Figure F1. Site map. Red = Site U1592, yellow = other sites. Inset: location map. See Figure F1 in the Site U1589 chapter (Druitt et al., 2024) for citations for the swath data on which this map is based. KVC = Kolumbo volcanic chain.

Figure F2. Seismic profile across the Anafi Basin along Seismic Line HH06-15. The basin fill has six seismic stratigraphic units (U1–U6), following Preine et al. (2022a). Insets: locations of Site U1592 and Holes U1592A and U1592B. Depths in meters. TWT = two-way traveltime.

Figure F3. Lithostratigraphic summary, Site U1592. Lithostratigraphic Unit I is divided into four subunits that are further characterized in Figures F4 and F5. Unit color = dominant lithology.

Figure F4. Relative percentages of volcanic, tuffaceous, and nonvolcanic lithologies, Site U1592. Unit I is volcanic dominated compared to Units II–V.

Figure F5. Grain size distribution of volcanic, tuffaceous, and nonvolcanic sediments, Site U1592. Length of colored bars = relative grain size (ash = <2 mm; lapilli = 2–64 mm; mud = <63 µm; sand = 0.063–2 mm), with separate scales shown for volcanic grain size (top) and tuffaceous and nonvolcanic grain size (bottom). Mixed lithologies such as lapilli-ash (dark pink) that have relative grain sizes between two categories are plotted between ticks.

Figure F6. Core disturbances, Site U1592. A. Uparching. B. Fall-in. C. Biscuiting. D. Brecciation. E. Crack. F. Sediment flowage.

Figure F7. A–E. Common lithologies from Unit I, Hole U1592A. Unit I is dominated by volcanic and tuffaceous lithologies, but Subunits Ib and Ic have a higher proportion of ooze.

Figure F8. Representative lithologies from Unit I, Hole U1592A. A. Tuffaceous ooze. B, C. Ash layers. D. Ooze with ash interval.

Figure F9. A–C. Transition from tuffaceous ooze to ash, Hole U1592A. This transition in (A) wet to (C) dry appearance consistently marks the increasing admixture of sediment with ash upward.

Figure F10. Common lithologies from Unit II, Hole U1592A. Dominant nonvolcanic sediments (ooze) generally appear gray to greenish gray and may contain (A) lapilli, (B) foraminifera, (C) lithics, and (D) shells. Intervals of organic-rich ooze are observed throughout Unit II, often identified by a gradational change from greenish gray ooze to dark brownish gray ooze.

Figure F11. Representative lithologies from Unit II, Site U1592. A. Nannofossil ooze with calcite, pyrite, and sponge spicules. B. Ash consisting of transparent cuspate and pumiceous vitric grains. C. Microfossils such as benthic and planktonic foraminifera.

Figure F12. Dolomitic ooze observed in Unit III, Hole U1592B. A. Foraminifera. B. Dolomite.

Figure F13. Common lithologies from Unit III, Hole U1592B. A–E. Dominant dolomitic sand containing (A–C) shell fragments, (D) plant fragments, and (E) lapilli. F. Periodic organic-rich intervals are more highly bioturbated and display numerous well-preserved traces of Chondrites and *Zoophycos*.

Figure F14. Lithologies from Units IV and V, Hole U1592B. A. Bioclastic limestone of Unit IV with two 1–2 cm thick interbedded bioclastic tuff intervals. B. Unit IV/V boundary. C. Oxidized limestone and marble cobbles of Unit V.

Figure F15. Limestone and marble, Hole U1592B. A–D. Unit IV matrix- to clast-supported bioclastic limestone containing component (allochemical) particles of predominantly bioclasts including benthic and planktonic foraminifera, bivalves, gastropods, corals, and algae. Minor lithic components, including sedimentary and metamorphic rock types, were also observed. Matrices either (A) consist of sparry calcite cement or (B–D) are micritic (A: 24R-1, 16–19 cm; B: 24R-2, 71–74 cm; C, D: 24R-2, 10–14 cm). E, F. Unit V (E) crystalline limestone (26R-2, 11–14 cm) and (F) granular calcite marble (26R-2, 62–65 cm).

Figure F16. A, B. Unique stratigraphic sections in Hole U1592A that correlate to Hole U1592B.

