

Model: MODEL1
Dependent Variable: CO2

Number of Observations Read	1680
Number of Observations Used	1680

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	0	0	.	.	.
Error	1679	215.11655	0.12812		
Corrected Total	1679	215.11655			

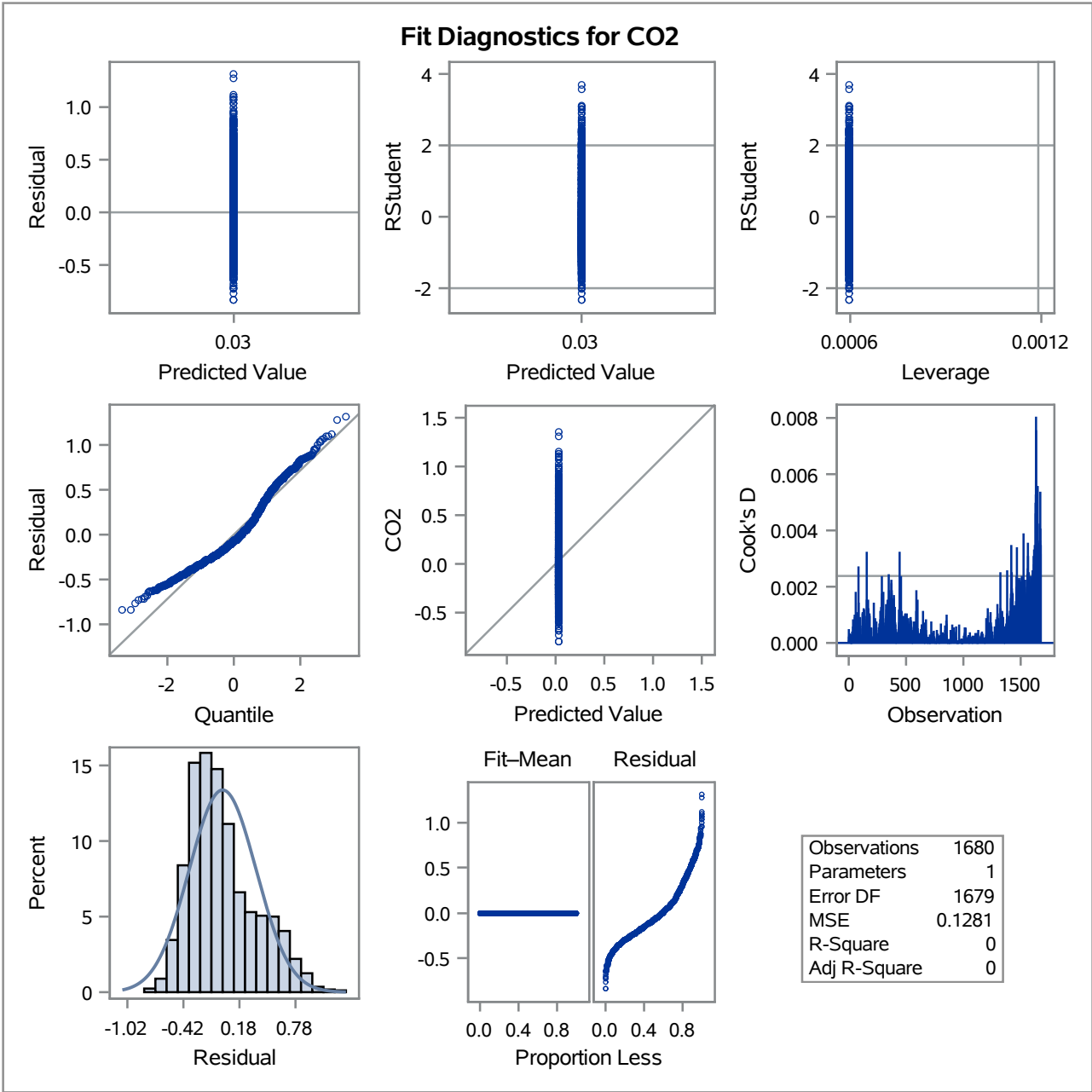
Root MSE	0.35794	R-Square	0.0000
Dependent Mean	0.03483	Adj R-Sq	0.0000
Coeff Var	1027.75772		

Parameter Estimates					
Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	0.03483	0.00873	3.99	<.0001

Model: MODEL1
Dependent Variable: CO2

Durbin-Watson D	0.121
Number of Observations	1680
1st Order Autocorrelation	0.939

