



Personality, Affect, and Coping Among SIRIUS 21 Crew

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Rationale



- Focus on individual differences informing team composition
- Confidentiality issues
 - Emphasis on means, standard deviations, range



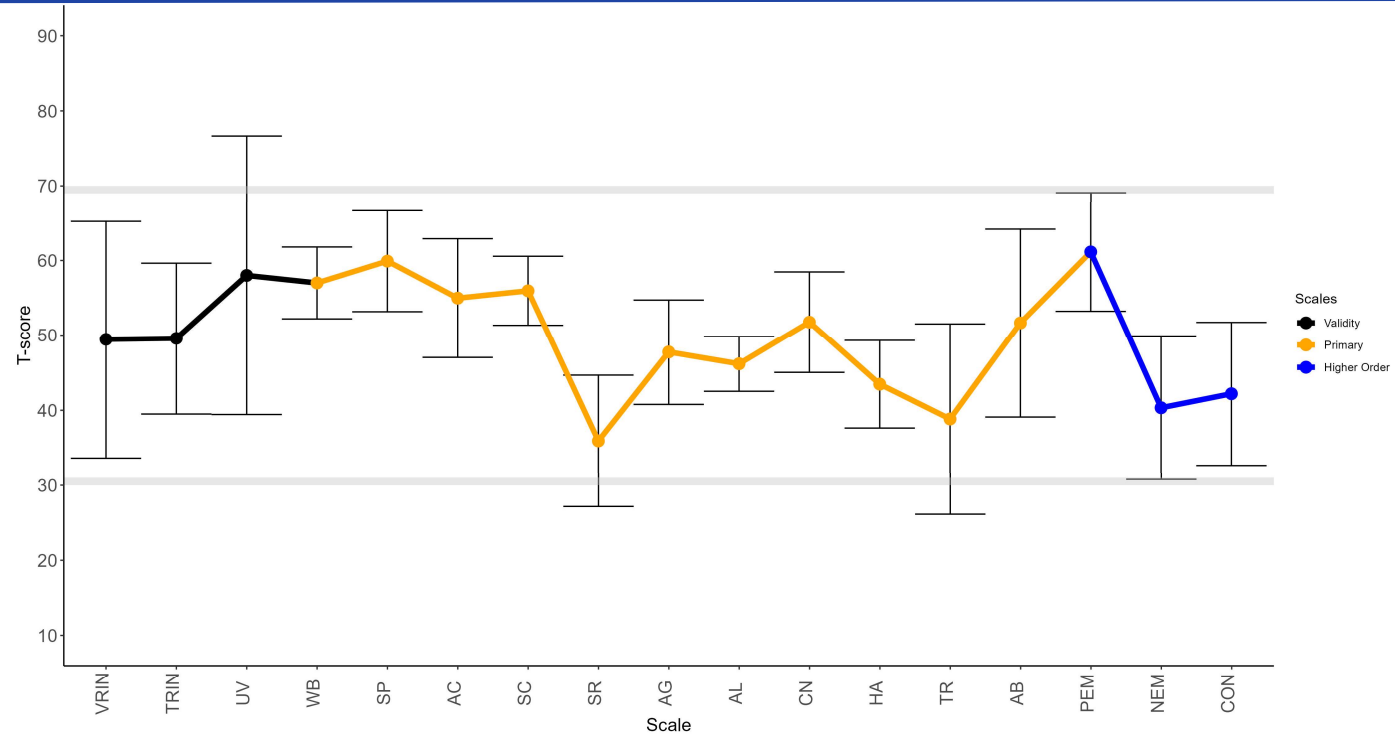
Protocol



- Personality assessment
 - Administered 1x Pre-Mission
 - Multidimensional Personality Questionnaire (MPQ)
 - Dichotomous Scale
- Weekly Rating Form (WRF)
 - Administered 21x over mission
 - 3x Pre-Mission, 17x In-Mission (bi-weekly), 1x Post-Mission
 - PANAS
 - Scale: 1 = Slightly/Not at All to 5 = Extremely
 - Work/Coping
 - Dichotomous Scale
- Measures in both English and Russian
 - Use in expedition research



