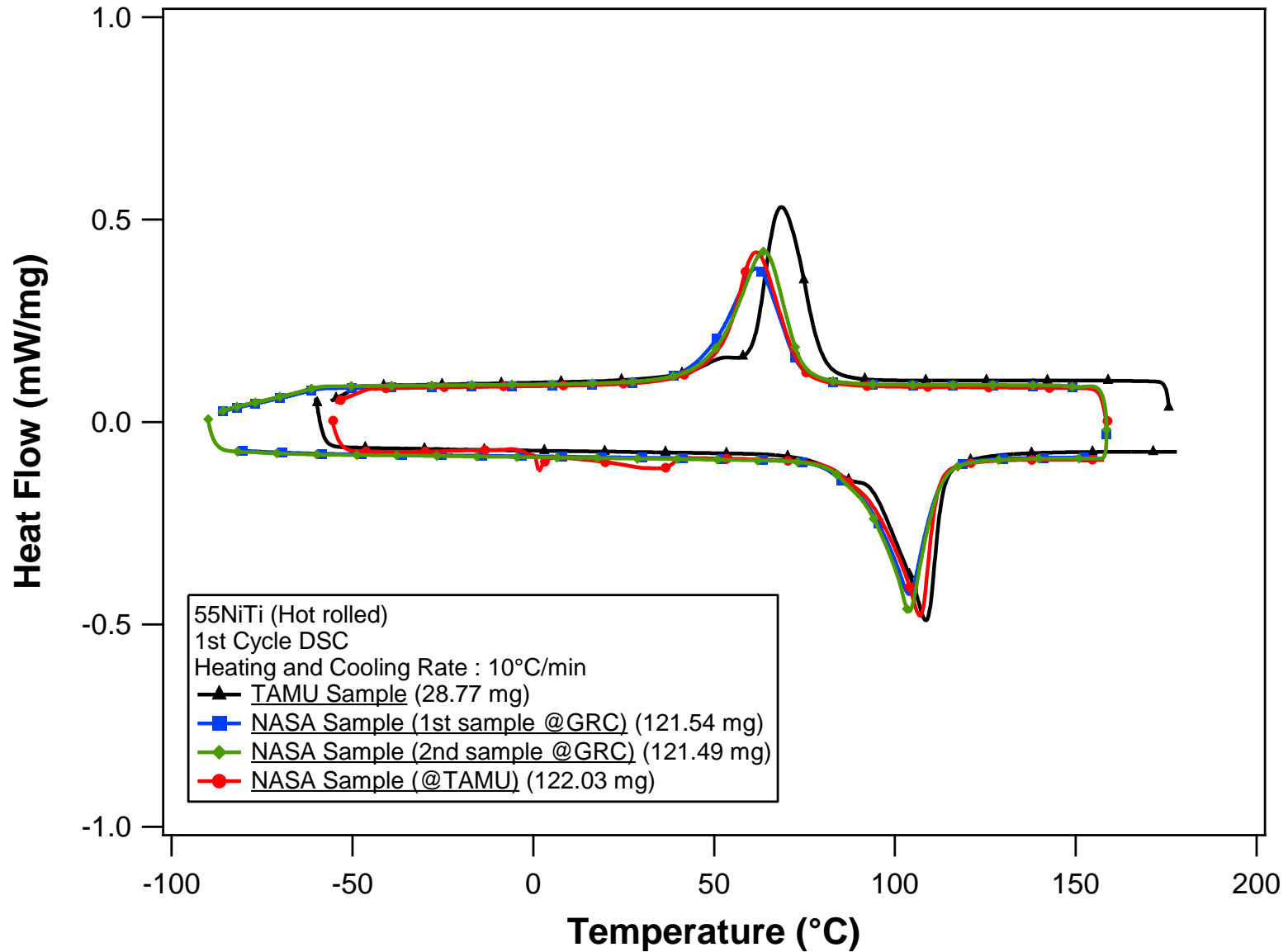


# Table of Contents

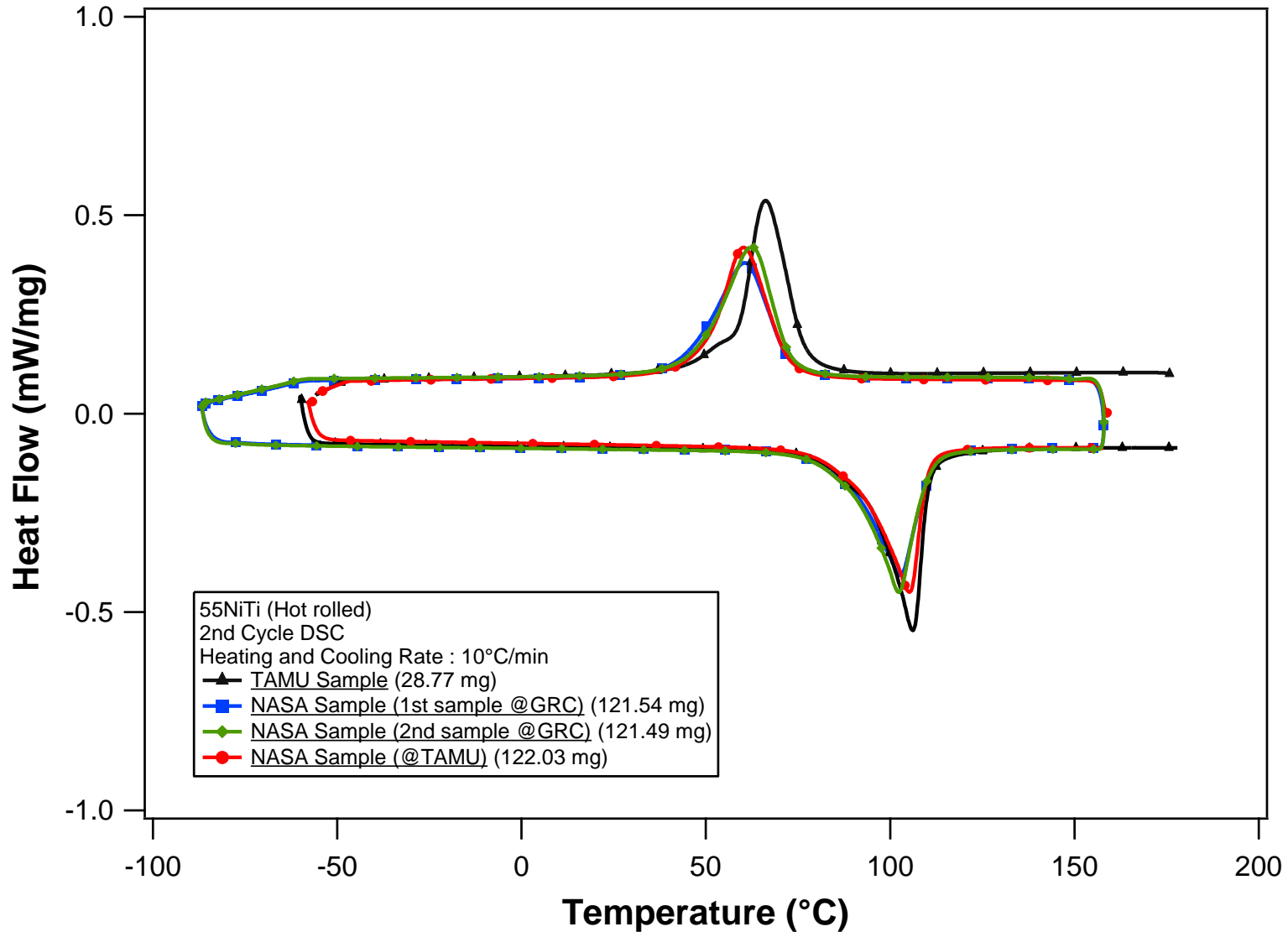
- Transformation Temperatures
  - DSC results
  - Stress free transformation temperatures
- Load Bias Tests
  - Transformation temperatures (TT)
  - Overall view of TT's including DSC results, stress free cycling and load bias tests
  - Open loop strain, transformation strain and work output comparisons

# DSC Analysis

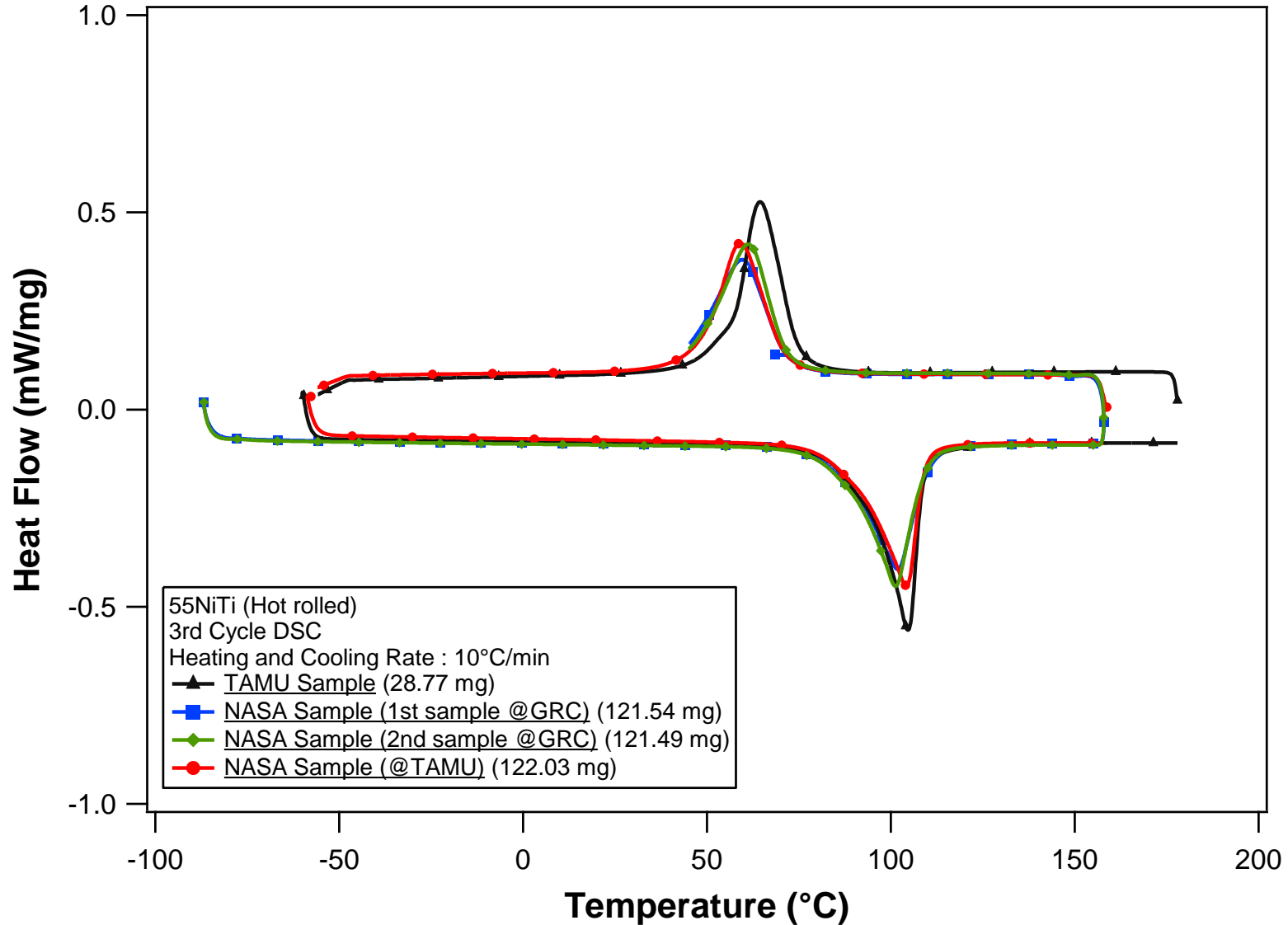
# DSC Results of 1st Cycles run at NASA GRC and TAMU



