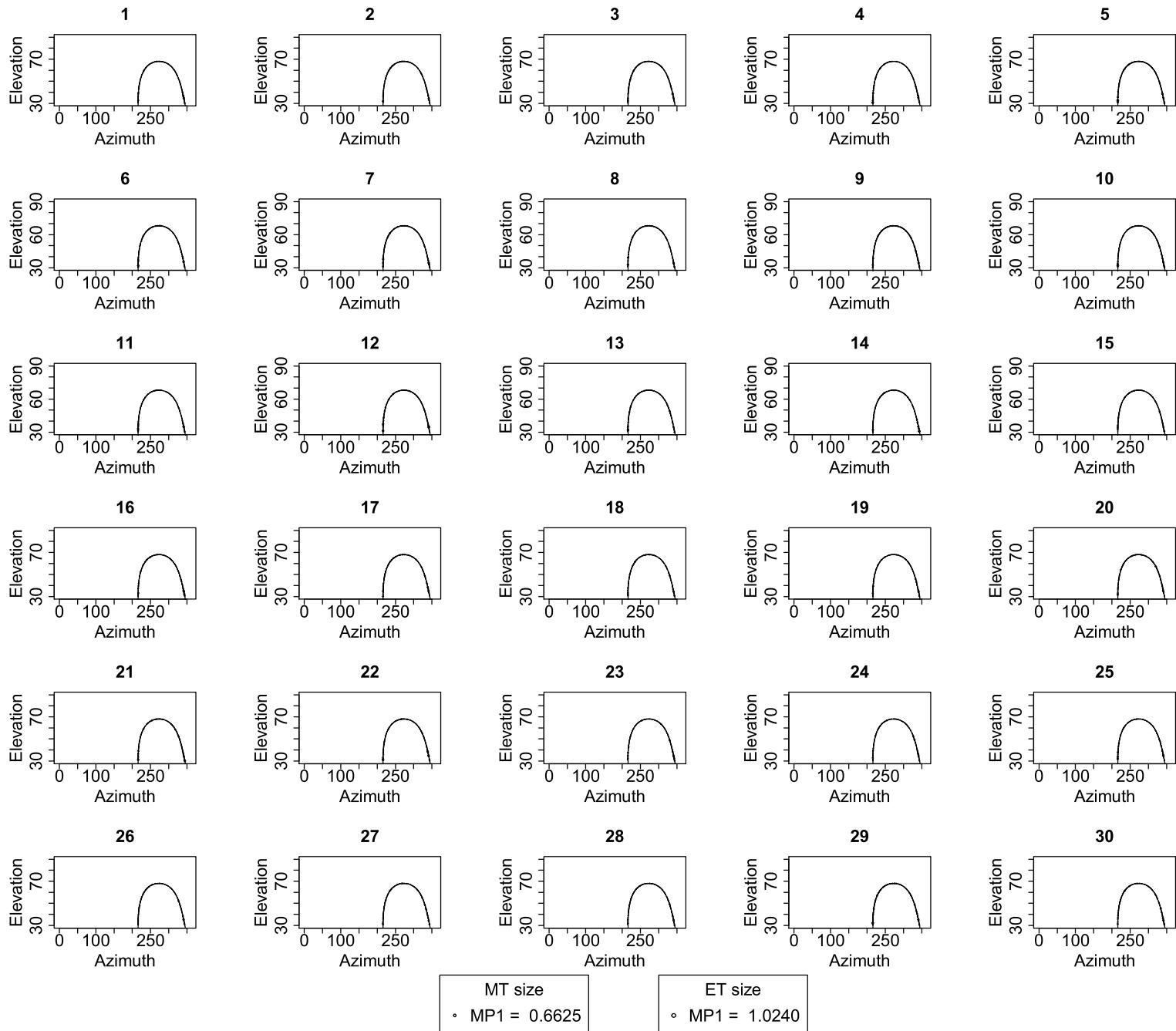


Figure S27 PEA plots comparison of MP1 for G27 on September 1–30, 2017 at SAOOP station

PEA plots (G28)

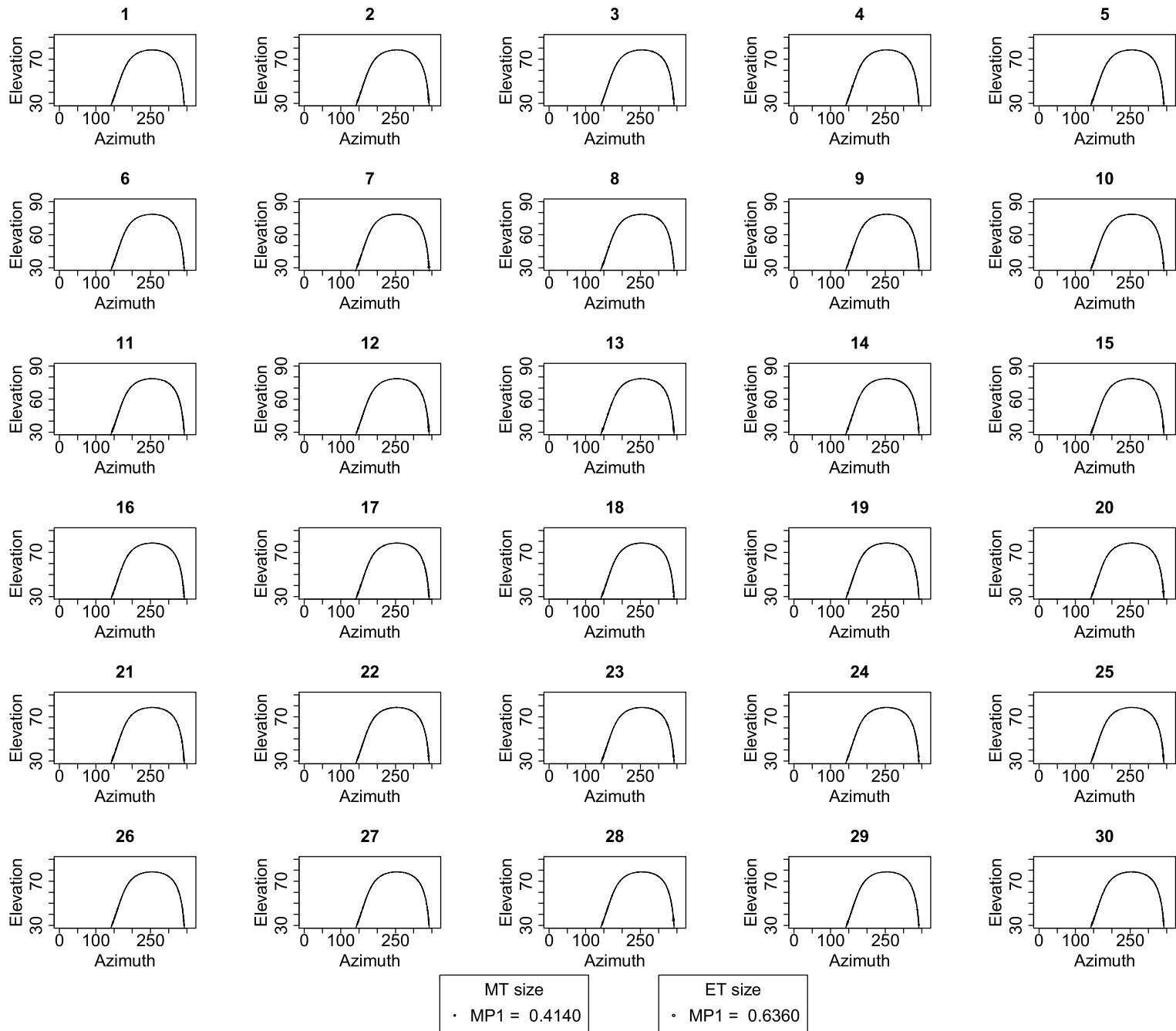


Figure S28 PEA plots comparison of MP1 for G28 on September 1–30, 2017 at SAOOP station

PEA plots (G29)

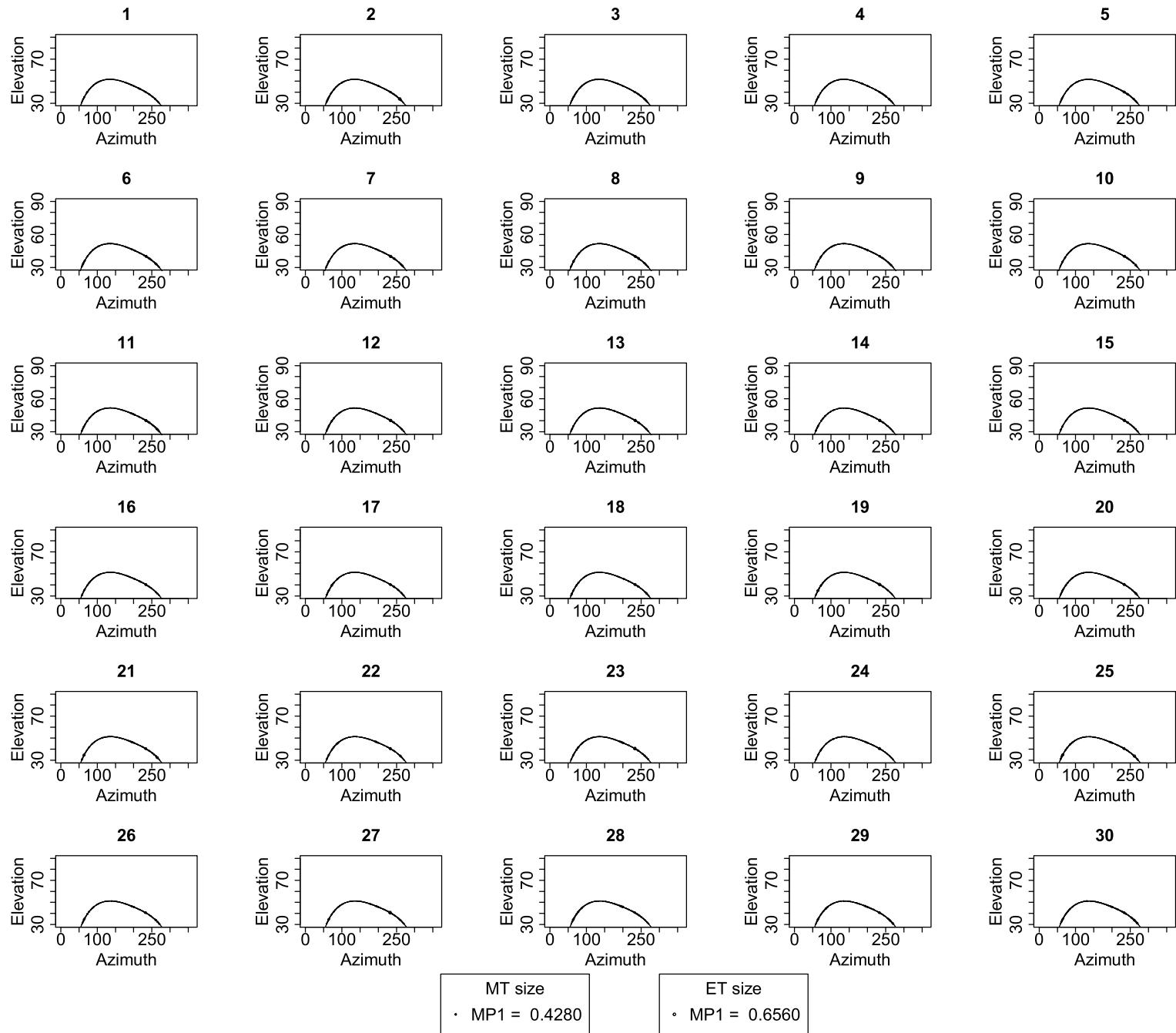


Figure S29 PEA plots comparison of MP1 for G29 on September 1–30, 2017 at SAOOP station

PEA plots (G30)

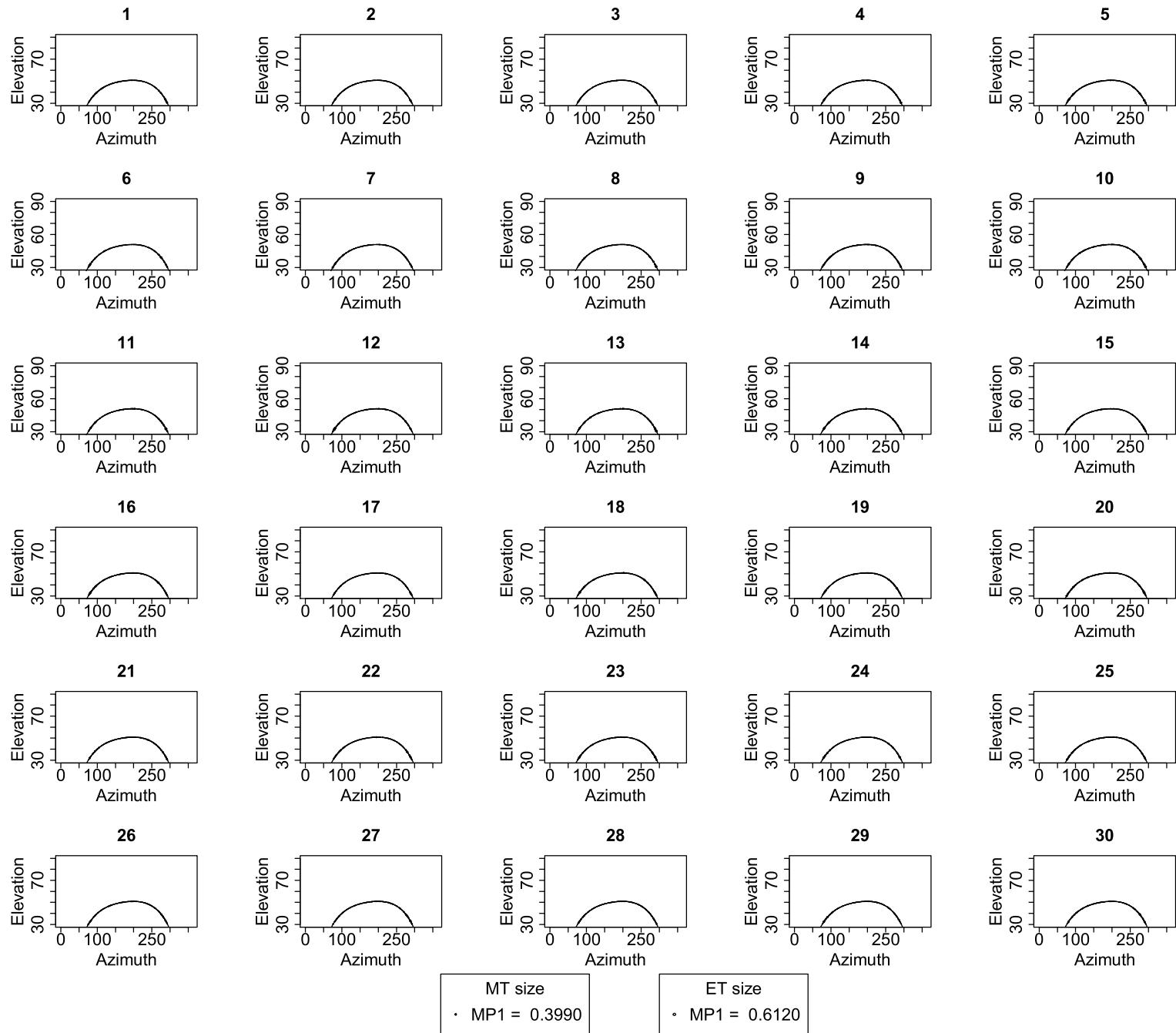


Figure S30 PEA plots comparison of MP1 for G30 on September 1–30, 2017 at SAOOP station

PEA plots (G31)

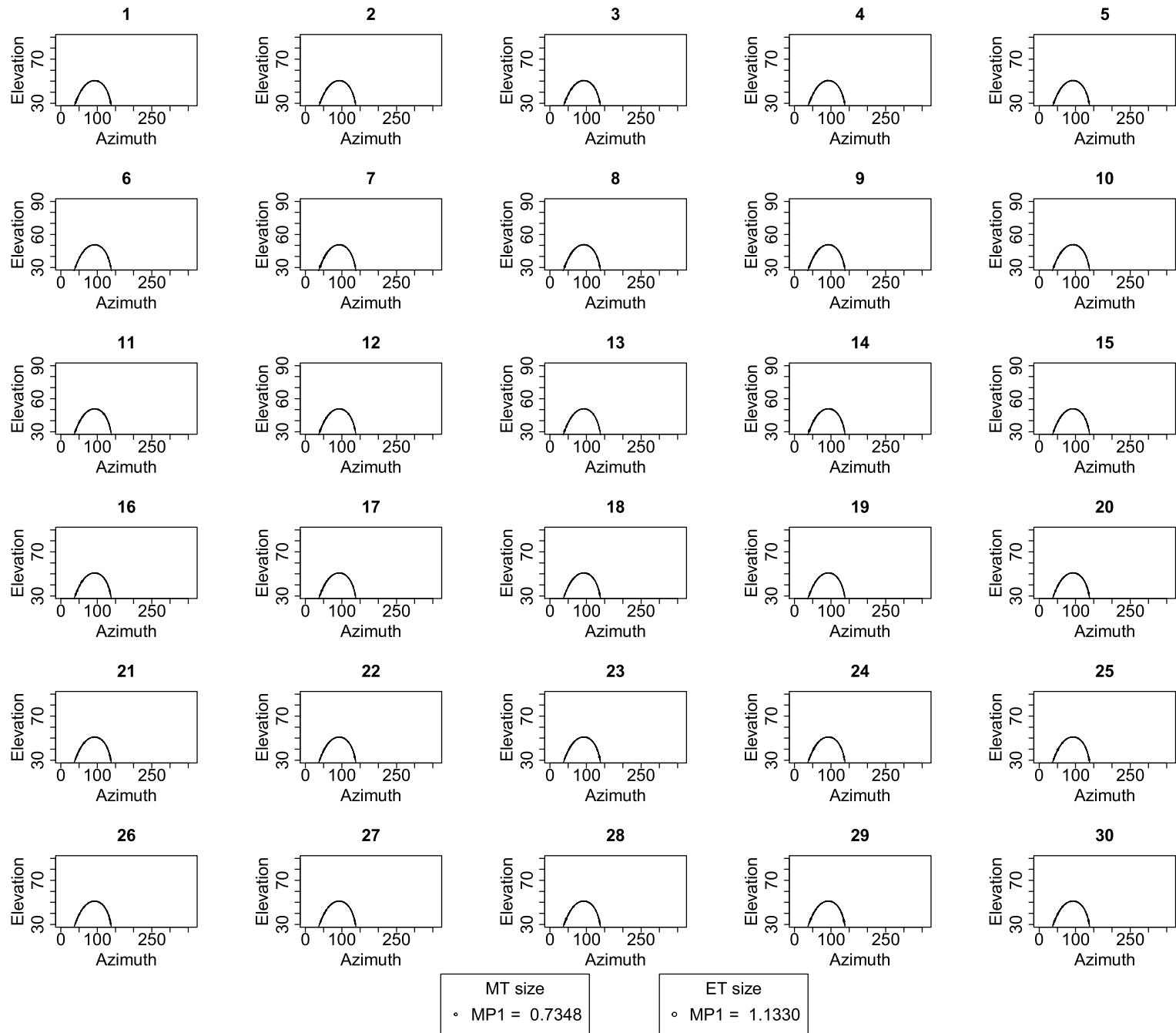


Figure S31 PEA plots comparison of MP1 for G31 on September 1–30, 2017 at SAOOP station

PEA plots (G32)

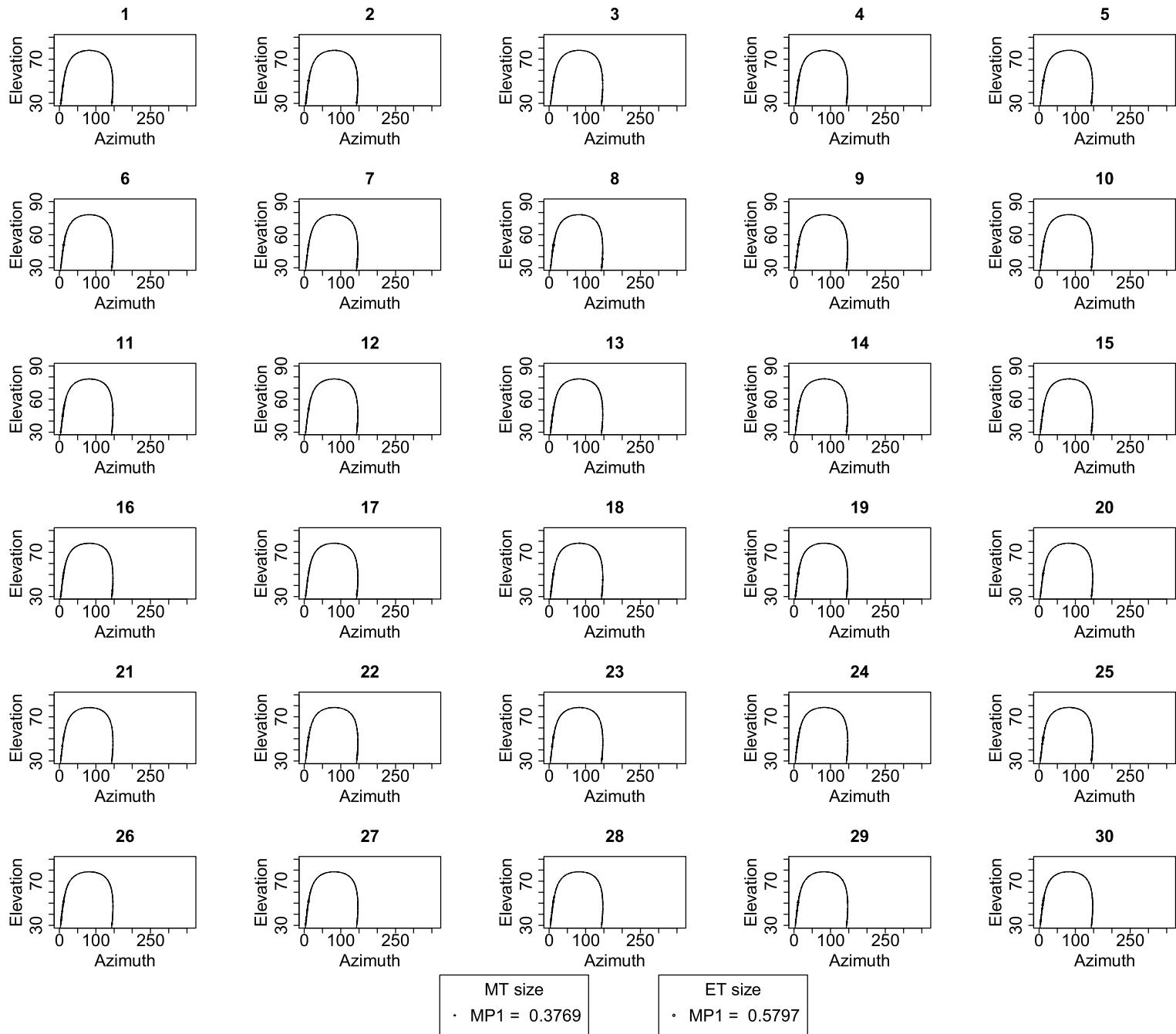


Figure S32 PEA plots comparison of MP1 for G32 on September 1–30, 2017 at SAOOP station

PEA plots (G1)

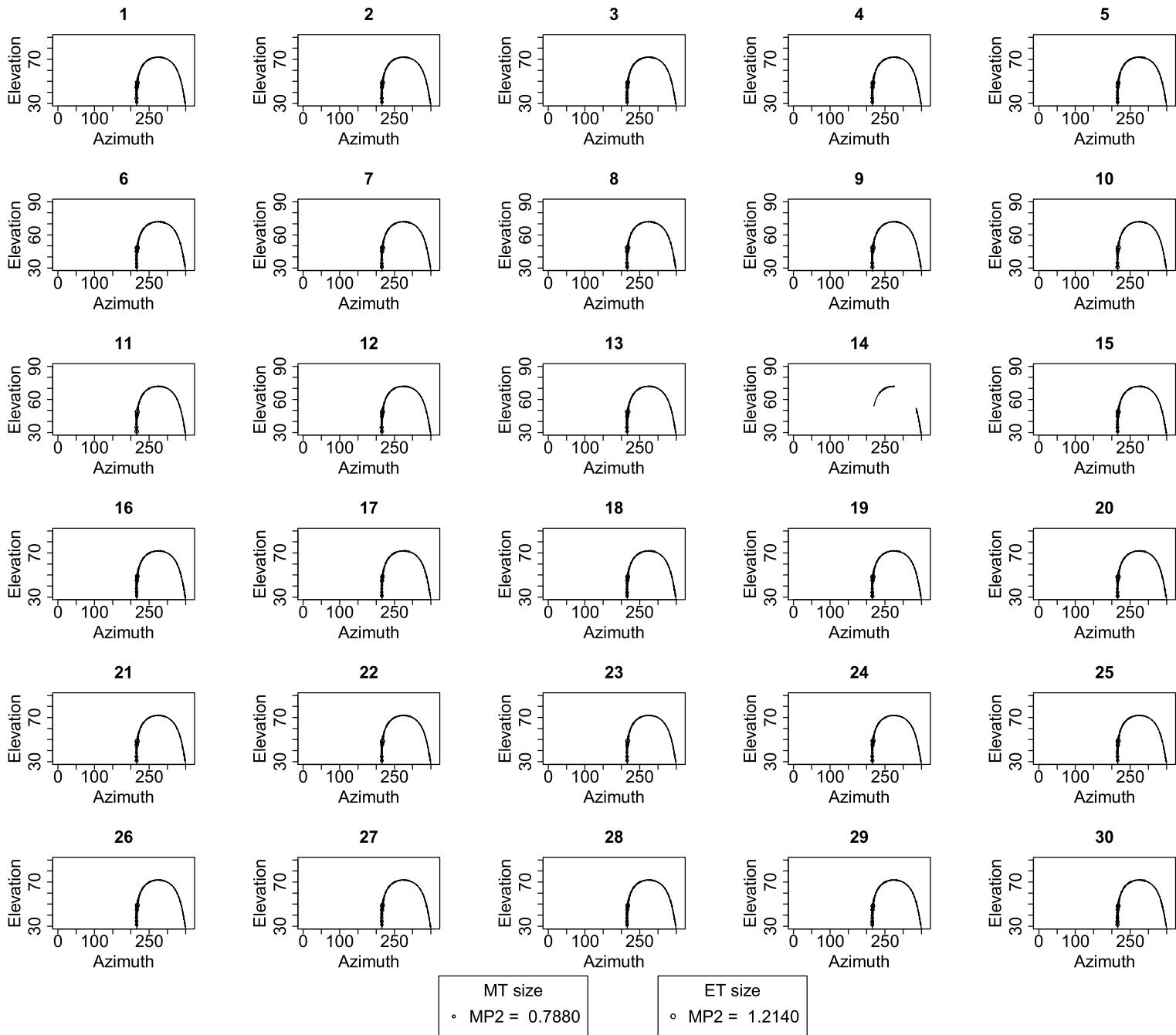


Figure S33 PEA plots comparison of MP2 for G1 on September 1–30, 2017 at SAO0P station

PEA plots (G2)

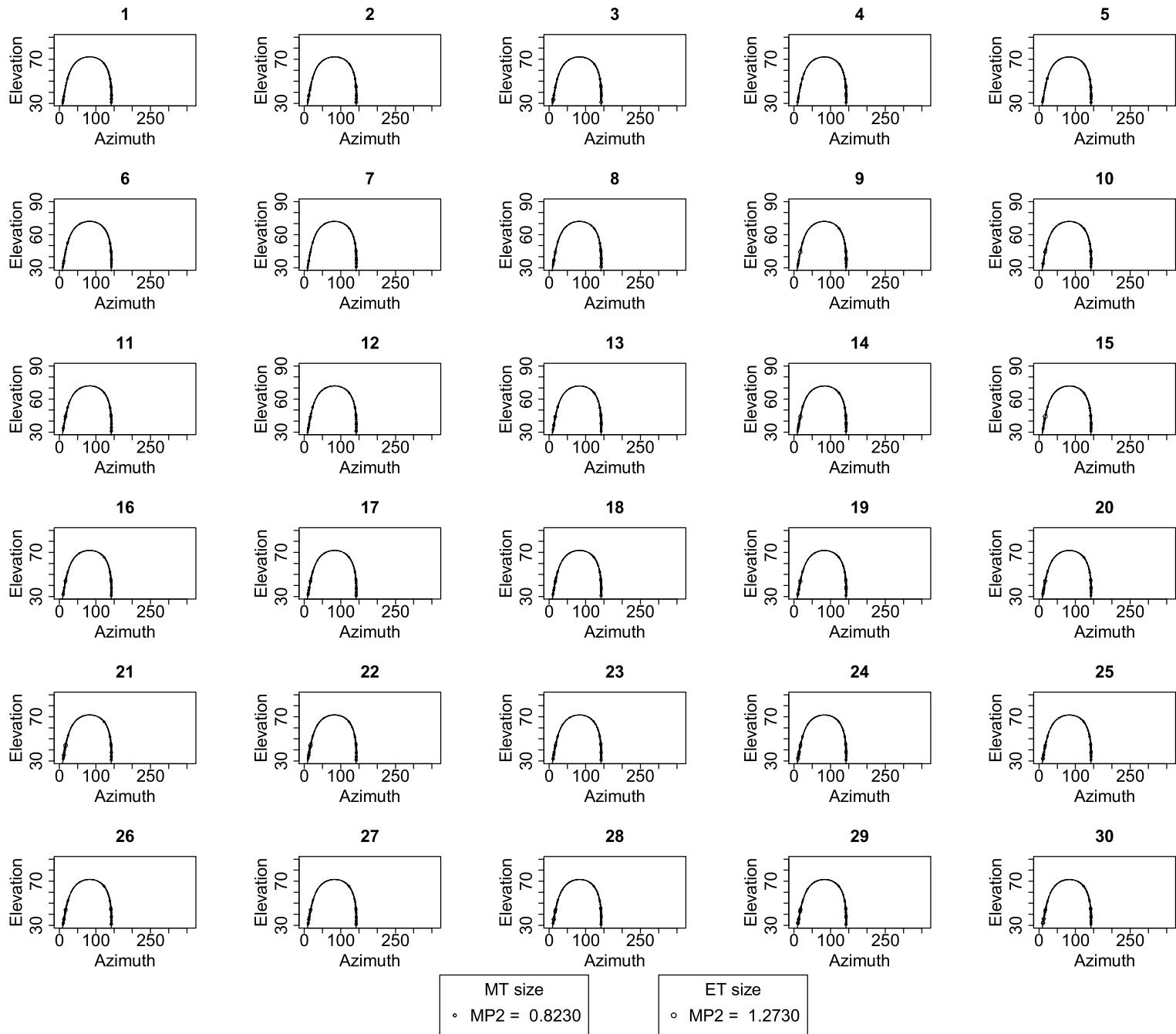


Figure S34 PEA plots comparison of MP2 for G2 on September 1–30, 2017 at SAO0P station

PEA plots (G3)

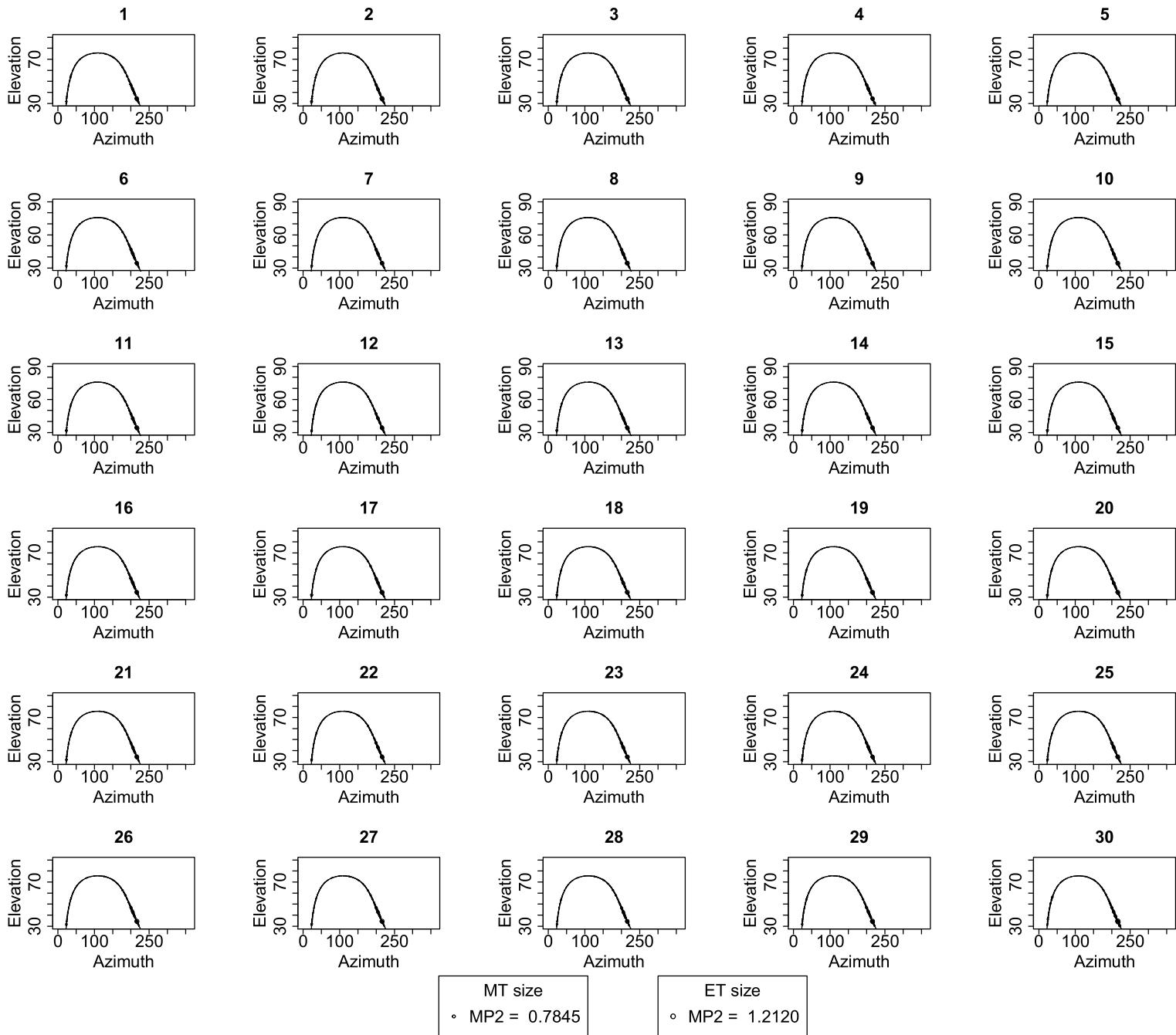


Figure S35 PEA plots comparison of MP2 for G3 on September 1–30, 2017 at SAO0P station

PEA plots (G4)

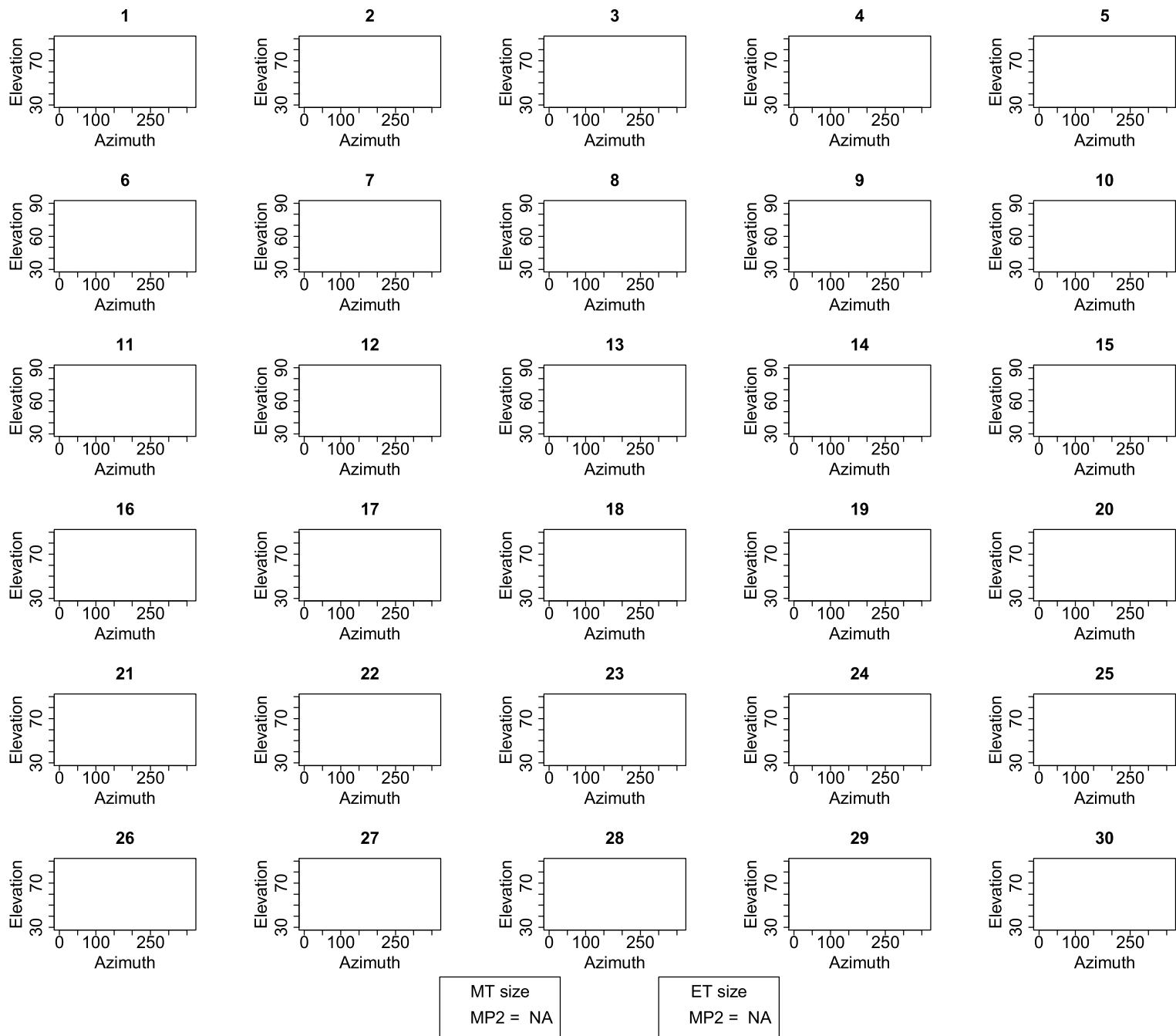


Figure S36 PEA plots comparison of MP2 for G4 on September 1–30, 2017 at SAOOP station

PEA plots (G5)

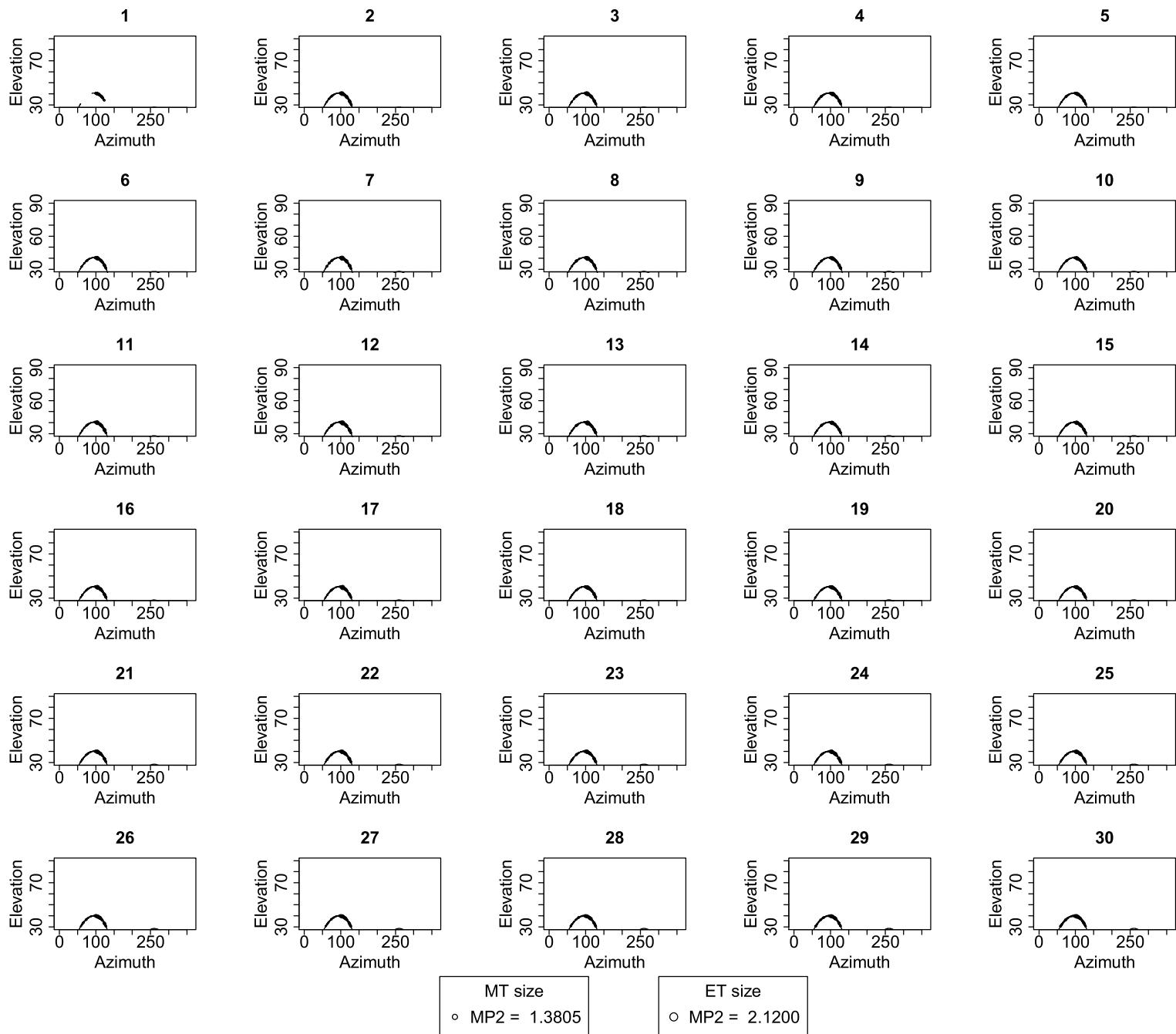


Figure S37 PEA plots comparison of MP2 for G5 on September 1–30, 2017 at SAOOP station

PEA plots (G6)

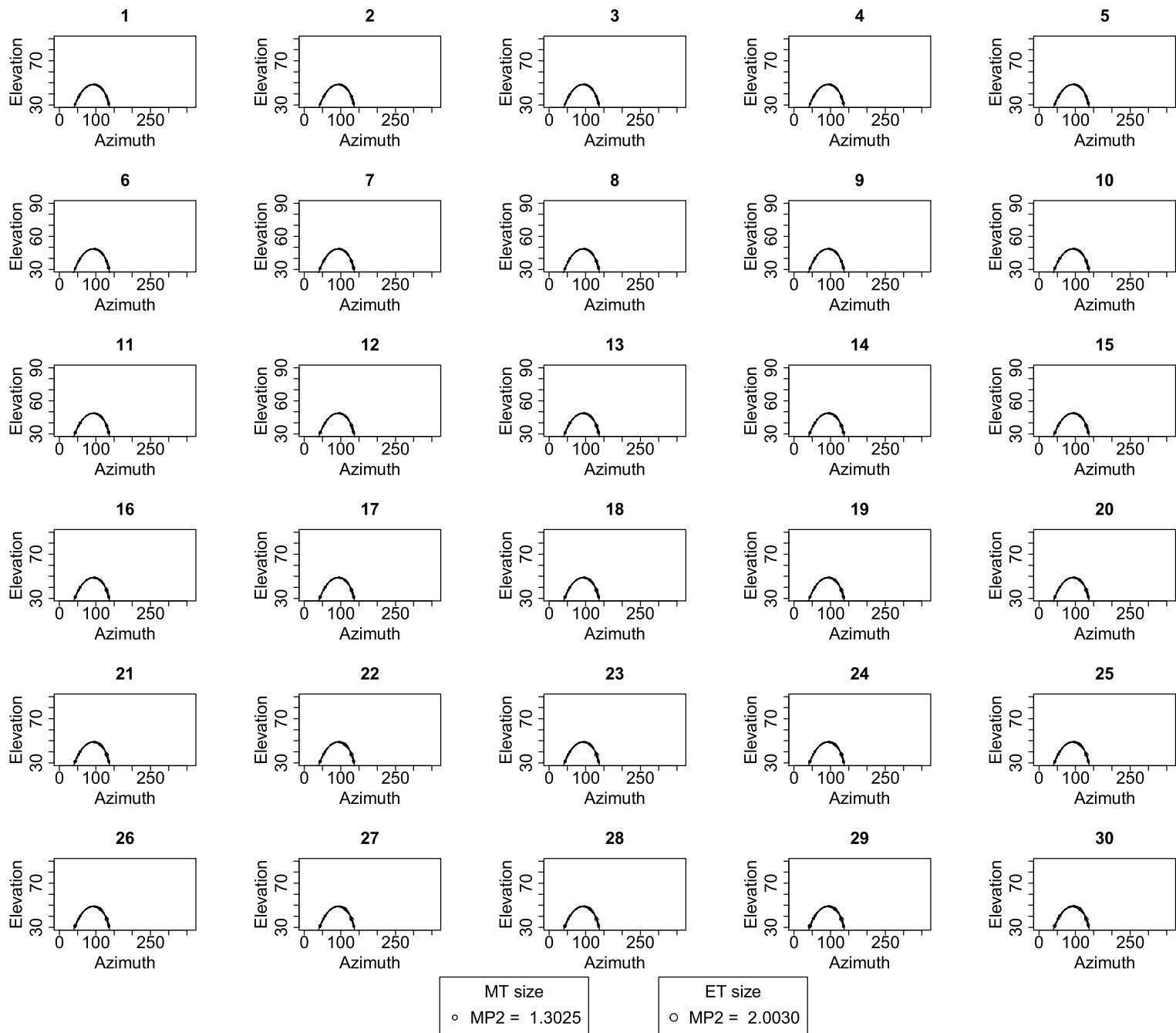


Figure S38 PEA plots comparison of MP2 for G6 on September 1–30, 2017 at SAOOP station

PEA plots (G7)

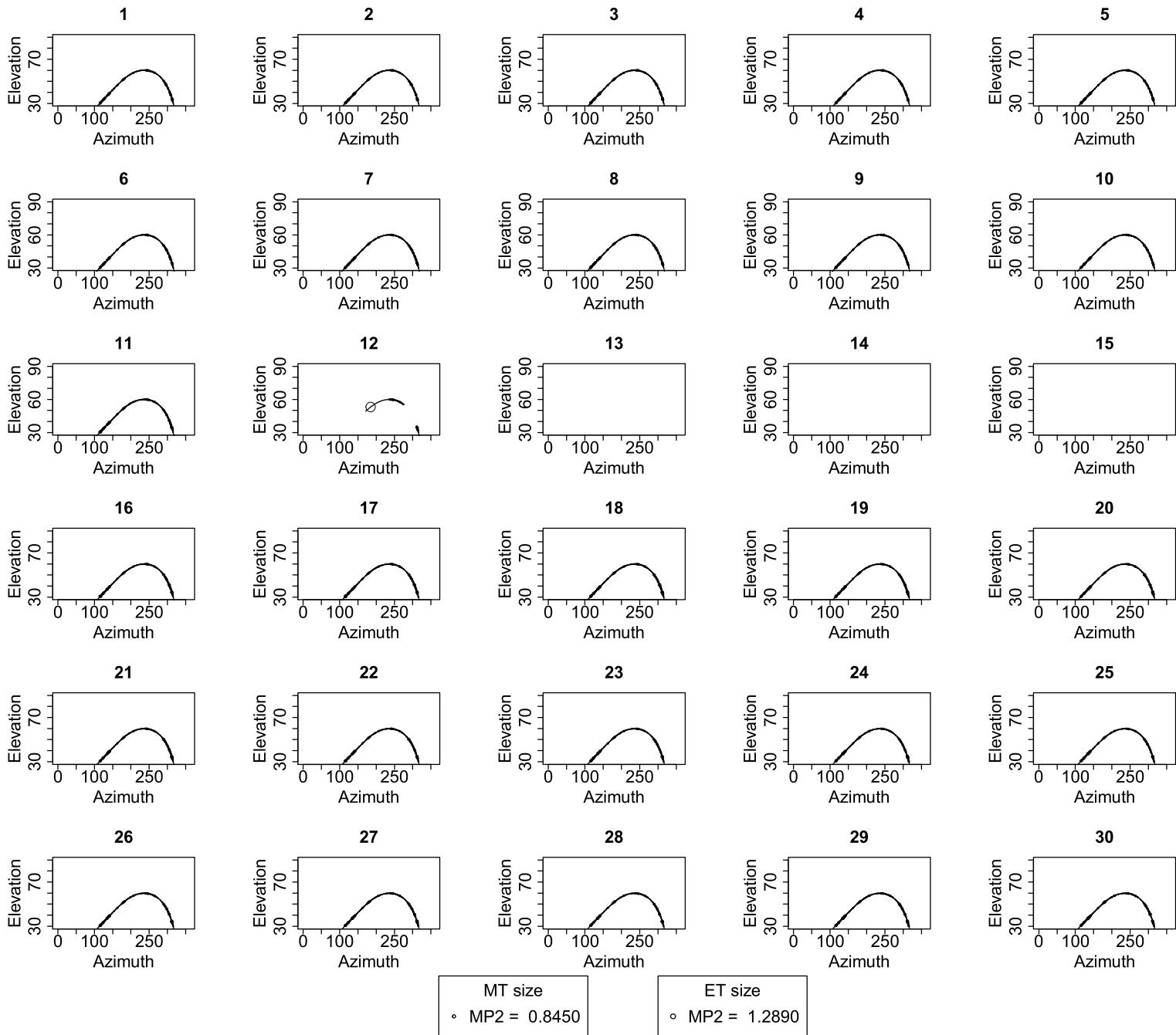


Figure S39 PEA plots comparison of MP2 for G7 on September 1–30, 2017 at SAO0P station

PEA plots (G8)

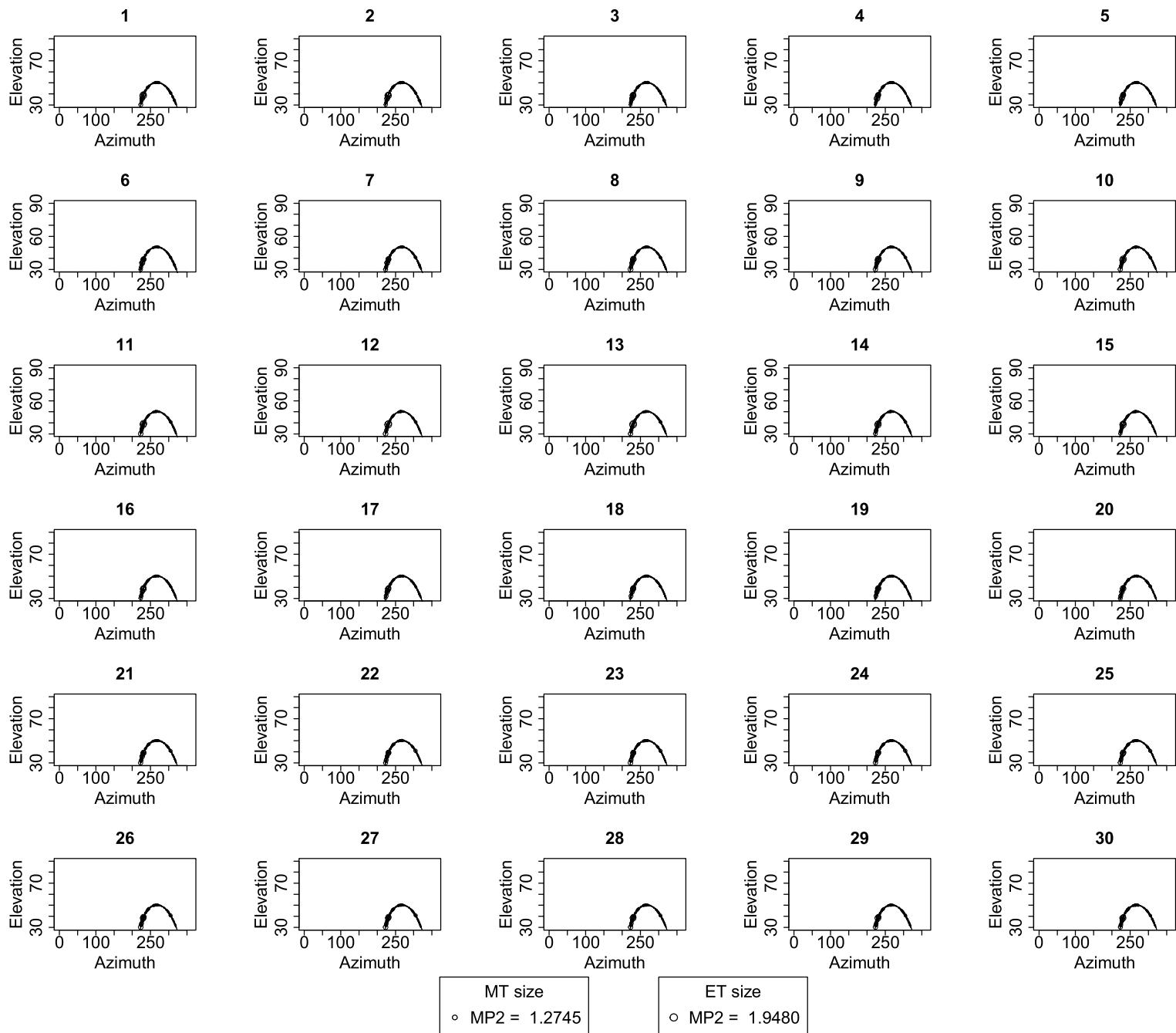


Figure S40 PEA plots comparison of MP2 for G8 on September 1–30, 2017 at SAOOP station

PEA plots (G9)

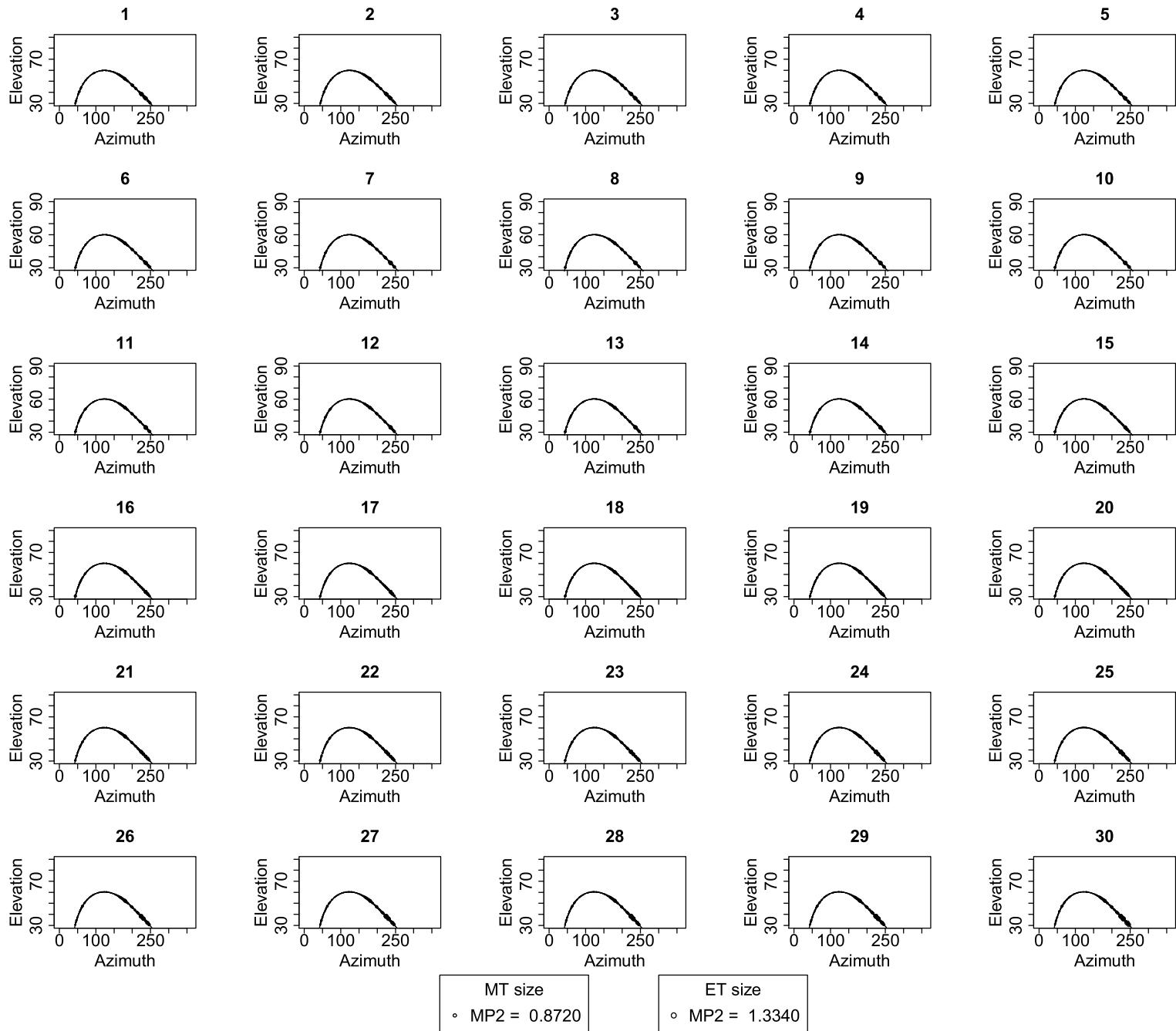


Figure S41 PEA plots comparison of MP2 for G9 on September 1–30, 2017 at SAOOP station

PEA plots (G10)

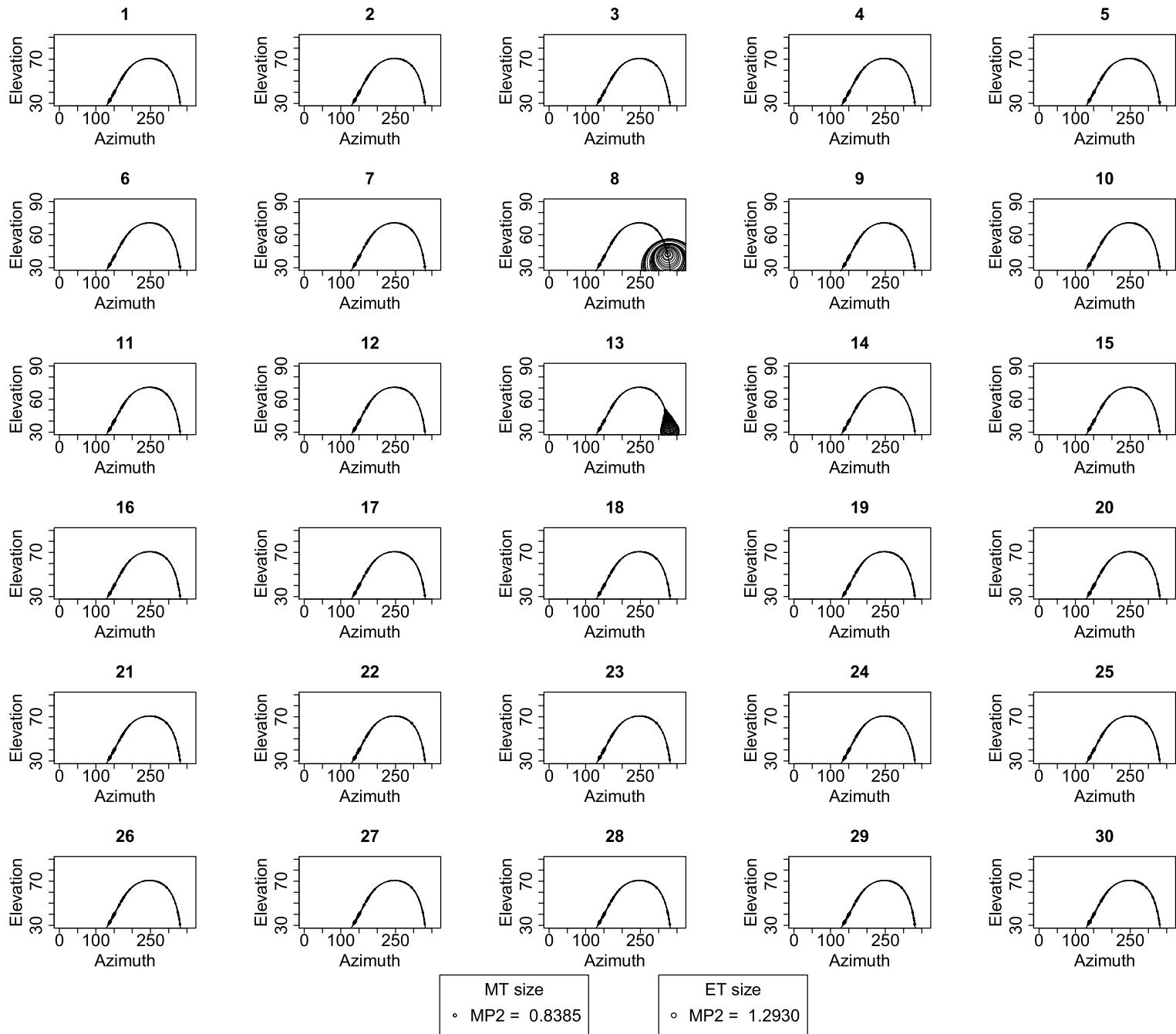


Figure S42 PEA plots comparison of MP2 for G10 on September 1–30, 2017 at SAOOP station

PEA plots (G11)

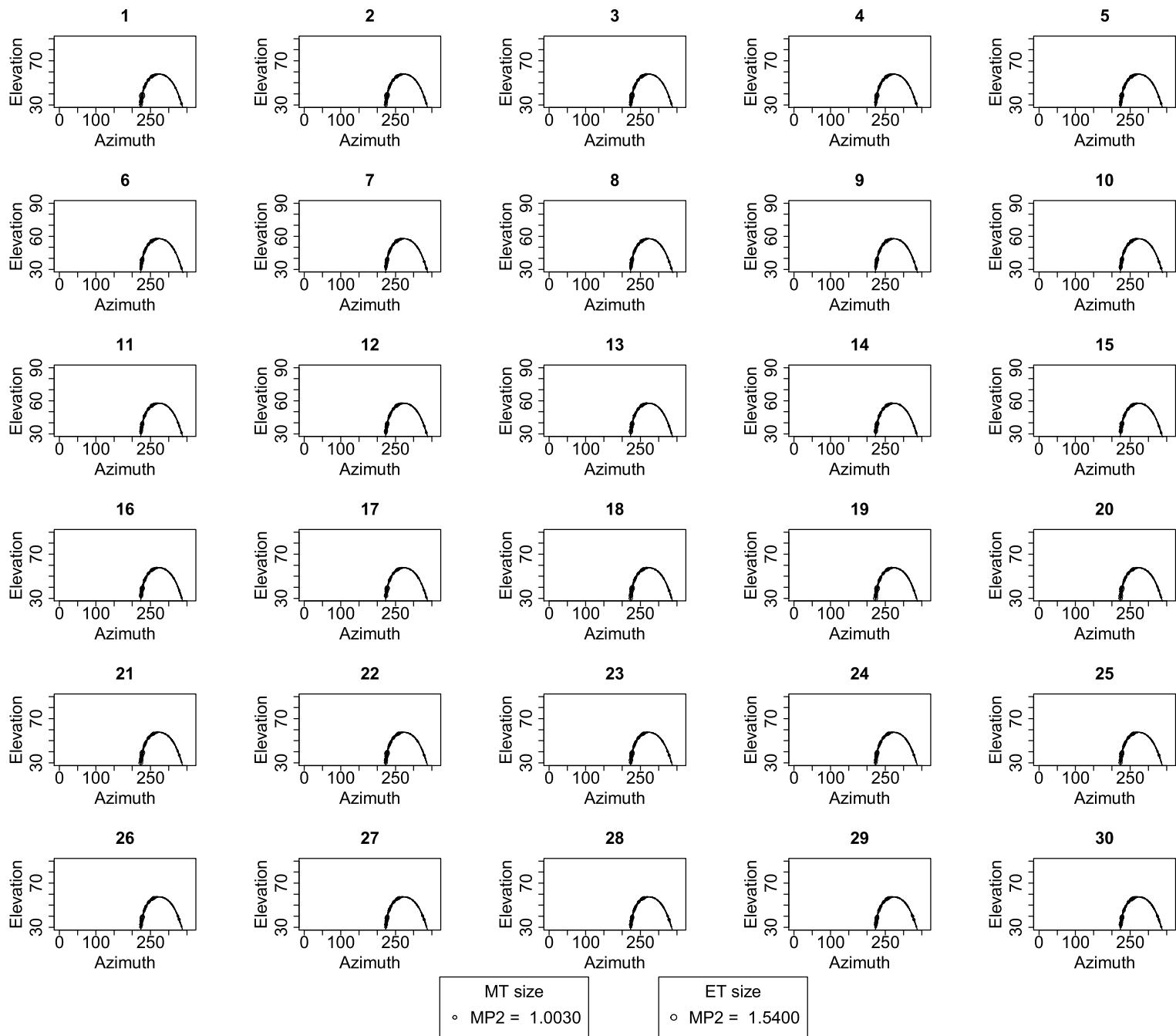


Figure S43 PEA plots comparison of MP2 for G11 on September 1–30, 2017 at SAOOP station

PEA plots (G12)

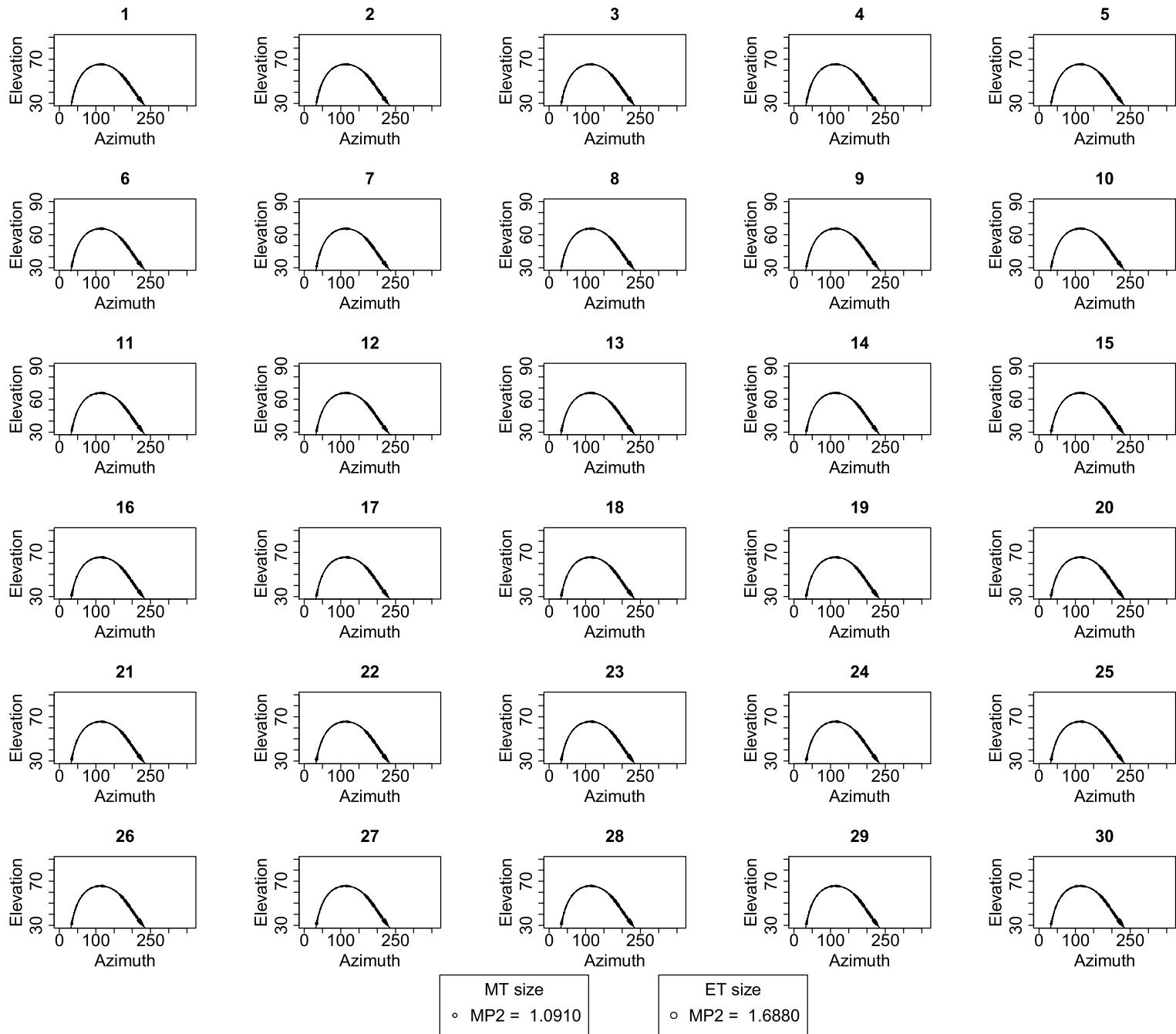


Figure S44 PEA plots comparison of MP2 for G12 on September 1–30, 2017 at SAOOP station

PEA plots (G13)

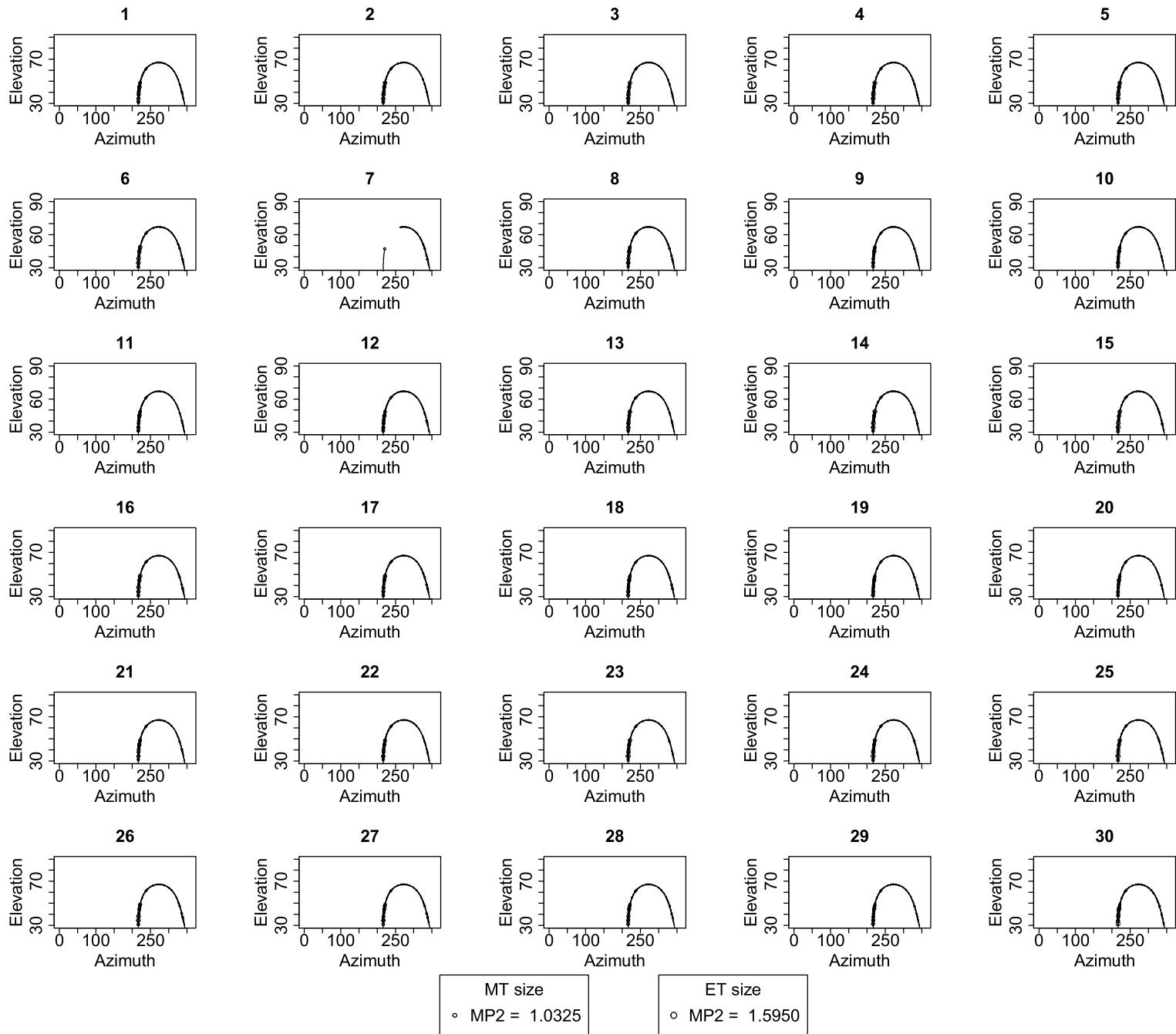


Figure S45 PEA plots comparison of MP2 for G13 on September 1–30, 2017 at SAOOP station

PEA plots (G14)

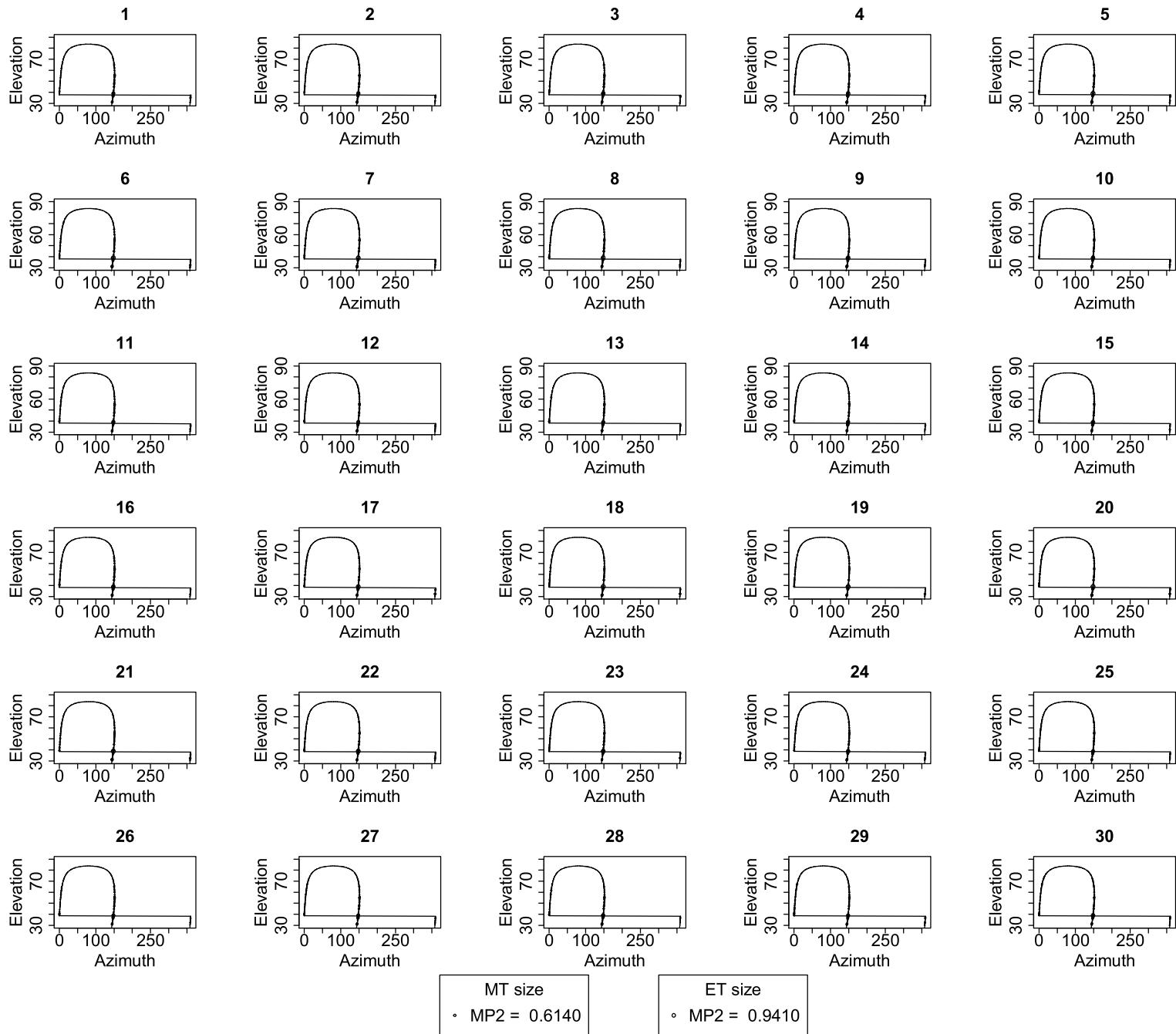


Figure S46 PEA plots comparison of MP2 for G14 on September 1–30, 2017 at SAOOP station

PEA plots (G15)

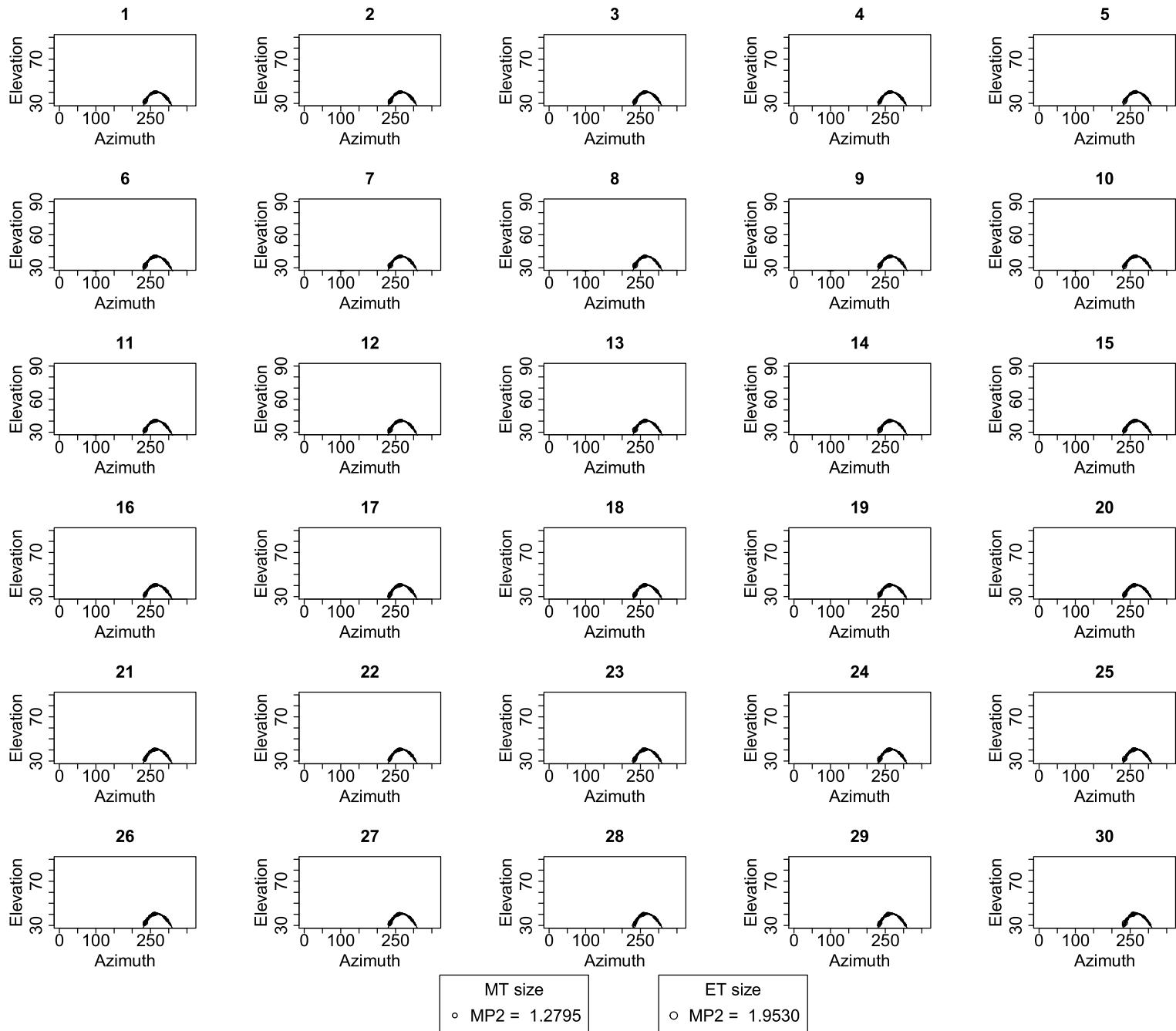


Figure S47 PEA plots comparison of MP2 for G15 on September 1–30, 2017 at SAOOP station

PEA plots (G16)

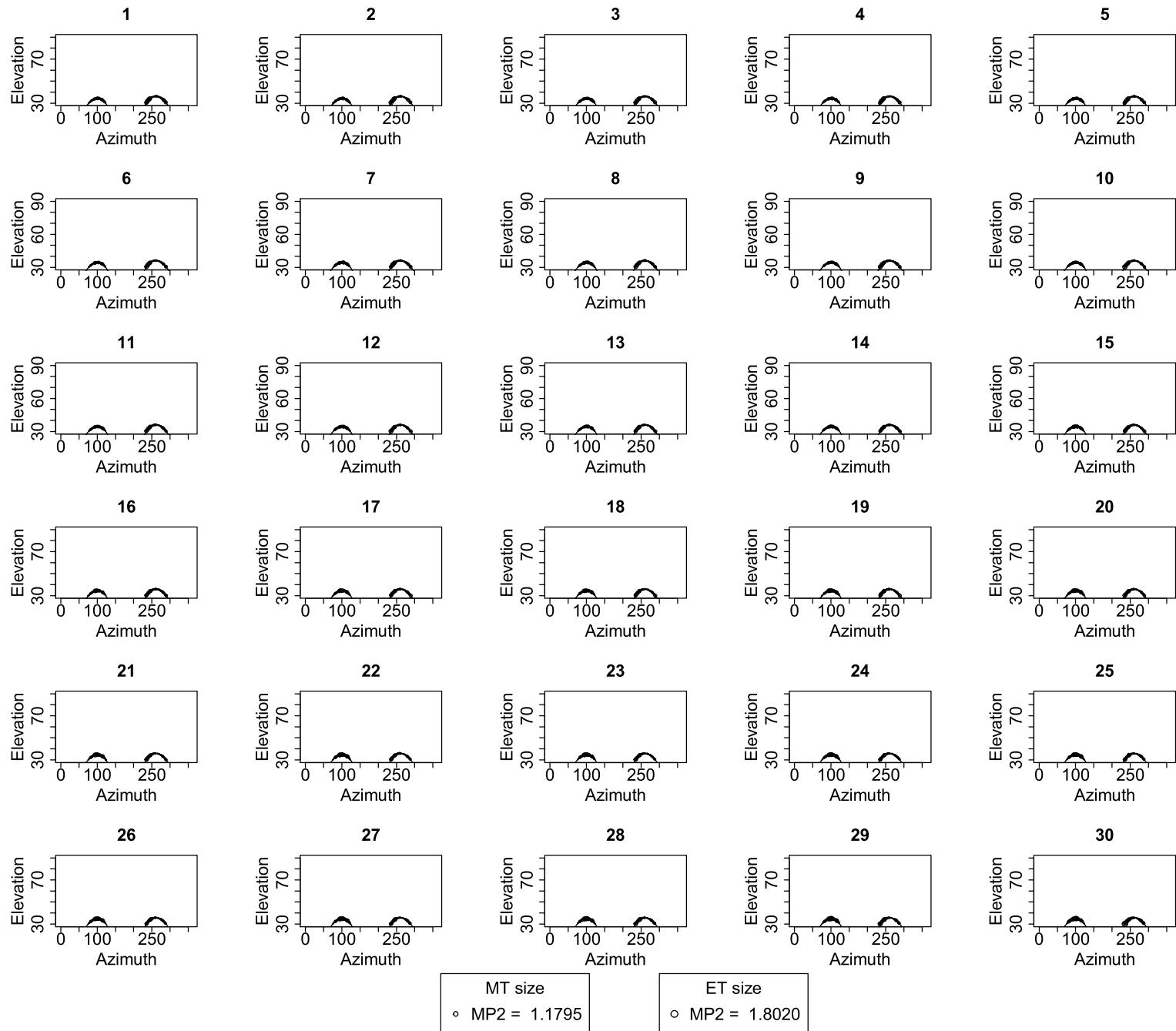


Figure S48 PEA plots comparison of MP2 for G16 on September 1–30, 2017 at SAOOP station

PEA plots (G17)

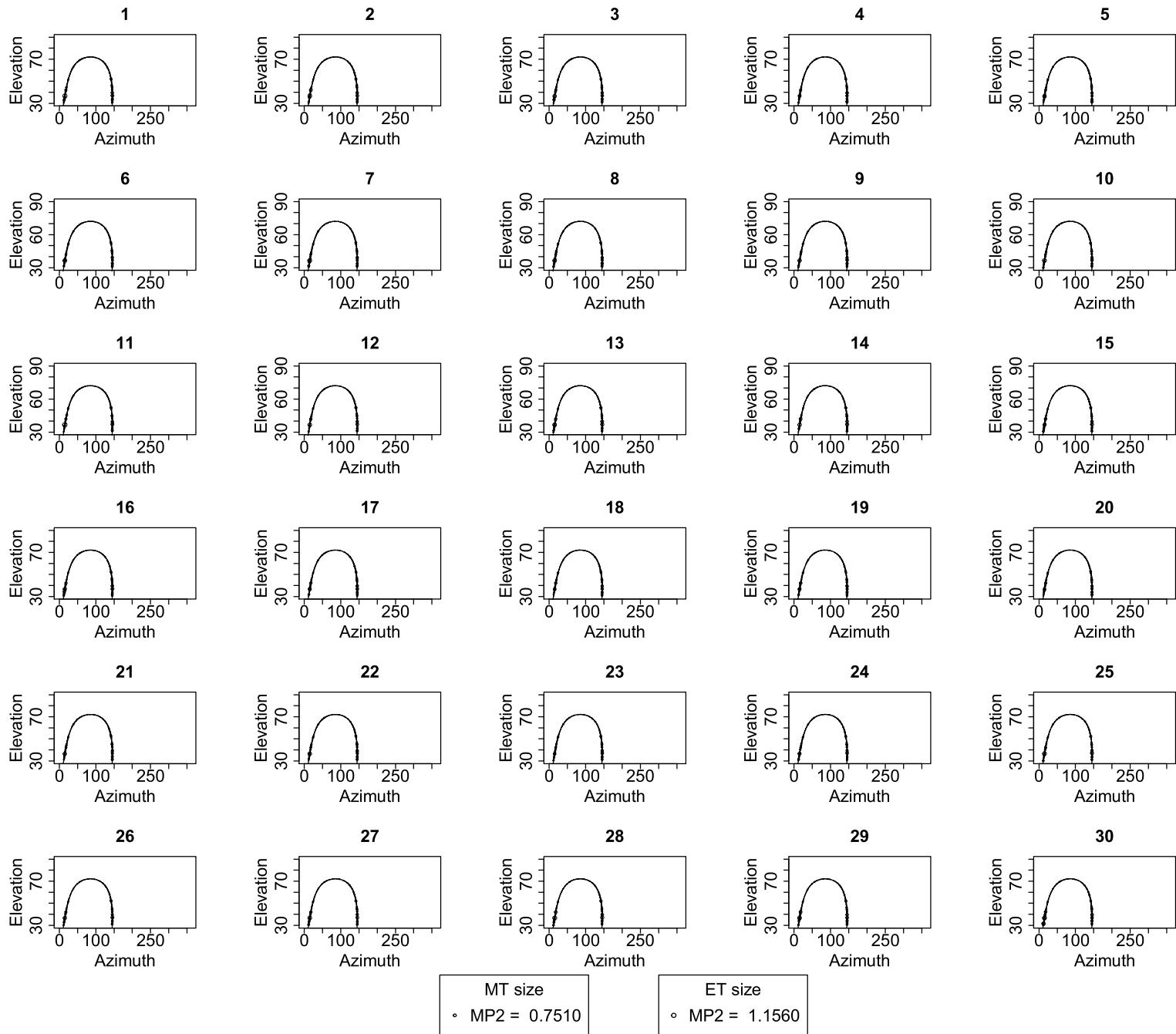


Figure S49 PEA plots comparison of MP2 for G17 on September 1–30, 2017 at SAOOP station

PEA plots (G18)

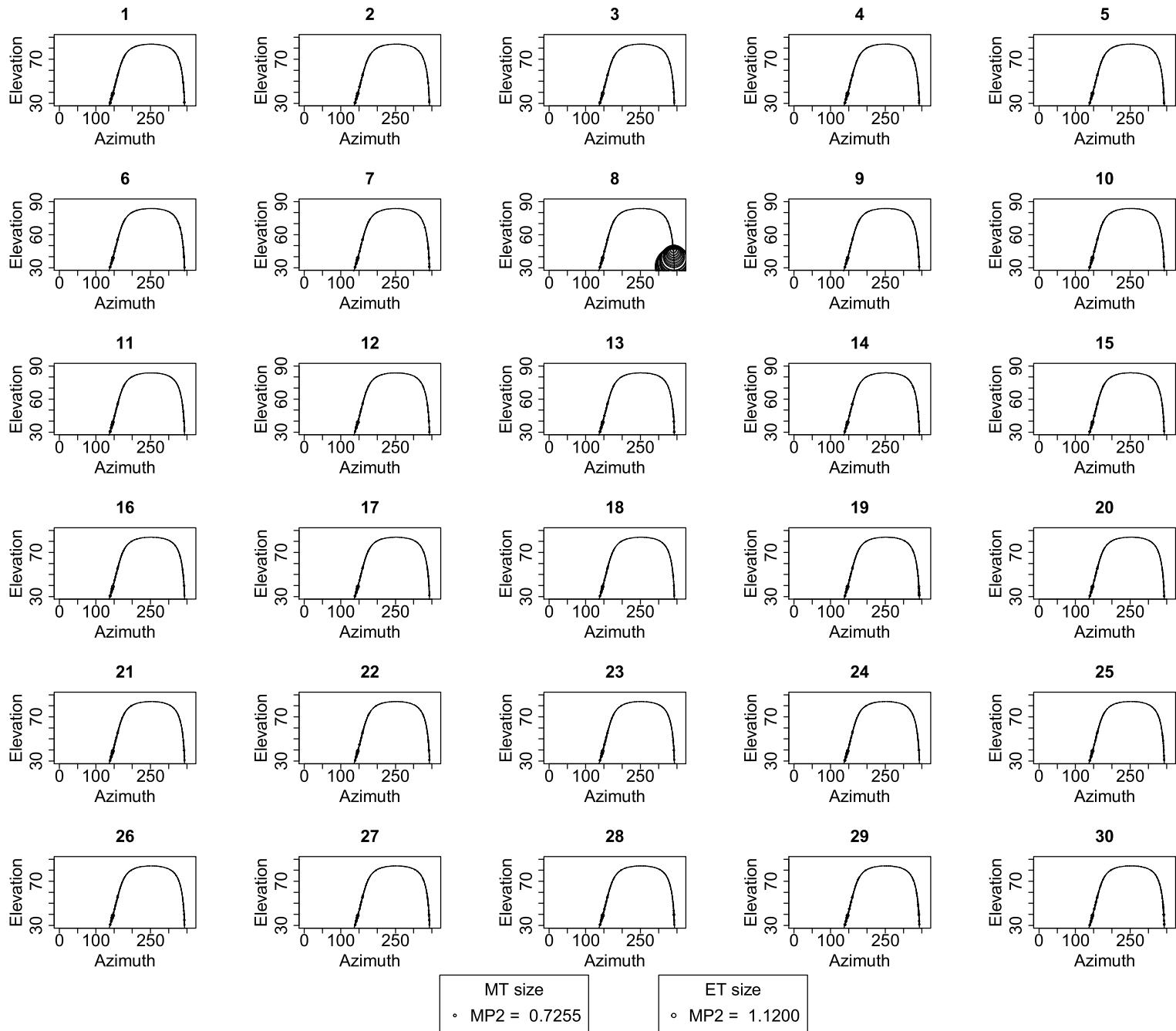


Figure S50 PEA plots comparison of MP2 for G18 on September 1–30, 2017 at SAOOP station

PEA plots (G19)

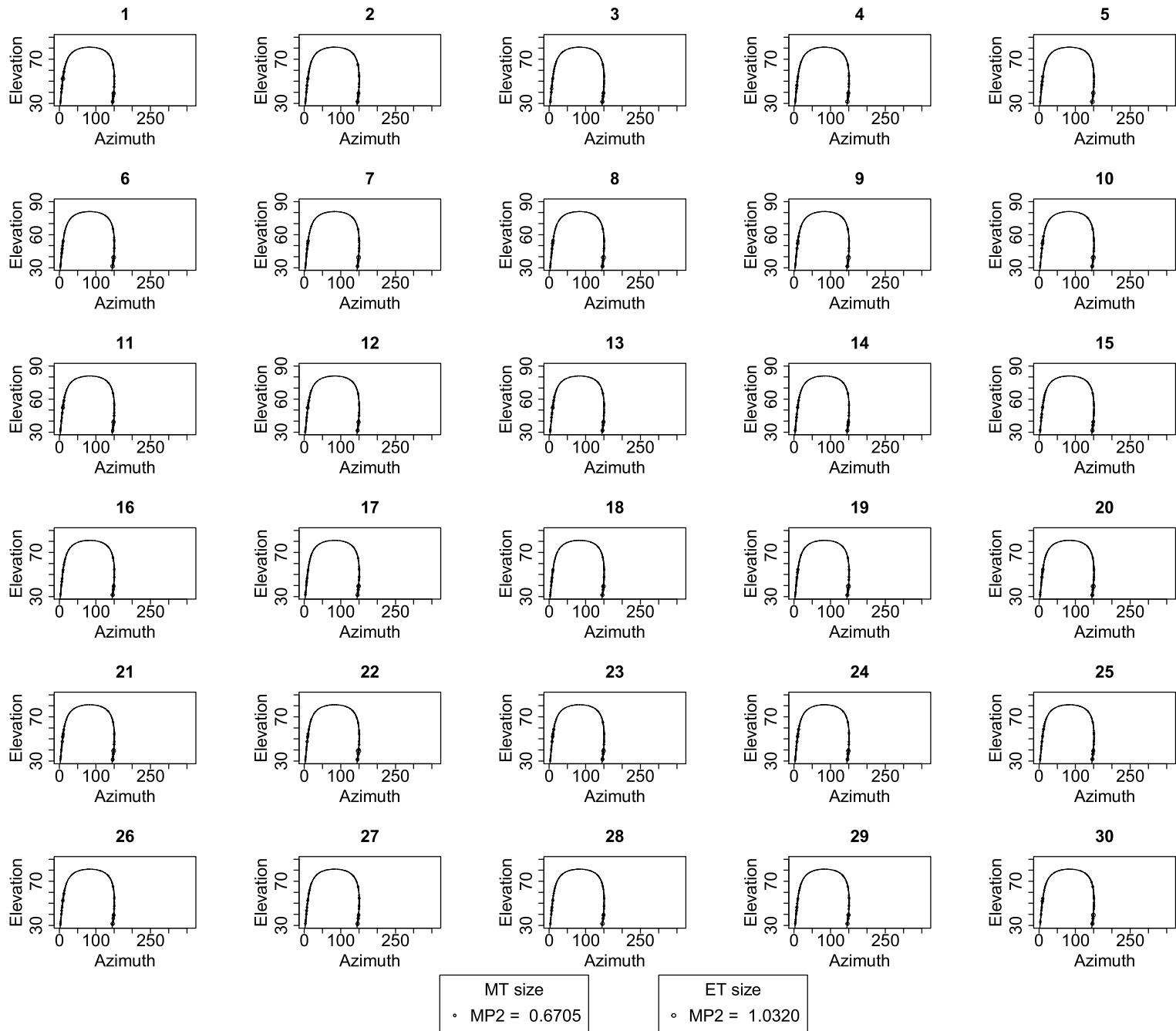


Figure S51 PEA plots comparison of MP2 for G19 on September 1–30, 2017 at SAOOP station

PEA plots (G20)

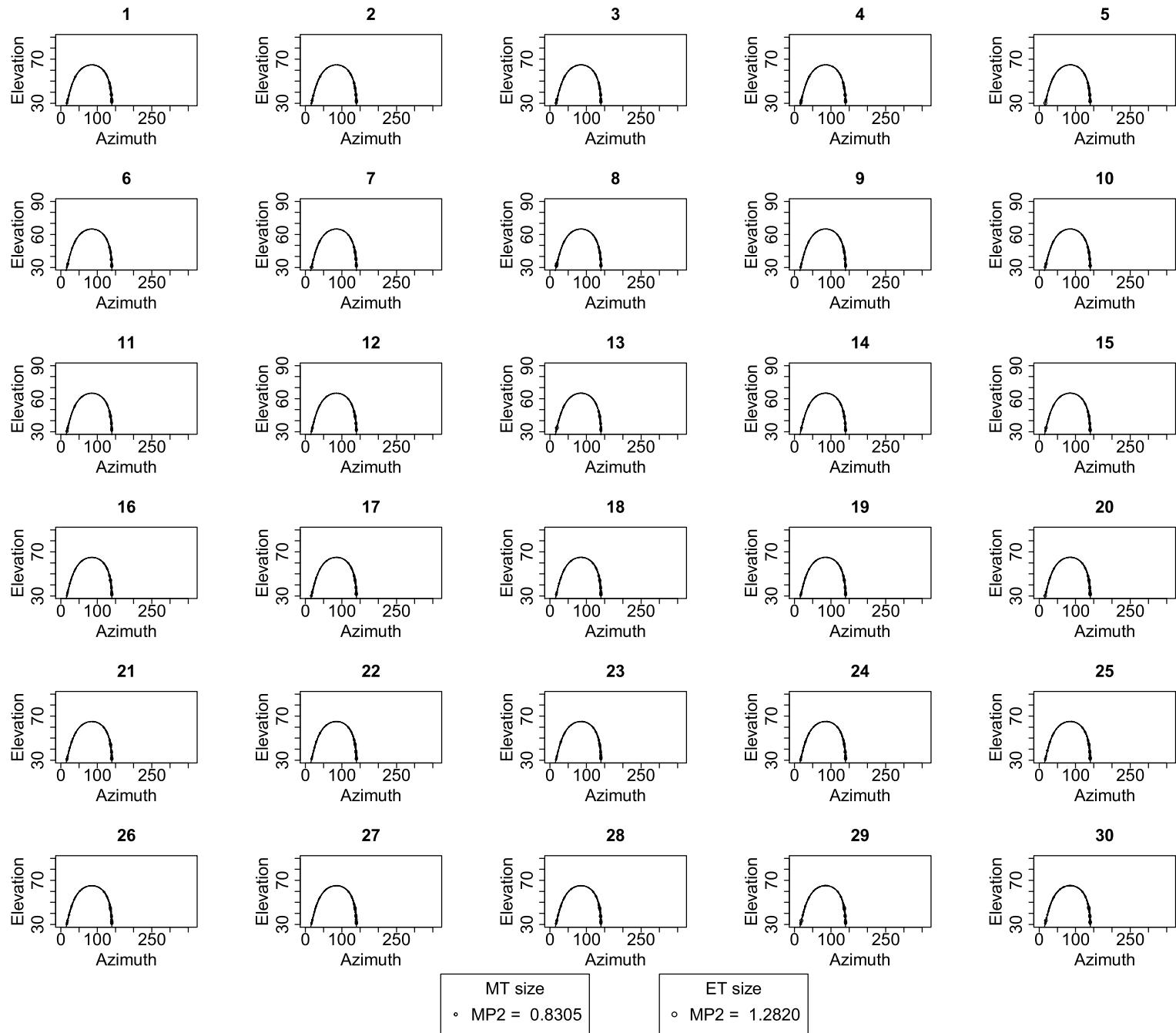


Figure S52 PEA plots comparison of MP2 for G20 on September 1–30, 2017 at SAOOP station

PEA plots (G21)

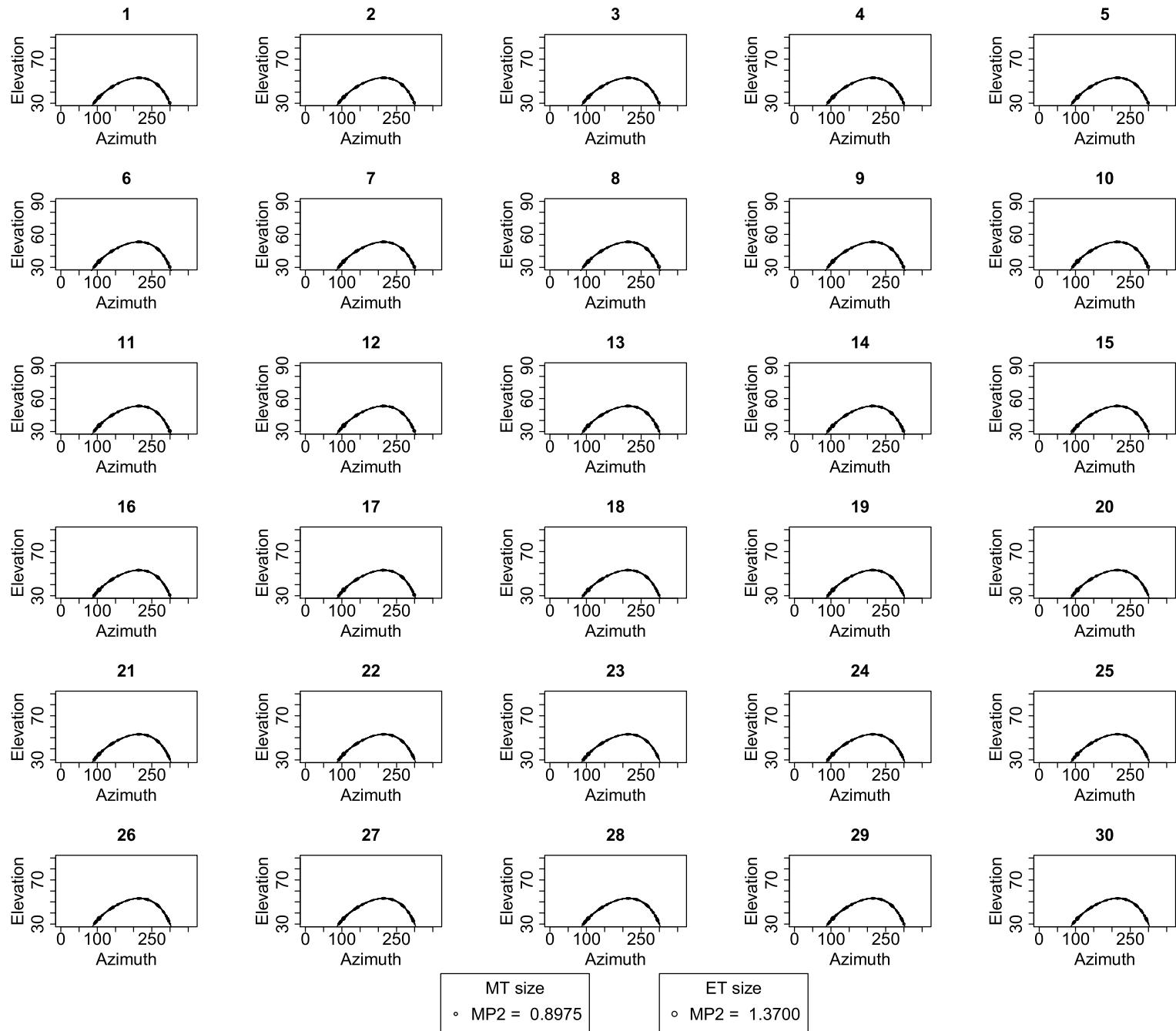


Figure S53 PEA plots comparison of MP2 for G21 on September 1–30, 2017 at SAOOP station

PEA plots (G22)

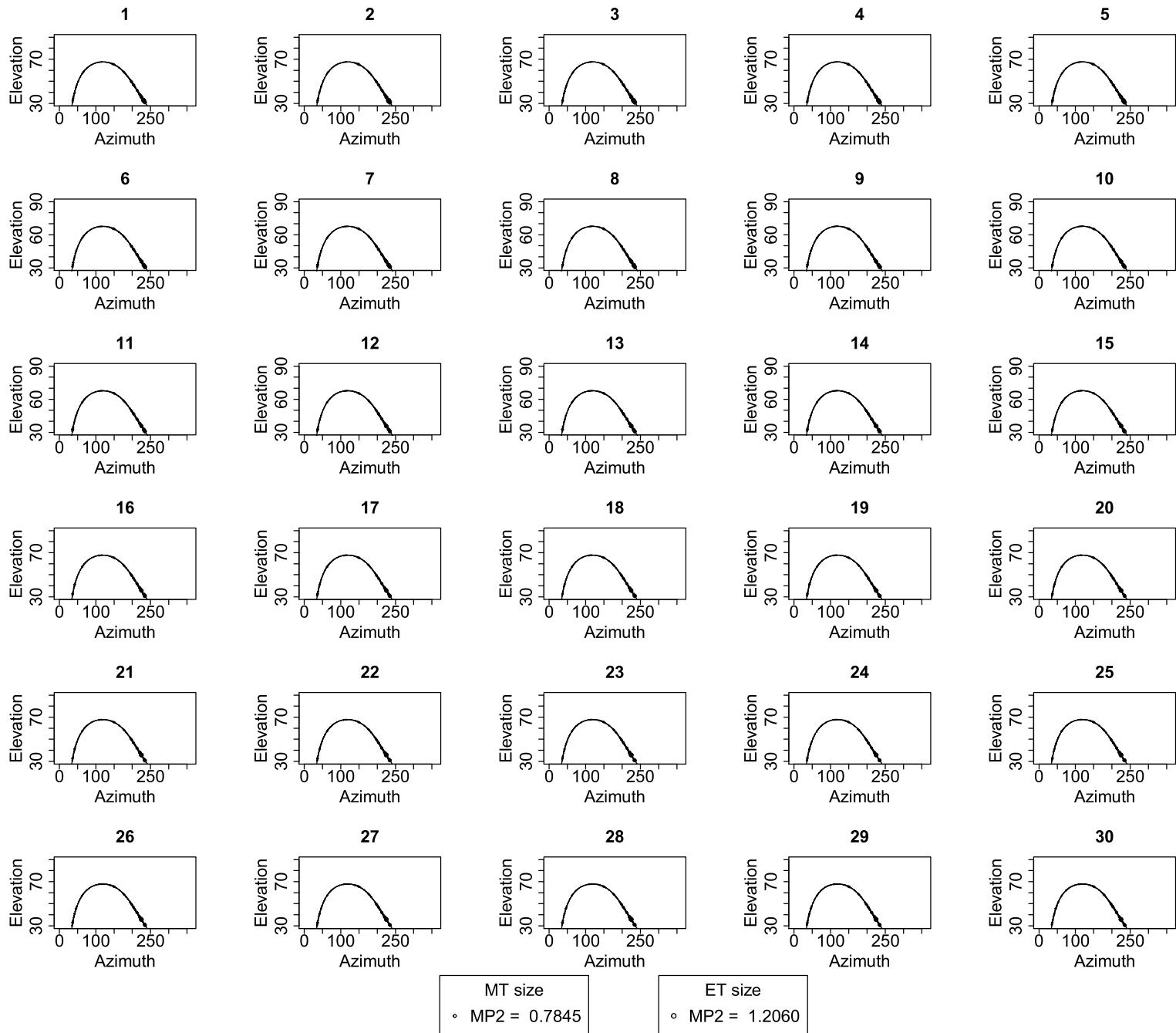


Figure S54 PEA plots comparison of MP2 for G22 on September 1–30, 2017 at SAOOP station

PEA plots (G23)

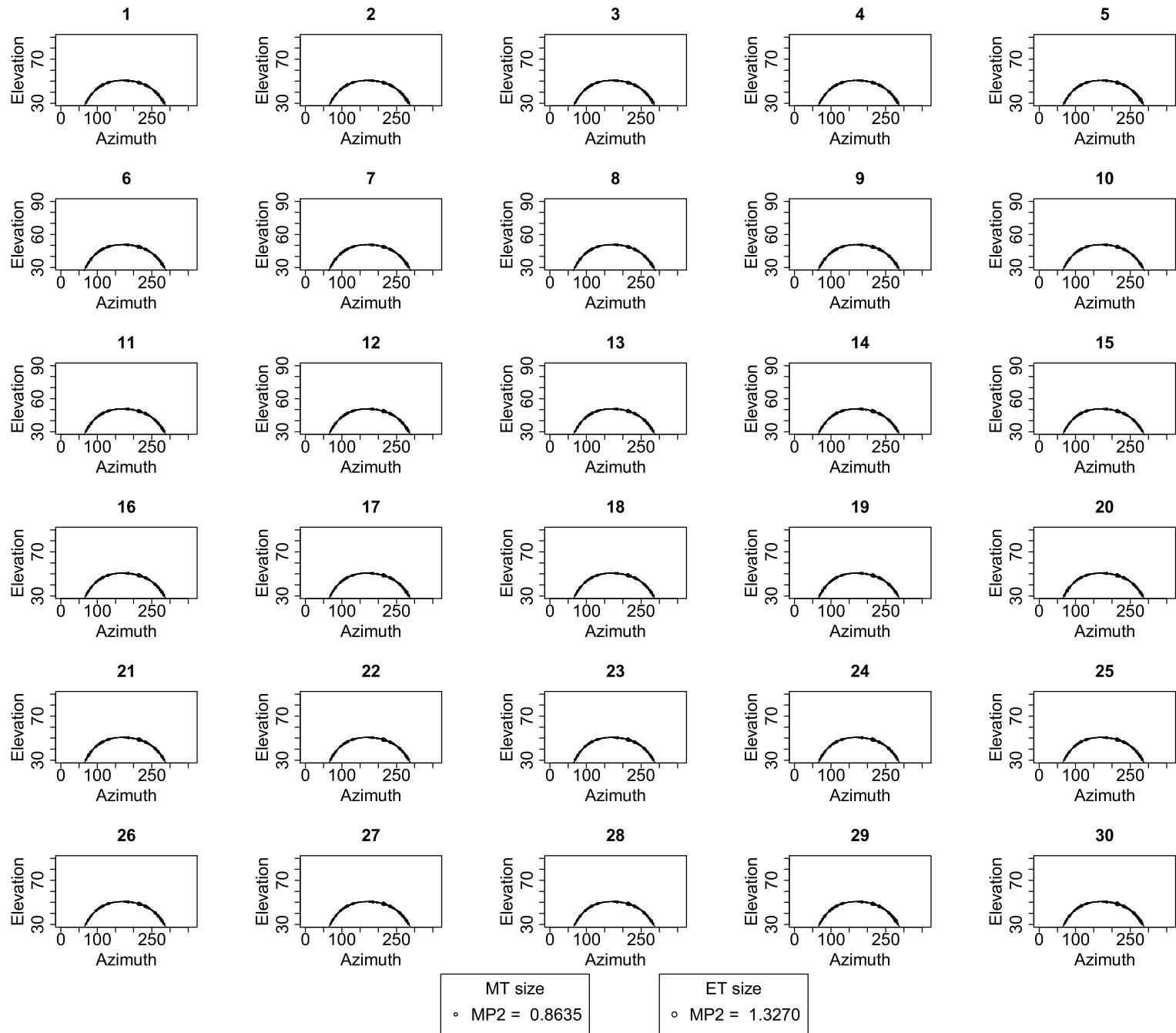


Figure S55 PEA plots comparison of MP2 for G23 on September 1–30, 2017 at SAOOP station

PEA plots (G24)

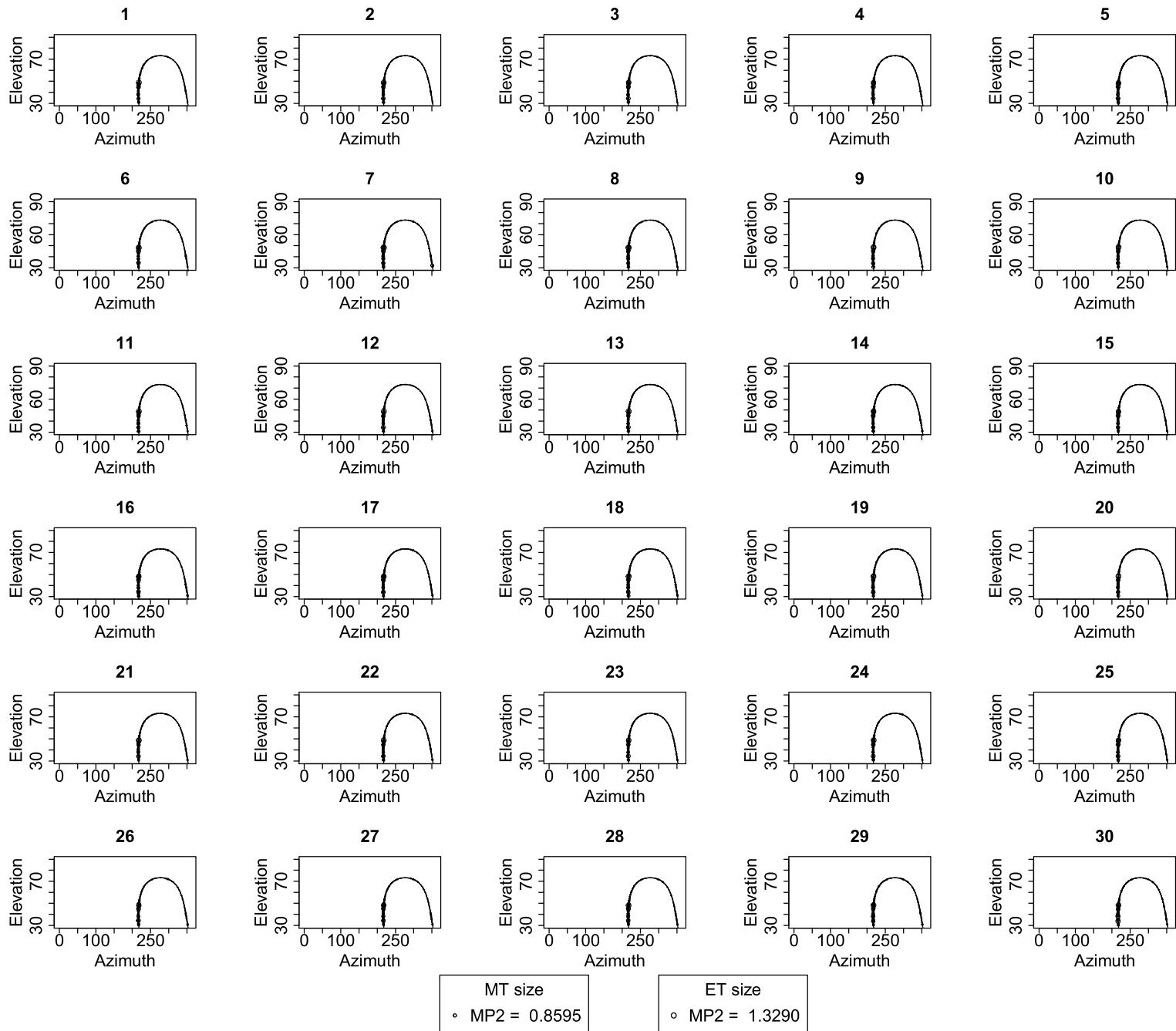


Figure S56 PEA plots comparison of MP2 for G24 on September 1–30, 2017 at SAOOP station

PEA plots (G25)

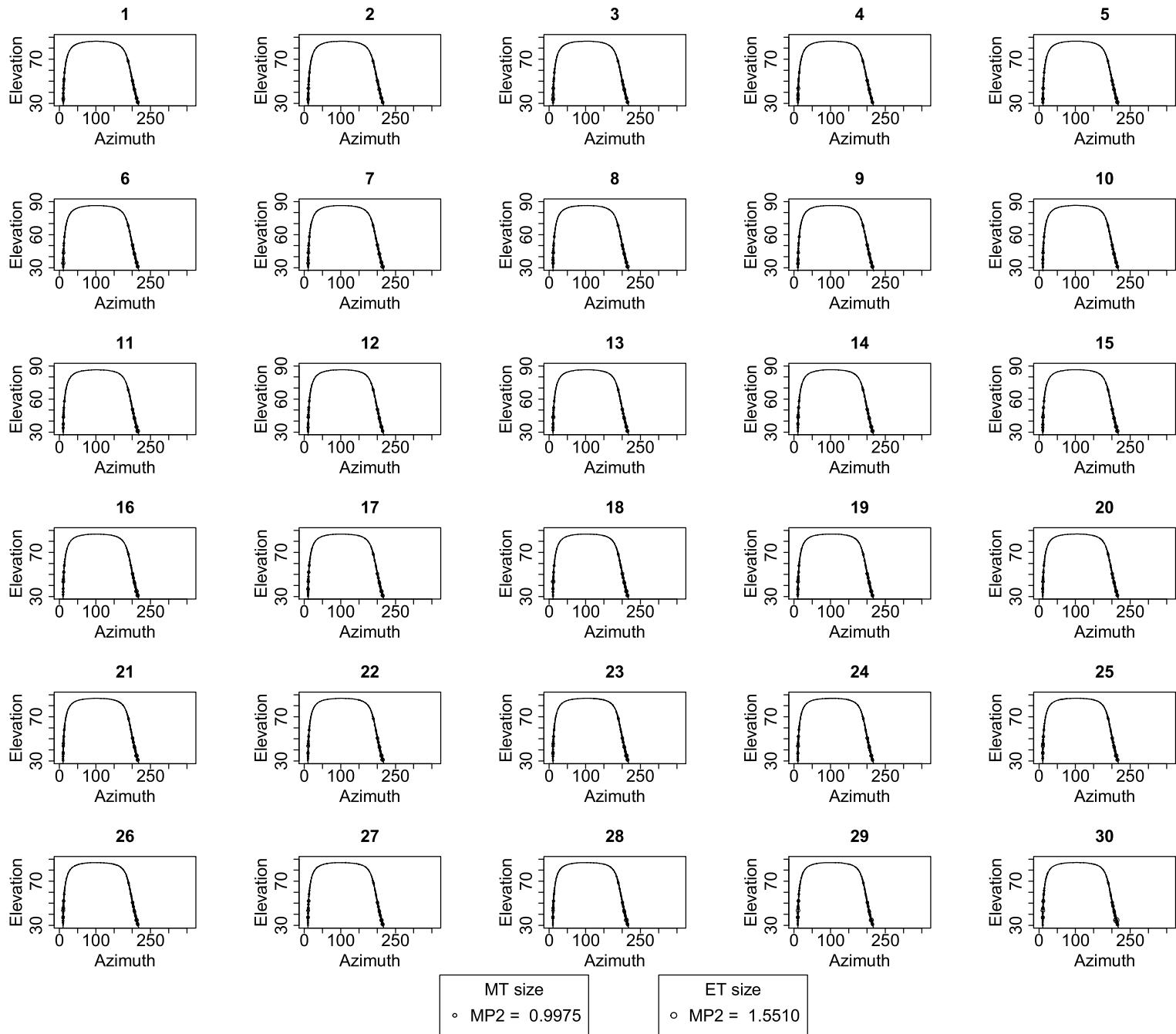


Figure S57 PEA plots comparison of MP2 for G25 on September 1–30, 2017 at SAOOP station

PEA plots (G26)

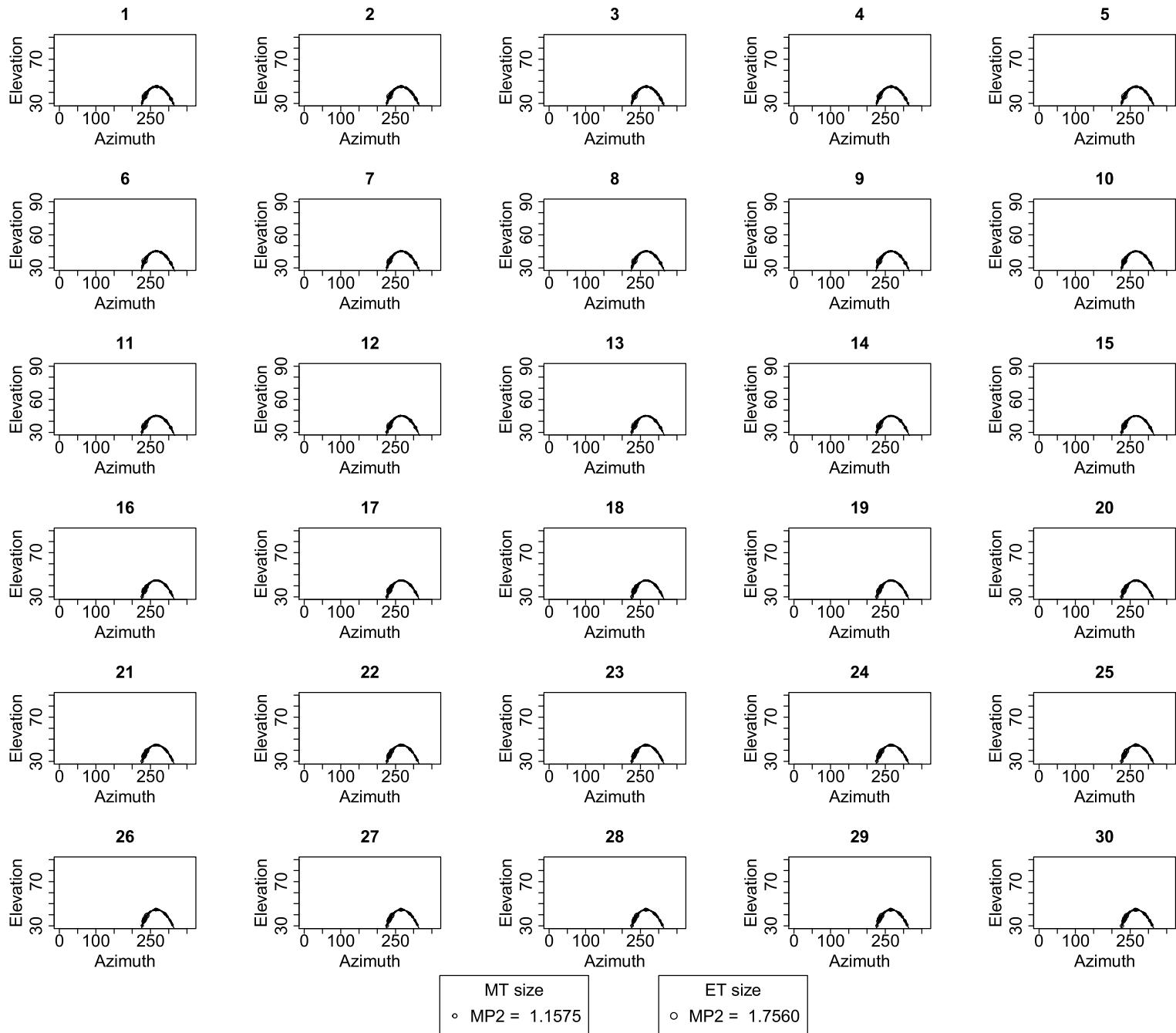


Figure S58 PEA plots comparison of MP2 for G26 on September 1–30, 2017 at SAOOP station

PEA plots (G27)

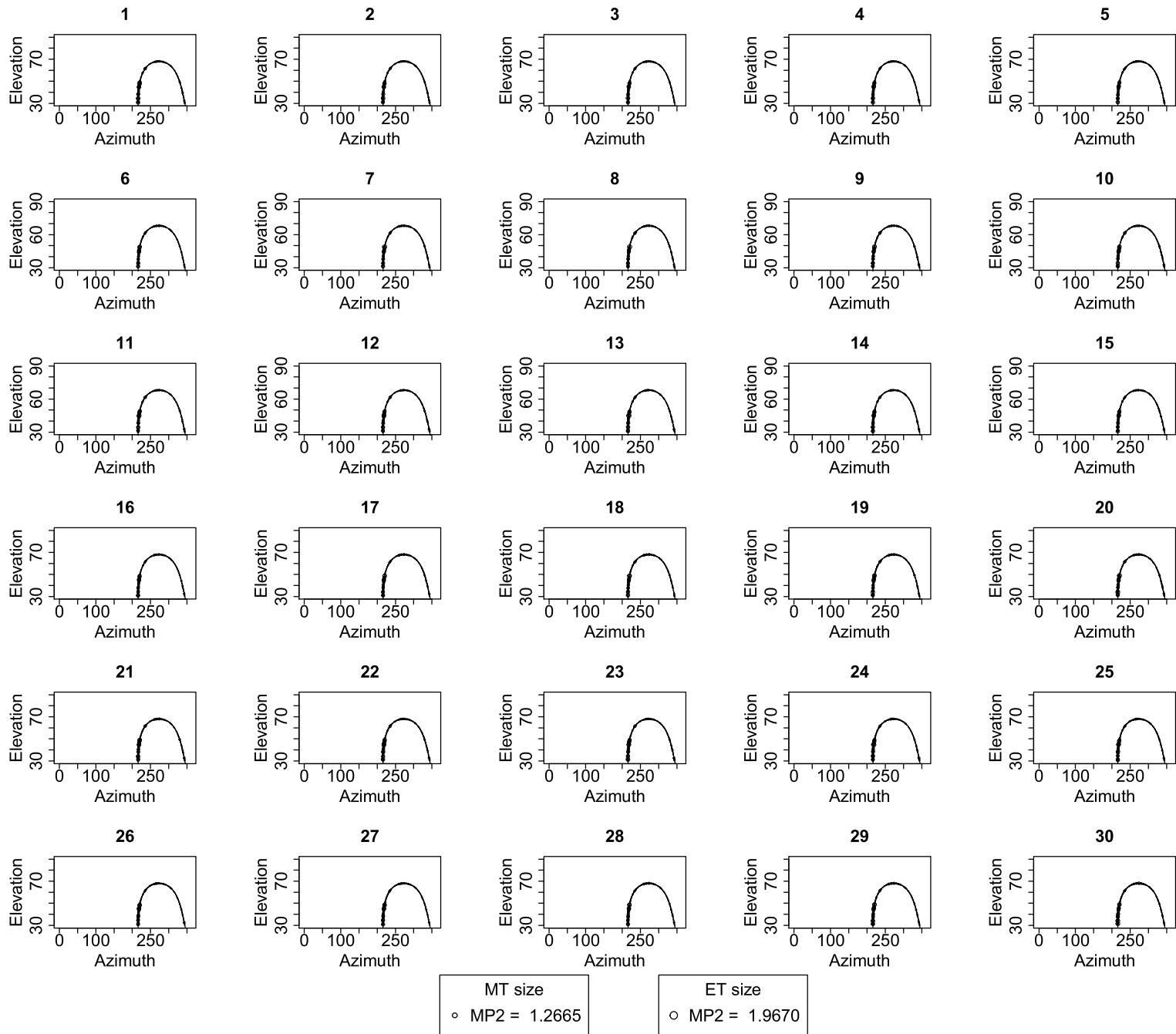


Figure S59 PEA plots comparison of MP2 for G27 on September 1–30, 2017 at SAOOP station

PEA plots (G28)

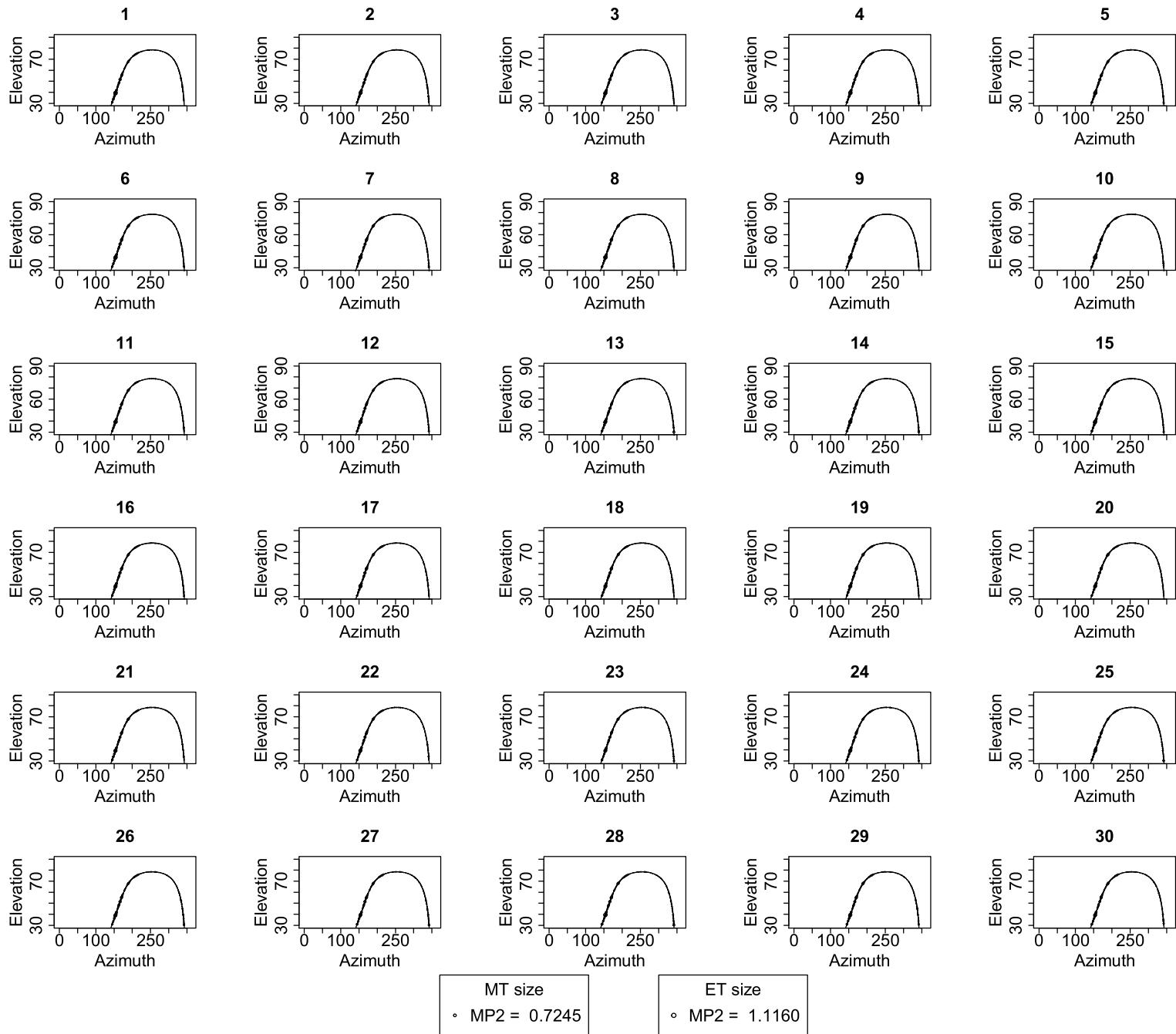


Figure S60 PEA plots comparison of MP2 for G28 on September 1–30, 2017 at SAOOP station

PEA plots (G29)

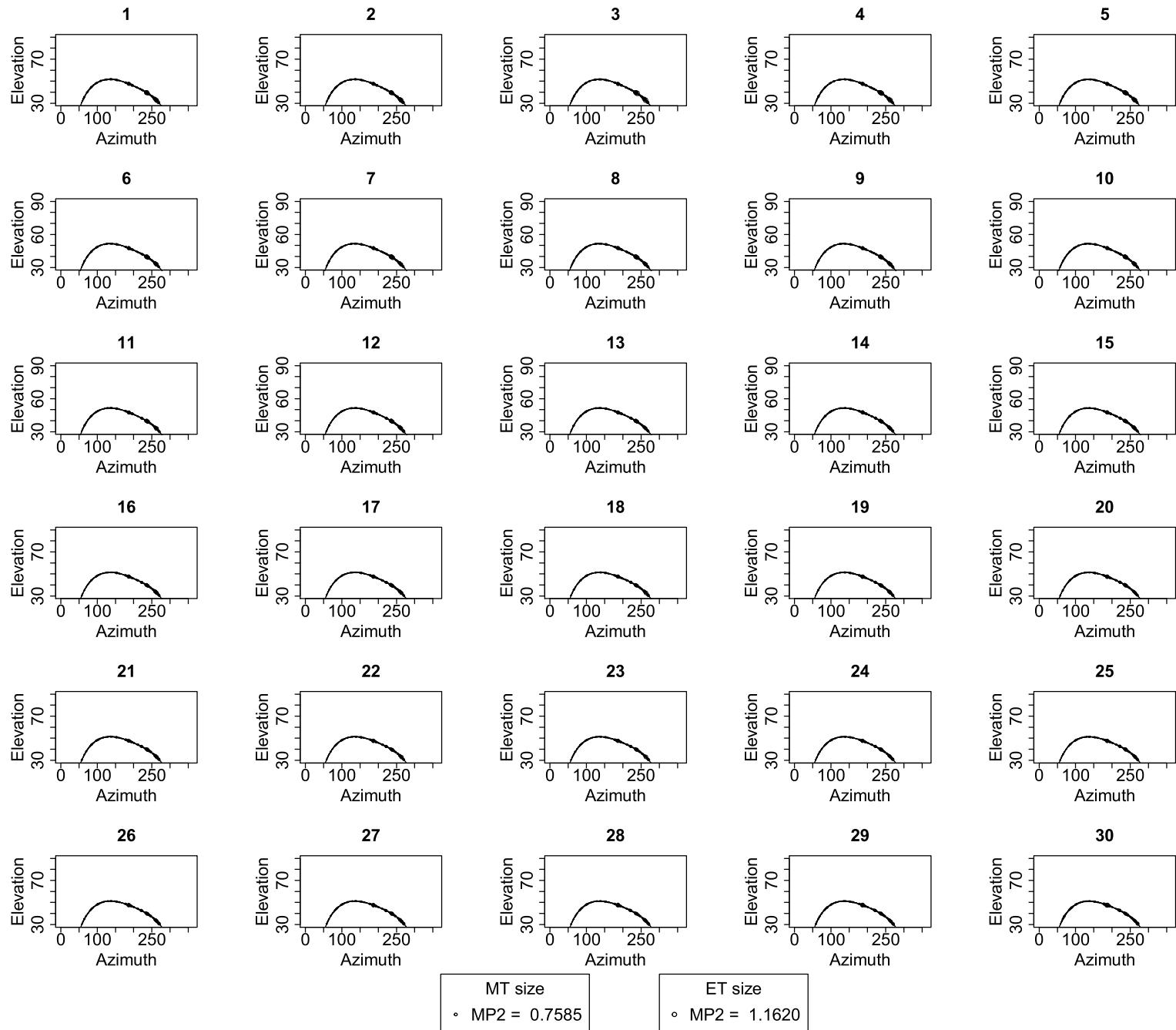


Figure S61 PEA plots comparison of MP2 for G29 on September 1–30, 2017 at SAOOP station

PEA plots (G30)

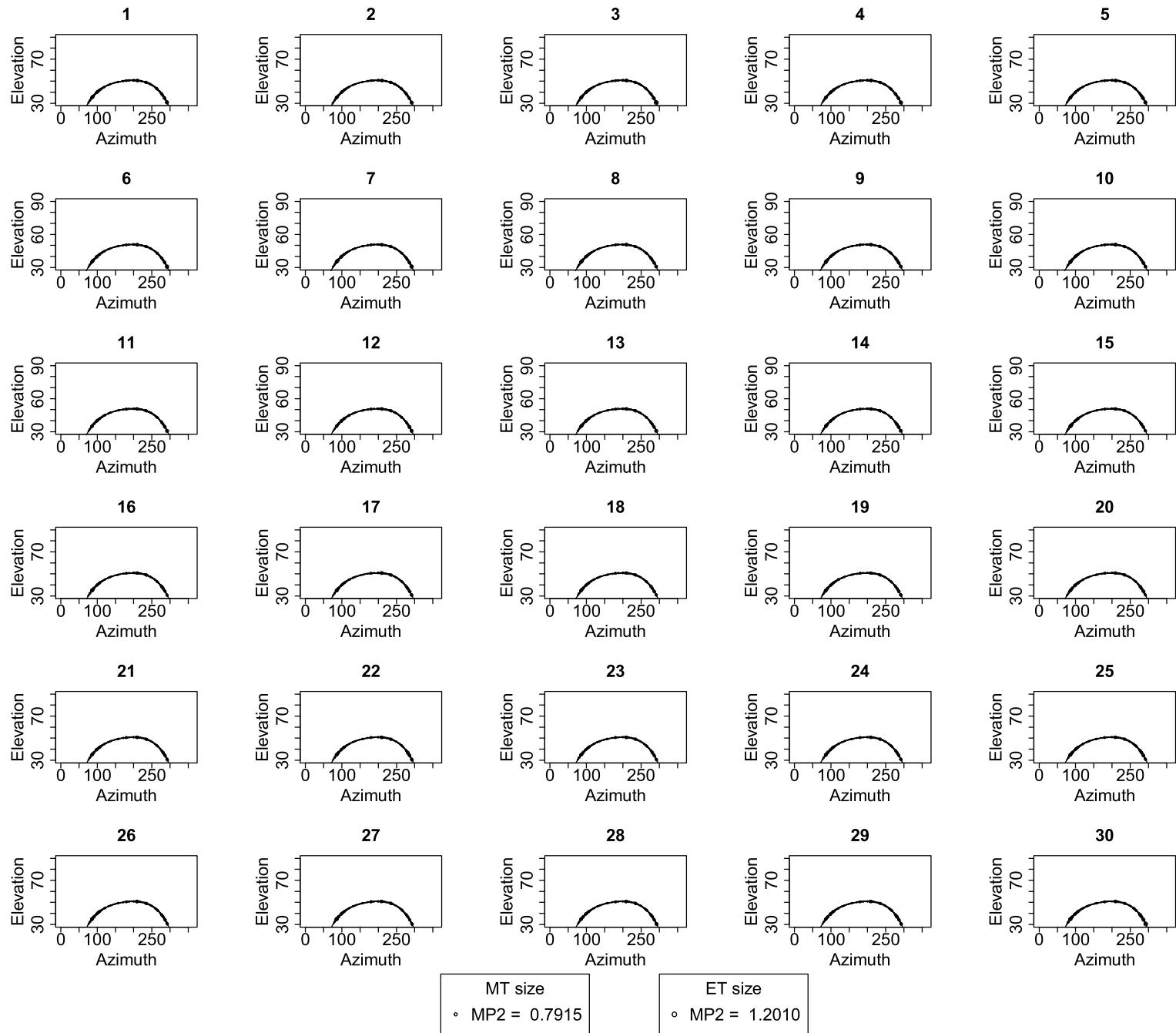


Figure S62 PEA plots comparison of MP2 for G30 on September 1–30, 2017 at SAOOP station

PEA plots (G31)

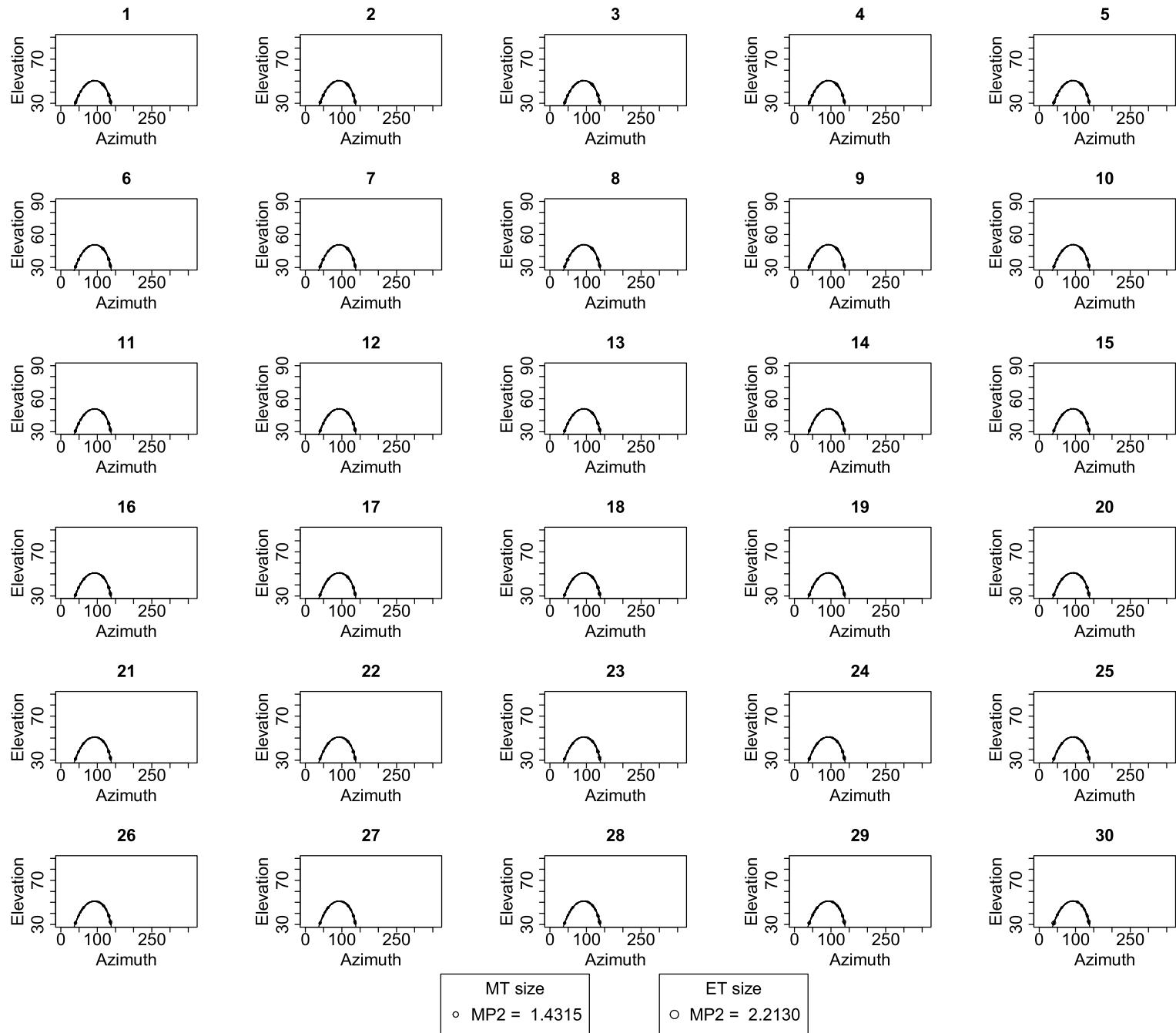


Figure S63 PEA plots comparison of MP2 for G31 on September 1–30, 2017 at SAOOP station

PEA plots (G32)

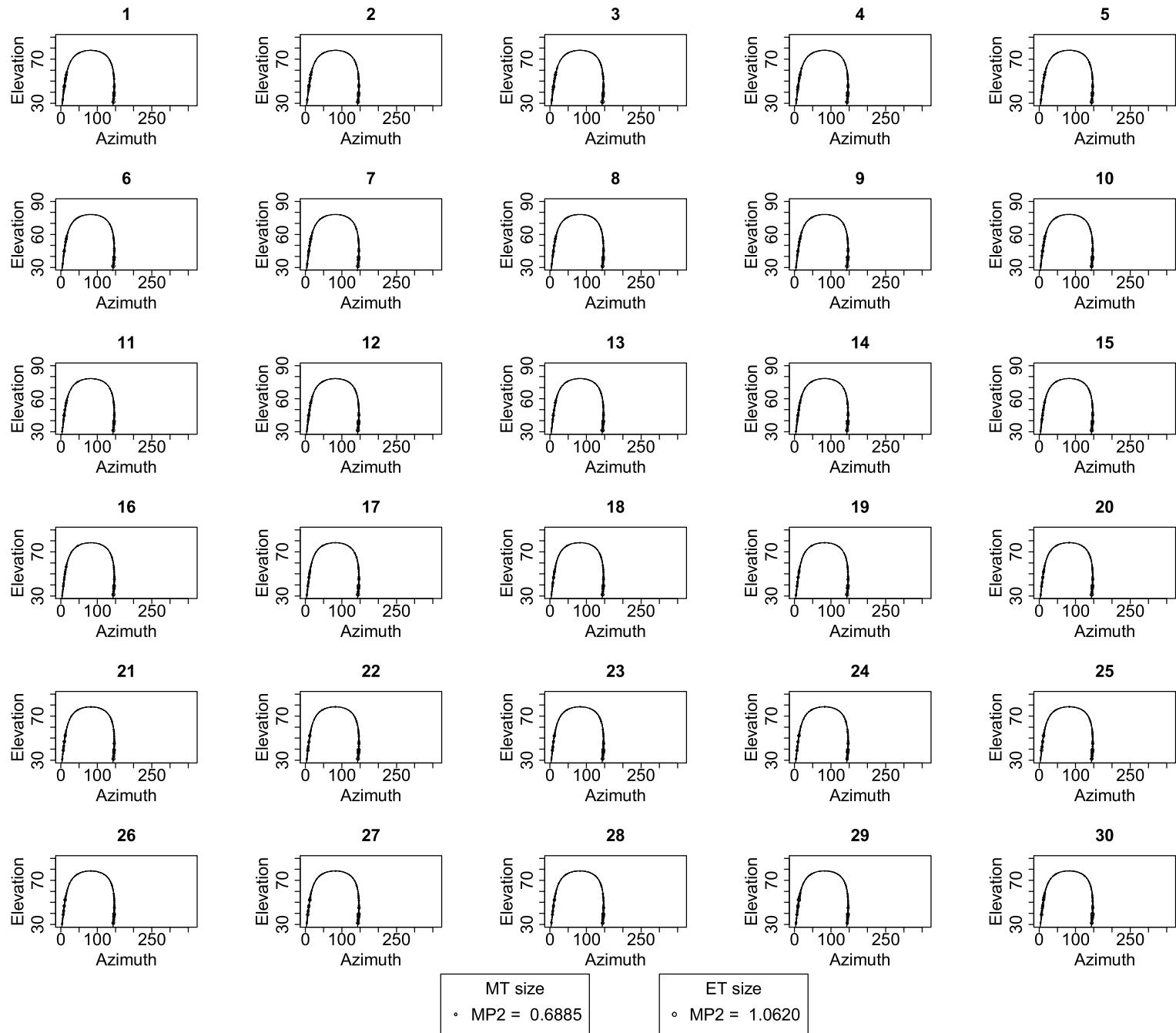


Figure S64 PEA plots comparison of MP2 for G32 on September 1–30, 2017 at SAOOP station

