Supplementary Material

1 SUPPLEMENTARY FIGURES

This document contains the full profile set provided by AOML. See sections 2.2.2 and 4.2 in the main paper for more details.

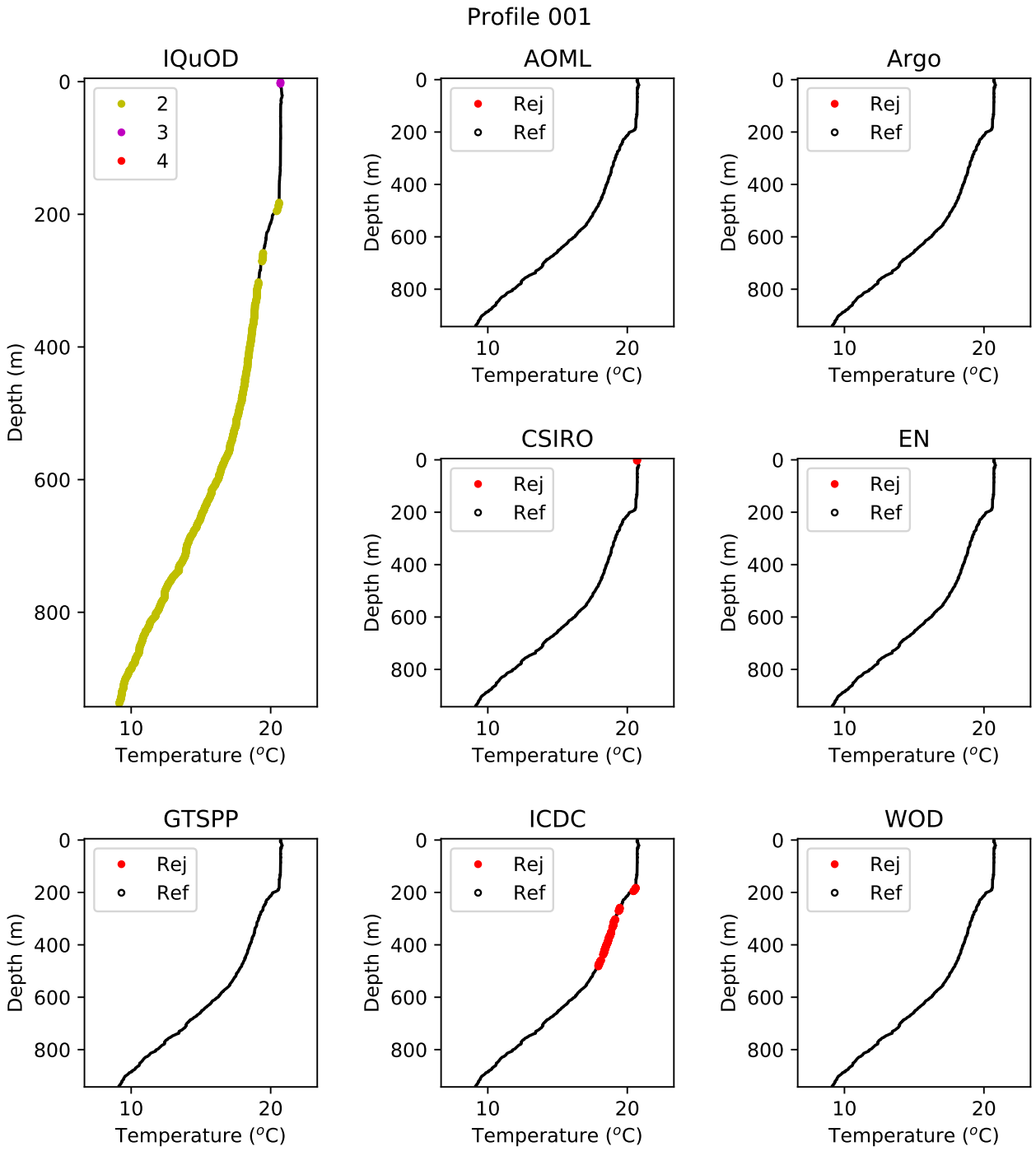

Figure S1. Description of profile: Exceeds bathymetry in the Atlantic Ocean (maximum depth = 30m).

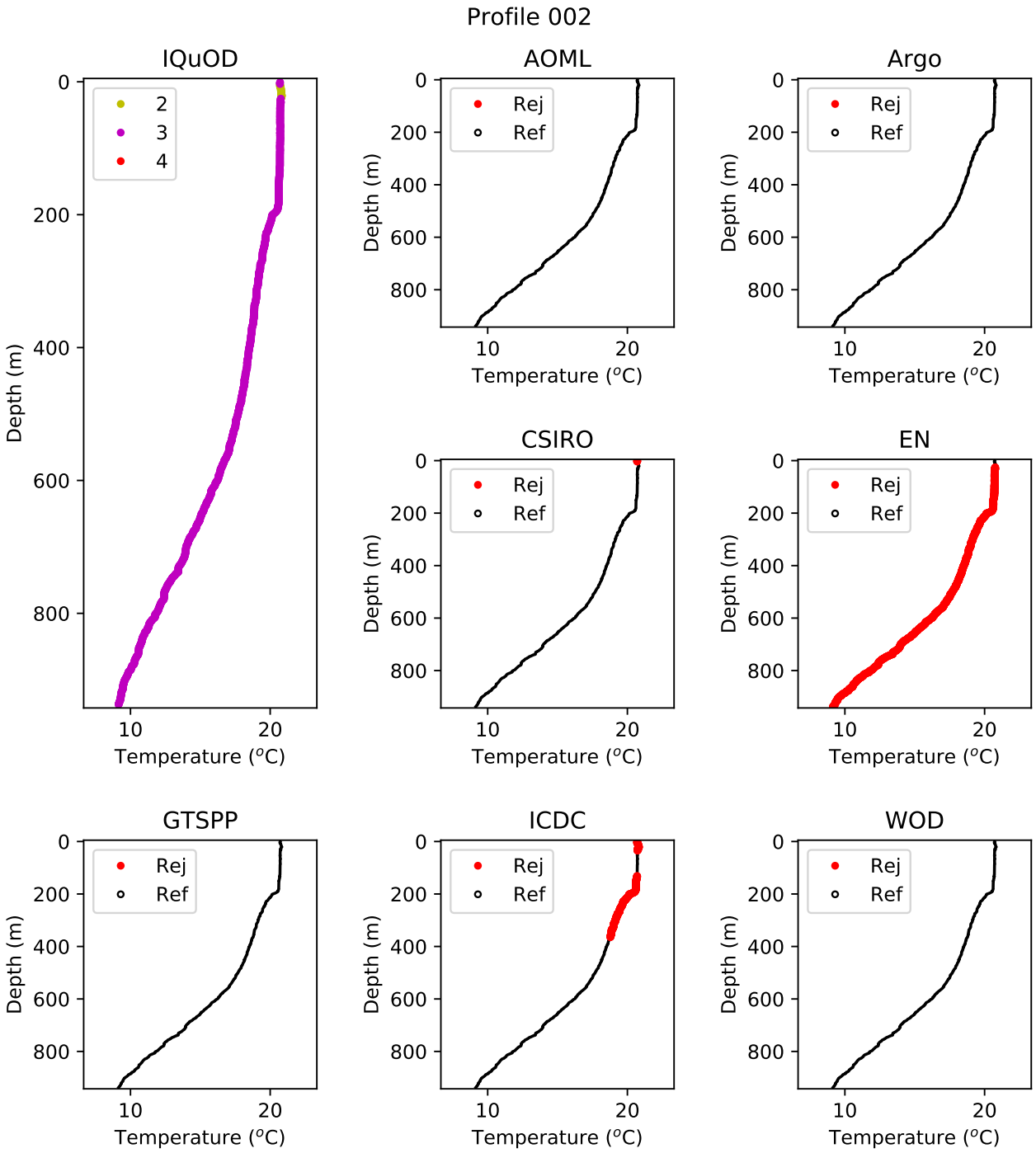

Figure S2. Description of profile: Exceeds bathymetry in the Atlantic Ocean (maximum depth = +2m i.e. on land).

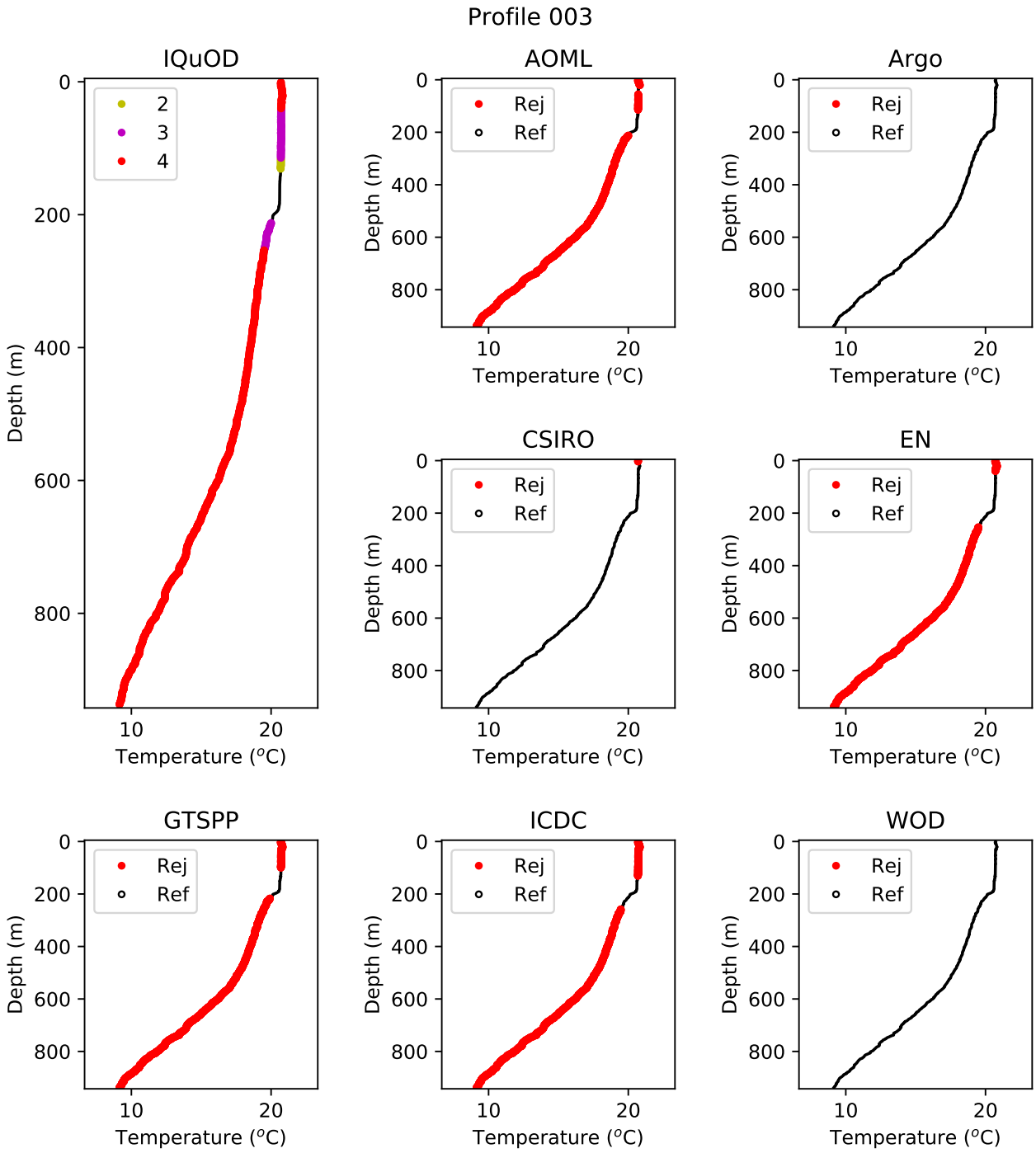

Figure S3. Description of profile: Exceeds bathymetry in the Atlantic Ocean (maximum depth = 150m).

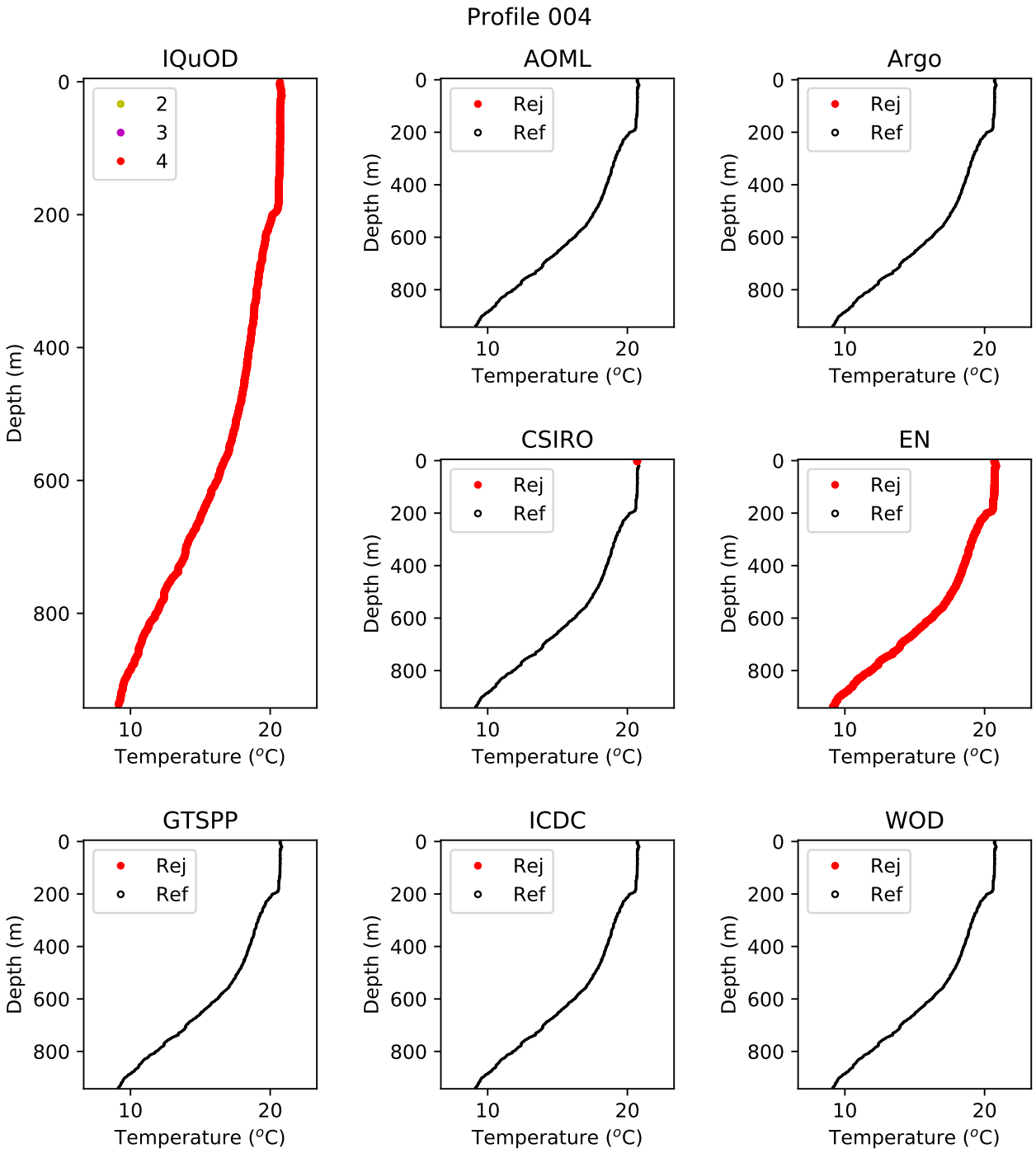

Figure S4. Description of profile: Exceeds bathymetry in the Atlantic (maximum depth = +1220m i.e. on land).

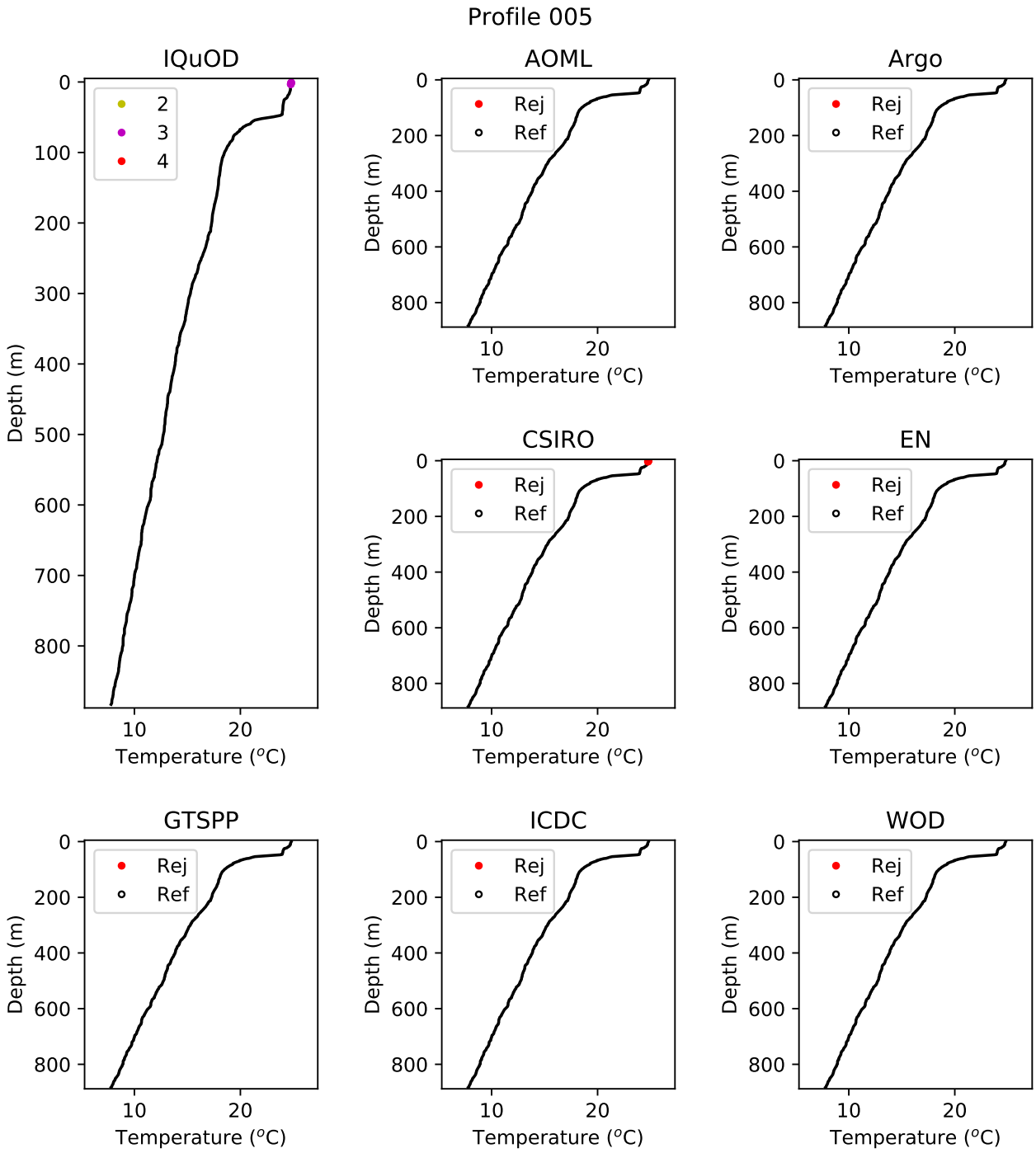

Figure S5. Description of profile: Bad date (year = 2028).

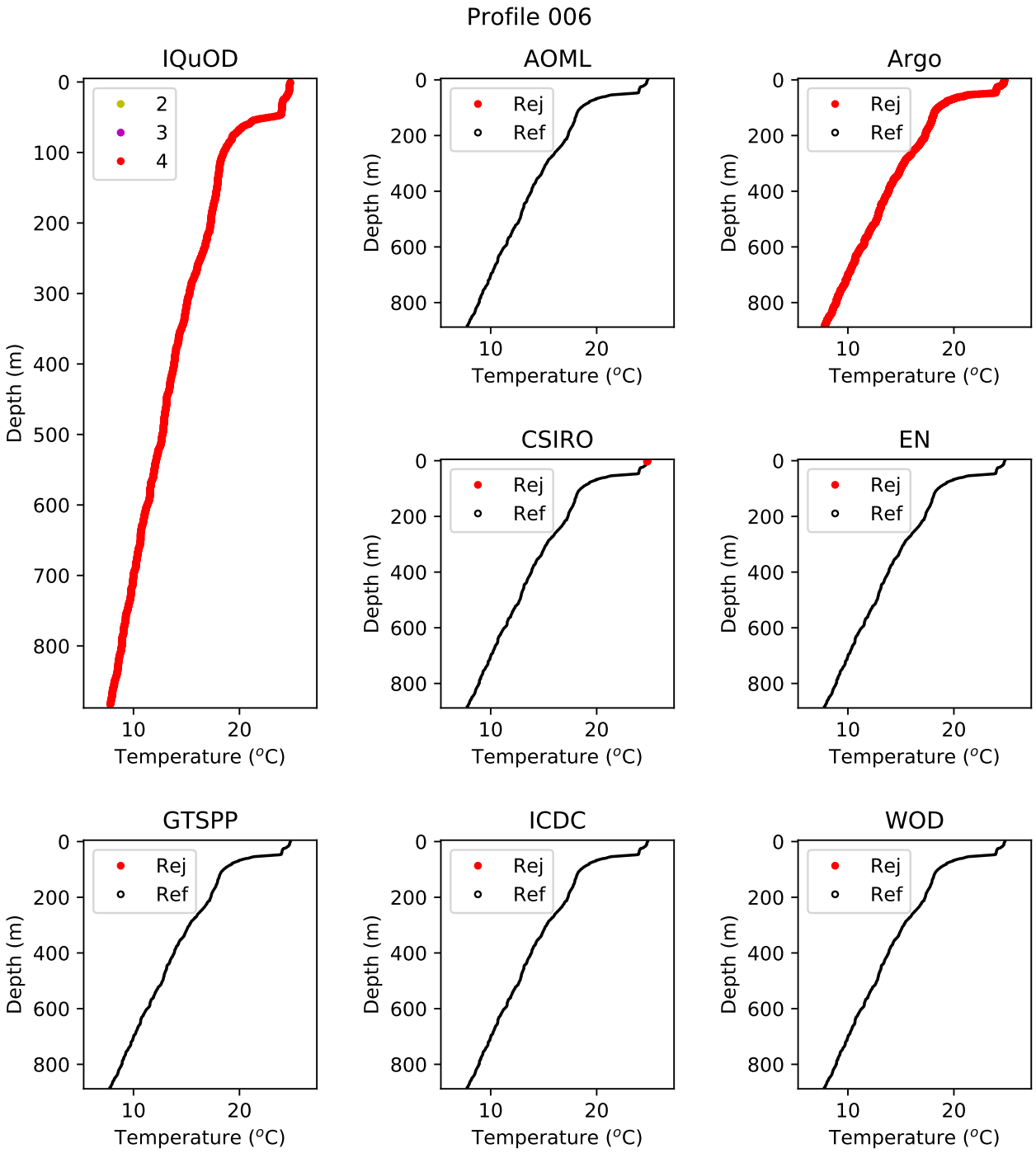

Figure S6. Description of profile: Bad date (month = 14).

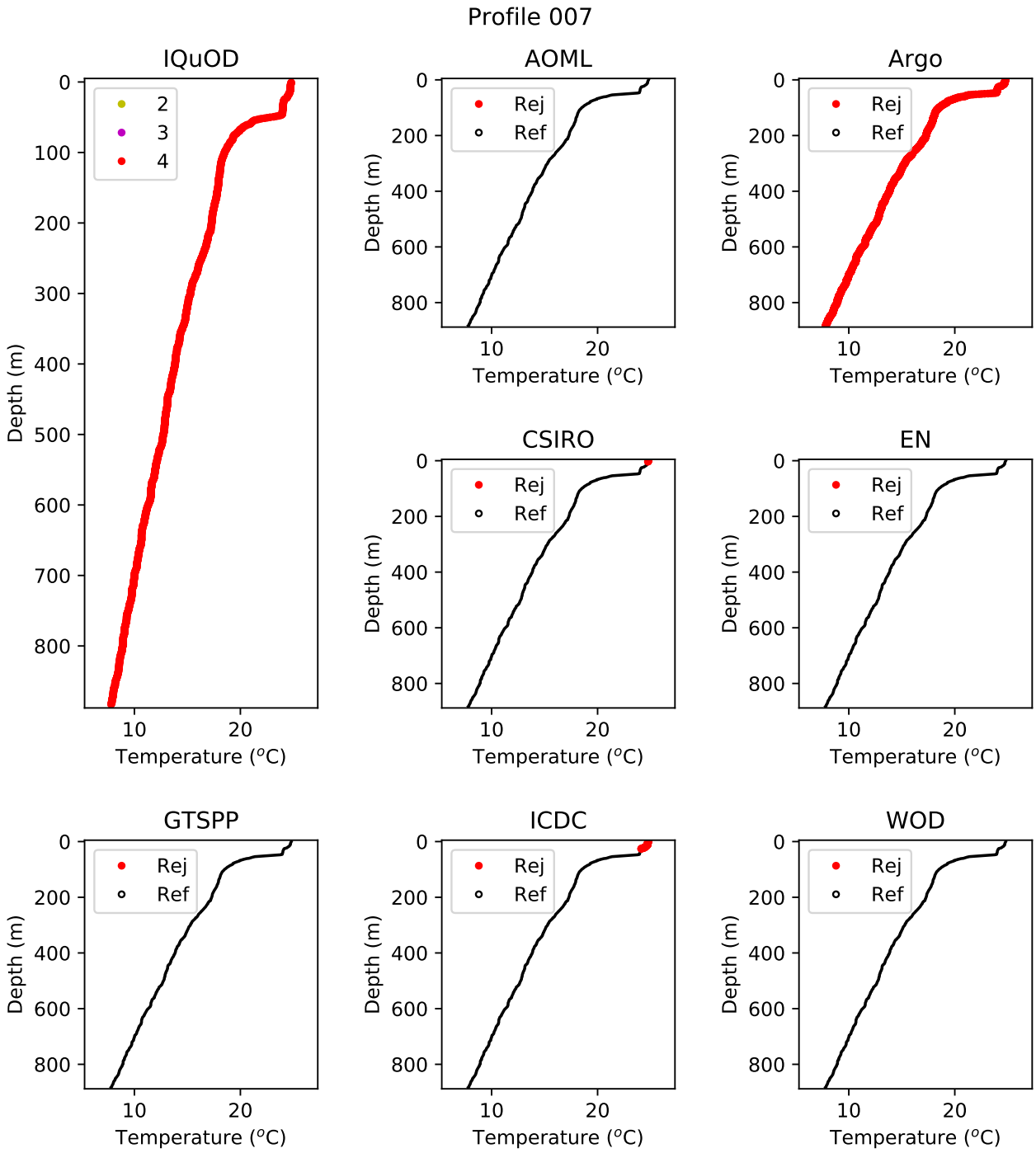

Figure S7. Description of profile: Bad date (day = 35).

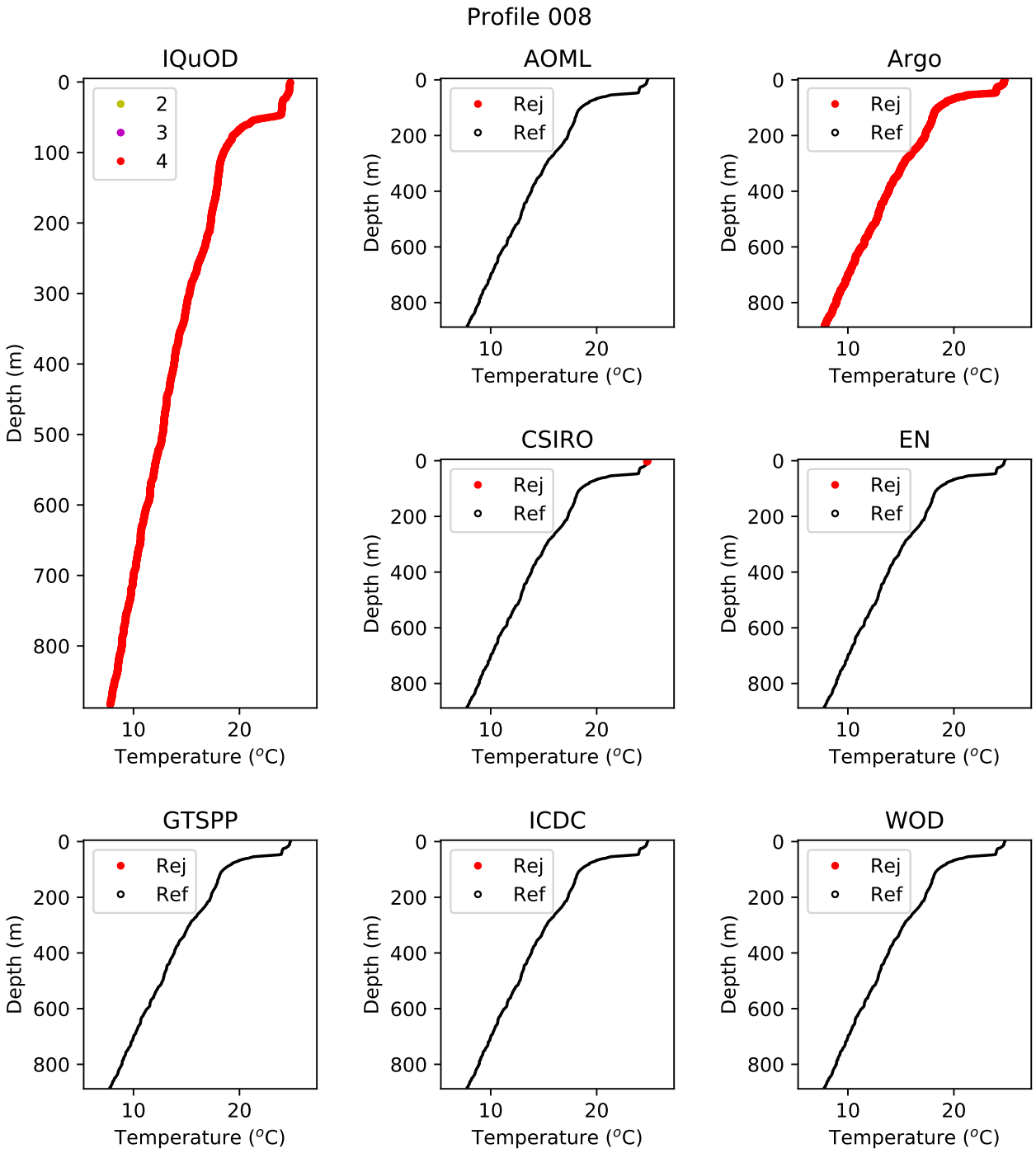

Figure S8. Description of profile: Bad date (year = 2017, month = 2, day = 29).

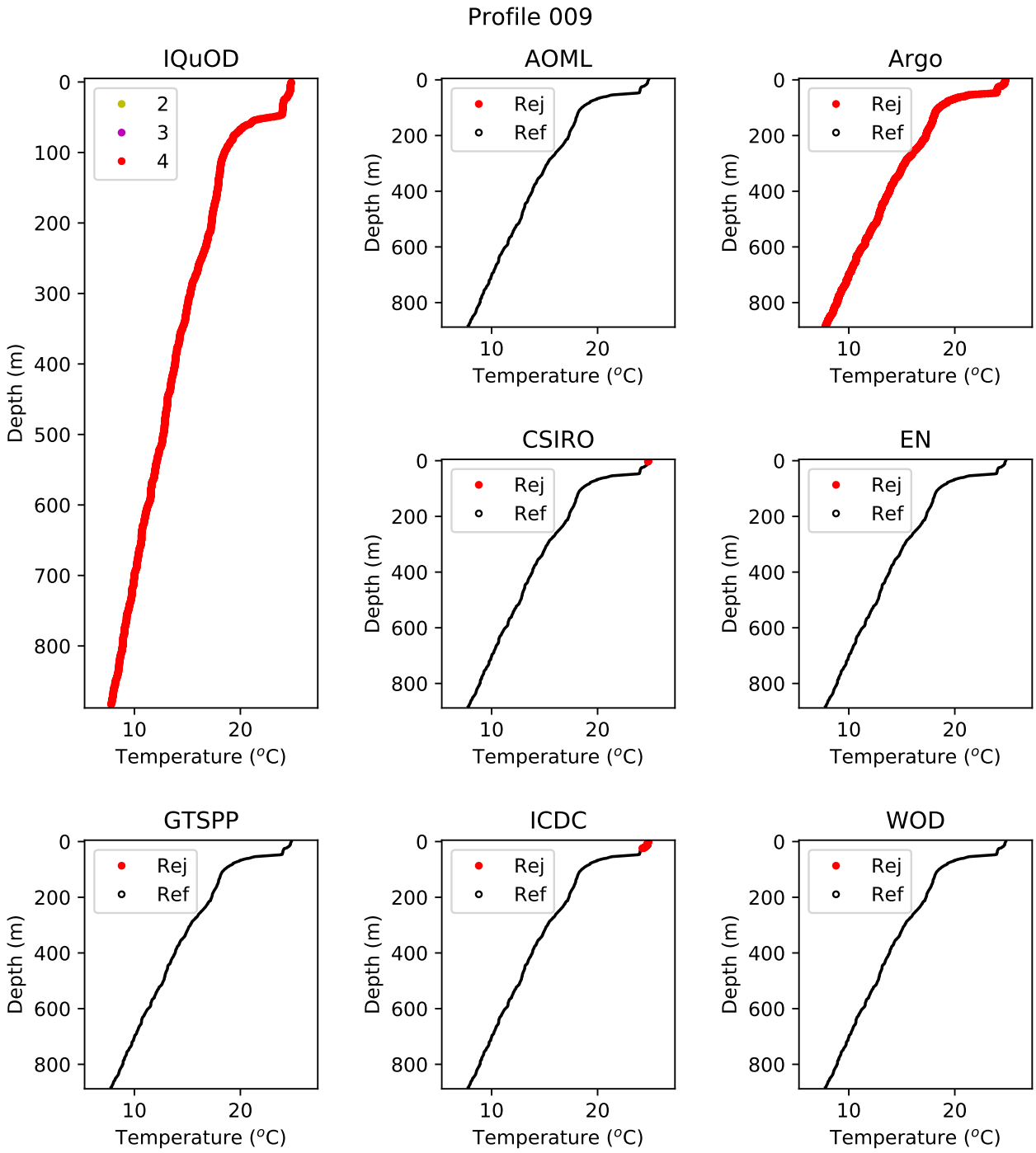

Figure S9. Description of profile: Bad date (year= 2015, month = 9, day = 31).

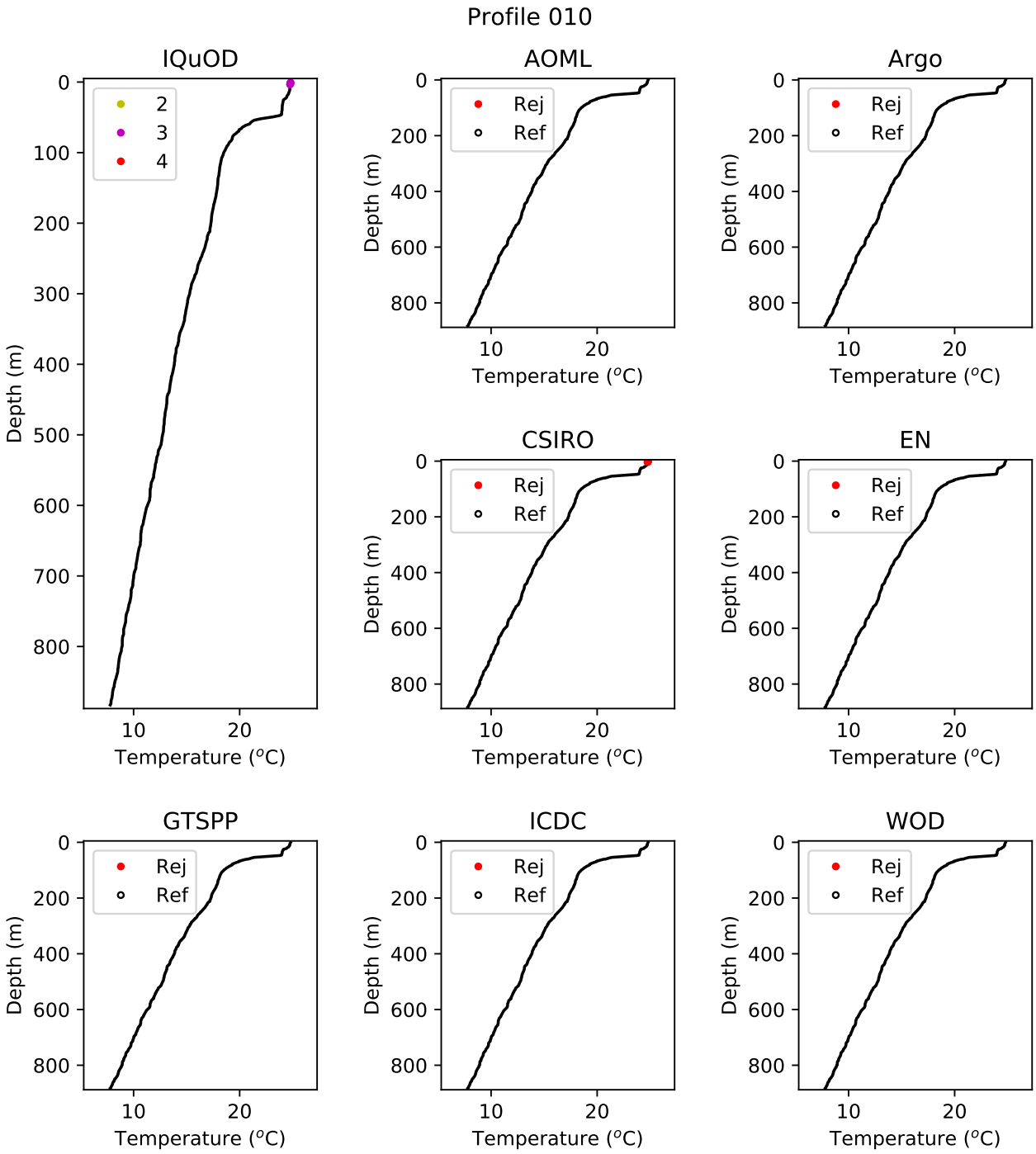

Figure S10. Description of profile: Bad date (year = 1912, which is wrong for this probe type).

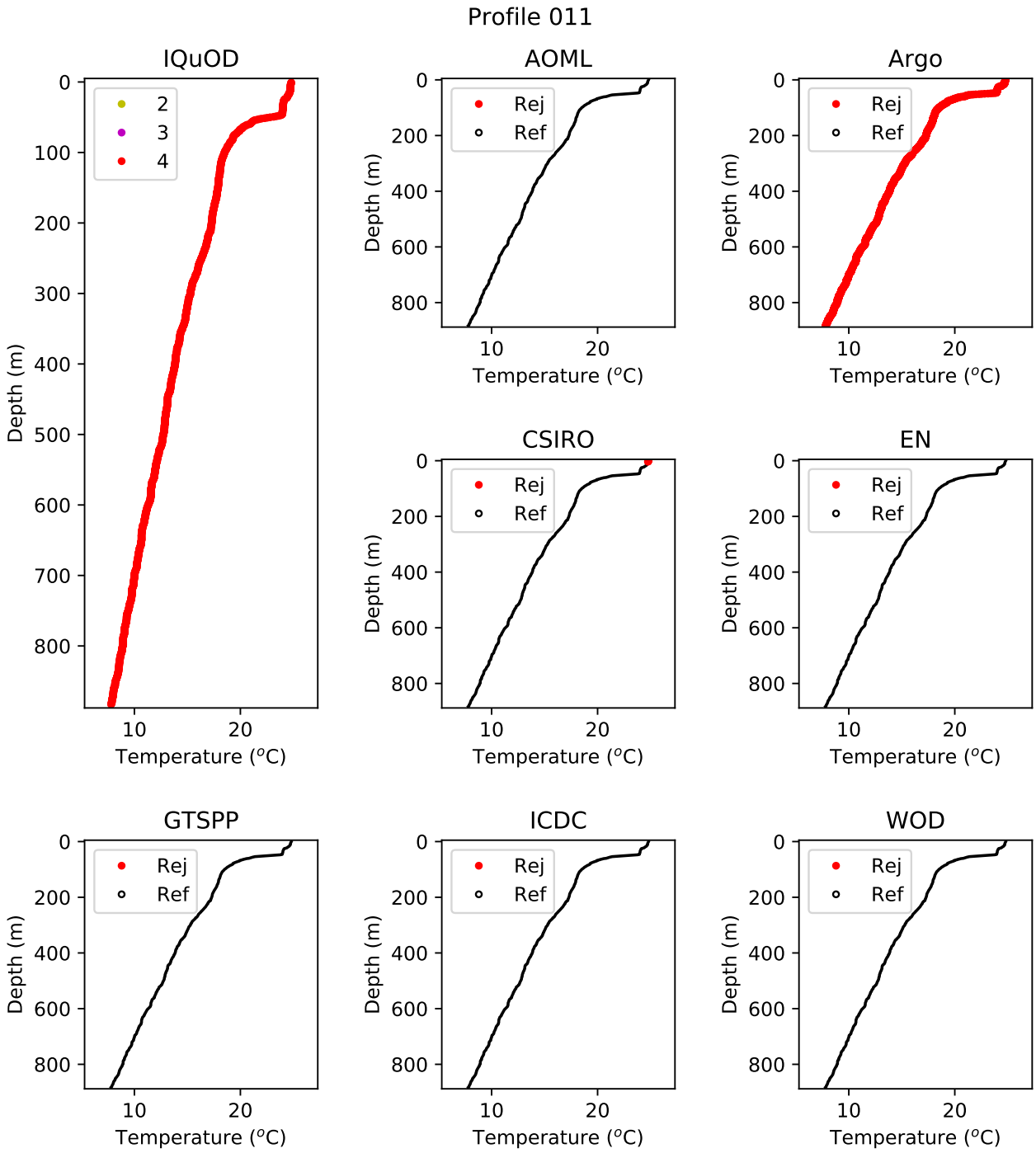

Figure S11. Description of profile: Bad date (hour = 26).

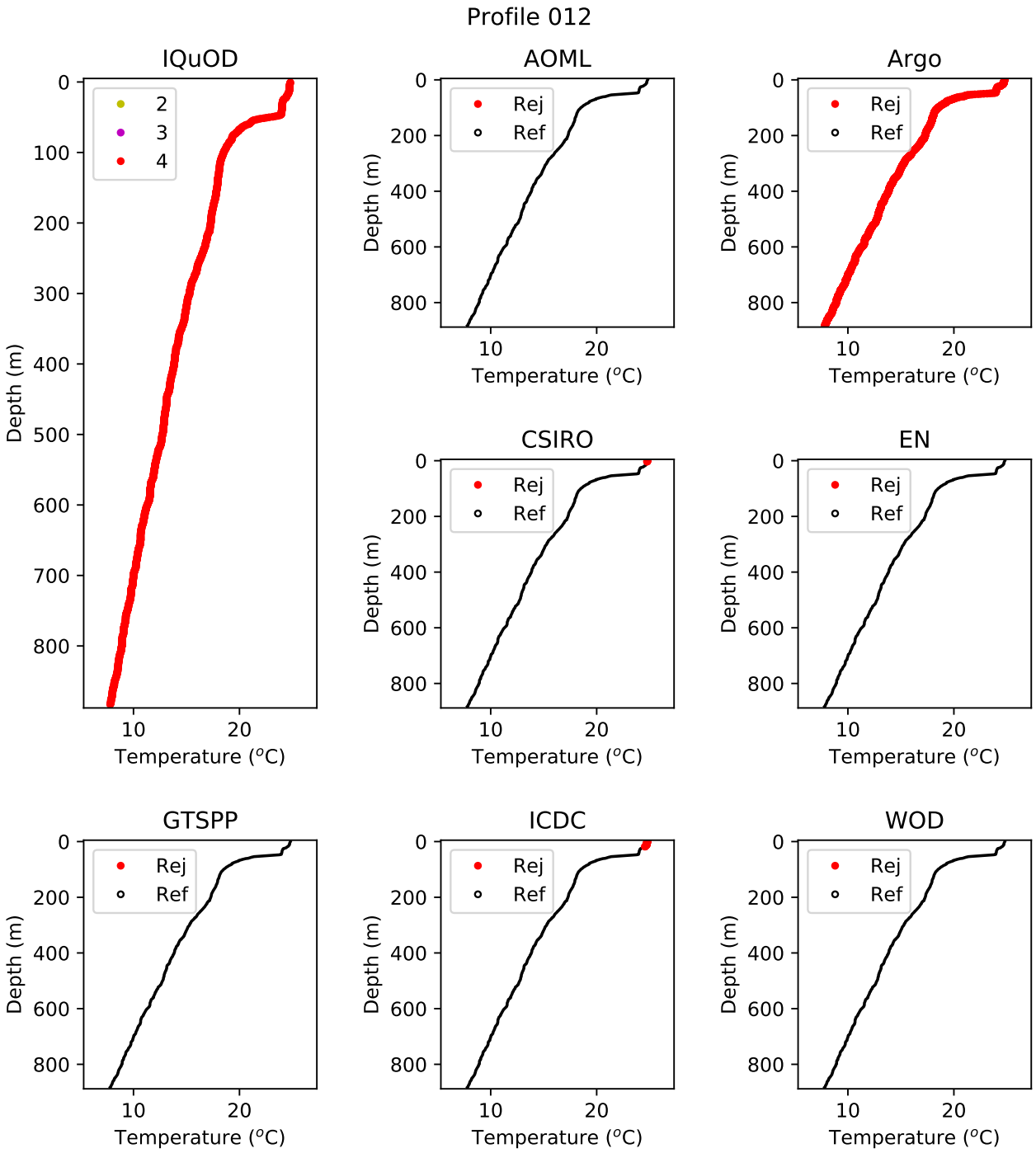

Figure S12. Description of profile: Bad date (minute = 71).

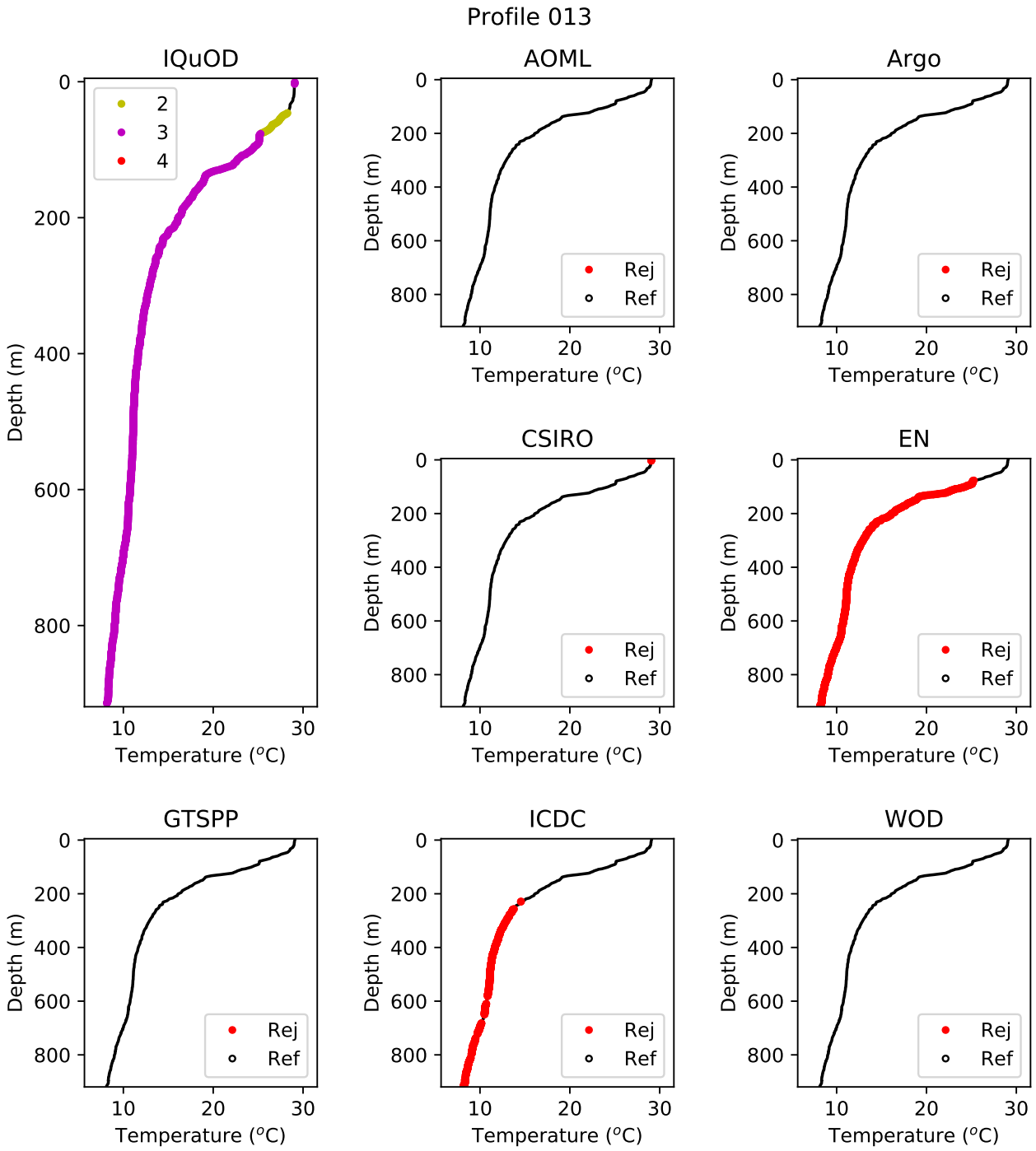

Figure S13. Description of profile: Exceeds bathymetry in the Indian Ocean (maximum depth = 20 m).

