## The GLM Procedure

| | |
|---|---|
| **Number of Observations Read** | 22 |
| **Number of Observations Used** | 22 |

## The GLM Procedure
## Repeated Measures Analysis of Variance

| Repeated Measures Level Information | | | | |
|---|---|---|---|---|
| Dependent Variable | lbrow1 | lbrow2 | lbrow3 | lbrow4 |
| Level of time | 1 | 2 | 3 | 4 |

| Partial Correlation Coefficients from the Error SSCP Matrix / Prob > \|r\| | | | | |
|---|---|---|---|---|
| DF = 21 | lbrow1 | lbrow2 | lbrow3 | lbrow4 |
| lbrow1 | 1.000000 | 0.668919<br>0.0007 | 0.450574<br>0.0353 | 0.208750<br>0.3512 |
| lbrow2 | 0.668919<br>0.0007 | 1.000000 | 0.517212<br>0.0137 | 0.235025<br>0.2924 |
| lbrow3 | 0.450574<br>0.0353 | 0.517212<br>0.0137 | 1.000000 | 0.444630<br>0.0381 |
| lbrow4 | 0.208750<br>0.3512 | 0.235025<br>0.2924 | 0.444630<br>0.0381 | 1.000000 |

| E = Error SSCP Matrix<br>time_N represents the contrast between the nth level of time and the 1st | | | |
|---|---|---|---|
| | time_2 | time_3 | time_4 |
| time_2 | 178438 | 118952 | 105793 |
| time_3 | 118952 | 763794 | 651135 |
| time_4 | 105793 | 651135 | 3437524 |

| Partial Correlation Coefficients from the Error SSCP Matrix of the Variables Defined by the Specified Transformation / Prob > \|r\| | | | |
|---|---|---|---|
| DF = 21 | time_2 | time_3 | time_4 |
| time_2 | 1.000000 | 0.322210<br>0.1436 | 0.135080<br>0.5489 |
| time_3 | 0.322210<br>0.1436 | 1.000000 | 0.401846<br>0.0638 |
| time_4 | 0.135080<br>0.5489 | 0.401846<br>0.0638 | 1.000000 |

| Sphericity Tests | | | | |
|---|---|---|---|---|
| Variables | DF | Mauchly's Criterion | Chi-Square | Pr > ChiSq |
| Transformed Variates | 5 | 0.1131394 | 42.977374 | <.0001 |
| Orthogonal Components | 5 | 0.1029906 | 44.830934 | <.0001 |

## The GLM Procedure
## Repeated Measures Analysis of Variance

**MANOVA Test Criteria and Exact F Statistics for the Hypothesis of no time Effect**
**H = Type III SSCP Matrix for time**
**E = Error SSCP Matrix**

**S=1 M=0.5 N=8.5**

| Statistic | Value | F Value | Num DF | Den DF | Pr > F |
|---|---|---|---|---|---|
| **Wilks' Lambda** | 0.45255174 | 7.66 | 3 | 19 | 0.0015 |
| **Pillai's Trace** | 0.54744826 | 7.66 | 3 | 19 | 0.0015 |
| **Hotelling-Lawley Trace** | 1.20969211 | 7.66 | 3 | 19 | 0.0015 |
| **Roy's Greatest Root** | 1.20969211 | 7.66 | 3 | 19 | 0.0015 |

## The GLM Procedure
## Repeated Measures Analysis of Variance
## Univariate Tests of Hypotheses for Within Subject Effects

| Source | DF | Type III SS | Mean Square | F Value | Pr > F | Adj Pr > F | |
|---|---|---|---|---|---|---|---|
| | | | | | | G - G | H - F |
| time | 3 | 1560725.761 | 520241.920 | 11.51 | <.0001 | 0.0006 | 0.0005 |
| Error(time) | 63 | 2846876.989 | 45188.524 | | | | |

| | |
|---|---|
| Greenhouse-Geisser Epsilon | 0.4802 |
| Huynh-Feldt Epsilon | 0.5061 |