Figure F17. Selected XRD spectra of Unit I–III lithologies, Site U1592. A. Tuffaceous ooze, Unit I. B. Volcanic ash, Unit I. C. Ooze, Unit II. D. Dolomitic sand, Unit III. gl = glauconite, sm = smectite (montmorillonite), il = illite, qtz = quartz, pl = Ca-rich plagioclase, cc = calcium carbonate (calcite, aragonite), mu = muscovite, chl = chlorite, dol = dolomite.

Figure F18. WRMSL-derived MS data, Holes U1592A and U1592B. Note that MS data are on the CCSF-A depth scale and the spliced section (right) is on the CCSF-D depth scale. Yellow shading = overlapping depth sections.

Figure F19. Splice, Site U1592. MS, NGR, and GRA density, as well as the respective spliced core interval from Holes U1592A and U1592B, are shown. cps = counts per second. Yellow shading = overlapping depth sections.

Figure F20. Dip data, Site U1592. Blue shading = development of slumps.

Figure F21. Box plots of bedding dip distribution, Site U1592. The minimum (P5), first quartile (P25), median value (P50), third quartile (P75), and maximum (P95) are shown. Only the first outlier smaller than P5 and larger than P95 is plotted as a dot. Md = median dip, N = number of samples.

Figure F22. Slump, Hole U1592A. A. Lower part of the slump exhibiting a fold (5H-3, 22–121 cm). B. 5H-3, 22–71 cm. C. 5H-3, 71–121 cm.

Figure F23. Normal faults, Site U1592. Normal faults and deformation bands occurred in dense population at 300–350 mbsf. Arrows = positions of faults and sense of shear direction. A, B. Normal faults identified just below slump layers (A: 398-U1592B-3R-5, 18–25 cm; B: 398-U1592A-49X-1, 28–36 cm). C. Systematic pattern of normal faulting (398-U1592A-50X-1, 4–8 cm).

Figure F24. Deformation bands, Section 398-U1592B-4R-2. A. Deformation bands represent offset showing normal sense of shear and were observed in clay-rich intervals that lack bioturbation. Range in thickness was <2 mm. Arrows = positions of faults and sense of shear direction. B. 11.5–28.5 cm. C. 40–59 cm.

Figure F25. Age-depth plot, Holes U1592A and U1592B. Integrated biochronology, magnetostratigraphy, and marine isotope stage boundaries are shown. CN = calcareous nannofossil, MNN = Mediterranean Neogene Nannoplankton, PF = planktonic foraminifer. Biohorizons correspond to those in Tables T5 and T6.

Figure F26. Calcareous nannofossils, Site U1592. 1. *Emiliania huxleyi* (Lohmann) Hay and Mohler (398-U1592A-1H-CC, 16–18 cm). 2. *Gephyrocapsa* sp. 3 (53X-CC, 17–19 cm). 3. *Reticulofenestra asanoi* Sato and Takayama (398-U1592B-16R-CC, 10–12 cm). 4. *Gephyrocapsa oceanica* Kamptner (398-U1592A-54X-CC, 34–37 cm). 5. *Gephyrocapsa* spp. large form (>5.5 µm) (398-U1592B-20R-CC, 11–13 cm). 6. *Calcidiscus macintyrei* (Bukry and Bramlette) Loeblich and Tappan (23R-CC, 20–23 cm).

Figure F27. Foraminiferal oceanicity and paleowater depth estimates, Site U1592. Blue colors show relationship between oceanicity index and paleowater depth. Observers: AW = Adam Woodhouse, OK = Olga Koukousioura. NA = not applicable.

Figure F28. Biostratigraphic summary, Site U1592. Interpreted oceanicity: solid line/red points = interpreted oceanicity, dashed line = extrapolation through barren/unreliable sample data. Interpreted paleowater depths: light blue points/shading = shallower paleowater depths, dark blue points/shading = deeper paleowater depths.

Figure F29. Planktonic foraminifera, Hole U1592A. A. *Globigerina bulloides*. B. *Neogloboquadrina* sp. 1. C. *Globigerinoides ruber*. D. *Neogloboquadrina pachyderma*. E. *Neogloboquadrina inglei*. F. *Neogloboquadrina incompta*. G. *Hirsutella scitula*. H. *Turborotalita quinqueloba*. I. *Truncorotalia truncatulinoides* (dextral). (A, C, E, F, H: 4H-CC, 6–8 cm; B: 11H-CC, 11–15 cm; D, G, I: 13H-CC, 10–15 cm.)