PEA plots (G1)

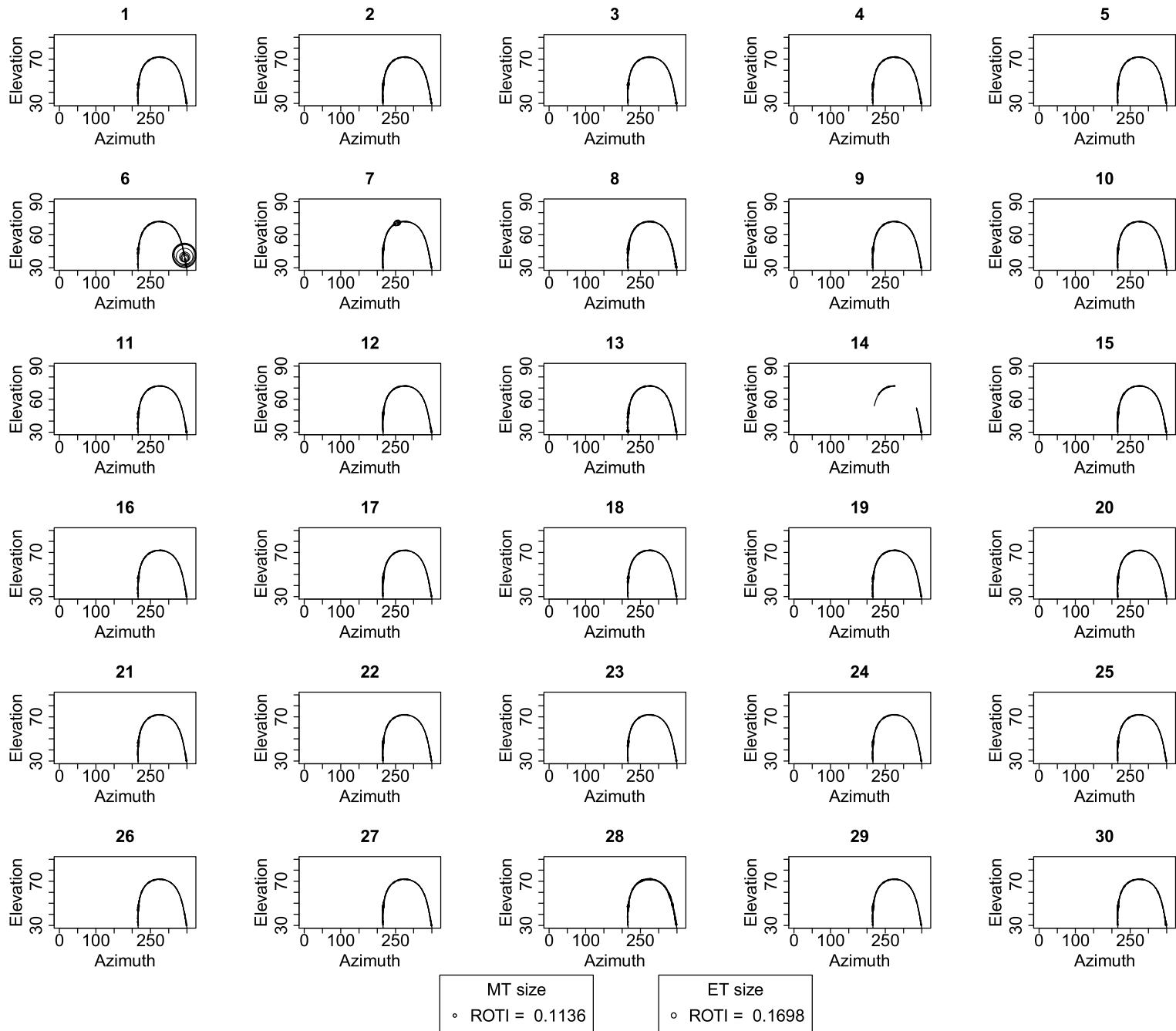


Figure S65 PEA plots comparison of ROTI for G1 on September 1–30, 2017 at SAOOP station

PEA plots (G2)

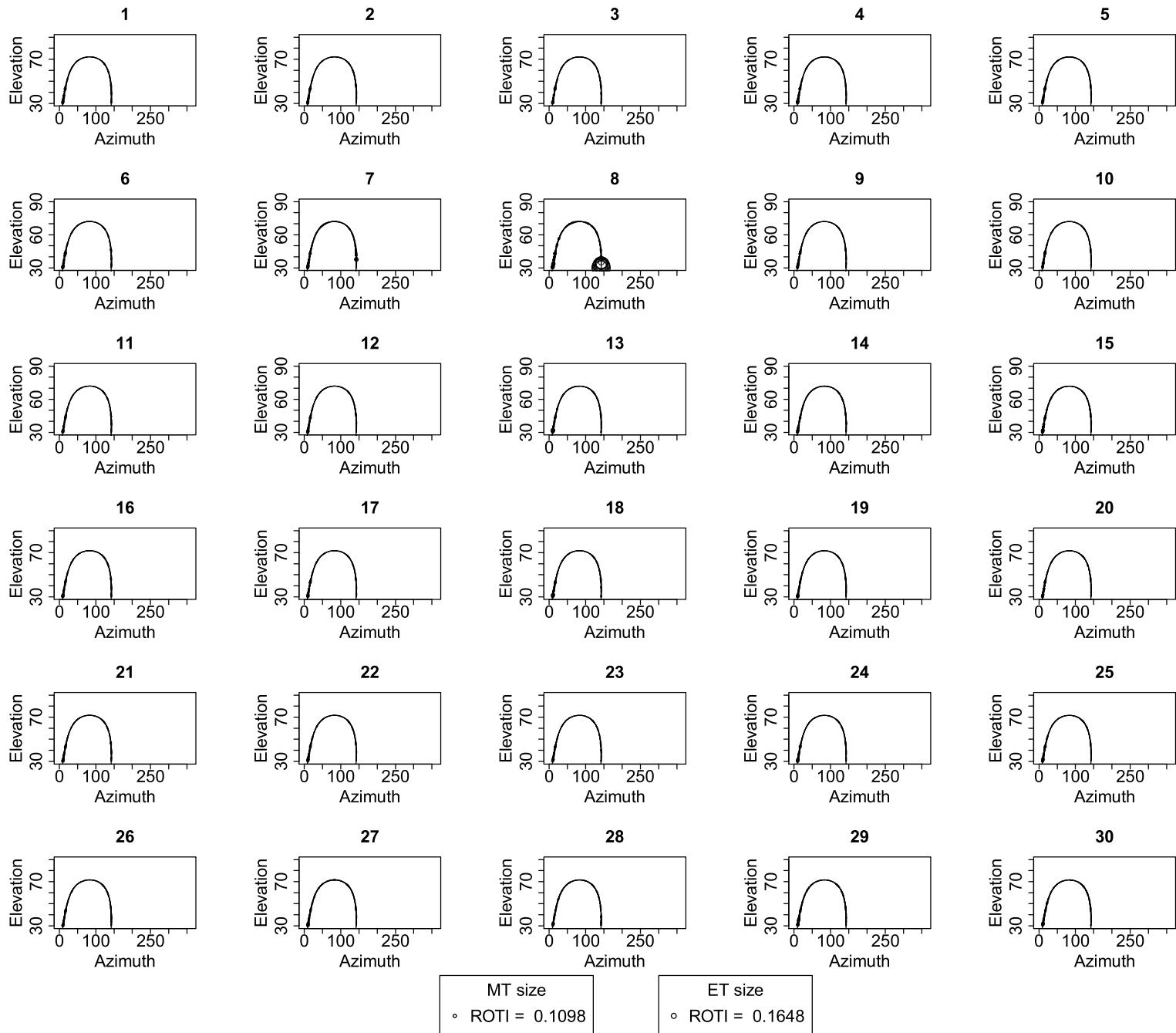


Figure S66 PEA plots comparison of ROTI for G2 on September 1–30, 2017 at SAOOP station

PEA plots (G3)

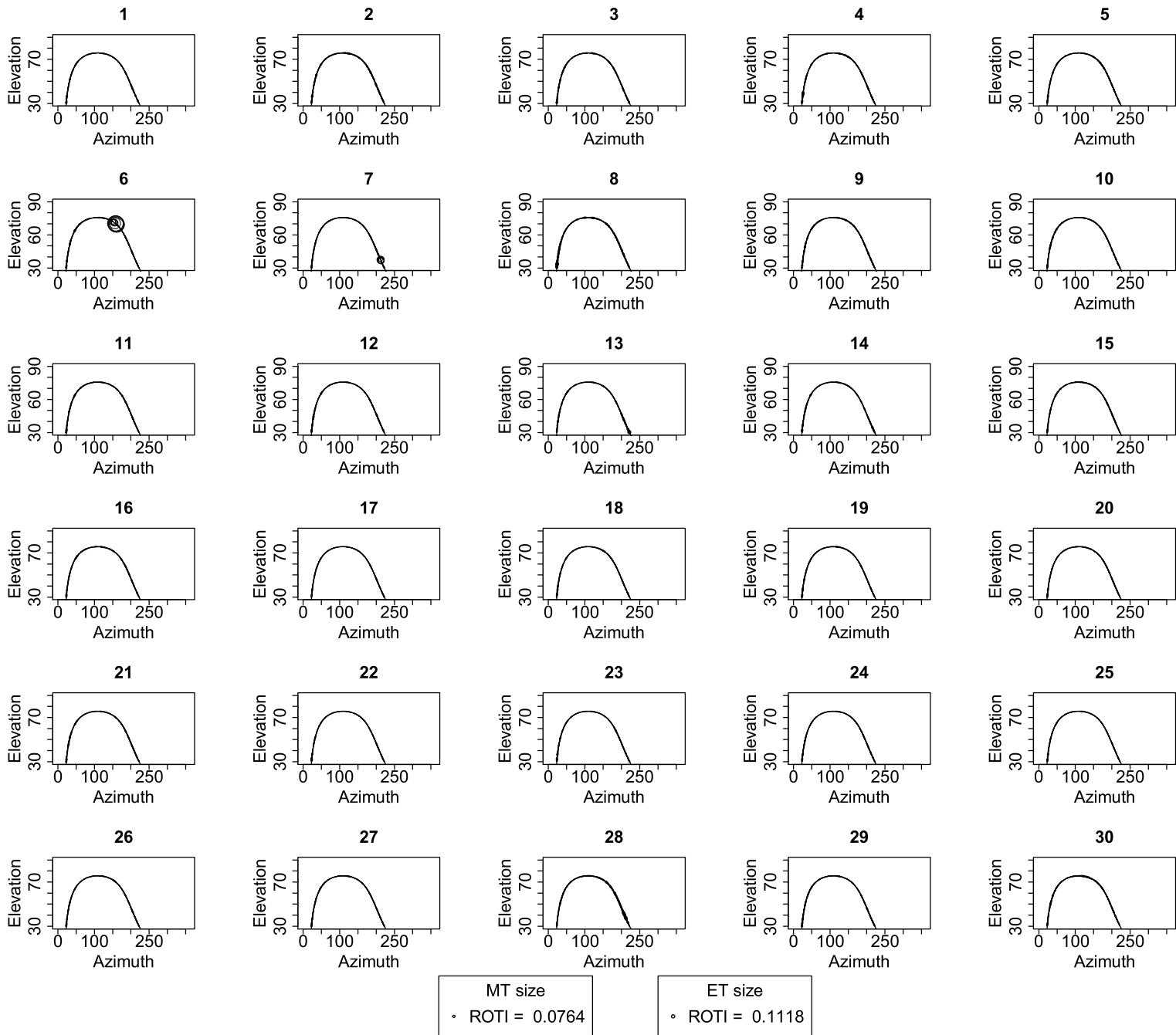


Figure S67 PEA plots comparison of ROTI for G3 on September 1–30, 2017 at SAOOP station

PEA plots (G4)

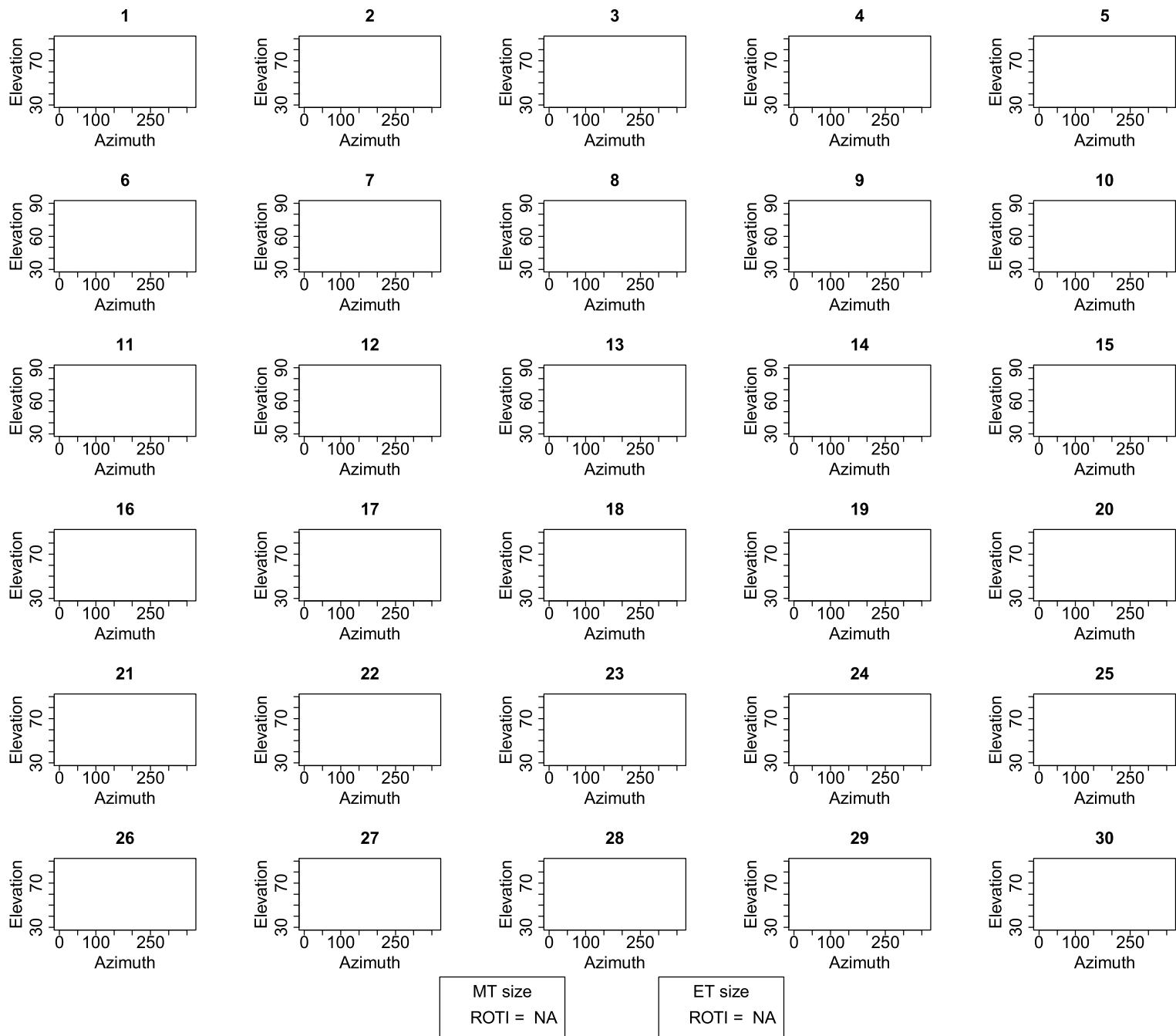


Figure S68 PEA plots comparison of ROTI for G4 on September 1–30, 2017 at SAOOP station

PEA plots (G5)

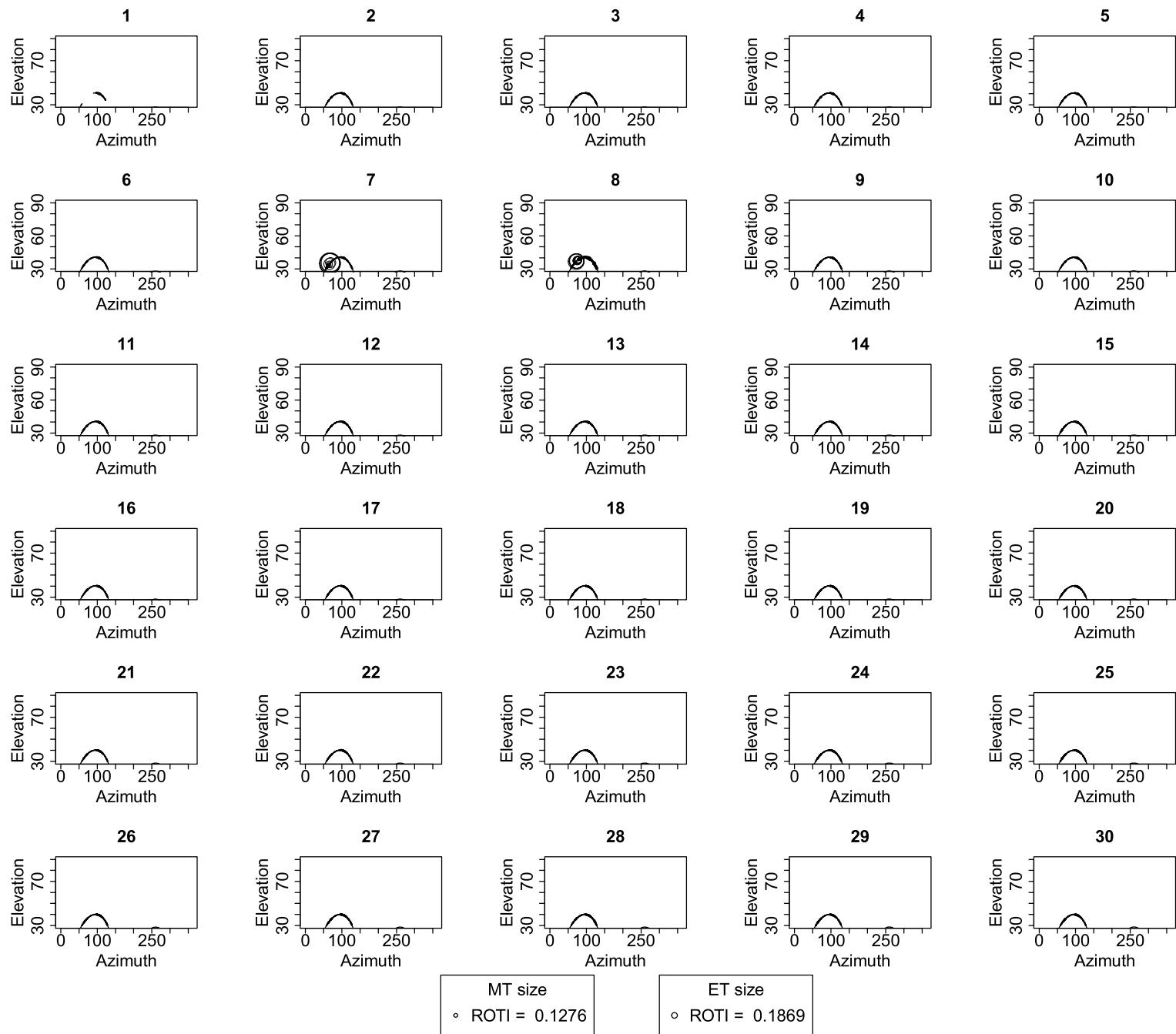


Figure S69 PEA plots comparison of ROTI for G5 on September 1–30, 2017 at SAOOP station

PEA plots (G6)

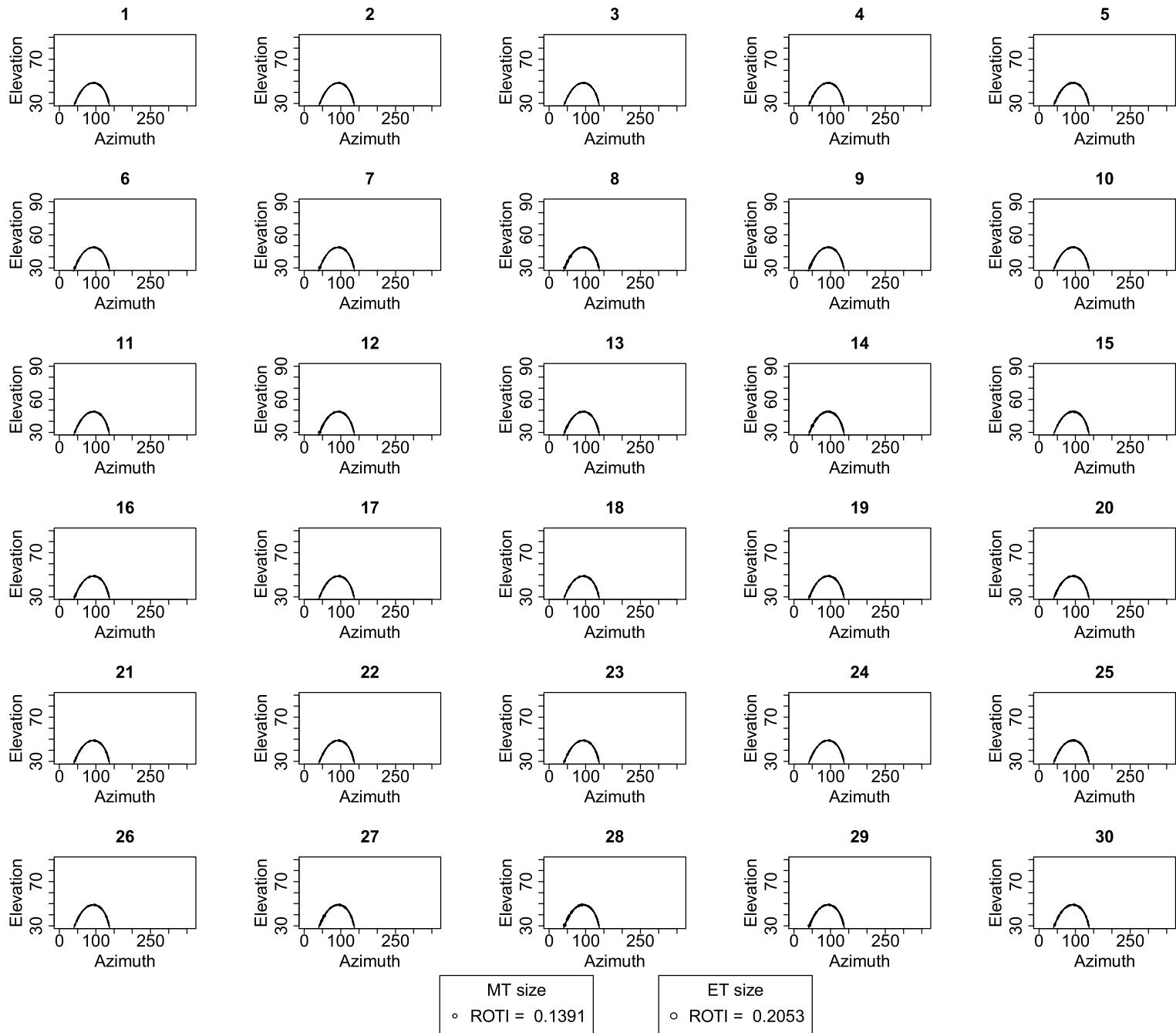


Figure S70 PEA plots comparison of ROTI for G6 on September 1–30, 2017 at SAOOP station

PEA plots (G7)

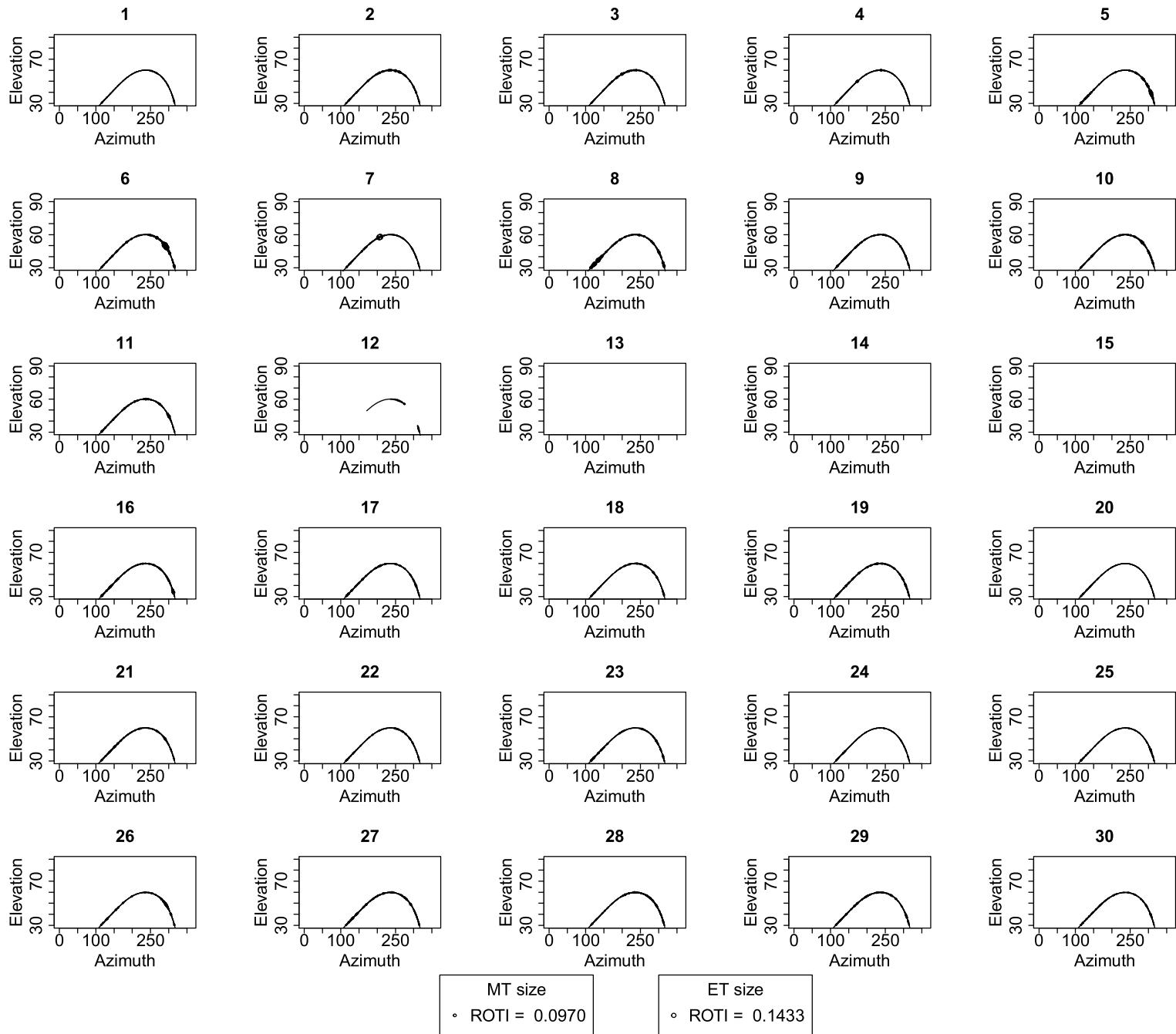


Figure S71 PEA plots comparison of ROTI for G7 on September 1–30, 2017 at SAOOP station

PEA plots (G8)

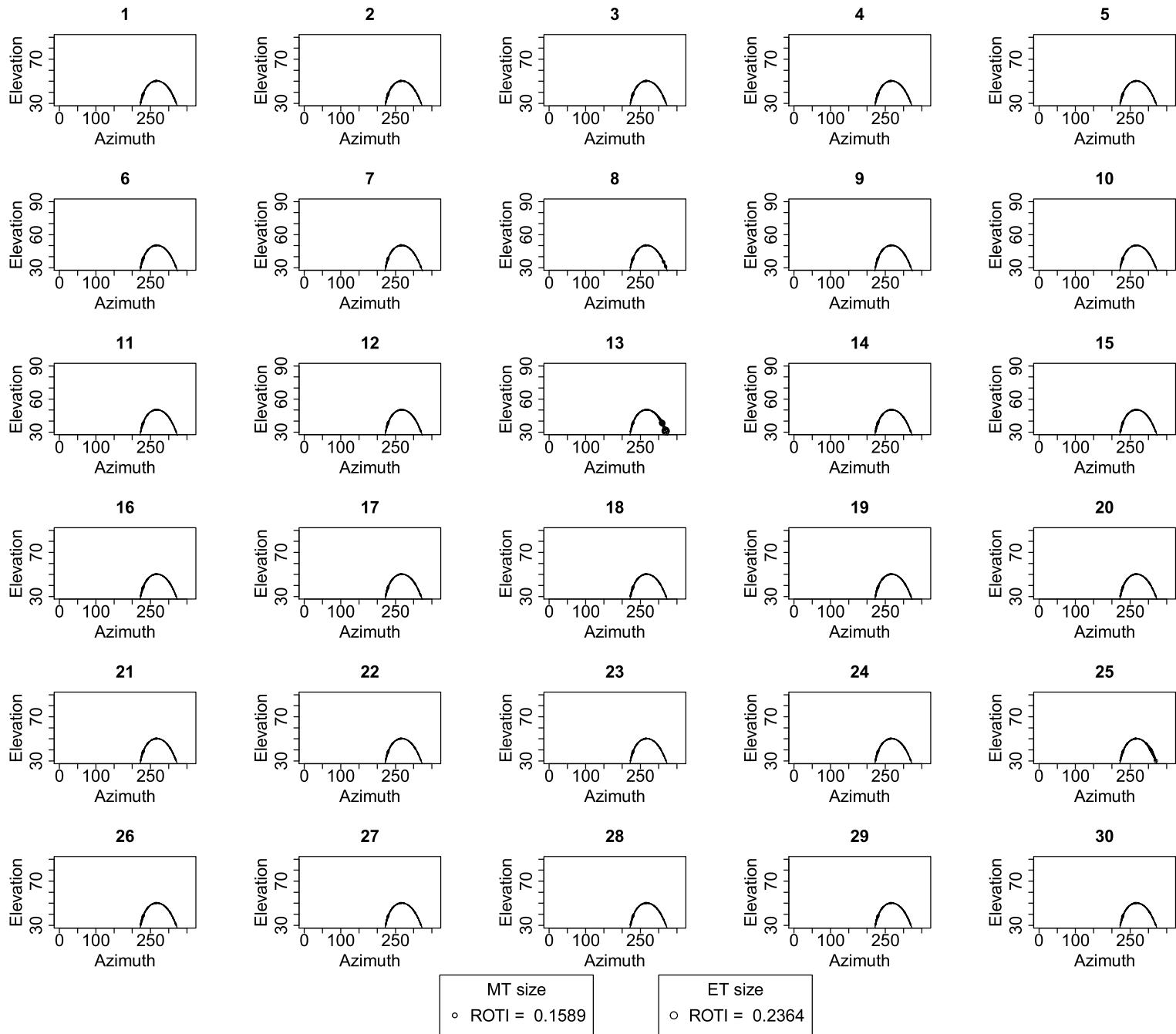


Figure S72 PEA plots comparison of ROTI for G8 on September 1–30, 2017 at SAOOP station

PEA plots (G9)

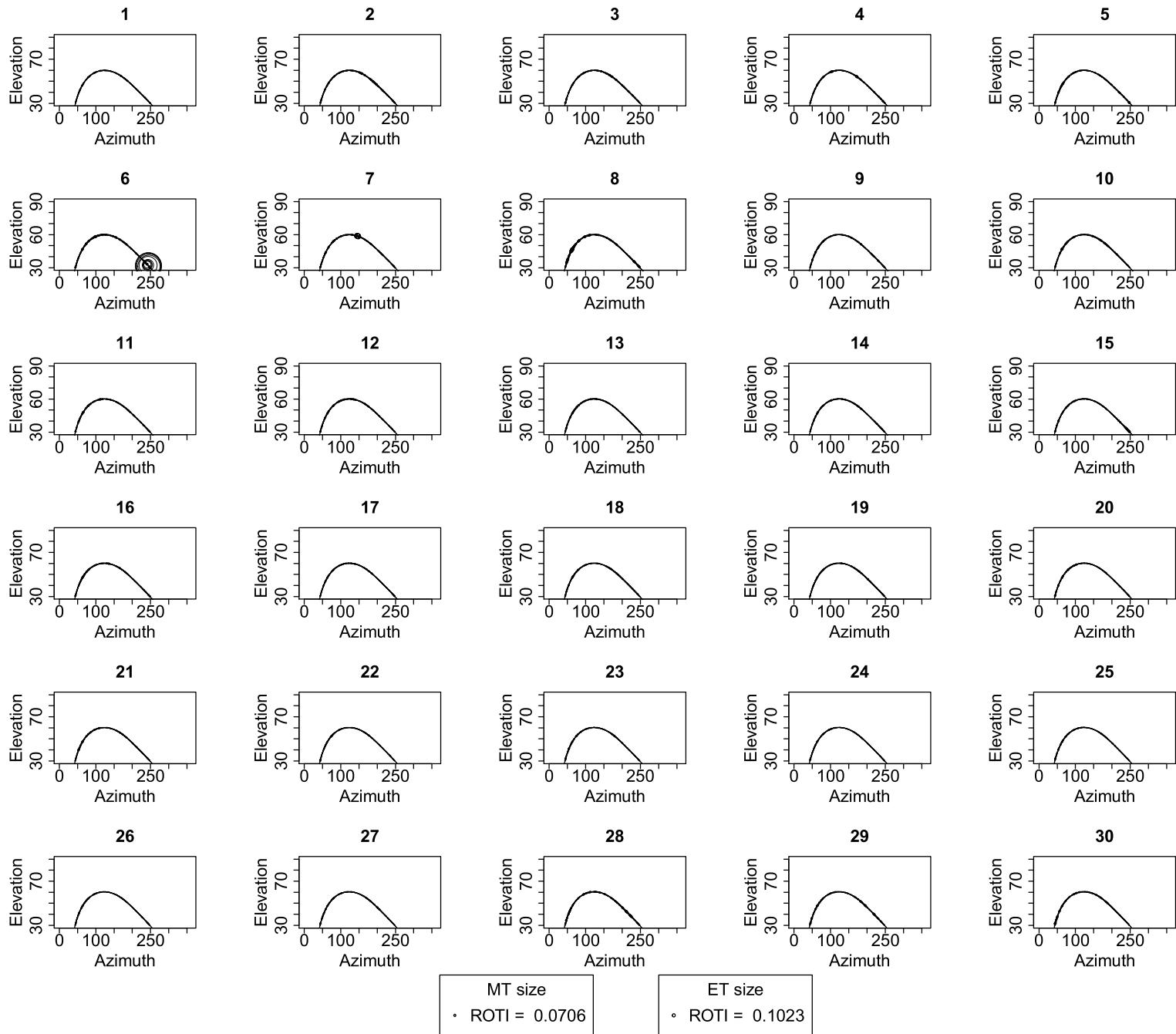


Figure S73 PEA plots comparison of ROTI for G9 on September 1–30, 2017 at SAOOP station

PEA plots (G10)

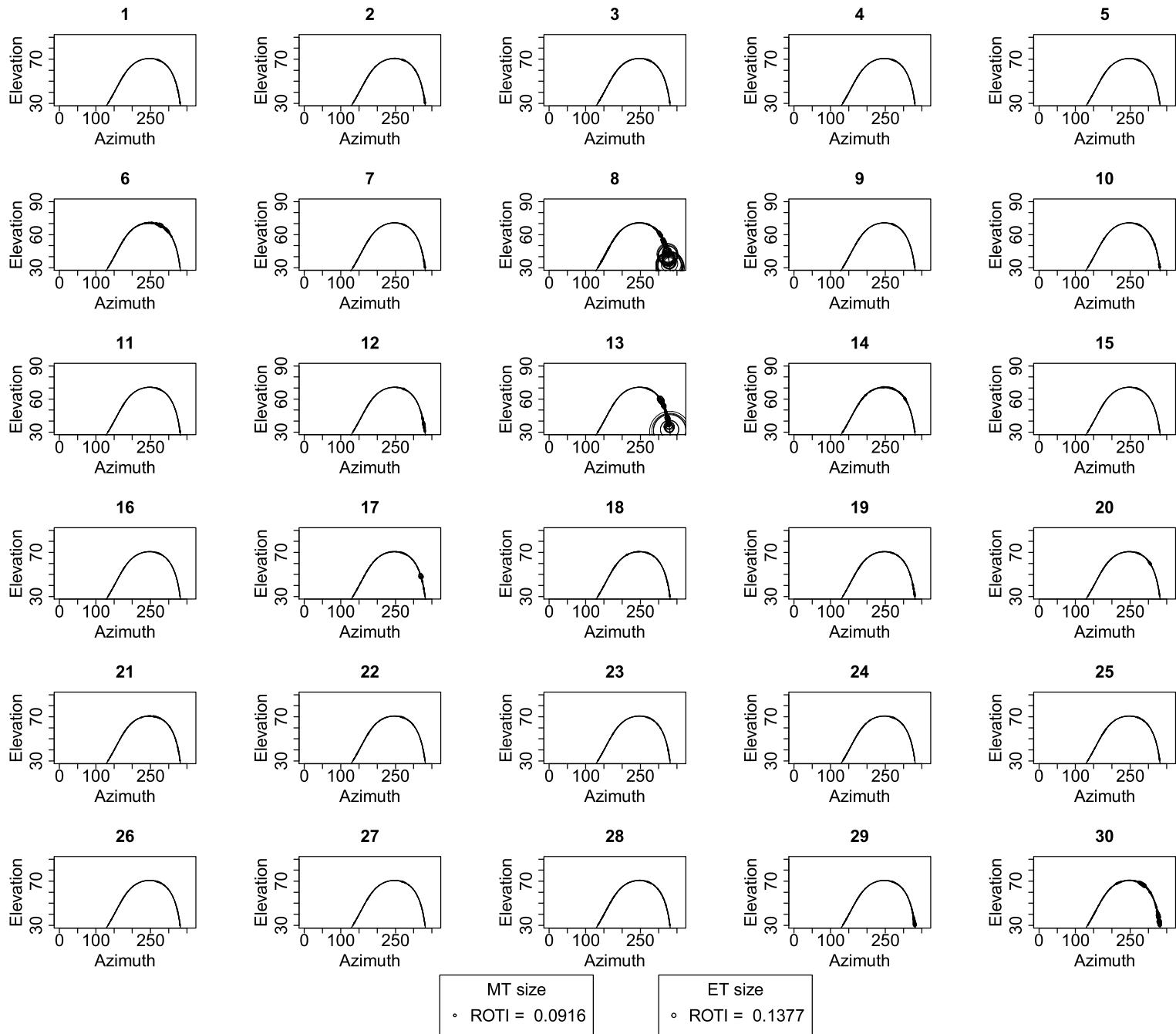


Figure S74 PEA plots comparison of ROTI for G10 on September 1–30, 2017 at SAOOP station

PEA plots (G11)

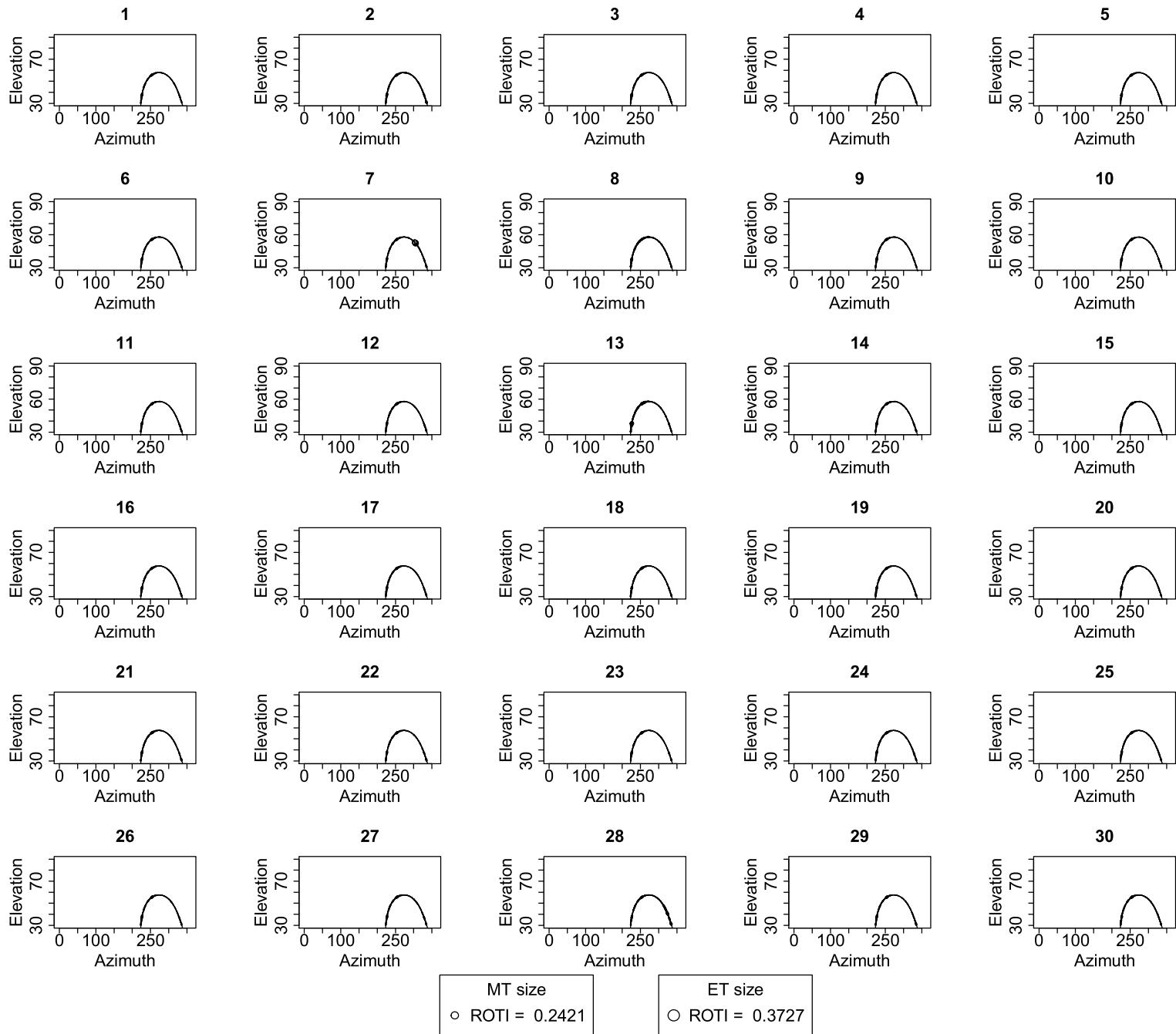


Figure S75 PEA plots comparison of ROTI for G11 on September 1–30, 2017 at SAOOP station

PEA plots (G12)

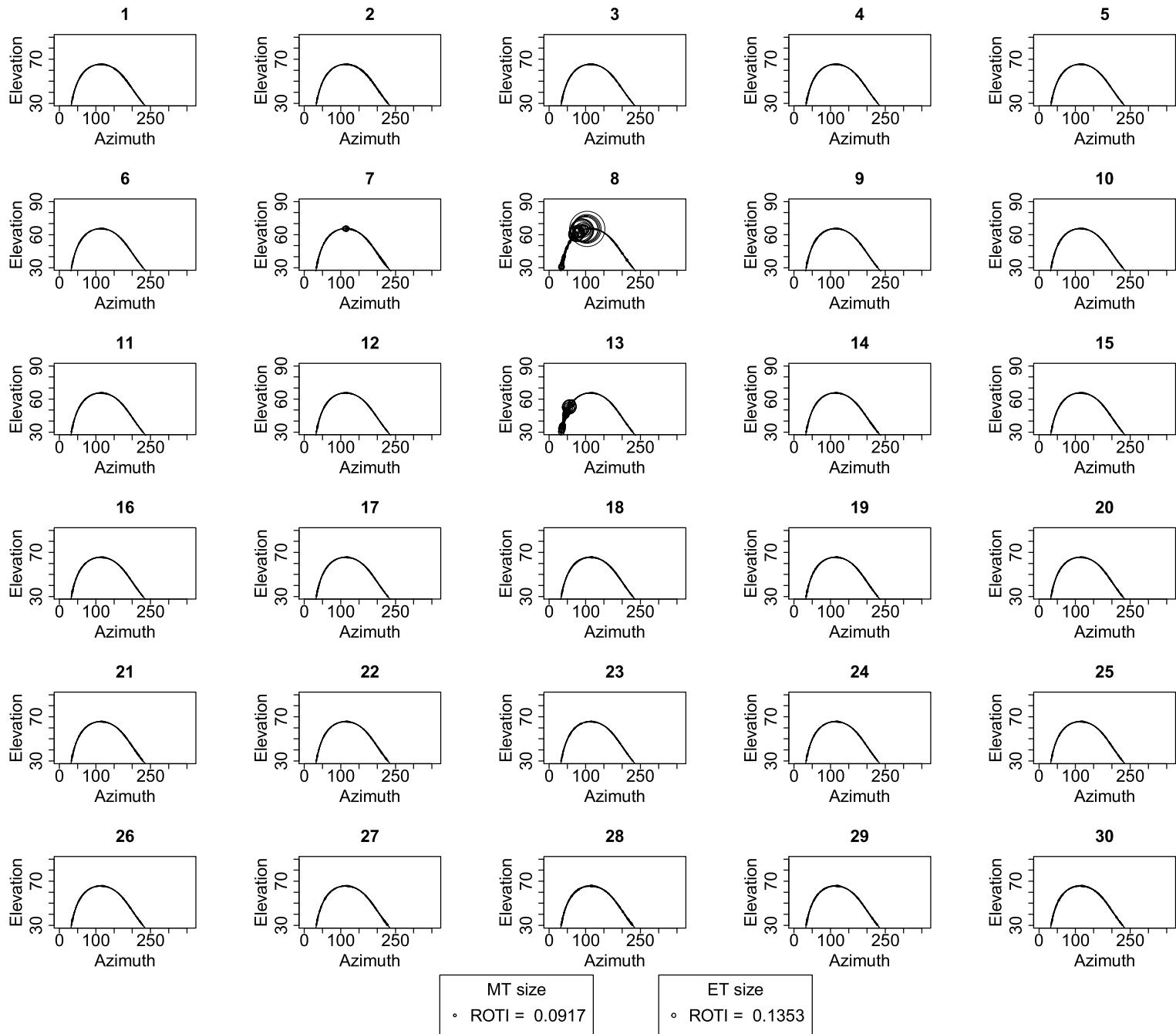


Figure S76 PEA plots comparison of ROTI for G12 on September 1–30, 2017 at SAOOP station

PEA plots (G13)

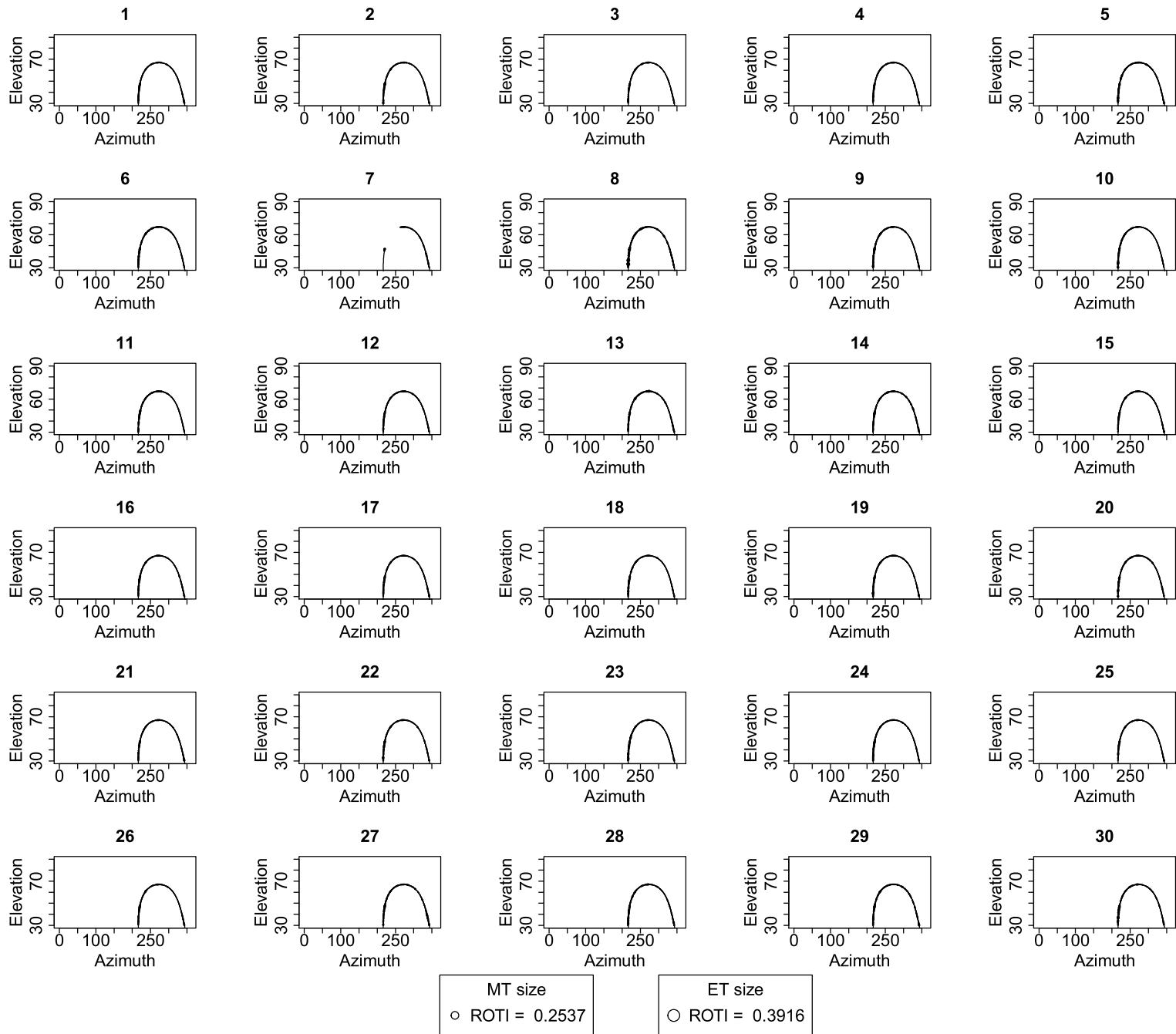


Figure S77 PEA plots comparison of ROTI for G13 on September 1–30, 2017 at SAOOP station

PEA plots (G14)

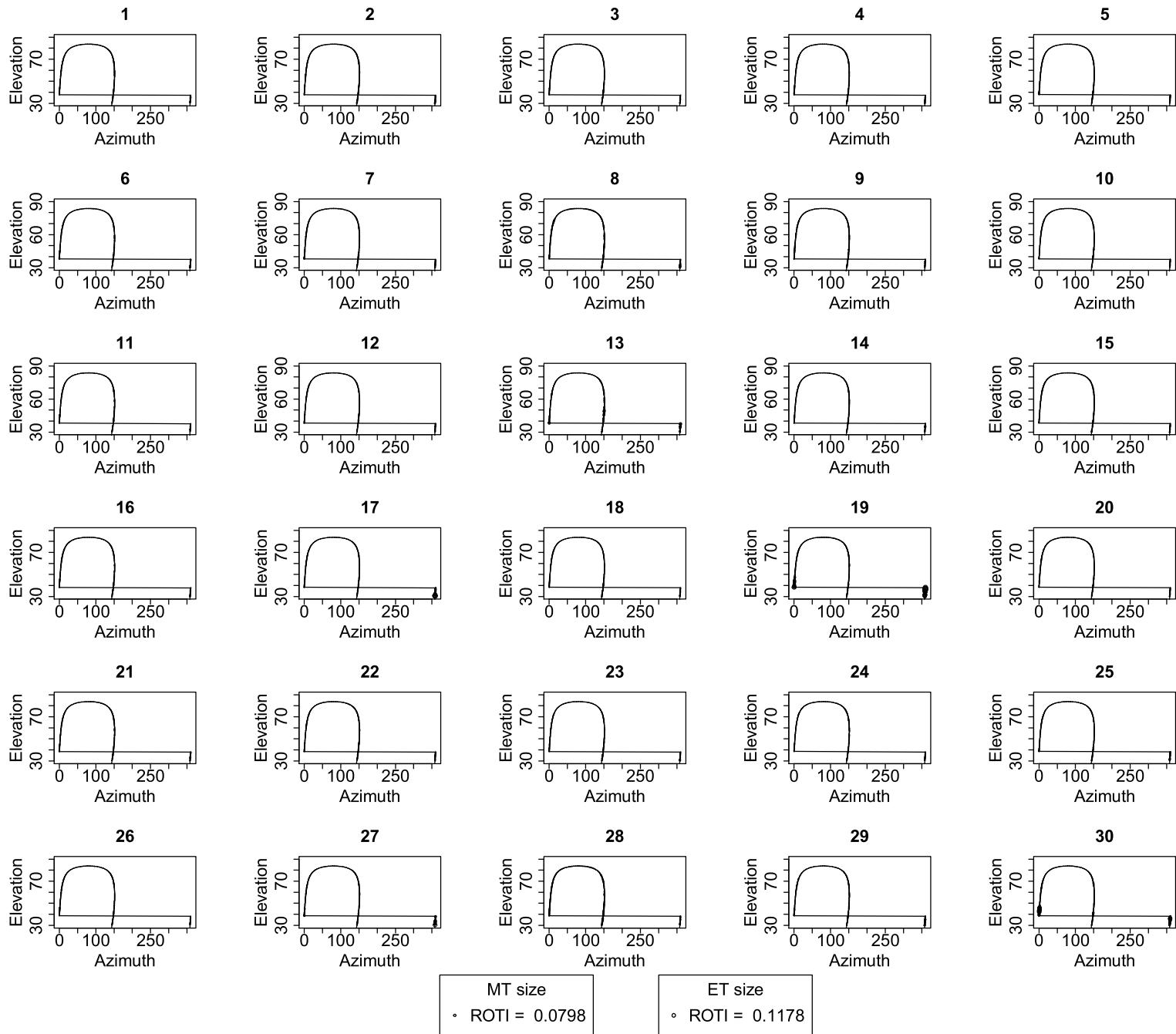


Figure S78 PEA plots comparison of ROTI for G14 on September 1–30, 2017 at SAOOP station

PEA plots (G15)

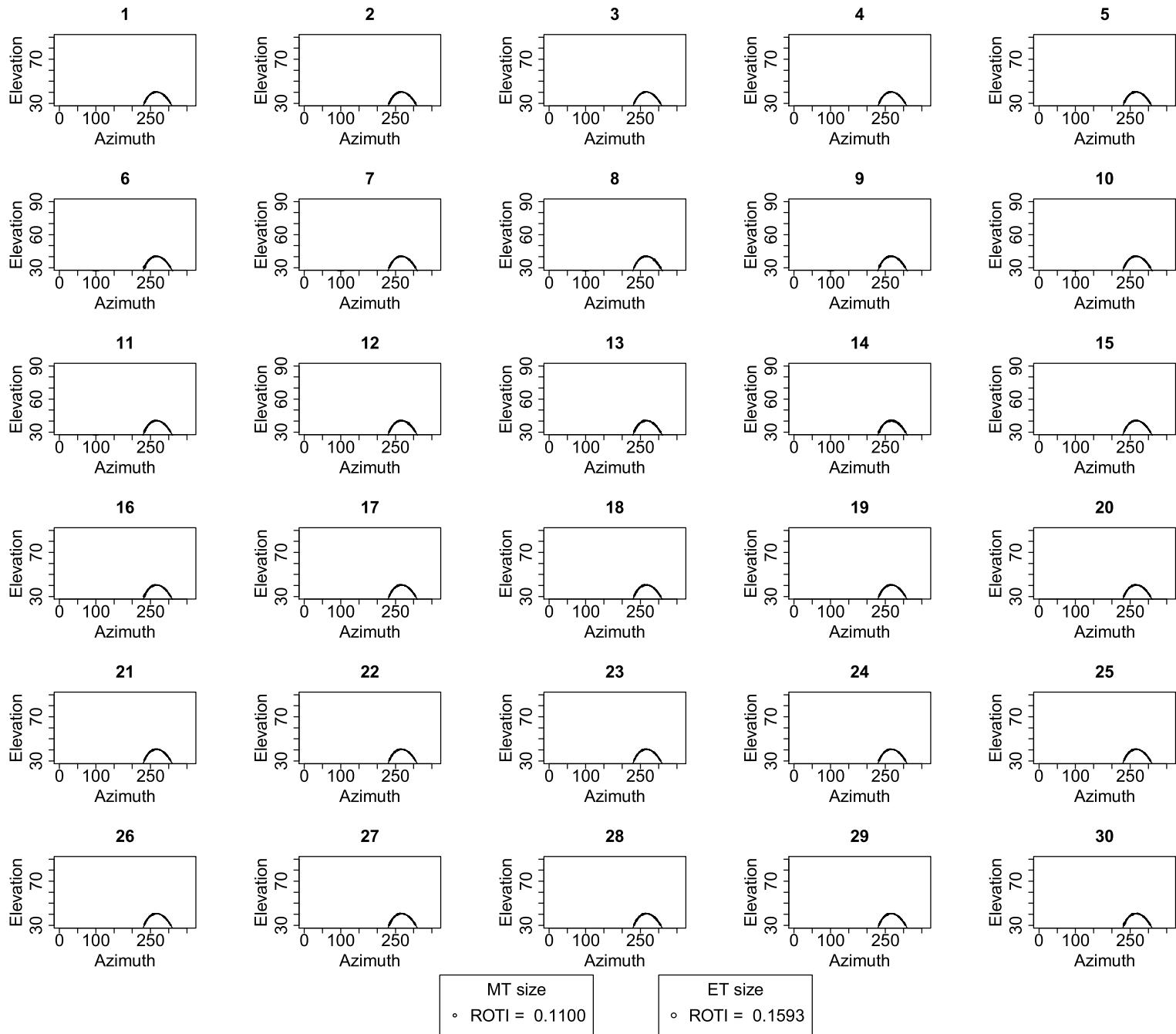


Figure S79 PEA plots comparison of ROTI for G15 on September 1–30, 2017 at SAOOP station

PEA plots (G16)

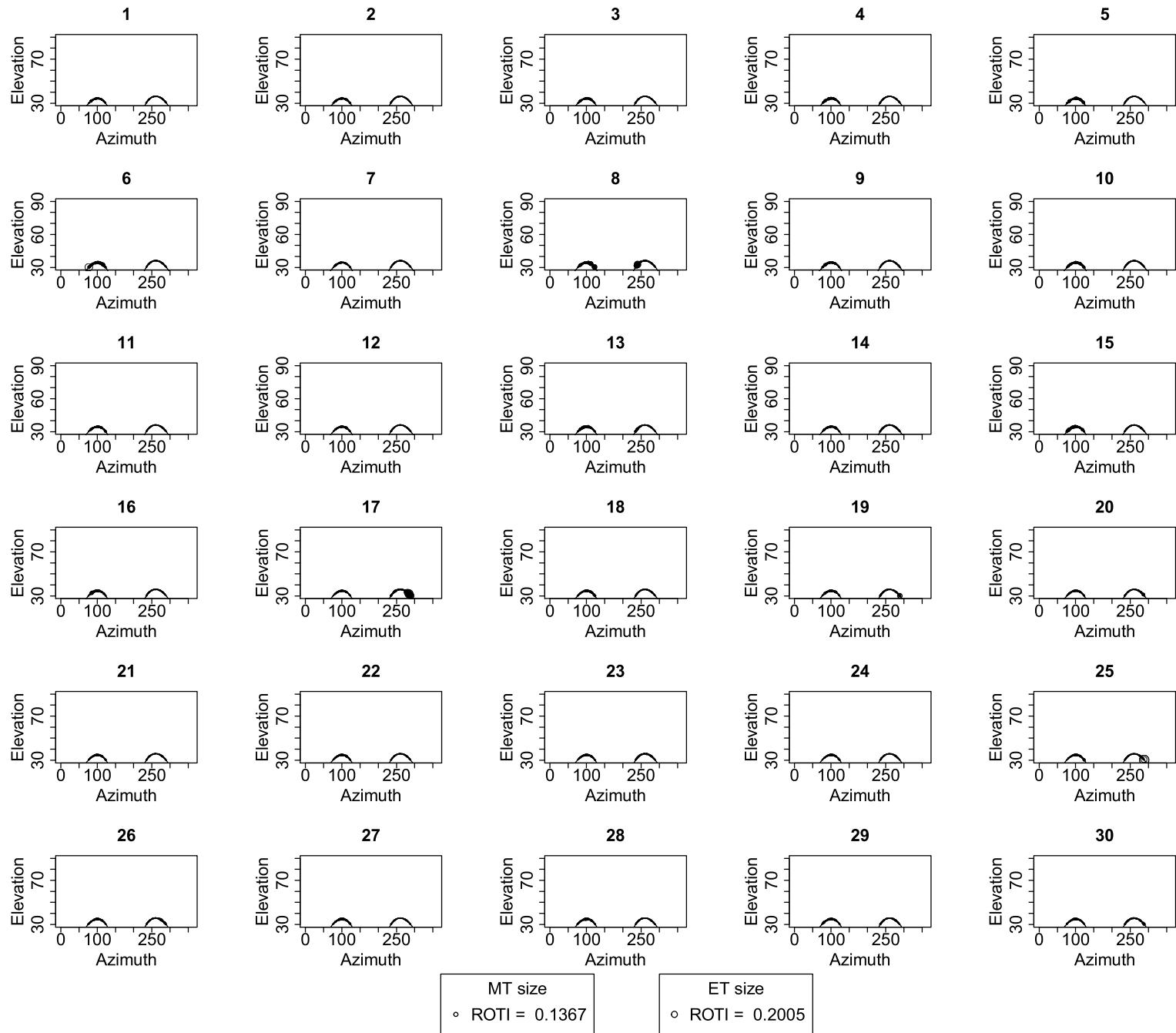


Figure S80 PEA plots comparison of ROTI for G16 on September 1–30, 2017 at SAOOP station

PEA plots (G17)

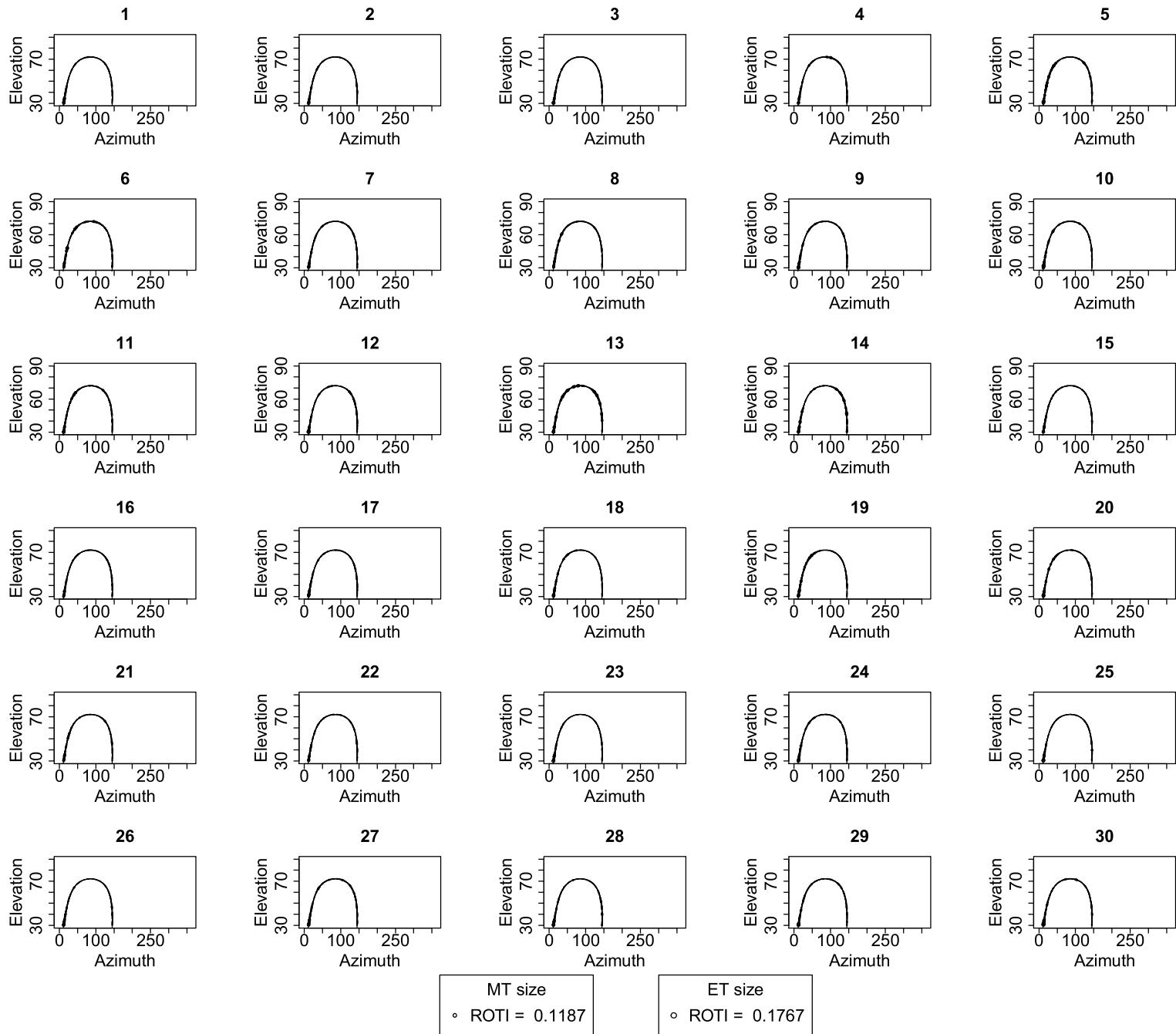


Figure S81 PEA plots comparison of ROTI for G17 on September 1–30, 2017 at SAOOP station

PEA plots (G18)

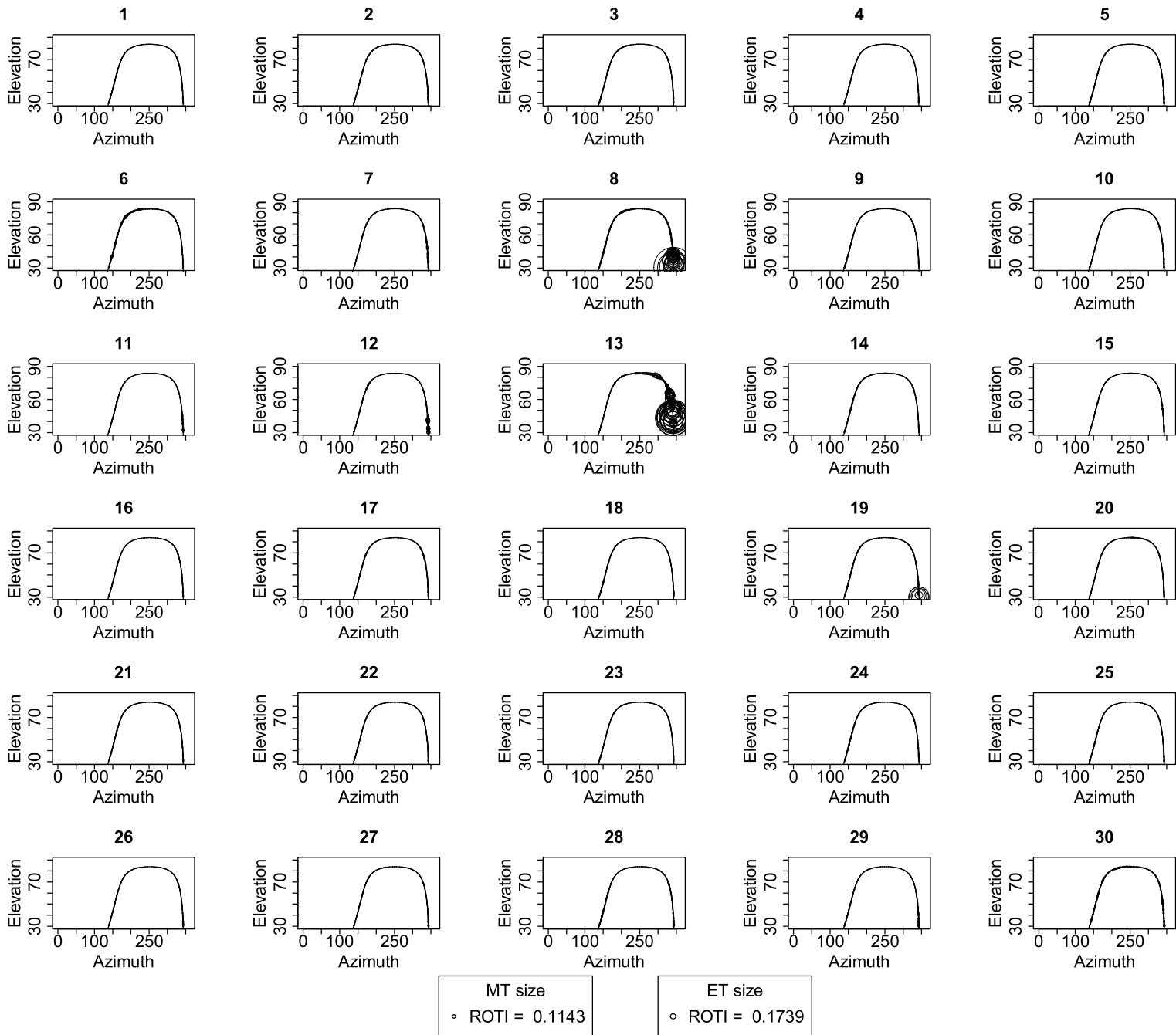


Figure S82 PEA plots comparison of ROTI for G18 on September 1–30, 2017 at SAOOP station

PEA plots (G19)

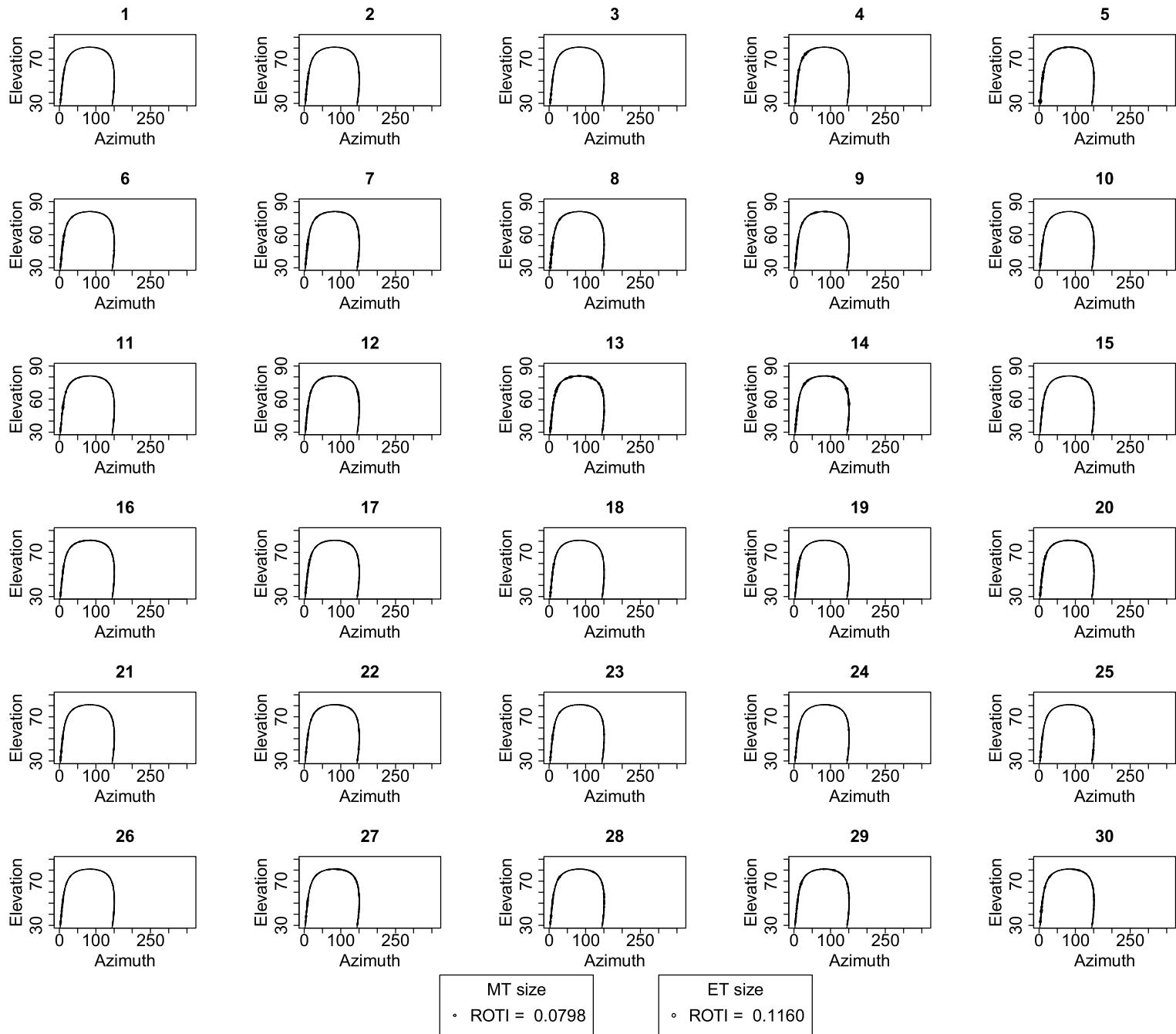


Figure S83 PEA plots comparison of ROTI for G19 on September 1–30, 2017 at SAOOP station

PEA plots (G20)

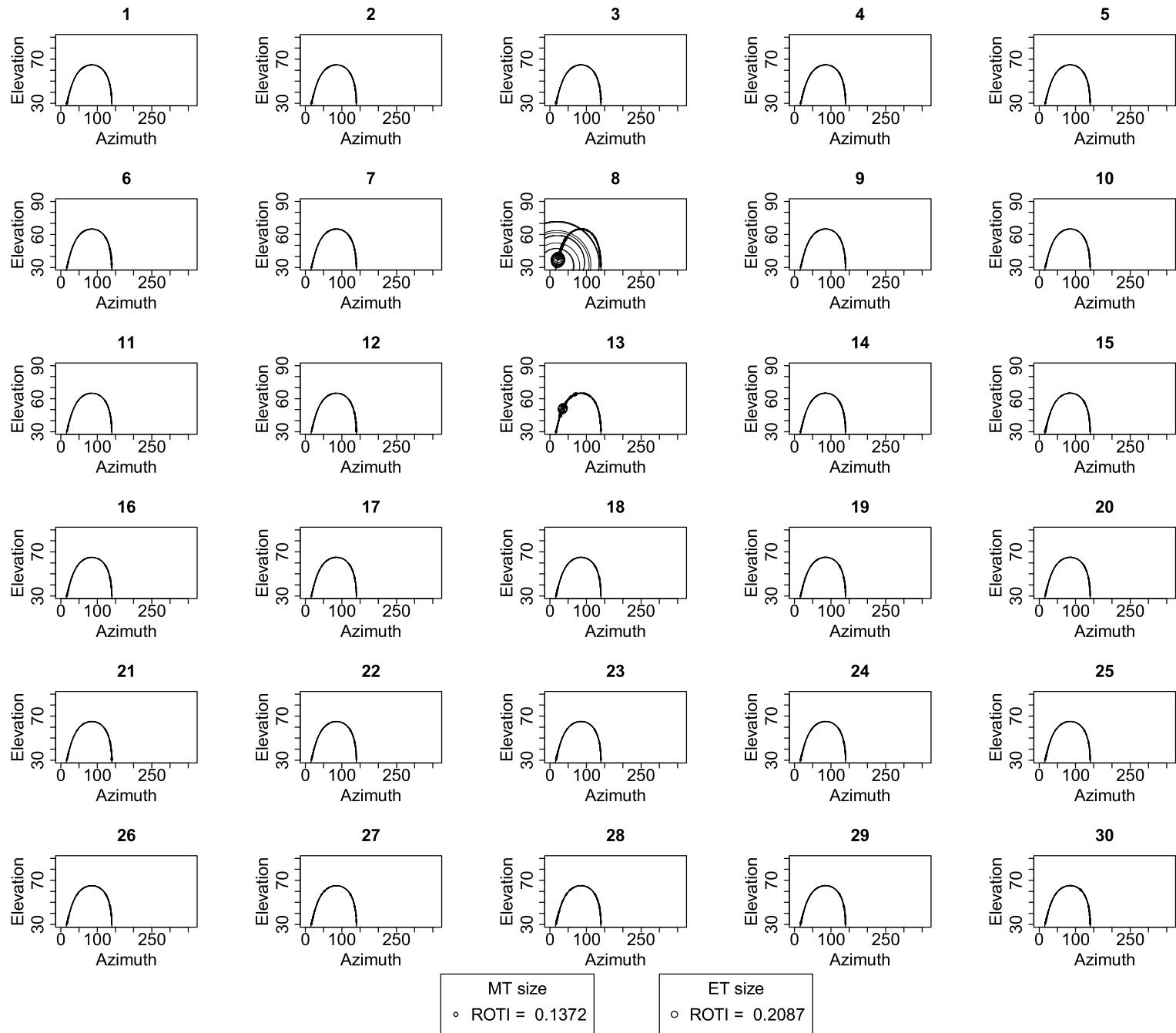


Figure S84 PEA plots comparison of ROTI for G20 on September 1–30, 2017 at SAOOP station

PEA plots (G21)

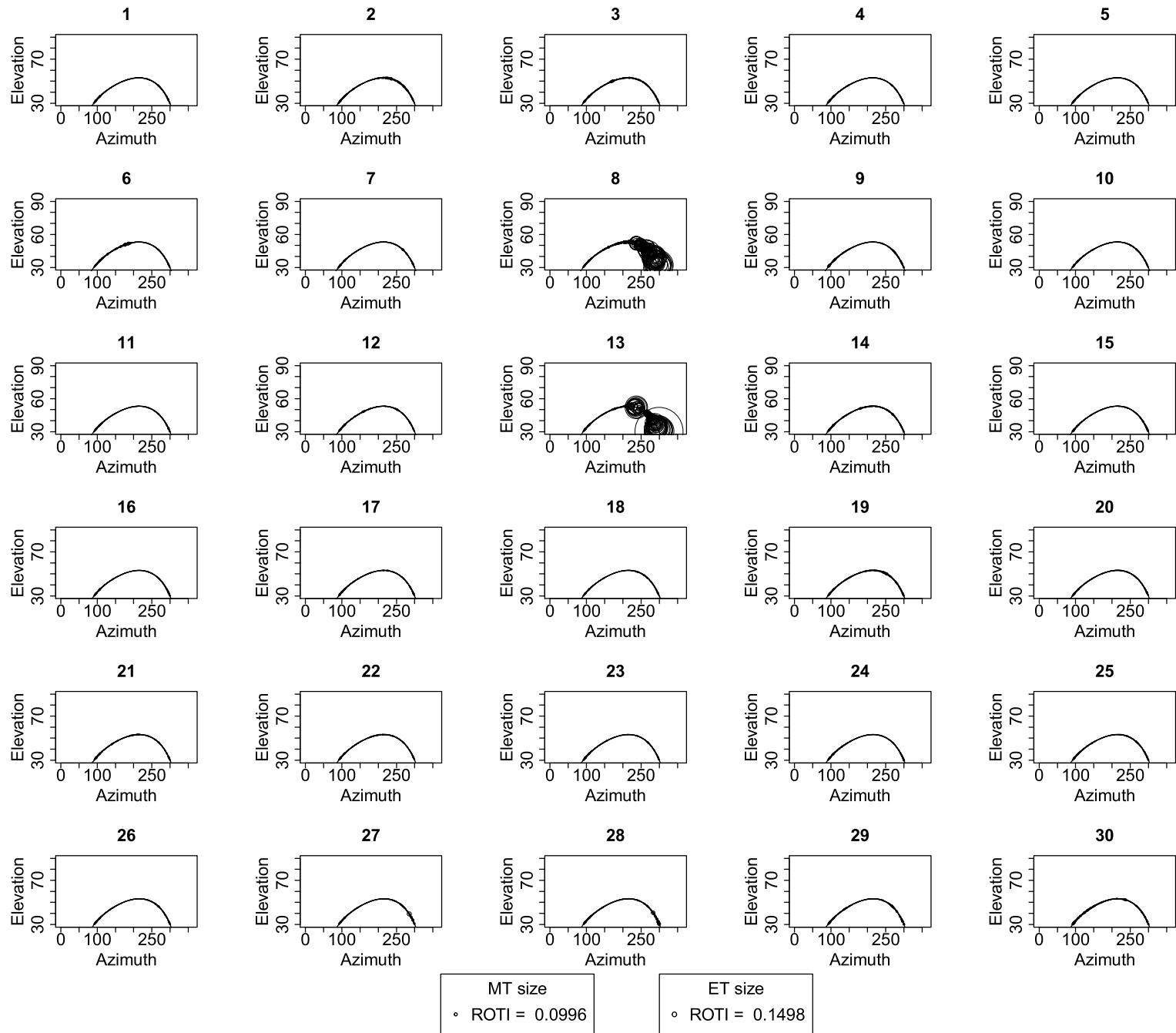


Figure S85 PEA plots comparison of ROTI for G21 on September 1–30, 2017 at SAOOP station

PEA plots (G22)

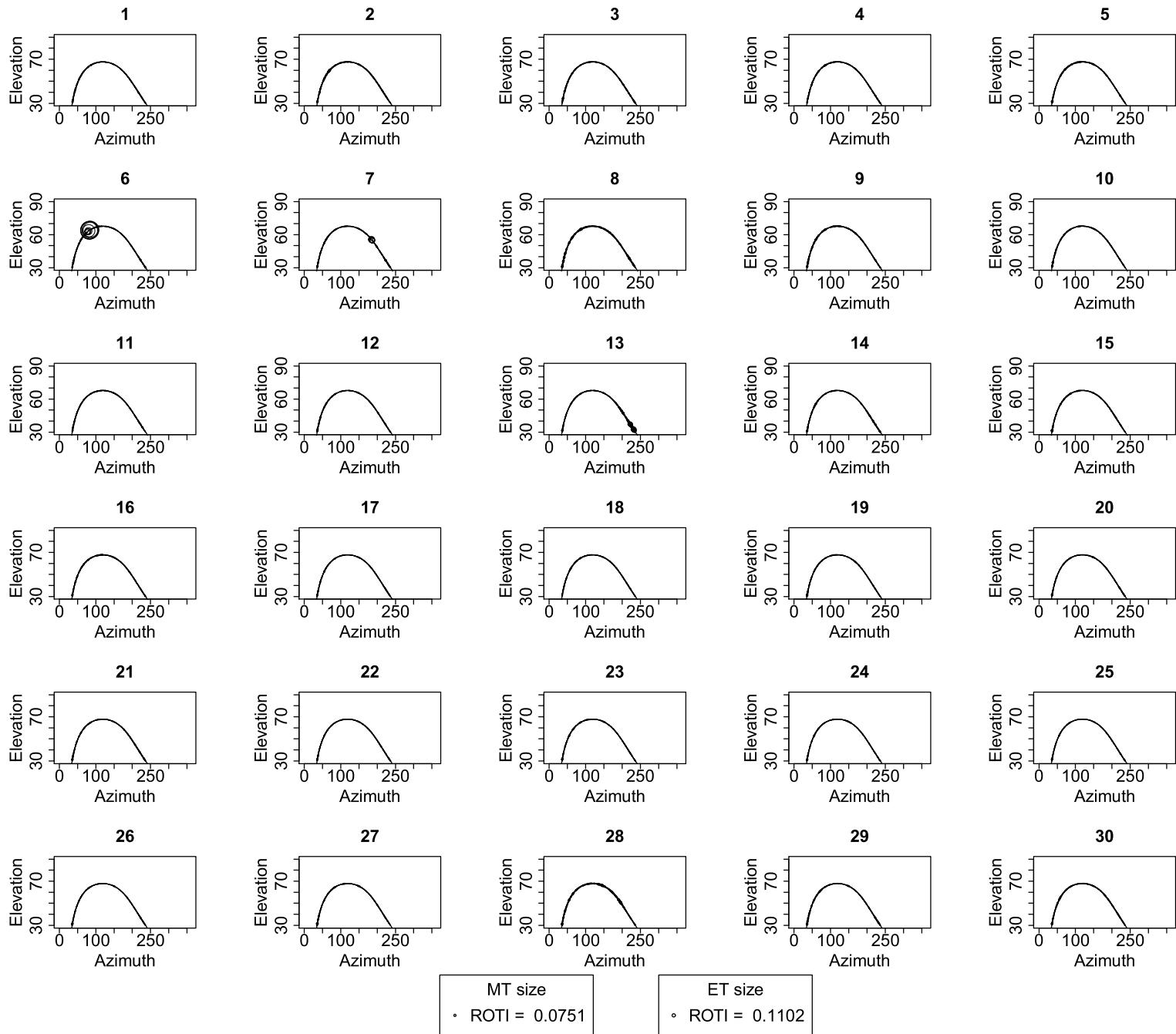


Figure S86 PEA plots comparison of ROTI for G22 on September 1–30, 2017 at SAOOP station

PEA plots (G23)

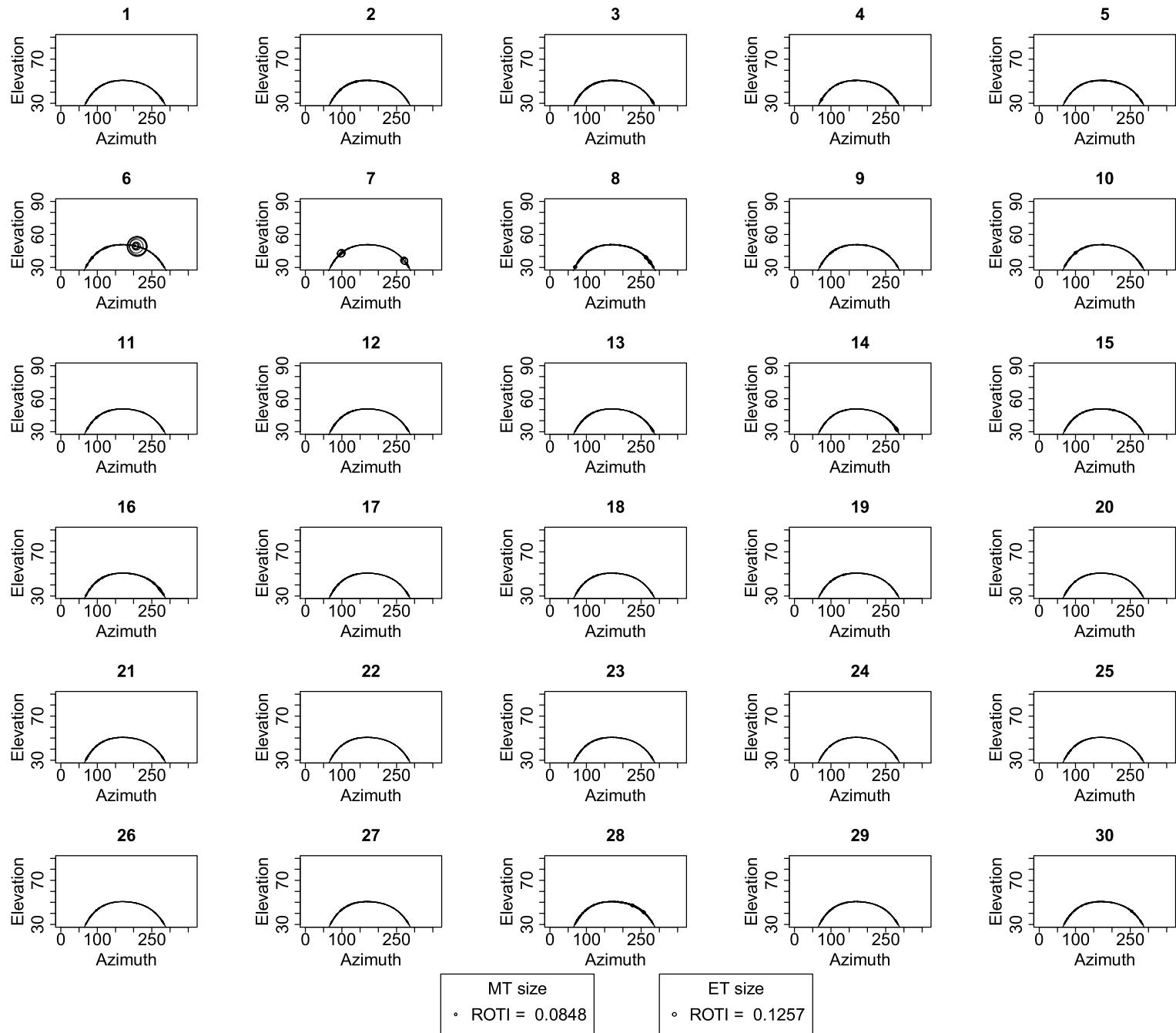


Figure S87 PEA plots comparison of ROTI for G23 on September 1–30, 2017 at SAOOP station

PEA plots (G24)

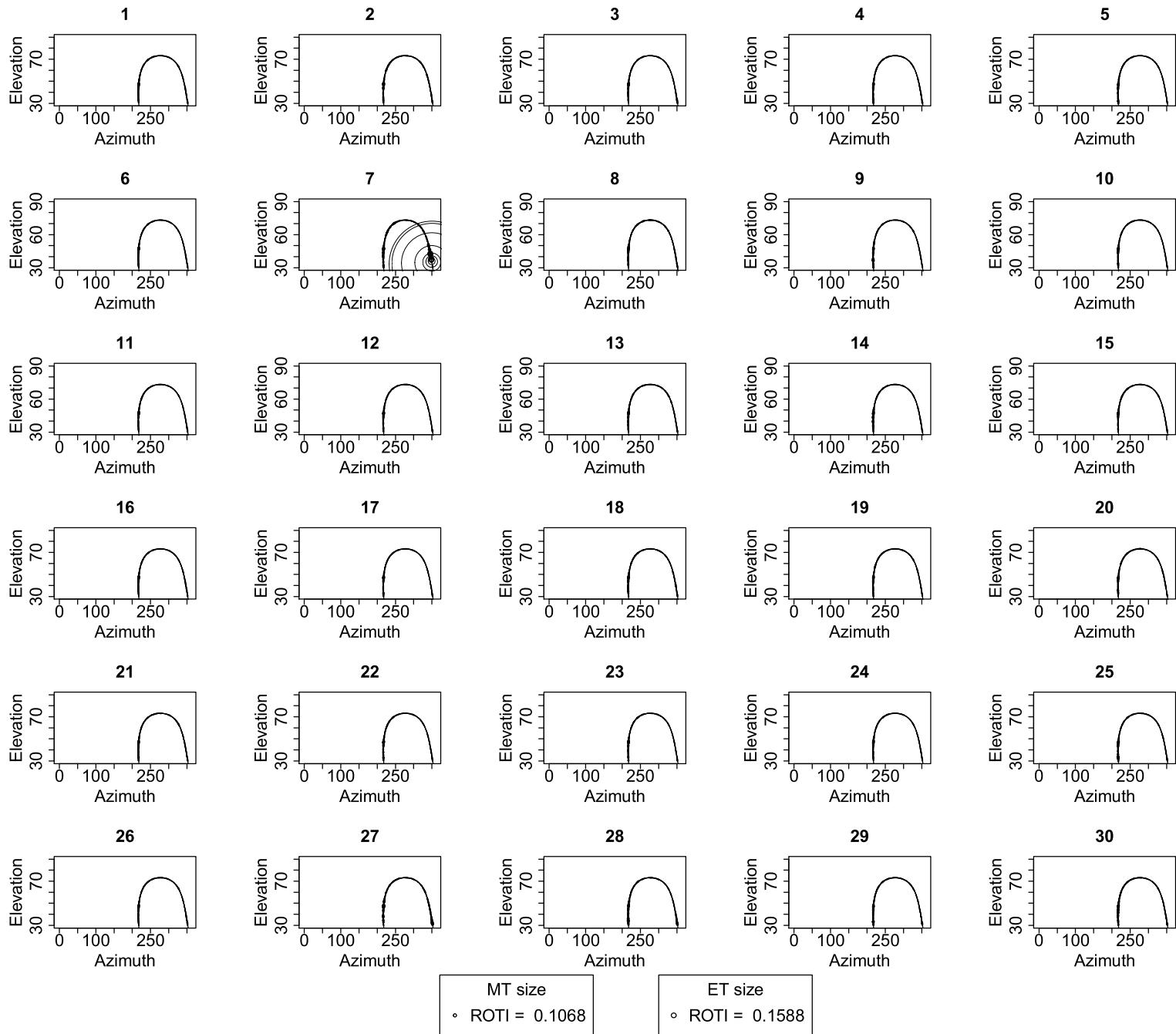


Figure S88 PEA plots comparison of ROTI for G24 on September 1–30, 2017 at SAOOP station

PEA plots (G25)

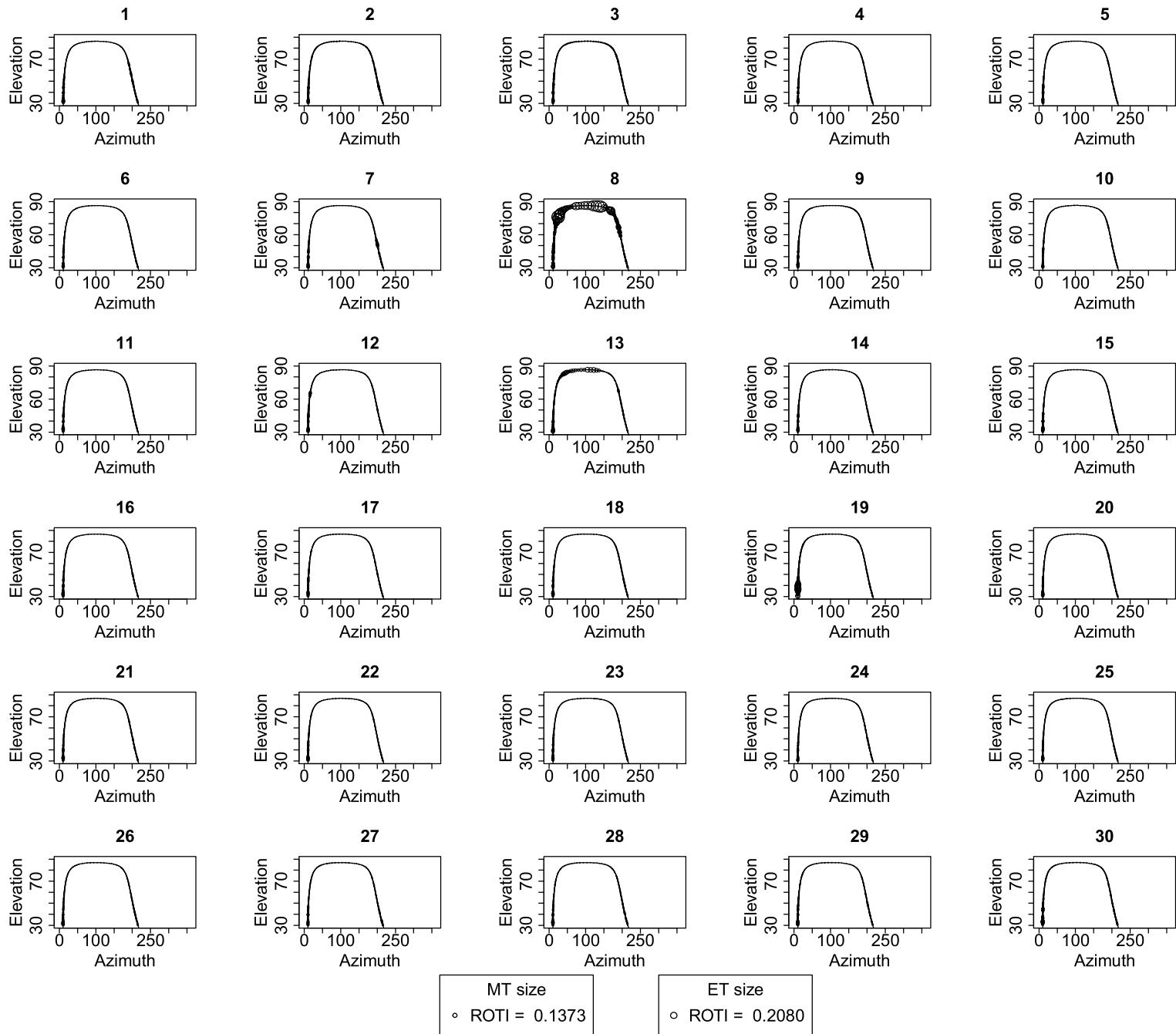


Figure S89 PEA plots comparison of ROTI for G25 on September 1–30, 2017 at SAOOP station

PEA plots (G26)

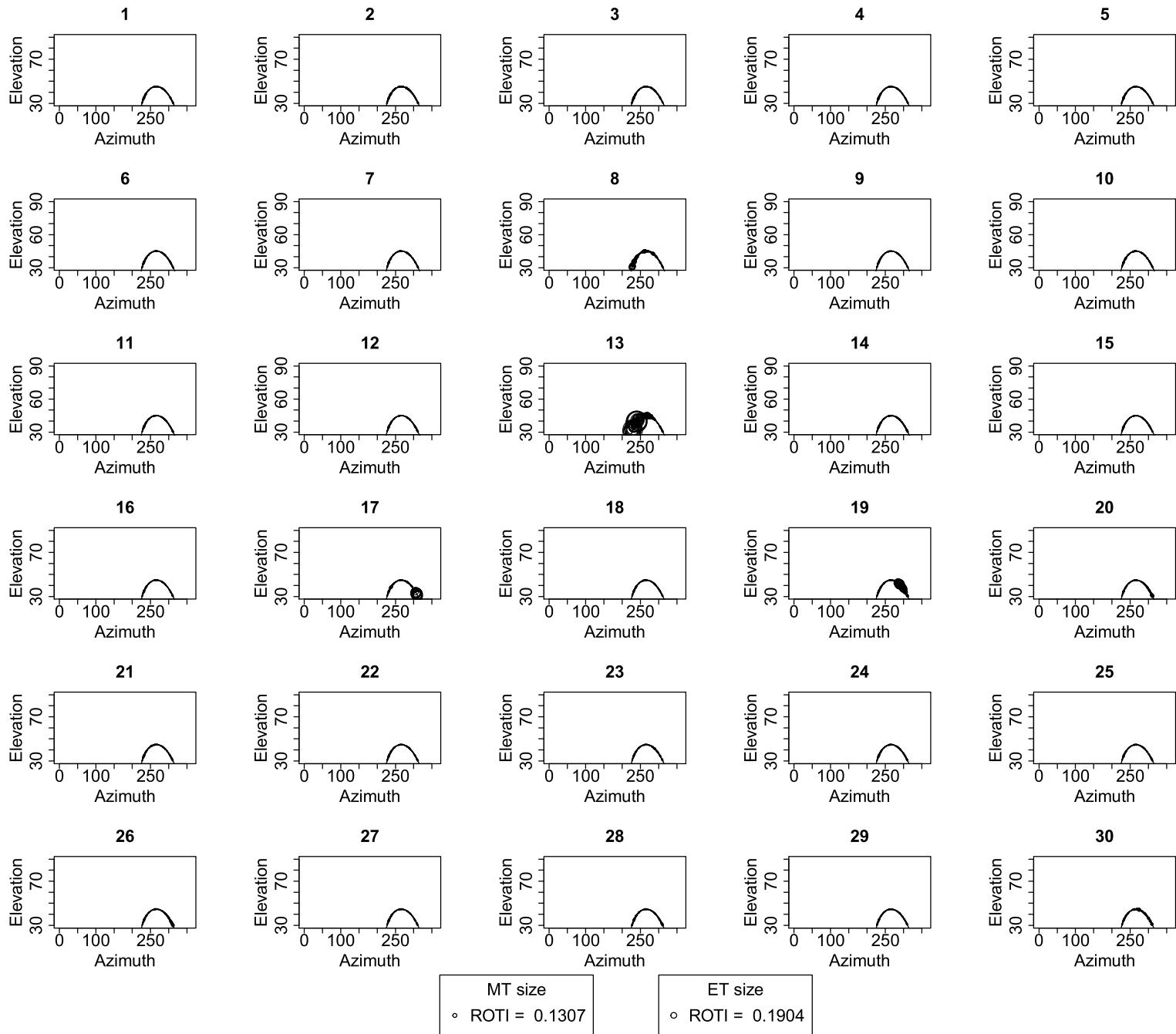


Figure S90 PEA plots comparison of ROTI for G26 on September 1–30, 2017 at SAOOP station

PEA plots (G27)

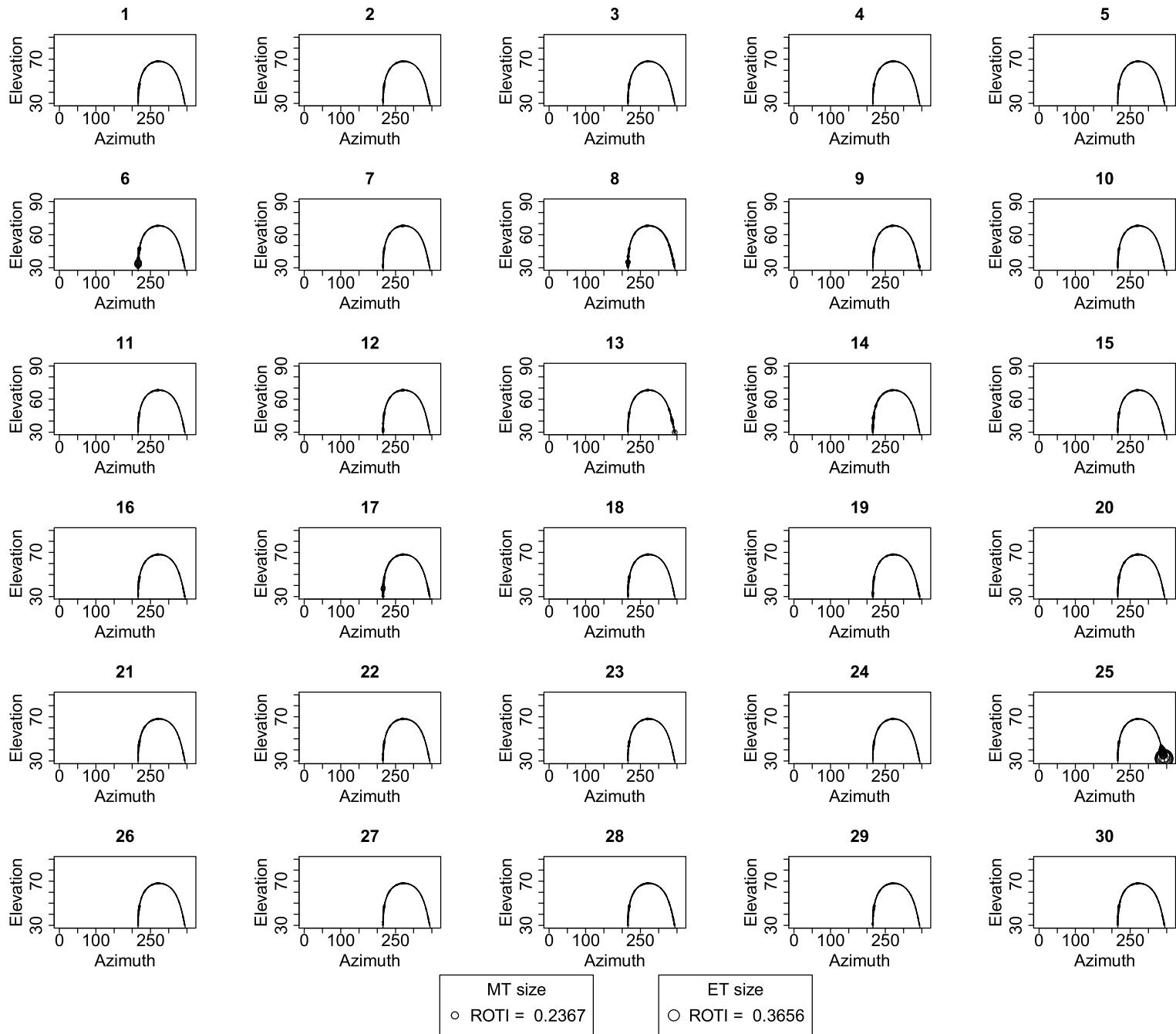


Figure S91 PEA plots comparison of ROTI for G27 on September 1–30, 2017 at SAOOP station

PEA plots (G28)

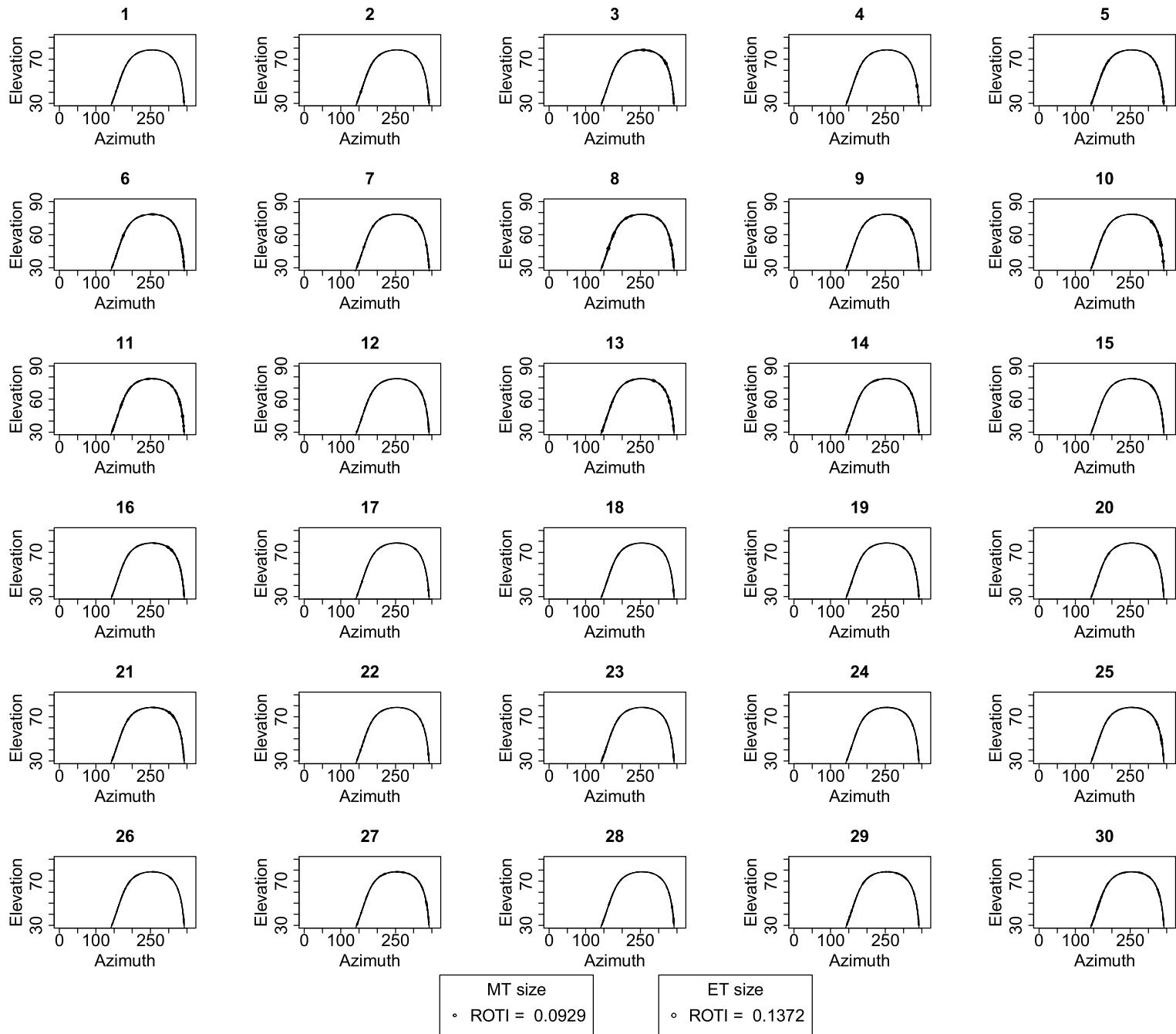


Figure S92 PEA plots comparison of ROTI for G28 on September 1–30, 2017 at SAOOP station

PEA plots (G29)

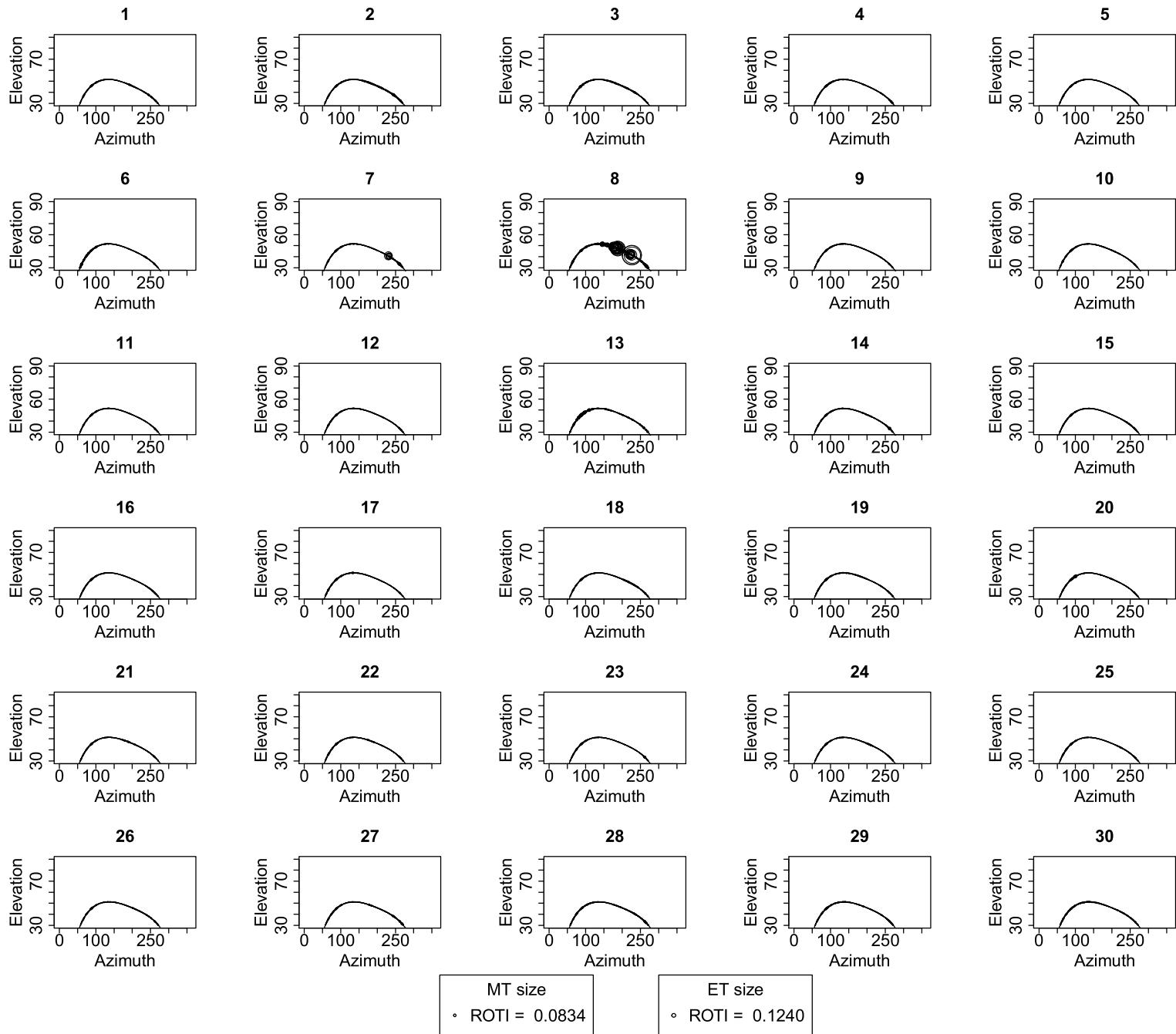


Figure S93 PEA plots comparison of ROTI for G29 on September 1–30, 2017 at SAOOP station

PEA plots (G30)

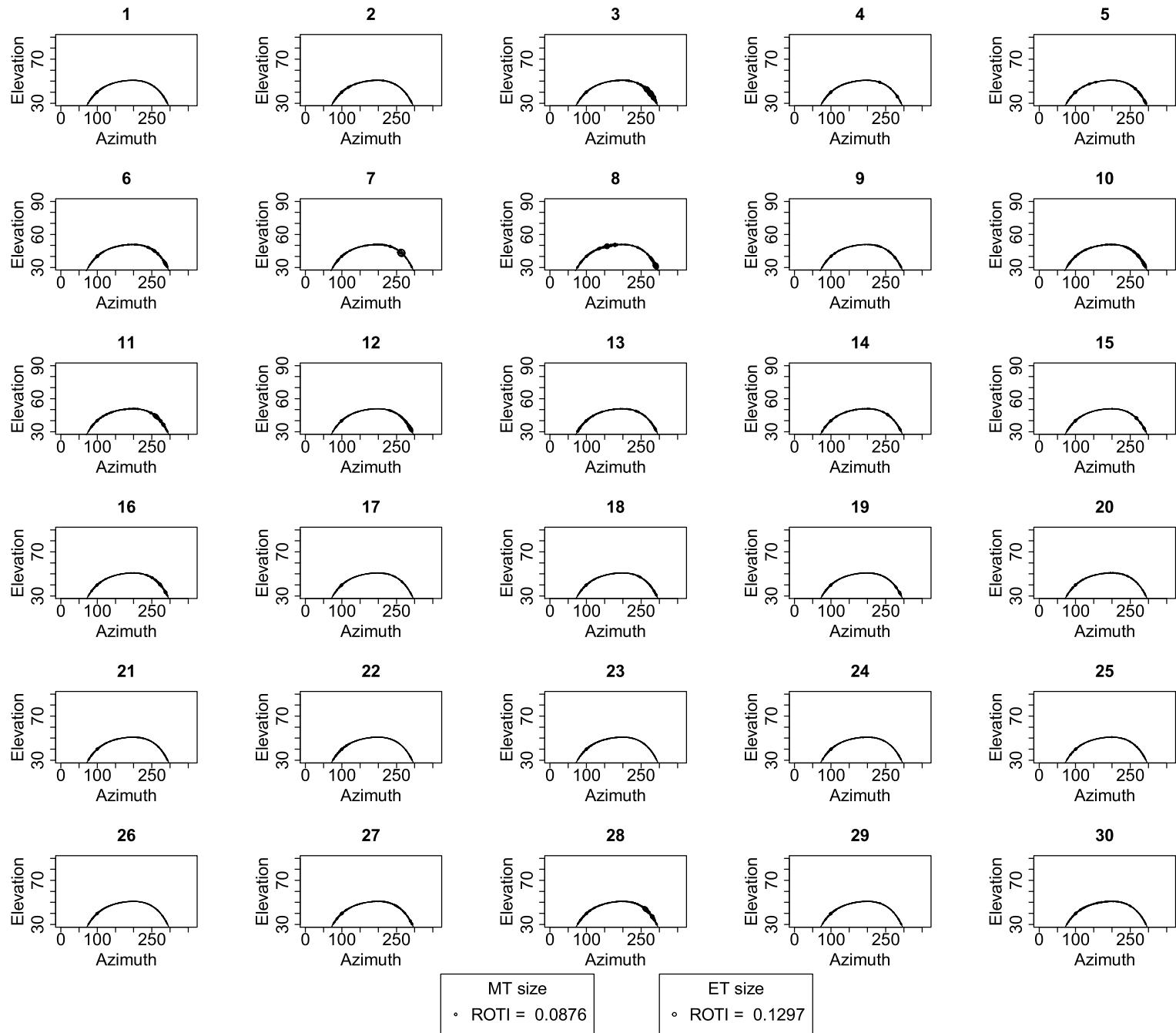


Figure S94 PEA plots comparison of ROTI for G30 on September 1–30, 2017 at SAOOP station

PEA plots (G31)

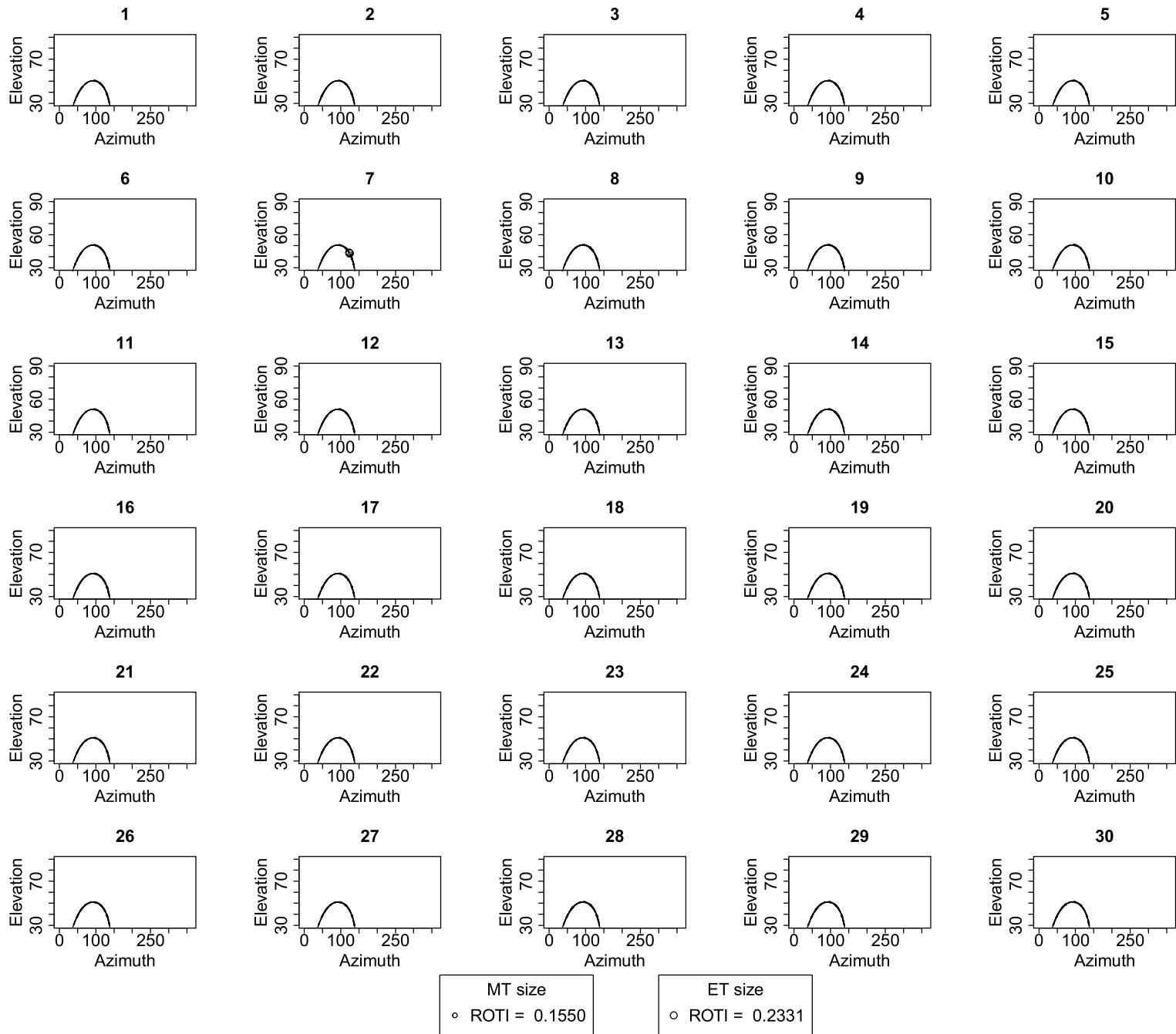


Figure S95 PEA plots comparison of ROTI for G31 on September 1–30, 2017 at SAOOP station

PEA plots (G32)

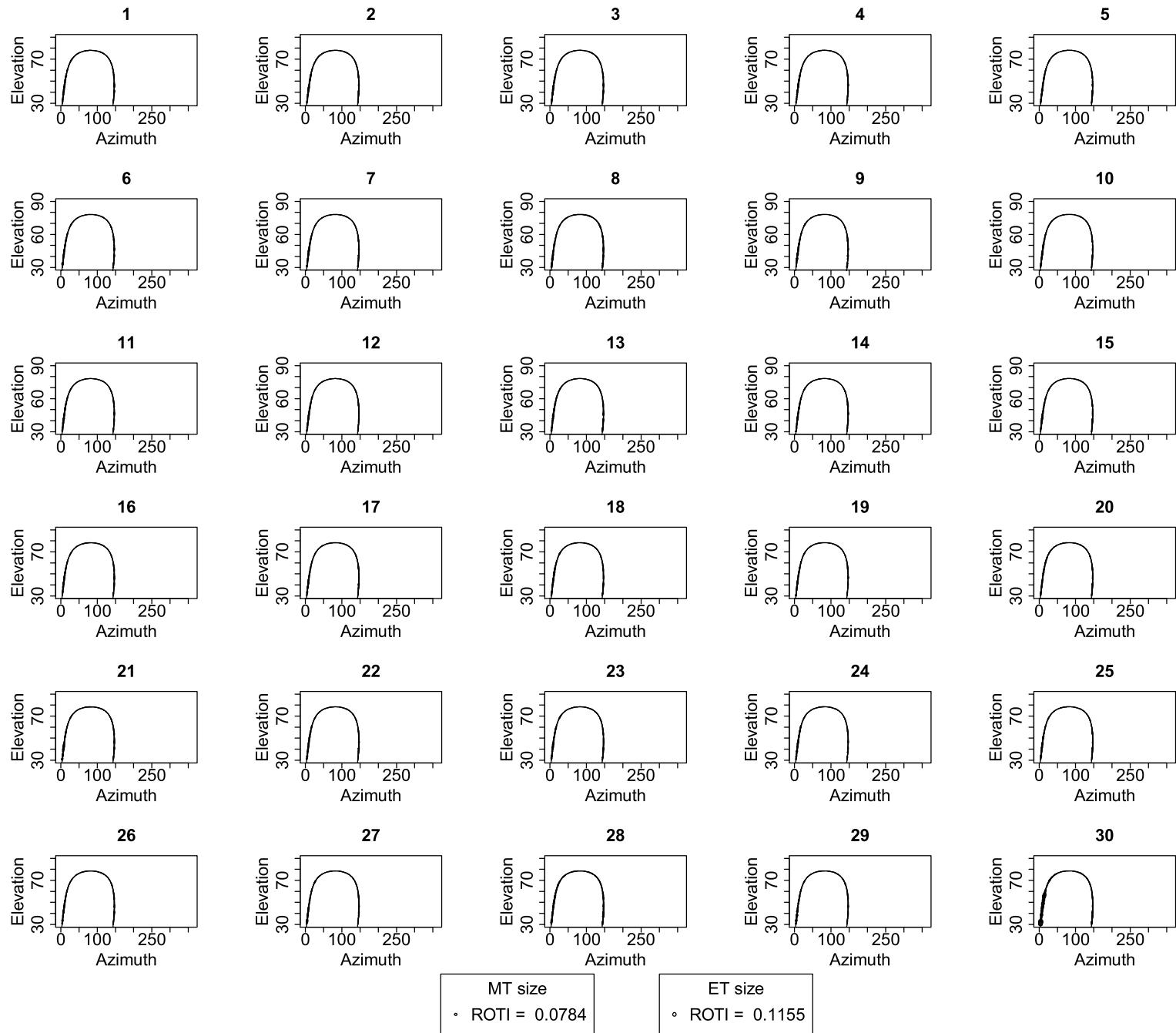


Figure S96 PEA plots comparison of ROTI for G32 on September 1–30, 2017 at SAOOP station

PEA plots (G21 with the extreme value)

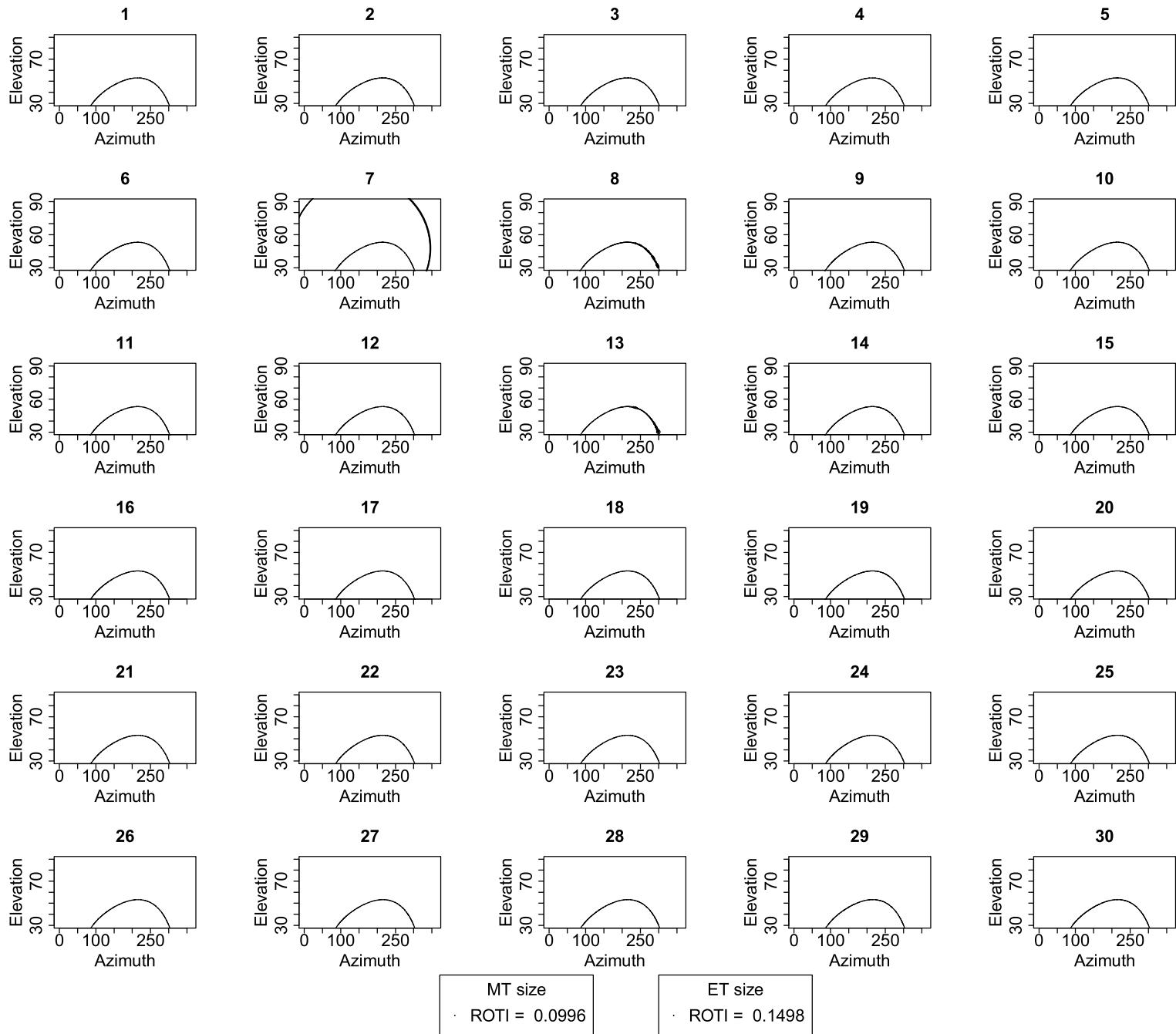


Figure S97 PEA plots comparison of ROTI for G21 on September 1–30, 2017 at SAOOP station

PEA plots (G24 with the extreme value)

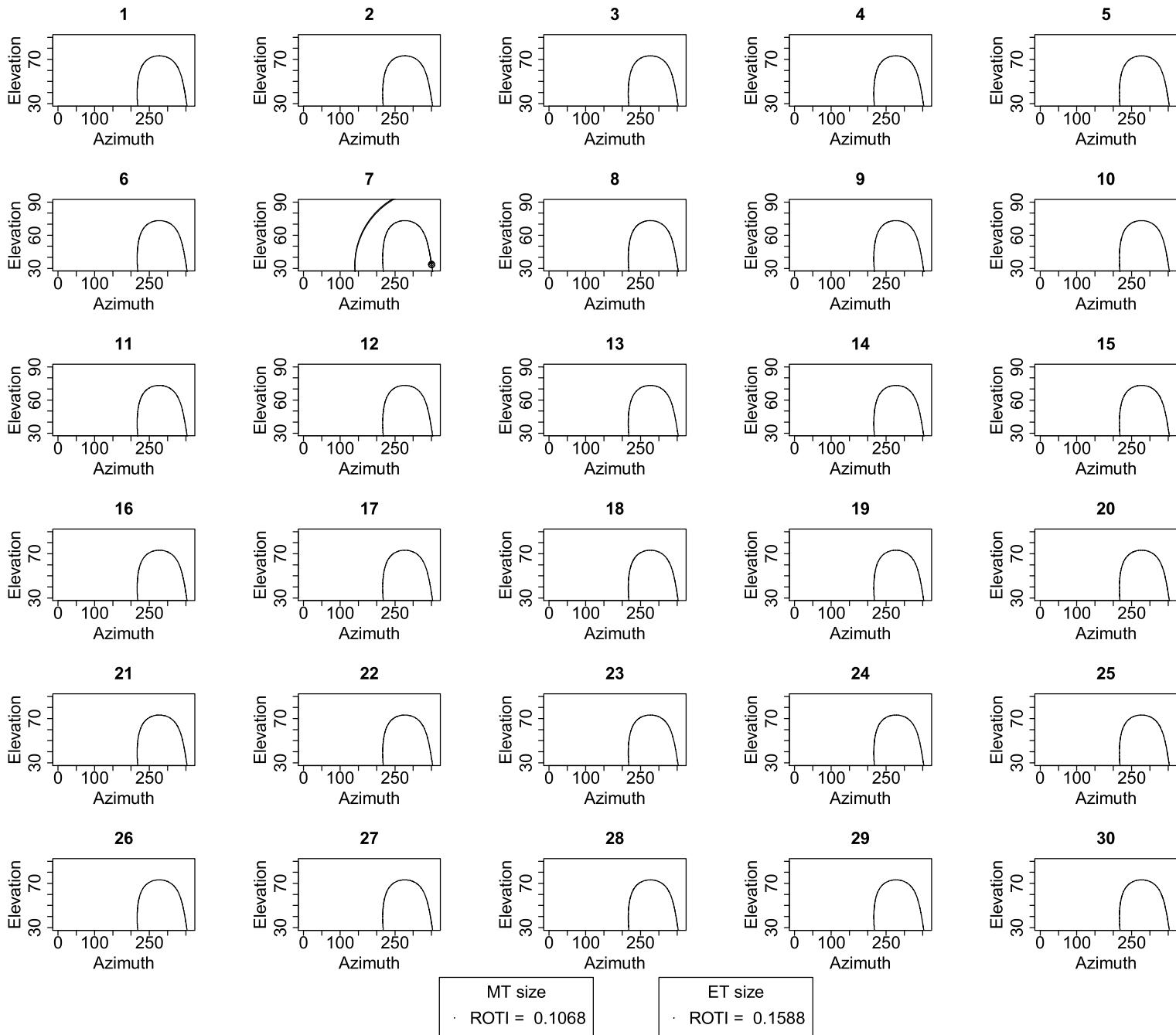


Figure S98 PEA plots comparison of ROTI for G24 on September 1–30, 2017 at SAOOP station

PEA plots (G1)

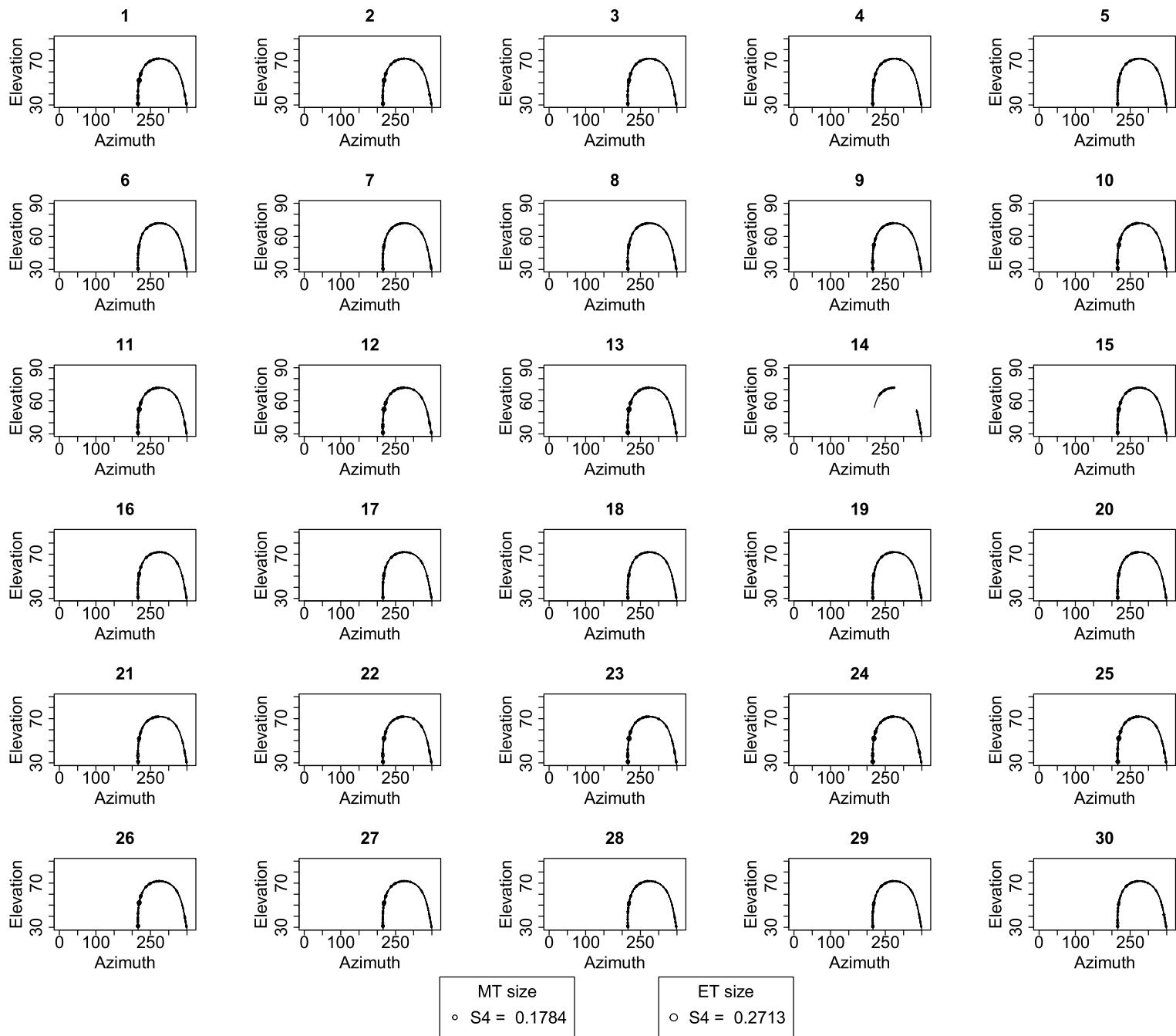


Figure S99 PEA plots comparison of S4 for G1 on September 1–30, 2017 at SAO0P station

PEA plots (G2)

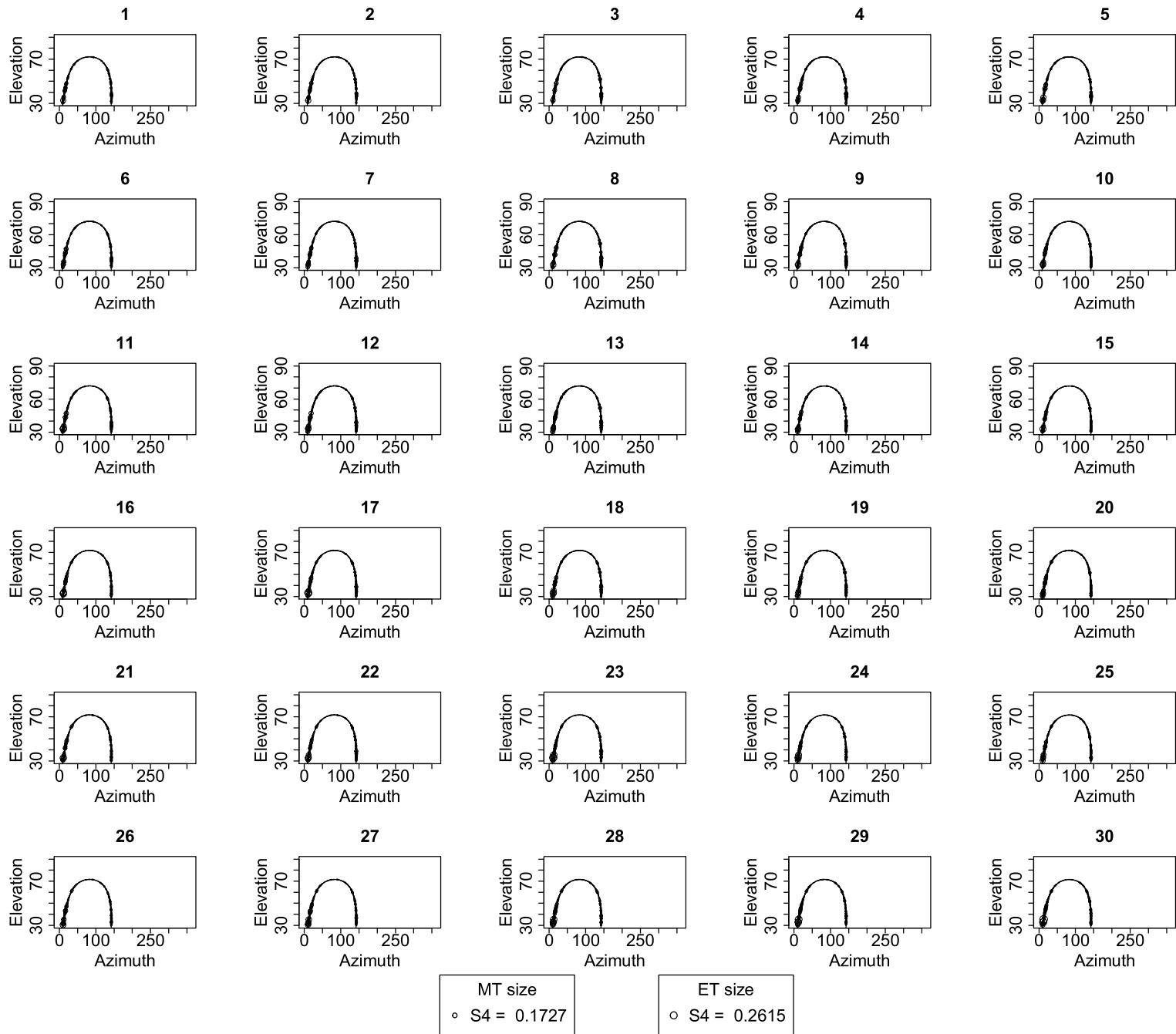


Figure S100 PEA plots comparison of S4 for G2 on September 1–30, 2017 at SAOOP station

PEA plots (G3)

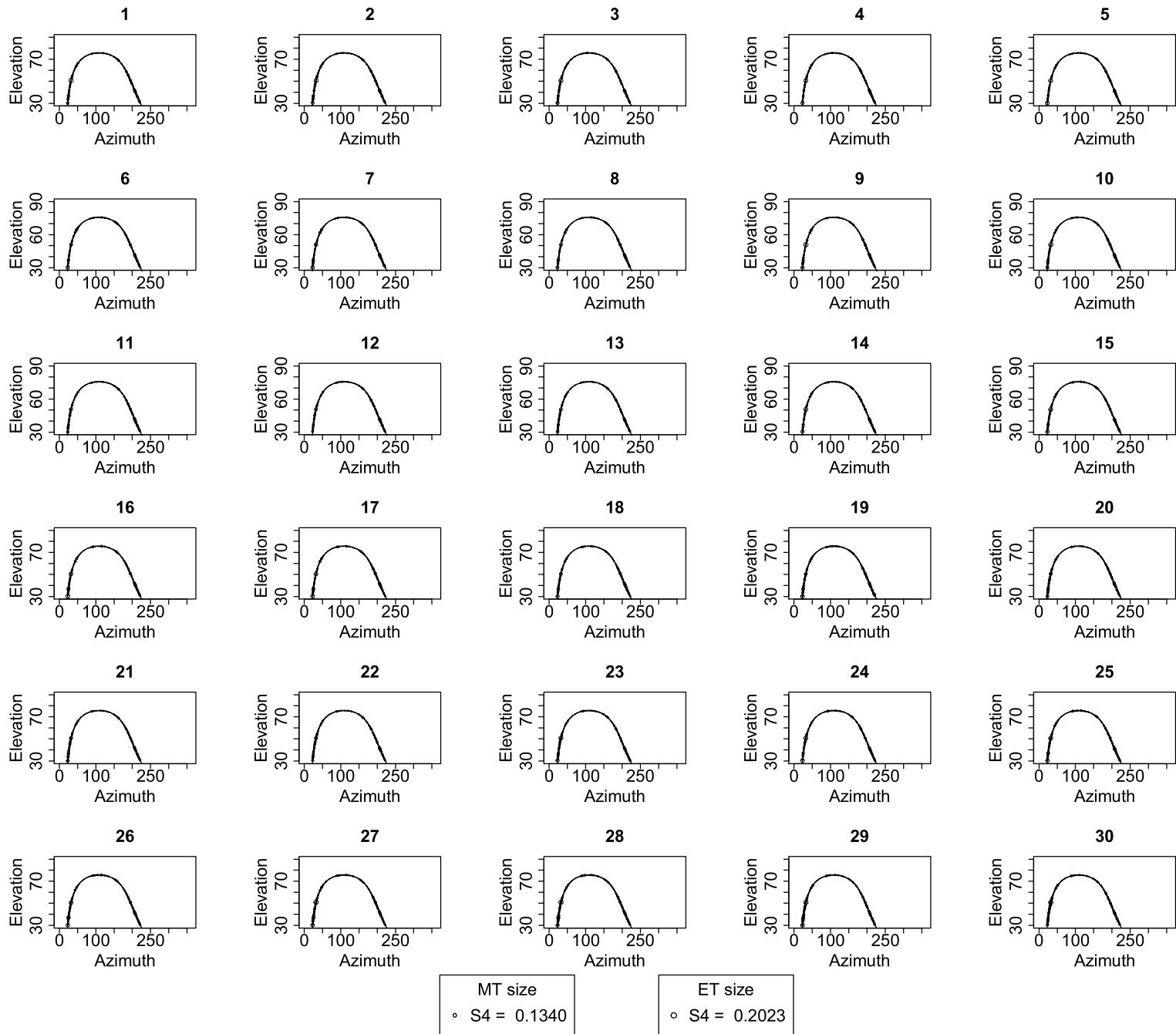


Figure S101 PEA plots comparison of S4 for G3 on September 1–30, 2017 at SAOOP station

PEA plots (G4)

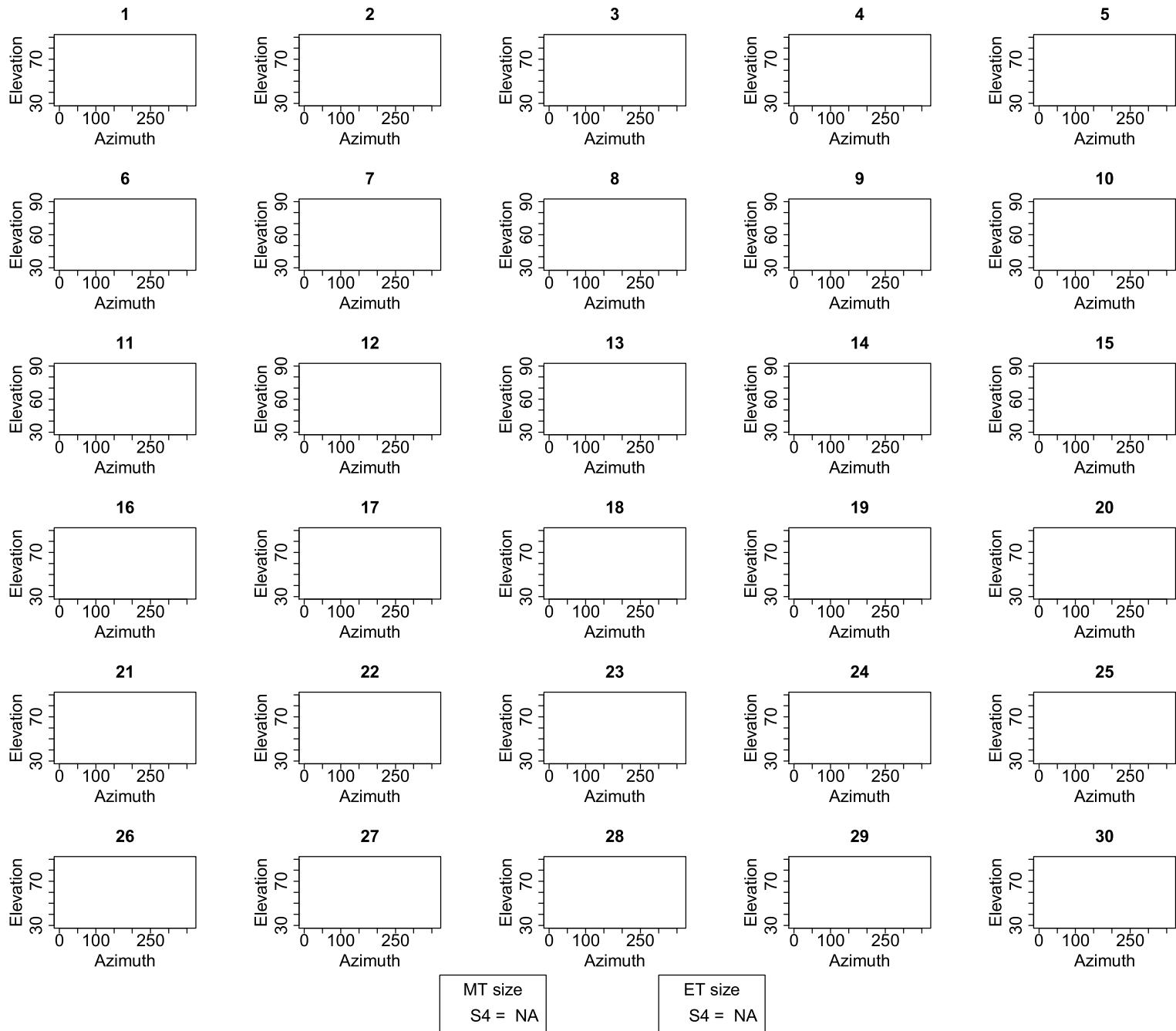


Figure S102 PEA plots comparison of S4 for G4 on September 1–30, 2017 at SAOOP station