Model: MODEL1
Dependent Variable: CO2



Model: MODEL1
Dependent Variable: CO2

Residual by Regressors for CO2

Model: MODEL1
Dependent Variable: CO2

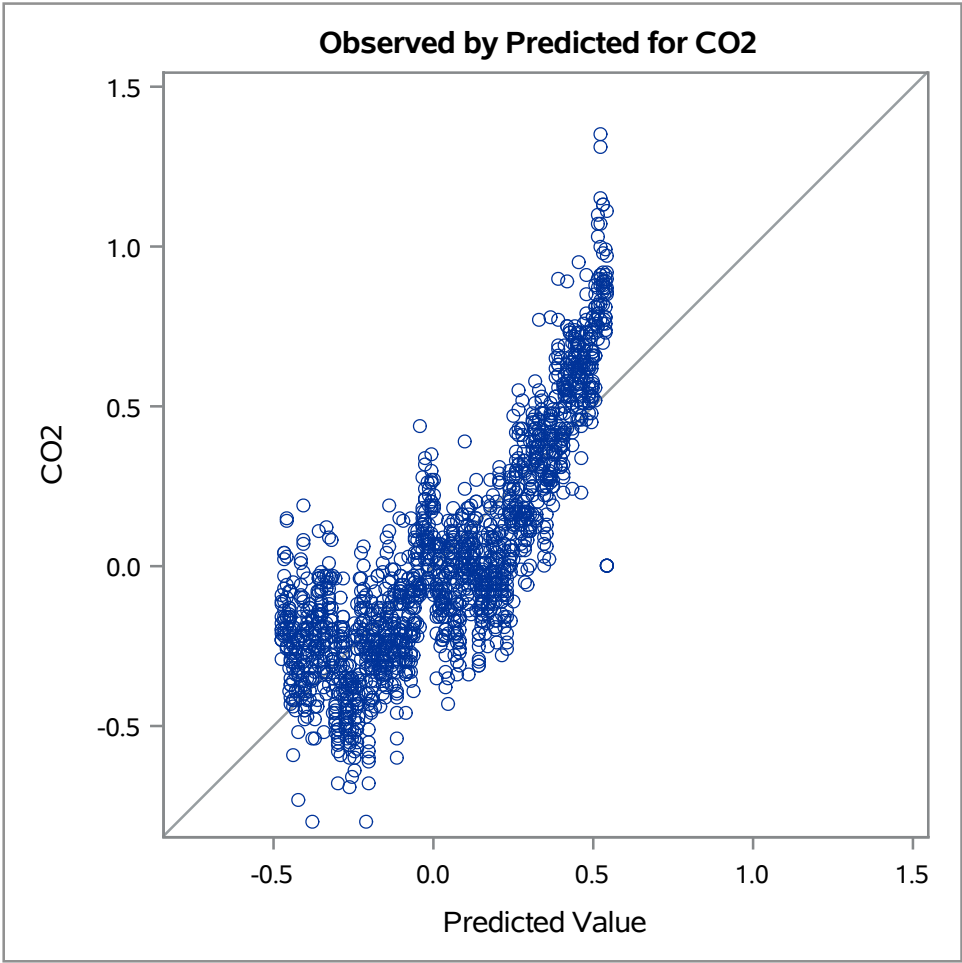
Number of Observations Read	1680
Number of Observations Used	1680

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	147.23077	147.23077	3639.25	<.0001
Error	1678	67.88578	0.04046		
Corrected Total	1679	215.11655			

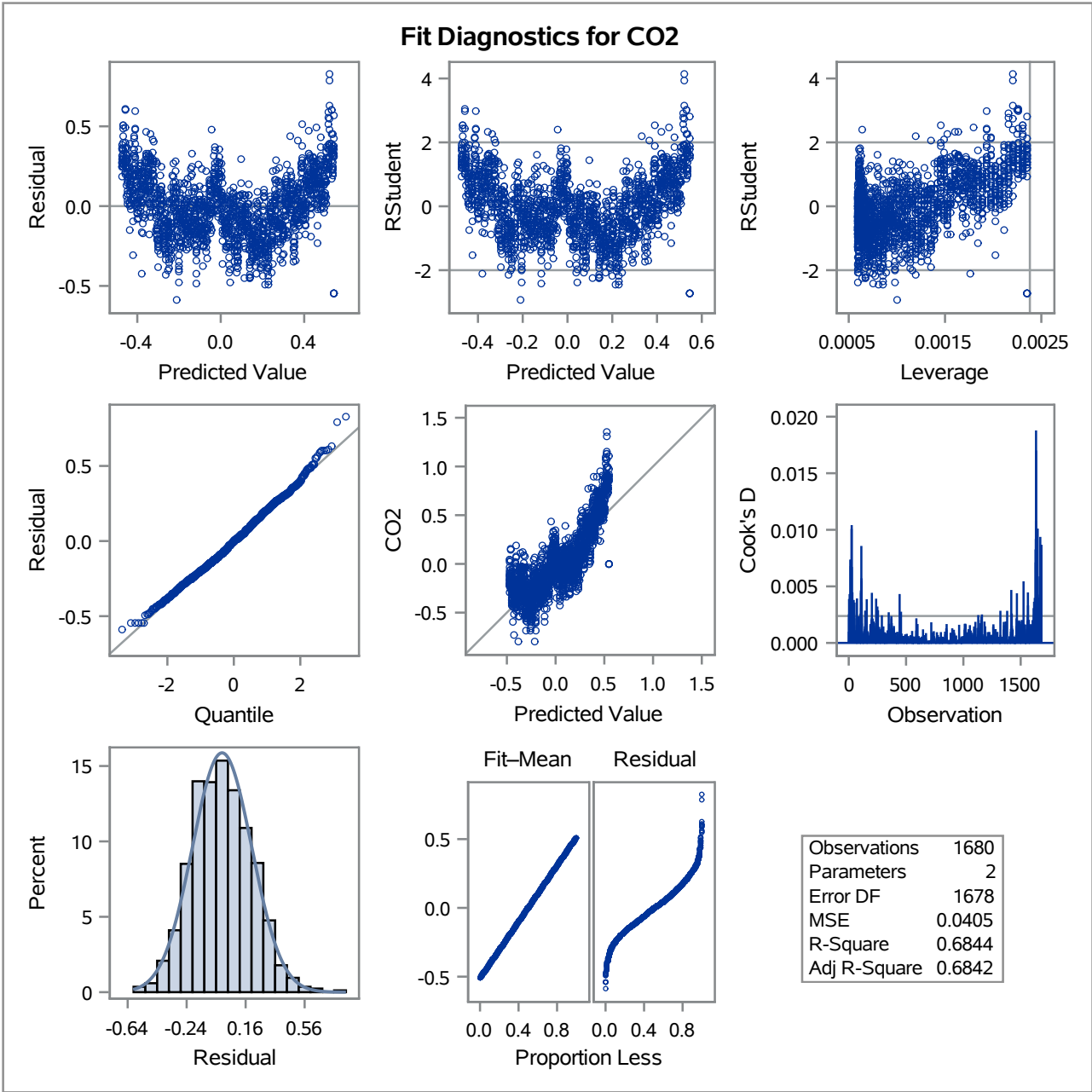
Root MSE	0.20114	R-Square	0.6844
Dependent Mean	0.03483	Adj R-Sq	0.6842
Coeff Var	577.52741		

Parameter Estimates					
Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	0.11162	0.00507	22.02	<.0001
Date	1	0.00002006	3.324518E-7	60.33	<.0001