## The GLM Procedure
## Repeated Measures Analysis of Variance
## Analysis of Variance of Contrast Variables

**time_N represents the contrast between the nth level of time and the 1st**

### Contrast Variable: time_2

| Source | DF | Type III SS | Mean Square | F Value | Pr > F |
|---|---|---|---|---|---|
| Mean | 1 | 40850.1818 | 40850.1818 | 4.81 | 0.0397 |
| Error | 21 | 178437.8182 | 8497.0390 | | |

### Contrast Variable: time_3

| Source | DF | Type III SS | Mean Square | F Value | Pr > F |
|---|---|---|---|---|---|
| Mean | 1 | 687115.6364 | 687115.6364 | 18.89 | 0.0003 |
| Error | 21 | 763794.3636 | 36371.1602 | | |

### Contrast Variable: time_4

| Source | DF | Type III SS | Mean Square | F Value | Pr > F |
|---|---|---|---|---|---|
| Mean | 1 | 2565689.500 | 2565689.500 | 15.67 | 0.0007 |
| Error | 21 | 3437523.500 | 163691.595 | | |

## The GLM Procedure
## Multivariate Analysis of Variance

| E = Error SSCP Matrix | | | | |
|---|---|---|---|---|
| | lbrow1 | lbrow2 | lbrow3 | lbrow4 |
| lbrow1 | 208517.09091 | 170104.81818 | 201386.90909 | 180617.09091 |
| lbrow2 | 170104.81818 | 310130.36364 | 281926.18182 | 247997.81818 |
| lbrow3 | 201386.90909 | 281926.18182 | 958051.09091 | 824621.90909 |
| lbrow4 | 180617.09091 | 247997.81818 | 824621.90909 | 3590240.5909 |

| Partial Correlation Coefficients from the Error SSCP Matrix / Prob > \|r\| | | | | |
|---|---|---|---|---|
| DF = 21 | lbrow1 | lbrow2 | lbrow3 | lbrow4 |
| lbrow1 | 1.000000 | 0.668919<br>0.0007 | 0.450574<br>0.0353 | 0.208750<br>0.3512 |
| lbrow2 | 0.668919<br>0.0007 | 1.000000 | 0.517212<br>0.0137 | 0.235025<br>0.2924 |
| lbrow3 | 0.450574<br>0.0353 | 0.517212<br>0.0137 | 1.000000 | 0.444630<br>0.0381 |
| lbrow4 | 0.208750<br>0.3512 | 0.235025<br>0.2924 | 0.444630<br>0.0381 | 1.000000 |

## The Mixed Procedure

| Model Information | |
|---|---|
| **Data Set** | WORK.VASEY_UNI |
| **Dependent Variable** | lbrow |
| **Covariance Structure** | Compound Symmetry |
| **Subject Effect** | patno |
| **Estimation Method** | REML |
| **Residual Variance Method** | Profile |
| **Fixed Effects SE Method** | Model-Based |
| **Degrees of Freedom Method** | Between-Within |

| Class Level Information | | |
|---|---|---|
| **Class** | **Levels** | **Values** |
| **Time** | 4 | 2 3 4 10 |
| **patno** | 22 | 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 |

| Dimensions | |
|---|---|
| **Covariance Parameters** | 2 |
| **Columns in X** | 5 |
| **Columns in Z** | 0 |
| **Subjects** | 22 |
| **Max Obs per Subject** | 4 |

| Number of Observations | |
|---|---|
| **Number of Observations Read** | 88 |
| **Number of Observations Used** | 88 |
| **Number of Observations Not Used** | 0 |

| Iteration History | | | |
|---|---|---|---|
| **Iteration** | **Evaluations** | **-2 Res Log Like** | **Criterion** |
| **0** | 1 | 1175.37001999 | |
| **1** | 1 | 1168.95653410 | 0.00000000 |

Convergence criteria met.