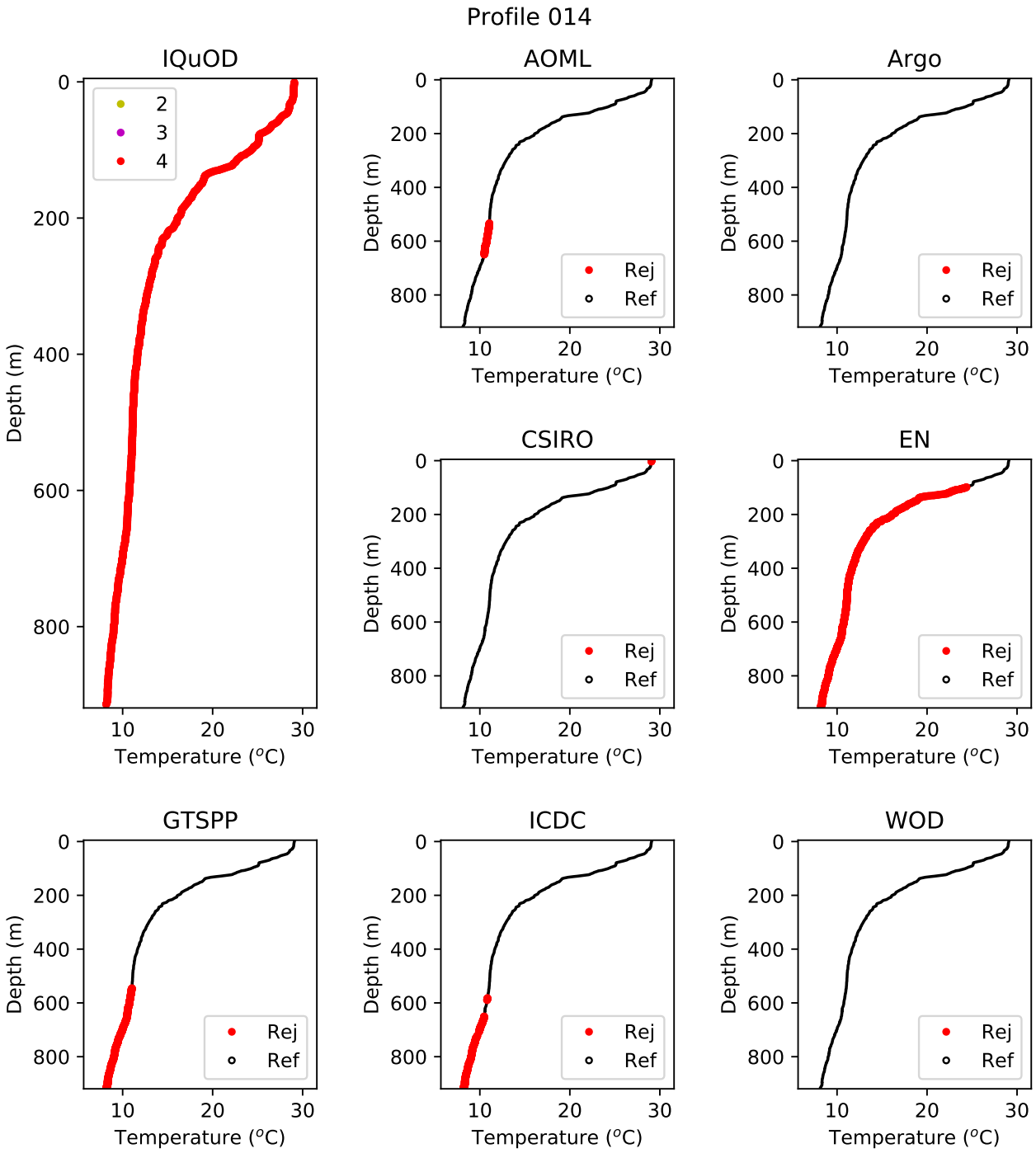

Figure S14. Description of profile: Exceeds bathymetry in the Indian Ocean (maximum depth = +430m,on land).

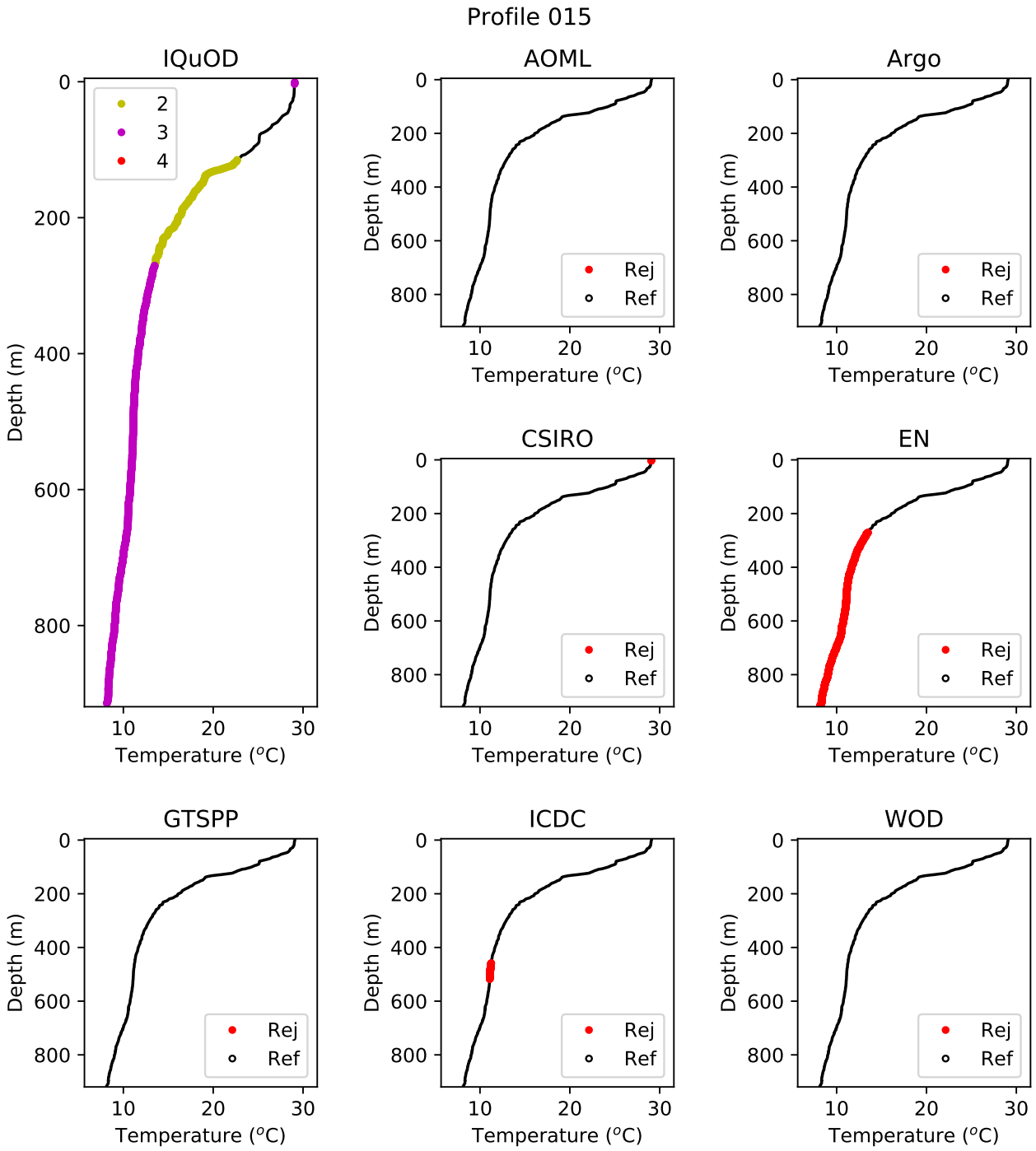

Figure S15. Description of profile: Exceeds bathymetry in the Indian Ocean (maximum depth = 100 m).

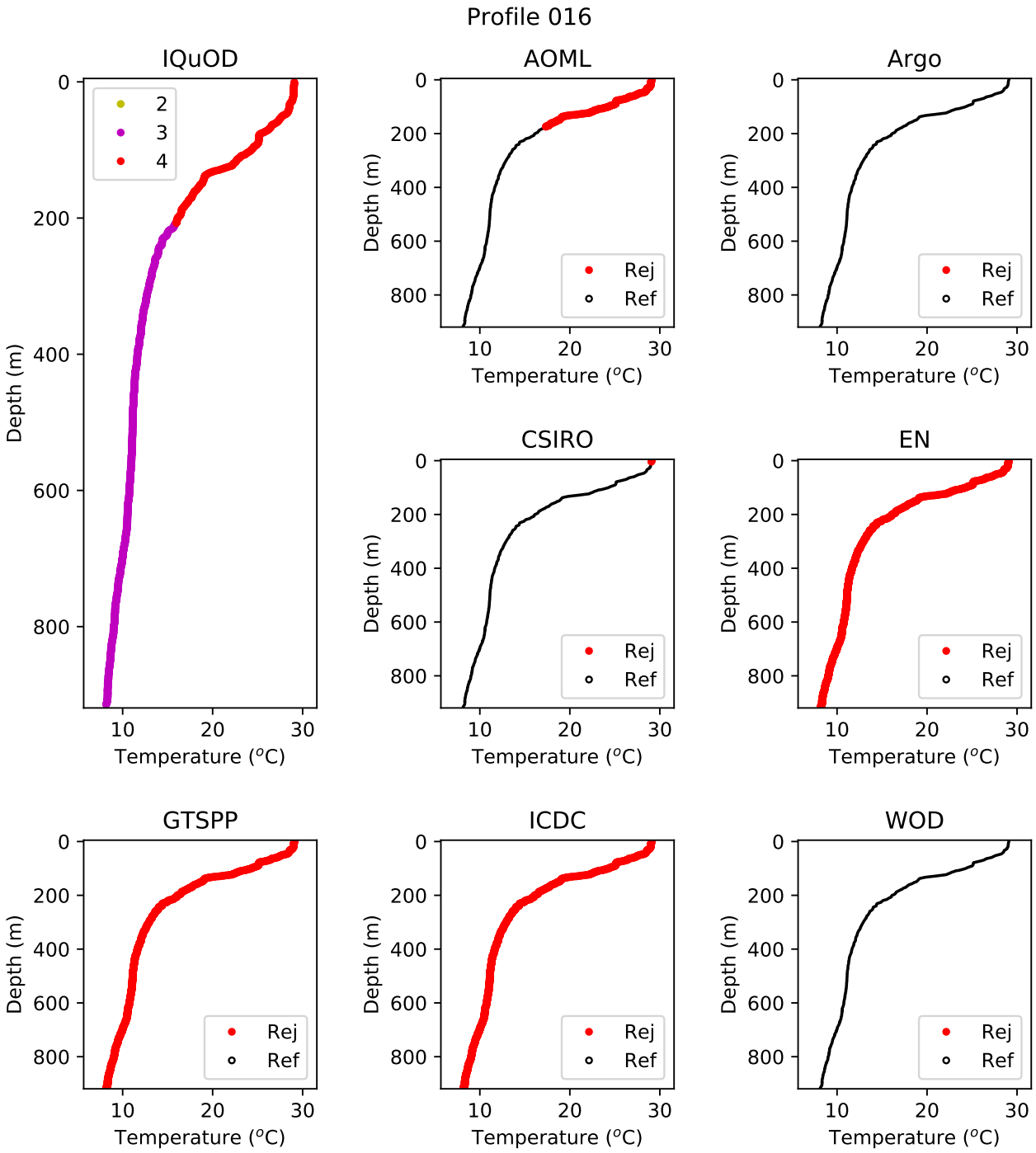

Figure S16. Description of profile: Exceeds bathymetry in the Indian Ocean (maximum depth = 100 m).

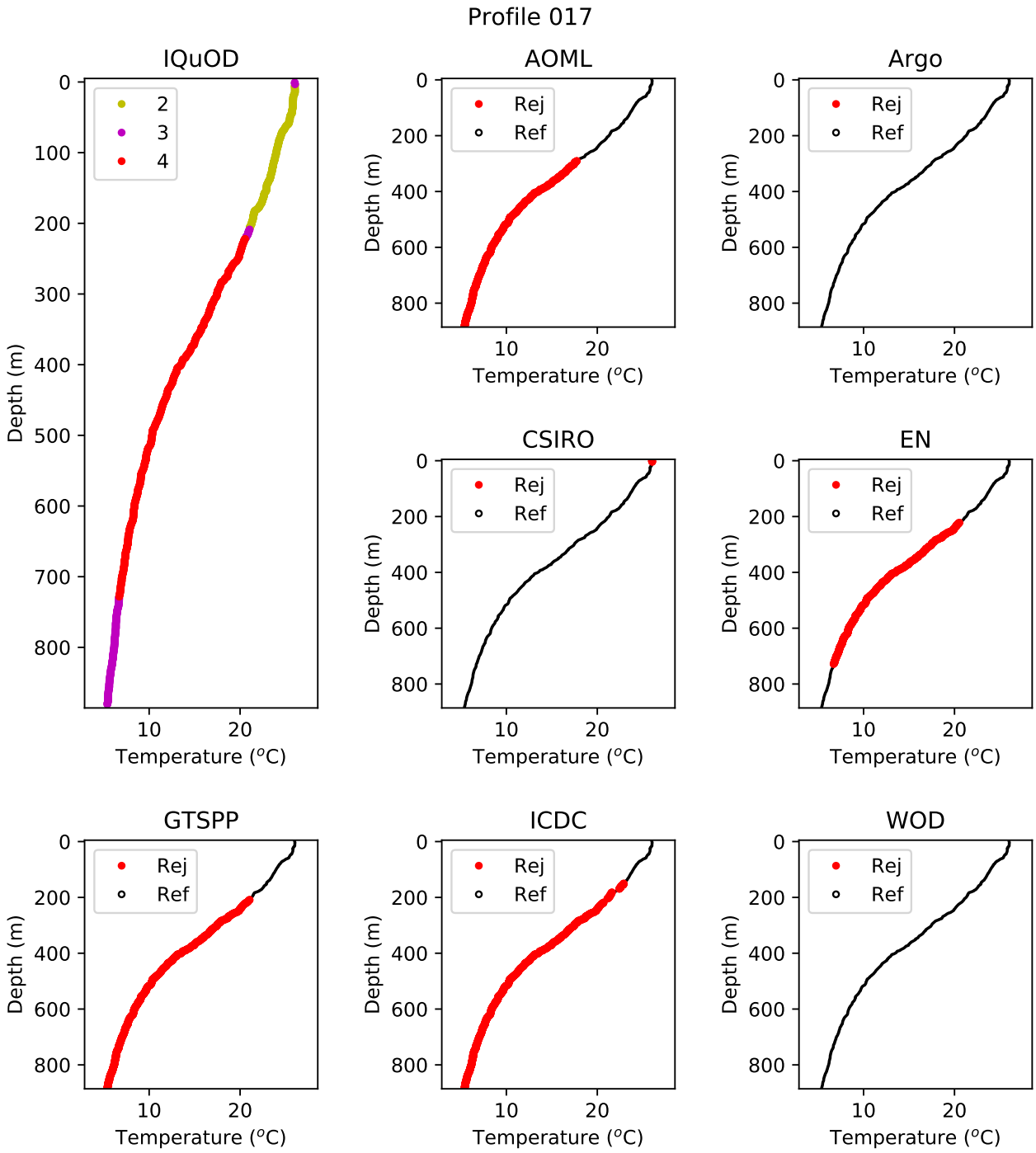

Figure S17. Description of profile: Exceeds bathymetry in the Pacific Ocean (maximum depth = +600 m i.e. on land).

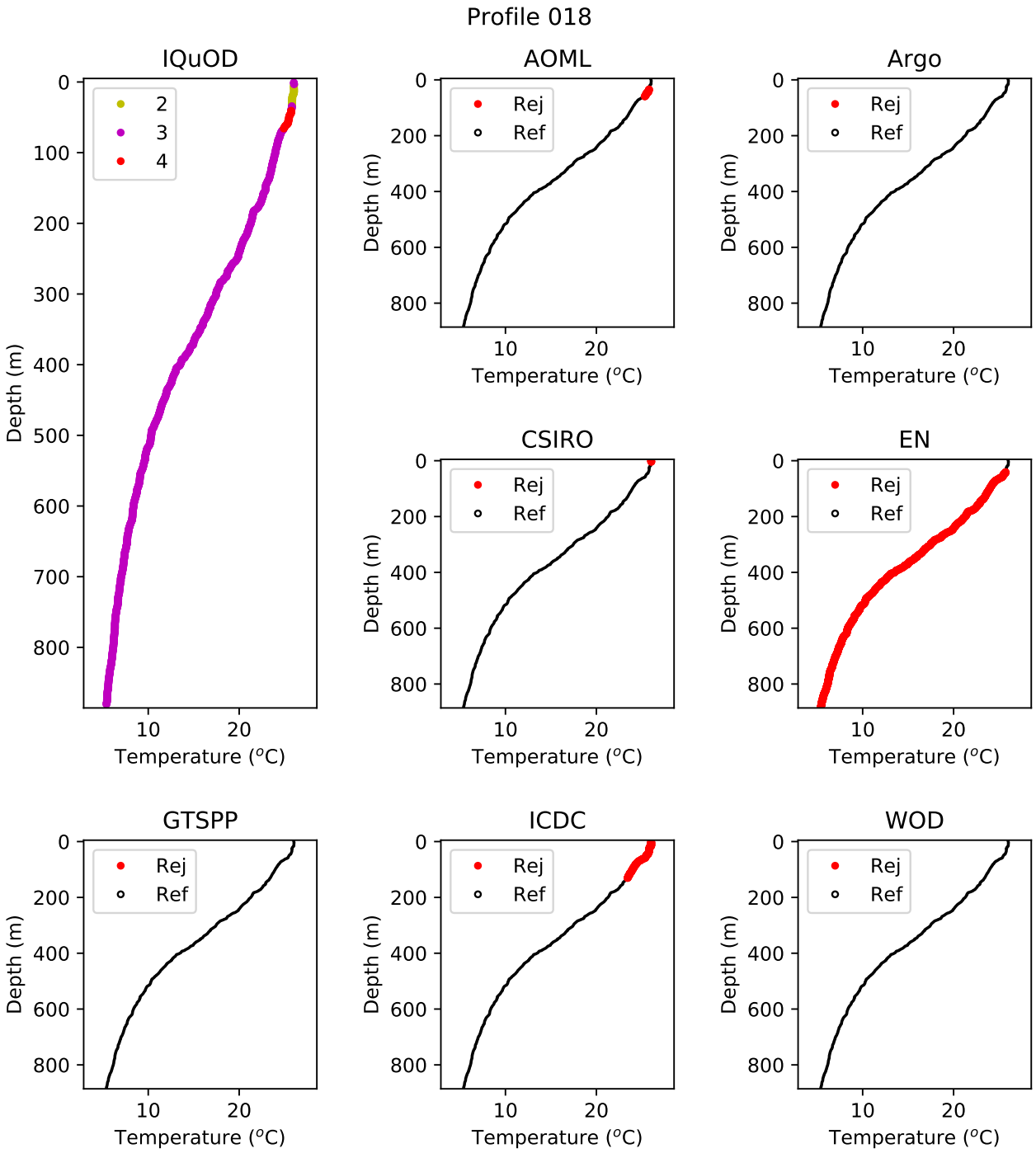

Figure S18. Description of profile: Exceeds bathymetry in the Pacific Ocean (maximum depth = 70 m).

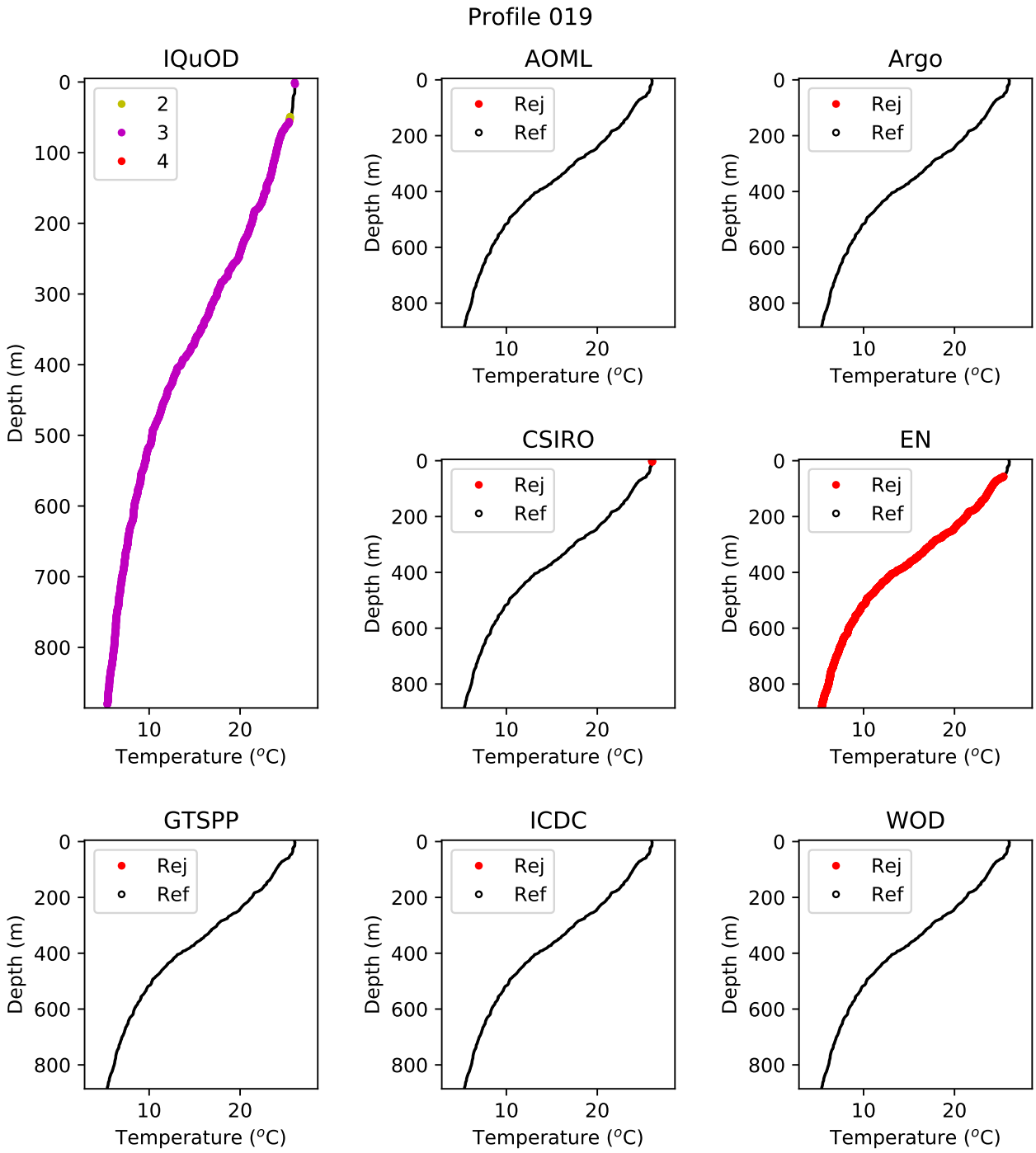

Figure S19. Description of profile: Exceeds bathymetry in the Pacific Ocean (maximum depth = 60m).

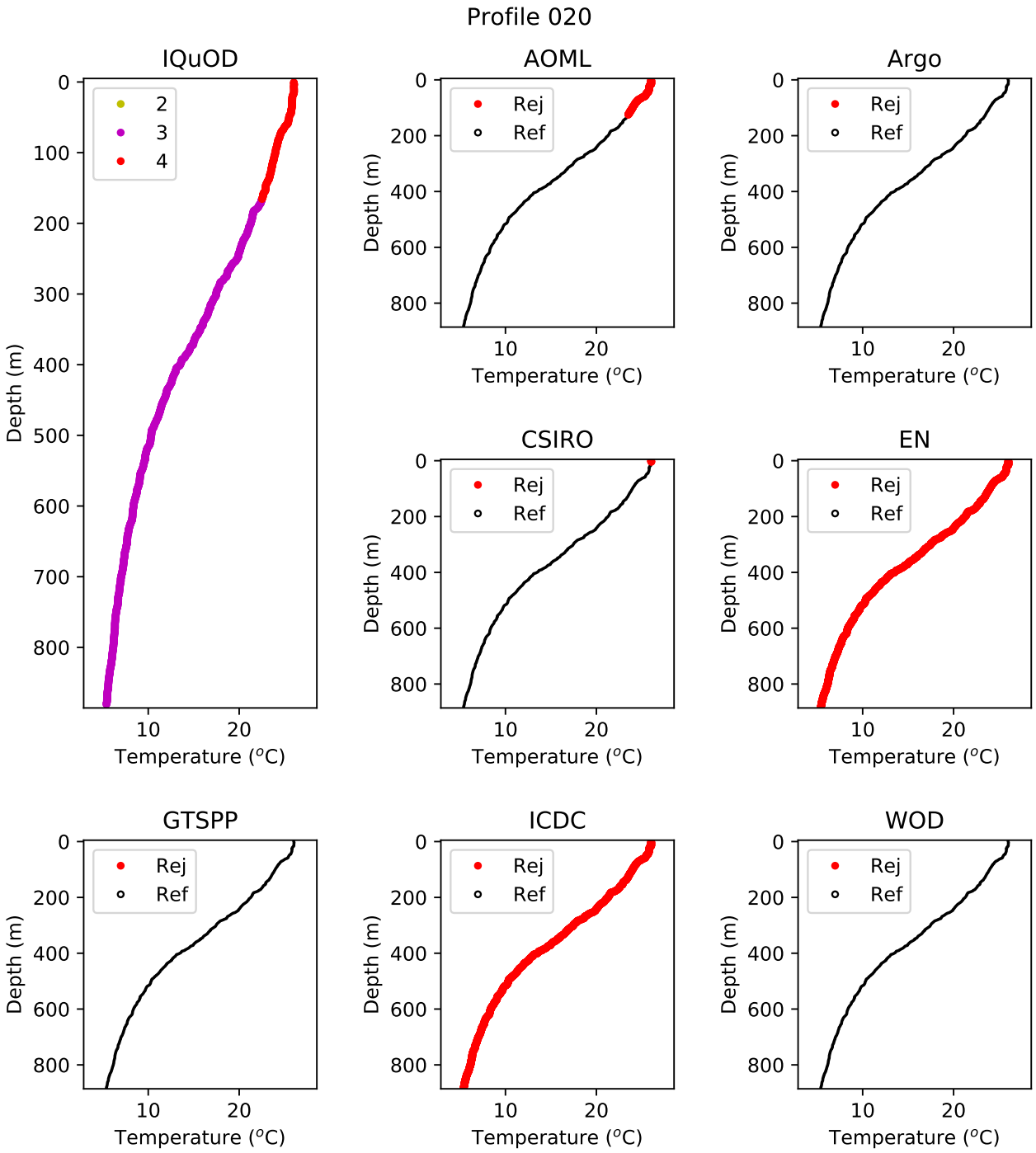

Figure S20. Description of profile: Exceeds bathymetry in the Pacific Ocean (maximum depth = 125 m).

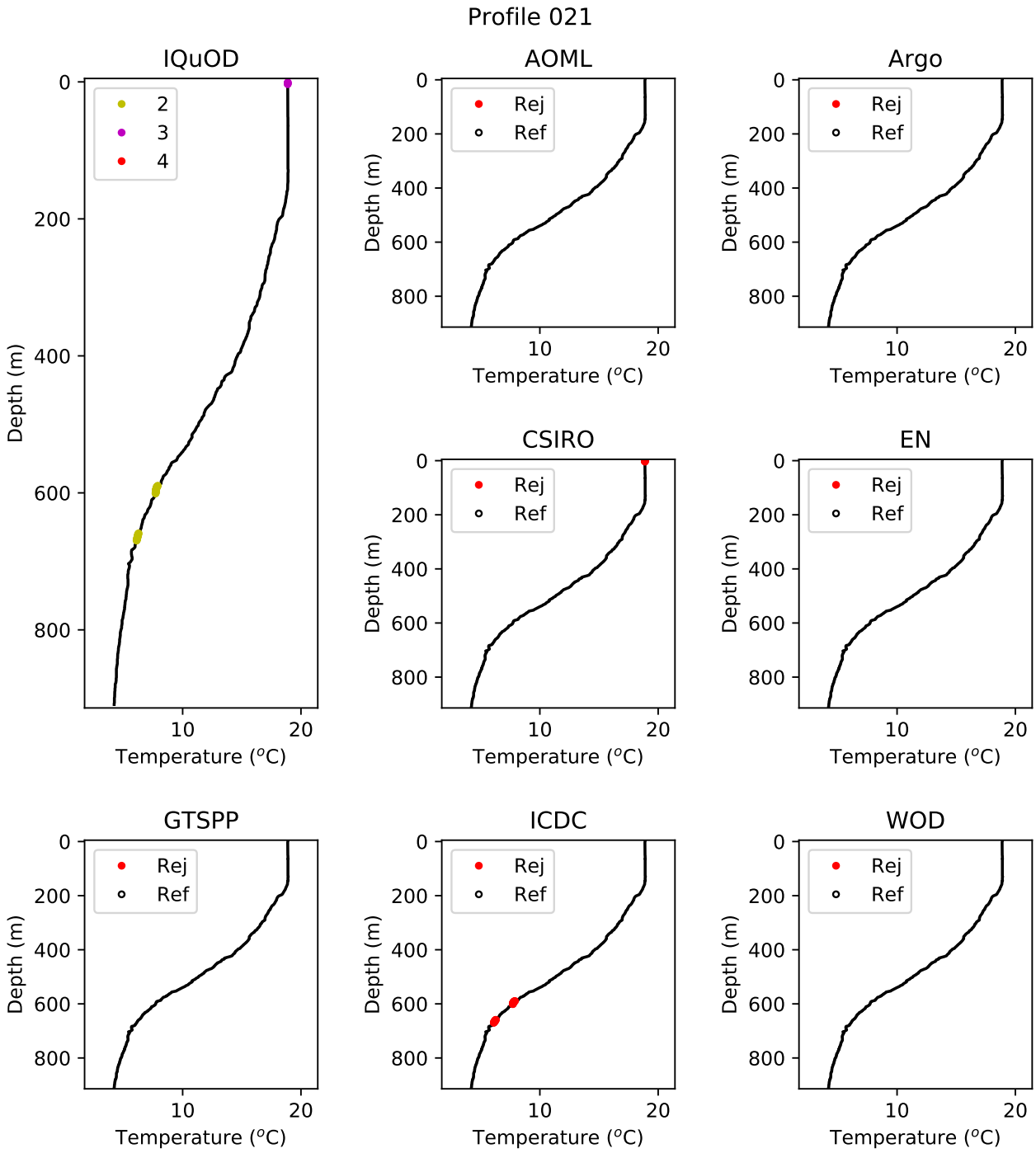

Figure S21. Description of profile: Exceeds maximum depth for probe type (probe code = 2, probe T-4, nominal depth = 460m)

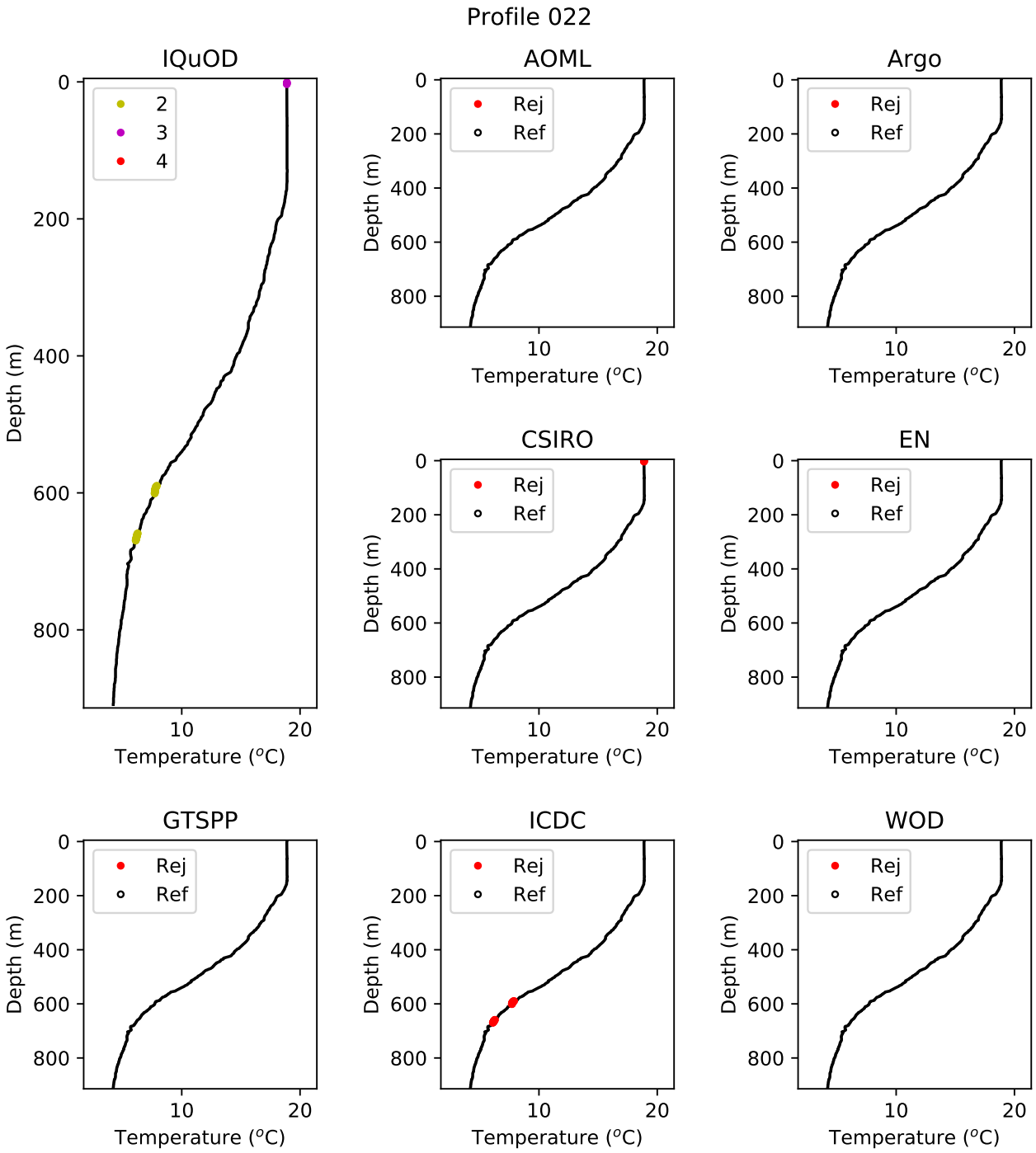

Figure S22. Description of profile: Exceeds maximum depth for probe type (probe code = 32, probe T-6, nominal depth = 460m).

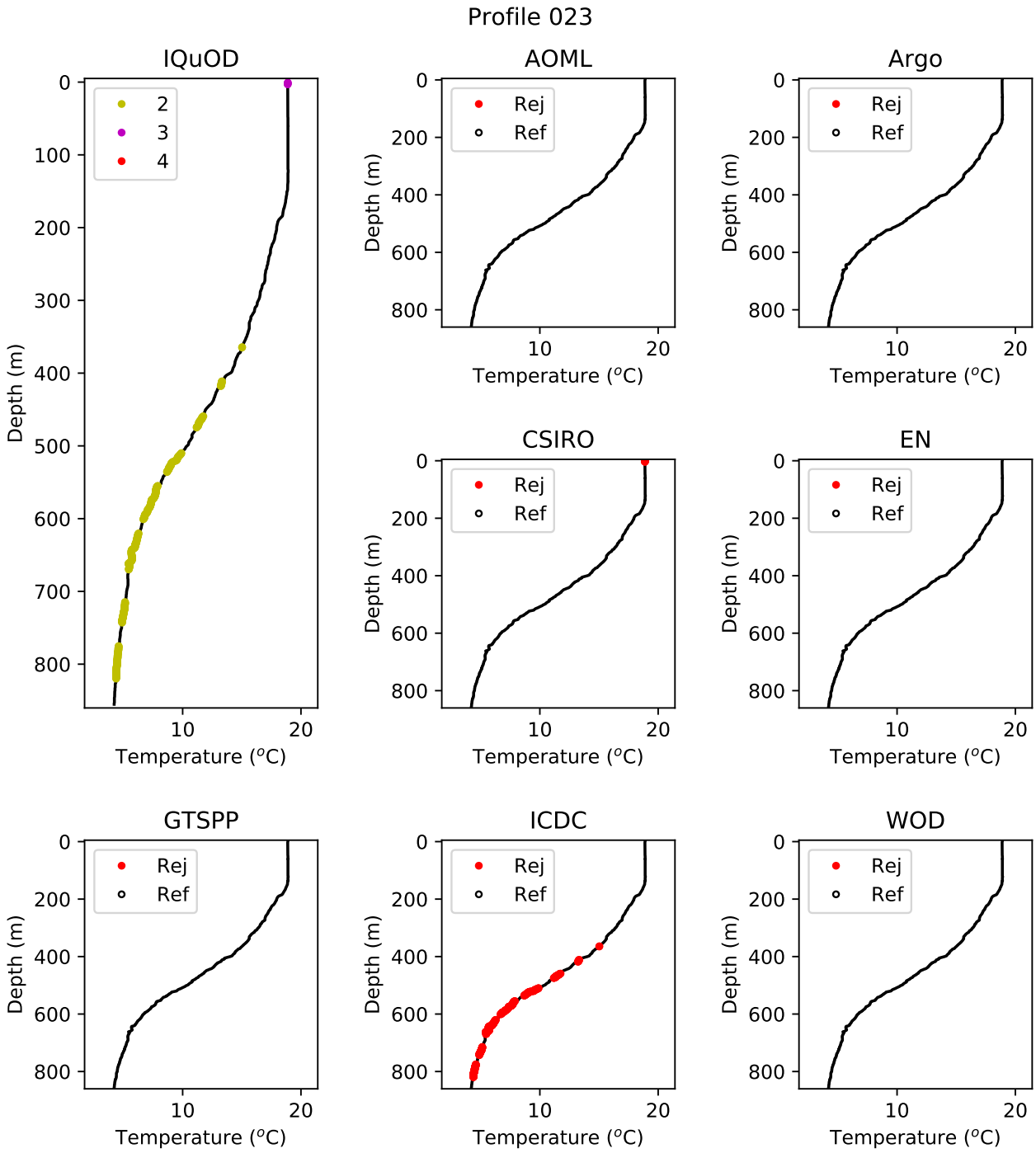

Figure S23. Description of profile: Exceeds maximum depth for probe type (probe code = 61, probe T-10, nominal depth = 200m).

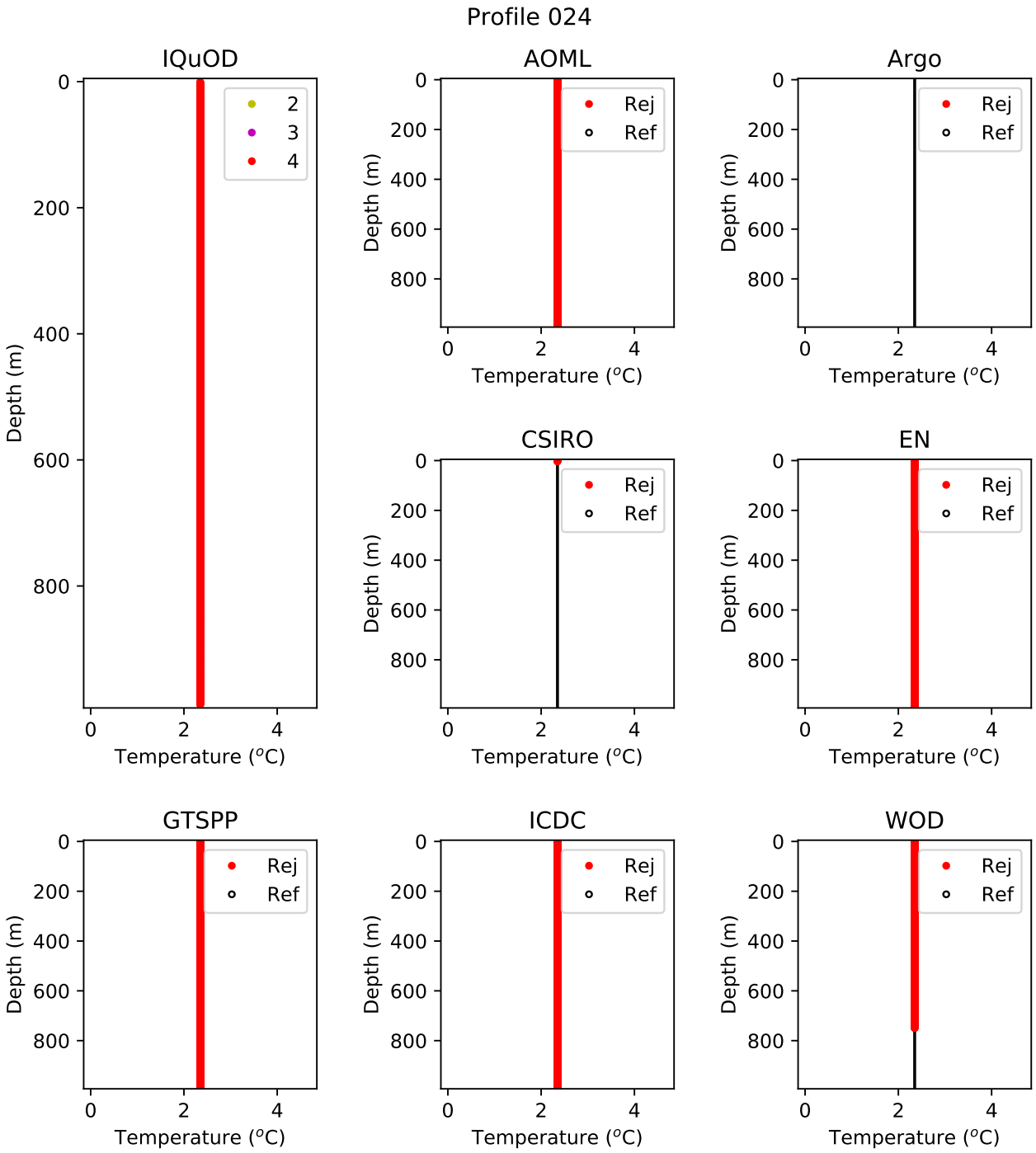

Figure S24. Description of profile: Constant profile (constant temperature = 2.35°C, lower than minimum for region).

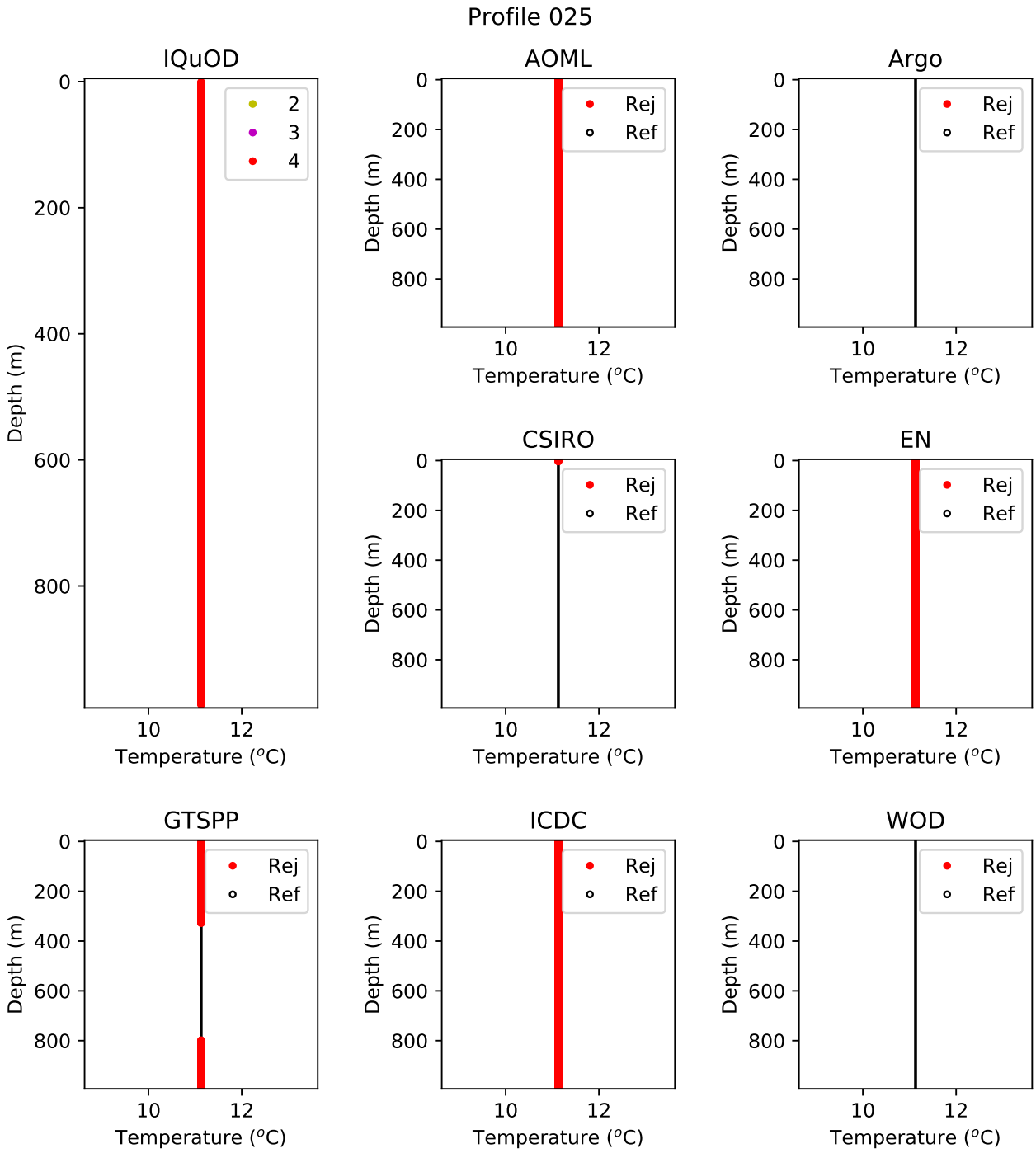

Figure S25. Description of profile: Constant profile (constant temperature = 11.13°C, average for region).