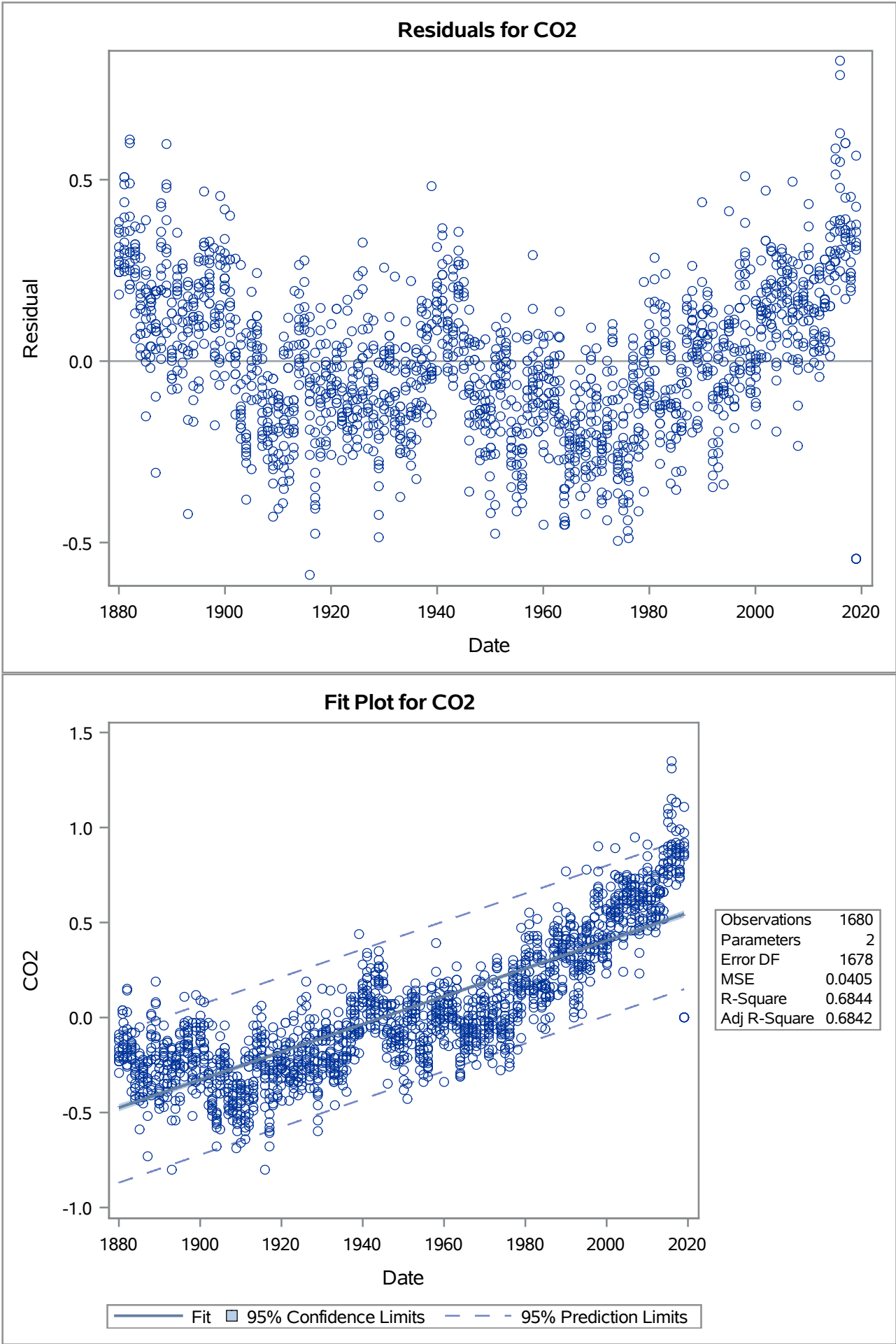
Model: MODEL1
Dependent Variable: CO2



Model: MODEL1
Dependent Variable: CO2



Model: MODEL1
Dependent Variable: CO2



Data Set	WORK.IMPORT
Dependent Variable	CO2
Selection Method	None

Number of Observations Read	1680
Number of Observations Used	240

Dimensions	
Number of Effects	3
Number of Parameters	3

Least Squares Summary			
Step	Effect Entered	Number Effects In	SBC
0	Intercept	1	-920.4461
1	Date	2	-915.1941
2	Date*Date	3	-932.4611*
* Optimal Value of Criterion			

Least Squares Model (No Selection)

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	0.46253	0.23126	11.91	<.0001
Error	237	4.60377	0.01943		
Corrected Total	239	5.06630			