# DSC Results of 2nd Cycles run at NASA GRC and TAMU



# DSC Results of 3rd Cycles run at NASA GRC and TAMU

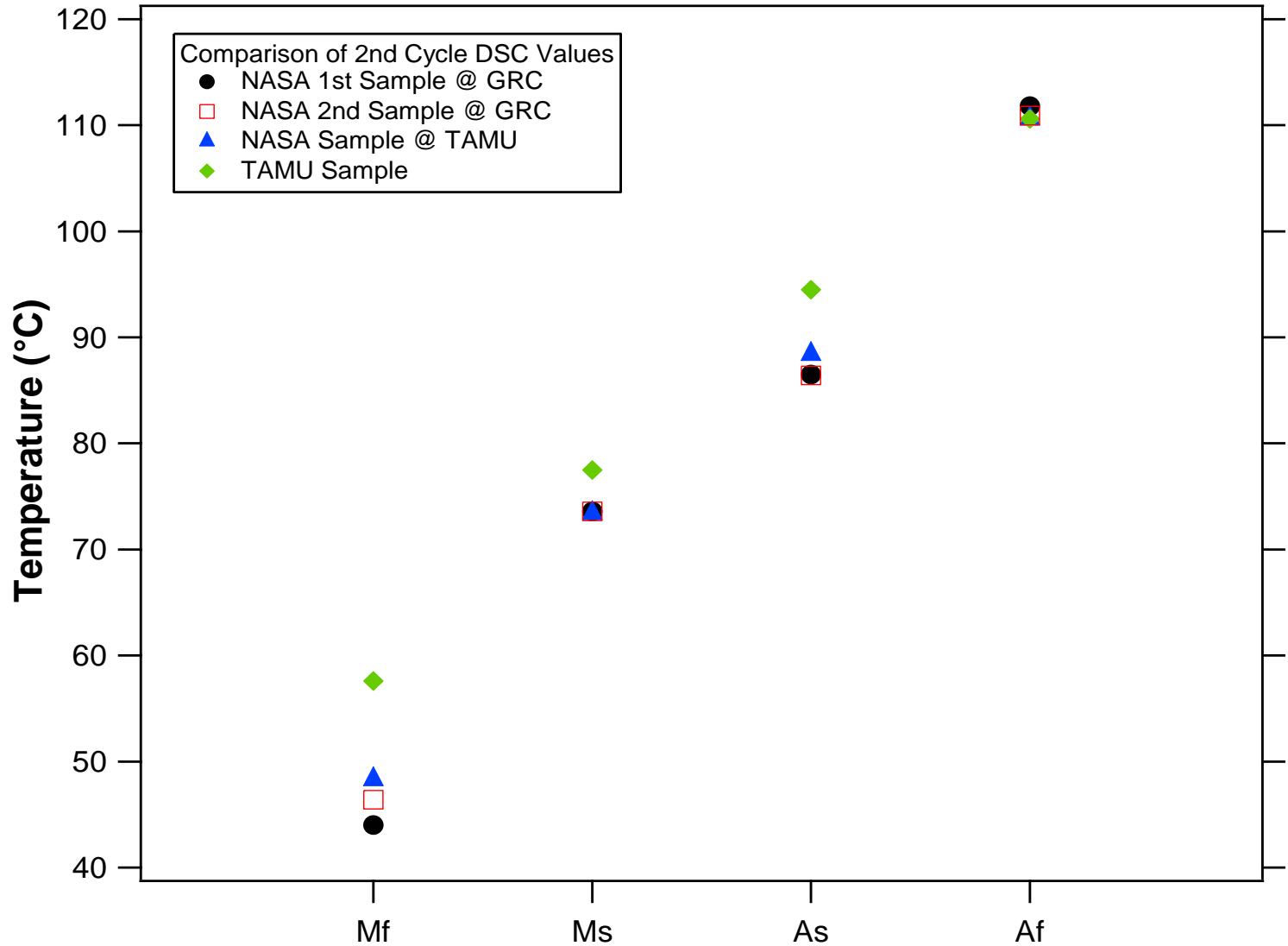


# DSC Results for 3 cycles run at NASA GRC and TAMU

	NASA GRC Sample 1				NASA GRC Sample 2			
<b>Cycles</b>	Mf	Ms	As	Af	Mf	Ms	As	Af
1	45.5	74.7	89.7	112.8	48.4	74.9	89.4	112.4
2	44.0	73.6	86.5	111.8	46.4	73.6	86.4	110.9
3	-	72.5	85.2	111.5	-	72.4	85.3	110.0

	NASA Sample Analysis at TAMU				TAMU Sample			
<b>Cycles</b>	Mf	Ms	As	Af	Mf	Ms	As	Af
1	50.1	74.4	91.6	112.5	60.1	80.1	95.5	113.7
2	48.3	73.4	88.4	110.6	57.6	77.5	94.5	110.6
3	46.6	71.9	86.7	109.7	55.8	75.5	93.7	108.9