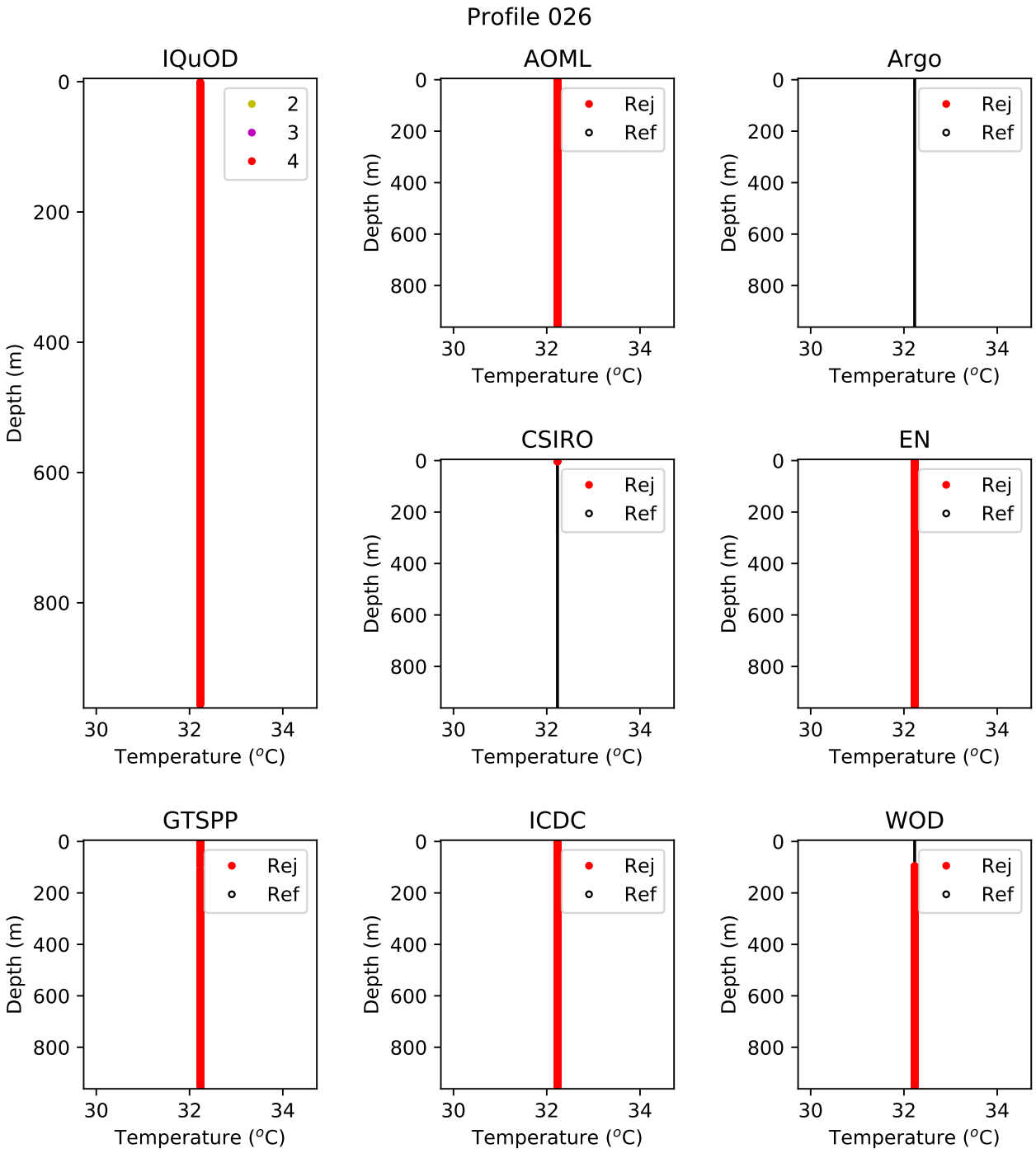

Figure S26. Description of profile: Constant profile (constant temperature = 32.23°C, higher than maximum for region).

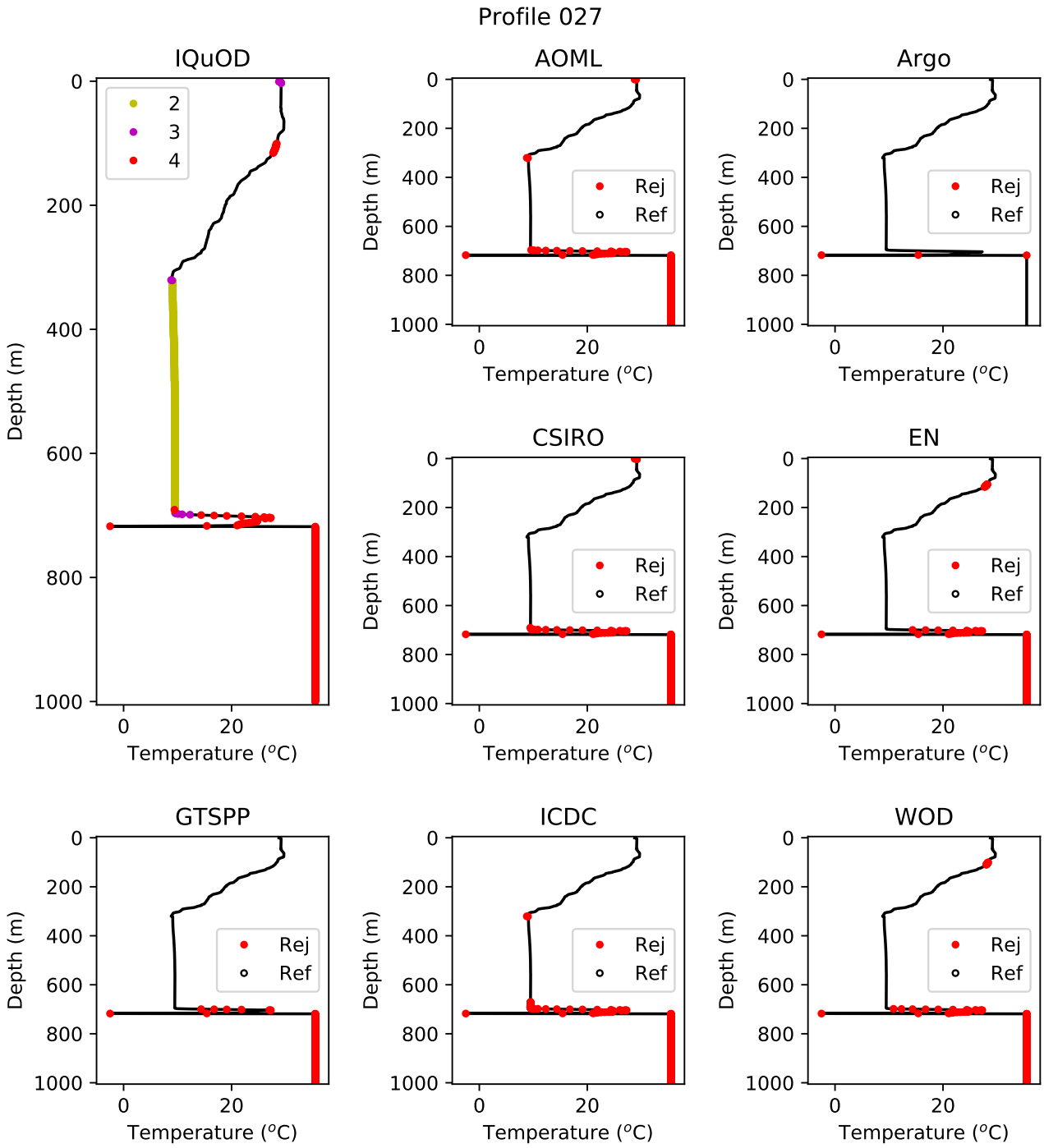

Figure S27. Description of profile: Gulf of Mexico (spike and bottom hit at 300 m; all points should be bad below 300 m).

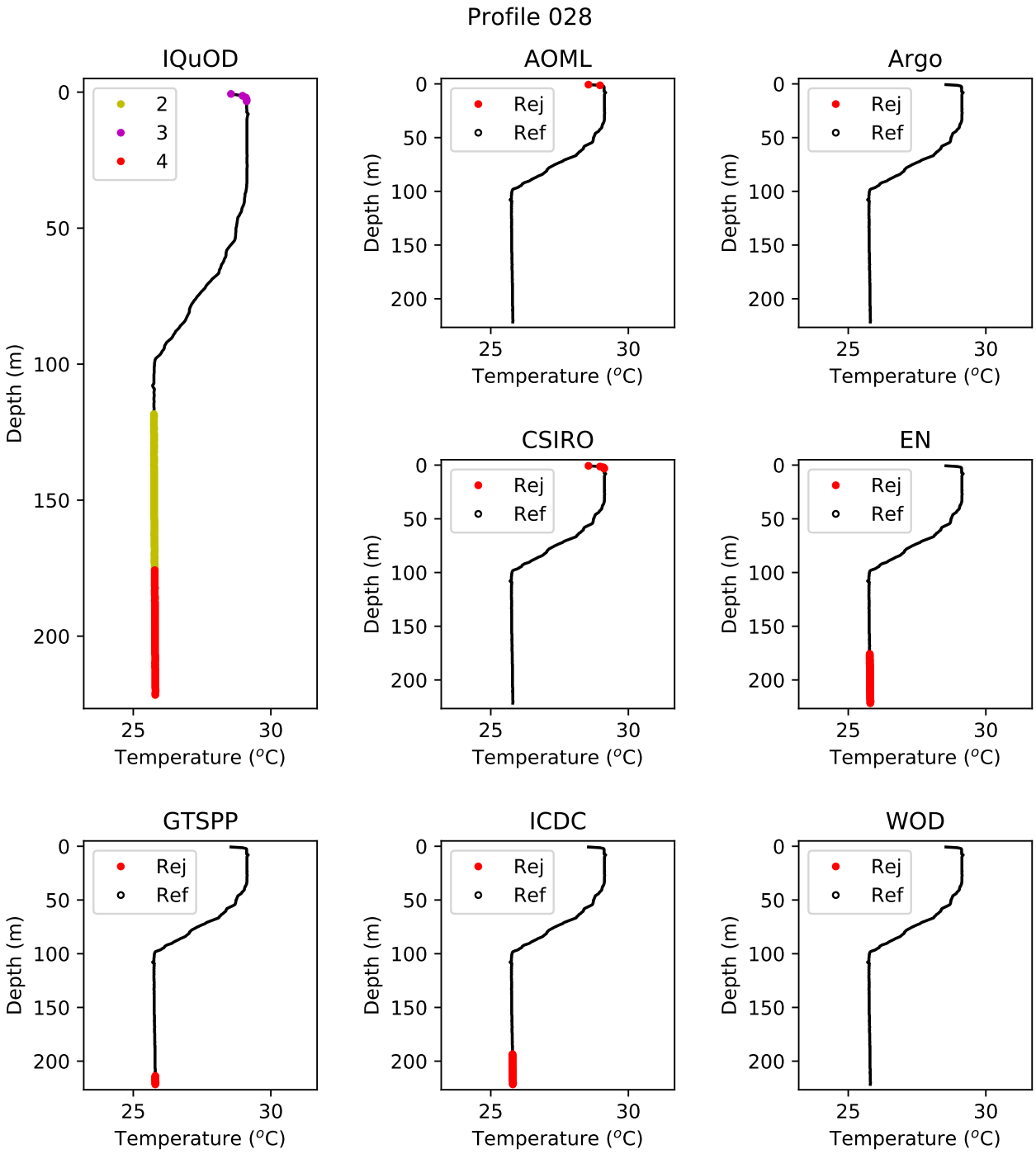

Figure S28. Description of profile: Gulf of Mexico (spikes at 10 m and 105 m; the rest is good).

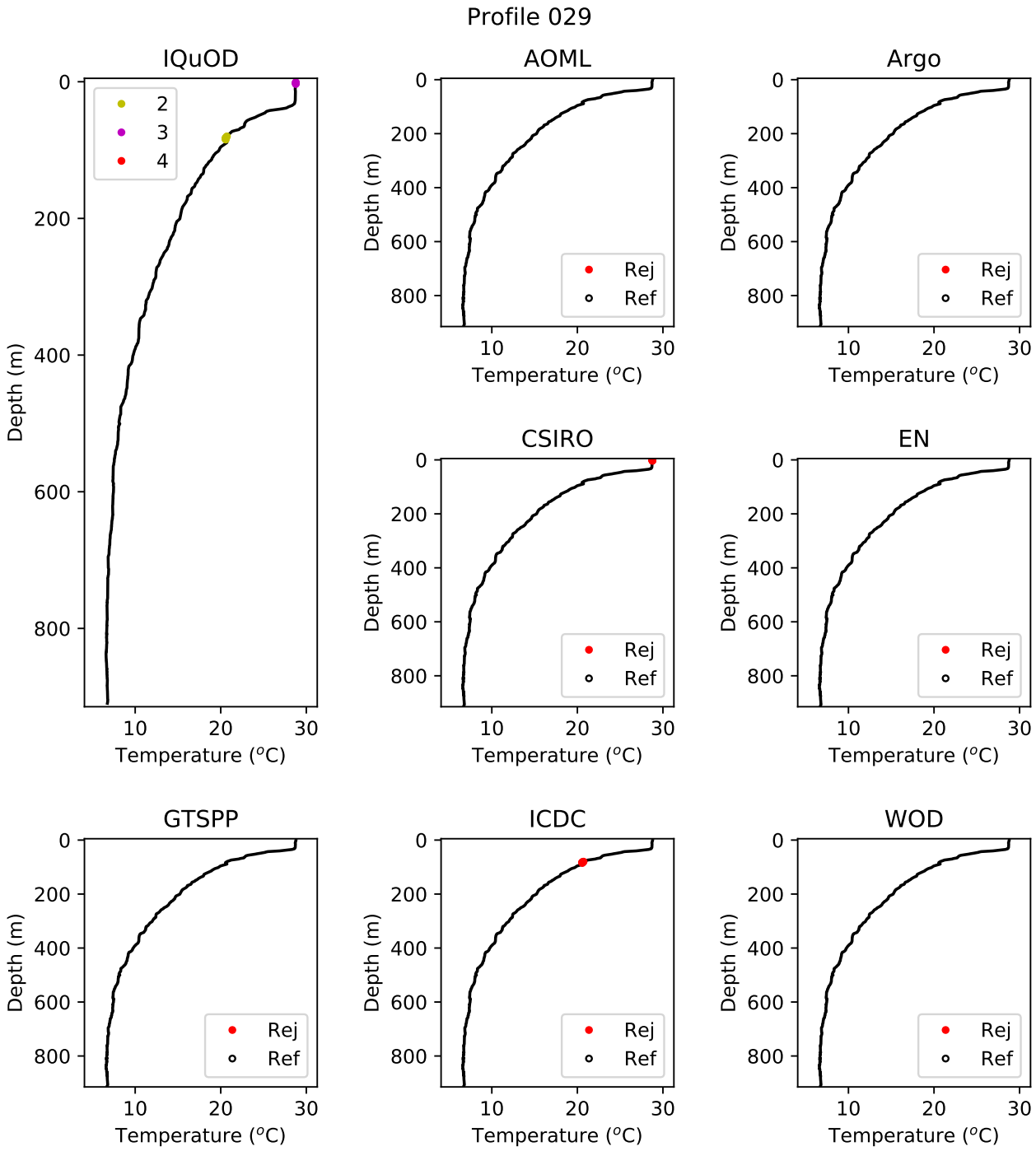

Figure S29. Description of profile: Gulf of Mexico (good with temperature inversion).

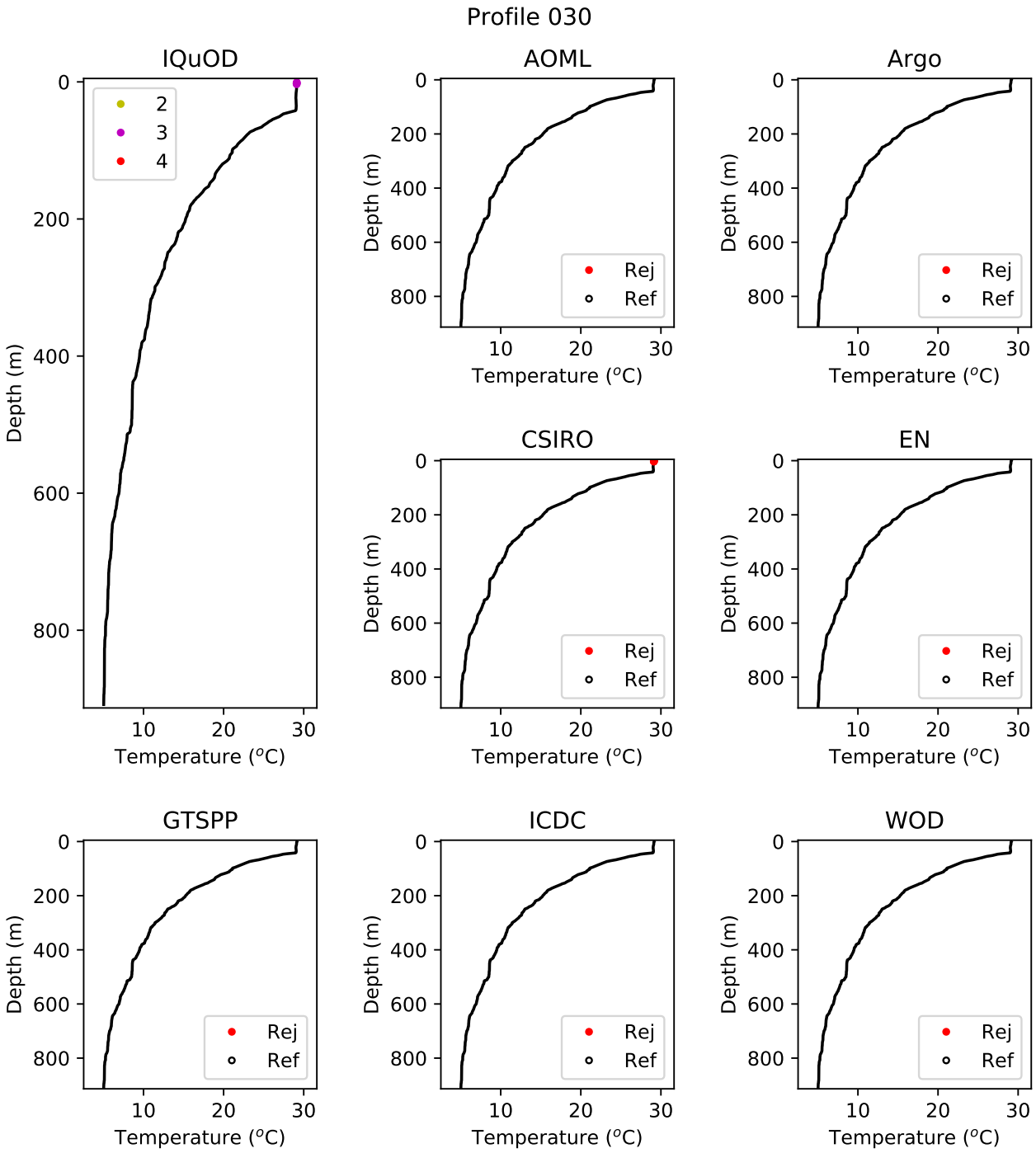

Figure S30. Description of profile: Gulf of Mexico (good with temperature inversion).

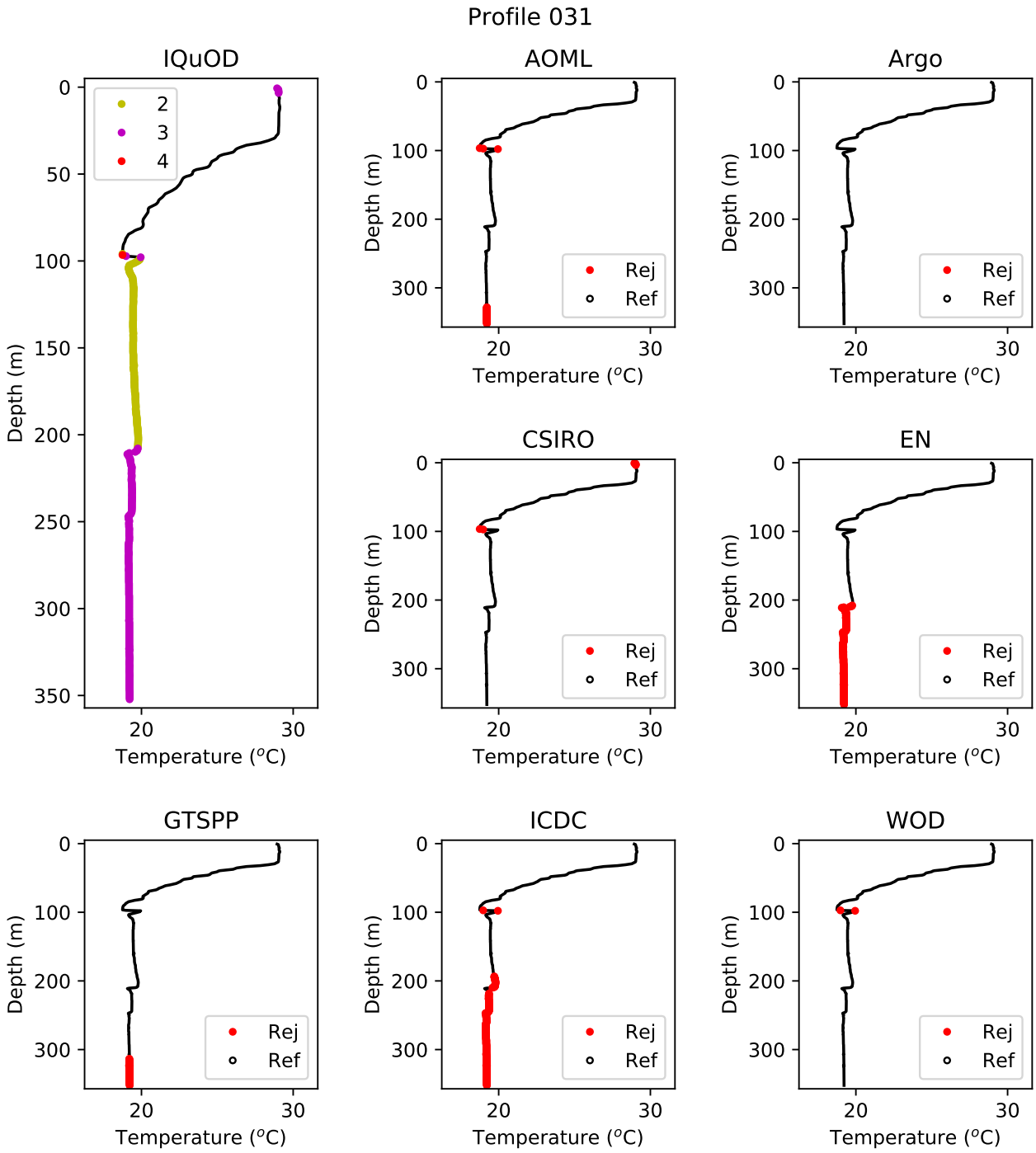

Figure S31. Description of profile: Gulf of Mexico (bottom hit at 100 m, bad for points below that with spikes, climatology and gradient problems).

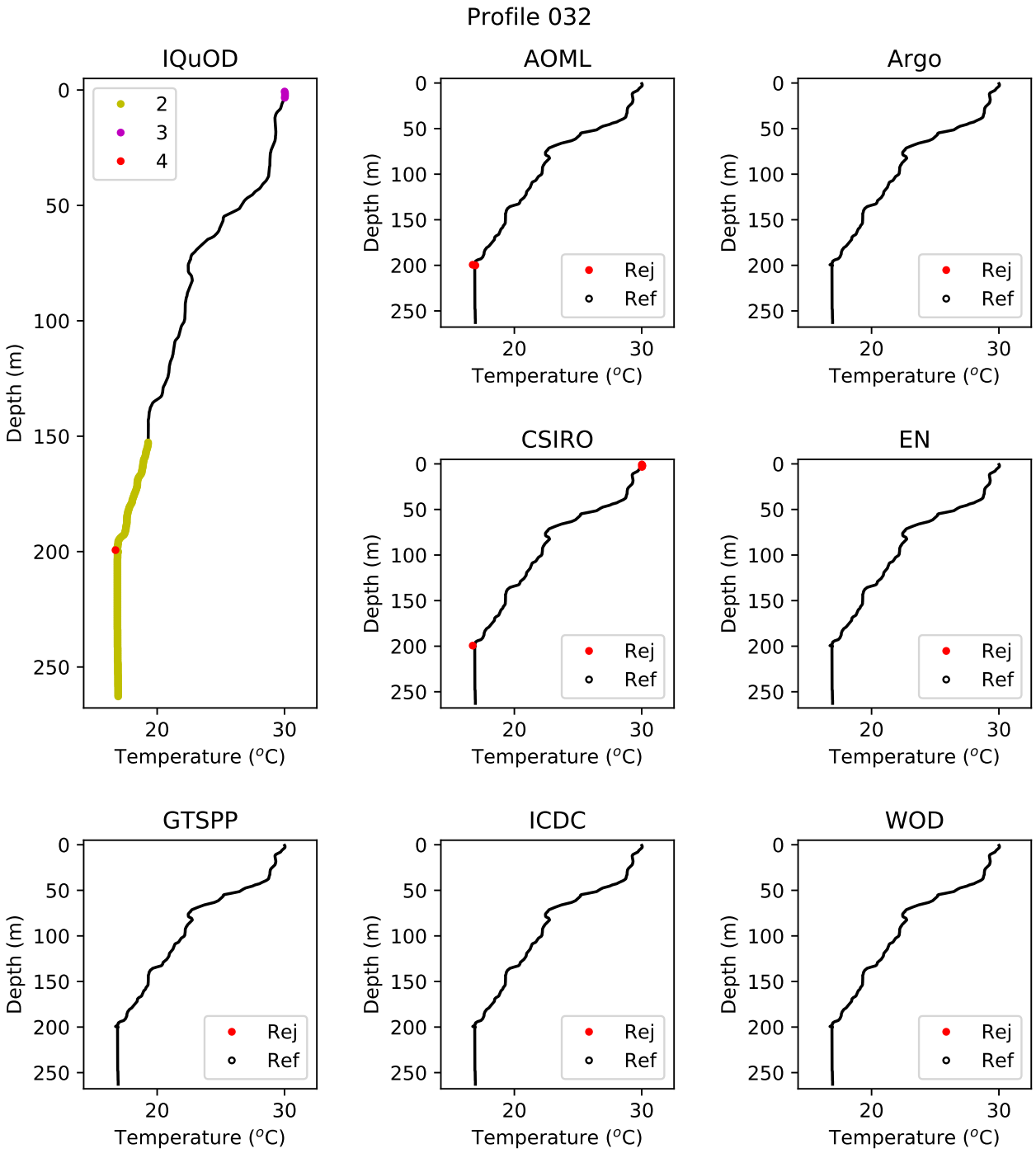

Figure S32. Description of profile: Gulf of Mexico (spike at 200 m due to bottom hit; good points above that with temperature inversion).

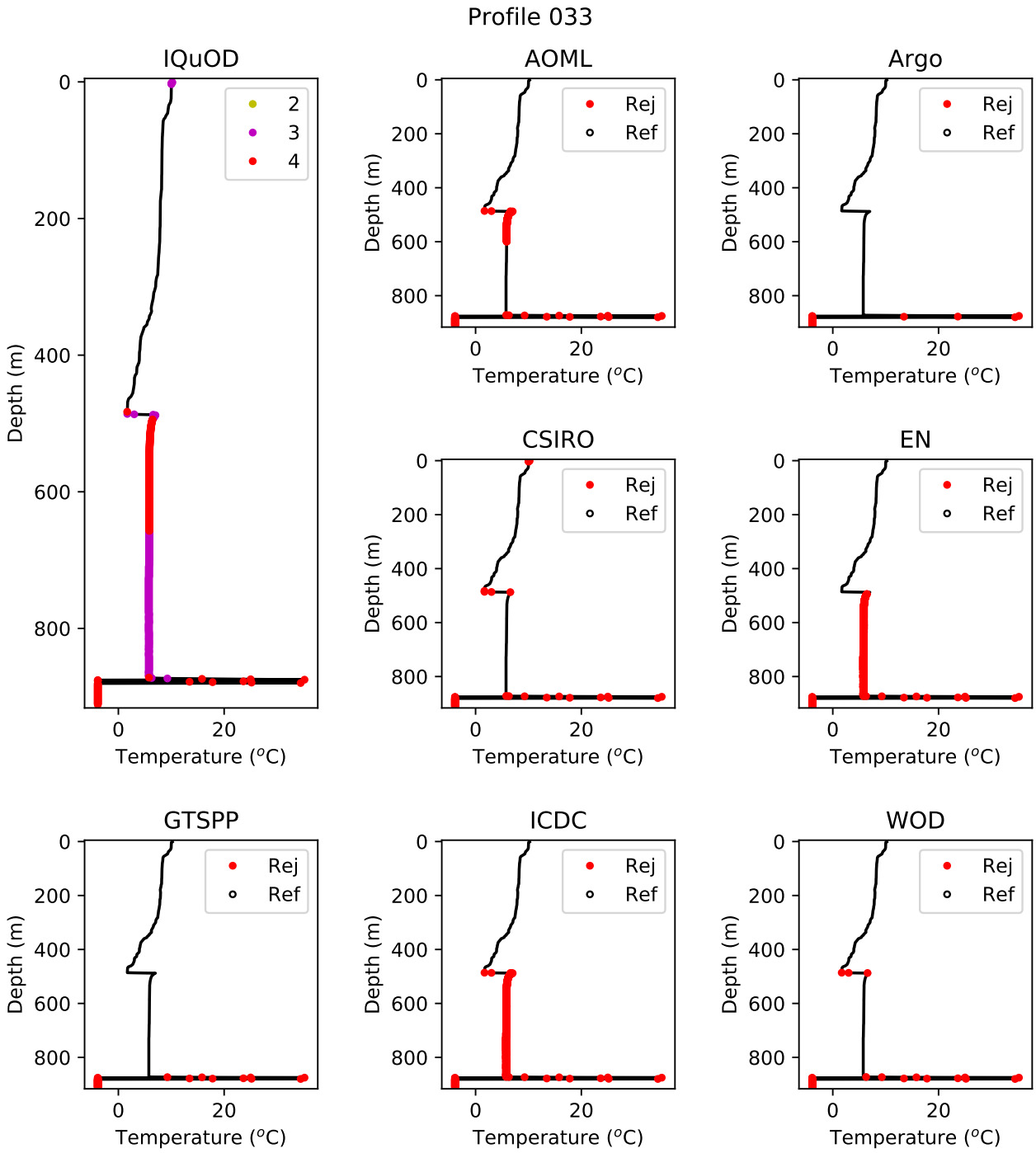

Figure S33. Description of profile: High latitude North (possible wire break at 500 m; all bad below that).

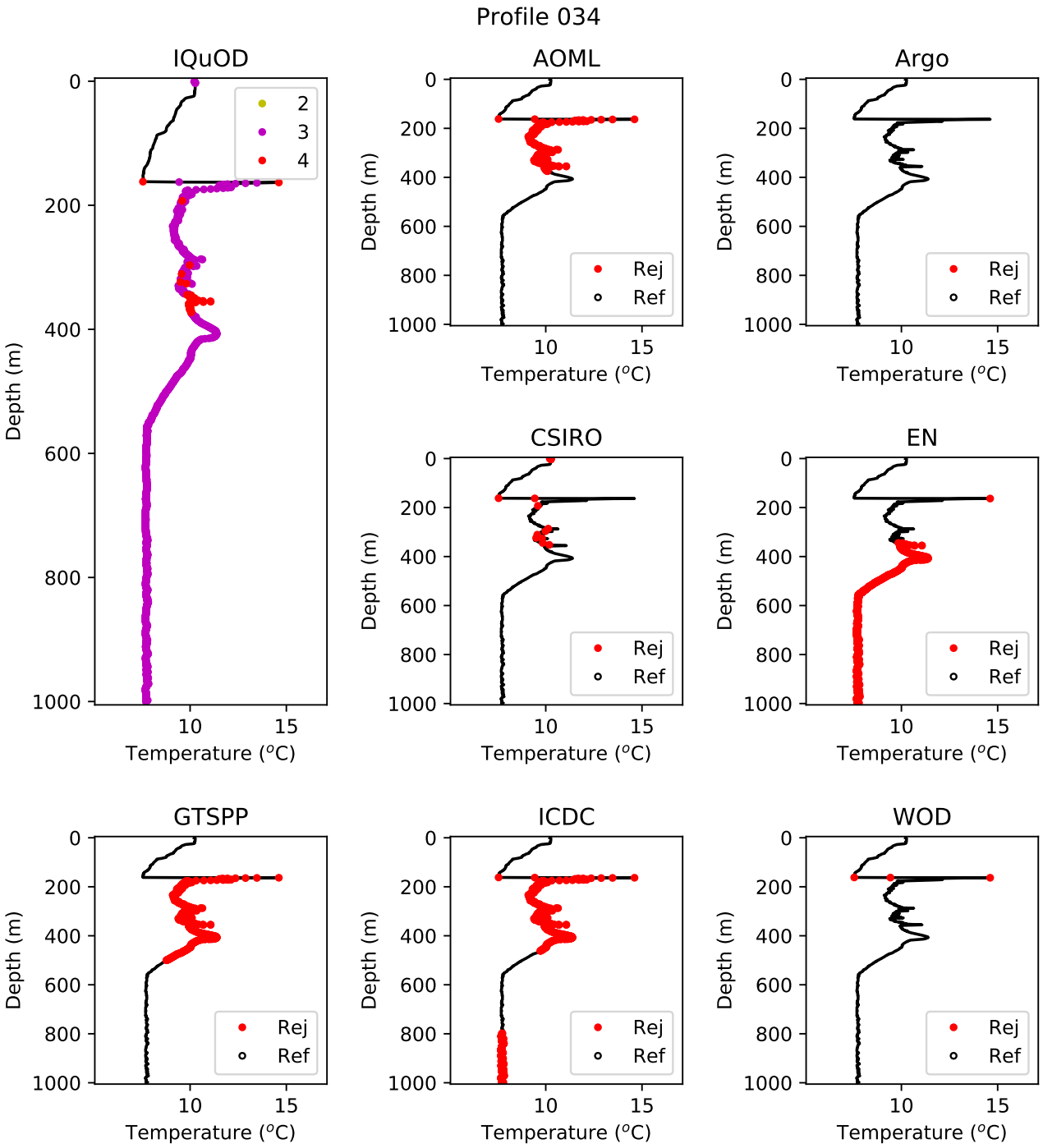

Figure S34. Description of profile: High latitude North (all bad below 160 m; possible shallow location, spikes, climatology and gradient problems).

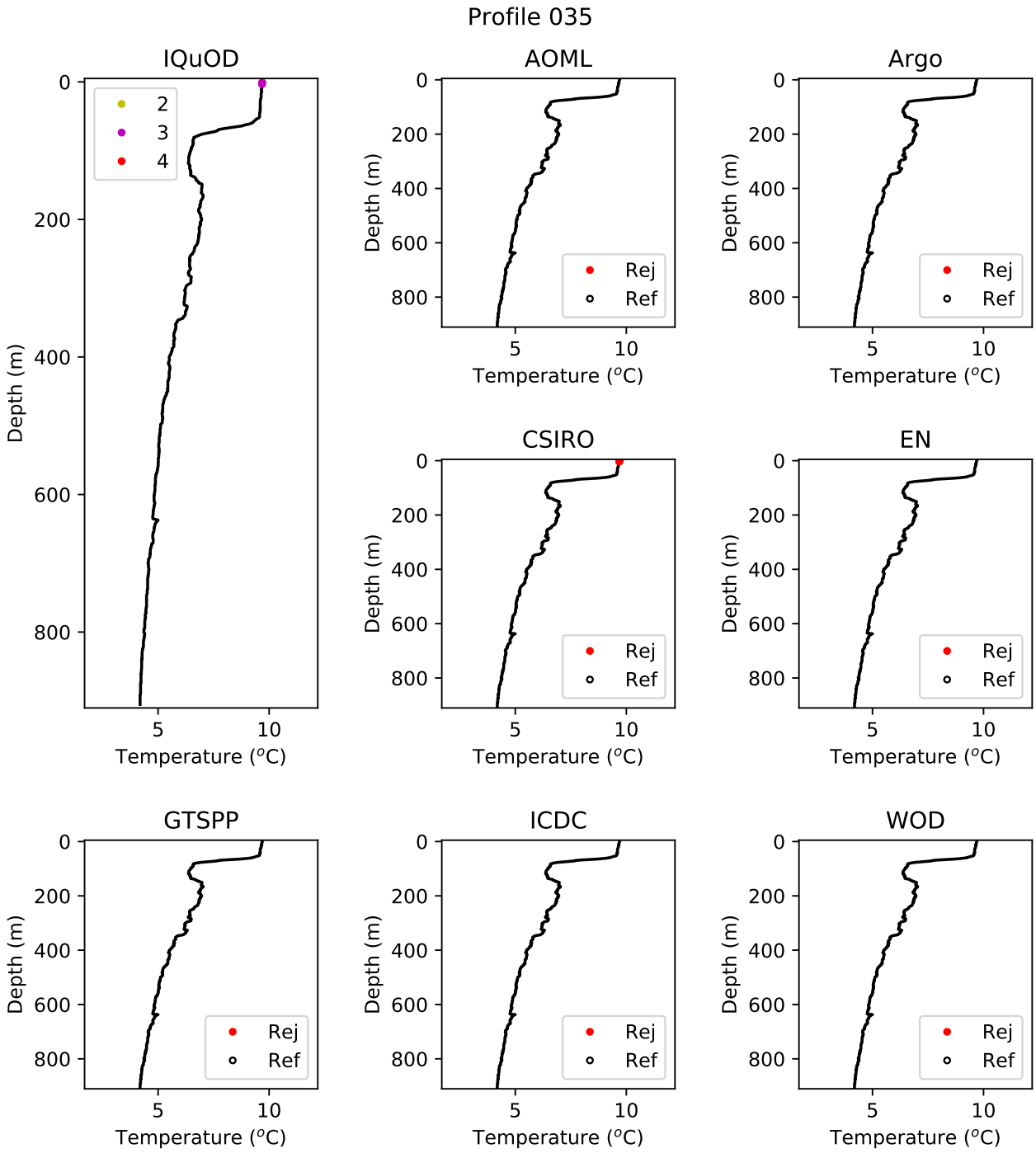

Figure S35. Description of profile: High latitude North (good with temperature inversion).

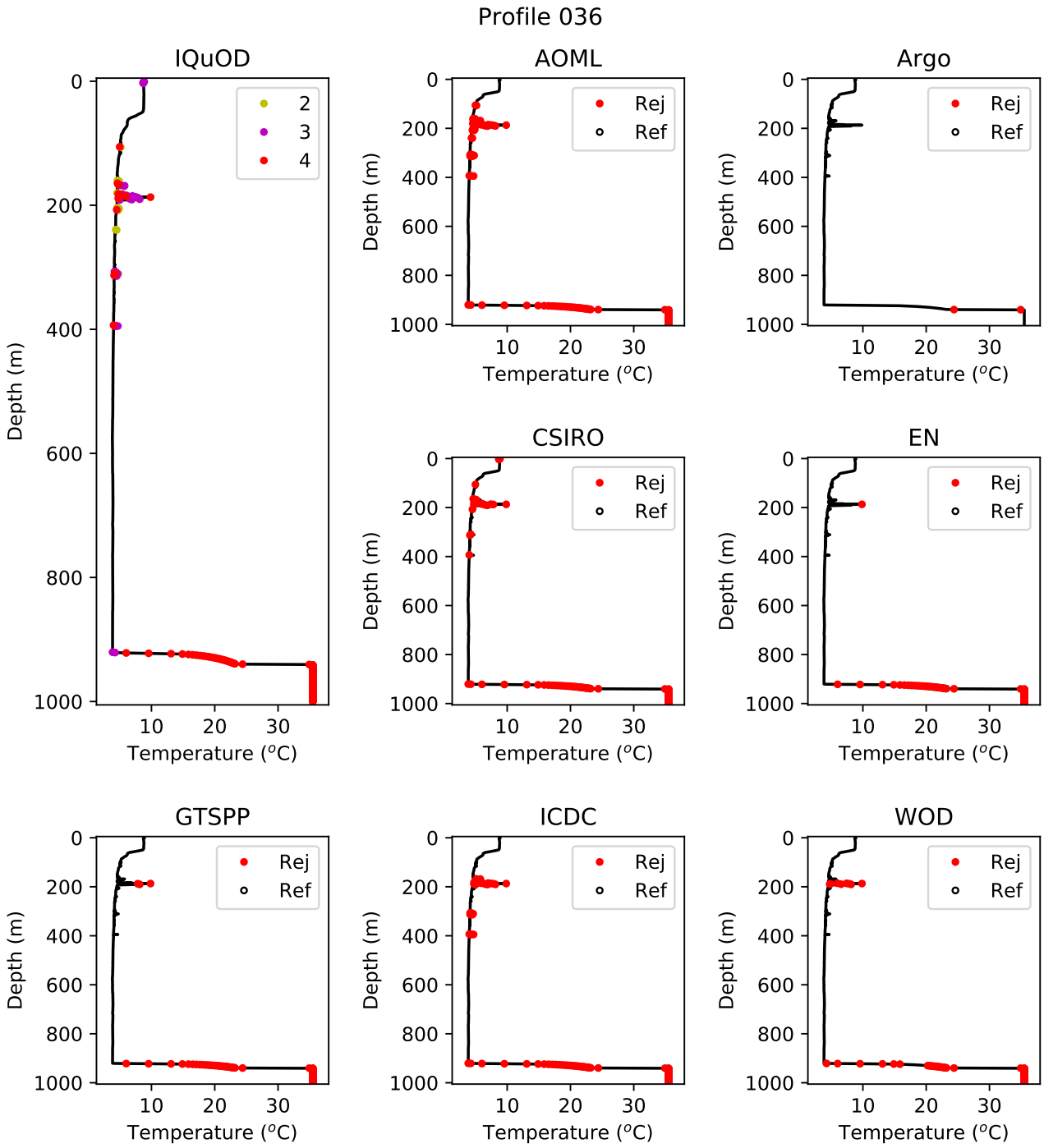

Figure S36. Description of profile: High latitude North (spikes at different depths between 180 and 400 m).

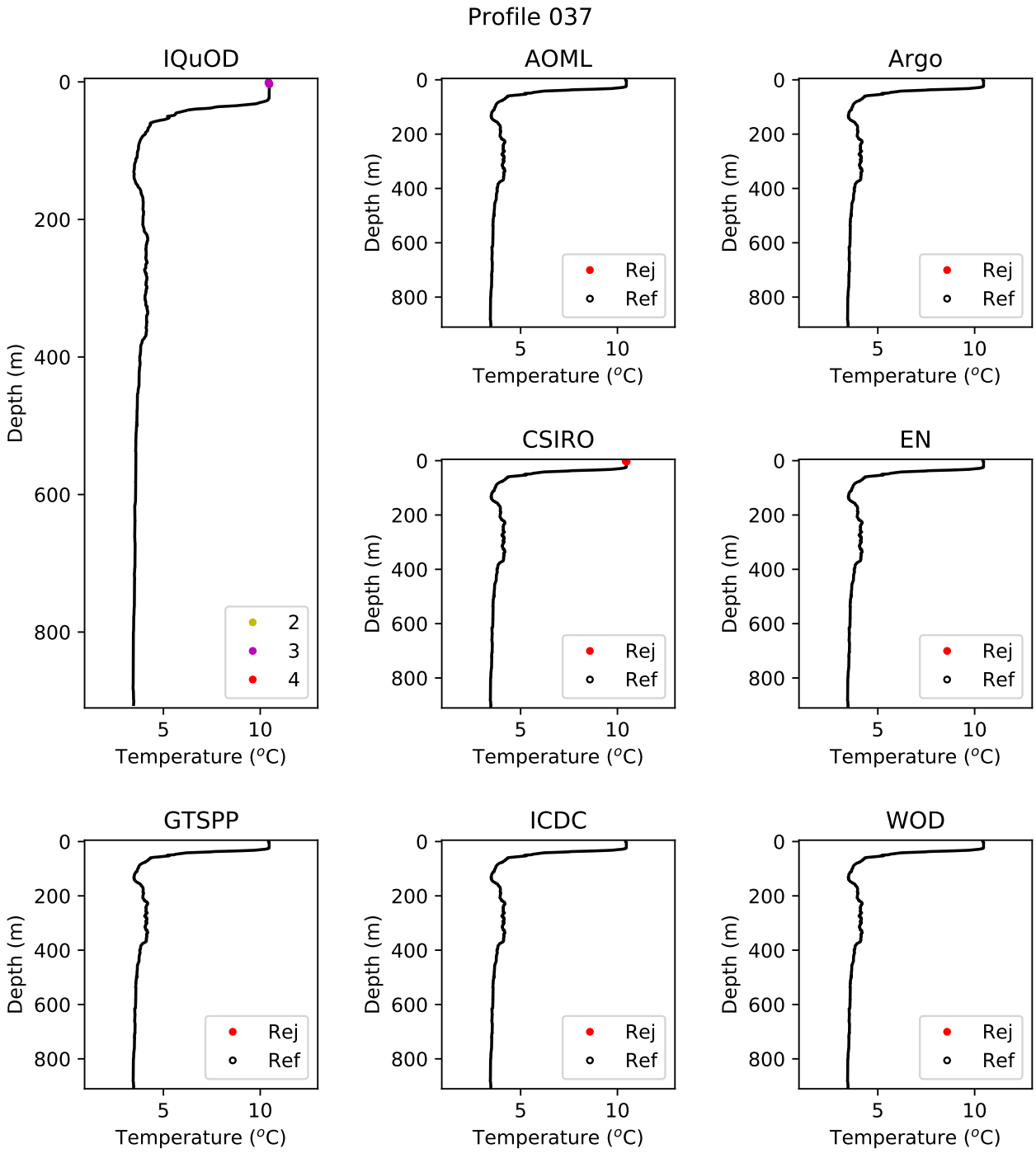

Figure S37. Description of profile: High latitude North (good with some temperature inversions).

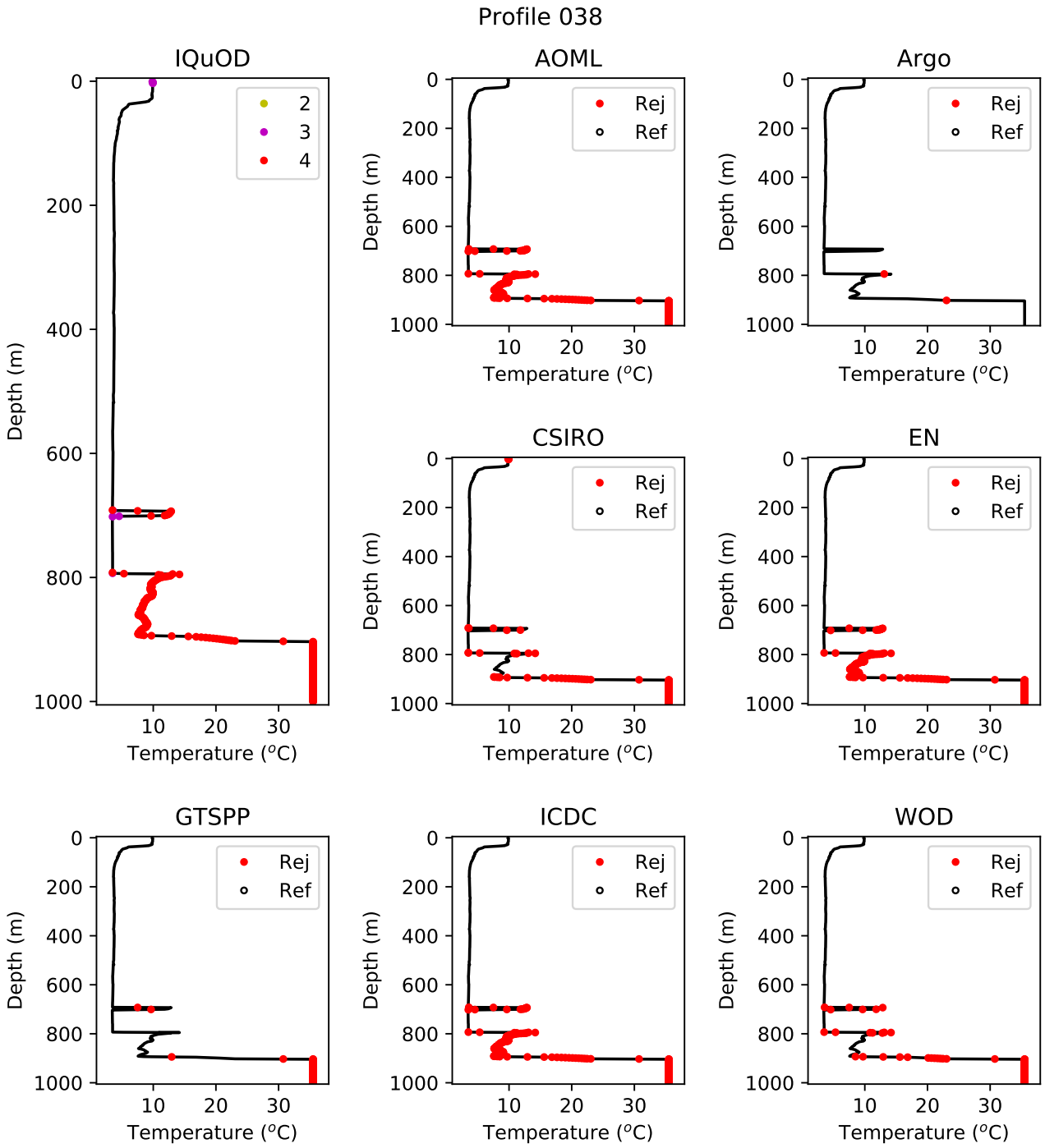

Figure S38. Description of profile: High latitude North (spikes at 700 m, possible wire break at 800 m with spikes, climatology problems etc.)