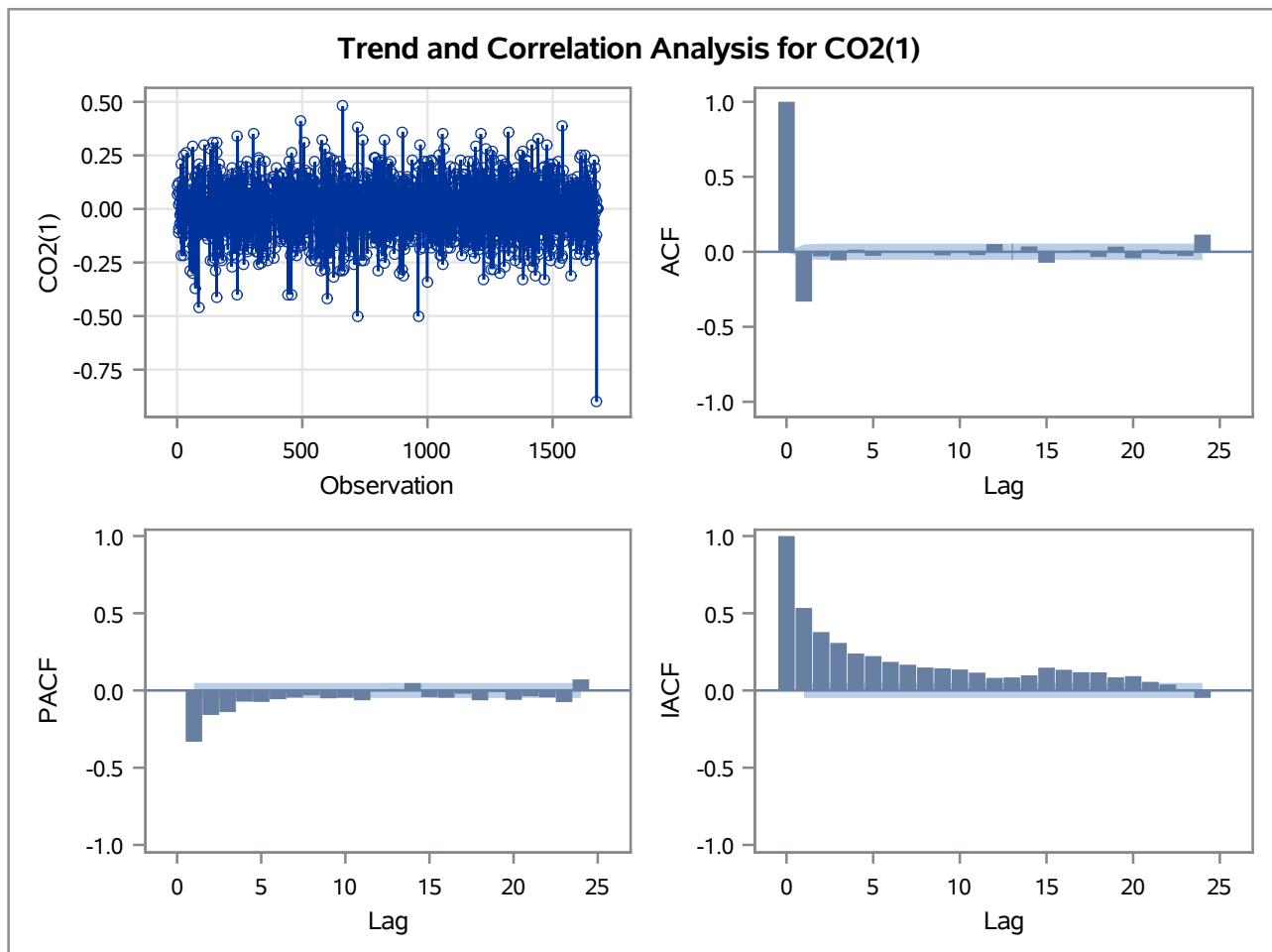
Root MSE	0.13937
Dependent Mean	-0.23004
R-Square	0.0913
Adj R-Sq	0.0836
AIC	-700.90306
AICC	-700.73285
SBC	-932.46115

Parameter Estimates					
Parameter	DF	Estimate	Standard Error	t Value	Pr > t
Intercept	1	6.853205	1.474503	4.65	<.0001
Date	1	0.000560	0.000116	4.83	<.0001
Date*Date	1	1.0981066E-8	2.262221E-9	4.85	<.0001

Input Data Set	
Name	WORK.IMPORT3
Label	
Time ID Variable	Date
Time Interval	MONTH
Length of Seasonal Cycle	12

Name of Variable = CO2	
Period(s) of Differencing	1
Mean of Working Series	0.000173
Standard Deviation	0.124288
Number of Observations	1679
Observation(s) eliminated by differencing	1

Autocorrelation Check for White Noise									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	194.30	6	<.0001	-0.332	-0.031	-0.057	0.015	-0.027	-0.002
12	200.69	12	<.0001	-0.005	0.004	-0.024	-0.004	-0.022	0.052
18	214.08	18	<.0001	-0.000	0.036	-0.073	-0.004	0.010	-0.034
24	243.53	24	<.0001	0.034	-0.042	0.015	-0.015	-0.028	0.114



Warning: Estimates did not improve after a ridge was encountered in the objective function. The iteration process has been terminated.

Warning: Estimates may not have converged.

ARIMA Estimation Optimization Summary	
Estimation Method	Maximum Likelihood
Parameters Estimated	4
Termination Criteria	Maximum Relative Change in Estimates
Iteration Stopping Value	0.001
Criteria Value	1.77E-16

ARIMA Estimation Optimization Summary	
Maximum Absolute Value of Gradient	0.028951
R-Square Change from Last Iteration	0.003419
Objective Function	Log Gaussian Likelihood
Objective Function Value	1217.043
Marquardt's Lambda Coefficient	1E12
Numerical Derivative Perturbation Delta	0.001
Iterations	34
Warning Message	Estimates may not have converged.

Maximum Likelihood Estimation					
Parameter	Estimate	Standard Error	t Value	Approx Pr > t	Lag
MU	0.0001572	0.0021544	0.07	0.9418	0
MA1,1	-0.98214	0.03823	-25.69	<.0001	1
AR1,1	-1.31265	0.04580	-28.66	<.0001	1
AR1,2	-0.32245	0.02876	-11.21	<.0001	2