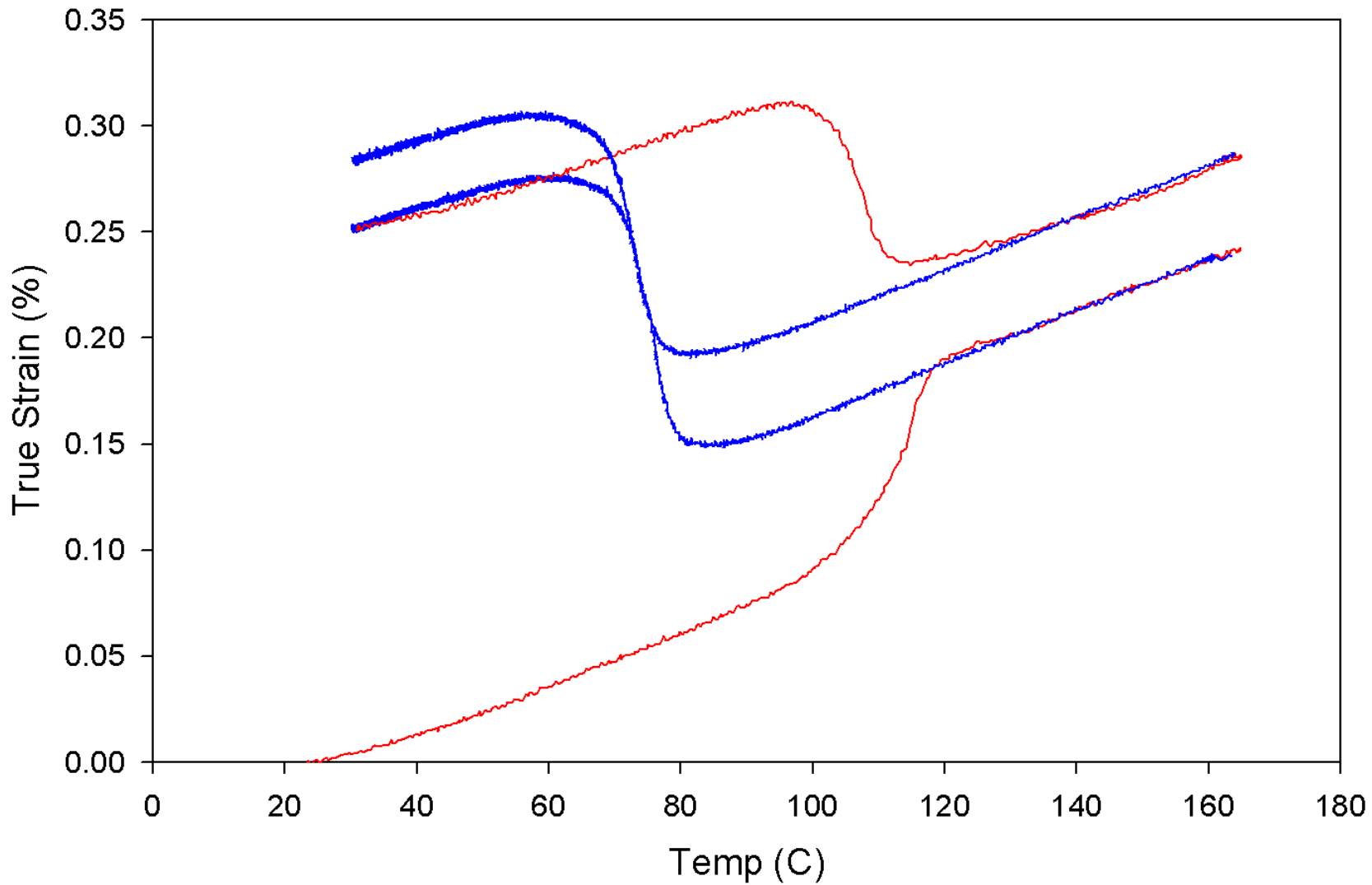
# Comparison of DSC Results



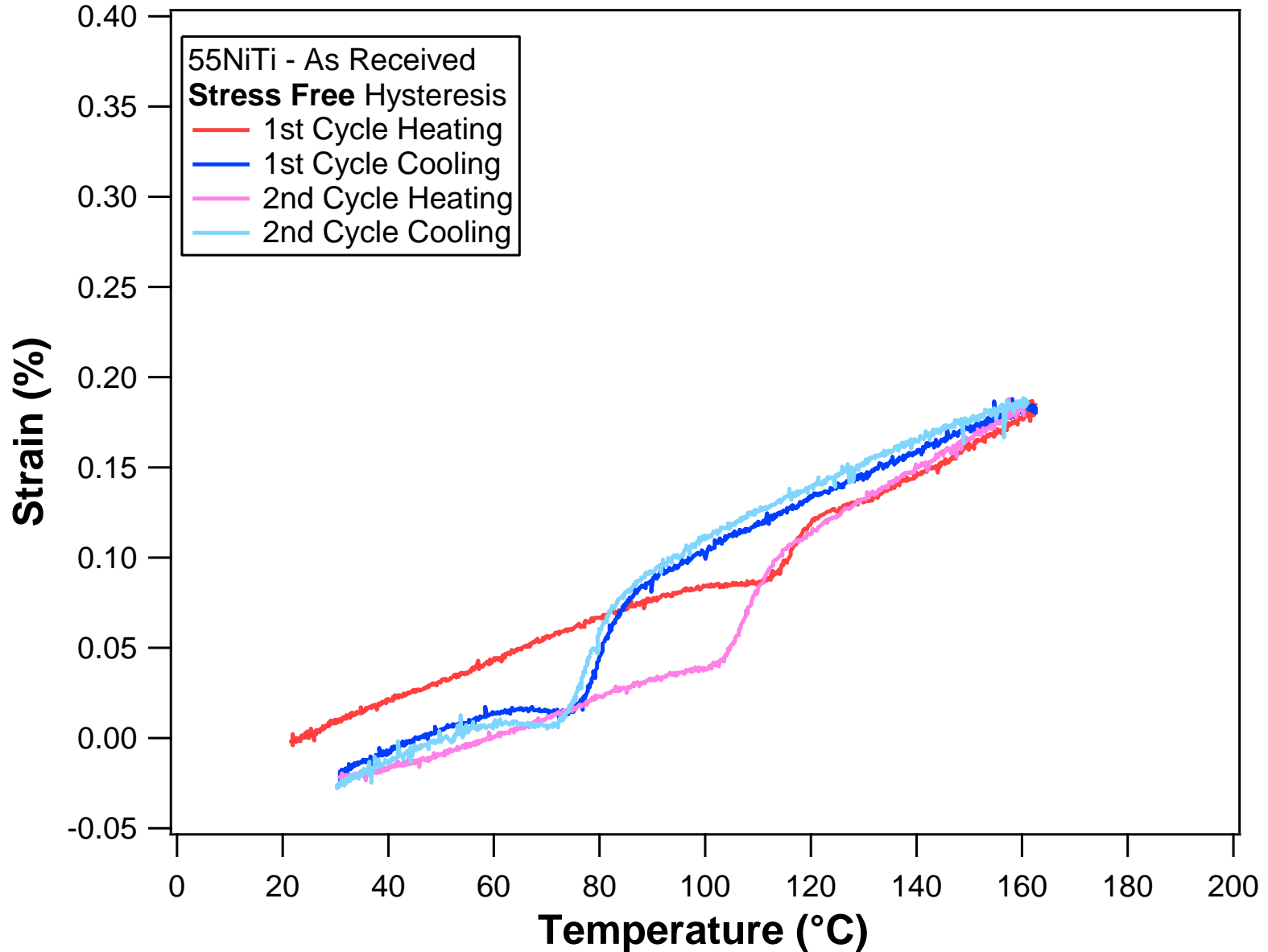
# Stress Free Cycling Tests



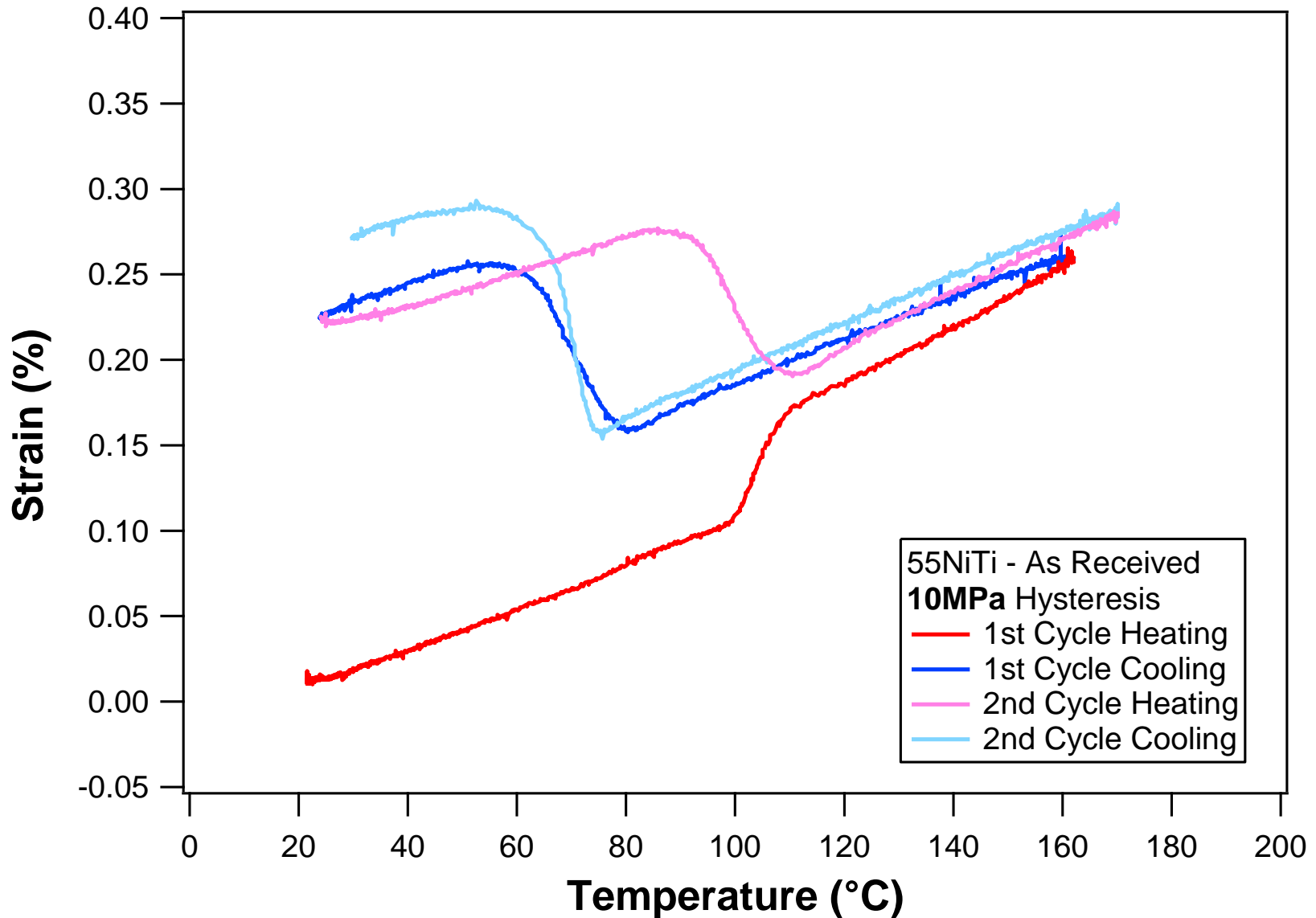
# 55NiTi NASA GRC Stress Free Hysteresis