## The Mixed Procedure

| Estimated R Matrix for patno 1 | | | | |
|---|---|---|---|---|
| **Row** | **Col1** | **Col2** | **Col3** | **Col4** |
| **1** | 60321 | 15132 | 15132 | 15132 |
| **2** | 15132 | 60321 | 15132 | 15132 |
| **3** | 15132 | 15132 | 60321 | 15132 |
| **4** | 15132 | 15132 | 15132 | 60321 |

| Covariance Parameter Estimates | | |
|---|---|---|
| **Cov Parm** | **Subject** | **Estimate** |
| **CS** | patno | 15132 |
| **Residual** | | 45189 |

| Fit Statistics | |
|---|---|
| **-2 Res Log Likelihood** | 1169.0 |
| **AIC (Smaller is Better)** | 1173.0 |
| **AICC (Smaller is Better)** | 1173.1 |
| **BIC (Smaller is Better)** | 1175.1 |

| Null Model Likelihood Ratio Test | | |
|---|---|---|
| **DF** | **Chi-Square** | **Pr > ChiSq** |
| 1 | 6.41 | 0.0113 |

| Solution for Fixed Effects | | | | | | |
|---|---|---|---|---|---|---|
| **Effect** | **Time** | **Estimate** | **Standard Error** | **DF** | **t Value** | **Pr > \|t\|** |
| **Intercept** | | 217.64 | 52.3627 | 21 | 4.16 | 0.0004 |
| **Time** | 2 | 43.0909 | 64.0941 | 63 | 0.67 | 0.5038 |
| **Time** | 3 | 176.73 | 64.0941 | 63 | 2.76 | 0.0076 |
| **Time** | 4 | 341.50 | 64.0941 | 63 | 5.33 | <.0001 |
| **Time** | 10 | 0 | . | . | . | . |

| Type 3 Tests of Fixed Effects | | | | |
|---|---|---|---|---|
| **Effect** | **Num DF** | **Den DF** | **F Value** | **Pr > F** |
| **Time** | 3 | 63 | 11.51 | <.0001 |

## The Mixed Procedure

| Model Information | |
|---|---|
| **Data Set** | WORK.VASEY_UNI |
| **Dependent Variable** | lbrow |
| **Covariance Structure** | Huynh-Feldt |
| **Subject Effect** | patno |
| **Estimation Method** | REML |
| **Residual Variance Method** | None |
| **Fixed Effects SE Method** | Model-Based |
| **Degrees of Freedom Method** | Between-Within |

| Class Level Information | | |
|---|---|---|
| **Class** | **Levels** | **Values** |
| **Time** | 4 | 2 3 4 10 |
| **patno** | 22 | 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 |

| Dimensions | |
|---|---|
| **Covariance Parameters** | 5 |
| **Columns in X** | 5 |
| **Columns in Z** | 0 |
| **Subjects** | 22 |
| **Max Obs per Subject** | 4 |

| Number of Observations | |
|---|---|
| **Number of Observations Read** | 88 |
| **Number of Observations Used** | 88 |
| **Number of Observations Not Used** | 0 |

| Iteration History | | | |
|---|---|---|---|
| **Iteration** | **Evaluations** | **-2 Res Log Like** | **Criterion** |
| **0** | 1 | 1175.37001999 | |
| **1** | 2 | 1167.12937134 | 0.00000000 |

Convergence criteria met but final hessian is not positive definite.

## The Mixed Procedure

| Estimated R Matrix for patno 1 | | | | |
|---|---|---|---|---|
| **Row** | **Col1** | **Col2** | **Col3** | **Col4** |
| **1** | 63190 | -9009.26 | 14233 | 40711 |
| **2** | -9009.26 | 75374 | 20324 | 46803 |
| **3** | 14233 | 20324 | 121857 | 70044 |
| **4** | 40711 | 46803 | 70044 | 174814 |

| Covariance Parameter Estimates | | |
|---|---|---|
| **Cov Parm** | **Subject** | **Estimate** |
| **Var(1)** | patno | 63190 |
| **Var(2)** | patno | 75374 |
| **Var(3)** | patno | 121857 |
| **Var(4)** | patno | 174814 |
| **HF** | patno | 78291 |

| Fit Statistics | |
|---|---|
| **-2 Res Log Likelihood** | 1167.1 |
| **AIC (Smaller is Better)** | 1177.1 |
| **AICC (Smaller is Better)** | 1177.9 |
| **BIC (Smaller is Better)** | 1182.6 |