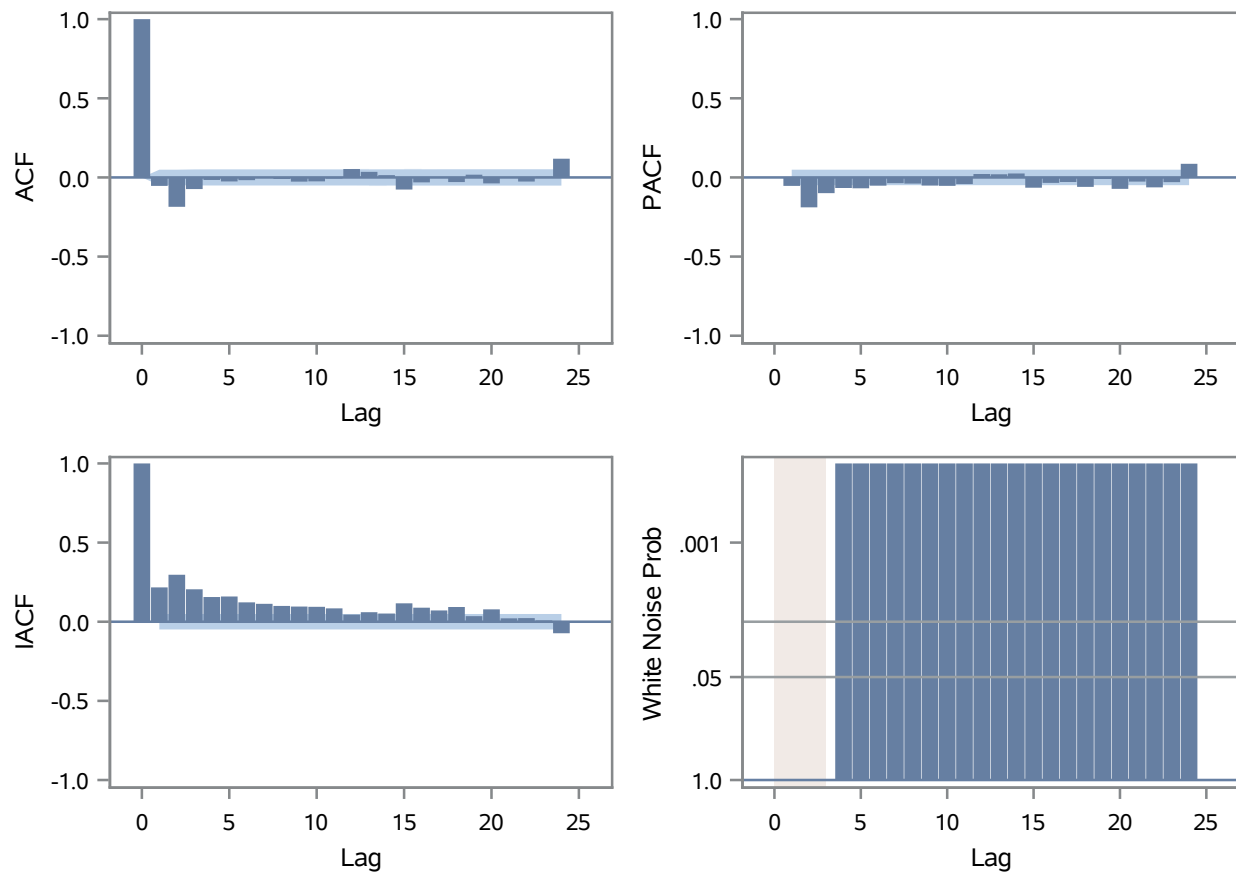
Constant Estimate	0.000414
Variance Estimate	0.01377
Std Error Estimate	0.117344
AIC	-2426.09
SBC	-2404.38
Number of Residuals	1679

Correlations of Parameter Estimates				
Parameter	MU	MA1,1	AR1,1	AR1,2
MU	1.000	-0.000	-0.000	-0.000
MA1,1	-0.000	1.000	0.864	0.596
AR1,1	-0.000	0.864	1.000	0.917
AR1,2	-0.000	0.596	0.917	1.000

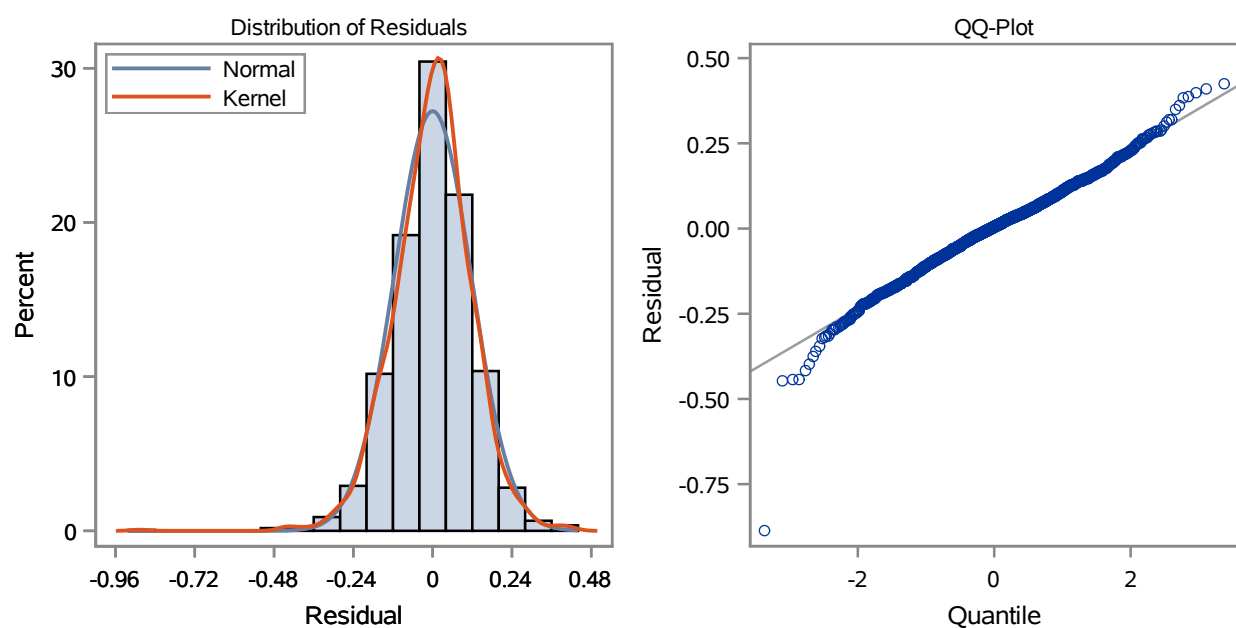
Autocorrelation Check of Residuals									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	73.80	3	<.0001	-0.053	-0.185	-0.074	-0.016	-0.025	-0.017
12	81.05	9	<.0001	-0.002	-0.010	-0.026	-0.025	-0.007	0.053
18	96.51	15	<.0001	0.035	0.015	-0.076	-0.031	0.002	-0.029
24	124.50	21	<.0001	0.017	-0.038	0.001	-0.026	0.005	0.118
30	127.98	27	<.0001	0.010	-0.012	-0.032	-0.000	-0.014	-0.023
36	135.83	33	<.0001	-0.037	-0.032	0.026	-0.001	0.038	0.012