MPQ

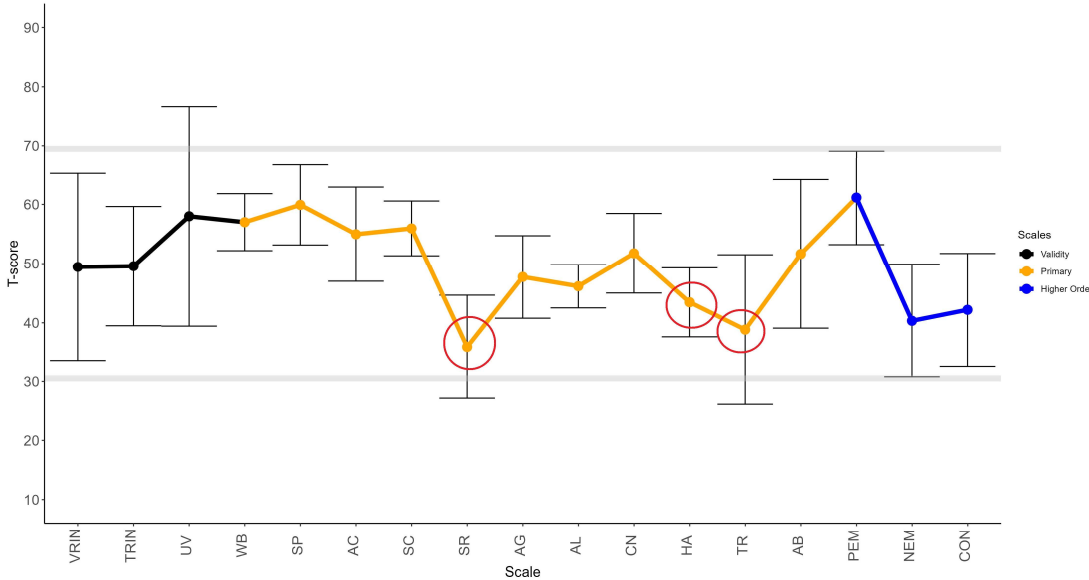




MPQ: Major Findings

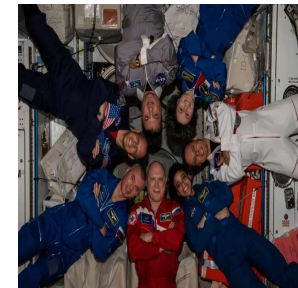


- Scales within the normal range
- Low T-scores on following:
 - Stress response – 35.94/8.73
 - Harm Avoidance – 43.47/5.83
 - Traditionalism – 38.85/12.66

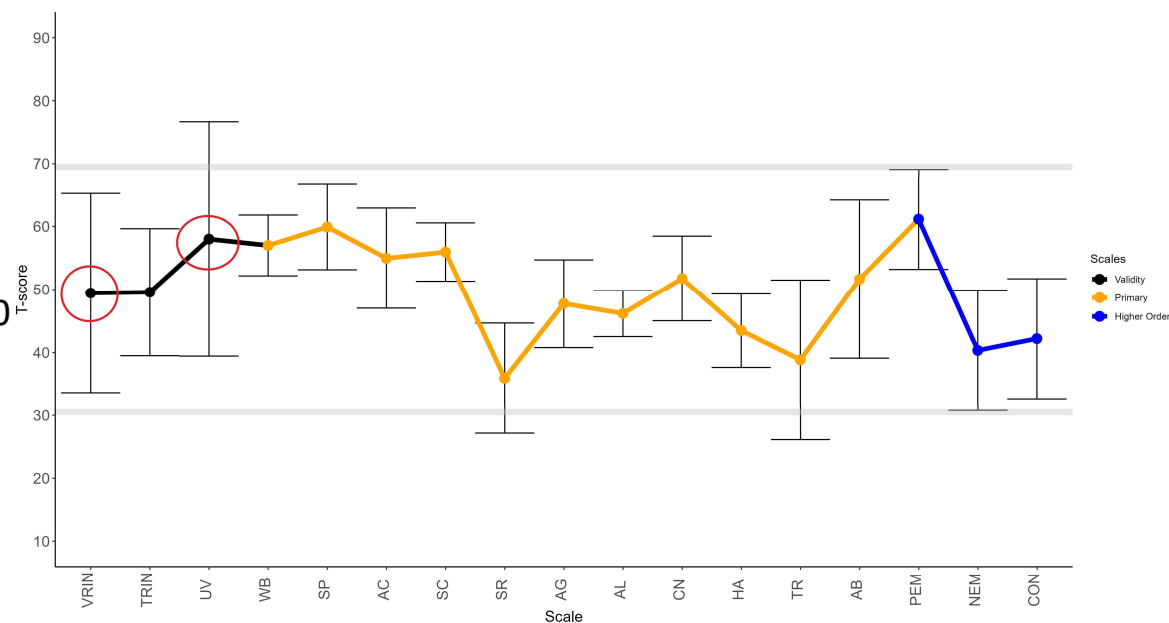




MPQ: Validity Scales



- Highly important to assess
- Two outside normal limits
 - Variable Response (VRIN) 49.44/15.80
 - Careless responding
 - Unlikely Virtues (UV) 58.00/18.56
 - Social desirability