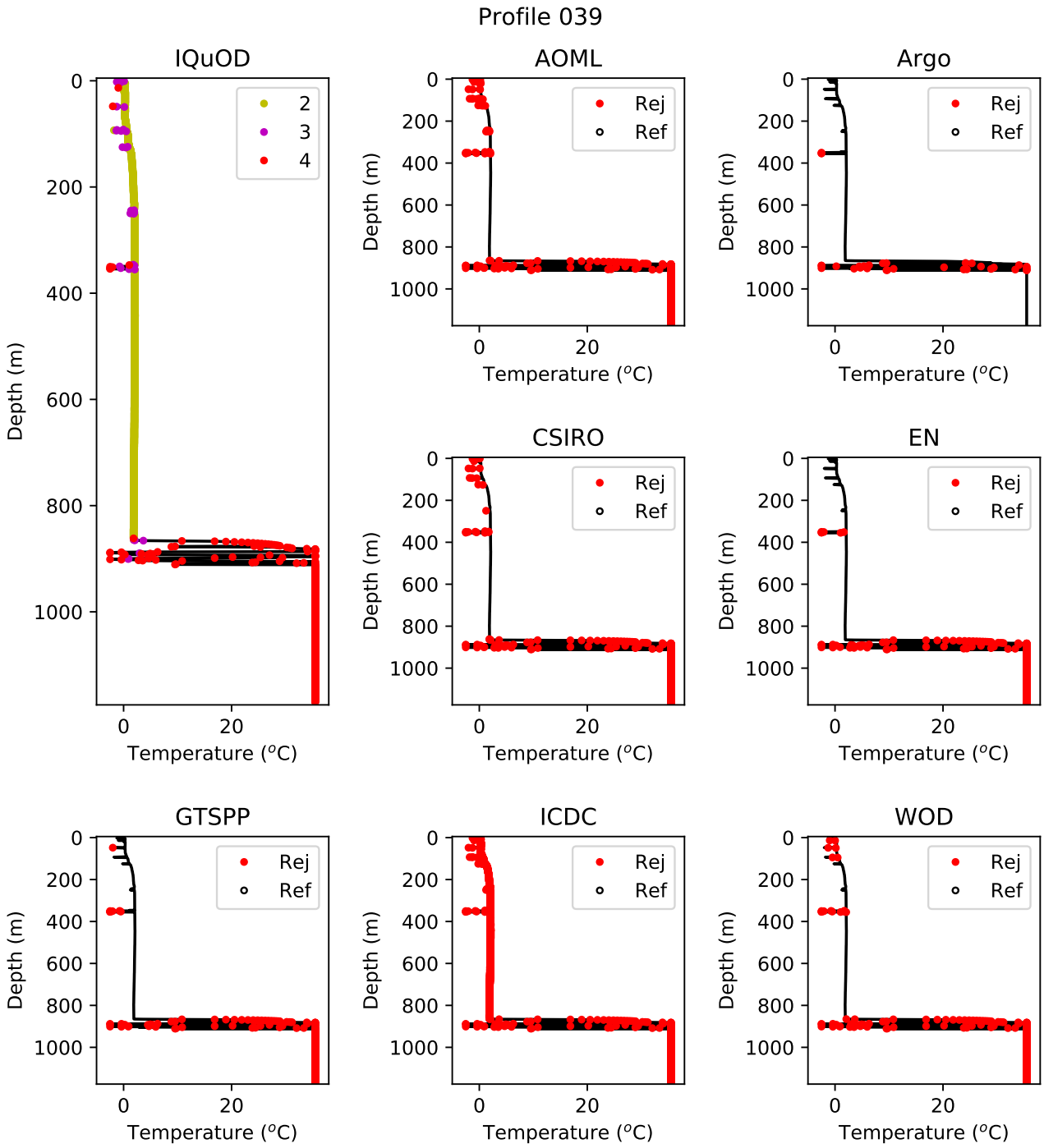

Figure S39. Description of profile: High latitude South (spikes at several depths from surface to bottom).

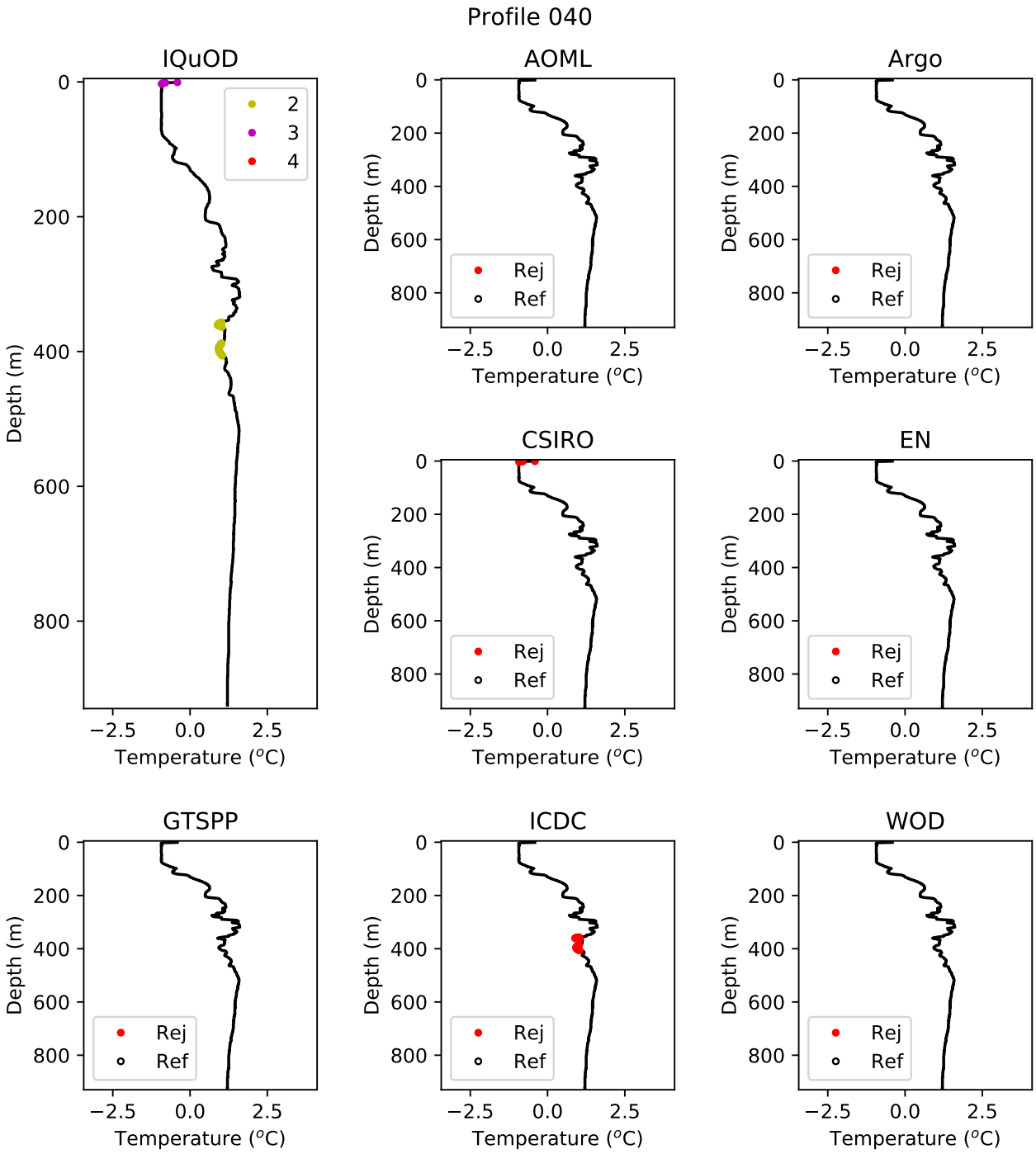

Figure S40. Description of profile: High latitude South (good with several temperature inversions).

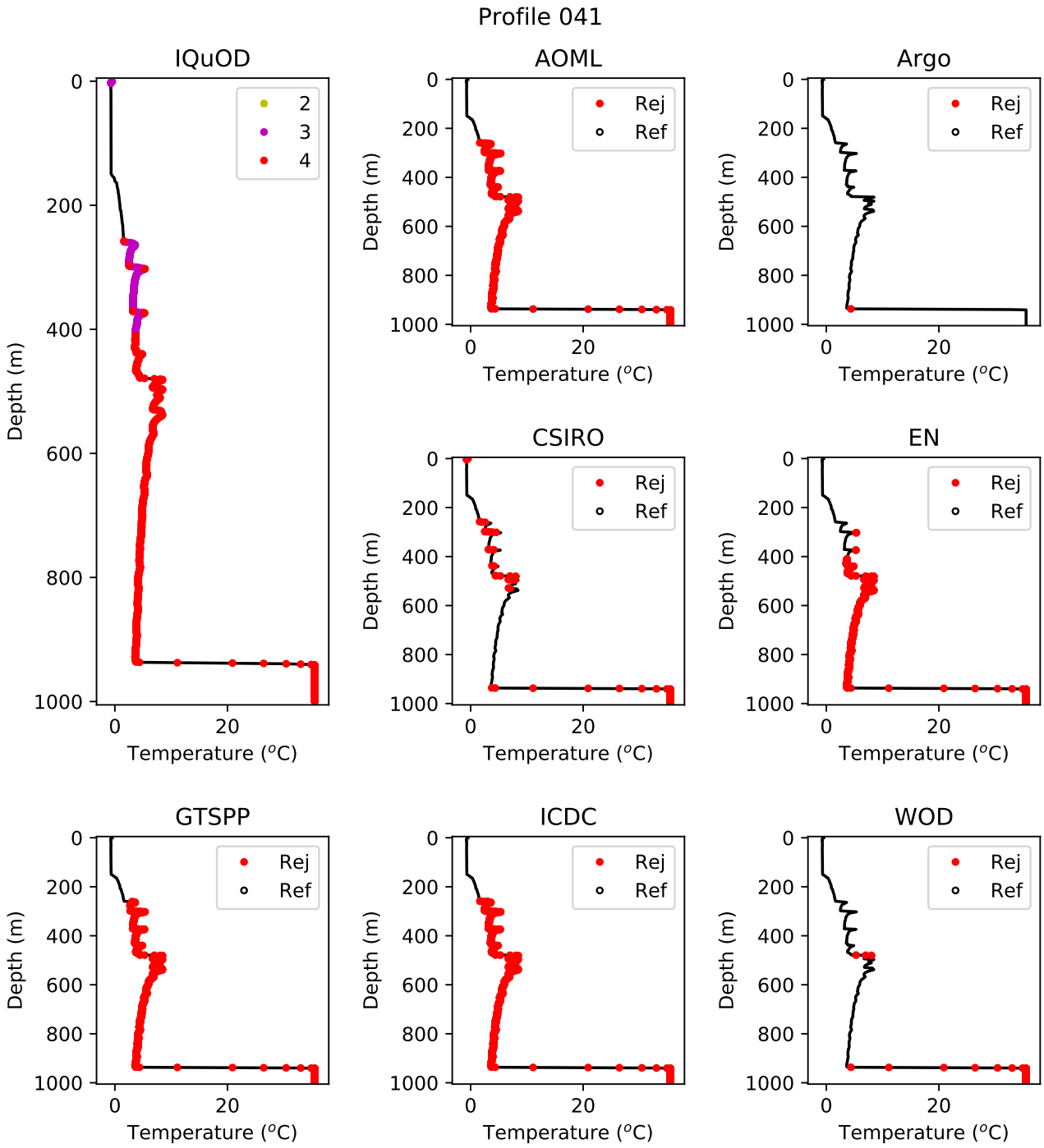

Figure S41. Description of profile: High latitude South (several spikes, gradient and climatology problems between 250 m and 600 m).

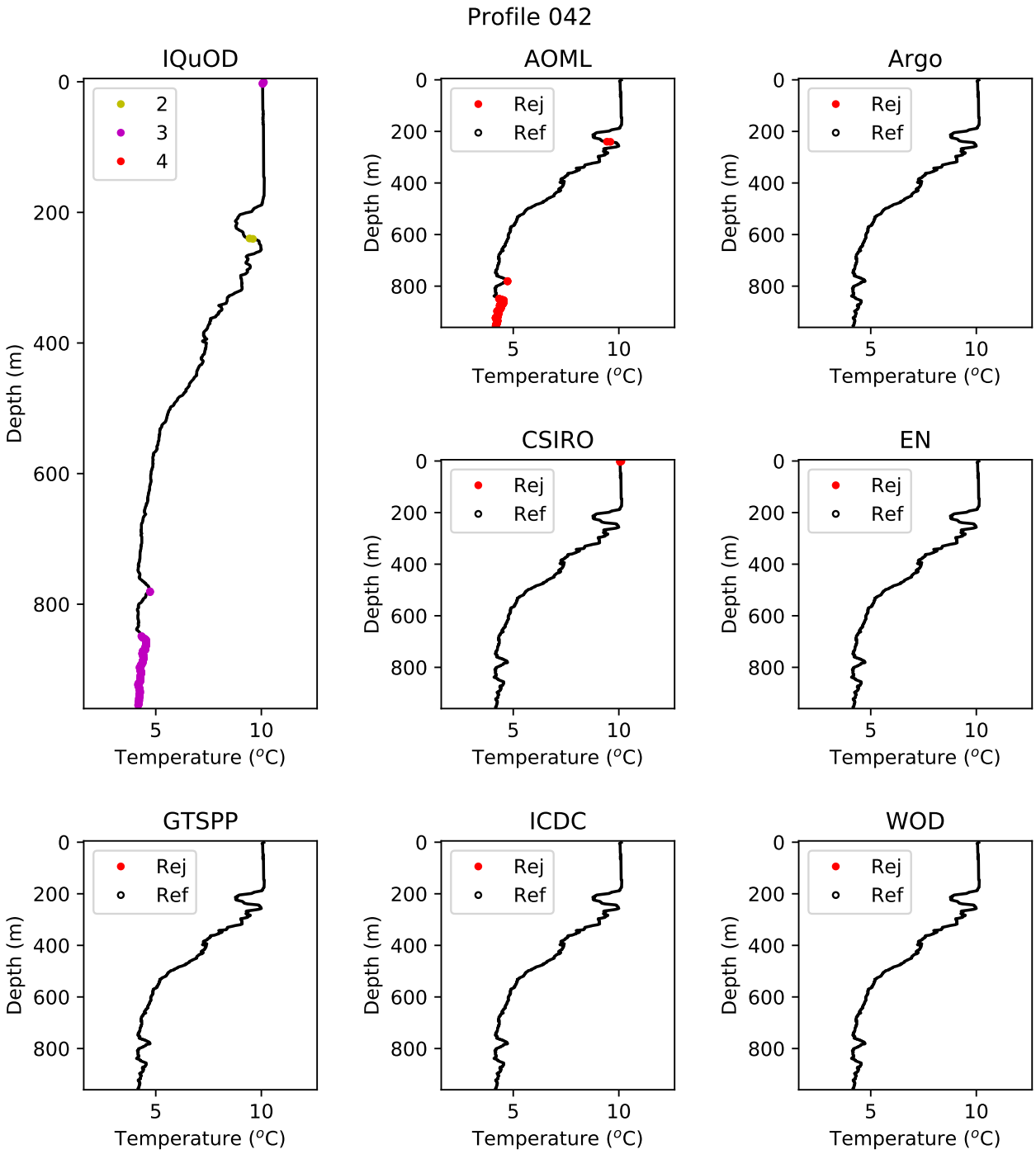

Figure S42. Description of profile: High latitude South (good with several temperature inversions).

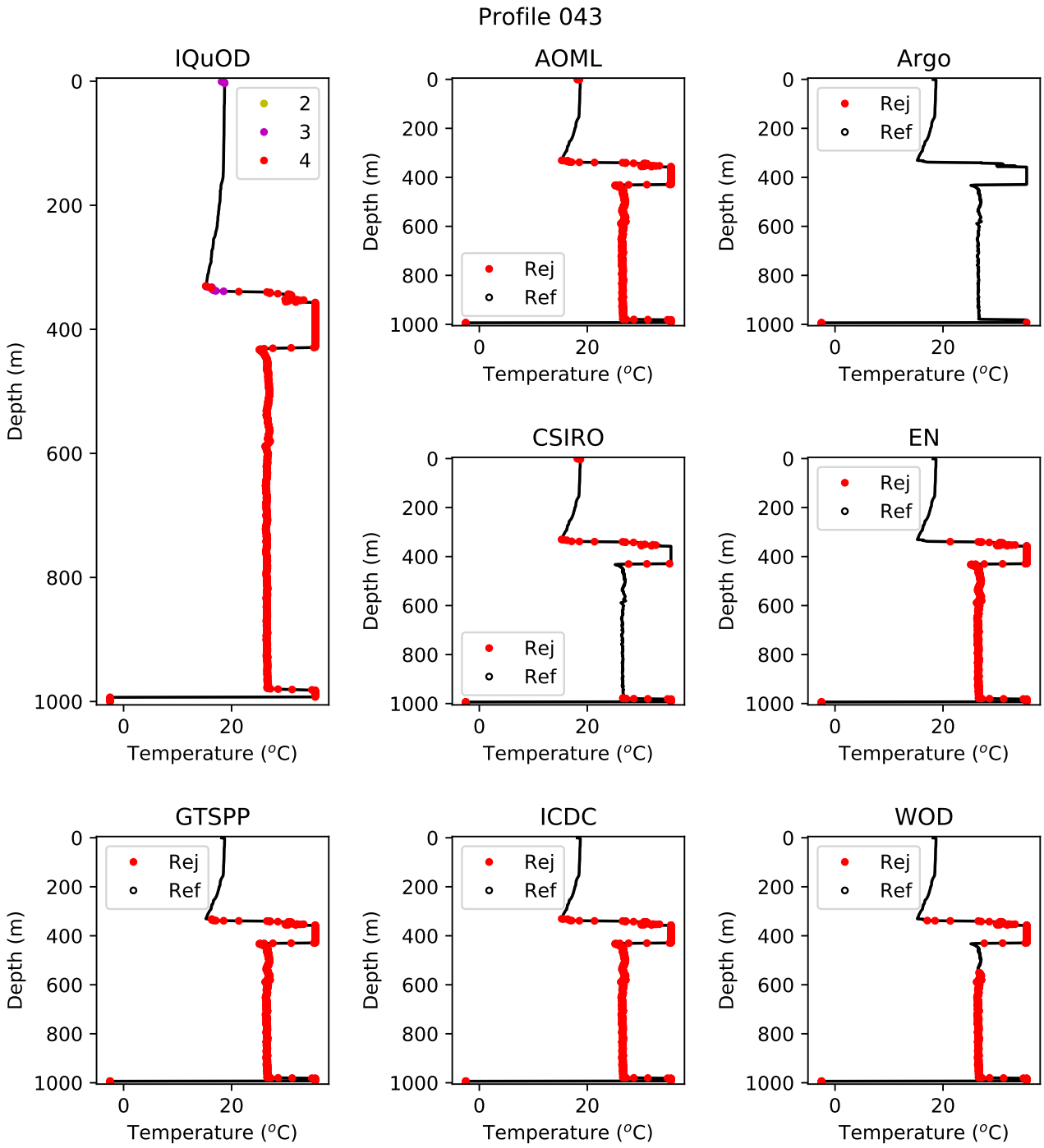

Figure S43. Description of profile: High latitude South (possible wire break at 350 m with spikes, climatology and gradient problems).

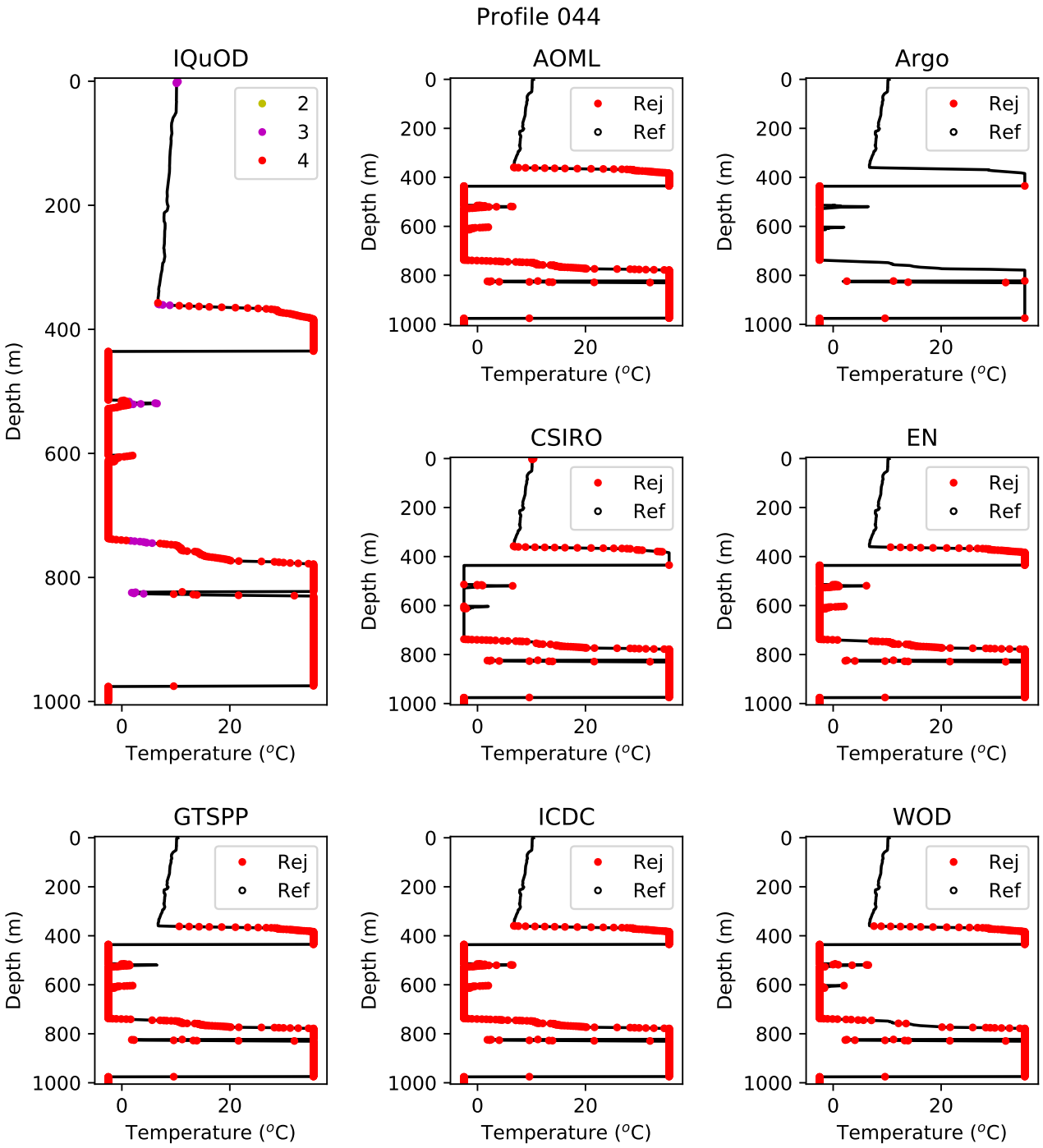

Figure S44. Description of profile: High latitude South (possible wire break at 350 m or insulation problems, with climatology and gradient problems).

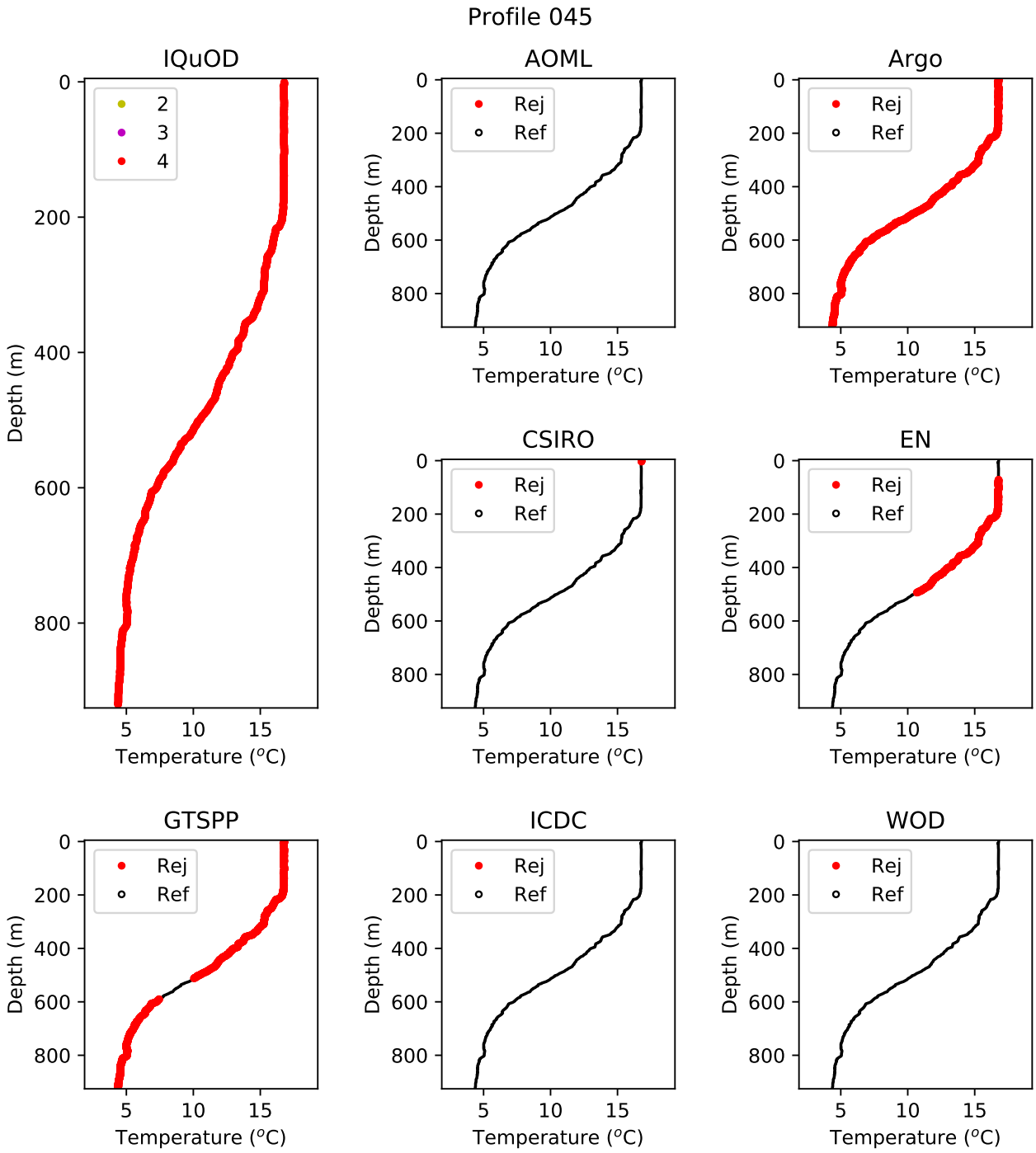

Figure S45. Description of profile: Impossible location (longitude ¡ -180^o).

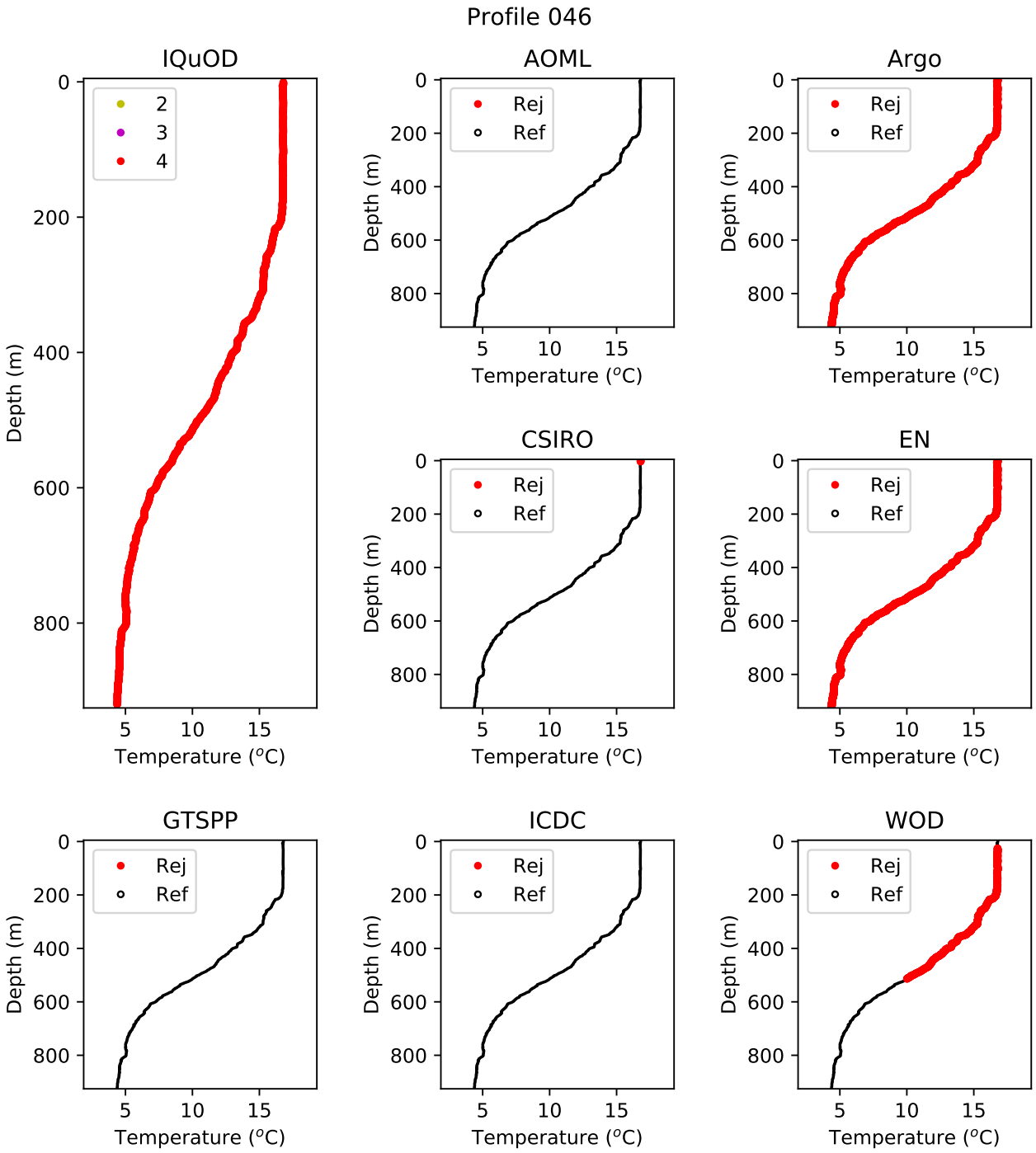

Figure S46. Description of profile: Impossible location (latitude ¡ -90°).

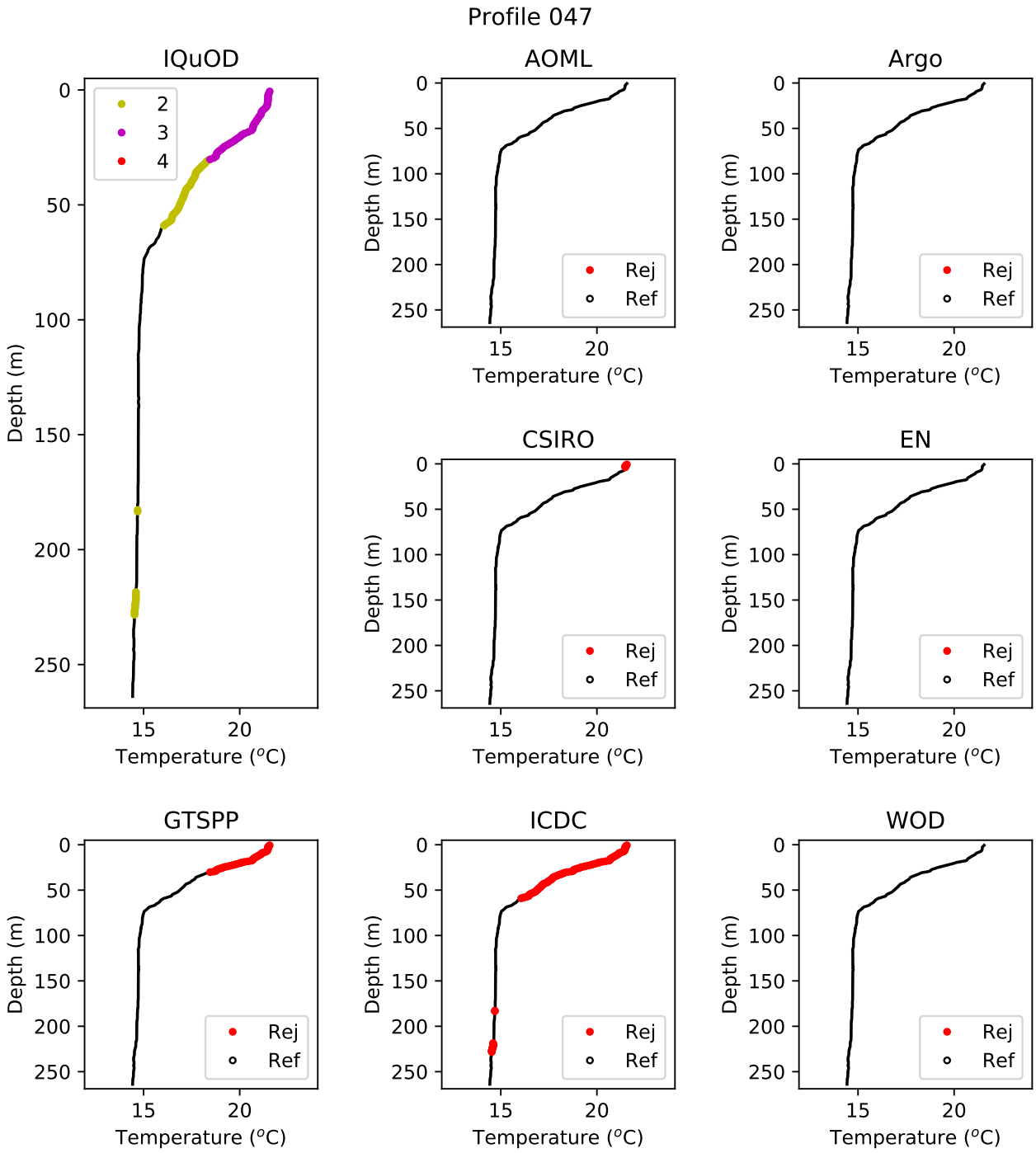

Figure S47. Description of profile: Mediterranean Sea (good with temperature inversion).

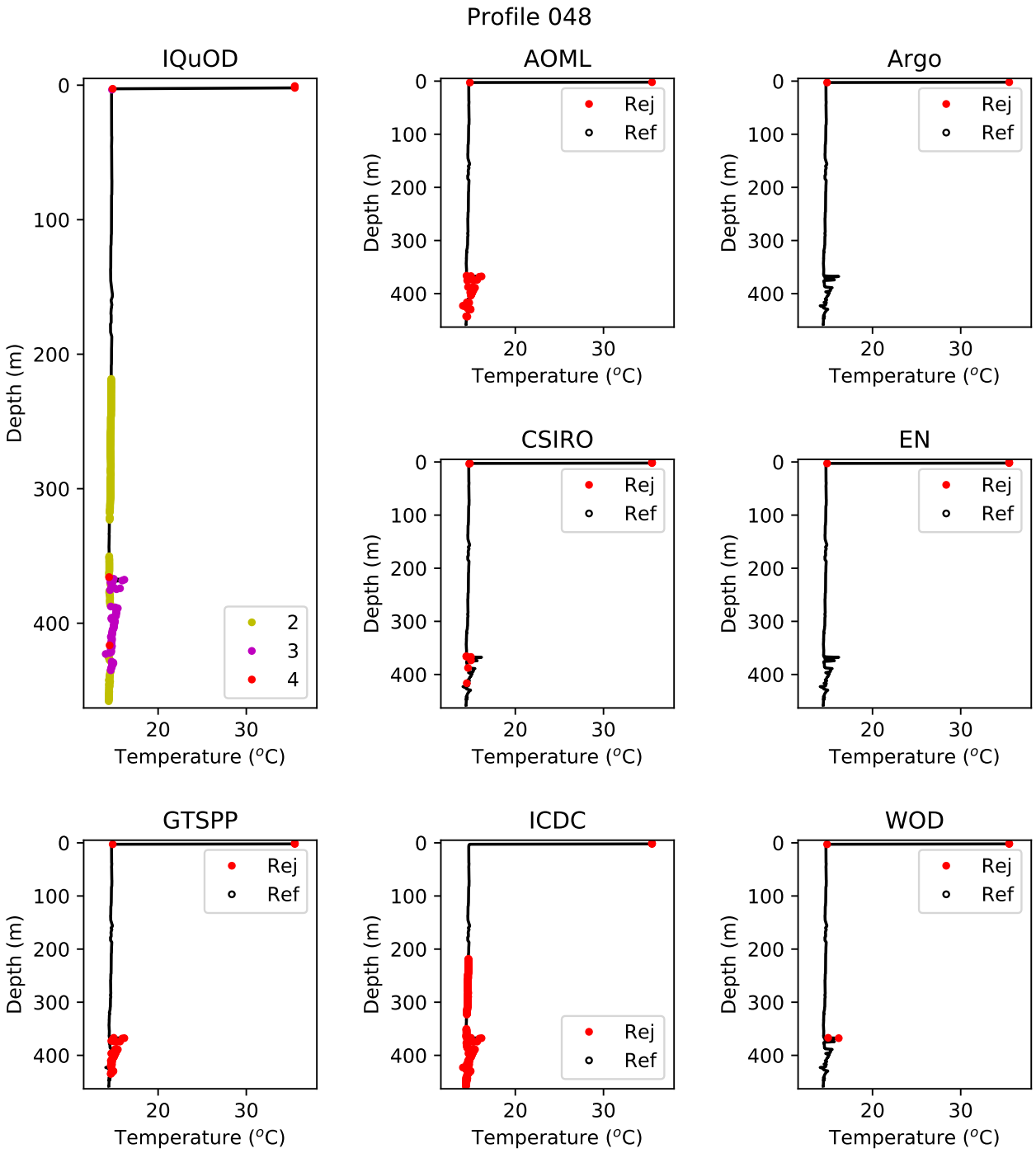

Figure S48. Description of profile: Mediterranean Sea (several spikes below 360 m, maximum depth = 460 m).

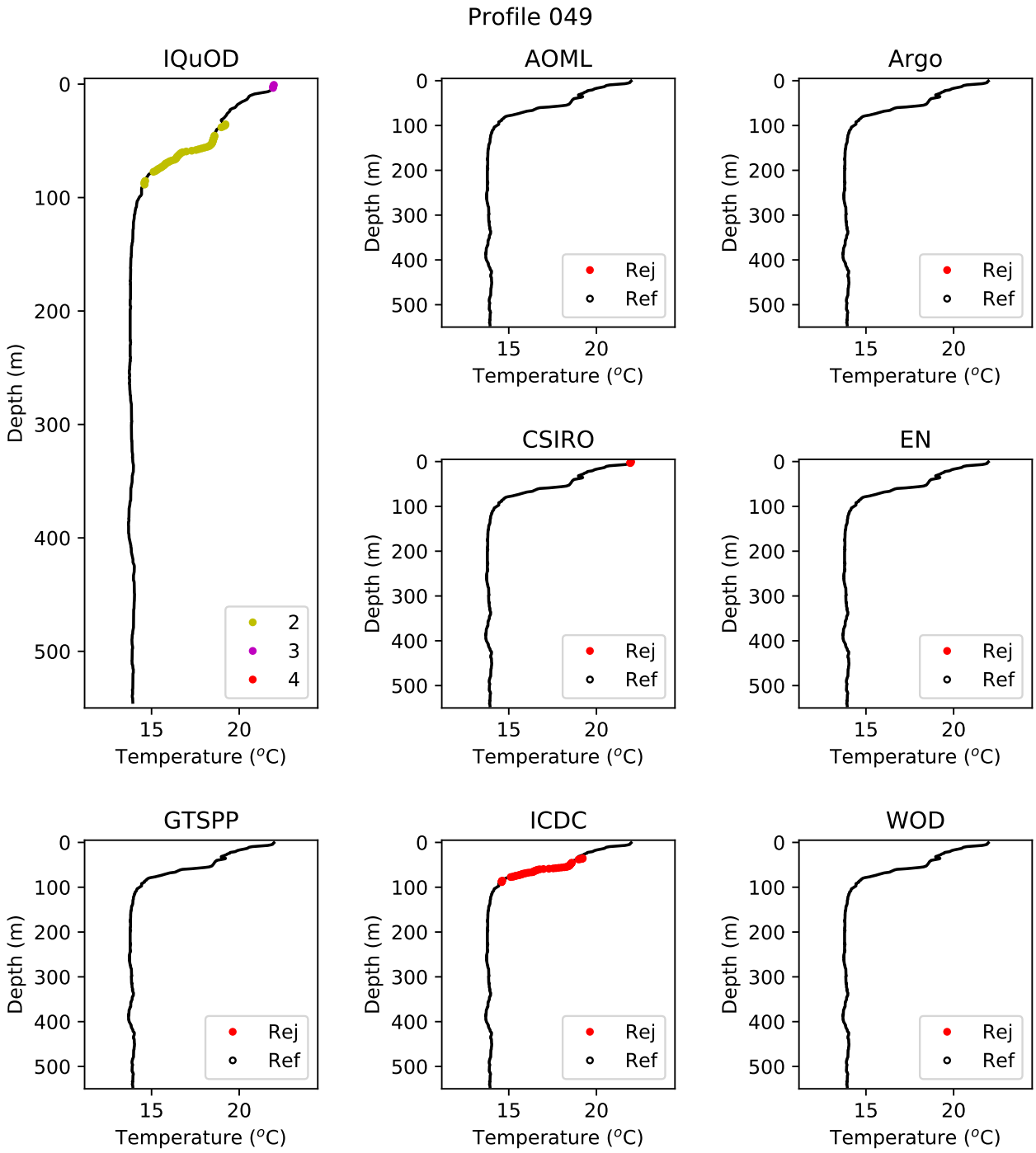

Figure S49. Description of profile: Mediterranean Sea (good with temperature inversion; this is a T-10 XBT with nominal depth = 200 m).

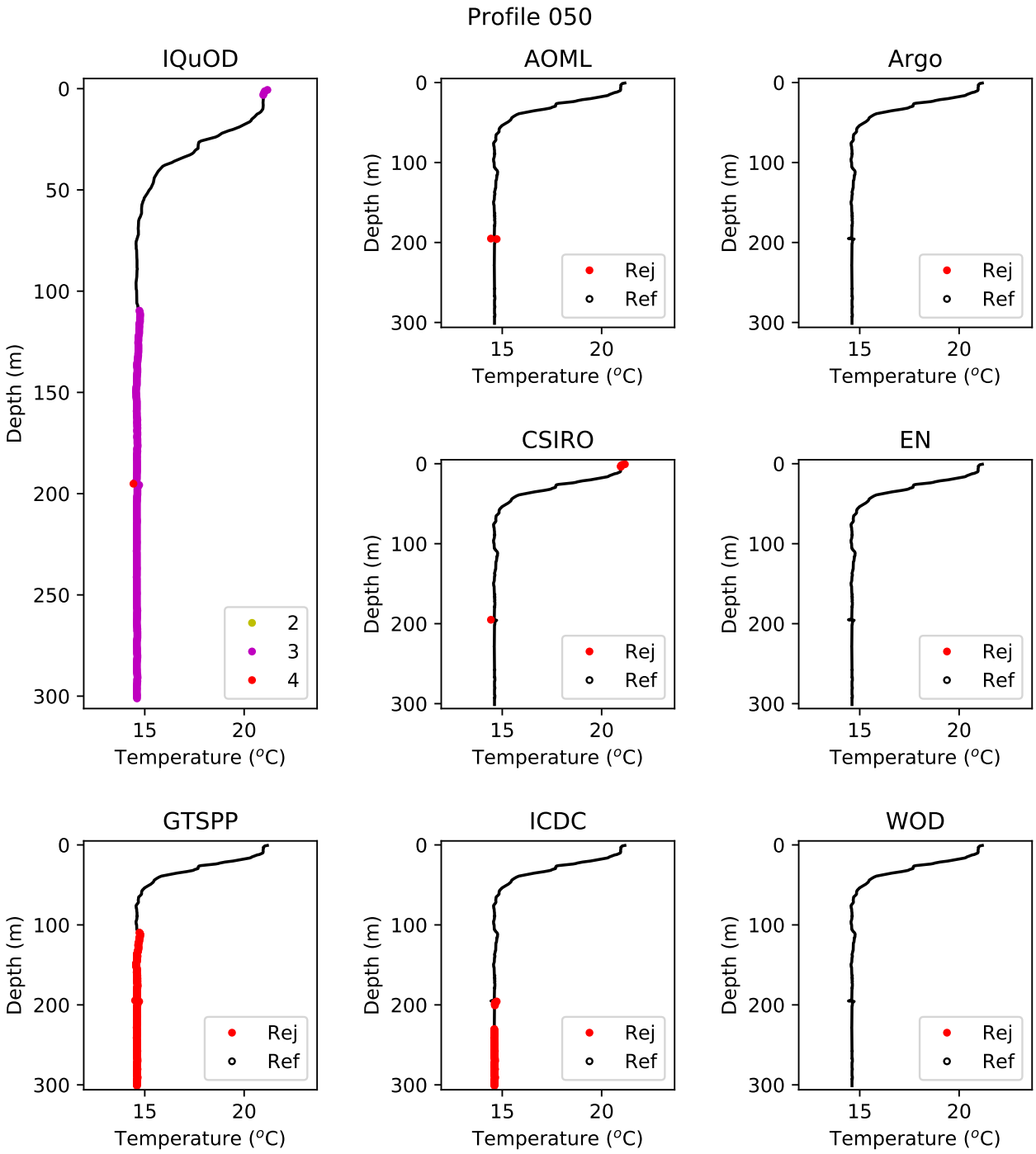

Figure S50. Description of profile: Mediterranean Sea (spike at 195 m, otherwise good with temperature inversion; this is a T-10 XBT with nominal depth of 200 m; the spike may be wire break).