PEA plots (G5)

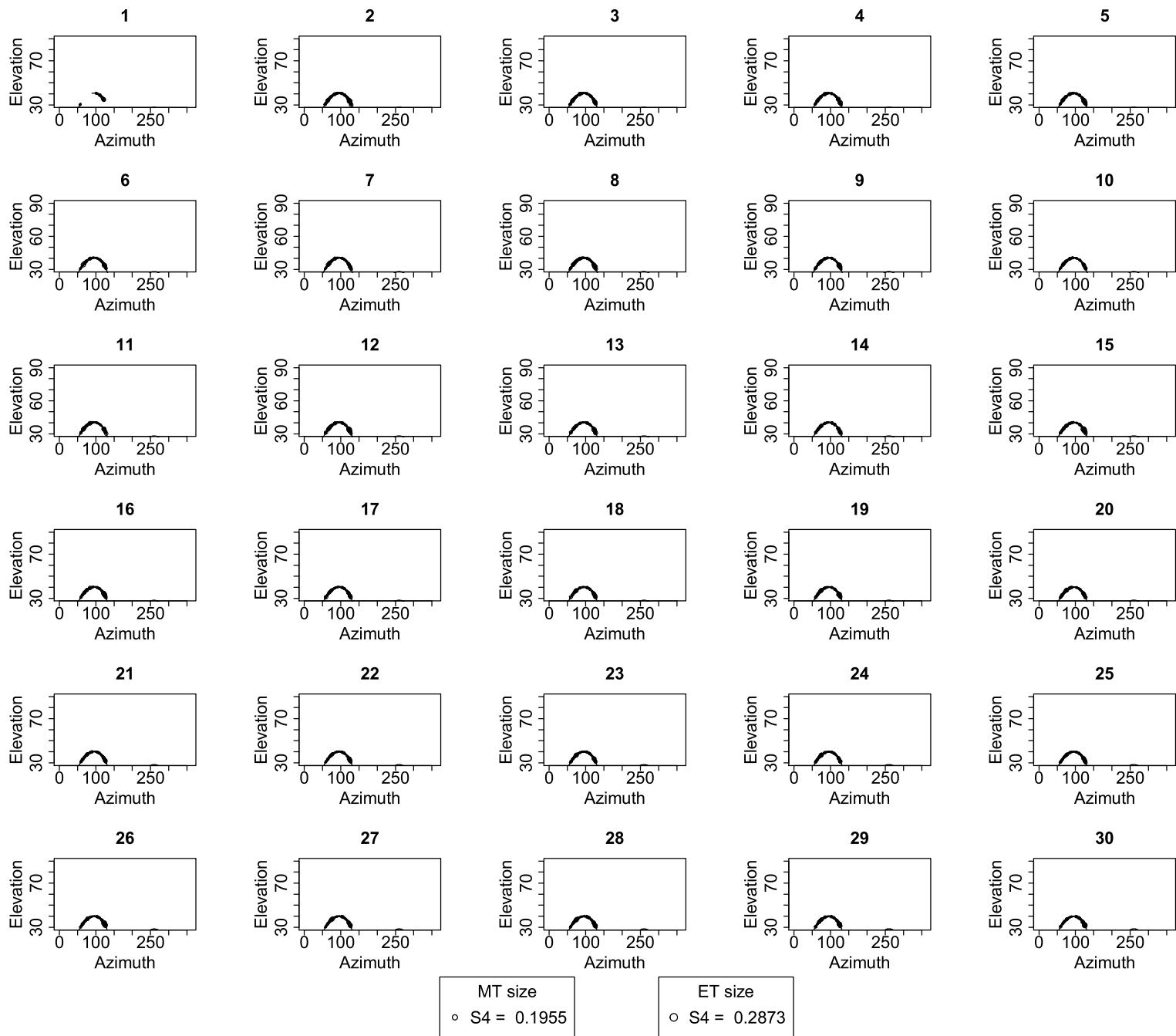


Figure S103 PEA plots comparison of S4 for G5 on September 1–30, 2017 at SAOOP station

PEA plots (G6)

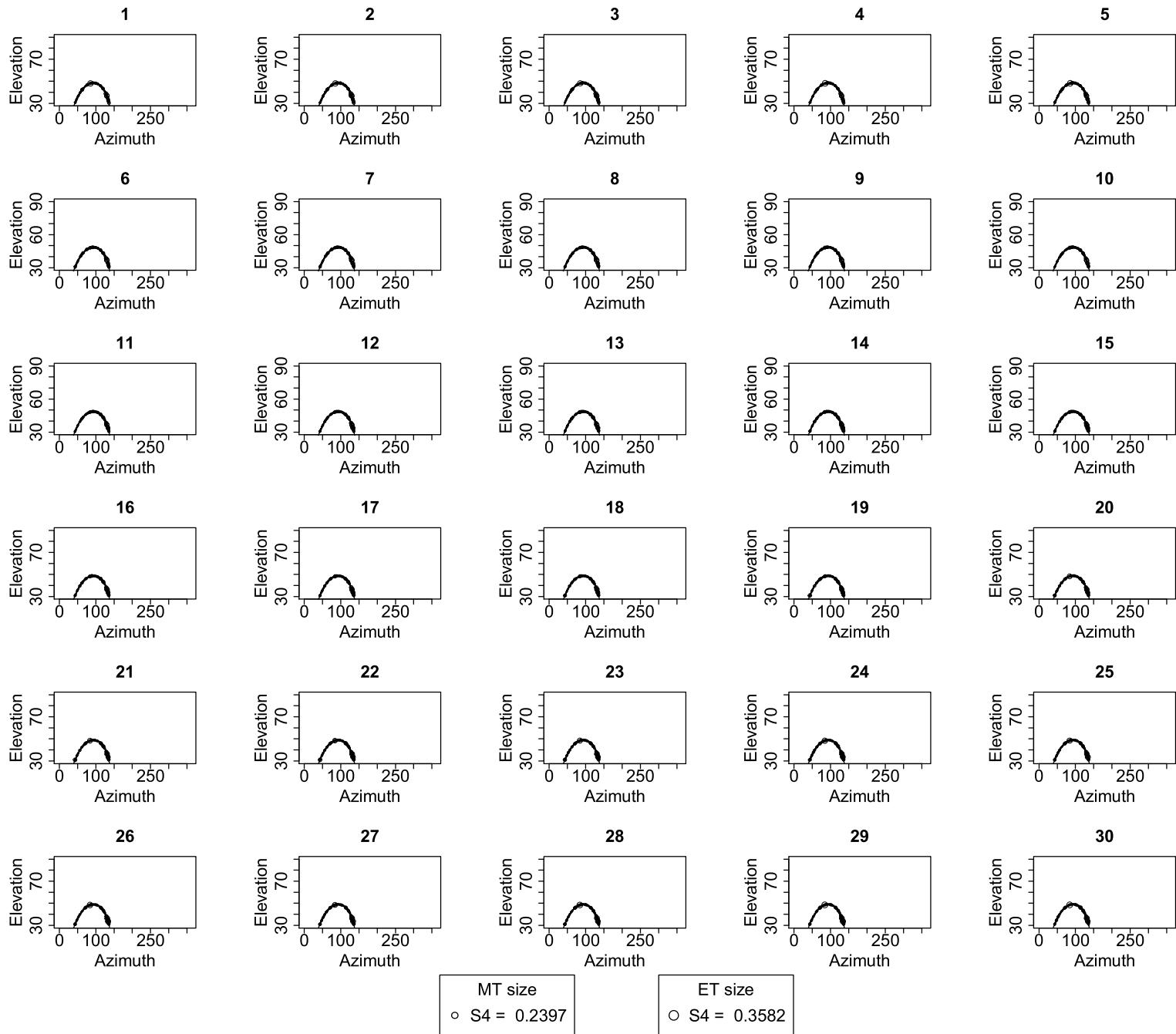


Figure S104 PEA plots comparison of S4 for G6 on September 1–30, 2017 at SAOOP station

PEA plots (G7)

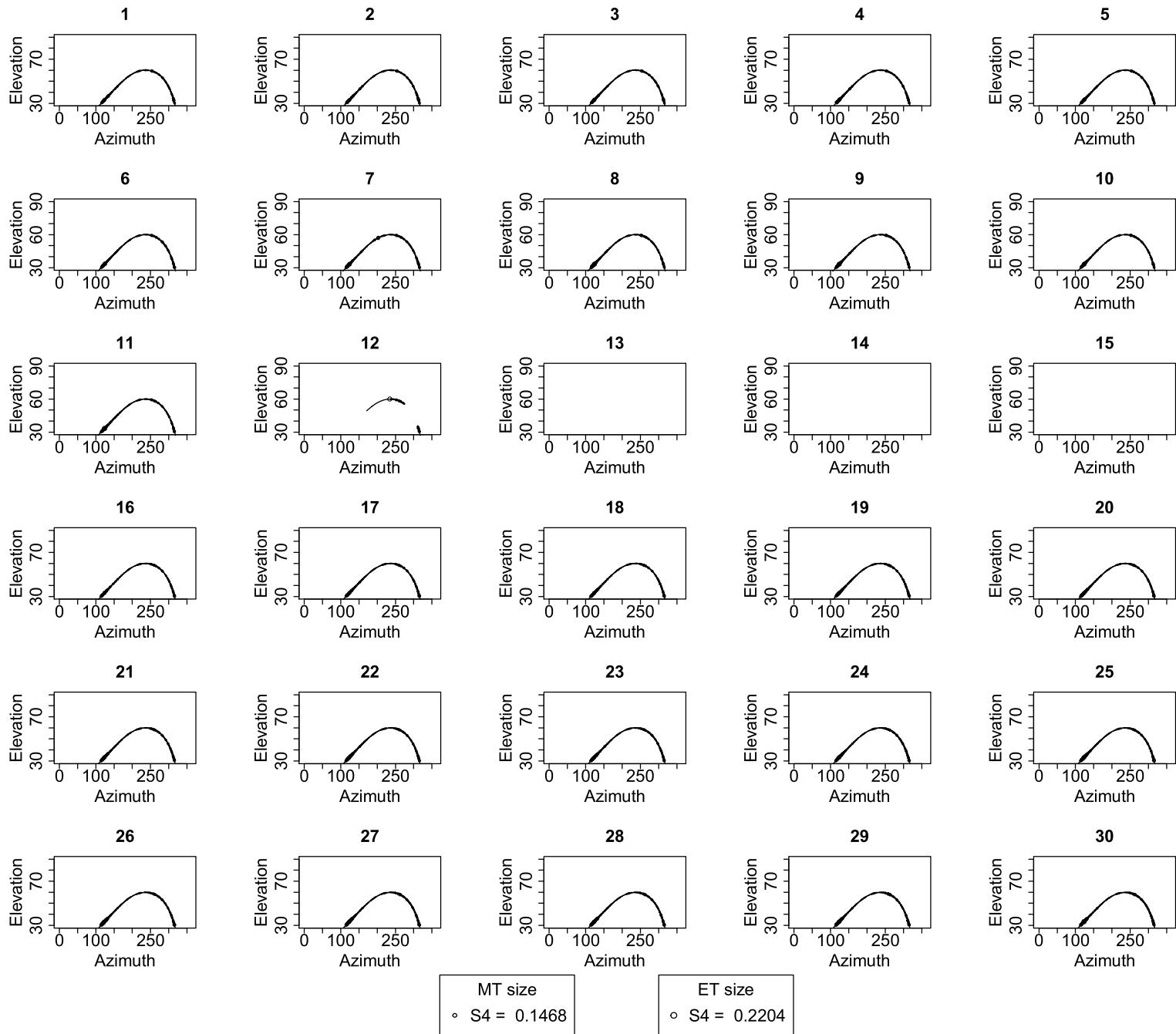


Figure S105 PEA plots comparison of S4 for G7 on September 1–30, 2017 at SAOOP station

PEA plots (G8)

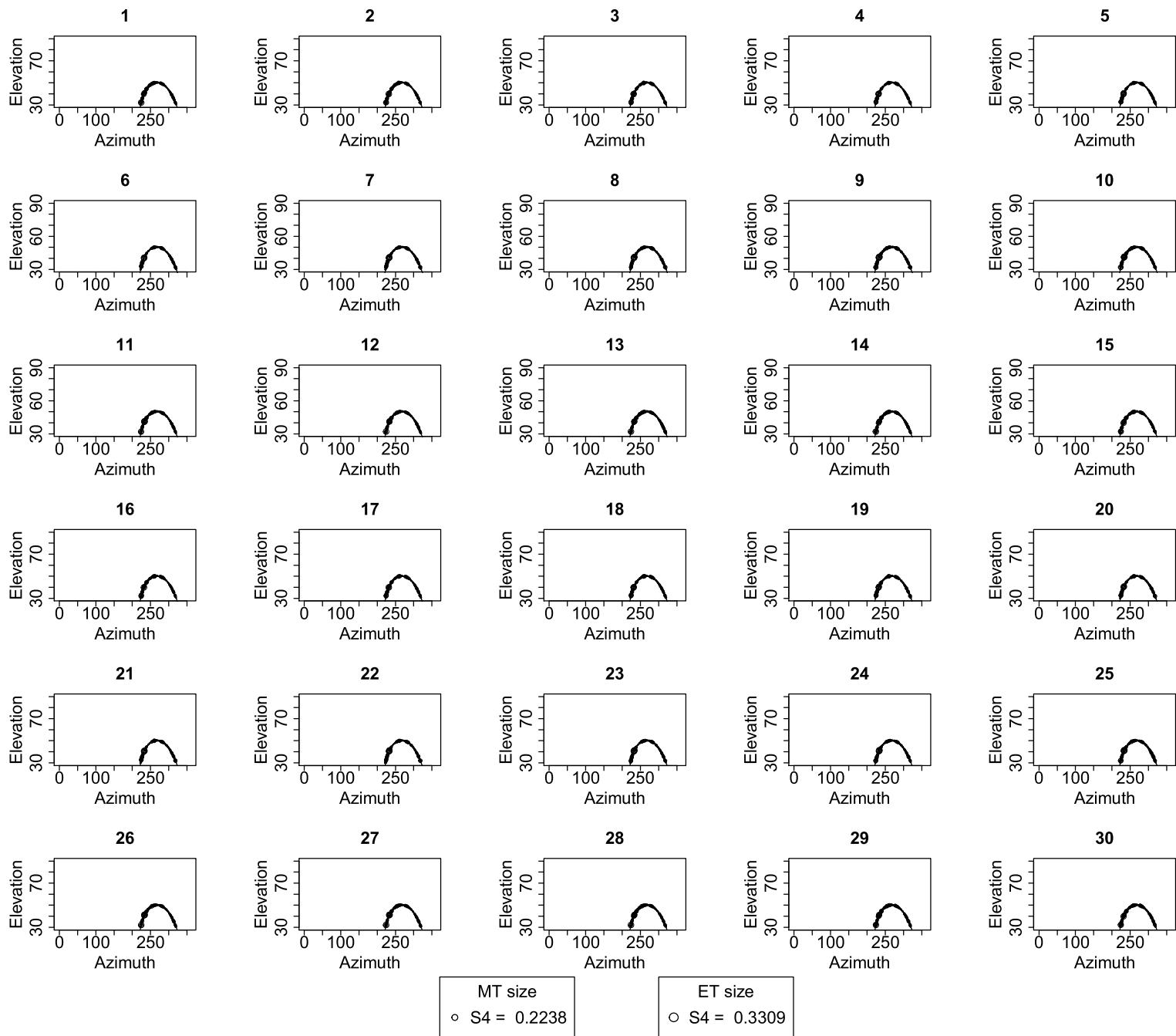


Figure S106 PEA plots comparison of S4 for G8 on September 1–30, 2017 at SAOOP station

PEA plots (G9)

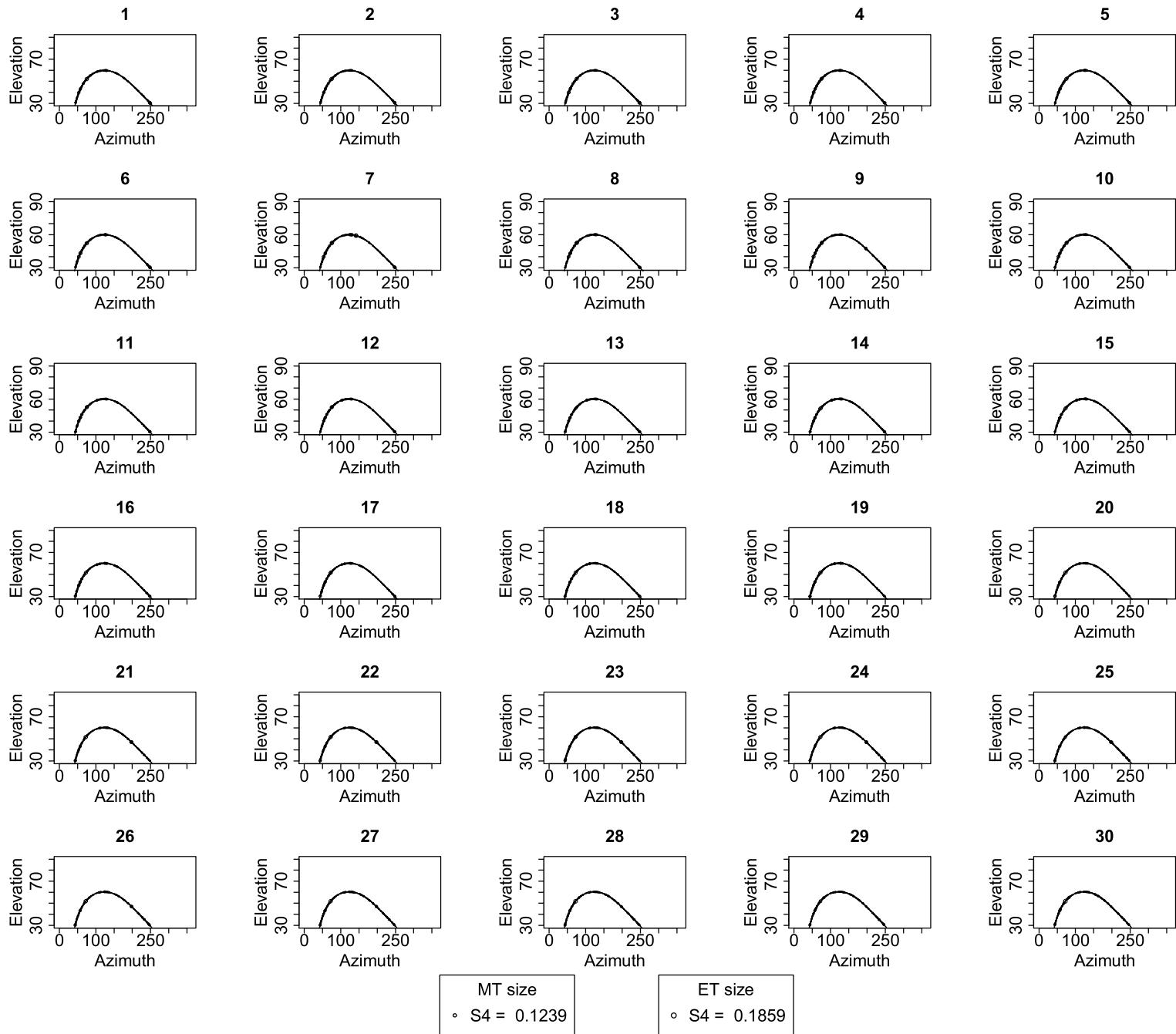


Figure S107 PEA plots comparison of S4 for G9 on September 1–30, 2017 at SAOOP station

PEA plots (G10)

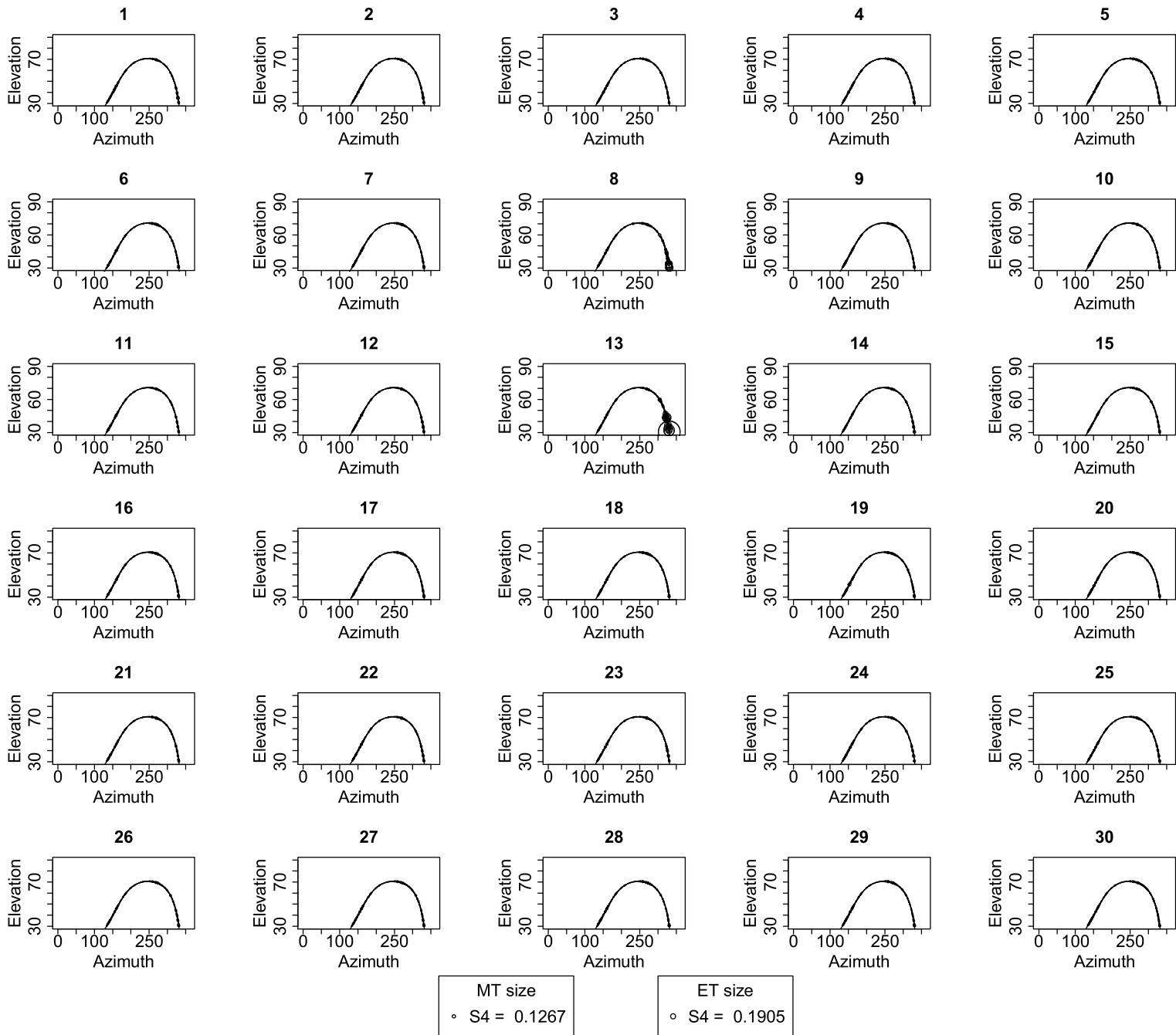


Figure S108 PEA plots comparison of S4 for G10 on September 1–30, 2017 at SAOOP station

PEA plots (G11)

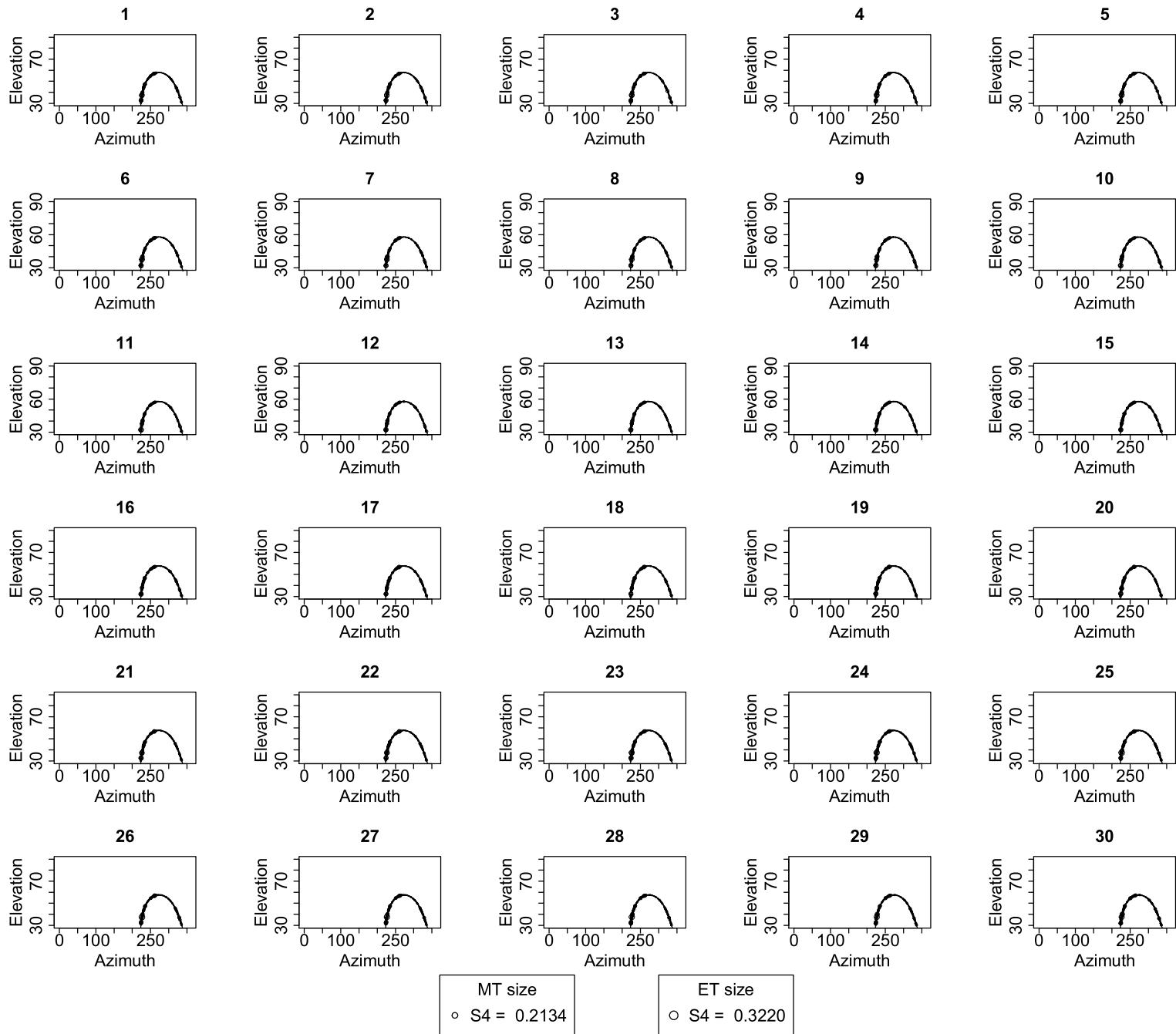


Figure S109 PEA plots comparison of S4 for G11 on September 1–30, 2017 at SAOOP station

PEA plots (G12)

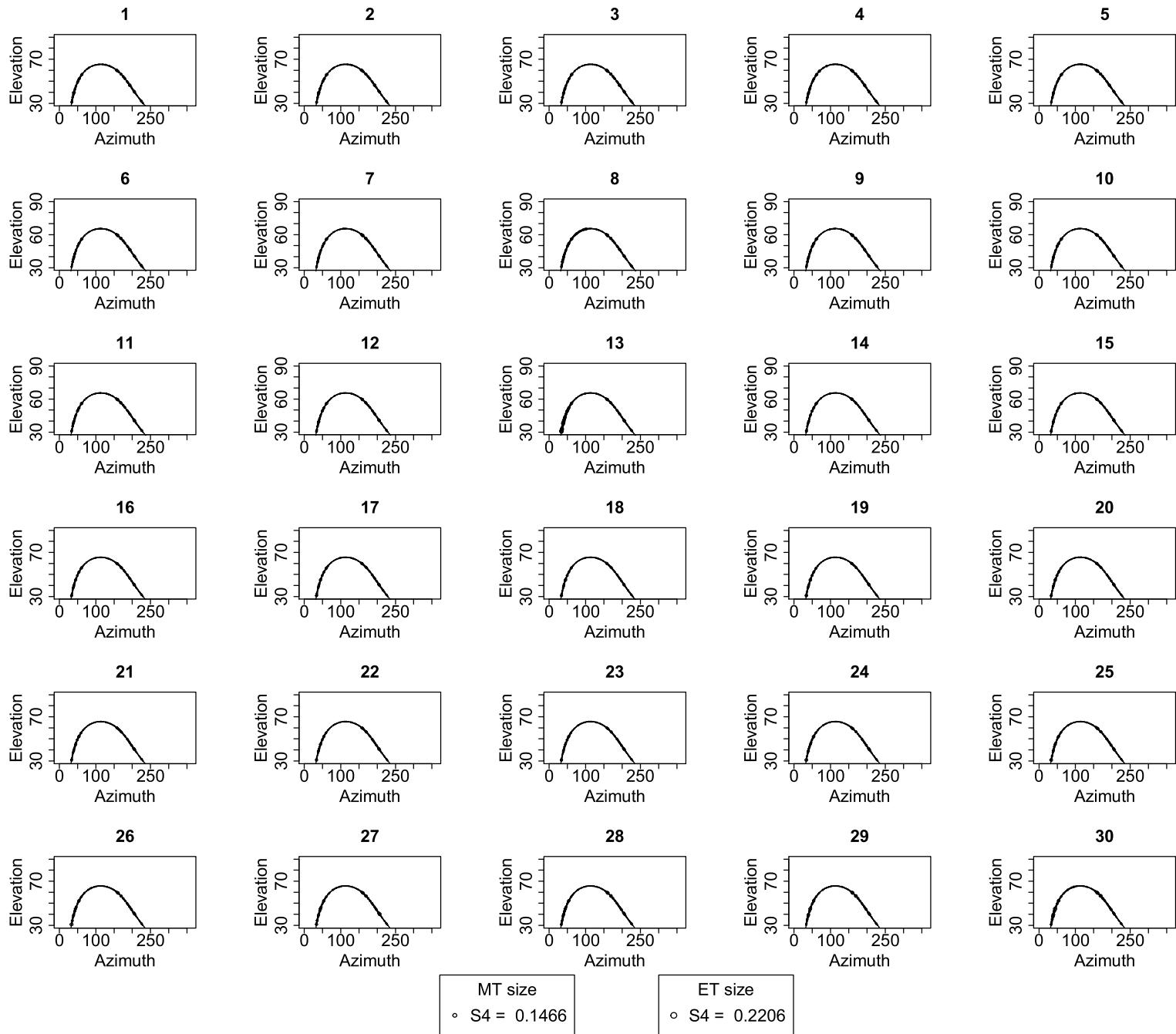


Figure S110 PEA plots comparison of S4 for G12 on September 1–30, 2017 at SAOOP station

PEA plots (G13)

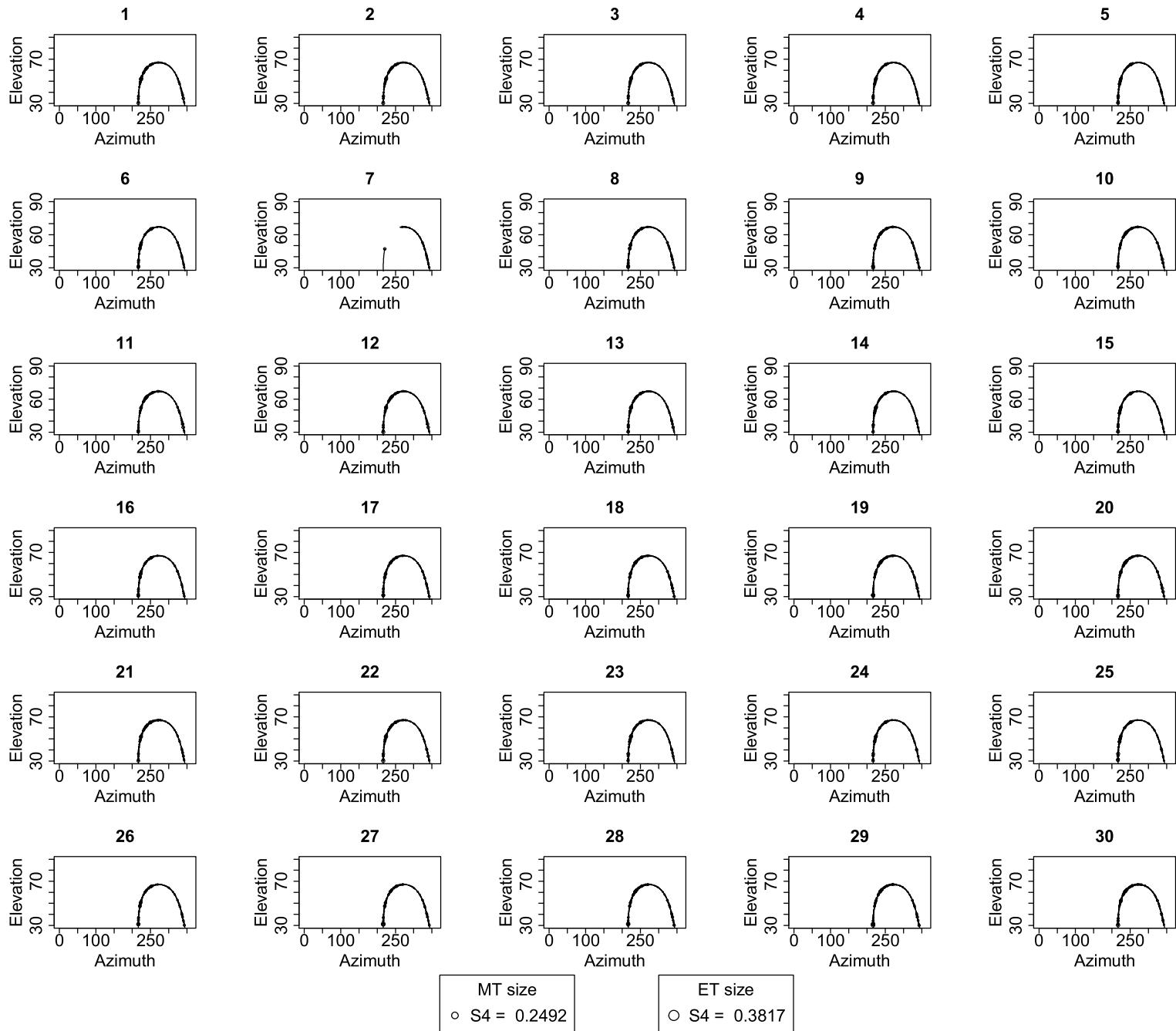


Figure S111 PEA plots comparison of S4 for G13 on September 1–30, 2017 at SAOOP station

PEA plots (G14)

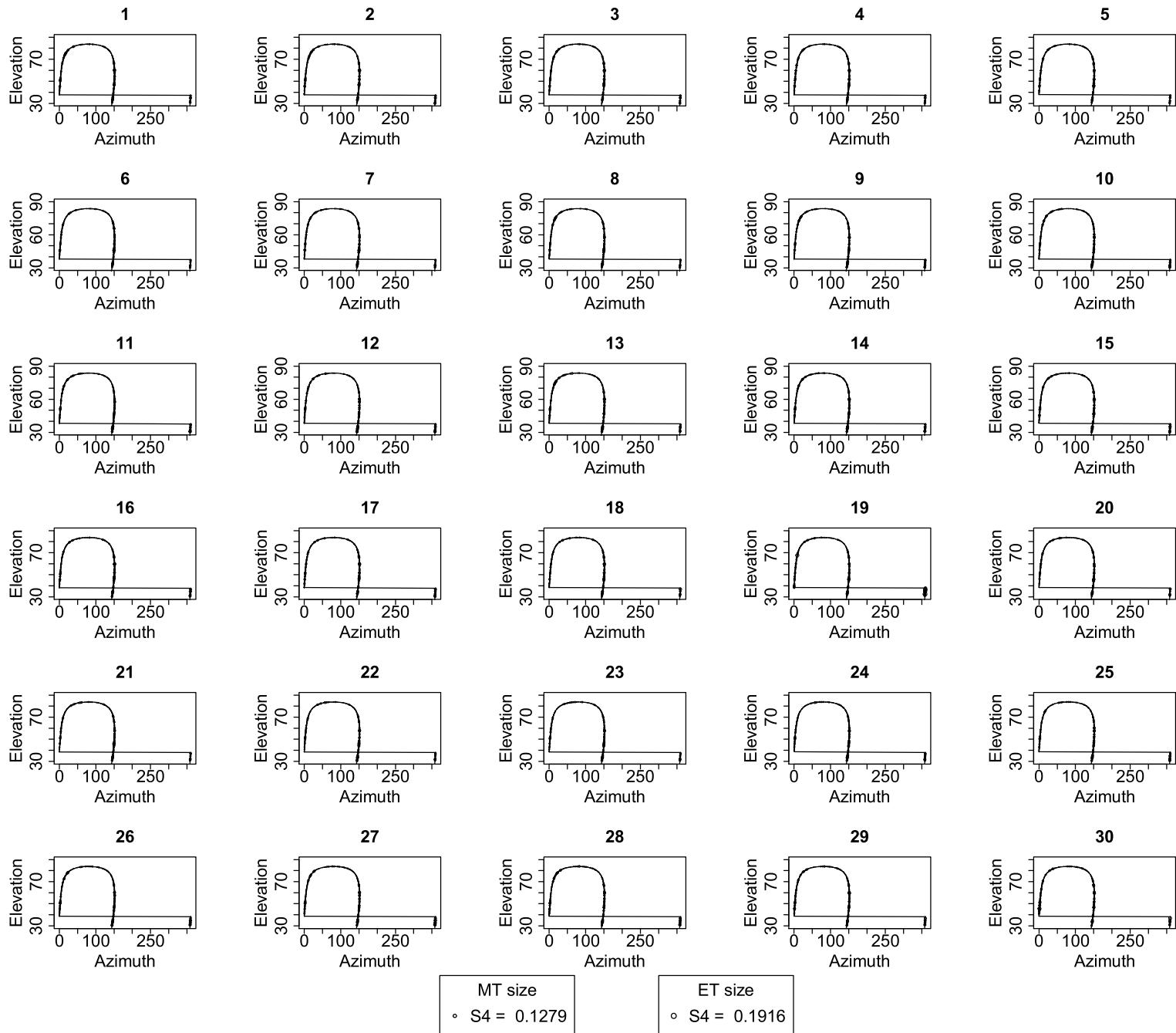


Figure S112 PEA plots comparison of S4 for G14 on September 1–30, 2017 at SAOOP station

PEA plots (G15)

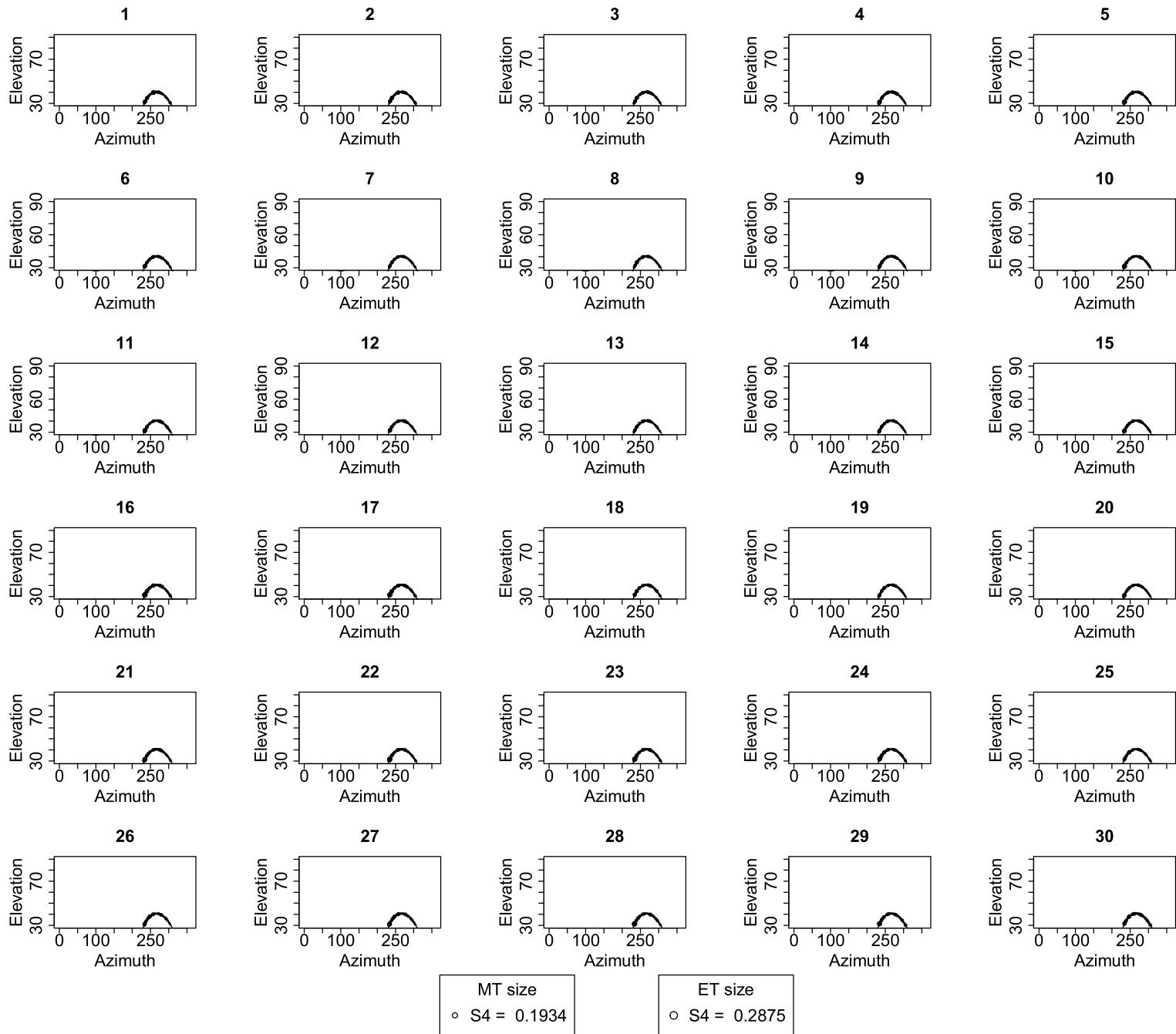


Figure S113 PEA plots comparison of S4 for G15 on September 1–30, 2017 at SAOOP station

PEA plots (G16)

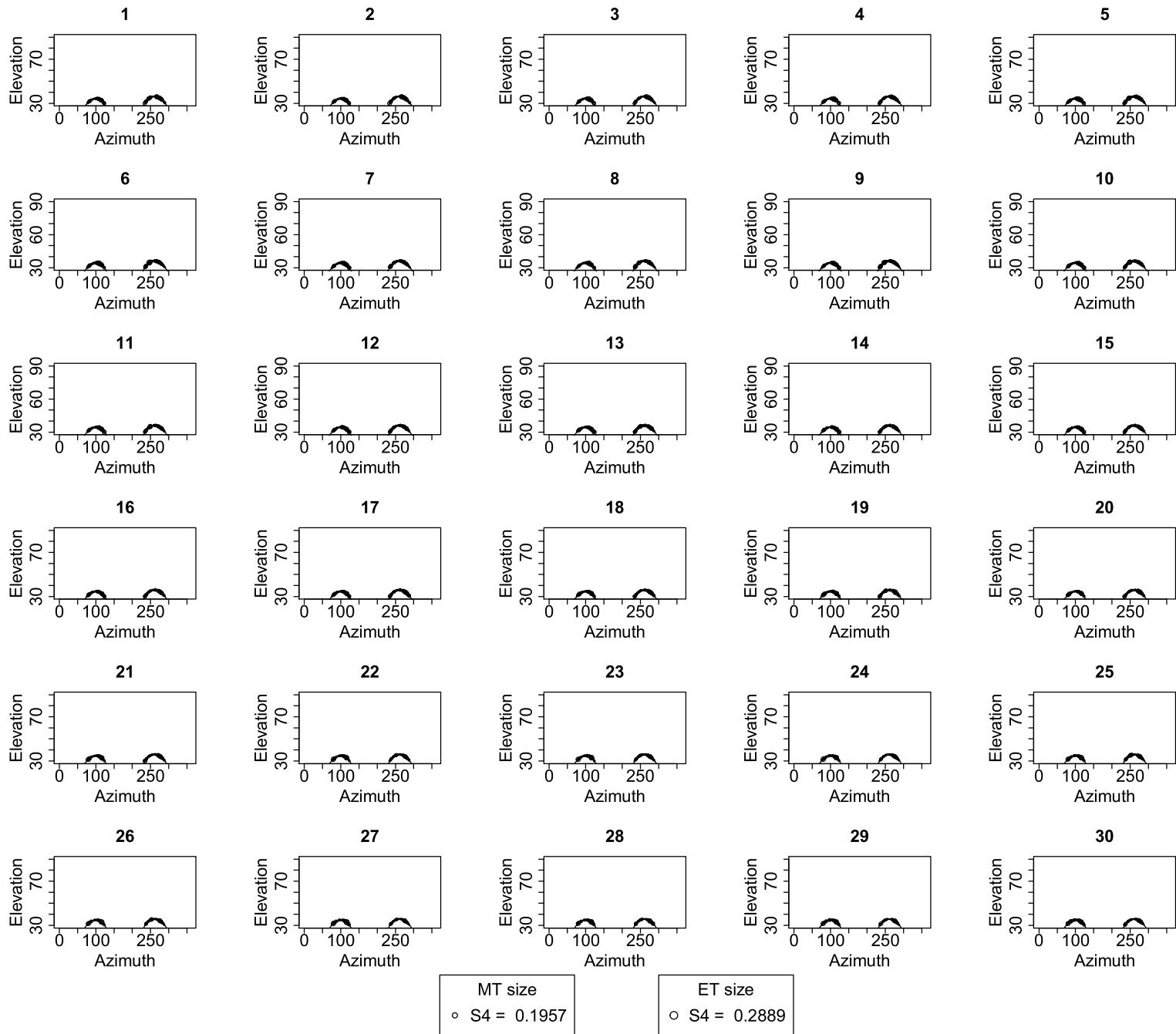


Figure S114 PEA plots comparison of S4 for G16 on September 1–30, 2017 at SAOOP station

PEA plots (G17)

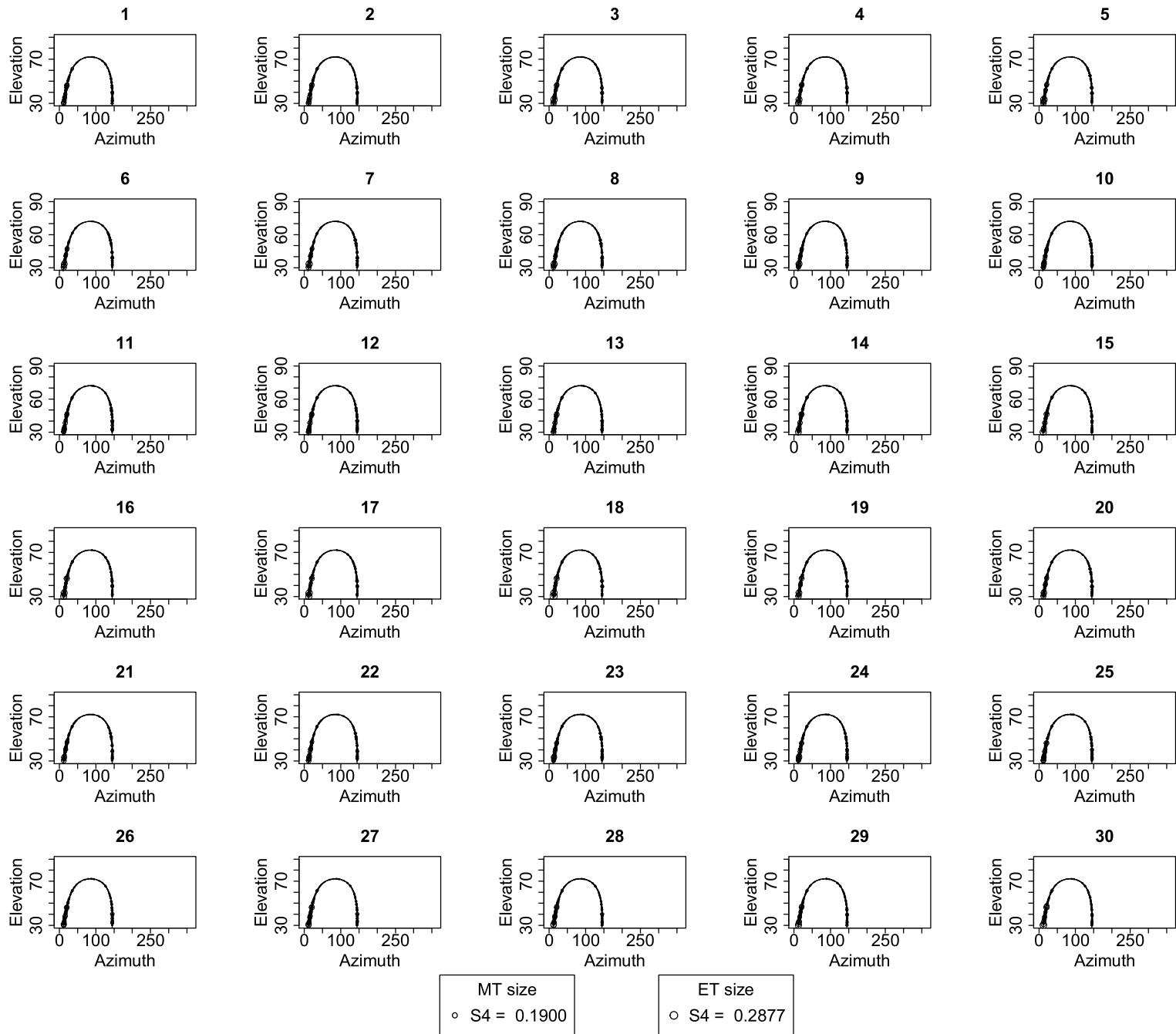


Figure S115 PEA plots comparison of S4 for G17 on September 1–30, 2017 at SAOOP station

PEA plots (G18)

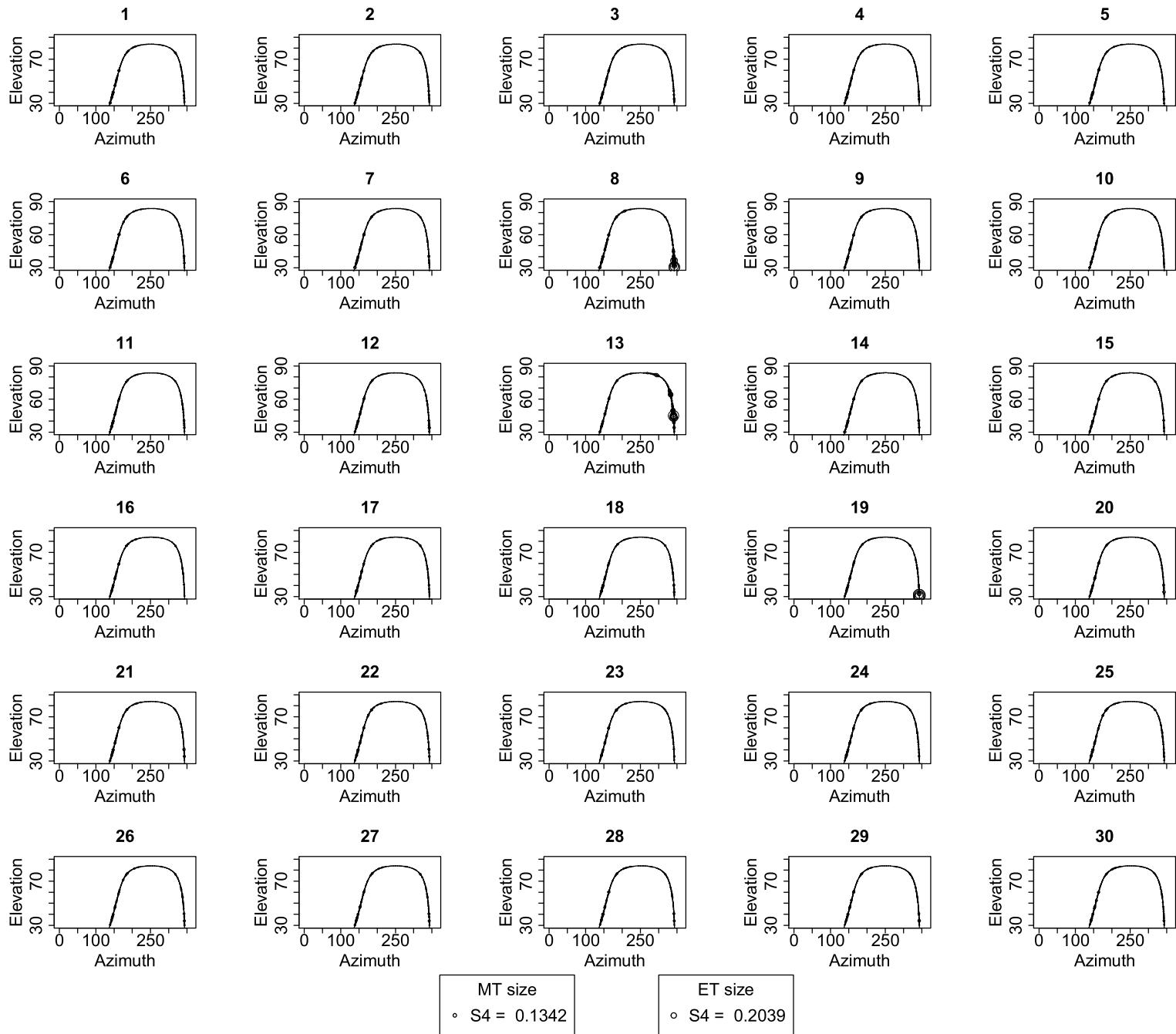


Figure S116 PEA plots comparison of S4 for G18 on September 1–30, 2017 at SAOOP station

PEA plots (G19)

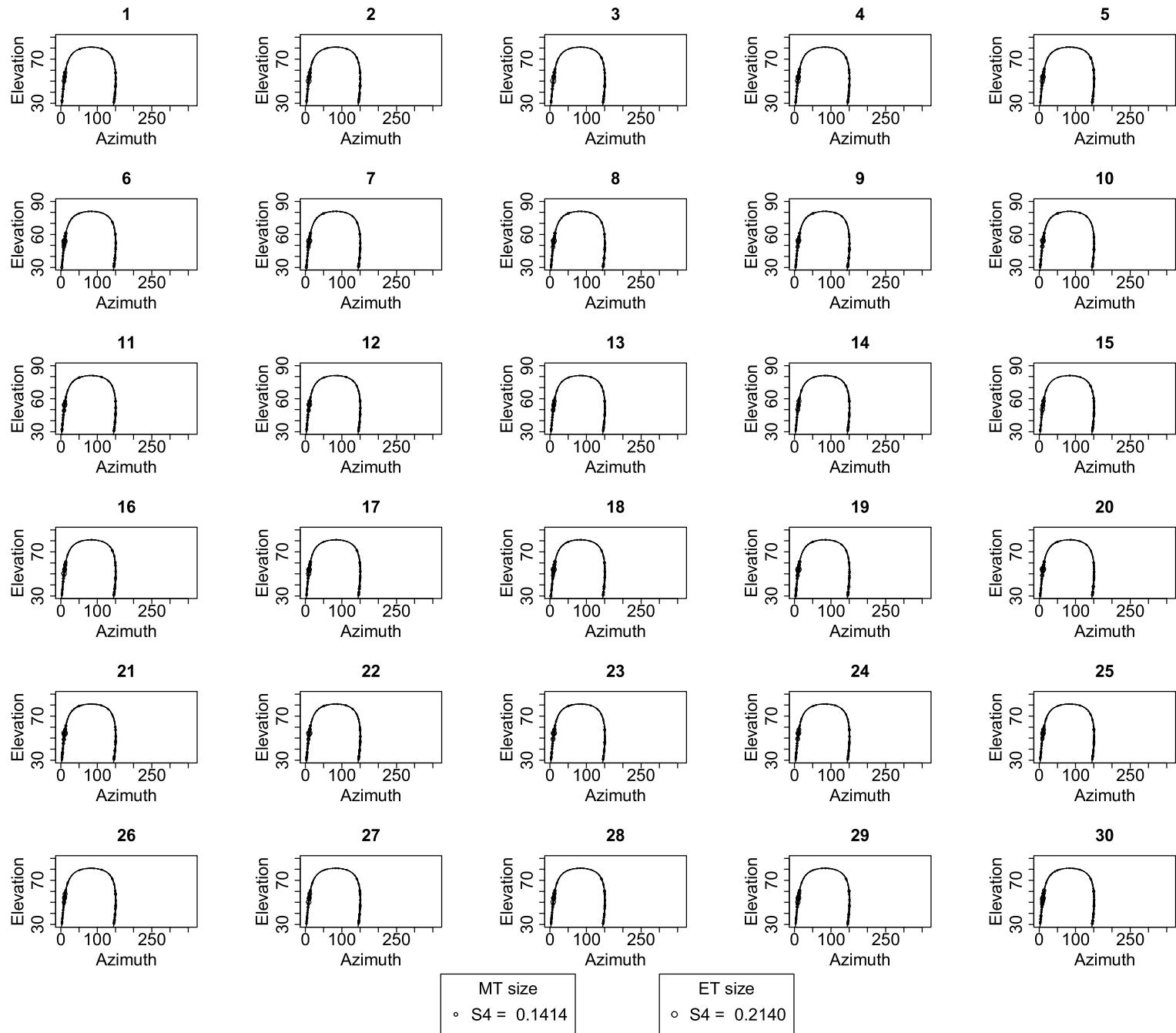


Figure S117 PEA plots comparison of S4 for G19 on September 1–30, 2017 at SAOOP station

PEA plots (G20)

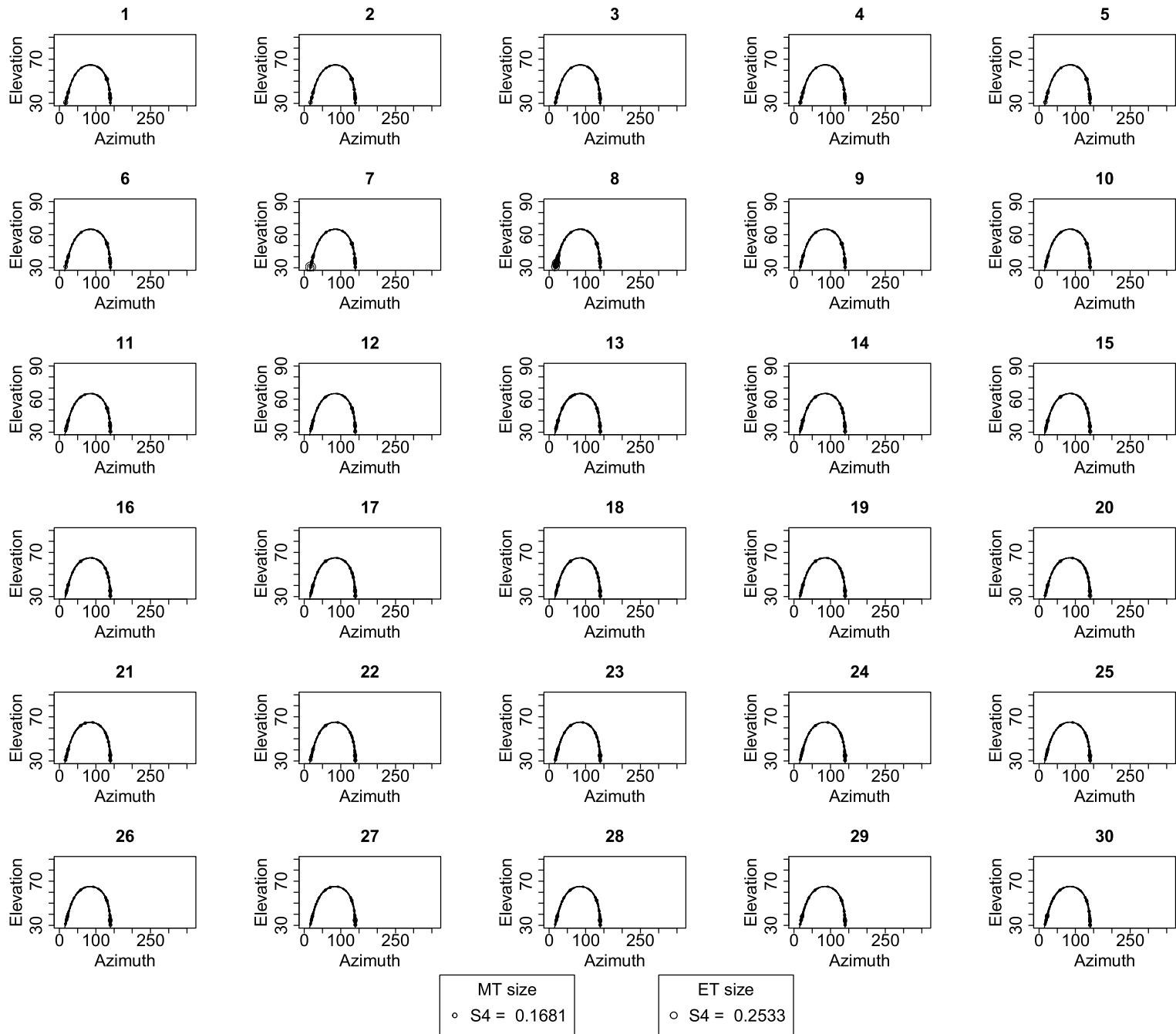


Figure S118 PEA plots comparison of S4 for G20 on September 1–30, 2017 at SAOOP station

PEA plots (G21)

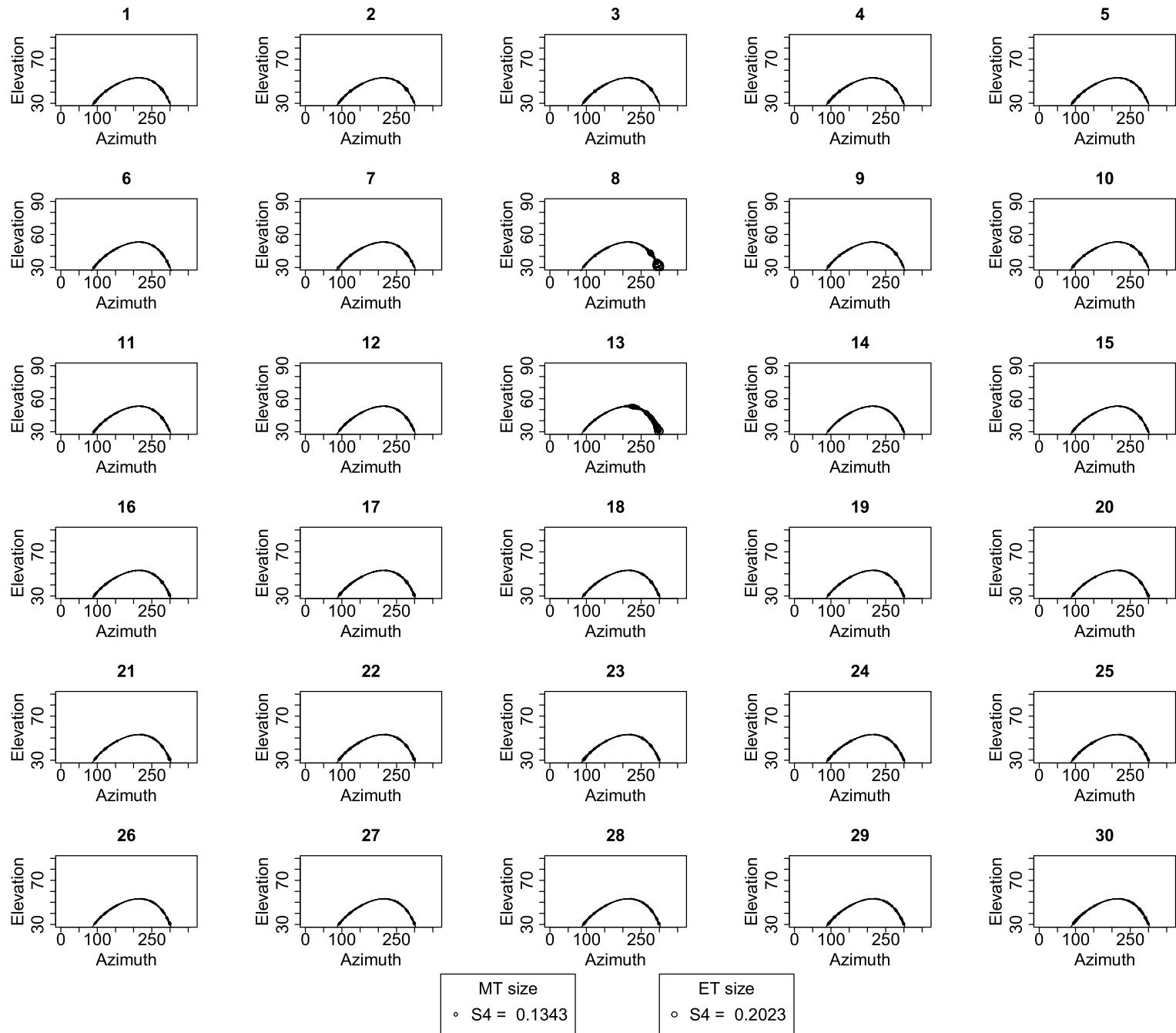


Figure S119 PEA plots comparison of S4 for G21 on September 1–30, 2017 at SAOOP station

PEA plots (G22)

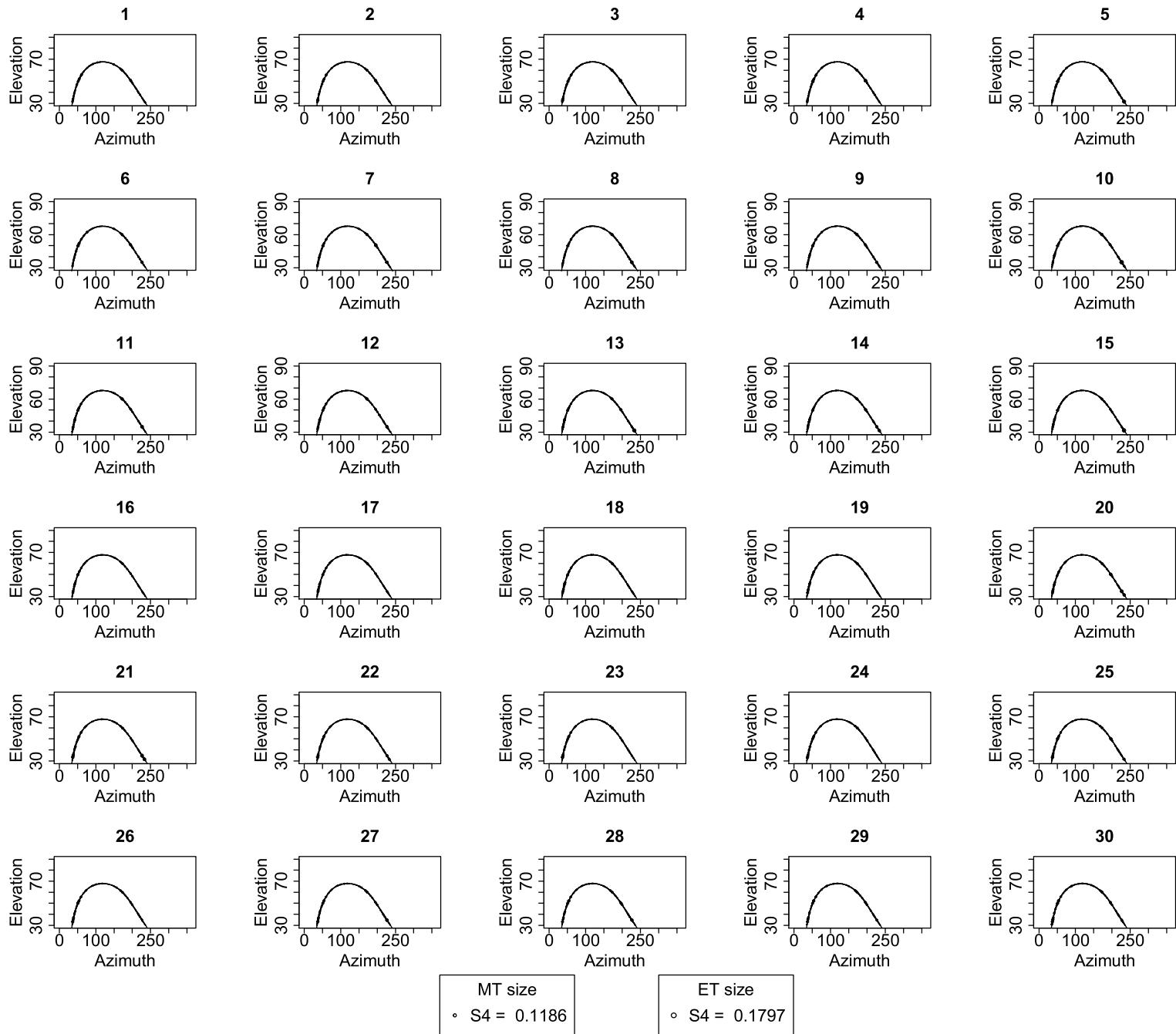


Figure S120 PEA plots comparison of S4 for G22 on September 1–30, 2017 at SAOOP station

PEA plots (G23)

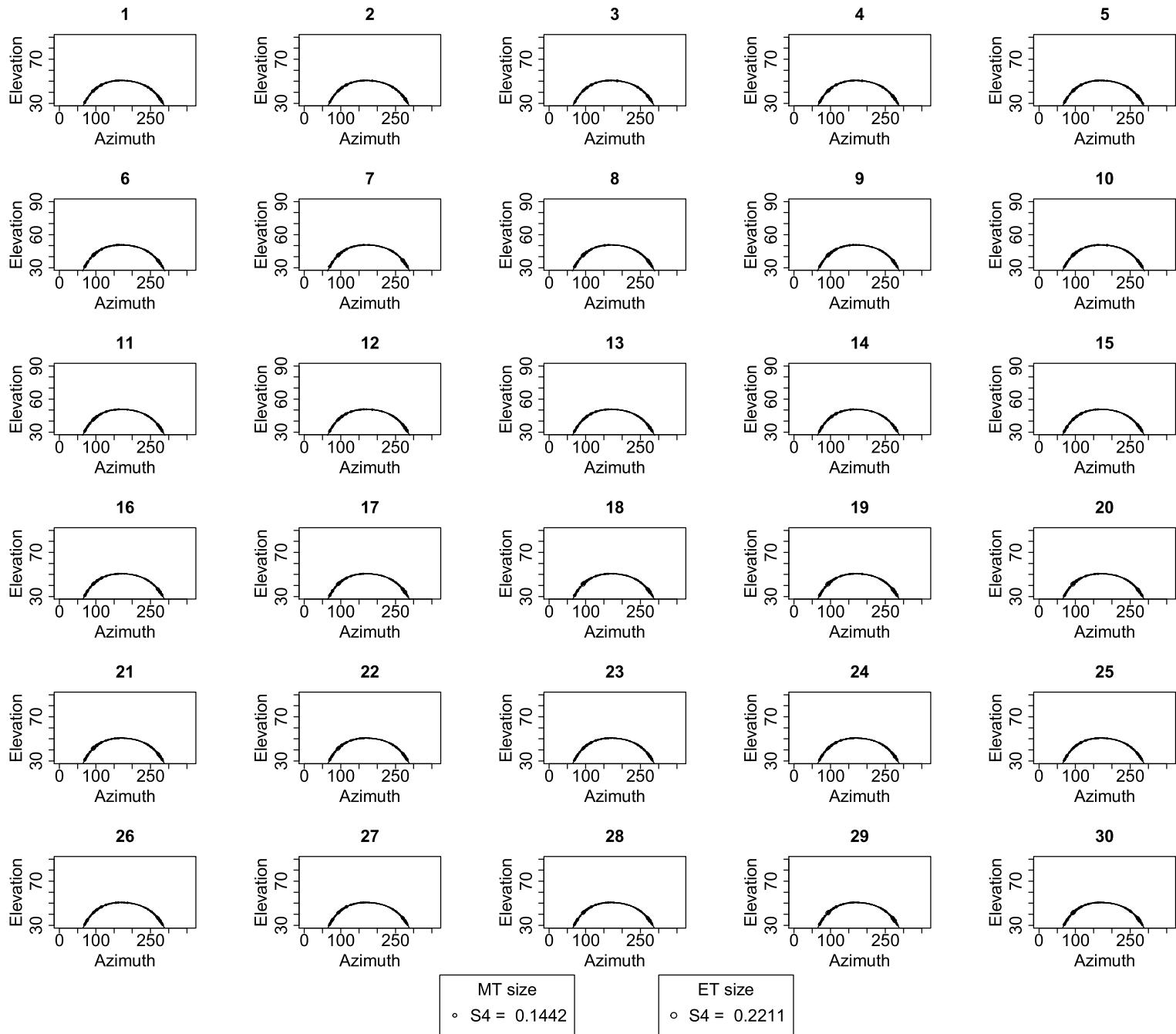


Figure S121 PEA plots comparison of S4 for G23 on September 1–30, 2017 at SAOOP station

PEA plots (G24)

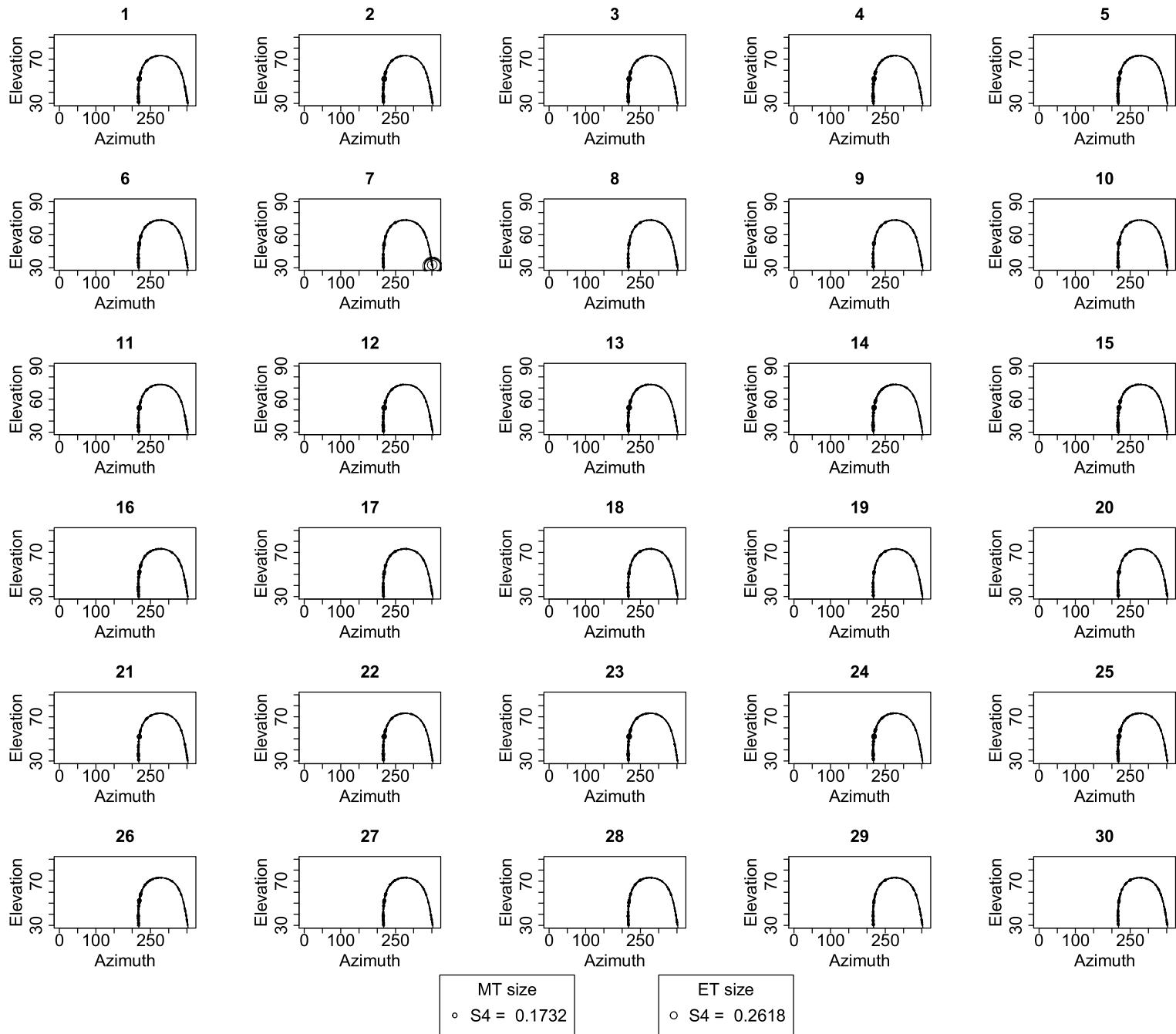


Figure S122 PEA plots comparison of S4 for G24 on September 1–30, 2017 at SAOOP station

PEA plots (G25)

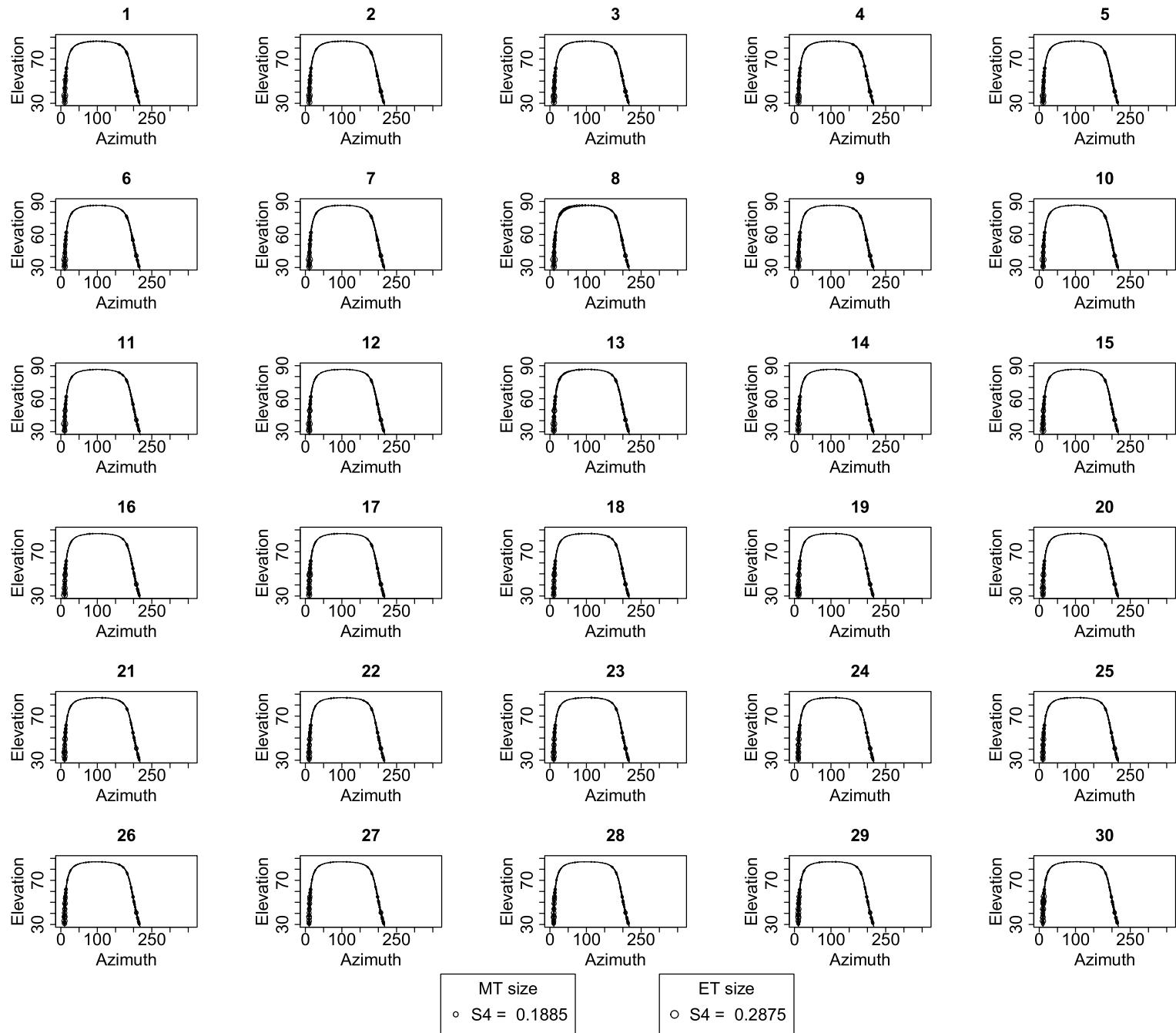


Figure S123 PEA plots comparison of S4 for G25 on September 1–30, 2017 at SAOOP station

PEA plots (G26)

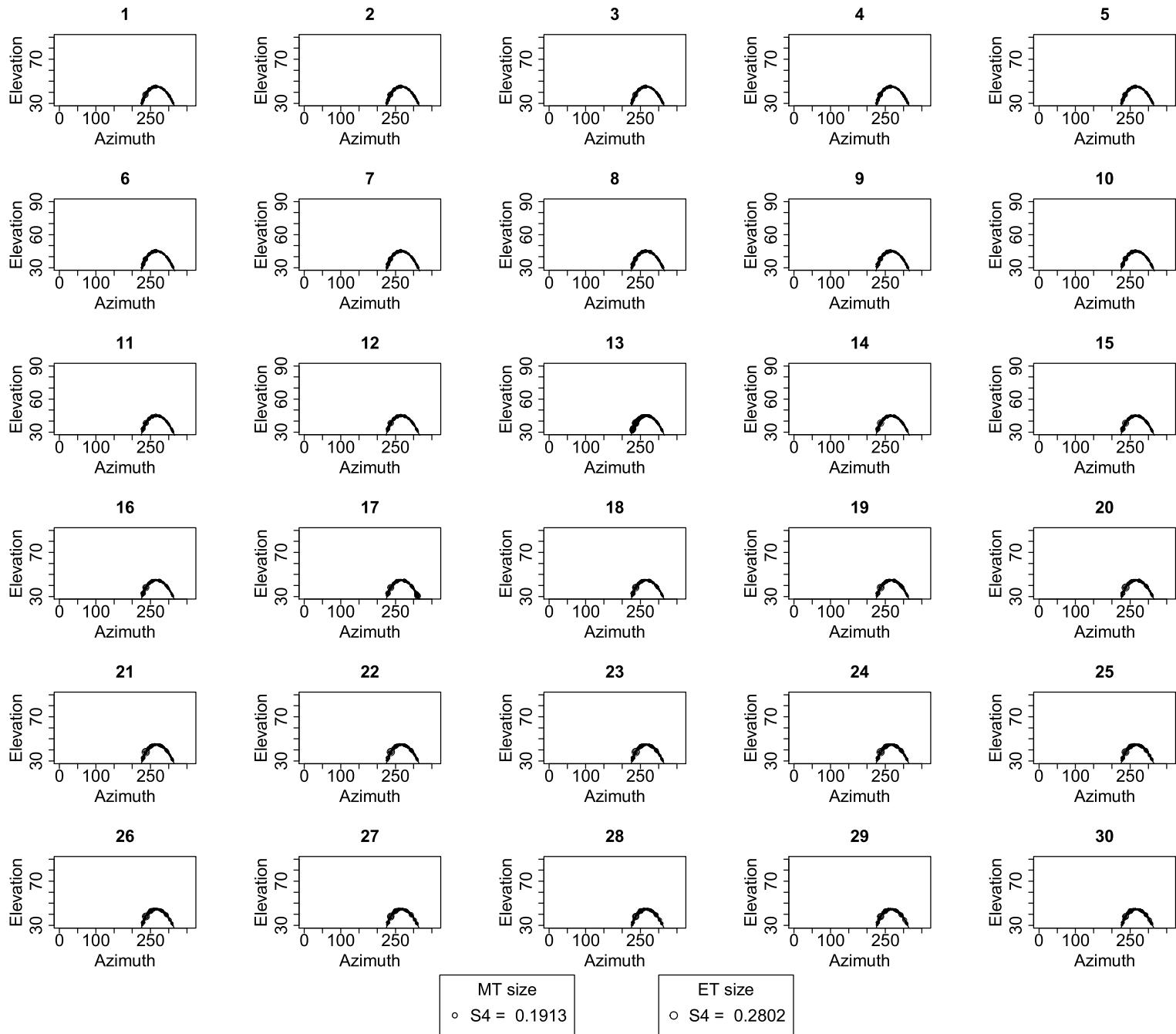


Figure S124 PEA plots comparison of S4 for G26 on September 1–30, 2017 at SAOOP station

PEA plots (G27)

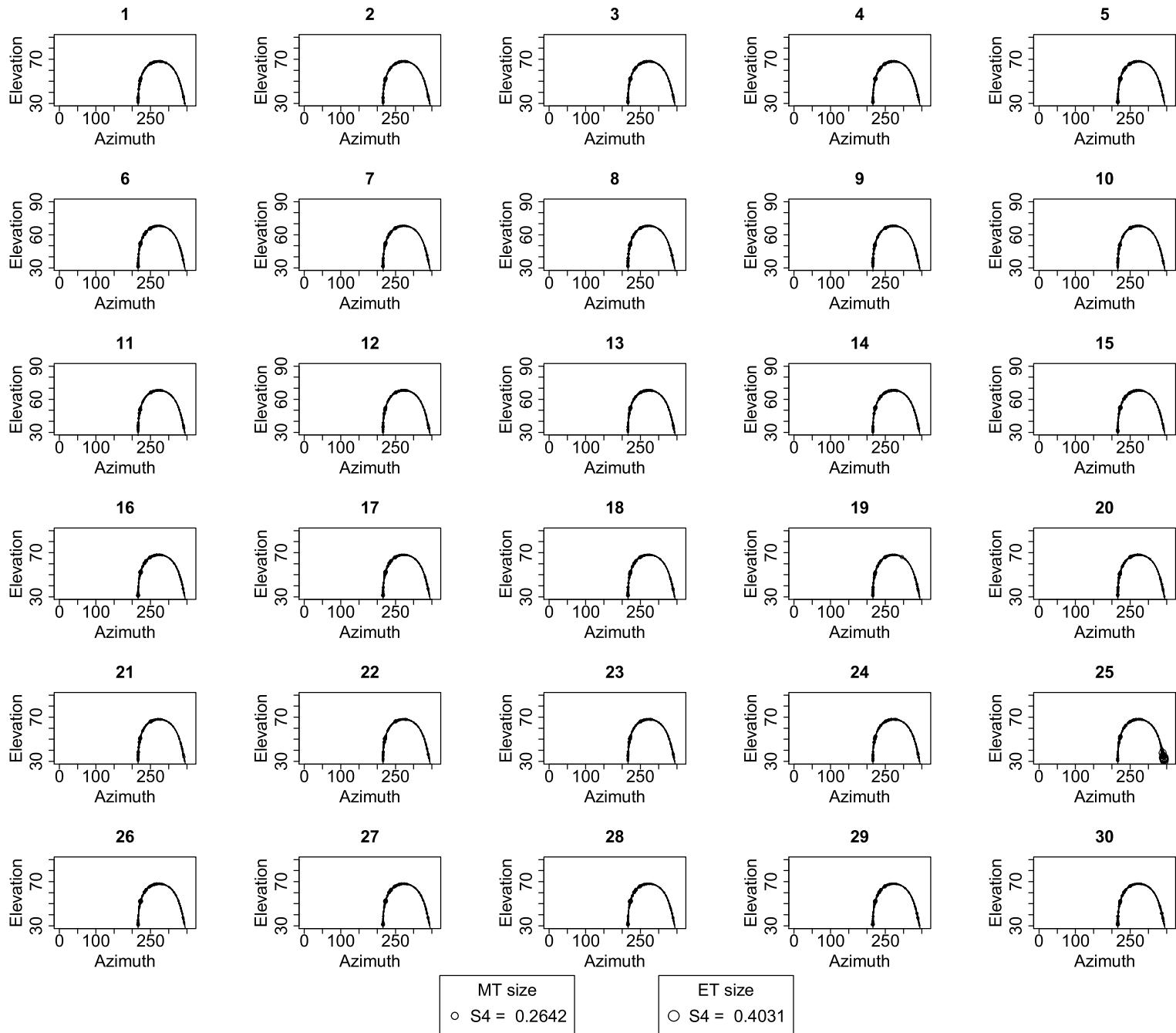


Figure S125 PEA plots comparison of S4 for G27 on September 1–30, 2017 at SAOOP station

PEA plots (G28)

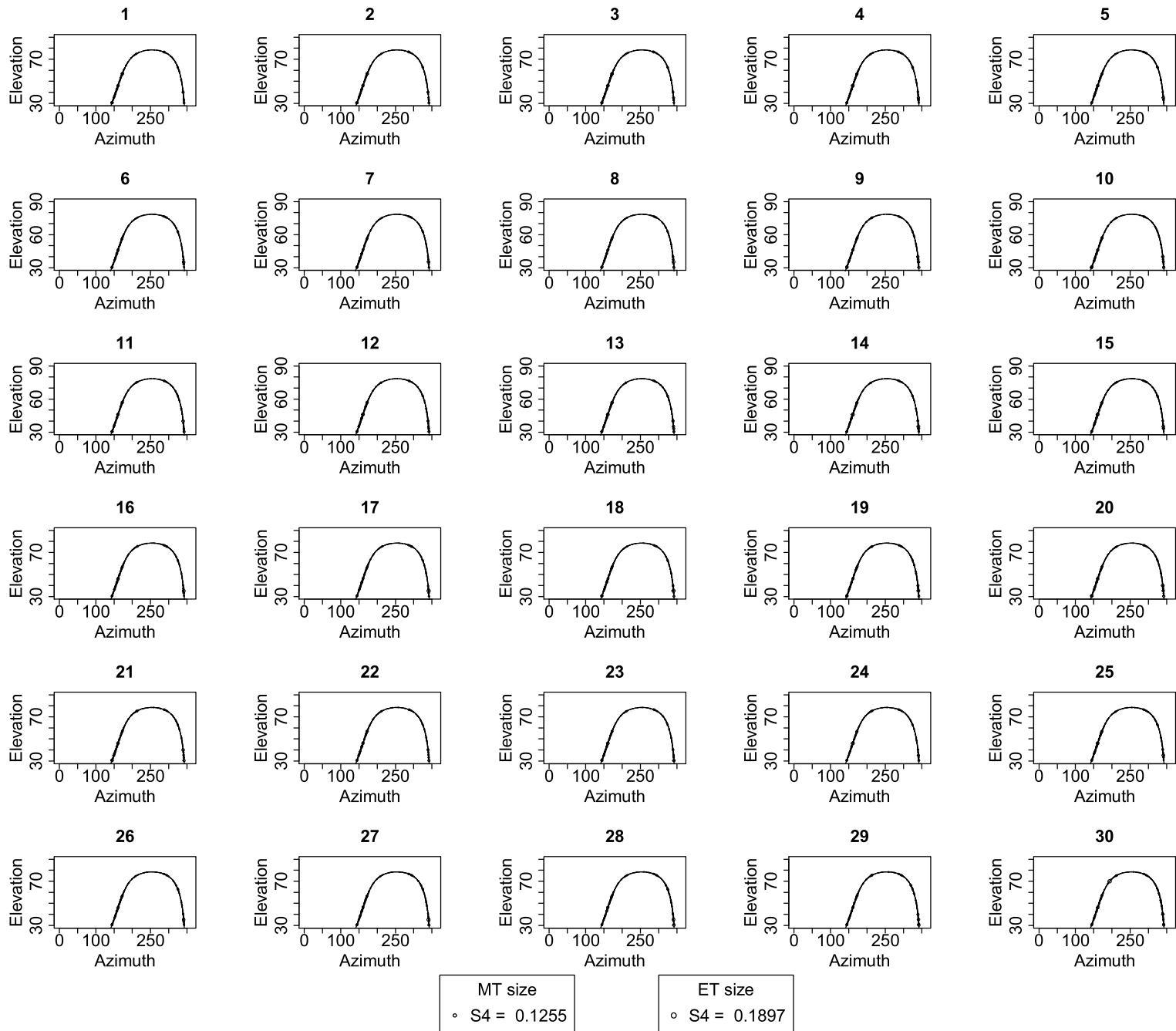


Figure S126 PEA plots comparison of S4 for G28 on September 1–30, 2017 at SAOOP station

PEA plots (G29)

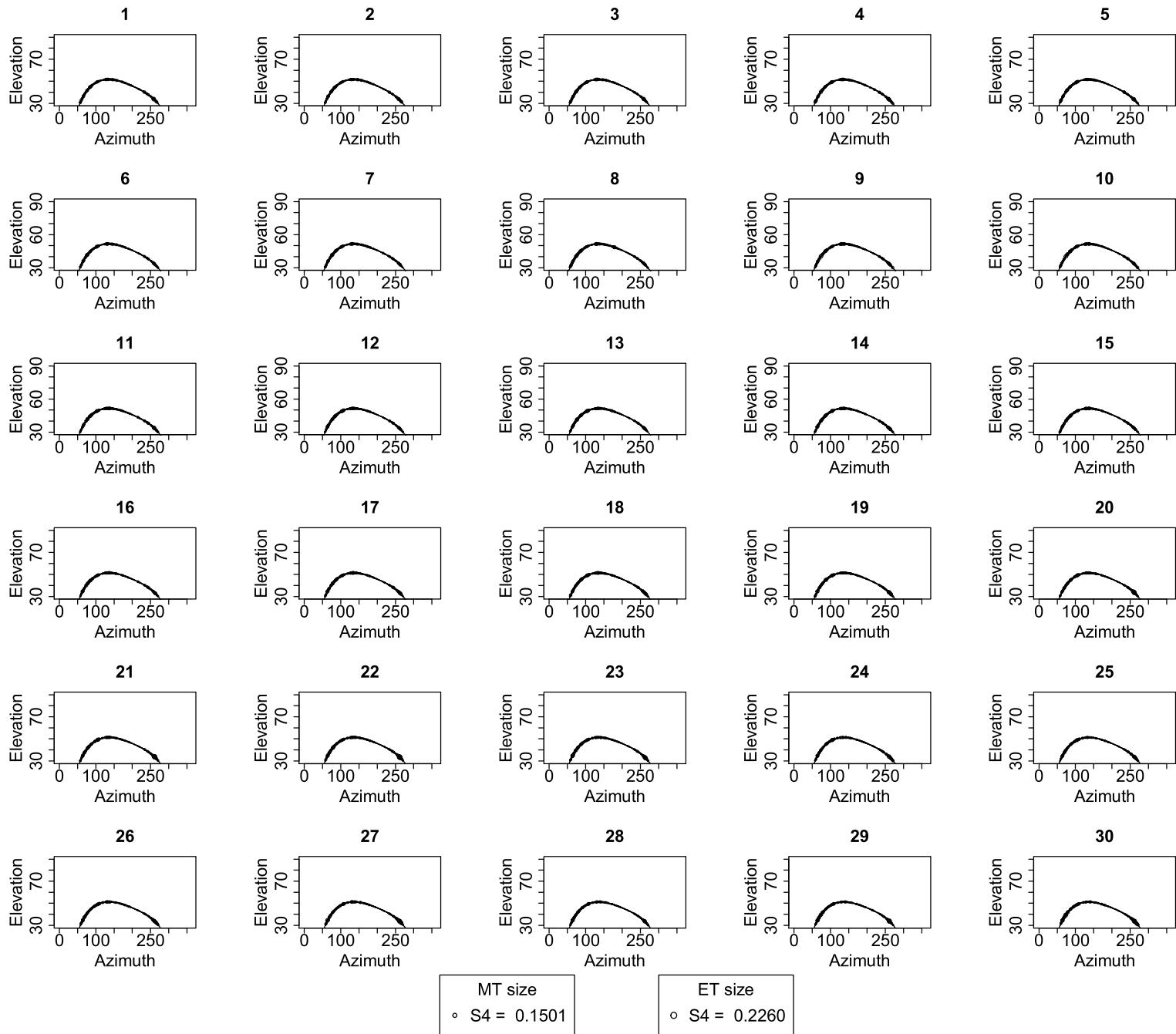


Figure S127 PEA plots comparison of S4 for G29 on September 1–30, 2017 at SAOOP station

PEA plots (G30)

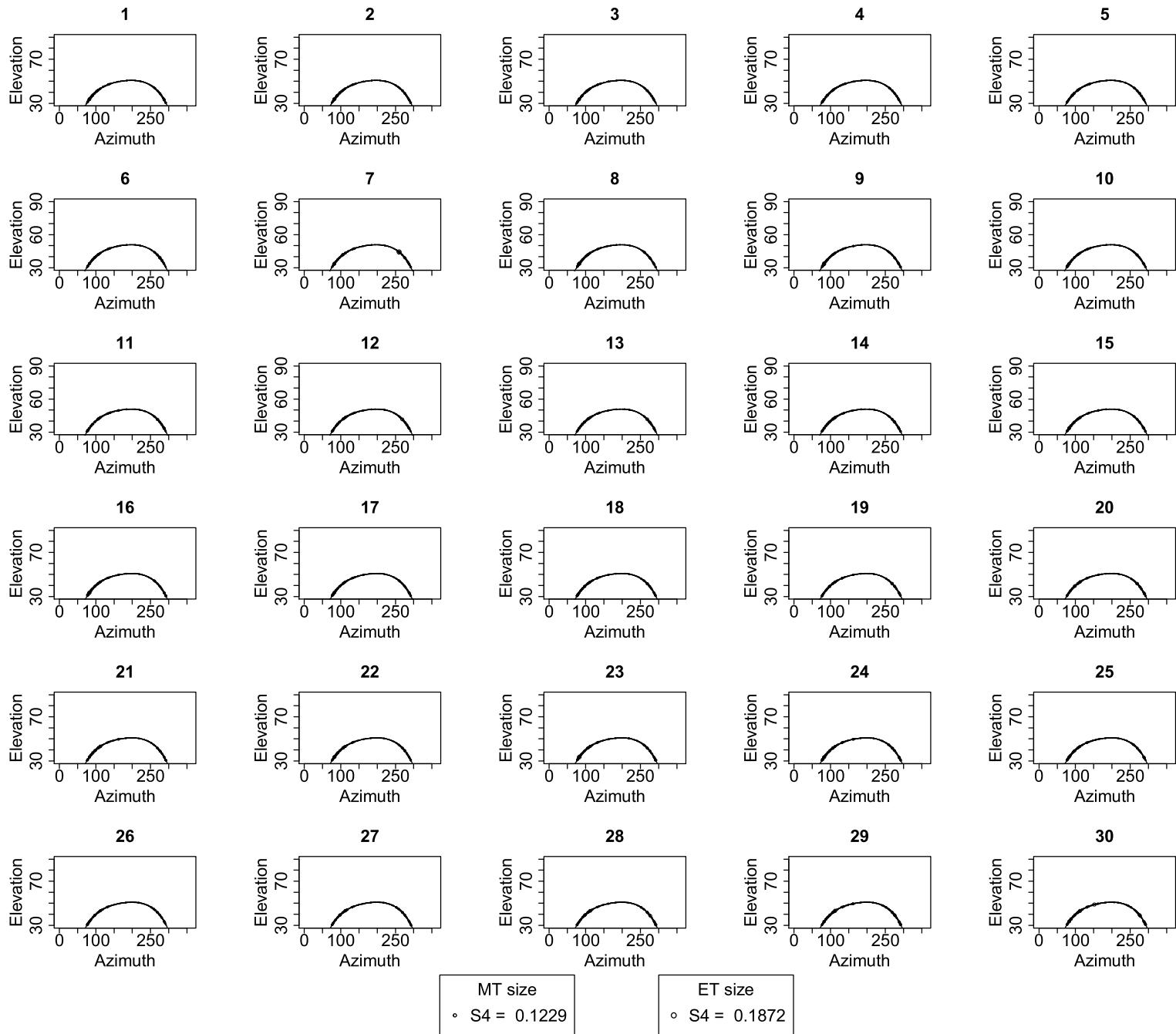


Figure S128 PEA plots comparison of S4 for G30 on September 1–30, 2017 at SAOOP station

PEA plots (G31)

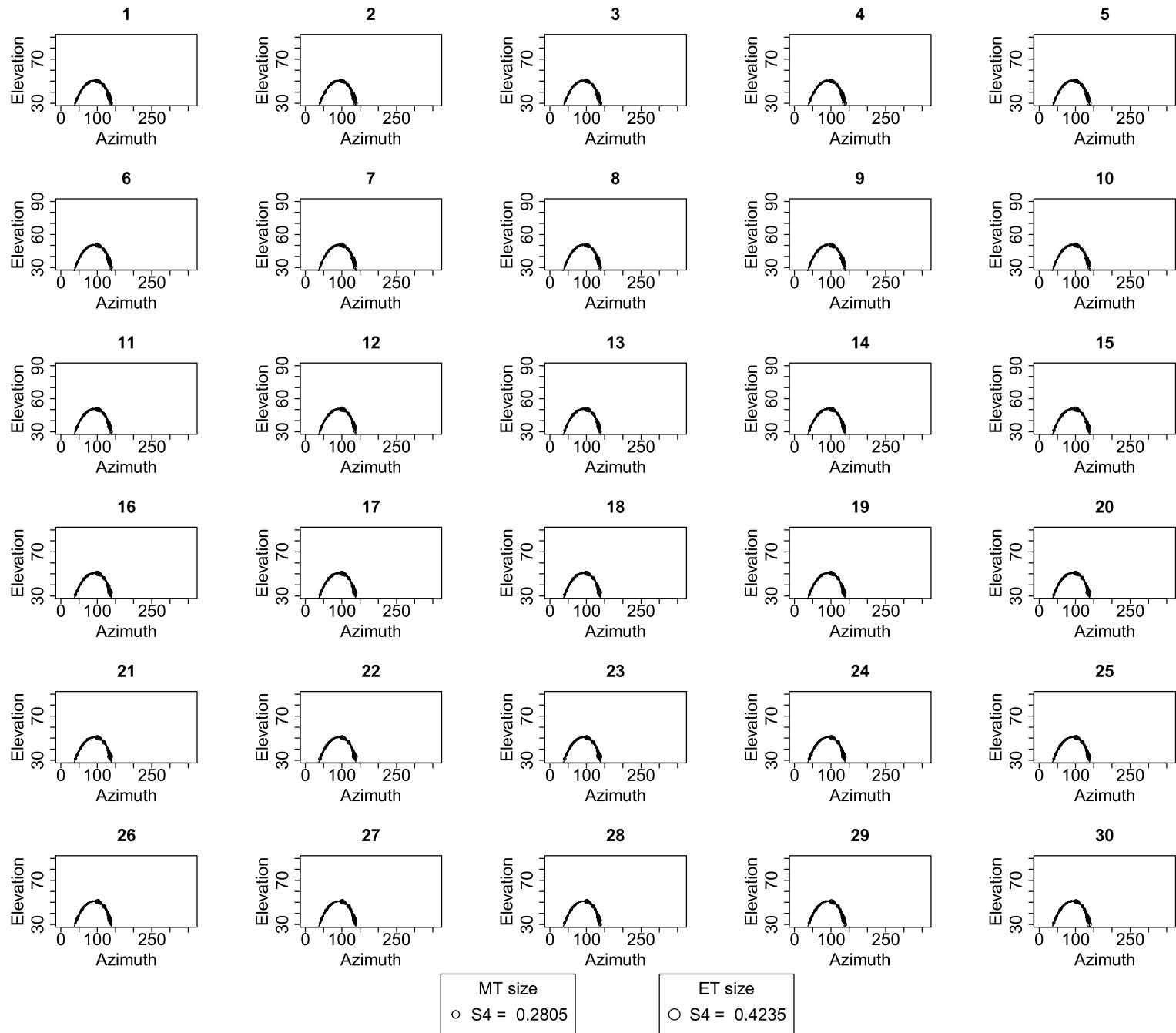


Figure S129 PEA plots comparison of S4 for G31 on September 1–30, 2017 at SAOOP station

PEA plots (G32)

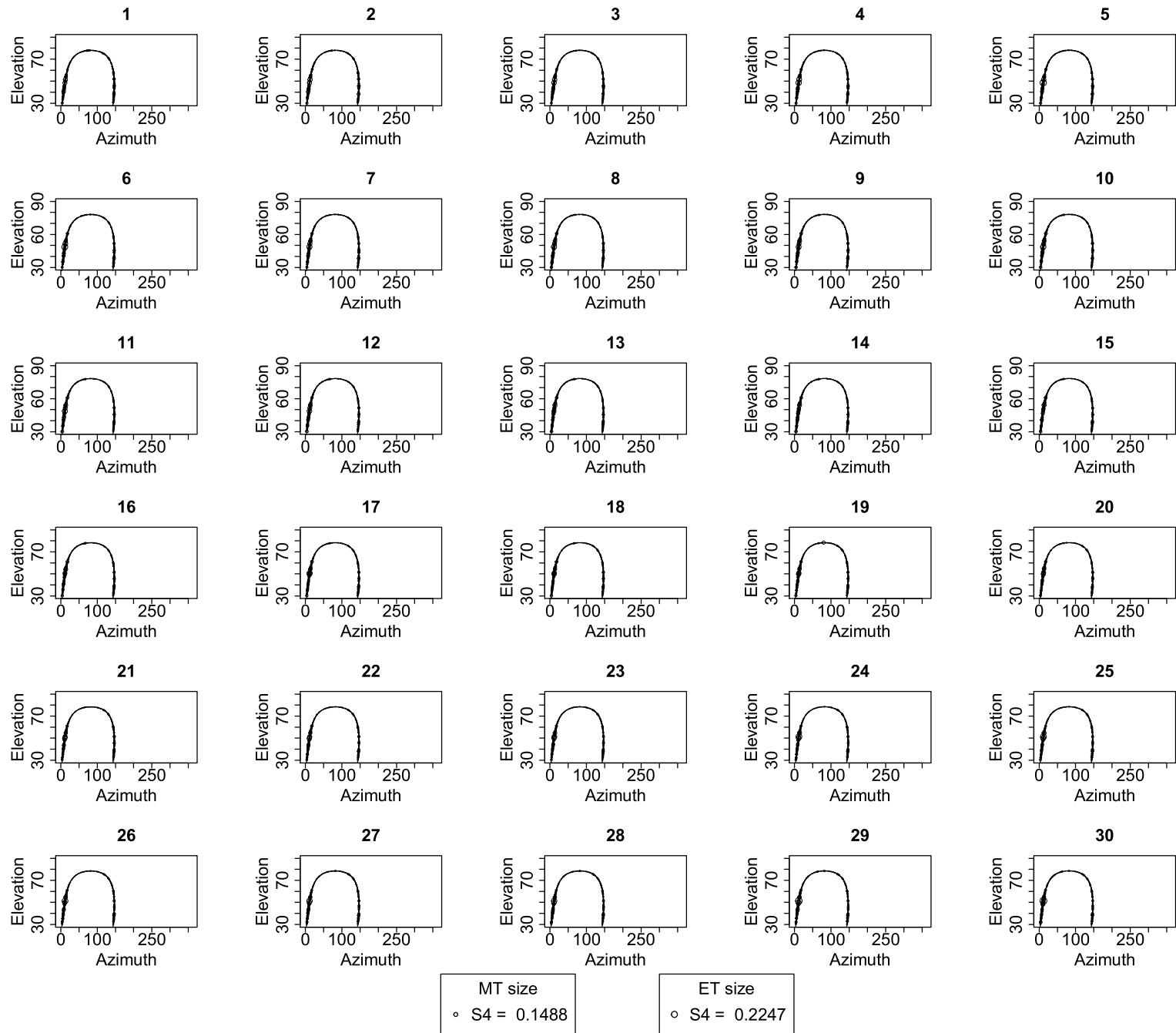


Figure S130 PEA plots comparison of S4 for G32 on September 1–30, 2017 at SAOOP station

PEA plots (G1)

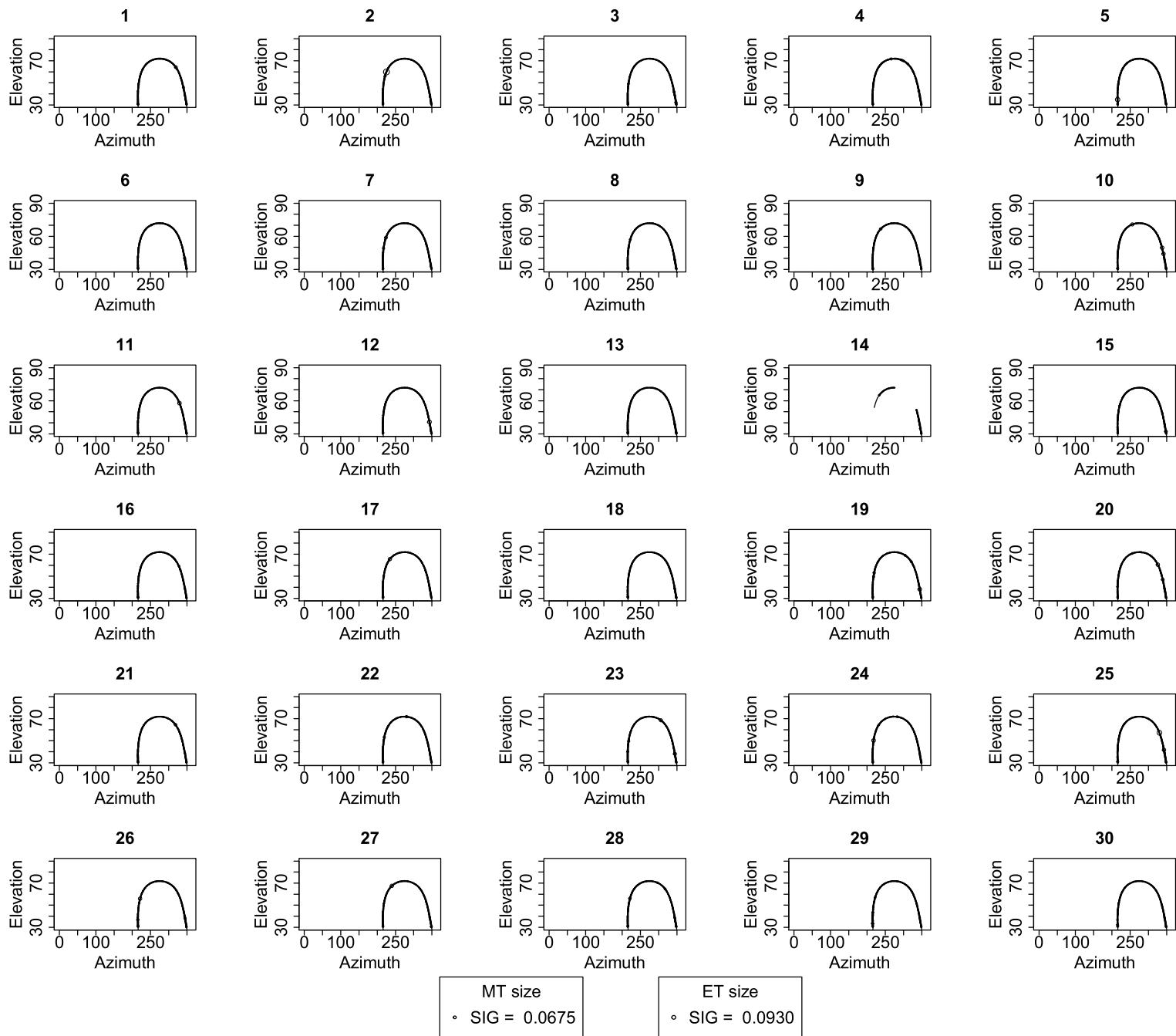


Figure S131 PEA plots comparison of Sigmaphi for G1 on September 1–30, 2017 at SAOOP station

PEA plots (G2)

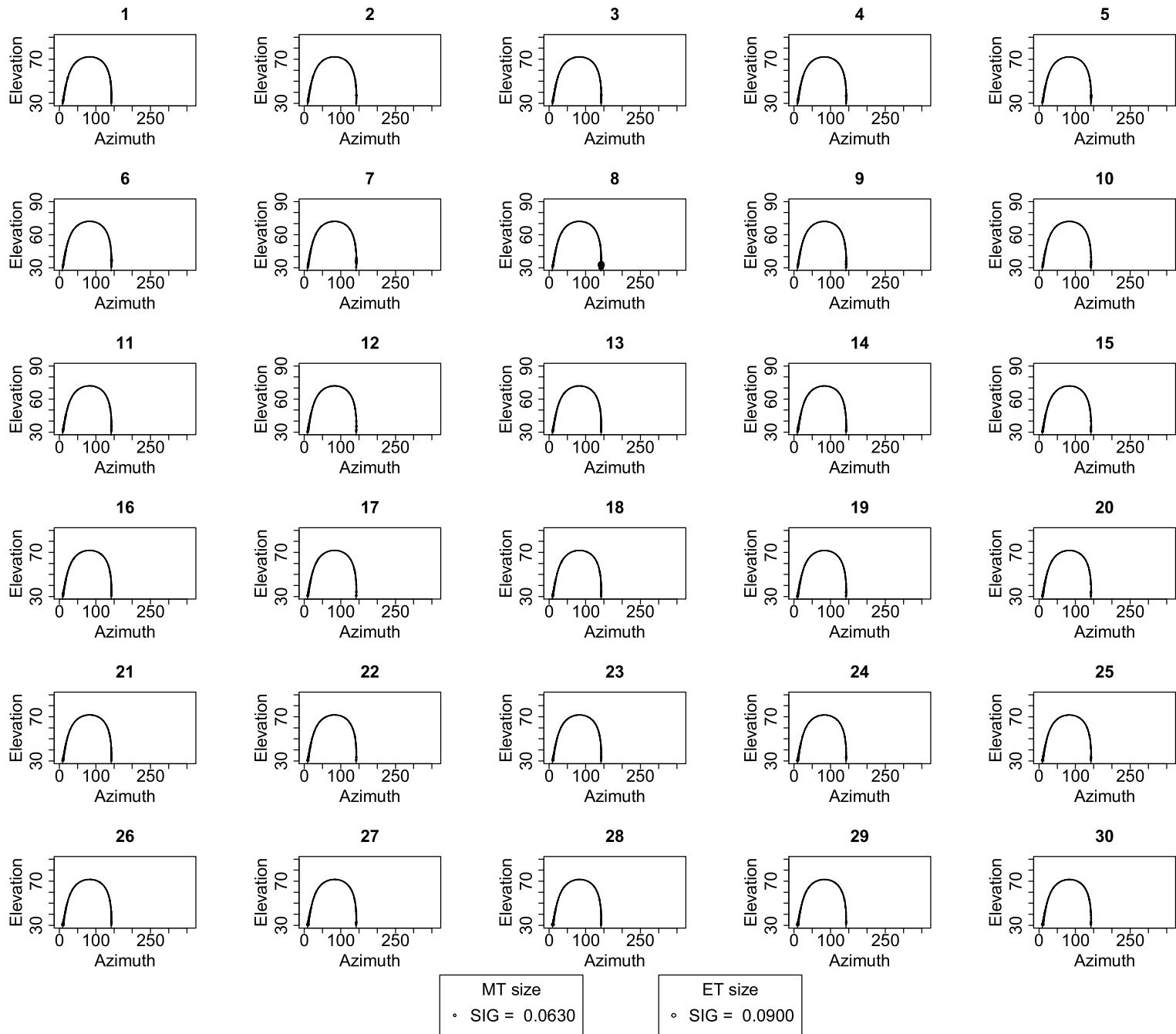


Figure S132 PEA plots comparison of Sigmaphi for G2 on September 1–30, 2017 at SAOOP station

PEA plots (G3)

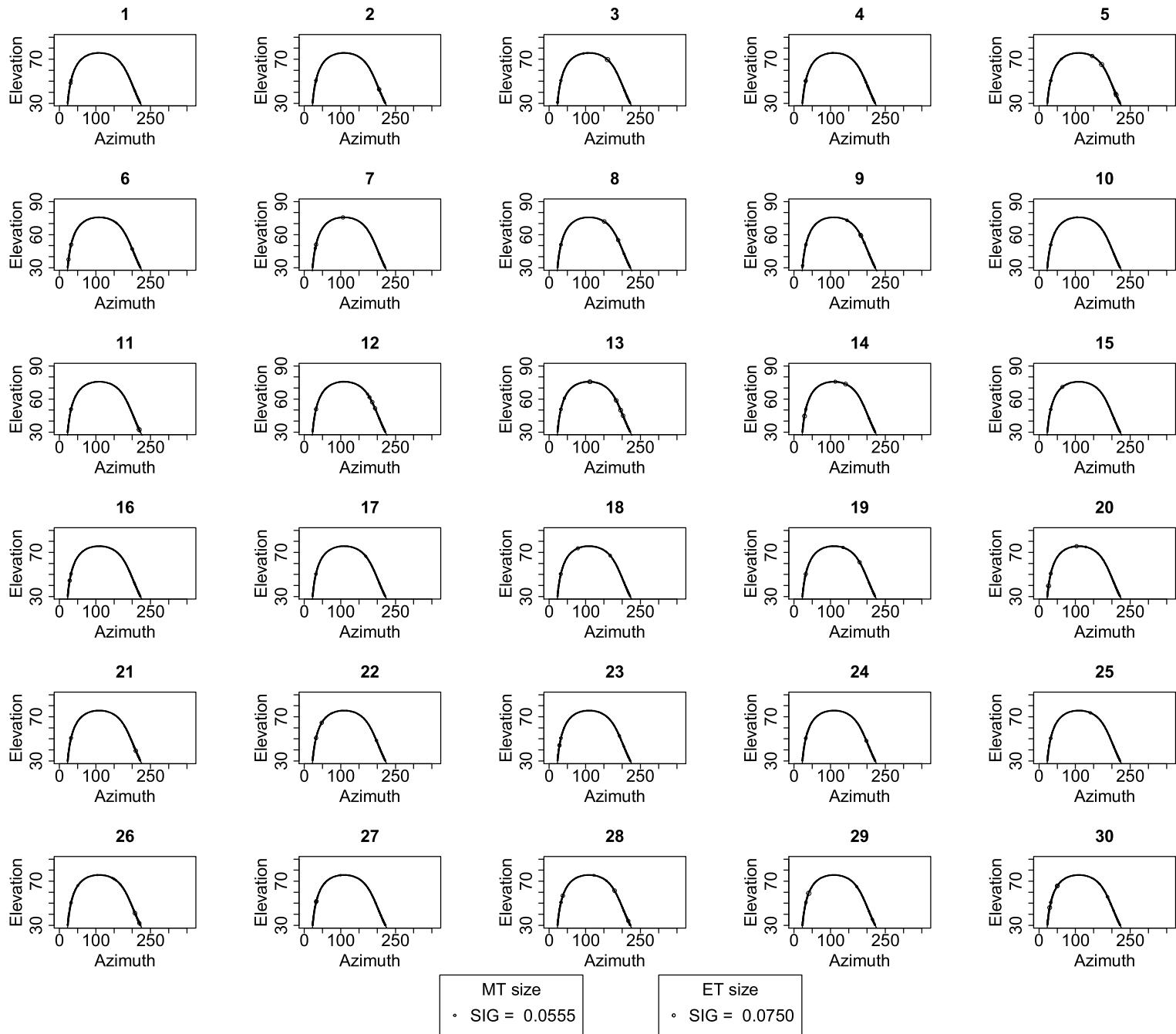


Figure S133 PEA plots comparison of Sigmaphi for G3 on September 1–30, 2017 at SAOOP station

PEA plots (G4)

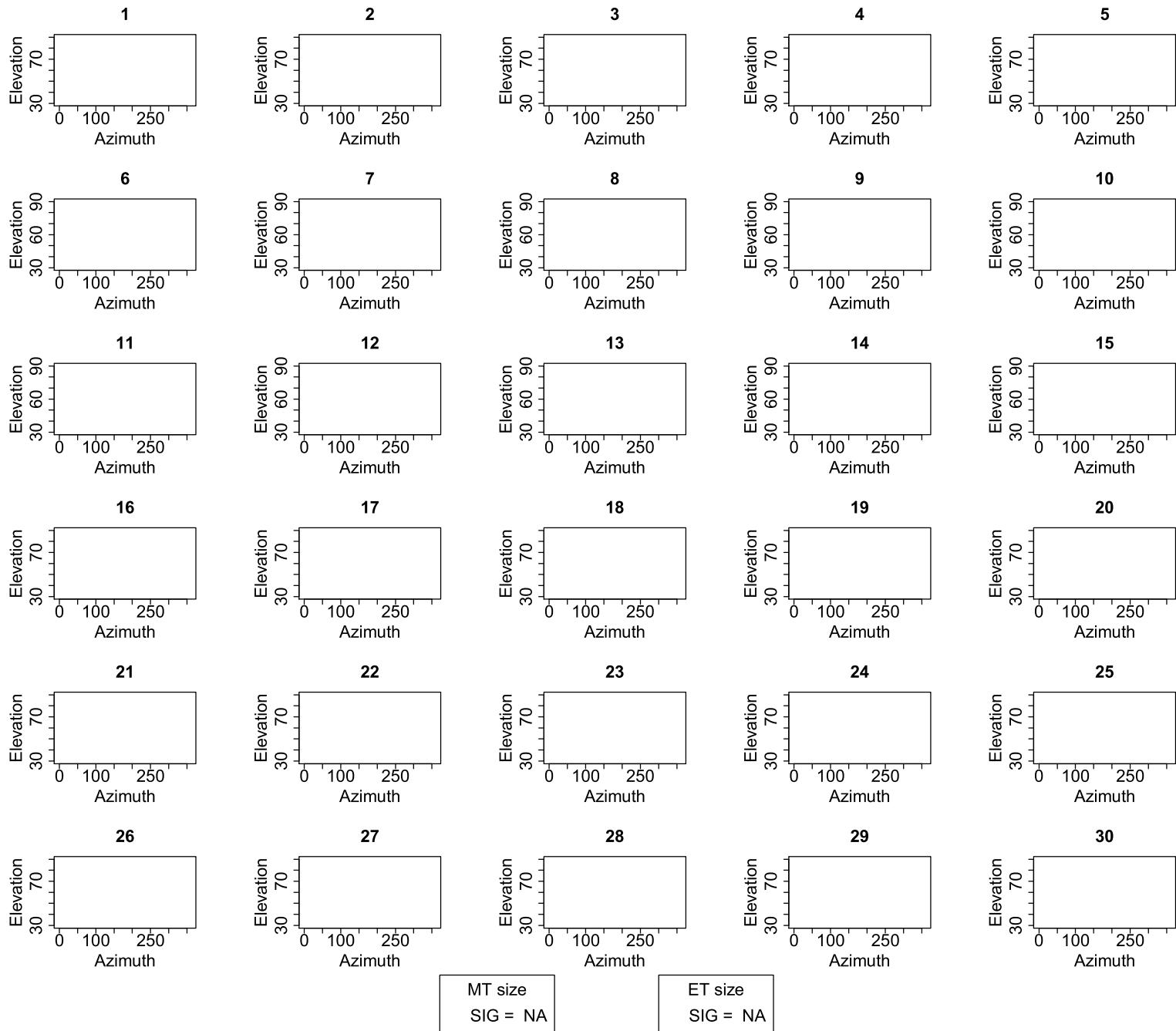


Figure S134 PEA plots comparison of Sigmaphi for G4 on September 1–30, 2017 at SAO0P station

PEA plots (G5)

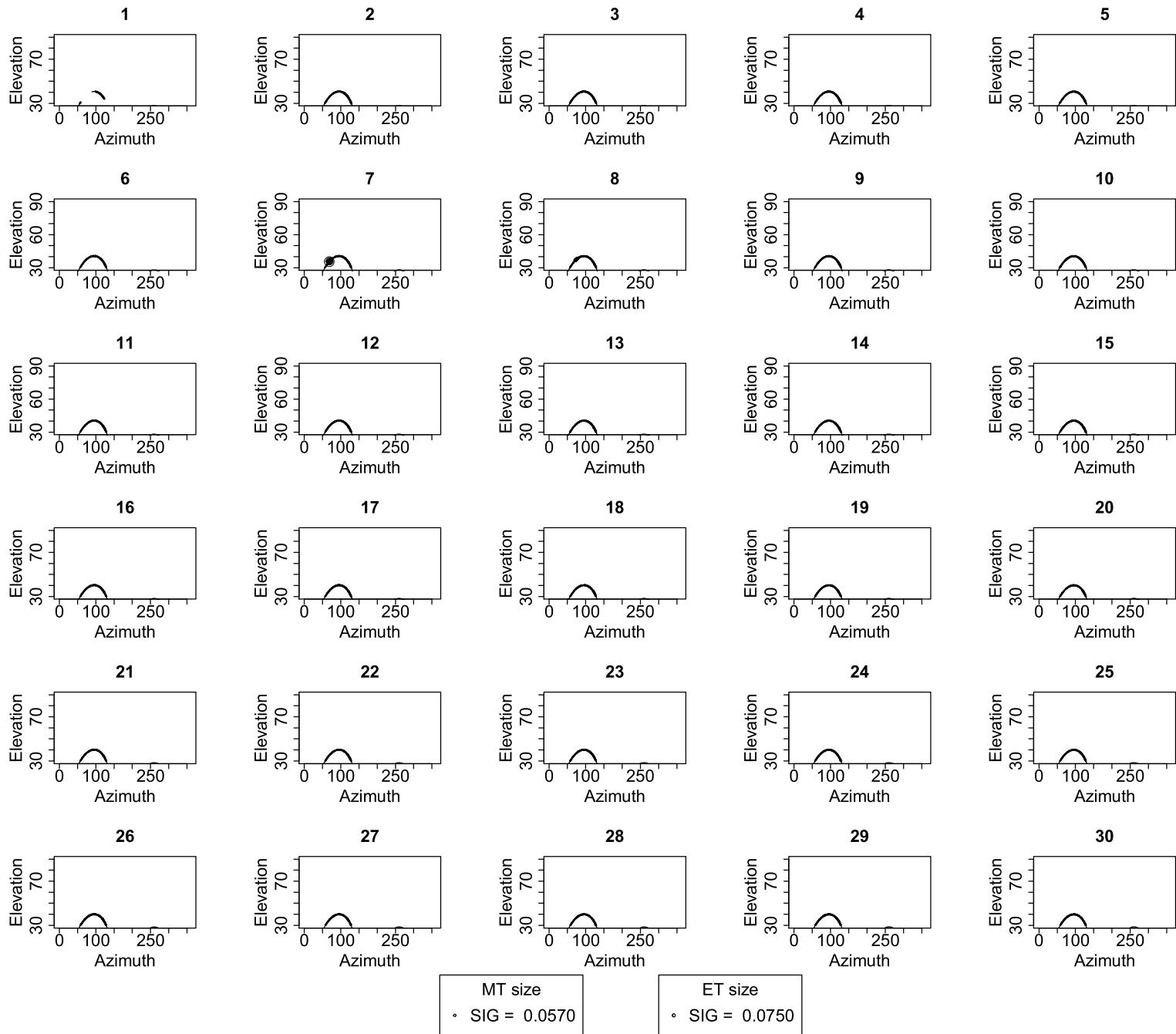


Figure S135 PEA plots comparison of Sigmaphi for G5 on September 1–30, 2017 at SAOOP station

PEA plots (G6)

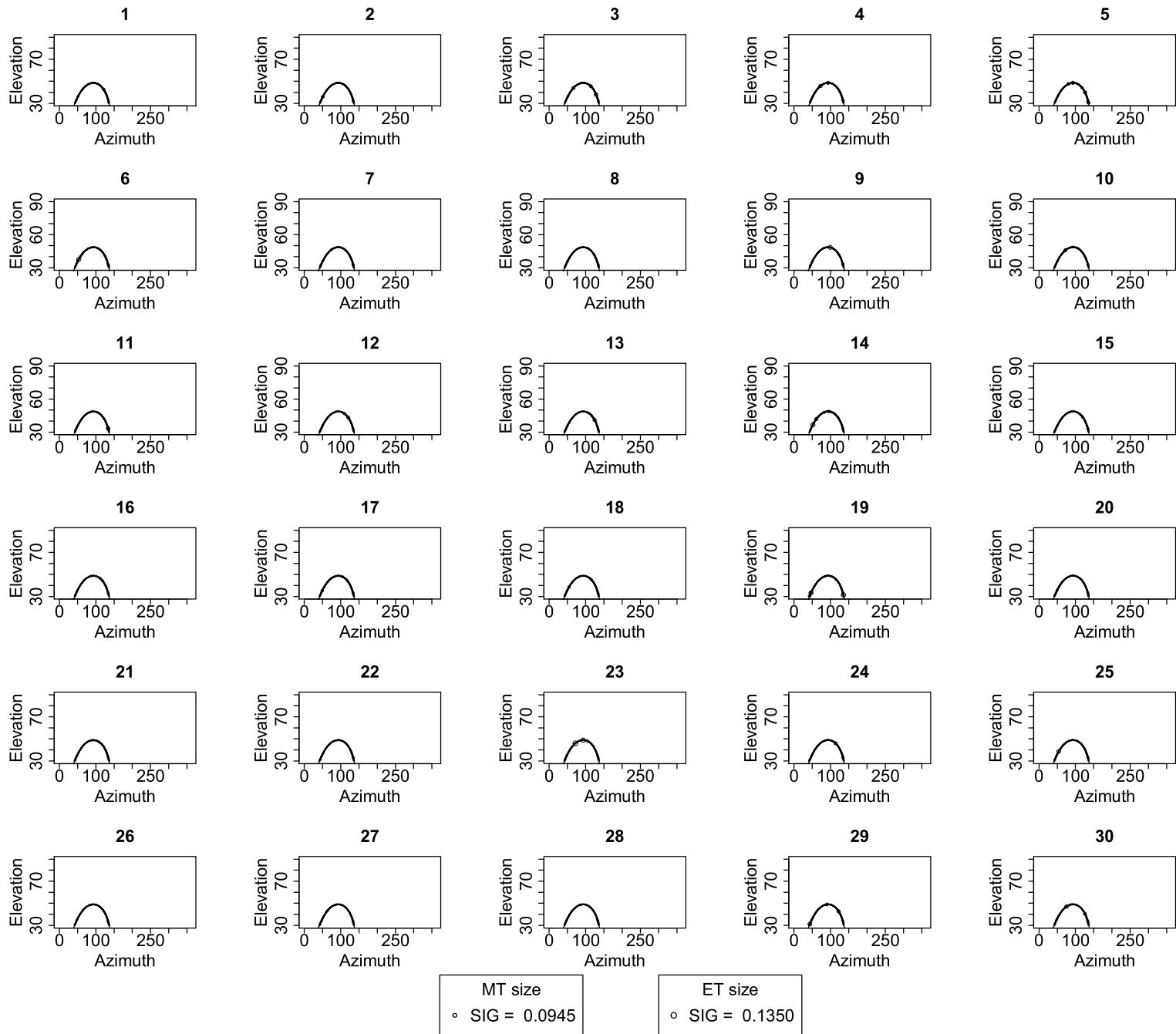


Figure S136 PEA plots comparison of Sigmaphi for G6 on September 1–30, 2017 at SAOOP station

PEA plots (G7)

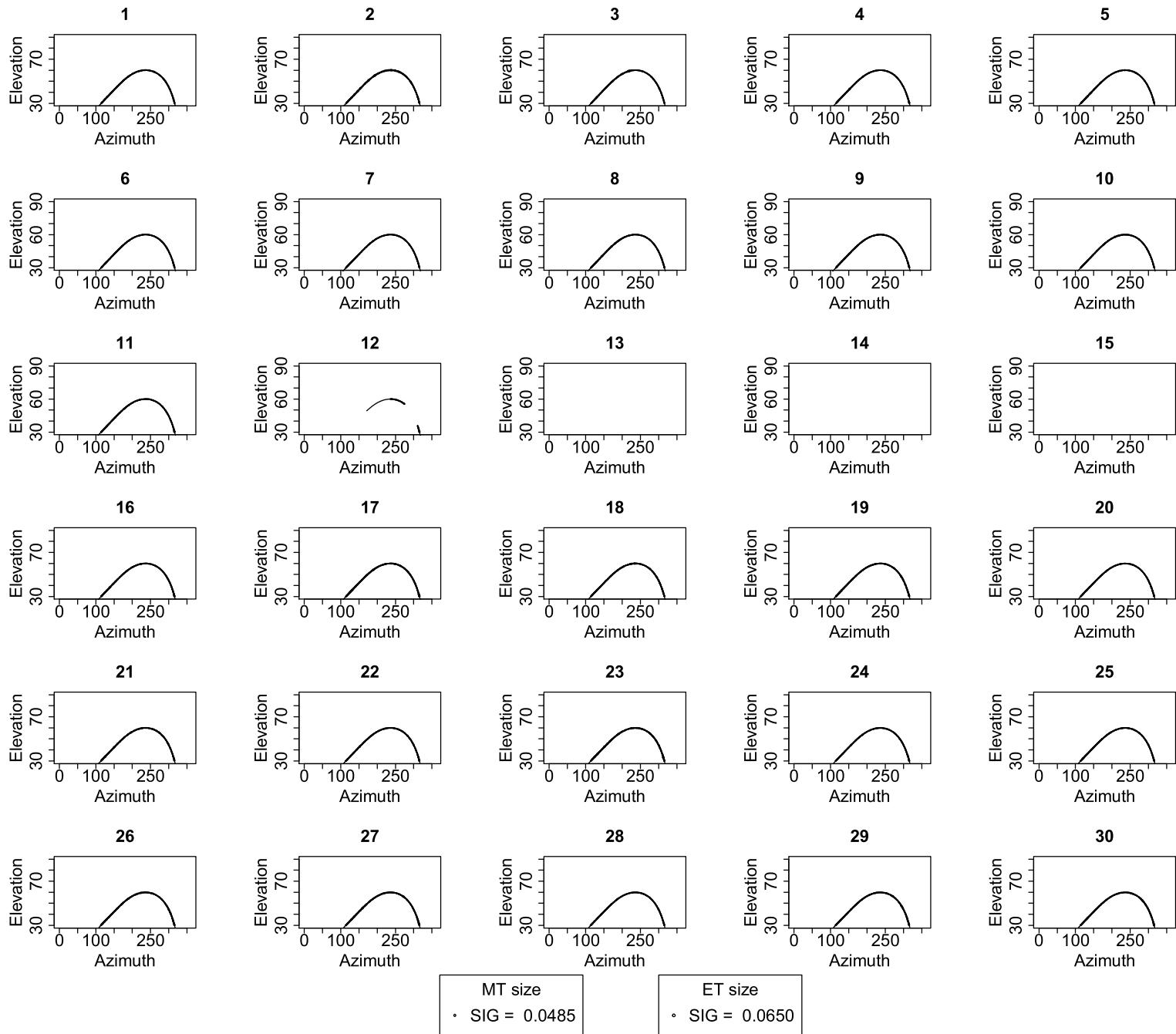


Figure S137 PEA plots comparison of Sigmaphi for G7 on September 1–30, 2017 at SAOOP station

PEA plots (G8)

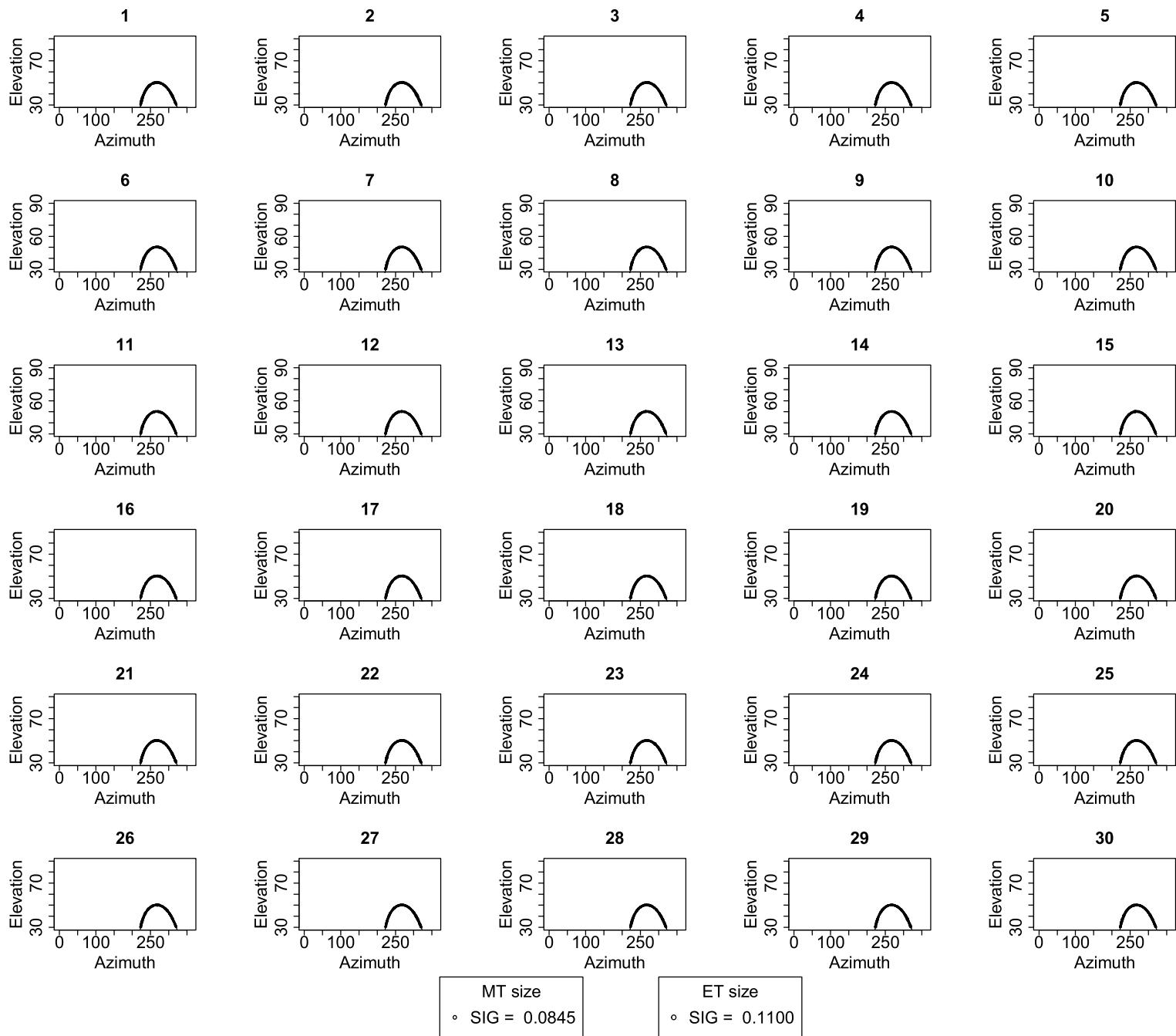


Figure S138 PEA plots comparison of Sigmaphi for G8 on September 1–30, 2017 at SAOOP station

PEA plots (G9)

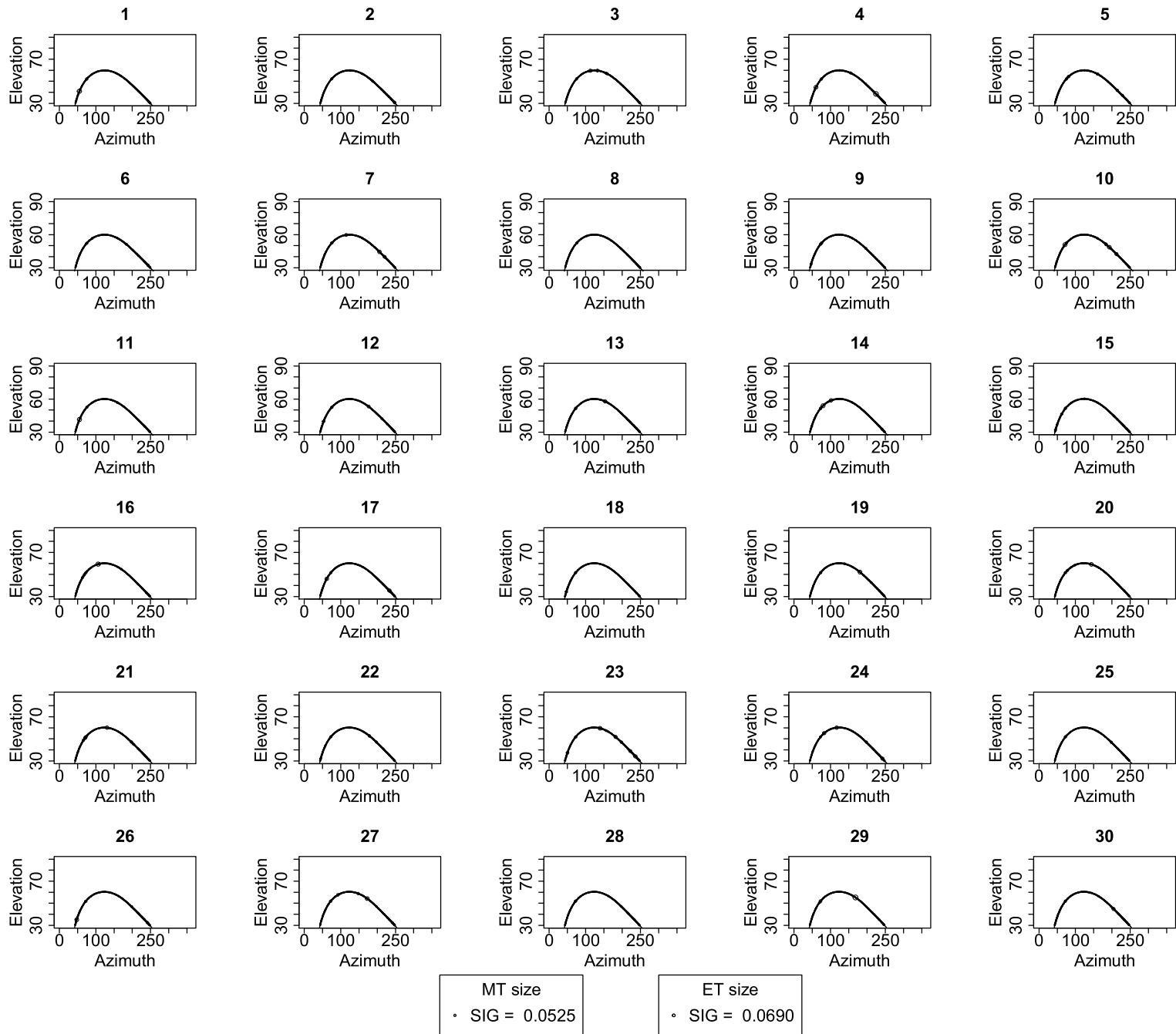


Figure S139 PEA plots comparison of Sigmaphi for G9 on September 1–30, 2017 at SAOOP station

PEA plots (G10)

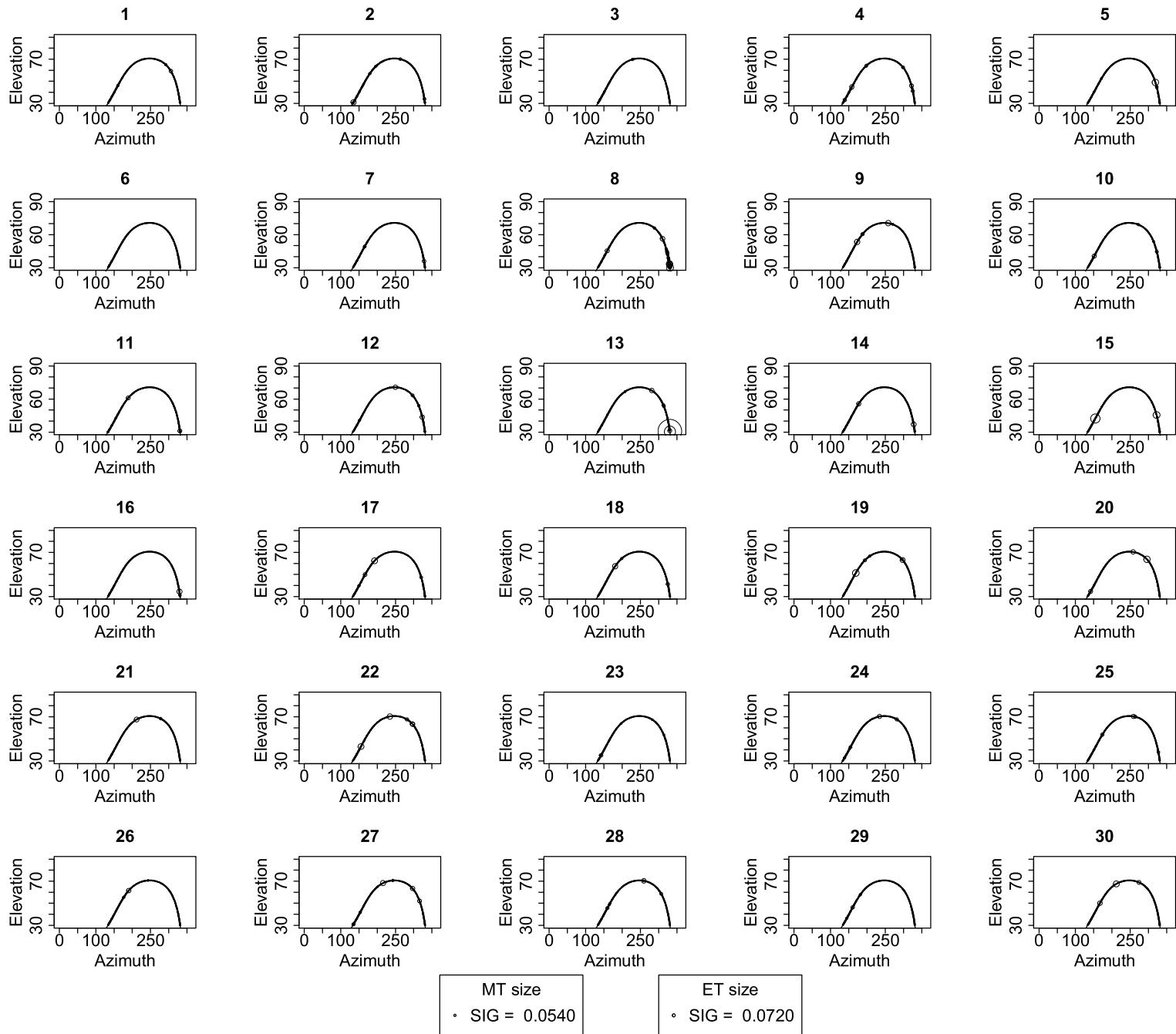


Figure S140 PEA plots comparison of Sigmaphi for G10 on September 1–30, 2017 at SAOOP station