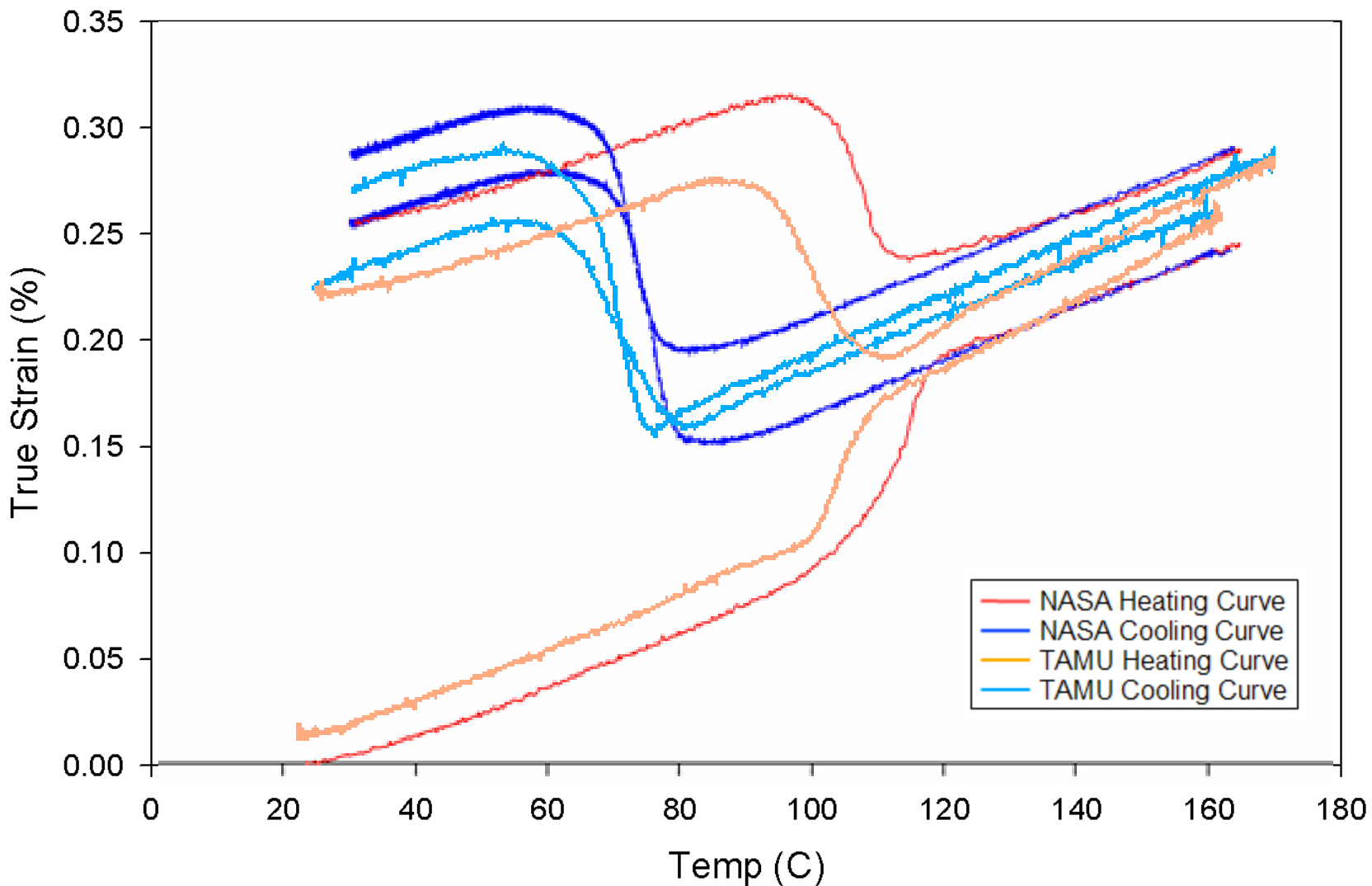
# 55NiTi TAMU Stress Free Hysteresis



# 55 NiTi TAMU 10MPa Hysteresis



# Comparison of the Stress Free Hysteresis Curves of NASA GRC and 10MPa Hysteresis Curves of TAMU



# 55NiTi Transformation

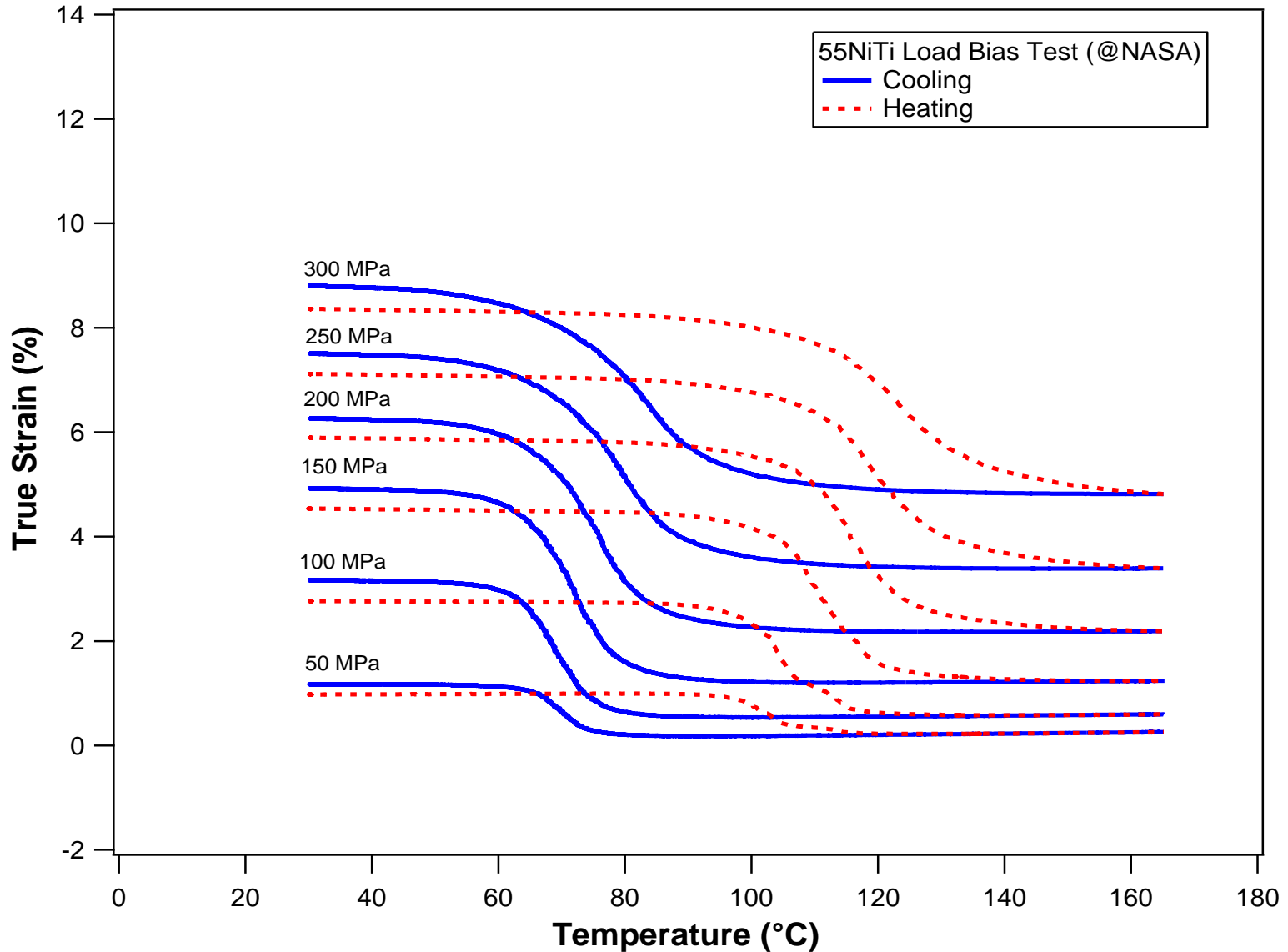
## Temperatures obtained from Load free and 10MPa Cycling Tests

	Mf	Ms	As	Af
NASA Stress Free*	68	77	102	112
TAMU 10 MPa*	64.2	74.5	90.9	108.7

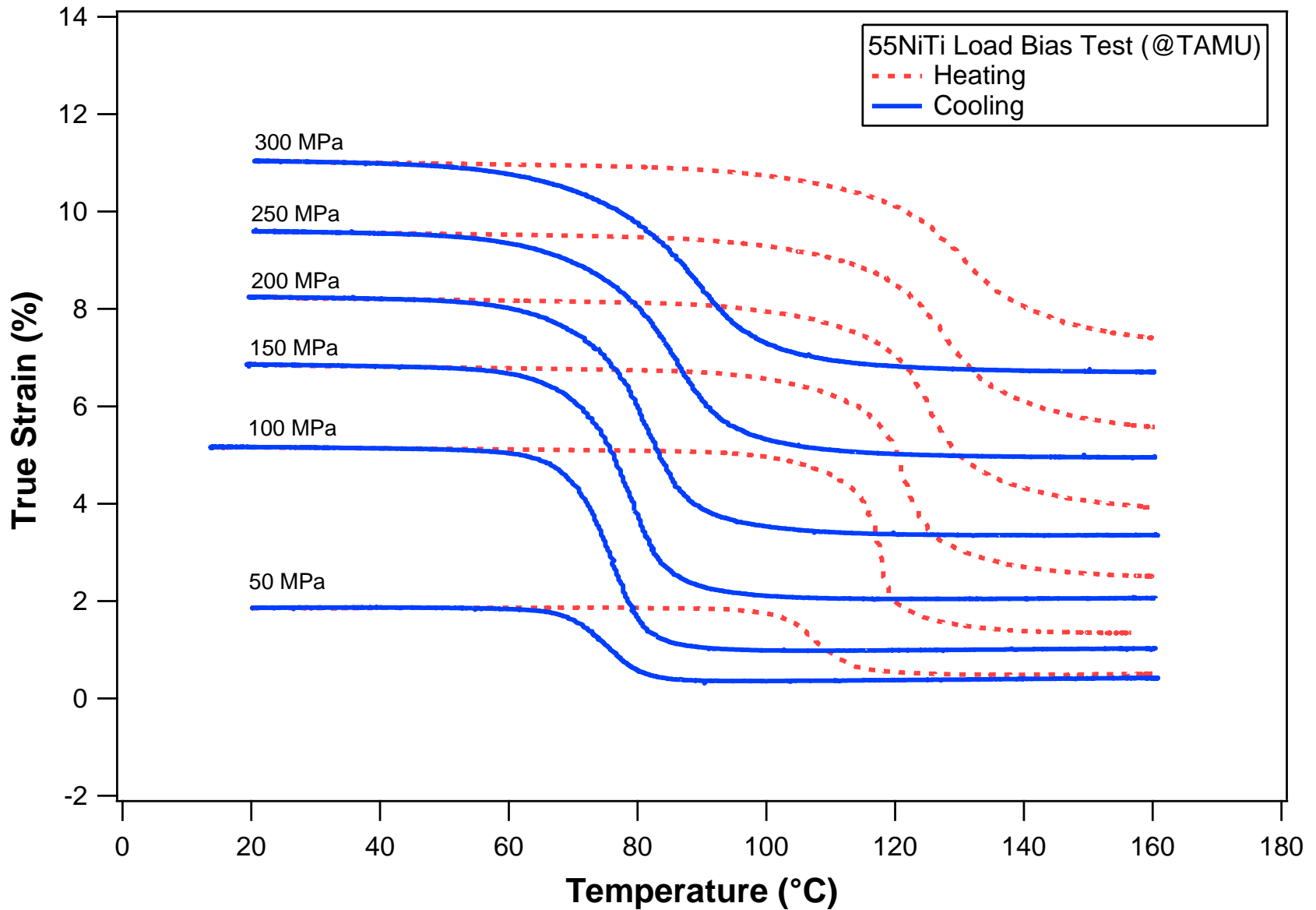
\*: Results are recorded from the 2<sup>nd</sup> cycles.