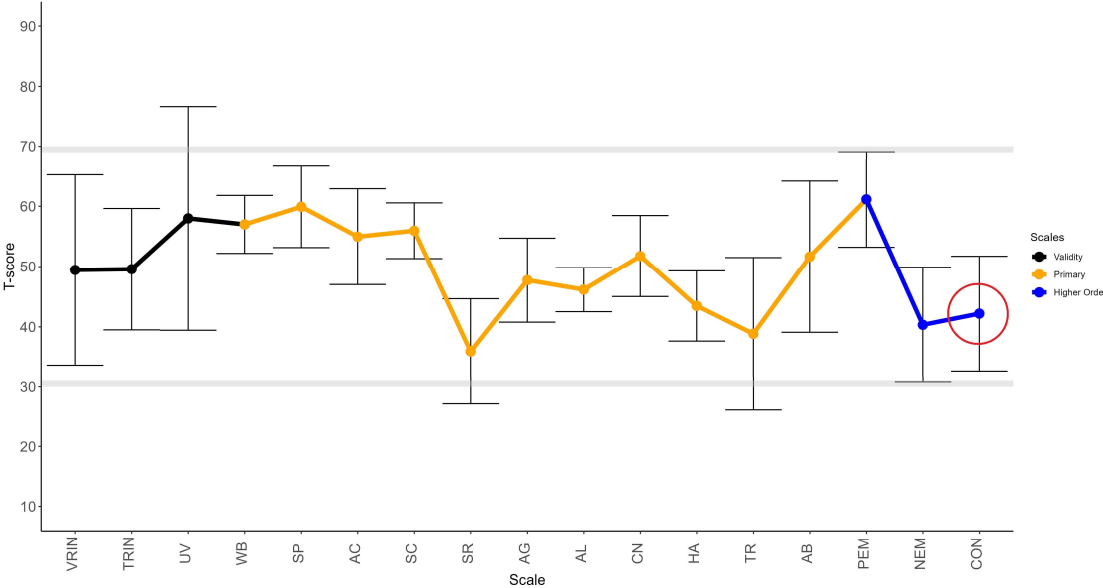


MPQ: Red Flag?



