21. Atlantis Chaos: (34.8°S, 177.4°W) (WEH wt% = 4.99) Examine the nature of Atlantis Chaos and assess the large fluvial lake hypothesis. Extended traverses to assess the major magnetic anomalies in this area. Access to Noachian stratigraphy and fluvial processes, with potential connection to deposition within Gusev Crater. EL4 Area of water ponding??? PL1 Not very geologically active today?

22. Central Alba Patera: (40.7°N, 109.6°W) (WEH wt% = 6.85) Examine the range of Hesperian and Amazonian volcanic activity associated with Alba Patera, the young (Late Amazonian) latitude-dependent mantle deposit, and ancient (Hesperian) valley networks on the northern flanks. EL4 Valley networks and volcanism suggest strong potential for habitats for life (water/mineral supplies). PL1 Geologically inactive today.

23. Chryse Planitia: (27.0°N, 41.0°W) (WEH wt% = 3.35) Examine over a wide area the mineralogy, petrology and biology of outflow channel effluent. Examine the "ocean" hypothesis. Study underlying Hesperian ridged plains at impact craters. Provide greater context for the results from Viking Lander 1 and Pathfinder. EL3 Outflow channels may provide transient water availability, but not sustained for life. Impact craters of potential biological interest. PL1 Geologically inactive today.

24. Medusae Fossae Formation: (1.6°N, 173.2°W) (WEH wt% = 6.39) Examine the areas where interfingering of Tharsis lava flows and the MFF are observed. Establish nature and origin of MFF and stratigraphy, age and interactions with lava flows. WG EL4 Lava flows and past water? PL1 Geologically inactive today.

25. Hellas Basin Floor: (41.9°S, 69.6°E) (WEH wt% = 3.92) Study the effluent of the Eastern Hellas outflow channels, and assess the Hellas "ocean" hypothesis. Meteorologic analyses could address the unique climate of Hellas at a low elevation and relatively high pressure. Very important site for biology. EL5 depth of hellas and evidence of sediments suggests sustained liquid water. PL3 May be a place where transient liquid water (above triple point) could be sustained today at bottom of basin?

26. Northeast flanks of Arsia Mons: (7.4°S, 121.2°W) Cave skylight site (see Cushing et al., 2007 – LPSC #1371). Site of high biologic interest if subsurface water resources are available. Accessiblity to Arsia lava flows.

27. Walls of Dao Vallis: (33.7°S, 92.5°E) These are classic, well-developed gully systems and also some of the gullies are associated with the "pasted-on" terrain which Christensen (2003) has hypothesized to be melting snowpacks. High relief throughout the valley could yield excellent insight into local micro-climate-related surface processes. From Jen Heldmann.

28. Terra Sirenum:(39.3°S, 161.7°W) Site of high-albedo deposit that formed within the last decade in the proximity of gullies

(Malin et al., 2006). Classic Noachian highland terrain with Hesperian lava flows and small-scale Amazonian fluvial activity.

29. Centauri Montes: (38.7°S, 96.7°E) Site of high-albedo deposit that formed within the last decade in the proximity of gullies and more extensive volatile-rich deposits (see site 13) (Malin et al., 2006). Meteorologic stations could provide insight into the local climate of eastern Hellas and the regional climate of Hellas as a whole.

30. Terra Cimmeria: (70.0°S, 180.0°E) A suggested drill target is at 180W between 60-80S which is a region of preserved crustal magnetism (indicating old terrain) and ground ice (GRS measurement, but also crater morphology indicative of underlying deeper ice).

31. Mawrth Vallis:(25.3°N, 19.3°W) Fluvial geomorphology with heavy weathering. Stratigraphic analysis and access to the northern lowlands.

32. Olympia Planitia: (75.0°N, 180.0°E) Sulfate-rich dunes around the north pole (very recent alteration product(?)). Access to the southern-most extent of the residual polar caps, and access to polar troughs to reveal Amazonian climate history.

33. Valles Marineris: (6.2°S, 70°W) Sulfate-rich deposits only accessible by human operations. Extensive stratigraphic analysis and access to landslides/talus piles.

34. Arsia lobate glacial deposit: (7.4°S, 123.8°W) Evidence for Late-Amazonian glacial activity. Assess the interaction of late-stage glaciation and volcanism, analyze climate history and sample possible residual ice. Assess various moraines, obtain ice cores, sample lava flow stratigraphy to assess volcano and glacial chronology. RM

35. North Polar Cap: (86.0°N, 79.0°E) Accessibility to Late-Amazonian ice deposits, through drilling and stratigraphic analysis of polar troughs.

36. South Polar Cap: (88.0°S, 30.0°E) Accessibility to Late-Amazonian ice deposits, through drilling and stratigraphic analysis of polar troughs.

37. Syrtis Major Planum: (7.0°N, 69.0°E) Possible SNC-meteorite ejection locale, Hesperian lava flows and silicate-rich deposits in caldera. Interactions with Isidis and the northern lowlands. From Joe Levy.

38. Mangala Valles: (18.0°S, 149.4°W) Outflow Channel Floor: Residual ice-rich deposits remaining on the floor of an outflow channel. Hesperian-aged (?) outflow channel. Dike-related vents: evidence for phreatomagmatic eruption and rim