PEA plots (G11)

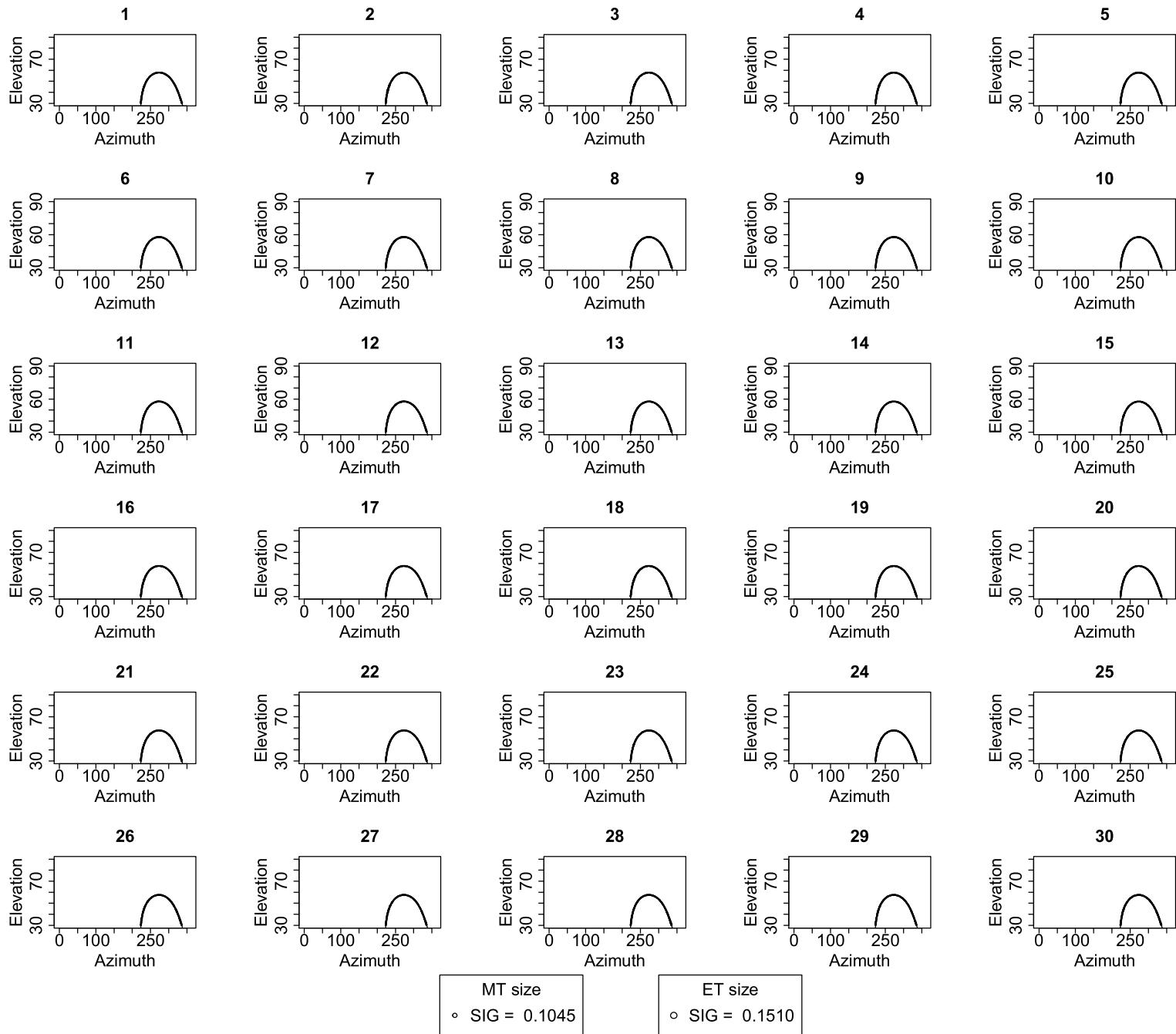


Figure S141 PEA plots comparison of Sigmaphi for G11 on September 1–30, 2017 at SAOOP station

PEA plots (G12)

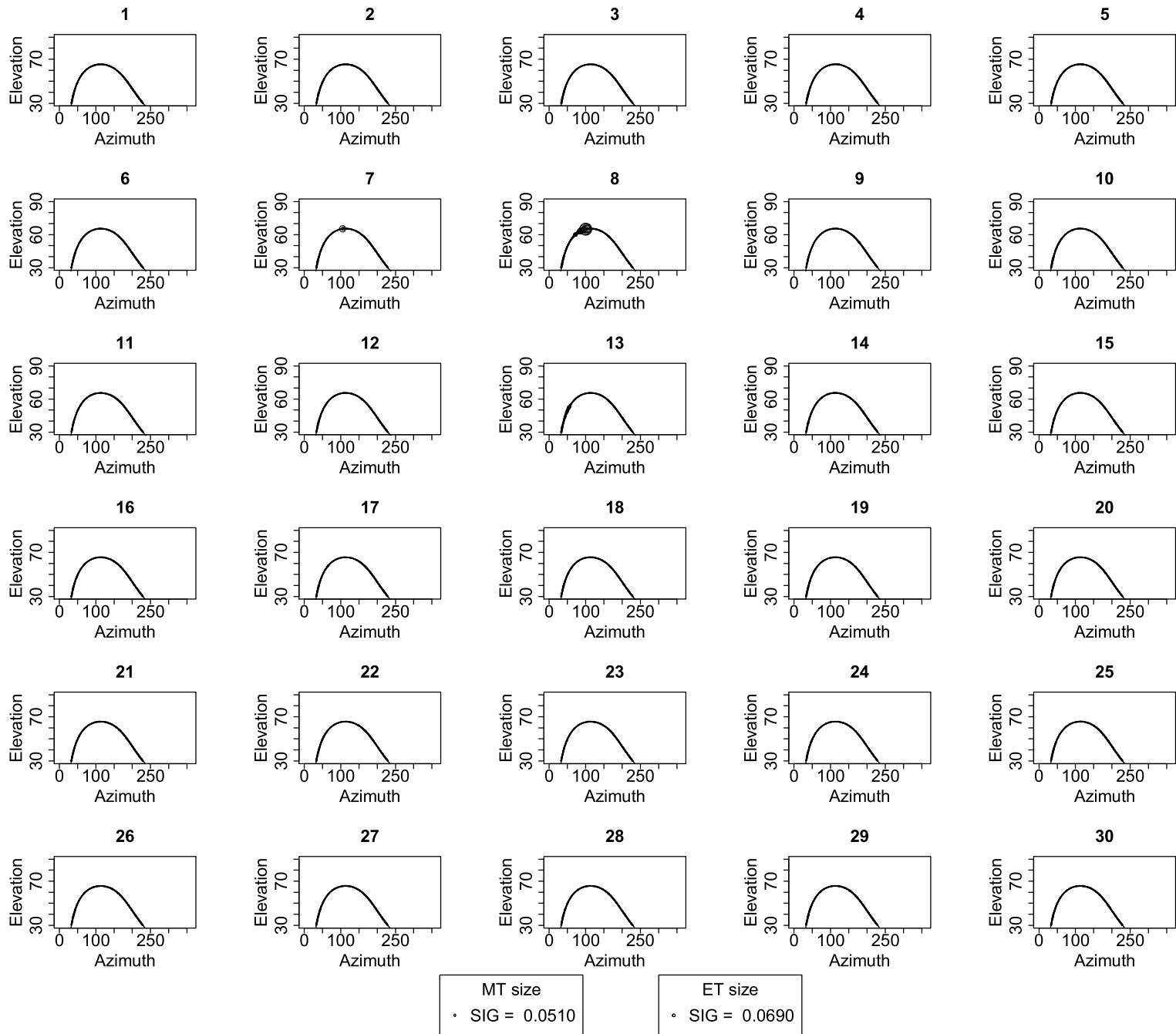


Figure S142 PEA plots comparison of Sigmaphi for G12 on September 1–30, 2017 at SAOOP station

PEA plots (G13)

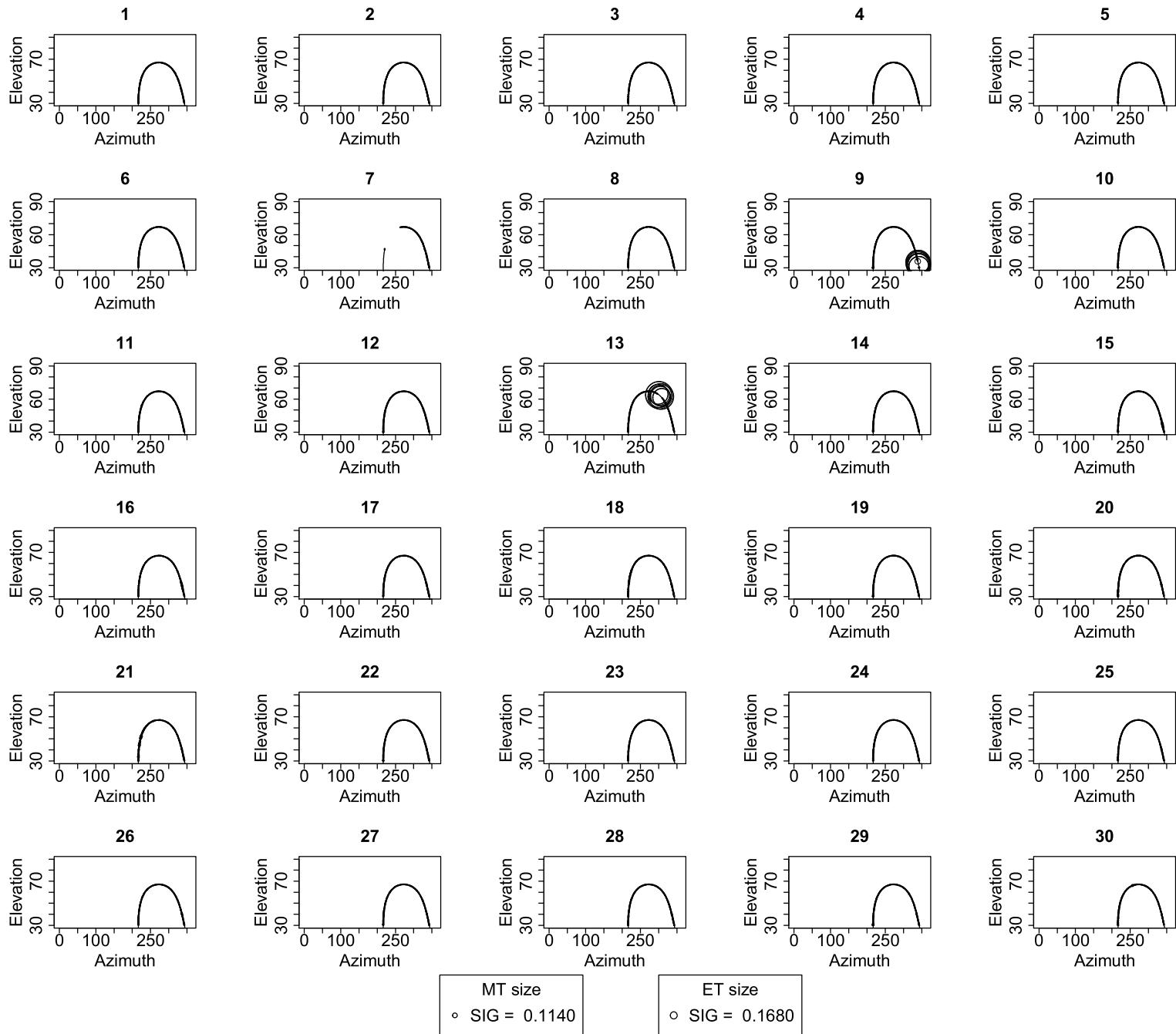


Figure S143 PEA plots comparison of Sigmaphi for G13 on September 1–30, 2017 at SAOOP station

PEA plots (G14)

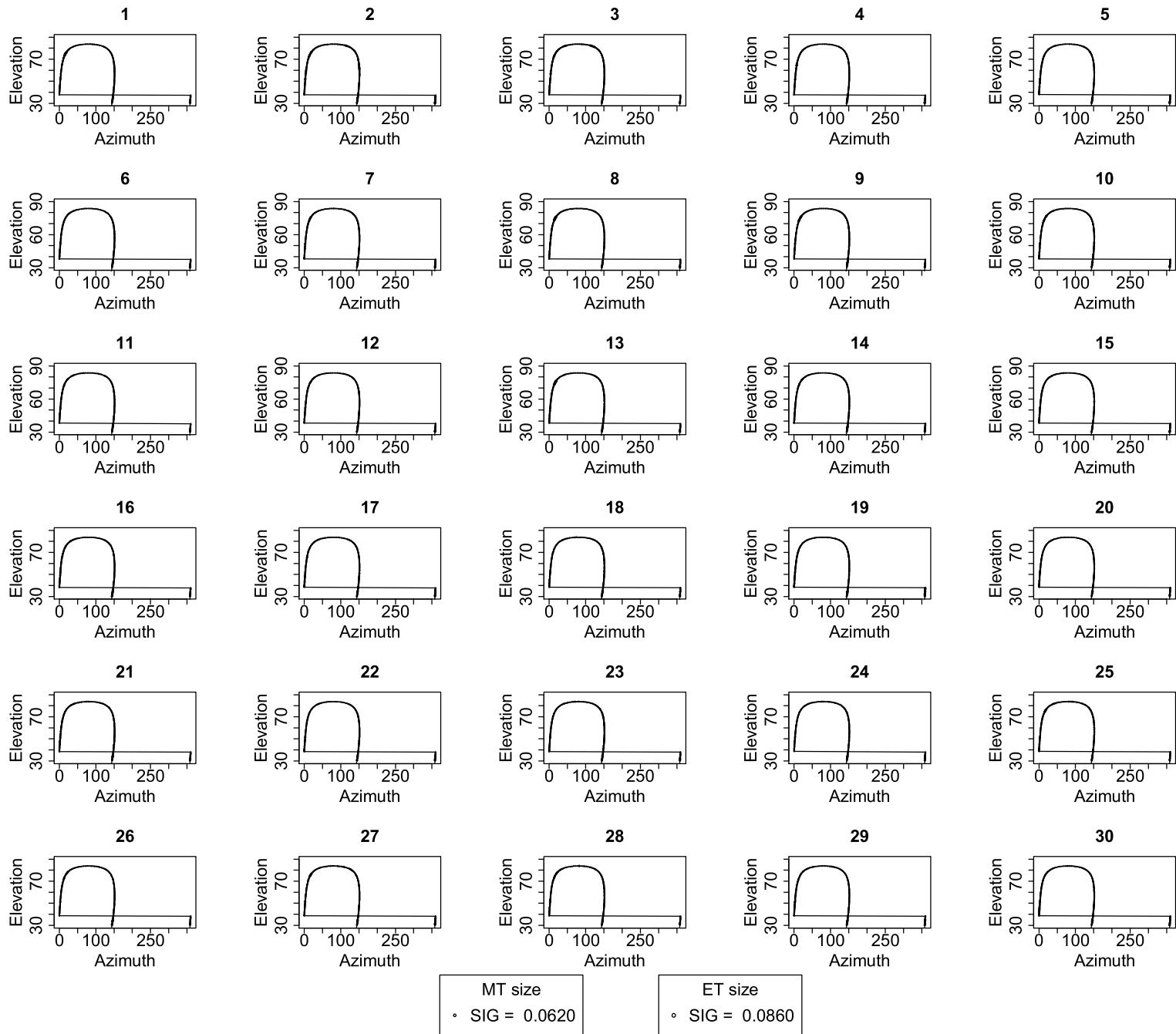


Figure S144 PEA plots comparison of Sigmaphi for G14 on September 1–30, 2017 at SAOOP station

PEA plots (G15)

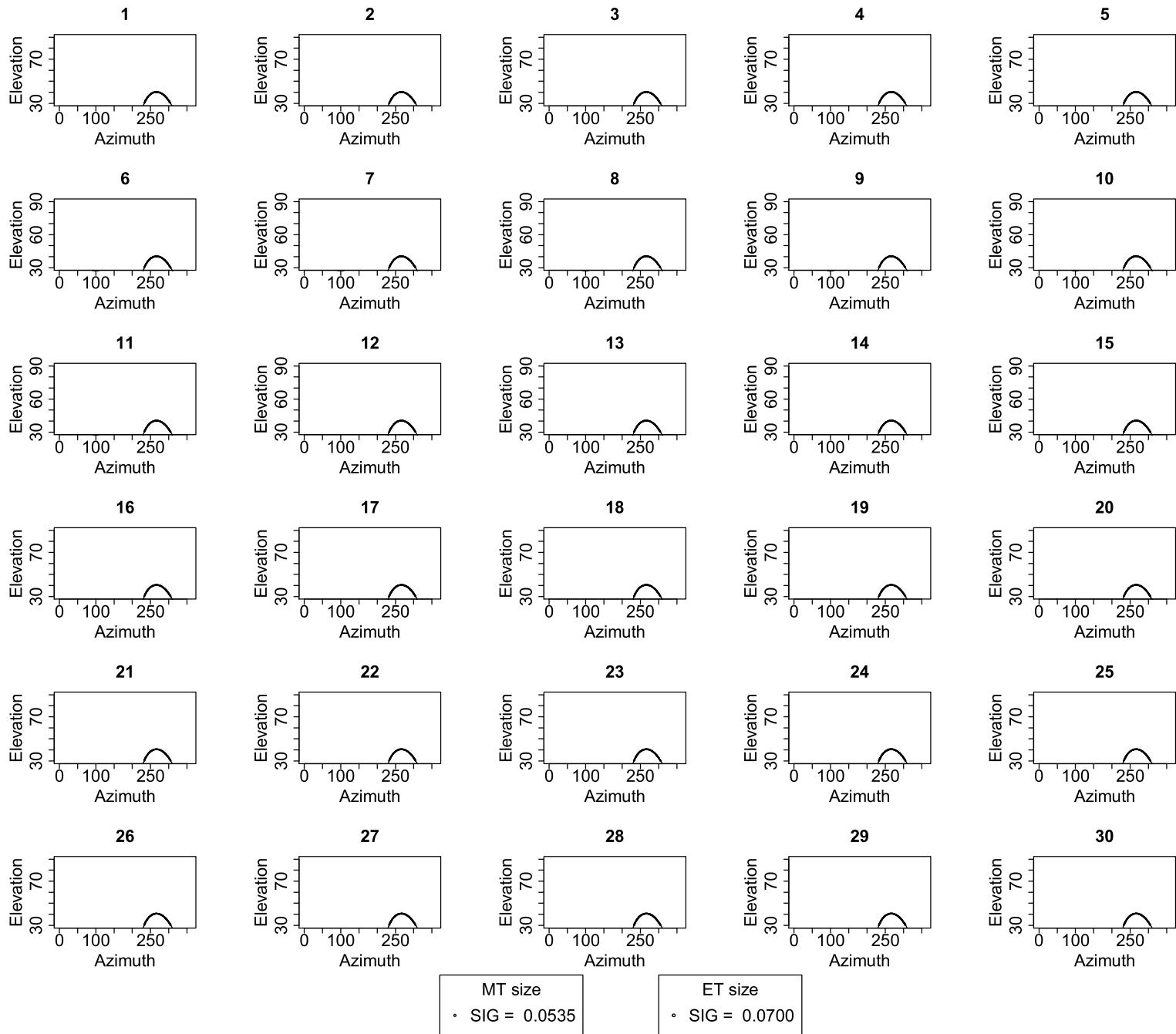


Figure S145 PEA plots comparison of Sigmaphi for G15 on September 1–30, 2017 at SAOOP station

PEA plots (G16)

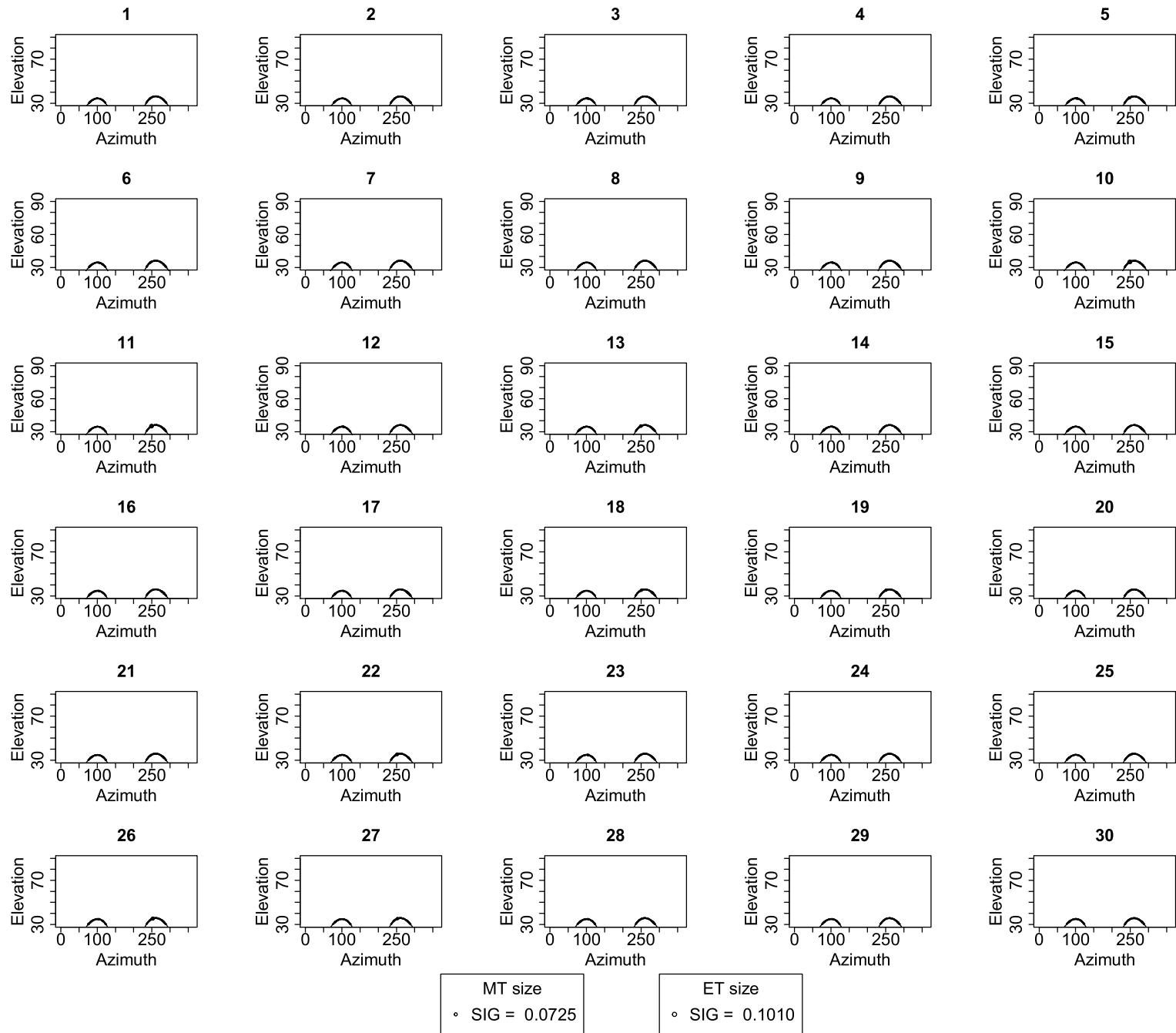


Figure S146 PEA plots comparison of Sigmaphi for G16 on September 1–30, 2017 at SAOOP station

PEA plots (G17)

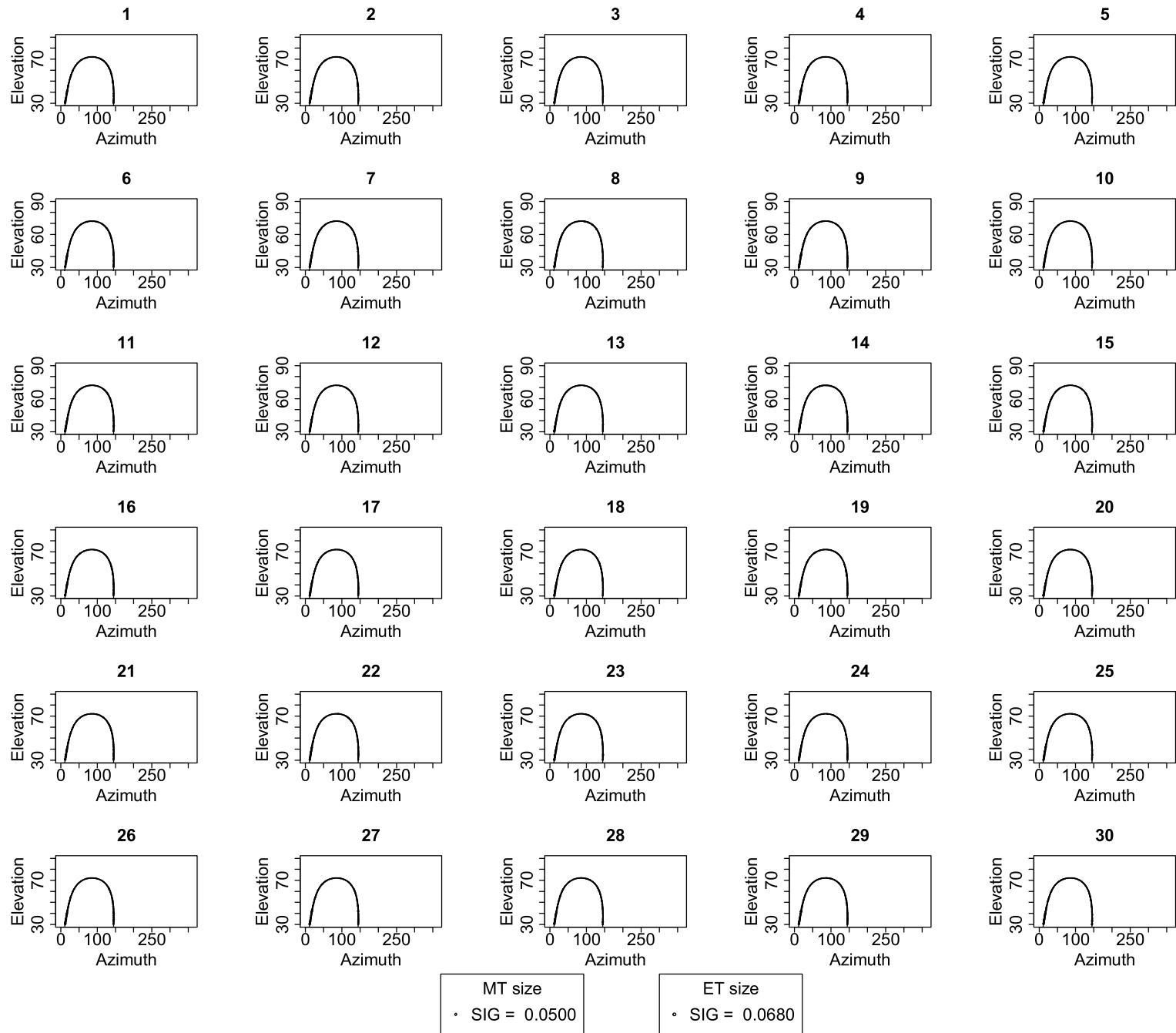


Figure S147 PEA plots comparison of Sigmaphi for G17 on September 1–30, 2017 at SAOOP station

PEA plots (G18)

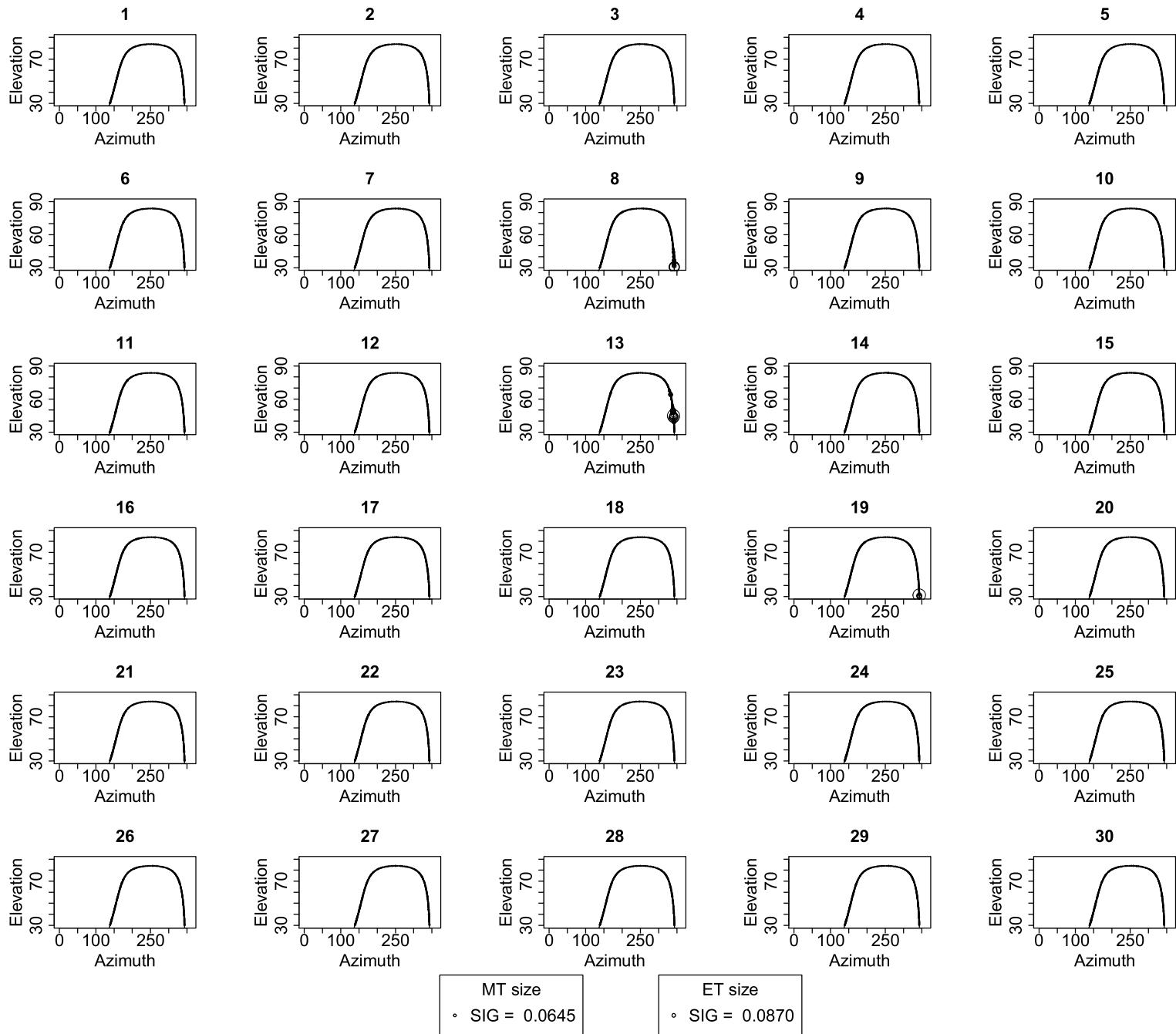


Figure S148 PEA plots comparison of Sigmaphi for G18 on September 1–30, 2017 at SAOOP station

PEA plots (G19)

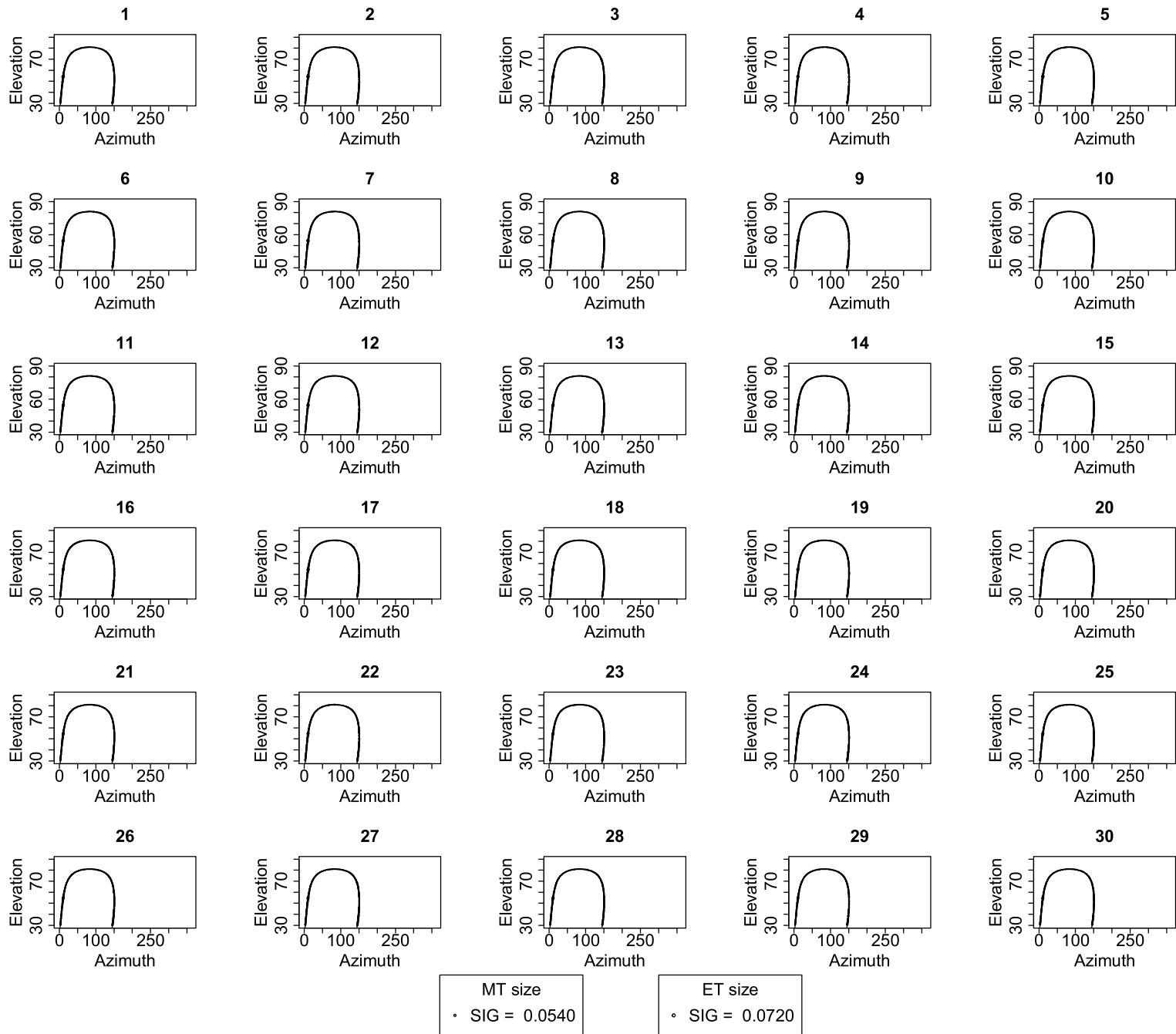


Figure S149 PEA plots comparison of SigmaPhi for G19 on September 1–30, 2017 at SAOOP station

PEA plots (G20)

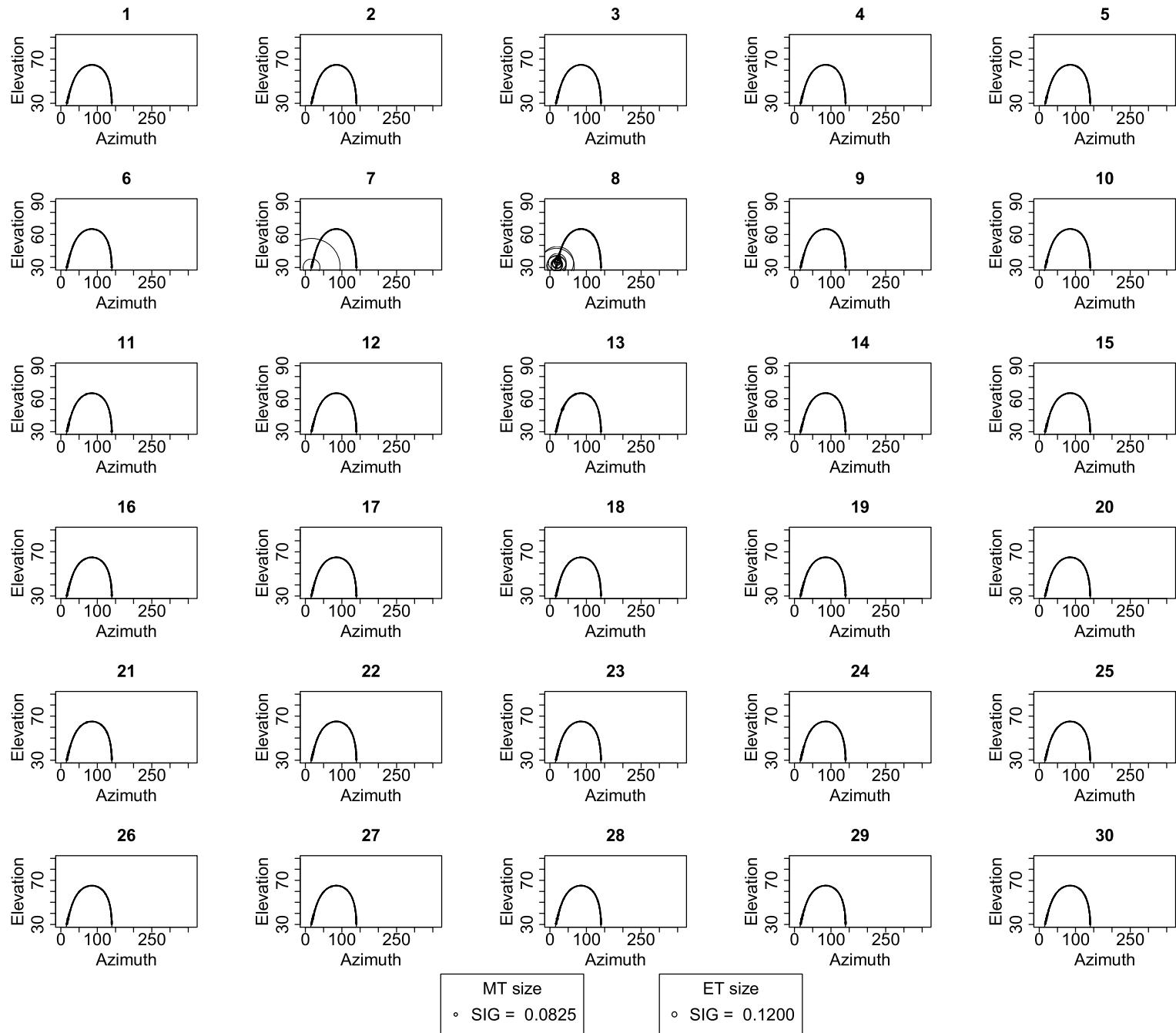


Figure S150 PEA plots comparison of Sigmaphi for G20 on September 1–30, 2017 at SAOOP station

PEA plots (G21)

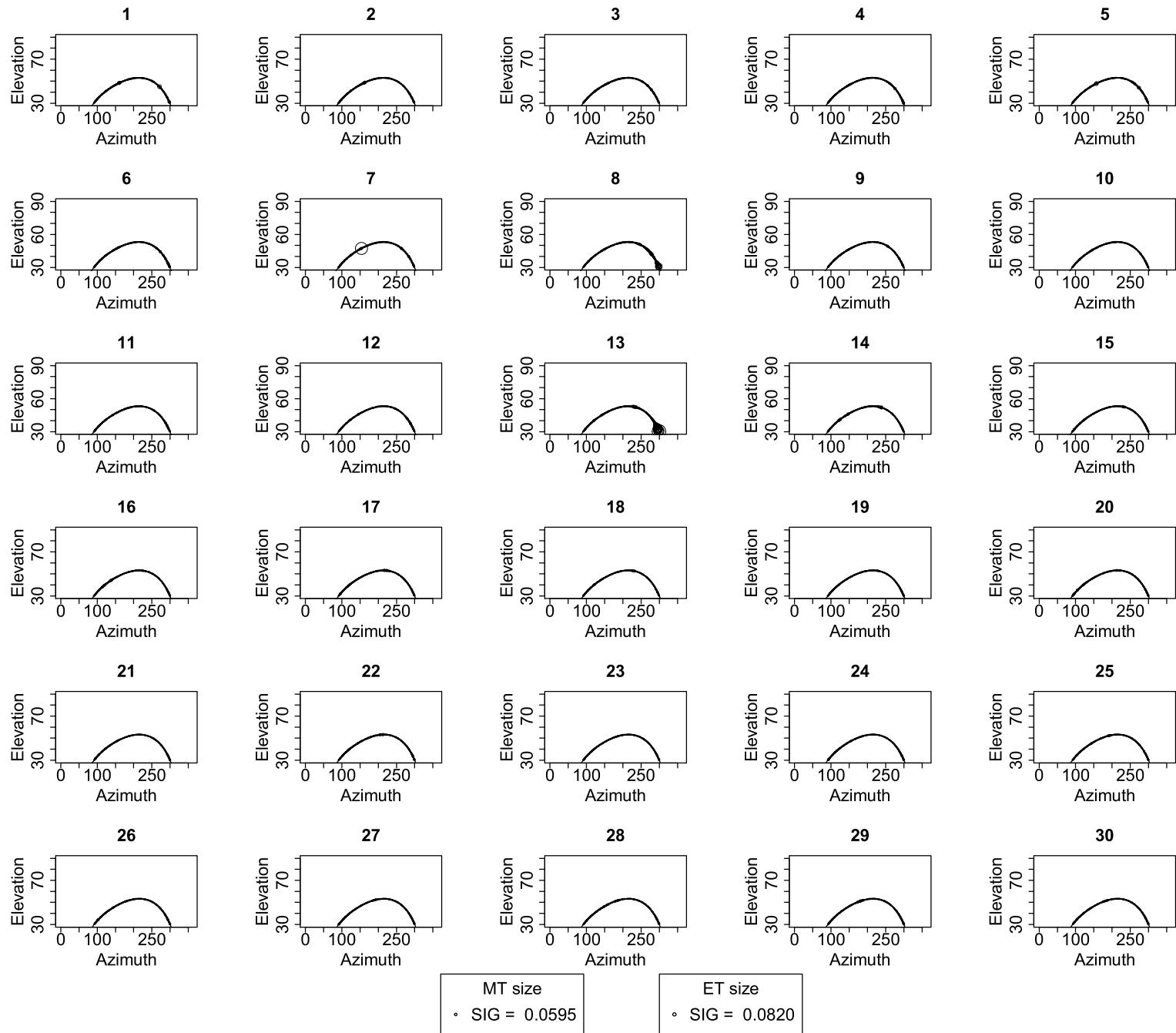


Figure S151 PEA plots comparison of Sigmaphi for G21 on September 1–30, 2017 at SAOOP station

PEA plots (G22)

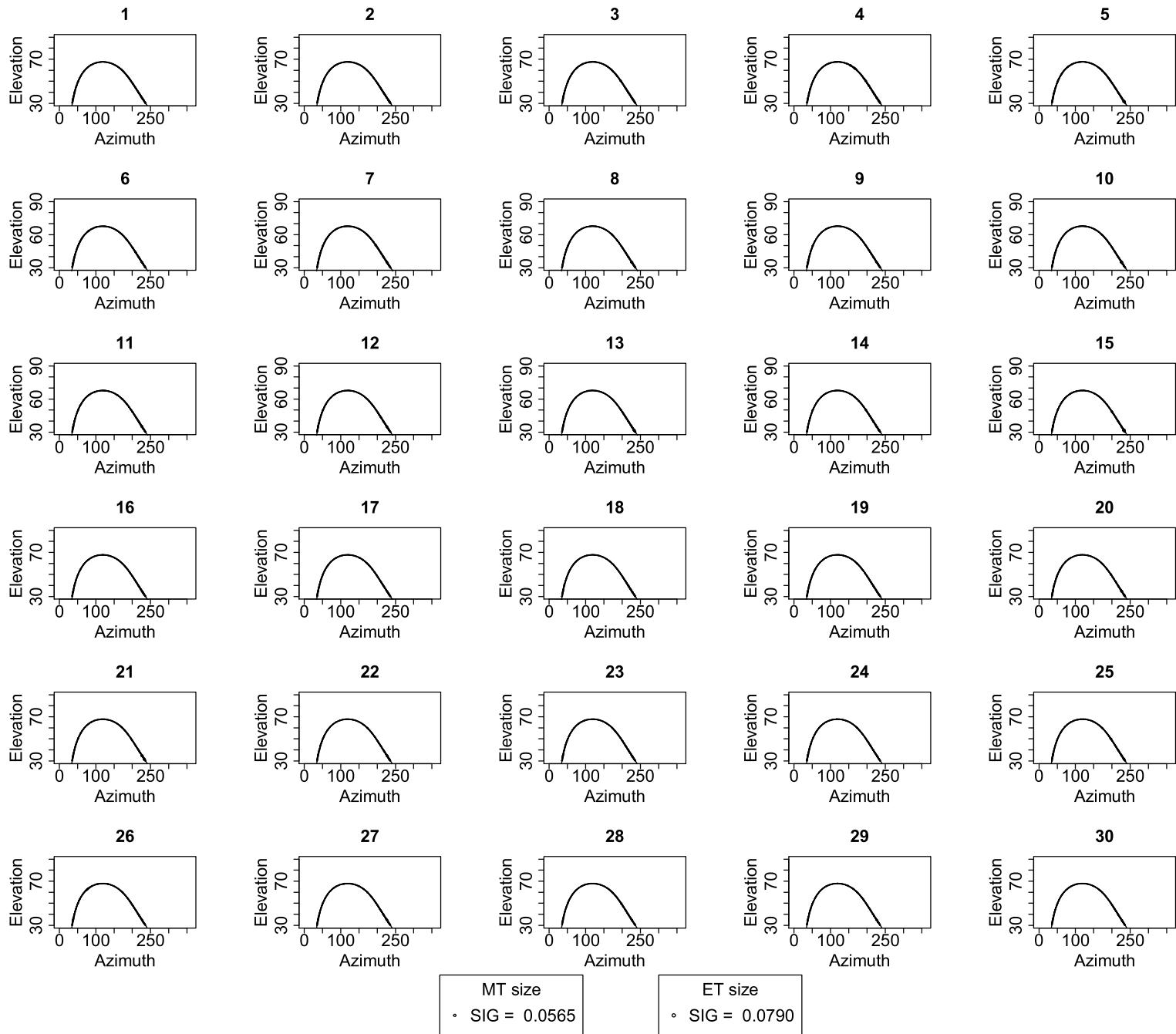


Figure S152 PEA plots comparison of Sigmaphi for G22 on September 1–30, 2017 at SAOOP station

PEA plots (G23)

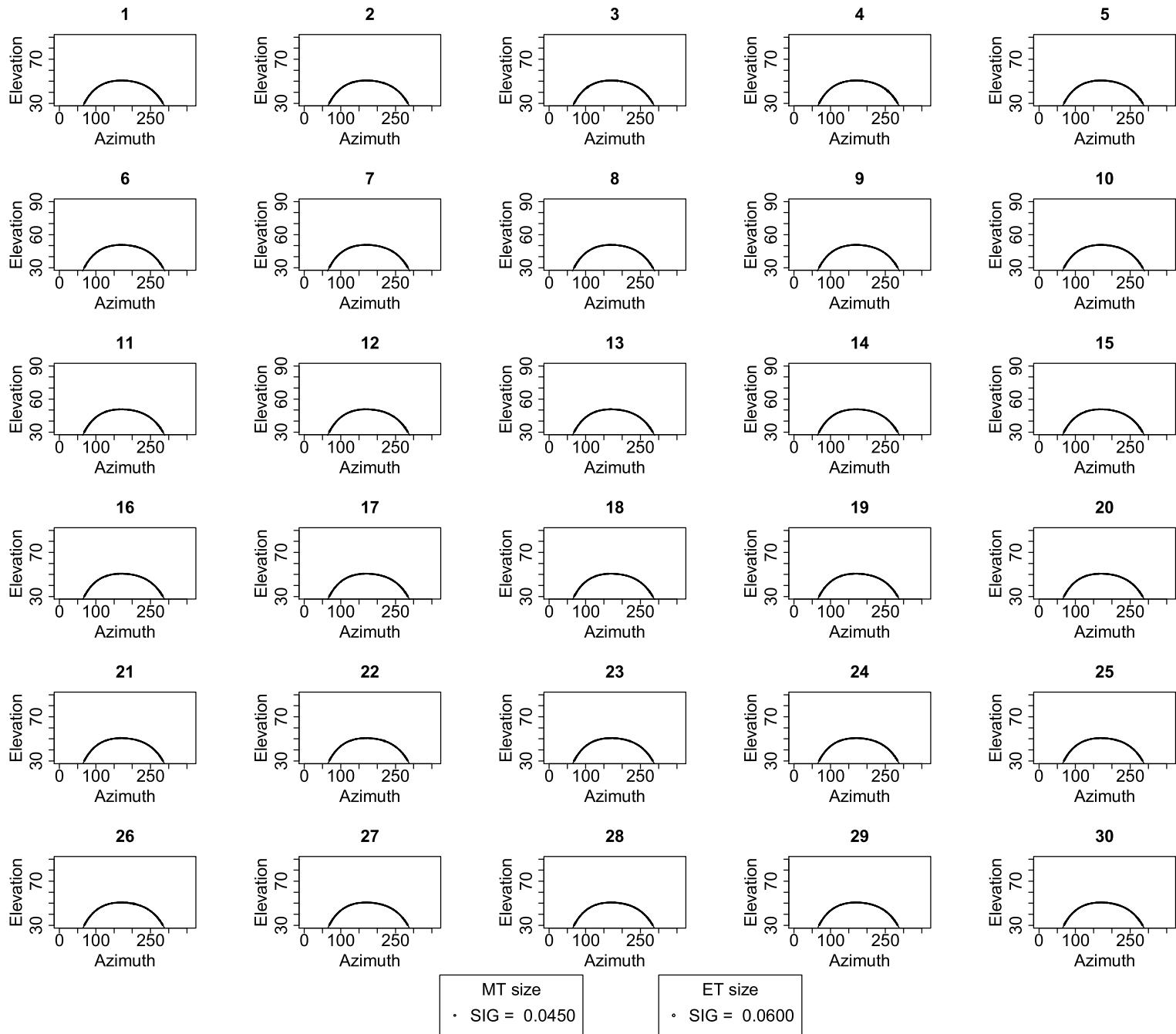


Figure S153 PEA plots comparison of SigmaPhi for G23 on September 1–30, 2017 at SAOOP station

PEA plots (G24)

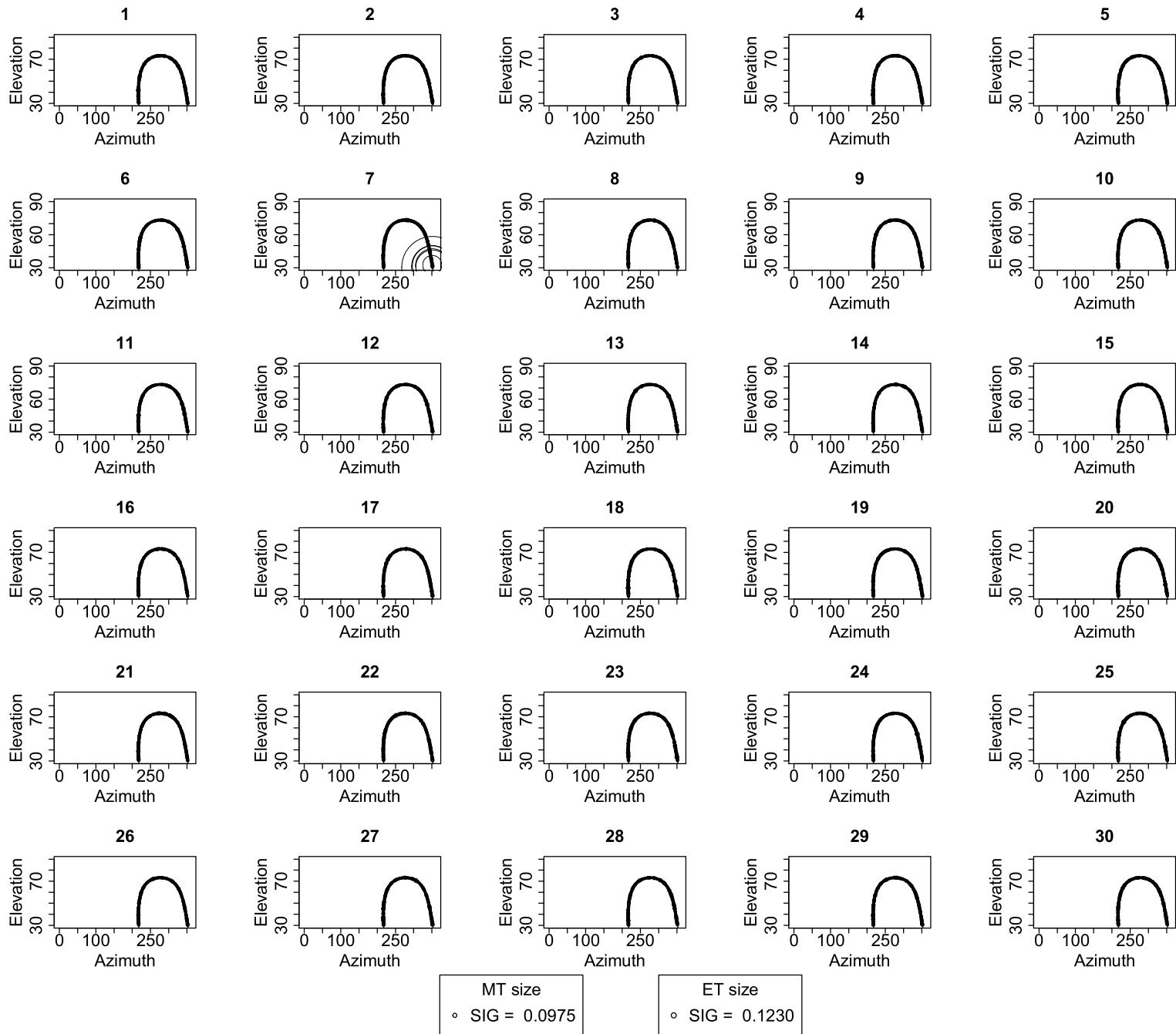


Figure S154 PEA plots comparison of SigmaPhi for G24 on September 1–30, 2017 at SAOOP station

PEA plots (G25)

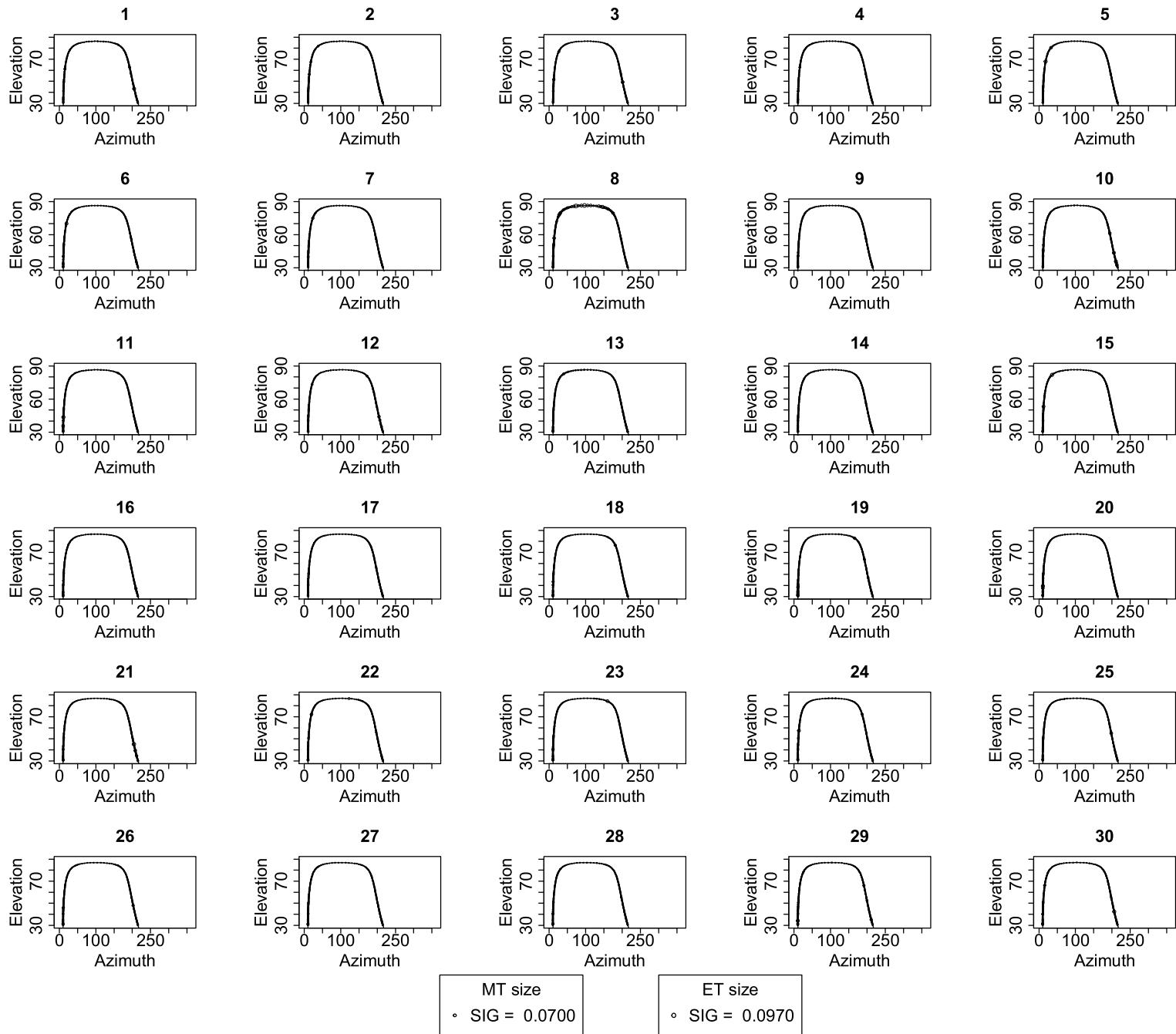


Figure S155 PEA plots comparison of SigmaPhi for G25 on September 1–30, 2017 at SAOOP station

PEA plots (G26)

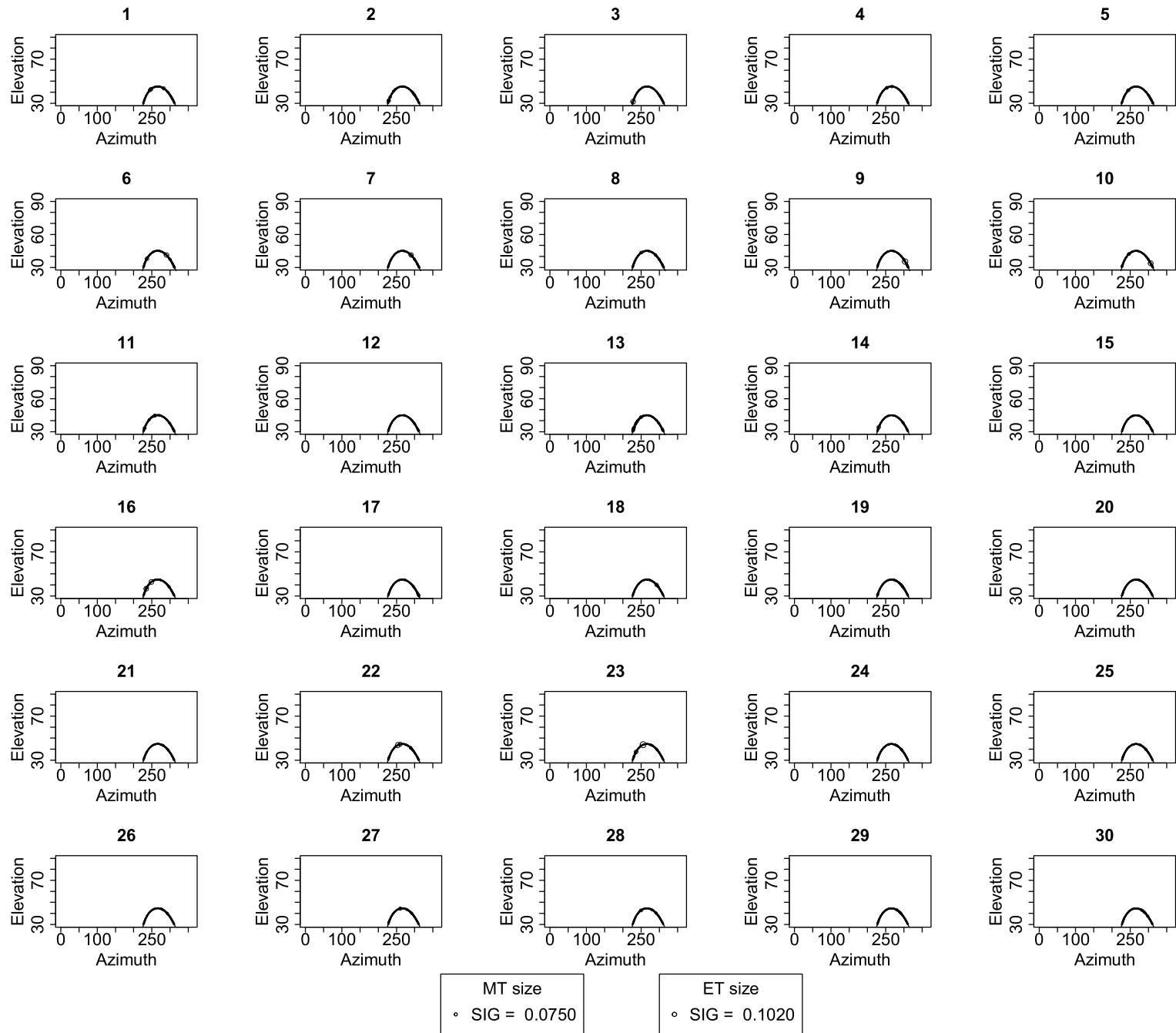


Figure S156 PEA plots comparison of SigmaPhi for G26 on September 1–30, 2017 at SAOOP station

PEA plots (G27)

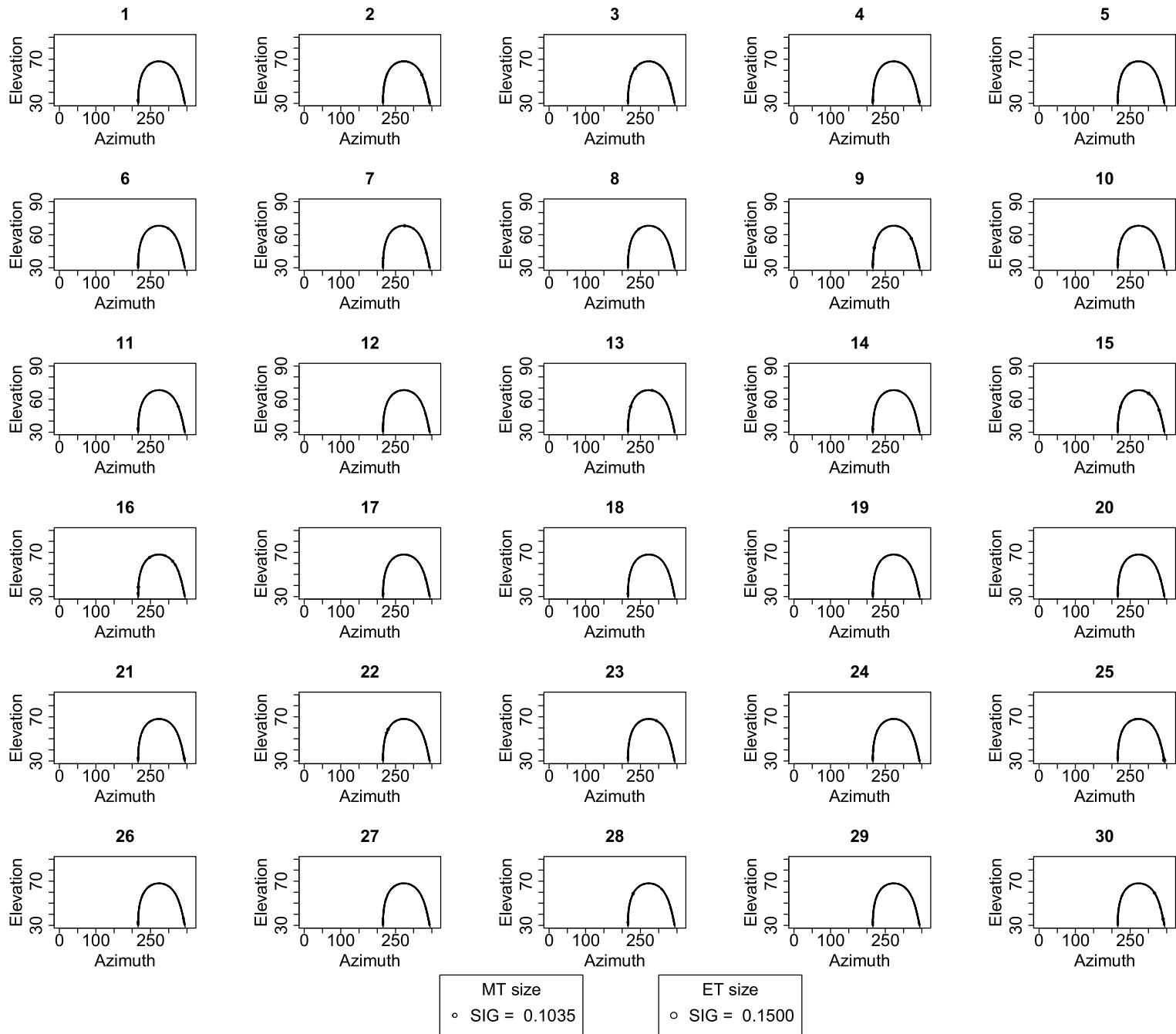


Figure S157 PEA plots comparison of SigmaPhi for G27 on September 1–30, 2017 at SAOOP station

PEA plots (G28)

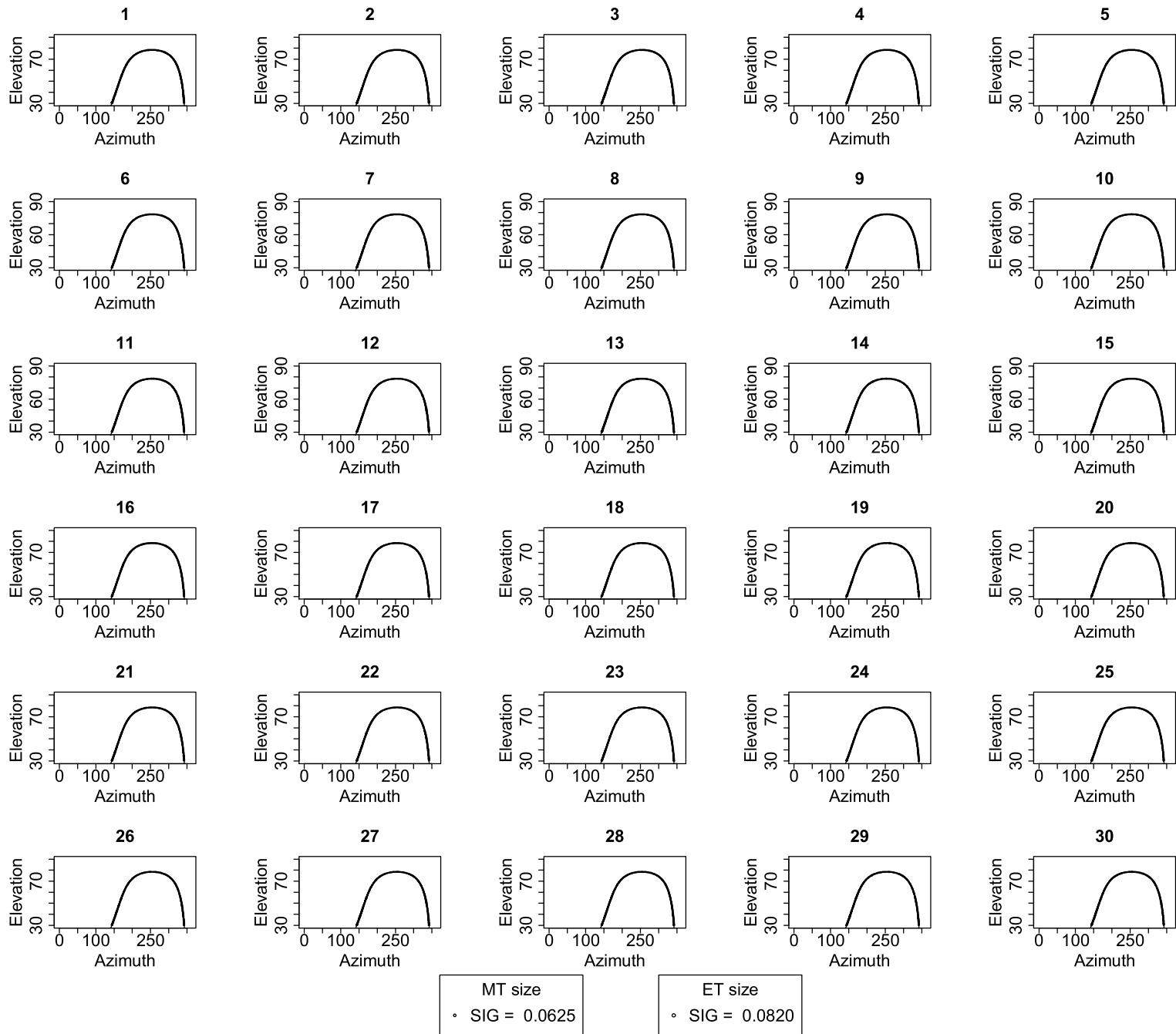


Figure S158 PEA plots comparison of Sigmaphi for G28 on September 1–30, 2017 at SAOOP station

PEA plots (G29)

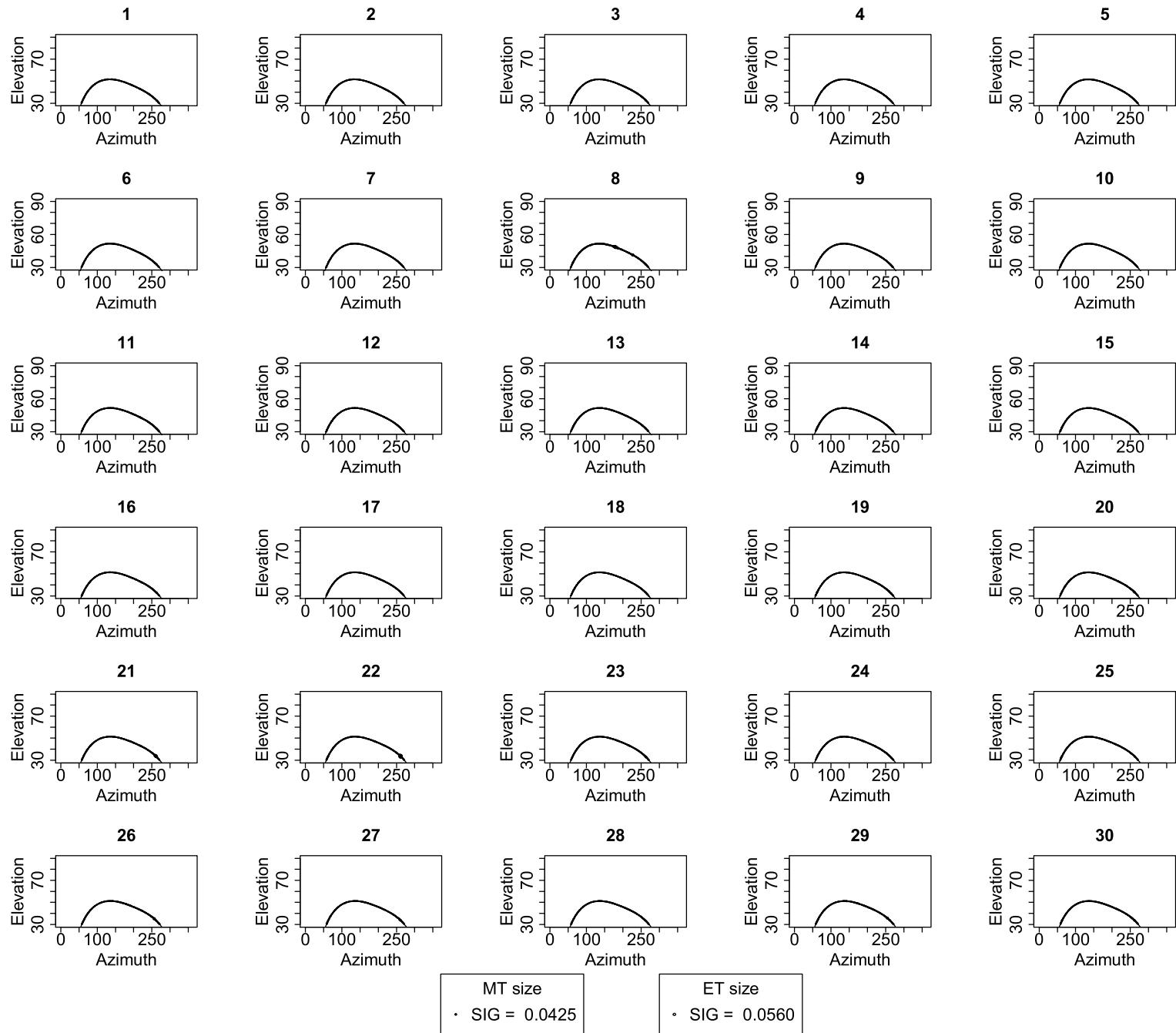


Figure S159 PEA plots comparison of SigmaPhi for G29 on September 1–30, 2017 at SAOOP station

PEA plots (G30)

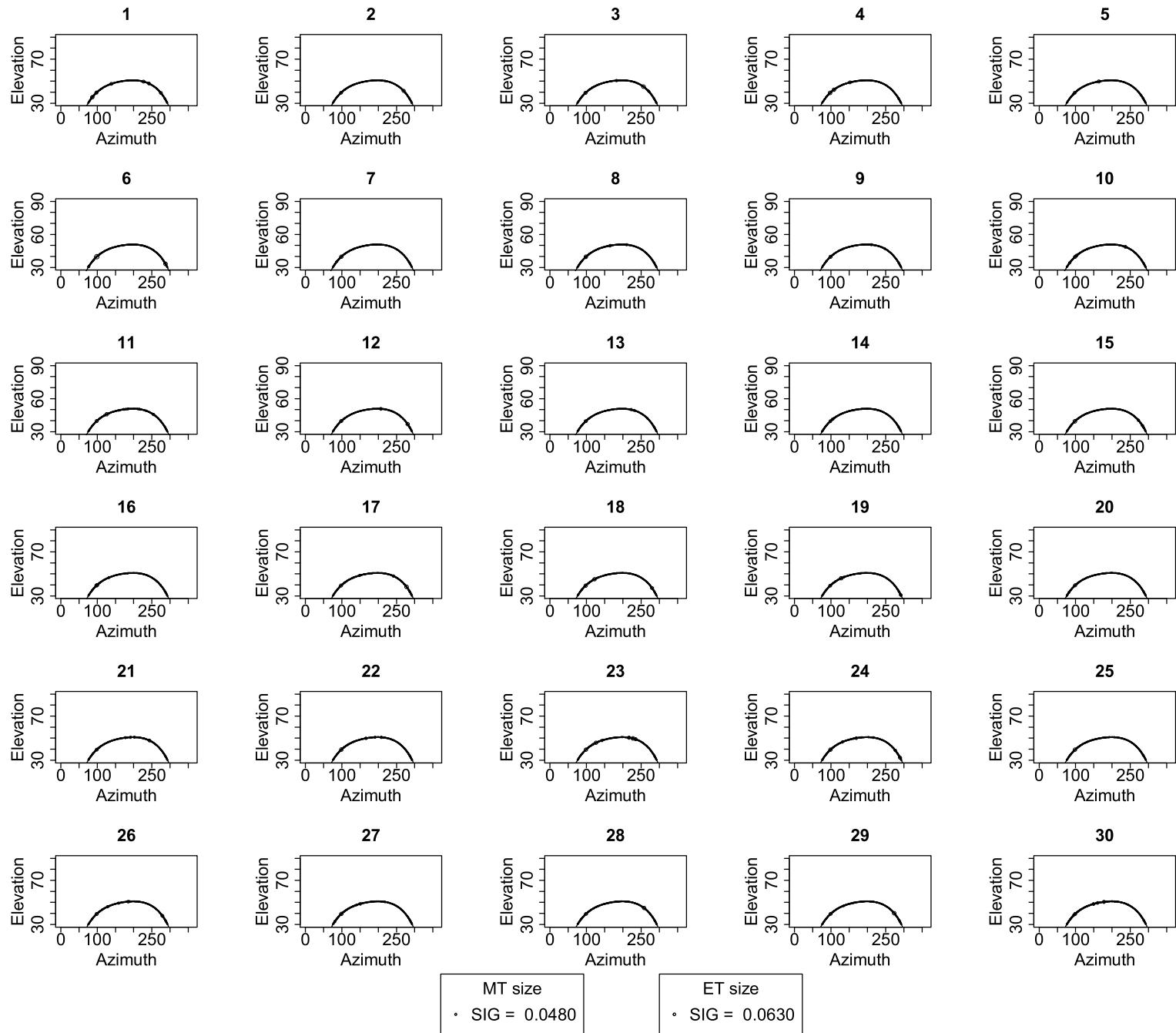


Figure S160 PEA plots comparison of Sigmaphi for G30 on September 1–30, 2017 at SAOOP station

PEA plots (G31)

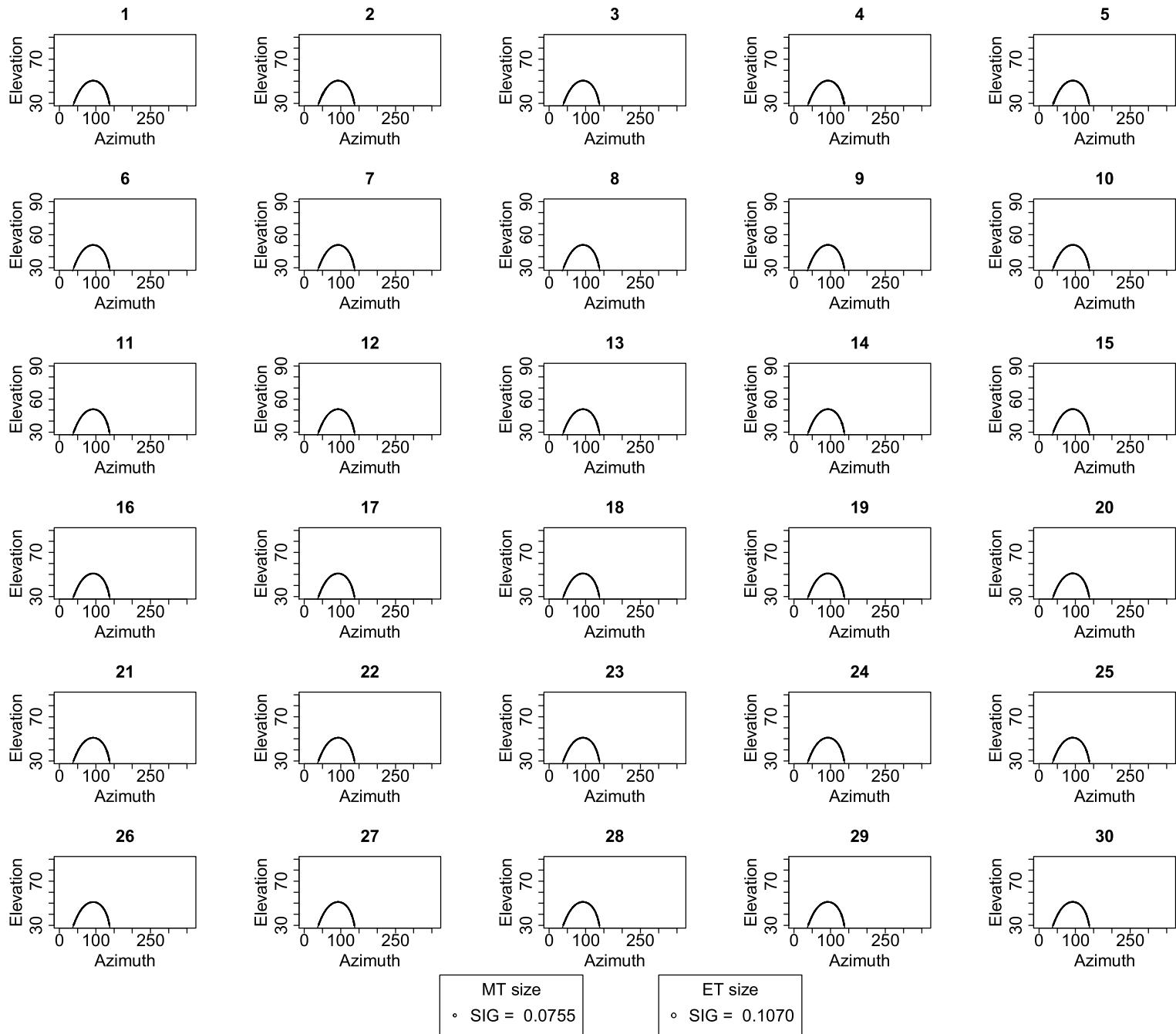


Figure S161 PEA plots comparison of SigmaPhi for G31 on September 1–30, 2017 at SAOOP station

PEA plots (G32)

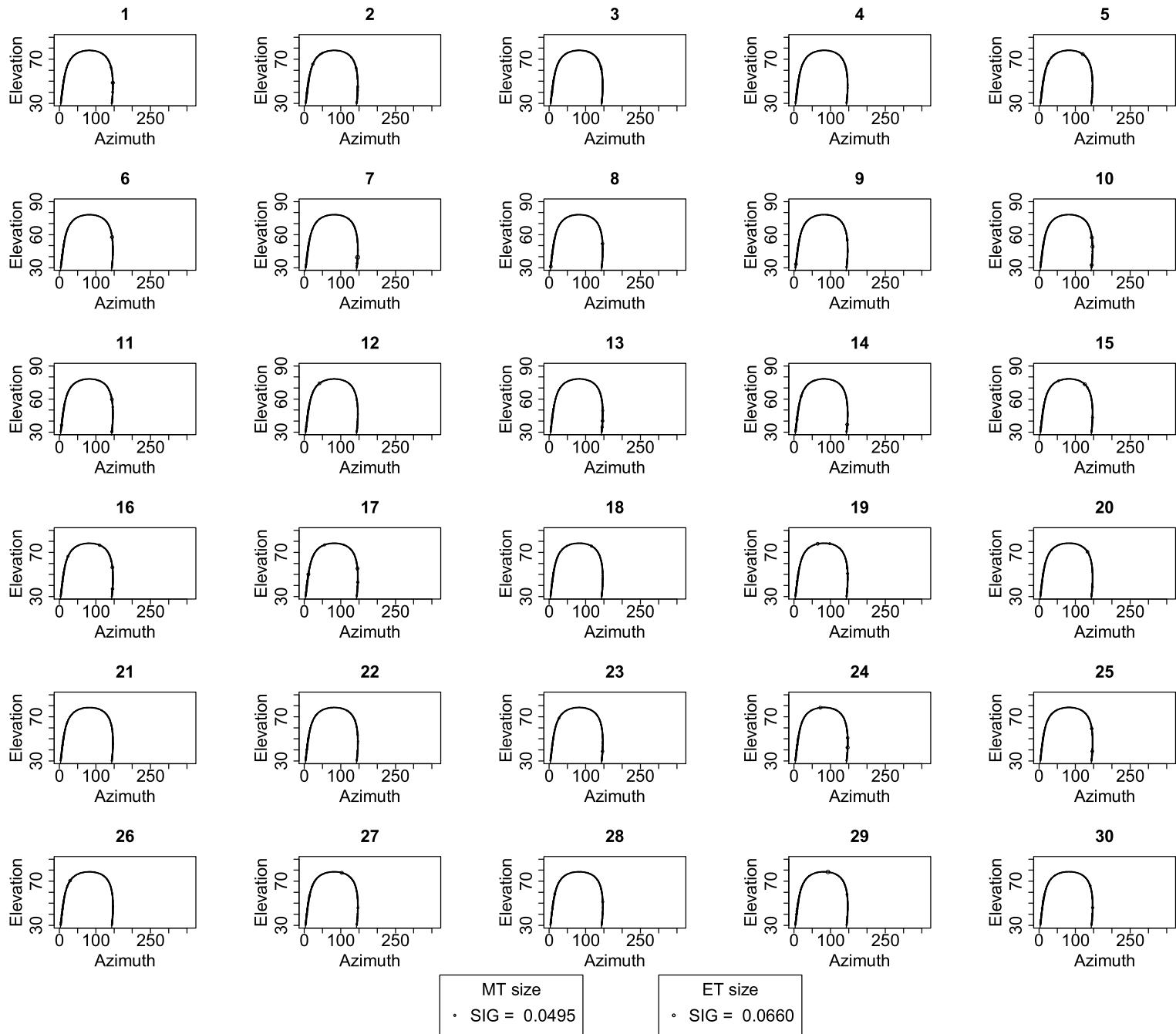


Figure S162 PEA plots comparison of Sigmaphi for G32 on September 1–30, 2017 at SAOOP station

PEA plots (G1)

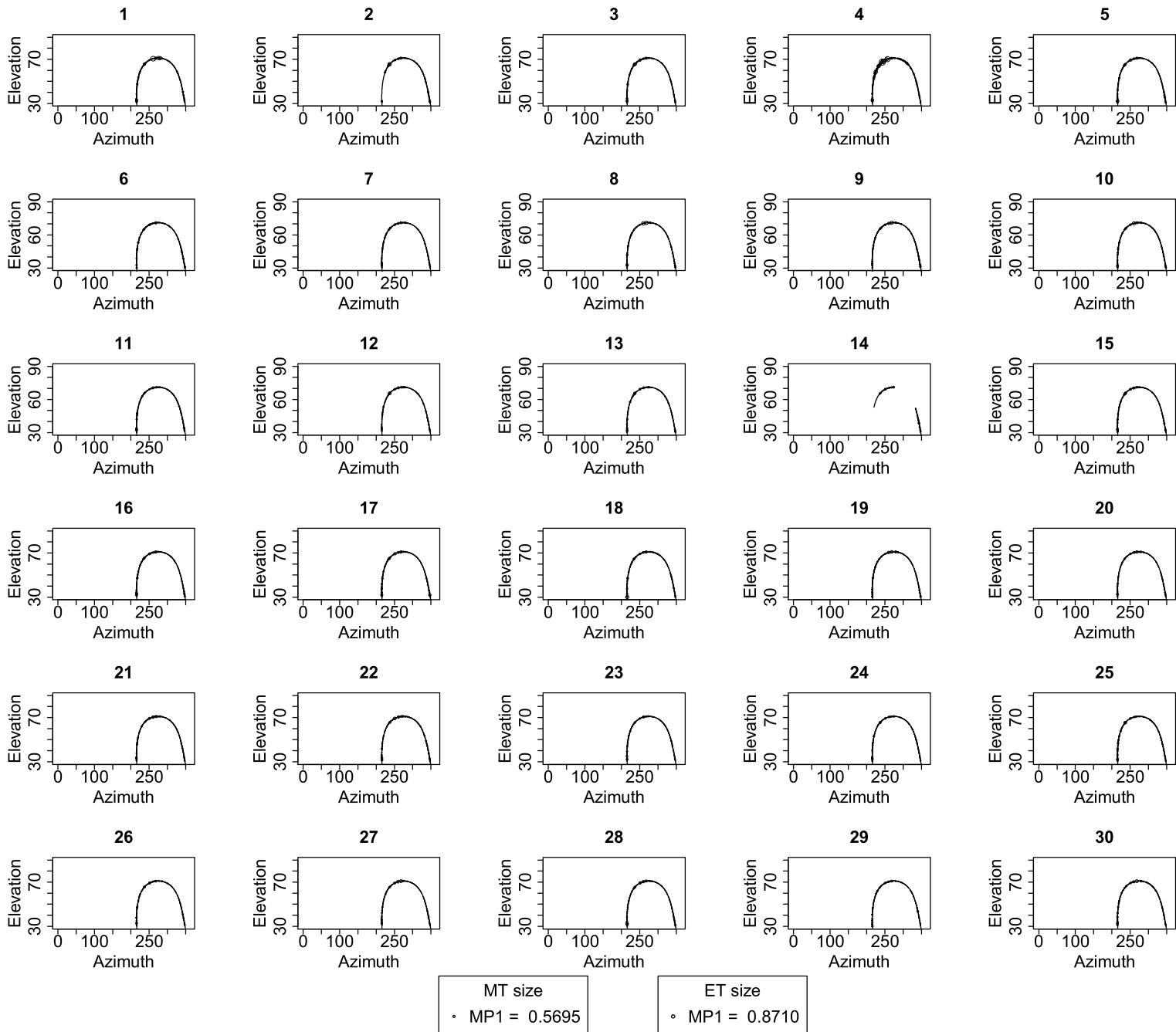


Figure S163 PEA plots comparison of MP1 for G1 on September 1–30, 2017 at SJCU station

PEA plots (G2)

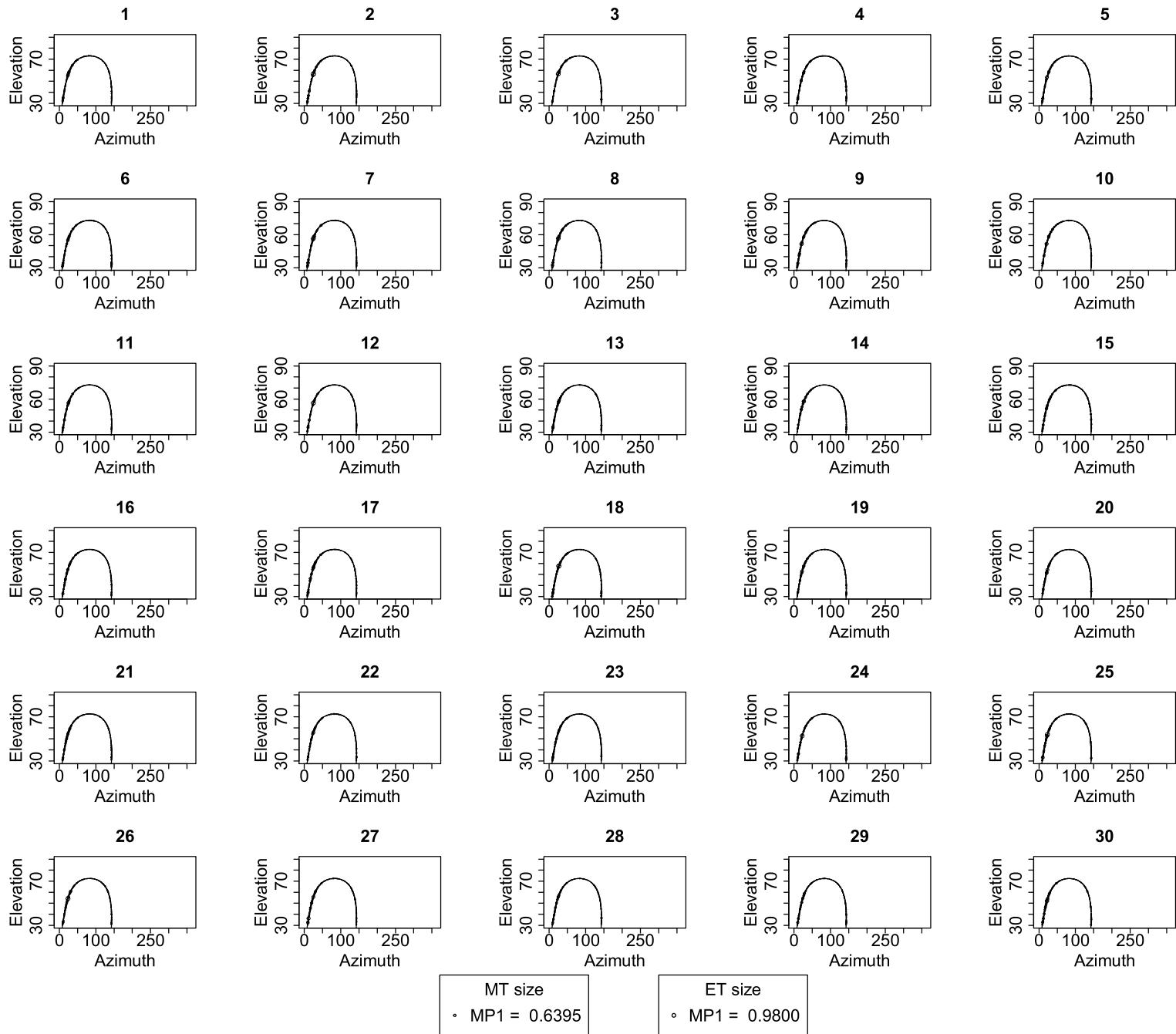


Figure S164 PEA plots comparison of MP1 for G2 on September 1–30, 2017 at SJCU station

PEA plots (G3)

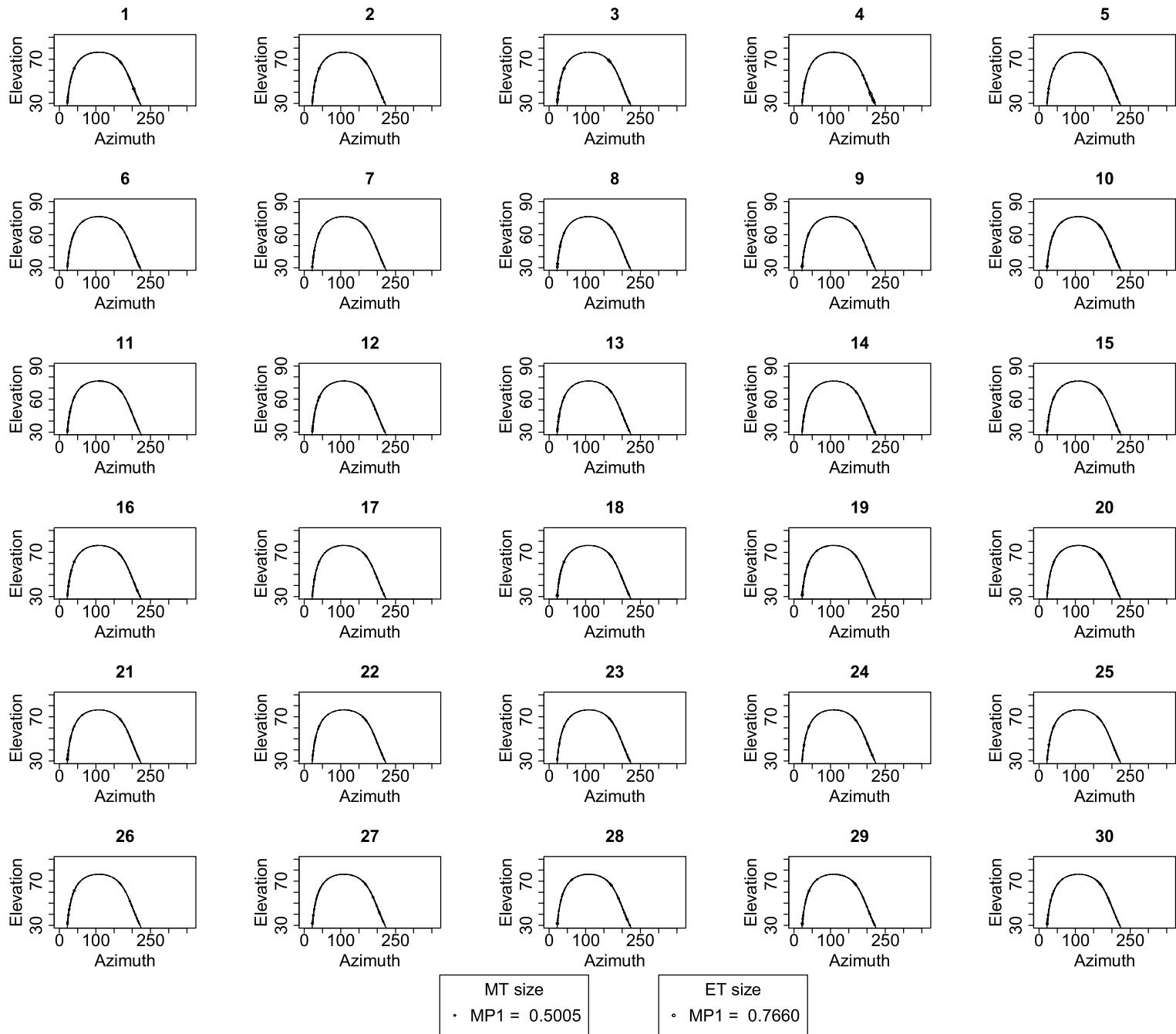


Figure S165 PEA plots comparison of MP1 for G3 on September 1–30, 2017 at SJCU station

PEA plots (G4)

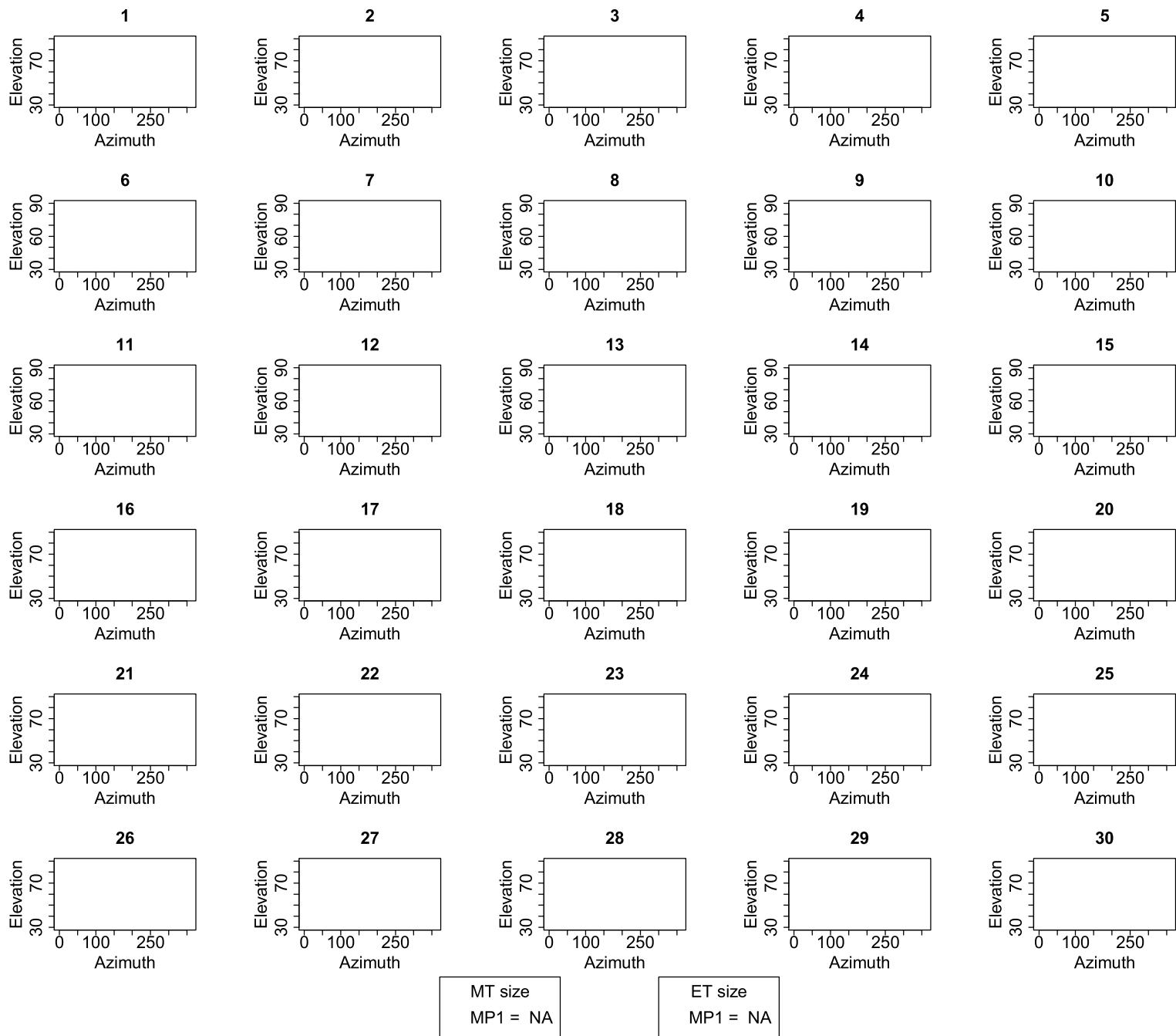


Figure S166 PEA plots comparison of MP1 for G4 on September 1–30, 2017 at SJCU station

PEA plots (G5)

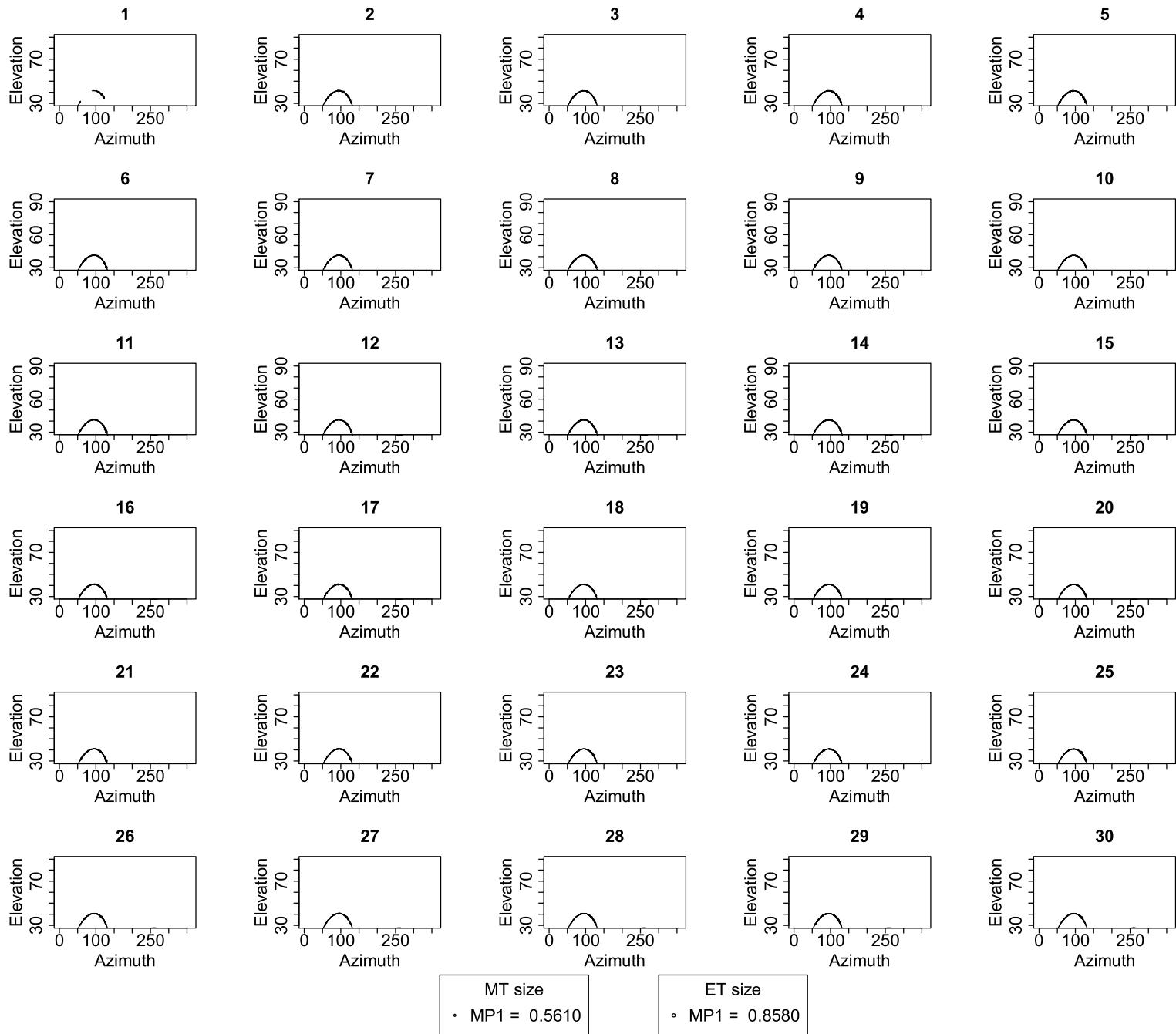


Figure S167 PEA plots comparison of MP1 for G5 on September 1–30, 2017 at SJCU station

PEA plots (G6)

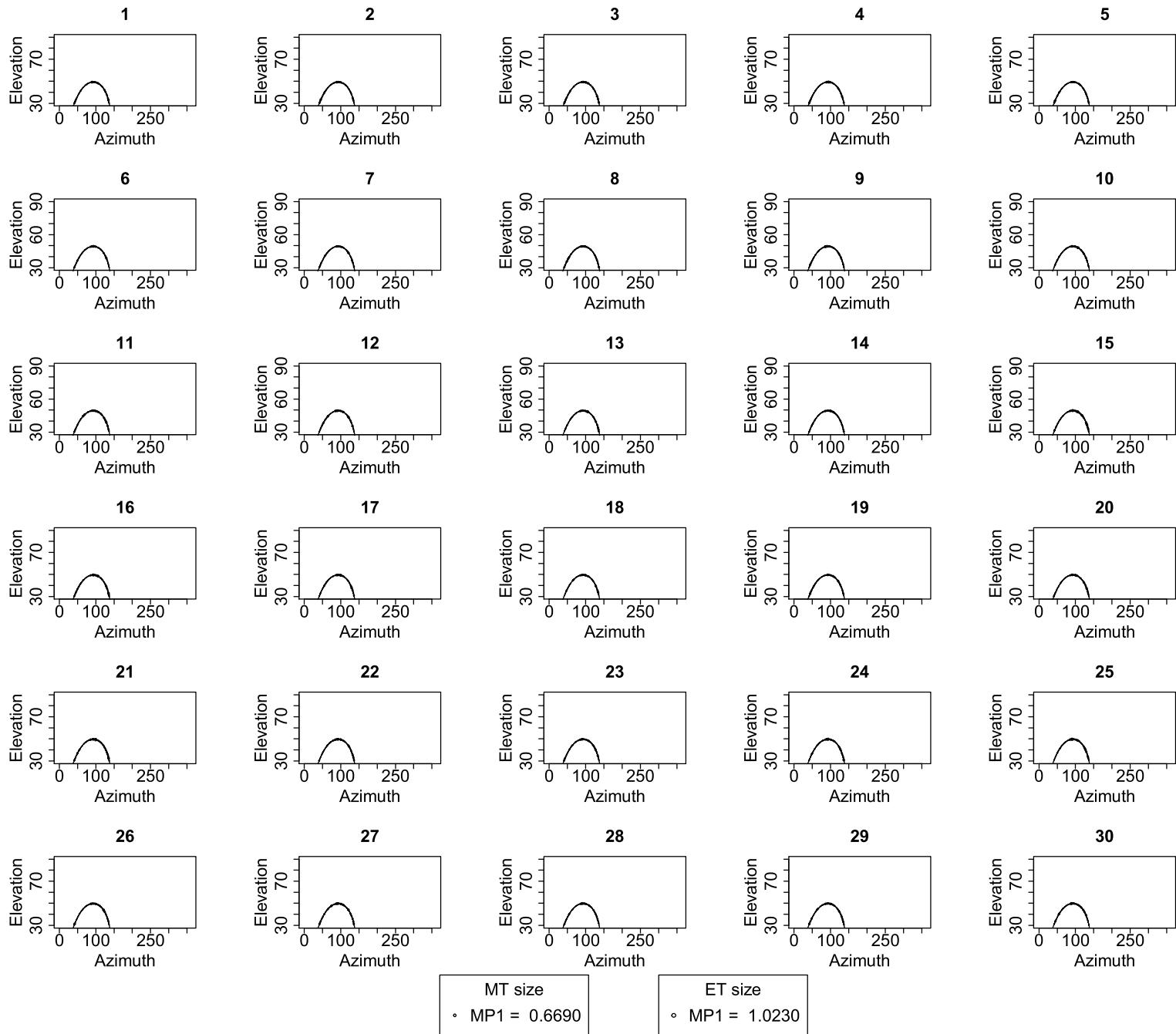


Figure S168 PEA plots comparison of MP1 for G6 on September 1–30, 2017 at SJCU station

PEA plots (G7)

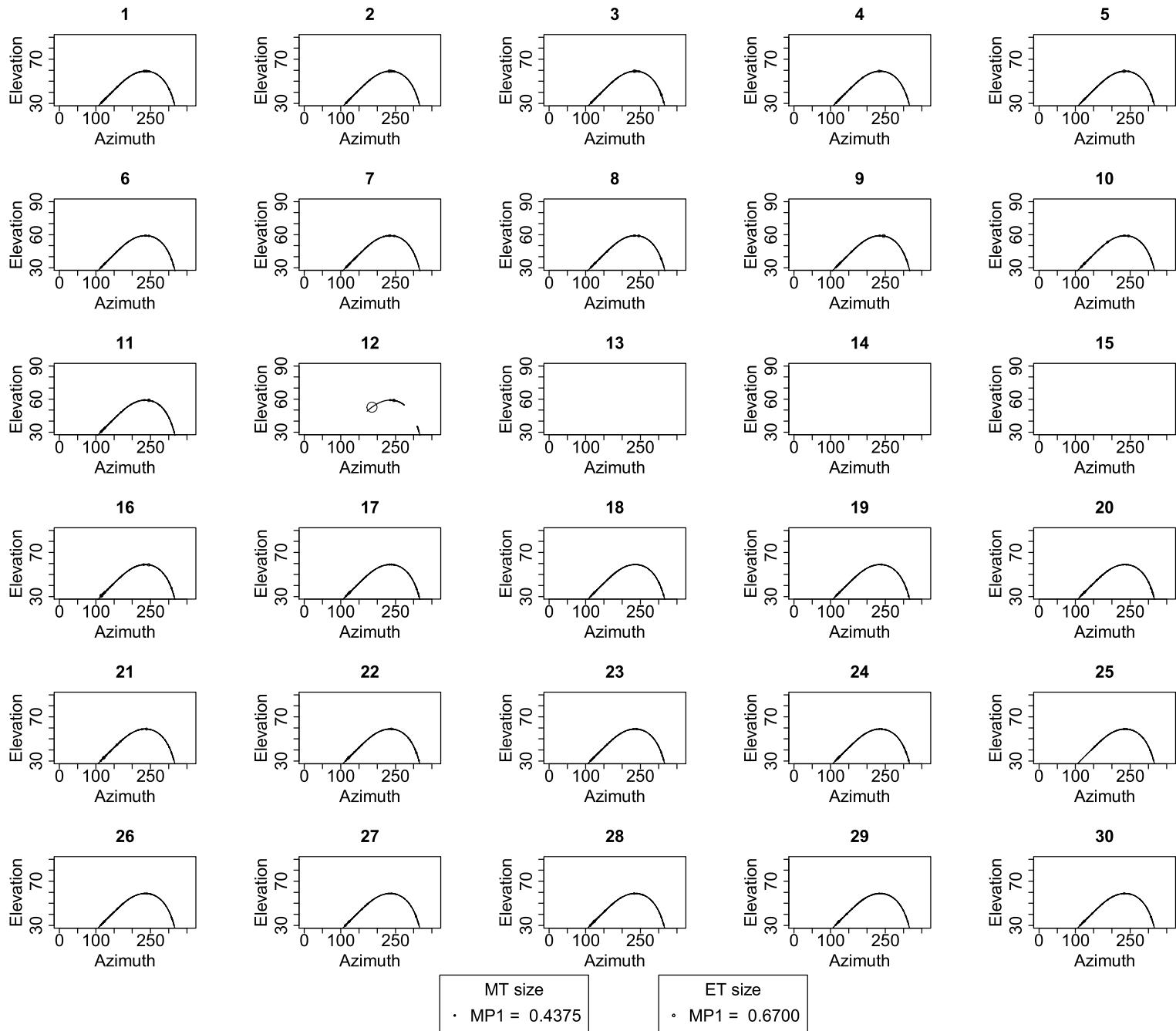


Figure S169 PEA plots comparison of MP1 for G7 on September 1–30, 2017 at SJCU station

PEA plots (G8)

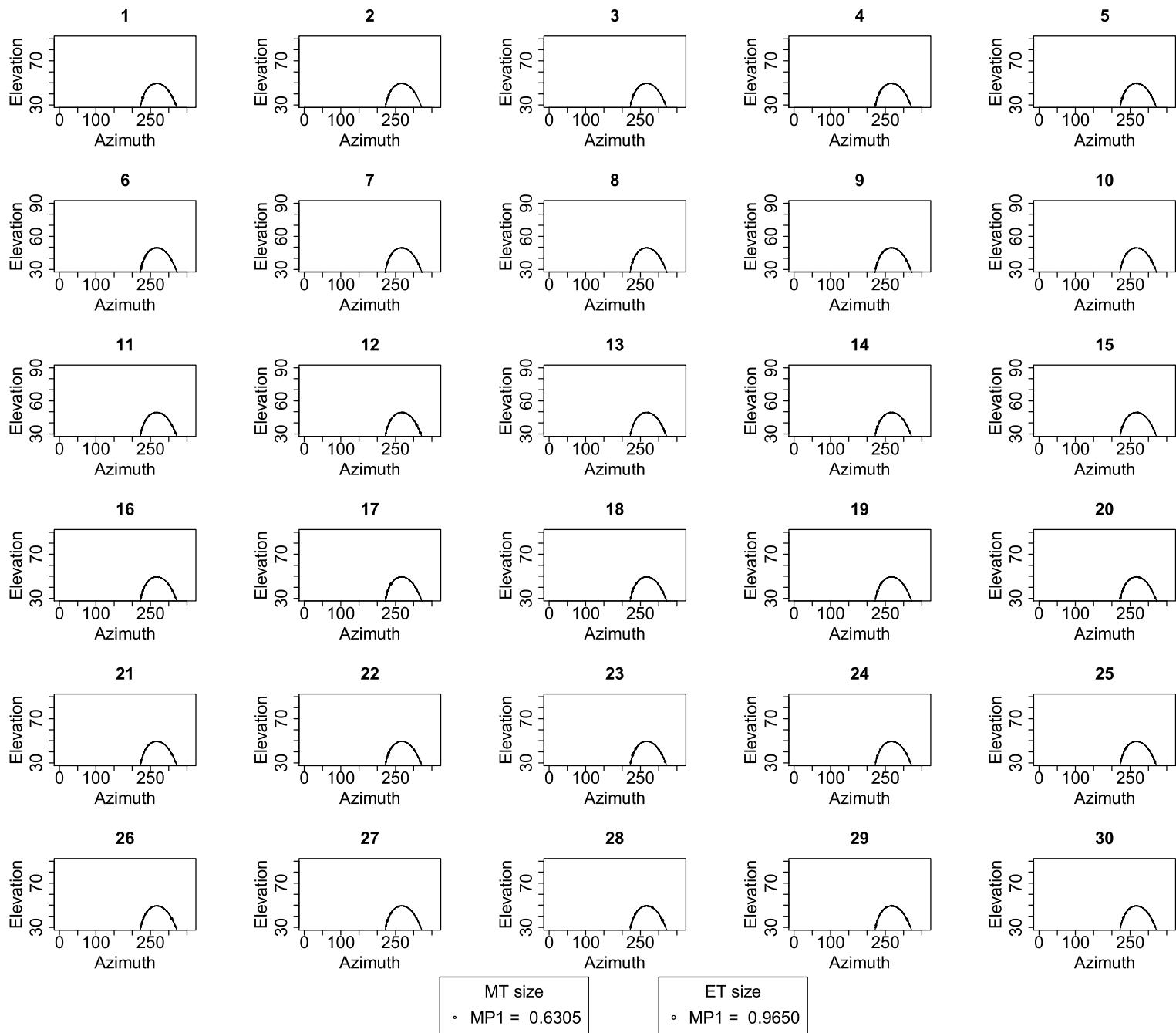


Figure S170 PEA plots comparison of MP1 for G8 on September 1–30, 2017 at SJCU station

PEA plots (G9)

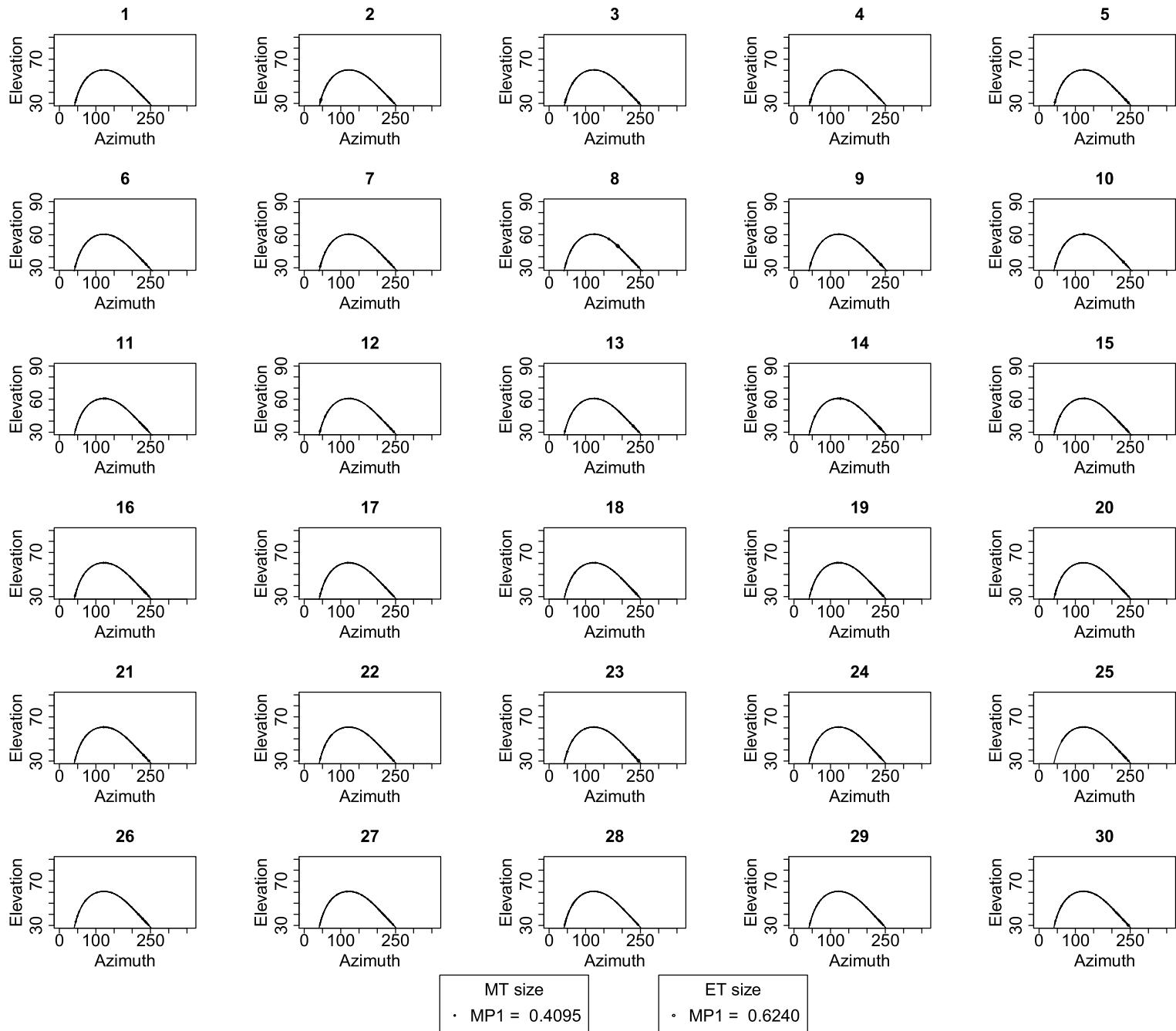


Figure S171 PEA plots comparison of MP1 for G9 on September 1–30, 2017 at SJCU station

PEA plots (G10)

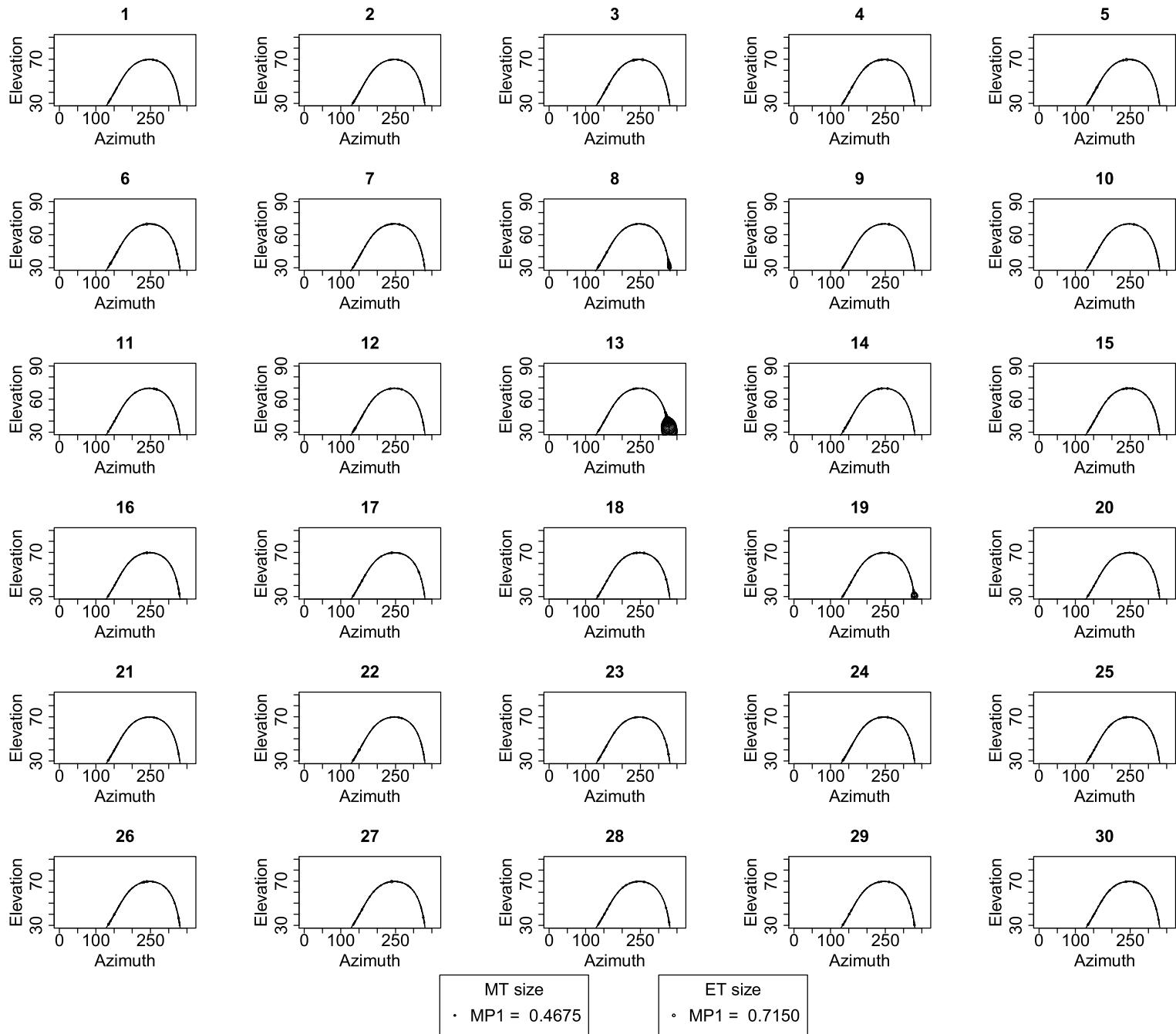


Figure S172 PEA plots comparison of MP1 for G10 on September 1–30, 2017 at SJCU station

PEA plots (G11)

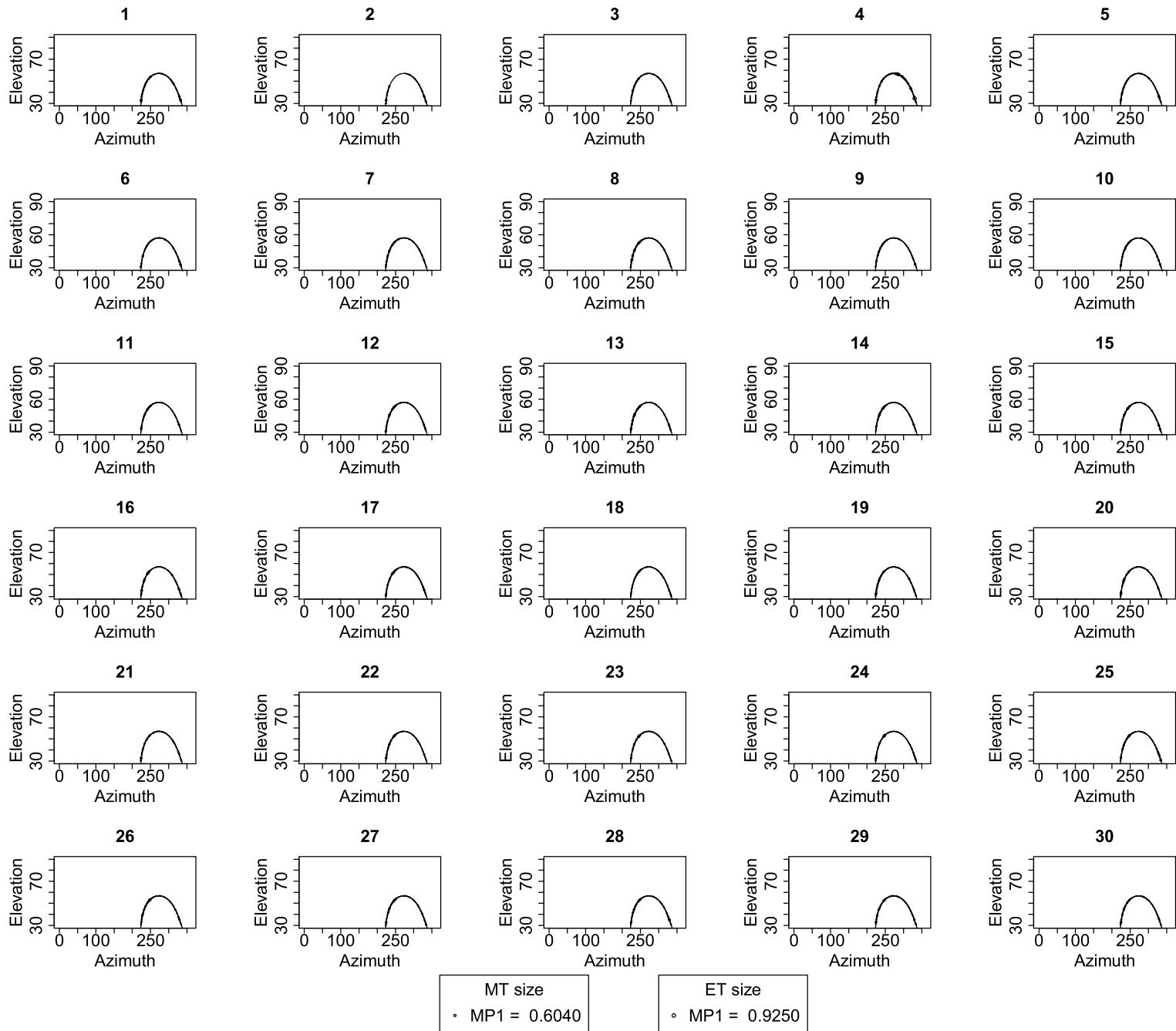


Figure S173 PEA plots comparison of MP1 for G11 on September 1–30, 2017 at SJCU station

PEA plots (G12)

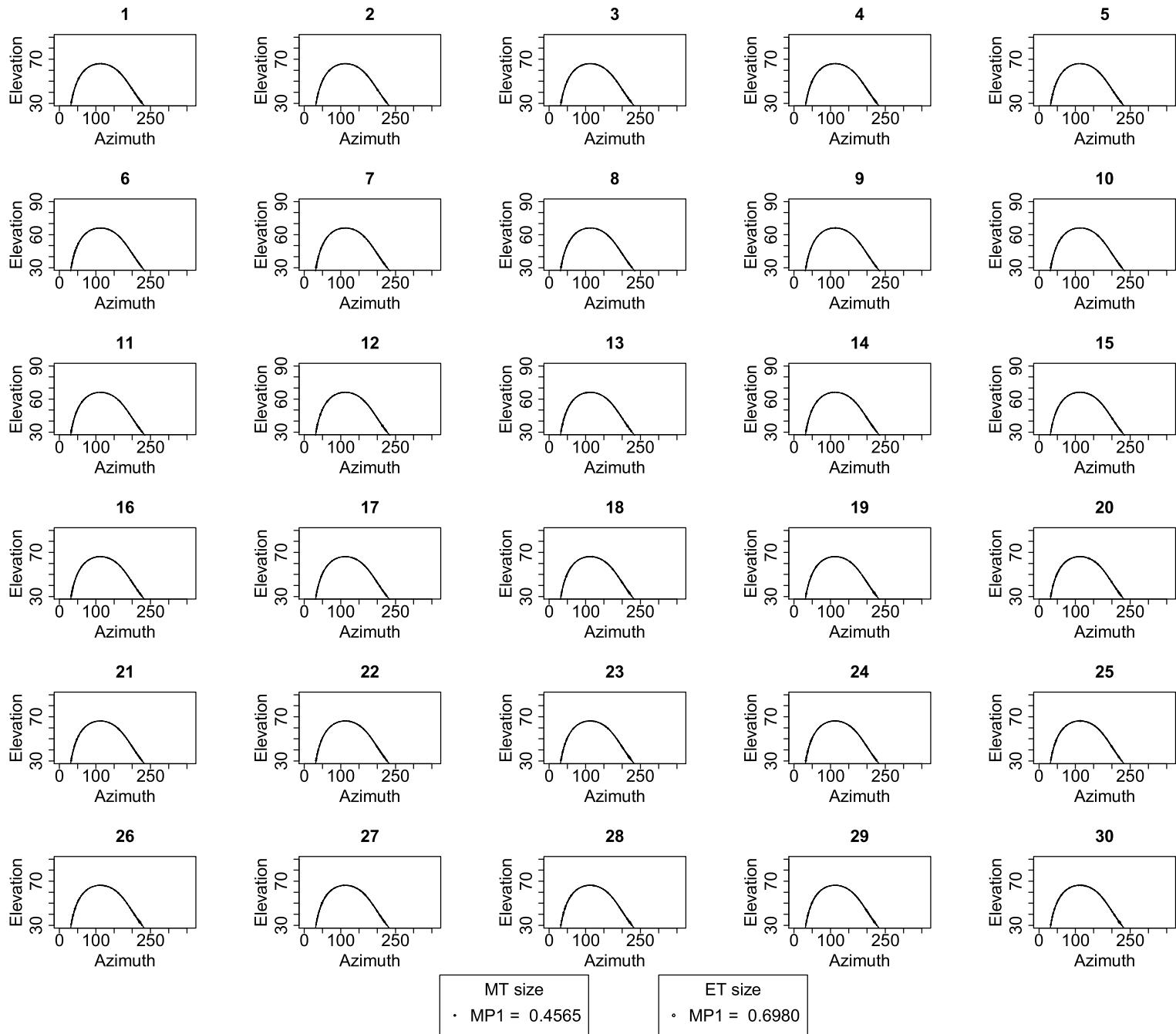


Figure S174 PEA plots comparison of MP1 for G12 on September 1–30, 2017 at SJCU station

PEA plots (G13)

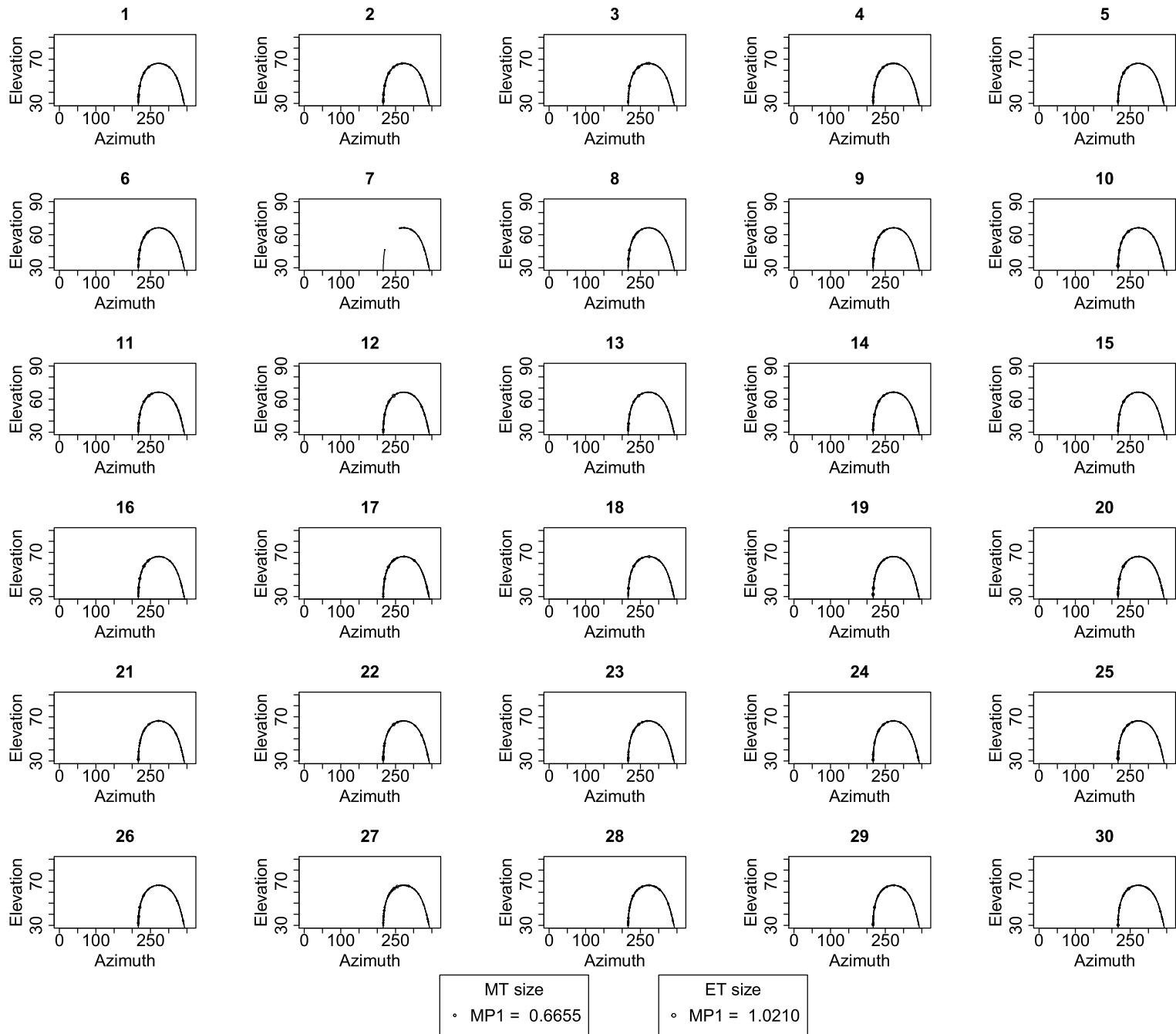


Figure S175 PEA plots comparison of MP1 for G13 on September 1–30, 2017 at SJCU station

PEA plots (G14)

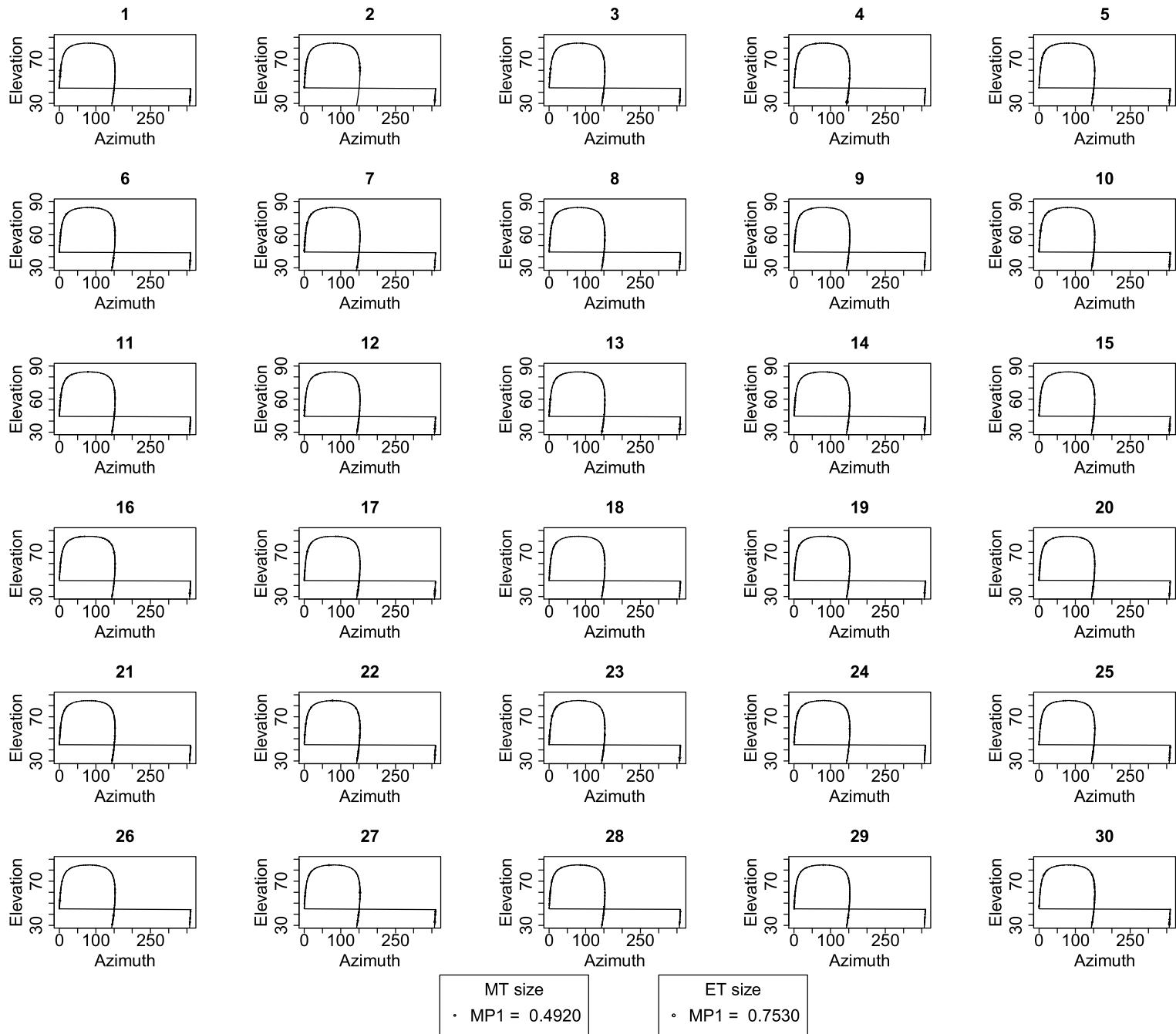


Figure S176 PEA plots comparison of MP1 for G14 on September 1–30, 2017 at SJCU station

PEA plots (G15)

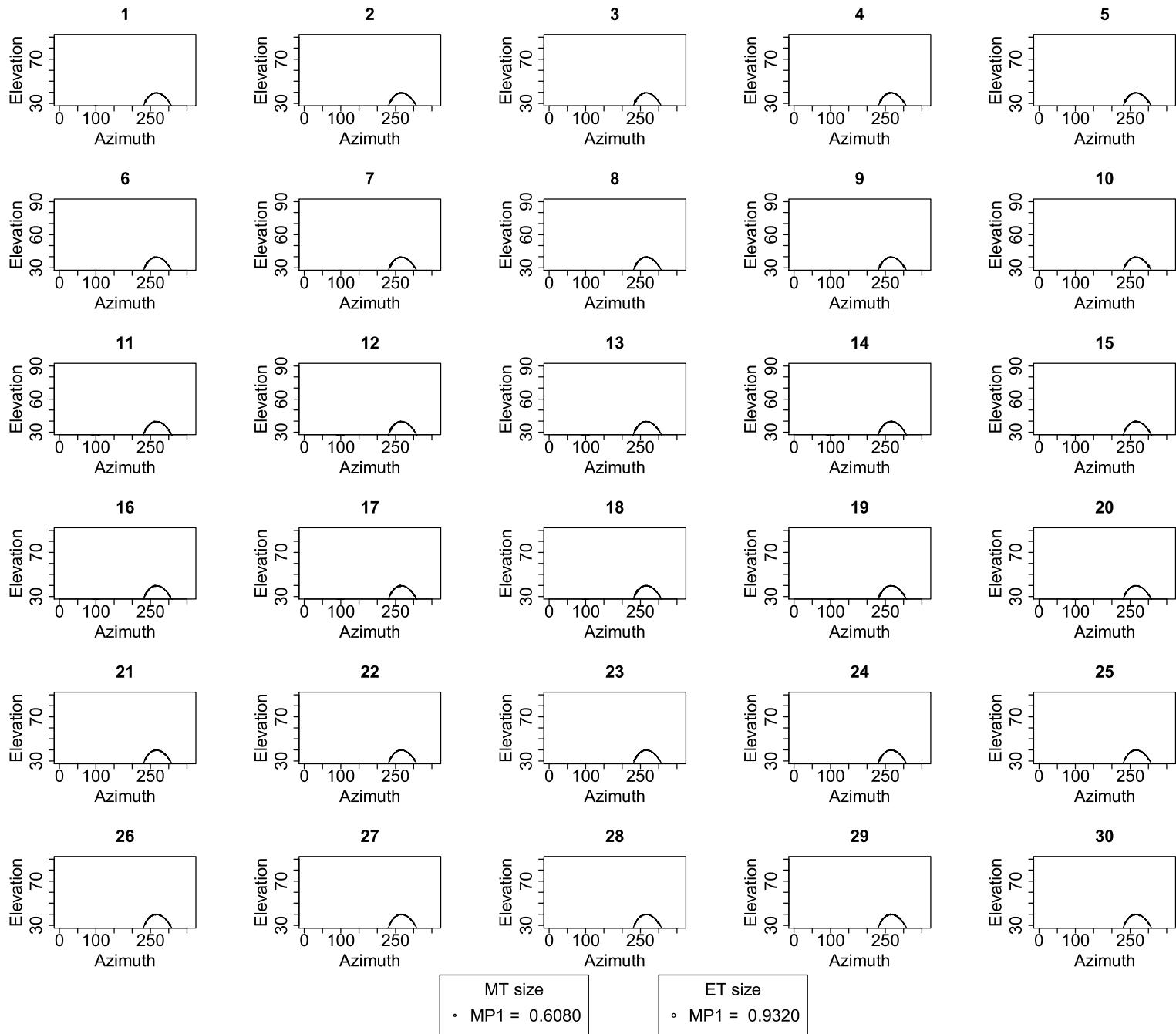


Figure S177 PEA plots comparison of MP1 for G15 on September 1–30, 2017 at SJCU station

PEA plots (G16)