# Load Bias Tests

# 55NiTi Load Bias Test Results of NASA GRC

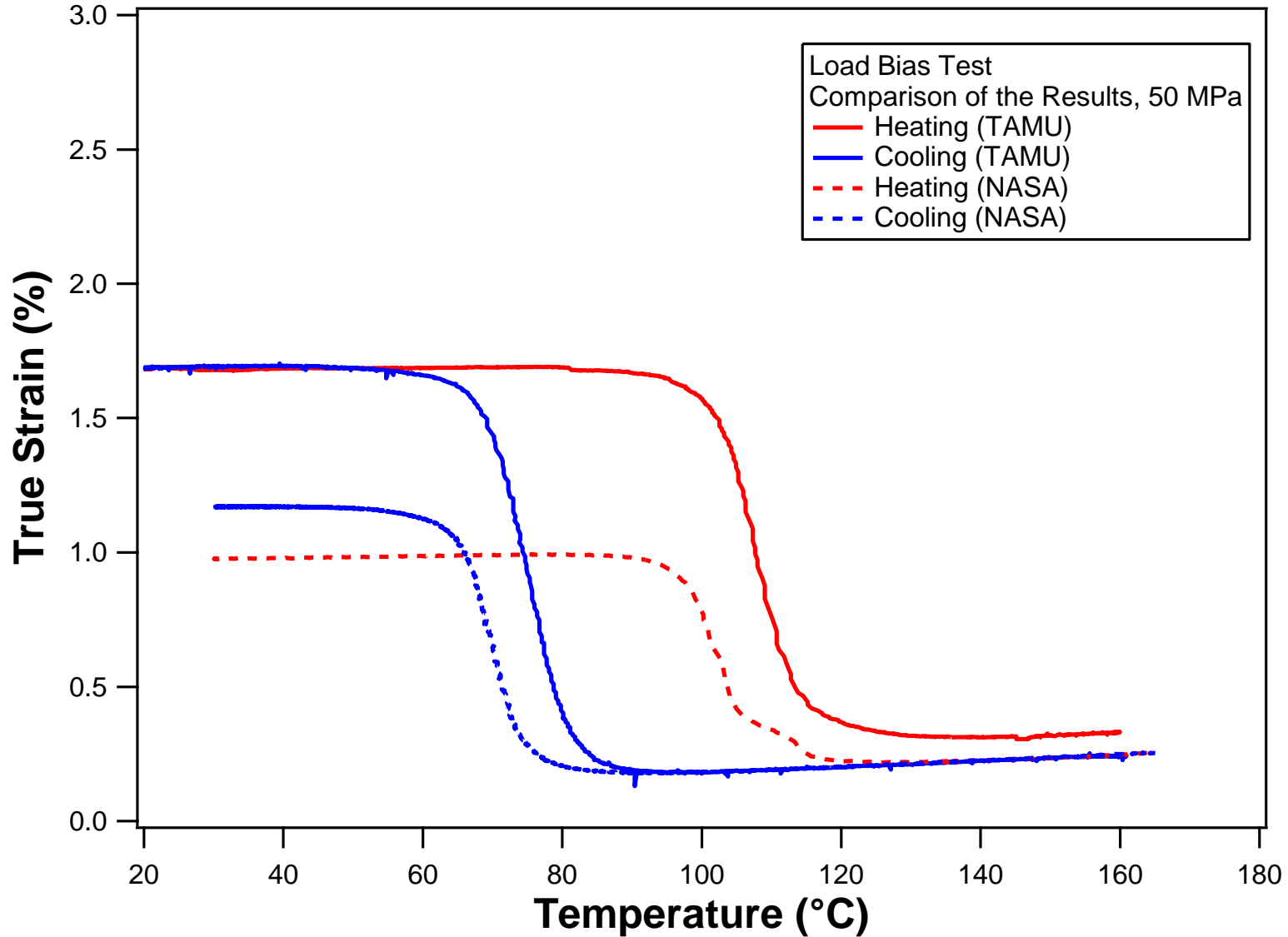


# 55NiTi Load Bias Test Results of TAMU

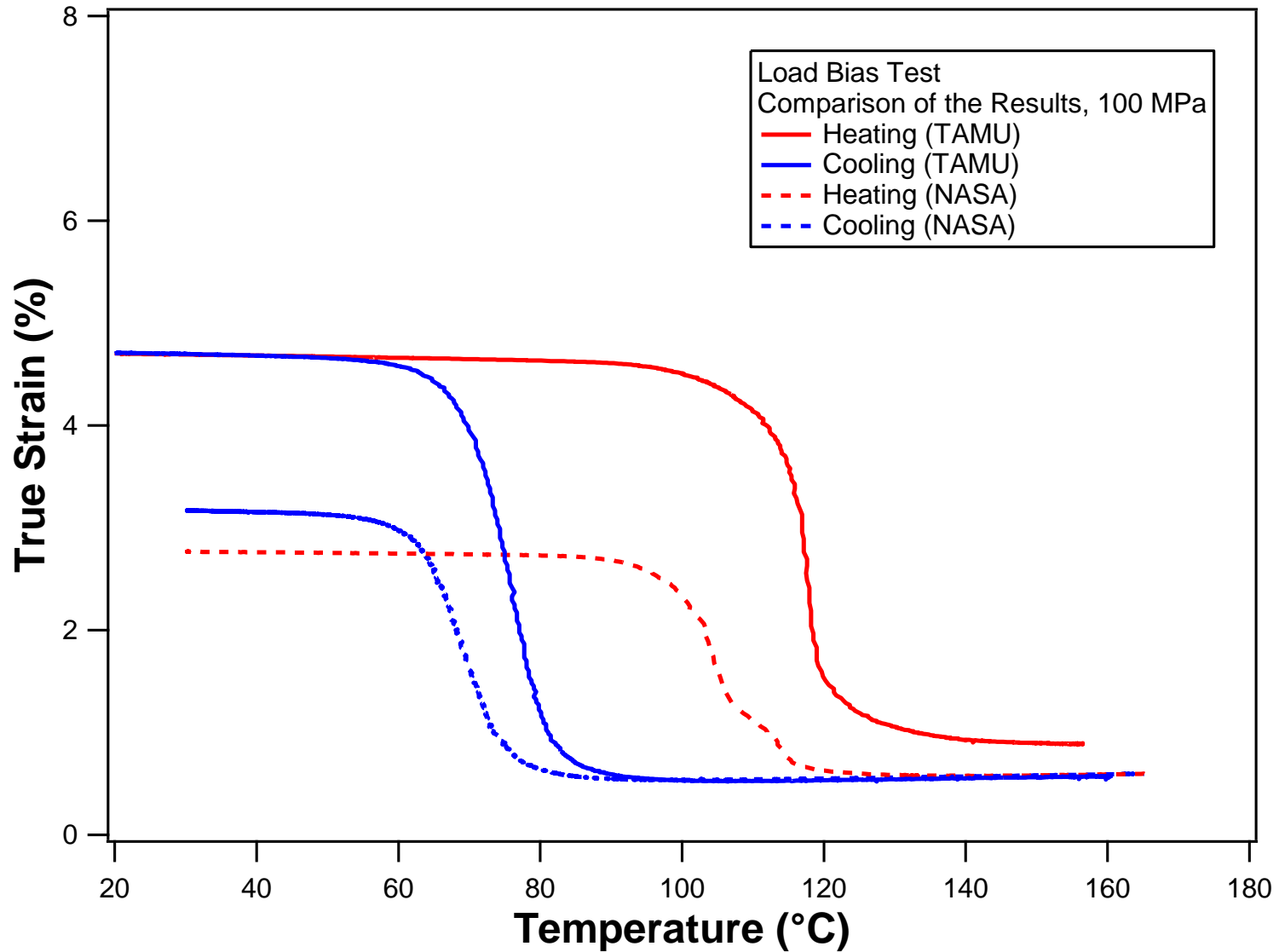




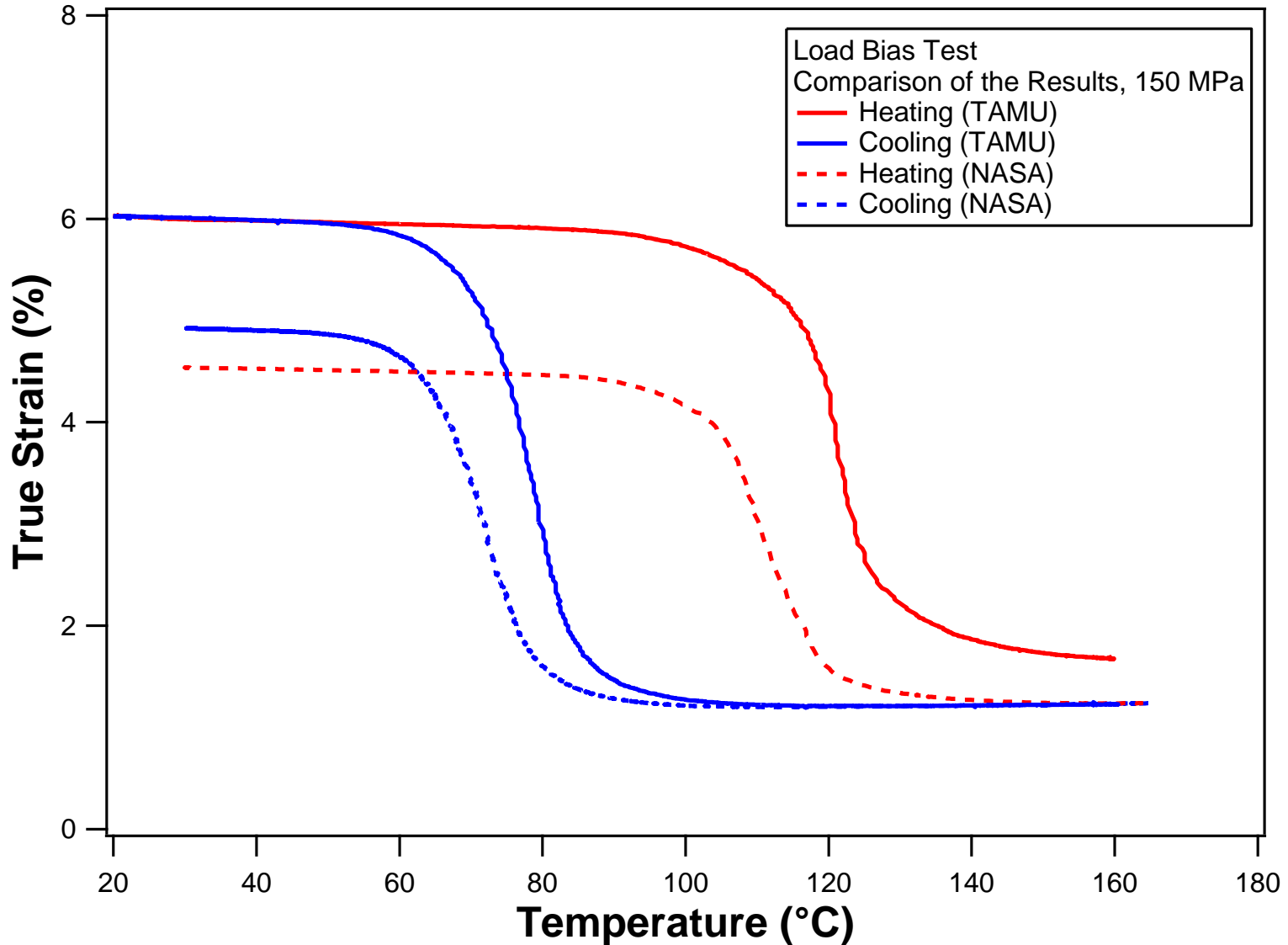
# Comparison of Hysteresis Curves under 50MPa