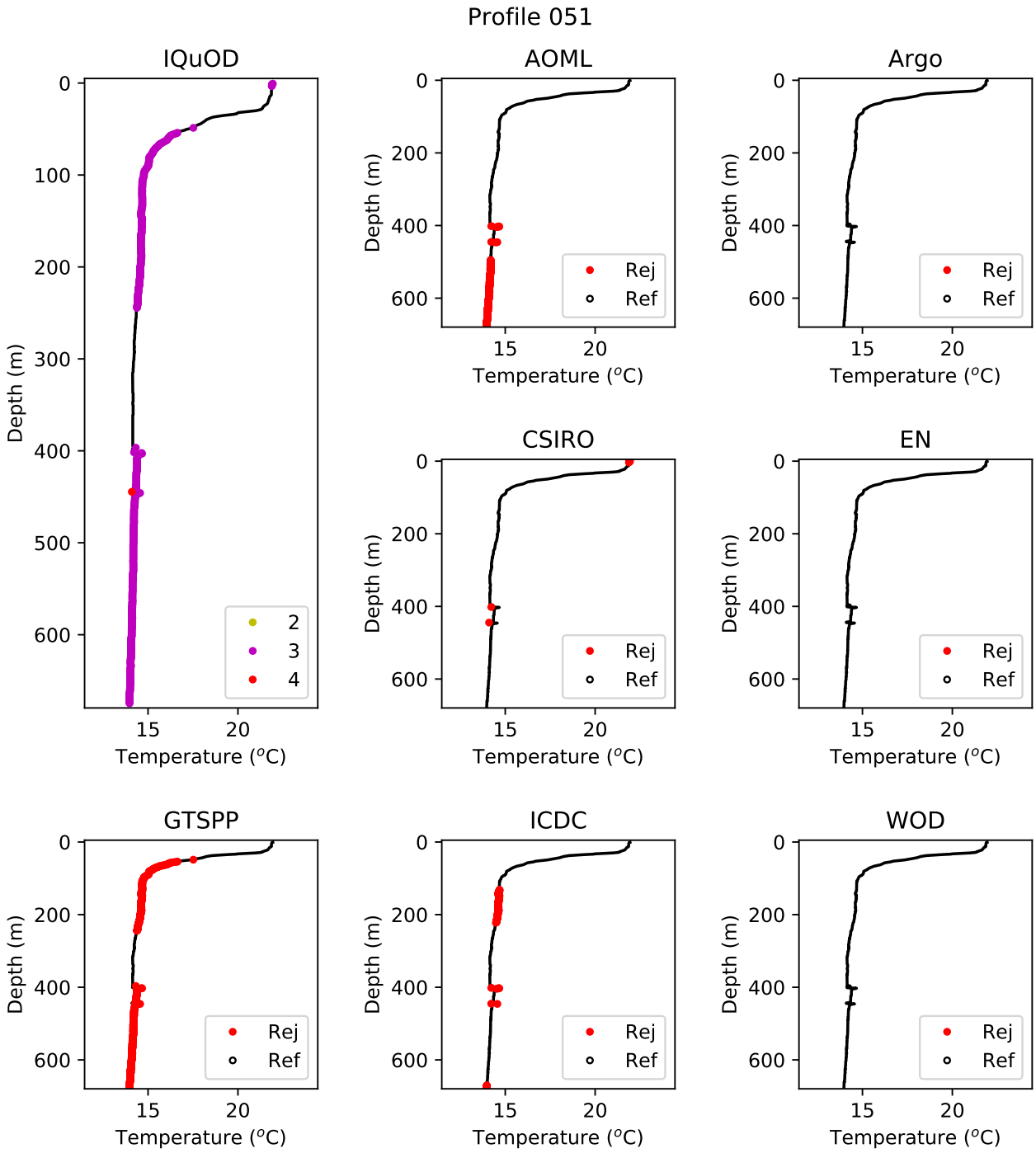

Figure S51. Description of profile: Mediterranean Sea (several spikes at 400 m and 450 m, otherwise good points with temperature inversion).

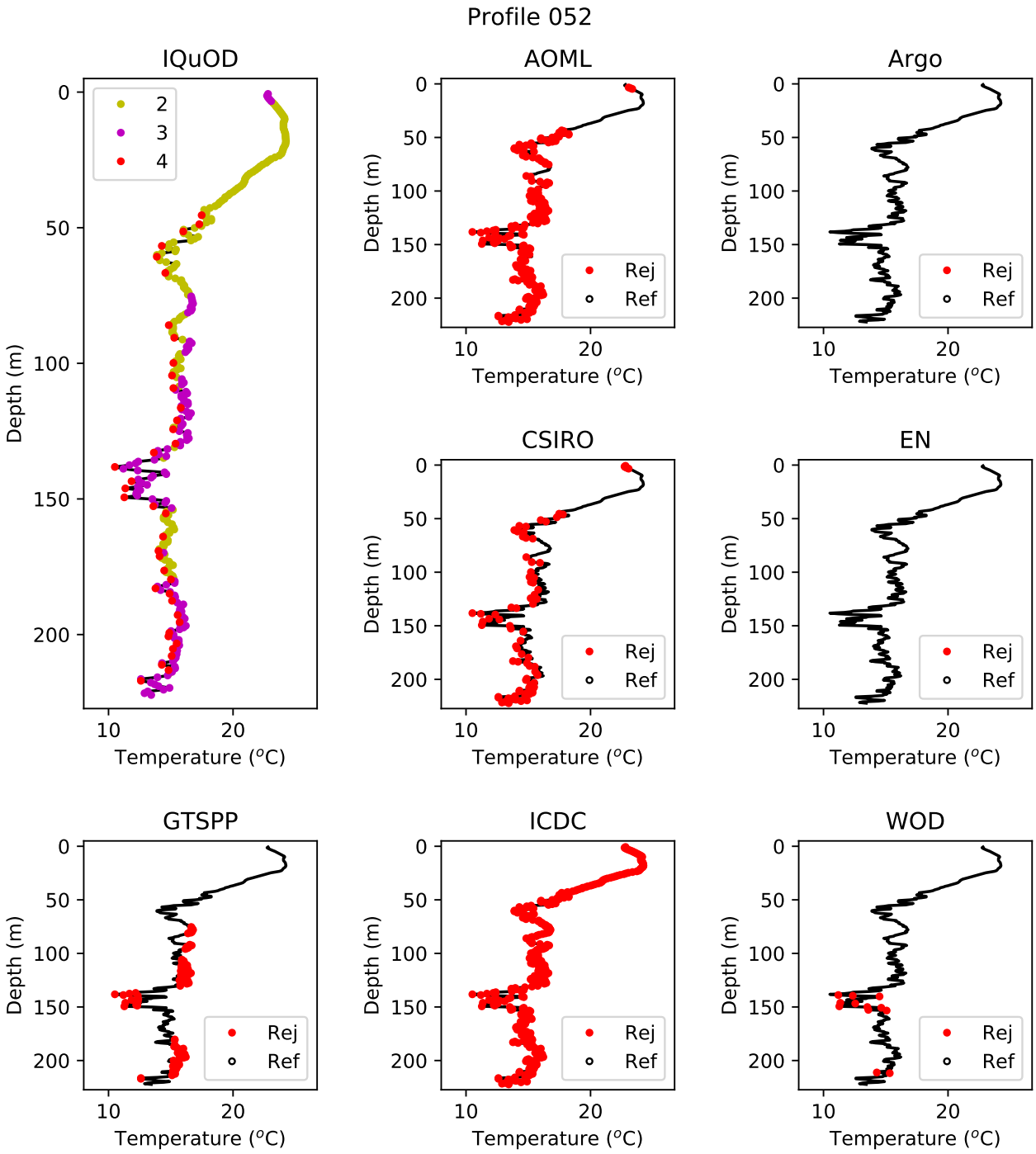

Figure S52. Description of profile: Mediterranean Sea (maximum depth = 220 m; profile is all bad below 50 m with spikes, climatology and gradient problems).

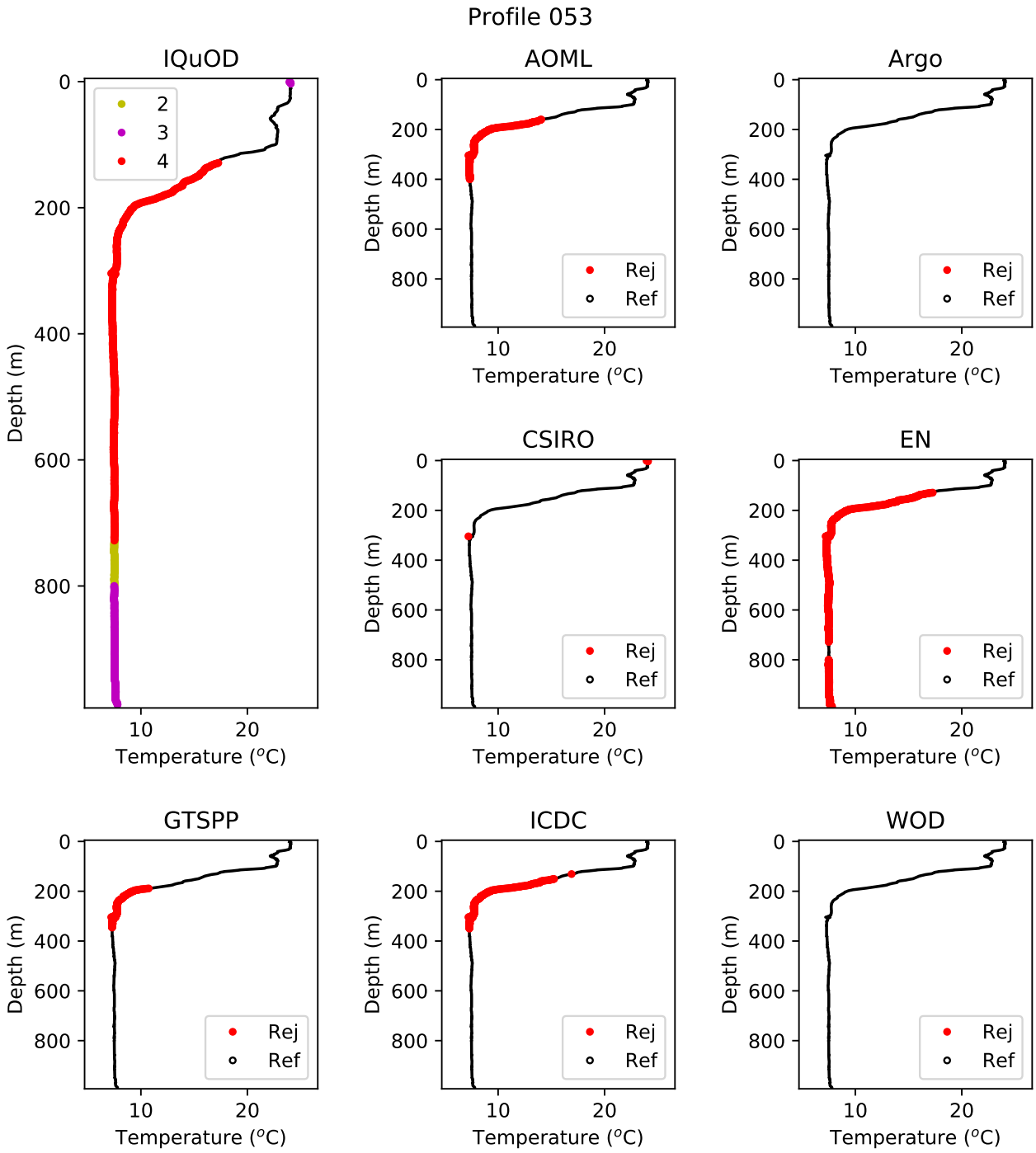

Figure S53. Description of profile: North Atlantic Ocean (good above 300 m, with spike at 300 m when the probe hit the bottom and bad afterwards).

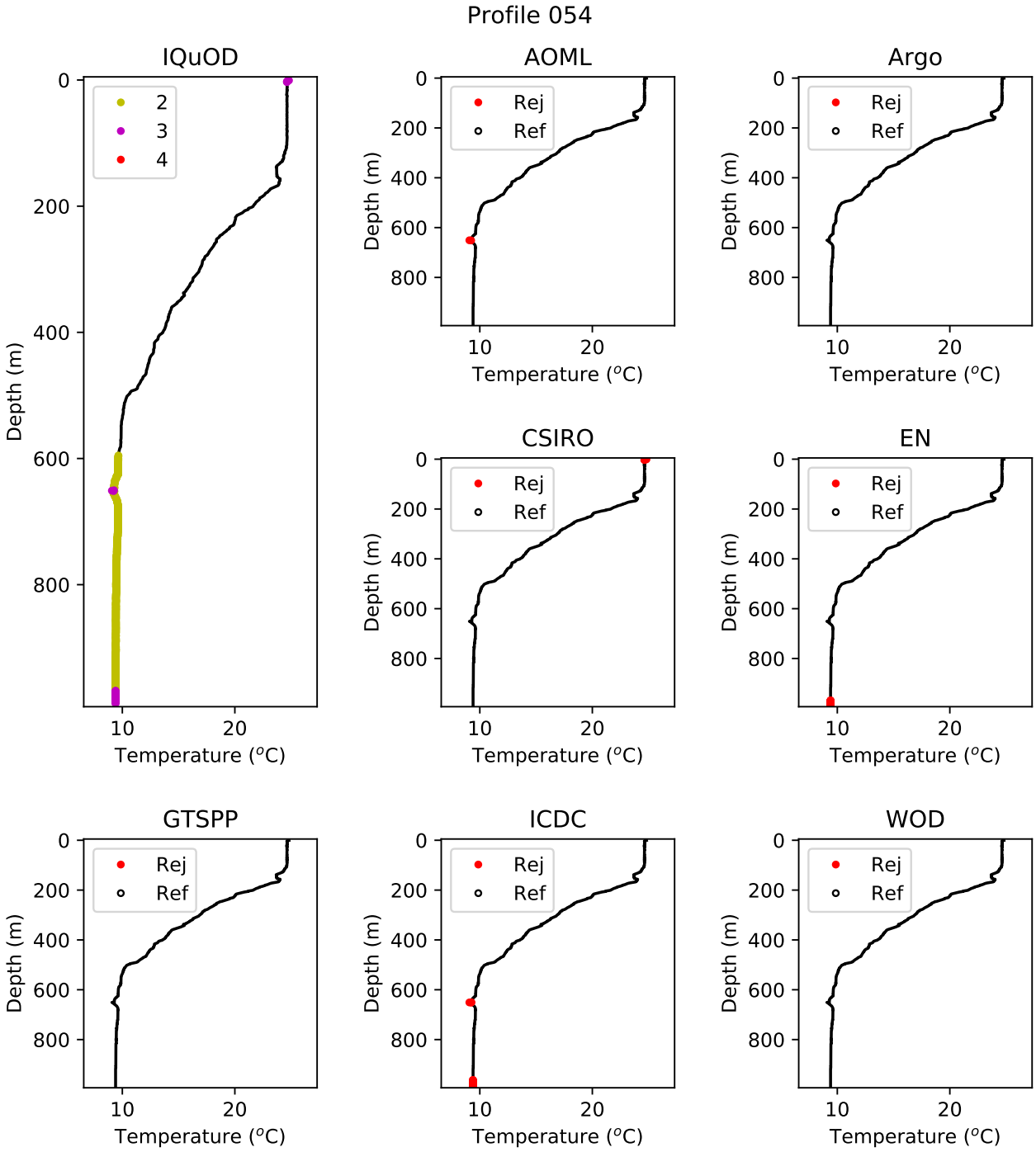

Figure S54. Description of profile: North Atlantic Ocean (hit bottom at 650 m; bad below that and good above with temperature inversion).

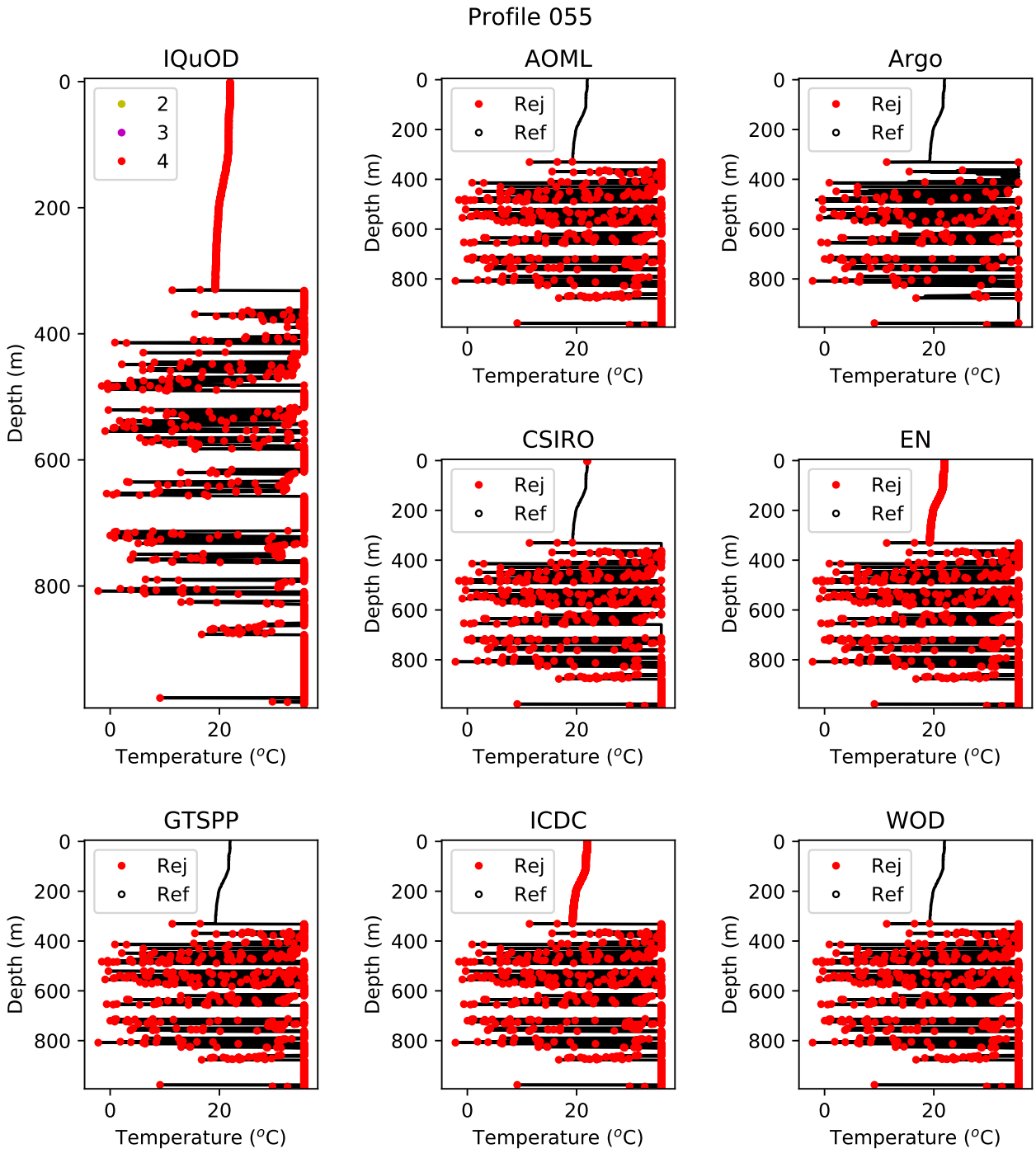

Figure S55. Description of profile: North Atlantic Ocean (all bad below 320 m with spikes, climatology and gradient problems; possible wire leak or insulation problem).

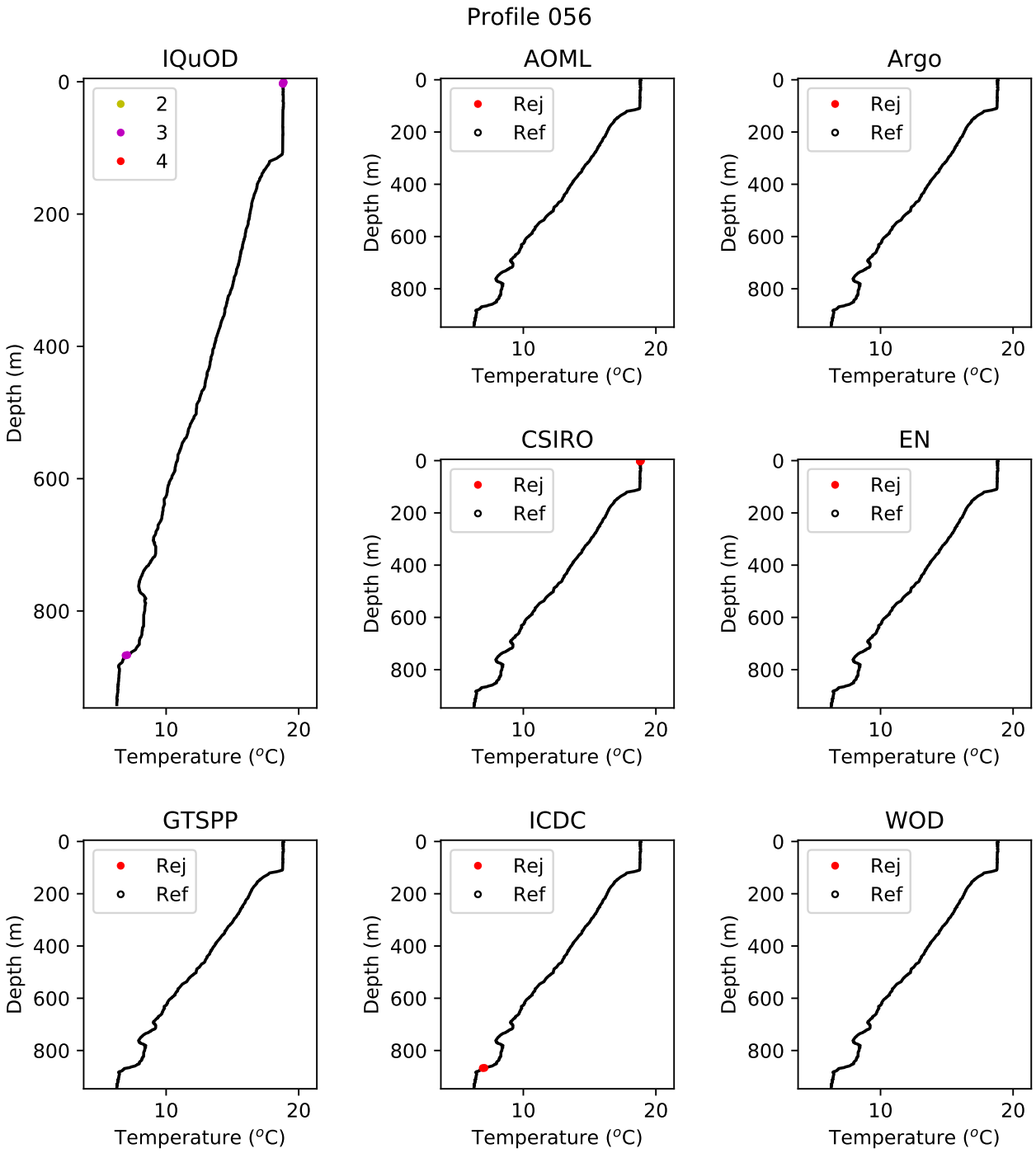

Figure S56. Description of profile: North Atlantic Ocean (good with temperature inversion).

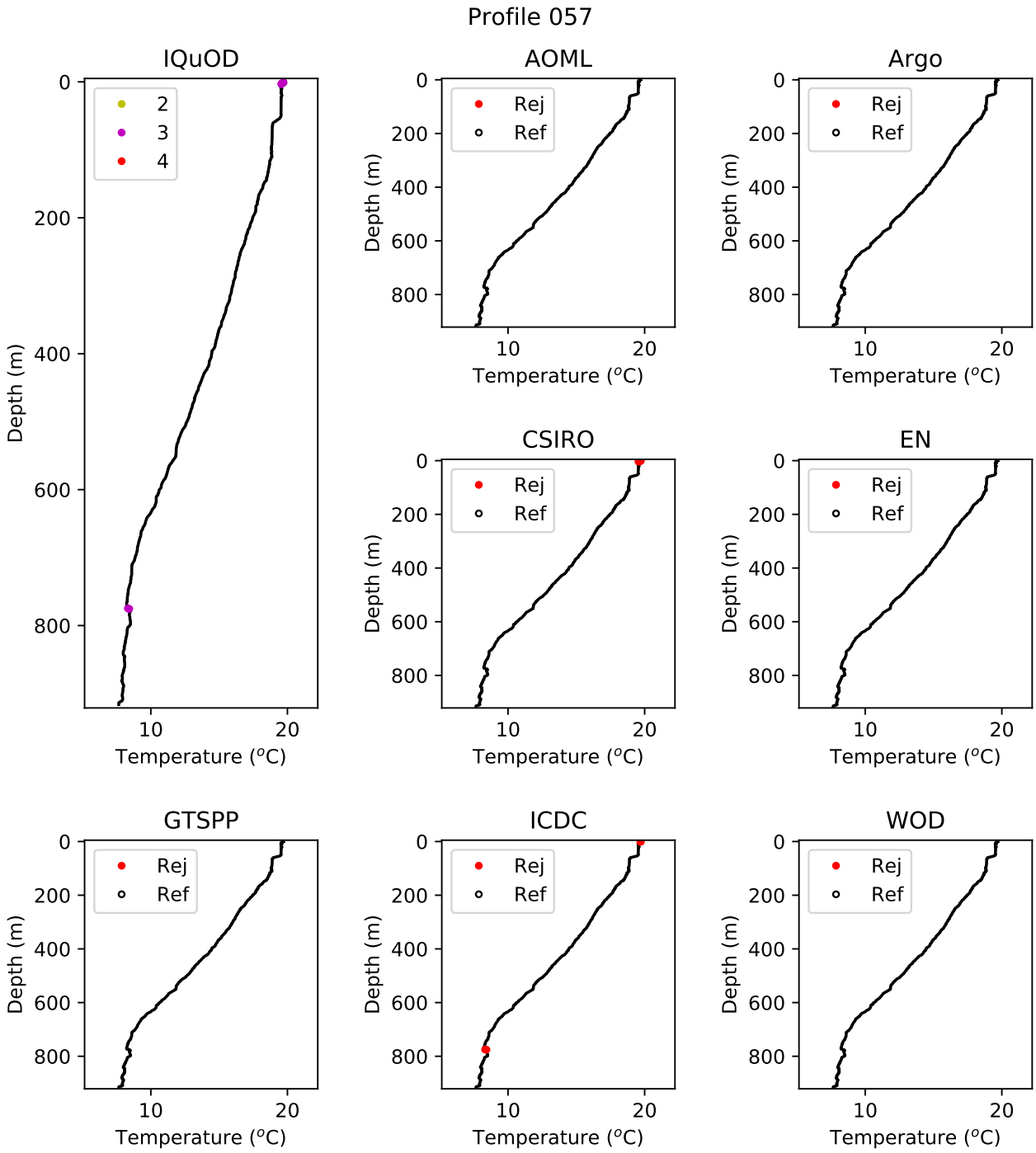

Figure S57. Description of profile: North Atlantic Ocean (good but irregular with temperature inversion).

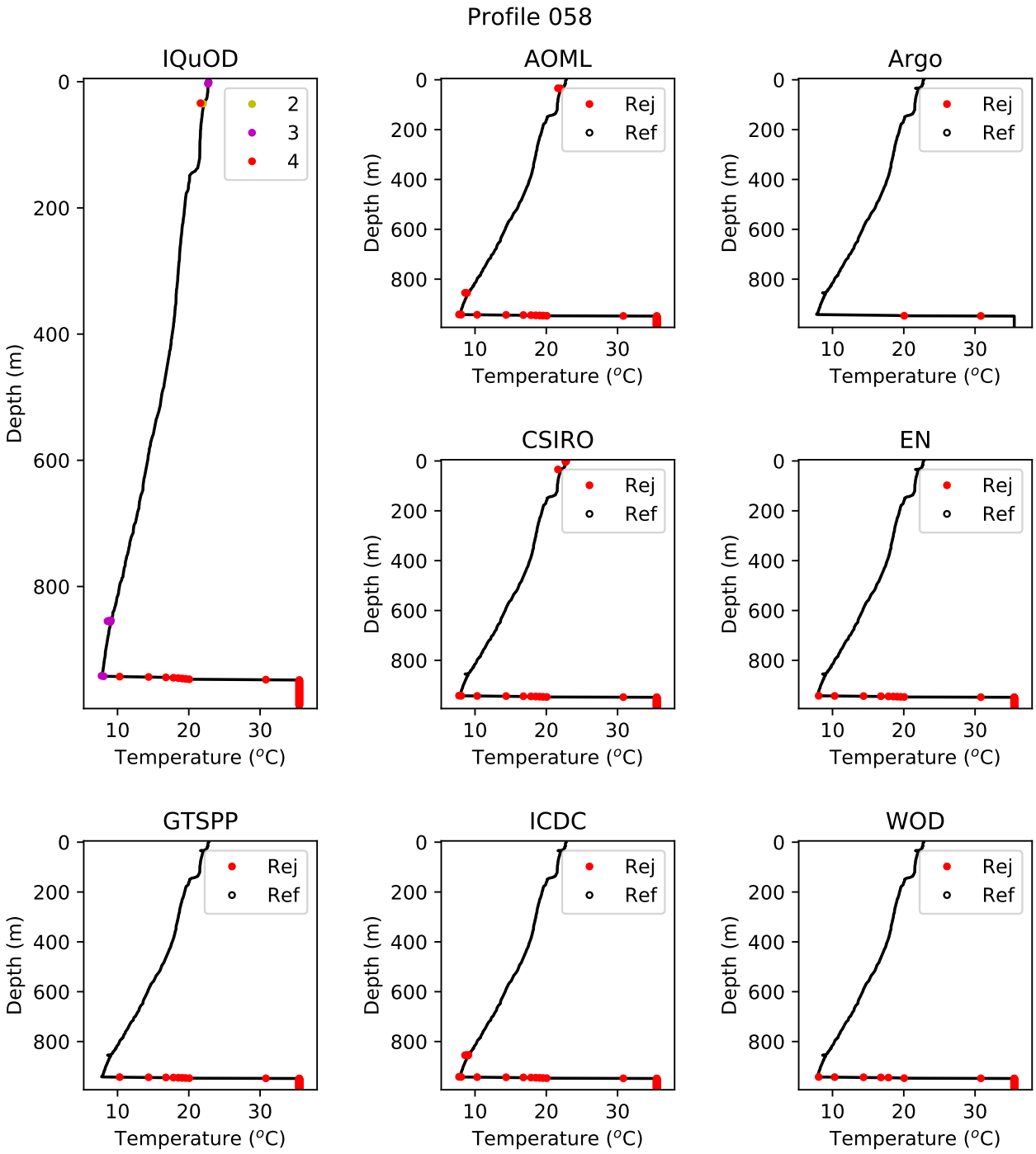

Figure S58. Description of profile: North Atlantic Ocean (spikes at 25 m, 850 m but otherwise good).

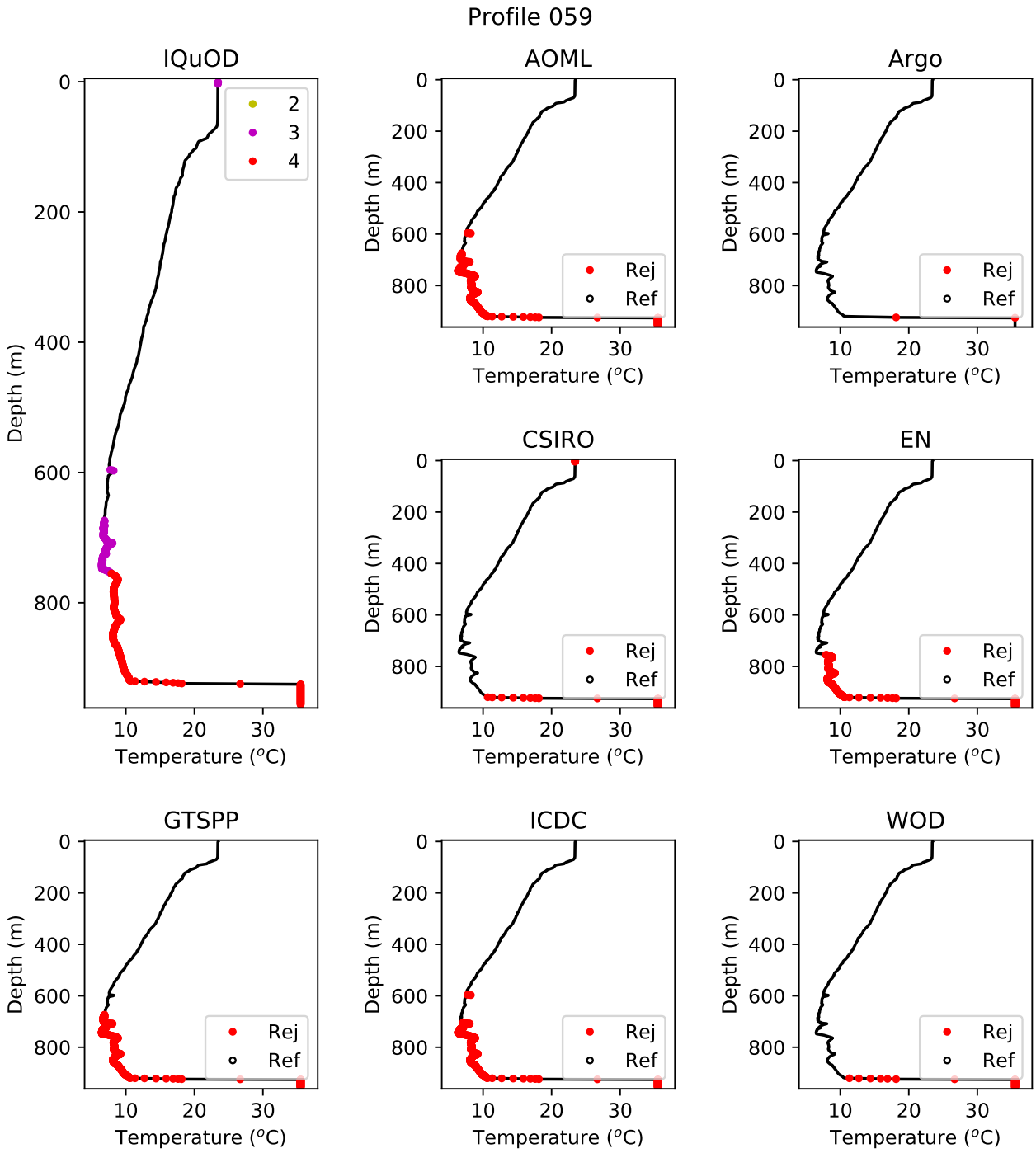

Figure S59. Description of profile: North Pacific Ocean (several spikes below 600 m).

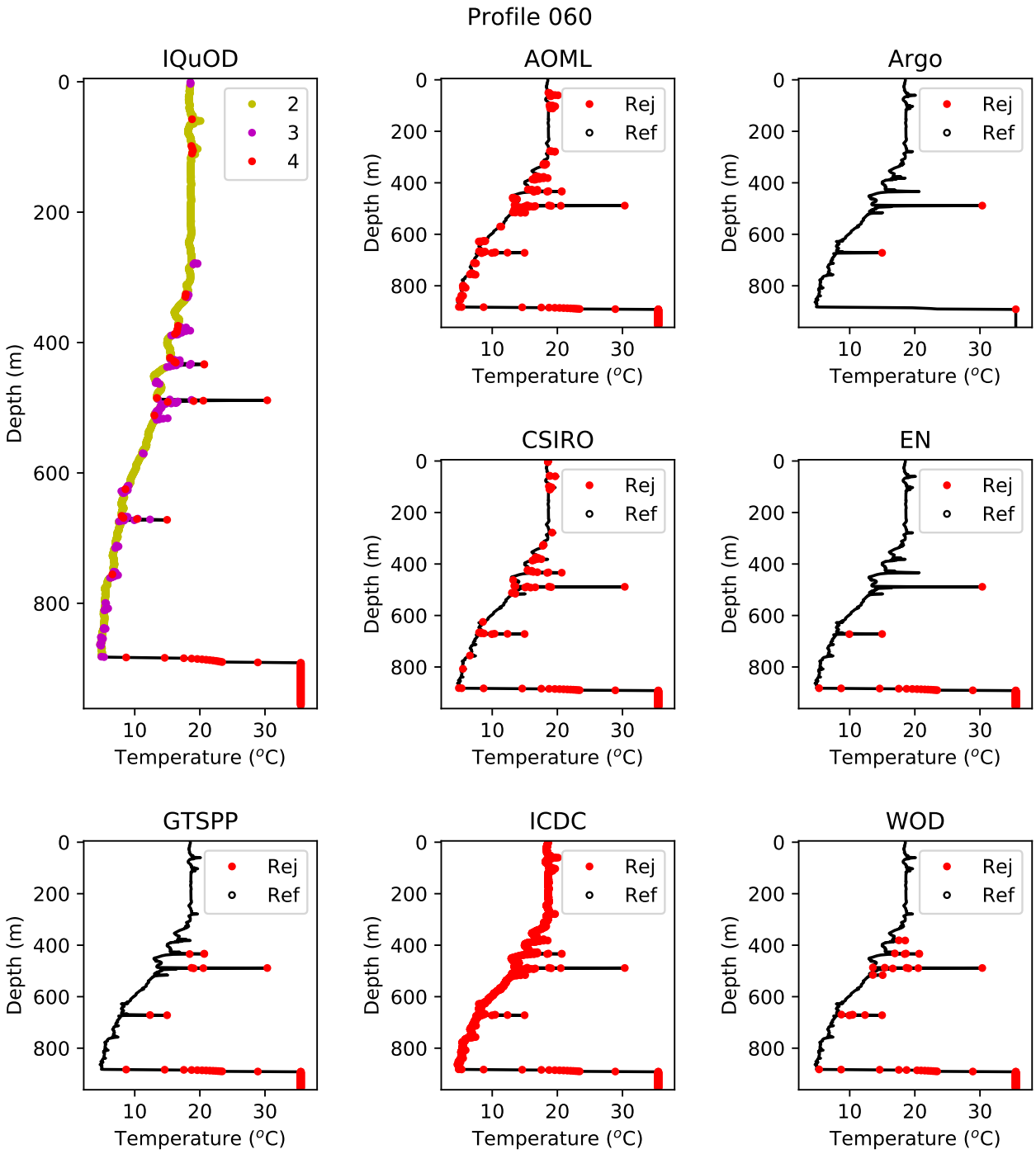

Figure S60. Description of profile: North Pacific Ocean (many spikes at many depths).

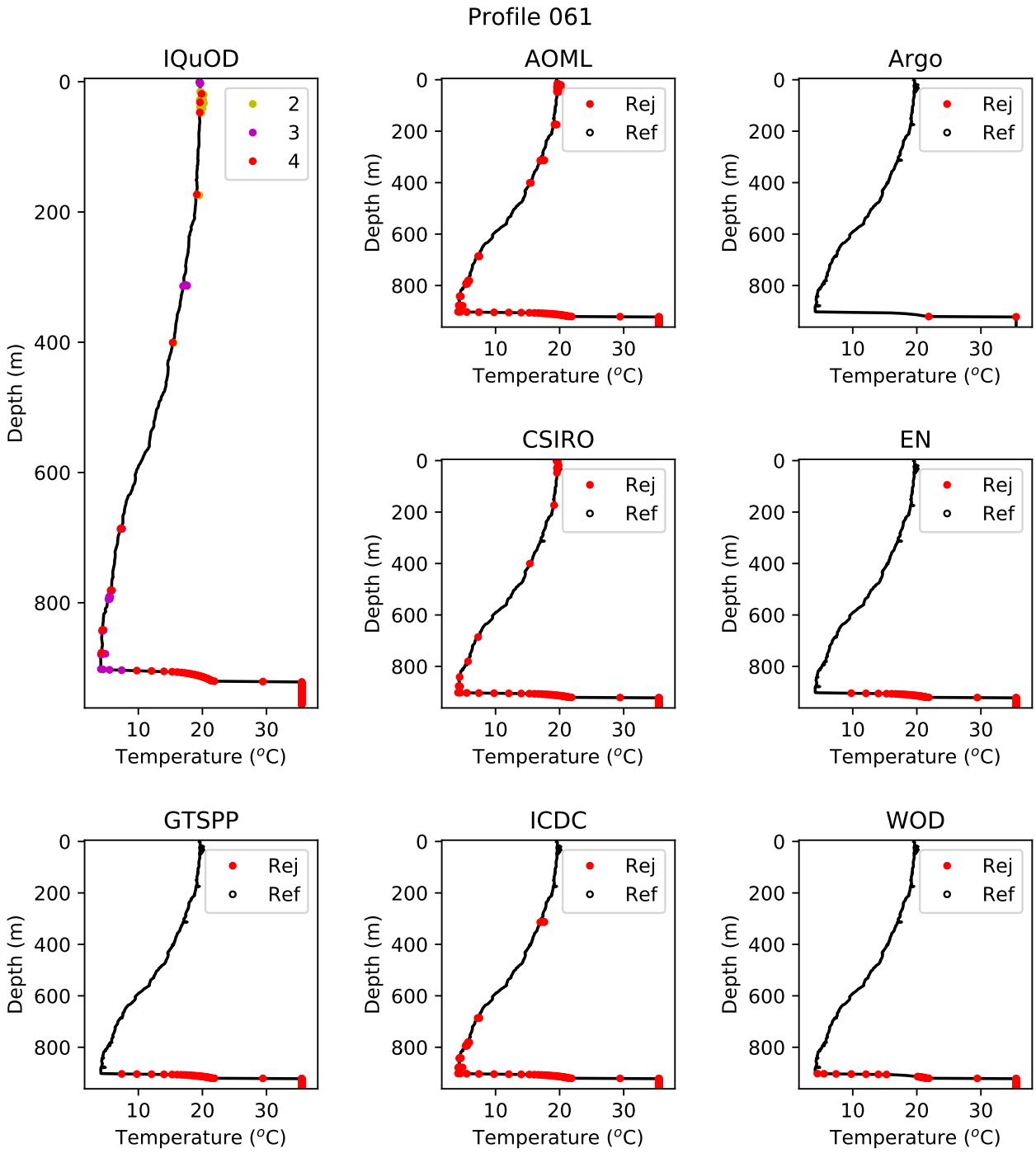

Figure S61. Description of profile: North Pacific Ocean (spikes near the surface and at 200 m, 300 m and 850 m).

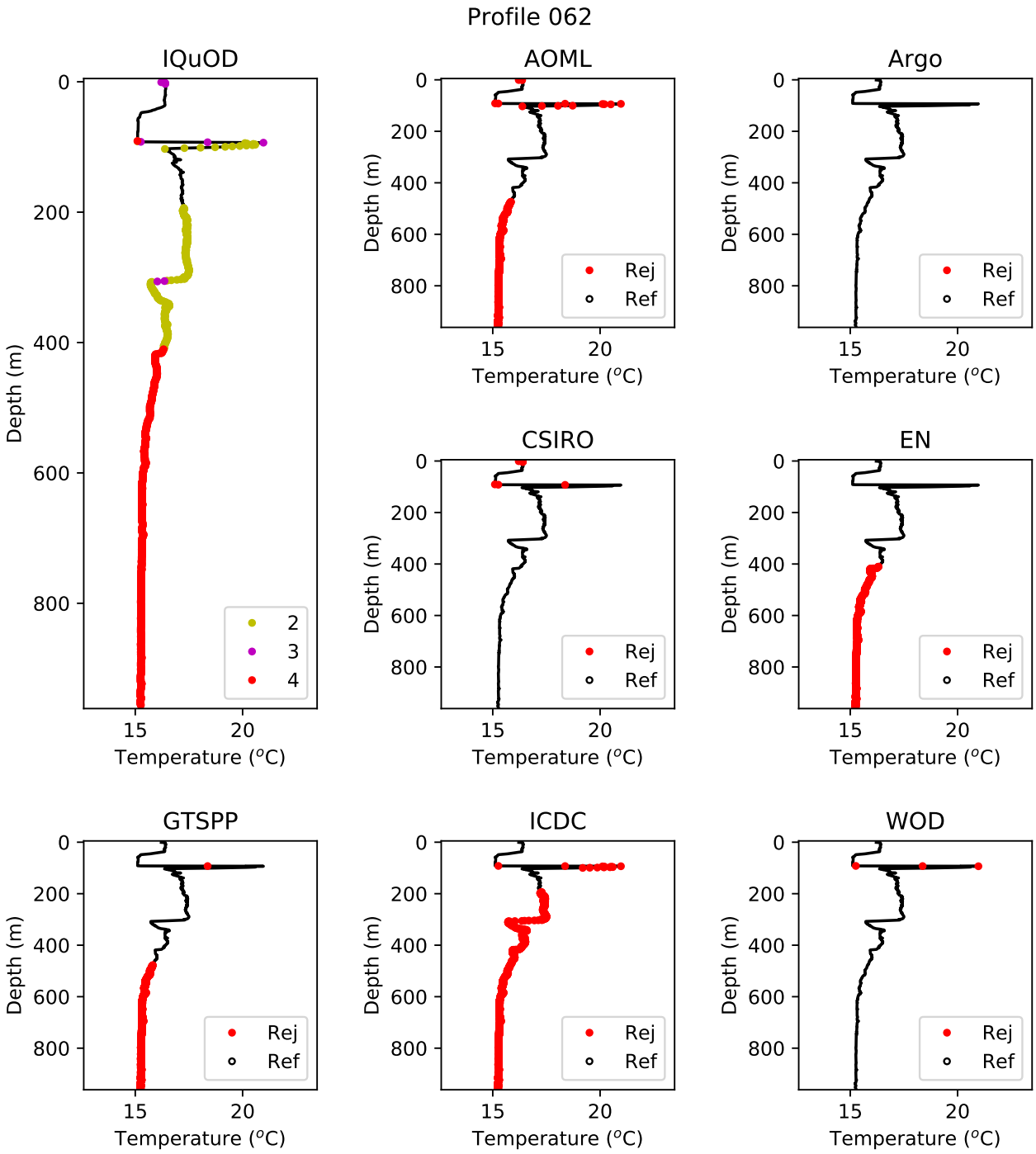

Figure S62. Description of profile: North Pacific Ocean (all bad; possibly deployed in a shallow region).

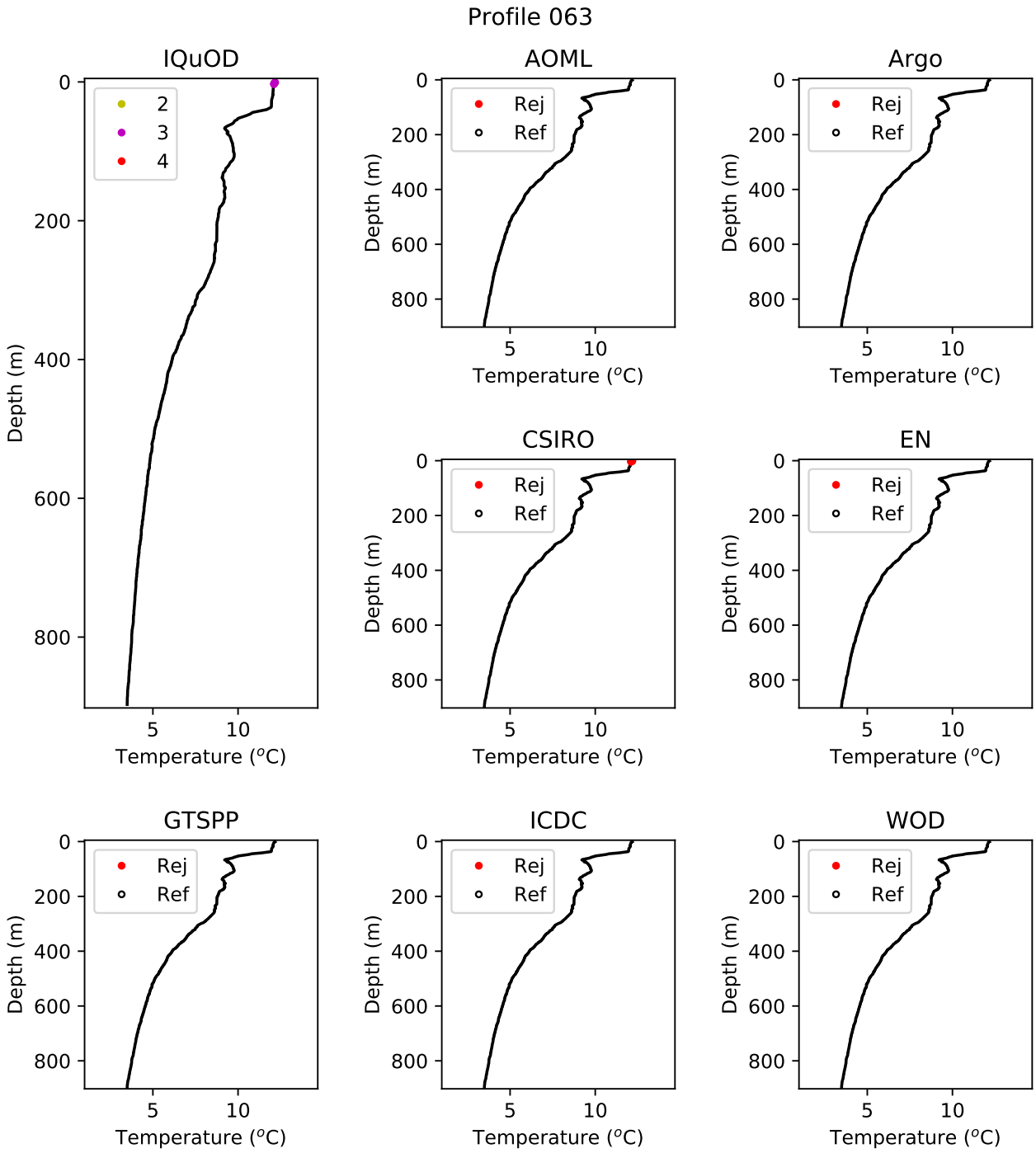

Figure S63. Description of profile: North Pacific Ocean (good with temperature inversion).