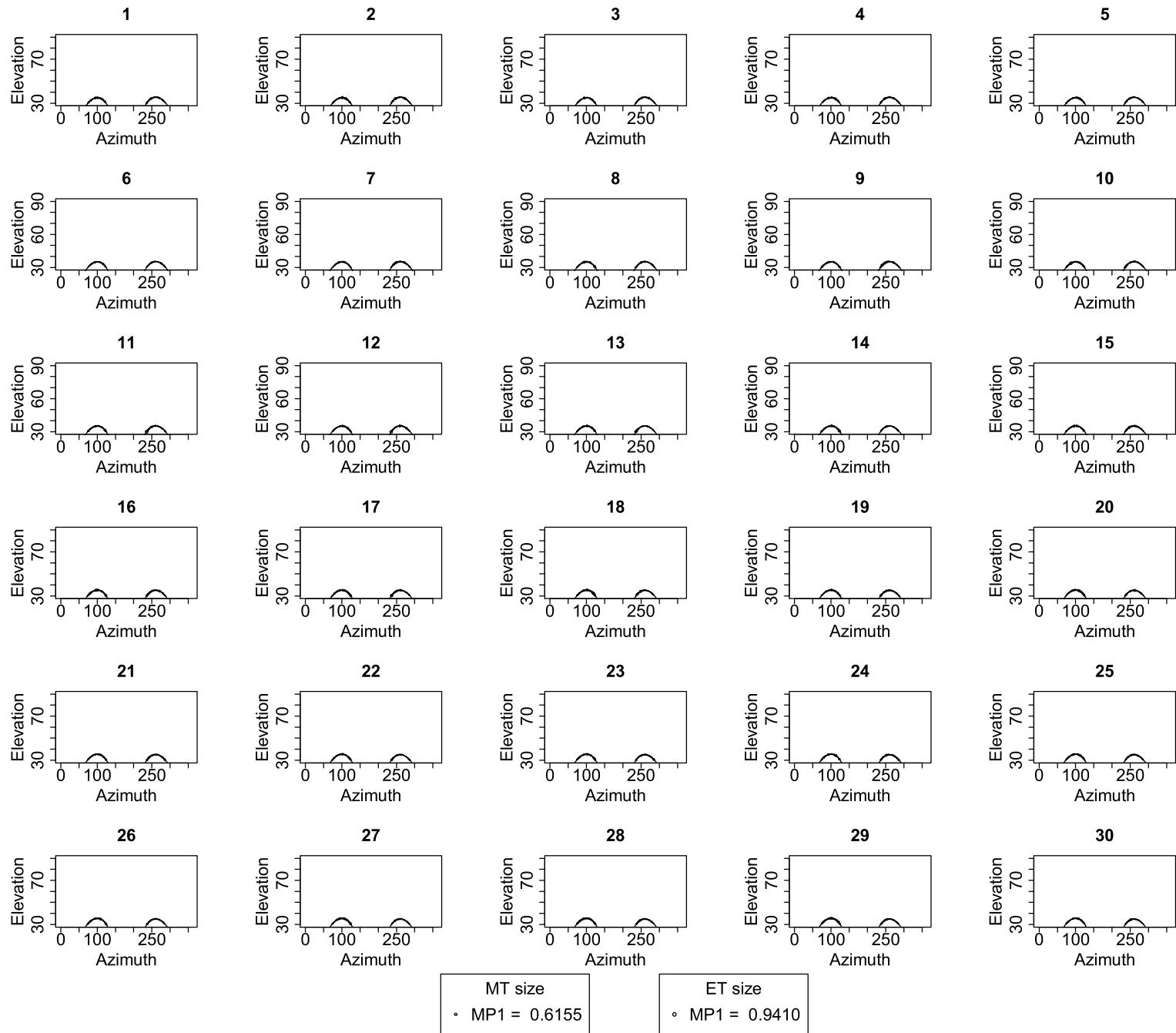


Figure S178 PEA plots comparison of MP1 for G16 on September 1–30, 2017 at SJCU station

PEA plots (G17)

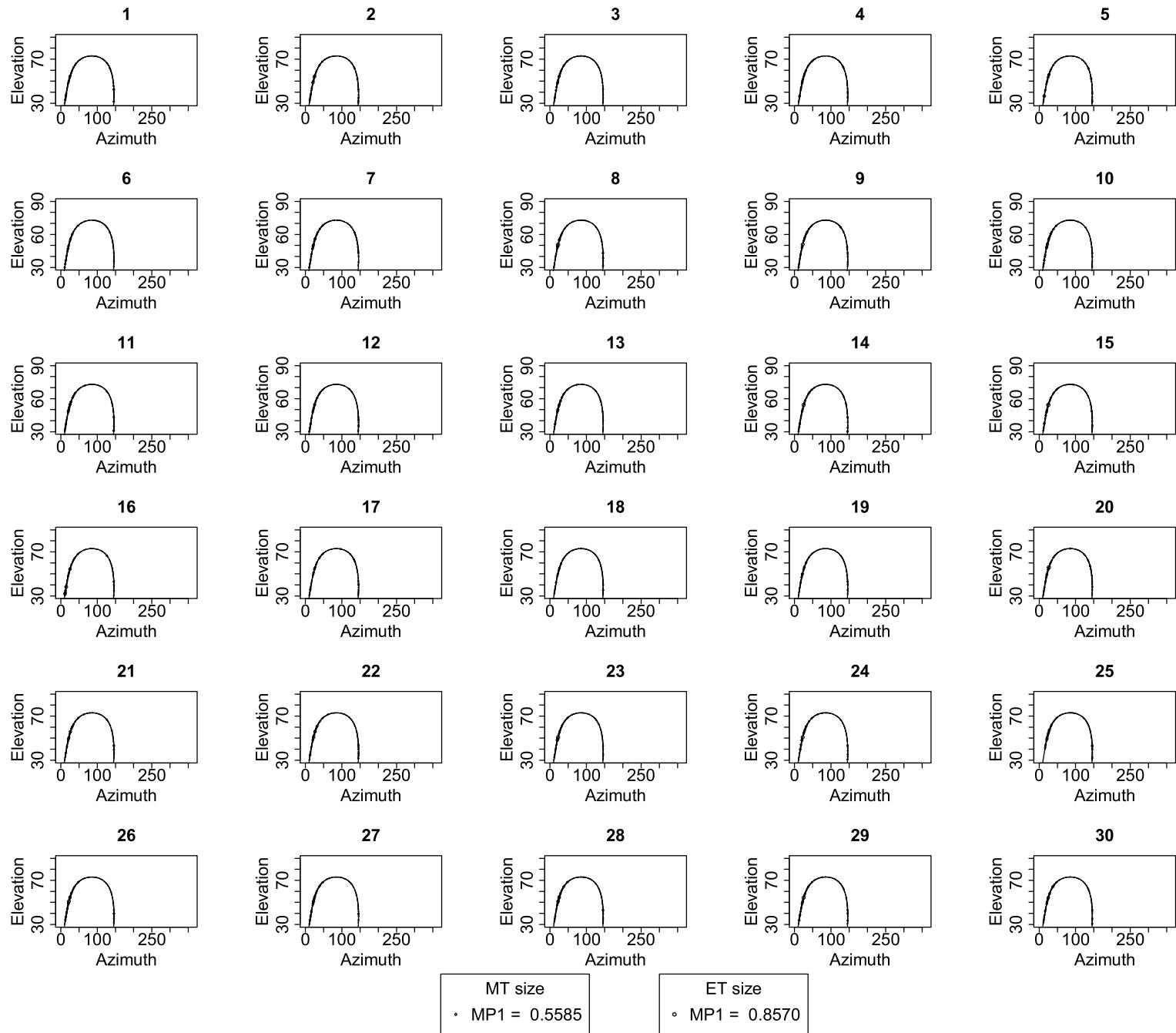


Figure S179 PEA plots comparison of MP1 for G17 on September 1–30, 2017 at SJCU station

PEA plots (G18)

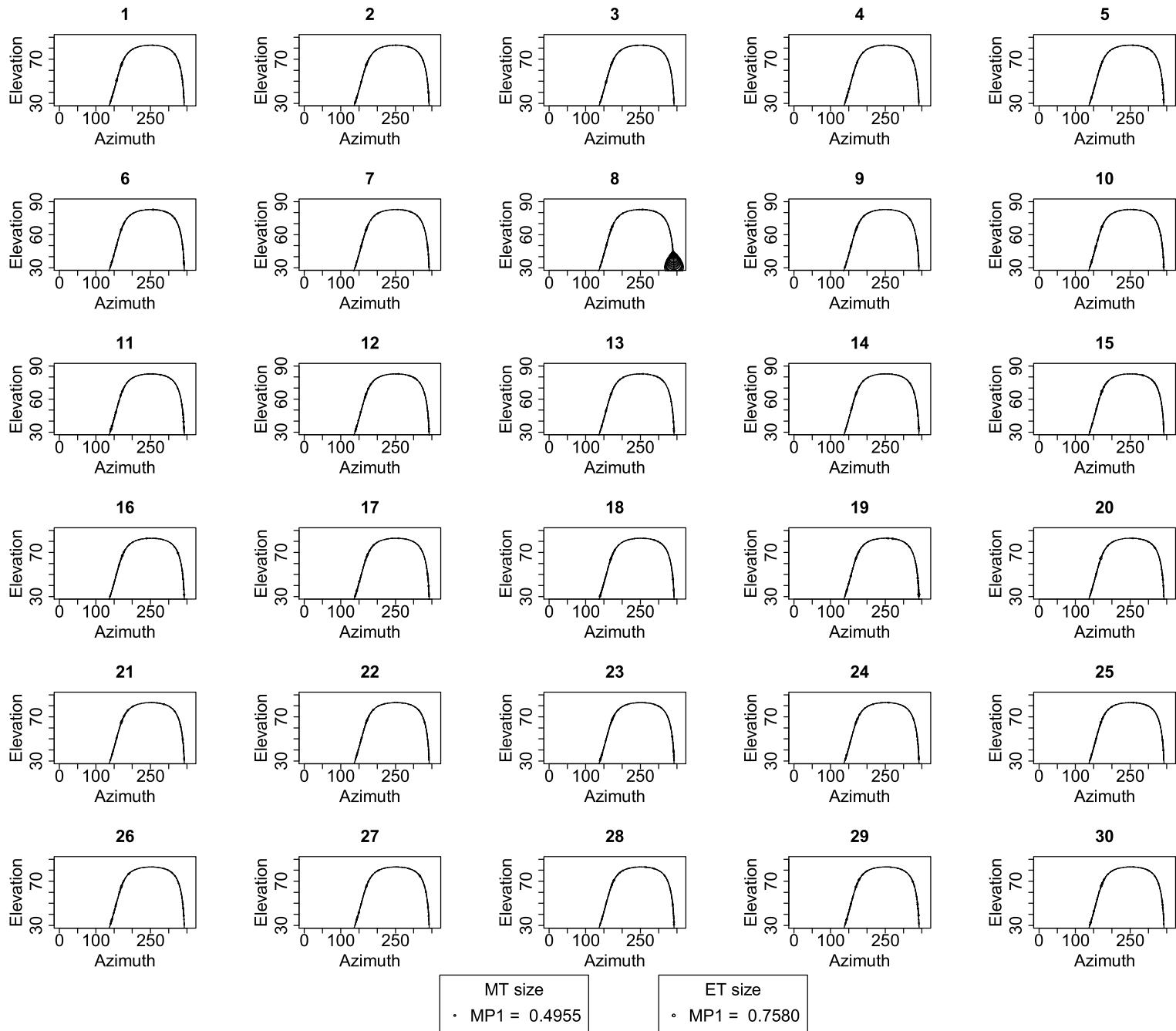


Figure S180 PEA plots comparison of MP1 for G18 on September 1–30, 2017 at SJCU station

PEA plots (G19)

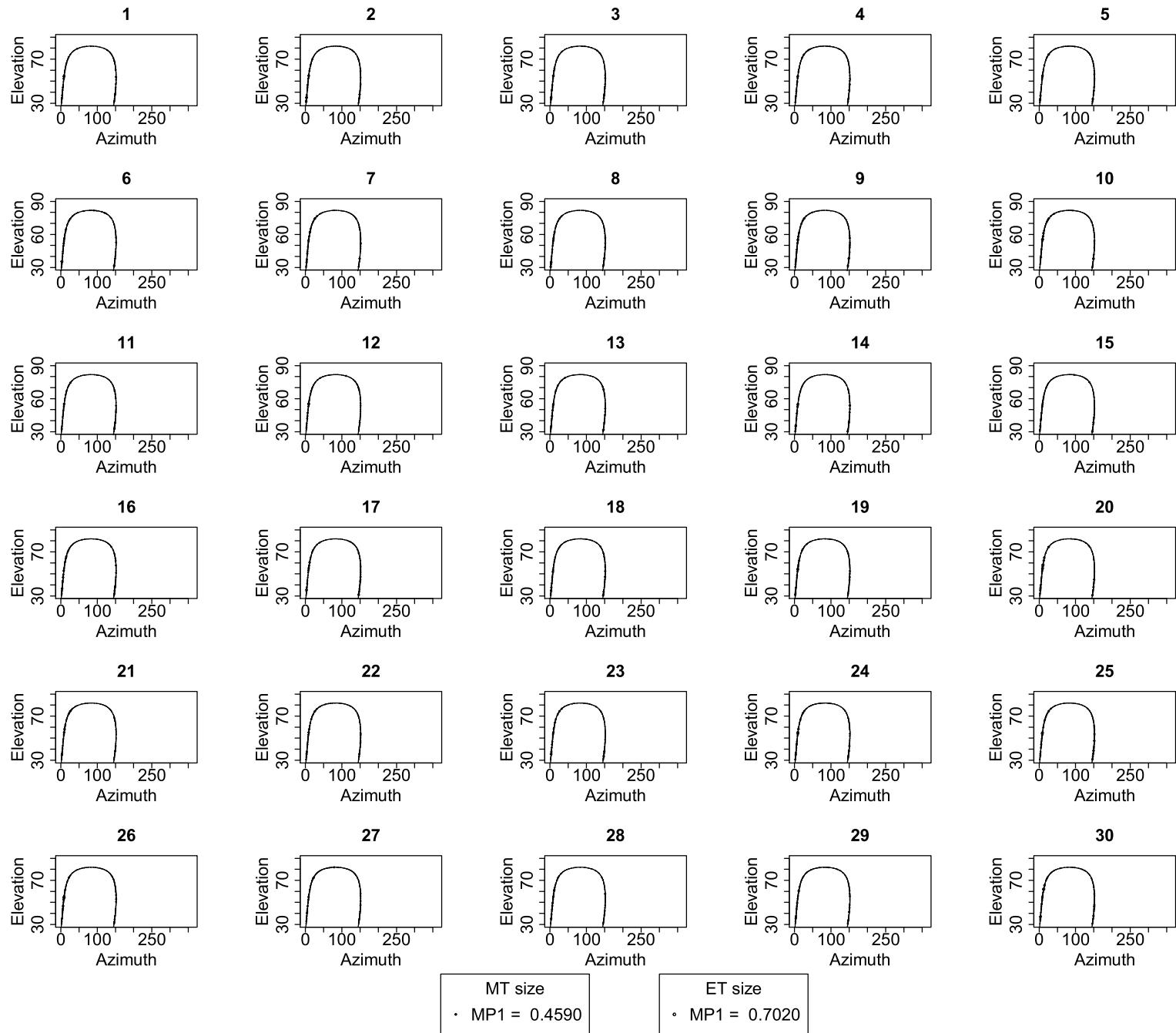


Figure S181 PEA plots comparison of MP1 for G19 on September 1–30, 2017 at SJCU station

PEA plots (G20)

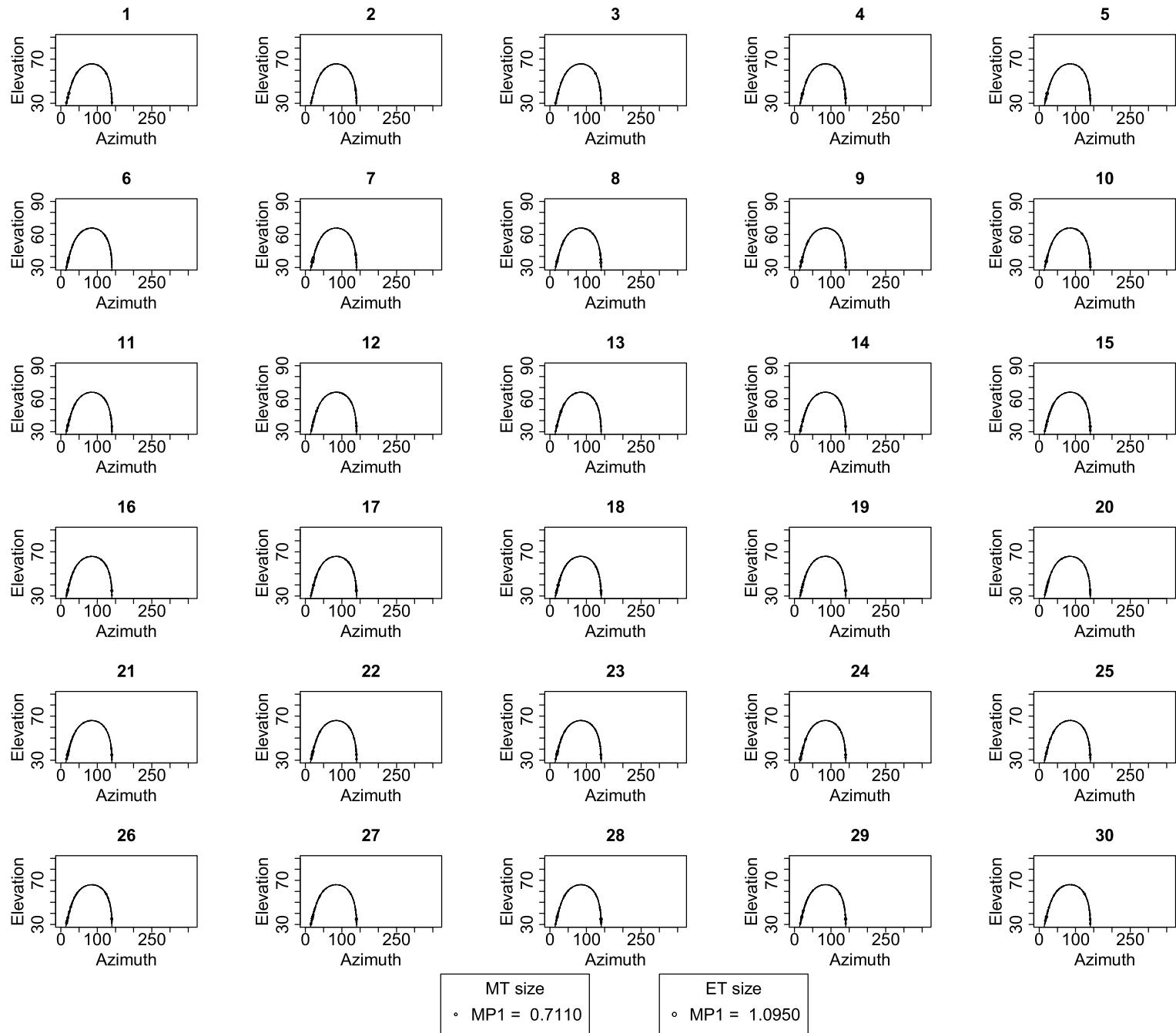


Figure S182 PEA plots comparison of MP1 for G20 on September 1–30, 2017 at SJCU station

PEA plots (G21)

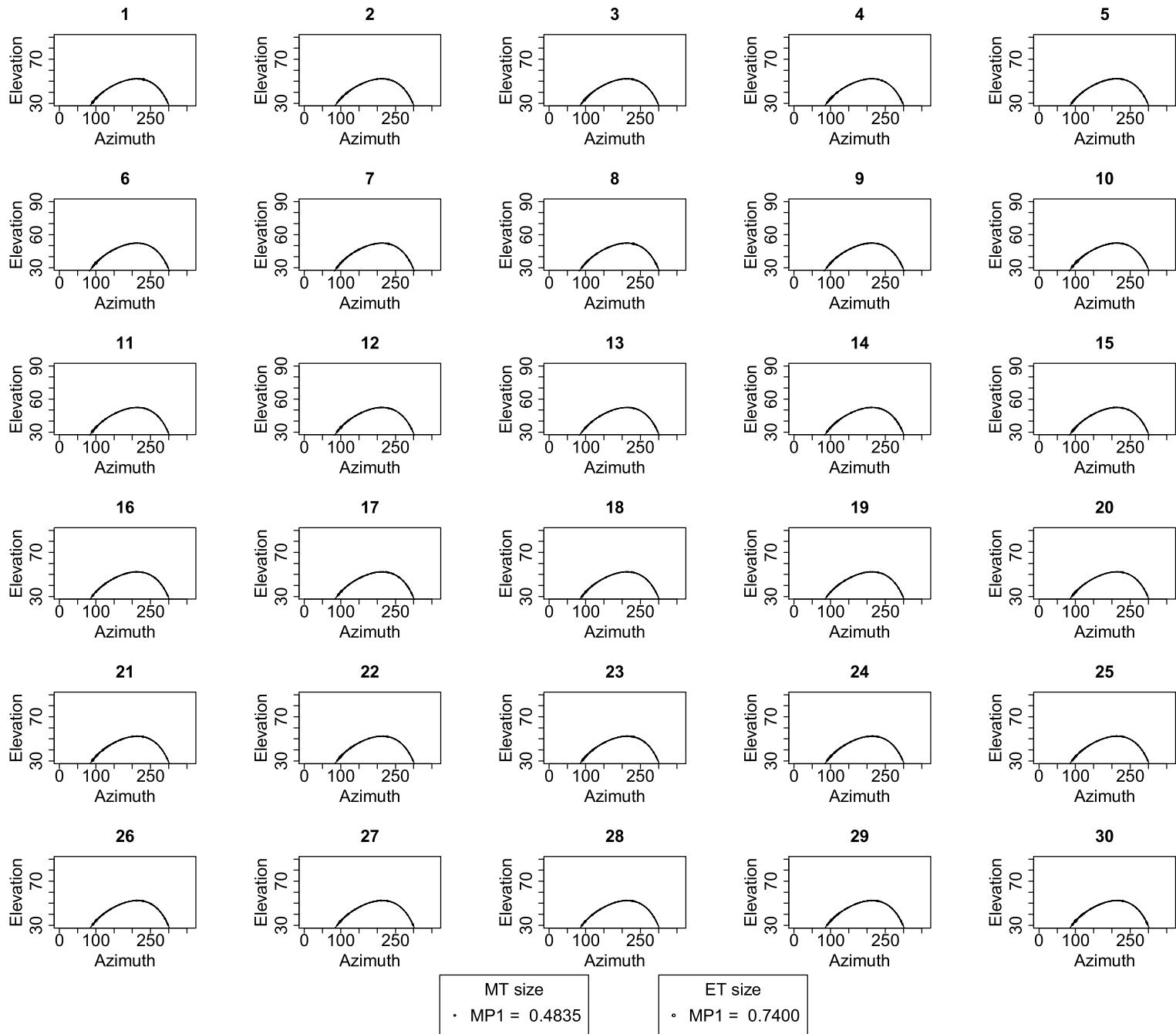


Figure S183 PEA plots comparison of MP1 for G21 on September 1–30, 2017 at SJCU station

PEA plots (G22)

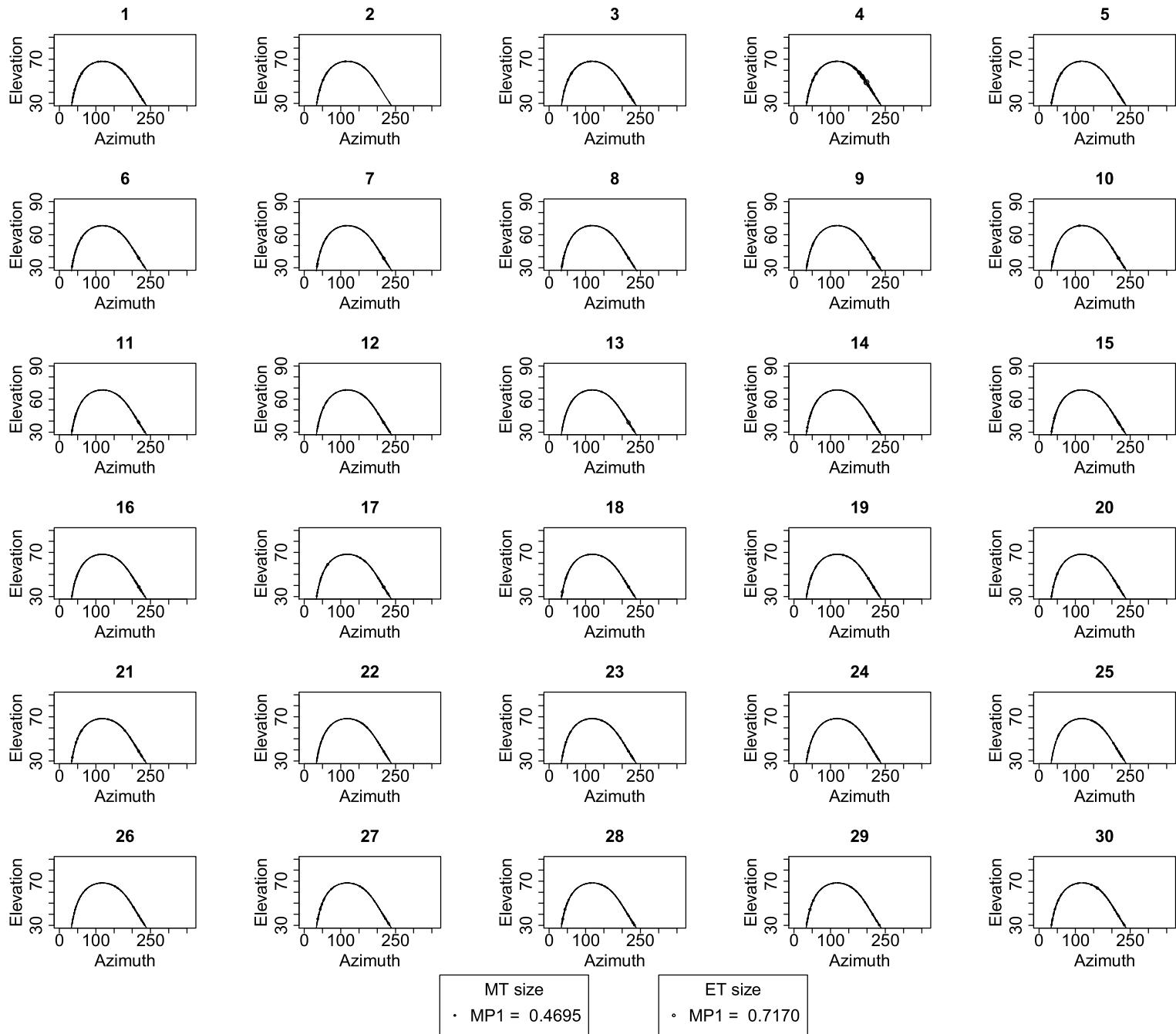


Figure S184 PEA plots comparison of MP1 for G22 on September 1–30, 2017 at SJCU station

PEA plots (G23)

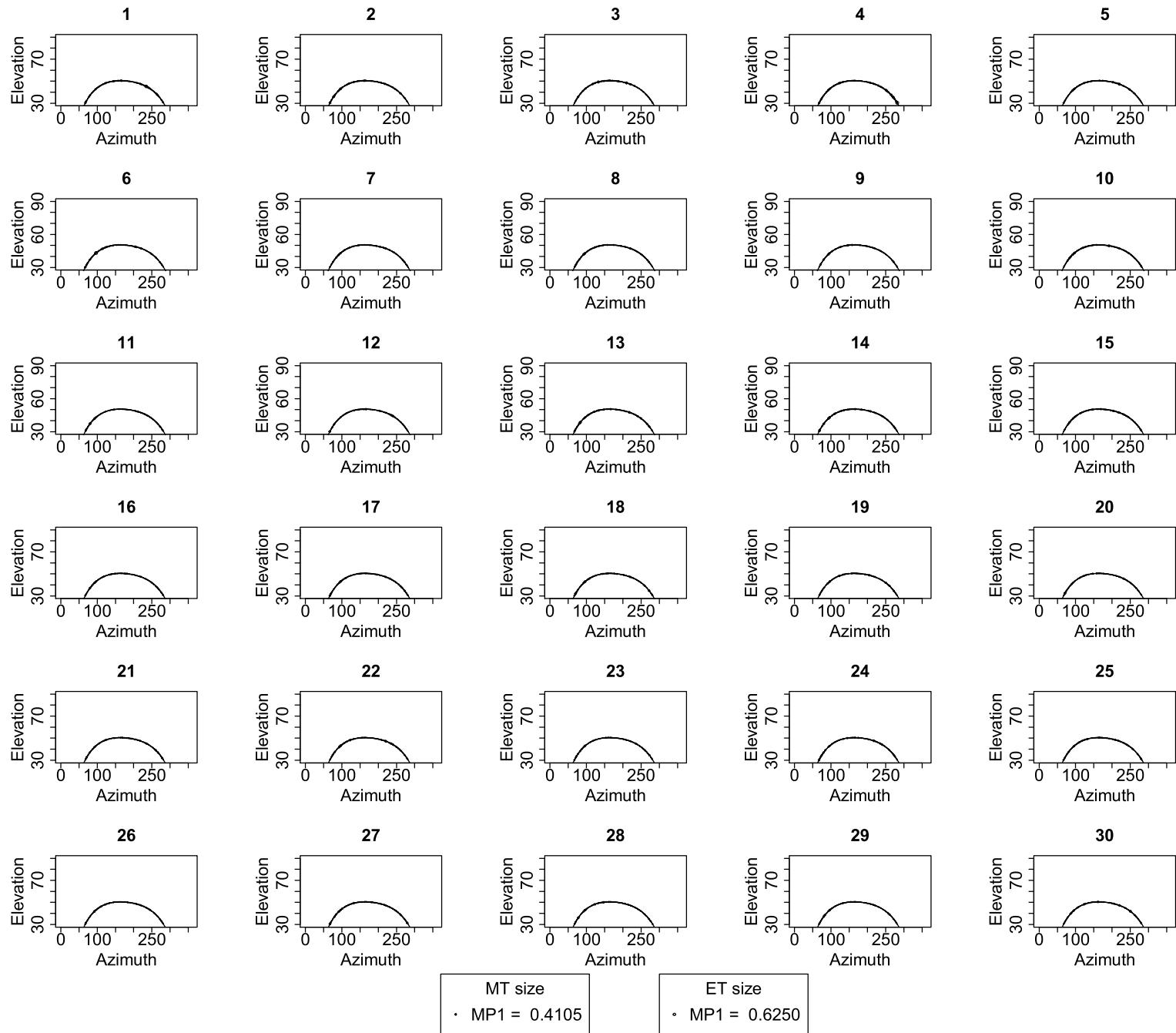


Figure S185 PEA plots comparison of MP1 for G23 on September 1–30, 2017 at SJCU station

PEA plots (G24)

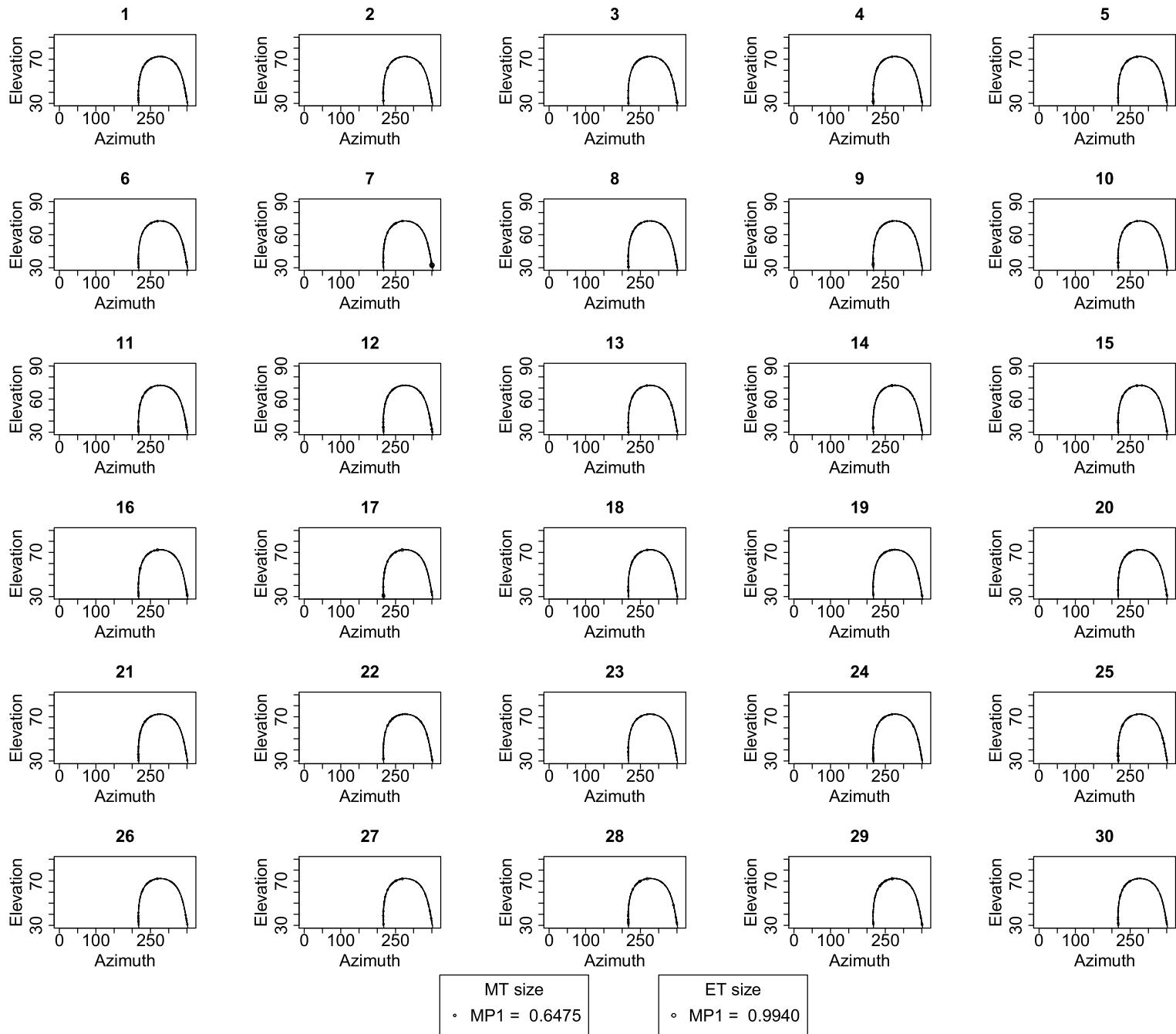


Figure S186 PEA plots comparison of MP1 for G24 on September 1–30, 2017 at SJCU station

PEA plots (G25)

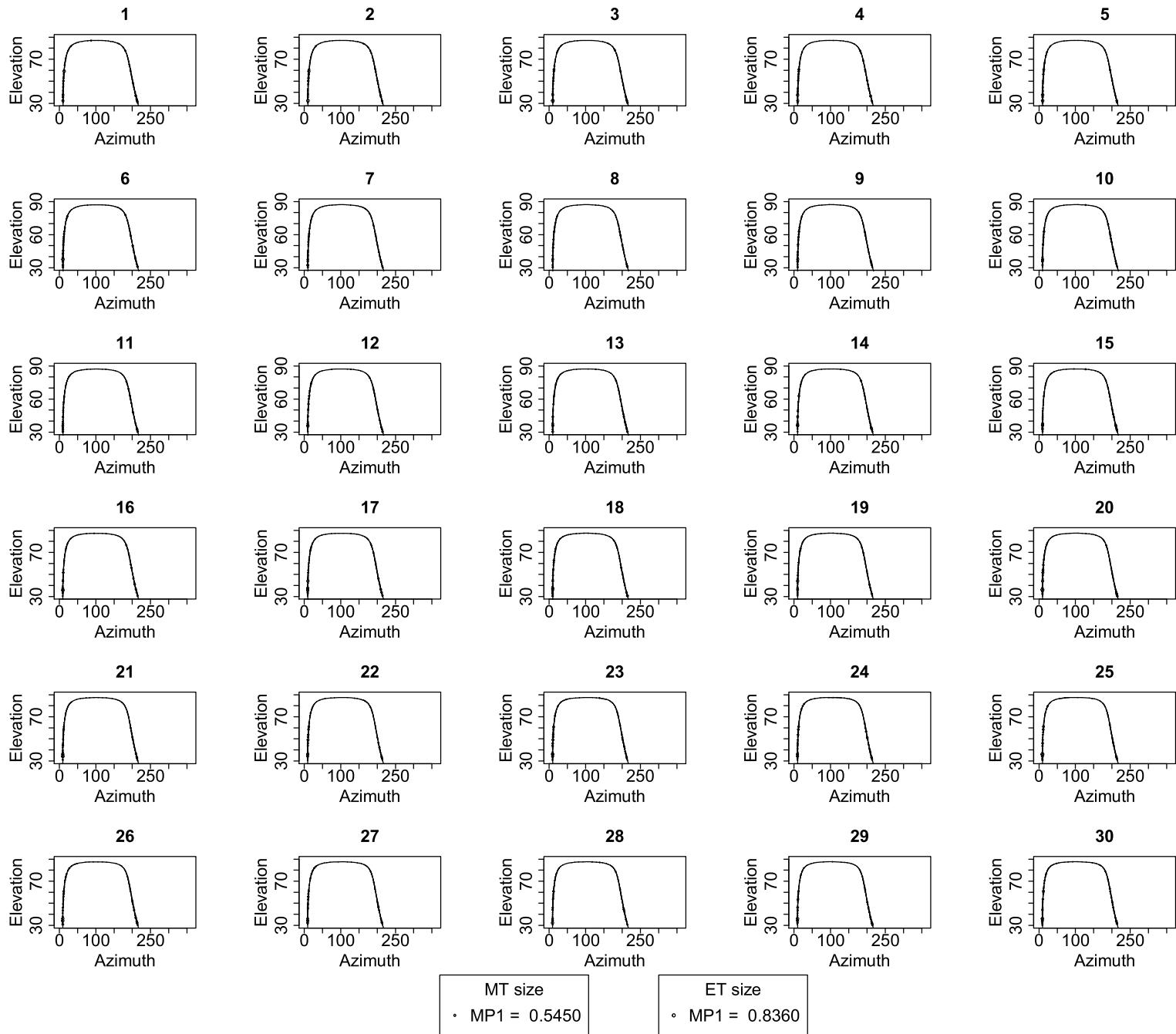


Figure S187 PEA plots comparison of MP1 for G25 on September 1–30, 2017 at SJCU station

PEA plots (G26)

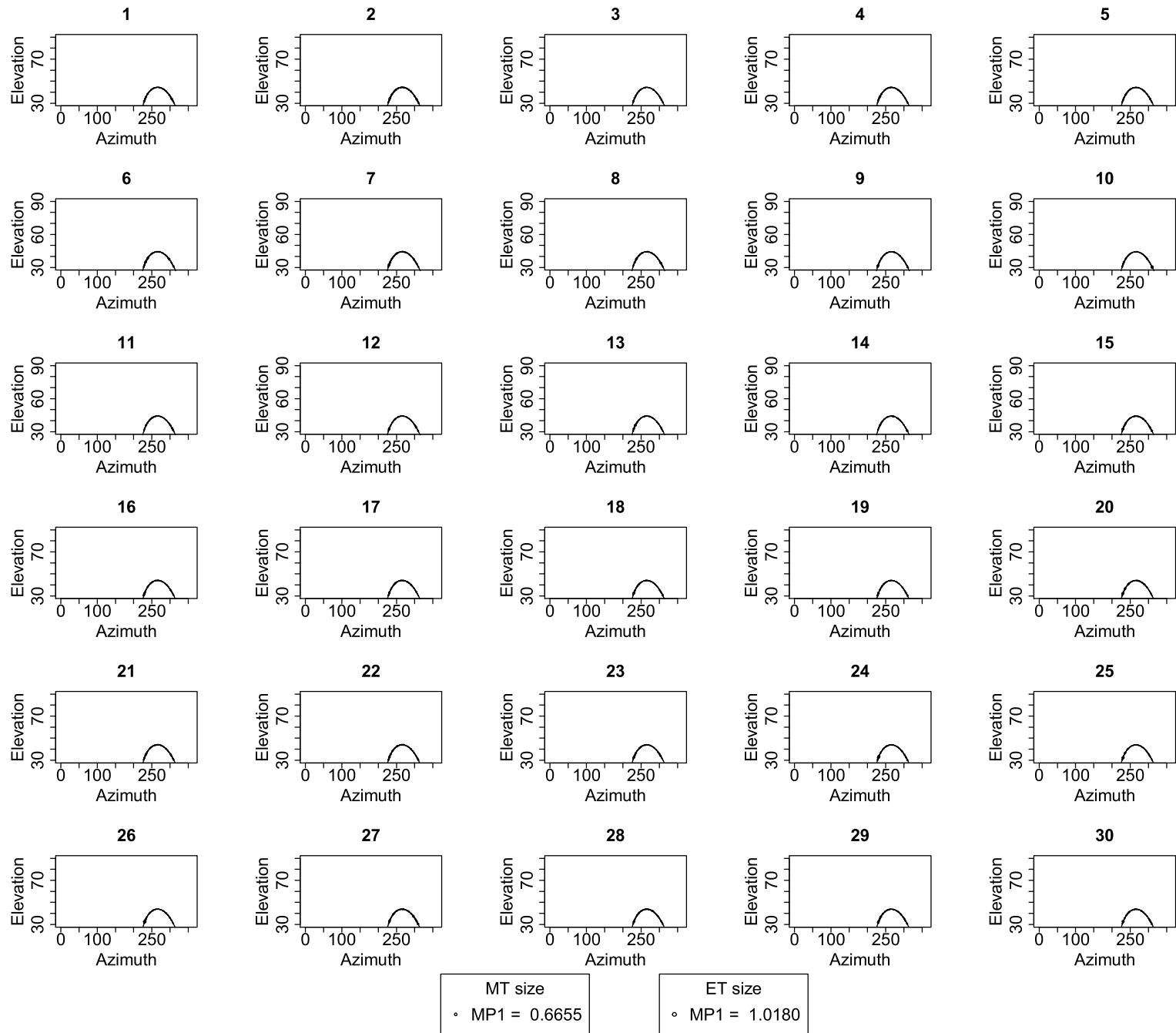


Figure S188 PEA plots comparison of MP1 for G26 on September 1–30, 2017 at SJCU station

PEA plots (G27)

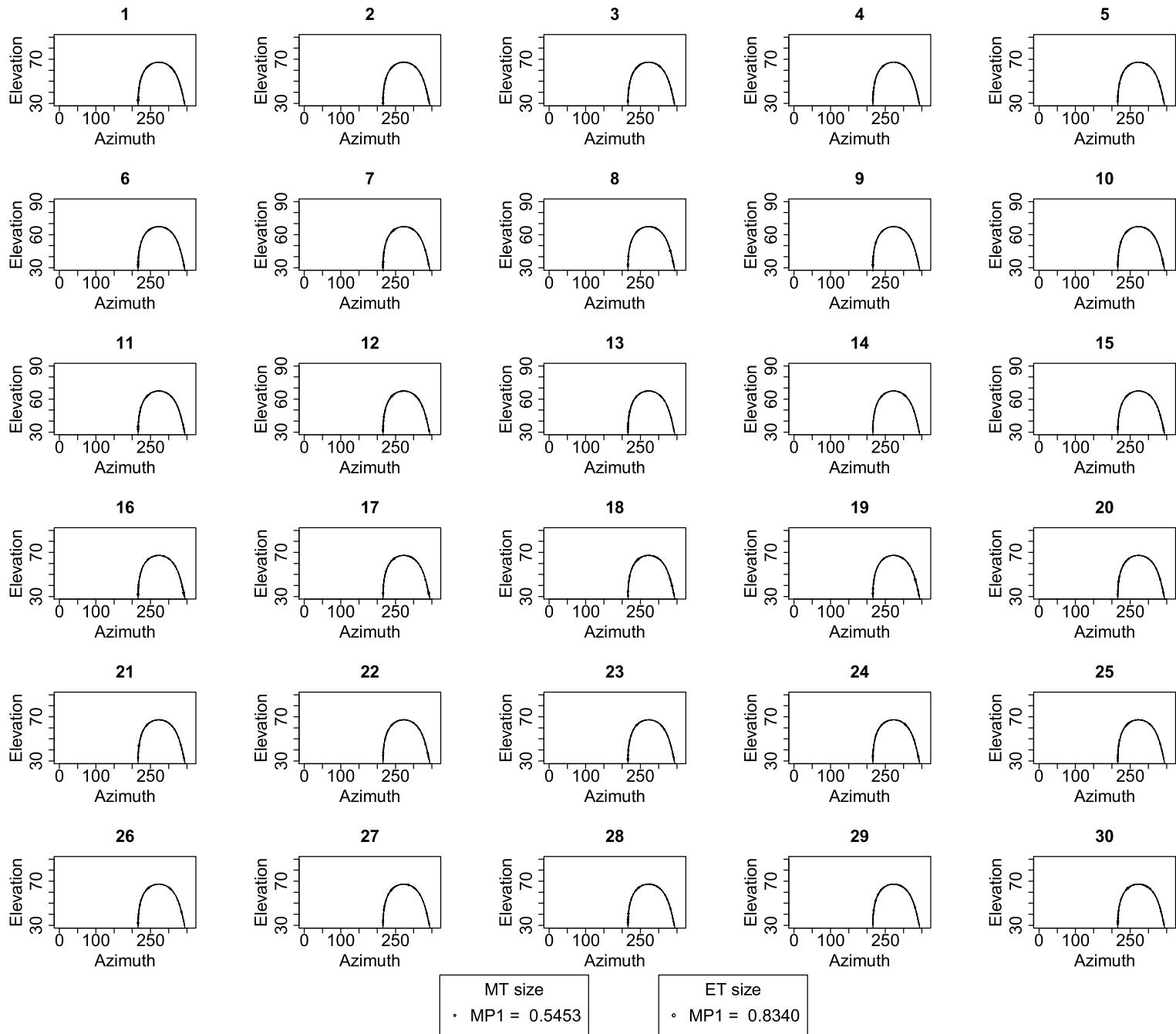


Figure S189 PEA plots comparison of MP1 for G27 on September 1–30, 2017 at SJCU station

PEA plots (G28)

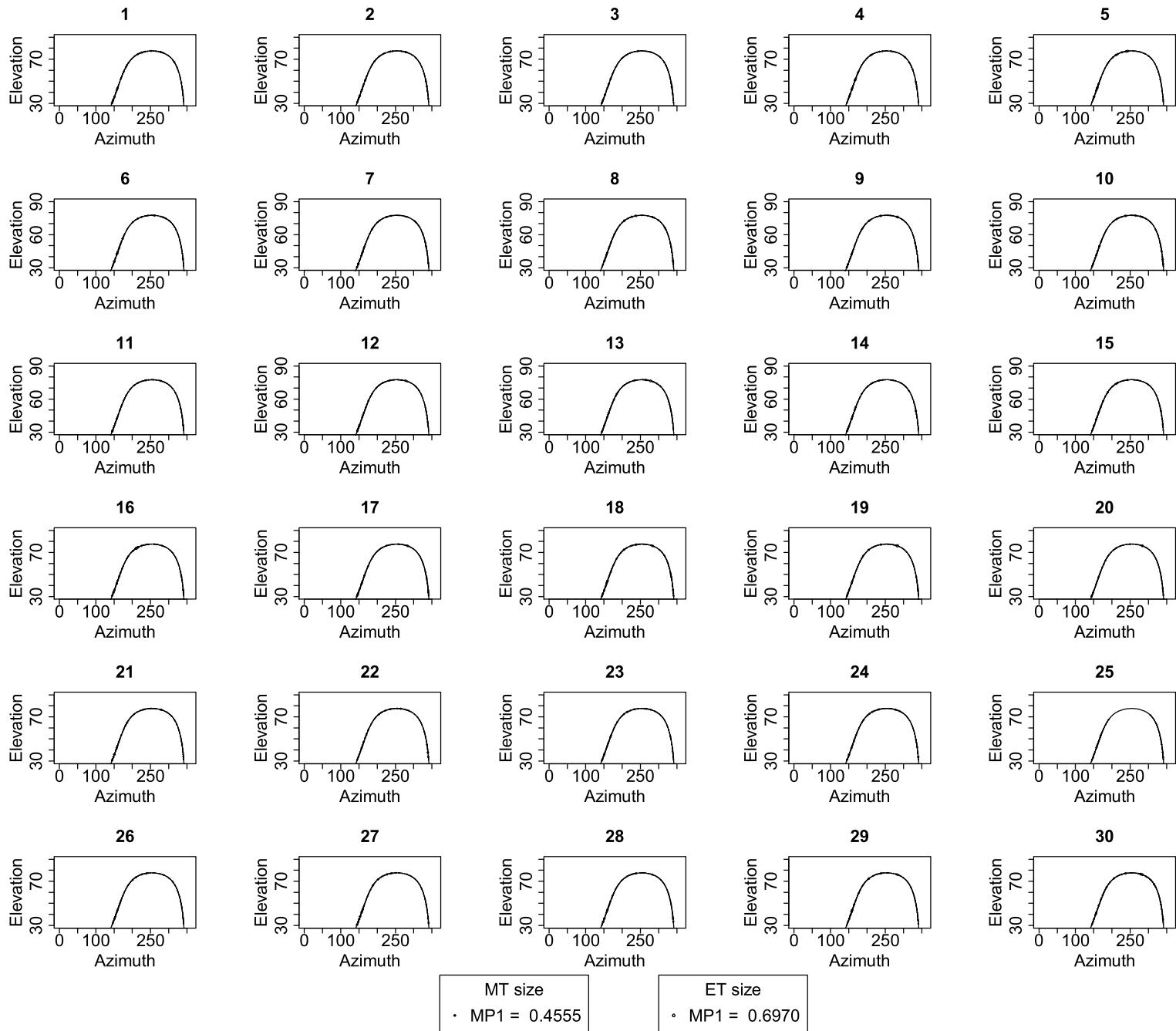


Figure S190 PEA plots comparison of MP1 for G28 on September 1–30, 2017 at SJCU station

PEA plots (G29)

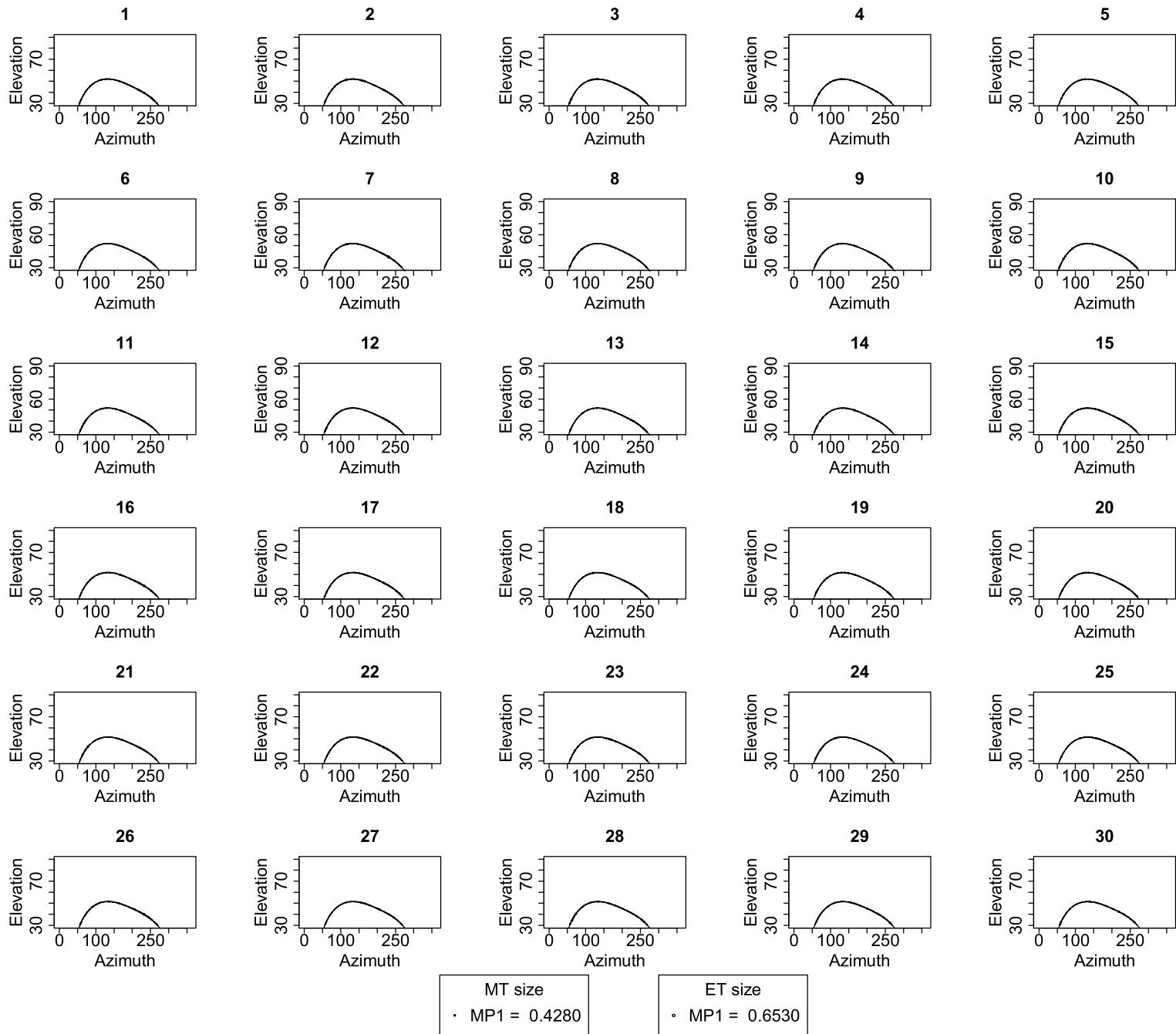


Figure S191 PEA plots comparison of MP1 for G29 on September 1–30, 2017 at SJCU station

PEA plots (G30)

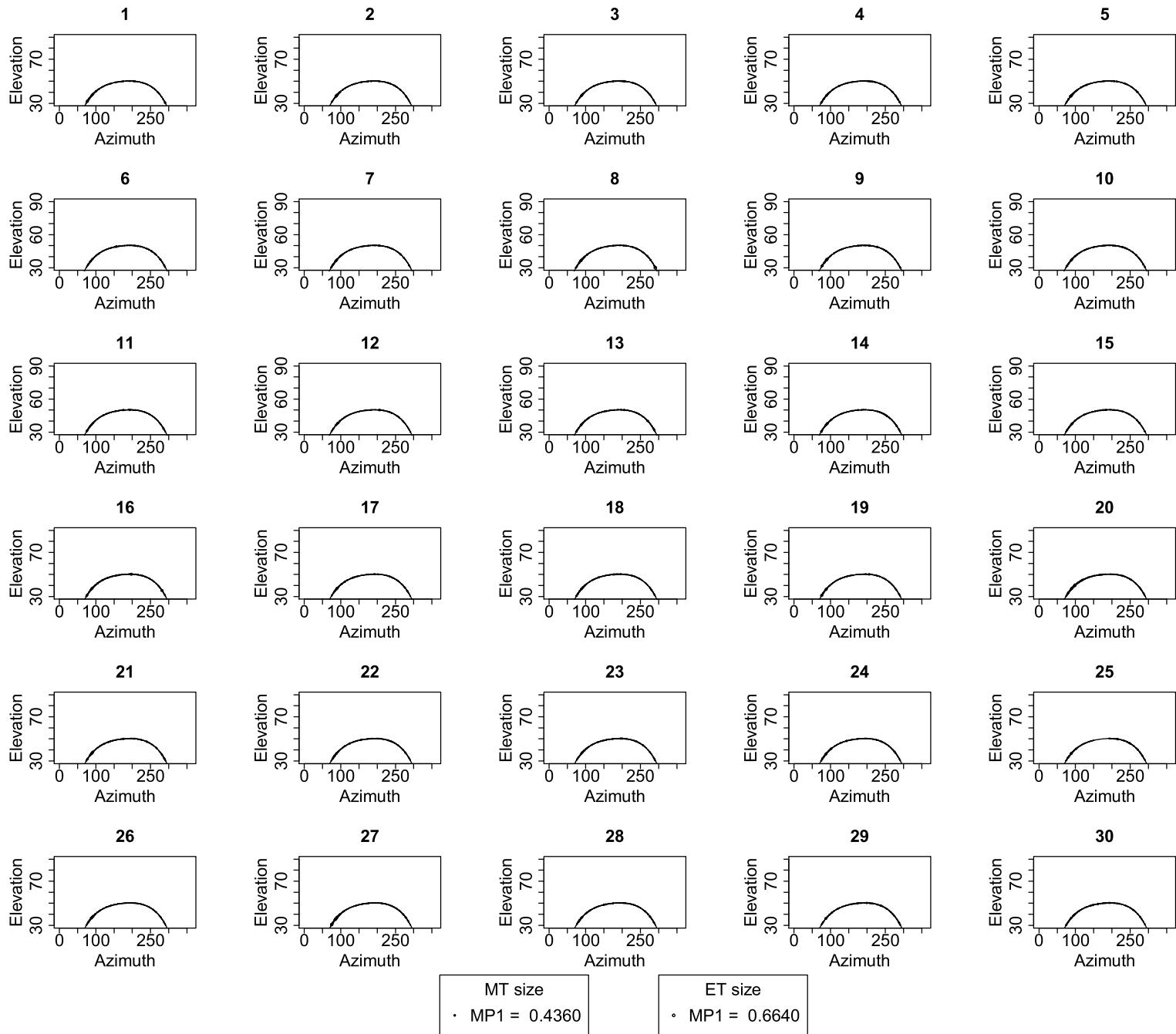


Figure S192 PEA plots comparison of MP1 for G30 on September 1–30, 2017 at SJCU station

PEA plots (G31)

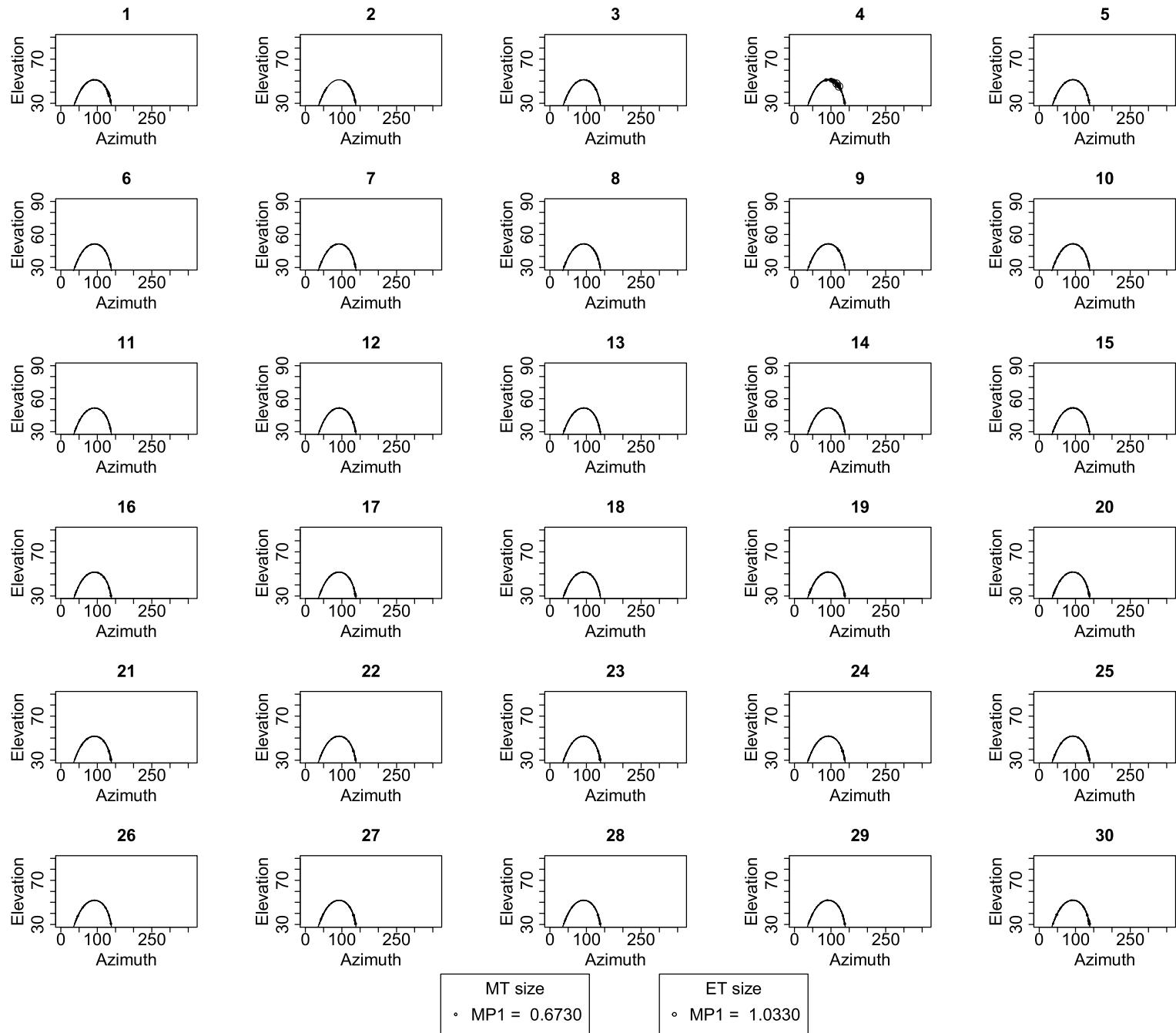


Figure S193 PEA plots comparison of MP1 for G31 on September 1–30, 2017 at SJCU station

PEA plots (G32)

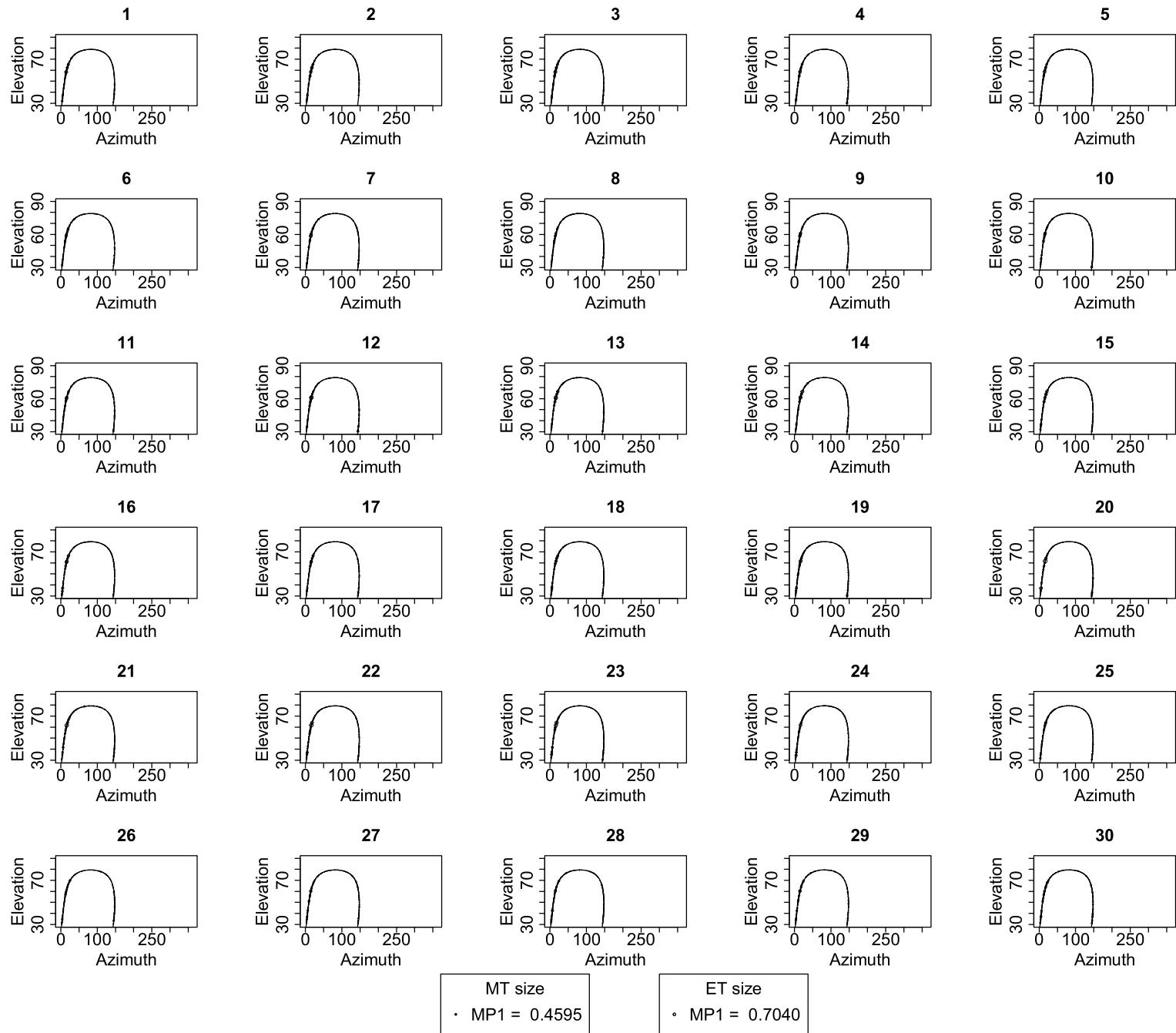


Figure S194 PEA plots comparison of MP1 for G32 on September 1–30, 2017 at SJCU station

PEA plots (G1)

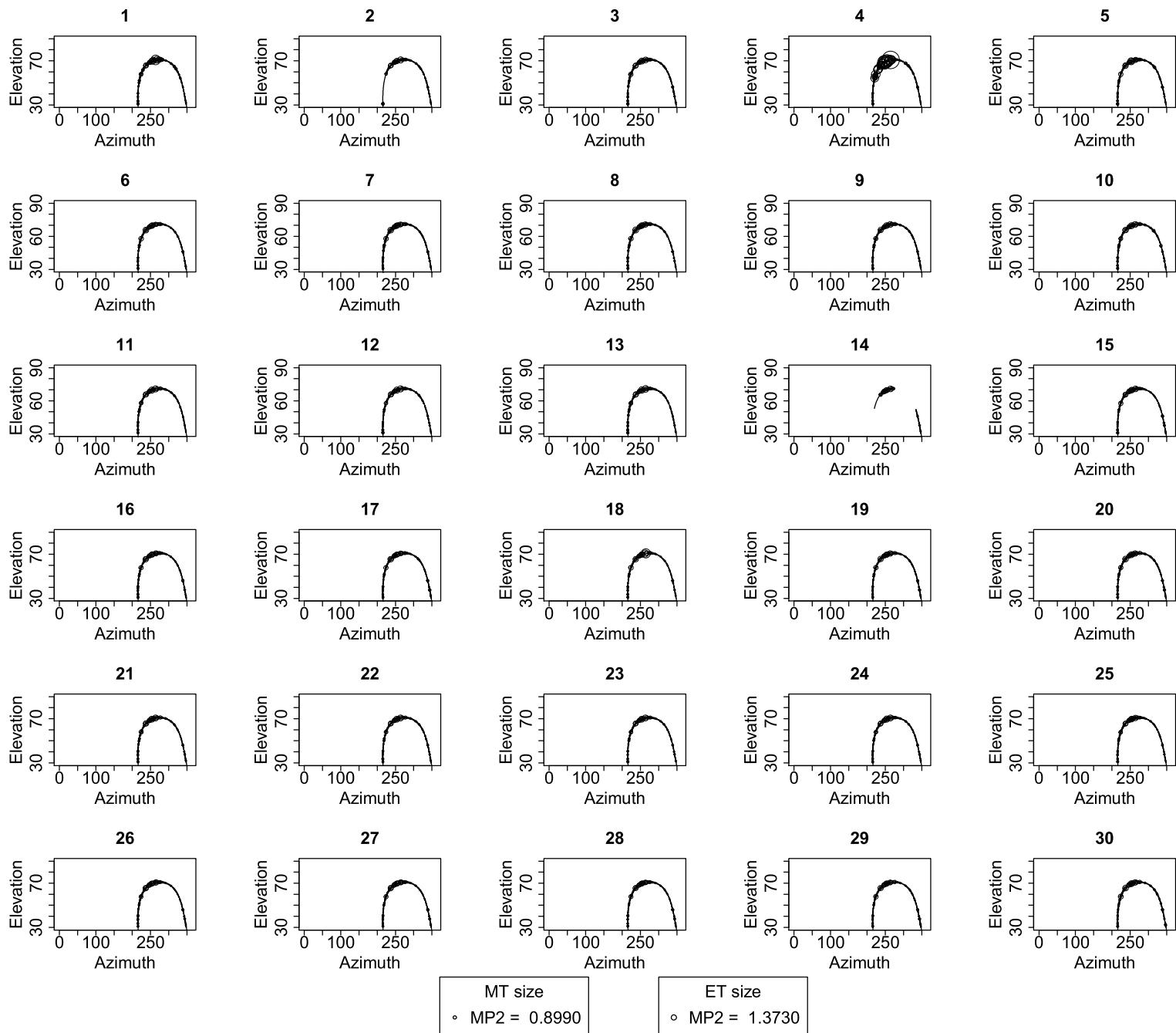


Figure S195 PEA plots comparison of MP2 for G1 on September 1–30, 2017 at SJCU station

PEA plots (G2)

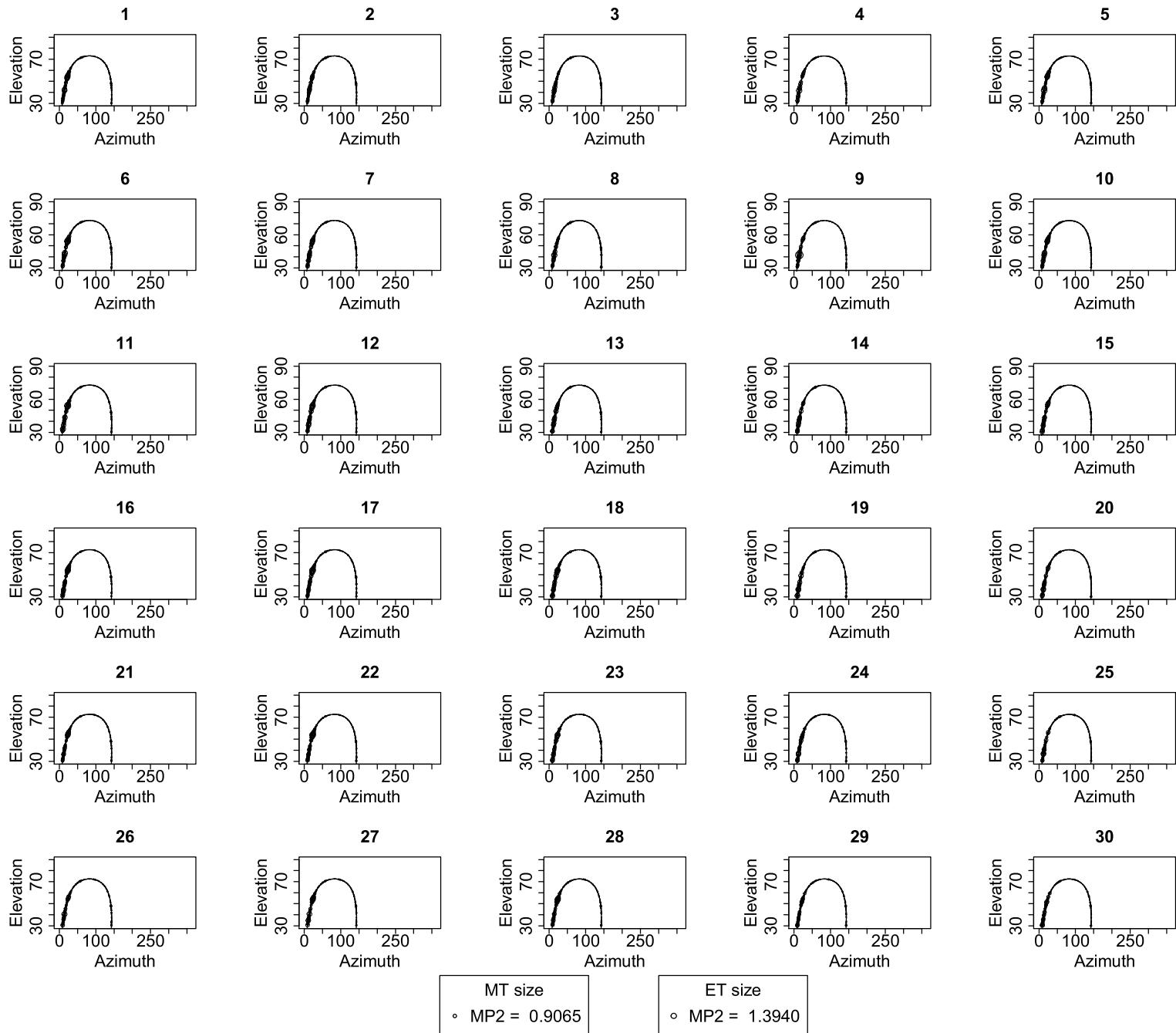


Figure S196 PEA plots comparison of MP2 for G2 on September 1–30, 2017 at SJCU station

PEA plots (G3)

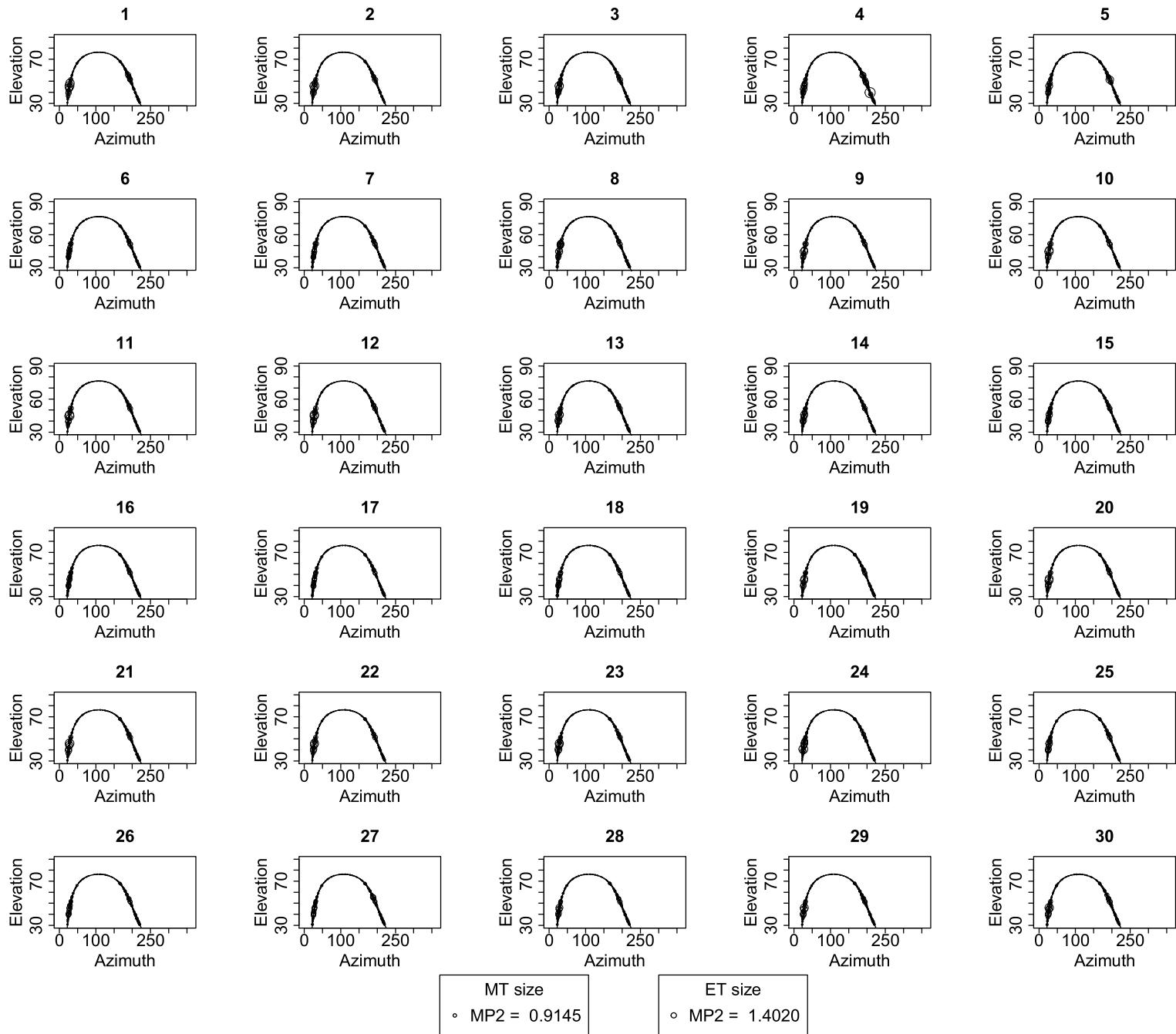


Figure S197 PEA plots comparison of MP2 for G3 on September 1–30, 2017 at SJCU station

PEA plots (G4)

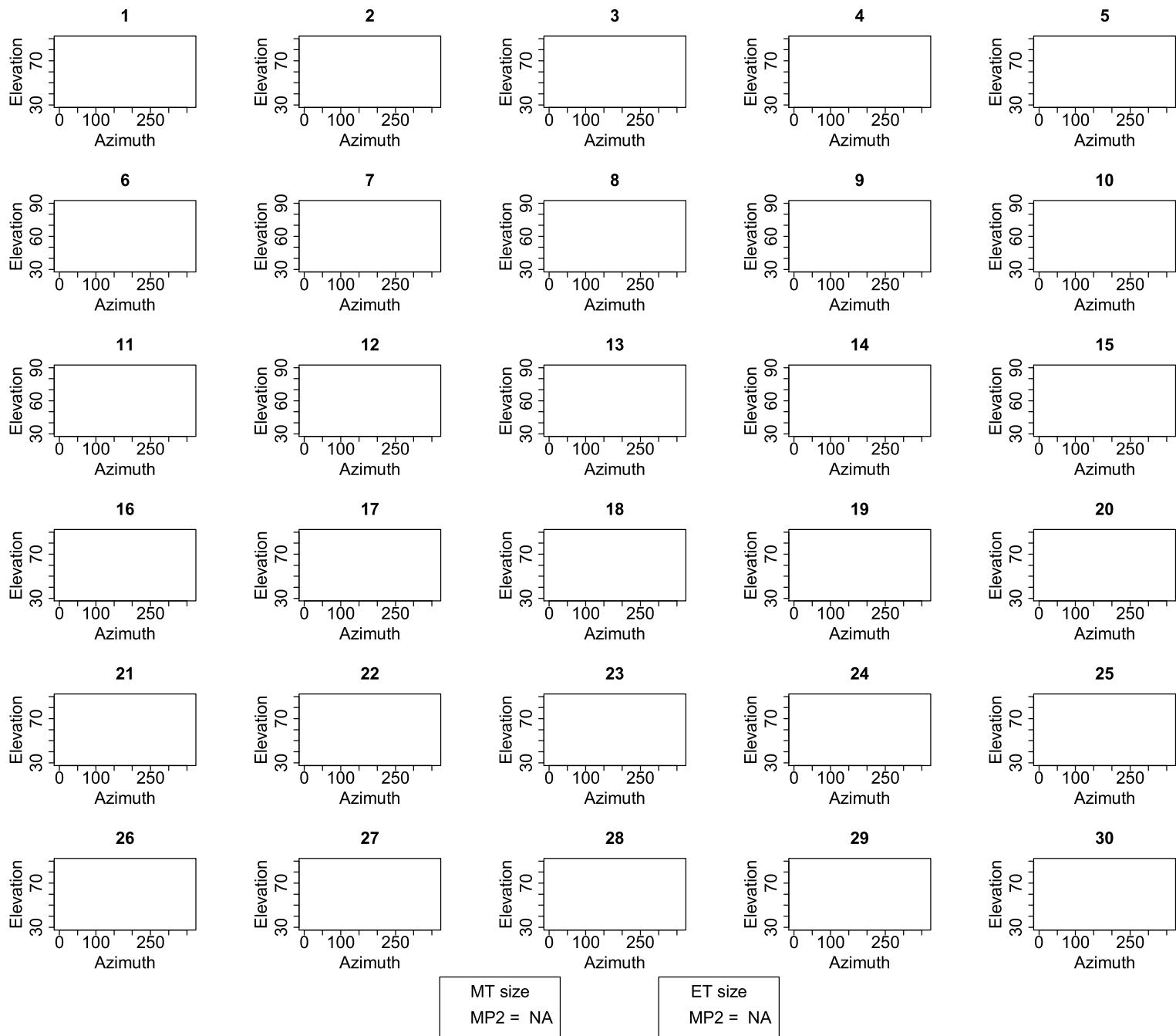


Figure S198 PEA plots comparison of MP2 for G4 on September 1–30, 2017 at SJCU station

PEA plots (G5)

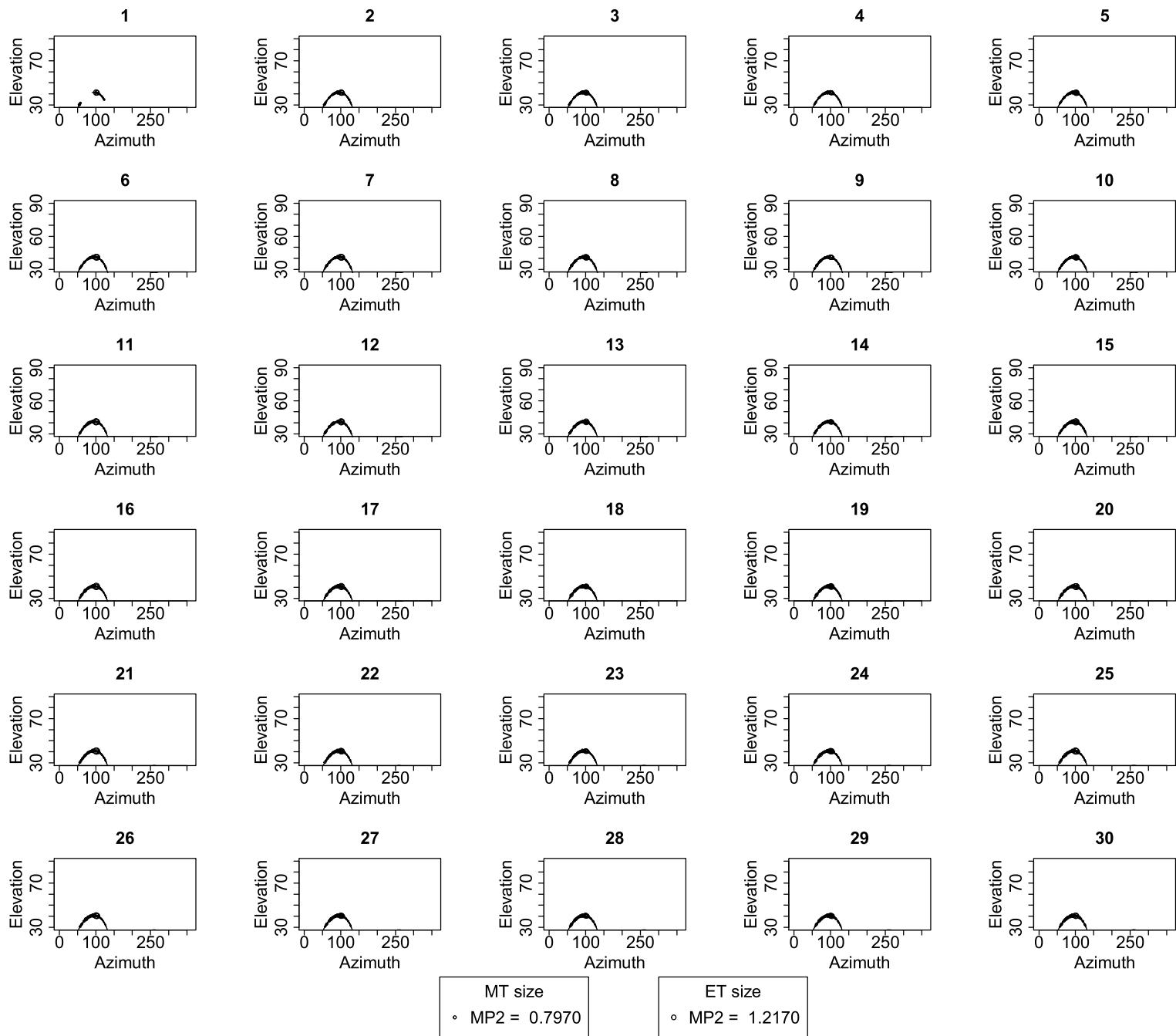


Figure S199 PEA plots comparison of MP2 for G5 on September 1–30, 2017 at SJCU station

PEA plots (G6)

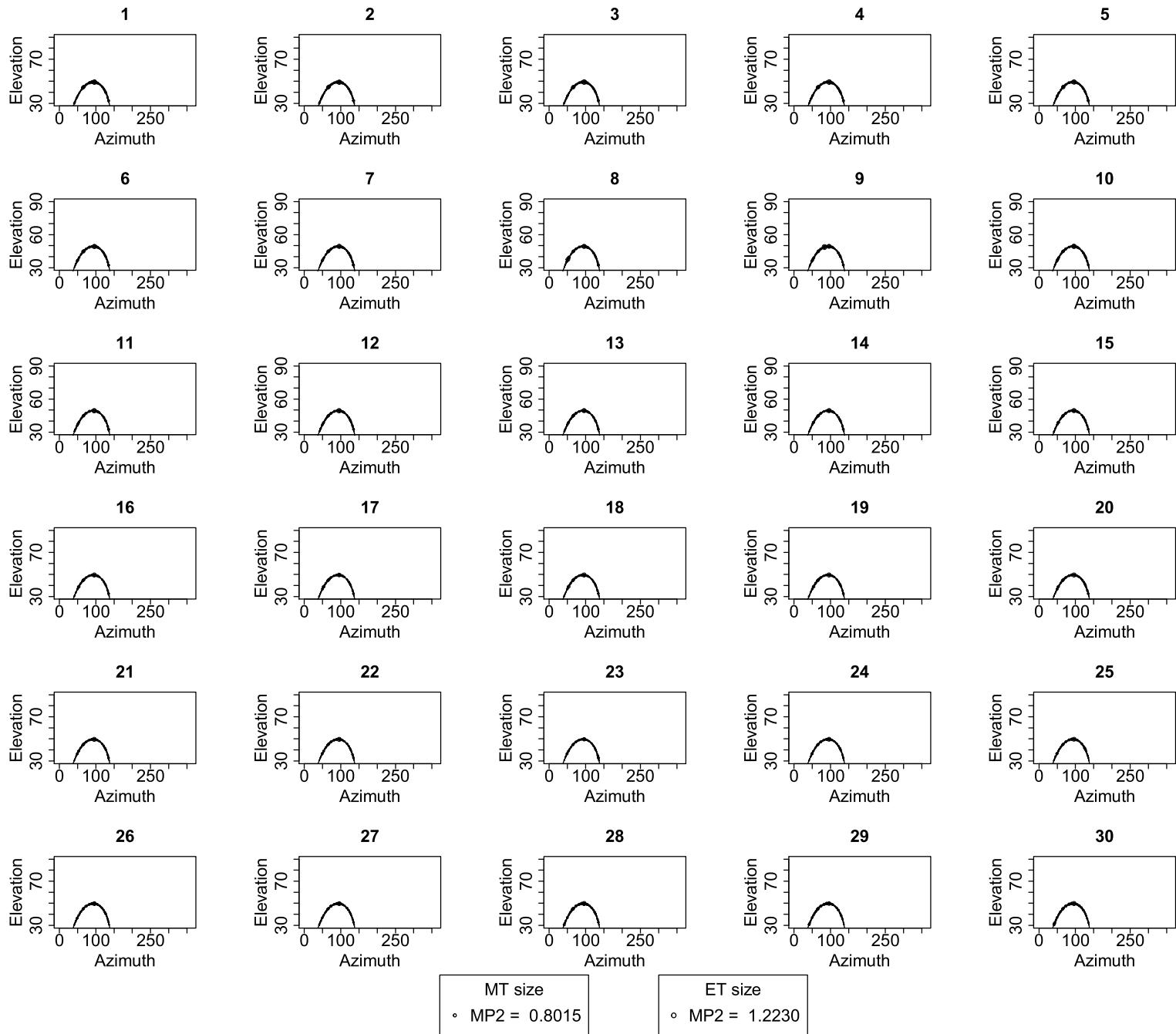


Figure S200 PEA plots comparison of MP2 for G6 on September 1–30, 2017 at SJCU station

PEA plots (G7)

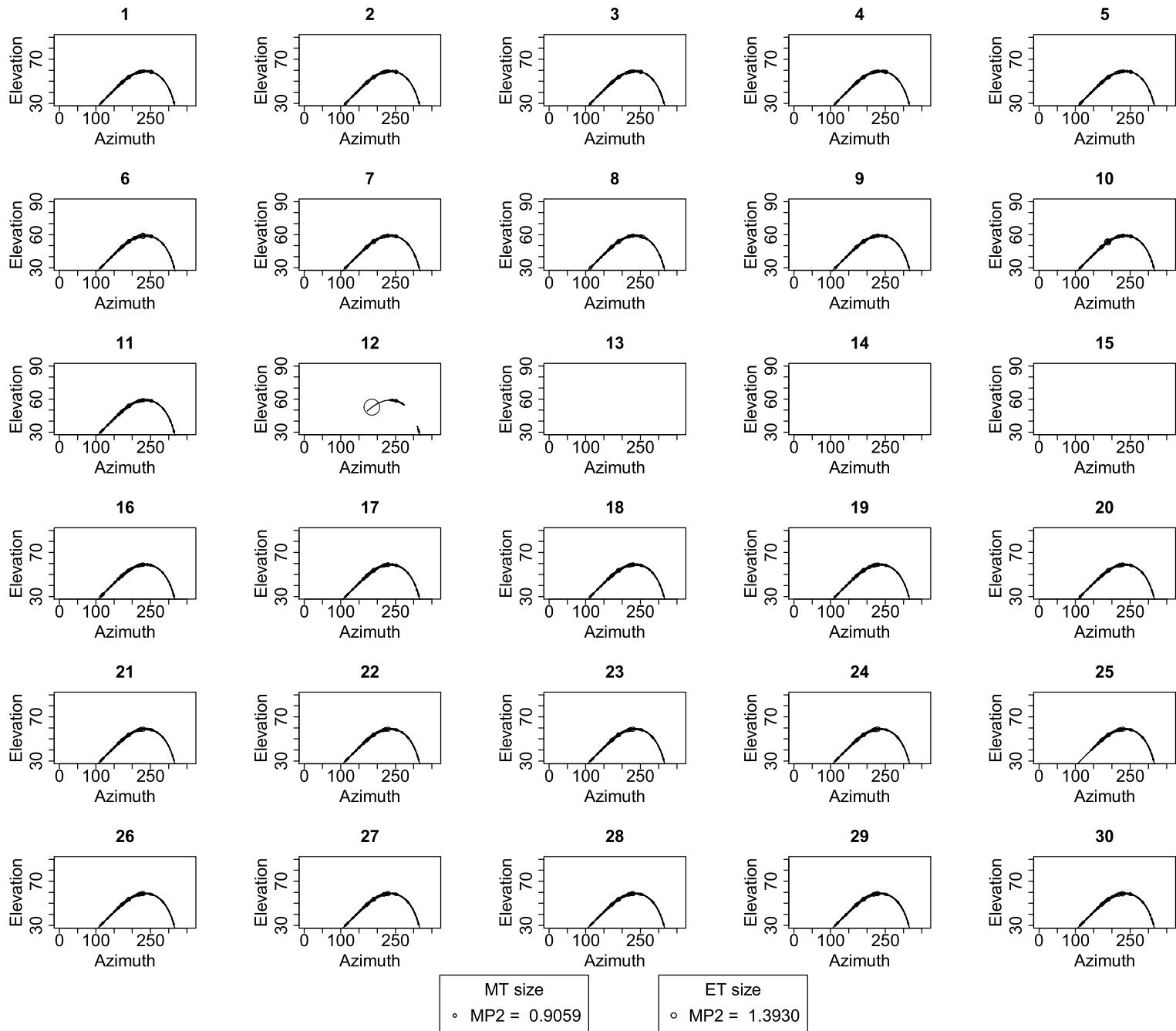


Figure S201 PEA plots comparison of MP2 for G7 on September 1–30, 2017 at SJCU station

PEA plots (G8)

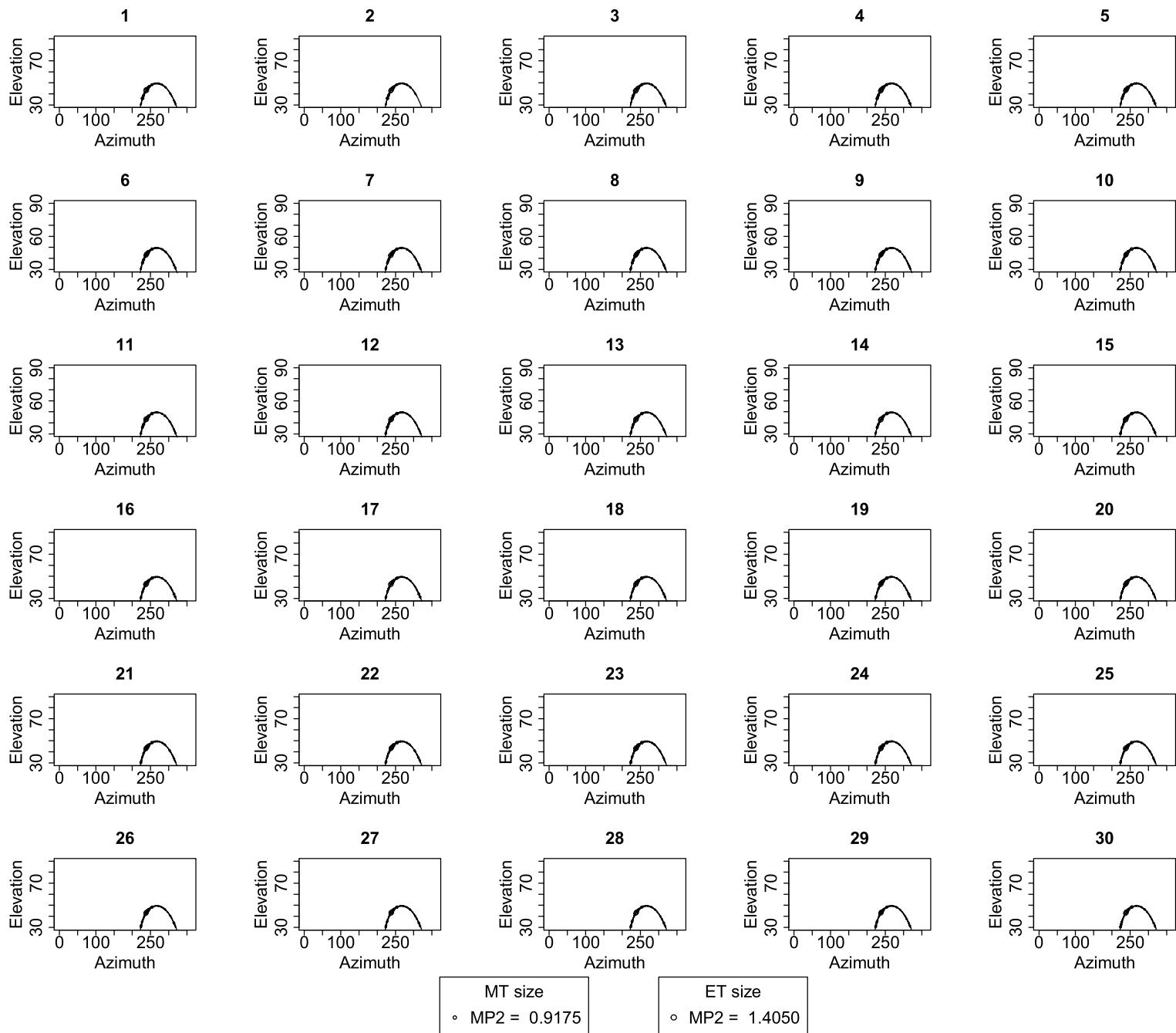


Figure S202 PEA plots comparison of MP2 for G8 on September 1–30, 2017 at SJCU station

PEA plots (G9)

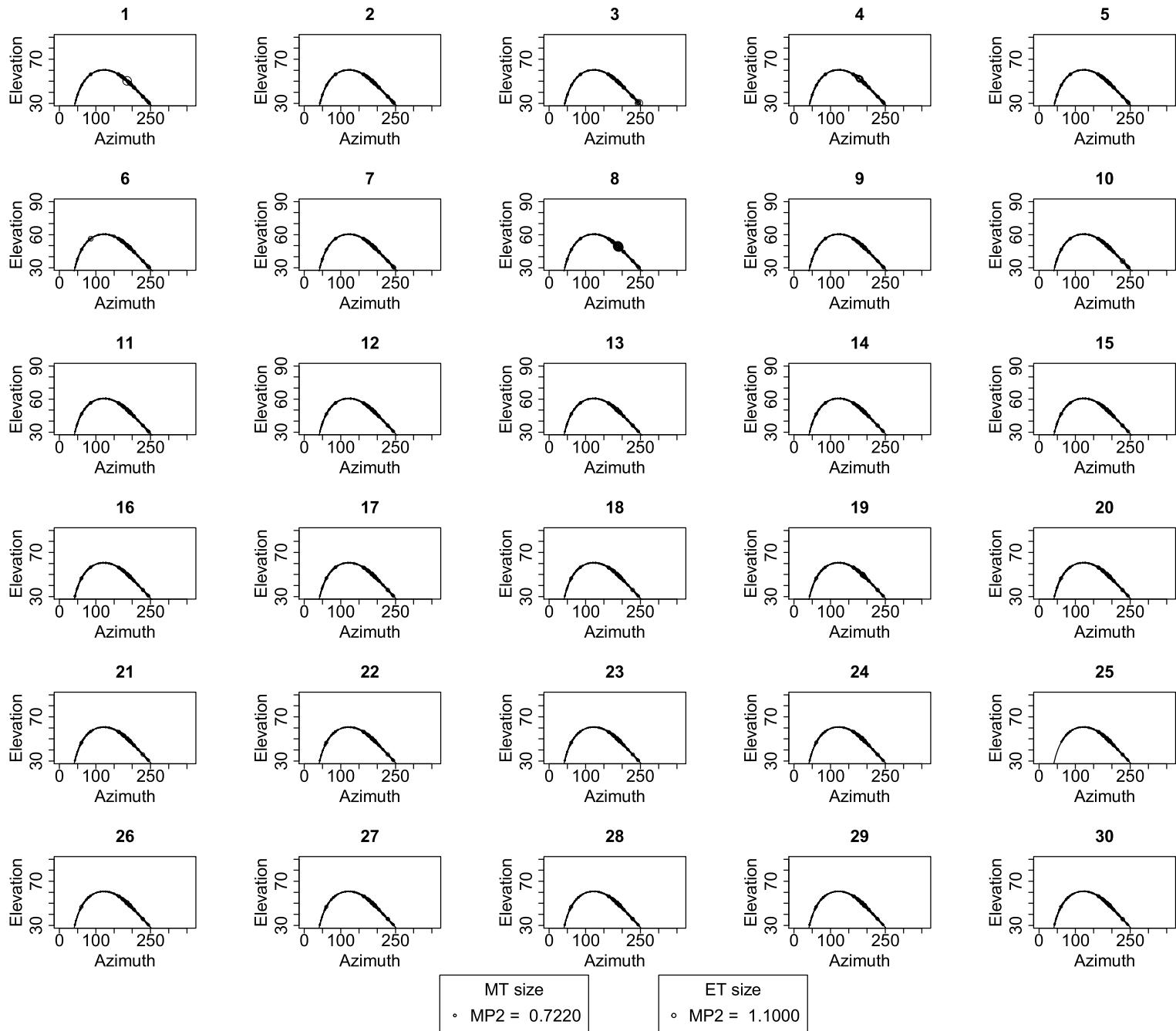


Figure S203 PEA plots comparison of MP2 for G9 on September 1–30, 2017 at SJCU station

PEA plots (G10)

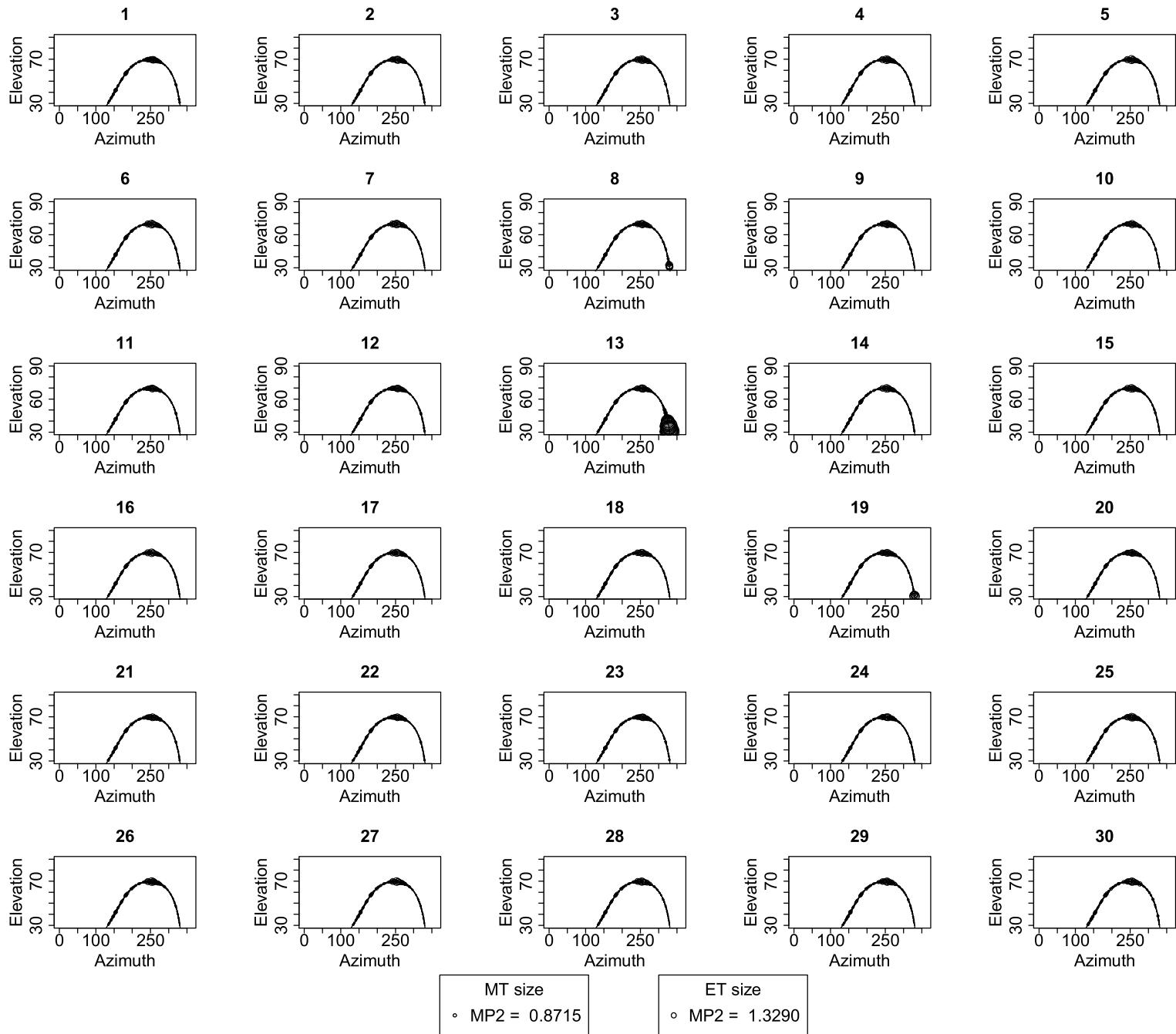


Figure S204 PEA plots comparison of MP2 for G10 on September 1–30, 2017 at SJCU station

PEA plots (G11)

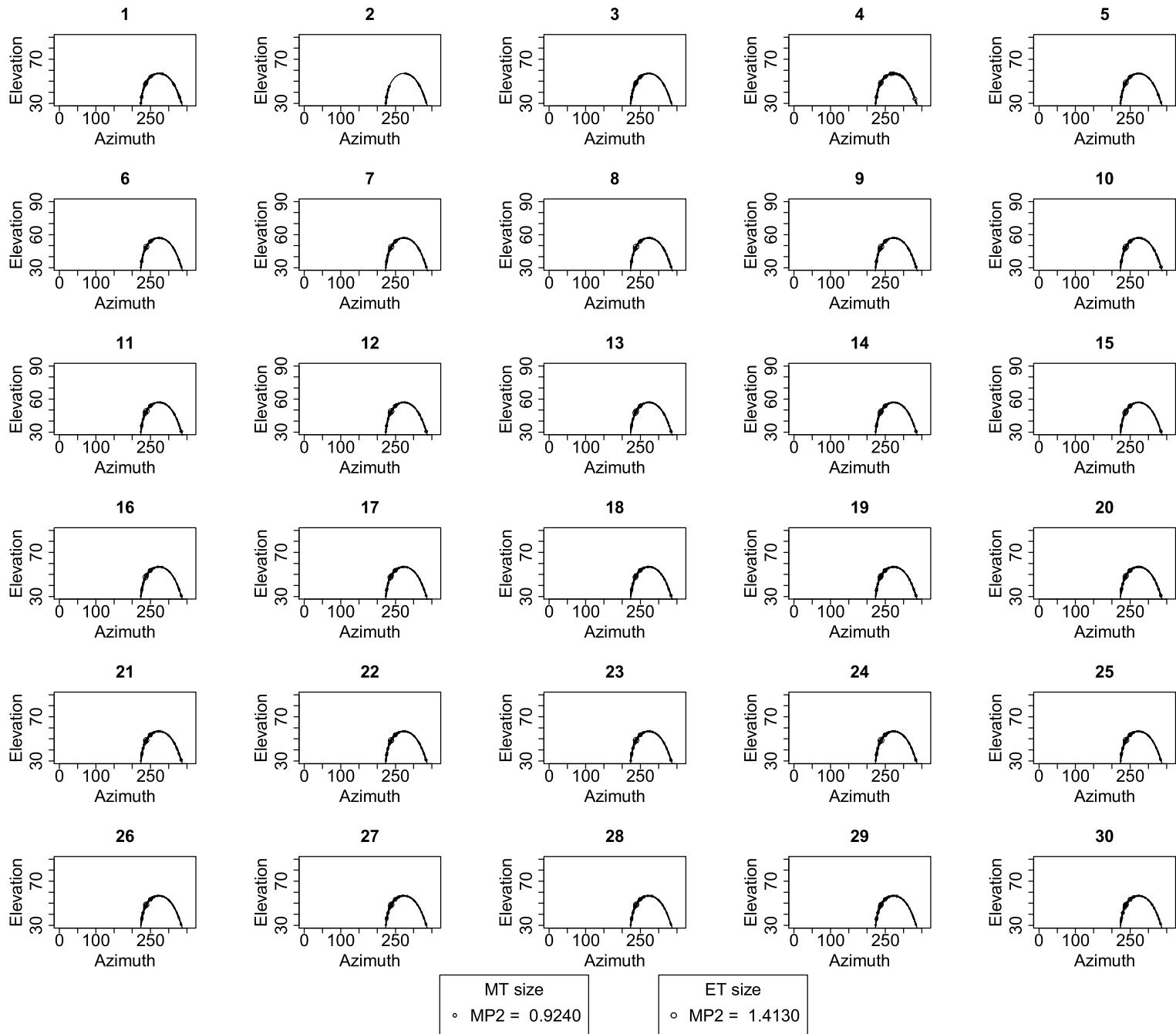


Figure S205 PEA plots comparison of MP2 for G11 on September 1–30, 2017 at SJCU station

PEA plots (G12)

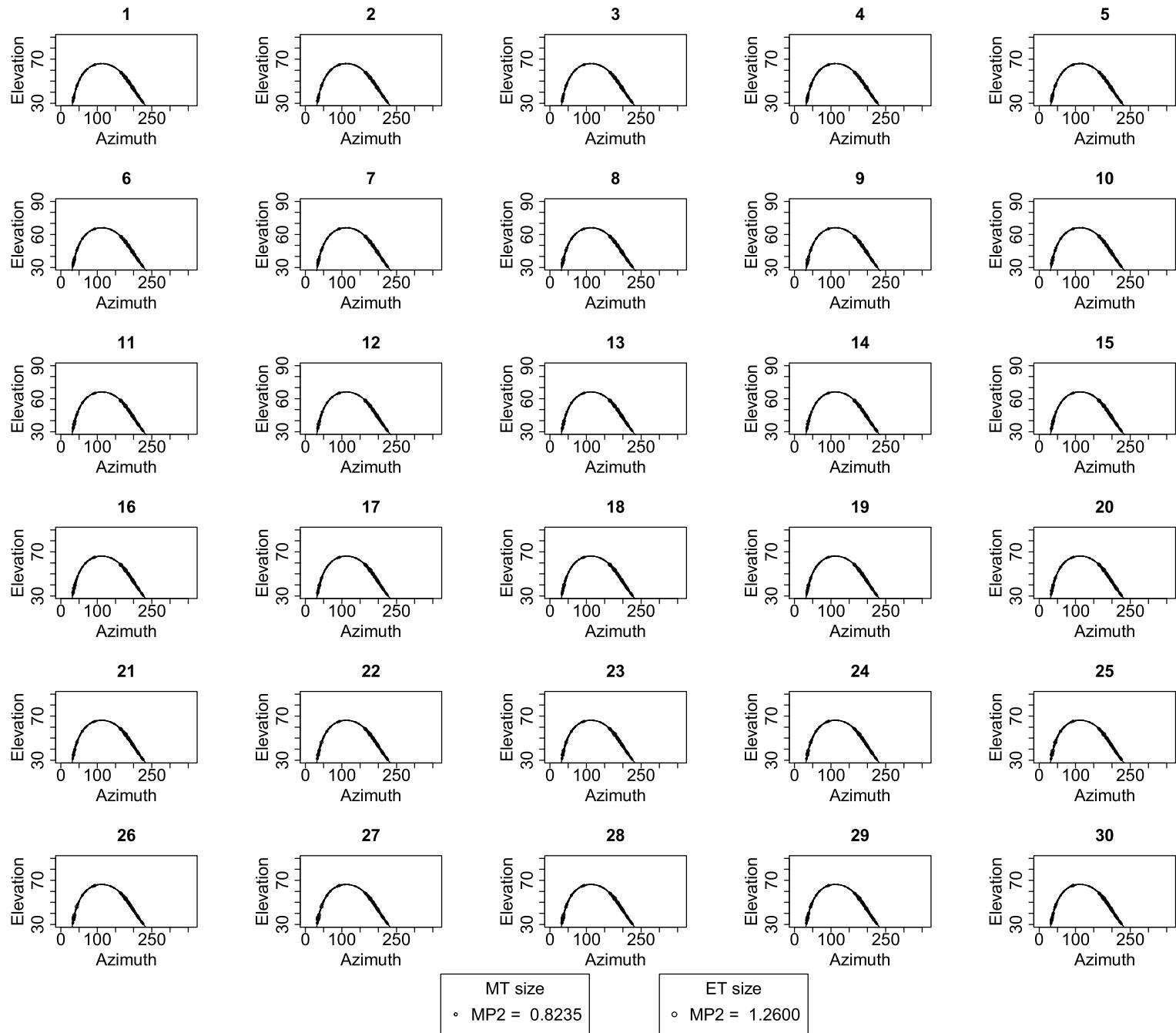


Figure S206 PEA plots comparison of MP2 for G12 on September 1–30, 2017 at SJCU station

PEA plots (G13)

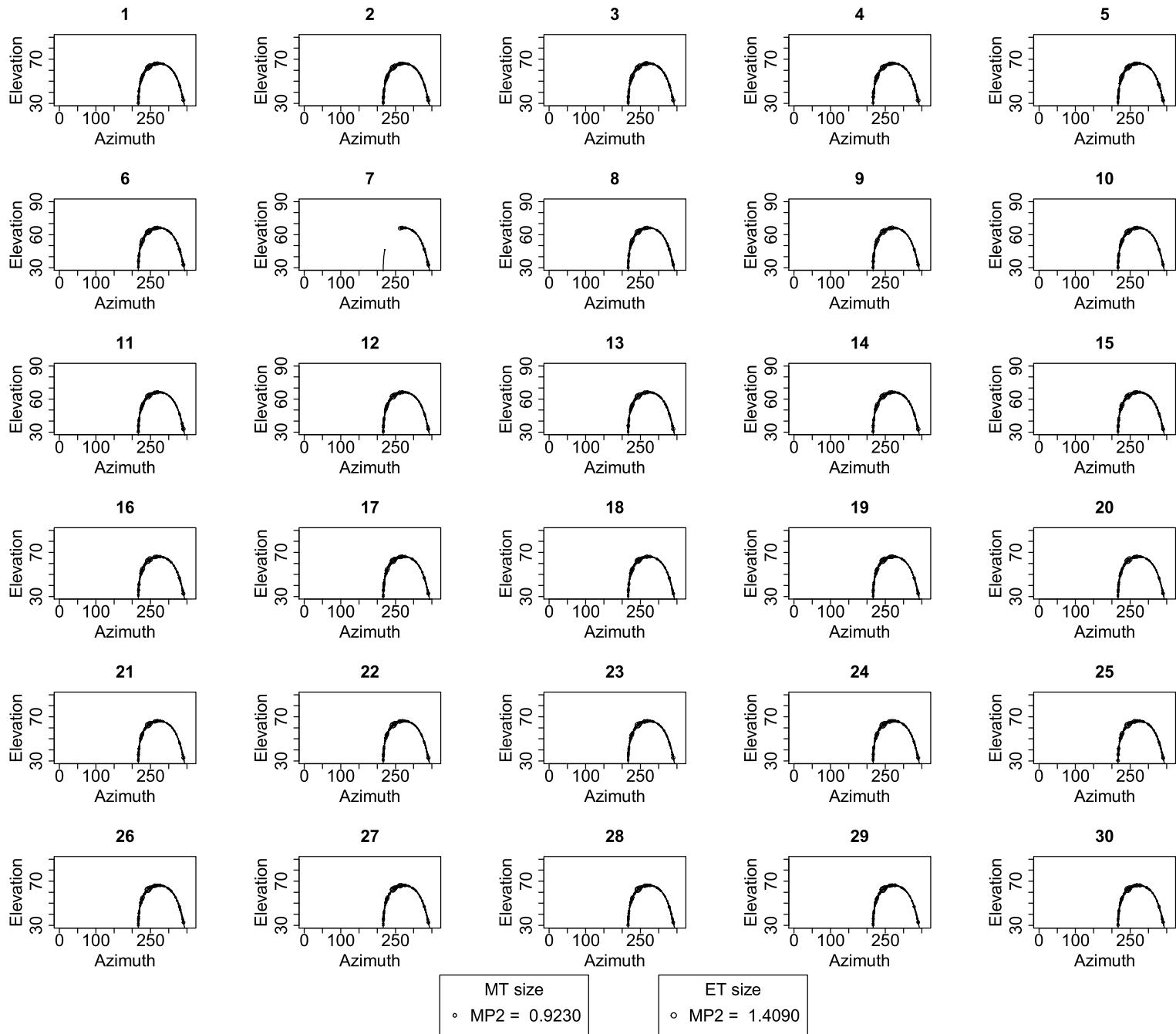


Figure S207 PEA plots comparison of MP2 for G13 on September 1–30, 2017 at SJCU station

PEA plots (G14)

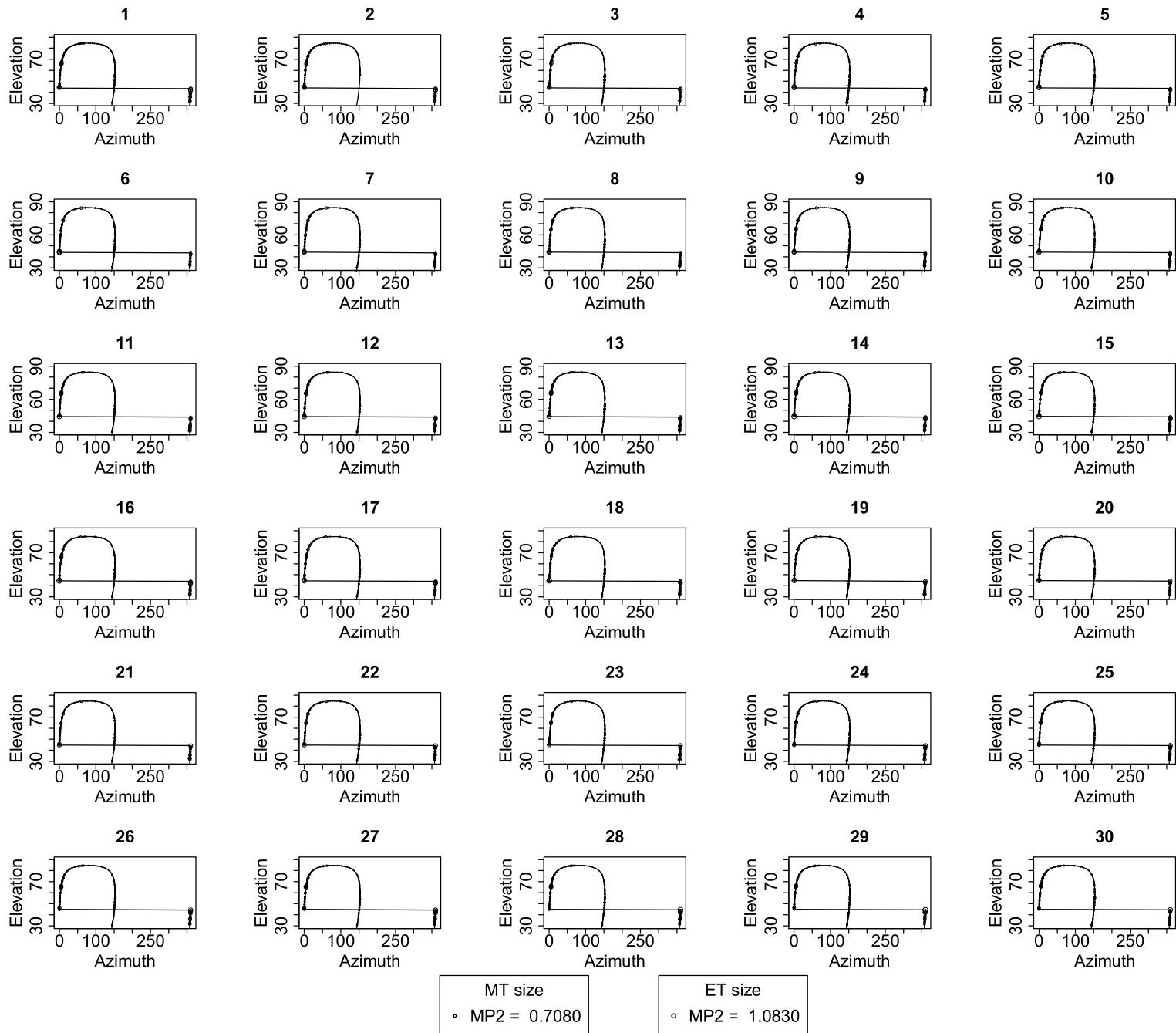


Figure S208 PEA plots comparison of MP2 for G14 on September 1–30, 2017 at SJCU station

PEA plots (G15)

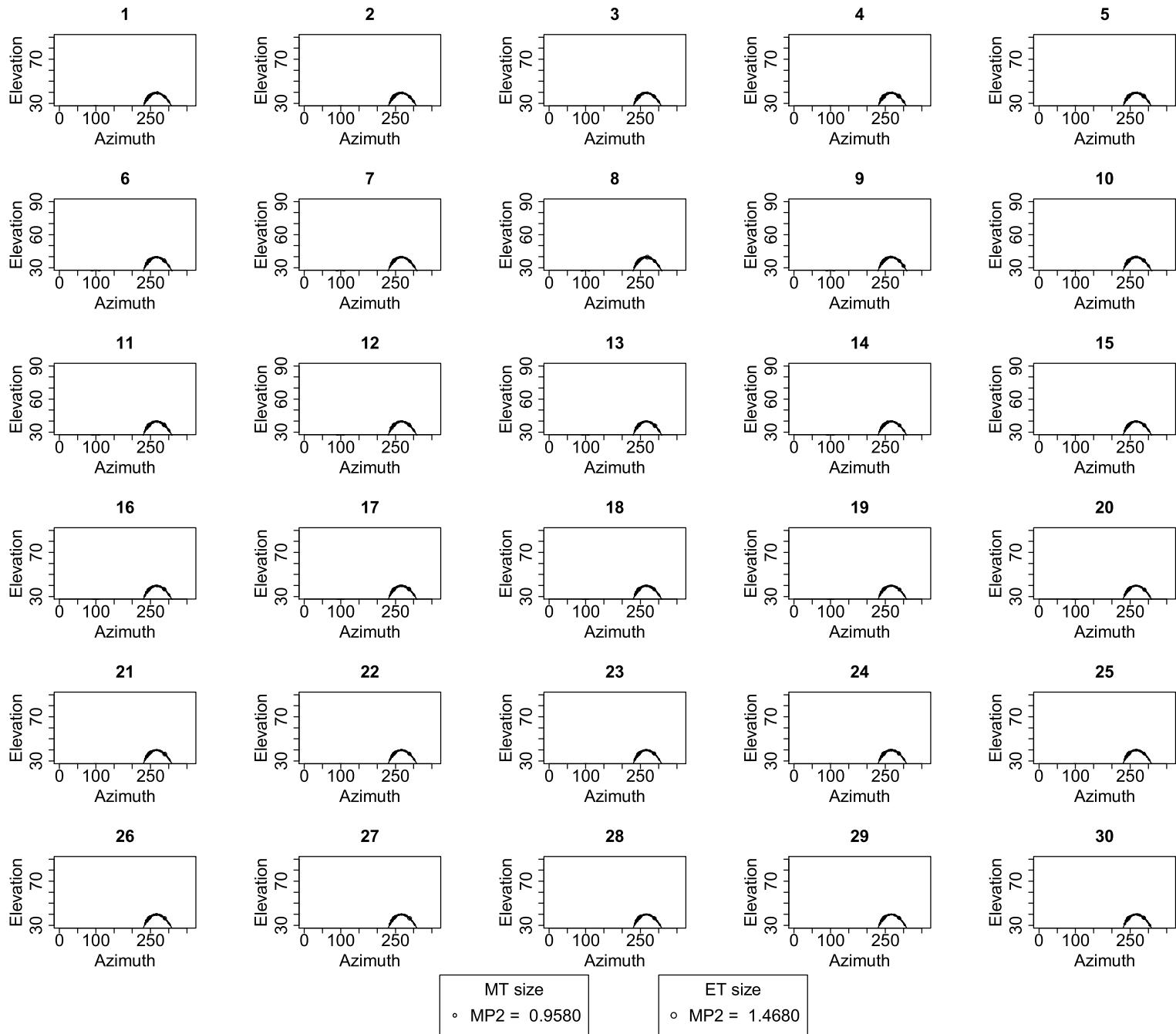


Figure S209 PEA plots comparison of MP2 for G15 on September 1–30, 2017 at SJCU station

PEA plots (G16)

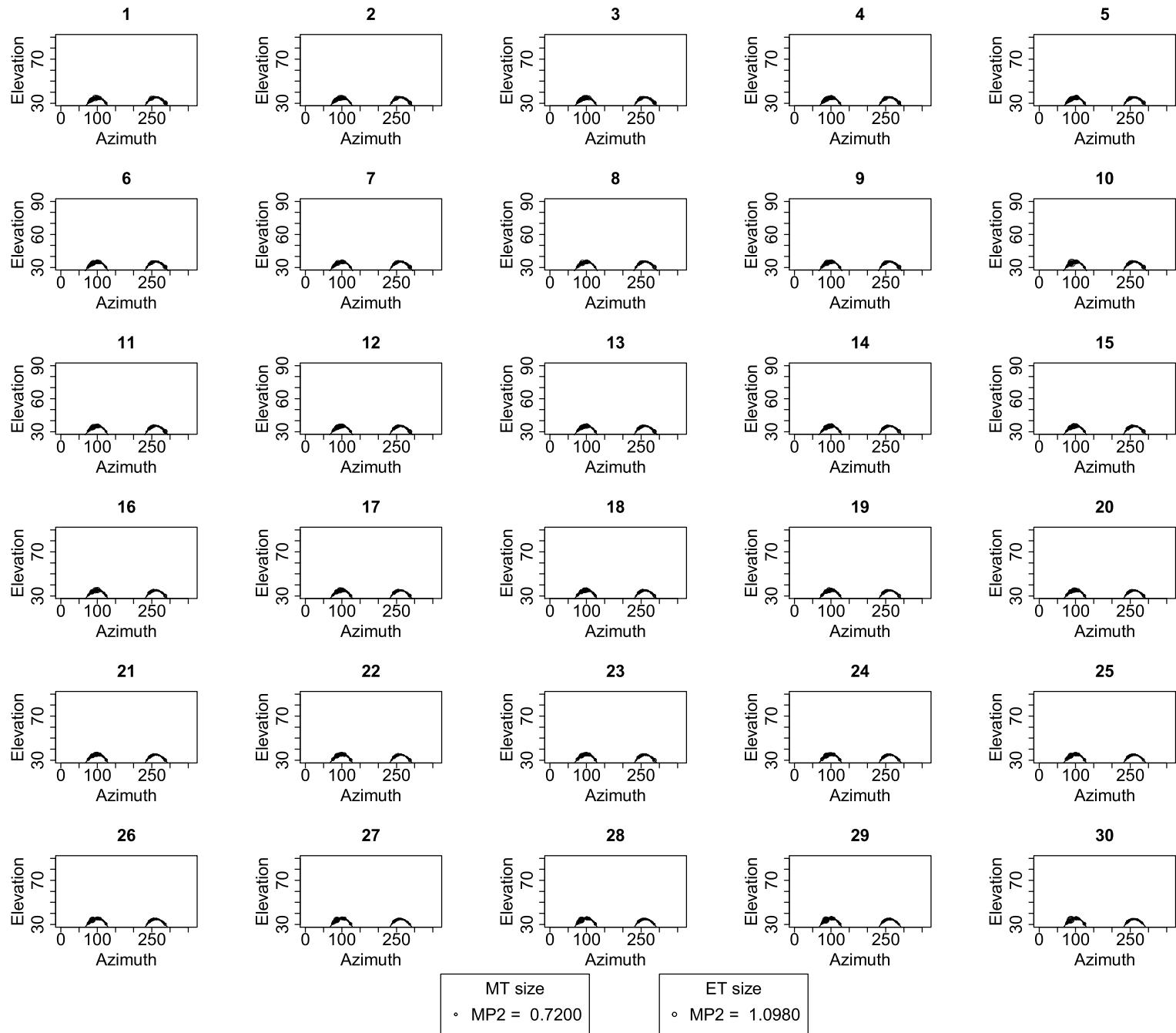


Figure S210 PEA plots comparison of MP2 for G16 on September 1–30, 2017 at SJCU station

PEA plots (G17)

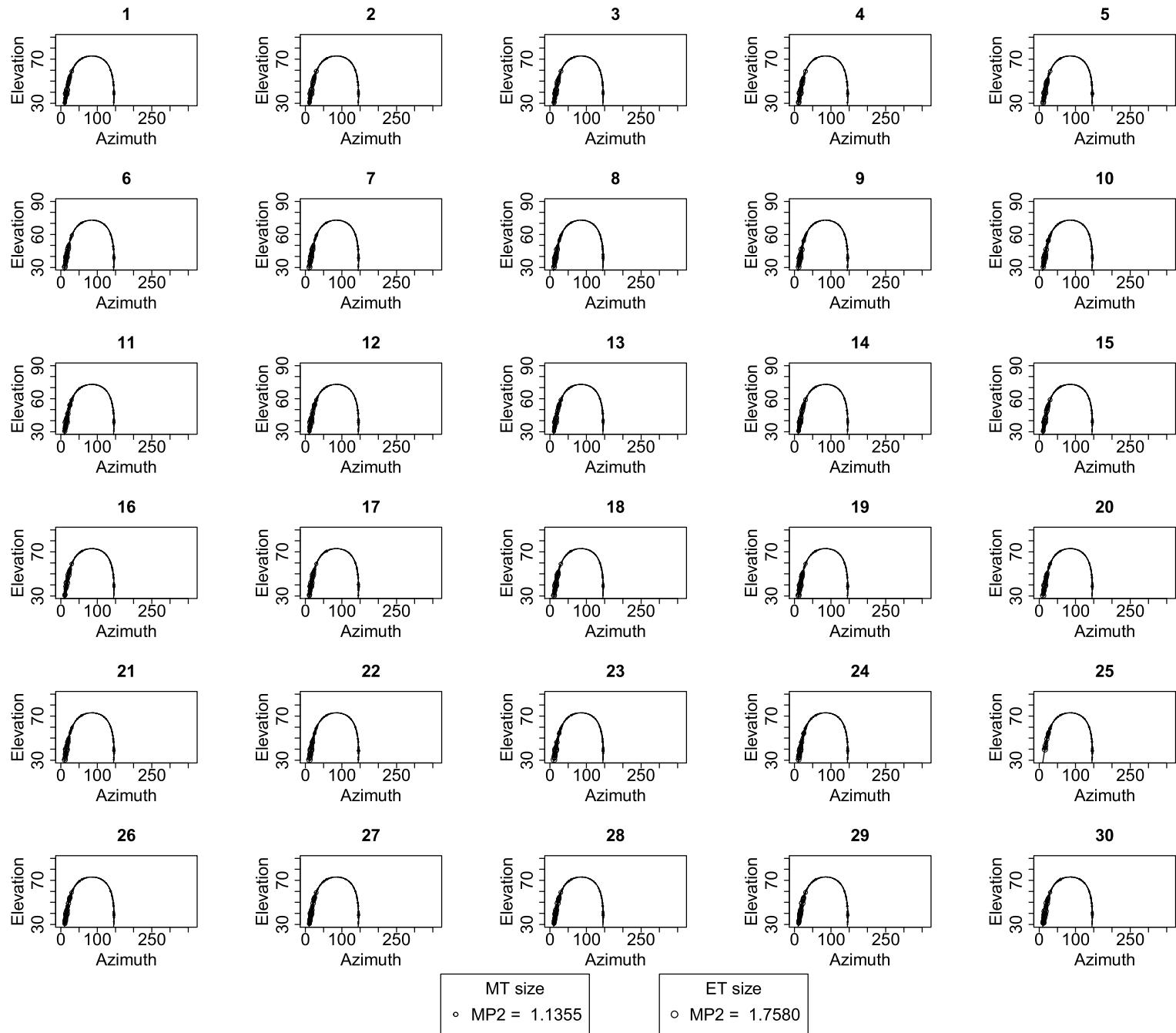


Figure S211 PEA plots comparison of MP2 for G17 on September 1–30, 2017 at SJCU station

PEA plots (G18)

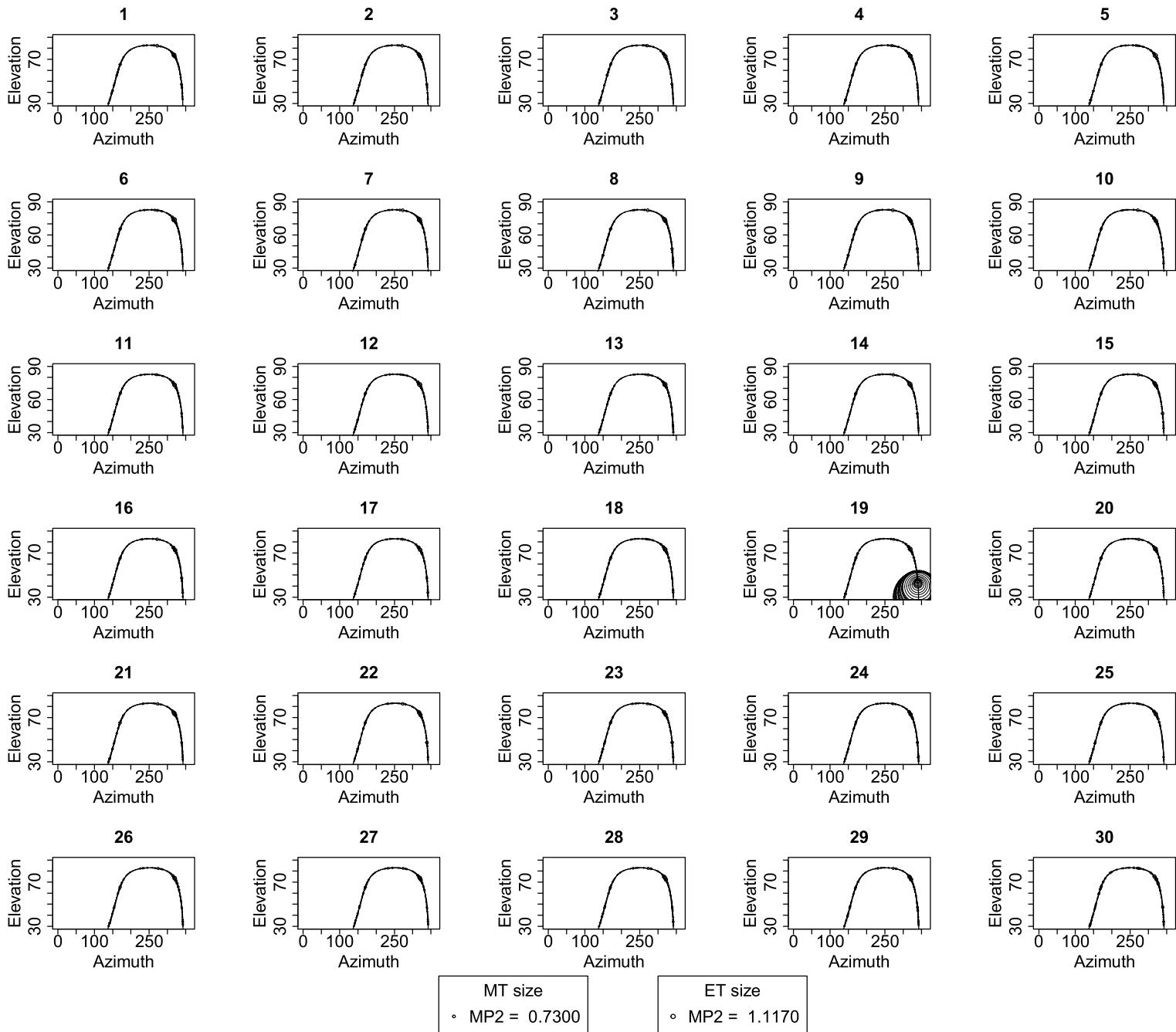


Figure S212 PEA plots comparison of MP2 for G18 on September 1–30, 2017 at SJCU station

PEA plots (G19)

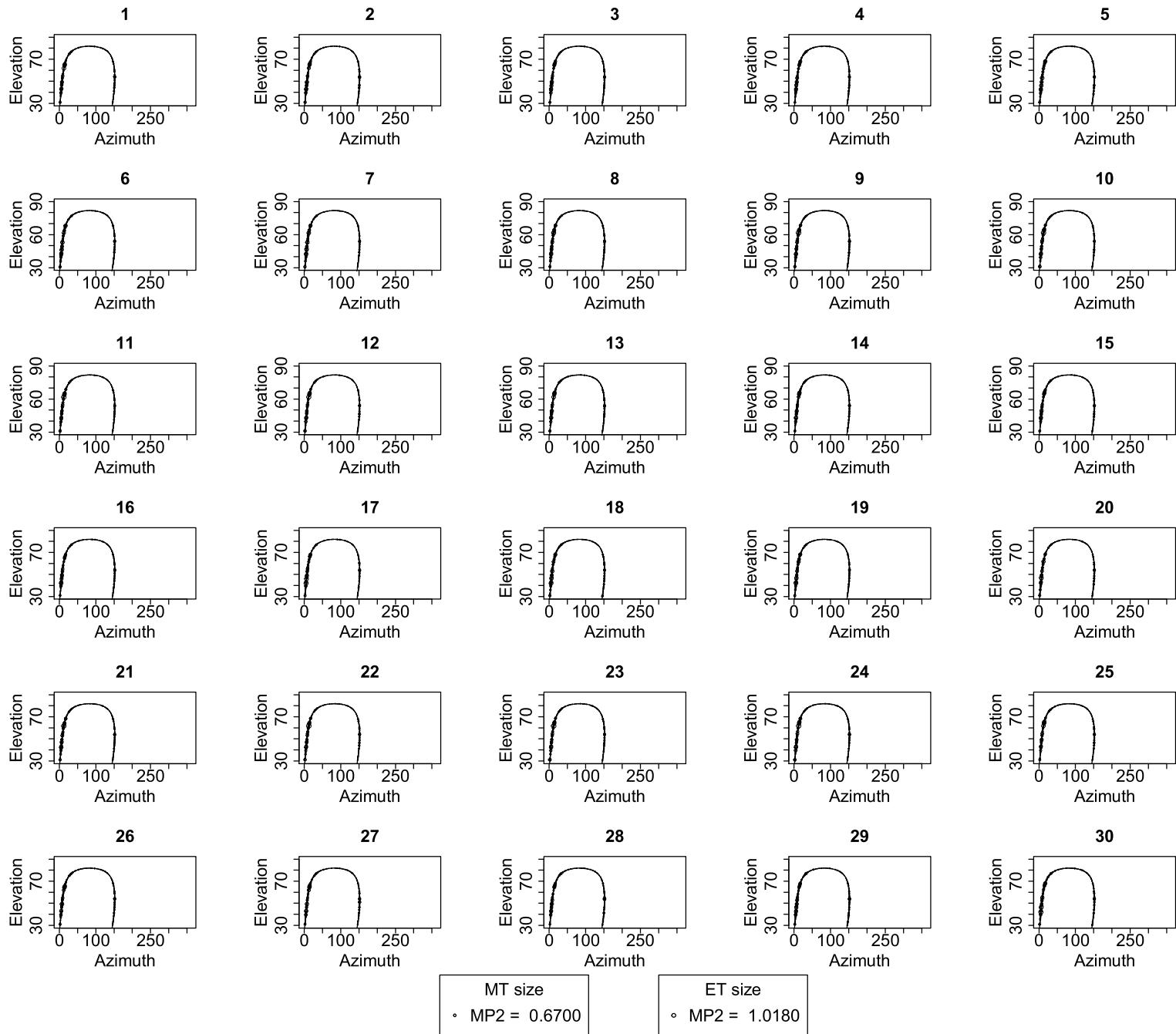


Figure S213 PEA plots comparison of MP2 for G19 on September 1–30, 2017 at SJCU station

PEA plots (G20)

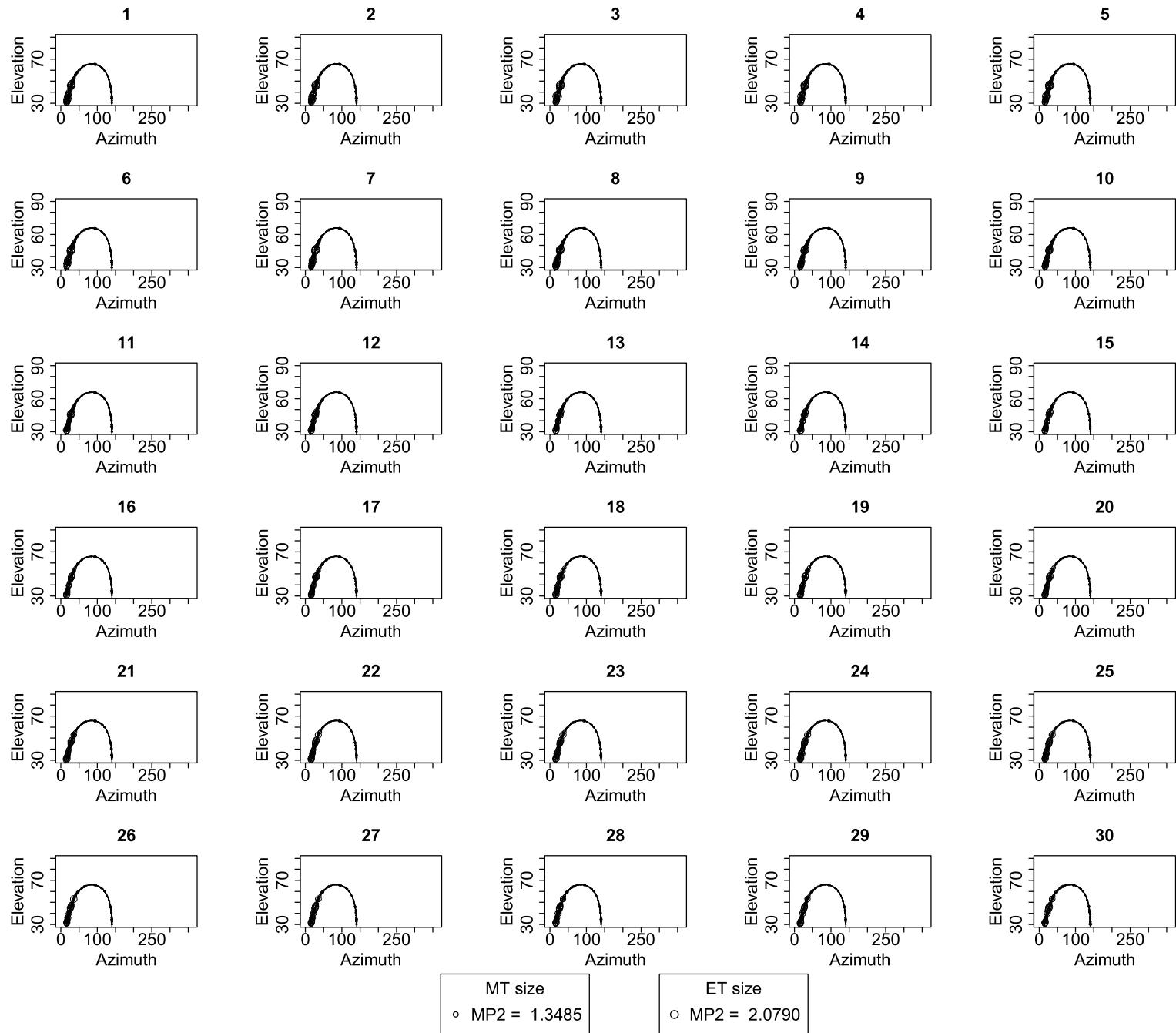


Figure S214 PEA plots comparison of MP2 for G20 on September 1–30, 2017 at SJCU station

PEA plots (G21)

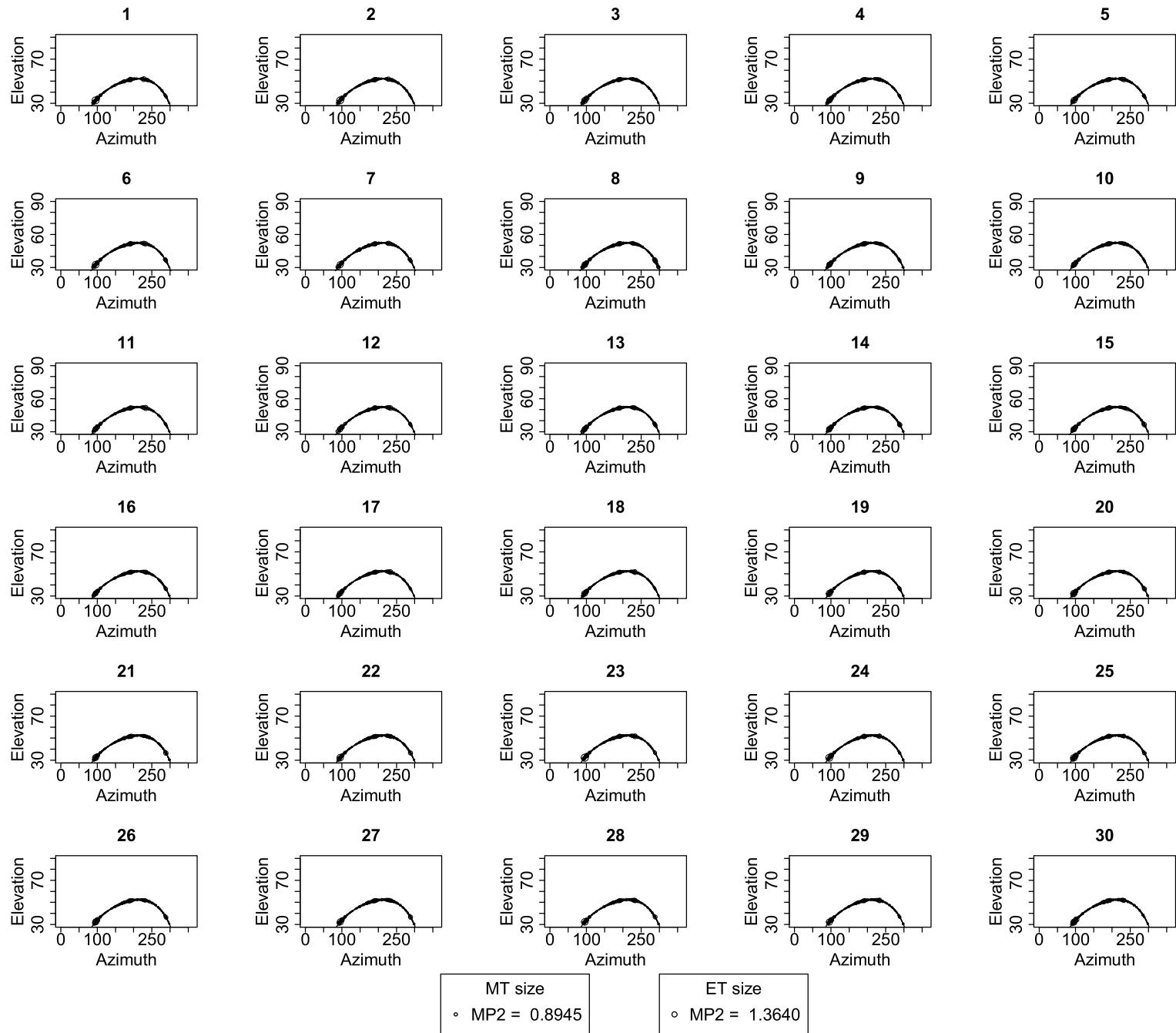


Figure S215 PEA plots comparison of MP2 for G21 on September 1–30, 2017 at SJCU station

PEA plots (G22)