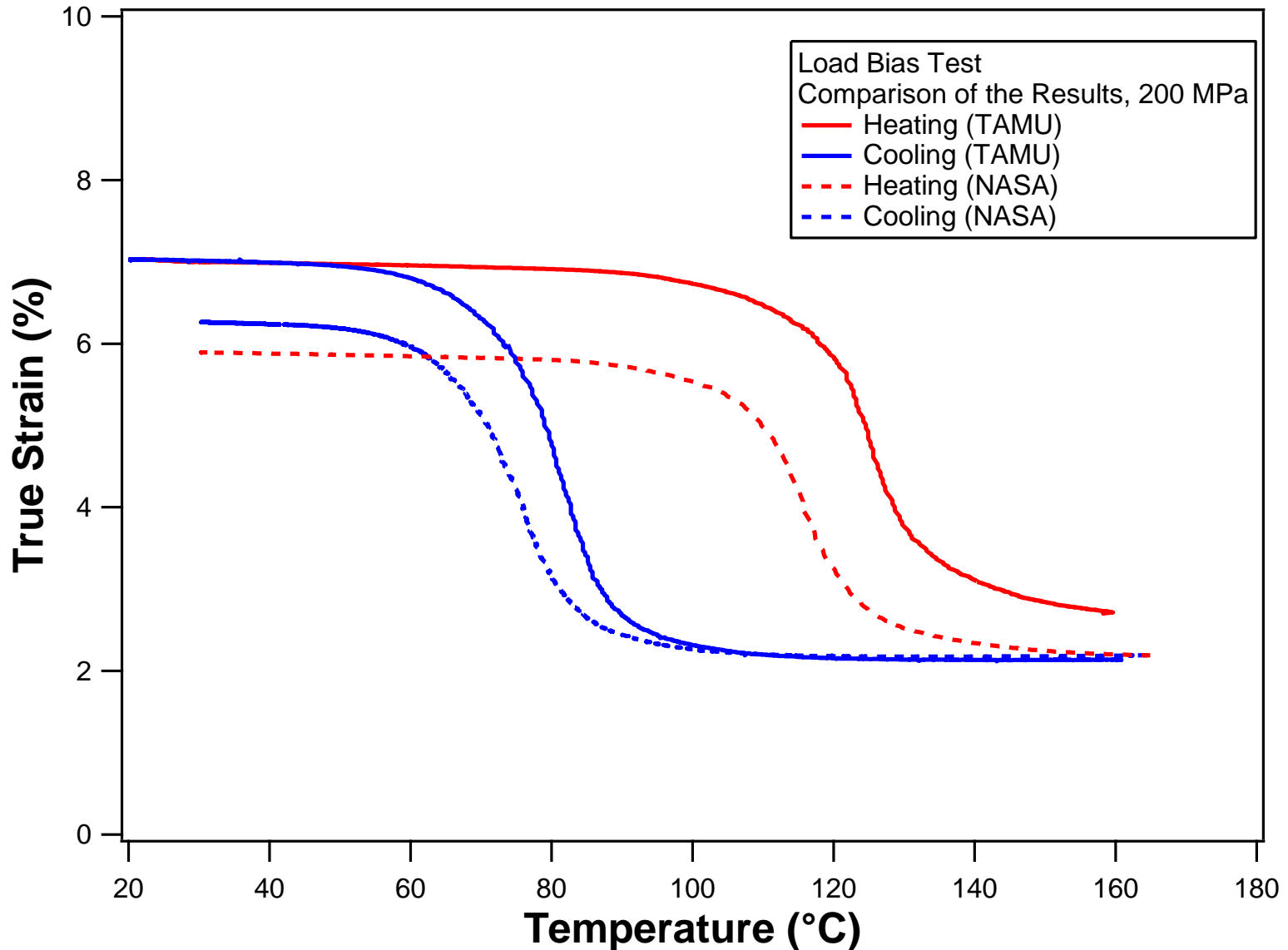
# Comparison of Hysteresis Curves under 100MPa



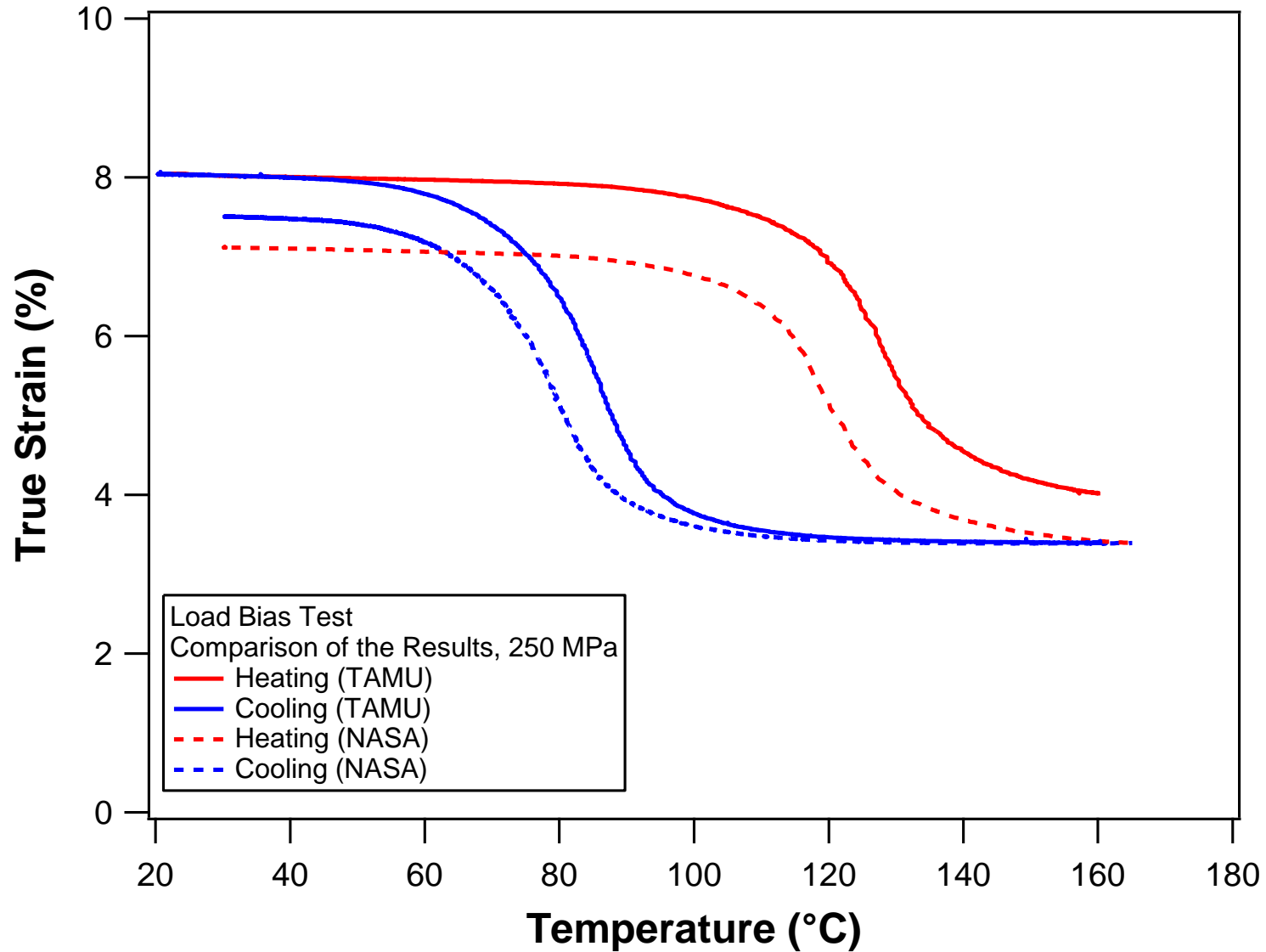
# Comparison of Hysteresis Curves under 150MPa



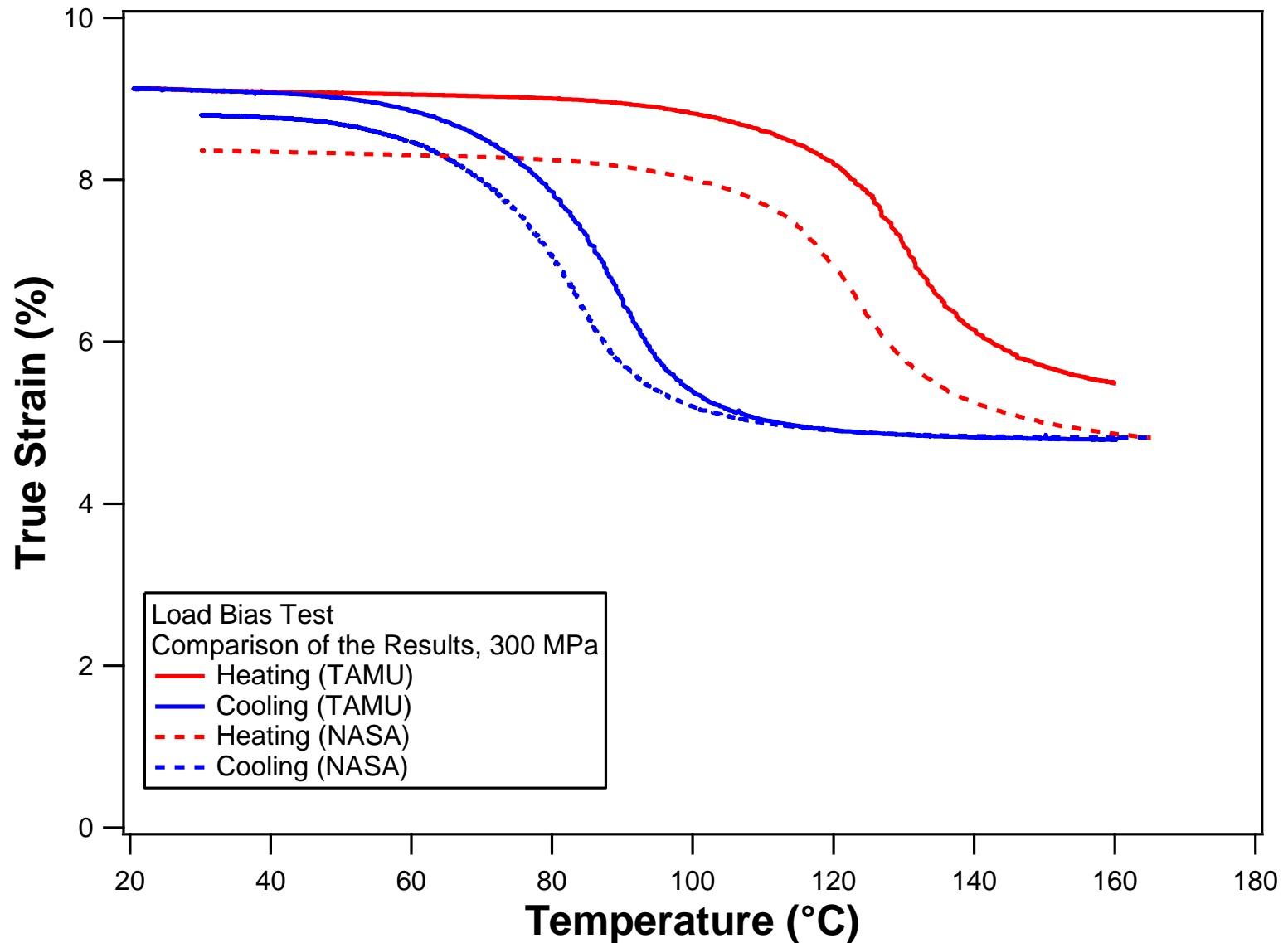
# Comparison of Hysteresis Curves under 200MPa