Figure F30. Bioclastic limestone showing possible *Nummulites millecaput-maximus* group, *Assilina* sp., *Discocyclina* spp., miliolids, and various undetermined rotaloid forms, planktonic foraminifera, and mollusks, Hole U1592B.

Figure F31. Bioclastic limestone showing possible *Globigerinoides ruber* (A) (plane-polarized light [PPL]).

Figure F32. Benthic foraminifera, Site U1592. A. *Cibicidoides wuellerstorfi*, spiral view (398-U1592A-52X-CC, 20–22 cm). B. *Cassidulina carinata*, apertural view (398-U1592B-6R-CC, 0–2 cm). C. *Elphidium crispum*, reworked specimen (398-U1592A-45F-CC, 0–2 cm). D. *Rectuvigerina phlegeri* (11H-CC, 11–15 cm). E. *Chilostomella mediterranensis* (7H-CC, 16–21 cm). F. *Sphaeroidina bulloides* (398-U1592B-6R-CC, 0–2 cm).

Figure F33. Histograms of NRM intensity and low-field MS, Site U1592. Data are based on archive-half section SRM measurements and low-field point MS measurements made at the same intervals downhole.

Figure F34. Archive-half section magnetic data, Site U1592. Red dashed lines = GAD inclinations expected at this site.

Figure F35. Archive-half section magnetic inclinations, Site U1592. Intervals are correlated to the Brunhes Chron. Red dashed lines = GAD inclinations expected at this site.

Figure F36. Archive-half section magnetic inclinations for 400–500 mbsf, Site U1592. Data are used to define magnetozones that are correlated to the geomagnetic polarity timescale (GPTS) of Gradstein et al. (2020). Red dashed lines = GAD inclinations expected at this site. Solid/open circles = normal/reversed polarity of discrete samples.

Figure F37. AF demagnetization of discrete samples and archive-half sections, Hole U1592B. Solid circles = projection onto horizontal plane, open circles = projection onto vertical plane.

Figure F38. Anisotropy of low-field magnetic anisotropy results from discrete samples, Site U1592. Left: lower hemisphere stereographic equal-area projections of principal anisotropy axes (min = minimum, int = intermediate, max = maximum). Right: shape parameter plotted against corrected anisotropy degree (Jelínek and Kropáček, 1978).

Figure F39. Physical properties, Site U1592. Dots = whole-round measurements, open symbols = discrete sample measurements. Samples with bulk density and *P*-wave velocity greater than the maximum values on the *x*-axes are plotted in Figure F42. cps = counts per second.

Figure F40. Coring disturbance effects on physical properties, Hole U1592A. Bulk density: points = GRA, circles = moisture and density (MAD). Core 11H shows sediment rearrangement in each section. *P*-wave velocity (V_P): circles = discrete values. Core 7H shows systematic offset from expansion after the cores are split. MS: Core 20F shows high-MS material falling into the top of recovered cores.

Figure F41. Section showing relationships between discrete *P*-wave velocity, whole-round NGR, and lithology, Hole U1592B. Uppermost and lowermost NGR measurements are removed from each section because the values are affected by edges of core liners. White bar on image = void space where IW samples were collected. cps = counts per second.

Figure F42. Discrete physical properties measurements, Site U1592. Shear strength: open symbols = measurements outside the instrument range. Sediment below measurements shown was too stiff for measurement. Bulk density and thermal conductivity: linear least-squares fits include the uppermost 499 m. *P*-wave: fit is to data in the uppermost 499 m excluding XCB cores.

Figure F43. ICP-AES analyses of selected volcaniclastic units used to discriminate between potential volcanic sources, Hole U1592A. A. Total alkali vs. SiO_2 plot with the rock nomenclature of Le Maitre et al. (2002) overlain used for sample naming. Ol = olivine. B. Ba/Y vs. Ba/Zr plot used to correlate samples.

Figure F44. IW salinity, alkalinity, and pH, Site U1592. Dashed lines = unit boundaries.

Figure F45. IC and ICP-AES concentrations of Br, Cl, B, Na, K, Mg, Ca, and SO_4^{2-} in IW samples, Site U1592. Dashed lines = unit boundaries.

Figure F46. ICP-AES concentrations of Li, Sr, Mn, Ba, and Si in IW samples, Site U1592. Dashed lines = unit boundaries.

Figure F47. TOC and carbonate, Site U1592. Dashed lines = unit boundaries. Sapropel units follow convention from Kidd et al. (1978).