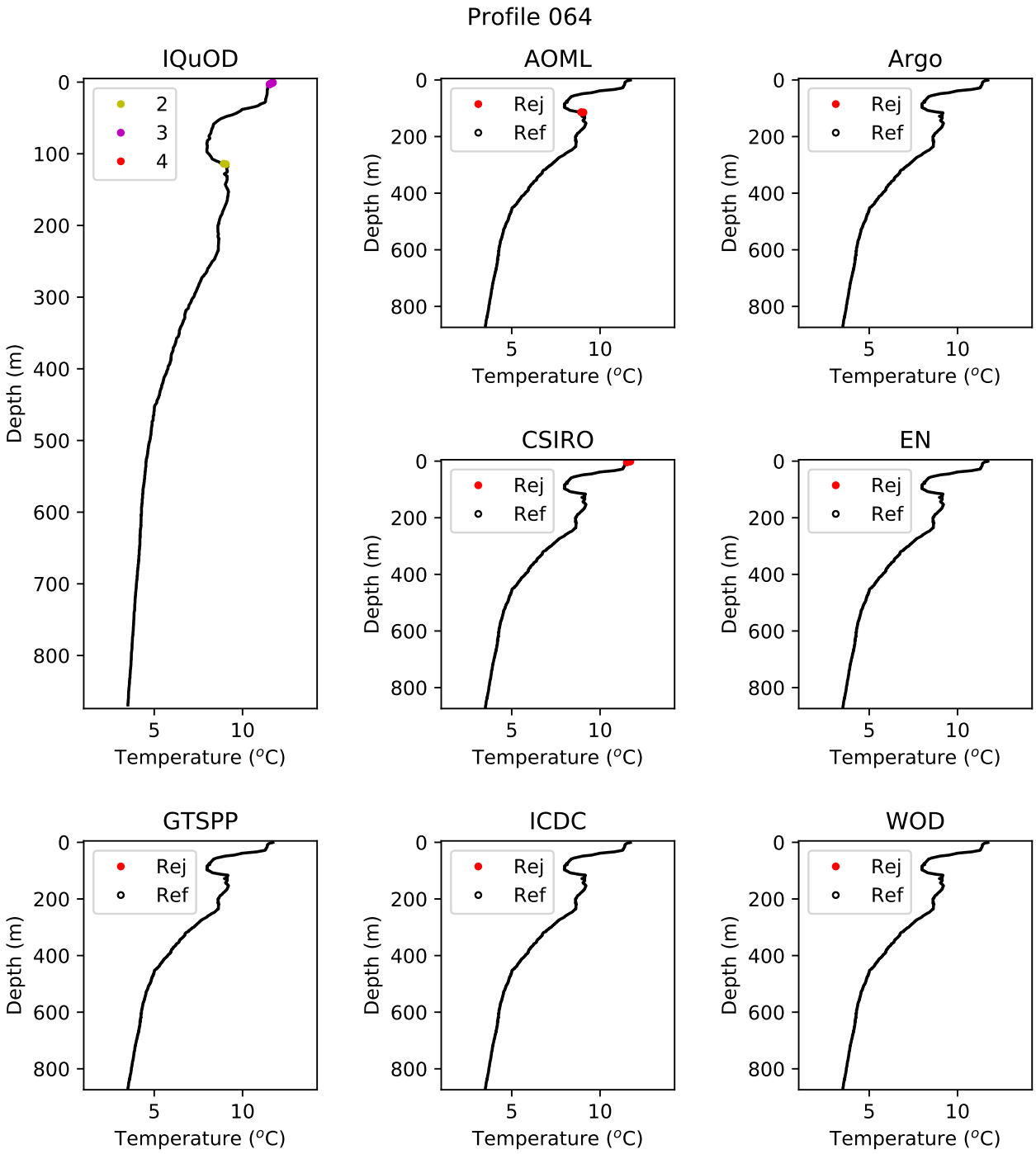

Figure S64. Description of profile: North Pacific Ocean (good with temperature inversion).

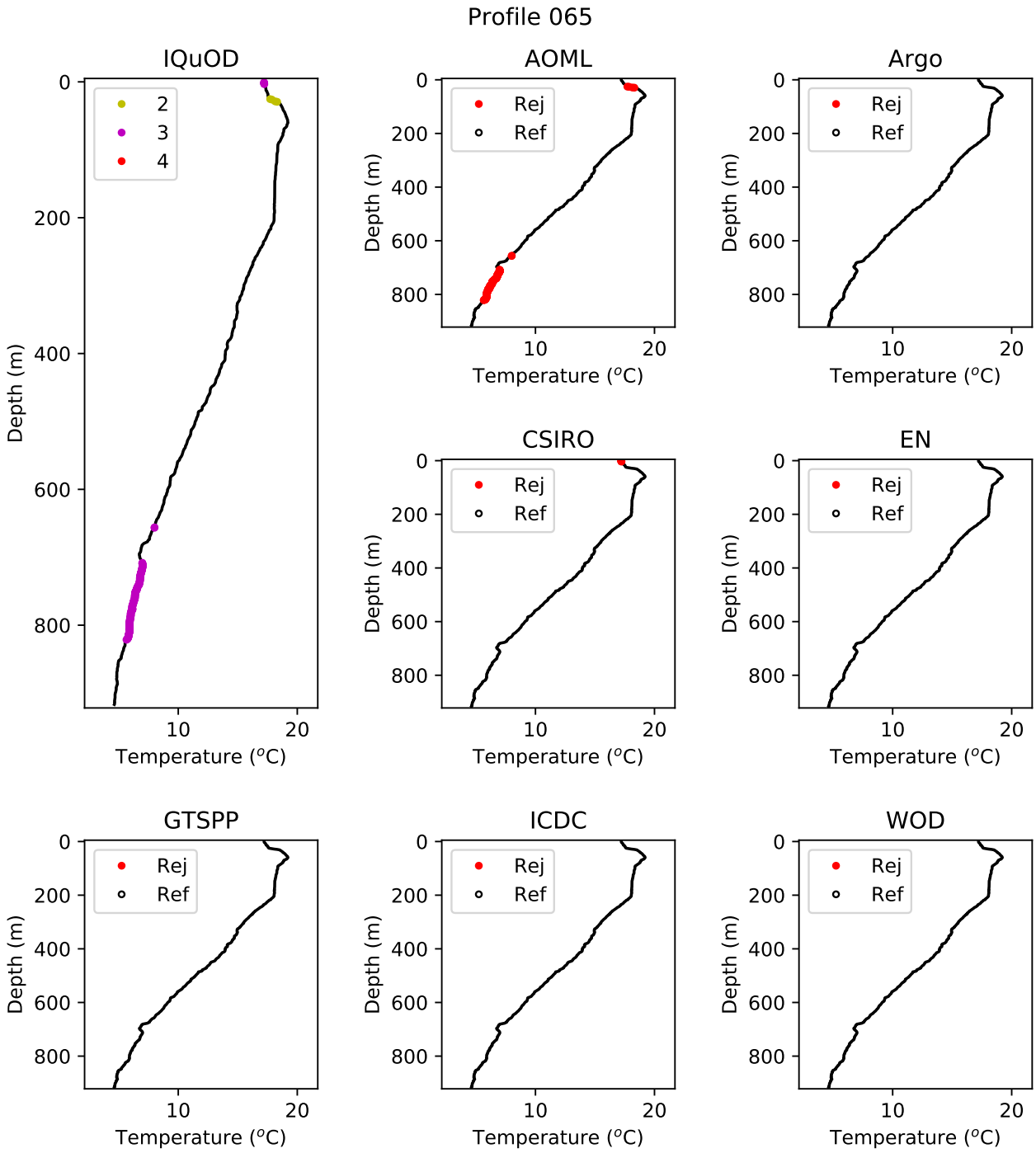

Figure S65. Description of profile: South Atlantic Ocean (good with temperature inversion).

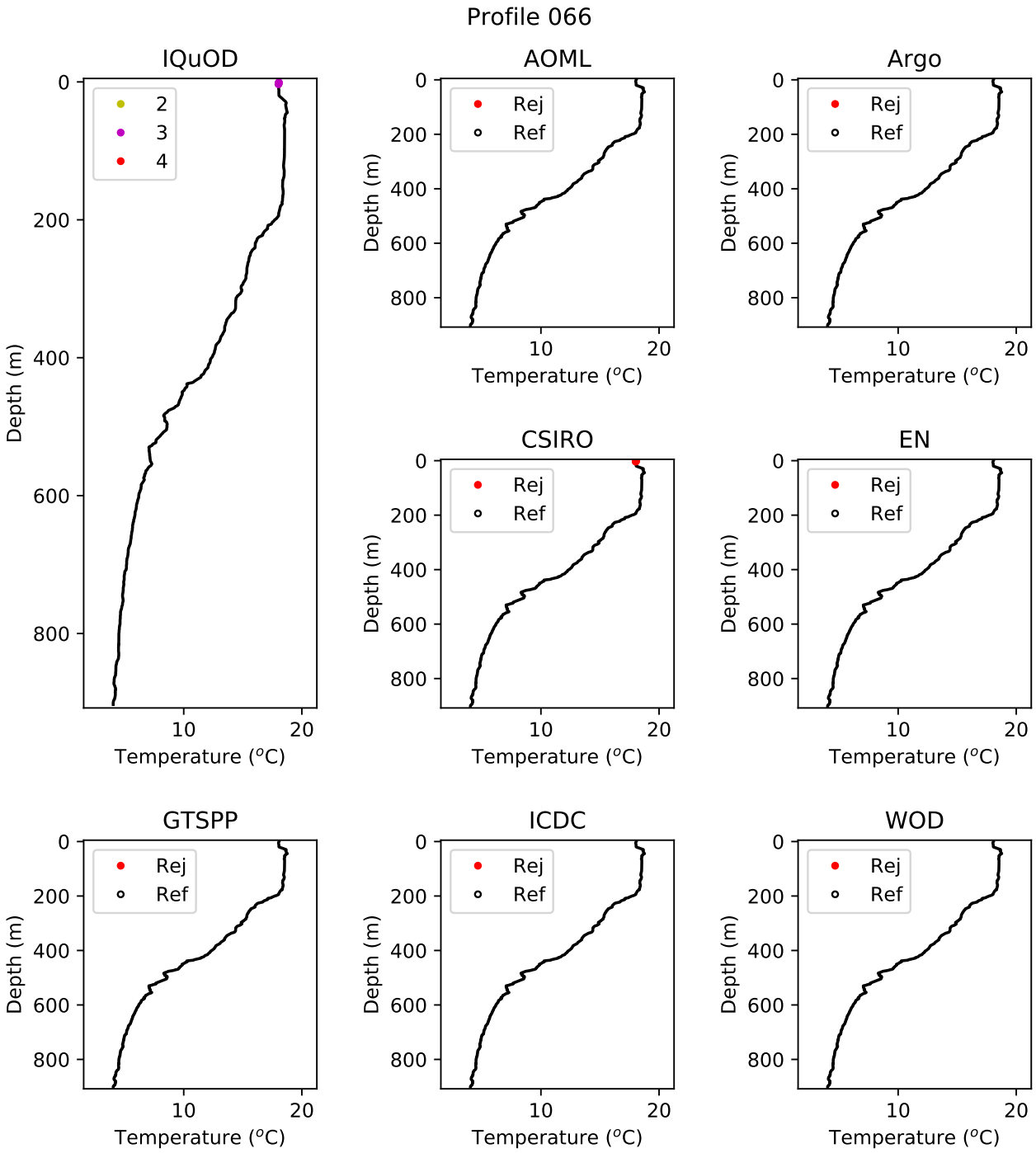

Figure S66. Description of profile: South Atlantic Ocean (good with temperature inversion).

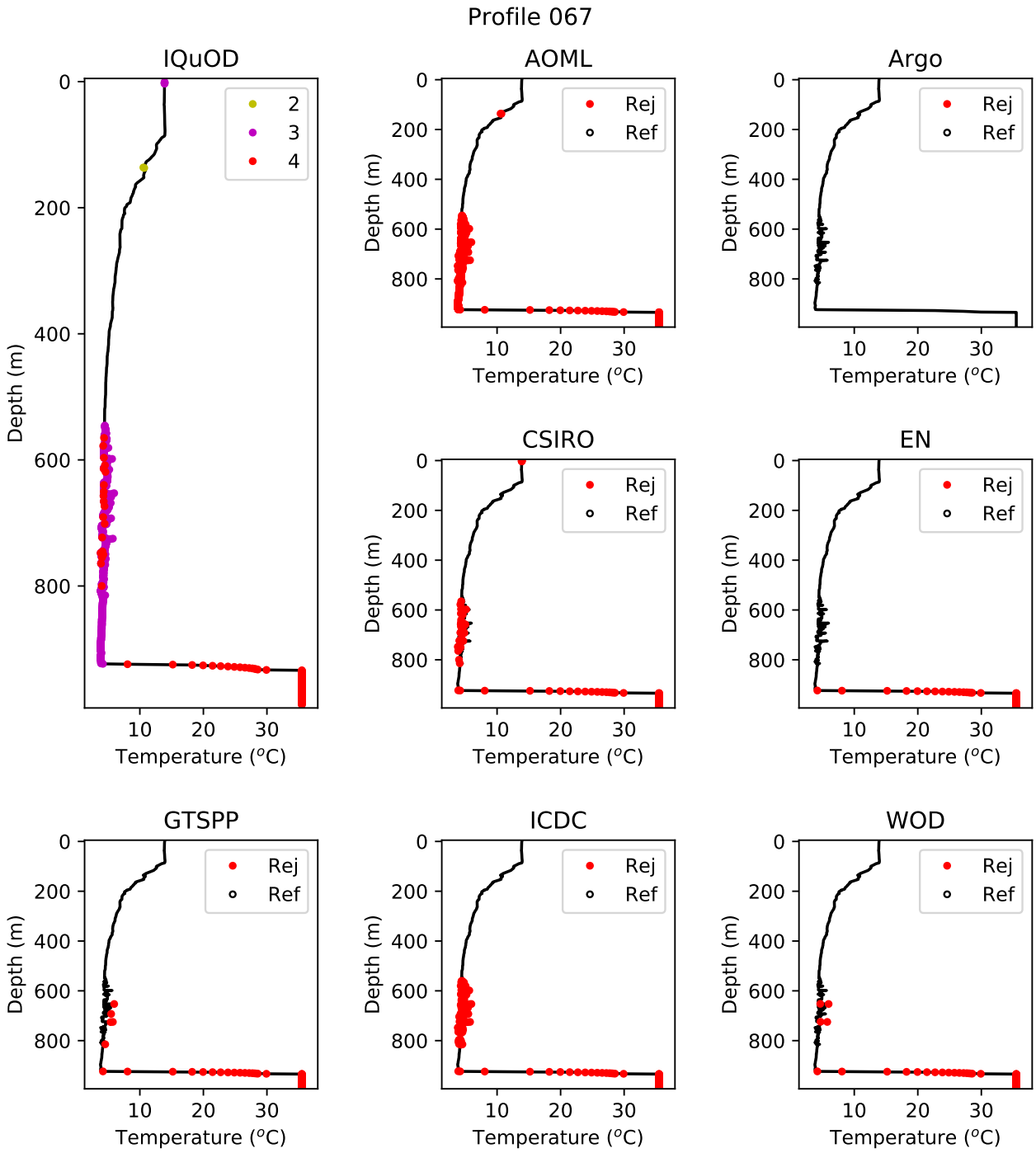

Figure S67. Description of profile: South Atlantic Ocean (many spikes between 550 m and 850 m; good before and after that).

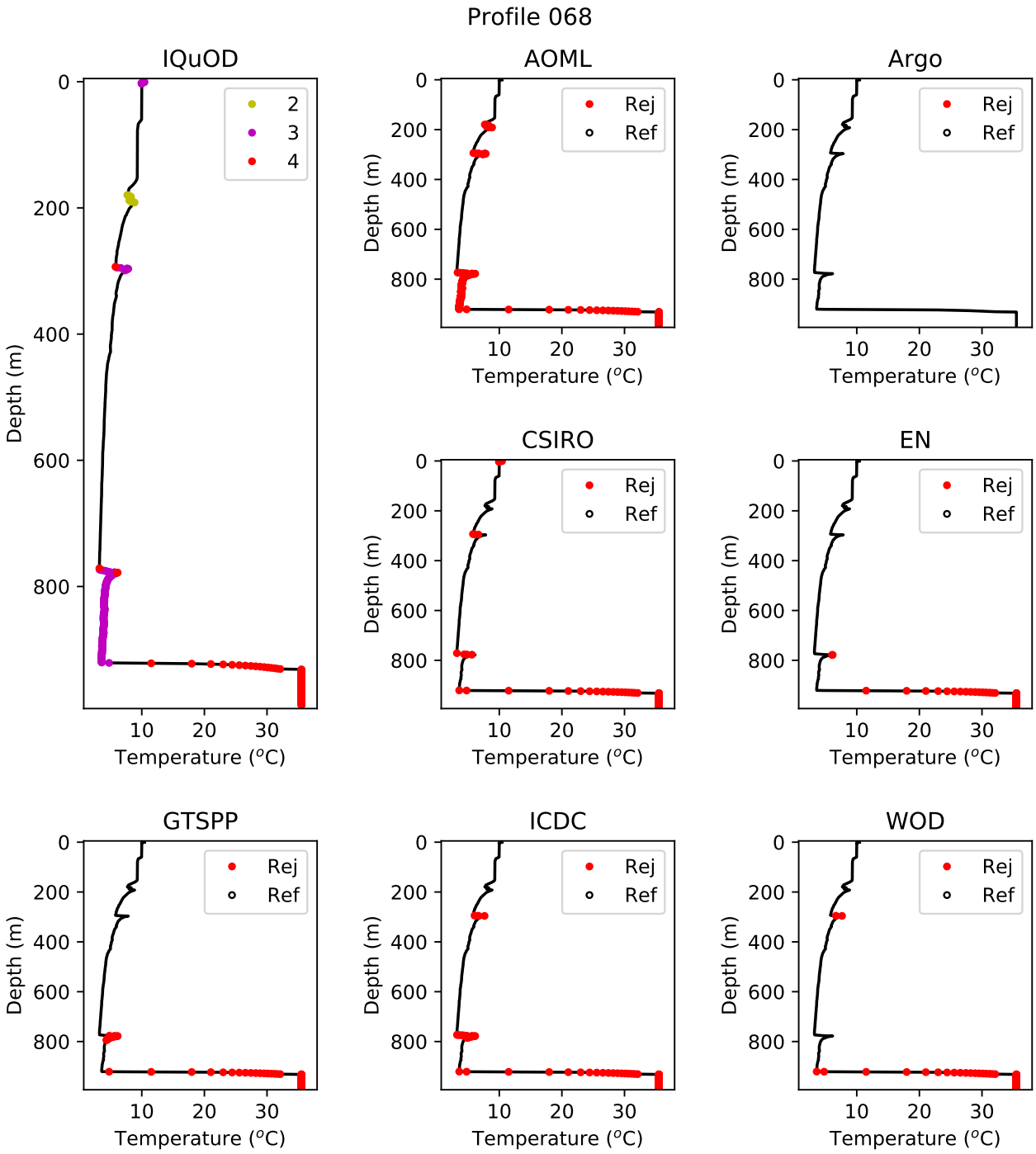

Figure S68. Description of profile: South Atlantic Ocean (spikes at several depths).

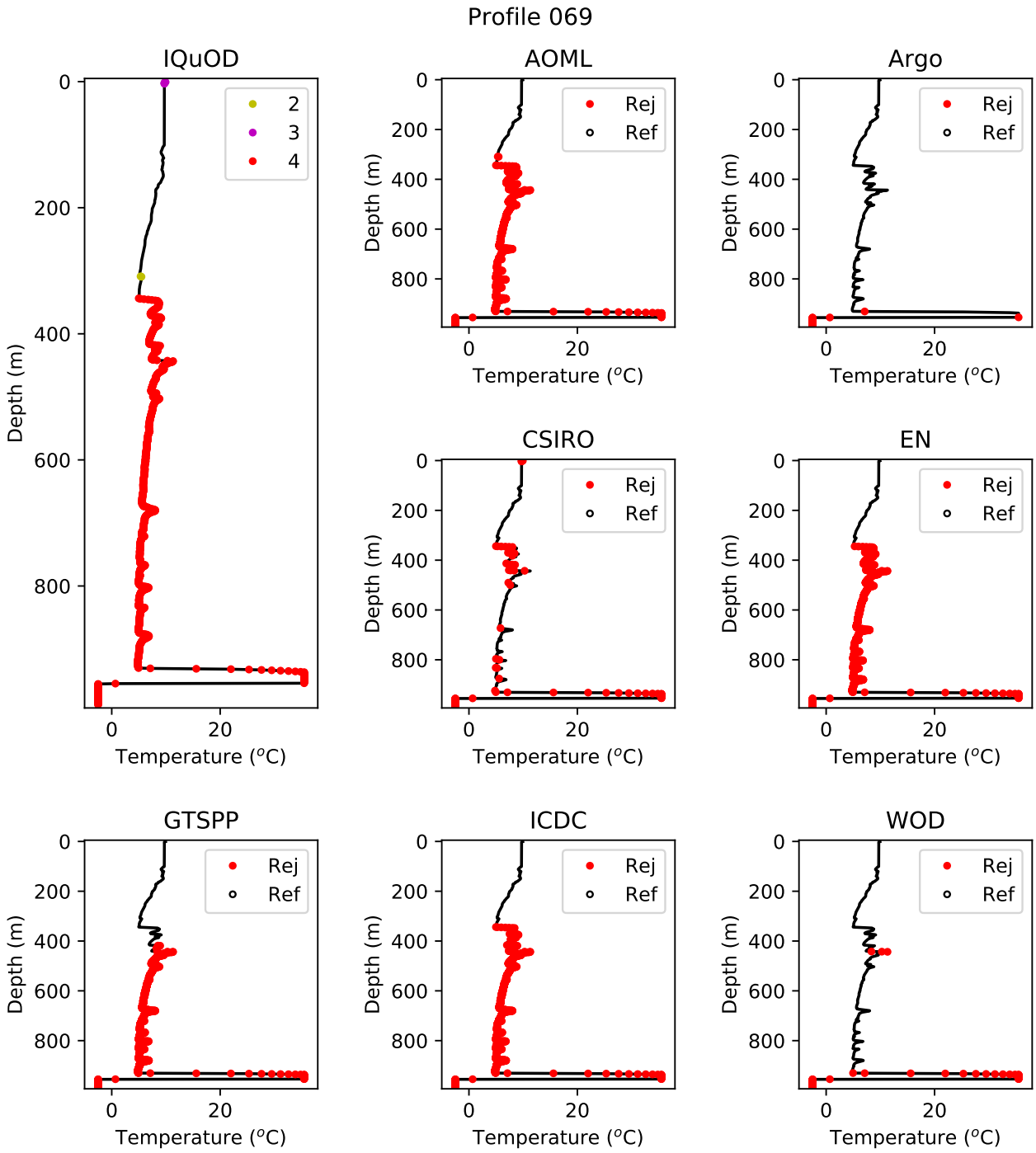

Figure S69. Description of profile: South Atlantic Ocean (many spikes; problems in climatology, gradient etc.)

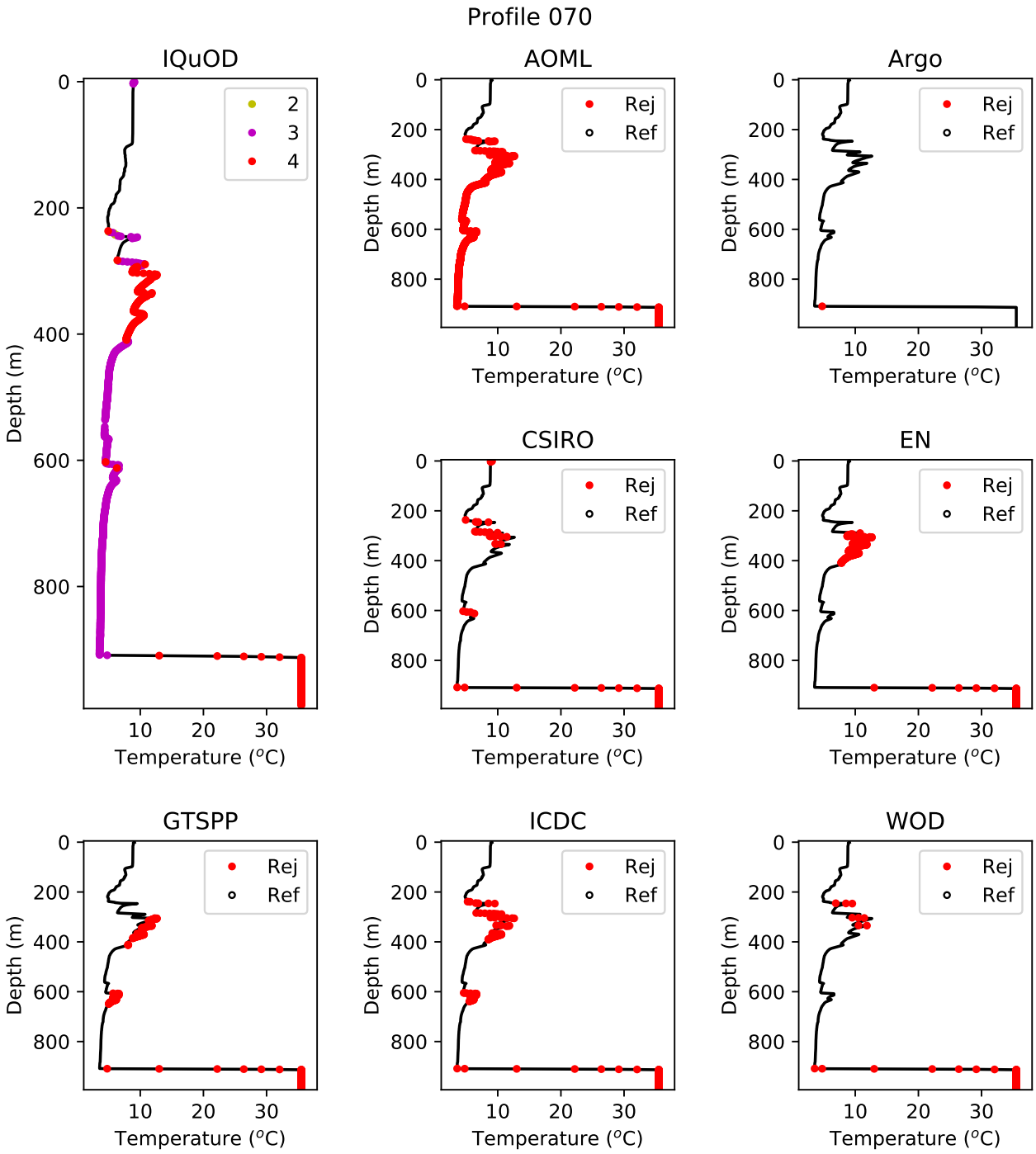

Figure S70. Description of profile: South Atlantic Ocean (mostly all bad; spikes, climatology and gradient problems).

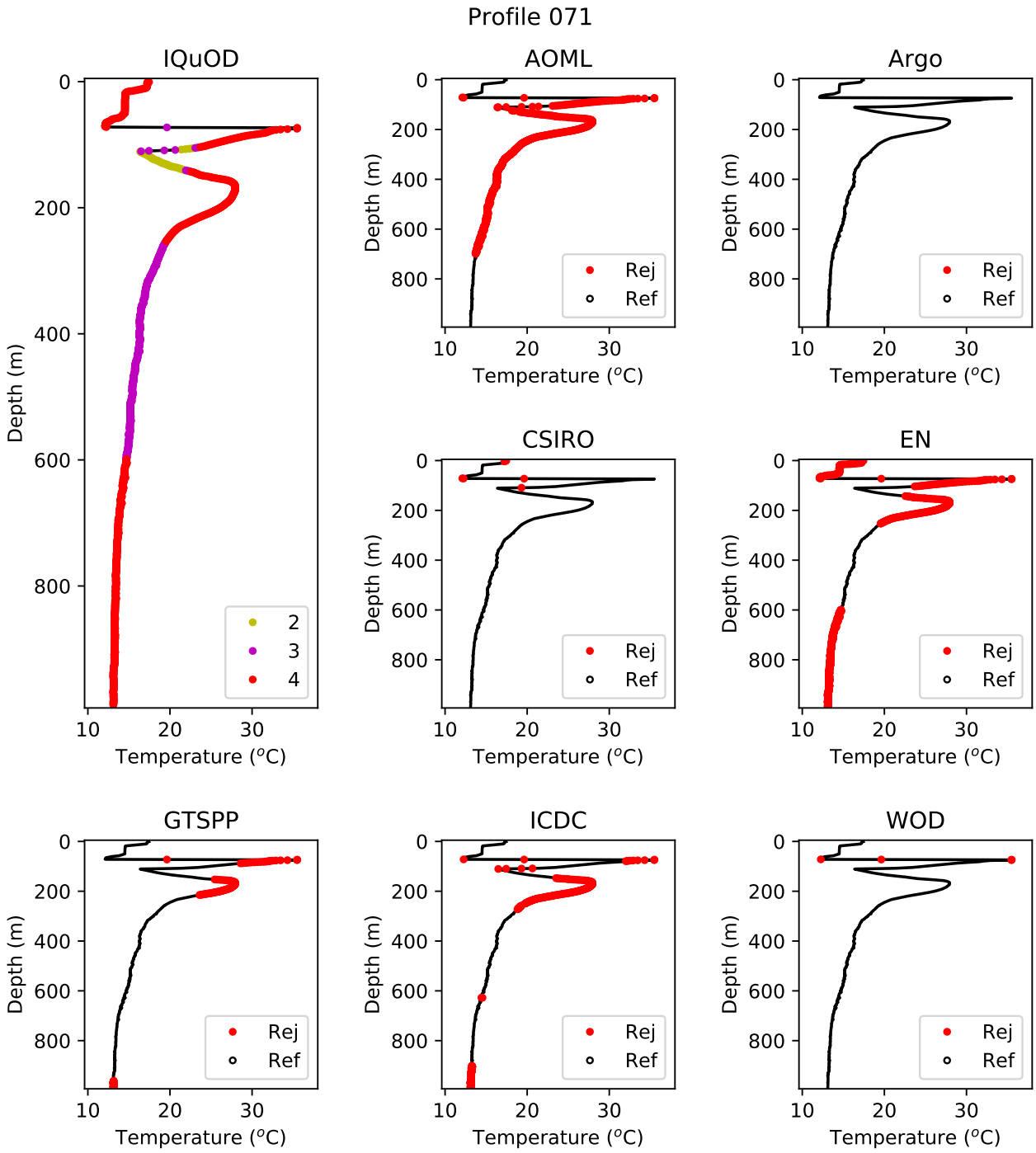

Figure S71. Description of profile: South Indian Ocean (spikes, climatoloy and gradient problems).

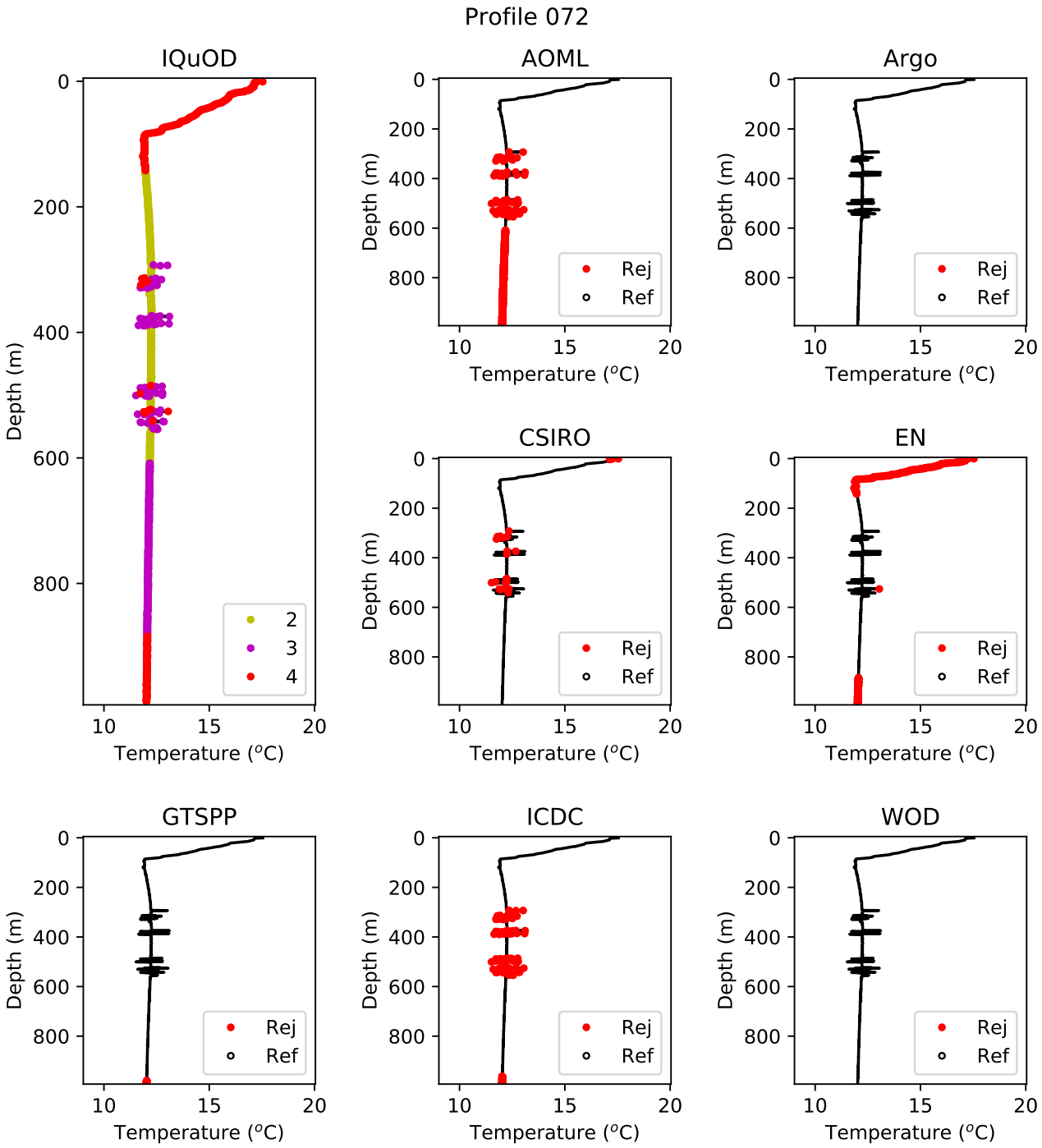

Figure S72. Description of profile: South Indian Ocean (many spikes and gradient problems).

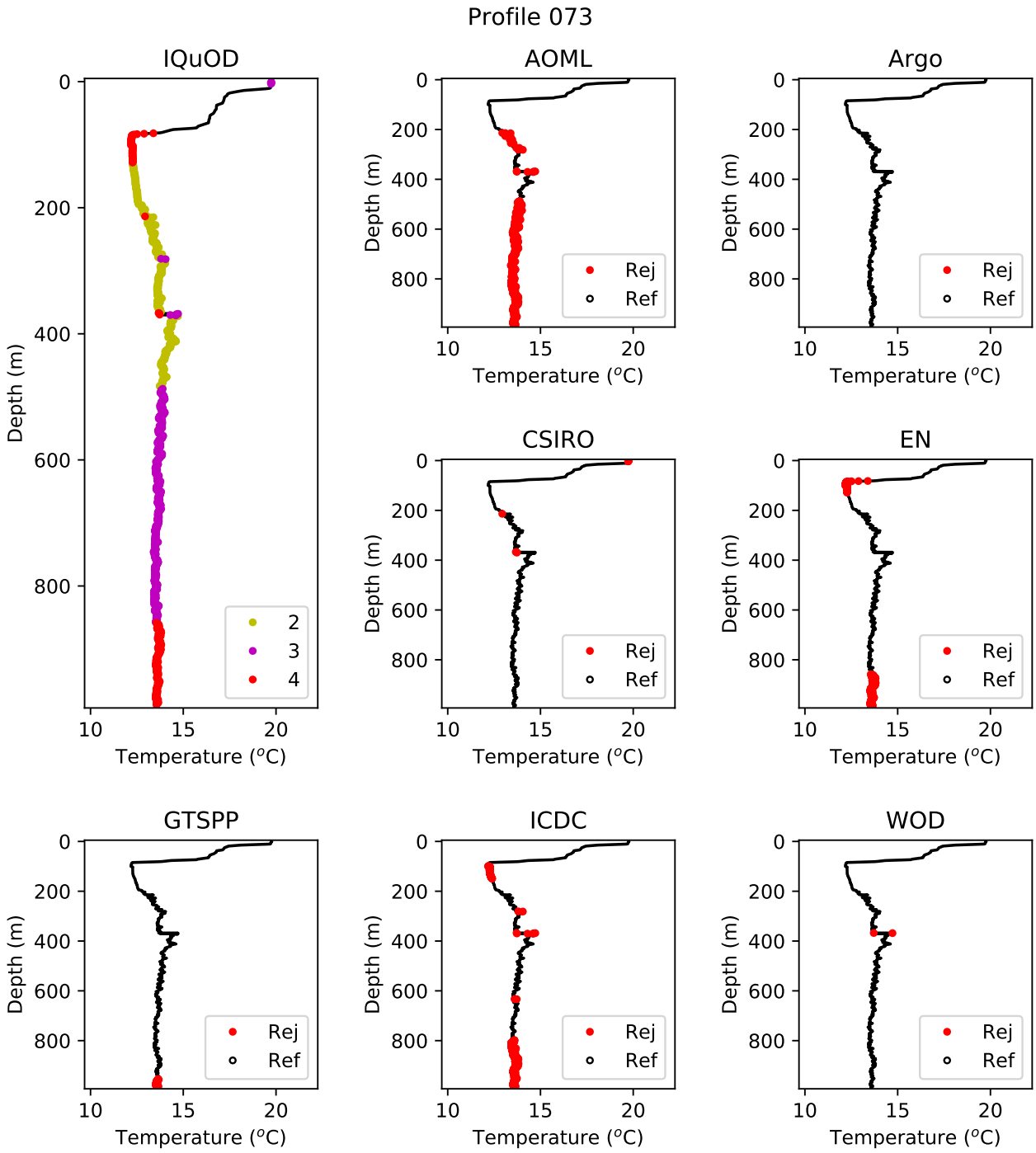

Figure S73. Description of profile: South Indian Ocean (all bad with many spikes).

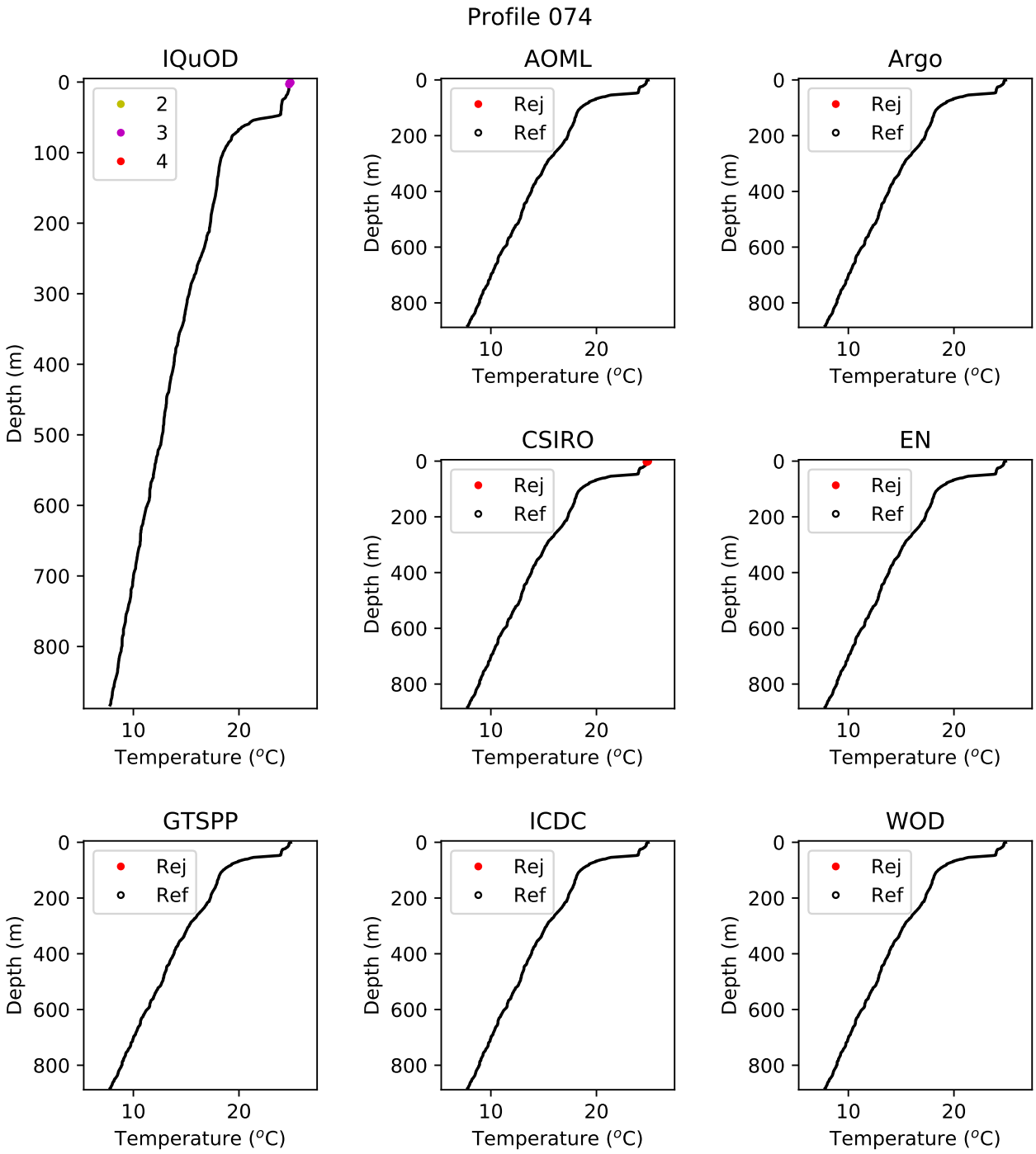

Figure S74. Description of profile: South Indian Ocean (good and relatively smooth).

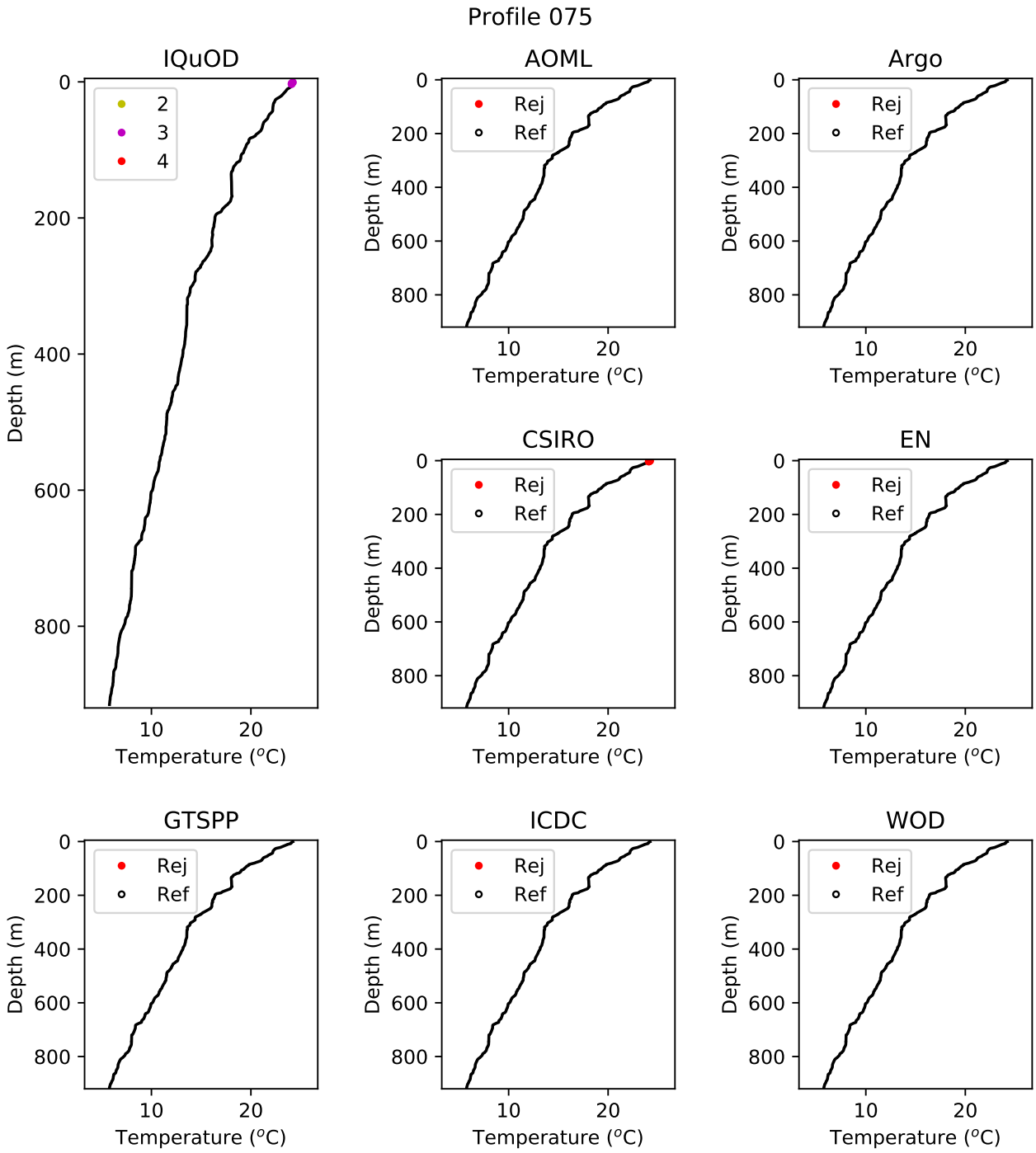

Figure S75. Description of profile: South Indian Ocean (good with temperature inversions but irregular).