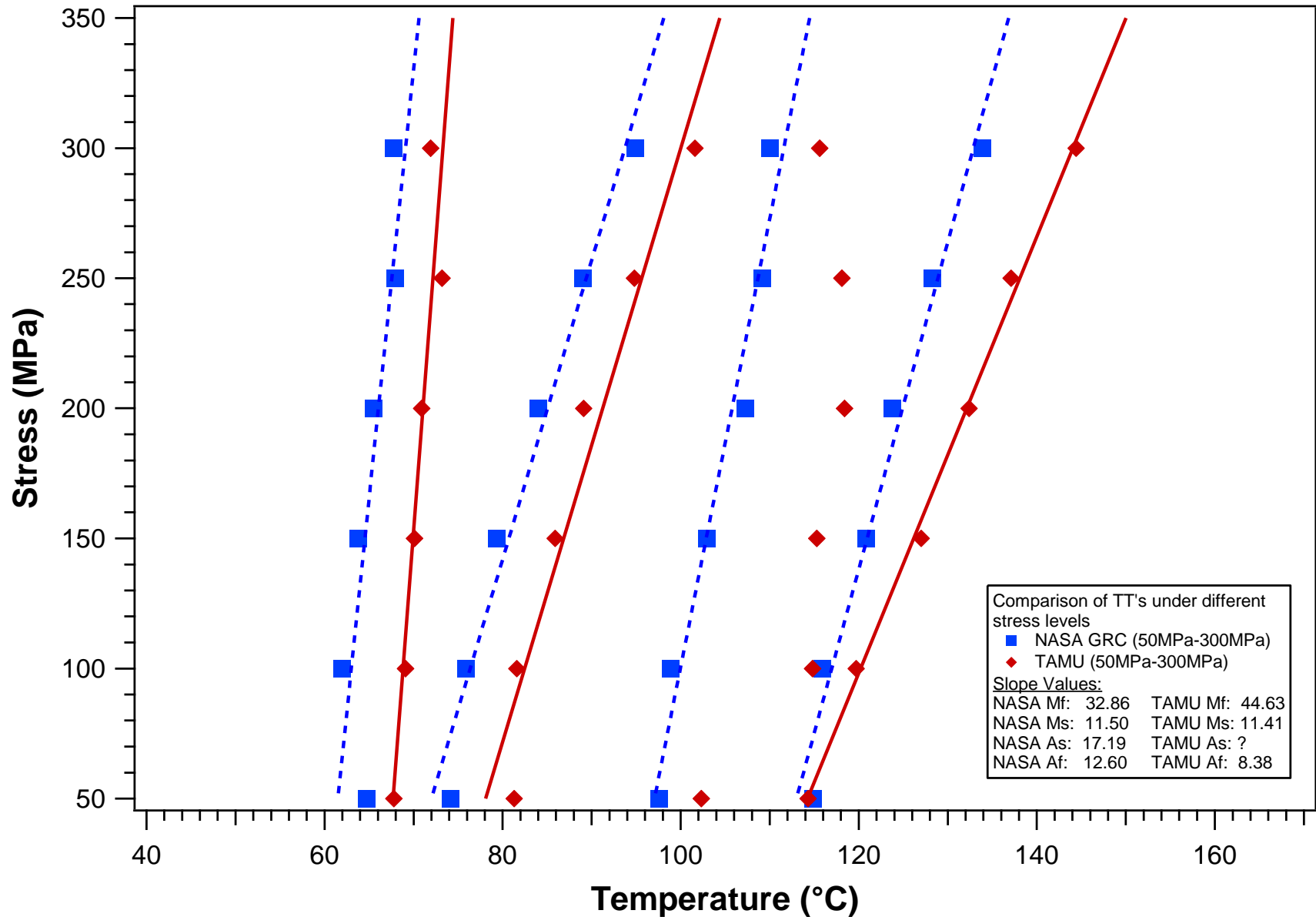
# Comparison of Hysteresis Curves under 250MPa



