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Prioritization is defined within each individual goal and is explained within the respective Goal chapter in the main document. This list of cross-cutting linkages is explained in the main document and is meant to be thorough but is not expected to be complete.

Goal	Inv #	Inv Priority	CC G1	CC G2	CC G3	CC G4	Starting text for the Investigation
I	**A1.1**	High			A2.3	D1.1, D2, D4	Search for chemical signatures of life in surface or subsurfa
I	**A1.2**	High			A2.3	D1.1, D2, D4	Search for physical structures or assemblages that might be
I	**A1.3**	Medium				D1.1, D2, D4	Test for evidence of physiological activity in surface or subs
I	**A2.1**	High		A1.2, A2.2, B2, C2	A1, A2	C2, D1.1	Constrain the availability of liquid water with respect to du
I	**A2.2**	Medium					Identify and constrain the magnitude of possible energy so
I	**A2.3**	Medium			A3		Characterize the physical and chemical environment, partic
I	**A2.4**	Medium			A3		Constrain the abundance and characterize potential source
I	**A2.5**	Medium			A, B		Provide overall geologic context.
I	**A3.1**	High		A2.2	A2		Evaluate conditions and processes that would have aided p
I	**A3.2**	High		A2.2	A2		Evaluate the conditions and processes that would have aide
I	**A3.3**	Medium		A2.2	A2		Evaluate the conditions and processes that would have aide
I	**B1.1**	High				D4	Characterize the inventory and abundance of organics on th
I	**B1.2**	High		A1.2, A2, A3, B1.1, B3, C1.2, C2.2	A3.4		Characterize the atmospheric reservoirs of carbon and thei
I	**B1.3**	Medium		A3, C1.2, C1.3	A3.4		Constrain the abiotic cycling (between atmosphere and cru
I	**B1.4**	High		C1.3	A3.4, A4.2, B1.1		Characterize bulk carbon in the martian mantle and crust th
I	**B2.1**	High		A3			Investigate atmospheric processes (e.g. photolysis, impact s
I	**B2.2**	High					Investigate the role of ionizing radiation in organic synthesi
I	**B2.3**	Medium					Investigate surface and subsurface processes, such as mine
I	**B2.4**	Medium					Investigate the role of subsurface processes (e.g. hydrother
II	**A1.1**	Higher			A1.5, A2.4	B3	Characterize the dynamical and thermal state of the lower
II	**A1.2**	Higher	A2.1, B1.2		A2.5	A1.2, B2	Measure water and carbon dioxide (clouds and vapor) and
II	**A2.1**	Higher			A2.2	A1, A3.2, B2, B3, B4.3	Characterize the fluxes and sources of dust and volatiles be
II	**A2.2**	Higher	A2, B1.2		A1, A3.4	C2.1, D5.1	Determine how the processes exchanging volatiles and dus
II	**A3.1**	Higher	B1, B2.1			A1	Measure the global average vertical profiles of key gaseous
II	**A3.2**	Medium	A2, B1, B2				Measure spatial and temporal variations of species that pla
II	**A3.3**	Medium					Determine the significance of heterogeneous reactions and
II	**A4.1**	Higher	A2.1			A1	Characterize the mechanisms for vertical transport of energ

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II	**A4.2**	Lower	A2			A1	Characterize the spatial distribution, variability, and dynam
II	**A4.3**	Lower	A2			A1	Characterize the thermal state and its variability of the upp
II	**B1.1**	Higher	B1.2		A1, A3, B1.1		Determine how orbital parameters, atmospheric processes
II	**B1.2**	Higher			A1, A3		Determine the vertical and horizontal variations of compos
II	**B1.3**	Medium			A1, A3, A4.1		Determine the absolute ages of the layers of the Polar Laye
II	**B2.1**	Medium	A2.1		A1, A2.3, A3, B1.1	C2.1	Characterize the locations, composition, and structure of lo
II	**B2.2**	Medium	A2.1		A1, A2.3, A3, A4.1		Determine the conditions under which low- and mid-latitud
II	**B3.1**	Medium	B1.2		A1, A3, B1.1		Determine how and when the buried CO2 ice reservoirs at
II	**B3.2**	Medium	B1.2		A1, A3		Measure the composition of gases trapped in the Polar Lay
II	**C1.1**	Higher			A3		Measure the composition and absolute ages of trapped ga
II	**C1.2**	Medium	B1.2		A1, A4.5		Characterize mineral and volatile deposits to determine cru
II	**C1.3**	Medium	B1.3, B1.4		A1.2, A4, B1.1		Determine sources of gases to the atmosphere over time b
II	**C1.4**	Medium	A2		A3		Determine the rates of atmospheric escape over geologic ti
II	**C2.1**	Higher			A1.2, A2, A4.1		Constrain the ancient water cycle by determining the spatia
II	**C2.2**	Higher	A2, B1		A1, A2.3, A3, B1.1		Characterize the ancient climate via modeling and constrain
III	**A1.1**	Higher	A2.1	B2		C2.1	Determine the modern extent and volume of liquid water a
III	**A1.2**	Higher	A2.1	B2.2, C2.1			Identify the geologic evidence for the location, volume, and
III	**A1.3**	Higher		B1, B3.2, C1.3			Determine the subsurface structure and age of the Polar La
III	**A1.4**	Medium	A2.1	B1		C2.1	Determine how the vertical and lateral distribution of surfa
III	**A1.5**	Medium		A1.1, A2			Determine the role of volatiles in modern dynamic surface
III	**A2.1**	Higher	A2.1	C2.1			Constrain the location, volume, timing, and duration of pas
III	**A2.2**	Higher	A1.2, A2.1, A3, B2.4				Constrain the location, composition and timing of diagenes
III	**A2.3**	Higher	A	B2, C2			Identify the intervals of the sedimentary record conducive t
III	**A2.4**	Lower		A1.1, A2.1		B3	Determine the sources and fluxes of modern aeolian sedim
III	**A2.5**	Lower		A1.2, A2.1		B3, D5.1	Determine the origin and timing of dust genesis, lofting me
III	**A3.1**	Higher	A2.5	B, C2			Link geologic evidence for local environmental transitions t
III	**A3.2**	Higher		B1			Determine the relative and absolute age, durations, and int
III	**A3.3**	Medium		B1			Document the nature and diversity of ancient environment
III	**A3.4**	Medium	B1				Determine the history and fate of sulfur and carbon throug