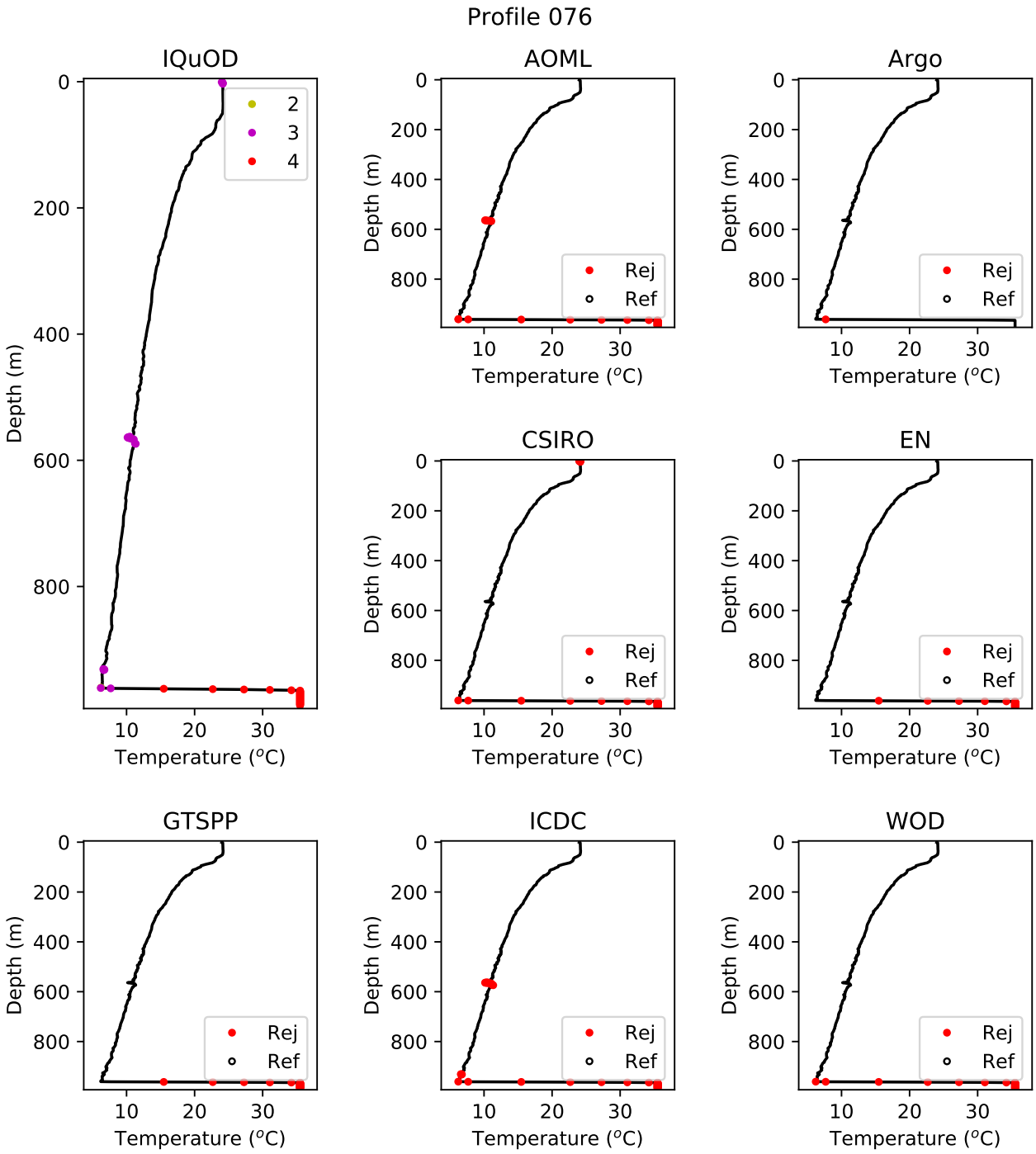

Figure S76. Description of profile: South Indian Ocean (spike).

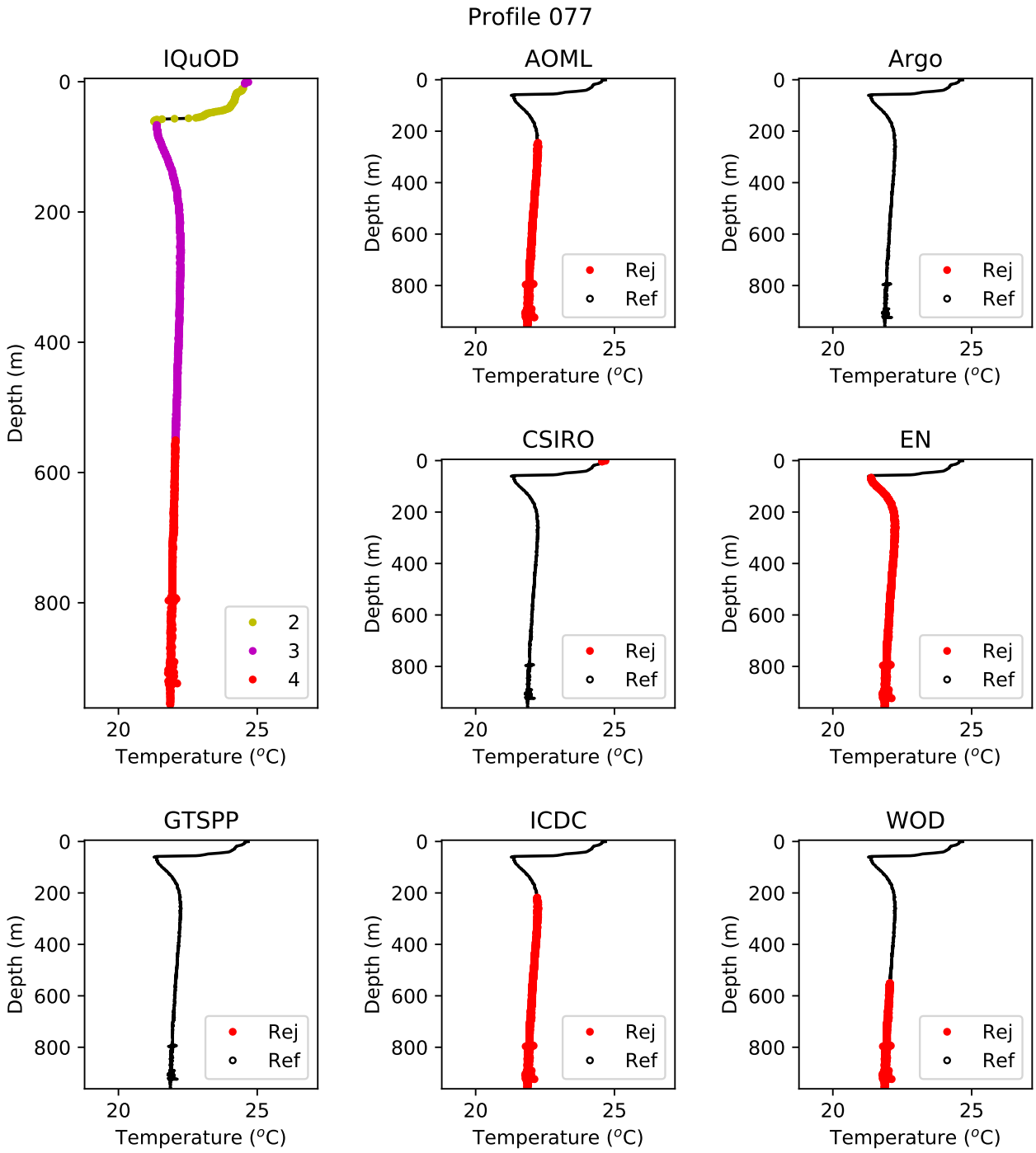

Figure S77. Description of profile: South Pacific Ocean (bad below 50 m; probably bottom hit; bad against climatology, gradient, spikes etc.)

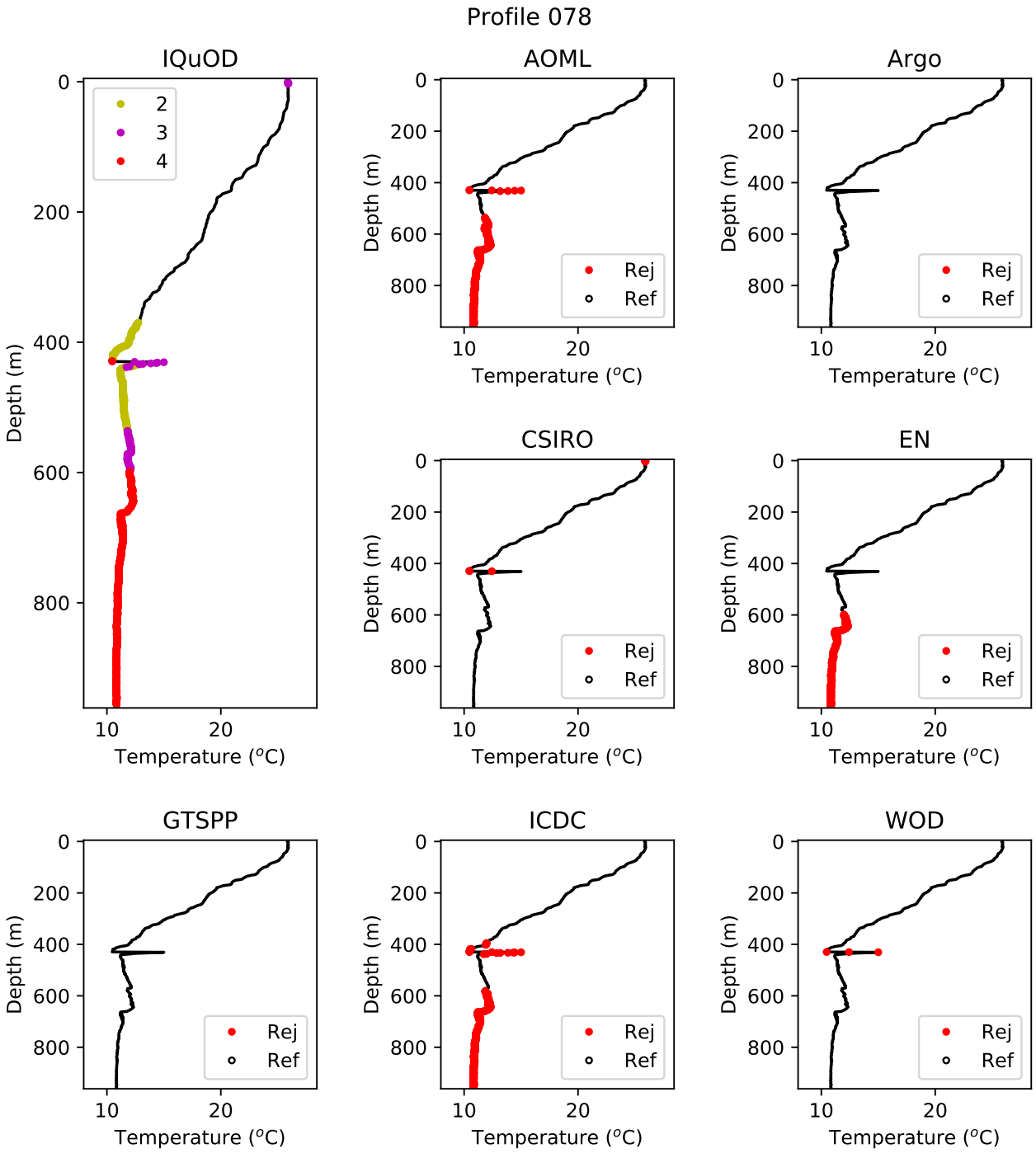

Figure S78. Description of profile: South Pacific Ocean (good until 400 m, then bad probably for bottom hit; spikes, gradient, climatology problems).

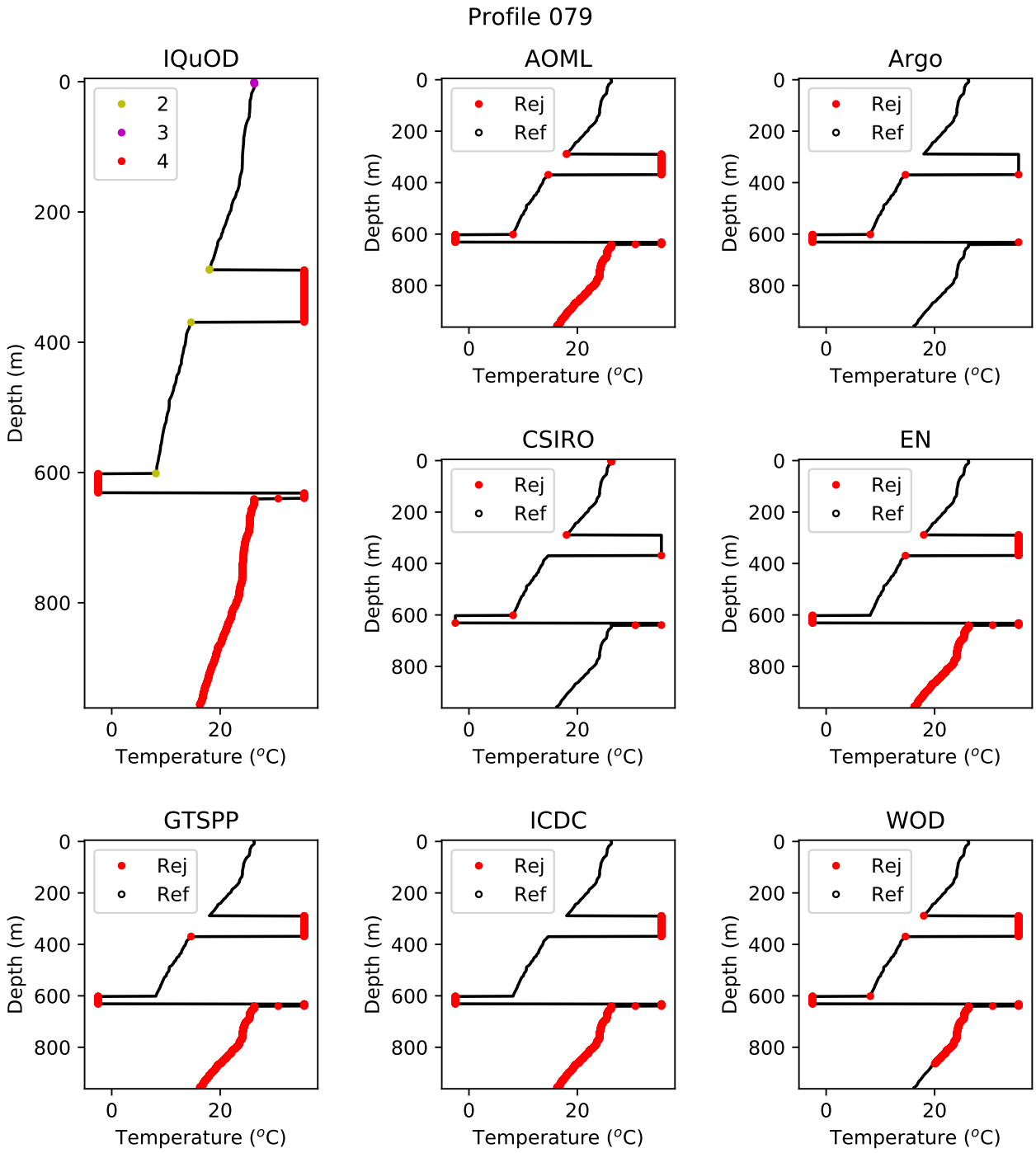

Figure S79. Description of profile: South Pacific Ocean (wire or electrical problem between 300 m and 350 m, and 600 m and 650 m, then profile continues with a large bias).

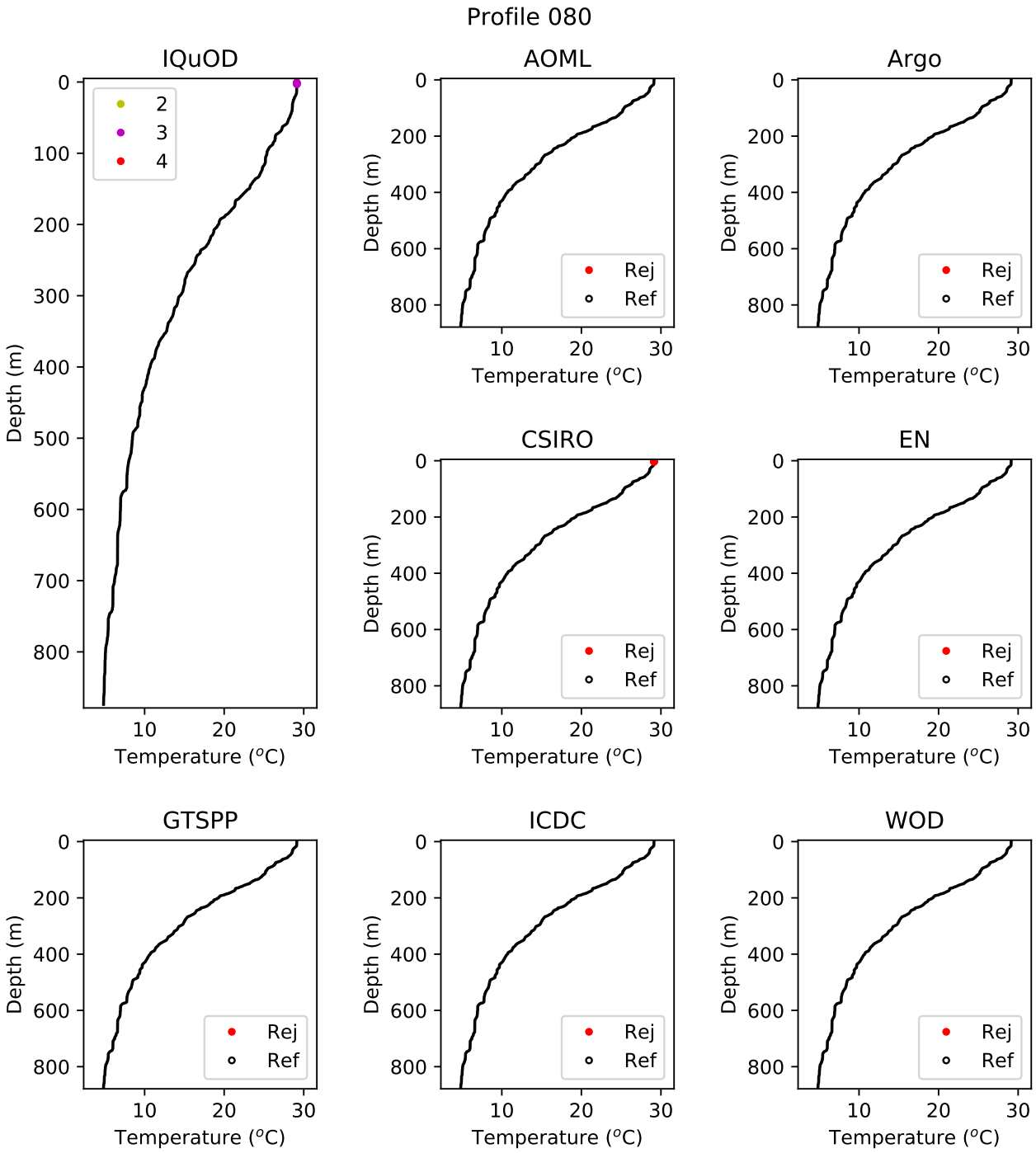

Figure S80. Description of profile: South Pacific Ocean (good with temperature inversion and steps).

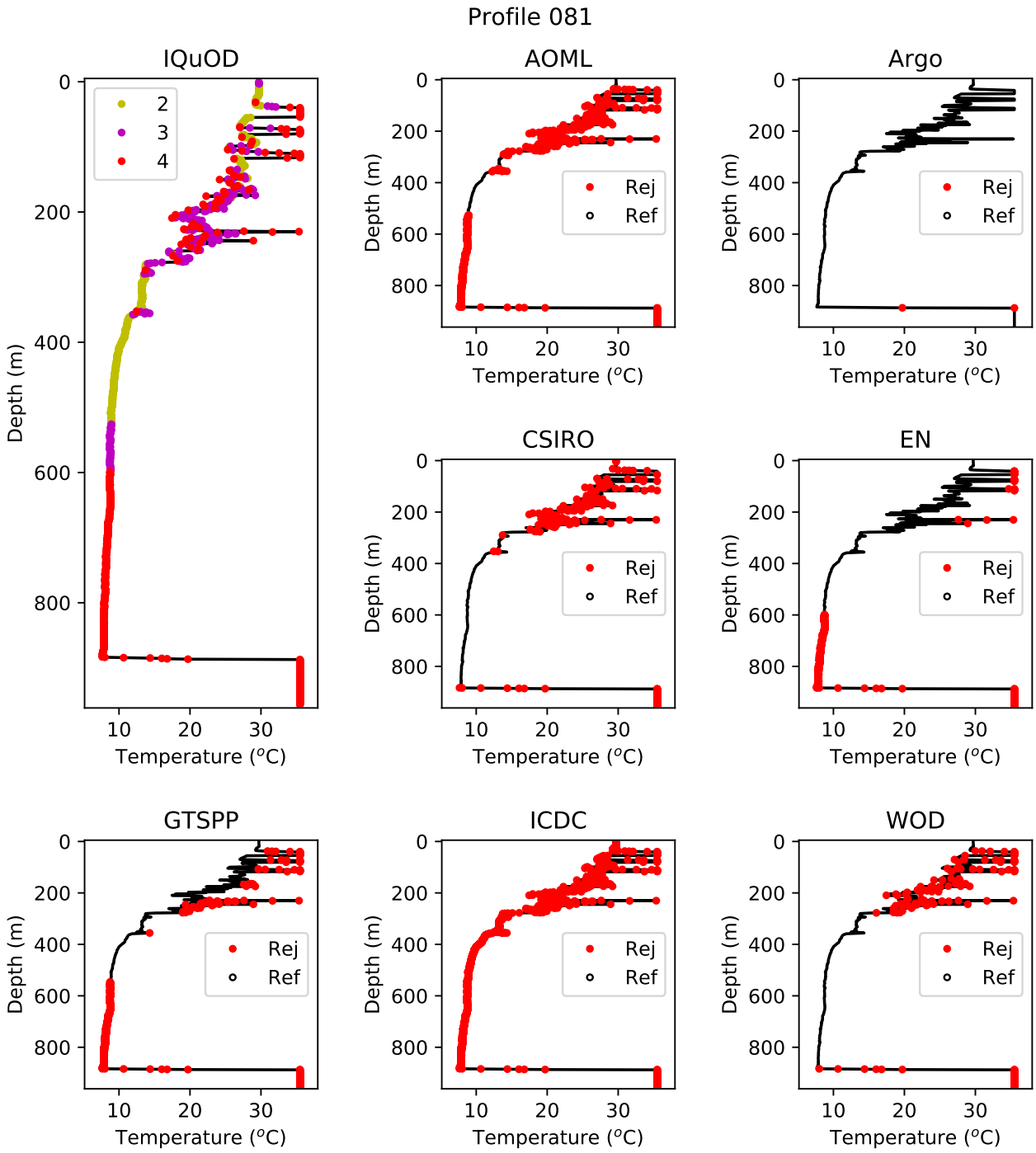

Figure S81. Description of profile: South Pacific Ocean (all bad with spikes etc.)

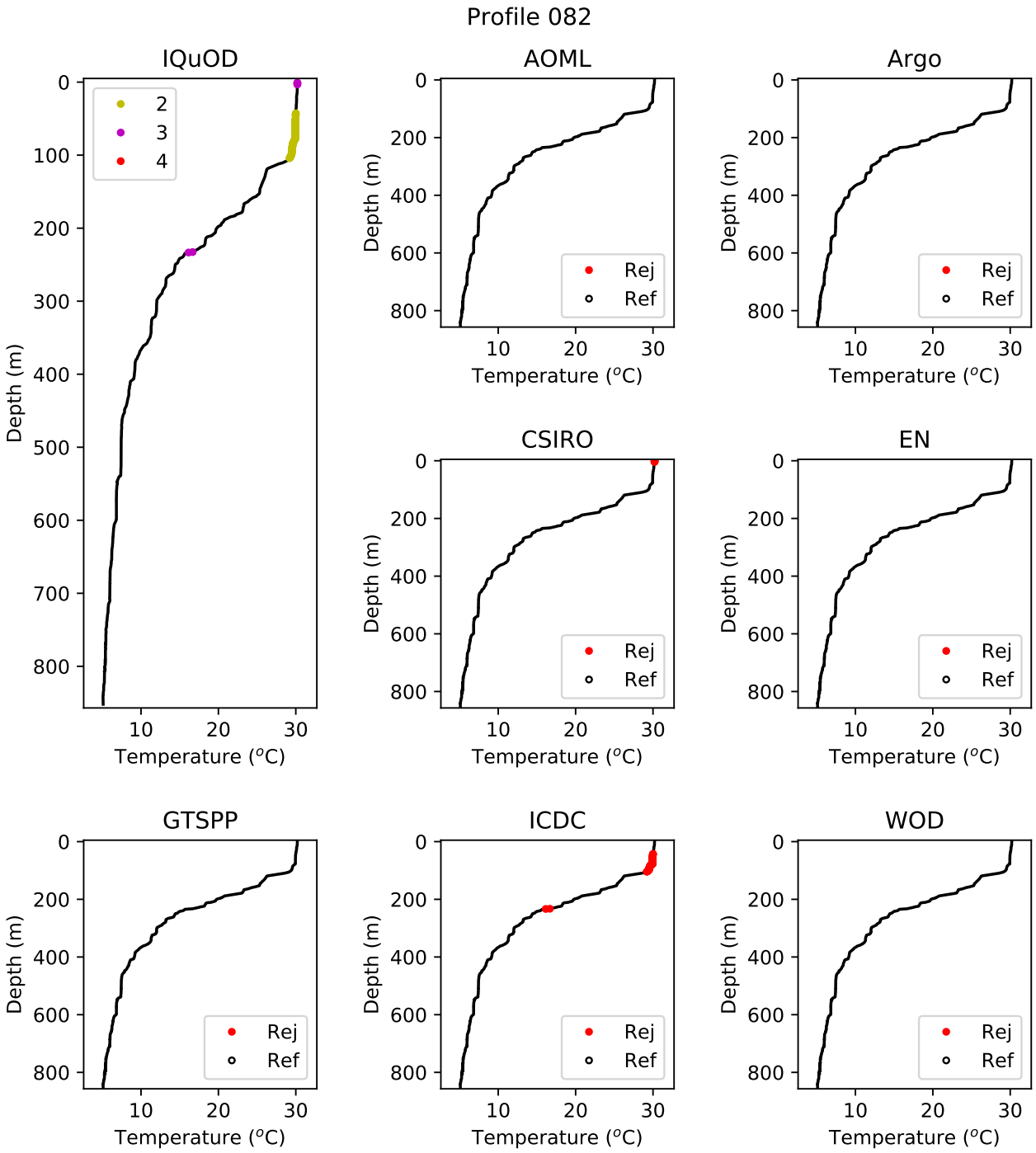

Figure S82. Description of profile: South Pacific Ocean (good with temperature inversion and steps).

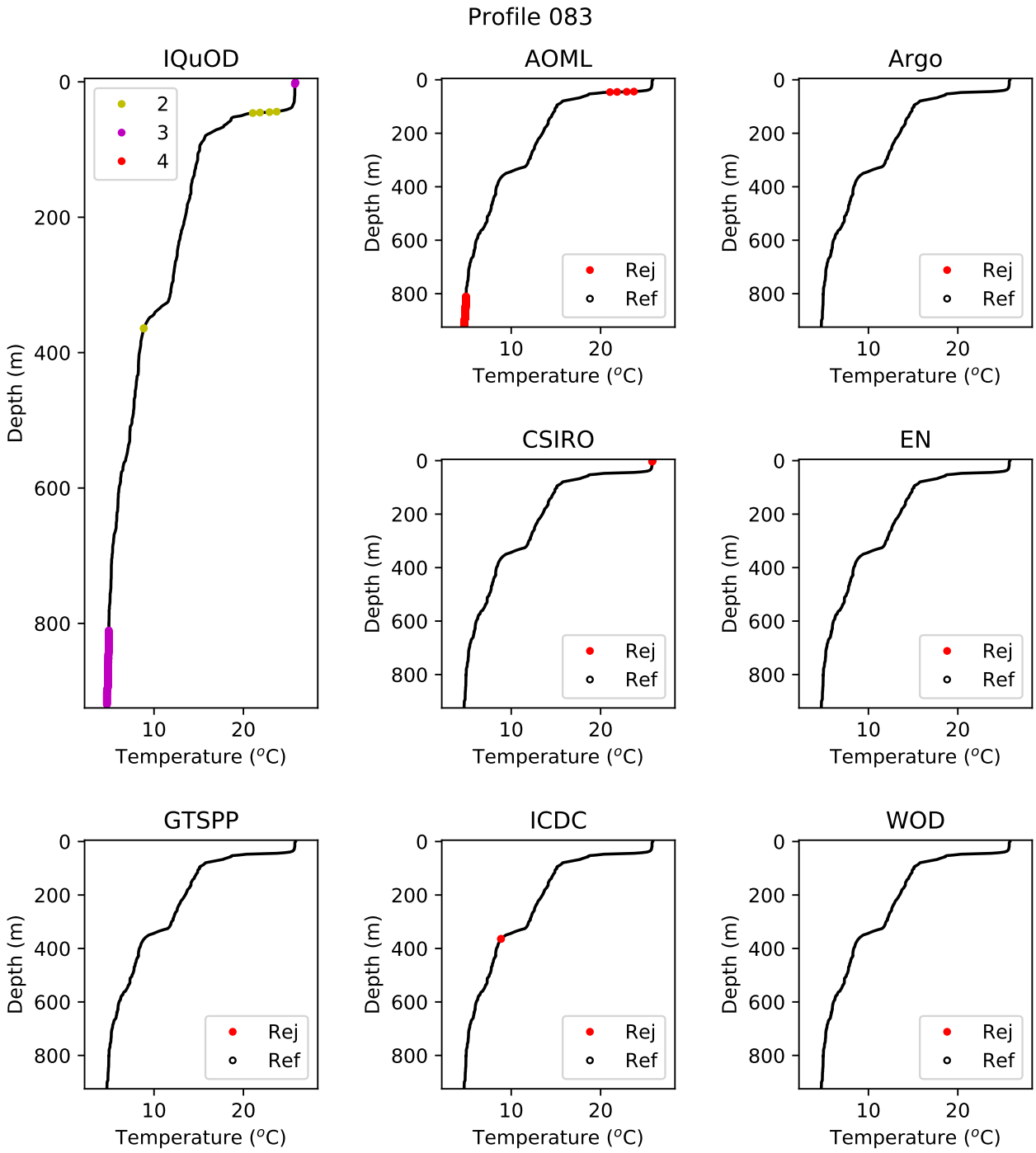

Figure S83. Description of profile: Tropical Atlantic Ocean (all good).

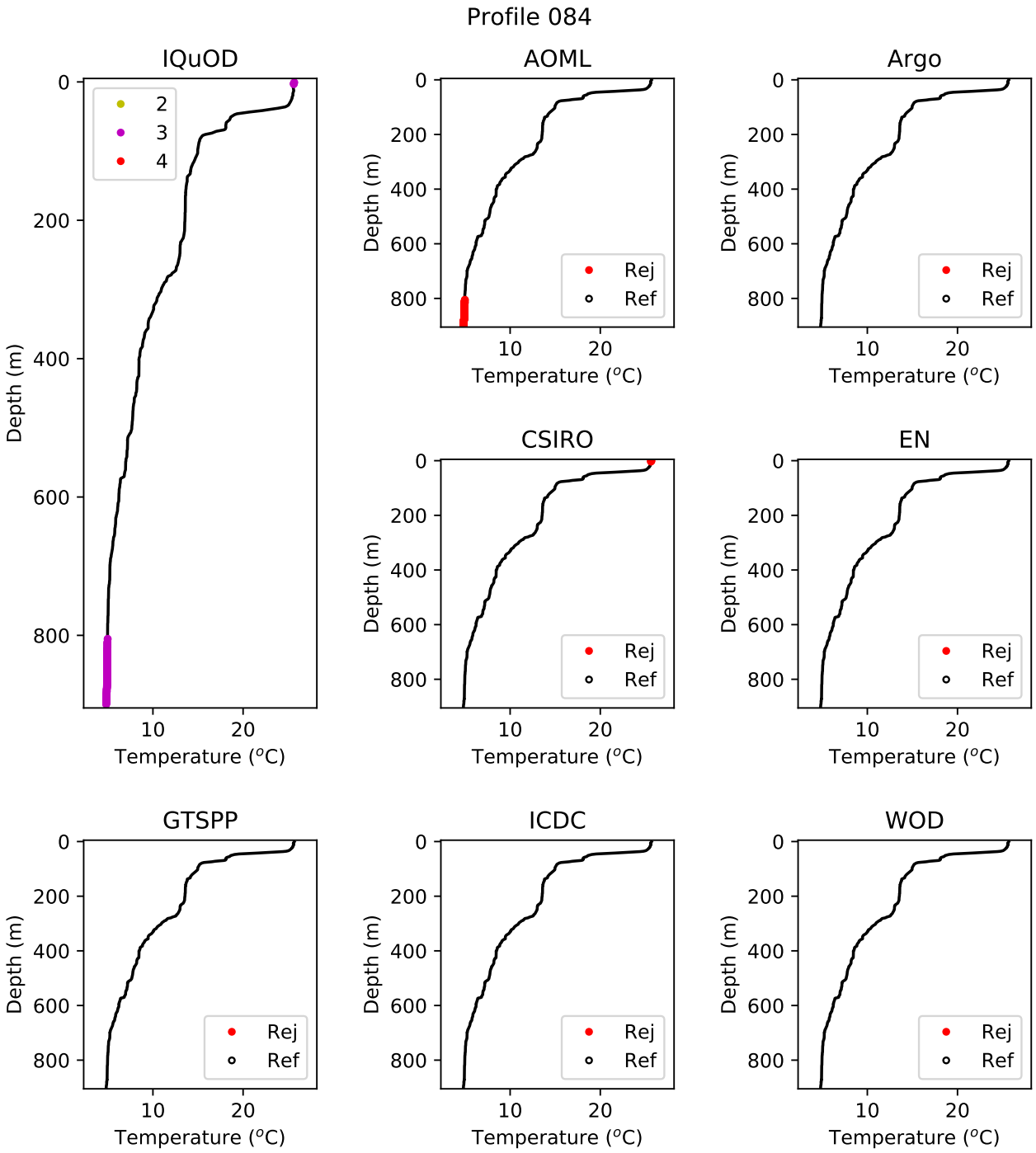

Figure S84. Description of profile: Tropical Atlantic Ocean (all good but irregular).

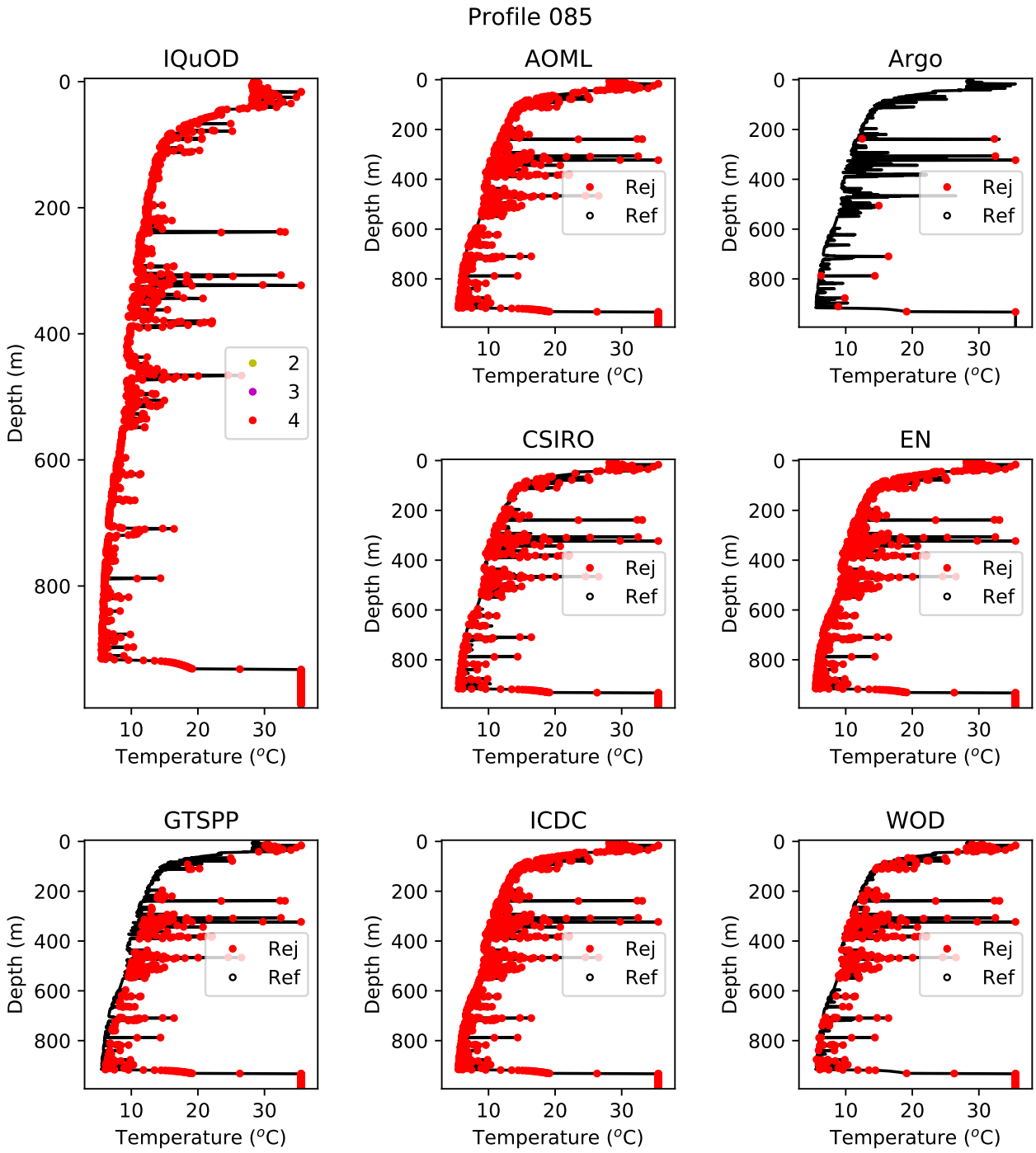

Figure S85. Description of profile: Tropical Atlantic Ocean (almost all bad, with big spikes because of a possible wire insulation problem; has good points between 550 m and 580 m).

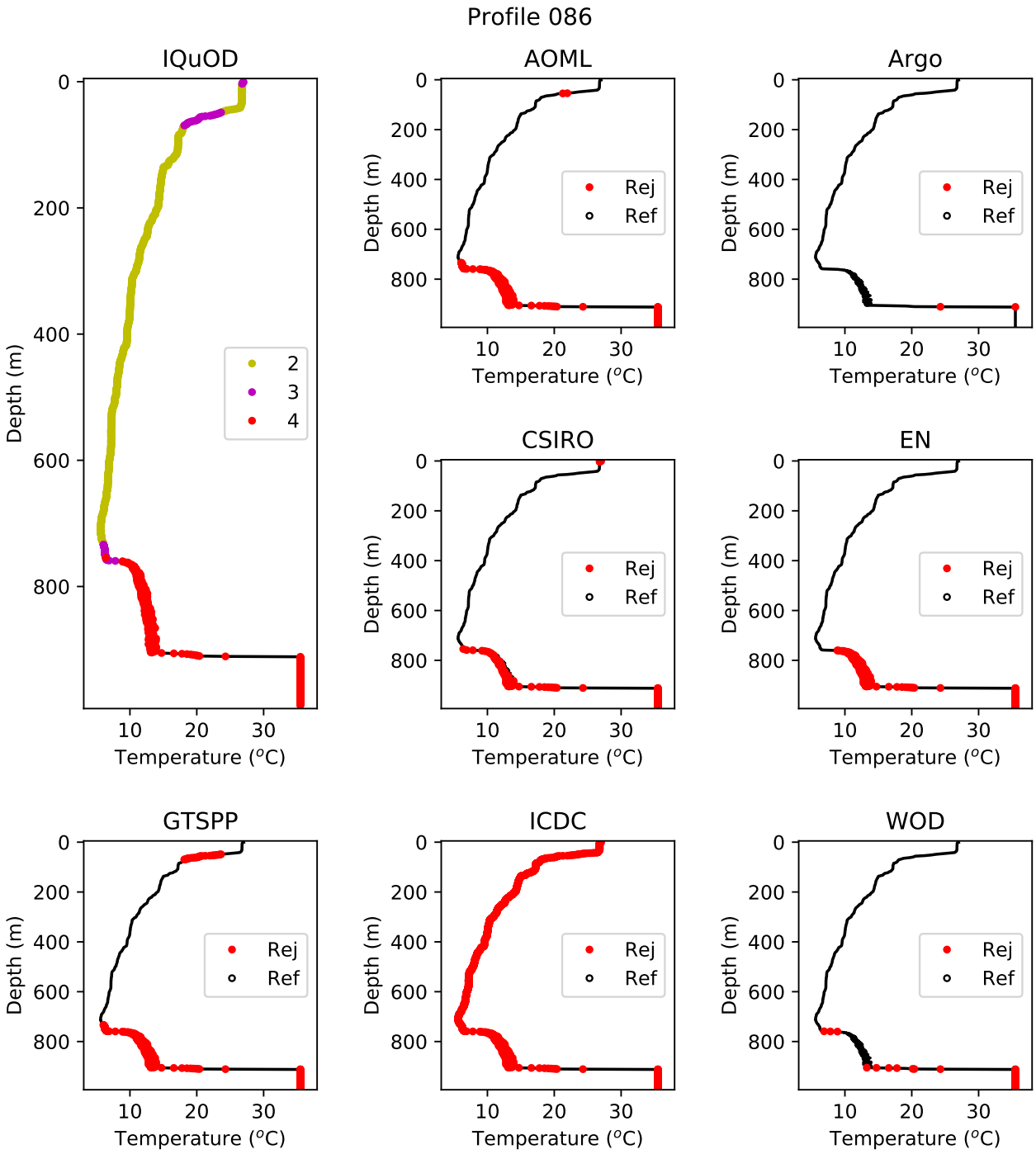

Figure S86. Description of profile: Tropical Atlantic Ocean (good for depth ¡ 700 m; all bad afterwards with climatolgy, gradient and spike problems).

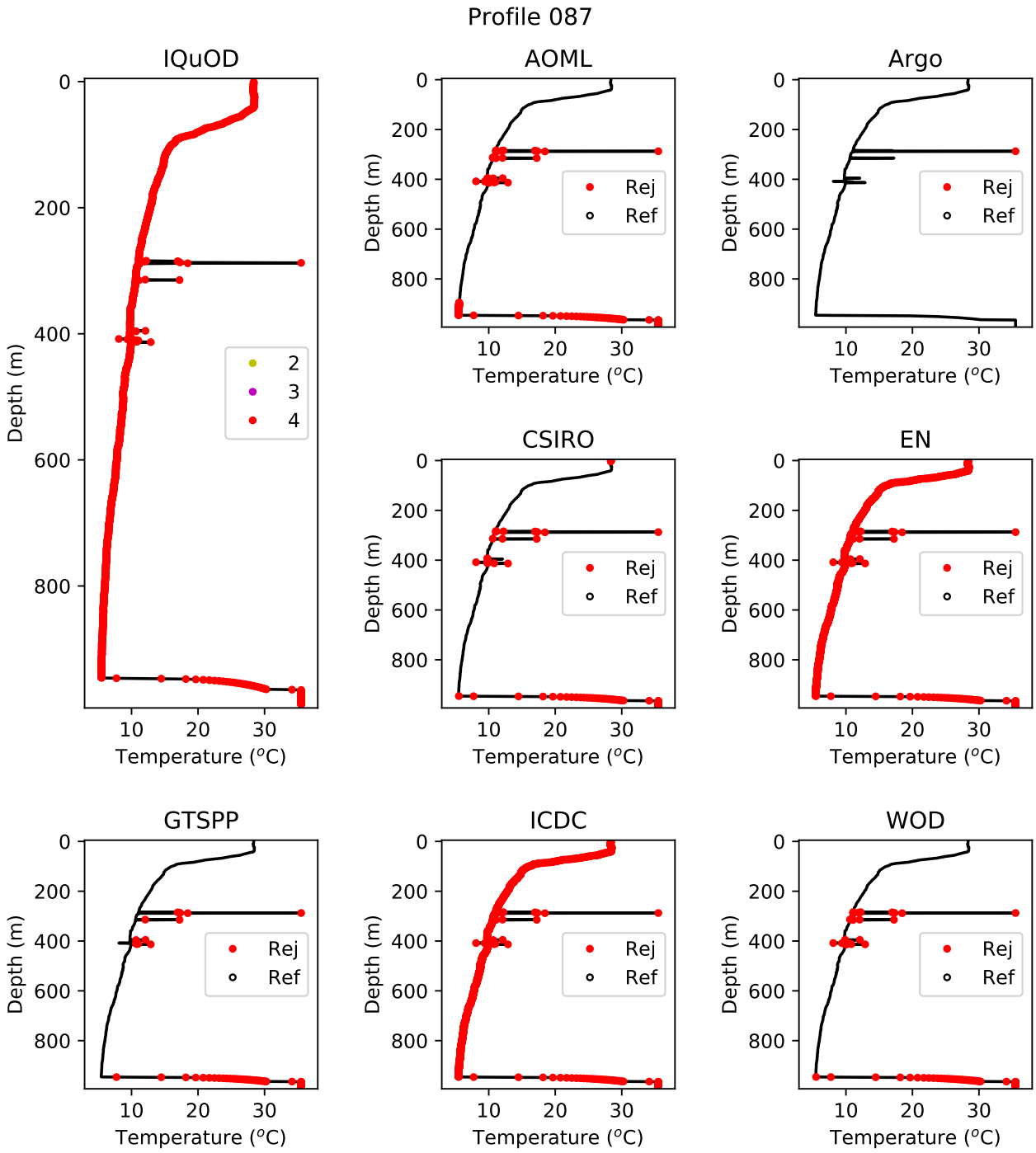

Figure S87. Description of profile: Tropical Atlantic Ocean (spikes at 250 m, 320 m, 400 m and 420 m).

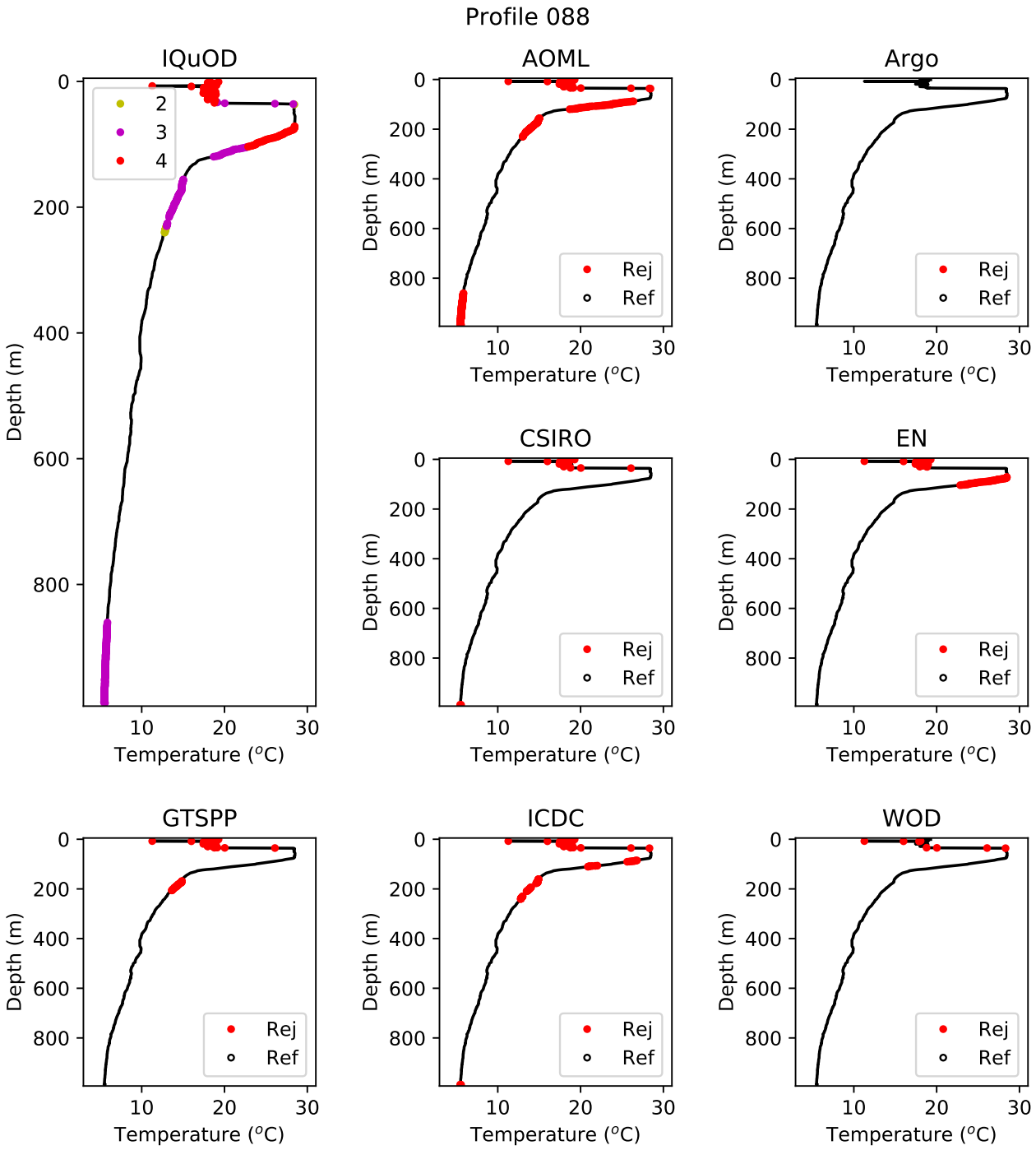

Figure S88. Description of profile: Tropical Atlantic Ocean (early splash and bad points for depths ¡ 70m; good afterwards).