| Null Model Likelihood Ratio Test | | |
|---|---|---|
| **DF** | **Chi-Square** | **Pr > ChiSq** |
| 4 | 8.24 | 0.0832 |

| Solution for Fixed Effects | | | | | | |
|---|---|---|---|---|---|---|
| **Effect** | **Time** | **Estimate** | **Standard Error** | **DF** | **t Value** | **Pr > \|t\|** |
| **Intercept** | | 217.64 | 53.5937 | 21 | 4.06 | 0.0006 |
| **Time** | 2 | 43.0909 | 84.3646 | 63 | 0.51 | 0.6113 |
| **Time** | 3 | 176.73 | 84.3646 | 63 | 2.09 | 0.0402 |
| **Time** | 4 | 341.50 | 84.3646 | 63 | 4.05 | 0.0001 |
| **Time** | 10 | 0 | . | . | . | . |

## The Mixed Procedure

| Type 3 Tests of Fixed Effects | | | | |
|---|---|---|---|---|
| Effect | Num DF | Den DF | F Value | Pr > F |
| Time | 3 | 63 | 6.64 | 0.0006 |

## The Mixed Procedure

| Model Information | |
|---|---|
| **Data Set** | WORK.VASEY_UNI |
| **Dependent Variable** | lbrow |
| **Covariance Structure** | Autoregressive |
| **Subject Effect** | patno |
| **Estimation Method** | REML |
| **Residual Variance Method** | Profile |
| **Fixed Effects SE Method** | Model-Based |
| **Degrees of Freedom Method** | Between-Within |

| Class Level Information | | |
|---|---|---|
| **Class** | **Levels** | **Values** |
| **Time** | 4 | 2 3 4 10 |
| **patno** | 22 | 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 |

| Dimensions | |
|---|---|
| **Covariance Parameters** | 2 |
| **Columns in X** | 5 |
| **Columns in Z** | 0 |
| **Subjects** | 22 |
| **Max Obs per Subject** | 4 |

| Number of Observations | |
|---|---|
| **Number of Observations Read** | 88 |
| **Number of Observations Used** | 88 |
| **Number of Observations Not Used** | 0 |

| Iteration History | | | |
|---|---|---|---|
| **Iteration** | **Evaluations** | **-2 Res Log Like** | **Criterion** |
| **0** | 1 | 1175.37001999 | |
| **1** | 2 | 1163.80918294 | 0.00008836 |
| **2** | 1 | 1163.76358517 | 0.00000010 |
| **3** | 1 | 1163.76353226 | 0.00000000 |

Convergence criteria met.

## The Mixed Procedure

| Estimated R Matrix for patno 1 | | | | |
|---|---|---|---|---|
| Row | Col1 | Col2 | Col3 | Col4 |
| 1 | 64379 | 31368 | 15284 | 7447.22 |
| 2 | 31368 | 64379 | 31368 | 15284 |
| 3 | 15284 | 31368 | 64379 | 31368 |
| 4 | 7447.22 | 15284 | 31368 | 64379 |

| Covariance Parameter Estimates | | |
|---|---|---|
| Cov Parm | Subject | Estimate |
| AR(1) | patno | 0.4872 |
| Residual | | 64379 |

| Fit Statistics | |
|---|---|
| -2 Res Log Likelihood | 1163.8 |
| AIC (Smaller is Better) | 1167.8 |
| AICC (Smaller is Better) | 1167.9 |
| BIC (Smaller is Better) | 1169.9 |

| Null Model Likelihood Ratio Test | | |
|---|---|---|
| DF | Chi-Square | Pr > ChiSq |
| 1 | 11.61 | 0.0007 |

| Solution for Fixed Effects | | | | | | |
|---|---|---|---|---|---|---|
| Effect | Time | Estimate | Standard Error | DF | t Value | Pr > \|t\| |
| Intercept | | 217.64 | 54.0953 | 21 | 4.02 | 0.0006 |
| Time | 2 | 43.0909 | 54.7807 | 63 | 0.79 | 0.4345 |
| Time | 3 | 176.73 | 66.8066 | 63 | 2.65 | 0.0103 |
| Time | 4 | 341.50 | 71.9415 | 63 | 4.75 | <.0001 |
| Time | 10 | 0 | . | . | . | . |

| Type 3 Tests of Fixed Effects | | | | |
|---|---|---|---|---|
| Effect | Num DF | Den DF | F Value | Pr > F |
| Time | 3 | 63 | 8.42 | <.0001 |