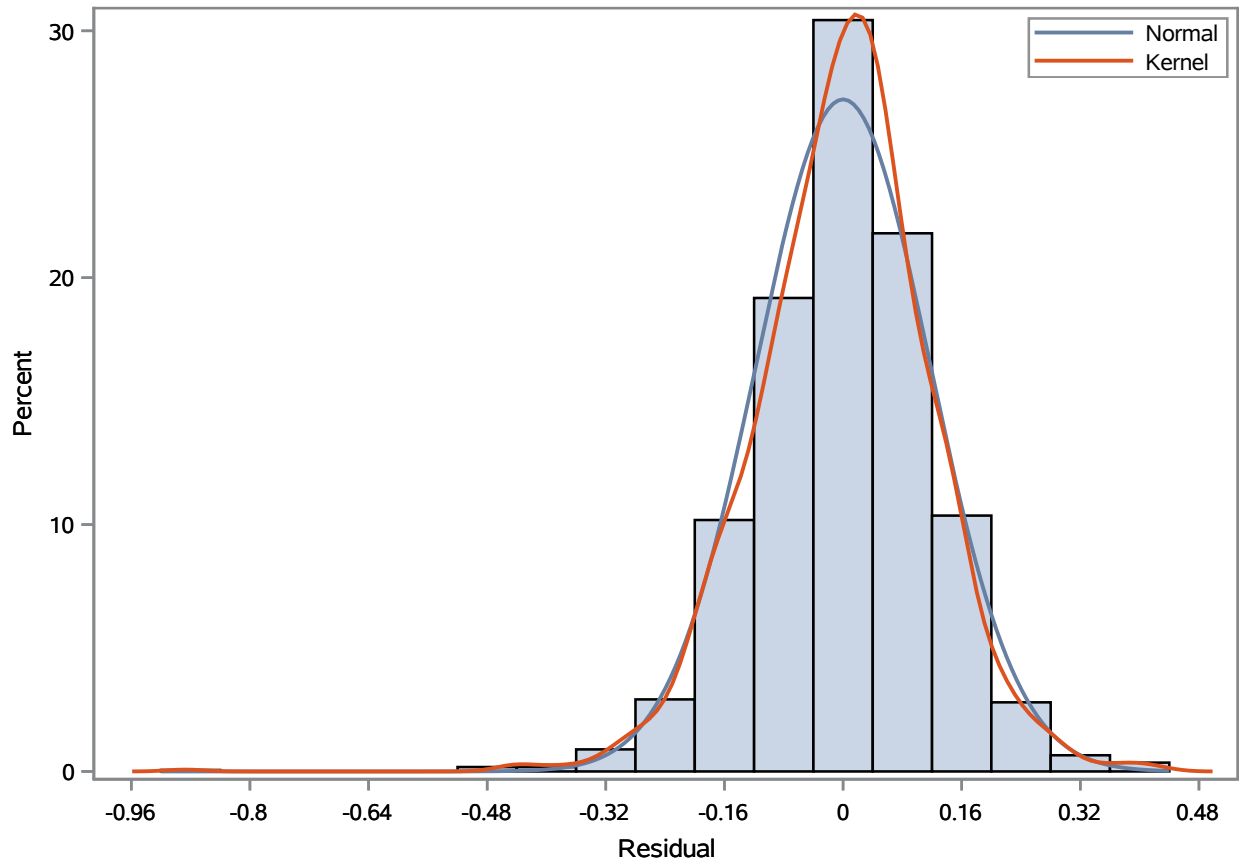
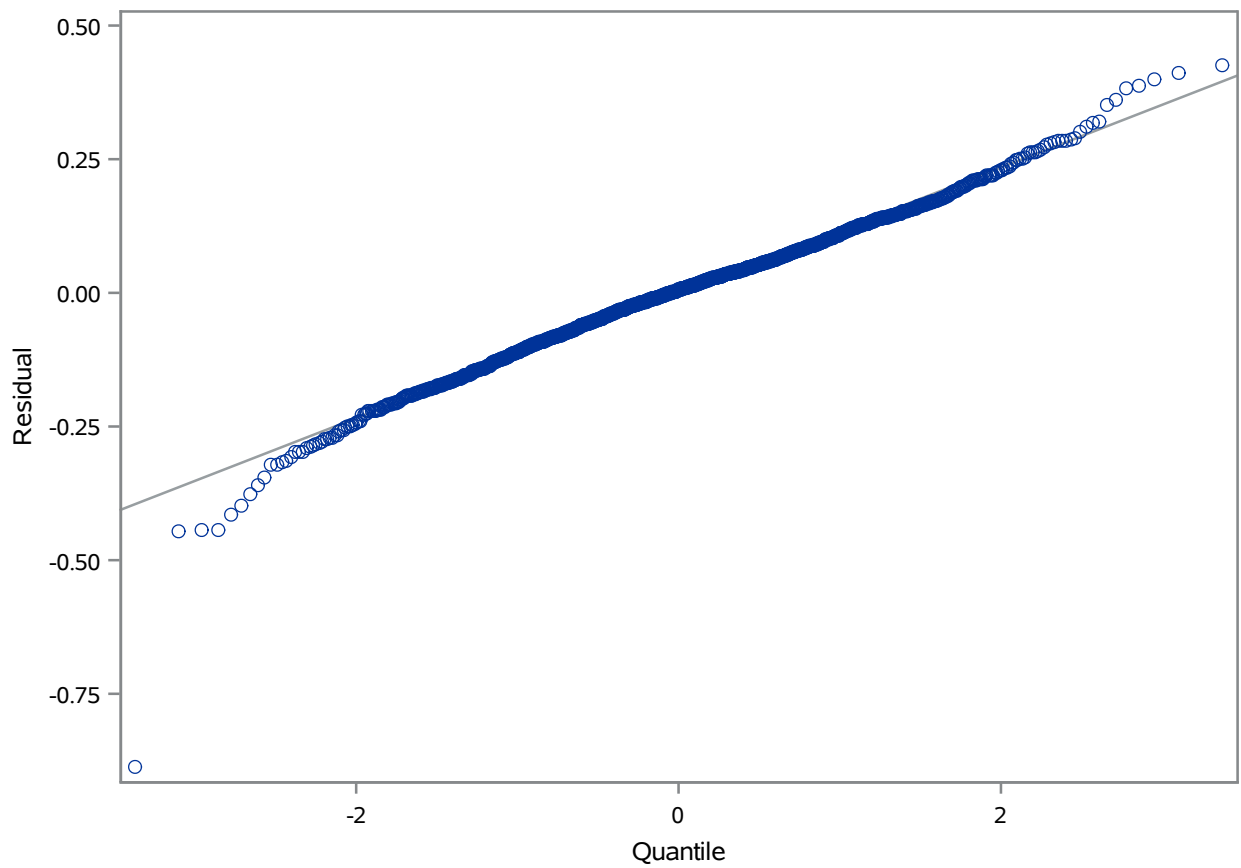
Autocorrelation Check of Residuals									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
42	145.29	39	<.0001	0.019	0.028	-0.057	0.009	0.025	-0.020
48	155.80	45	<.0001	-0.003	0.009	0.015	-0.048	-0.036	0.046