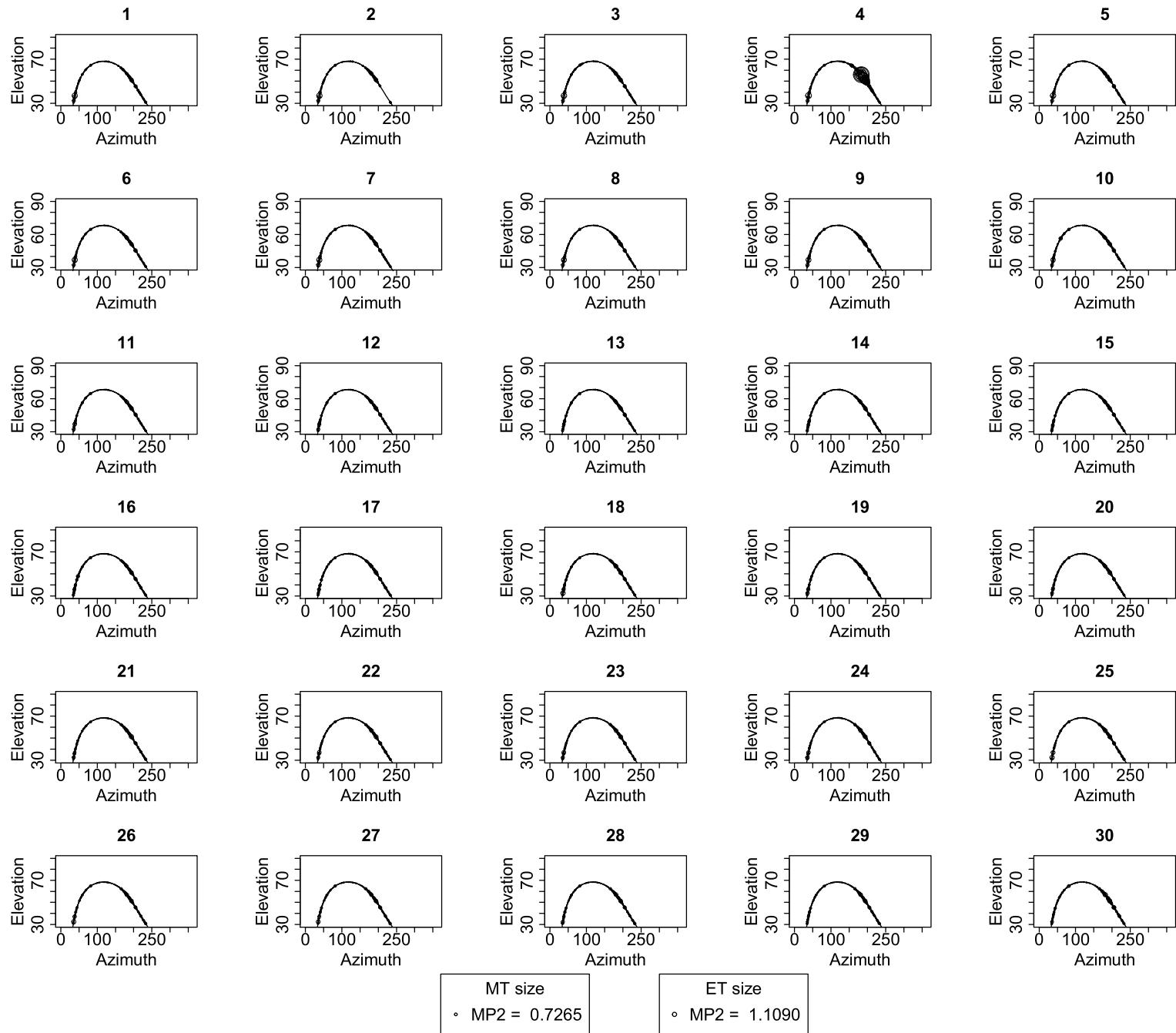


Figure S216 PEA plots comparison of MP2 for G22 on September 1–30, 2017 at SJCU station

PEA plots (G23)

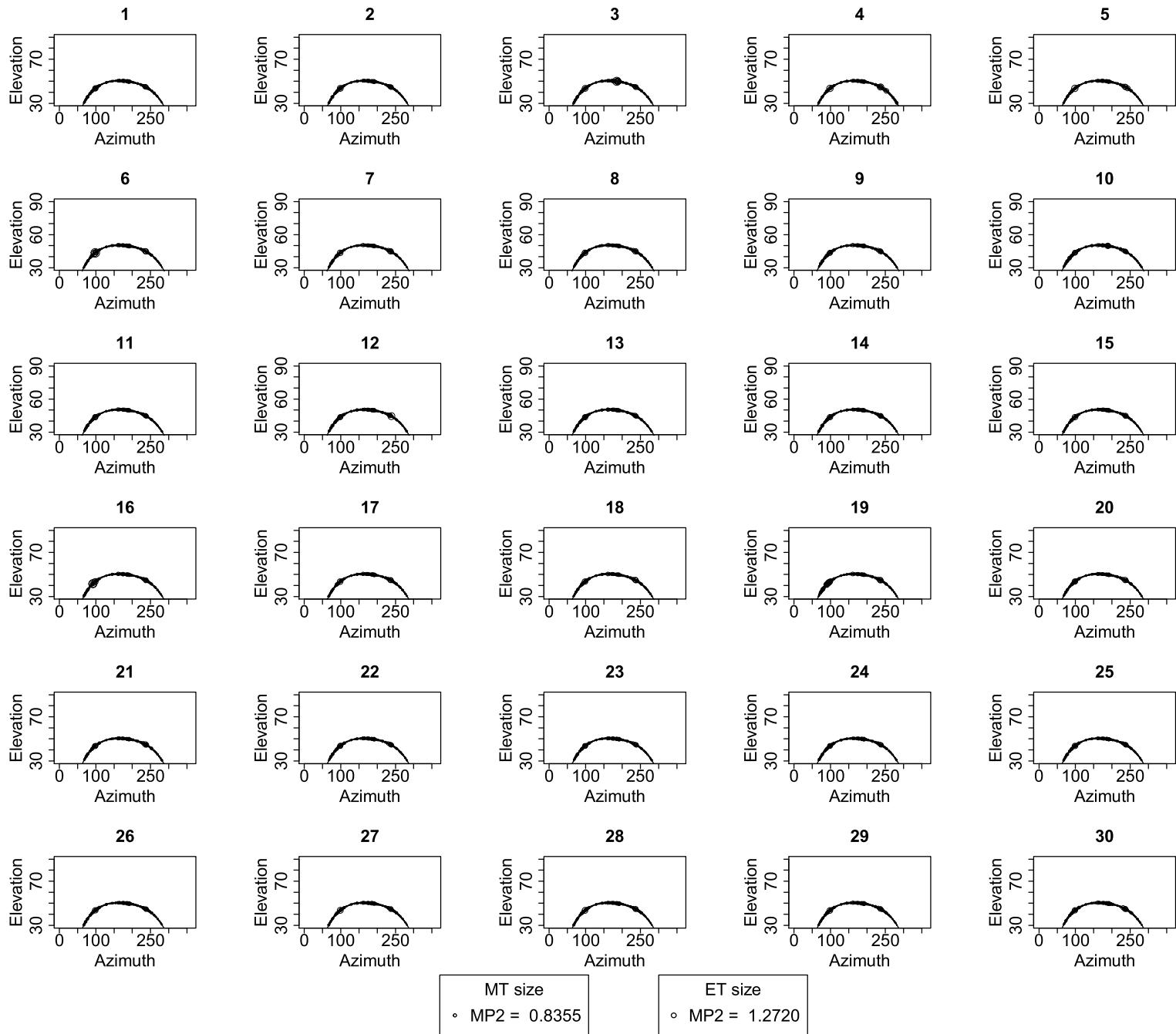


Figure S217 PEA plots comparison of MP2 for G23 on September 1–30, 2017 at SJCU station

PEA plots (G24)

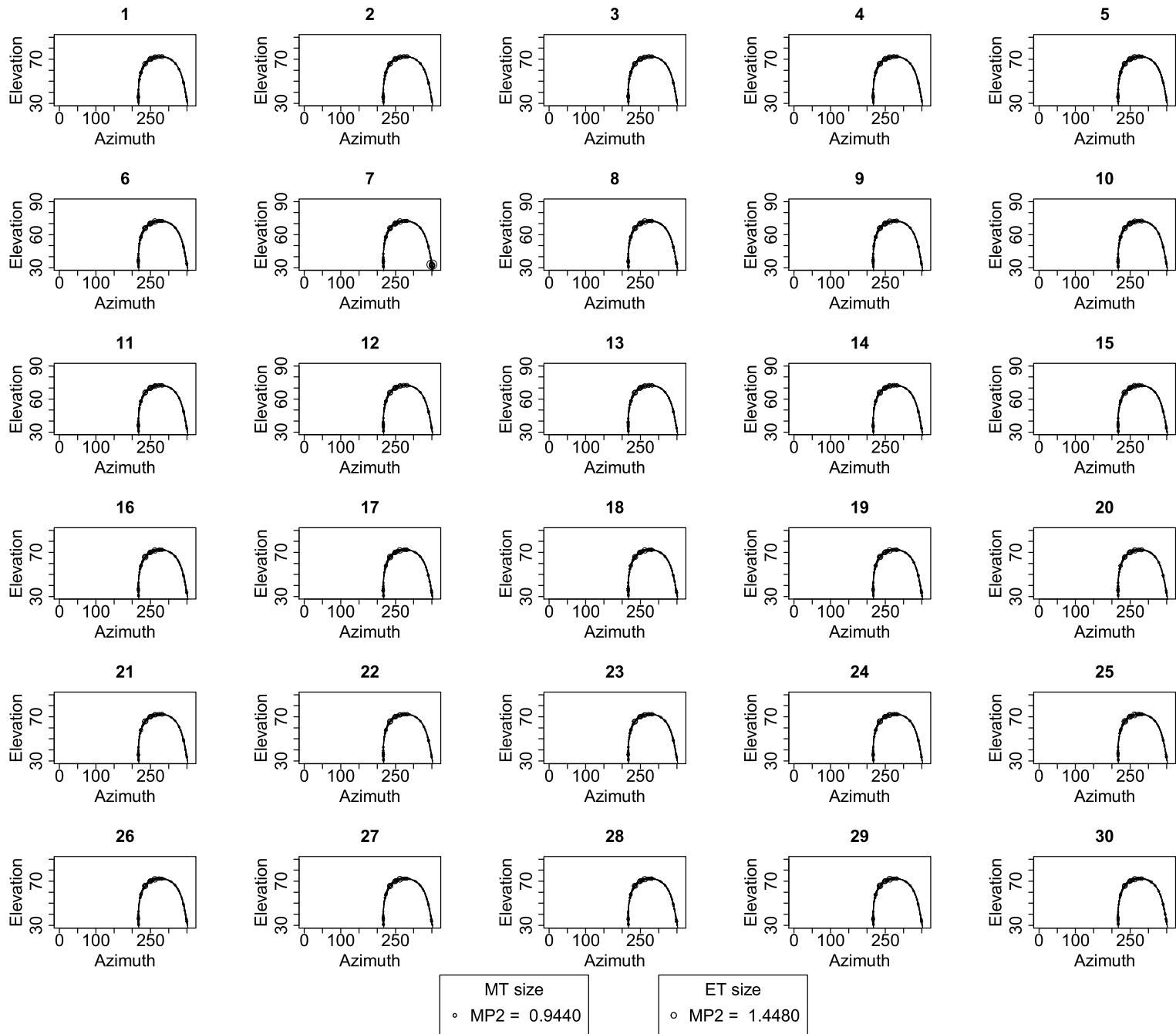


Figure S218 PEA plots comparison of MP2 for G24 on September 1–30, 2017 at SJCU station

PEA plots (G25)

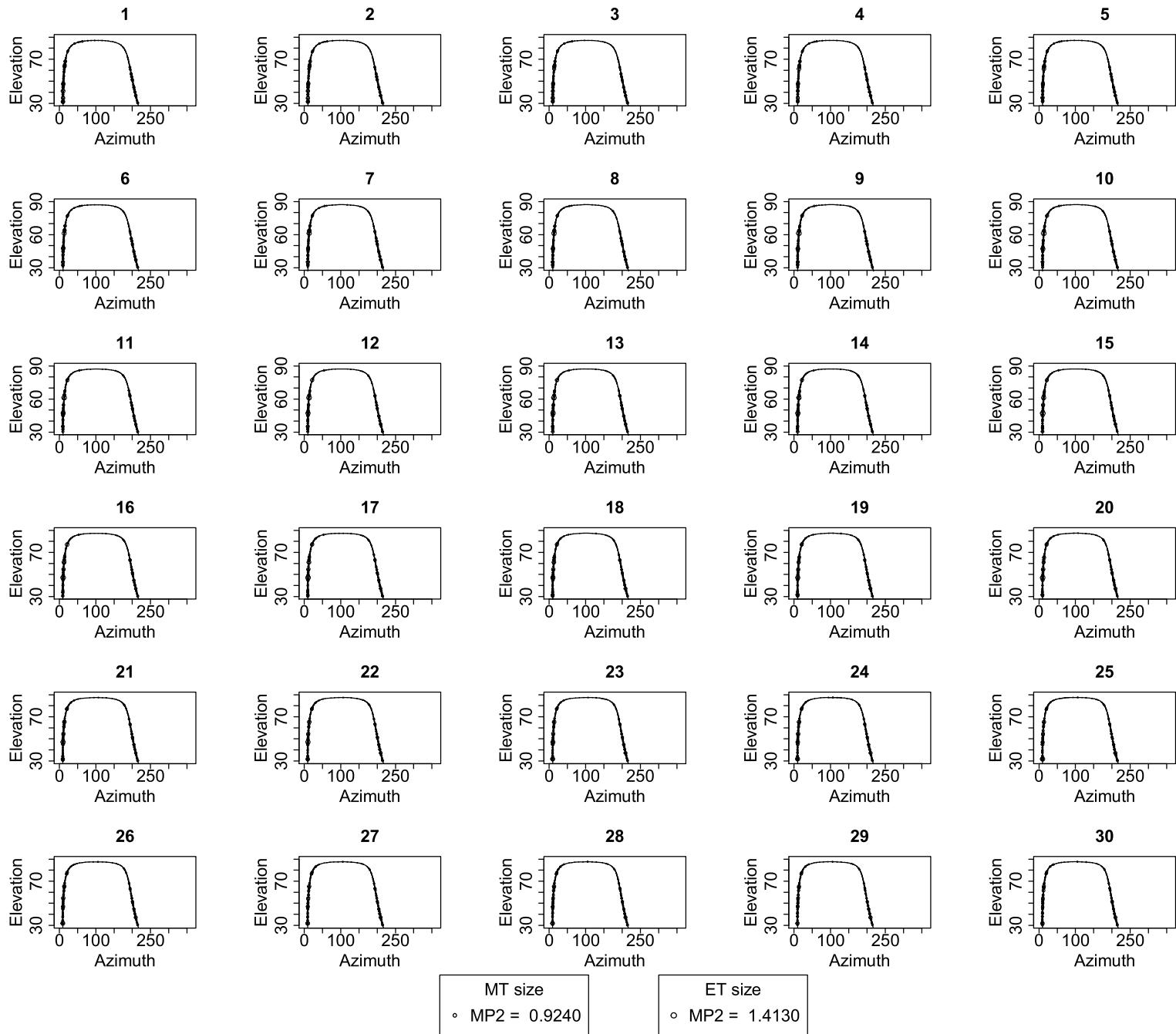


Figure S219 PEA plots comparison of MP2 for G25 on September 1–30, 2017 at SJCU station

PEA plots (G26)

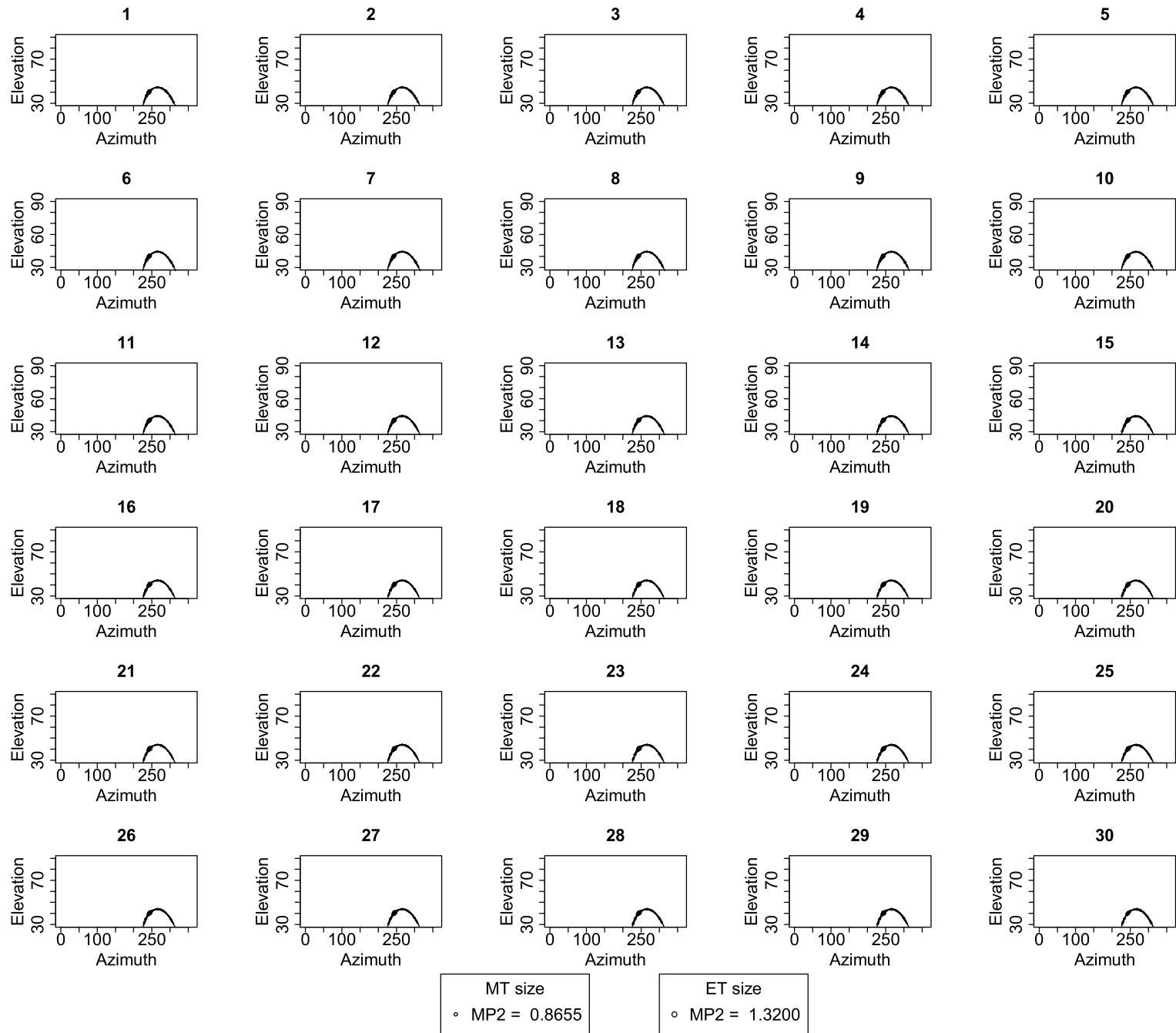


Figure S220 PEA plots comparison of MP2 for G26 on September 1–30, 2017 at SJCU station

PEA plots (G27)

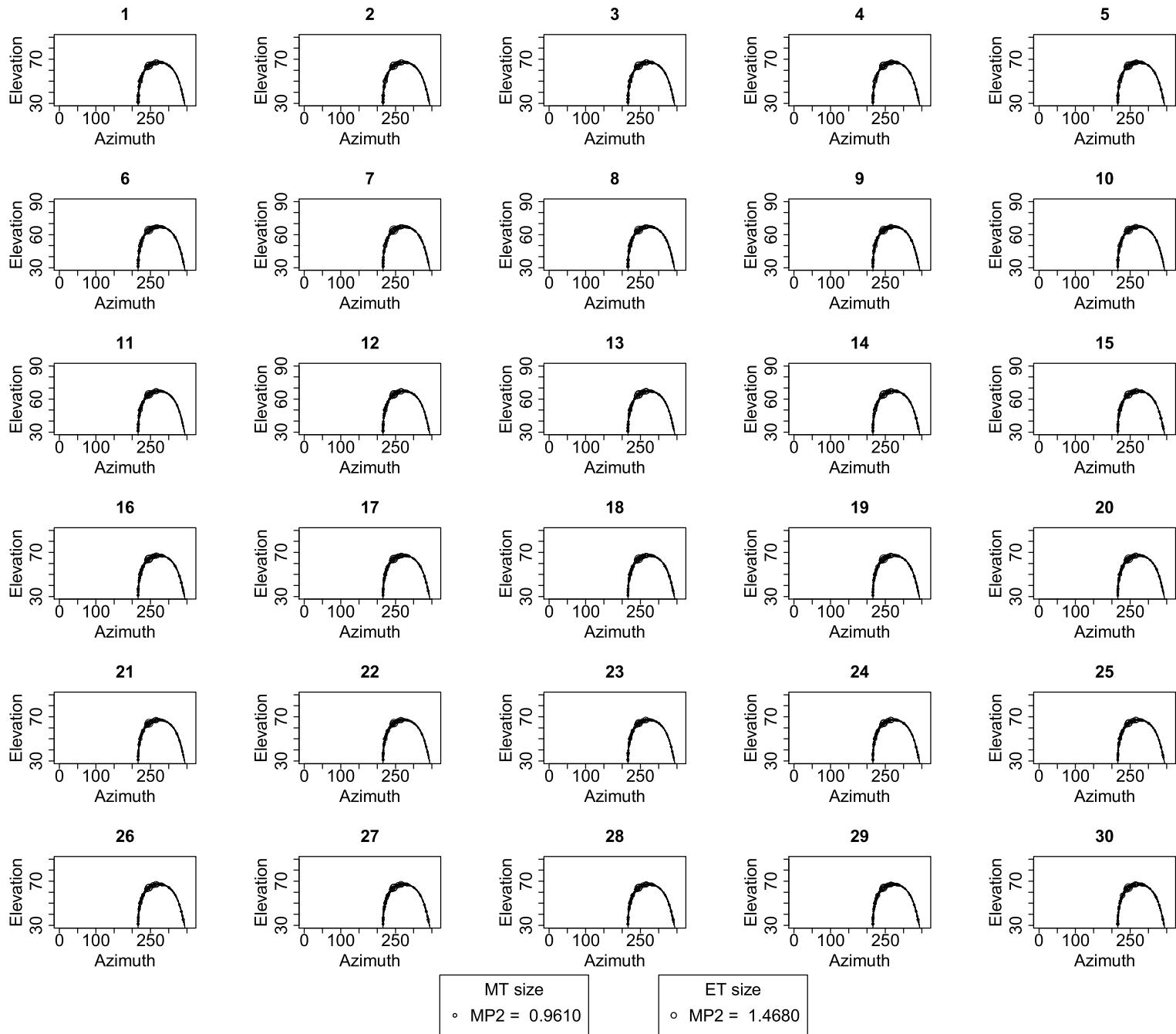


Figure S221 PEA plots comparison of MP2 for G27 on September 1–30, 2017 at SJCU station

PEA plots (G28)

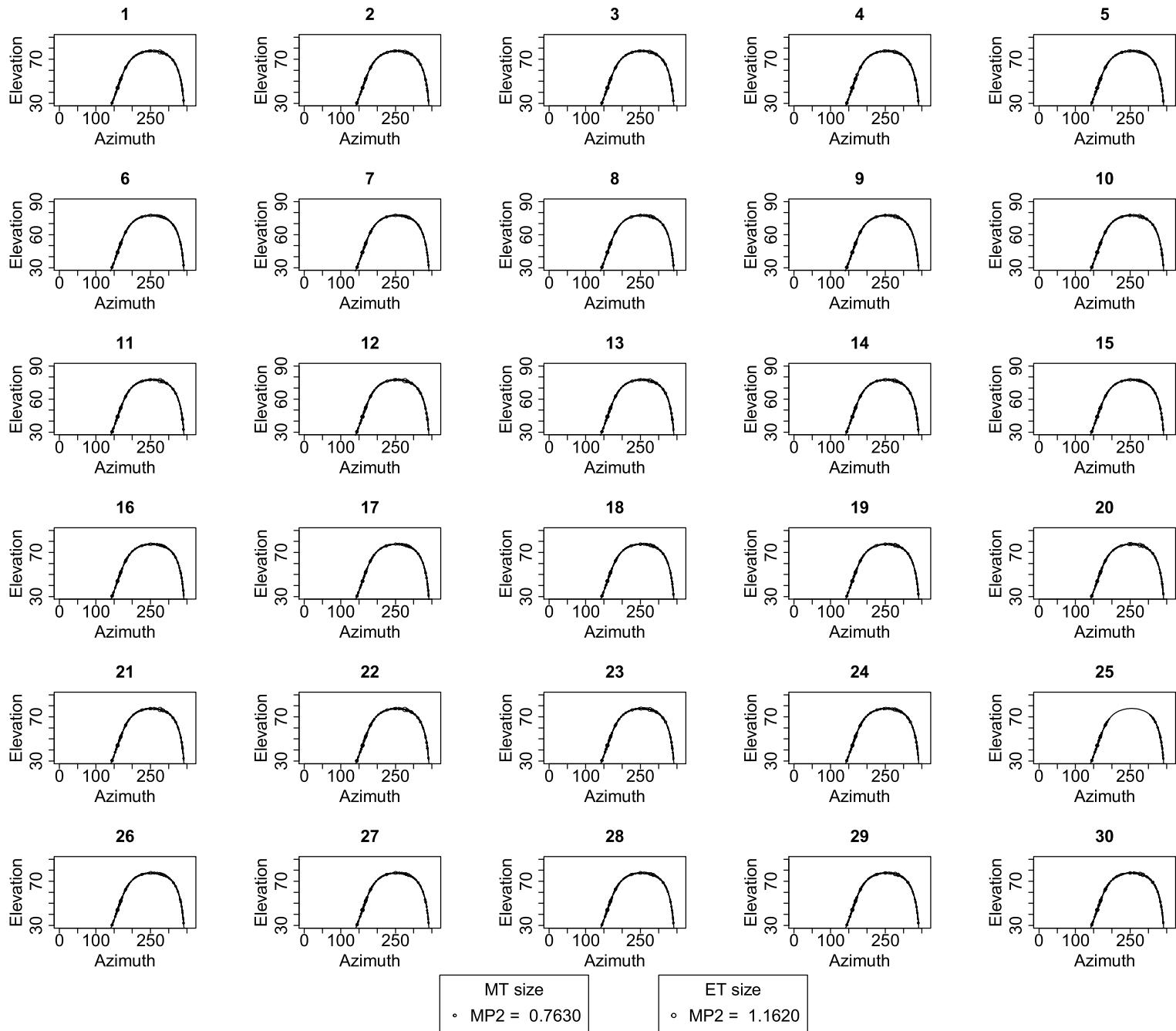


Figure S222 PEA plots comparison of MP2 for G28 on September 1–30, 2017 at SJCU station

PEA plots (G29)

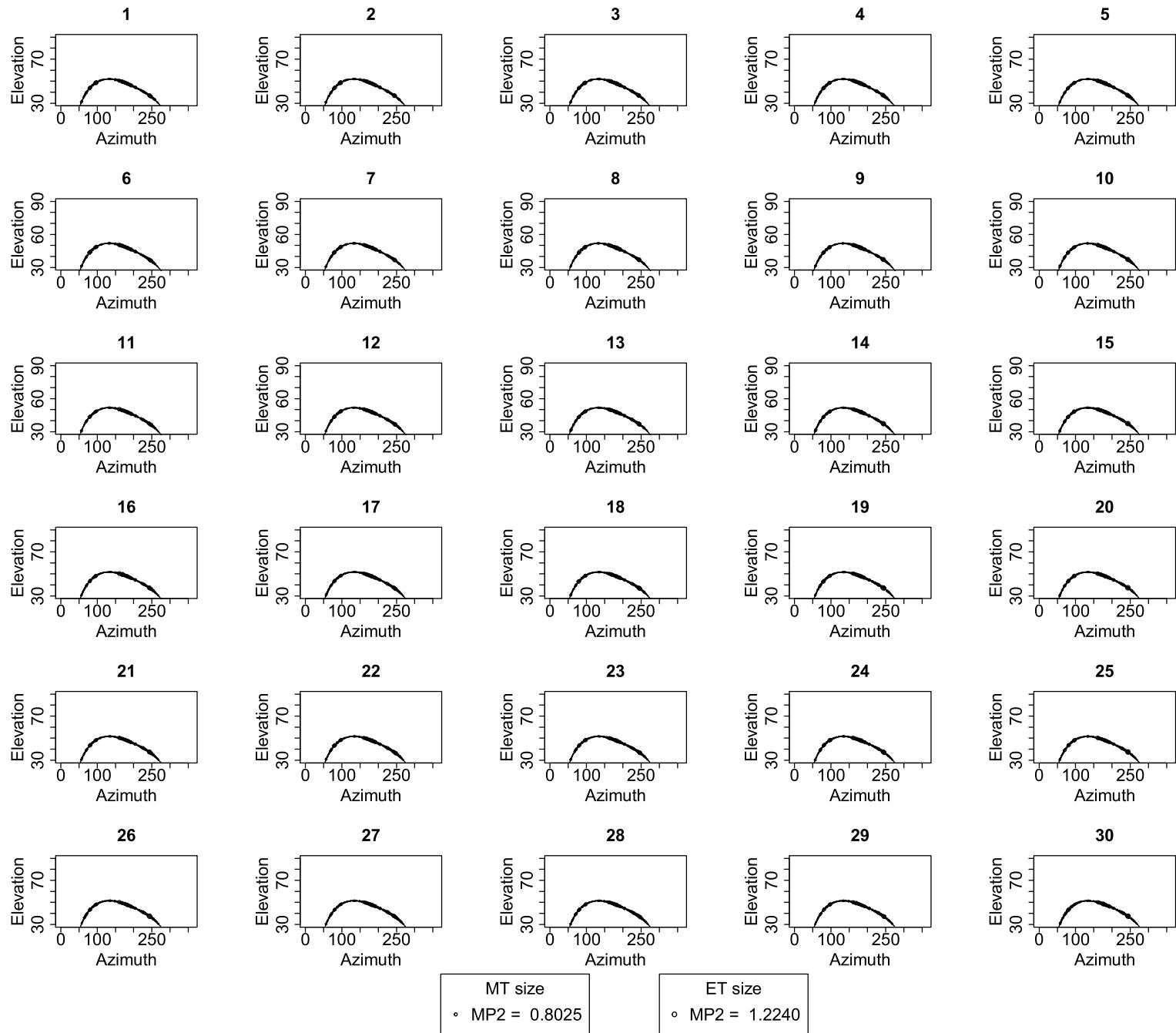


Figure S223 PEA plots comparison of MP2 for G29 on September 1–30, 2017 at SJCU station

PEA plots (G30)

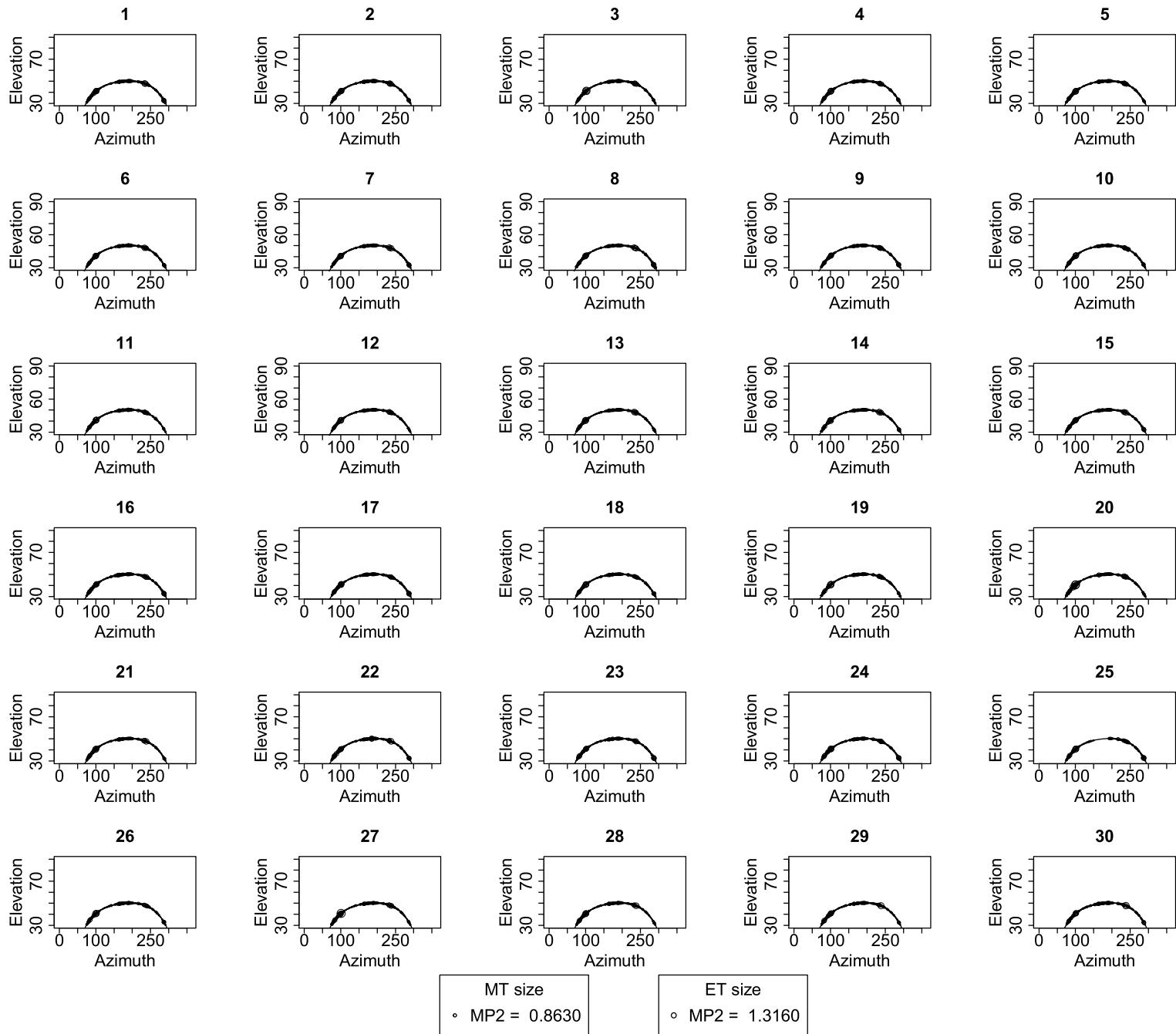


Figure S224 PEA plots comparison of MP2 for G30 on September 1–30, 2017 at SJCU station

PEA plots (G31)

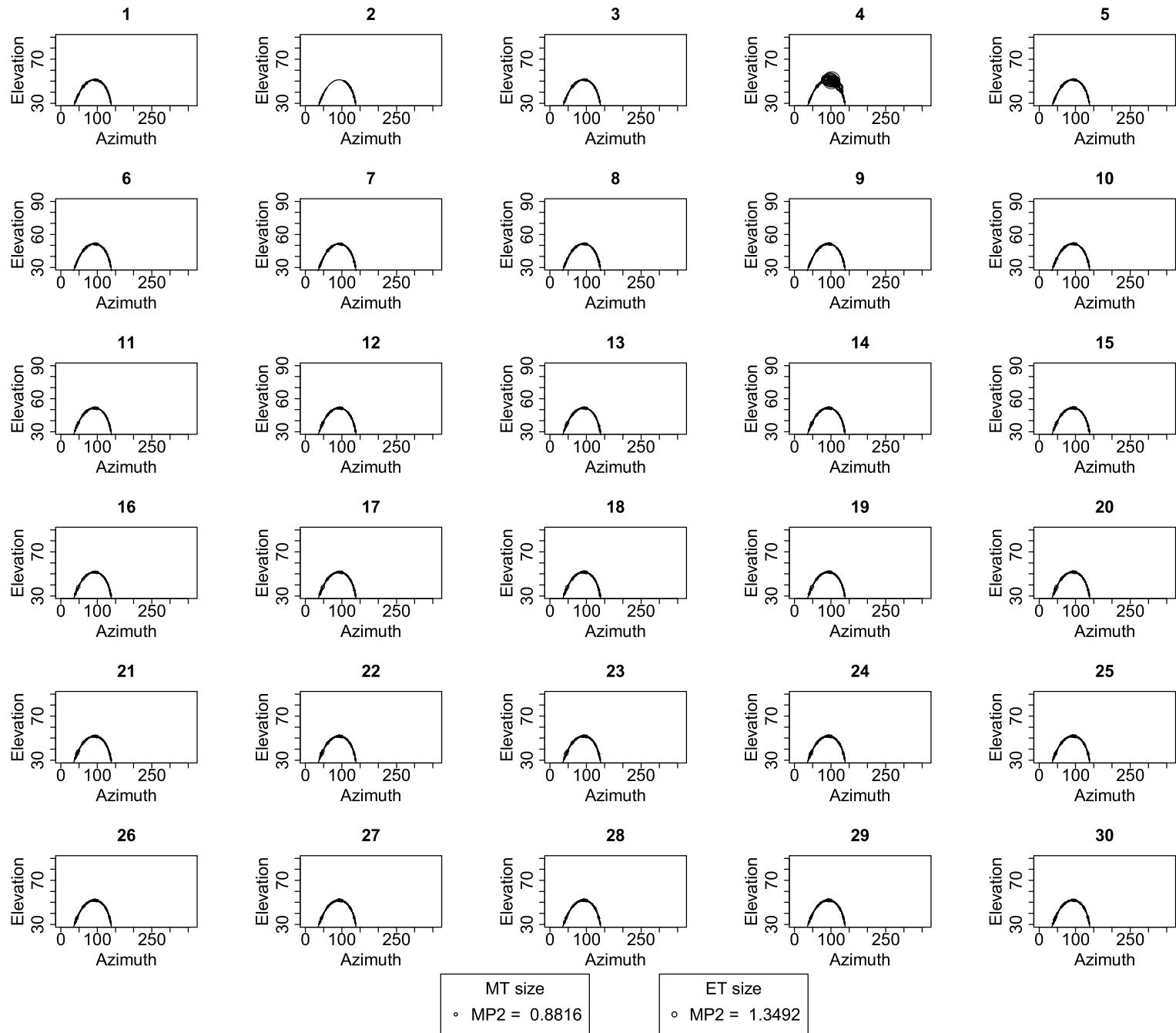


Figure S225 PEA plots comparison of MP2 for G31 on September 1–30, 2017 at SJCU station

PEA plots (G32)

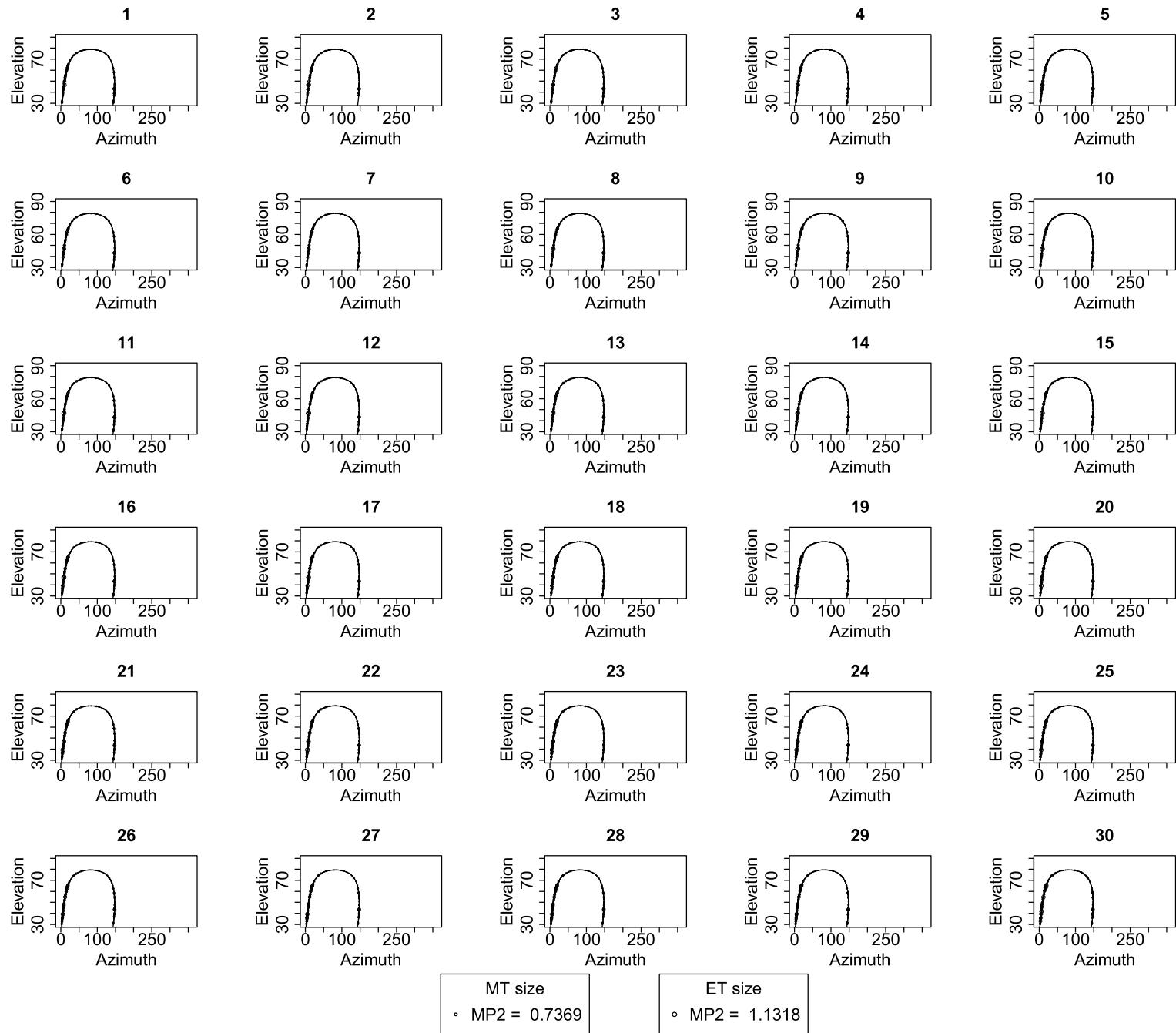


Figure S226 PEA plots comparison of MP2 for G32 on September 1–30, 2017 at SJCU station

PEA plots (G1)

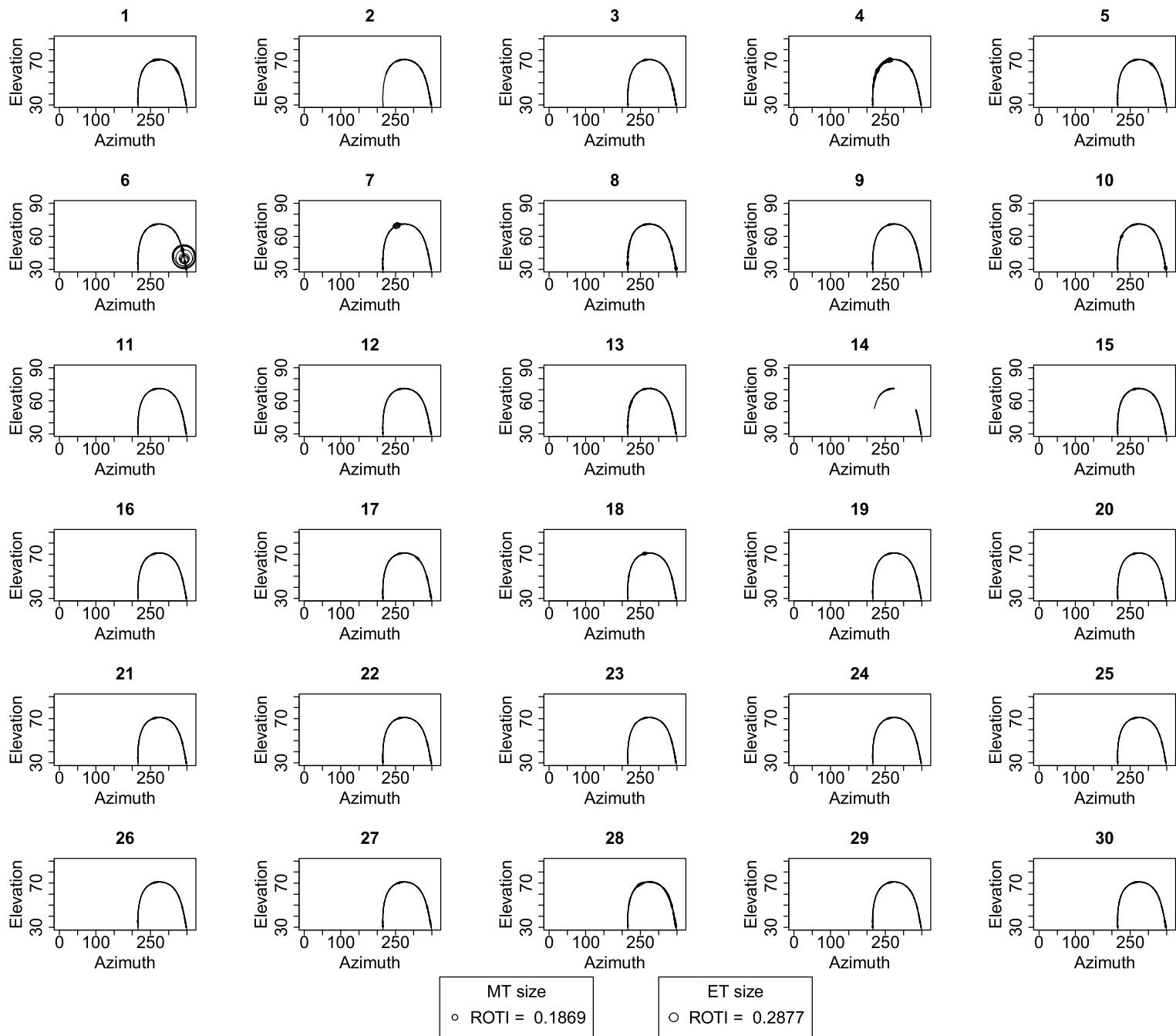


Figure S227 PEA plots comparison of ROTI for G1 on September 1–30, 2017 at SJC station

PEA plots (G2)

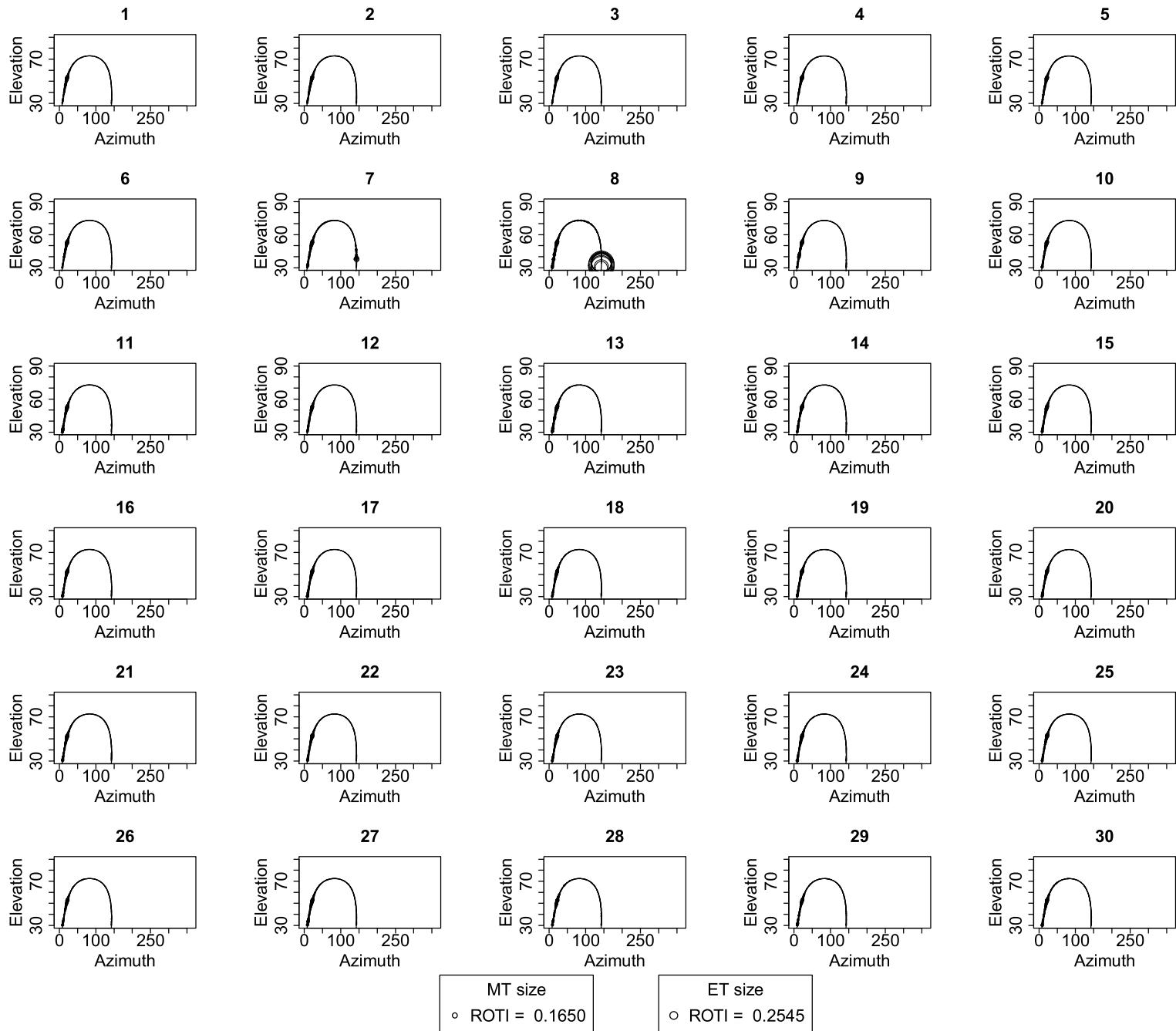


Figure S228 PEA plots comparison of ROTI for G2 on September 1–30, 2017 at SJC station

PEA plots (G3)

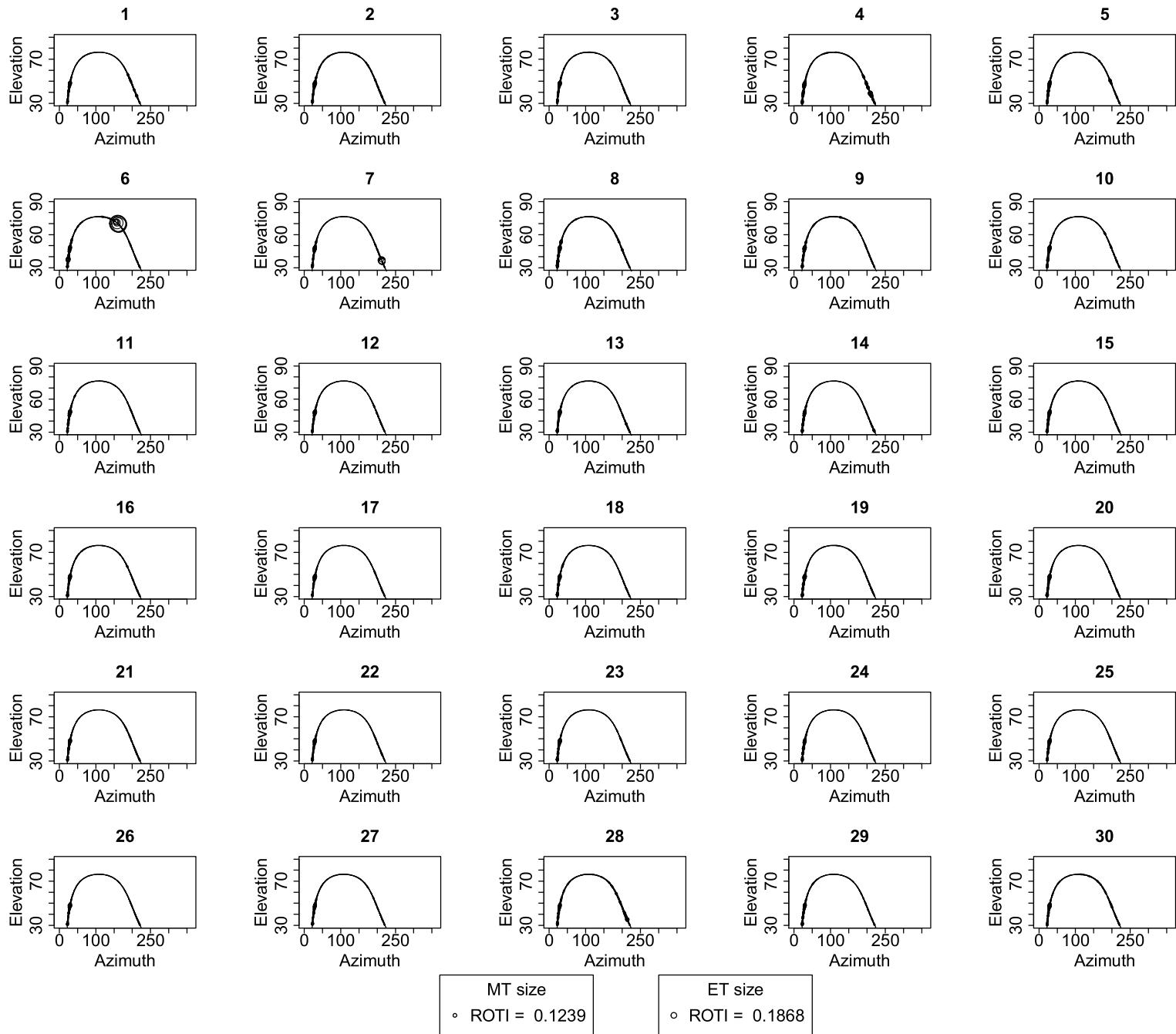


Figure S229 PEA plots comparison of ROTI for G3 on September 1–30, 2017 at SJCU station

PEA plots (G4)

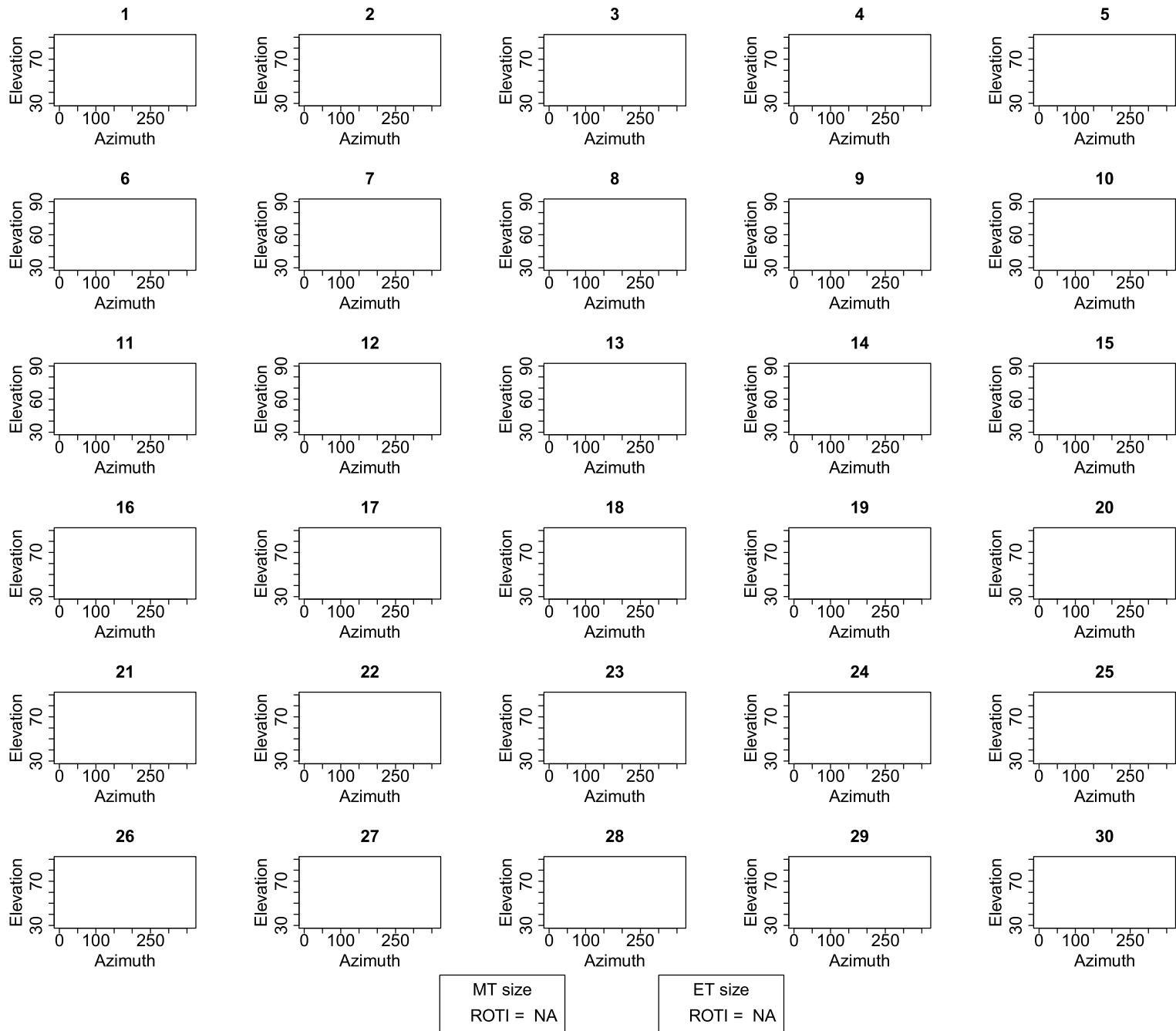


Figure S230 PEA plots comparison of ROTI for G4 on September 1–30, 2017 at SJCU station

PEA plots (G5)

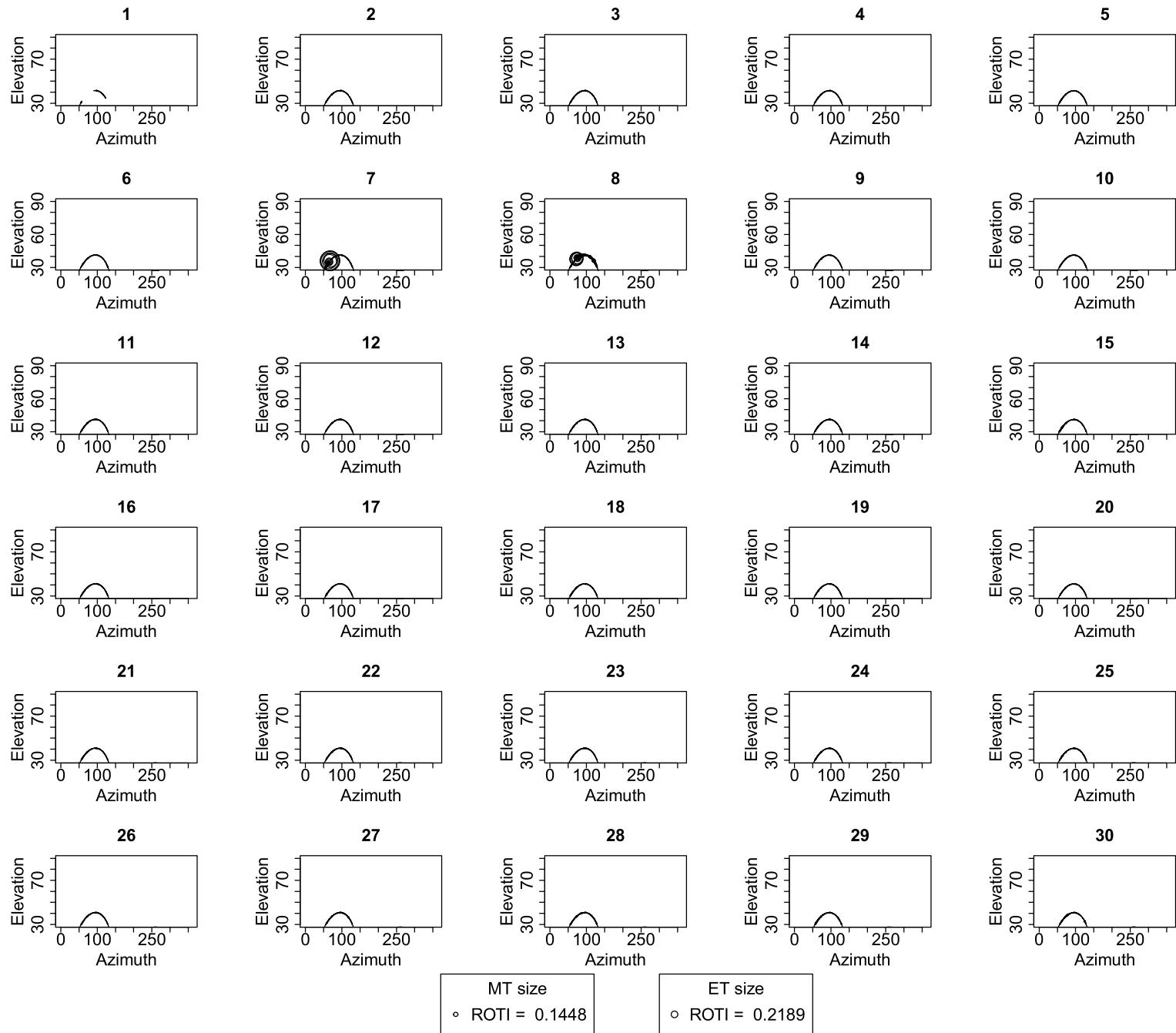


Figure S231 PEA plots comparison of ROTI for G5 on September 1–30, 2017 at SJC station

PEA plots (G6)

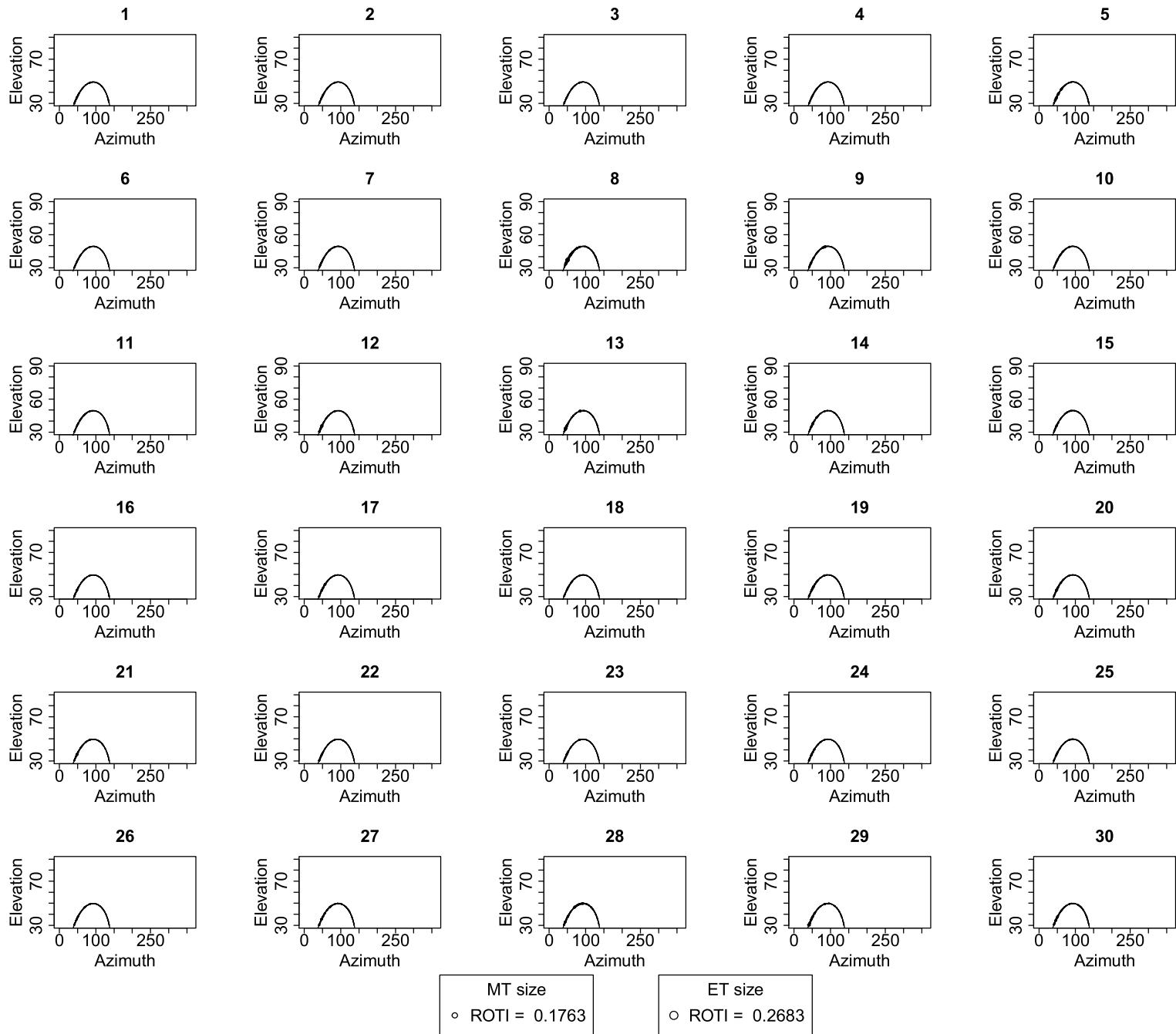


Figure S232 PEA plots comparison of ROTI for G6 on September 1–30, 2017 at SJC station

PEA plots (G7)

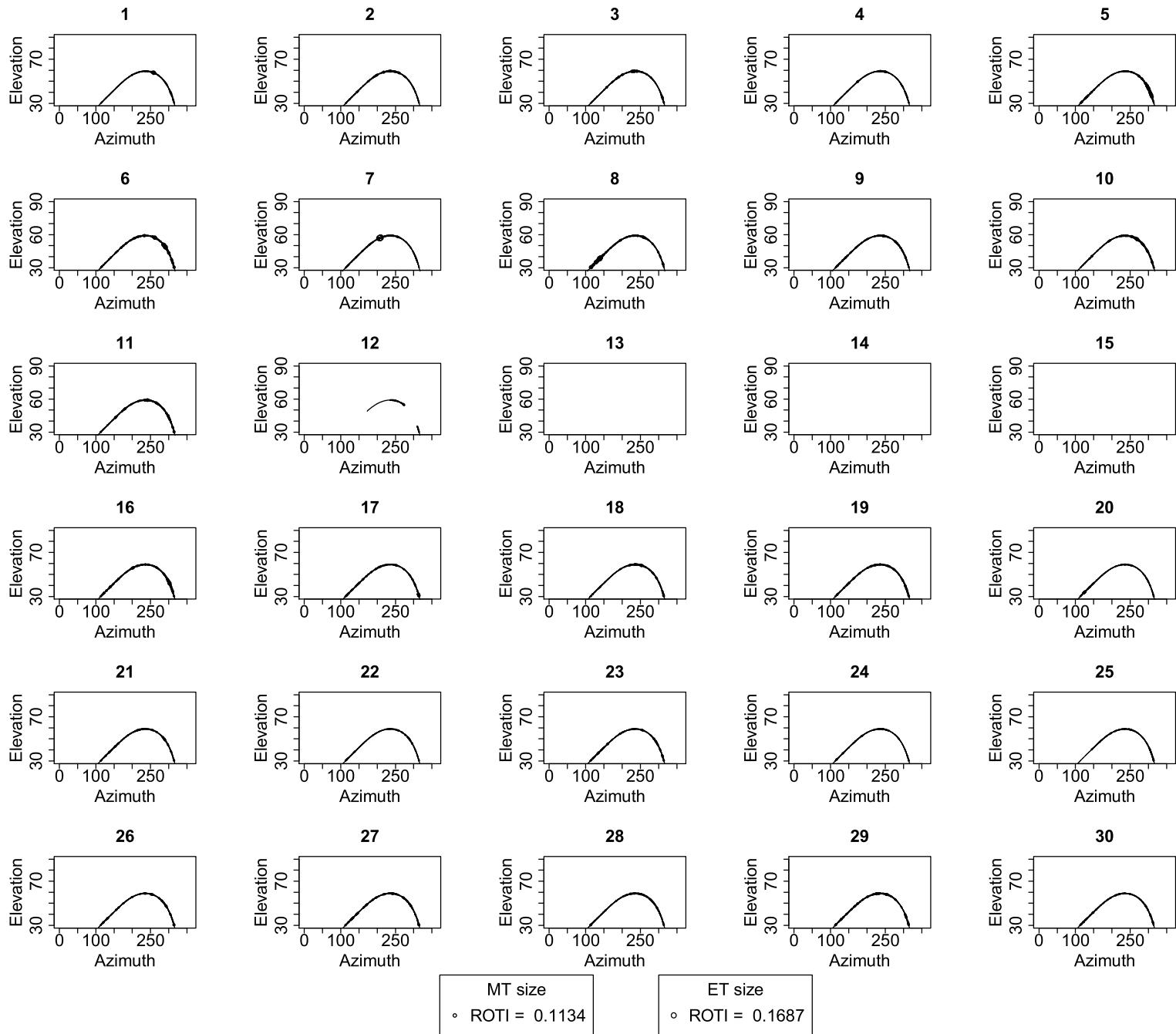


Figure S233 PEA plots comparison of ROTI for G7 on September 1–30, 2017 at SJC station

PEA plots (G8)

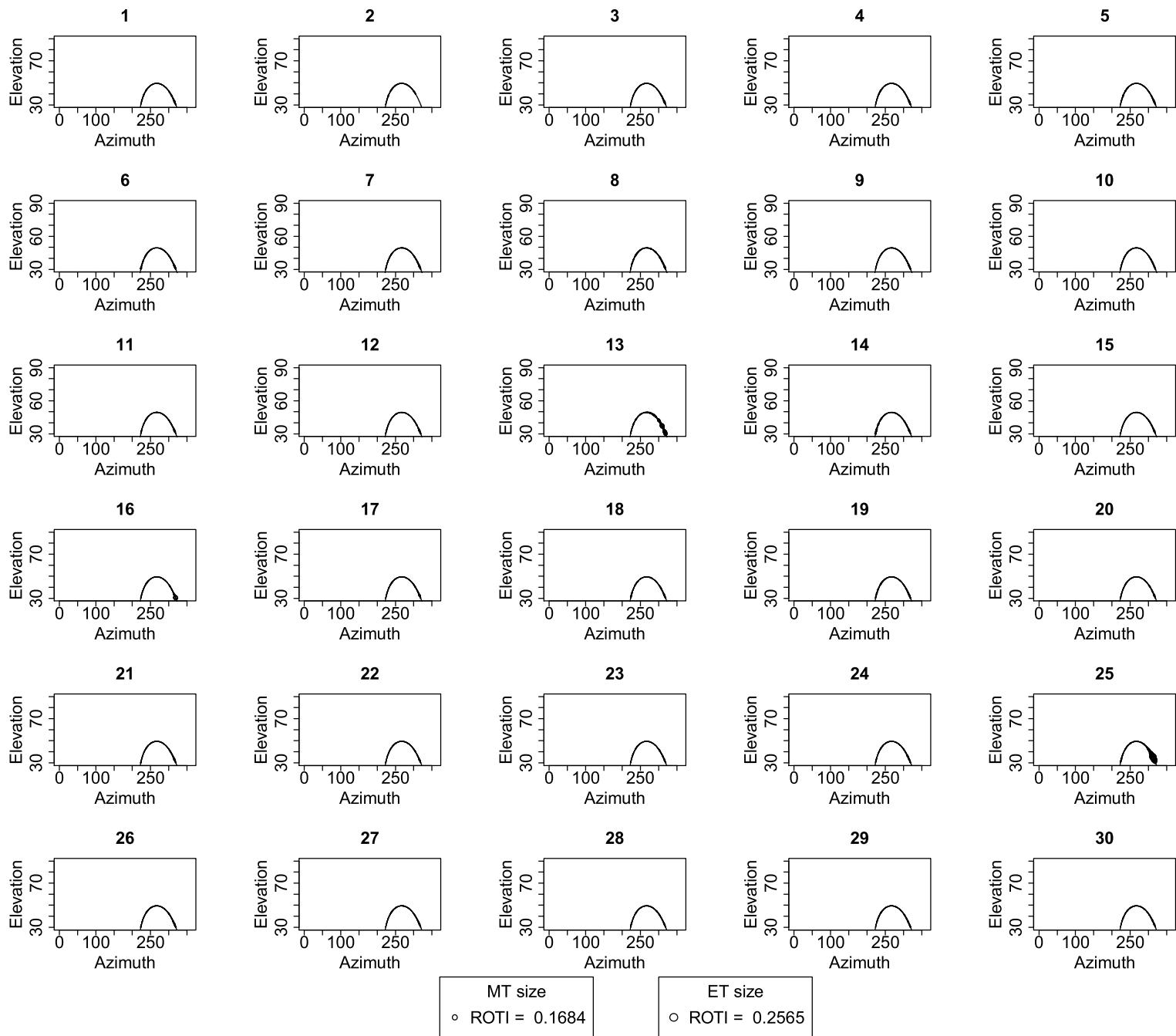


Figure S234 PEA plots comparison of ROTI for G8 on September 1–30, 2017 at SJCU station

PEA plots (G9)

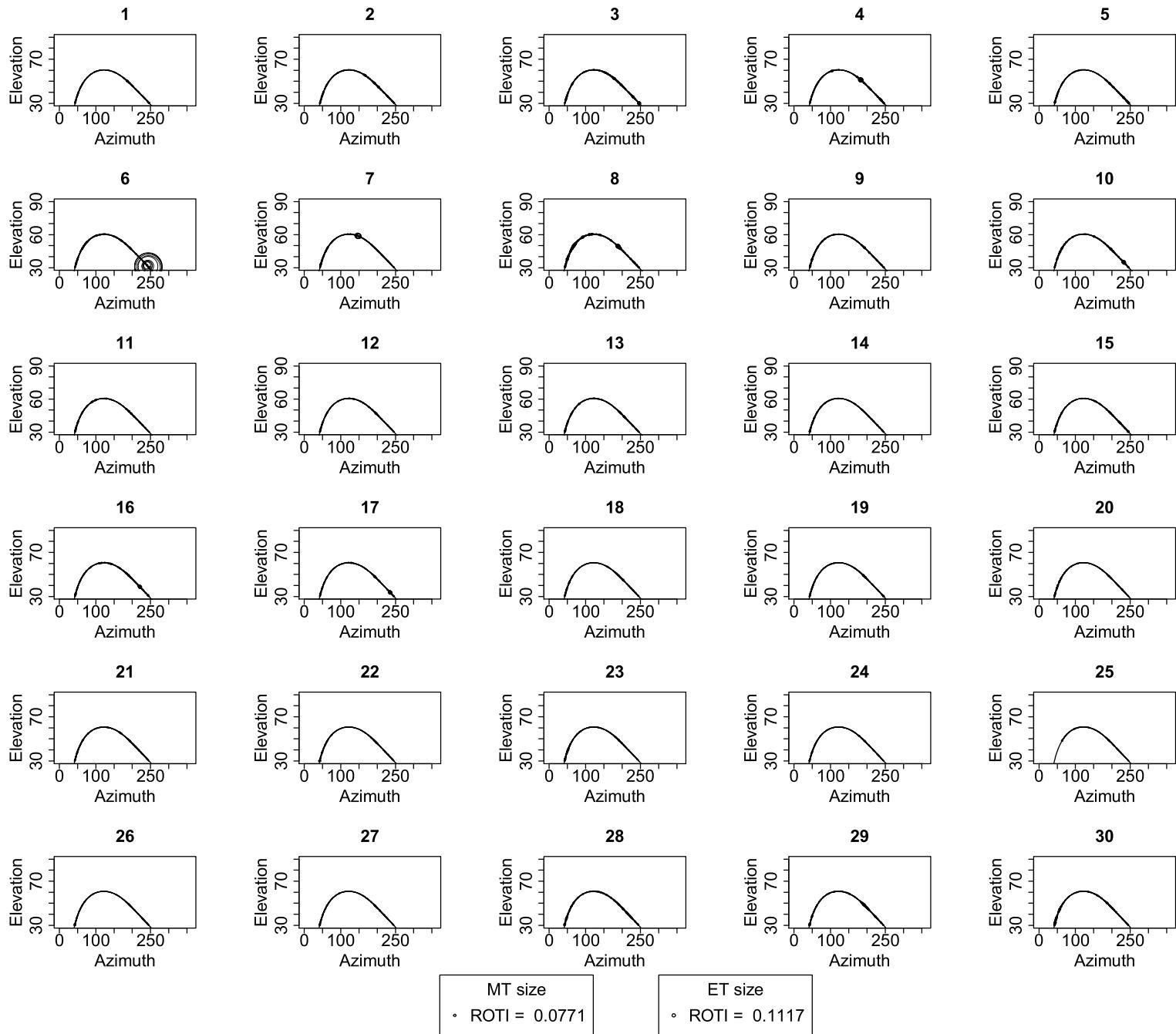


Figure S235 PEA plots comparison of ROTI for G9 on September 1–30, 2017 at SJC station

PEA plots (G10)

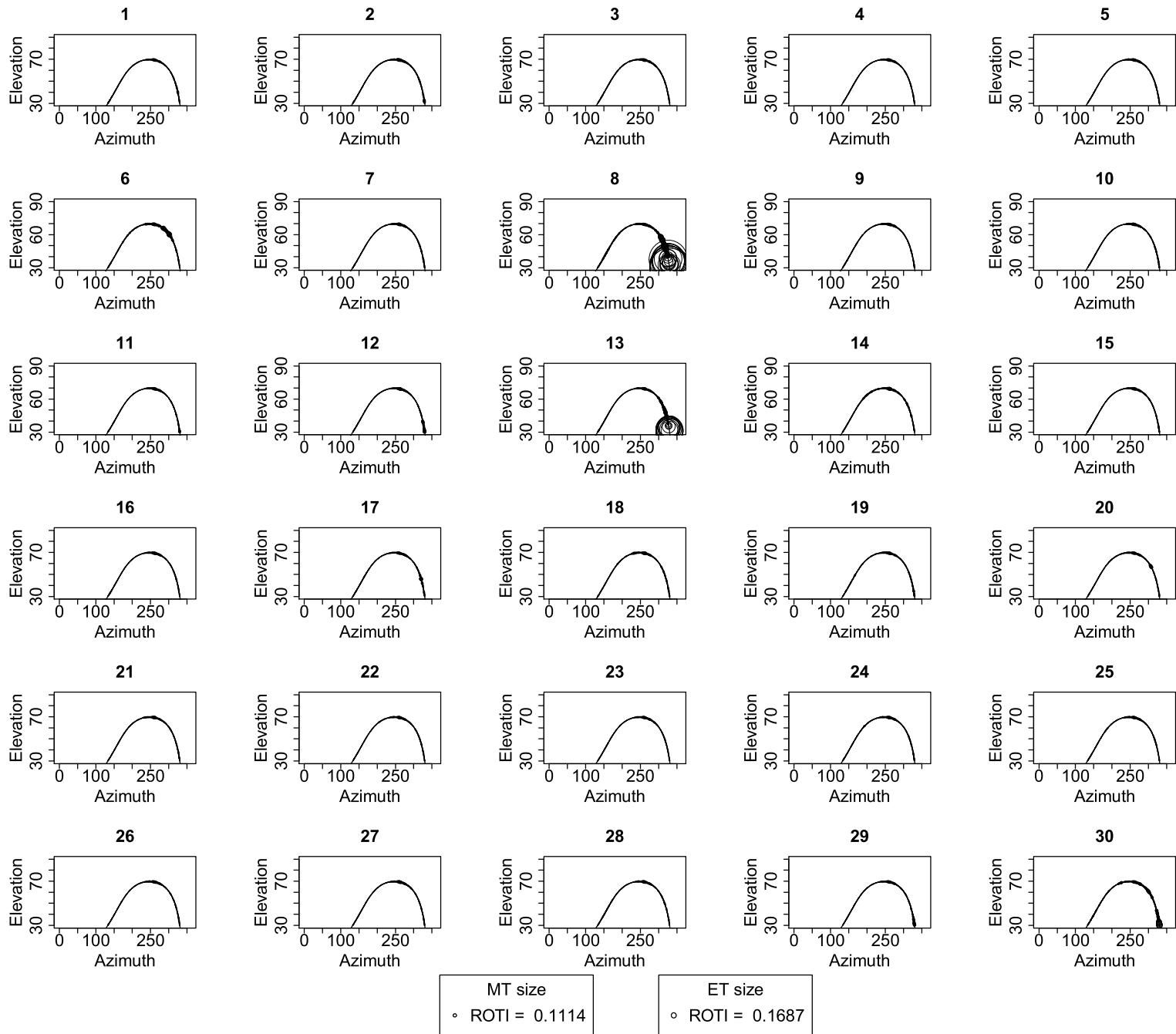


Figure S236 PEA plots comparison of ROTI for G10 on September 1–30, 2017 at SJCU station

PEA plots (G11)

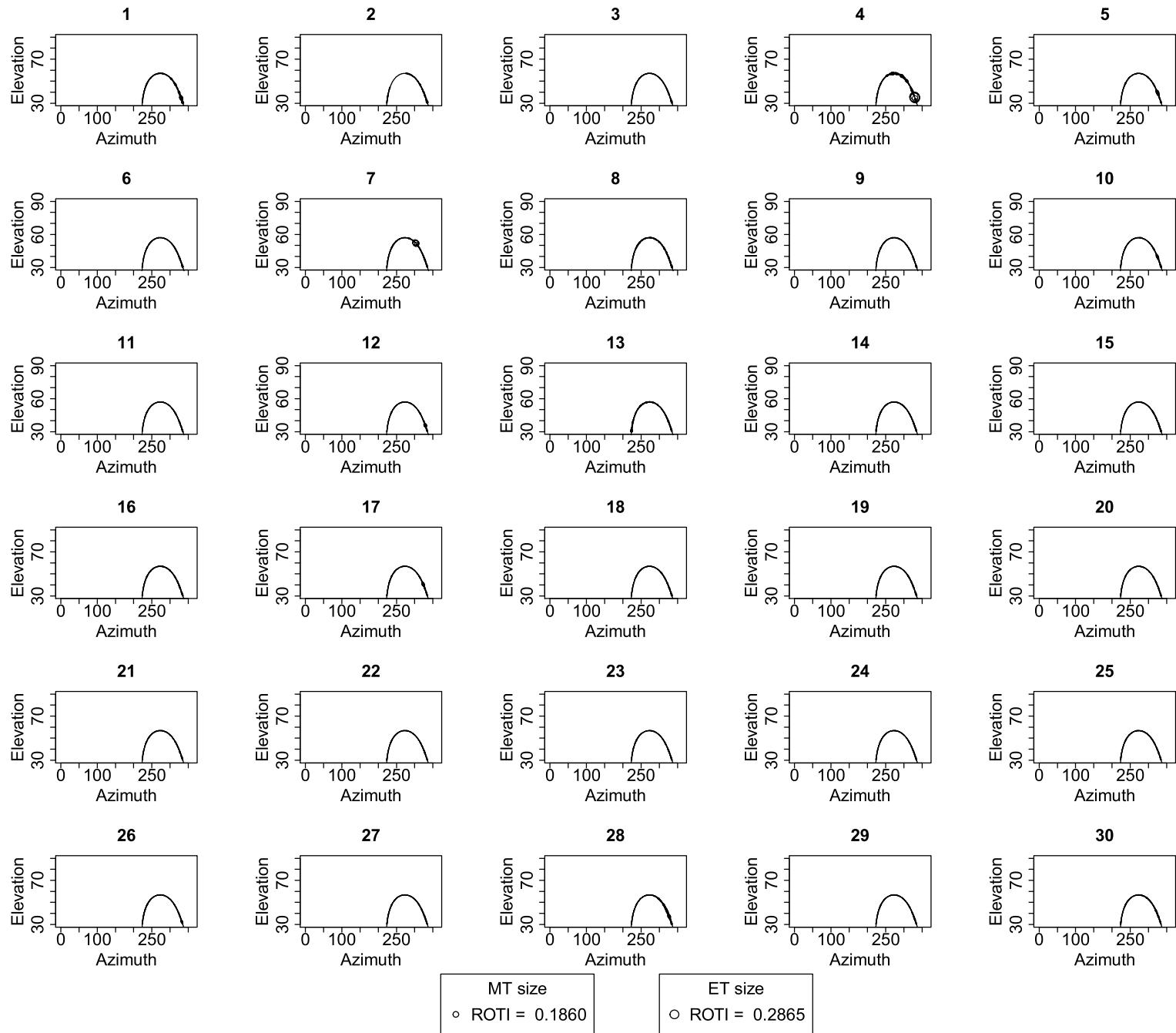


Figure S237 PEA plots comparison of ROTI for G11 on September 1–30, 2017 at SJCU station

PEA plots (G12)

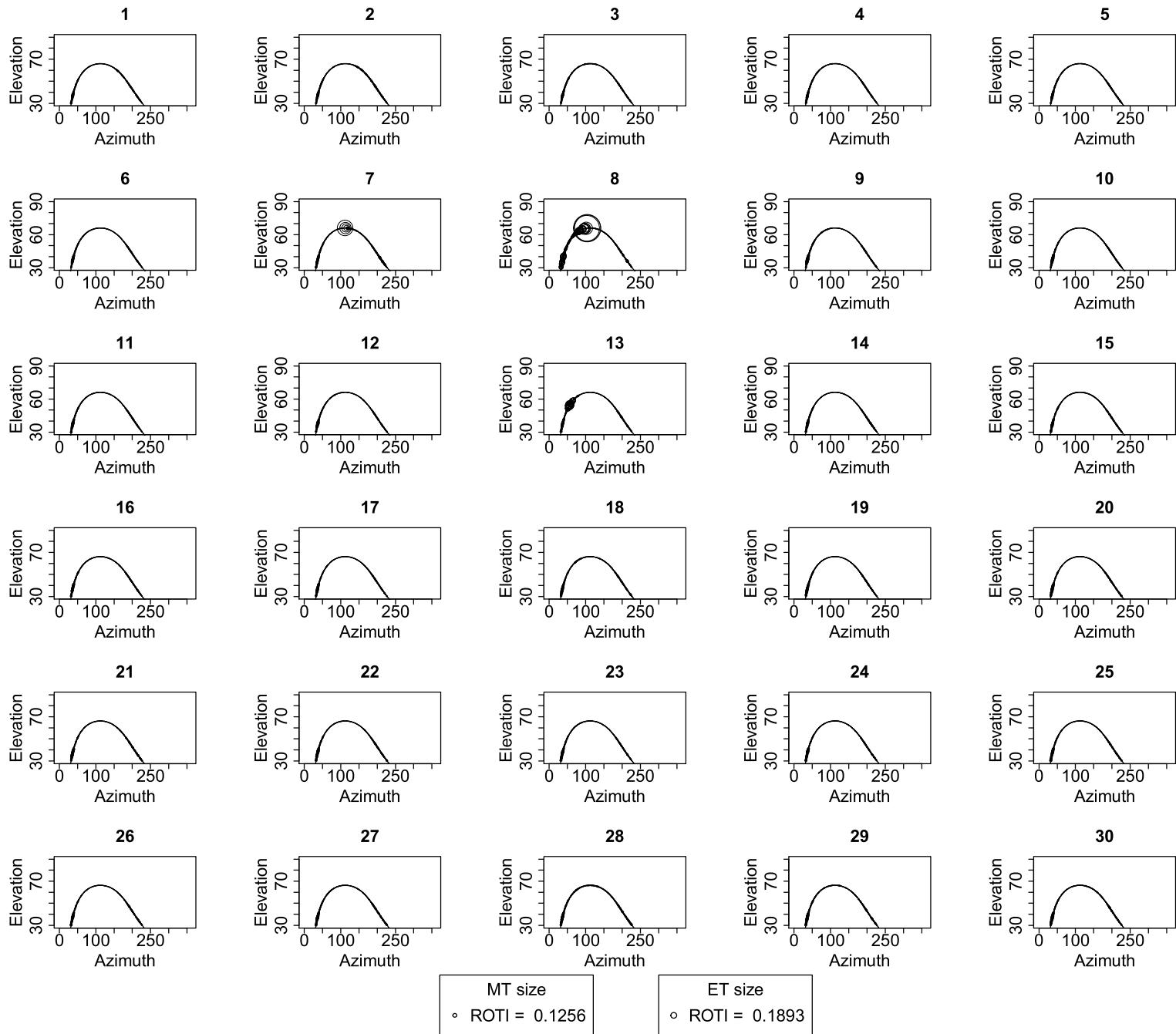


Figure S238 PEA plots comparison of ROTI for G12 on September 1–30, 2017 at SJCU station

PEA plots (G13)

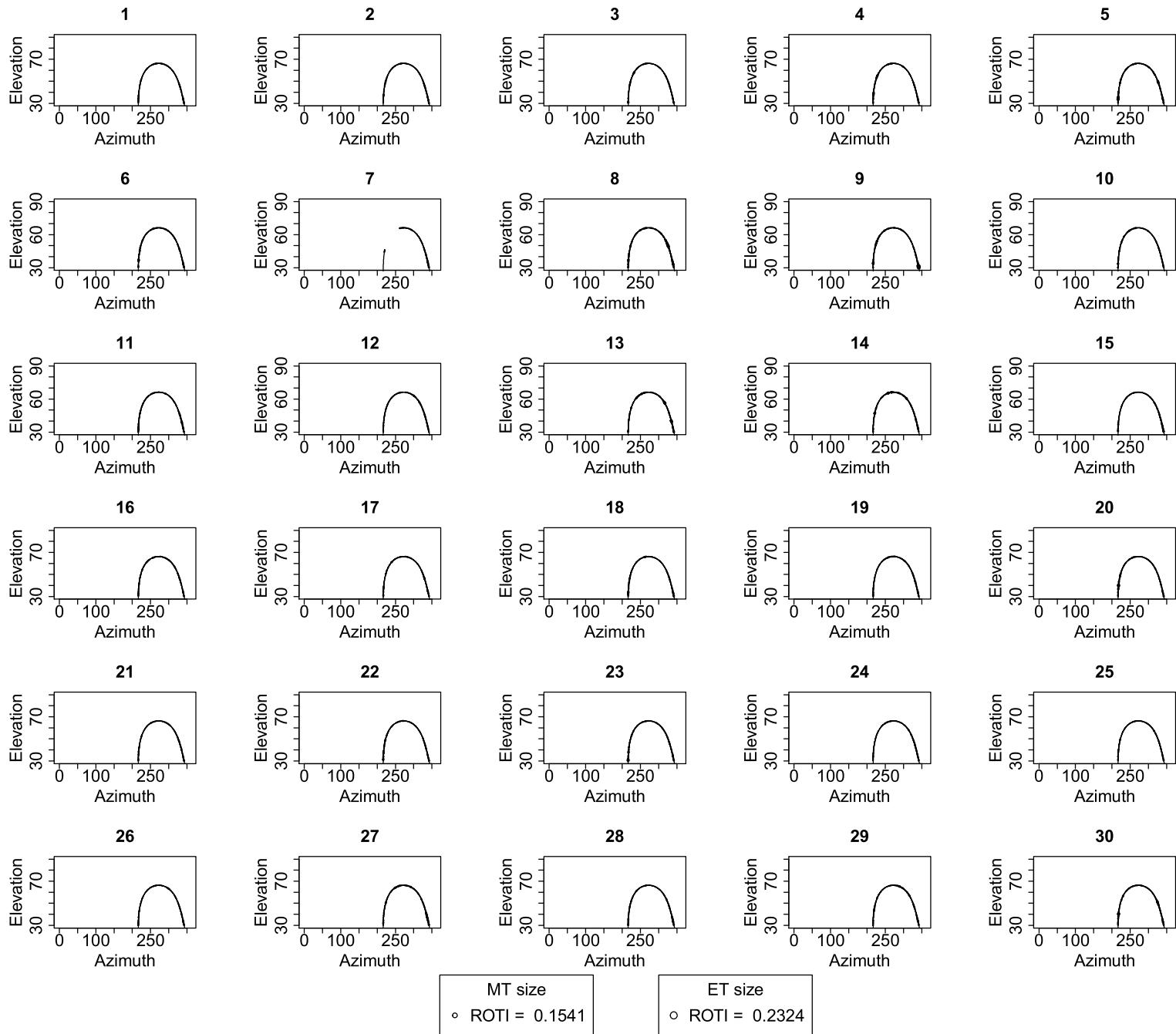


Figure S239 PEA plots comparison of ROTI for G13 on September 1–30, 2017 at SJCU station

PEA plots (G14)

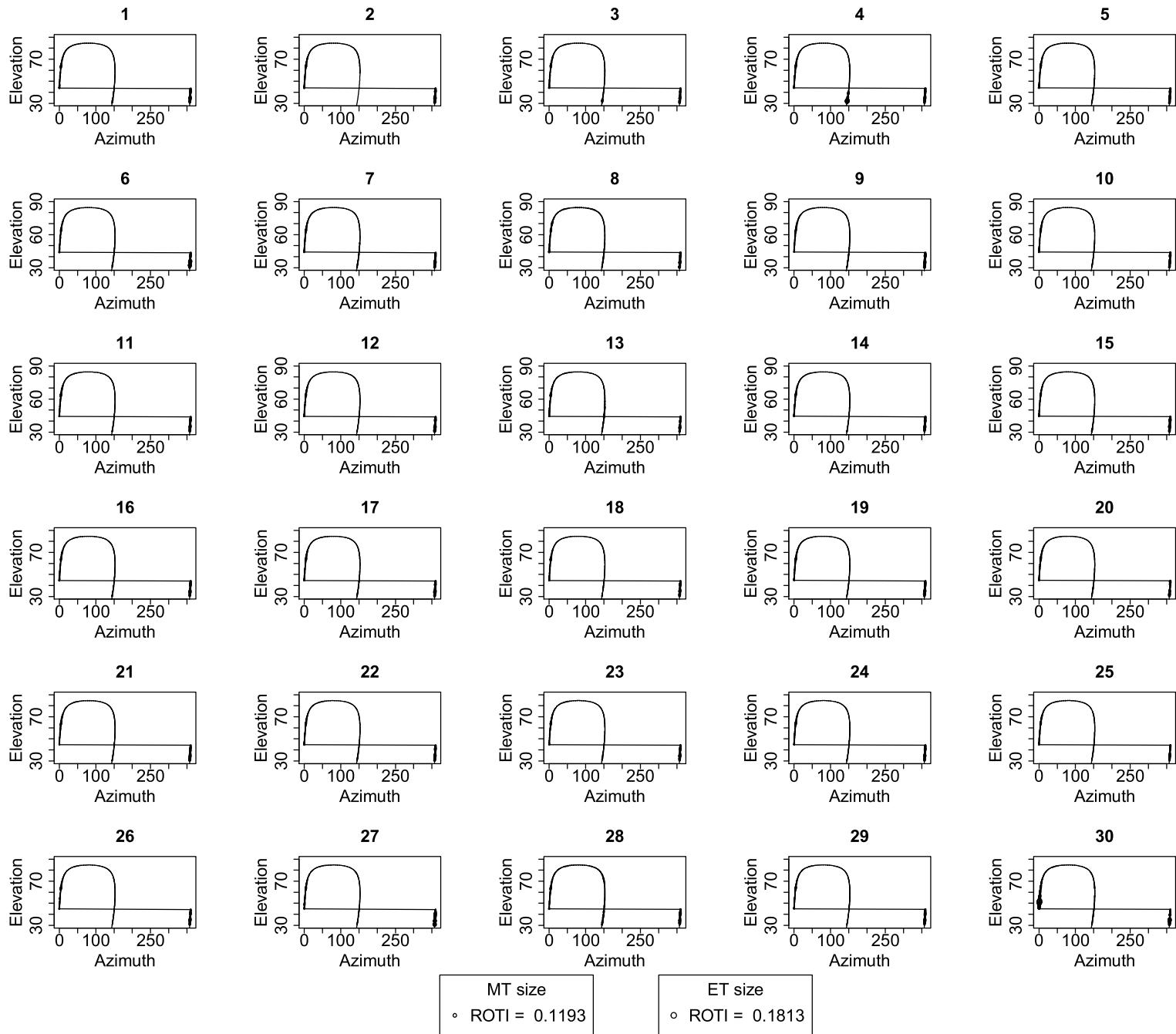


Figure S240 PEA plots comparison of ROTI for G14 on September 1–30, 2017 at SJCU station

PEA plots (G15)

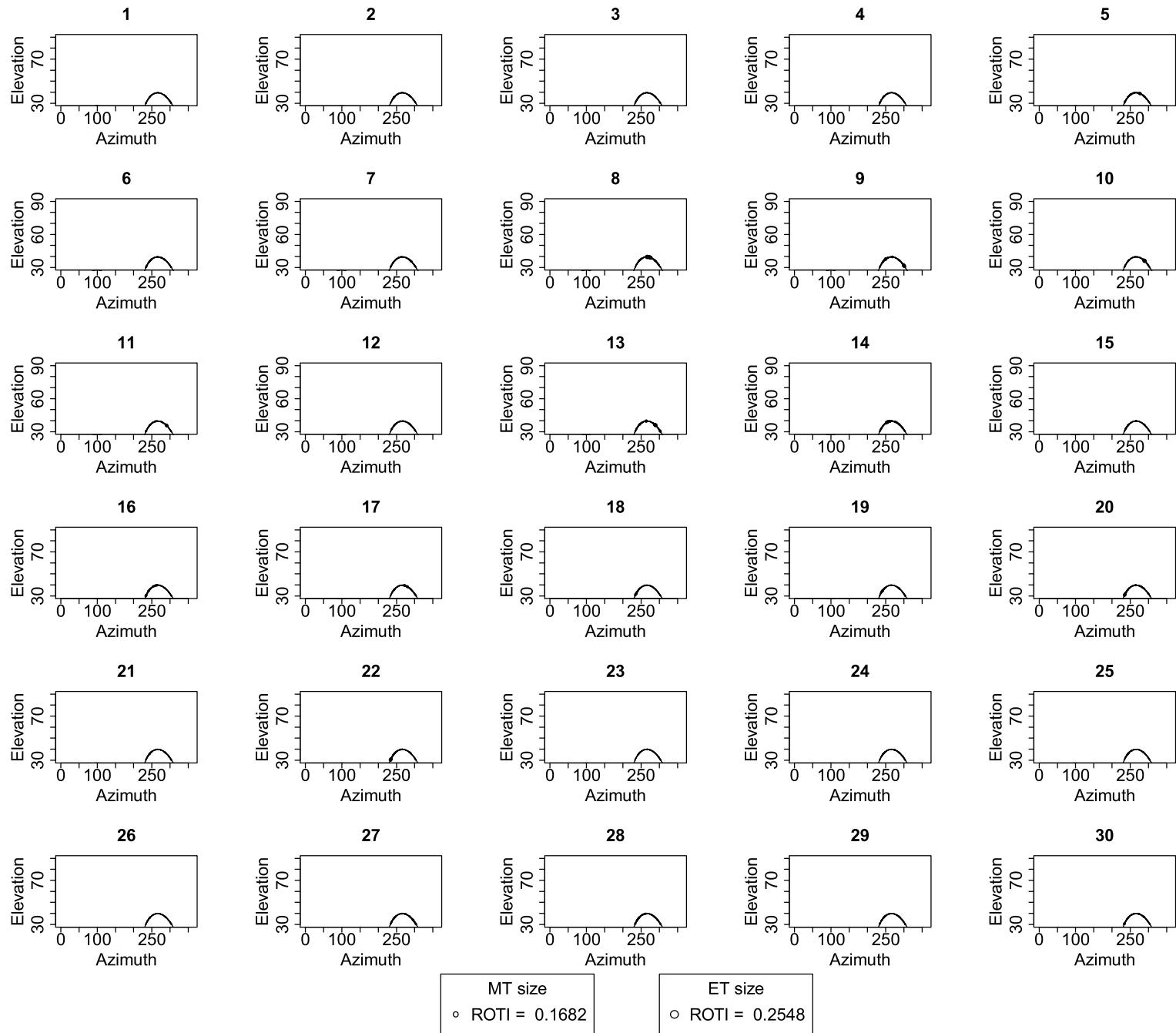


Figure S241 PEA plots comparison of ROTI for G15 on September 1–30, 2017 at SJCU station

PEA plots (G16)

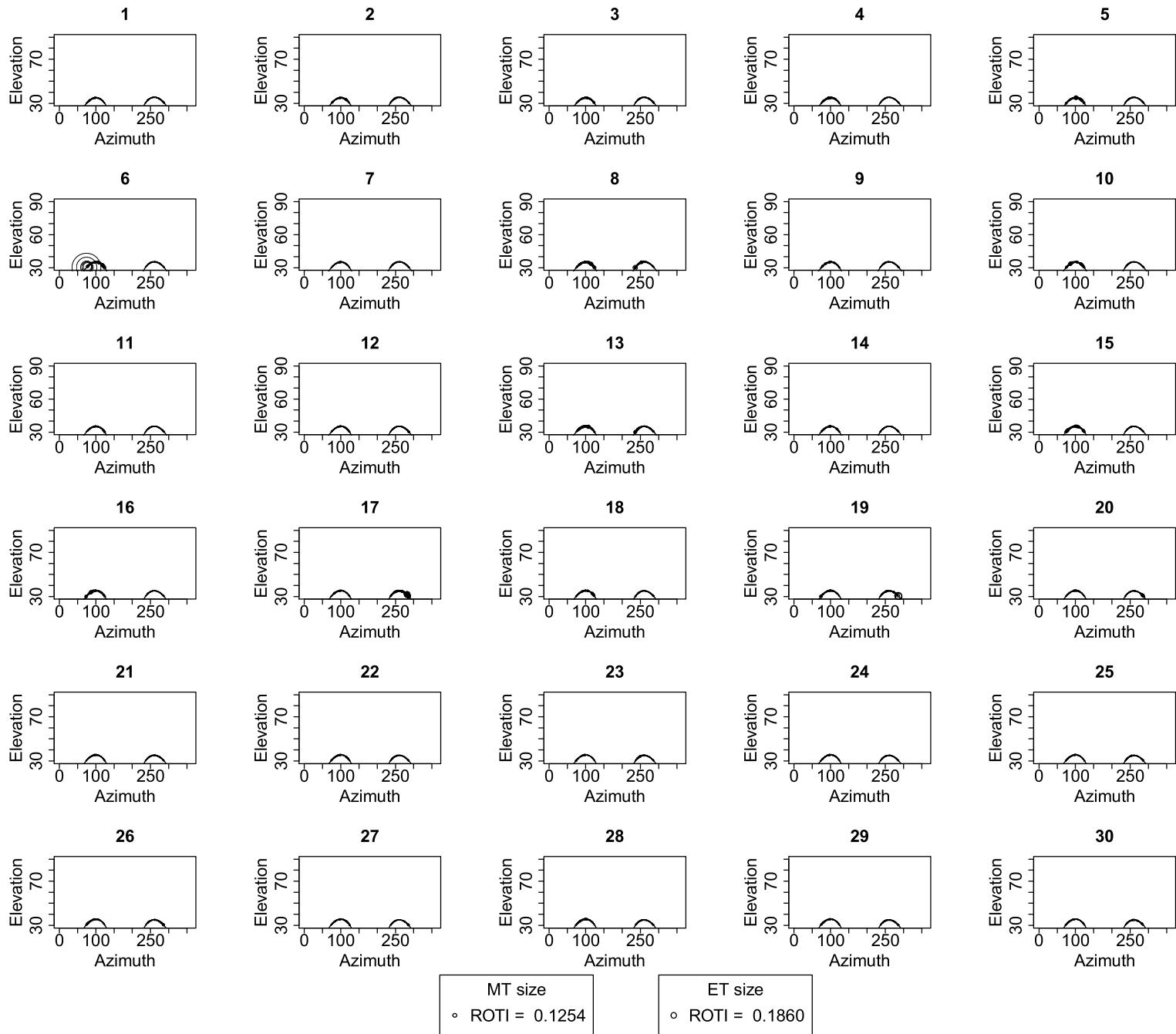


Figure S242 PEA plots comparison of ROTI for G16 on September 1–30, 2017 at SJCU station

PEA plots (G17)

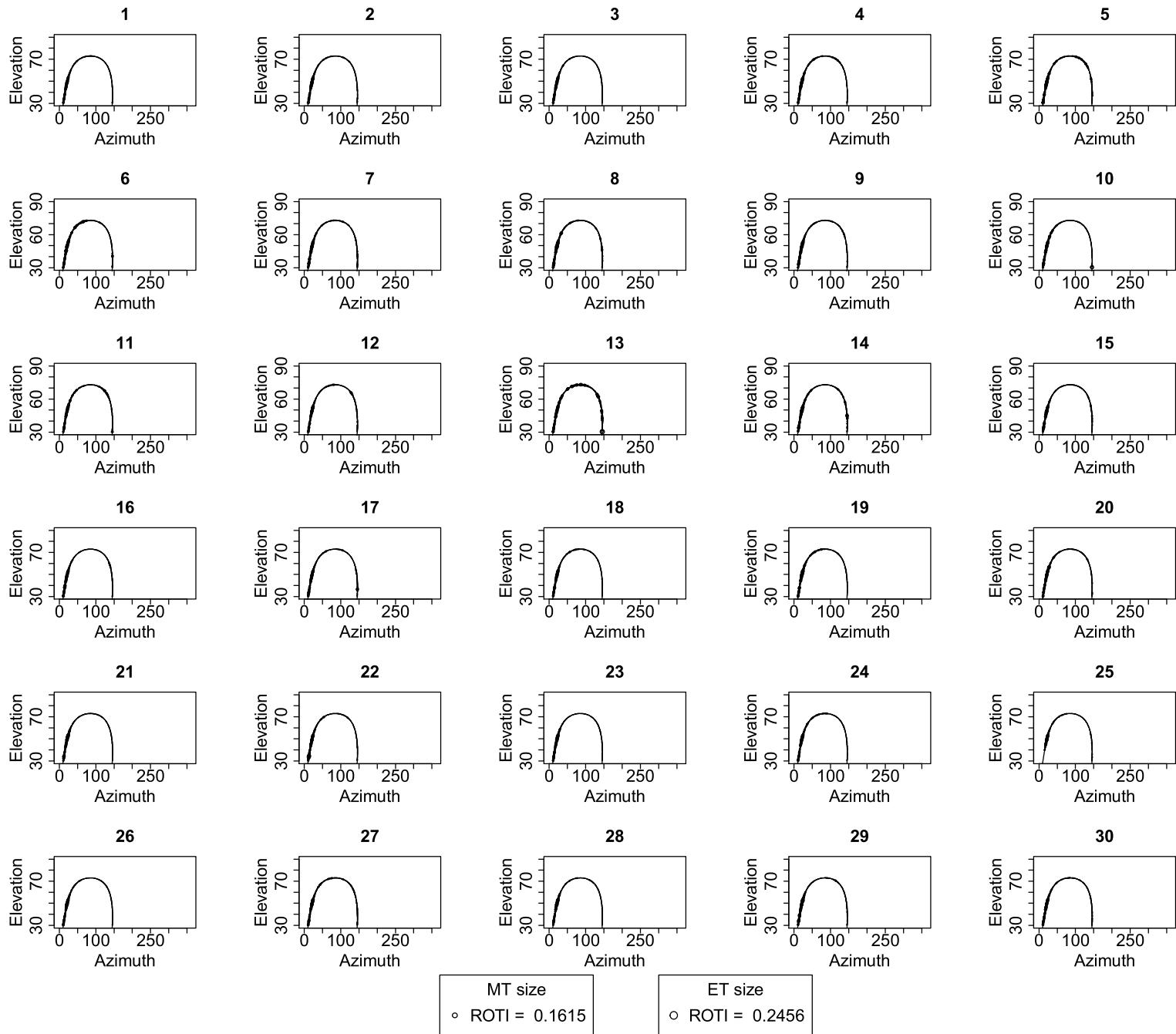


Figure S243 PEA plots comparison of ROTI for G17 on September 1–30, 2017 at SJCU station

PEA plots (G18)

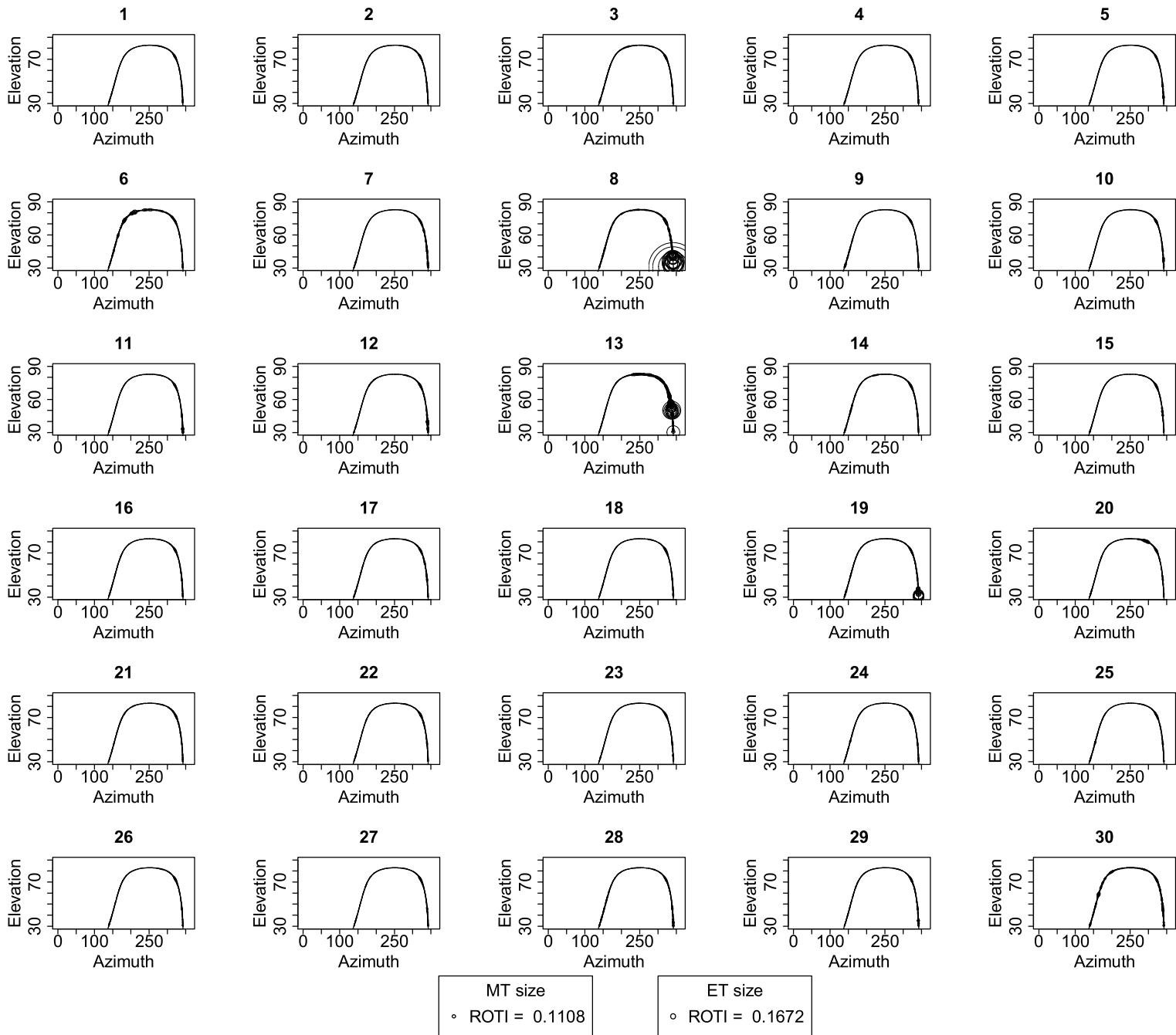


Figure S244 PEA plots comparison of ROTI for G18 on September 1–30, 2017 at SJCU station

PEA plots (G19)

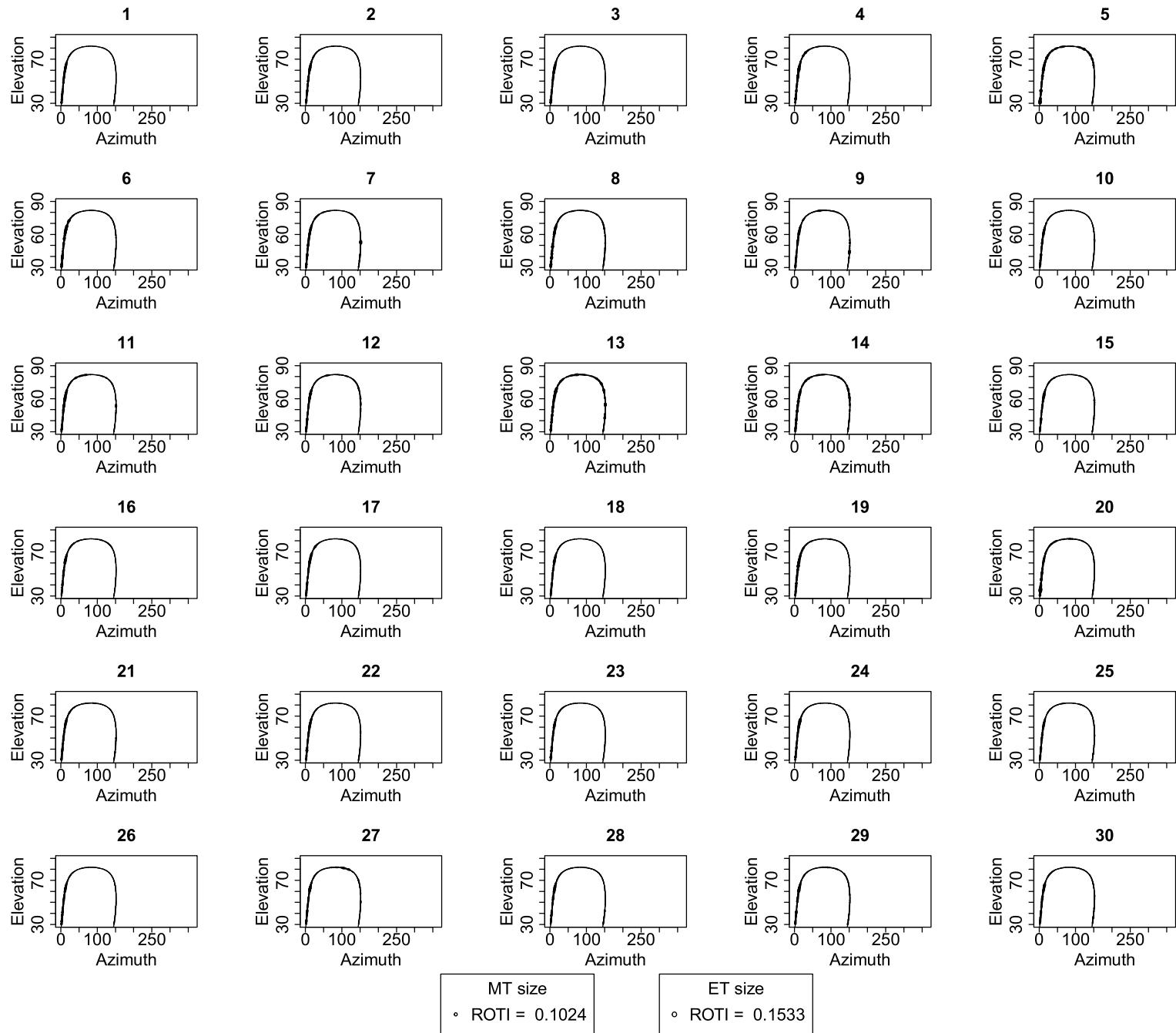


Figure S245 PEA plots comparison of ROTI for G19 on September 1–30, 2017 at SJCU station

PEA plots (G20)

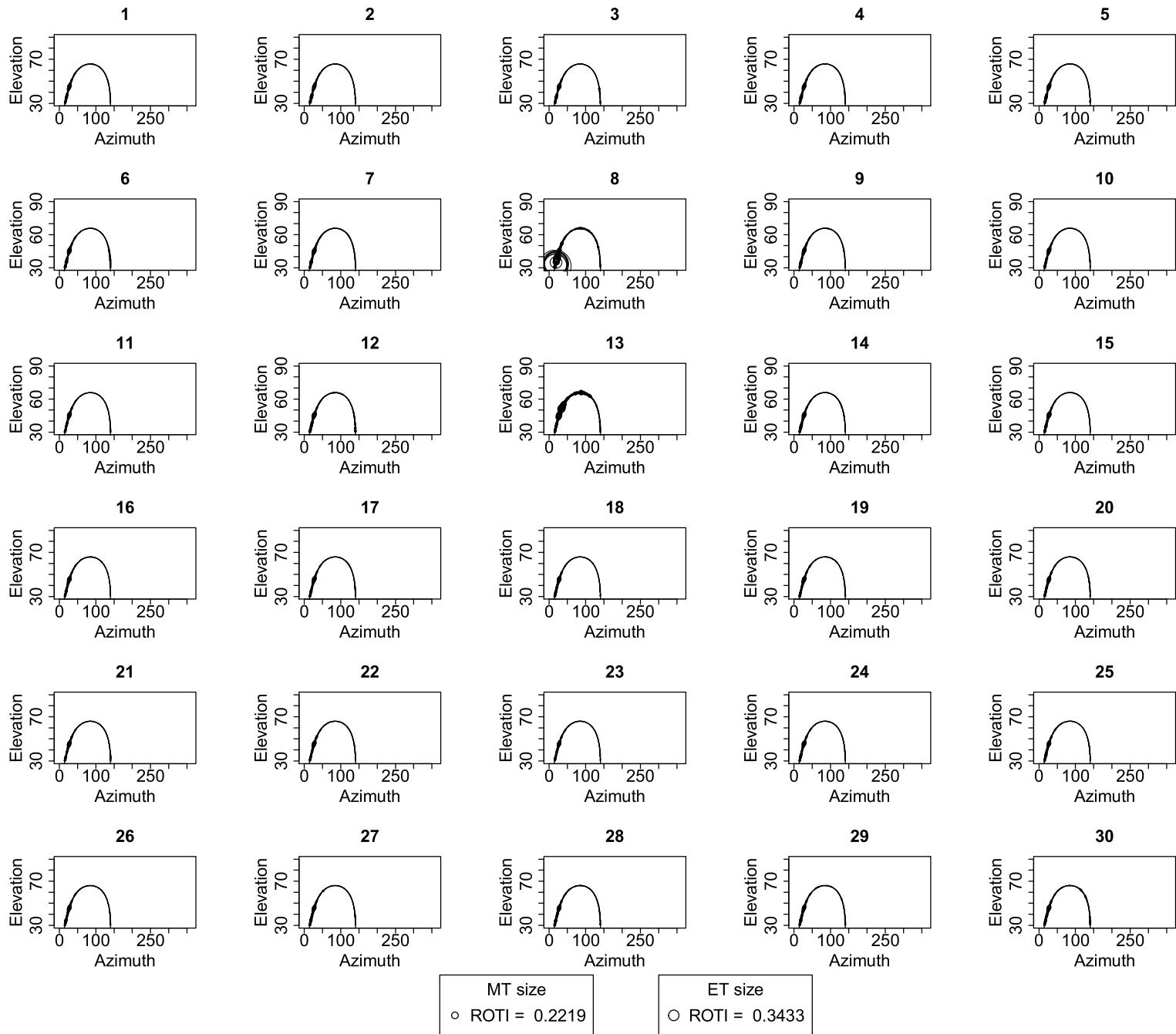


Figure S246 PEA plots comparison of ROTI for G20 on September 1–30, 2017 at SJCU station

PEA plots (G21)

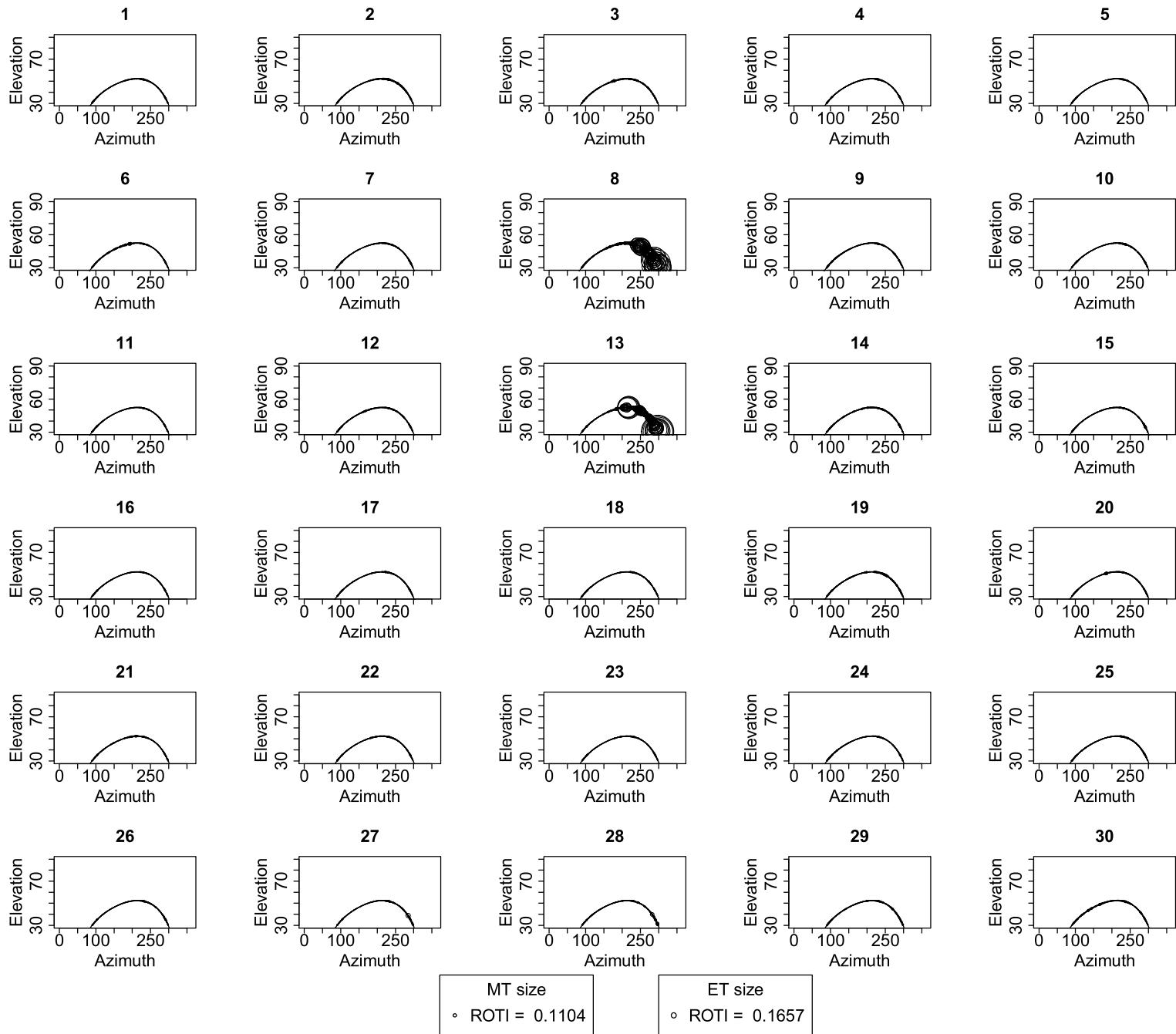


Figure S247 PEA plots comparison of ROTI for G21 on September 1–30, 2017 at SJCU station

PEA plots (G22)

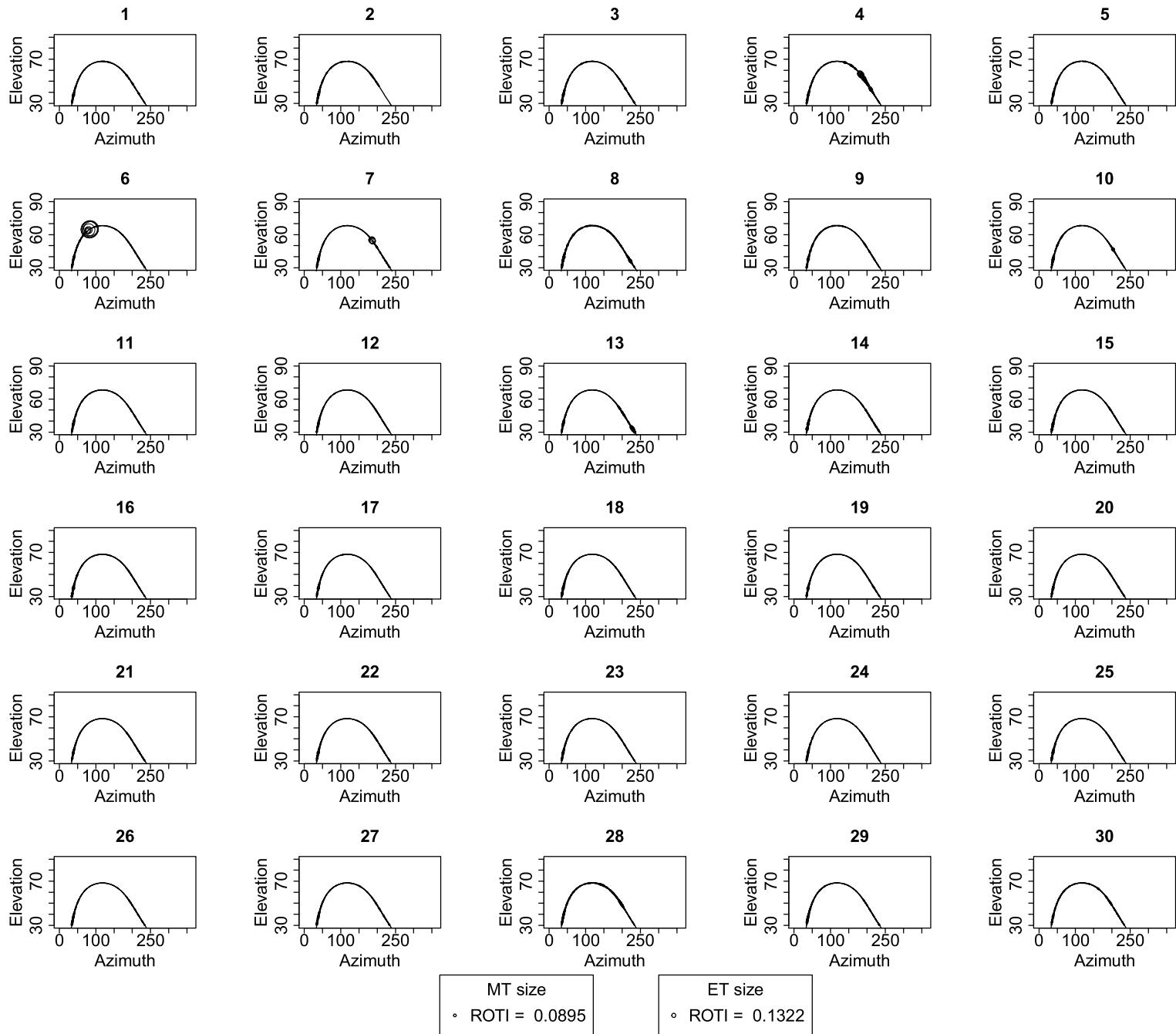


Figure S248 PEA plots comparison of ROTI for G22 on September 1–30, 2017 at SJCU station

PEA plots (G23)

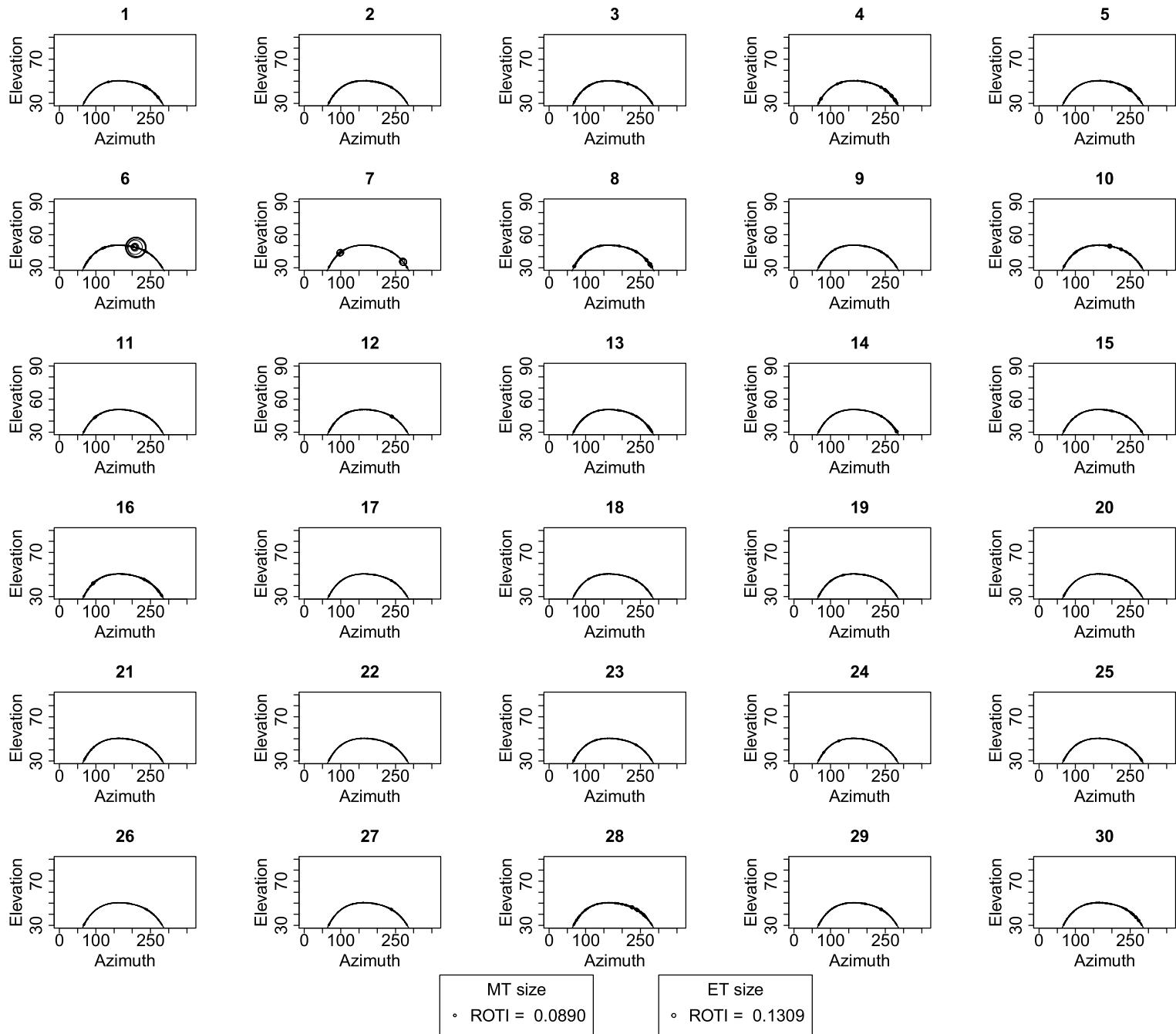


Figure S249 PEA plots comparison of ROTI for G23 on September 1–30, 2017 at SJCU station

PEA plots (G24)

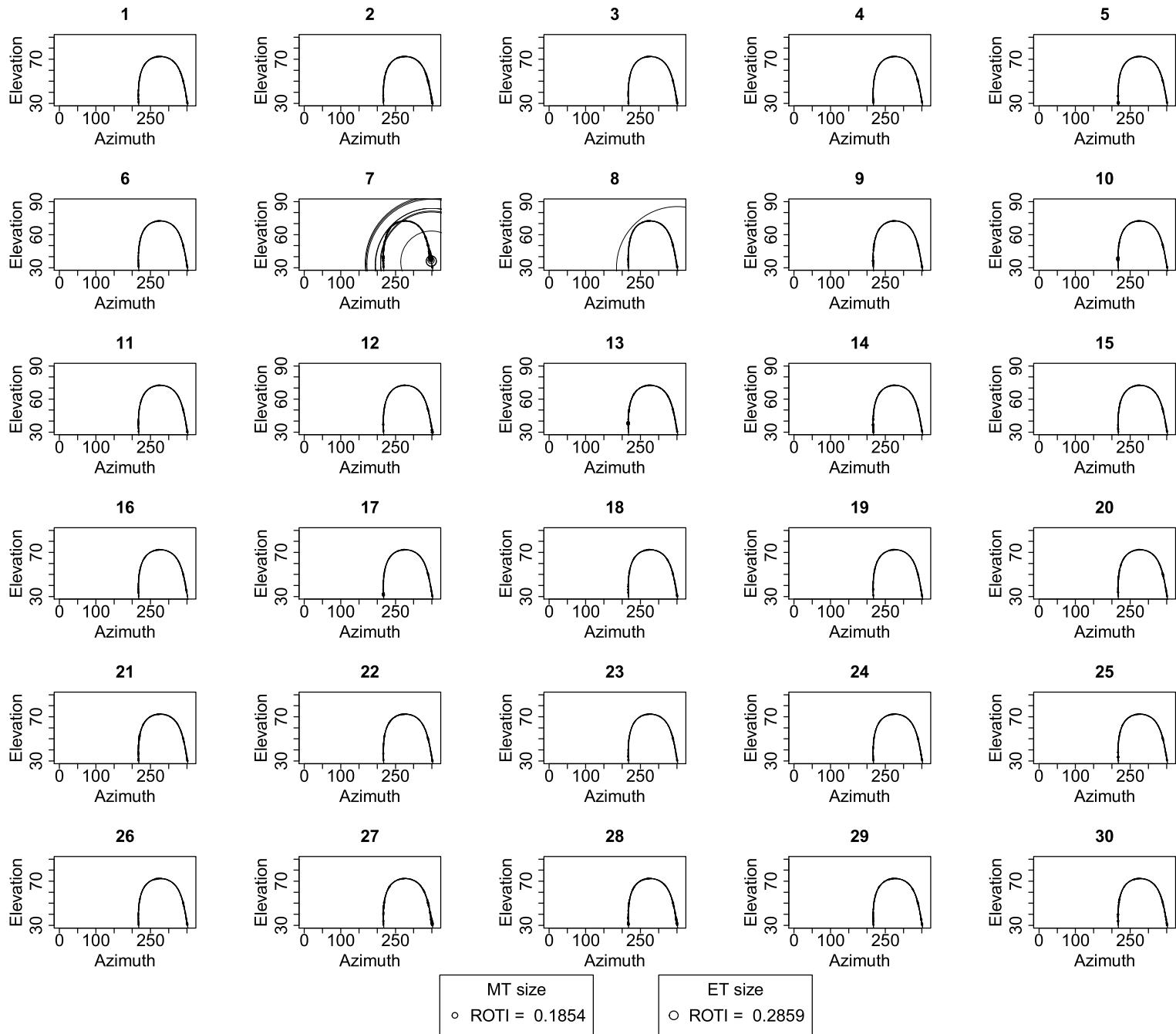


Figure S250 PEA plots comparison of ROTI for G24 on September 1–30, 2017 at SJCU station

PEA plots (G25)

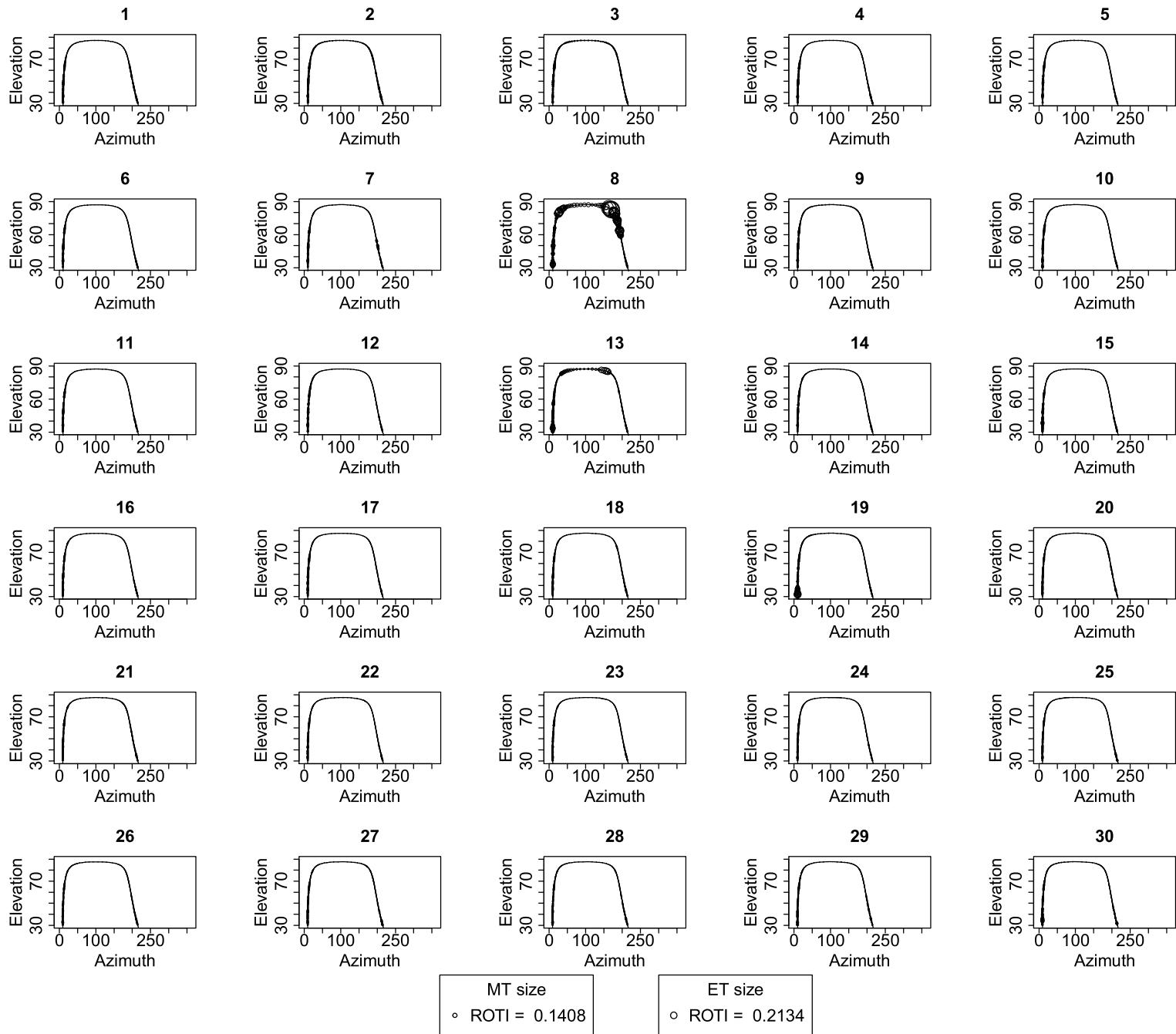


Figure S251 PEA plots comparison of ROTI for G25 on September 1–30, 2017 at SJCU station

PEA plots (G26)

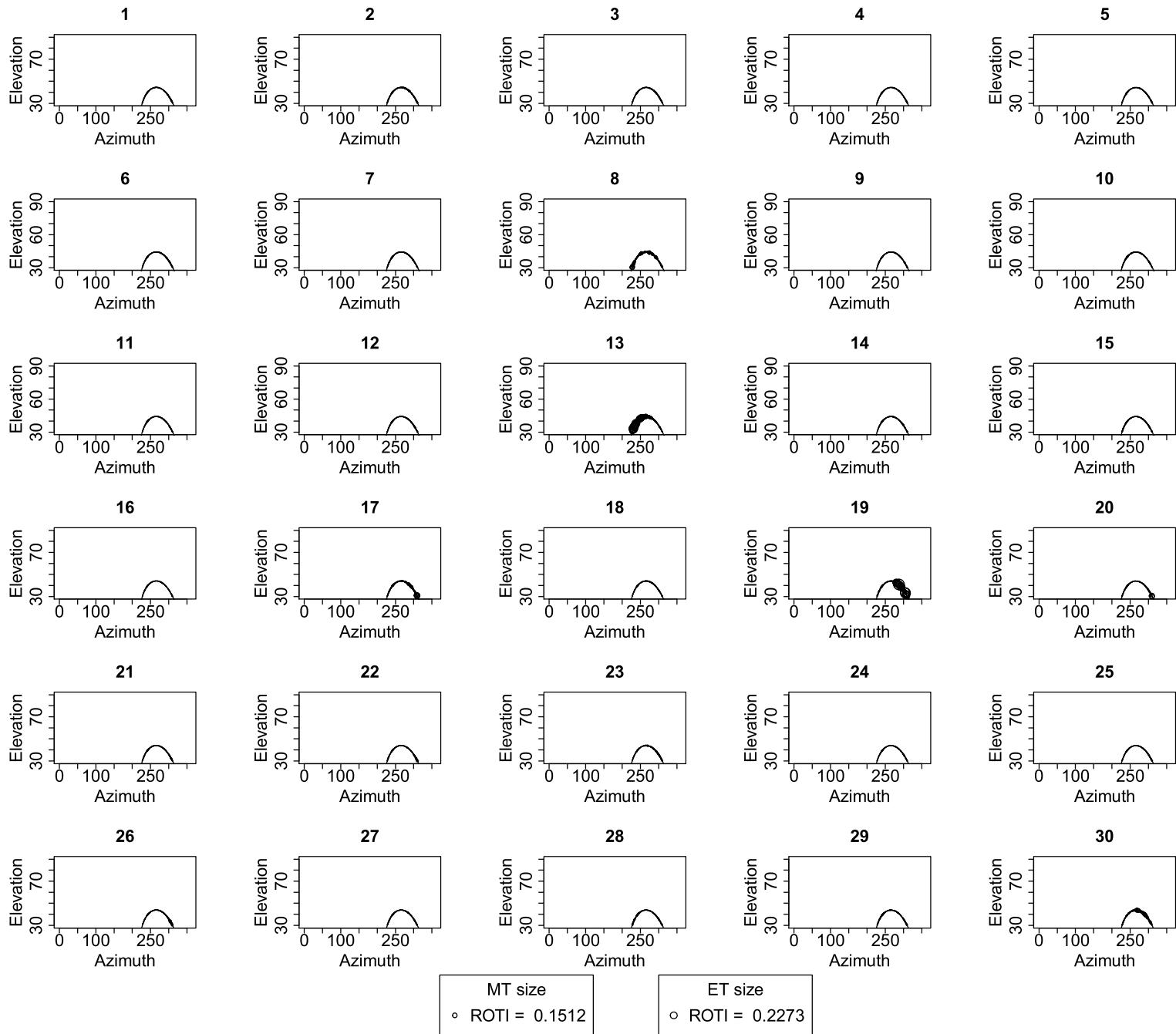


Figure S252 PEA plots comparison of ROTI for G26 on September 1–30, 2017 at SJCU station

PEA plots (G27)

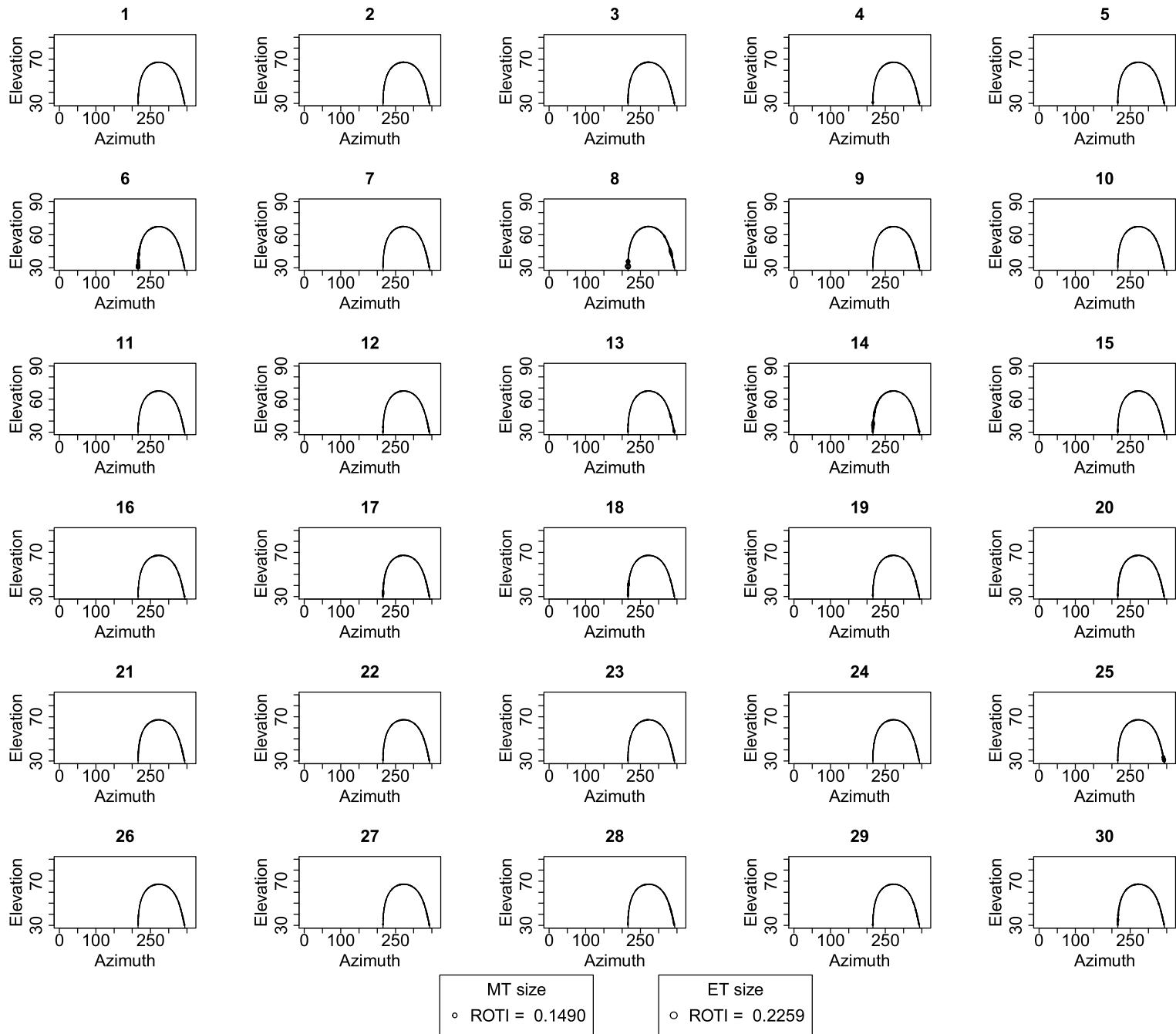


Figure S253 PEA plots comparison of ROTI for G27 on September 1–30, 2017 at SJCU station

PEA plots (G28)