## The Mixed Procedure

| Model Information | |
|---|---|
| **Data Set** | WORK.VASEY_UNI |
| **Dependent Variable** | lbrow |
| **Covariance Structure** | Unstructured |
| **Subject Effect** | patno |
| **Estimation Method** | REML |
| **Residual Variance Method** | None |
| **Fixed Effects SE Method** | Model-Based |
| **Degrees of Freedom Method** | Between-Within |

| Class Level Information | | |
|---|---|---|
| **Class** | **Levels** | **Values** |
| **Time** | 4 | 2 3 4 10 |
| **patno** | 22 | 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 |

| Dimensions | |
|---|---|
| **Covariance Parameters** | 10 |
| **Columns in X** | 5 |
| **Columns in Z** | 0 |
| **Subjects** | 22 |
| **Max Obs per Subject** | 4 |

| Number of Observations | |
|---|---|
| **Number of Observations Read** | 88 |
| **Number of Observations Used** | 88 |
| **Number of Observations Not Used** | 0 |

| Iteration History | | | |
|---|---|---|---|
| **Iteration** | **Evaluations** | **-2 Res Log Like** | **Criterion** |
| **0** | 1 | 1175.37001999 | |
| **1** | 1 | 1099.74468936 | 0.00000000 |

Convergence criteria met.

## The Mixed Procedure

| Estimated R Matrix for patno 1 | | | | |
|---|---|---|---|---|
| Row | Col1 | Col2 | Col3 | Col4 |
| 1 | 9929.39 | 8100.23 | 9589.85 | 8600.81 |
| 2 | 8100.23 | 14768 | 13425 | 11809 |
| 3 | 9589.85 | 13425 | 45621 | 39268 |
| 4 | 8600.81 | 11809 | 39268 | 170964 |

| Covariance Parameter Estimates | | |
|---|---|---|
| Cov Parm | Subject | Estimate |
| UN(1,1) | patno | 9929.39 |
| UN(2,1) | patno | 8100.23 |
| UN(2,2) | patno | 14768 |
| UN(3,1) | patno | 9589.85 |
| UN(3,2) | patno | 13425 |
| UN(3,3) | patno | 45621 |
| UN(4,1) | patno | 8600.81 |
| UN(4,2) | patno | 11809 |
| UN(4,3) | patno | 39268 |
| UN(4,4) | patno | 170964 |

| Fit Statistics | |
|---|---|
| -2 Res Log Likelihood | 1099.7 |
| AIC (Smaller is Better) | 1119.7 |
| AICC (Smaller is Better) | 1122.8 |
| BIC (Smaller is Better) | 1130.7 |

| Null Model Likelihood Ratio Test | | |
|---|---|---|
| DF | Chi-Square | Pr > ChiSq |
| 9 | 75.63 | <.0001 |

| Solution for Fixed Effects | | | | | | |
|---|---|---|---|---|---|---|
| Effect | Time | Estimate | Standard Error | DF | t Value | Pr > \|t\| |
| Intercept | | 217.64 | 21.2447 | 21 | 10.24 | <.0001 |
| Time | 2 | 43.0909 | 19.6527 | 21 | 2.19 | 0.0397 |
| Time | 3 | 176.73 | 40.6600 | 21 | 4.35 | 0.0003 |

## The Mixed Procedure

| Solution for Fixed Effects | | | | | | |
|---|---|---|---|---|---|---|
| Effect | Time | Estimate | Standard Error | DF | t Value | Pr > \|t\| |
| Time | 4 | 341.50 | 86.2585 | 21 | 3.96 | 0.0007 |
| Time | 10 | 0 | . | . | . | . |

| Type 3 Tests of Fixed Effects | | | | |
|---|---|---|---|---|
| Effect | Num DF | Den DF | F Value | Pr > F |
| Time | 3 | 21 | 8.47 | 0.0007 |