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III	A4.1	Higher		B1.3, B2.2, C2.1			Determine the absolute and relative ages of geologic units
III	A4.2	Medium	B1.4	C1.1, C2.2			Link the petrogenesis of martian meteorites and returned s
III	A4.3	Lower		A1.1		A3.3, B3.2	Characterize modern surface processes and their rates of cl
III	A4.4	Lower		C1.3			Constrain the effect of impact processes on the martian cru
III	A4.5	Lower		C1.2, C1.3			Determine the surface manifestation of volcanic processes
III	A4.6	Lower		C1.3			Constrain the petrology/petrogenesis of igneous rocks over
III	A4.7	Lower	A2.5			A3.1, B4.1, C2.2, D1.1	Develop a planet-wide model of Mars evolution through glo
III	B1.1	Higher	B1.4	B1.1, C2.2			Determine the types, nature, abundance, and interaction o
III	B1.2	Medium					Seek evidence of plate tectonics-style activity and metamor
III	B2.1	Higher					Characterize the structure and dynamics of the interior.
III	B2.2	Medium					Measure the thermal state and heat flow of the martian int
III	B2.3	Medium					Determine the origin and history of the magnetic field.
III	C1.1	Medium				E1, E2	Determine the thermal, physical, and compositional proper
III	C1.2	Medium				E1	Interpret the geologic history of the moons, by identificatio
III	C1.3	Lower				E1 E2.2	Characterize the interior structure of the moons to determi
III	C2.1	Lower				A2.1	Understand the flux of impactors in the martian system, as
III	C2.2	Lower				A2.1	Measure the character and rate of material exchange betw
IV	A1.1	High		A1.1, A4			At all local times, make long-term (>5 Mars years) observat
IV	A1.2	High		A1.1,A1.2, A2.1, A3.1, A4			At all local times, make long-term (>5 Mars years) global m
IV	A1.3	High		A1.1, A2.1, A4			Make long-term (>5 Mars years) observations of global win
IV	A2.1	Low			C2.1, C2.2		Develop and fly an experiment capable of measuring or cor
IV	A3.1	High			A4.7		Characterize selected potential landing sites to sufficient re
IV	A3.2	High		A2			Determine physical and mechanical properties and structur
IV	A3.3	High			A4.3		Profile the near-surface winds (<15 km altitude) with a pre
IV	B1.1	Medium					Conduct measurements of neutrons with directionality (en
IV	B1.2	Medium					Measure the charged particle spectra, neutral particle spec
IV	B1.3	Medium					Assay for chemicals with known toxic effect on humans in s
IV	B1.4	Medium					Analyze the shapes of martian dust grains with a grain size
IV	B2.1	Low		A1			Analyze regolith and surface aeolian fines (dust), with a pri
IV	B3.1	High		A1	A2.4		Globally monitor the dust and aerosol activity continuously
IV	B3.2	High		A1	A2.5, A4.3		Monitor surface pressure and near surface (below 10 km al

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IV	**B3.3**	High		A1			Collect temperature and aerosol profile observations even
IV	**B4.1**	Medium			A4.7		Characterize selected potential landing sites to sufficient re
IV	**B4.2**	Medium					Determine physical and mechanical properties and structur
IV	**B4.3**	Medium		A1.2			Combine the characterization of atmospheric electricity wit
IV	**C1.1**	High					Test ISRU atmospheric processing system to measure resili
IV	**C2.1**	Medium	A2.1	A2.2, B2.1	A1.1, A1.4		Identify a set of candidate water resource deposits that hav
IV	**C2.2**	Medium			A4.7		Prepare high spatial resolution maps of one equatorial site
IV	**C2.3**	Medium					Measure the energy required to excavate/drill and extract
IV	**D1.1**	High	A1		A4.7		Identify the locations and characteristics of naturally occurr
IV	**D2.1**	High					Determine if extant life is widely present in the martian nea
IV	**D3.1**	Low					Determine the viability of terrestrial organisms when expos
IV	**D4.1**	High	A1.1, B1.1				Determine characteristics of the Mars atmosphere, surface
IV	**D5.1**	Medium		A2	A2.5		Determine the extent to which bio-material released by hu
IV	**D5.2**	Medium					Determine the survivability of terrestrial organisms release
IV	**E1.1**	Medium			C		Determine the elemental and mineralogical composition as
IV	**E1.2**	Medium			C1		Identify geologic units, their value for science and explorati
IV	**E1.3**	Medium			C1.3		Determine the gravitational field to a sufficiently high degr
IV	**E2.1**	Medium			C1		Measure and characterize the physical properties and struc
IV	**E2.2**	Medium			C1.3		Determine the gravitational field to a sufficiently high degr
IV	**E2.3**	Medium					Measure the electrostatic charge and plasma fields near th
IV	**E2.4**	Medium			C1.1		Measure the surface and subsurface temperature regime o