# Comparison of Hysteresis Curves under 300MPa

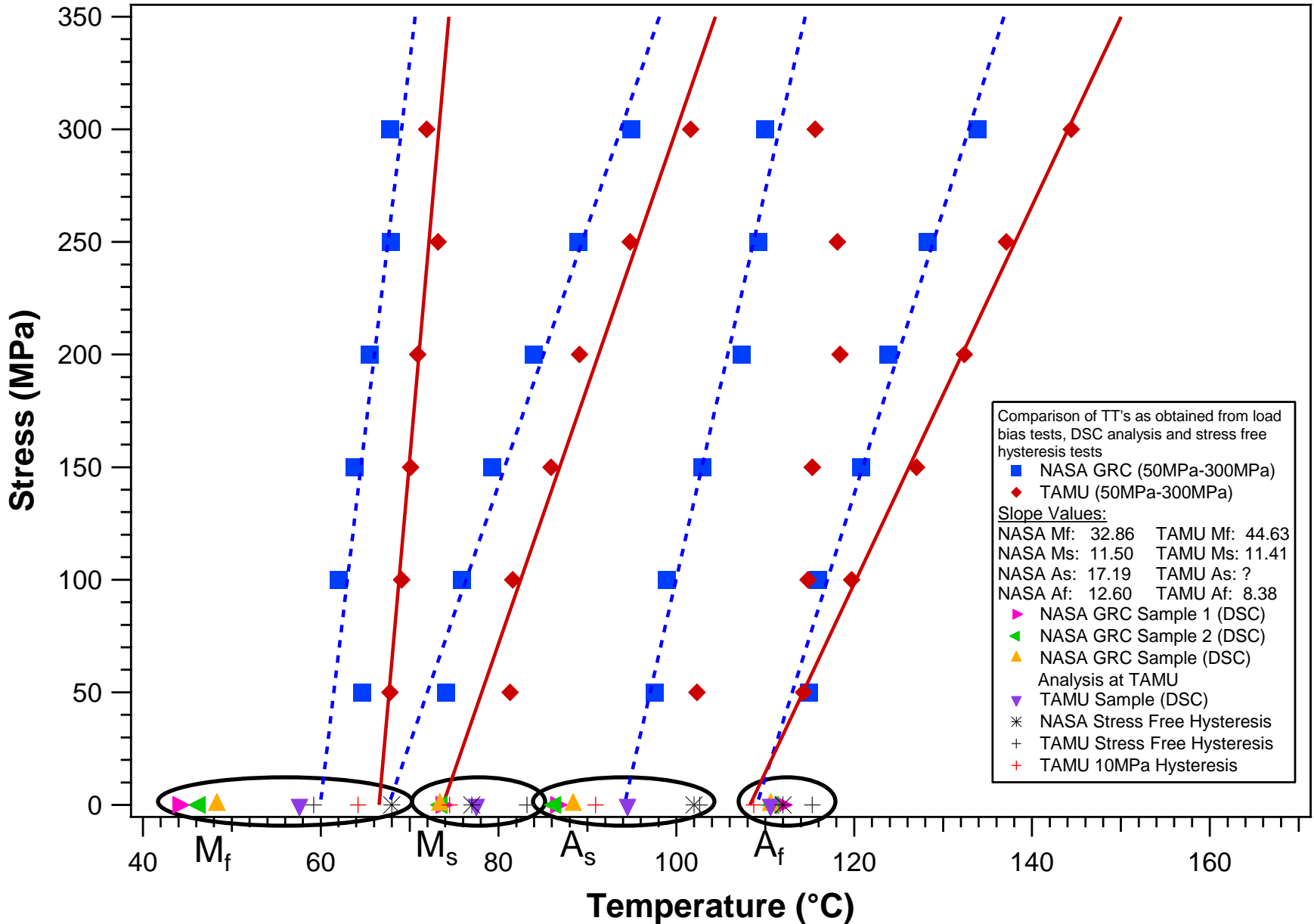


# 55NiTi Transformation Temperatures under Different Stress Levels



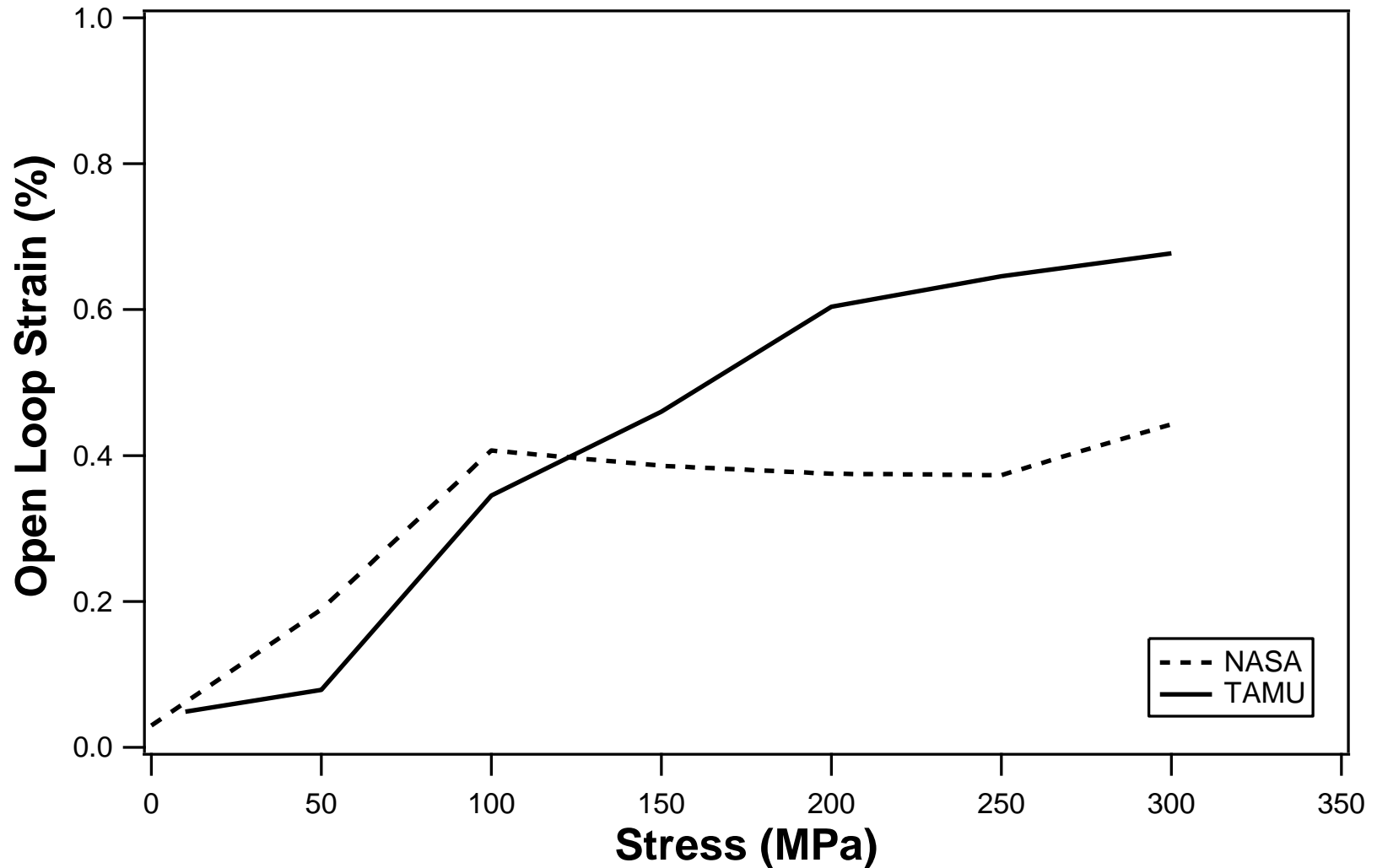
# 55NiTi Transformation Temperatures

## Overall Results

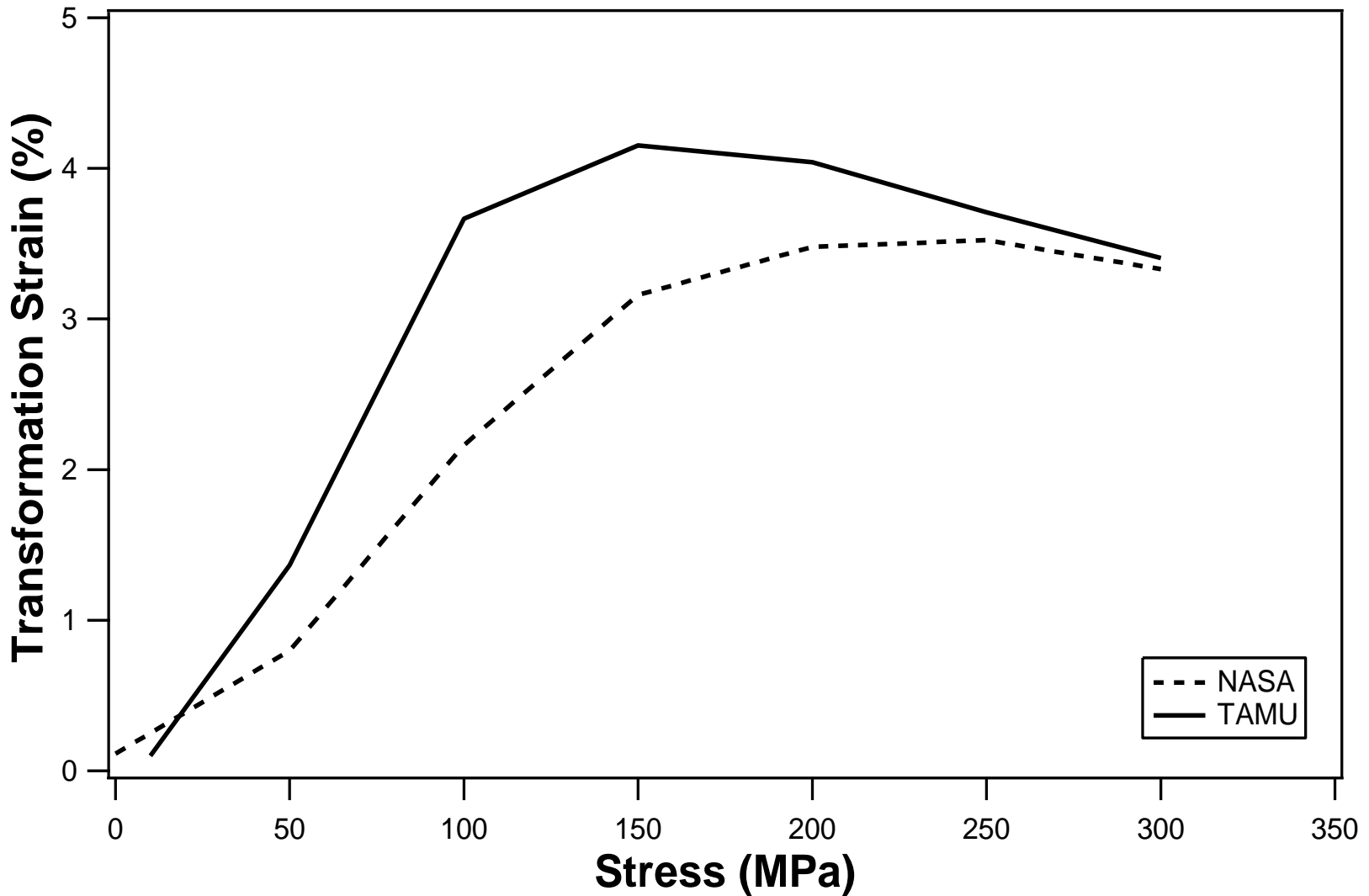




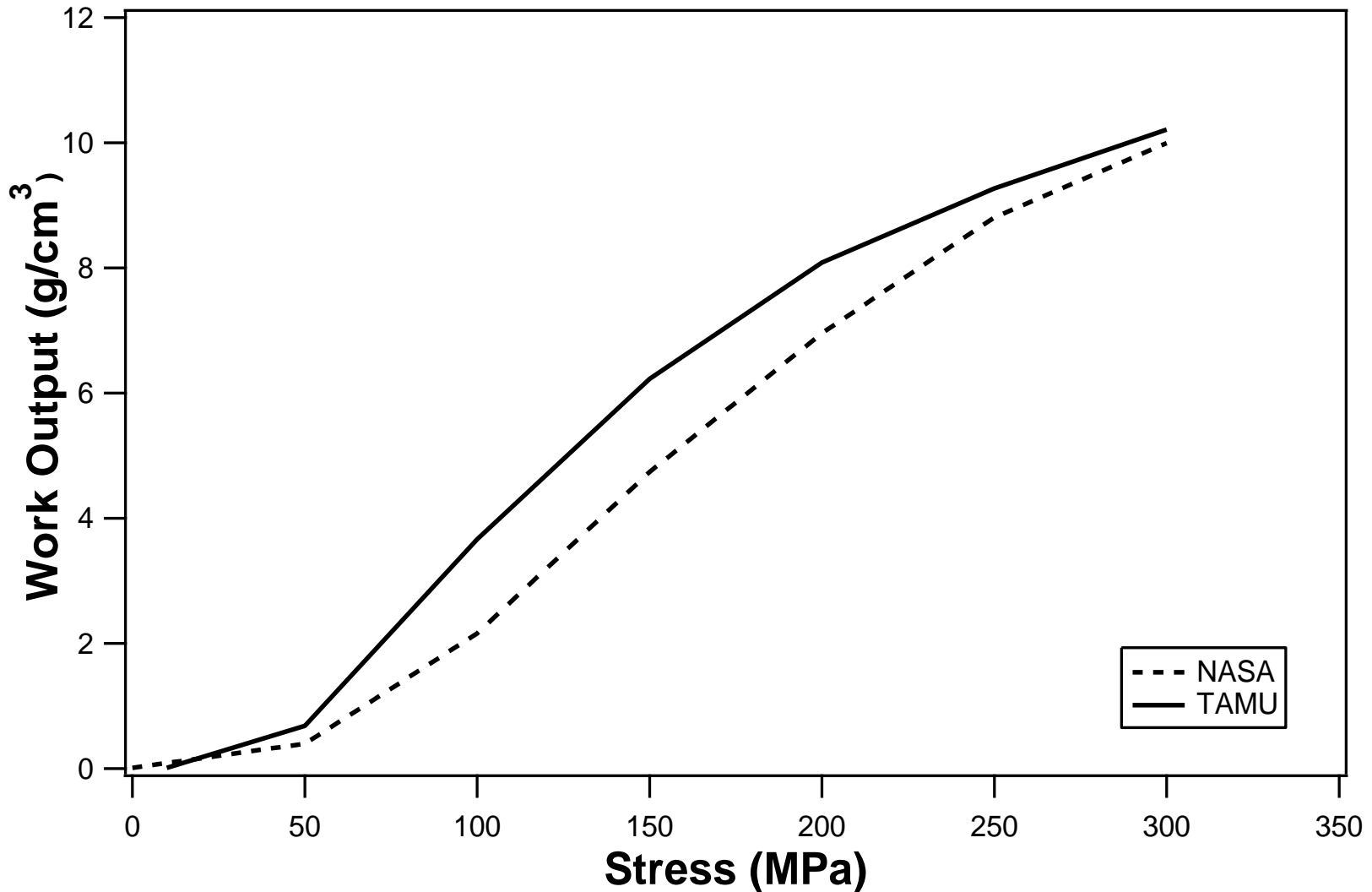
# Comparison of Open Loop Strains as obtained from Load Bias Tests



# Comparison of Transformation Strains as obtained from Load Bias Tests



# Comparison of Work Outputs as obtained from Load Bias Tests



**Thank You!**