## The Mixed Procedure

| Model Information | |
|---|---|
| **Data Set** | WORK.VASEY_UNI |
| **Dependent Variable** | lbrow |
| **Covariance Structure** | Heterogeneous Compound Symmetry |
| **Subject Effect** | patno |
| **Estimation Method** | REML |
| **Residual Variance Method** | None |
| **Fixed Effects SE Method** | Model-Based |
| **Degrees of Freedom Method** | Between-Within |

| Class Level Information | | |
|---|---|---|
| **Class** | **Levels** | **Values** |
| **Time** | 4 | 2 3 4 10 |
| **patno** | 22 | 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 |

| Dimensions | |
|---|---|
| **Covariance Parameters** | 5 |
| **Columns in X** | 5 |
| **Columns in Z** | 0 |
| **Subjects** | 22 |
| **Max Obs per Subject** | 4 |

| Number of Observations | |
|---|---|
| **Number of Observations Read** | 88 |
| **Number of Observations Used** | 88 |
| **Number of Observations Not Used** | 0 |

| Iteration History | | | |
|---|---|---|---|
| **Iteration** | **Evaluations** | **-2 Res Log Like** | **Criterion** |
| **0** | 1 | 1175.37001999 | |
| **1** | 2 | 1106.52088339 | 0.00002023 |
| **2** | 1 | 1106.51096898 | 0.00000005 |
| **3** | 1 | 1106.51094602 | 0.00000000 |

Convergence criteria met.

## The Mixed Procedure

| Estimated R Matrix for patno 1 | | | | |
|---|---|---|---|---|
| **Row** | **Col1** | **Col2** | **Col3** | **Col4** |
| **1** | 9754.77 | 4993.80 | 8800.15 | 18229 |
| **2** | 4993.80 | 14181 | 10611 | 21979 |
| **3** | 8800.15 | 10611 | 44038 | 38732 |
| **4** | 18229 | 21979 | 38732 | 188962 |

| Covariance Parameter Estimates | | |
|---|---|---|
| **Cov Parm** | **Subject** | **Estimate** |
| **Var(1)** | patno | 9754.77 |
| **Var(2)** | patno | 14181 |
| **Var(3)** | patno | 44038 |
| **Var(4)** | patno | 188962 |
| **CSH** | patno | 0.4246 |

| Fit Statistics | |
|---|---|
| **-2 Res Log Likelihood** | 1106.5 |
| **AIC (Smaller is Better)** | 1116.5 |
| **AICC (Smaller is Better)** | 1117.3 |
| **BIC (Smaller is Better)** | 1122.0 |

| Null Model Likelihood Ratio Test | | |
|---|---|---|
| **DF** | **Chi-Square** | **Pr > ChiSq** |
| 4 | 68.86 | <.0001 |

| Solution for Fixed Effects | | | | | | |
|---|---|---|---|---|---|---|
| **Effect** | **Time** | **Estimate** | **Standard Error** | **DF** | **t Value** | **Pr > \|t\|** |
| **Intercept** | | 217.64 | 21.0570 | 21 | 10.34 | <.0001 |
| **Time** | 2 | 43.0909 | 25.1796 | 63 | 1.71 | 0.0919 |
| **Time** | 3 | 176.73 | 40.5600 | 63 | 4.36 | <.0001 |
| **Time** | 4 | 341.50 | 85.8802 | 63 | 3.98 | 0.0002 |
| **Time** | 10 | 0 | . | . | . | . |

## The Mixed Procedure

| Type 3 Tests of Fixed Effects | | | | |
|---|---|---|---|---|
| Effect | Num DF | Den DF | F Value | Pr > F |
| Time | 3 | 63 | 9.08 | <.0001 |