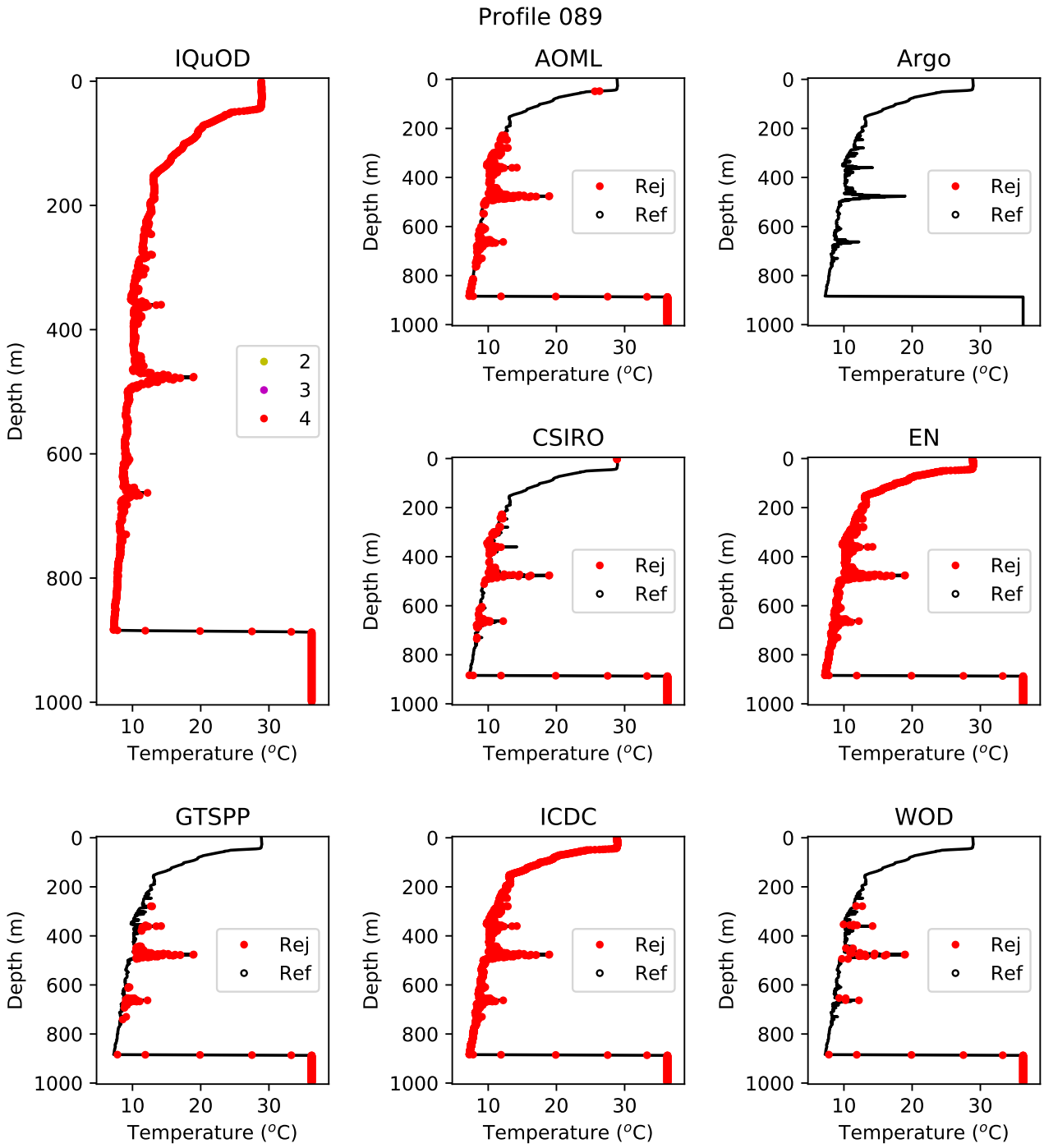

Figure S89. Description of profile: Tropical Indian Ocean (good above 250 m with temperature inversion; many spikes afterwards).

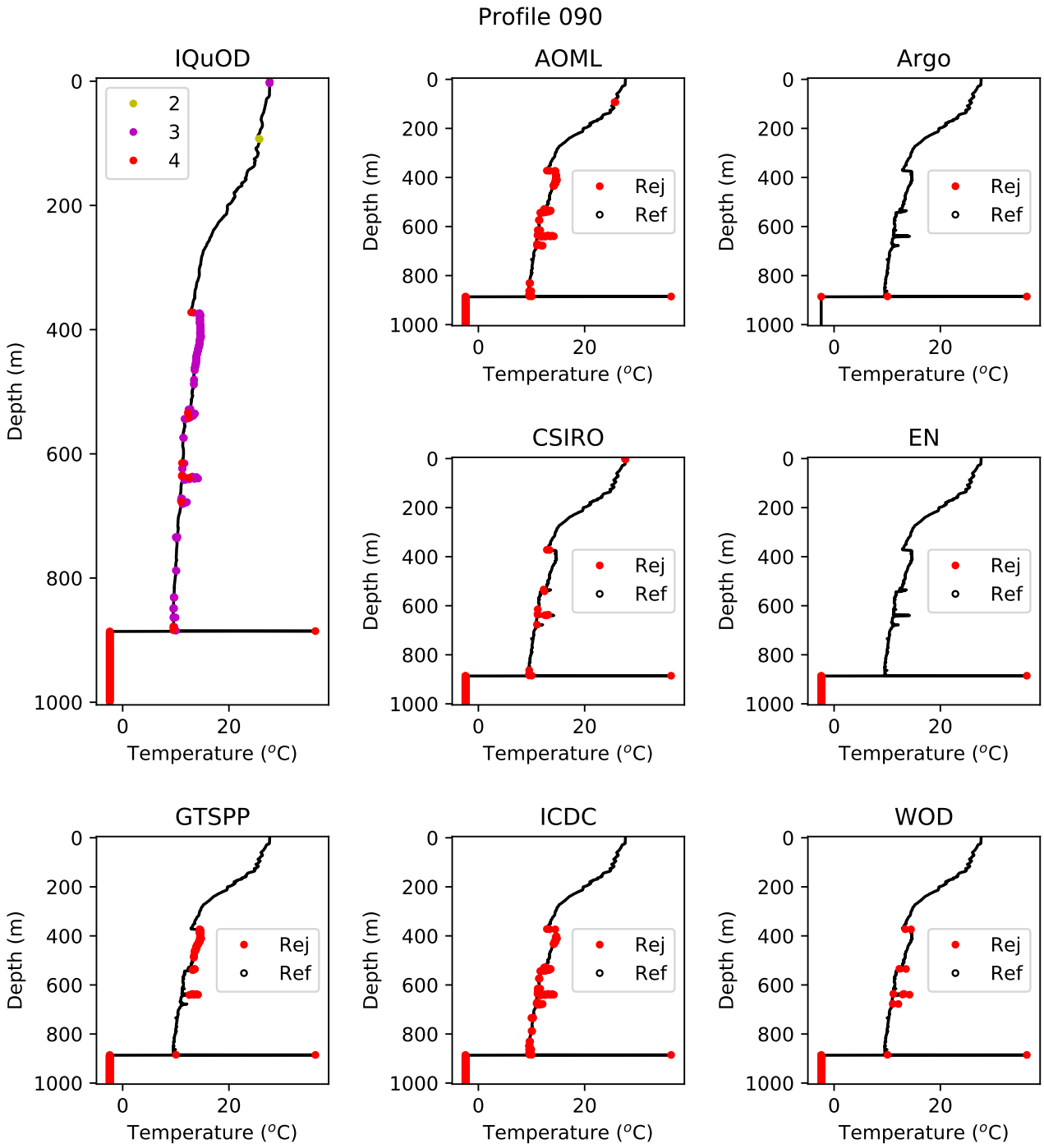

Figure S90. Description of profile: Tropical Indian Ocean (good with temperature inversion above 400 m; spikes and climatology problems below that).

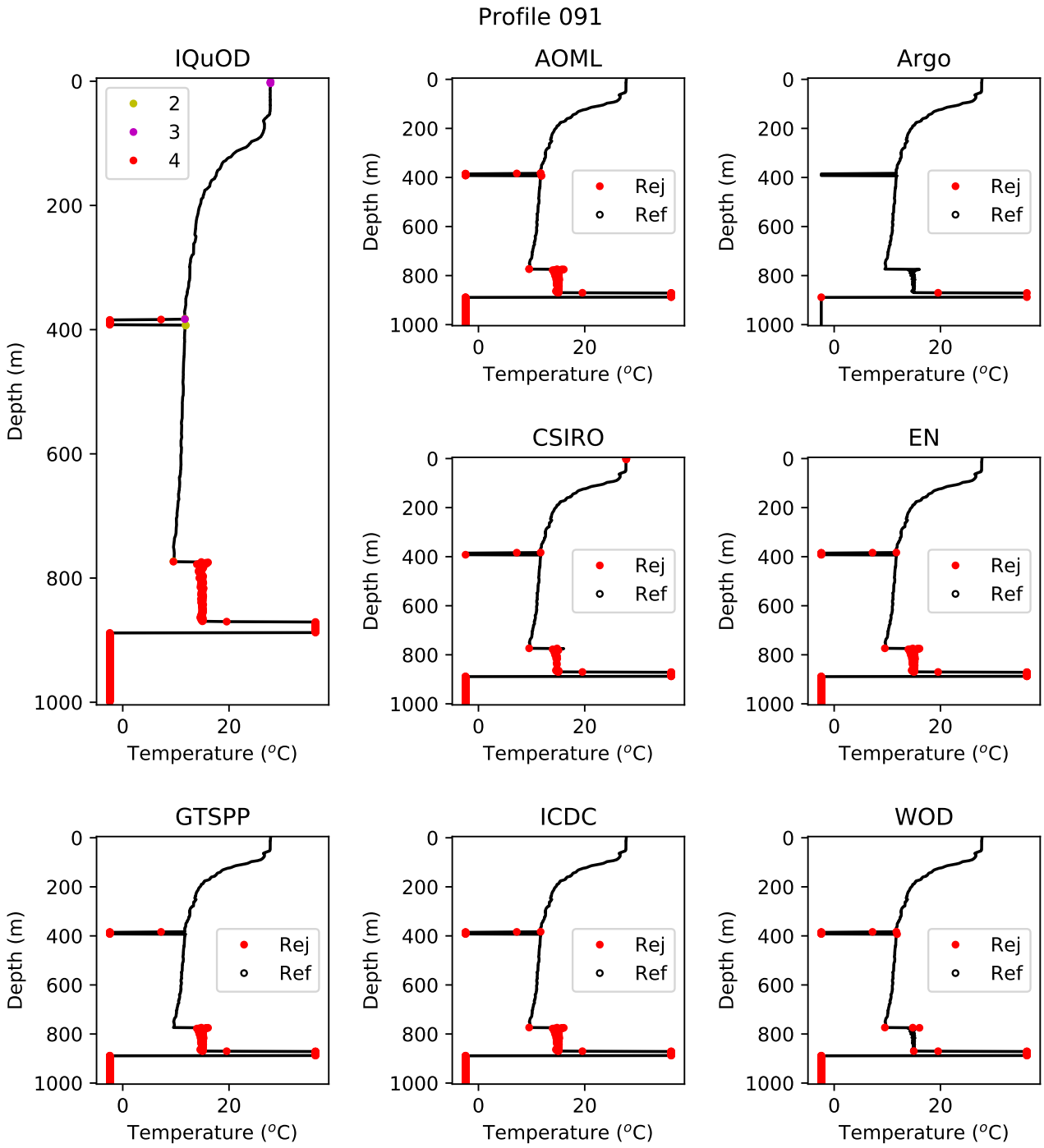

Figure S91. Description of profile: Tropical Indian Ocean (spikes at 380 m for possible wire insulation problem; bad against climatology below 780 m.)

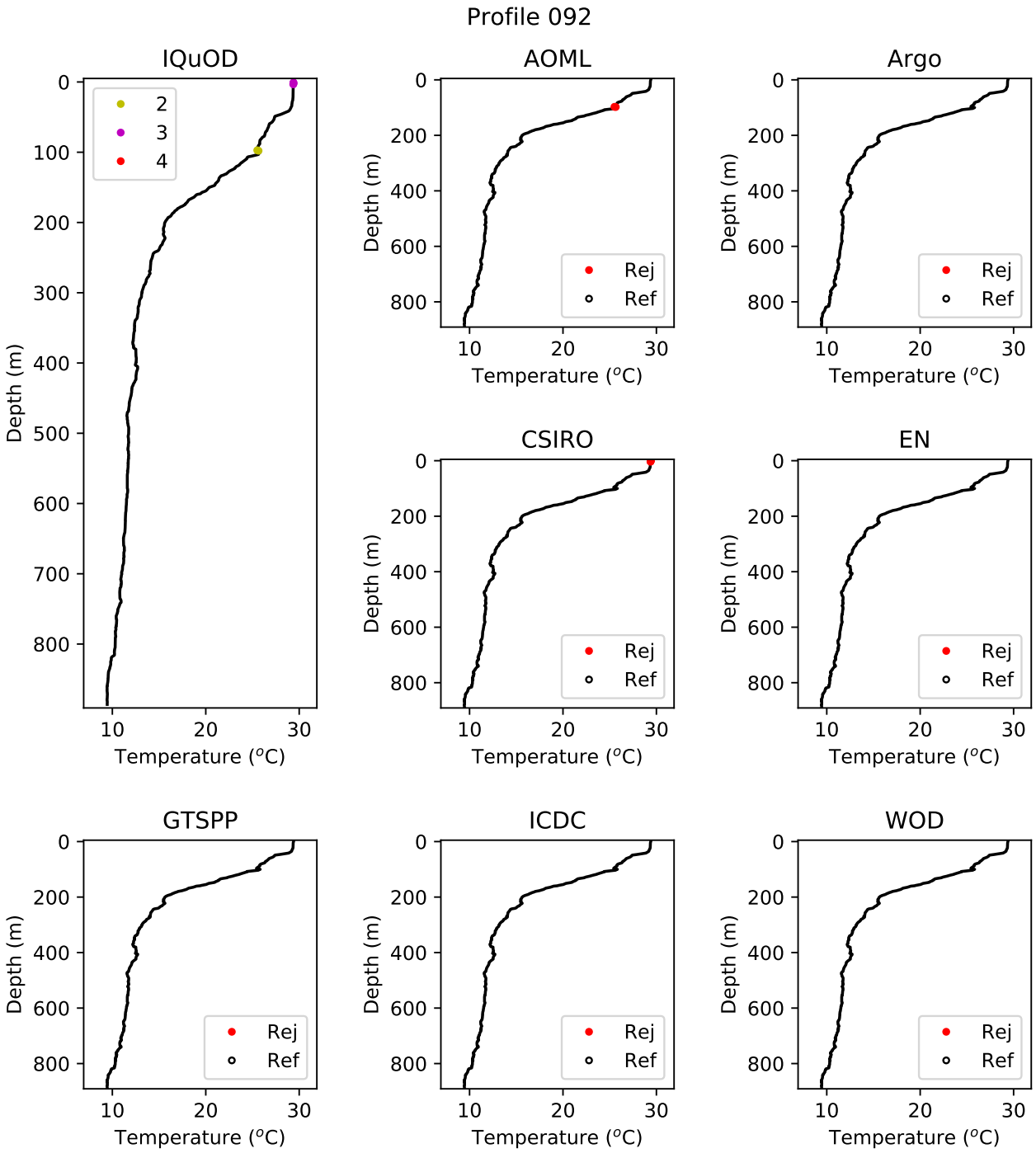

Figure S92. Description of profile: Tropical Indian Ocean (good with temperature inversion but irregular).

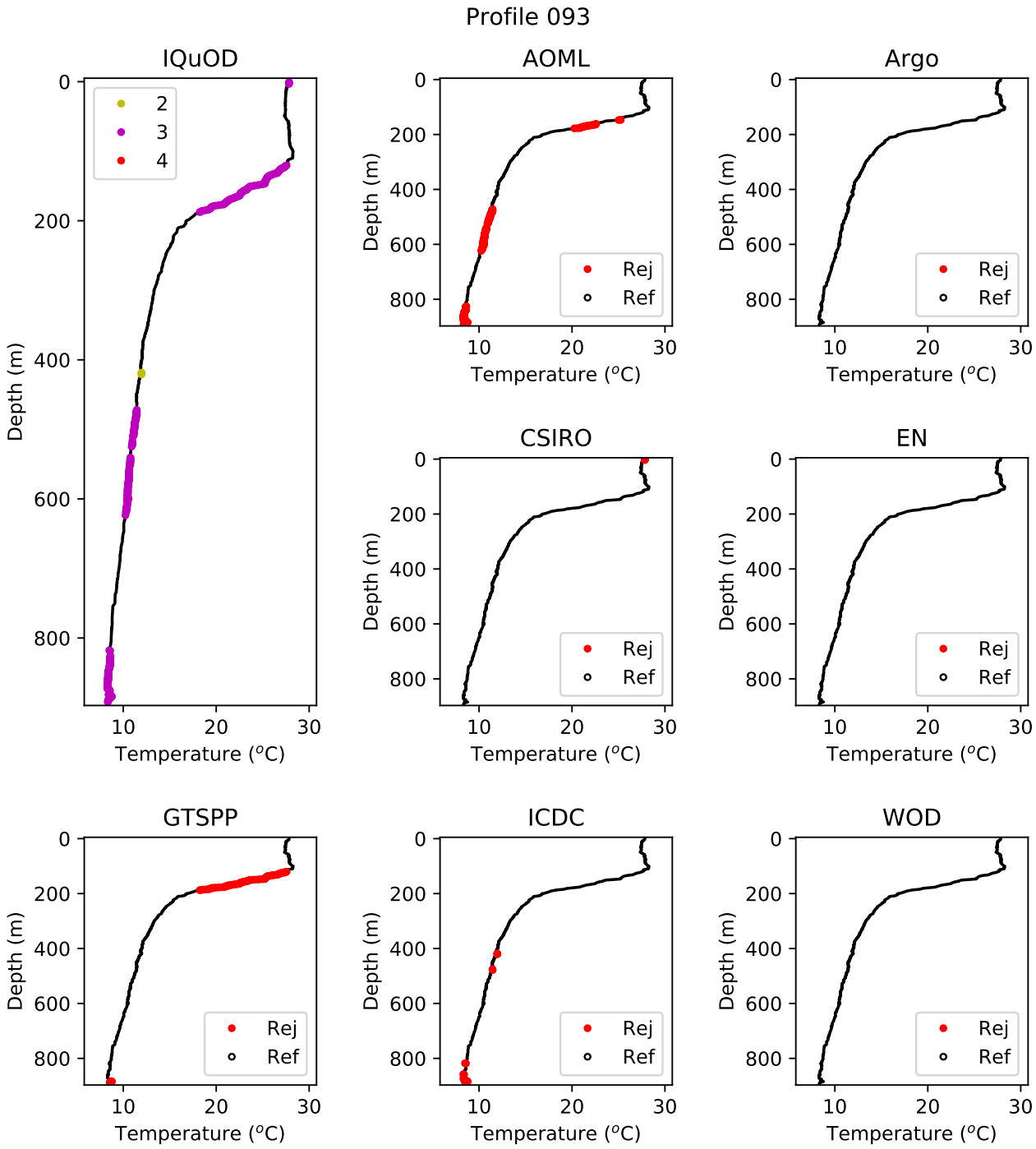

Figure S93. Description of profile: Tropical Indian Ocean (good with temperature inversion).

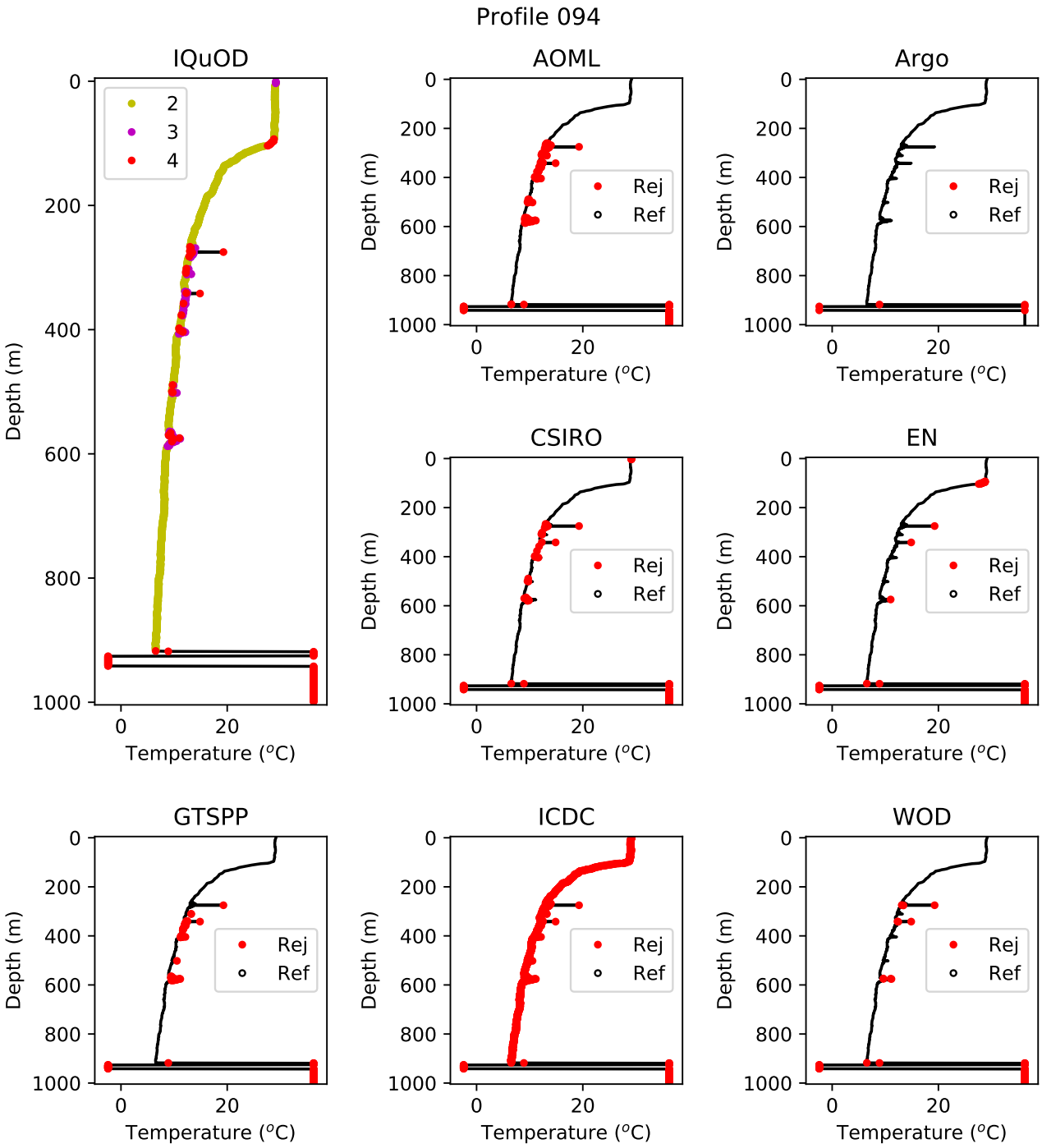

Figure S94. Description of profile: Tropical Indian Ocean (several spikes at depths below 250 m).

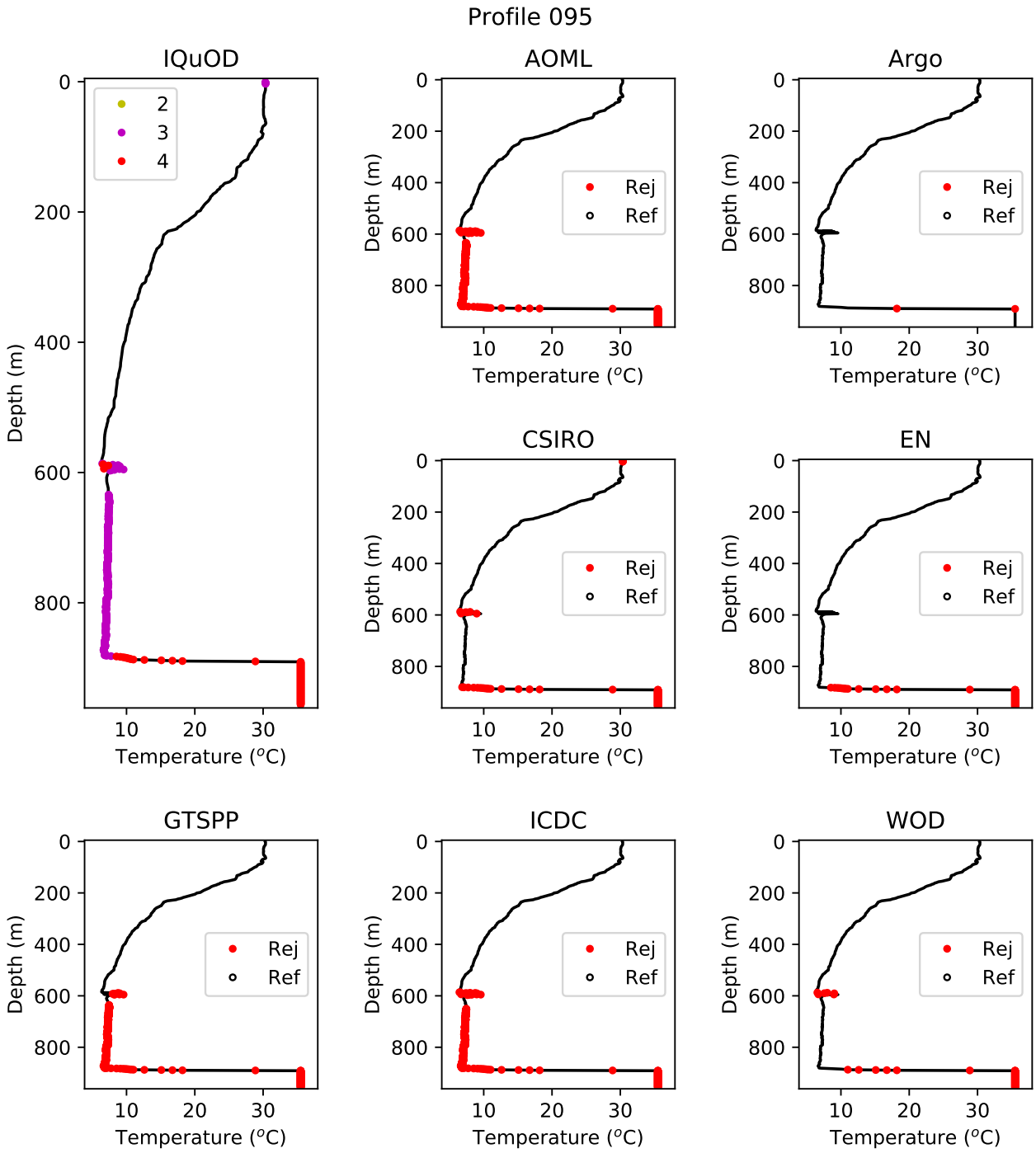

Figure S95. Description of profile: Tropical Pacific Ocean (good until 600 m, then probable bottom hit with spikes, climatology and gradient problems).

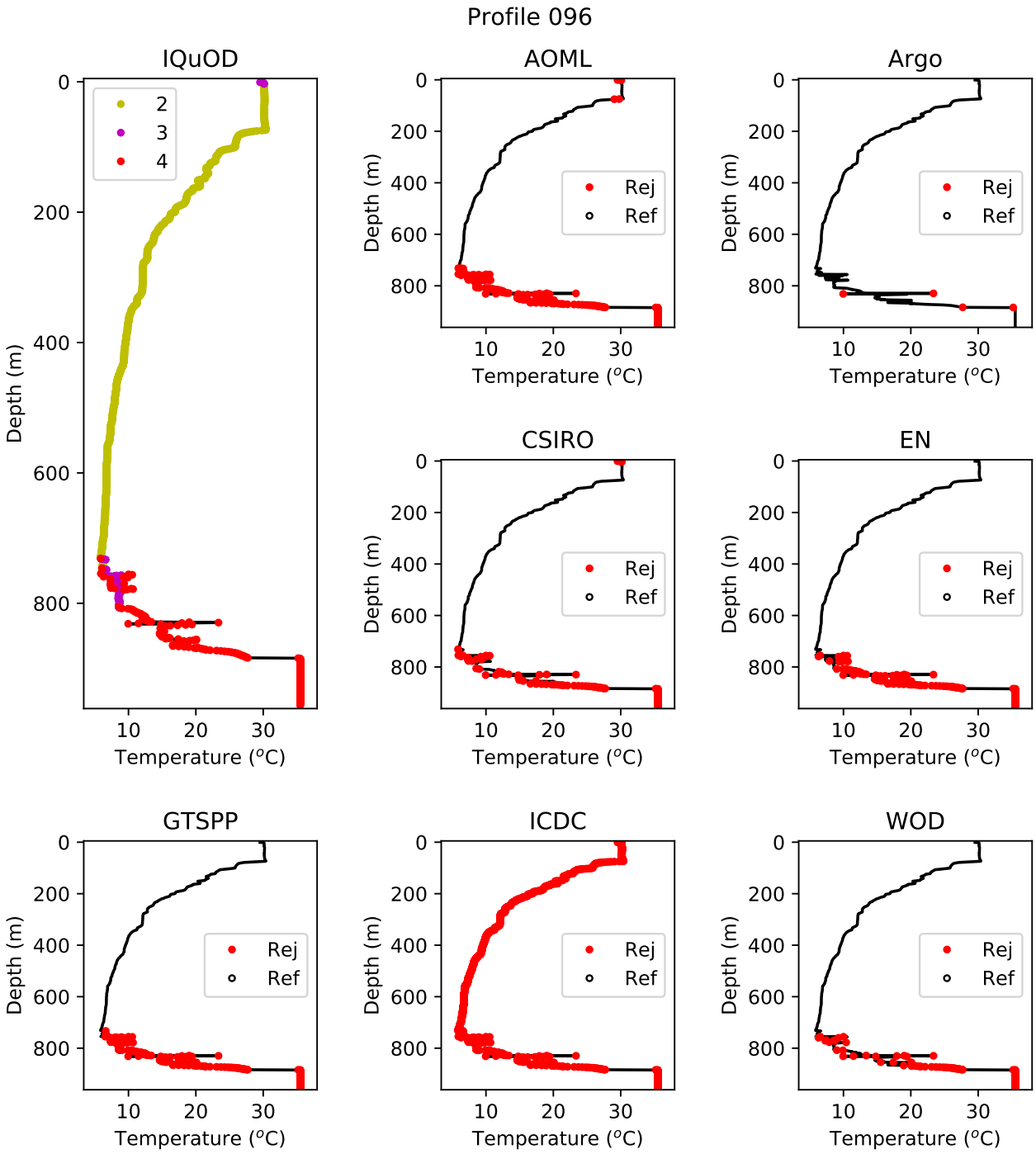

Figure S96. Description of profile: Tropical Pacific Ocean (good above 700 m,then bad with spikes, gradient and climatology problems).

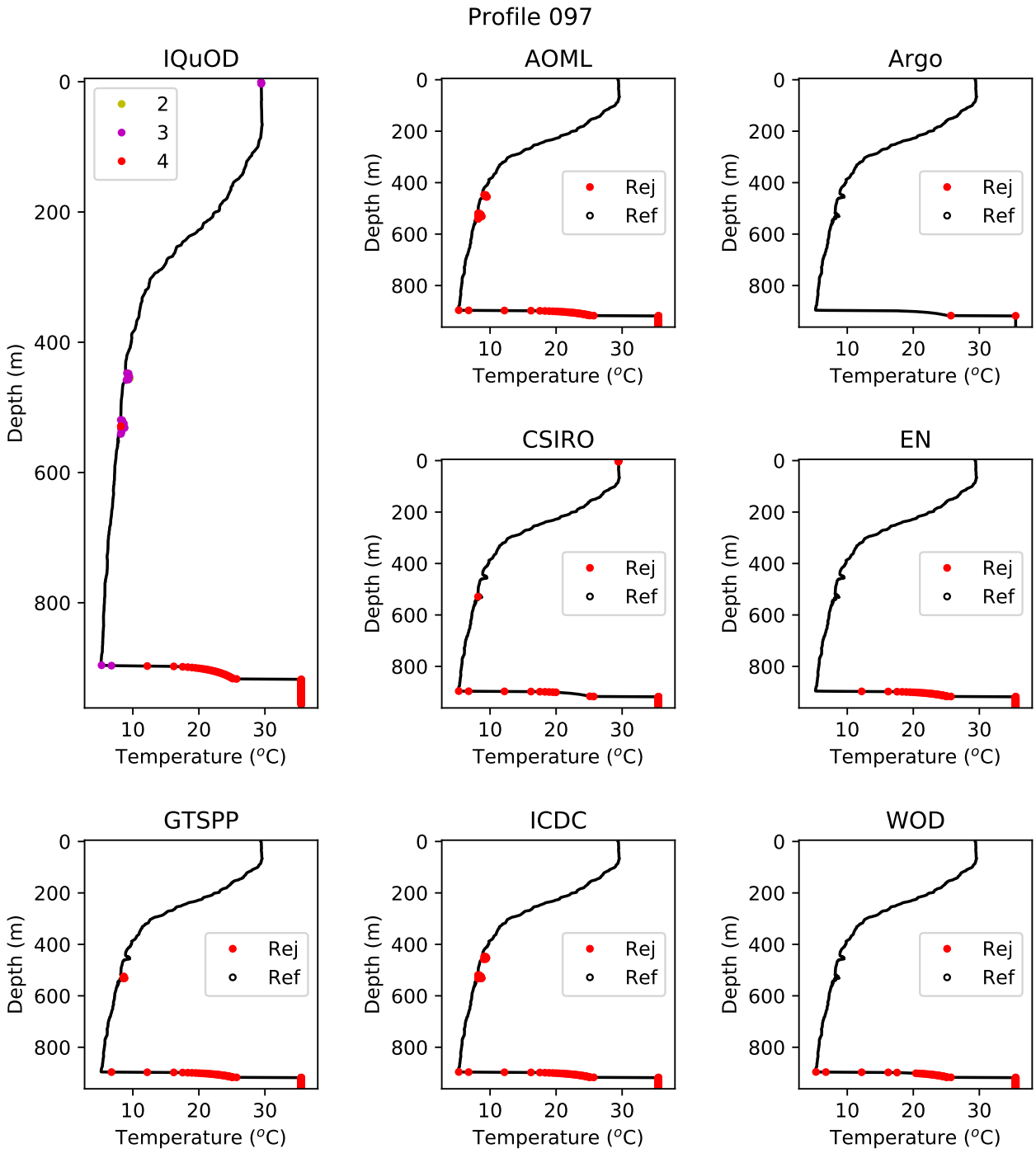

Figure S97. Description of profile: Tropical Pacific Ocean (several spikes around 450 m and 550 m; good otherwise).

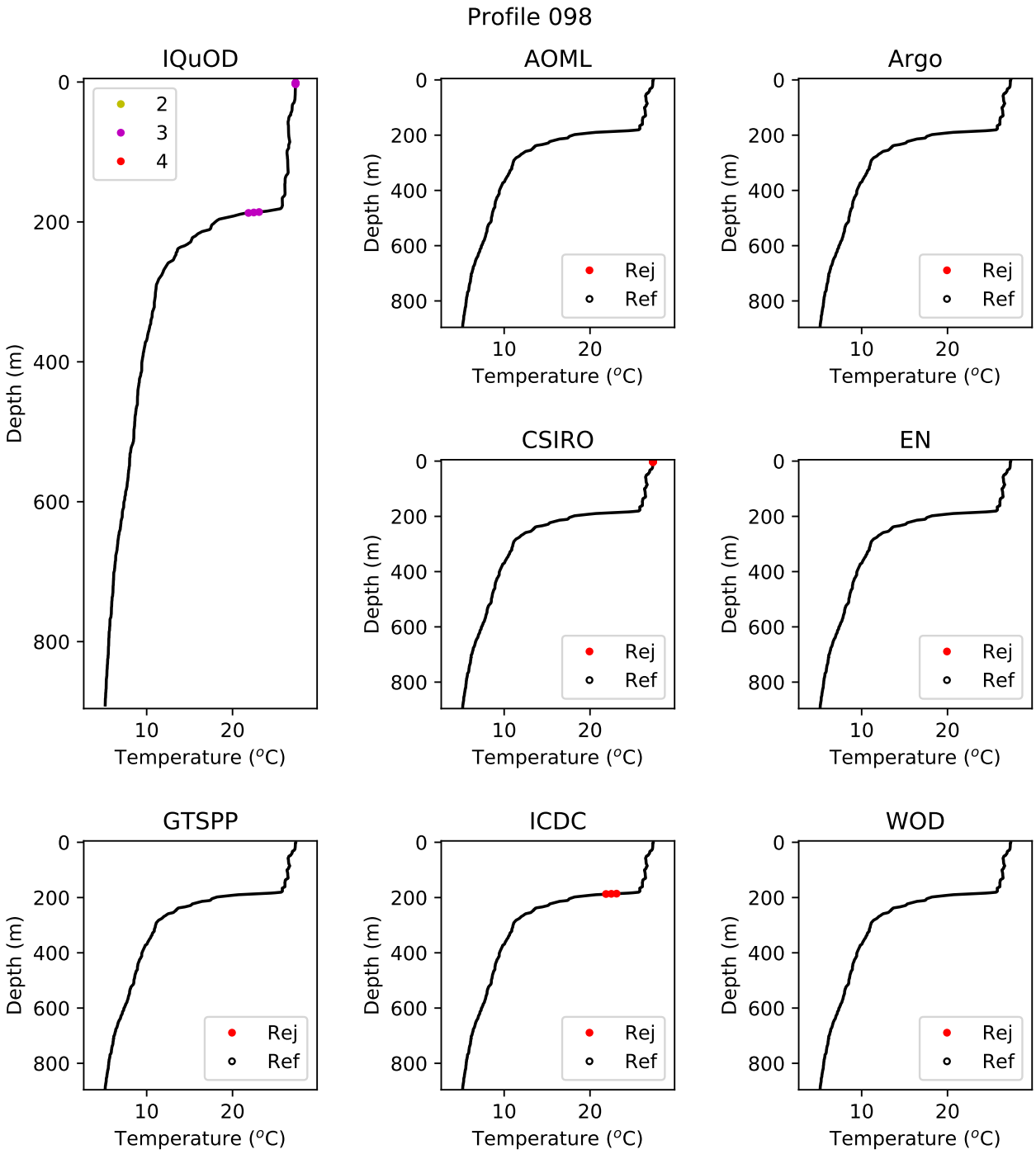

Figure S98. Description of profile: Tropical Pacific Ocean (good with several temperature inversions in the mixed layer between 0 and 200 m).

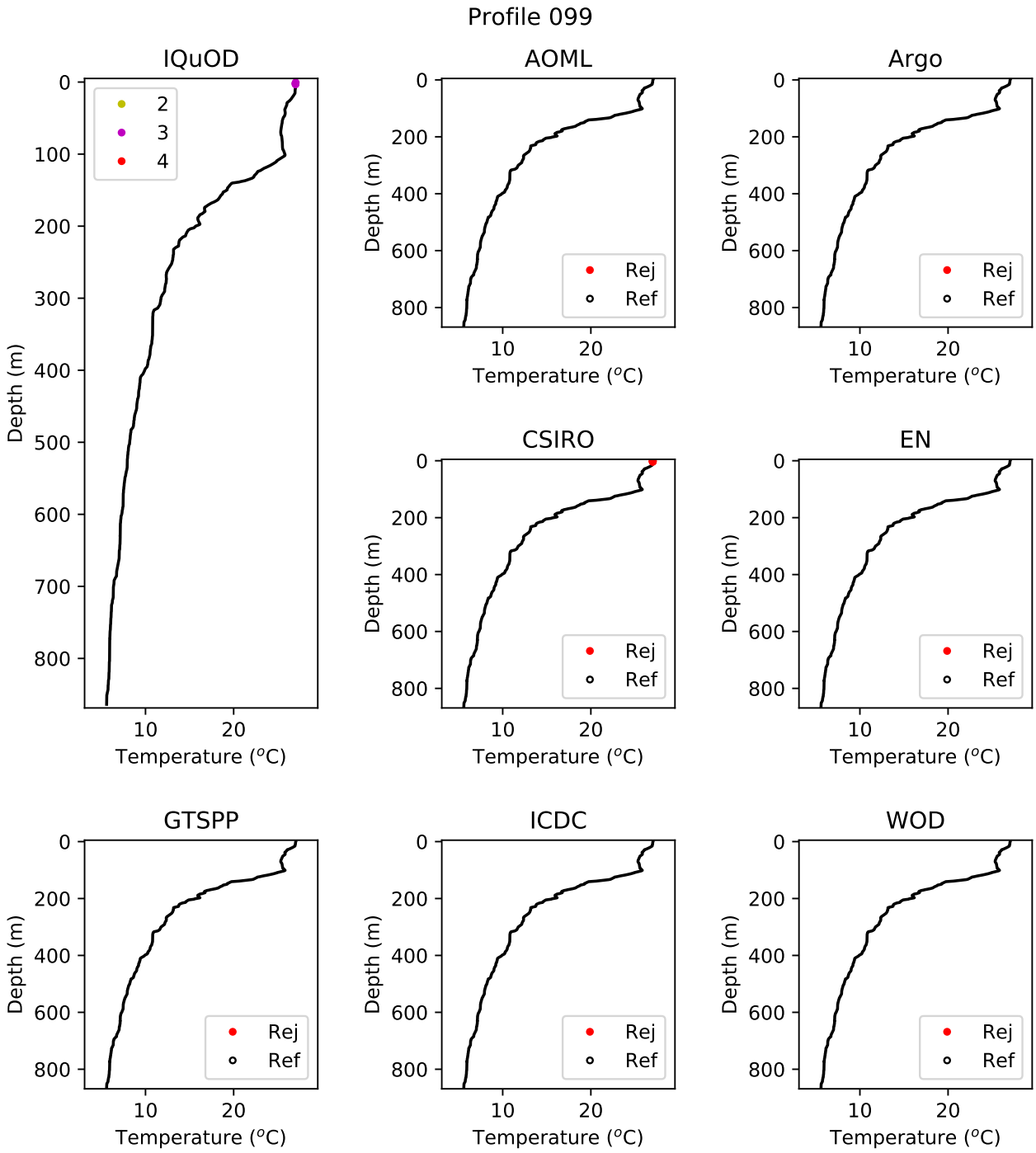

Figure S99. Description of profile: Tropical Pacific Ocean (good with strong temperature inversion at 100 m and different gradients around 350 m etc.)

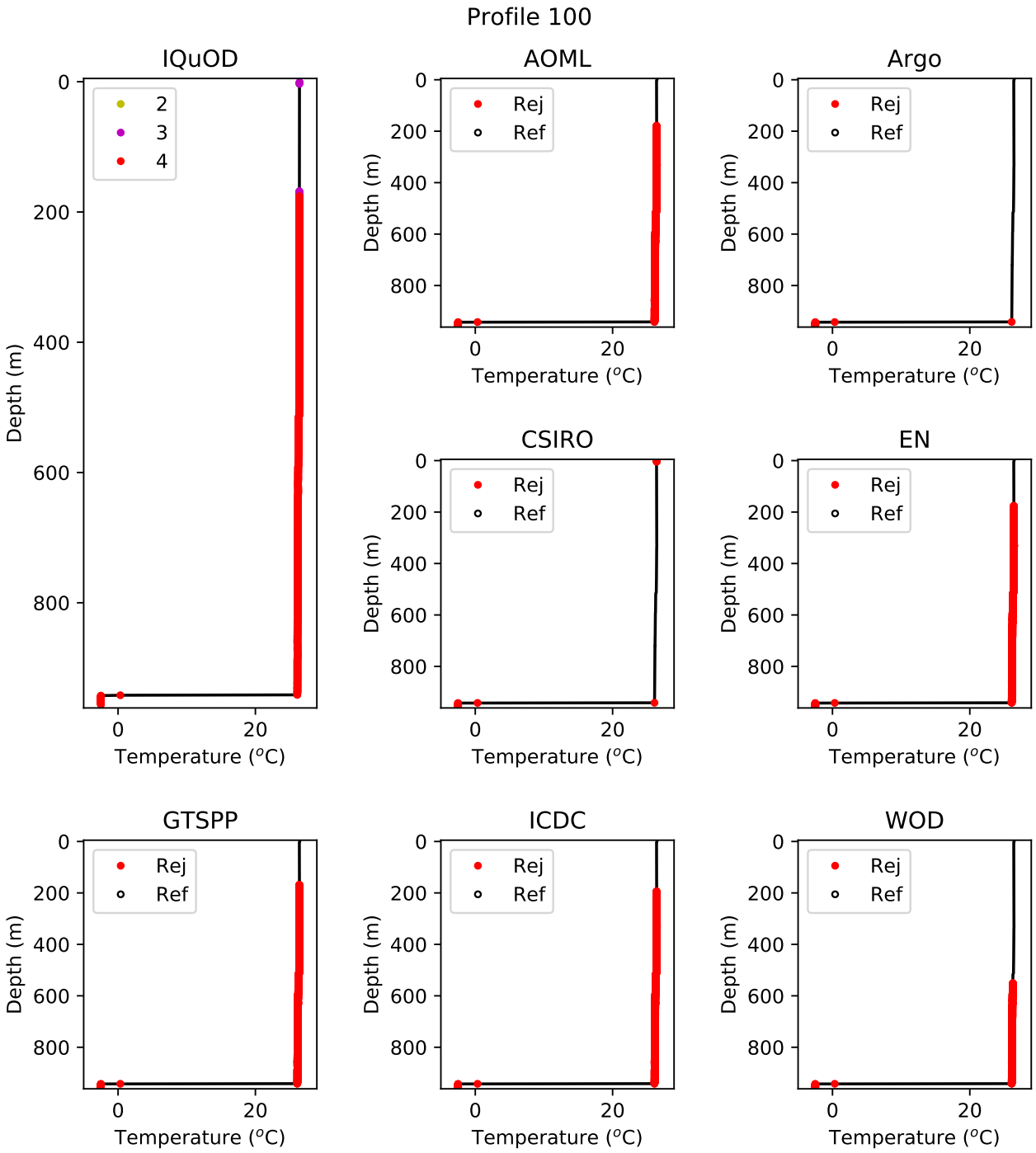

Figure S100. Description of profile: Tropical Pacific Ocean (has constant temperature = 26°C from 0 to 900 m).