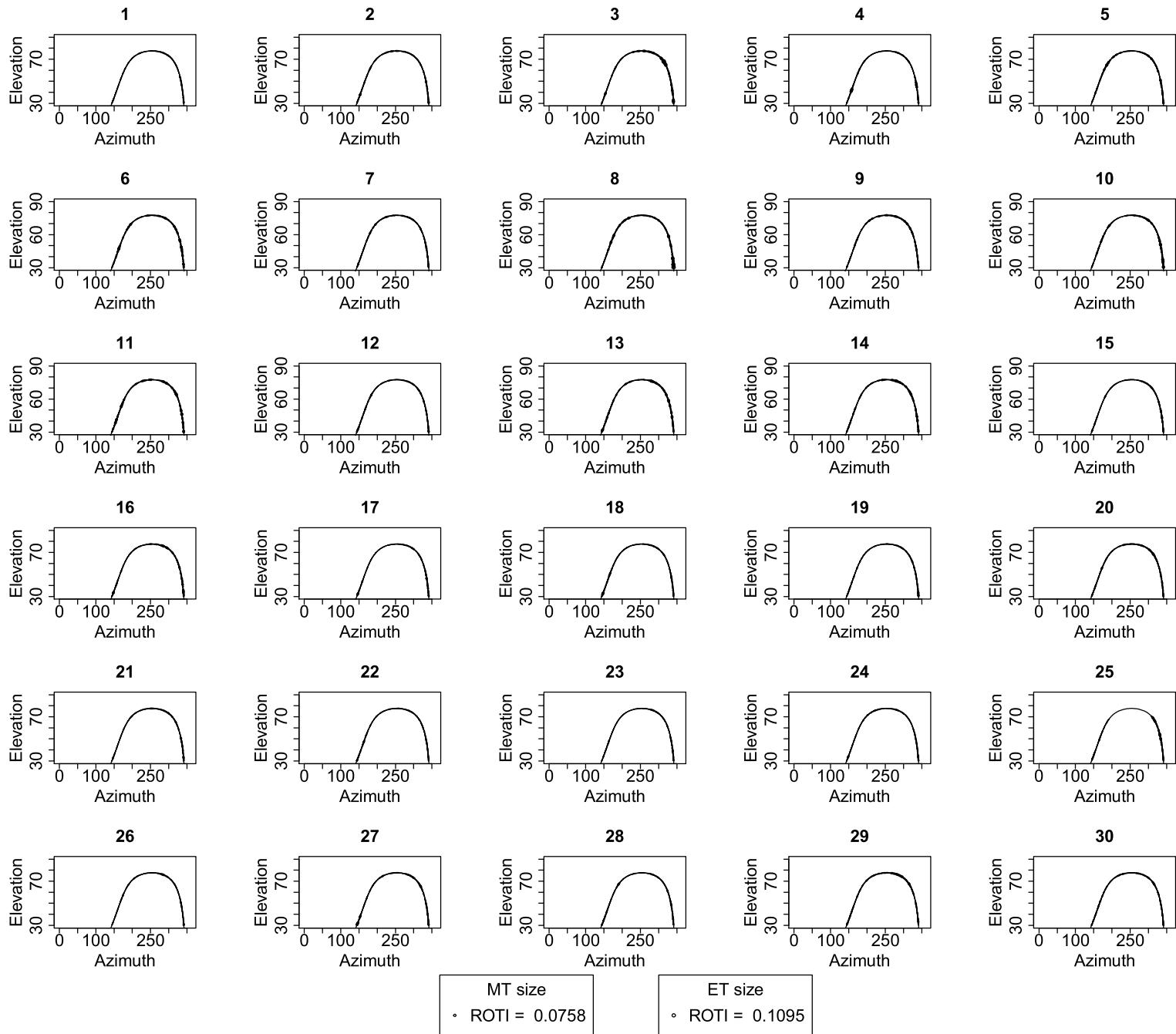


Figure S254 PEA plots comparison of ROTI for G28 on September 1–30, 2017 at SJCU station

PEA plots (G29)

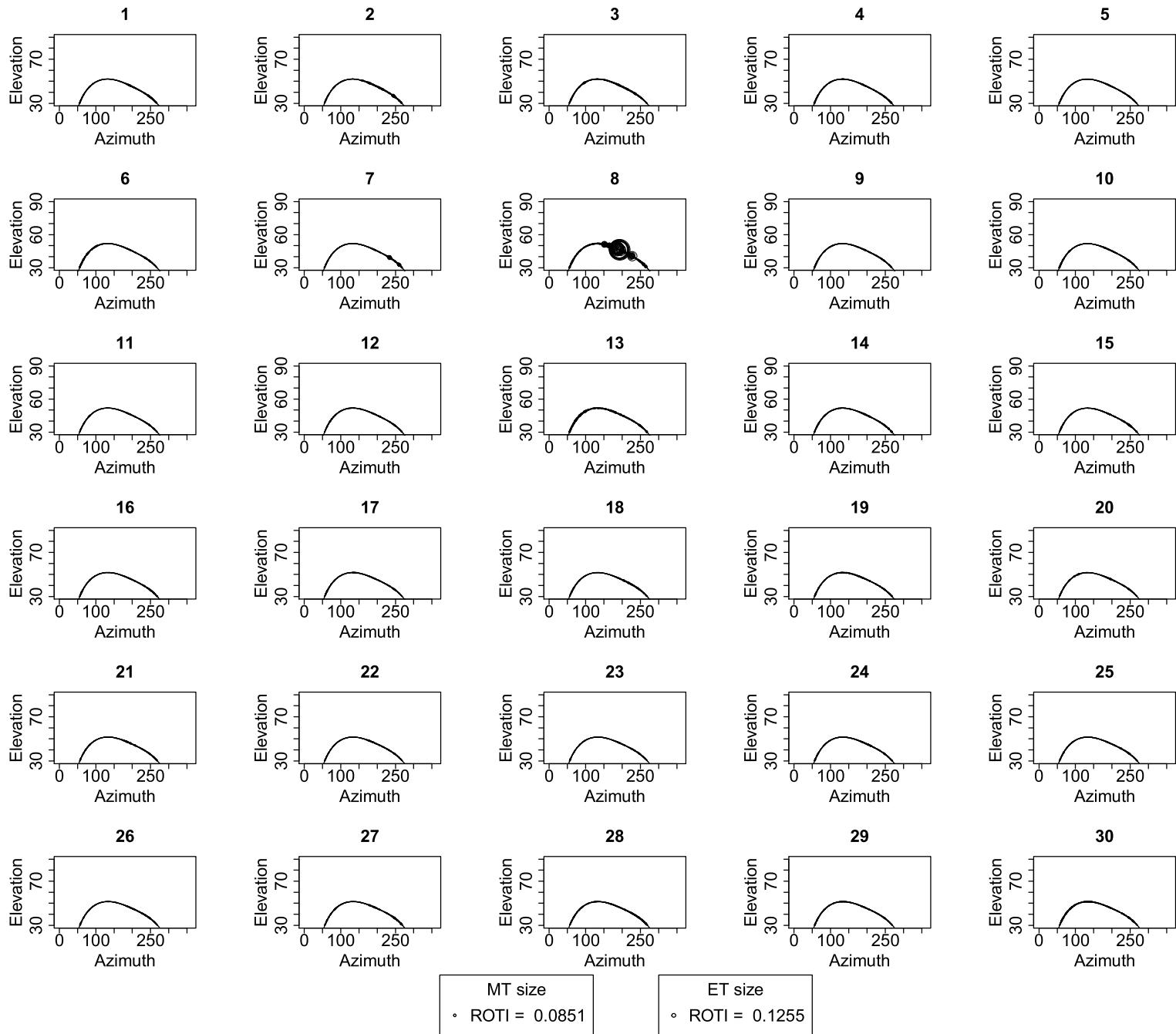


Figure S255 PEA plots comparison of ROTI for G29 on September 1–30, 2017 at SJCU station

PEA plots (G30)

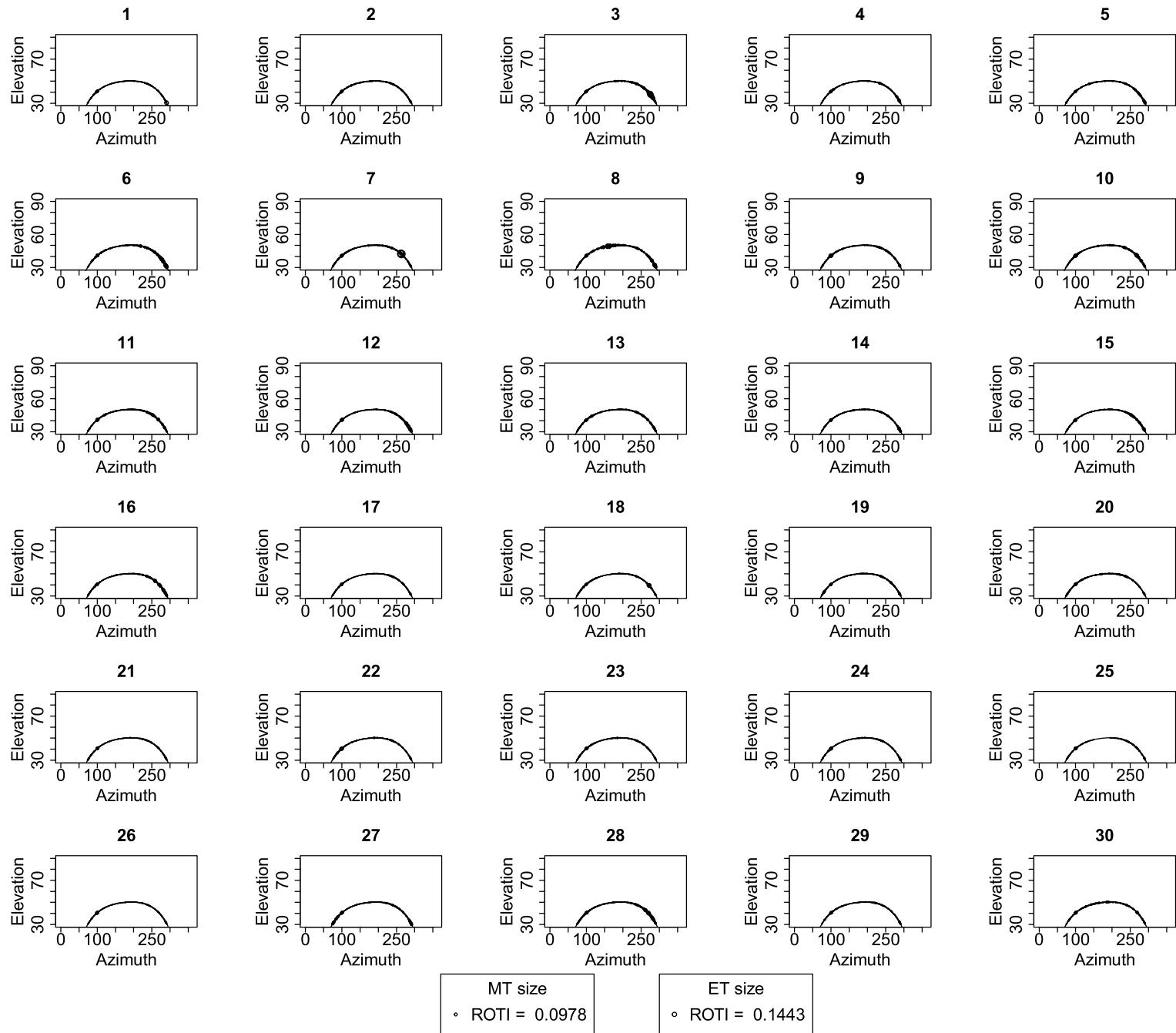


Figure S256 PEA plots comparison of ROTI for G30 on September 1–30, 2017 at SJCU station

PEA plots (G31)

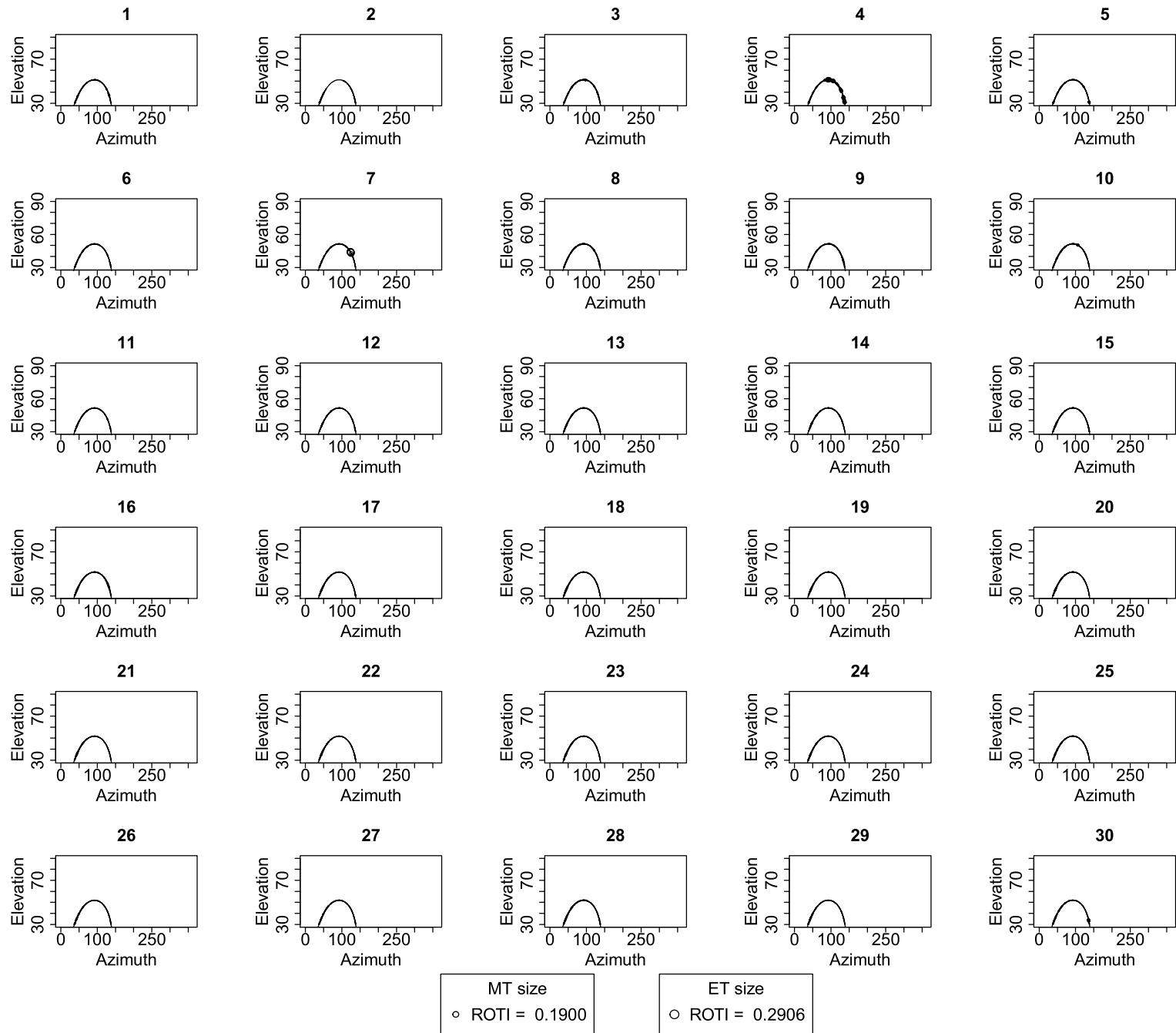


Figure S257 PEA plots comparison of ROTI for G31 on September 1–30, 2017 at SJCU station

PEA plots (G32)

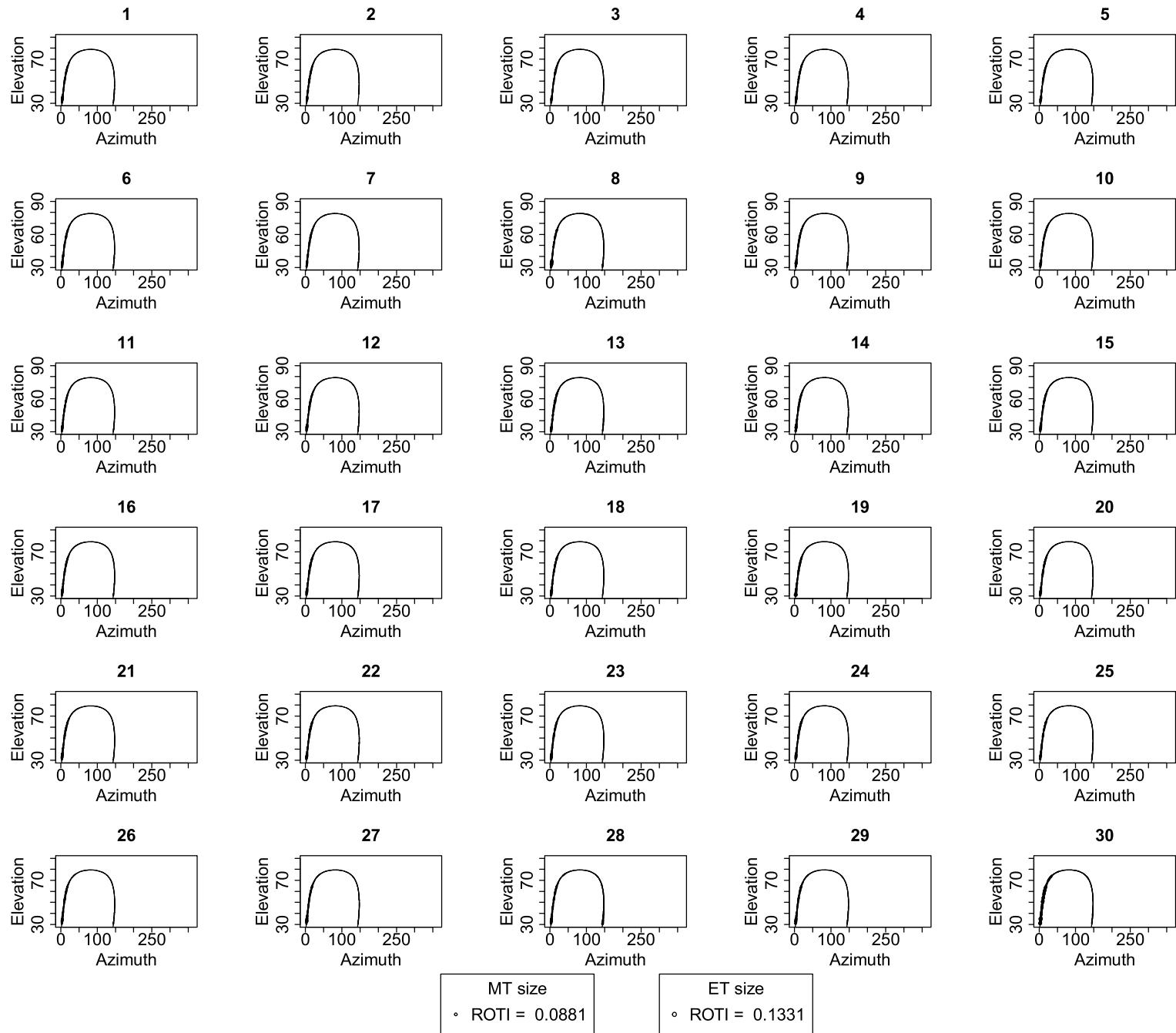


Figure S258 PEA plots comparison of ROTI for G32 on September 1–30, 2017 at SJCU station

PEA plots (G21 with the extreme value)

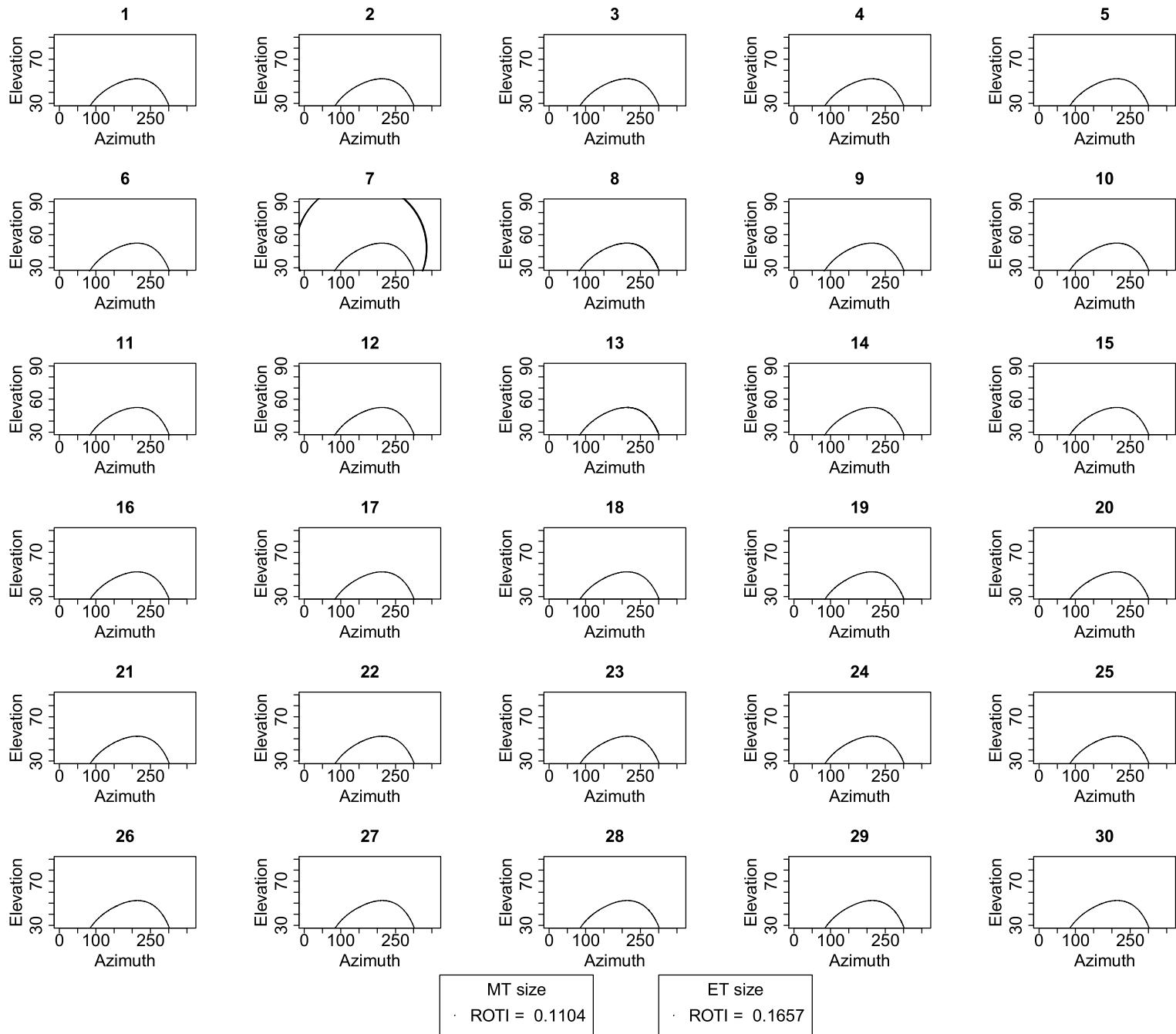


Figure S259 PEA plots comparison of ROTI for G21 on September 1–30, 2017 at SJCU station

PEA plots (G1)

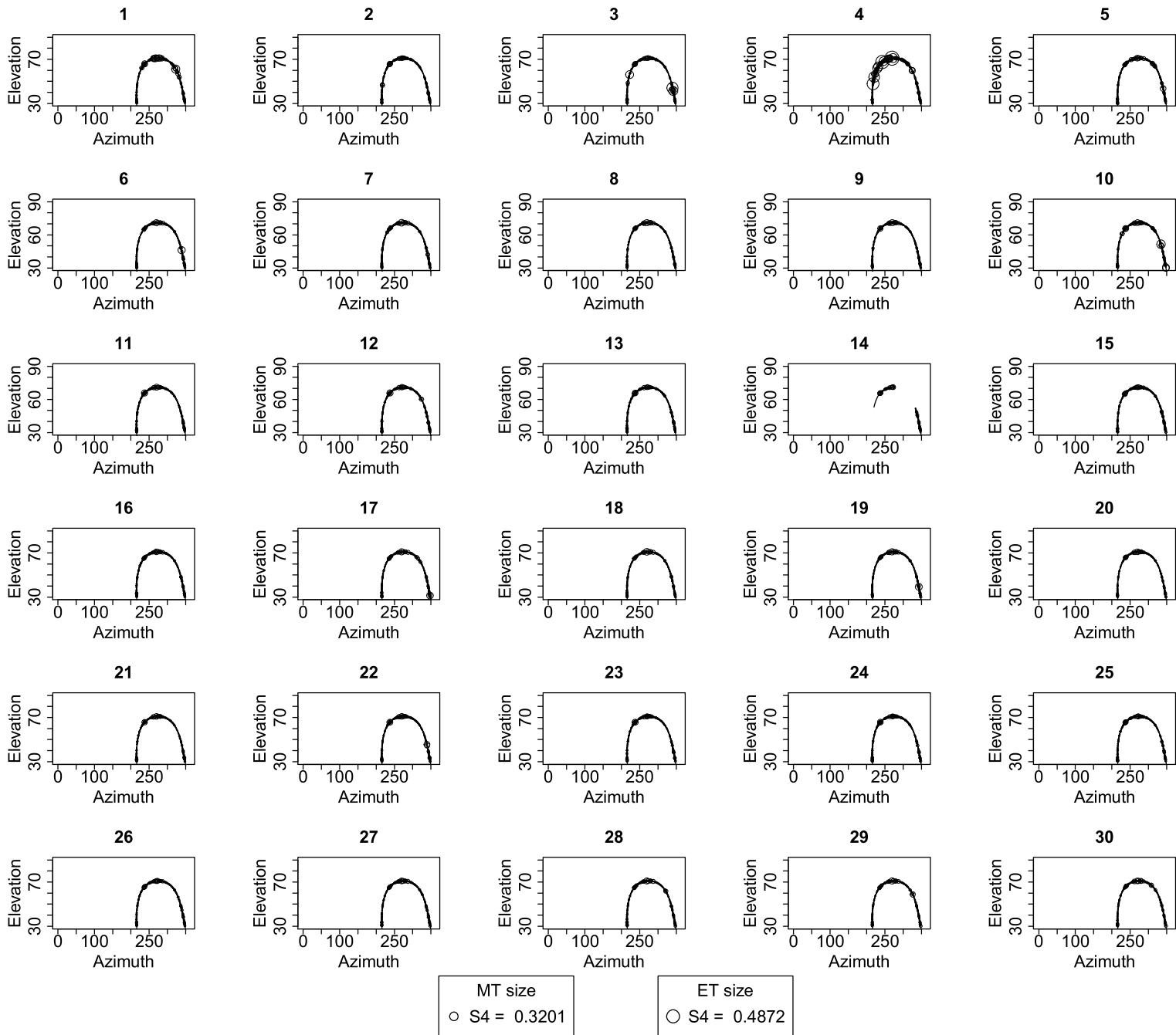


Figure S260 PEA plots comparison of S_4 for G1 on September 1–30, 2017 at SJC station

PEA plots (G2)

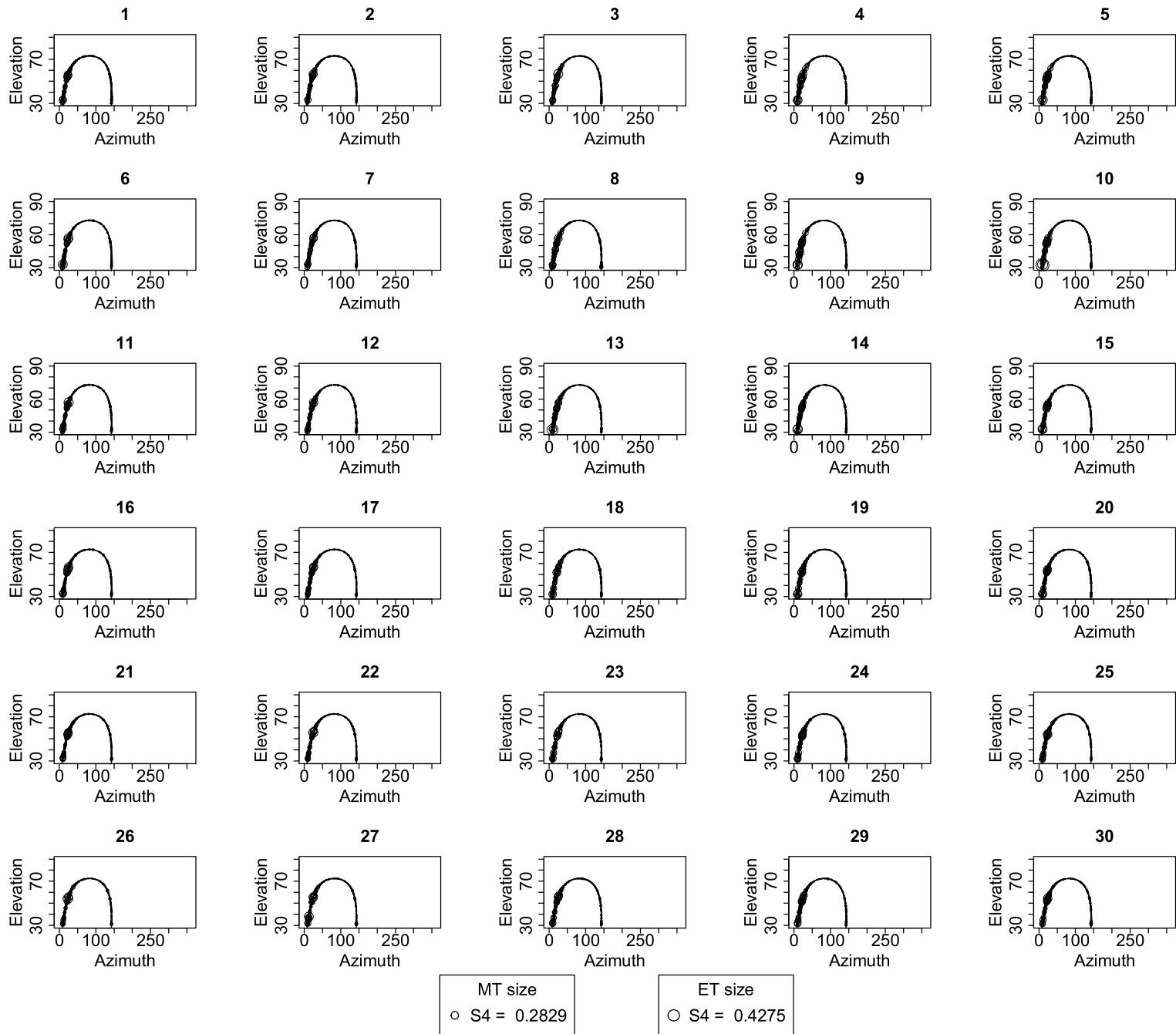


Figure S261 PEA plots comparison of S4 for G2 on September 1–30, 2017 at SJCU station

PEA plots (G3)

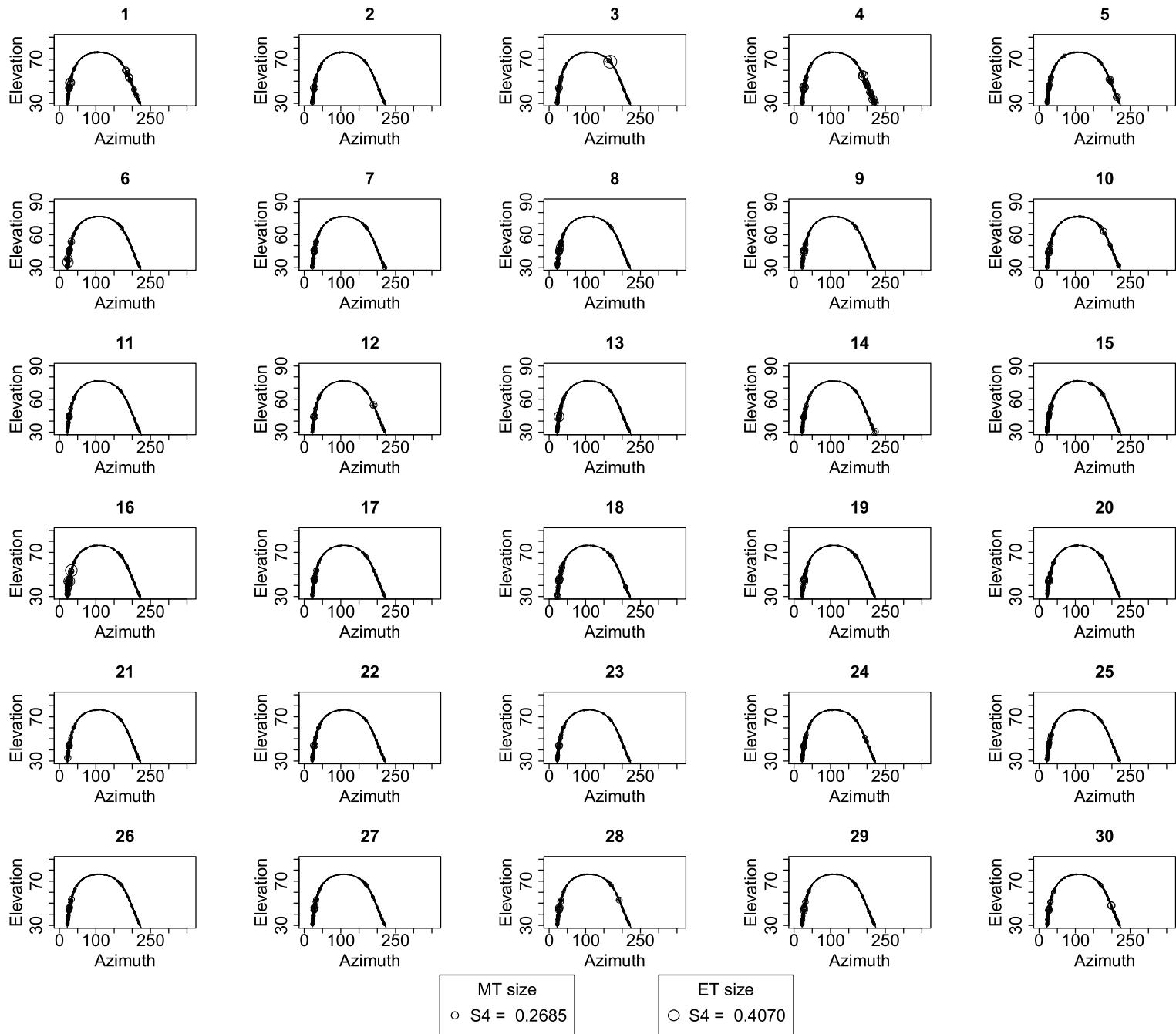


Figure S262 PEA plots comparison of S4 for G3 on September 1–30, 2017 at SJCU station

PEA plots (G4)

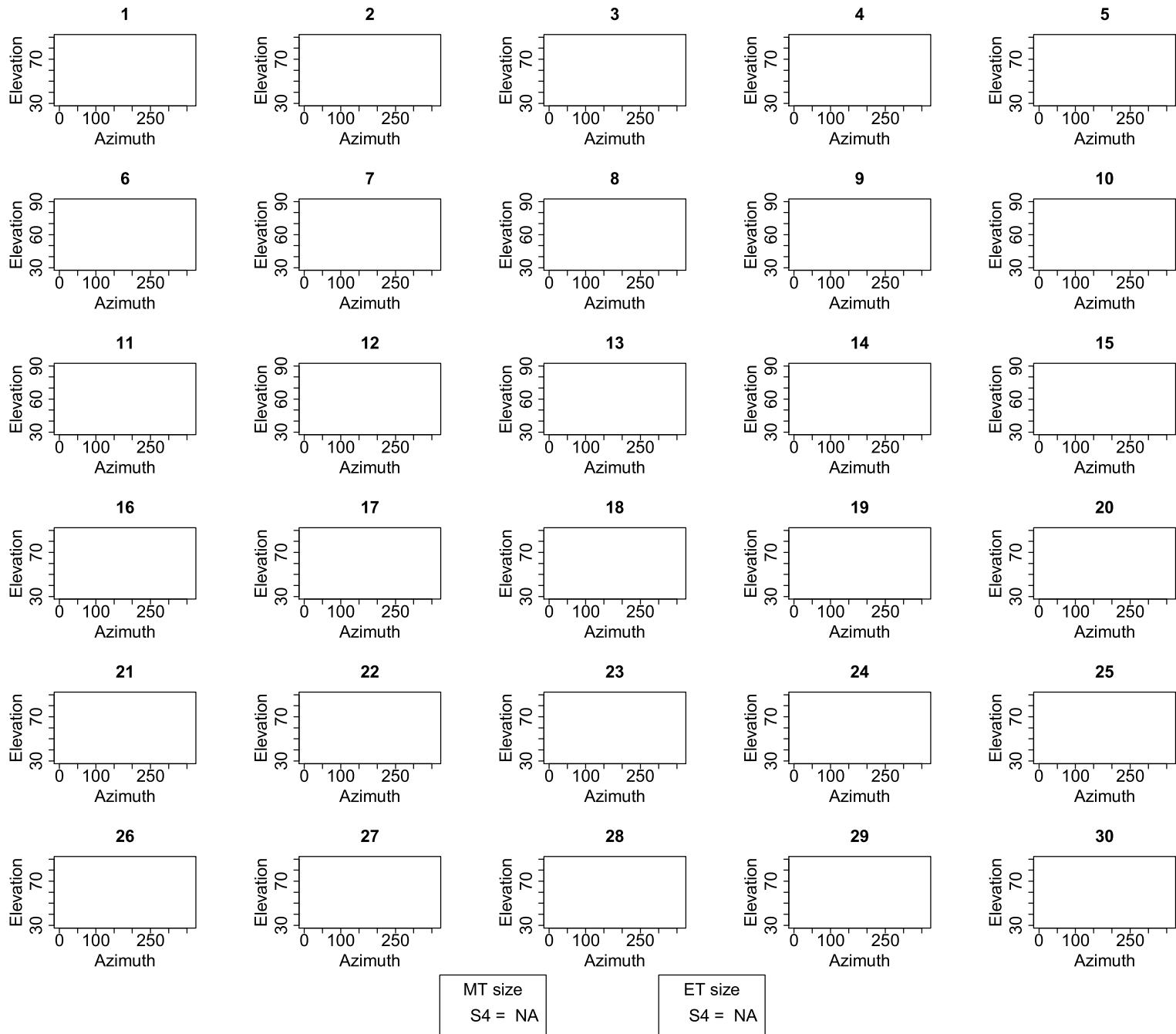


Figure S263 PEA plots comparison of S4 for G4 on September 1–30, 2017 at SJCUC station

PEA plots (G5)

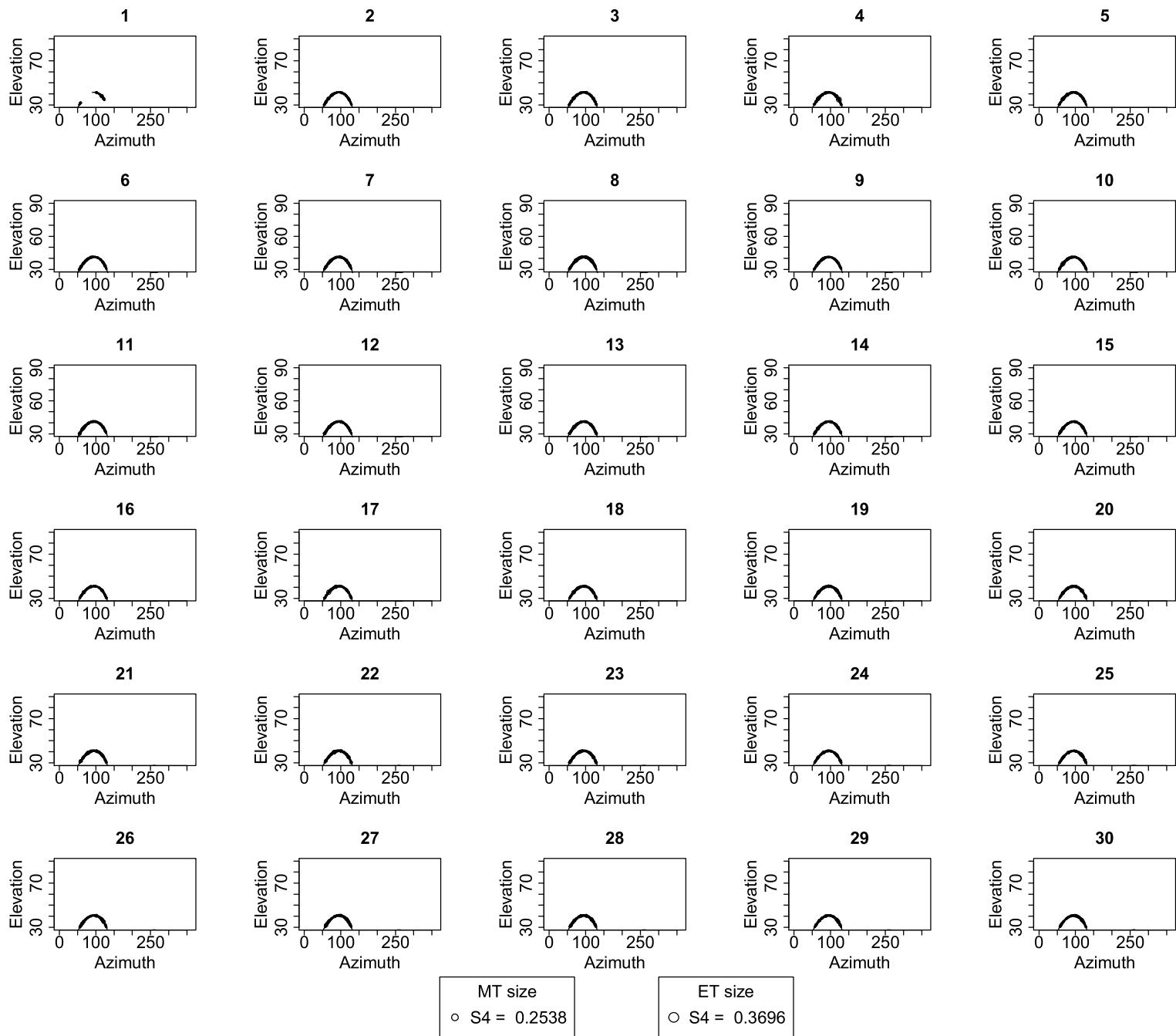


Figure S264 PEA plots comparison of S4 for G5 on September 1–30, 2017 at SJC station

PEA plots (G6)

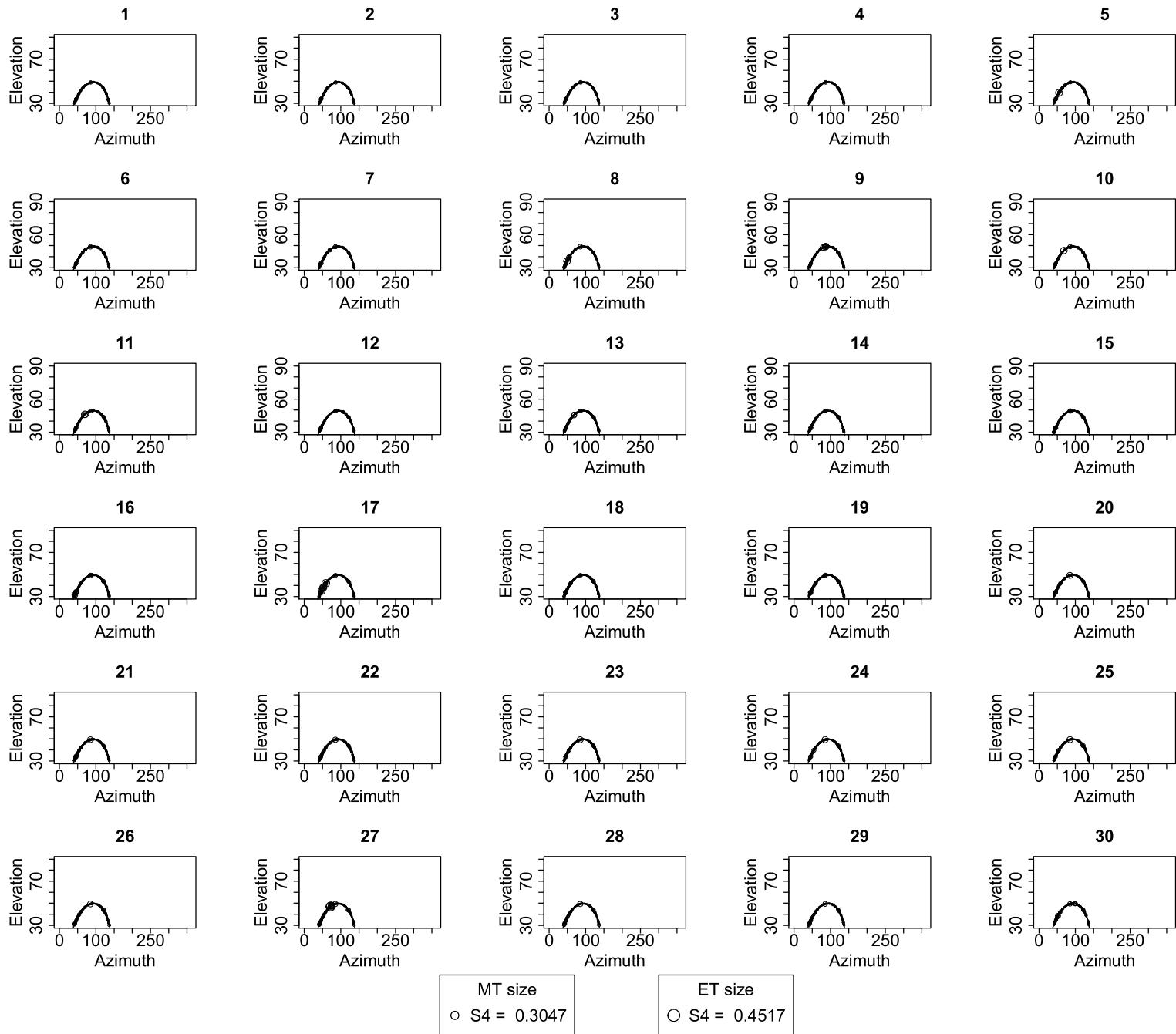


Figure S265 PEA plots comparison of S4 for G6 on September 1–30, 2017 at SJCU station

PEA plots (G7)

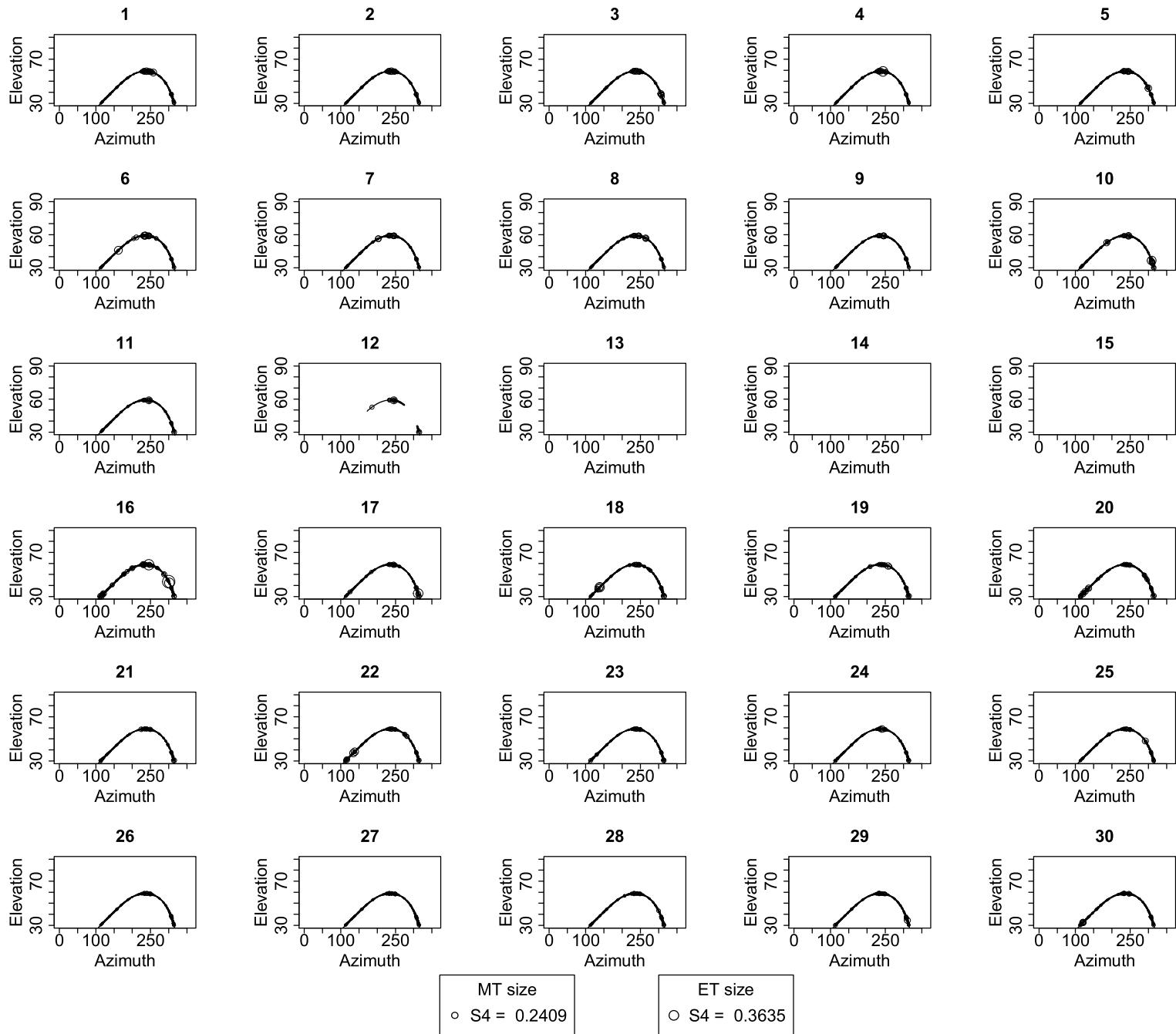


Figure S266 PEA plots comparison of S4 for G7 on September 1–30, 2017 at SJC station

PEA plots (G8)

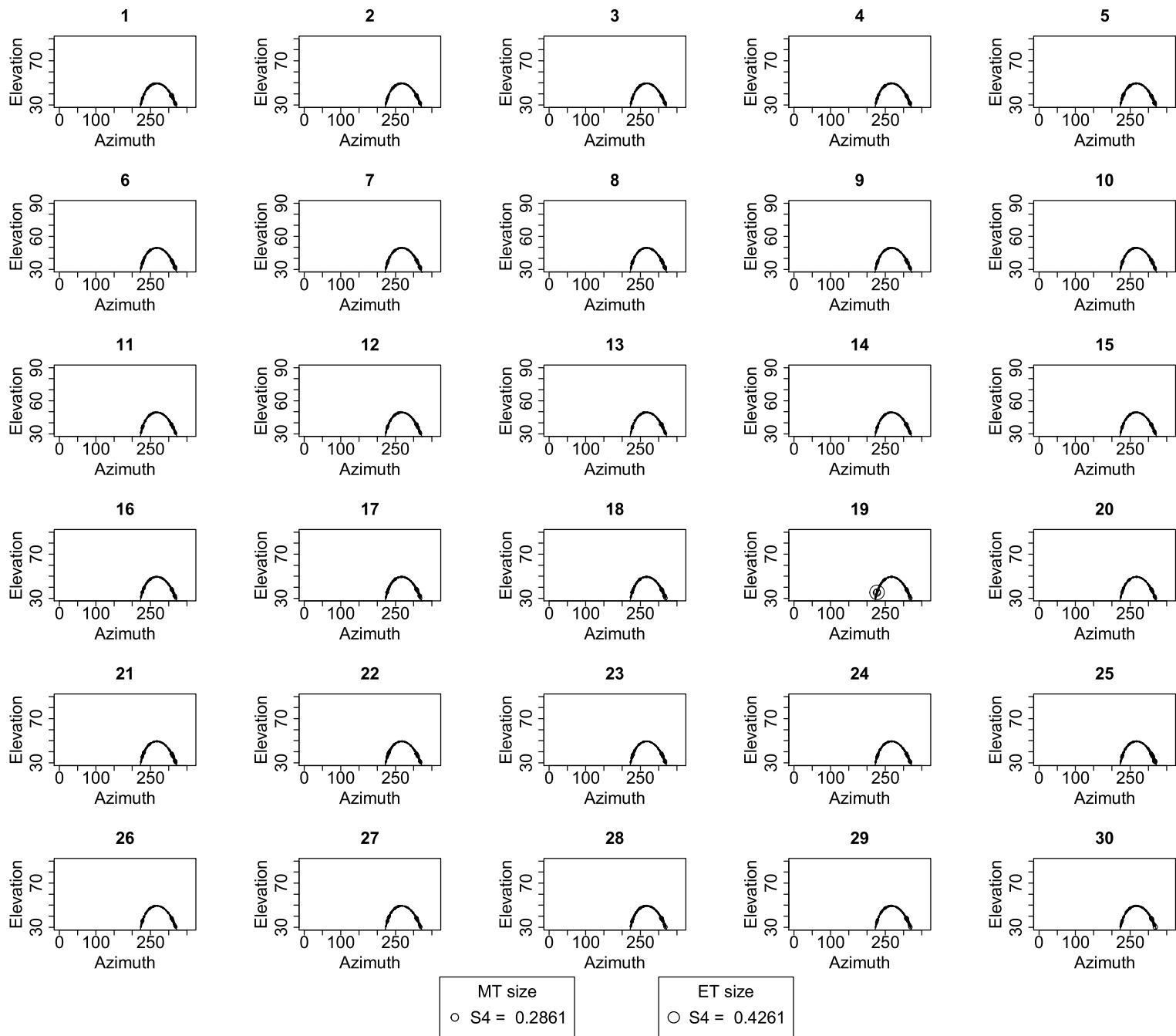


Figure S267 PEA plots comparison of S4 for G8 on September 1–30, 2017 at SJC station

PEA plots (G9)

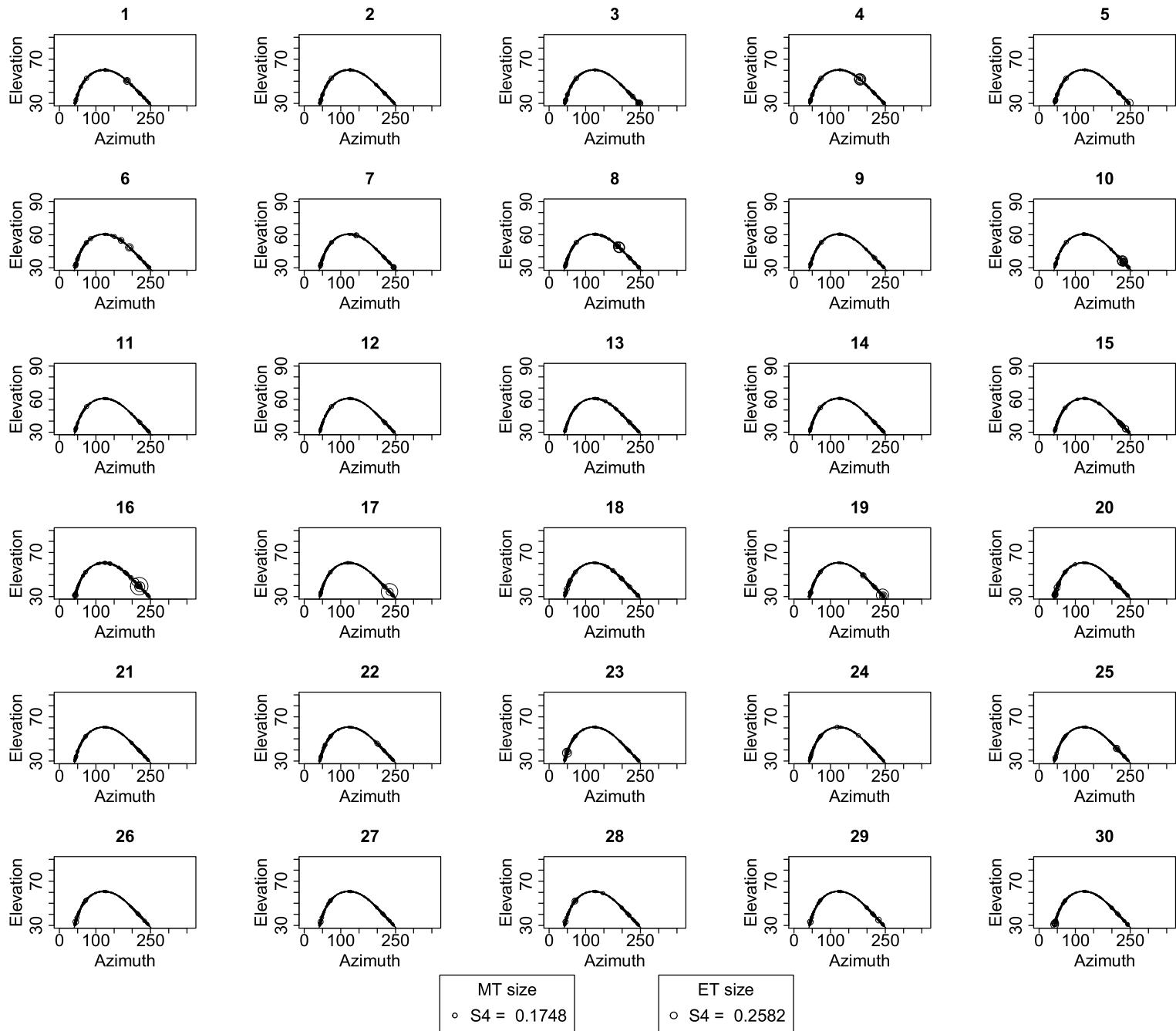


Figure S268 PEA plots comparison of S4 for G9 on September 1–30, 2017 at SJCU station

PEA plots (G10)

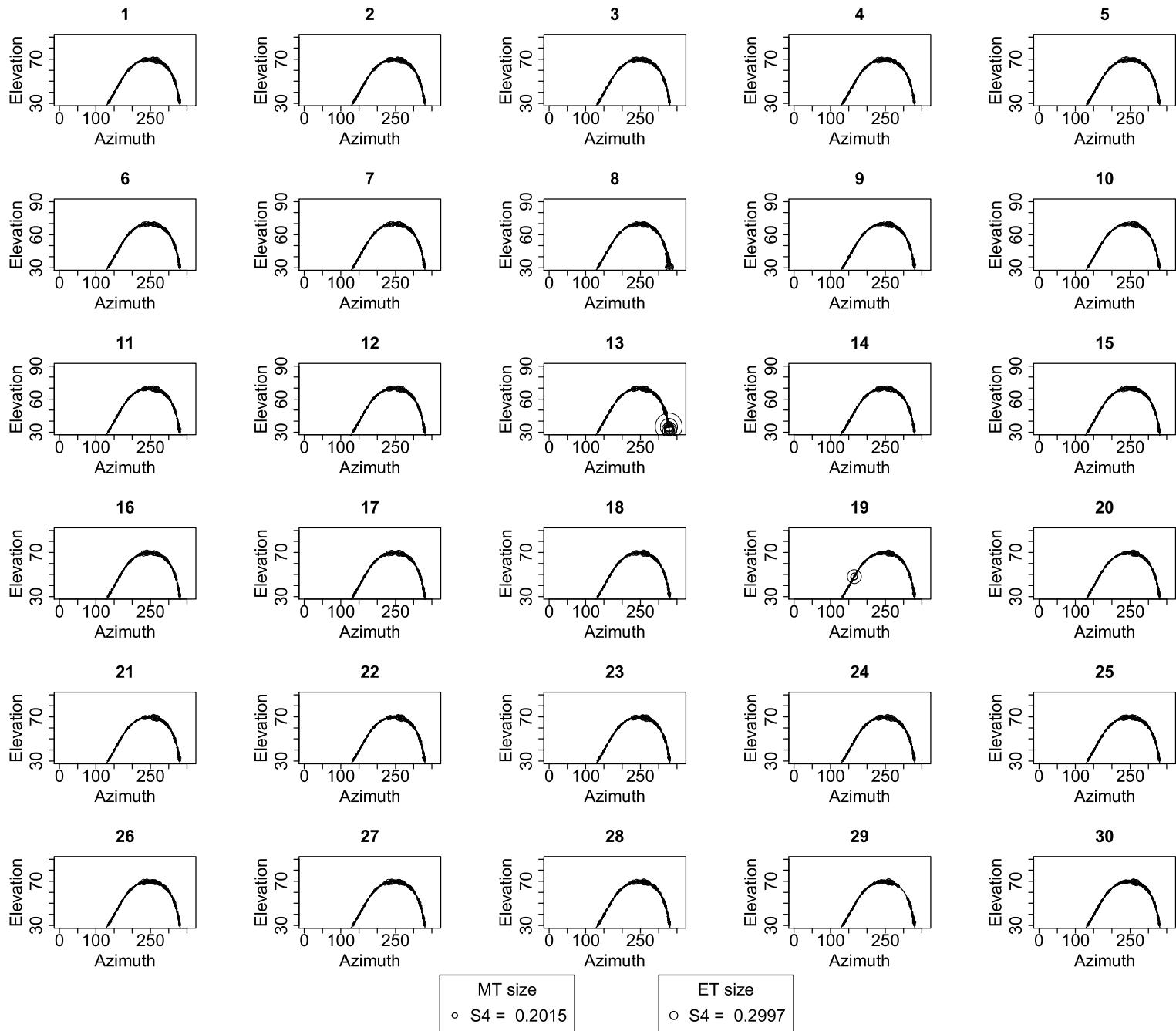


Figure S269 PEA plots comparison of S4 for G10 on September 1–30, 2017 at SJCU station

PEA plots (G11)

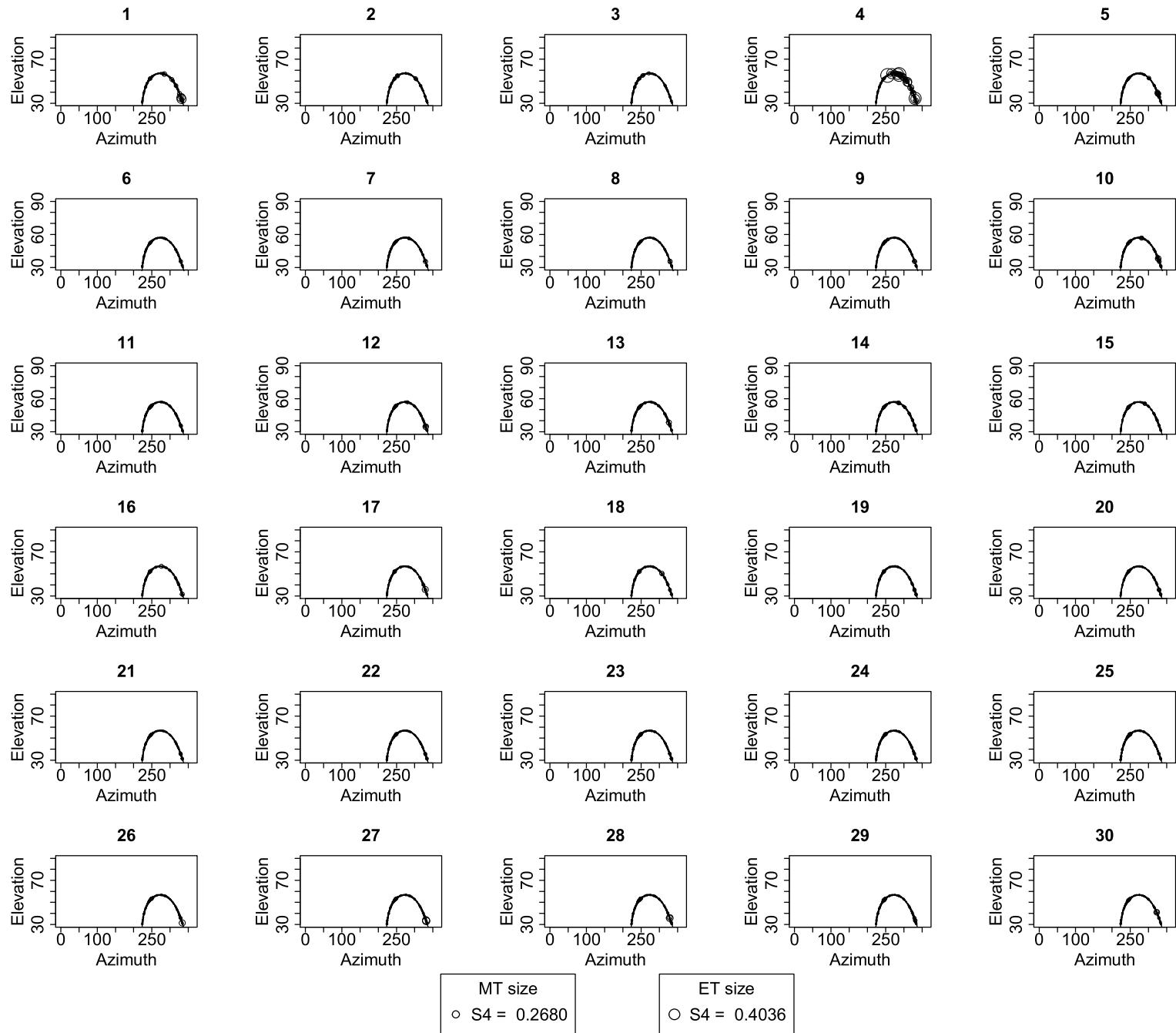


Figure S270 PEA plots comparison of S4 for G11 on September 1–30, 2017 at SJCU station

PEA plots (G12)

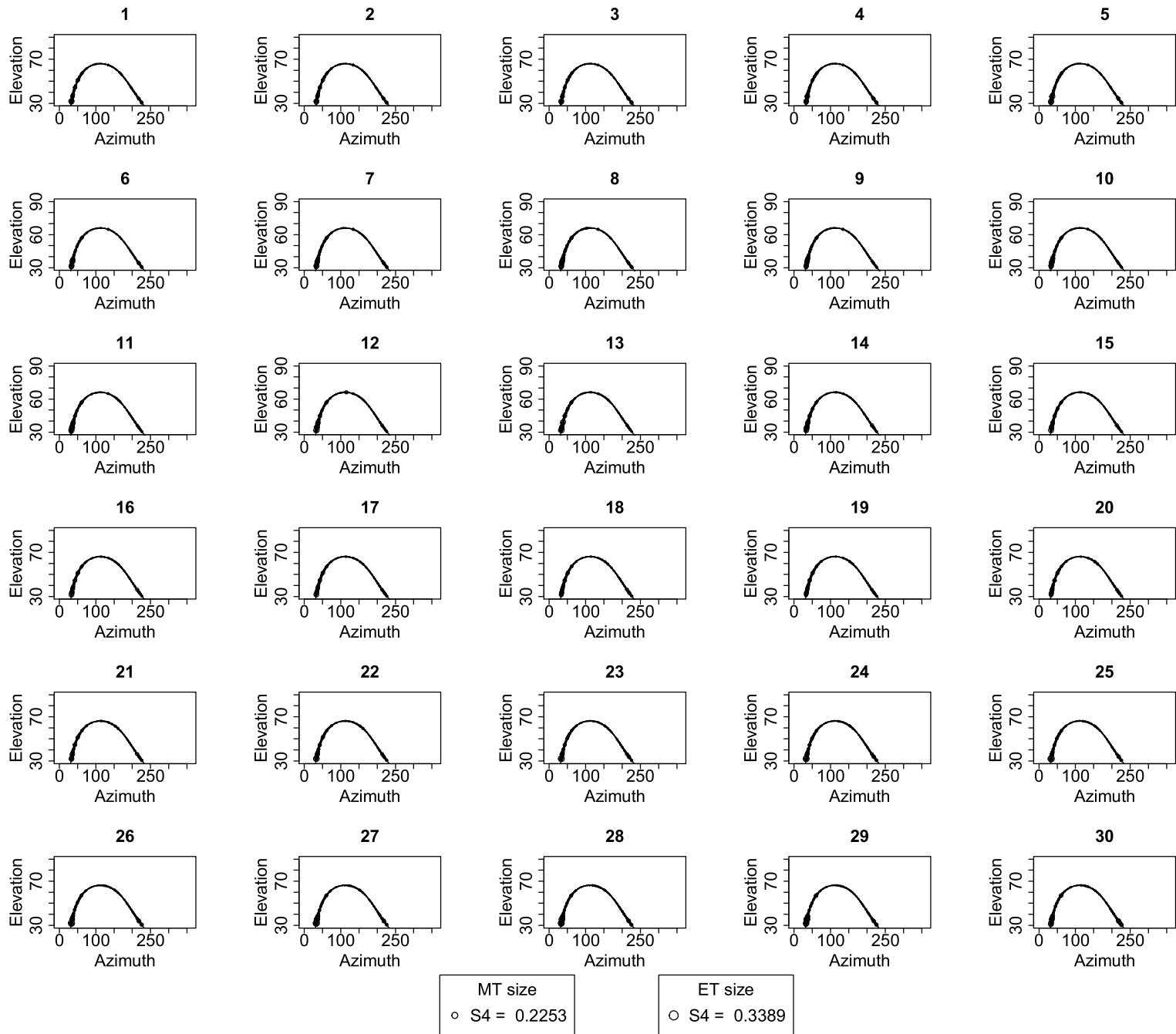


Figure S271 PEA plots comparison of S4 for G12 on September 1–30, 2017 at SJCU station

PEA plots (G13)

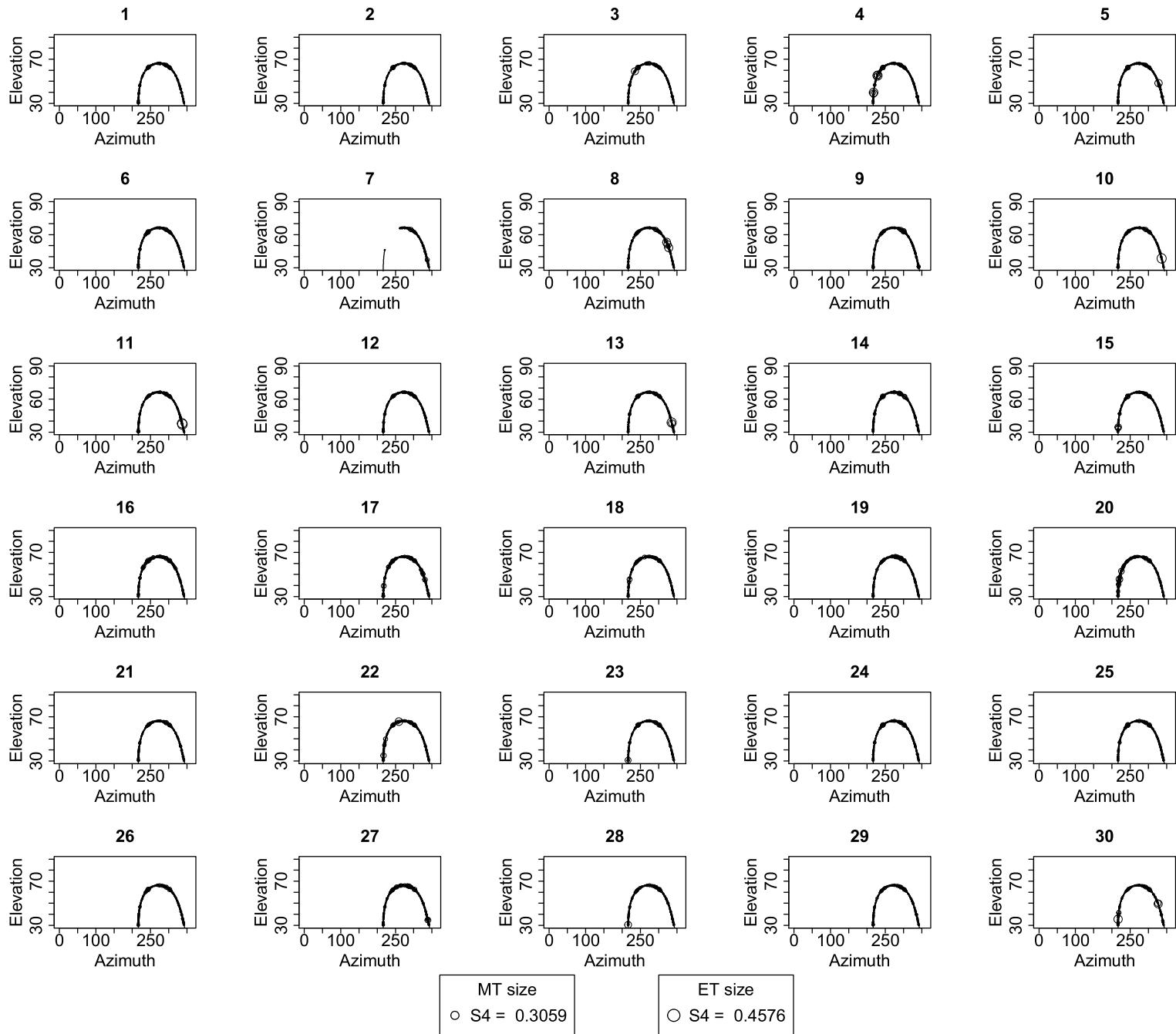


Figure S272 PEA plots comparison of S4 for G13 on September 1–30, 2017 at SJCU station

PEA plots (G14)

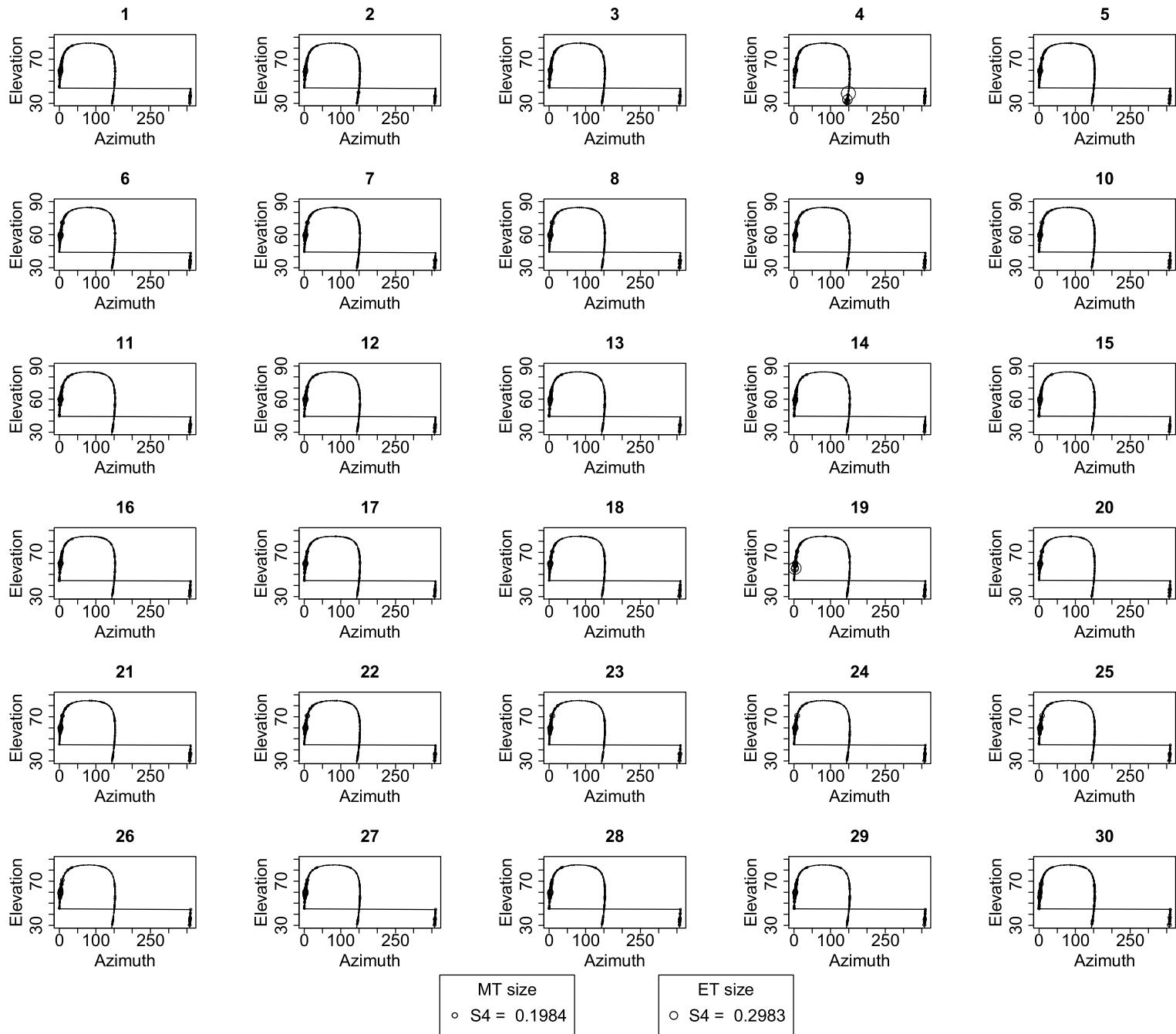


Figure S273 PEA plots comparison of S4 for G14 on September 1–30, 2017 at SJCU station

PEA plots (G15)

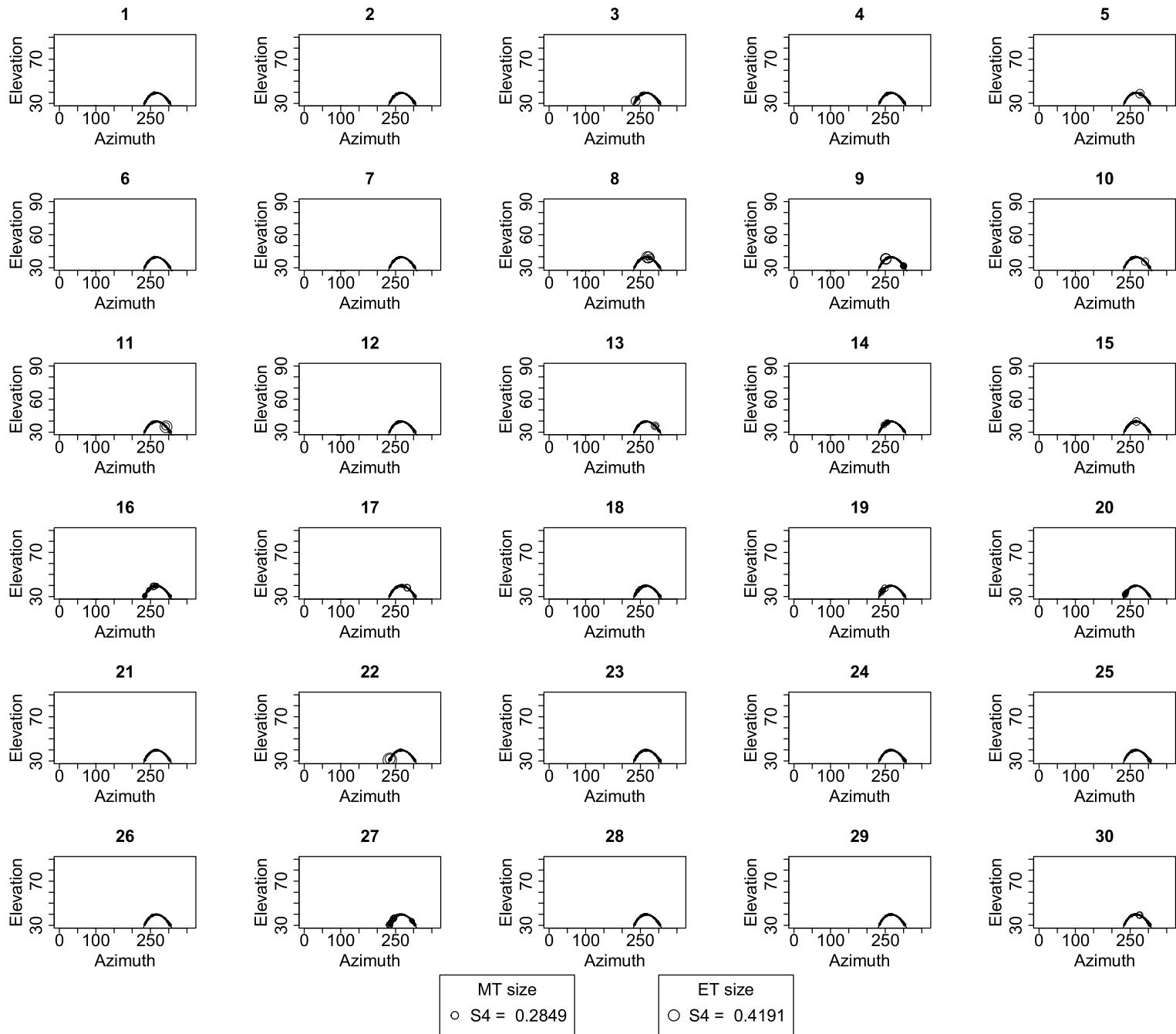


Figure S274 PEA plots comparison of S4 for G15 on September 1–30, 2017 at SJCU station

PEA plots (G16)

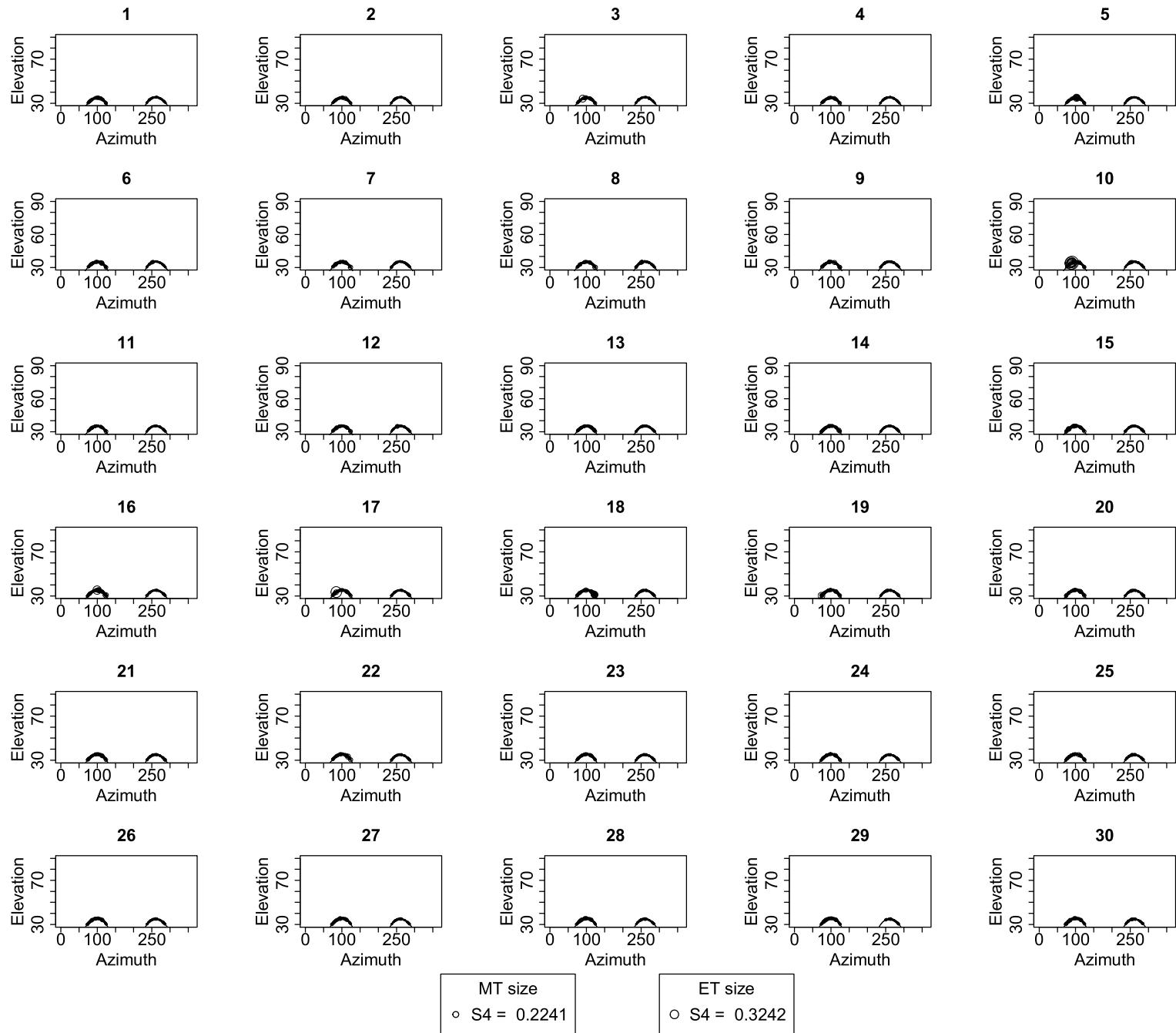


Figure S275 PEA plots comparison of S4 for G16 on September 1–30, 2017 at SJCU station

PEA plots (G17)

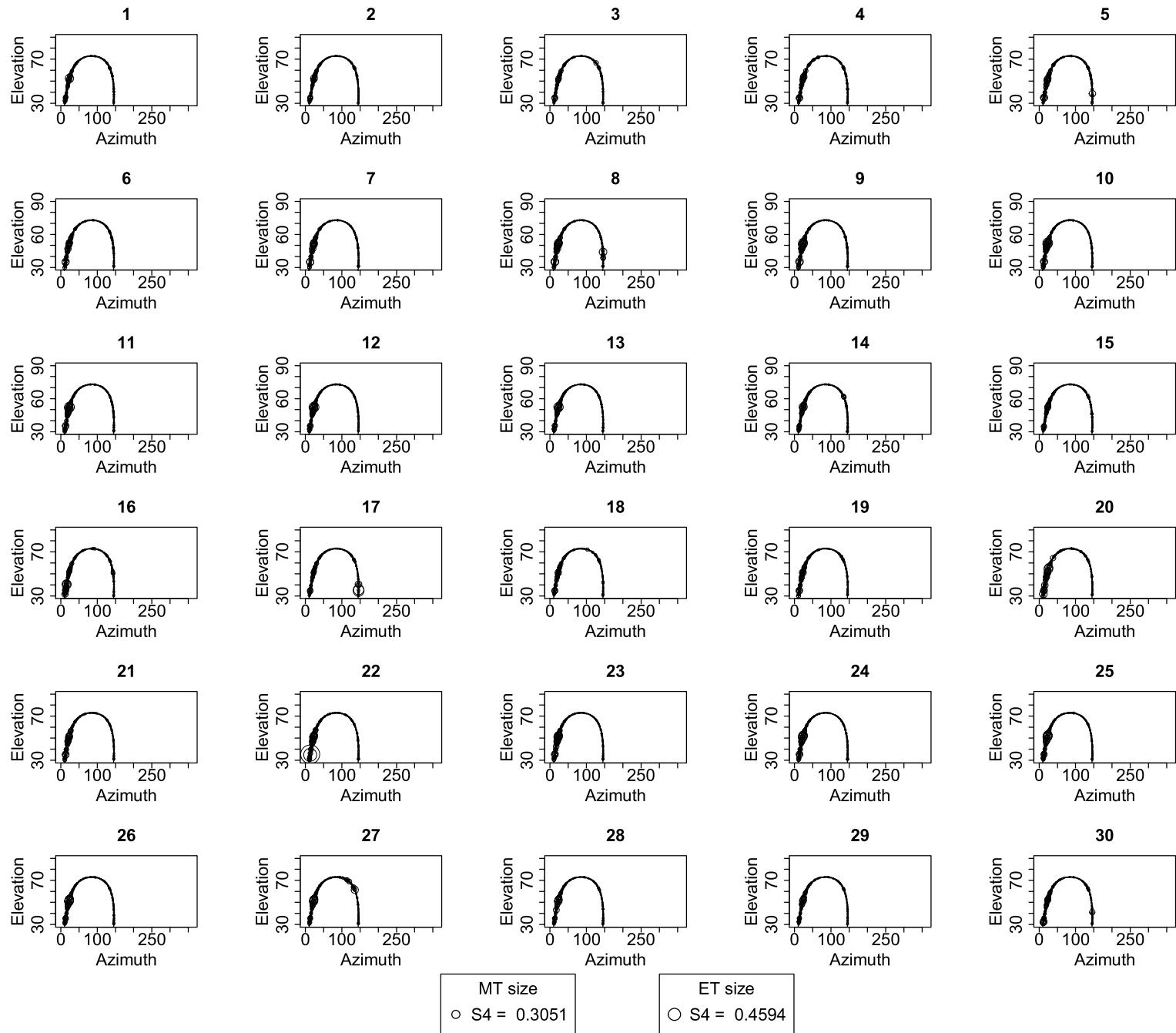


Figure S276 PEA plots comparison of S4 for G17 on September 1–30, 2017 at SJCU station

PEA plots (G18)

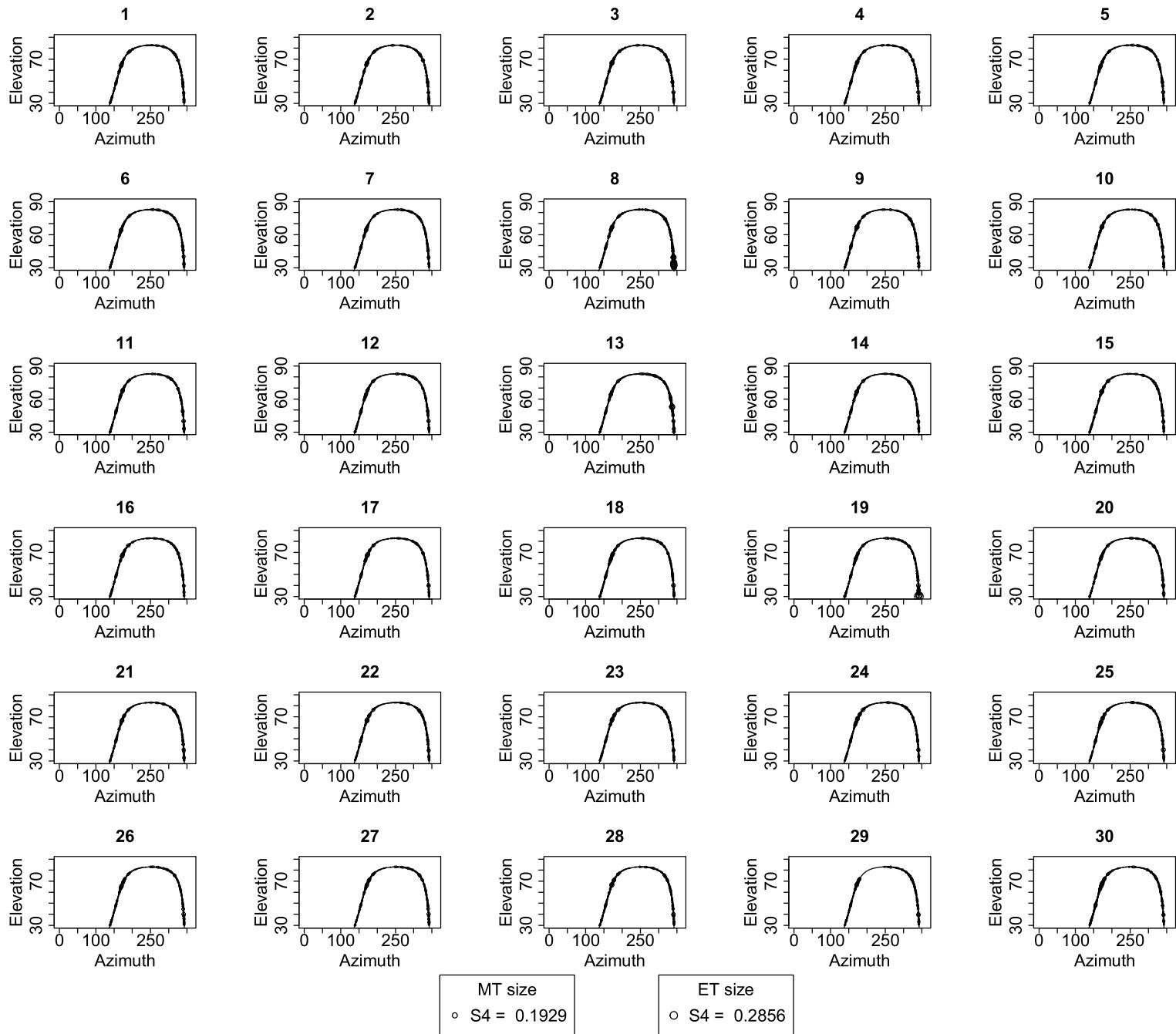


Figure S277 PEA plots comparison of S4 for G18 on September 1–30, 2017 at SJCU station

PEA plots (G19)

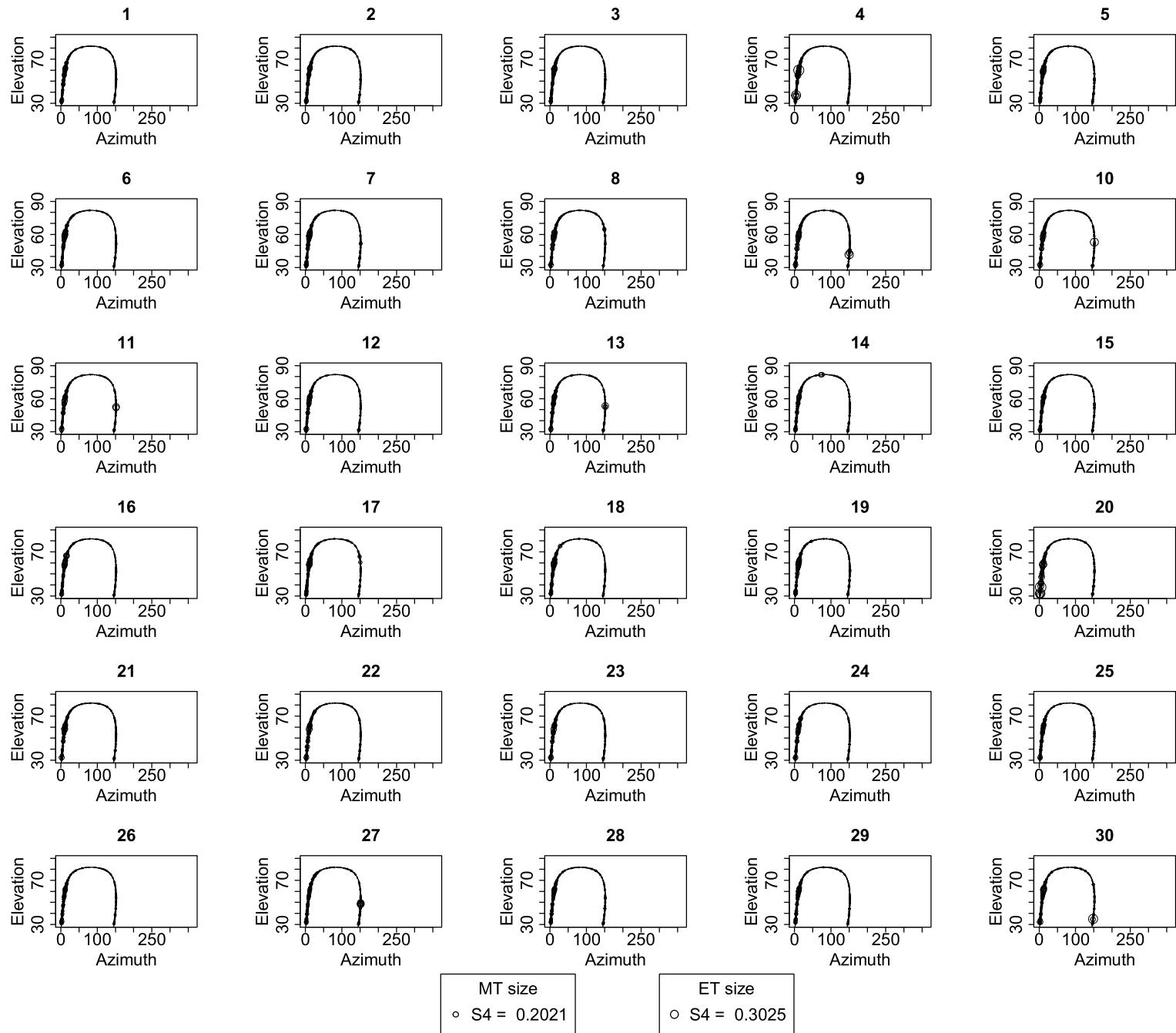


Figure S278 PEA plots comparison of S4 for G19 on September 1–30, 2017 at SJCU station

PEA plots (G20)

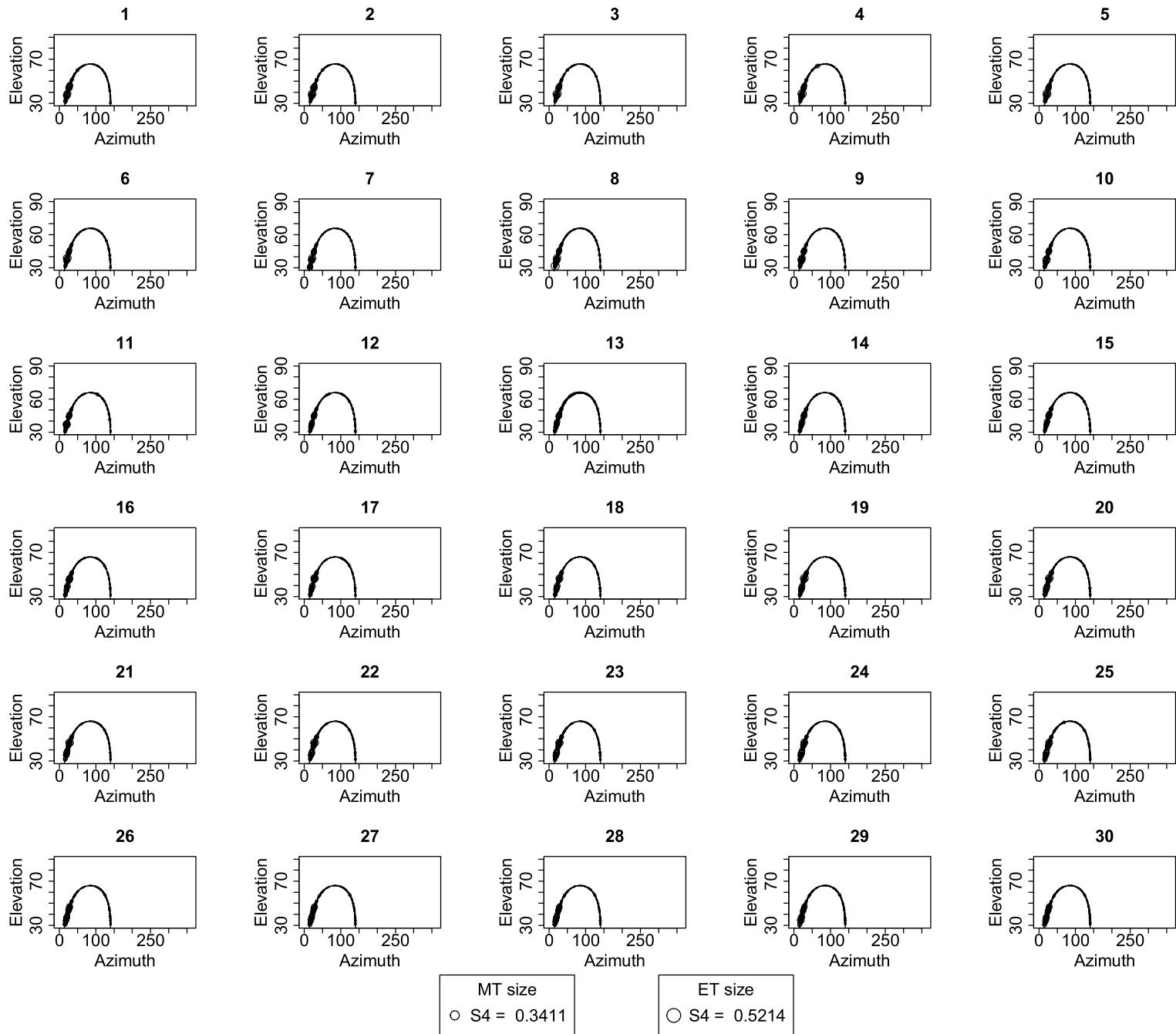


Figure S279 PEA plots comparison of S4 for G20 on September 1–30, 2017 at SJCU station

PEA plots (G21)

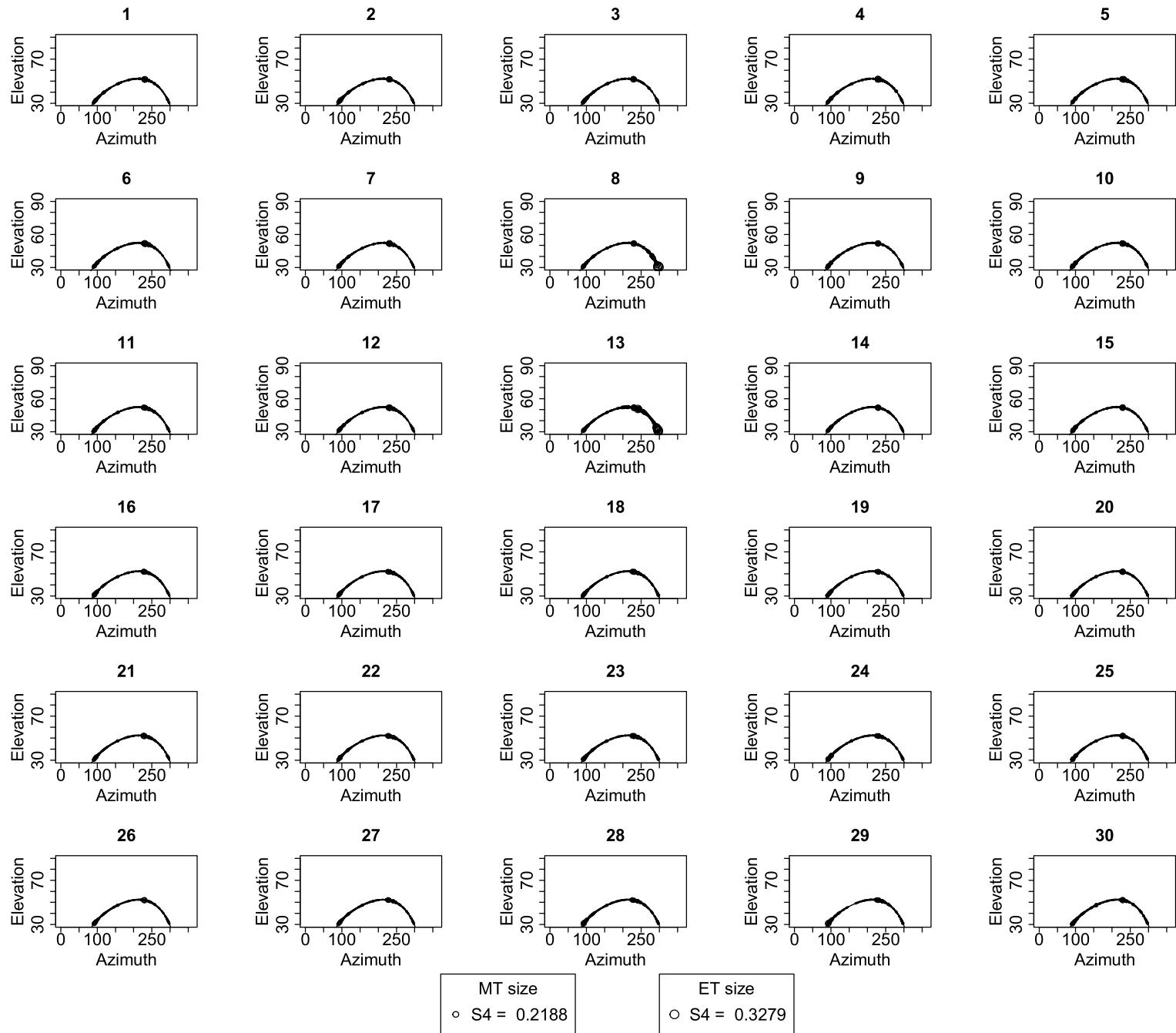


Figure S280 PEA plots comparison of S4 for G21 on September 1–30, 2017 at SJCU station

PEA plots (G22)

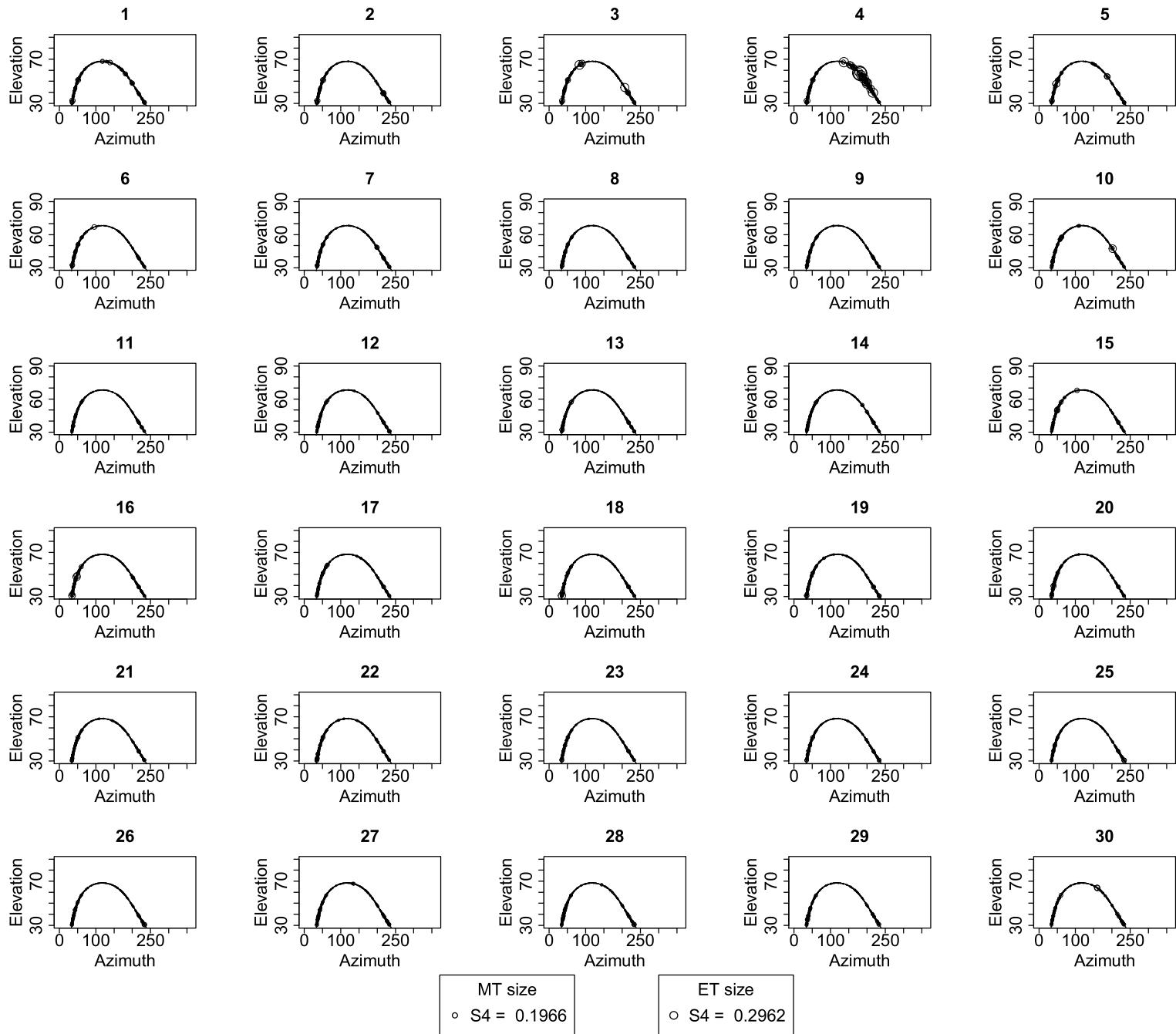


Figure S281 PEA plots comparison of S4 for G22 on September 1–30, 2017 at SJCU station

PEA plots (G23)

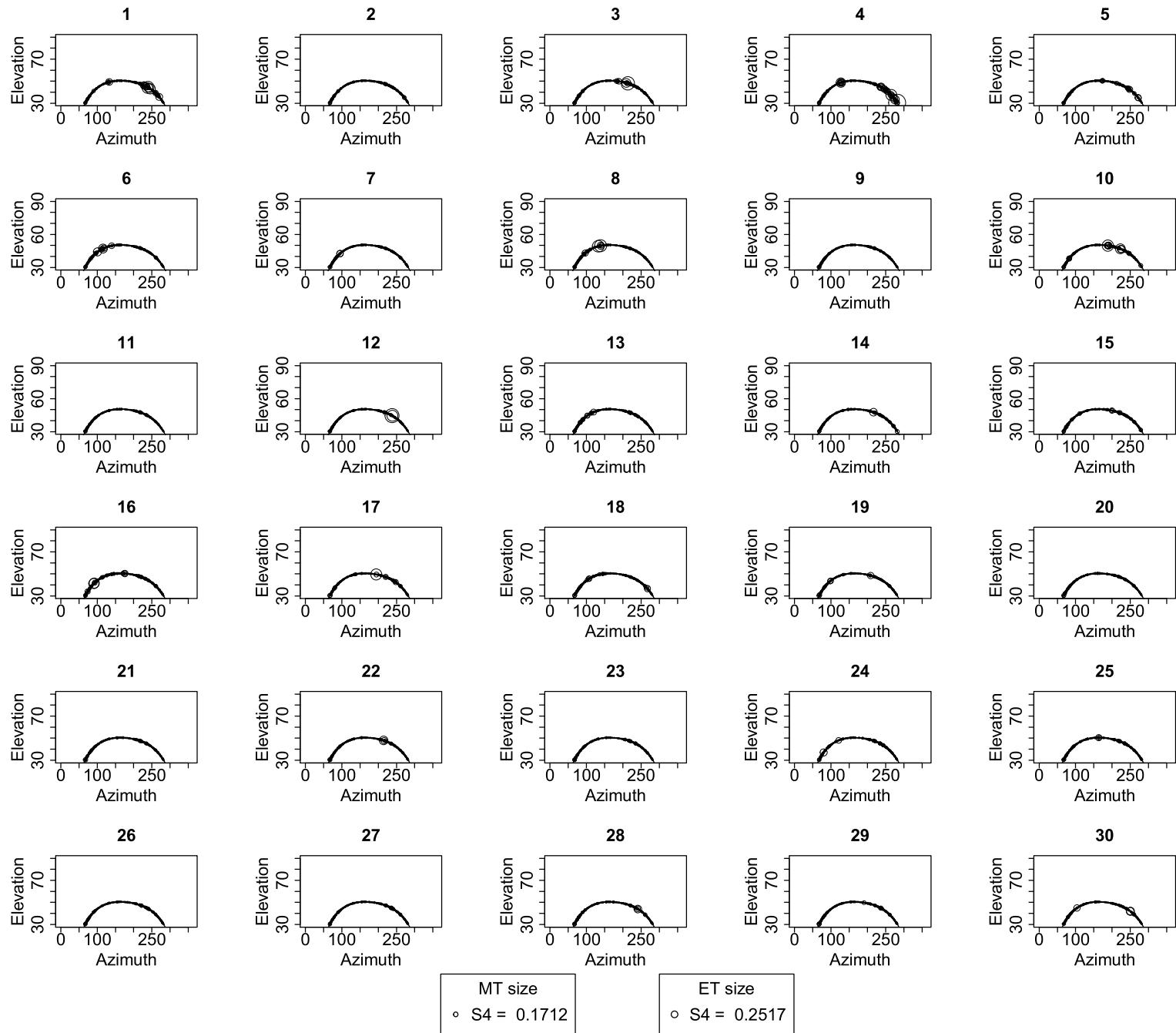


Figure S282 PEA plots comparison of S4 for G23 on September 1–30, 2017 at SJCU station

PEA plots (G24)

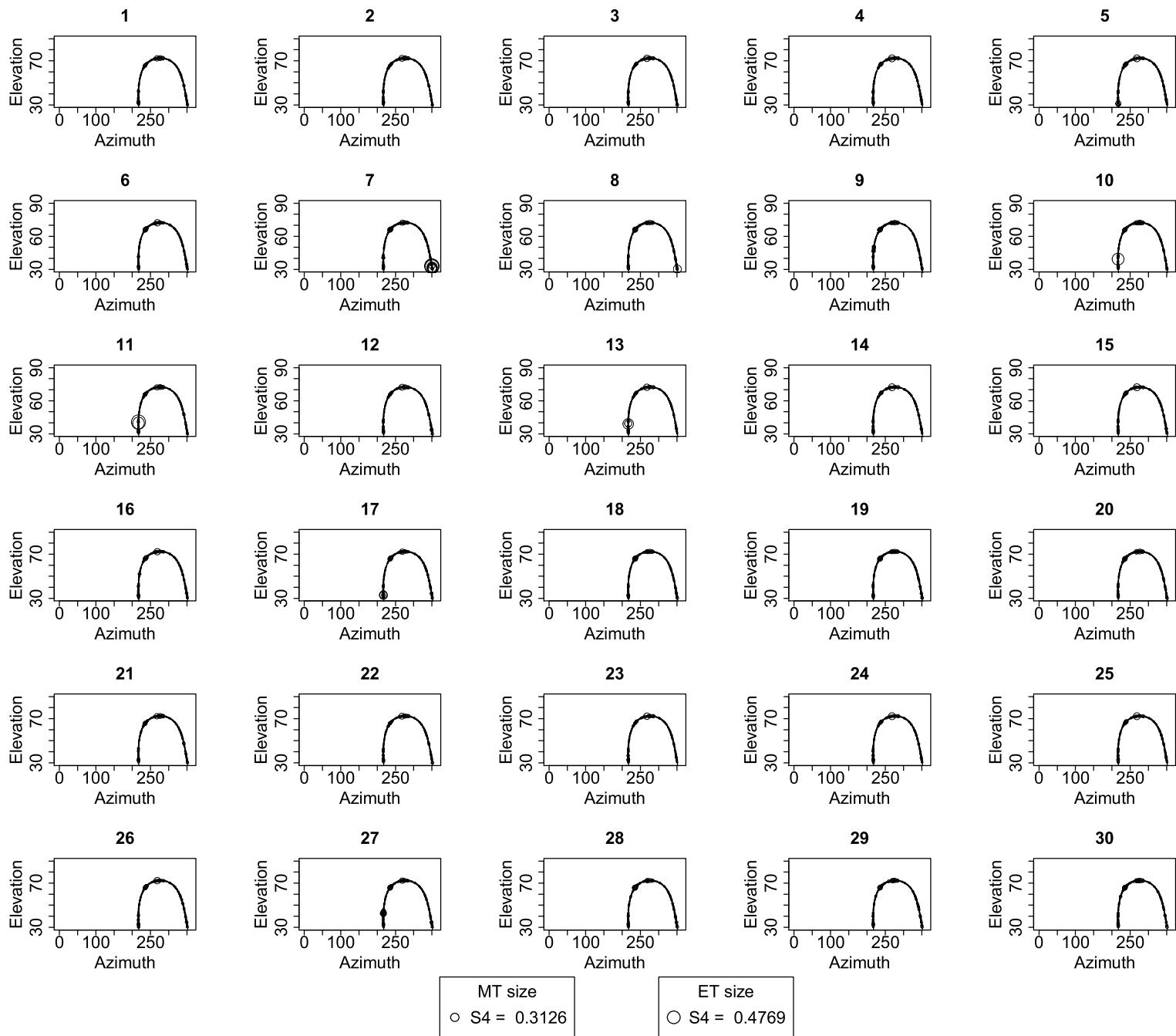


Figure S283 PEA plots comparison of S4 for G24 on September 1–30, 2017 at SJCU station

PEA plots (G25)

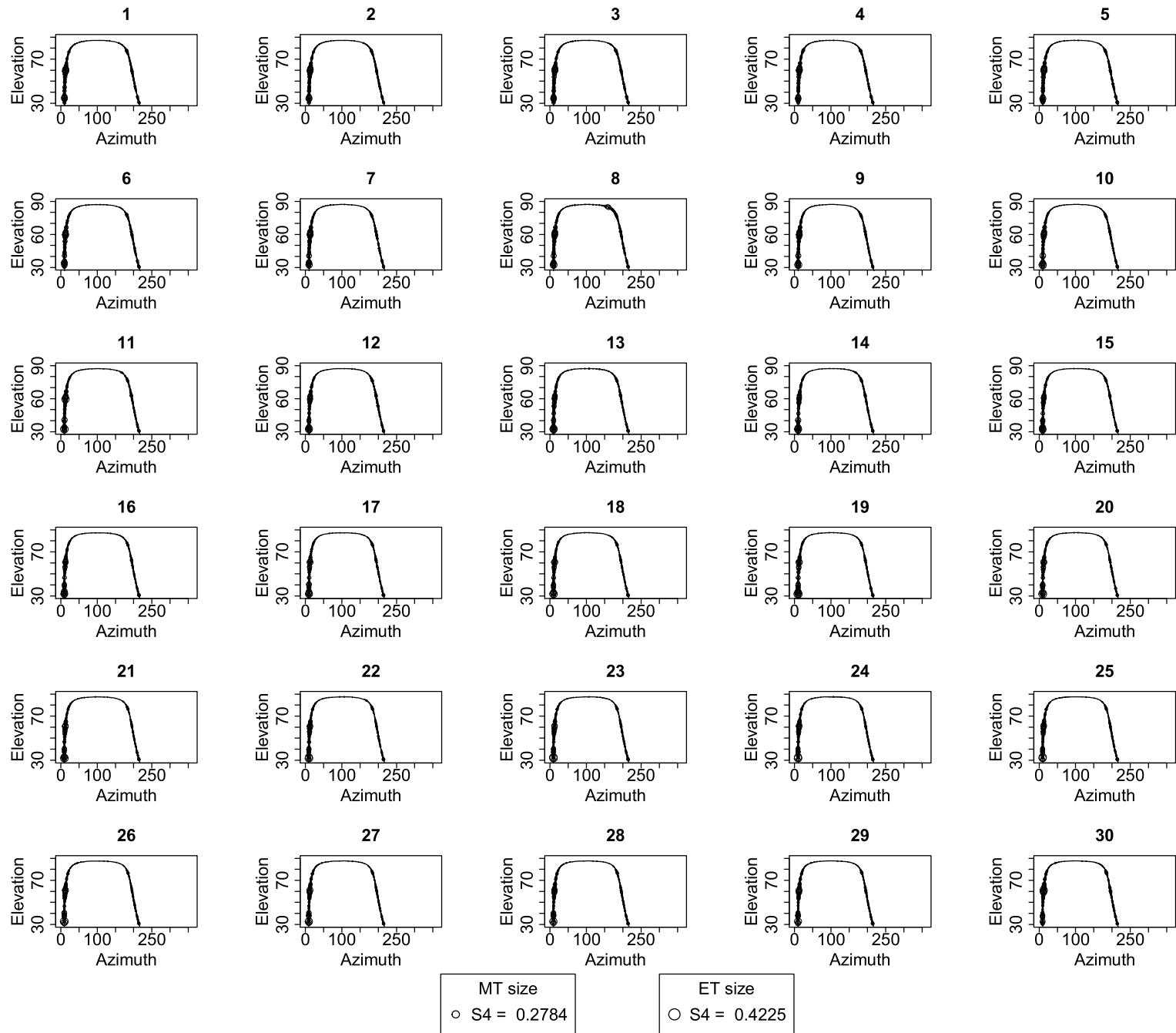


Figure S284 PEA plots comparison of S4 for G25 on September 1–30, 2017 at SJCU station

PEA plots (G26)

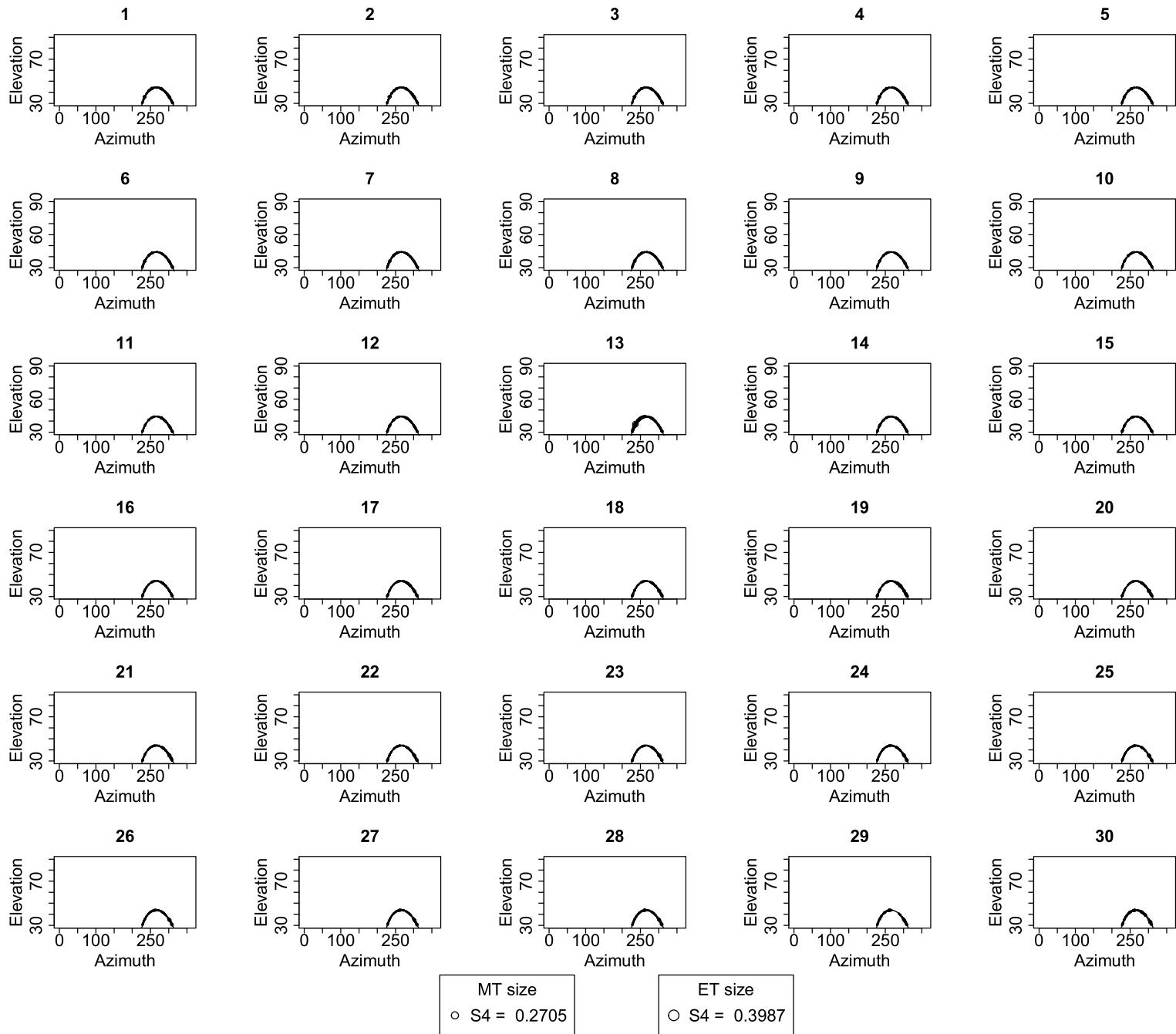


Figure S285 PEA plots comparison of S4 for G26 on September 1–30, 2017 at SJCU station

PEA plots (G27)

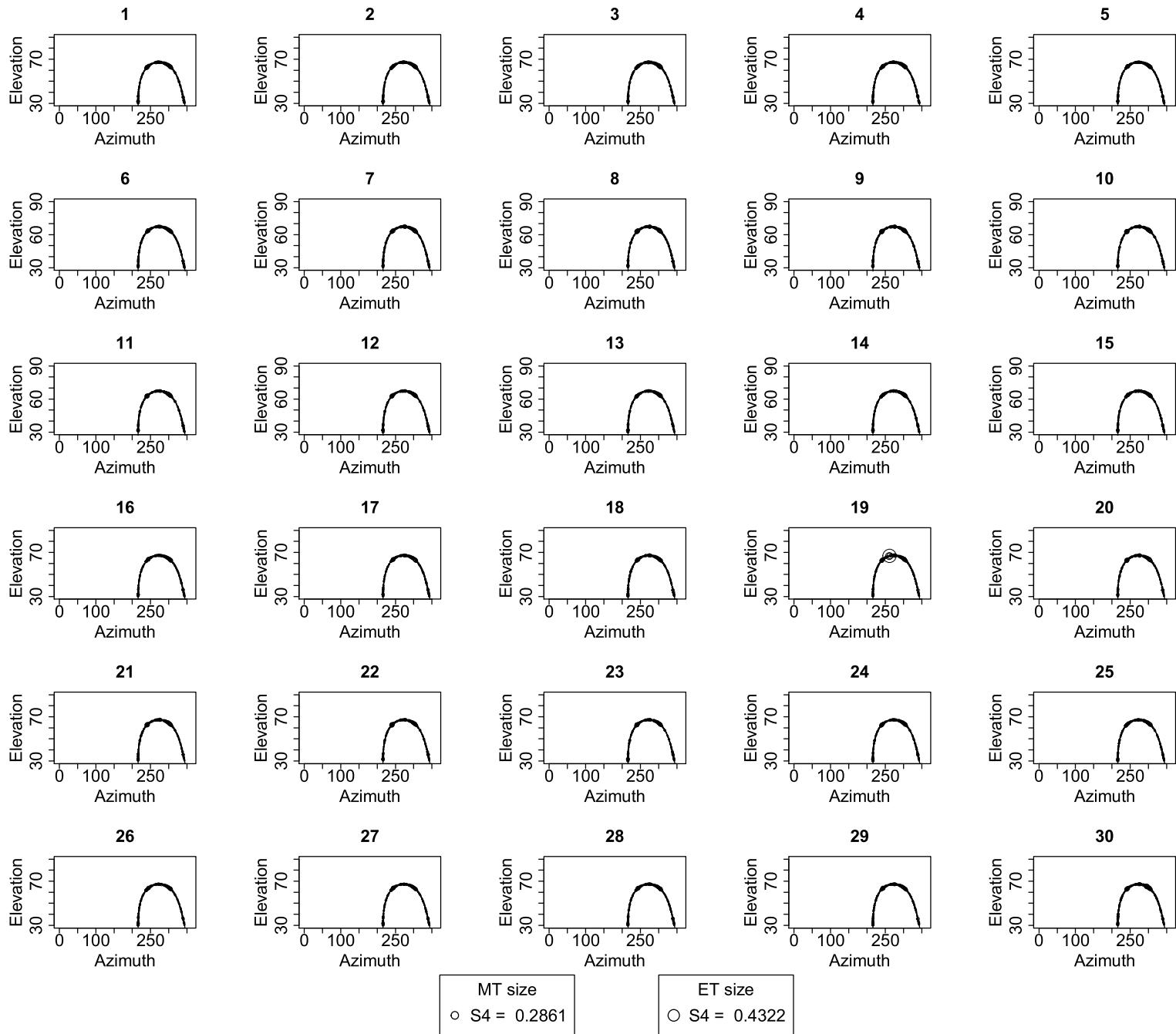


Figure S286 PEA plots comparison of S4 for G27 on September 1–30, 2017 at SJCU station

PEA plots (G28)

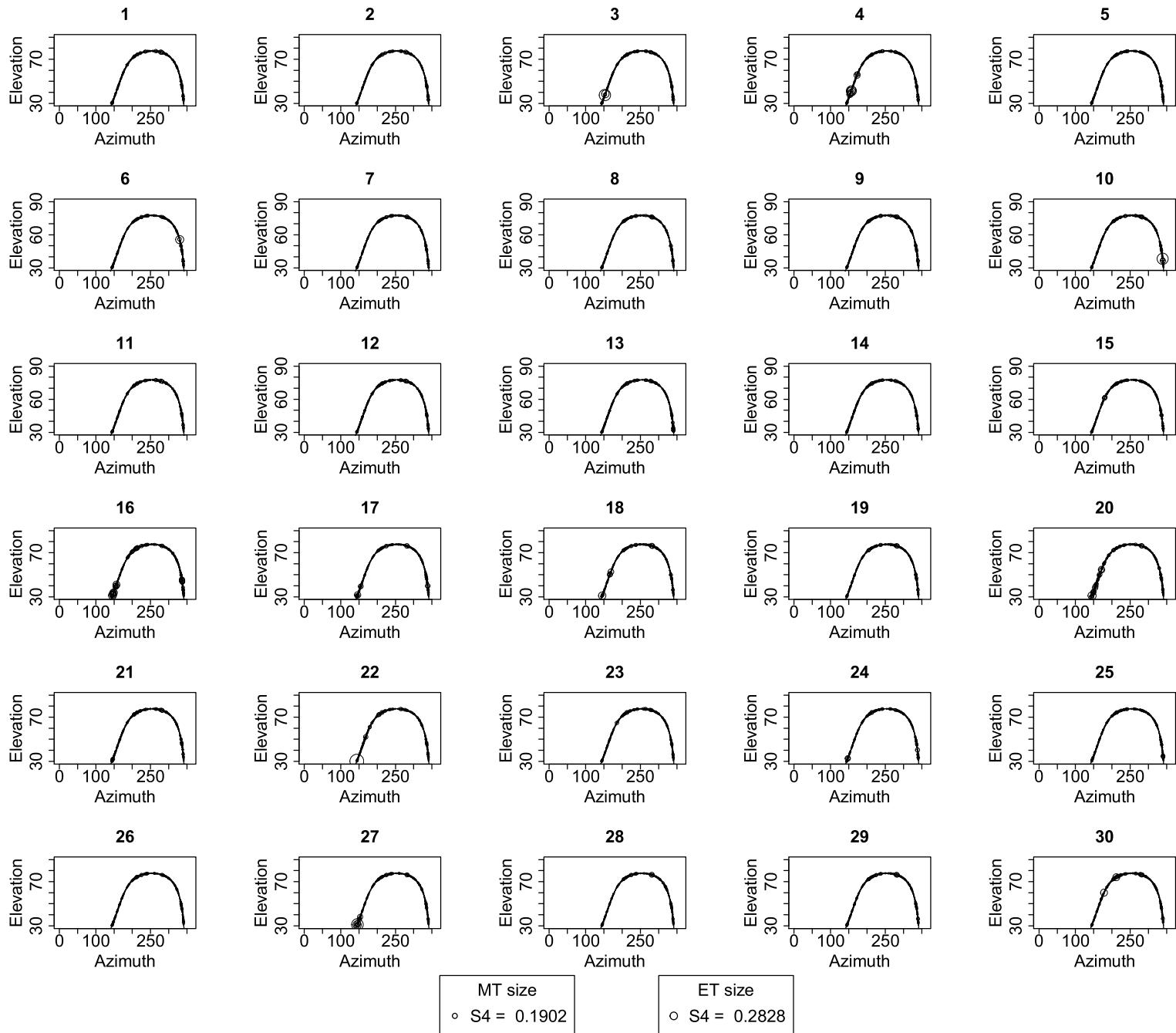


Figure S287 PEA plots comparison of S4 for G28 on September 1–30, 2017 at SJCU station

PEA plots (G29)

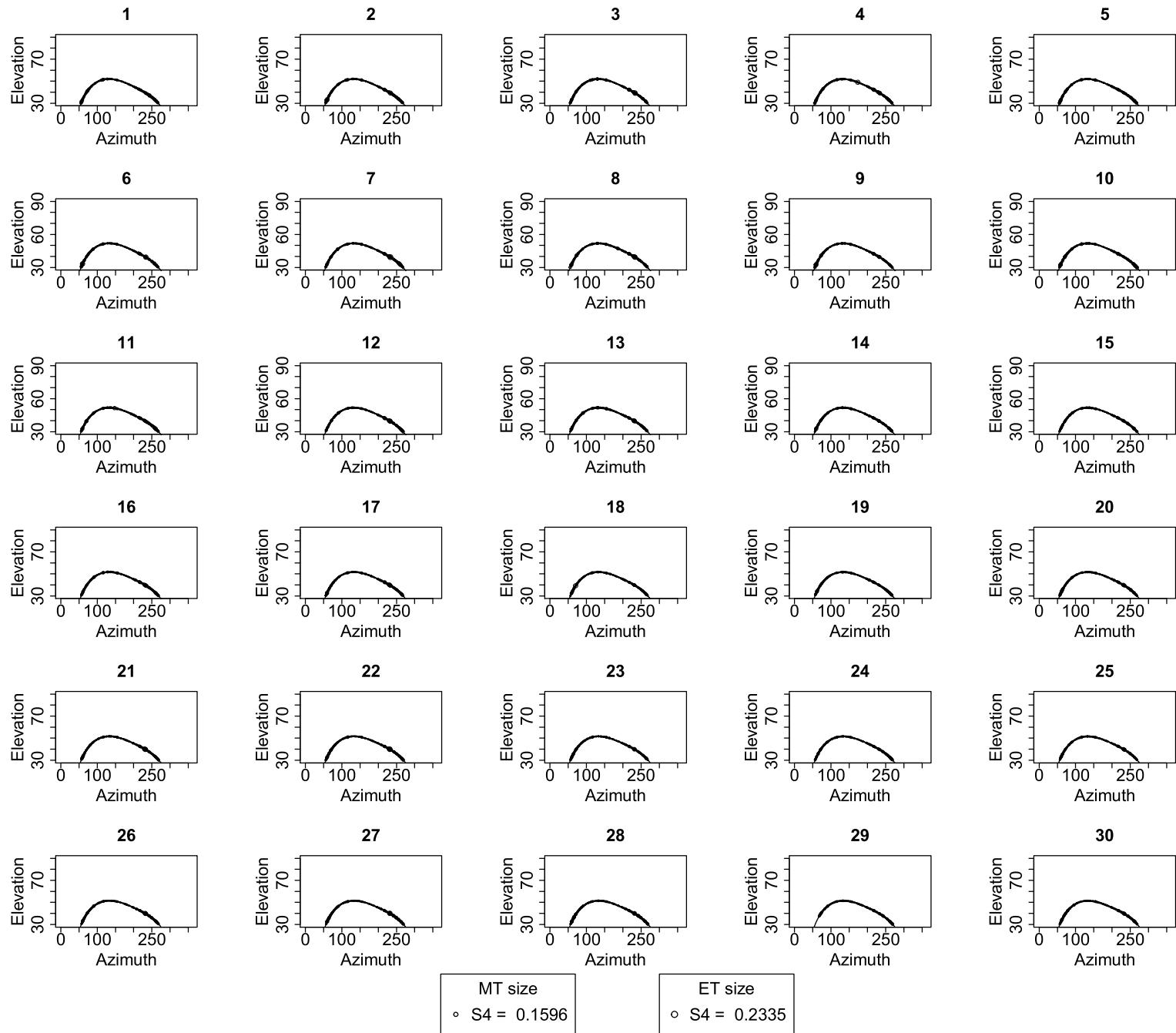


Figure S288 PEA plots comparison of S4 for G29 on September 1–30, 2017 at SJCU station

PEA plots (G30)

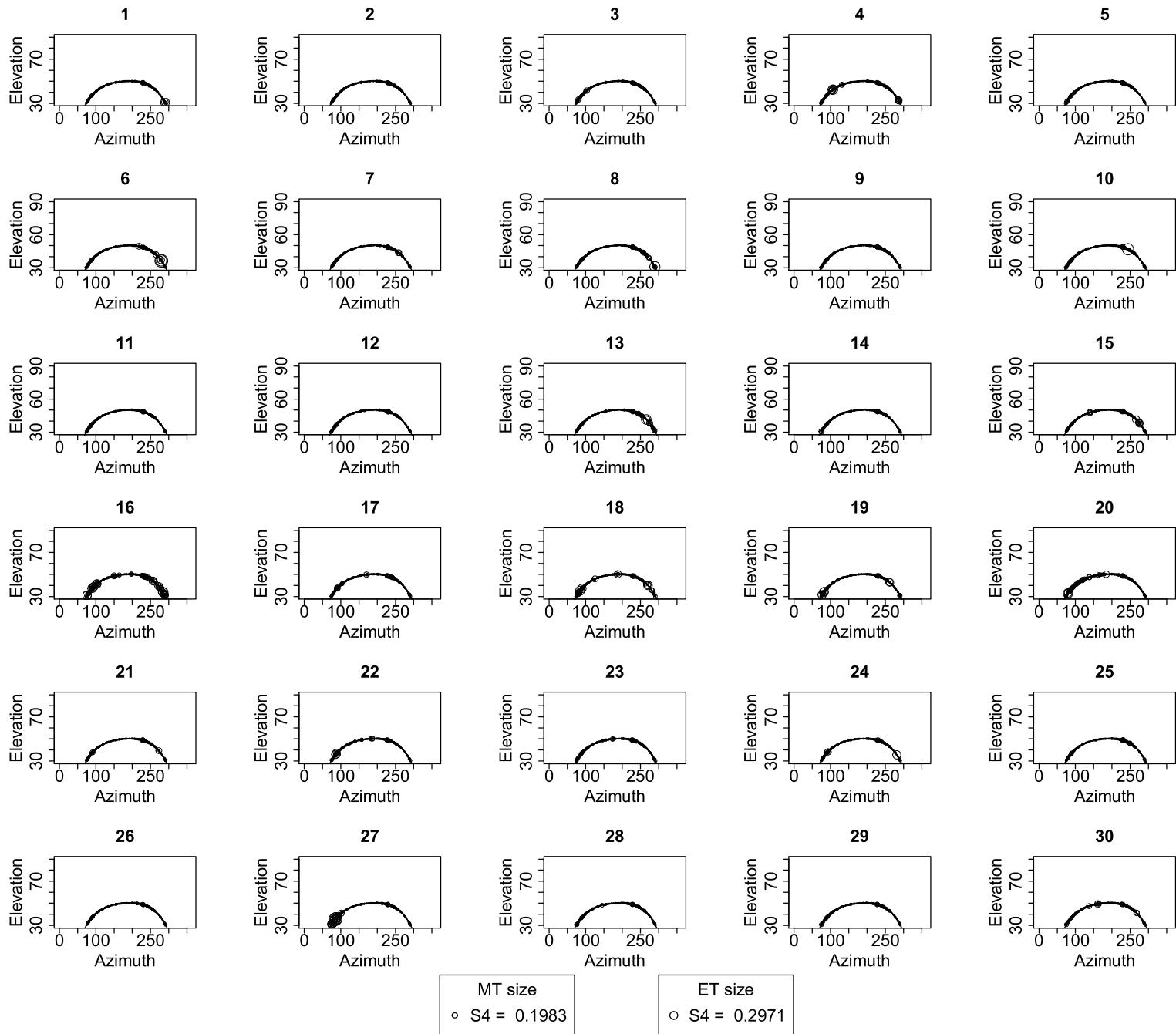


Figure S289 PEA plots comparison of S4 for G30 on September 1–30, 2017 at SJCU station

PEA plots (G31)

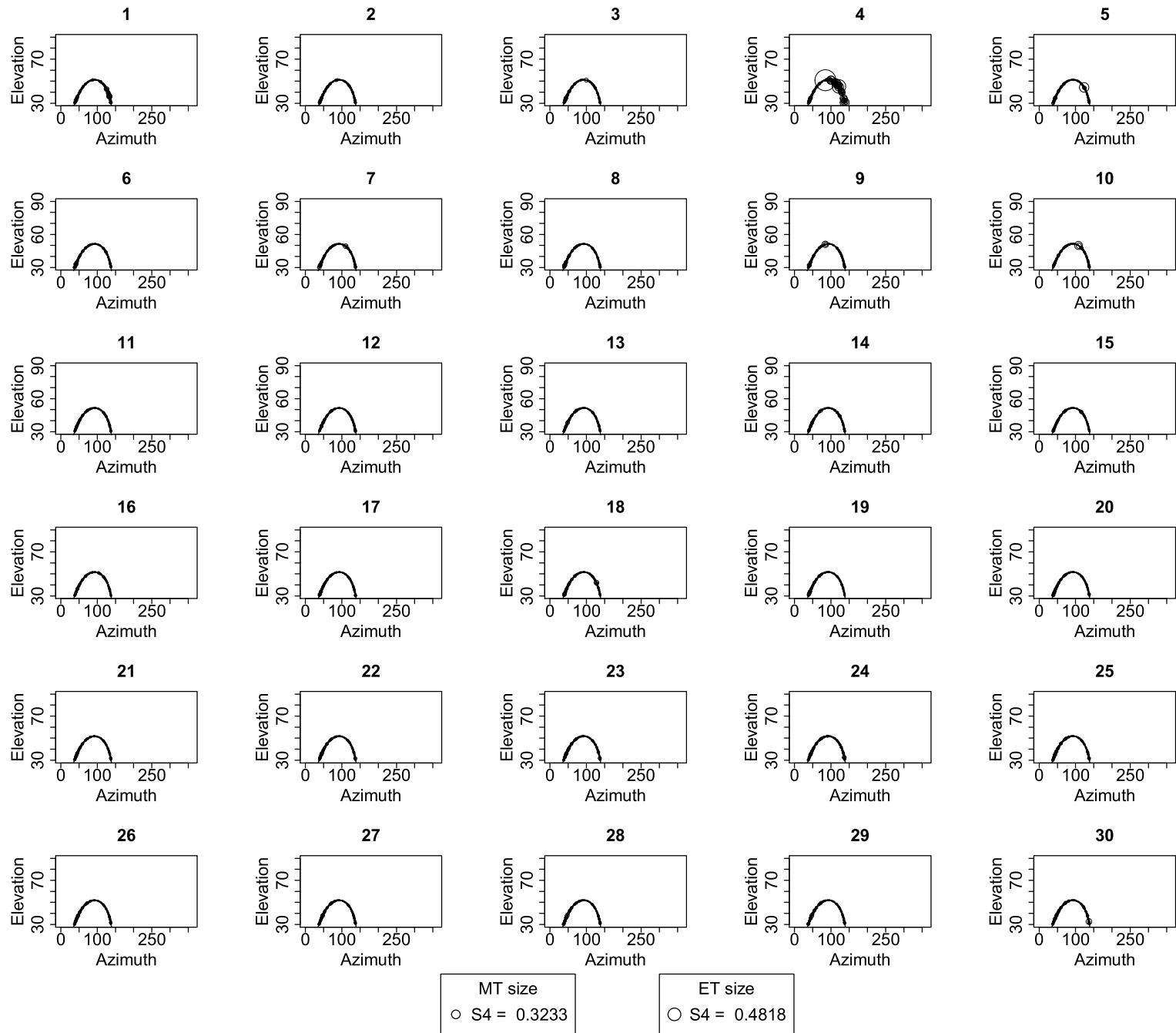


Figure S290 PEA plots comparison of S4 for G31 on September 1–30, 2017 at SJCU station

PEA plots (G32)

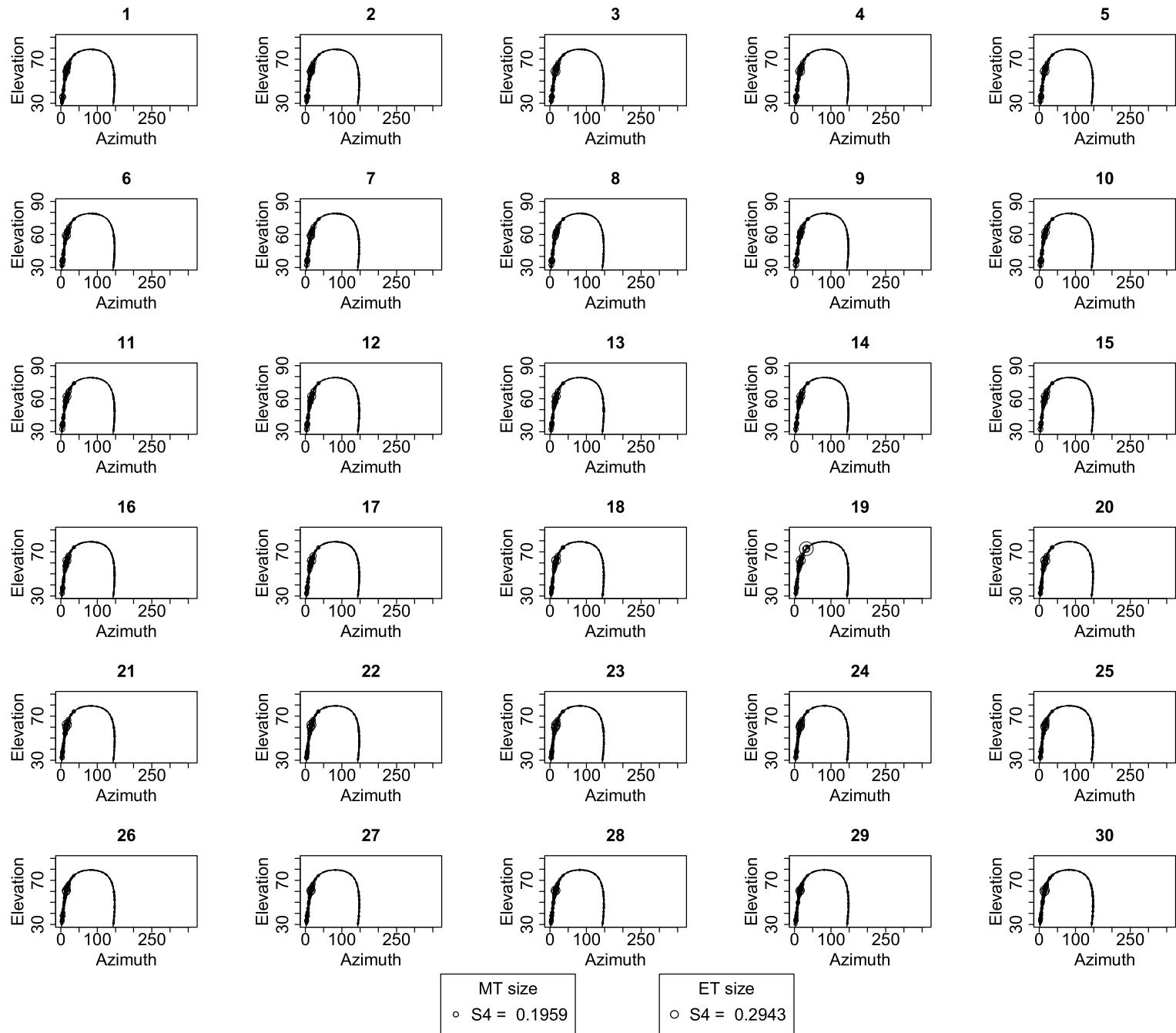


Figure S291 PEA plots comparison of S4 for G32 on September 1–30, 2017 at SJC station

PEA plots (G1)