## The Mixed Procedure

| Model Information | |
|---|---|
| **Data Set** | WORK.VASEY_UNI |
| **Dependent Variable** | lbrow |
| **Covariance Structure** | Heterogeneous Autoregressive |
| **Subject Effect** | patno |
| **Estimation Method** | REML |
| **Residual Variance Method** | None |
| **Fixed Effects SE Method** | Model-Based |
| **Degrees of Freedom Method** | Between-Within |

| Class Level Information | | |
|---|---|---|
| **Class** | **Levels** | **Values** |
| **Time** | 4 | 2 3 4 10 |
| **patno** | 22 | 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 |

| Dimensions | |
|---|---|
| **Covariance Parameters** | 5 |
| **Columns in X** | 5 |
| **Columns in Z** | 0 |
| **Subjects** | 22 |
| **Max Obs per Subject** | 4 |

| Number of Observations | |
|---|---|
| **Number of Observations Read** | 88 |
| **Number of Observations Used** | 88 |
| **Number of Observations Not Used** | 0 |

| Iteration History | | | |
|---|---|---|---|
| **Iteration** | **Evaluations** | **-2 Res Log Like** | **Criterion** |
| **0** | 1 | 1175.37001999 | |
| **1** | 2 | 1101.68388690 | 0.00016580 |
| **2** | 1 | 1101.60158378 | 0.00000099 |
| **3** | 1 | 1101.60111365 | 0.00000000 |

Convergence criteria met.

## The Mixed Procedure

| Estimated R Matrix for patno 1 | | | | |
|---|---|---|---|---|
| Row | Col1 | Col2 | Col3 | Col4 |
| 1 | 9092.16 | 6211.51 | 6415.19 | 6837.69 |
| 2 | 6211.51 | 14013 | 14473 | 15426 |
| 3 | 6415.19 | 14473 | 49362 | 52613 |
| 4 | 6837.69 | 15426 | 52613 | 185187 |

| Covariance Parameter Estimates | | |
|---|---|---|
| Cov Parm | Subject | Estimate |
| Var(1) | patno | 9092.16 |
| Var(2) | patno | 14013 |
| Var(3) | patno | 49362 |
| Var(4) | patno | 185187 |
| ARH(1) | patno | 0.5503 |

| Fit Statistics | |
|---|---|
| -2 Res Log Likelihood | 1101.6 |
| AIC (Smaller is Better) | 1111.6 |
| AICC (Smaller is Better) | 1112.4 |
| BIC (Smaller is Better) | 1117.1 |

| Null Model Likelihood Ratio Test | | |
|---|---|---|
| DF | Chi-Square | Pr > ChiSq |
| 4 | 73.77 | <.0001 |

| Solution for Fixed Effects | | | | | | |
|---|---|---|---|---|---|---|
| Effect | Time | Estimate | Standard Error | DF | t Value | Pr > \|t\| |
| Intercept | | 217.64 | 20.3293 | 21 | 10.71 | <.0001 |
| Time | 2 | 43.0909 | 22.0357 | 63 | 1.96 | 0.0550 |
| Time | 3 | 176.73 | 45.5390 | 63 | 3.88 | 0.0003 |
| Time | 4 | 341.50 | 90.6049 | 63 | 3.77 | 0.0004 |
| Time | 10 | 0 | . | . | . | . |

## The Mixed Procedure

| Type 3 Tests of Fixed Effects | | | | |
|---|---|---|---|---|
| Effect | Num DF | Den DF | F Value | Pr > F |
| Time | 3 | 63 | 6.36 | 0.0008 |

## The Mixed Procedure

| Model Information | |
|---|---|
| **Data Set** | WORK.VASEY_UNI |
| **Dependent Variable** | lbrow |
| **Covariance Structure** | Heterogeneous Toeplitz |
| **Subject Effect** | patno |
| **Estimation Method** | REML |
| **Residual Variance Method** | None |
| **Fixed Effects SE Method** | Model-Based |
| **Degrees of Freedom Method** | Between-Within |

| Class Level Information | | |
|---|---|---|
| **Class** | **Levels** | **Values** |
| **Time** | 4 | 2 3 4 10 |
| **patno** | 22 | 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 |

| Dimensions | |
|---|---|
| **Covariance Parameters** | 7 |
| **Columns in X** | 5 |
| **Columns in Z** | 0 |
| **Subjects** | 22 |
| **Max Obs per Subject** | 4 |