Residual Correlation Diagnostics for CO2(1)



Residual Normality Diagnostics for CO2(1)



Distribution of Residuals for CO2(1)**Residual Q-Q Plot for CO2(1)**

Warning: The ID value for observation 1664 is the same as the ID value for the last observation according to ID variable DATE.

Warning: The ID value for observation 1665 is the same as the ID value for the last observation according to ID variable DATE.

Warning: The ID value for observation 1666 is the same as the ID value for the last observation according to ID variable DATE.

Warning: The ID value for observation 1667 is the same as the ID value for the last observation according to ID variable DATE.

Warning: The ID value for observation 1668 is the same as the ID value for the last observation according to ID variable DATE.

Warning: The ID value for observation 1670 is the same as the ID value for the last observation according to ID variable DATE.

Warning: The ID value for observation 1671 is the same as the ID value for the last observation according to ID variable DATE.

Warning: The ID value for observation 1672 is the same as the ID value for the last observation according to ID variable DATE.

Warning: The ID value for observation 1673 is the same as the ID value for the last observation according to ID variable DATE.

Warning: The ID value for observation 1674 is the same as the ID value for the last observation according to ID variable DATE.

Warning: The ID value for observation 1675 is the same as the ID value for the last observation according to ID variable DATE.

Warning: The ID value for observation 1676 is the same as the ID value for the last observation according to ID variable DATE.