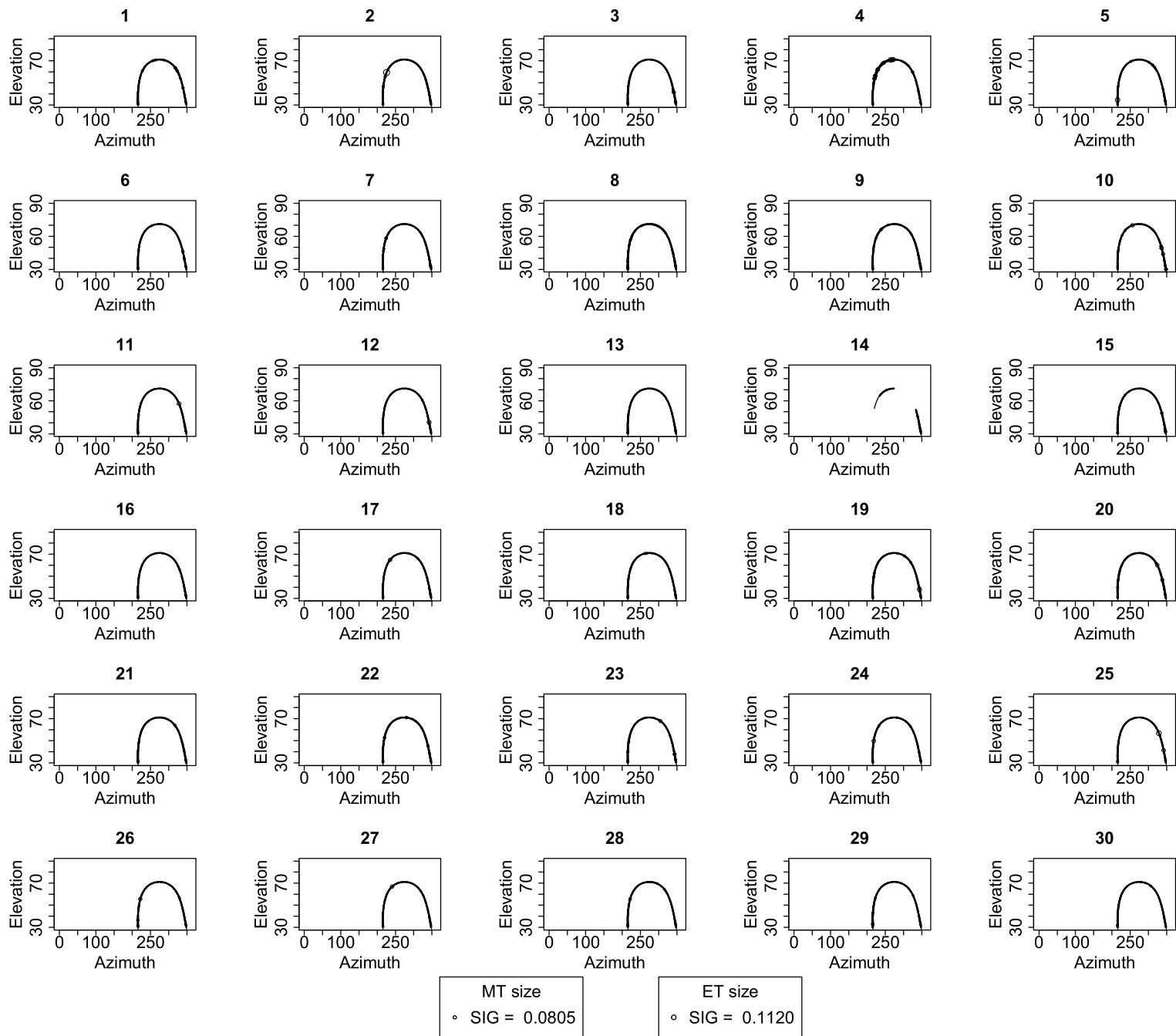


Figure S292 PEA plots comparison of Sigmaphi for G1 on September 1–30, 2017 at SJCU station

PEA plots (G2)

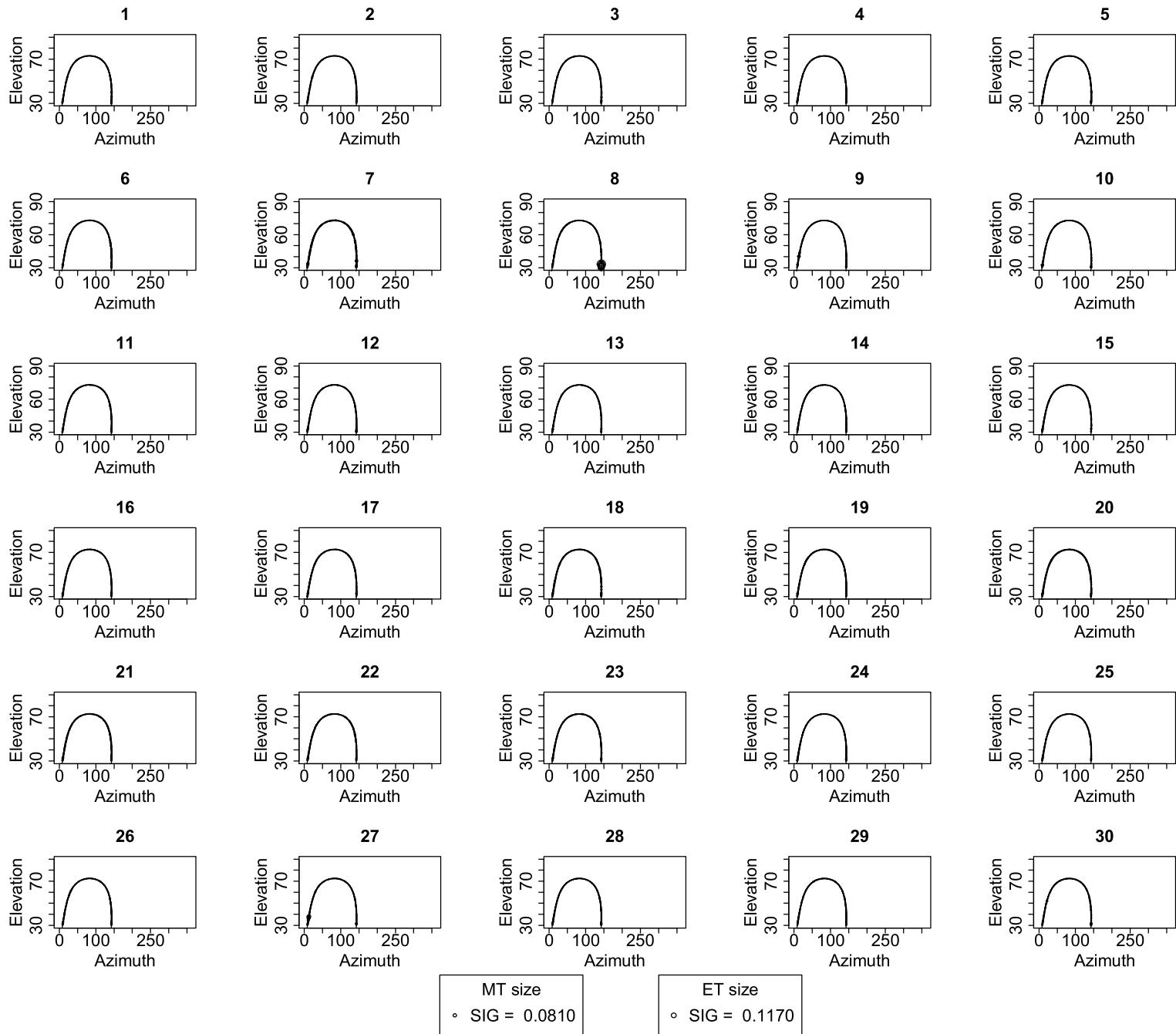


Figure S293 PEA plots comparison of Sigmaphi for G2 on September 1–30, 2017 at SJCU station

PEA plots (G3)

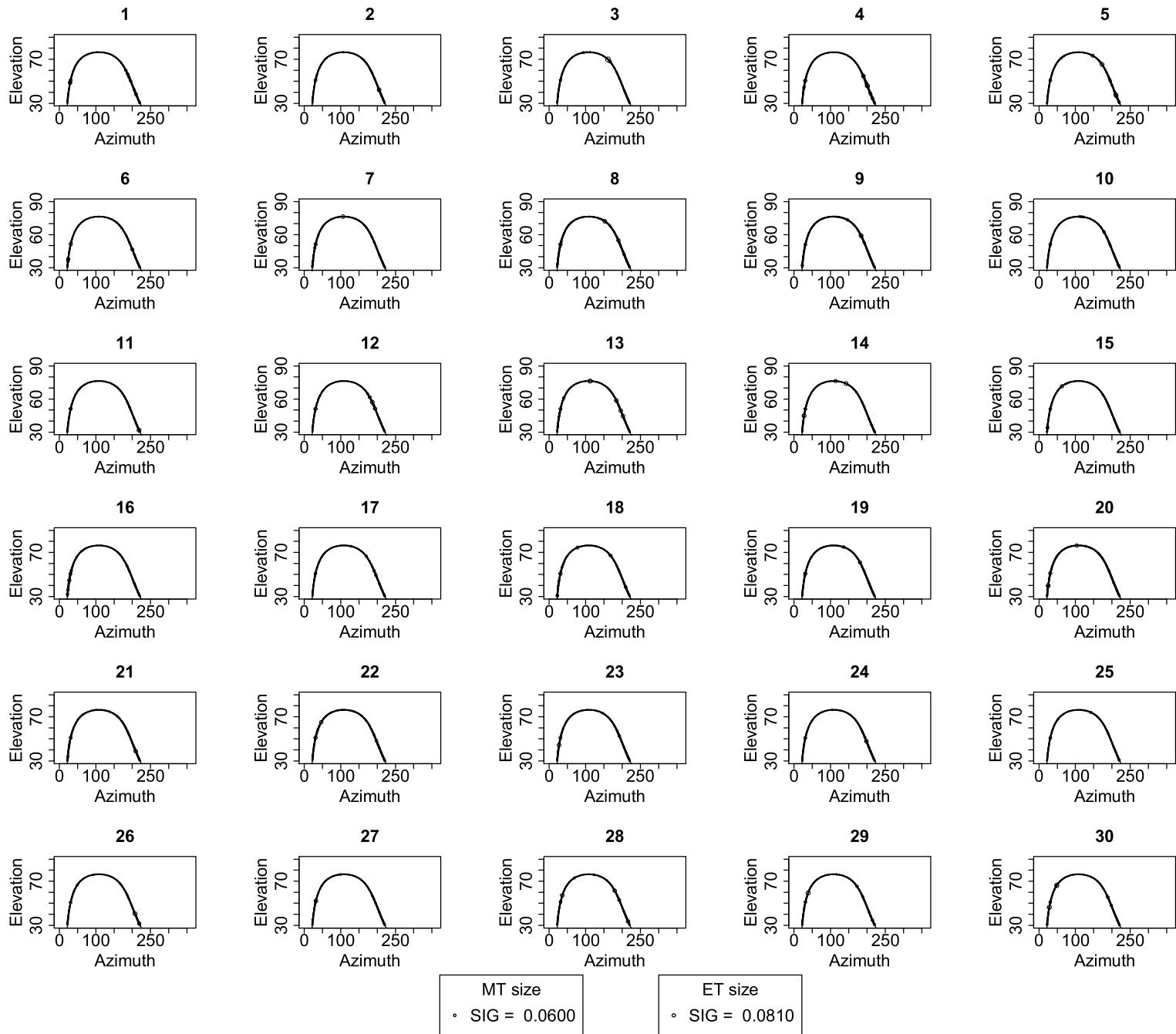


Figure S294 PEA plots comparison of SigmaPhi for G3 on September 1–30, 2017 at SJCU station

PEA plots (G4)

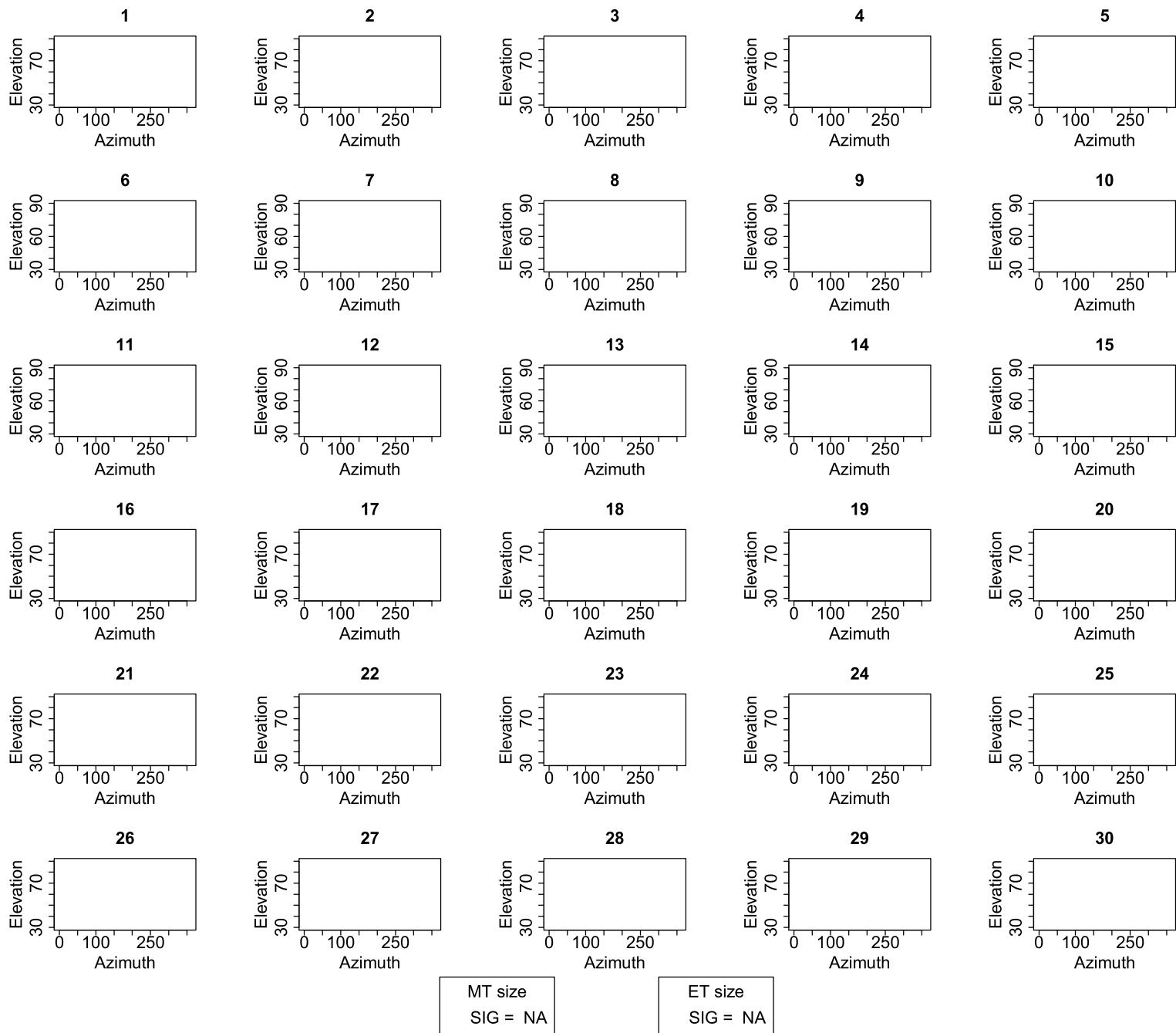


Figure S295 PEA plots comparison of Sigmaphi for G4 on September 1–30, 2017 at SJCU station

PEA plots (G5)

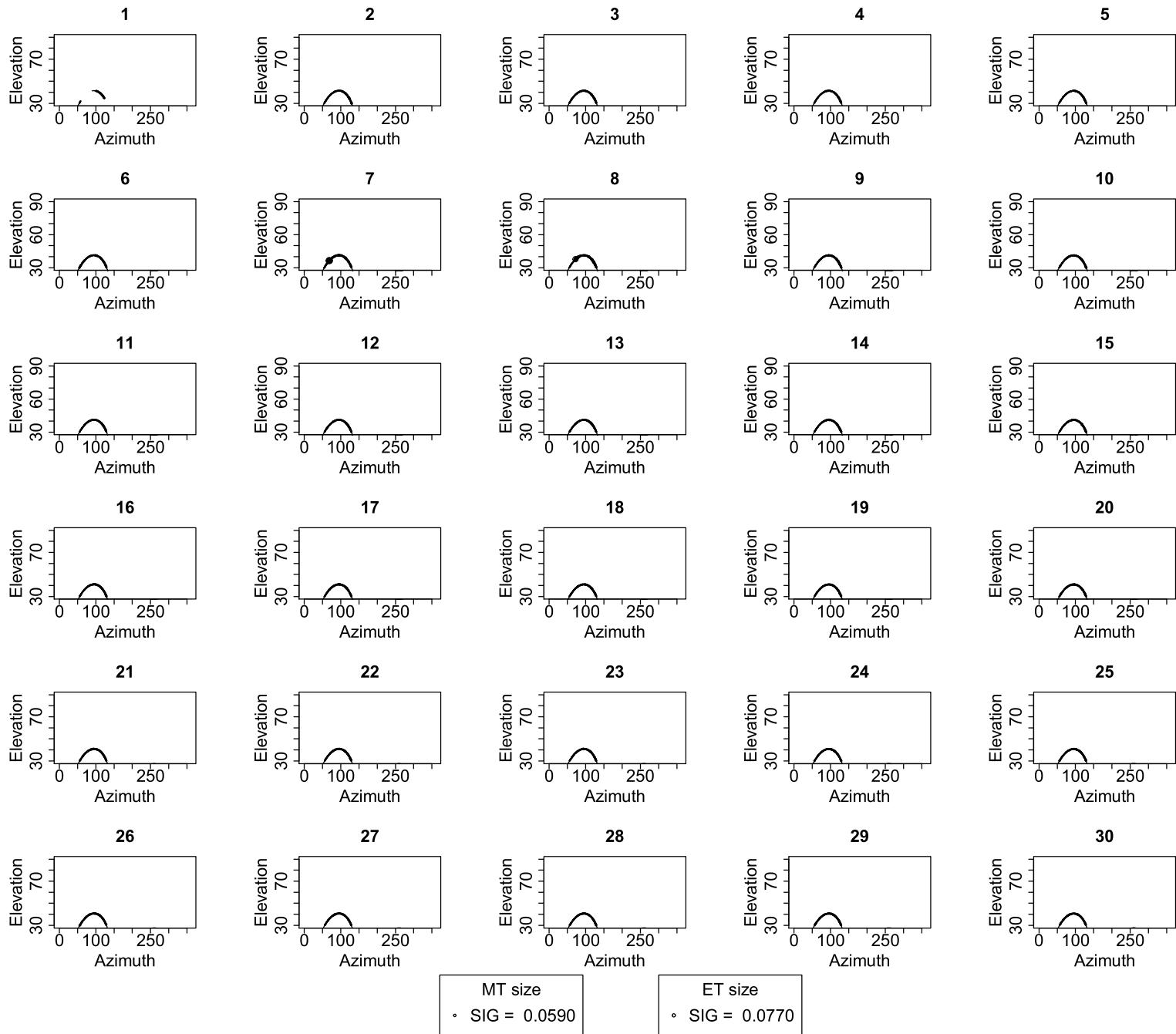


Figure S296 PEA plots comparison of Sigmaphi for G5 on September 1–30, 2017 at SJCU station

PEA plots (G6)

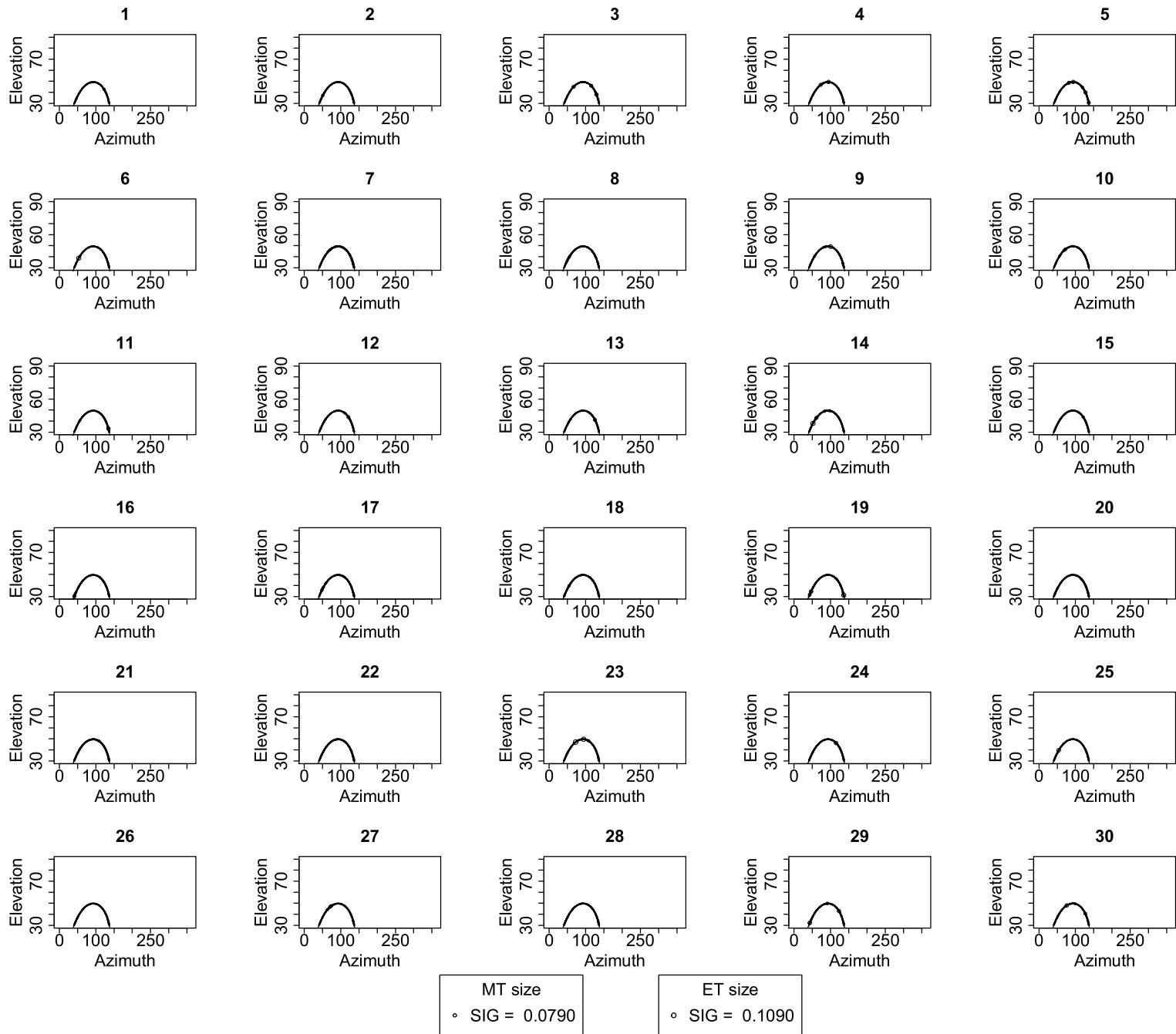


Figure S297 PEA plots comparison of Sigmaphi for G6 on September 1–30, 2017 at SJCU station

PEA plots (G7)

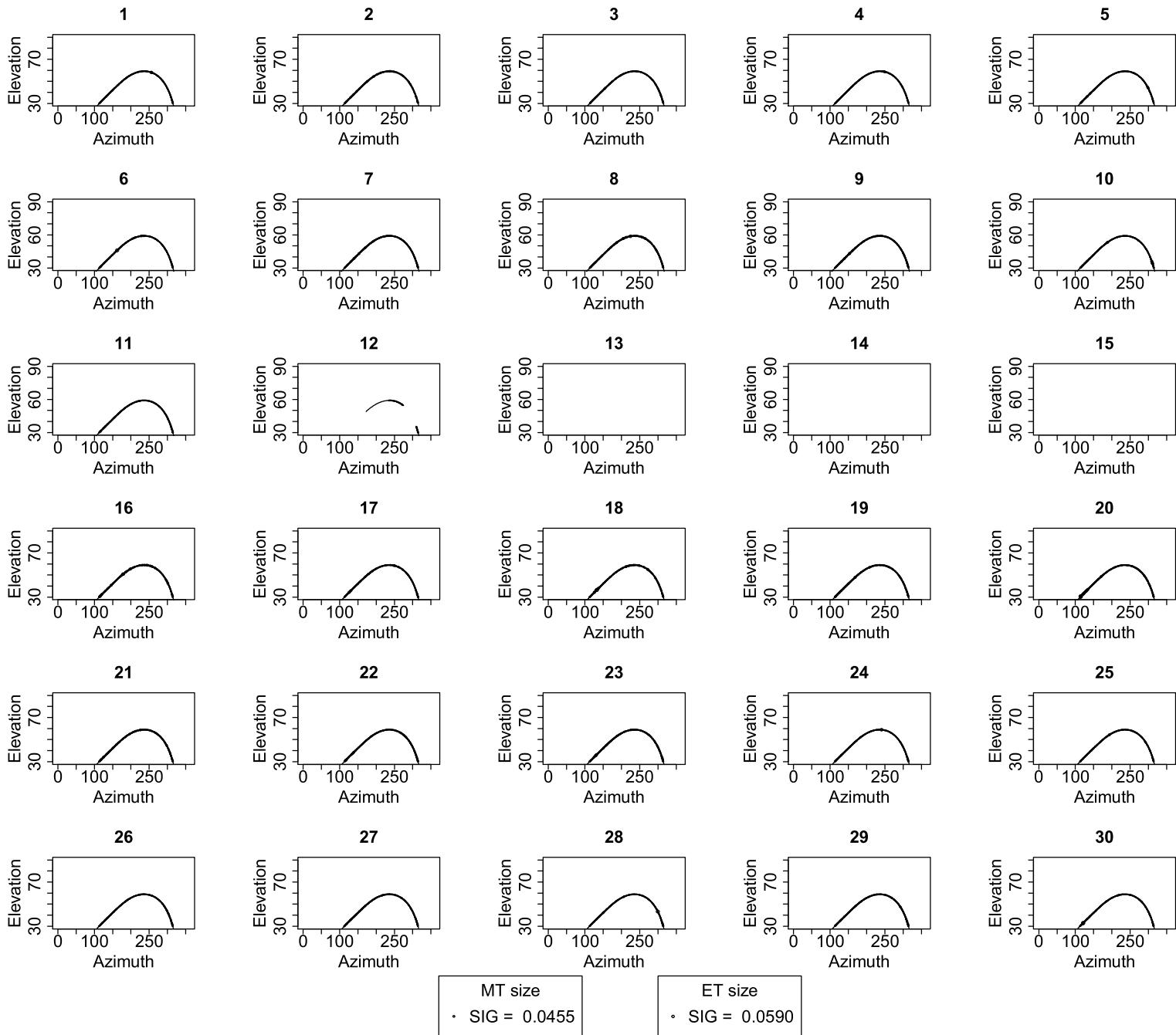


Figure S298 PEA plots comparison of Sigmaphi for G7 on September 1–30, 2017 at SJCU station

PEA plots (G8)

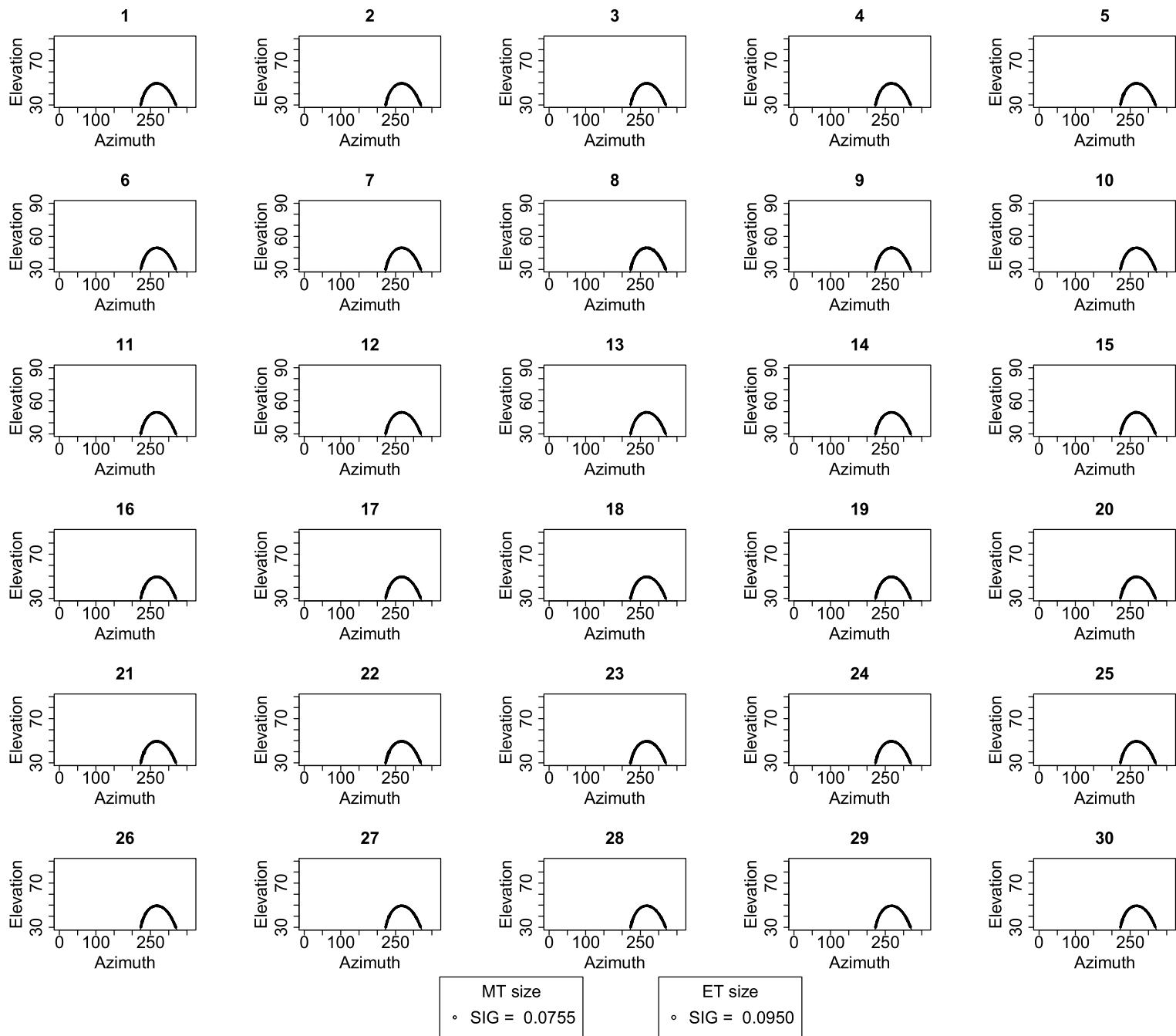


Figure S299 PEA plots comparison of Sigmaphi for G8 on September 1–30, 2017 at SJCU station

PEA plots (G9)

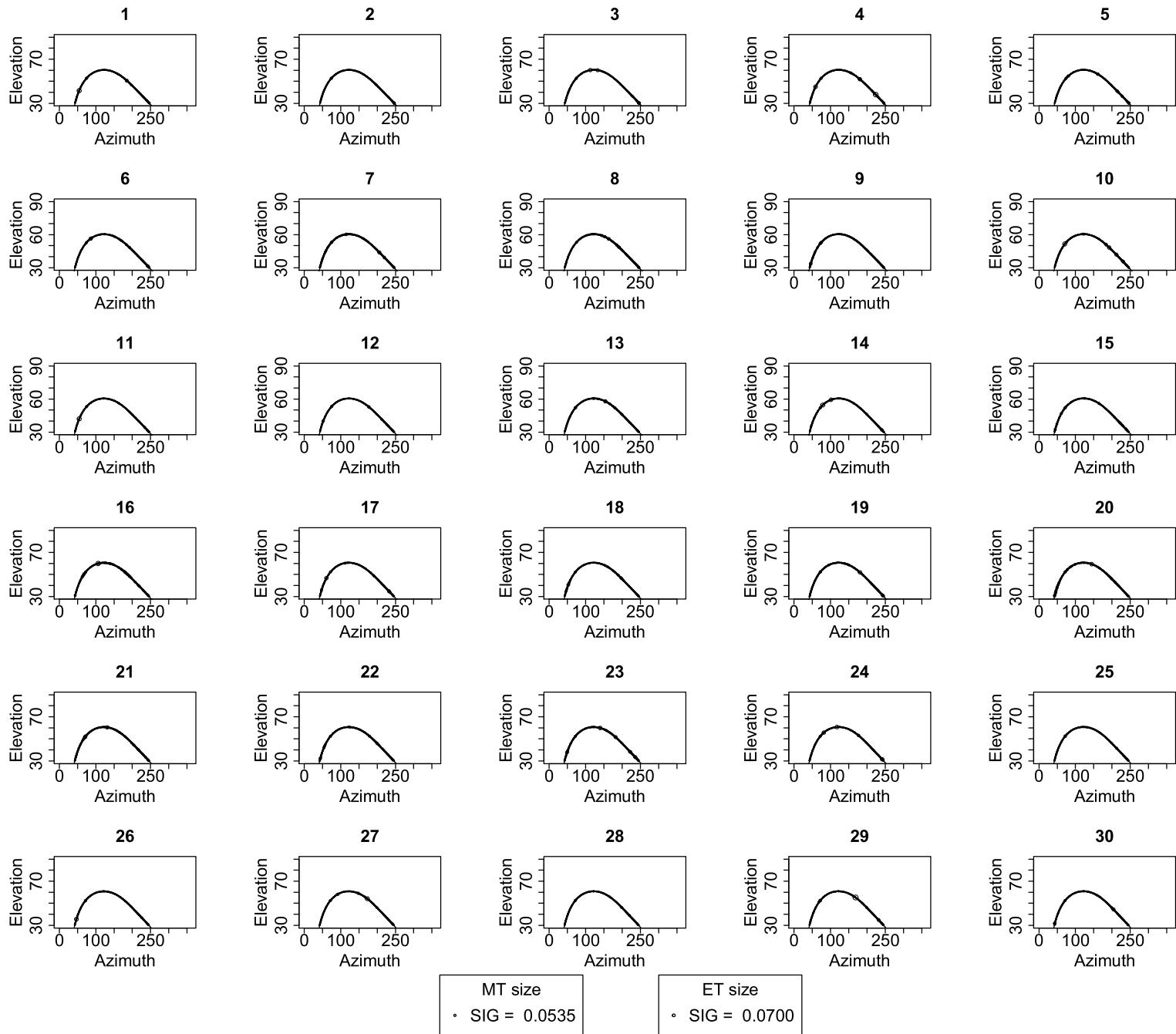


Figure S300 PEA plots comparison of Sigmaphi for G9 on September 1–30, 2017 at SJCU station

PEA plots (G10)

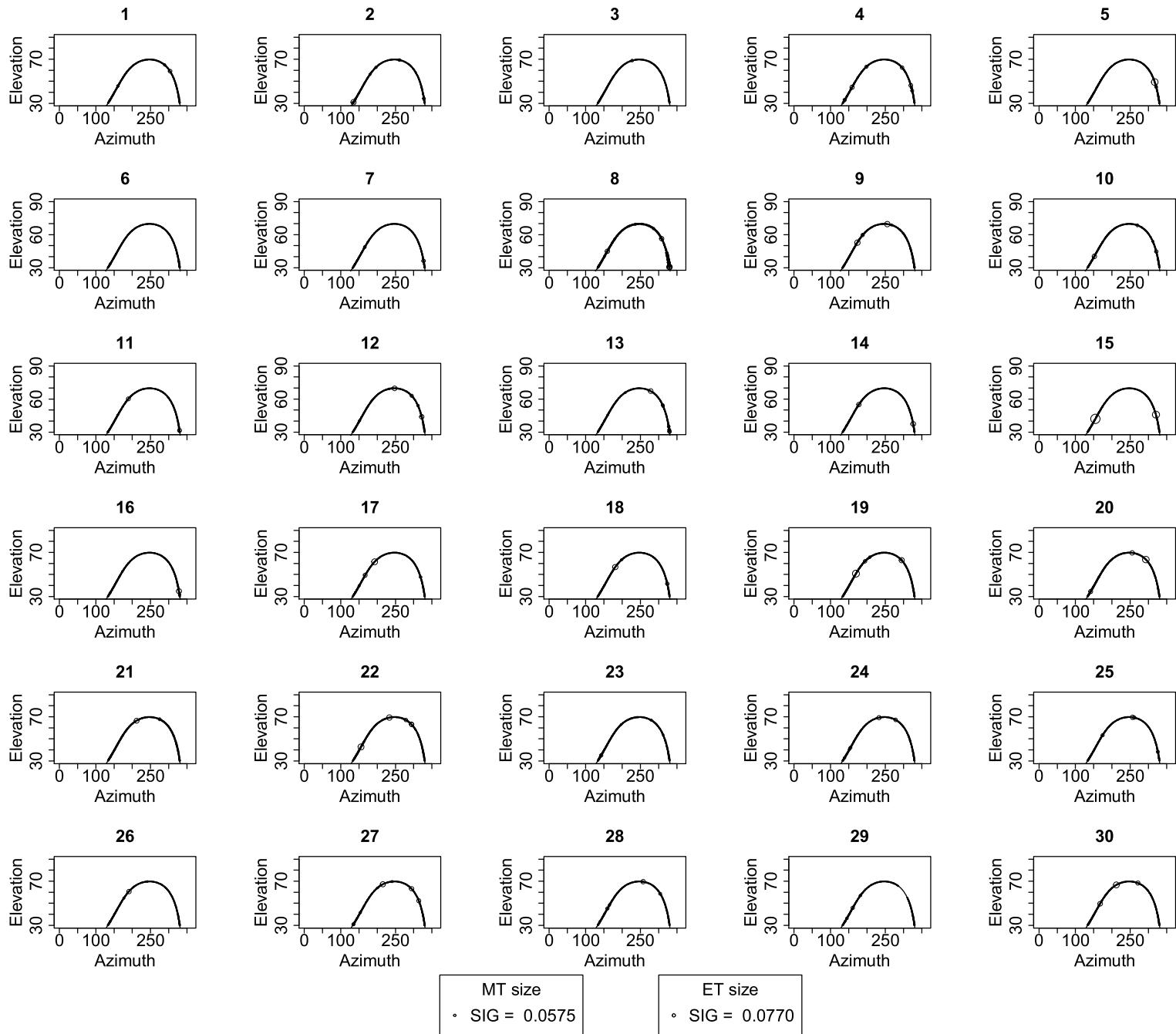


Figure S301 PEA plots comparison of Sigmaphi for G10 on September 1–30, 2017 at SJCU station

PEA plots (G11)

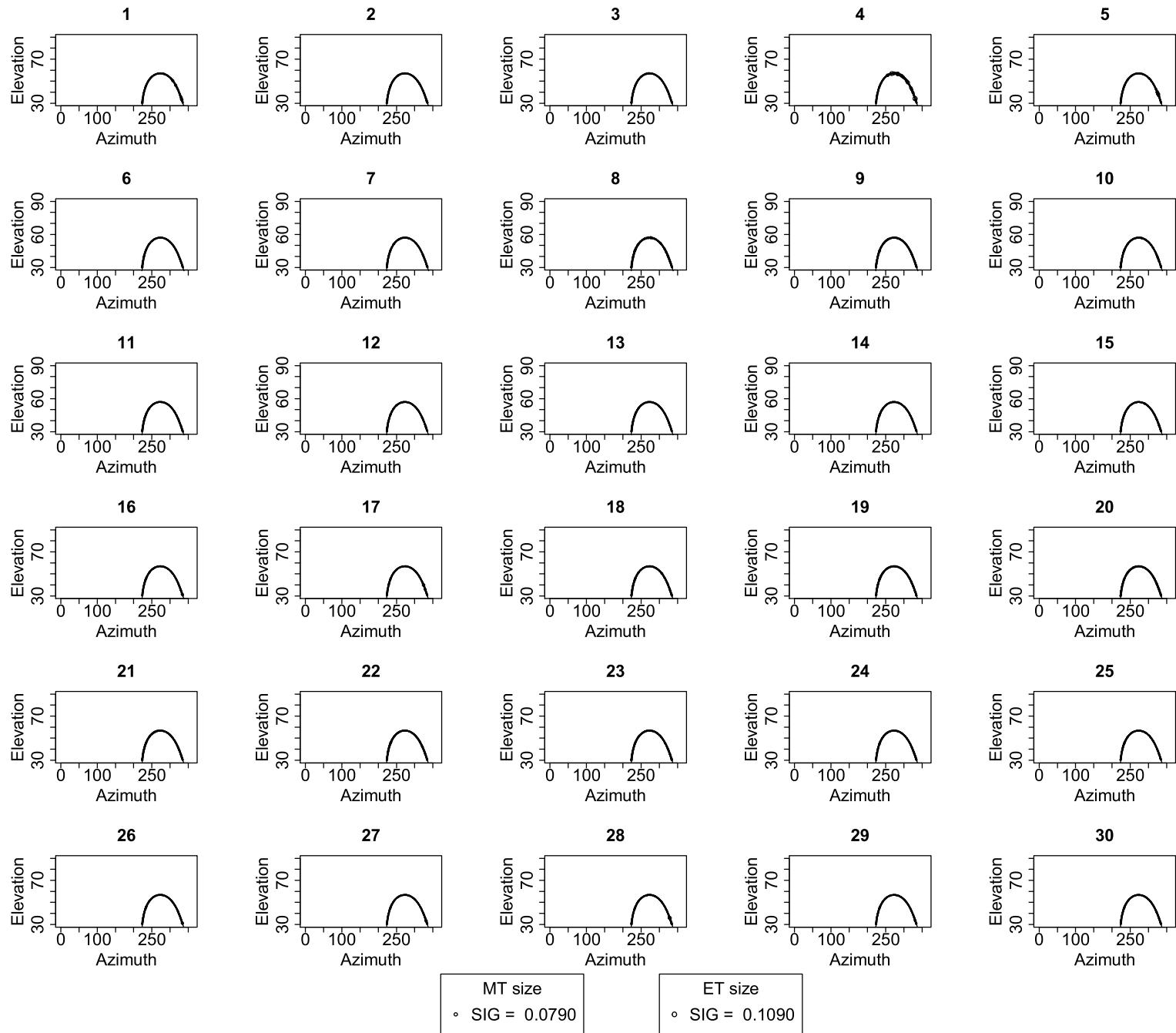


Figure S302 PEA plots comparison of Sigmaphi for G11 on September 1–30, 2017 at SJCU station

PEA plots (G12)

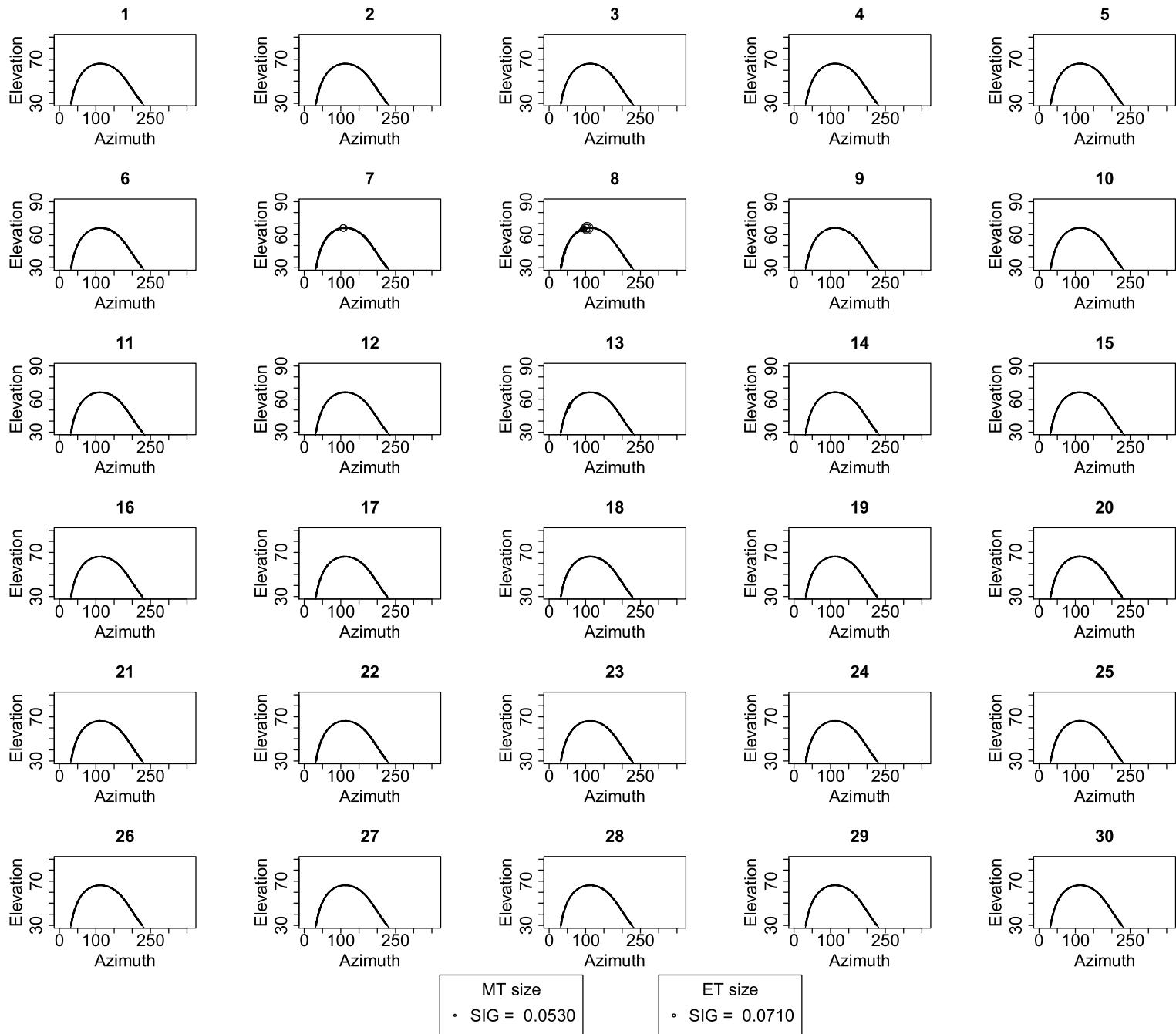


Figure S303 PEA plots comparison of Sigmaphi for G12 on September 1–30, 2017 at SJCU station

PEA plots (G13)

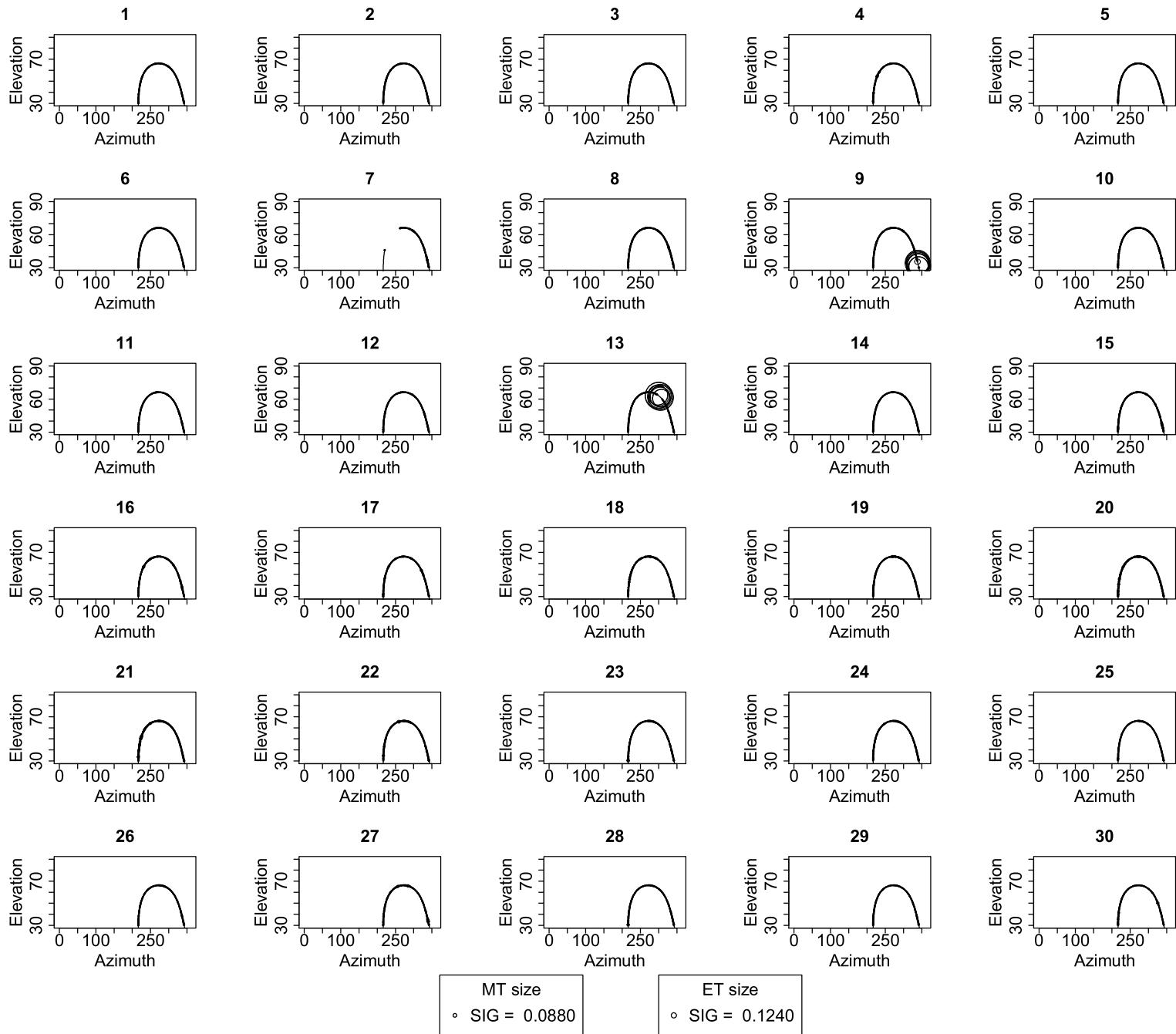


Figure S304 PEA plots comparison of Sigmaphi for G13 on September 1–30, 2017 at SJCU station

PEA plots (G14)

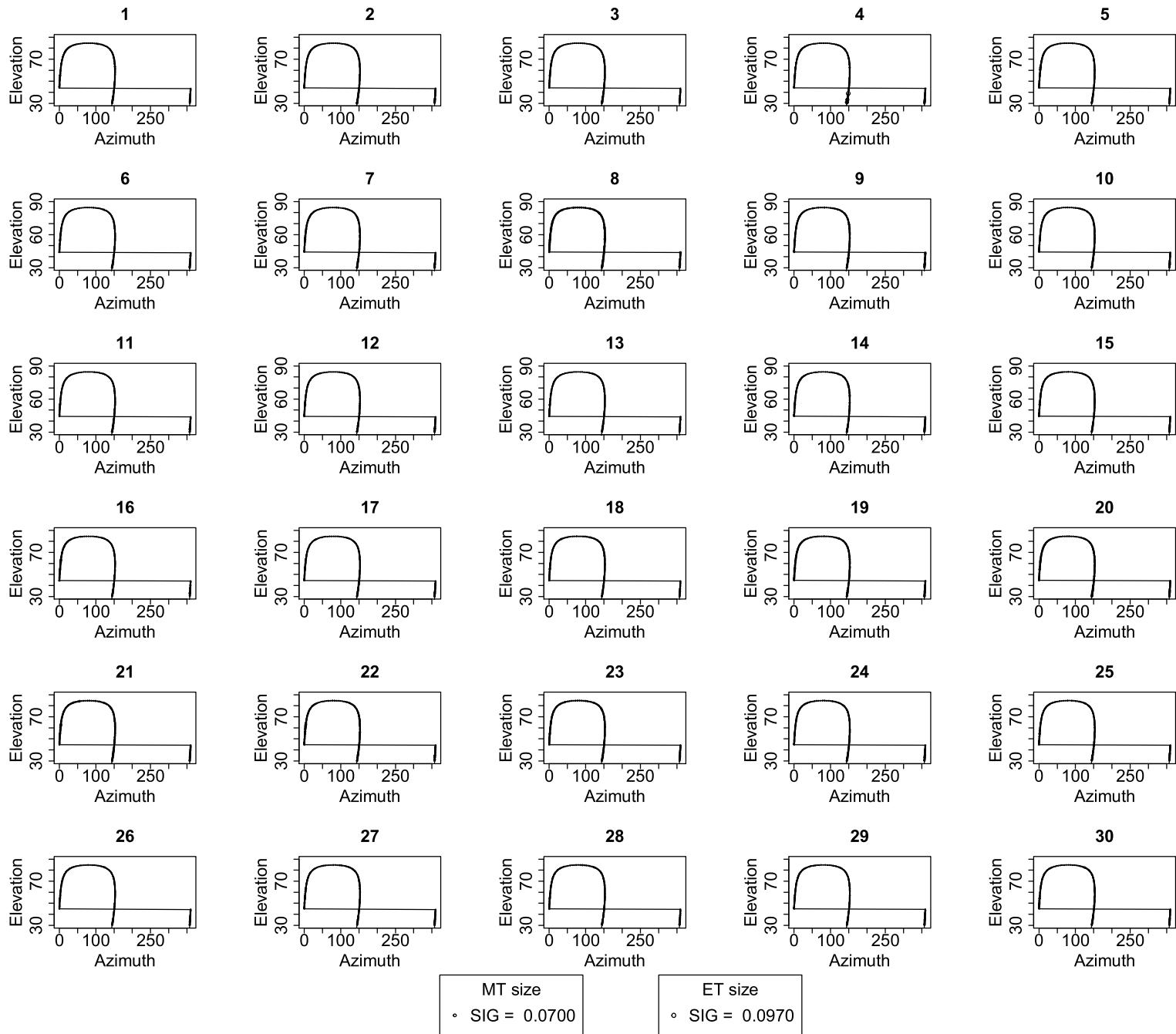


Figure S305 PEA plots comparison of Sigmaphi for G14 on September 1–30, 2017 at SJCU station

PEA plots (G15)

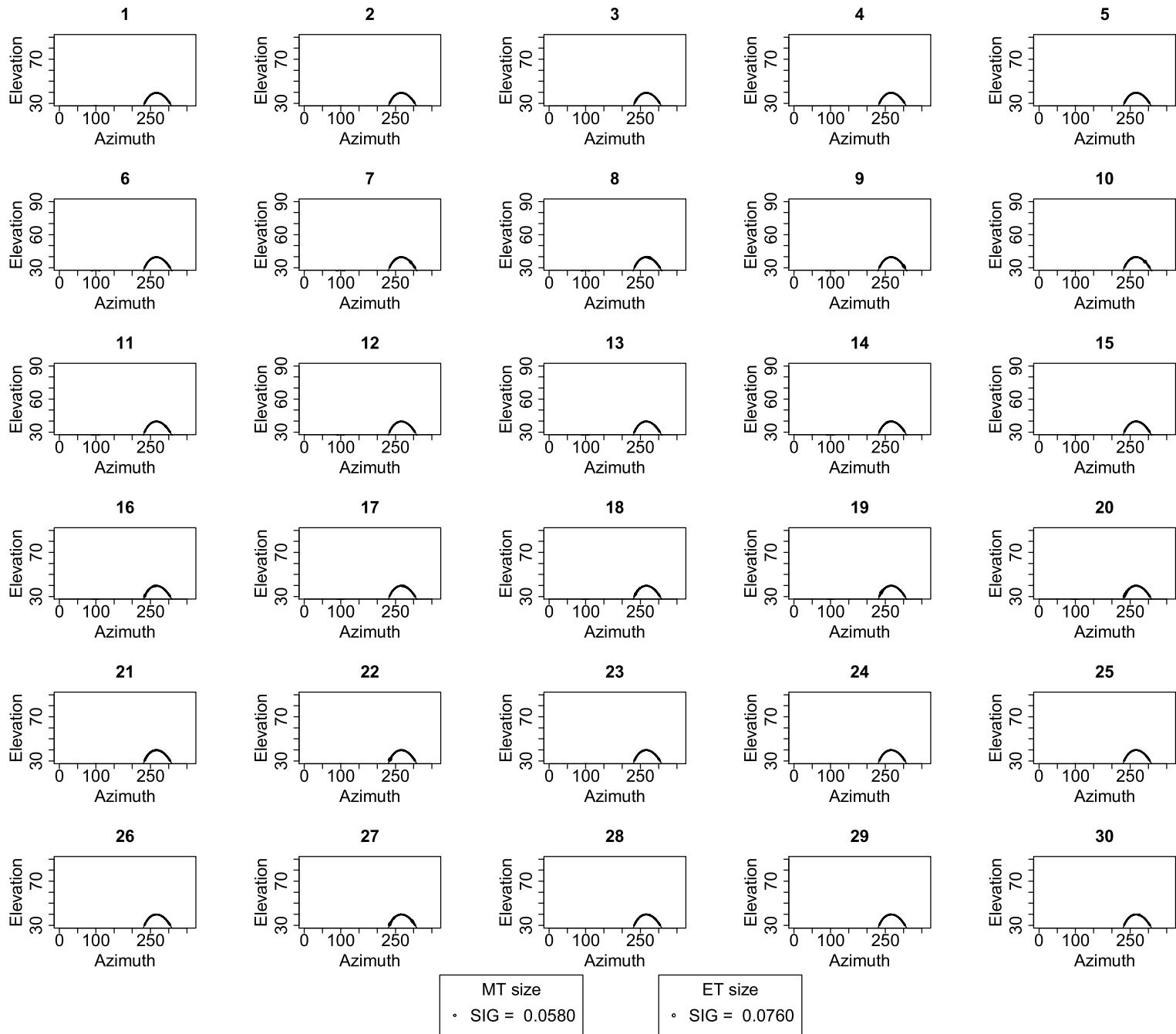


Figure S306 PEA plots comparison of Sigmaphi for G15 on September 1–30, 2017 at SJCU station

PEA plots (G16)

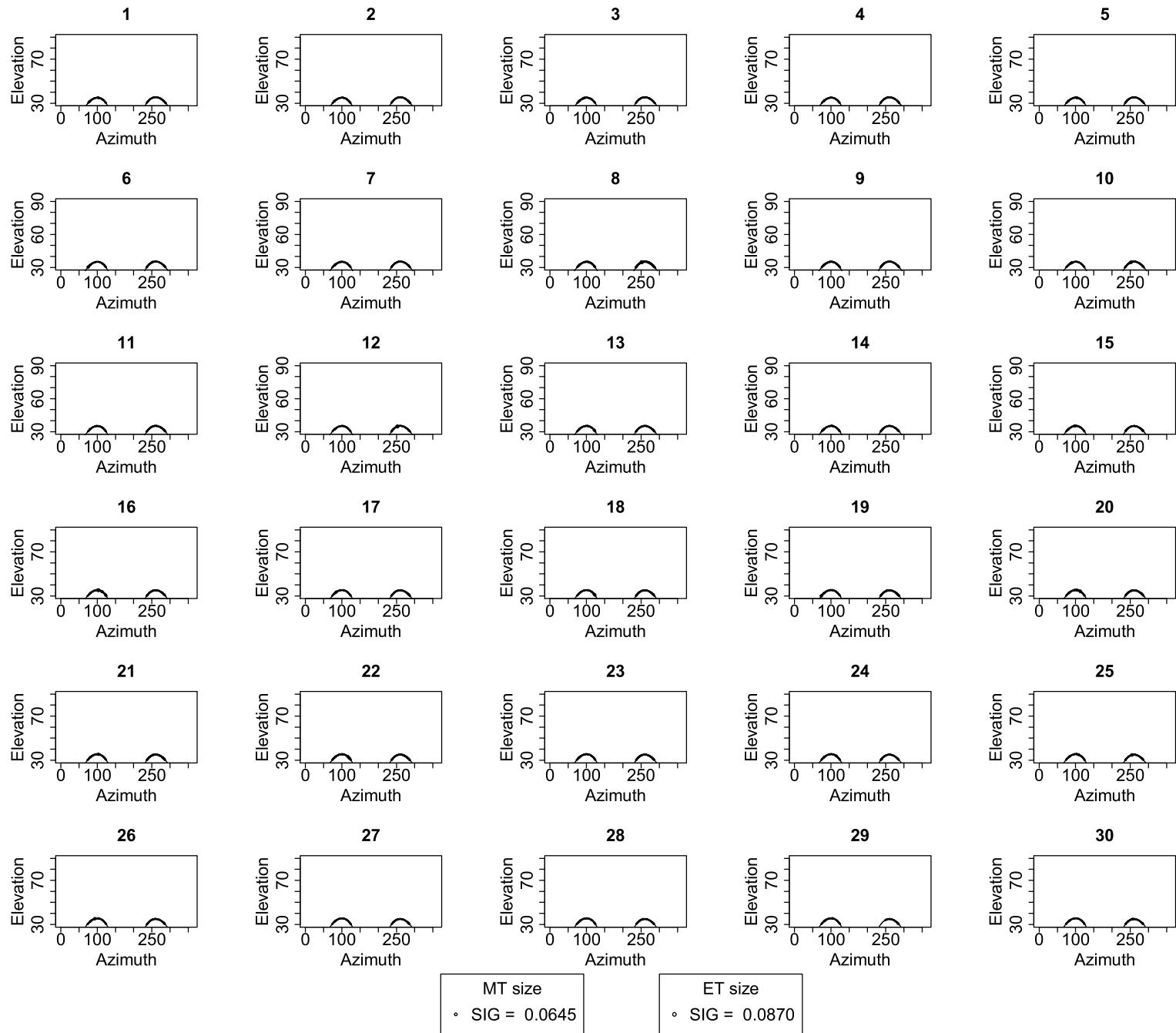


Figure S307 PEA plots comparison of Sigmaphi for G16 on September 1–30, 2017 at SJCU station

PEA plots (G17)

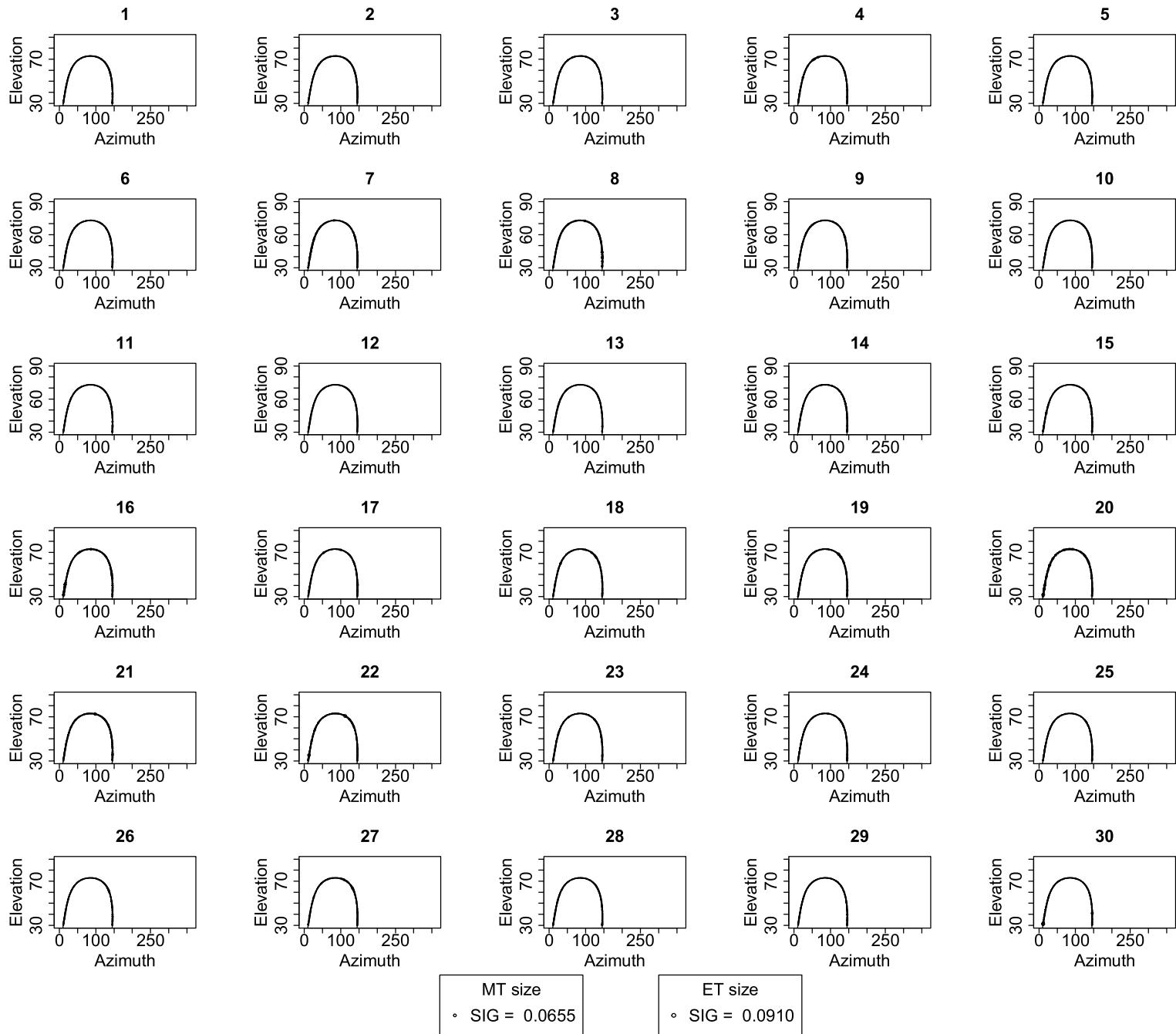


Figure S308 PEA plots comparison of Sigmaphi for G17 on September 1–30, 2017 at SJCU station

PEA plots (G18)

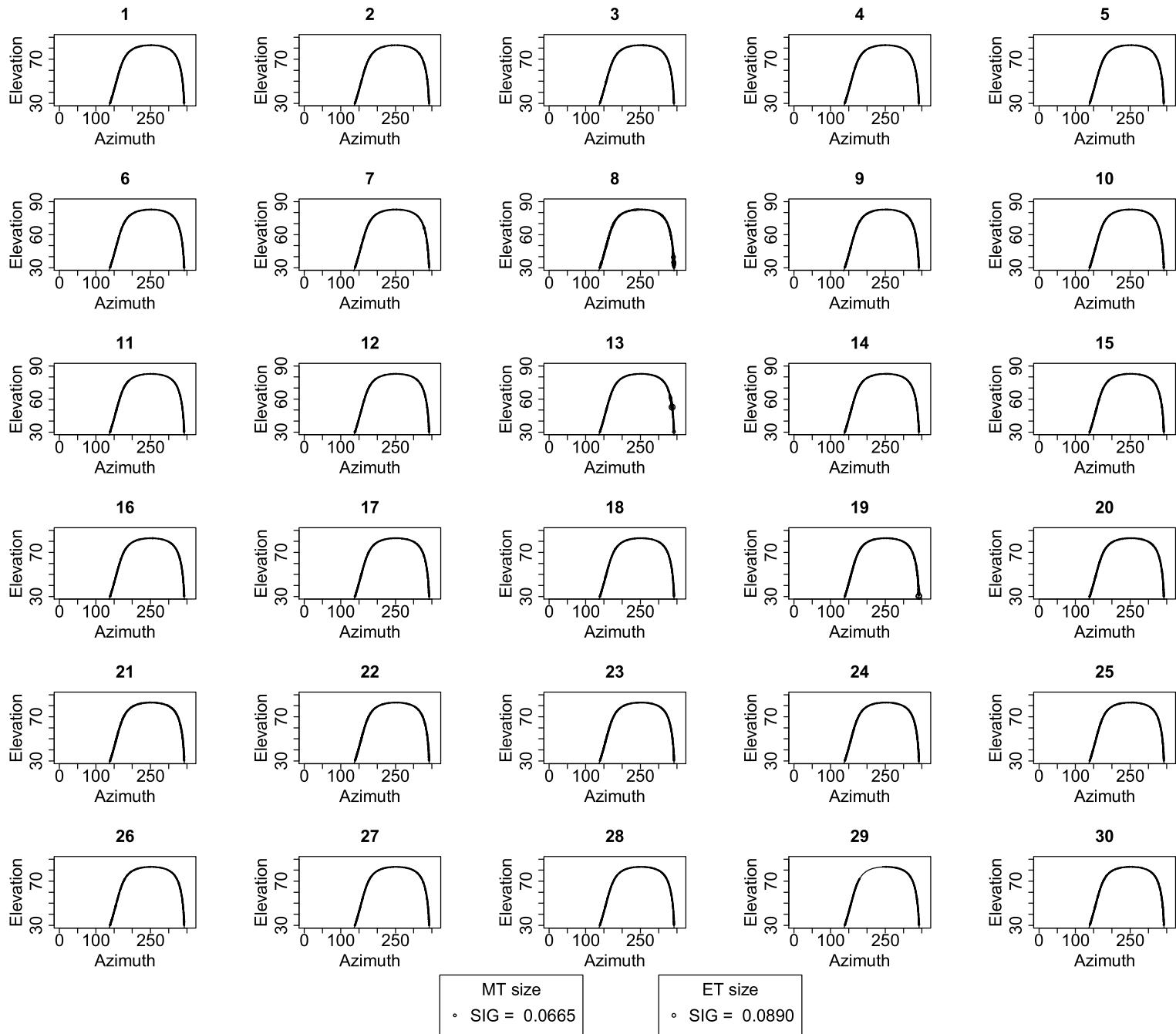


Figure S309 PEA plots comparison of Sigmaphi for G18 on September 1–30, 2017 at SJCU station

PEA plots (G19)

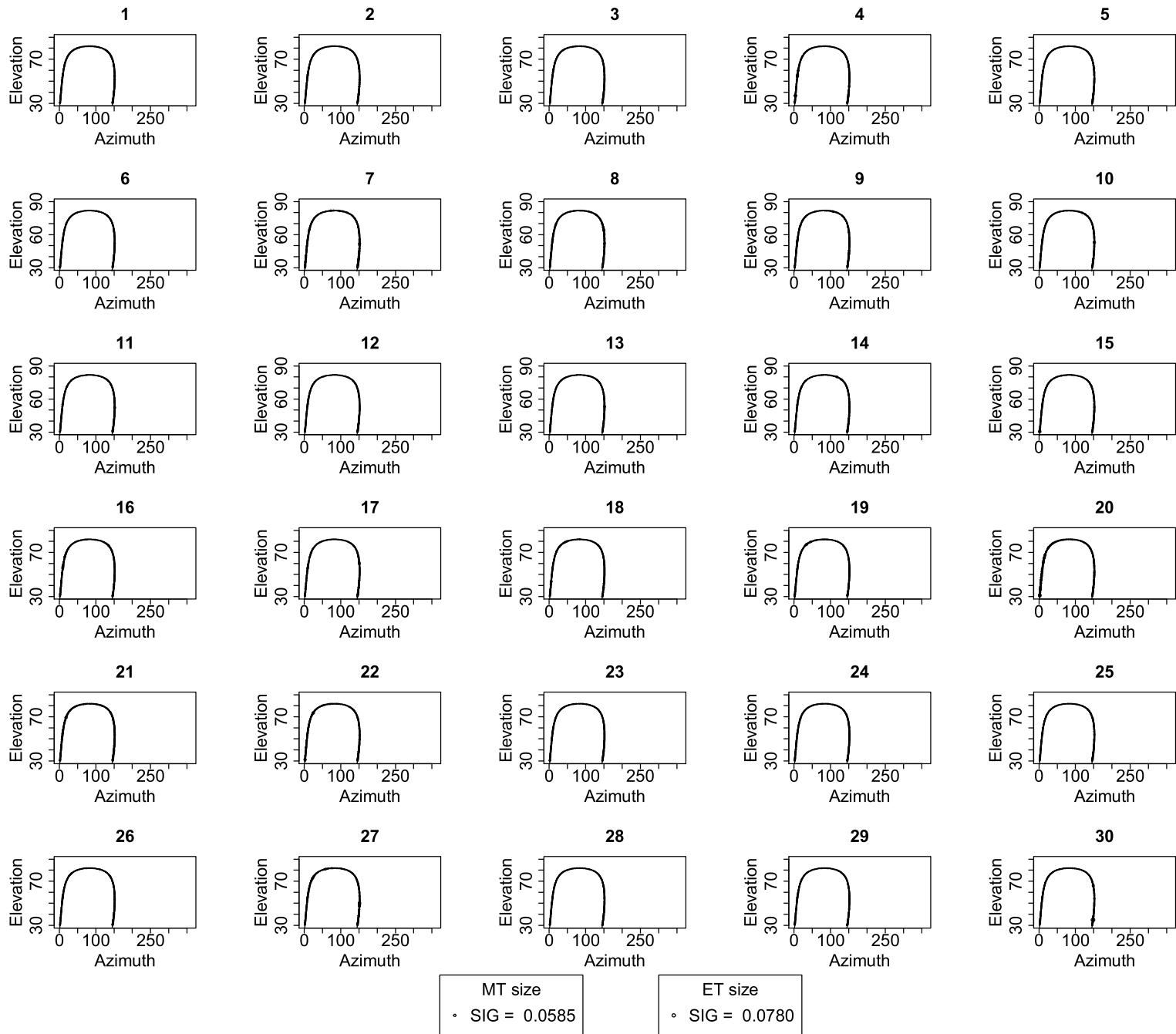


Figure S310 PEA plots comparison of Sigmaphi for G19 on September 1–30, 2017 at SJCU station

PEA plots (G20)

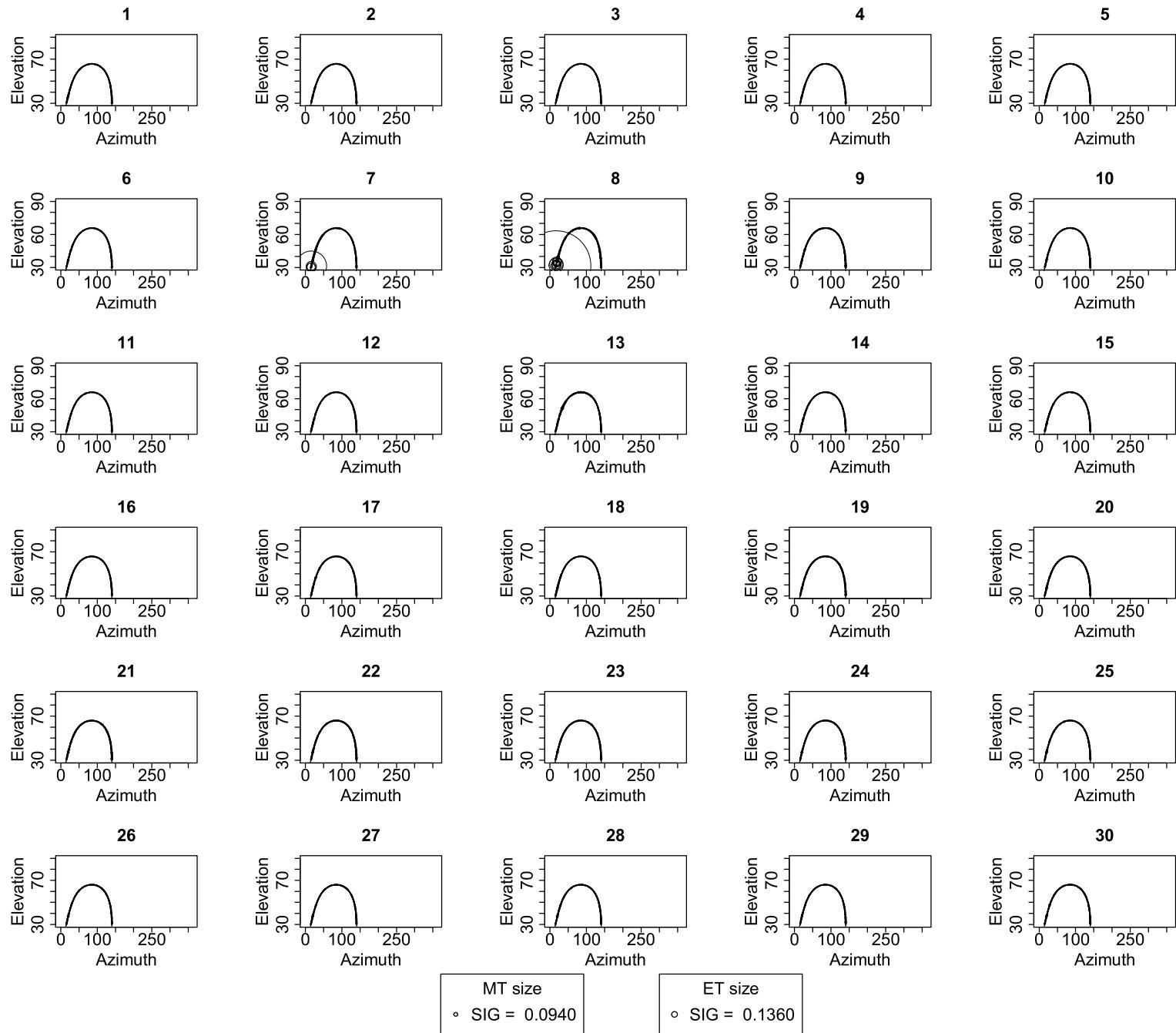


Figure S311 PEA plots comparison of Sigmaphi for G20 on September 1–30, 2017 at SJCU station

PEA plots (G21)

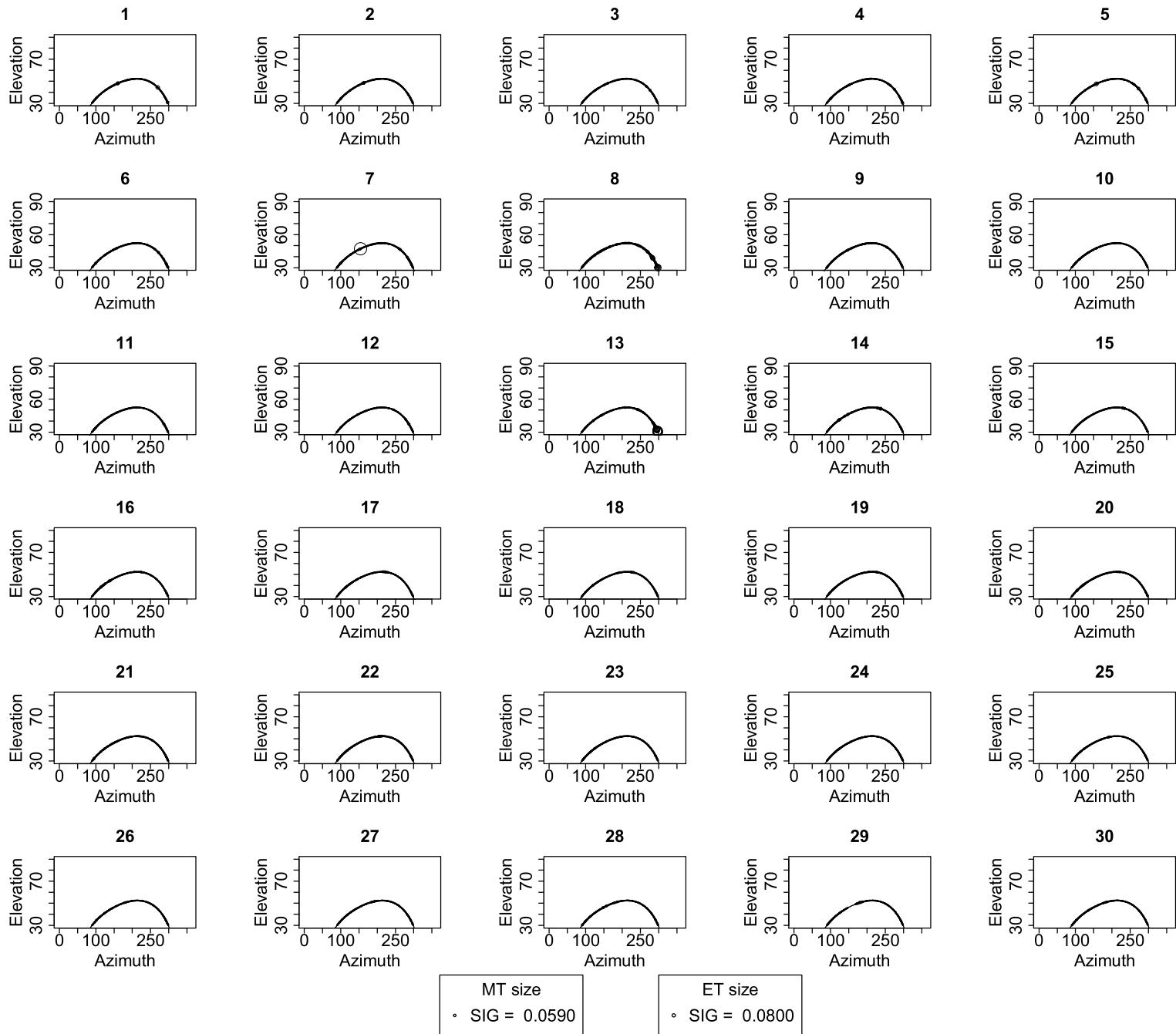


Figure S312 PEA plots comparison of Sigmaphi for G21 on September 1–30, 2017 at SJCU station

PEA plots (G22)

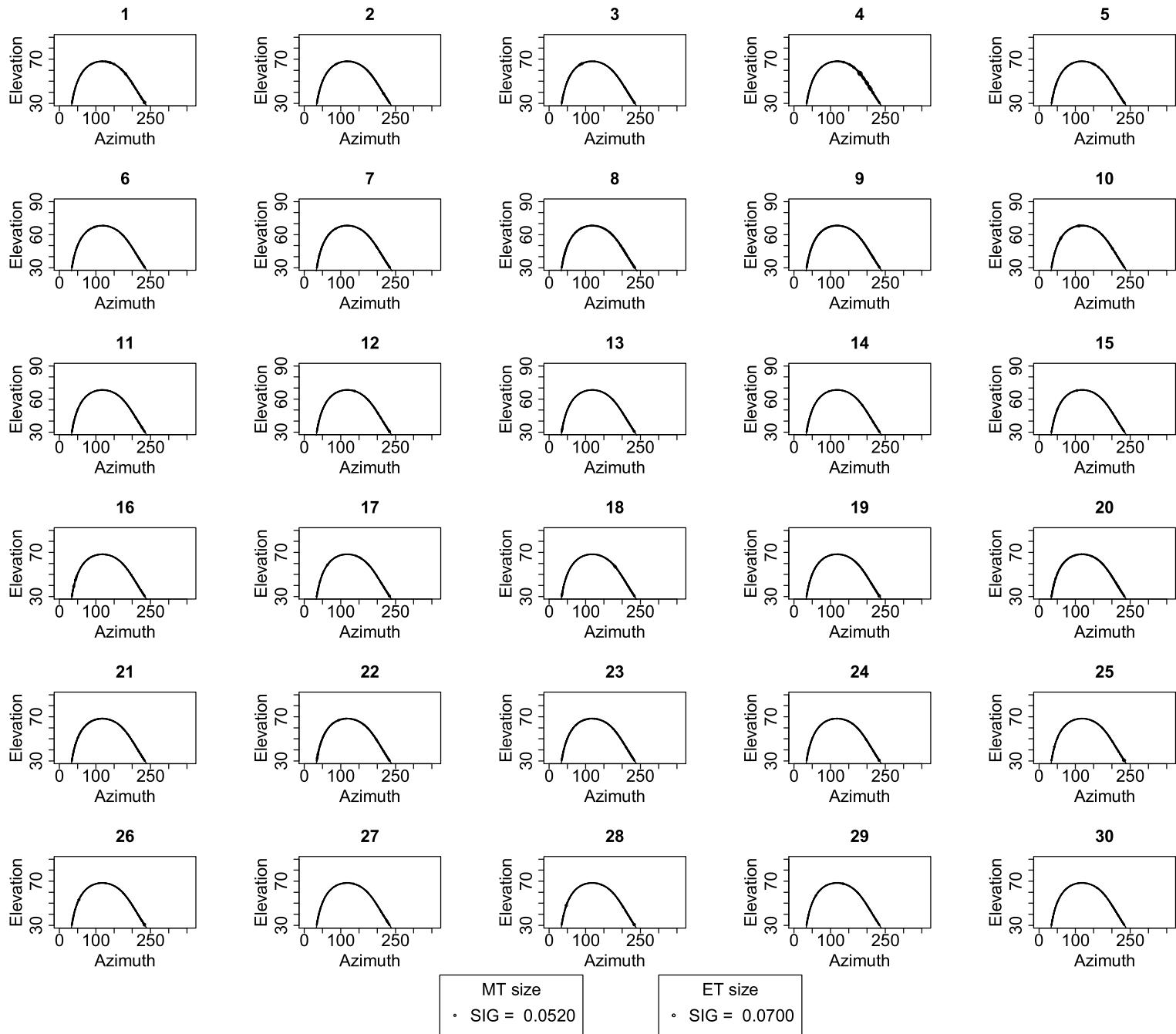


Figure S313 PEA plots comparison of Sigmaphi for G22 on September 1–30, 2017 at SJCU station

PEA plots (G23)

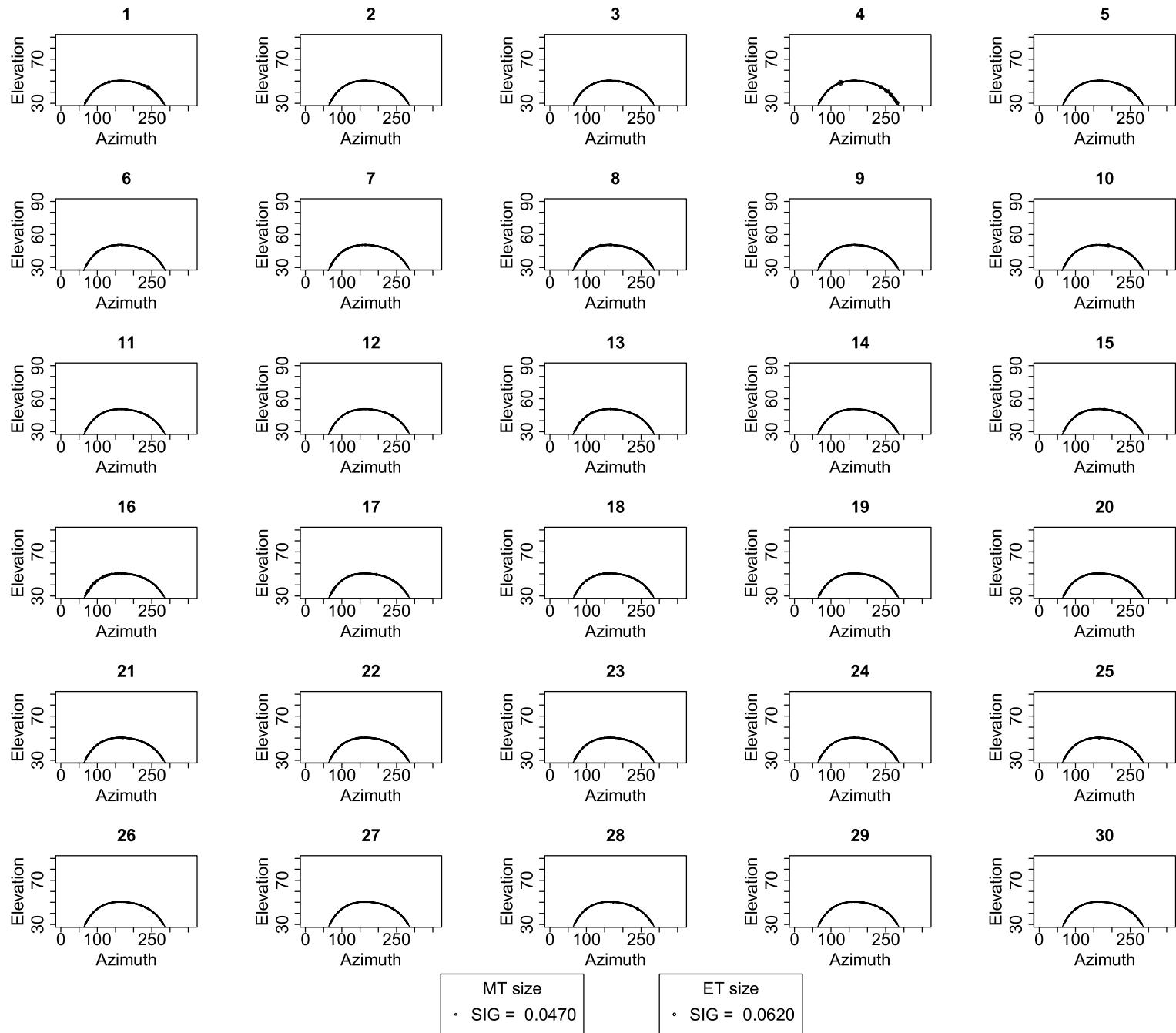


Figure S314 PEA plots comparison of Sigmaphi for G23 on September 1–30, 2017 at SJCU station

PEA plots (G24)

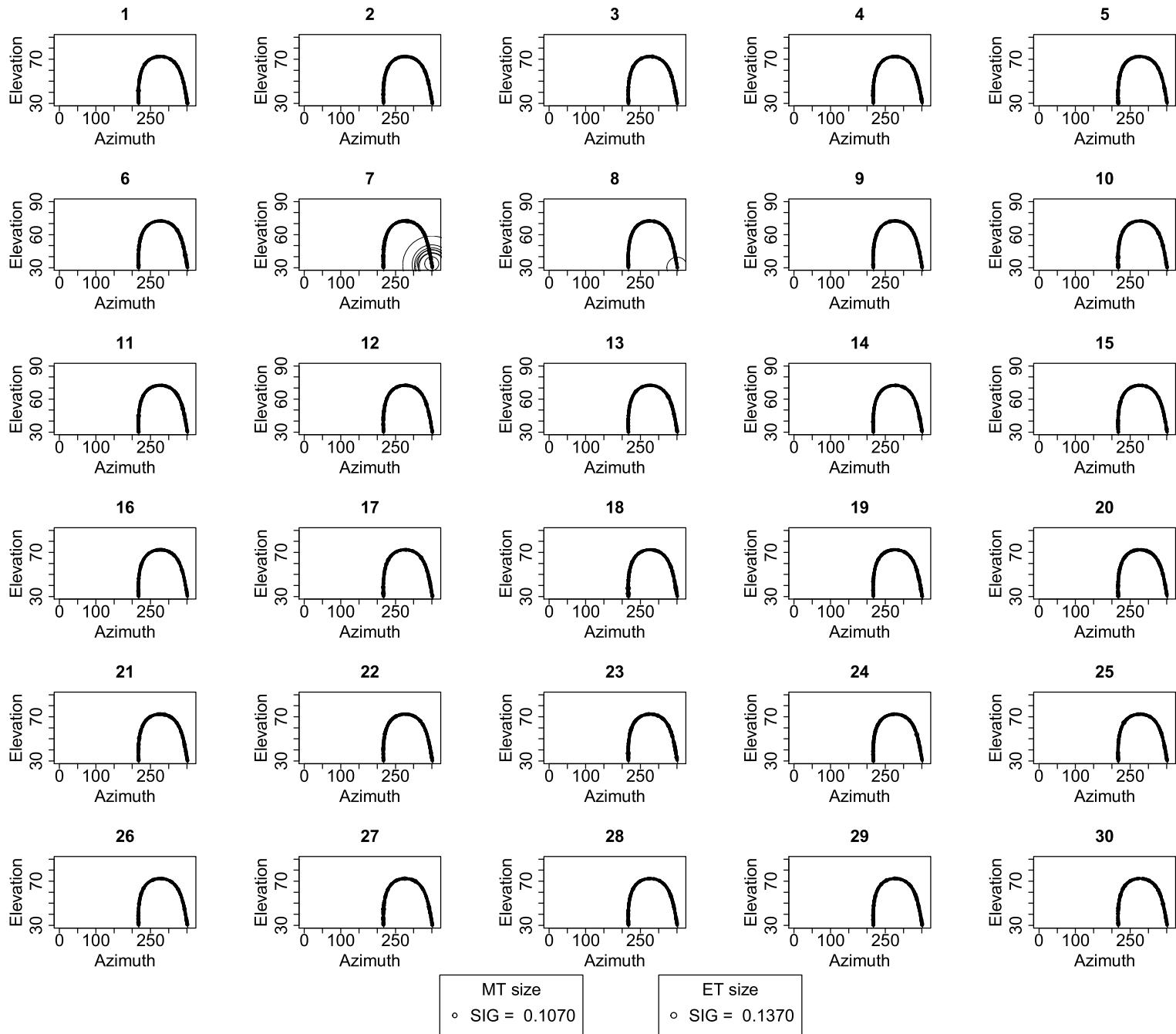


Figure S315 PEA plots comparison of Sigmaphi for G24 on September 1–30, 2017 at SJCU station

PEA plots (G25)

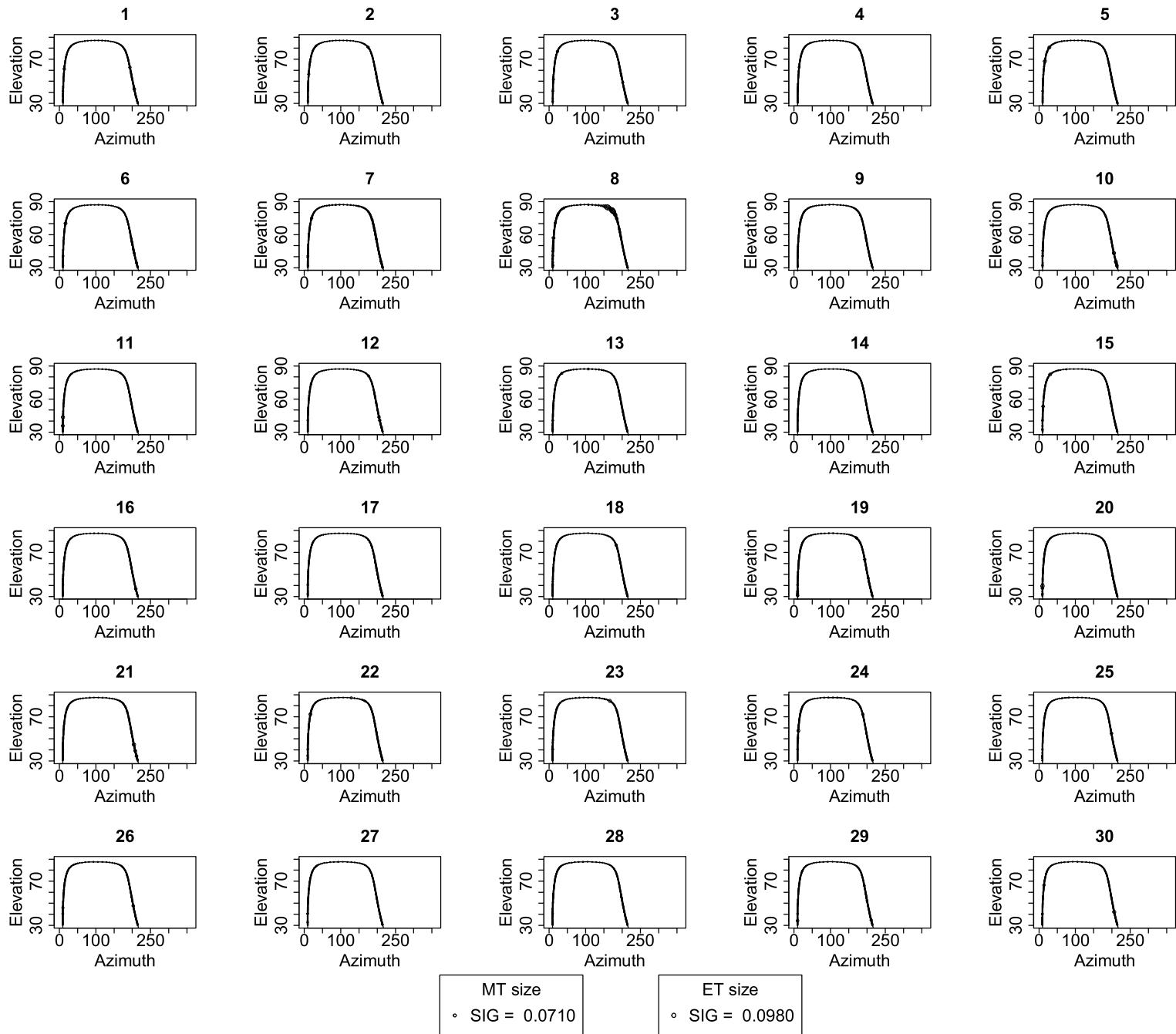


Figure S316 PEA plots comparison of Sigmaphi for G25 on September 1–30, 2017 at SJCU station

PEA plots (G26)

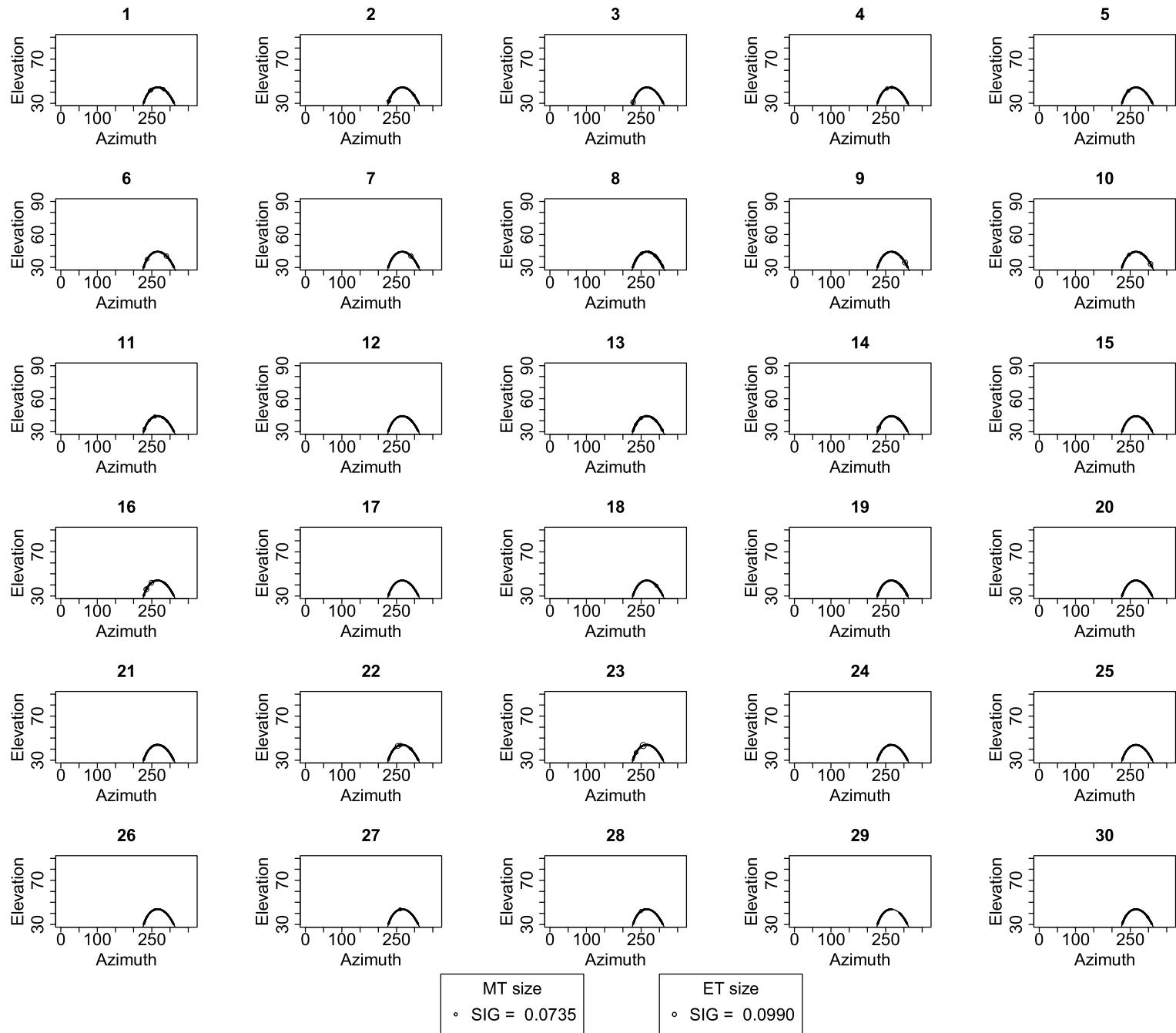


Figure S317 PEA plots comparison of Sigmaphi for G26 on September 1–30, 2017 at SJCU station

PEA plots (G27)

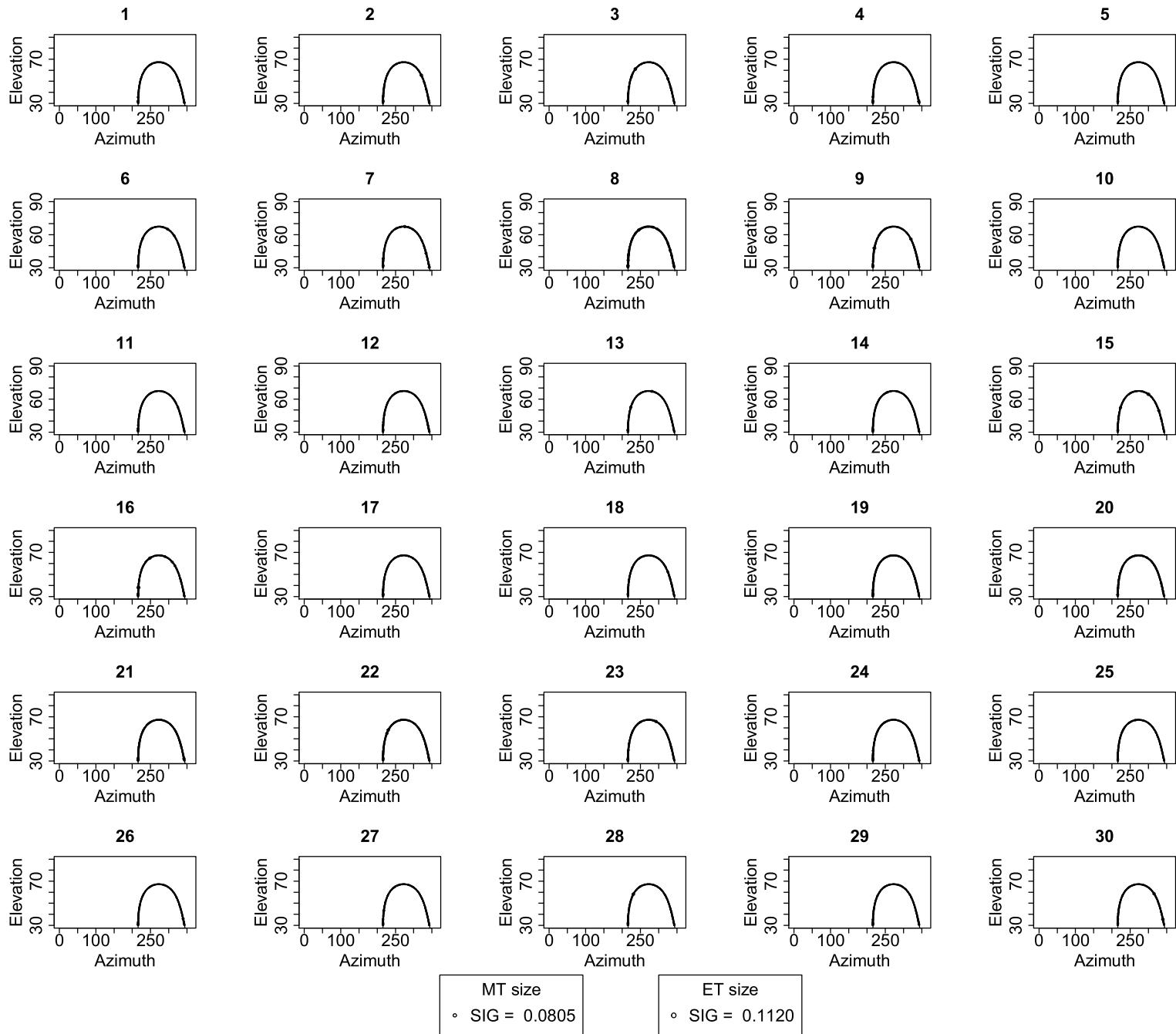


Figure S318 PEA plots comparison of Sigmaphi for G27 on September 1–30, 2017 at SJCU station

PEA plots (G28)

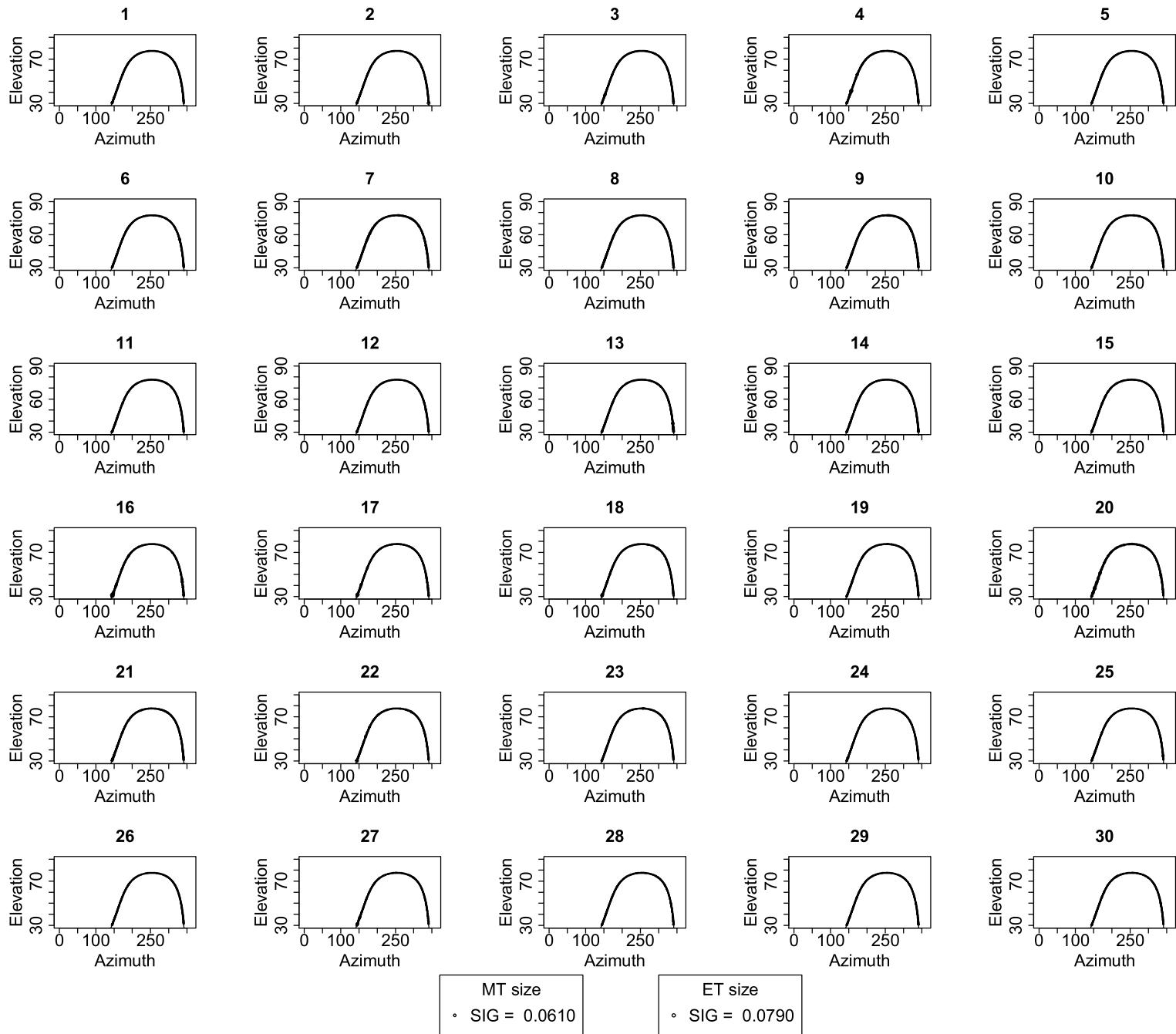


Figure S319 PEA plots comparison of Sigmaphi for G28 on September 1–30, 2017 at SJCU station

PEA plots (G29)

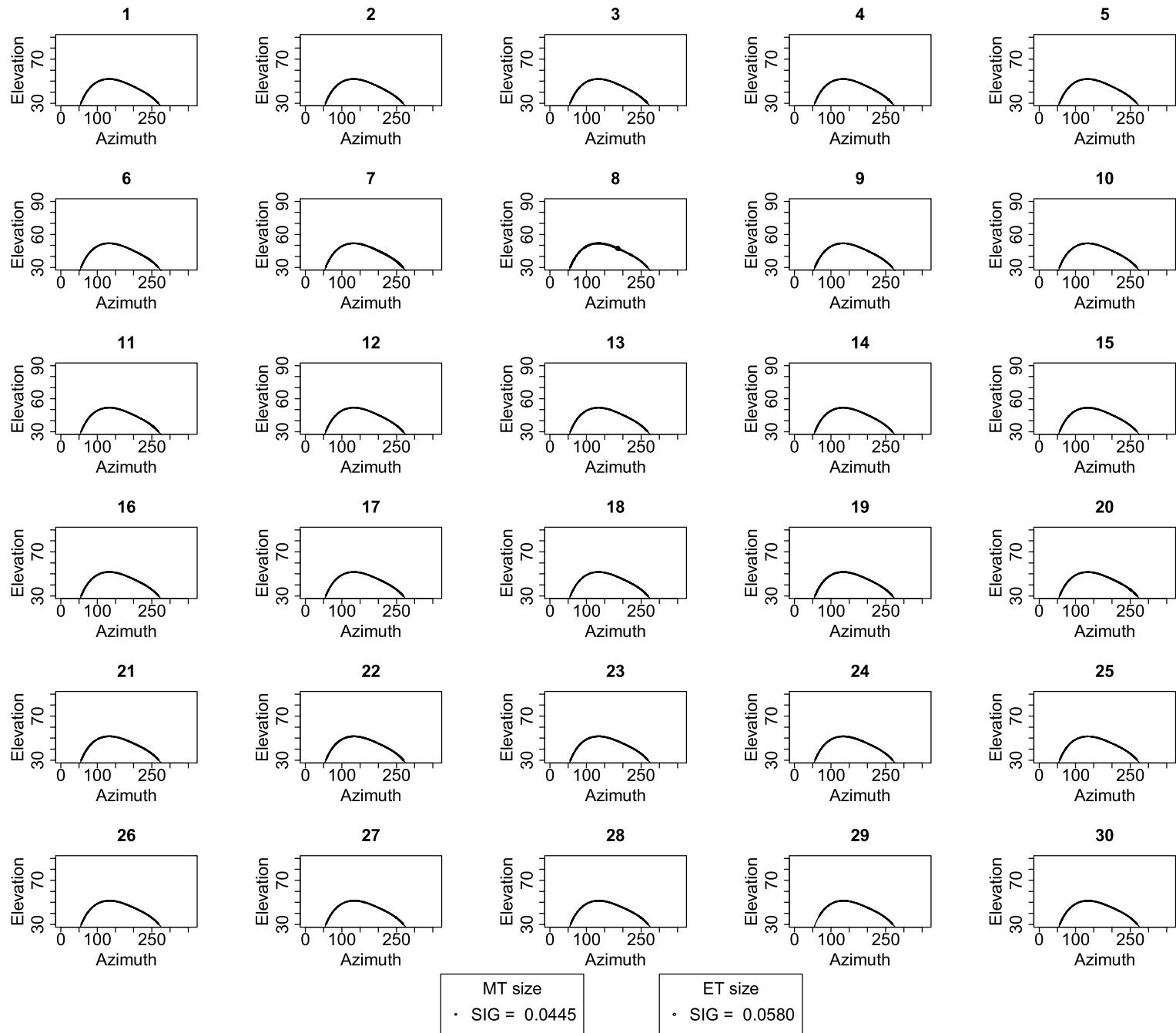


Figure S320 PEA plots comparison of Sigmaphi for G29 on September 1–30, 2017 at SJCU station

PEA plots (G30)

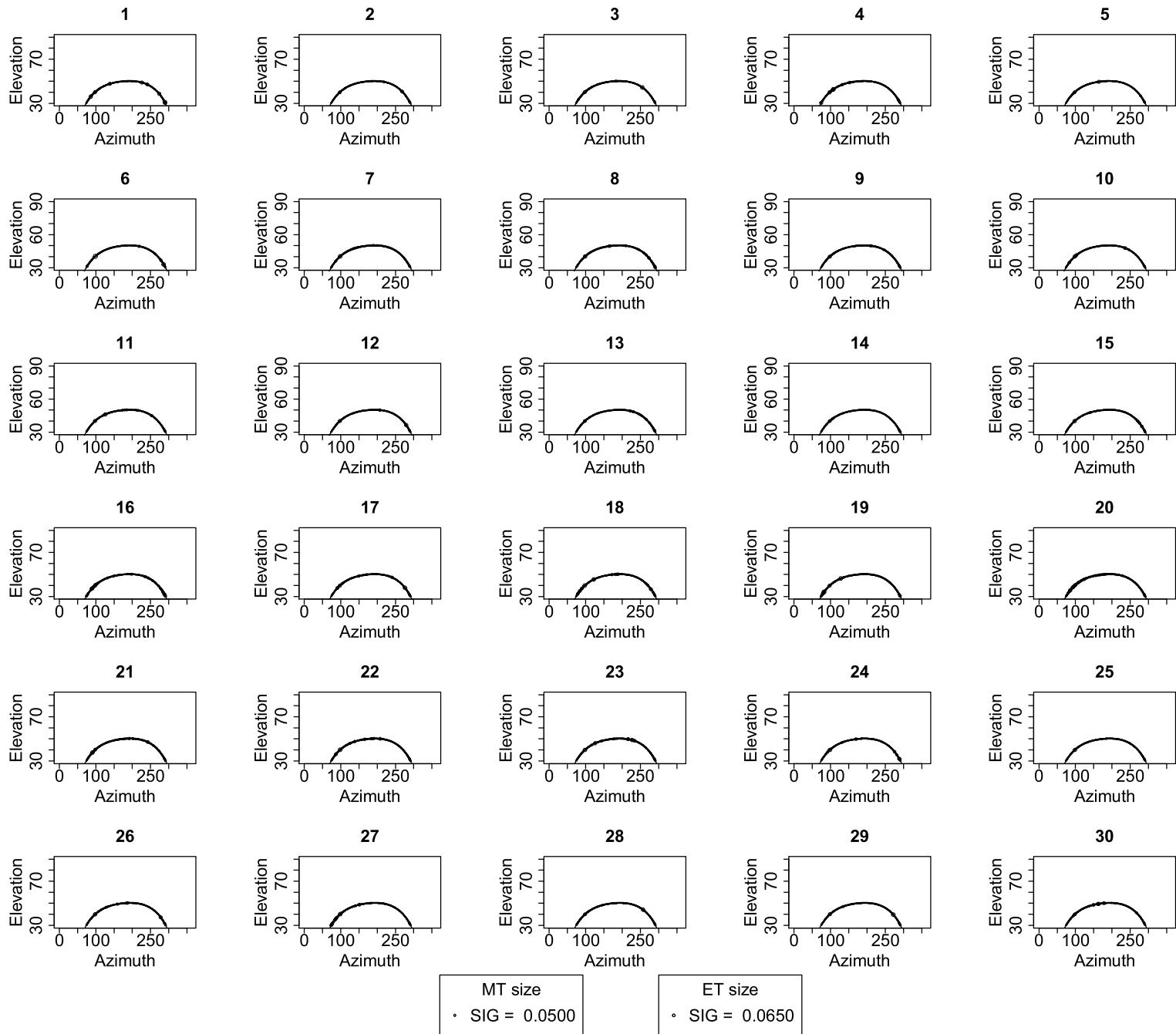


Figure S321 PEA plots comparison of Sigmaphi for G30 on September 1–30, 2017 at SJCU station

PEA plots (G31)

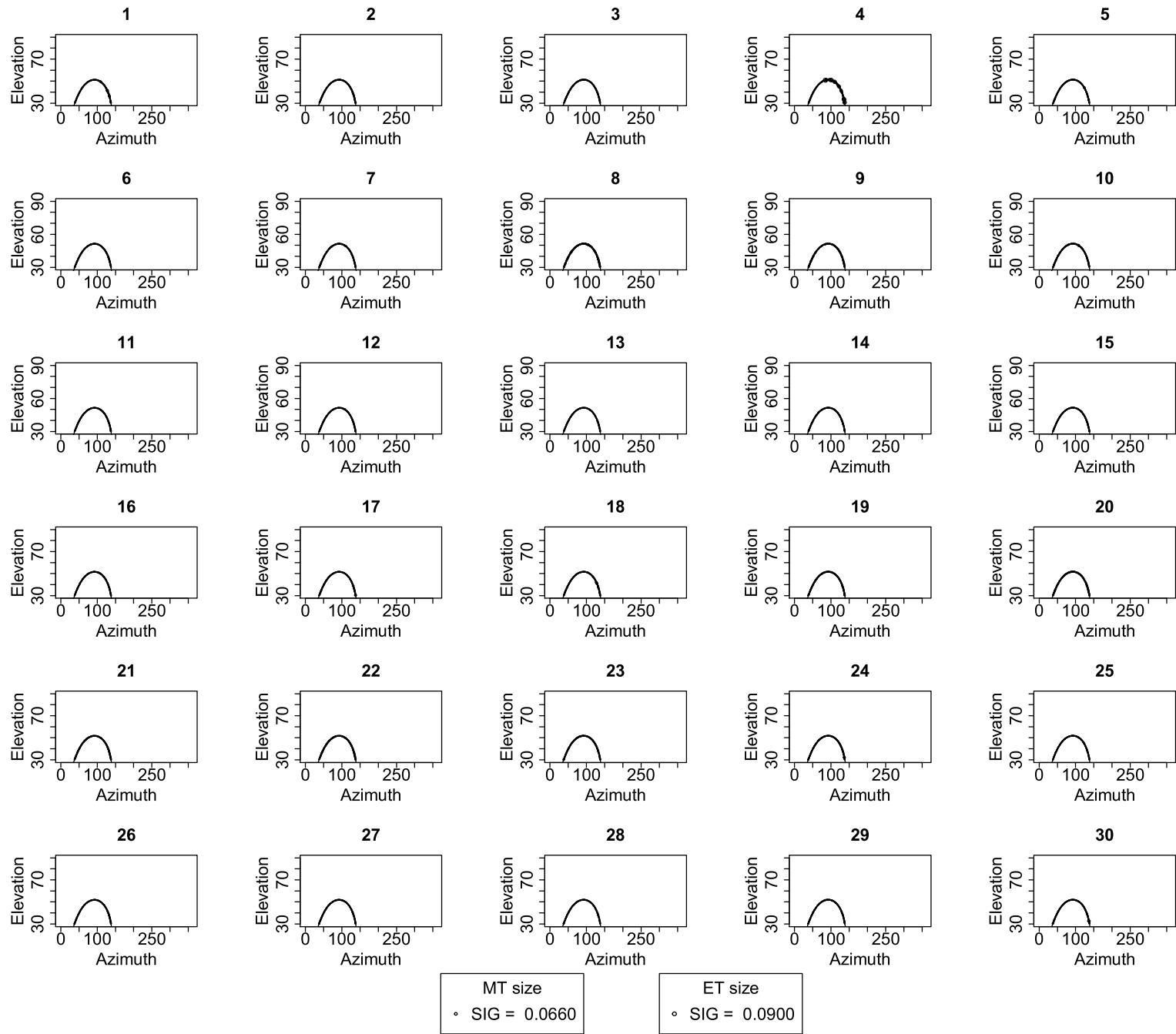


Figure S322 PEA plots comparison of Sigmaphi for G31 on September 1–30, 2017 at SJCU station

PEA plots (G32)

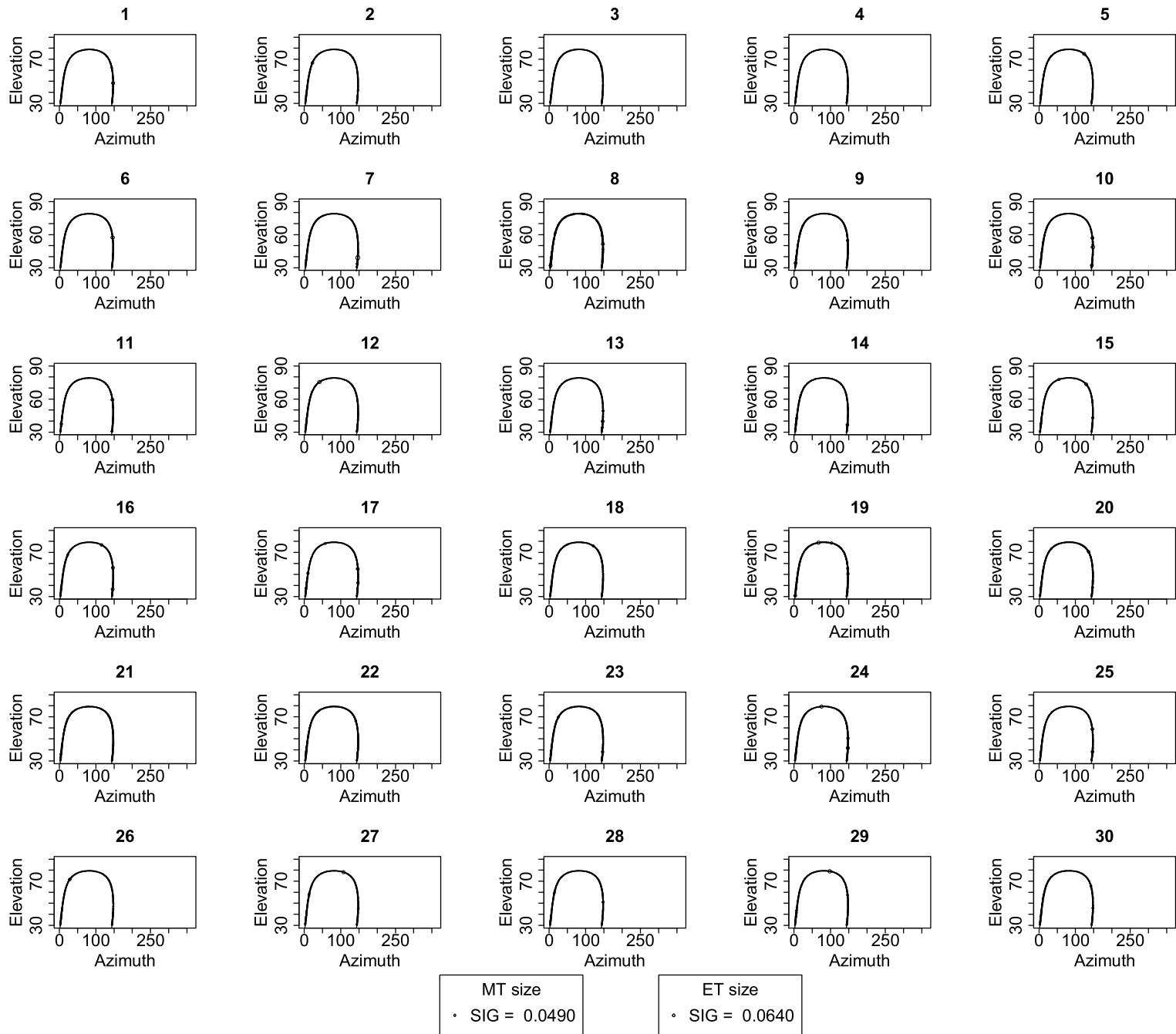


Figure S323 PEA plots comparison of Sigmaphi for G32 on September 1–30, 2017 at SJCU station

Appendix 2: Supplementary tables for Chapter 6

Changes of height and 3D positioning errors through the observation removal strategy based on mild threshold (MT) and extreme threshold (ET) during 14 days (2017-09-07, 2017-09-08, 2017-09-13 at SAOOP station, 2017-09-04, 2017-09-07, 2017-09-08, 2017-09-13 at SJCU station and 2016-02-18, 2016-04-02, 2016-04-13, 2016-05-09, 2016-06-06, 2016-07-28, 2016-10-13 at SNAOP station) are presented in Appendix 2. Table S2 shows the table and page numbers for each station and threshold type. In each of Table S3-Table S30, 10 permutations and combinations of parameters are evaluated.

Table S2 Table and page number range for each station and threshold type

Station name	MT	ET
SAOOP	S3-5 A326-327	S17-19 A333-334
SJCU	S6-9 A327-329	S20-23 A334-336
SNAOP	S10-16 A329-332	S24-30 A336-339

Table S3 Change of the height and 3D positioning errors through the observation removal strategy based on MT as represented by the RMSE at SAOOP on 2017-09-07. Improved RMSEs are highlighted in bold.

Station	Date	Original RMSE		Permutations and combinations	Observation-removed RMSE	
		height	3D		height	3D
SAOOP	20170907	0.0144	0.0180	σ_ϕ	0.0145	0.0175
				S4	0.0170	0.0203
		$\sigma_\phi, S4$		$\sigma_\phi, S4$	0.0214	0.0234
				ROTI	0.0115	0.0192
		MP2		MP2	0.0044	0.0057
				MP1	0.0270	0.0307
		MP2, ROTI		MP2, ROTI	0.0031	0.0050
				MP1, ROTI	0.0073	0.0078
		MP1, MP2		MP1, MP2	0.0015	0.0036
				MP1, MP2, ROTI	0.0014	0.0042

Table S4 Change of the height and 3D positioning errors through the observation removal strategy based on MT as represented by the RMSE at SAOOP on 2017-09-08. Improved RMSEs are highlighted in bold.

Station	Date	Original RMSE		Permutations and combinations	Observation-removed RMSE	
		height	3D		height	3D
SAOOP	20170908	0.6245	0.6422	σ_ϕ	0.0981	0.1255
				S4	0.3661	0.4013
		$\sigma_\phi, S4$		$\sigma_\phi, S4$	0.1046	0.1261
				ROTI	0.1828	0.2087
		MP2		MP2	0.6771	0.6954
				MP1	0.4566	0.4961
		MP2, ROTI		MP2, ROTI	0.0718	0.0780
				MP1, ROTI	0.1756	0.1979
		MP1, MP2		MP1, MP2	0.7069	0.7238
				MP1, MP2, ROTI	0.0885	0.0946

Table S5 Change of the height and 3D positioning errors through the observation removal strategy based on MT as represented by the RMSE at SAOOP on 2017-09-08. Improved RMSEs are highlighted in bold.

Station	Date	Original RMSE		Permutations and combinations	Observation-removed RMSE	
		height	3D		height	3D
SAOOP	20170913	0.1395	0.1581	σ_ϕ	0.0345	0.0518
				S4	0.0283	0.0321
				$\sigma_\phi, S4$	0.0248	0.0259
				ROTI	0.0172	0.0308
				MP2	0.1012	0.1573
				MP1	0.0559	0.0635
				MP2, ROTI	0.0182	0.0210
				MP1, ROTI	0.0345	0.0360
				MP1, MP2	0.0880	0.1472
				MP1, MP2, ROTI	0.0270	0.0289

Table S6 Change of the height and 3D positioning errors through the observation removal strategy based on MT as represented by the RMSE at SJCU on 2017-09-04. Improved RMSEs are highlighted in bold.

Station	Date	Original RMSE		Permutations and combinations	Observation-removed RMSE	
		height	3D		height	3D
SJCU	20170904	0.0260	0.0345	σ_ϕ	0.0435	0.0452
				S4	0.0205	0.0279
				$\sigma_\phi, S4$	0.0429	0.0460
				ROTI	0.0248	0.0330
				MP2	0.0340	0.0465
				MP1	0.0254	0.0276
				MP2, ROTI	0.0342	0.0474
				MP1, ROTI	0.0262	0.0284
				MP1, MP2	0.0418	0.0490
				MP1, MP2, ROTI	0.0417	0.0492

Table S7 Change of the height and 3D positioning errors through the observation removal strategy based on MT as represented by the RMSE at SJCU on 2017-09-07. Improved RMSEs are highlighted in bold.

Station	Date	Original RMSE		Permutations and combinations	Observation-removed RMSE	
		height	3D		height	3D
SJCU	20170907	0.0247	0.0311	σ_ϕ	0.0285	0.0308
				S4	0.0313	0.0321
				$\sigma_\phi, S4$	0.0388	0.0395
				ROTI	0.0315	0.0320
				MP2	0.0329	0.0399
				MP1	0.0298	0.0301
				MP2, ROTI	0.0339	0.0401
				MP1, ROTI	0.0300	0.0303
				MP1, MP2	0.0331	0.0373
				MP1, MP2, ROTI	0.0343	0.0373

Table S8 Change of the height and 3D positioning errors through the observation removal strategy based on MT as represented by the RMSE at SJCU on 2017-09-08. Improved RMSEs are highlighted in bold.

Station	Date	Original RMSE		Permutations and combinations	Observation-removed RMSE	
		height	3D		height	3D
SJCU	20170908	0.1355	0.3454	σ_ϕ	0.2160	0.2731
				S4	1.5847	1.6025
				$\sigma_\phi, S4$	0.2205	0.2808
				ROTI	0.2461	0.3328
				MP2	0.3595	0.3801
				MP1	0.2776	0.3248
				MP2, ROTI	0.1201	0.1418
				MP1, ROTI	0.2142	0.3107
				MP1, MP2	0.1731	0.2521
				MP1, MP2, ROTI	0.1129	0.1249

Table S9 Change of the height and 3D positioning errors through the observation removal strategy based on MT as represented by the RMSE at SJCU on 2017-09-13. Improved RMSEs are highlighted in bold.

Station	Date	Original RMSE		Permutations and combinations	Observation-removed RMSE	
		height	3D		height	3D
SJCU	20170913	0.0219	0.0329	σ_ϕ	0.0188	0.0282
				S4	0.0157	0.0269
				$\sigma_\phi, S4$	0.0193	0.0298
				ROTI	0.0646	0.0850
				MP2	0.0302	0.0564
				MP1	0.0258	0.0370
				MP2, ROTI	0.0795	0.1280
				MP1, ROTI	0.0402	0.0551
				MP1, MP2	0.0261	0.0502
				MP1, MP2, ROTI	0.0787	0.1242

Table S10 Change of the height and 3D positioning errors through the observation removal strategy based on MT as represented by the RMSE at SNA0P on 2016-02-18. Improved RMSEs are highlighted in bold.

Station	Date	Original RMSE		Permutations and combinations	Observation-removed RMSE	
		height	3D		height	3D
SNA0P	20160218	0.1699	0.2148	σ_ϕ	0.1671	0.2125
				S4	0.1877	0.2263
				$\sigma_\phi, S4$	0.1583	0.2064
				ROTI	0.2319	0.2828
				MP2	0.2433	0.2835
				MP1	0.2174	0.2651
				MP2, ROTI	0.3193	0.3426
				MP1, ROTI	0.2889	0.3164
				MP1, MP2	0.2036	0.2424
				MP1, MP2, ROTI	0.3450	0.3676

Table S11 Change of the height and 3D positioning errors through the observation removal strategy based on MT as represented by the RMSE at SNA0P on 2016-04-02. Improved RMSEs are highlighted in bold.

Station	Date	Original RMSE		Permutations and combinations	Observation-removed RMSE	
		height	3D		height	3D
SNA0P	20160402	0.0087	0.0329	σ_ϕ	0.0068	0.0280
				S4	0.0059	0.0282
				$\sigma_\phi, S4$	0.0066	0.0283
				ROTI	0.0072	0.0324
				MP2	0.0078	0.0295
				MP1	0.0064	0.0285
				MP2, ROTI	0.0070	0.0290
				MP1, ROTI	0.0054	0.0283
				MP1, MP2	0.0073	0.0291
				MP1, MP2, ROTI	0.0073	0.0289

Table S12 Change of the height and 3D positioning errors through the observation removal strategy based on MT as represented by the RMSE at SNA0P on 2016-04-13. Improved RMSEs are highlighted in bold.

Station	Date	Original RMSE		Permutations and combinations	Observation-removed RMSE	
		height	3D		height	3D
SNA0P	20160413	0.8233	0.8521	σ_ϕ	0.1799	0.2260
				S4	0.4178	0.6136
				$\sigma_\phi, S4$	0.1834	0.2262
				ROTI	0.1427	0.2025
				MP2	0.5525	0.5626
				MP1	0.8517	0.9361
				MP2, ROTI	0.1161	0.1800
				MP1, ROTI	0.0687	0.1724
				MP1, MP2	0.1997	0.2997
				MP1, MP2, ROTI	0.0801	0.1760

Table S13 Change of the height and 3D positioning errors through the observation removal strategy based on MT as represented by the RMSE at SNA0P on 2016-05-09. Improved RMSEs are highlighted in bold.

Station	Date	Original RMSE		Permutations and combinations	Observation-removed RMSE	
		height	3D		height	3D
SNA0P	20160509	0.4466	0.5796	σ_ϕ	0.3020	0.3191
				S4	0.4084	0.5487
				$\sigma_\phi, S4$	0.3018	0.3191
				ROTI	0.2238	0.2431
				MP2	0.4407	0.5573
				MP1	0.4017	0.4720
				MP2, ROTI	0.2139	0.2496
				MP1, ROTI	0.2758	0.2930
				MP1, MP2	0.2794	0.3374
				MP1, MP2, ROTI	0.2229	0.2591

Table S14 Change of the height and 3D positioning errors through the observation removal strategy based on MT as represented by the RMSE at SNA0P on 2016-06-06. Improved RMSEs are highlighted in bold.

Station	Date	Original RMSE		Permutations and combinations	Observation-removed RMSE	
		height	3D		height	3D
SNA0P	20160606	0.5636	1.1350	σ_ϕ	0.5182	0.5730
				S4	1.6784	2.0880
				$\sigma_\phi, S4$	0.6953	0.7354
				ROTI	0.1968	0.2298
				MP2	2.0577	2.3840
				MP1	1.0227	1.4342
				MP2, ROTI	0.3771	0.3993
				MP1, ROTI	0.1517	0.1971
				MP1, MP2	1.7578	2.1342
				MP1, MP2, ROTI	0.3778	0.4000

Table S15 Change of the height and 3D positioning errors through the observation removal strategy based on MT as represented by the RMSE at SNA0P on 2016-07-28. Improved RMSEs are highlighted in bold.

Station	Date	Original RMSE		Permutations and combinations	Observation-removed RMSE	
		height	3D		height	3D
SNA0P	20160728	0.0099	0.0207	σ_ϕ	0.0105	0.0309
				S4	0.0091	0.0204
				$\sigma_\phi, S4$	0.0122	0.0274
				ROTI	0.0105	0.0213
				MP2	0.0151	0.0352
				MP1	0.0136	0.0301
				MP2, ROTI	0.0168	0.0356
				MP1, ROTI	0.0131	0.0300
				MP1, MP2	0.0147	0.0356
				MP1, MP2, ROTI	0.0145	0.0354

Table S16 Change of the height and 3D positioning errors through the observation removal strategy based on MT as represented by the RMSE at SNA0P on 2016-10-13. Improved RMSEs are highlighted in bold.

Station	Date	Original RMSE		Permutations and combinations	Observation-removed RMSE	
		height	3D		height	3D
SNA0P	20161013	0.0010	0.0228	σ_ϕ	0.0247	0.0507
				S4	0.0023	0.0344
				$\sigma_\phi, S4$	0.0256	0.0518
				ROTI	0.0197	0.0624
				MP2	0.0246	0.0625
				MP1	0.0039	0.0326
				MP2, ROTI	0.0121	0.0568
				MP1, ROTI	0.0257	0.0669
				MP1, MP2	0.0307	0.0694
				MP1, MP2, ROTI	0.0171	0.0564

Table S17 Change of the height and 3D positioning errors through the observation removal strategy based on MT as represented by the RMSE at SAOOP on 2017-09-07. Improved RMSEs are highlighted in bold.

Station	Date	Original RMSE		Permutations and combinations	Observation-removed RMSE	
		height	3D		height	3D
SAOOP	20170907	0.0144	0.0180	σ_ϕ	0.0165	0.0204
				S4	0.0121	0.0167
				$\sigma_\phi, S4$	0.0160	0.0203
				ROTI	0.0124	0.0192
				MP2	0.0148	0.0178
				MP1	0.0175	0.0213
				MP2, ROTI	0.0130	0.0196
				MP1, ROTI	0.0179	0.0224
				MP1, MP2	0.0179	0.0215
				MP1, MP2, ROTI	0.0183	0.0226

Table S18 Change of the height and 3D positioning errors through the observation removal strategy based on MT as represented by the RMSE at SAOOP on 2017-09-08. Improved RMSEs are highlighted in bold.

Station	Date	Original RMSE		Permutations and combinations	Observation-removed RMSE	
		height	3D		height	3D
SAOOP	20170908	0.6245	0.6422	σ_ϕ	0.4126	0.4540
				S4	0.1664	0.2517
				$\sigma_\phi, S4$	0.4672	0.5482
				ROTI	0.1202	0.1464
				MP2	0.5154	0.5376
				MP1	0.5769	0.5887
				MP2, ROTI	0.1174	0.1420
				MP1, ROTI	0.1101	0.1337
				MP1, MP2	0.6117	0.6208
				MP1, MP2, ROTI	0.1069	0.1310

Table S19 Change of the height and 3D positioning errors through the observation removal strategy based on MT as represented by the RMSE at SAOOP on 2017-09-08. Improved RMSEs are highlighted in bold.

Station	Date	Original RMSE		Permutations and combinations	Observation-removed RMSE	
		height	3D		height	3D
SAOOP	20170913	0.1395	0.1581	σ_ϕ	0.0608	0.0617
				S4	0.0556	0.0657
				$\sigma_\phi, S4$	0.0387	0.0416
				ROTI	0.0165	0.0349
				MP2	0.1536	0.1683
				MP1	0.1018	0.1202
				MP2, ROTI	0.0223	0.0359
				MP1, ROTI	0.0239	0.0382
				MP1, MP2	0.1270	0.1773
				MP1, MP2, ROTI	0.0269	0.0387

Table S20 Change of the height and 3D positioning errors through the observation removal strategy based on MT as represented by the RMSE at SJCU on 2017-09-04. Improved RMSEs are highlighted in bold.

Station	Date	Original RMSE		Permutations and combinations	Observation-removed RMSE	
		height	3D		height	3D
SJCU	20170904	0.0260	0.0345	σ_ϕ	0.0265	0.0282
				S4	0.0268	0.0353
				$\sigma_\phi, S4$	0.0256	0.0272
				ROTI	0.0255	0.0339
				MP2	0.0272	0.0289
				MP1	0.0245	0.0306
				MP2, ROTI	0.0269	0.0286
				MP1, ROTI	0.0243	0.0302
				MP1, MP2	0.0270	0.0282
				MP1, MP2, ROTI	0.0268	0.0279

Table S21 Change of the height and 3D positioning errors through the observation removal strategy based on MT as represented by the RMSE at SJCU on 2017-09-07. Improved RMSEs are highlighted in bold.

Station	Date	Original RMSE		Permutations and combinations	Observation-removed RMSE	
		height	3D		height	3D
SJCU	20170907	0.0247	0.0311	σ_ϕ	0.0282	0.0298
				S4	0.0268	0.0331
				$\sigma_\phi, S4$	0.0294	0.0310
				ROTI	0.0304	0.0311
				MP2	0.0302	0.0306
				MP1	0.0292	0.0300
				MP2, ROTI	0.0308	0.0310
				MP1, ROTI	0.0290	0.0295
				MP1, MP2	0.0287	0.0291
				MP1, MP2, ROTI	0.0292	0.0295

Table S22 Change of the height and 3D positioning errors through the observation removal strategy based on MT as represented by the RMSE at SJCU on 2017-09-08. Improved RMSEs are highlighted in bold.

Station	Date	Original RMSE		Permutations and combinations	Observation-removed RMSE	
		height	3D		height	3D
SJCU	20170908	0.1355	0.3454	σ_ϕ	0.1638	0.3521
				S4	0.4893	0.5559
				$\sigma_\phi, S4$	0.1638	0.3521
				ROTI	0.1986	0.2357
				MP2	0.3026	0.4002
				MP1	0.0632	0.0839
				MP2, ROTI	0.0386	0.0473
				MP1, ROTI	0.1979	0.2342
				MP1, MP2	0.0779	0.2221
				MP1, MP2, ROTI	0.0511	0.0572

Table S23 Change of the height and 3D positioning errors through the observation removal strategy based on MT as represented by the RMSE at SJCU on 2017-09-13. Improved RMSEs are highlighted in bold.

Station	Date	Original RMSE		Permutations and combinations	Observation-removed RMSE	
		height	3D		height	3D
SJCU	20170913	0.0219	0.0329	σ_ϕ	0.0240	0.0328
				S4	0.0153	0.0275
				$\sigma_\phi, S4$	0.0193	0.0292
				ROTI	0.0332	0.0440
				MP2	0.0264	0.0402
				MP1	0.0226	0.0339
				MP2, ROTI	0.0210	0.0383
				MP1, ROTI	0.0331	0.0440
				MP1, MP2	0.0264	0.0402
				MP1, MP2, ROTI	0.0210	0.0383

Table S24 Change of the height and 3D positioning errors through the observation removal strategy based on MT as represented by the RMSE at SNA0P on 2016-02-18. Improved RMSEs are highlighted in bold.

Station	Date	Original RMSE		Permutations and combinations	Observation-removed RMSE	
		height	3D		height	3D
SNA0P	20160218	0.1699	0.2148	σ_ϕ	0.1645	0.2167
				S4	0.1689	0.2118
				$\sigma_\phi, S4$	0.1658	0.2182
				ROTI	0.2287	0.2658
				MP2	0.1992	0.2315
				MP1	0.1703	0.2113
				MP2, ROTI	0.1983	0.2389
				MP1, ROTI	0.1909	0.2350
				MP1, MP2	0.2092	0.2577
				MP1, MP2, ROTI	0.1874	0.2322

Table S25 Change of the height and 3D positioning errors through the observation removal strategy based on MT as represented by the RMSE at SNA0P on 2016-04-02. Improved RMSEs are highlighted in bold.

Station	Date	Original RMSE		Permutations and combinations	Observation-removed RMSE	
		height	3D		height	3D
SNA0P	20160402	0.0087	0.0329	σ_ϕ	0.0059	0.0281
				S4	0.0062	0.0287
				$\sigma_\phi, S4$	0.0059	0.0281
				ROTI	0.0077	0.0326
				MP2	0.0066	0.0319
				MP1	0.0064	0.0298
				MP2, ROTI	0.0061	0.0315
				MP1, ROTI	0.0060	0.0296
				MP1, MP2	0.0069	0.0331
				MP1, MP2, ROTI	0.0064	0.0328

Table S26 Change of the height and 3D positioning errors through the observation removal strategy based on MT as represented by the RMSE at SNA0P on 2016-04-13. Improved RMSEs are highlighted in bold.

Station	Date	Original RMSE		Permutations and combinations	Observation-removed RMSE	
		height	3D		height	3D
SNA0P	20160413	0.8233	0.8521	σ_ϕ	0.0831	0.1741
				S4	0.5556	0.5855
				$\sigma_\phi, S4$	0.0788	0.1580
				ROTI	0.2972	0.3955
				MP2	0.8869	0.9404
				MP1	0.7885	0.8586
				MP2, ROTI	0.3655	0.4579
				MP1, ROTI	0.3101	0.3843
				MP1, MP2	0.8351	0.8954
				MP1, MP2, ROTI	0.3358	0.4303

Table S27 Change of the height and 3D positioning errors through the observation removal strategy based on MT as represented by the RMSE at SNA0P on 2016-05-09. Improved RMSEs are highlighted in bold.

Station	Date	Original RMSE		Permutations and combinations	Observation-removed RMSE	
		height	3D		height	3D
SNA0P	20160509	0.4466	0.5796	σ_ϕ	0.2487	0.2673
				S4	0.3828	0.5038
				$\sigma_\phi, S4$	0.2486	0.2672
				ROTI	0.2345	0.2629
				MP2	0.4373	0.6193
				MP1	0.3512	0.4326
				MP2, ROTI	0.2269	0.2532
				MP1, ROTI	0.3006	0.3249
				MP1, MP2	0.3344	0.4559
				MP1, MP2, ROTI	0.2963	0.3186

Table S28 Change of the height and 3D positioning errors through the observation removal strategy based on MT as represented by the RMSE at SNA0P on 2016-06-06. Improved RMSEs are highlighted in bold.

Station	Date	Original RMSE		Permutations and combinations	Observation-removed RMSE	
		height	3D		height	3D
SNA0P	20160606	0.5636	1.1350	σ_ϕ	0.5722	0.7549
				S4	0.5700	1.2371
				$\sigma_\phi, S4$	0.7753	1.0596
				ROTI	0.5522	0.6354
				MP2	0.6488	1.1009
				MP1	1.1436	1.6746
				MP2, ROTI	1.3408	1.4053
				MP1, ROTI	0.1624	0.3385
				MP1, MP2	0.8409	1.3097
				MP1, MP2, ROTI	1.5458	1.5911

Table S29 Change of the height and 3D positioning errors through the observation removal strategy based on MT as represented by the RMSE at SNA0P on 2016-07-28. Improved RMSEs are highlighted in bold.

Station	Date	Original RMSE		Permutations and combinations	Observation-removed RMSE	
		height	3D		height	3D
SNA0P	20160728	0.0099	0.0207	σ_ϕ	0.0111	0.0217
				S4	0.0092	0.0204
				$\sigma_\phi, S4$	0.0106	0.0215
				ROTI	0.0109	0.0214
				MP2	0.0114	0.0218
				MP1	0.0128	0.0252
				MP2, ROTI	0.0117	0.0220
				MP1, ROTI	0.0157	0.0255
				MP1, MP2	0.0126	0.0275
				MP1, MP2, ROTI	0.0126	0.0256

Table S30 Change of the height and 3D positioning errors through the observation removal strategy based on MT as represented by the RMSE at SNA0P on 2016-10-13. Improved RMSEs are highlighted in bold.

Station	Date	Original RMSE		Permutations and combinations	Observation-removed RMSE	
		height	3D		height	3D
SNA0P	20161013	0.0010	0.0228	σ_ϕ	0.0039	0.0238
				S4	0.0006	0.0230
				$\sigma_\phi, S4$	0.0042	0.0241
				ROTI	0.0036	0.0198
				MP2	0.0097	0.0289
				MP1	0.0008	0.0335
				MP2, ROTI	0.0054	0.0242
				MP1, ROTI	0.0033	0.0298
				MP1, MP2	0.0043	0.0378
				MP1, MP2, ROTI	0.0038	0.0300