| Number of Observations | |
|---|---|
| **Number of Observations Read** | 88 |
| **Number of Observations Used** | 88 |
| **Number of Observations Not Used** | 0 |

| Iteration History | | | |
|---|---|---|---|
| **Iteration** | **Evaluations** | **-2 Res Log Like** | **Criterion** |
| **0** | 1 | 1175.37001999 | |
| **1** | 2 | 1102.61279452 | 0.00205559 |
| **2** | 1 | 1101.74968116 | 0.00075877 |
| **3** | 1 | 1101.38584174 | 0.00002213 |
| **4** | 1 | 1101.37513208 | 0.00000003 |
| **5** | 1 | 1101.37511952 | 0.00000000 |

Convergence criteria met.

## The Mixed Procedure

| Estimated R Matrix for patno 1 | | | | |
|---|---|---|---|---|
| **Row** | **Col1** | **Col2** | **Col3** | **Col4** |
| **1** | 9090.65 | 6242.76 | 7437.29 | 8484.43 |
| **2** | 6242.76 | 14147 | 14455 | 18126 |
| **3** | 7437.29 | 14455 | 48736 | 52414 |
| **4** | 8484.43 | 18126 | 52414 | 186016 |

| Covariance Parameter Estimates | | |
|---|---|---|
| **Cov Parm** | **Subject** | **Estimate** |
| **Var(1)** | patno | 9090.65 |
| **Var(2)** | patno | 14147 |
| **Var(3)** | patno | 48736 |
| **Var(4)** | patno | 186016 |
| **TOEPH(1)** | patno | 0.5505 |
| **TOEPH(2)** | patno | 0.3533 |
| **TOEPH(3)** | patno | 0.2063 |

| Fit Statistics | |
|---|---|
| **-2 Res Log Likelihood** | 1101.4 |
| **AIC (Smaller is Better)** | 1115.4 |
| **AICC (Smaller is Better)** | 1116.8 |
| **BIC (Smaller is Better)** | 1123.0 |

| Null Model Likelihood Ratio Test | | |
|---|---|---|
| **DF** | **Chi-Square** | **Pr > ChiSq** |
| 6 | 73.99 | <.0001 |

| Solution for Fixed Effects | | | | | | |
|---|---|---|---|---|---|---|
| **Effect** | **Time** | **Estimate** | **Standard Error** | **DF** | **t Value** | **Pr > \|t\|** |
| **Intercept** | | 217.64 | 20.3276 | 21 | 10.71 | <.0001 |
| **Time** | 2 | 43.0909 | 22.1075 | 63 | 1.95 | 0.0557 |
| **Time** | 3 | 176.73 | 44.1858 | 63 | 4.00 | 0.0002 |
| **Time** | 4 | 341.50 | 89.9844 | 63 | 3.80 | 0.0003 |
| **Time** | 10 | 0 | . | . | . | . |

## The Mixed Procedure

| Type 3 Tests of Fixed Effects | | | | |
|---|---|---|---|---|
| Effect | Num DF | Den DF | F Value | Pr > F |
| Time | 3 | 63 | 6.67 | 0.0006 |

## The Mixed Procedure

| Model Information | |
|---|---|
| **Data Set** | WORK.VASEY_UNI |
| **Dependent Variable** | lbrow |
| **Covariance Structure** | Variance Components |
| **Subject Effect** | patno |
| **Estimation Method** | REML |
| **Residual Variance Method** | Parameter |
| **Fixed Effects SE Method** | Model-Based |
| **Degrees of Freedom Method** | Between-Within |

| Class Level Information | | |
|---|---|---|
| **Class** | **Levels** | **Values** |
| **Time** | 4 | 2 3 4 10 |
| **patno** | 22 | 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 |

| Dimensions | |
|---|---|
| **Covariance Parameters** | 1 |
| **Columns in X** | 5 |
| **Columns in Z** | 0 |
| **Subjects** | 22 |
| **Max Obs per Subject** | 4 |

| Number of Observations | |
|---|---|
| **Number of Observations Read** | 88 |
| **Number of Observations Used** | 88 |
| **Number of Observations Not Used** | 0 |