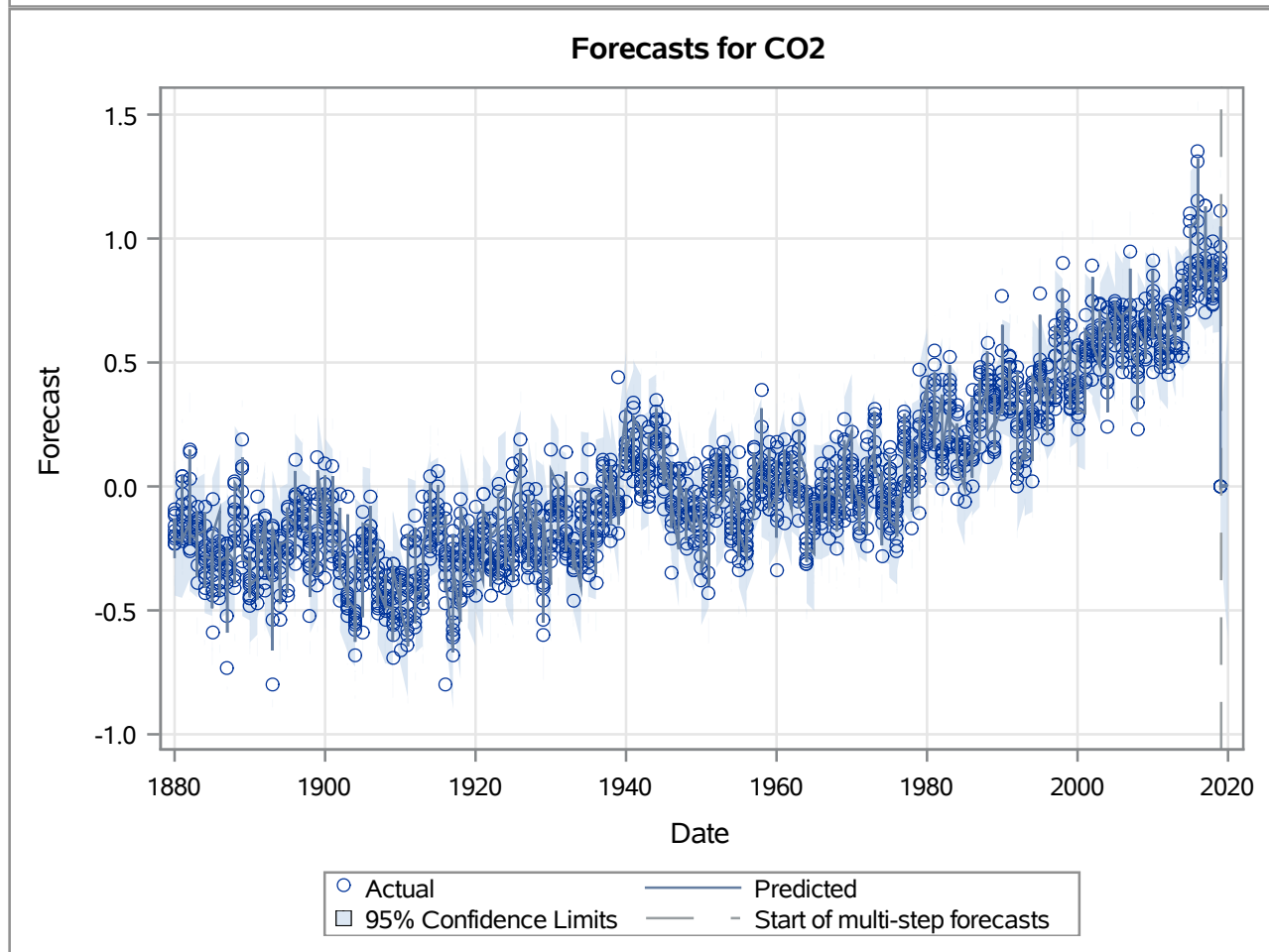
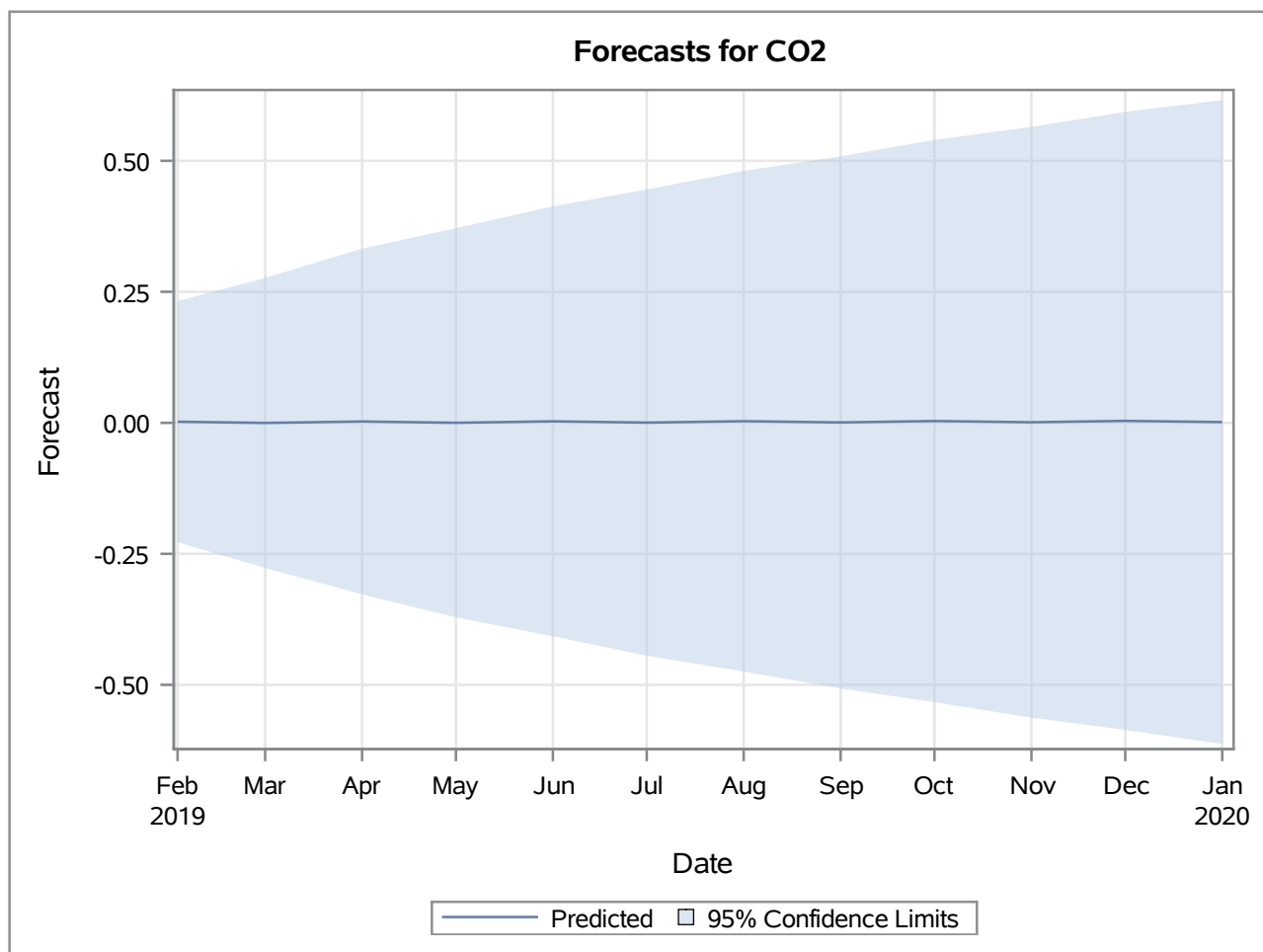
Warning: The ID value for observation 1677 is the same as the ID value for the last observation according to ID variable DATE.

Warning: The ID value for observation 1678 is the same as the ID value for the last observation according to ID variable DATE.

Warning: The ID value for observation 1679 is the same as the ID value for the last observation according to ID variable DATE.

Warning: The ID value for observation 1680 is the same as the ID value for the last observation according to ID variable DATE.

Forecasts for variable CO2				
Obs	Forecast	Std Error	95% Confidence Limits	
1681	0.0021	0.1173	-0.2279	0.2321
1682	-0.0002	0.1412	-0.2770	0.2765
1683	0.0026	0.1683	-0.3273	0.3325
1684	0.0000	0.1895	-0.3713	0.3714
1685	0.0029	0.2093	-0.4073	0.4131
1686	0.0004	0.2270	-0.4445	0.4453
1687	0.0032	0.2437	-0.4744	0.4807
1688	0.0007	0.2591	-0.5070	0.5085
1689	0.0034	0.2738	-0.5331	0.5400
1690	0.0011	0.2876	-0.5625	0.5647
1691	0.0037	0.3009	-0.5860	0.5934
1692	0.0014	0.3135	-0.6130	0.6159



Outlier Detection Summary	
Maximum number searched	5
Number found	5
Significance used	0.05

Outlier Details				
Obs	Type	Estimate	Chi-Square	Approx Prob>ChiSq
1676	Shift	-0.88836	76.76	<.0001
720	Additive	0.41938	24.19	<.0001
157	Additive	-0.39207	21.14	<.0001
662	Additive	0.36964	18.91	<.0001
85	Additive	-0.36406	18.34	<.0001