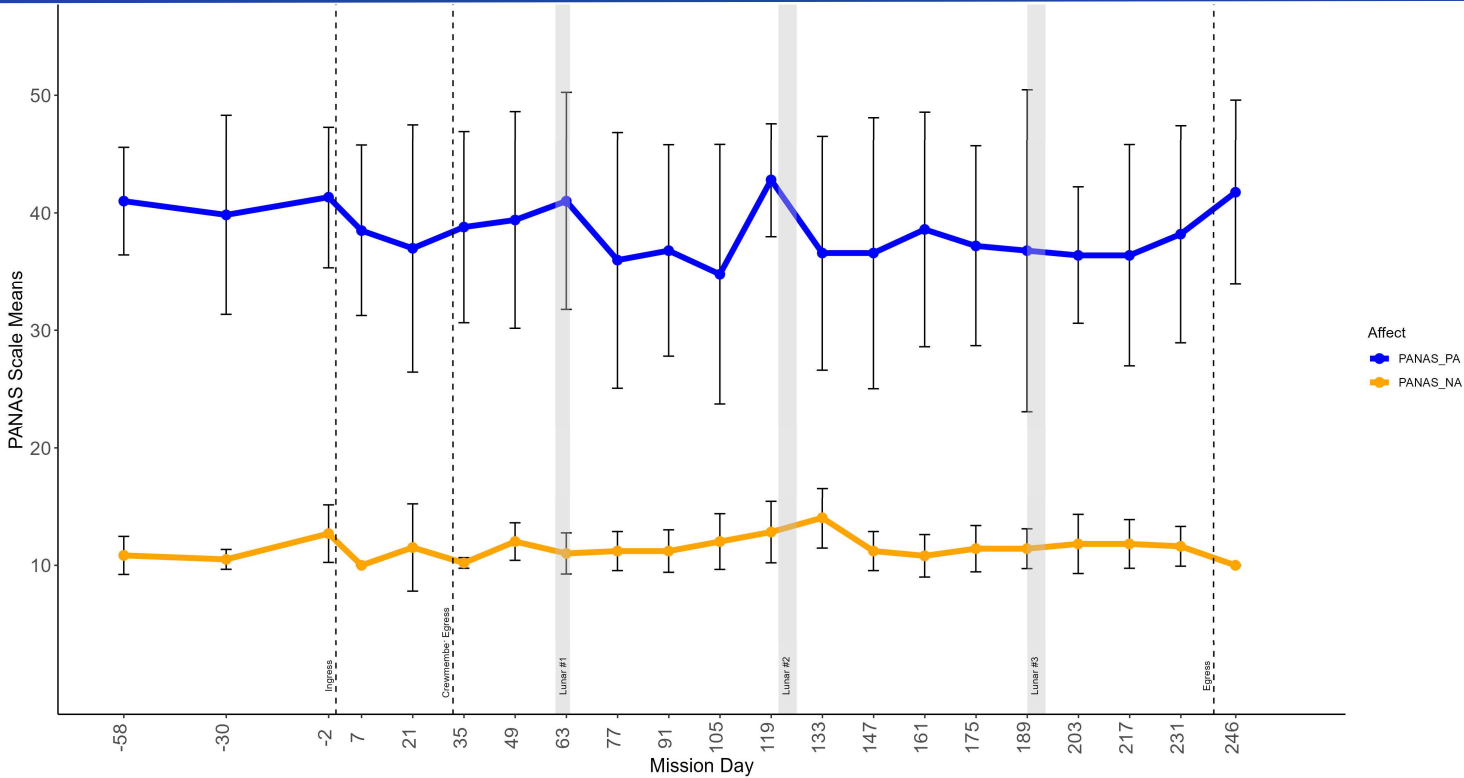
- Higher order Constraint factor
 - T-score 42.19/9.52

- Impulsivity
- Recklessness
- High emotional expressiveness





WRF Findings: PANAS Over Time





WRF: Emotional Climate Over Time



<u>Item</u>	<u>Percentage</u>	<u>Range</u>
Enjoyment of the analog space situation	81	40-100
Tension or argument with a crewmate	8	0-19
Technical problems communicating with mission controller	6	0-20
Interpersonal problems communicating with mission controller	6	0-20
Team Mean % of Rating Periods When Item was Endorsed		



WRF: Work Performance Over Time



<u>Item</u>	<u>Percentage</u>	<u>Range</u>
Pleased how effective my crewmates and I were working together	84	65-100
Concern about how effective my crewmates and I were working together	21	10-55
Concerns about the effectiveness or safety of decisions I made today	8	0-20
Concerns about the effectiveness or safety of decisions a crewmate made today	6	0-15

Team Mean % of Rating Periods When Item was Endorsed



WRF: Coping Strategies Over Time

Problem Oriented



<u>Item</u>	<u>Percentage</u>	<u>Range</u>
Discussed task concerns with a crewmate	50	5-80
Discussed personal concerns with a crewmate	39	19-60
Communicated with family, friends	71	40-90
Tried to figure out how to solve situation that's bothering me	44	5-86

Team Mean % of Rating Periods When Item was Endorsed



WRF: Coping Strategies Over Time

Cognitive/Behavioral



<u>Item</u>	<u>Percentage</u>	<u>Range</u>
Kept positive attitude. Used humor, joked around and had fun	87	62-100
Saw the situation in a very positive way, what I'm learning and getting out of it	70	19-100
Activity, stayed as busy as I could	53	20-85
Kept the goal in sight. Thought about finishing the mission and why I'm here	73	57-95

Team Mean % of Rating Periods When Item was Endorsed



Conclusions



- Analog fidelity dependent in part on fidelity of chosen participants
 - “The right mix of the right stuff”
- Crew members highly different from each other
 - Personality, affect, coping
 - Incompatibility affecting team performance
- Possible first quarter exacerbation of stress



Conclusions, Cont.



- Attention to role of mission controllers
 - Effectiveness of communication
- Advantages of completing forms in native language



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Thank you!

Questions?